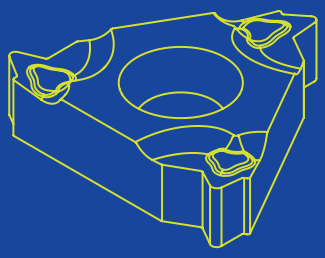
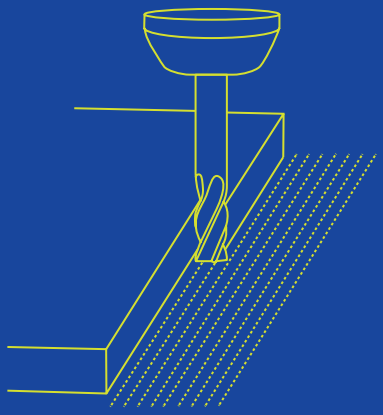
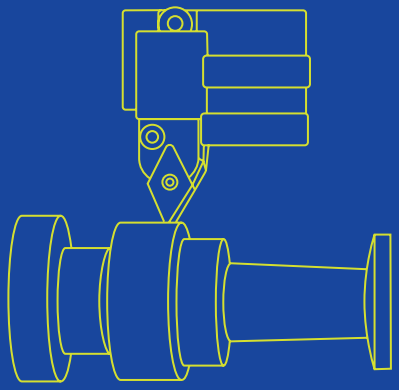
CATALOGUE 2025

CUTTING

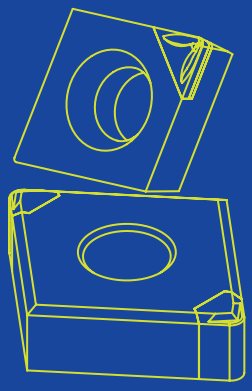




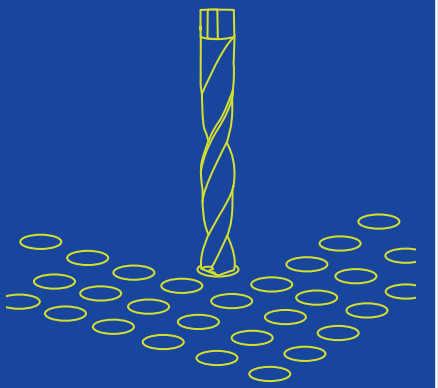




TOOLS



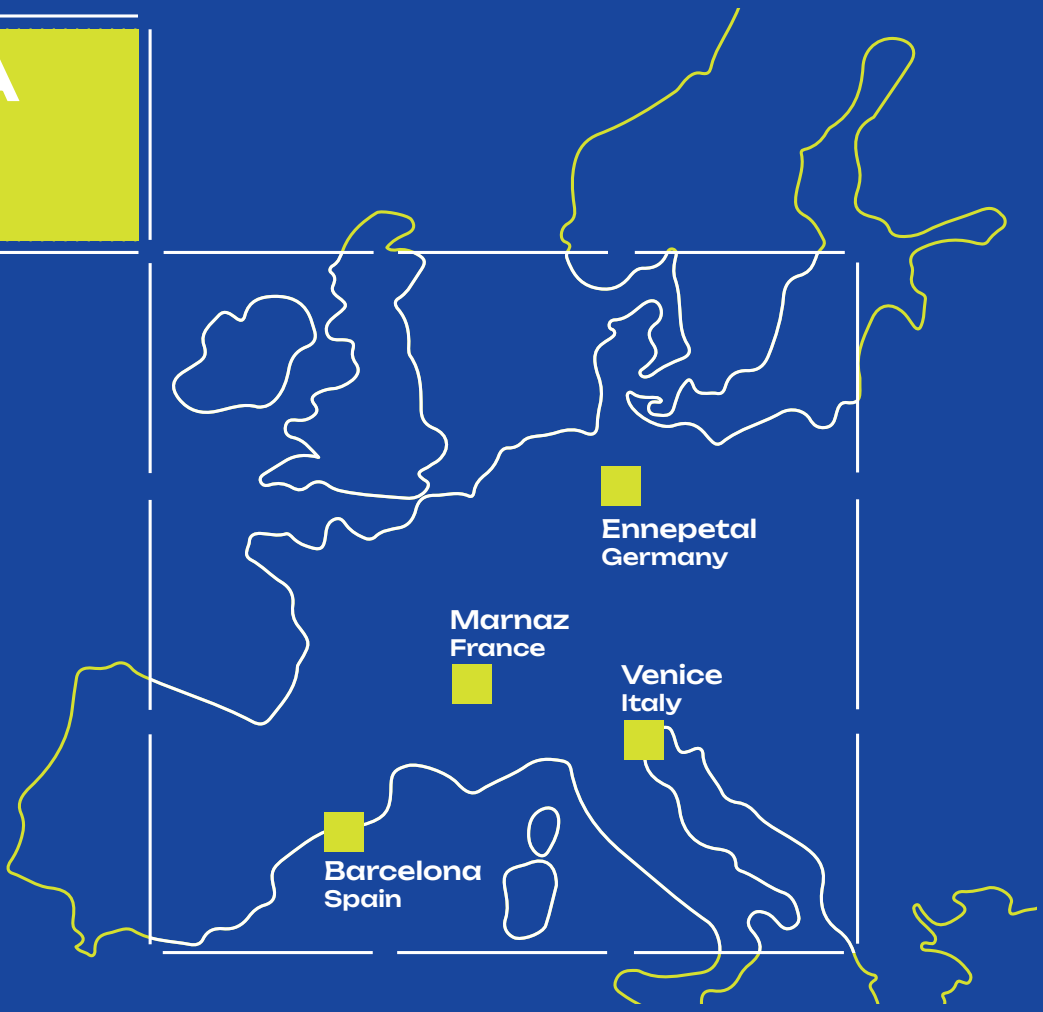




SORMA
DIAMOND & CUTTING TOOLS

CATALOGUE 2025

SORMA GROUP


Ennepetal
Germany
Marnaz
France
Venice
Italy
Barcelona
Spain

The year 2025 marks an important milestone for Sorma.

We began as a small store in Frezzeria, Venice, in 1950. Since then, 75 years have passed and 3 generations have taken turns leading the company.

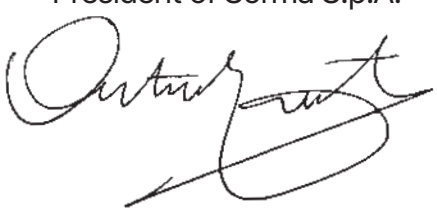
Yet one thing has remained unchanged, our mission: to grow together with our customers through a sustainable growth model.

Always staying true to the values that have shaped our history: respect people and the environment, reliability and passion for excellence.

Proud of the satisfaction of the customers who choose us every day, we are pleased to introduce our unified catalogue, showcasing our selection of Nikko and Osawa tools for the metalcutting industry.

It took us 75 years to become Sorma, because credibility, reliability, and excellence are not just three words to us, but a commitment we renew every day.

Arturo Sorgato
President of Sorma S.p.A.



MAIN INDEX

INDEXABLE

Turning .A1
Threading .B1
Grooving .C1
Milling .D1
Drilling .E1
Accessories .F1
Spare parts .G1

SOLID

Carbide drills .H1
HSS drills .I1
Carbide end mills .J1
HSS end mills .K1
Carbide burrs .L1

Workpiece materials .M1
General index .N1

HOW TO READ THE CATALOGUE

Section index

MAIN INDEX

INDEXABLE

Turning .A1
Threading .B1
Grooving .C1
Milling .D1
Drilling .E1
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Spare parts .G1

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Carbide drills .H1
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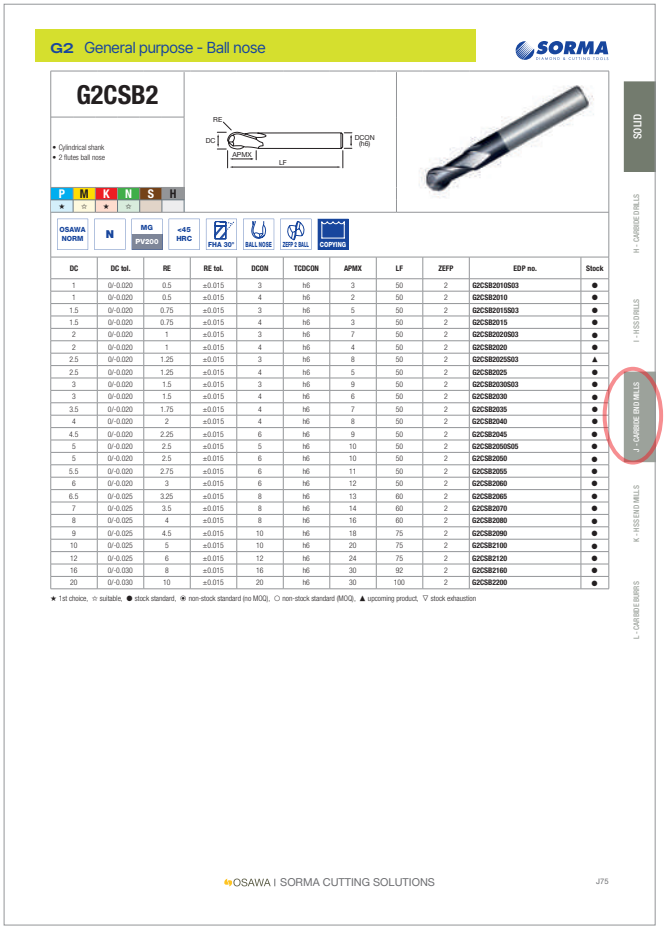


G2 General purpose - Ball nose

SORMA DIAMOND & CUTTING TOOLS

G2CSB2

• Cylindrical shank
• 2 flutes ball nose

P M K N S H

OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPPING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	±0.015	3	h6	3	50	2	G2CSB2010S03	●
1	0/-0.020	0.5	±0.015	4	h6	2	50	2	G2CSB2010	●
1.5	0/-0.020	0.75	±0.015	3	h6	5	50	2	G2CSB2015S03	●
1.5	0/-0.020	0.75	±0.015	4	h6	3	50	2	G2CSB2015	●
2	0/-0.020	1	±0.015	3	h6	7	50	2	G2CSB2020S03	●
2	0/-0.020	1	±0.015	4	h6	4	50	2	G2CSB2020	●
2.5	0/-0.020	1.25	±0.015	3	h6	8	50	2	G2CSB2025S03	▲
2.5	0/-0.020	1.25	±0.015	4	h6	5	50	2	G2CSB2025	●
3	0/-0.020	1.5	±0.015	3	h6	9	50	2	G2CSB2030S03	●
3	0/-0.020	1.5	±0.015	4	h6	6	50	2	G2CSB2030	●
3.5	0/-0.020	1.75	±0.015	4	h6	7	50	2	G2CSB2035	●
4	0/-0.020	2	±0.015	4	h6	8	50	2	G2CSB2040	●
4.5	0/-0.020	2.25	±0.015	6	h6	9	50	2	G2CSB2045	●
5	0/-0.020	2.5	±0.015	5	h6	10	50	2	G2CSB2050S05	●
5	0/-0.020	2.5	±0.015	6	h6	10	50	2	G2CSB2050	●
5.5	0/-0.020	2.75	±0.015	6	h6	11	50	2	G2CSB2055	●
6	0/-0.020	3	±0.015	6	h6	12	50	2	G2CSB2060	●
6.5	0/-0.025	3.25	±0.015	8	h6	13	60	2	G2CSB2065	●
7	0/-0.025	3.5	±0.015	8	h6	14	60	2	G2CSB2070	●
8	0/-0.025	4	±0.015	8	h6	16	60	2	G2CSB2080	●
9	0/-0.025	4.5	±0.015	10	h6	18	75	2	G2CSB2090	●
10	0/-0.025	5	±0.015	10	h6	20	75	2	G2CSB2100	●
12	0/-0.025	6	±0.015	12	h6	24	75	2	G2CSB2120	●
16	0/-0.030	8	±0.015	16	h6	30	92	2	G2CSB2160	●
20	0/-0.030	10	±0.015	20	h6	30	100	2	G2CSB2200	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SOLID
H - CARBIDE DRILLS
I - HSS DRILLS
J - CARBIDE END MILLS
K - HSS END MILLS
L - CARBIDE BURRS

OSAWA I SORMA CUTTING SOLUTIONS J75

MAIN AND THUMB INDEX
if product series (e.g. carbide endmills) is known, check main index at page 5 or follow the thumb index.

INDICE PRINCIPALE E RUBRICATURA
conoscendo la serie prodotto (es. carbide endmills), consultare l'indice principale a pag. 5 o seguire la rubricatura.

INDEX UND DAUMEN INDEX
wenn die produktgruppe bekannt ist (z.b carbide endmills), schlagen sie im index -Seite 5- nach, oder folgend sie dem daumen index.

INDEX ET RUBRIQUE
En connaissant la référence du produit (ex. carbide endmills), consulter l'index général à la page 5 ou suivre la rubrique.

Product search

GENERAL INDEX Indexable

DESIGNATION			
07IR...	Threading	Indexable - INTERNAL	B16
11IL...	Threading	Indexable - INTERNAL	B20
11IR...	Threading	Indexable - INTERNAL	B18
16EL...	Threading	Indexable - EXTERNAL	B7
16ER...	Threading	Indexable - EXTERNAL	B7
16IL...	Threading	Indexable - INTERNAL	B20
16IR...	Threading	Indexable - INTERNAL	B20
22ER...	Threading	Indexable - EXTERNAL	B6
22IR...	Threading	Indexable - INTERNAL	B18
A DCLN...	Turning	HOLDERS	A293
A DDUN...	Turning	HOLDERS	A313
A DTFN...	Turning	HOLDERS	A345
A DWLN...	Turning	HOLDERS	A373
A PCLN...	Turning	HOLDERS	A294
A PWLN...	Turning	HOLDERS	A374
A SCLC...	Turning	HOLDERS	A281
A SDUC...	Turning	HOLDERS	A302
A STFC...	Turning	HOLDERS	A338
A16K SCLC...	Turning	HOLDERS	A282
APKT...	Milling	ISO Shouldering	D50
BGF-HLD...	Grooving and Parting	BGF	C19
BGFL...	Grooving and Parting	BGF	C18
BGFR...	Grooving and Parting	BGF	C18
CCET...	Turning	CARBIDE	A69
CCGT...	Turning	CARBIDE	A69
CCGT...	Turning	DIAMOND	A194
CCGW...	Turning	CERAMIC	A234
CCGW...	Turning	DIAMOND	A194
CCGW...	Turning	PCBN	A144

DESIGNATION			
DCMT...	Turning	CARBIDE	A76
DDJN...	Turning	HOLDERS	A310
DEX...	Drilling	DEX drills	E37
DNGA...	Turning	CERAMIC	A237
DNGA...	Turning	DIAMOND	A199
DNGA...	Turning	PCBN	A153
DNGG...	Turning	CARBIDE	A79
DNGM...	Turning	DIAMOND	A199
DNGN...	Turning	CERAMIC	A238
DNMA...	Turning	CARBIDE	A81
DNMA...	Turning	CERAMIC	A237
DNMG...	Turning	CARBIDE	A78
DNMX...	Turning	CARBIDE	A80
DRSP...	Drilling	DRS pilot	E29
DTGN...	Turning	HOLDERS	A342
DTJN...	Turning	HOLDERS	A343
DVJN...	Turning	HOLDERS	A362
DVVNN...	Turning	HOLDERS	A363
DWLN...	Turning	HOLDERS	A370
DXP...	Drilling	DXP drills	E72
E MCC...	Turning	HOLDERS	A315
E SCLC...	Turning	HOLDERS	A283
E SDUC...	Turning	HOLDERS	A303
E STFC...	Turning	HOLDERS	A339
EX MCN...	Turning	HOLDERS	A317
EX MDN...	Turning	HOLDERS	A319
HNEN...	Milling	DoubleHex	D83
HNEX...	Milling	DoubleHex	D83
HNMX...	Milling	DoubleHex	D83

ALPHANUMERIC INDEX
If product code (e.g. ITEM No. 118N) is known, check the alphanumeric general index at page N1.

INDICE ALFANUMERICO
Conoscendo il codice prodotto (es. ITEM No. 118N), consultare l'indice generale a pag. N1.

ALPHANUMERISCHER INDEX
Wenn Sie die Art.Nr kennen (z.B. ART.Nr 118N), können Sie die entsprechende Seite durch den Alphanumerischen Index – Seite N1 - finden.

INDEX ALPHANUMÉRIQUE
En connaissant le code produit (ex. ITEM No. 118N), consulter l'index alphanumérique à la page N1.

Product tables

1 **TURNING** 2 Indexable inserts - CARBIDE 3

INDEXABLE | A - TURNING | B - THREADING | C - GROOVING | D - MILLING | E - DRILLING | F - ACCESSORIES | G - SPARE PARTS

CC 4

ISO - with hole

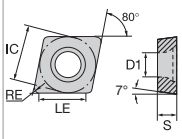
- The most popular insert shape due to high versatility
- Clearance angle 7°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

7

5 HF: Micrograin tungstein carbide; HT: Cermet; ed tungstein carbide; ical vapor deposition; CVD: ...mical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
6 Stable machining, light cut	1st choice	●	○	●	●	○	●	○	●	●	●	○	●	●	●
General machining, medium cut	1st choice, suitable	◔	◔		◔	◔	◔	◔	◔	◔	◔	◔	◔		◔
Unstable machining, heavy cut	1st choice, suitable	✱	✱			✱		✱				✱			✱

Dimensions



2 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

P			200 380	170 360	140 330			180 400	100 220	90 200	70 180		200 380			
M				8		100 200	80 180	100 220	70 160	60 150	50 140					
K	130 380	110 300						150 320		90 190	60 180					
N												400 1400		200 1000		
S									20 70	20 70	20 70					
H																

9 Designation		RE	IC	S	D1	LE	Stock 10									
MEDIUM	PMU P M K	CCMT060202-PMU	0.20	6.35	2.38	2.8	6.2				⦿	●		⦿	⦿					●		
		CCMT060204-PMU	0.40	6.35	2.38	2.8	6	●			●	●	●	●	●			●		●		
		CCMT060208-PMU	0.80	6.35	2.38	2.8	5.6	●			⦿	●		●						○		
		CCMT09T302-PMU	0.20	9.525	3.97	4.4	9.5				⦿	●		⦿	⦿					⦿		
		CCMT09T304-PMU	0.40	9.525	3.97	4.4	9.3	●			●	●	●	●	●		●	●		●		
		CCMT09T308-PMU	0.80	9.525	3.97	4.4	8.9	●	●		●	●	○	●	⦿		●	●		⦿		
		CCMT120404-PMU JC9025 NIKKO	0.40	12.7	4.76	5.5	12.5											⦿				
		CCMT120404-PMU	0.40	12.7	4.76	5.5	12.5	●			●	●		●								
		CCMT120408-PMU	0.80	12.7	4.76	5.5	12.1	●	⦿		●	●		●								
		CCMT120412-PMU	1.20	12.7	4.76	5.5	11.7	●			⦿	⦿		⦿								
MEDIUM	PMN N	CCGX060202-PMN	0.20	6.35	2.38	2.8	6.2											○		●		
		CCGX060204-PMN	0.40	6.35	2.38	2.8	6											○		●		
		CCGX060208-PMN	0.80	6.35	2.38	2.8	5.6											○		●		
		CCGX09T302-PMN	0.20	9.525	3.97	4.4	9.5											○		●		
		CCGX09T304-PMN	0.40	9.525	3.97	4.4	9.3											⦿		●		
		CCGX09T308-PMN	0.80	9.525	3.97	4.4	8.9											●		●		
		CCGX120402-PMN	0.20	12.7	4.76	5.5	12.7											○		○		
		CCGX120404-PMN	0.40	12.7	4.76	5.5	12.5											●		●		
		CCGX120408-PMN	0.80	12.7	4.76	5.5	12.1											●		●		
ROUGHING	PRU P K	CCMT09T304-PRU	0.40	9.525	3.97	4.4	9.3	⦿				●										
		CCMT09T308-PRU	0.80	9.525	3.97	4.4	8.9	⦿				●										
		CCMT120408-PRU	0.80	12.7	4.76	5.5	12.1	●				●										
		CCMT120412-PRU	1.20	12.7	4.76	5.5	11.7	⦿				●										

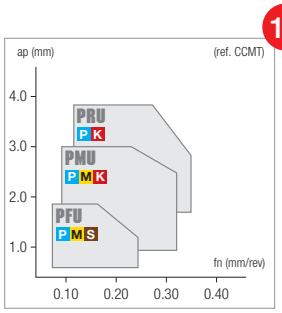
11 **1st choice** all-around application

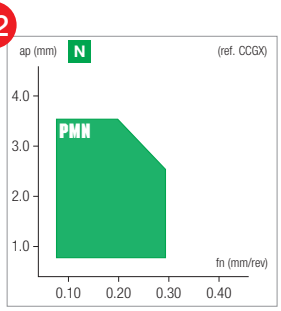
polished surface ground clearance

strong edge interrupted cut

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

12





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | 13 HOLDERS p. A255

How to read the catalogue - INSERTS - INDEXABLE TABLES

1

- Chapter
- Capitolo
- Kapitel
- Chapitre

2

- Section
- Sezione
- Abschnitt
- Section

3

- Sub-chapter
- Sottocapitolo
- Unterkapitel
- Sous-chapitre

4

- ISO shape
- Geometria ISO
- ISO-Geometrie
- Géométrie ISO

5

- Insert composition according to ISO 513.
- Composizione dell'inserto secondo ISO 513.
- Zusammensetzung der Wendeschneidplatte nach ISO 513.
- Composition de la plaquette conformément à l'ISO 513.

6

- Suggested applications based on the main features of each grade.
- Applicazioni consigliate sulla base delle caratteristiche principali di ogni grado.
- Empfohlene Anwendungen auf Basis der wesentlichen Eigenschaften der einzelnen Sorten.
- Applications recommandées en fonction des principales caractéristiques de chaque nuance.

7

- Main features
- Principali caratteristiche
- Wesentliche Eigenschaften
- Principales caractéristiques

8

- Suggested cutting speed for different workpiece materials.
  For ease of reading, values are shown only for the most common materials in each group.

  P ▸ P1 K ▸ K1 S ▸ S1
  M ▸ M1 N ▸ N1 H ▸ H1

  More accurate indications are listed at the end of every sub-chapter.
- Velocità di taglio suggerita per differenti materiali. Per facilitare la lettura, di ogni gruppo vengono mostrati solo i materiali più comuni.

  P ▸ P1 K ▸ K1 S ▸ S1
  M ▸ M1 N ▸ N1 H ▸ H1

  Indicazioni più accurate sono fornite alla fine di ogni sub-capitolo.
- Empfohlene Schnittgeschwindigkeit für die verschiedenen Materialien.
  Zur besseren Lesbarkeit sind nur die häufigsten Materialien jeder Gruppe aufgeführt.

  P ▸ P1 K ▸ K1 S ▸ S1
  M ▸ M1 N ▸ N1 H ▸ H1

  Genauere Angaben sind am Ende eines jeden Unterkapitels zu finden.
- Vitesse de coupe recommandée pour différentes matières. Pour faciliter la lecture, seules les matières les plus courantes de chaque groupe sont présentées.

  P ▸ P1 K ▸ K1 S ▸ S1
  M ▸ M1 N ▸ N1 H ▸ H1

  Des informations plus précises sont fournies à la fin de chaque sous-chapitre.

9

- Geometry designation and main material application.
- Designazione della geometria e principali materiali lavorabili.
- Geometrische Bezeichnung und wichtigste bearbeitbare Materialien.
- Géométries et applications matières.

10

- Stock status. This value may be updated without prior notice.
- Disponibilità stock. Questa informazione può essere variata senza una precedente comunicazione.
- Lagerbestand. Die Angaben können ohne vorherige Ankündigung geändert werden.
- Disponibilité des stocks. Les informations peuvent subir des modifications sans avis préalable.

11

- Application and main geometry features.
- Applicazione e caratteristiche principali.
- Anwendungen und wesentliche Eigenschaften.
- Application et principales caractéristiques.

12

- General indication about the application range of each product. More detailed suggestions can be found at the end of every sub-chapter.
- Indicazioni generali relative all'intervallo applicativo di ogni prodotto. Indicazioni più dettagliate sono fornite alla fine di ogni sub-capitolo.
- Allgemeine Angaben zu den Anwendungsbereichen der einzelnen Produkte. Detaillierte Angaben sind am Ende eines jeden Unterkapitels zu finden.
- Indications générales relatives à la gamme d'application de chaque produit. Des informations plus détaillées sont fournies à la fin de chaque sous-chapitre.

13

- Shortcut to the most import section of every chapter or to directly related products (insert ▸holders).
- Accesso rapido alla sezione principale di ogni capitolo o ai prodotti direttamente correlati (insertit ▸portautensili).
- Schnellzugriff auf den wichtigsten Abschnitt jedes Kapitels oder auf direkt zugehörige Produkte (Wendeplattent ▸Halter).
- Accès rapide à la section principale de chaque chapitre ou aux produits directement associés (plaquettest ▸porte-outils).

Holders tables

1 2 3

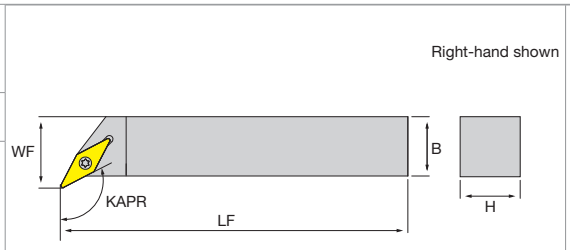
TURNING Holders - EXTERNAL

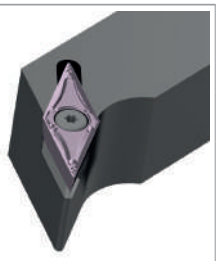
4 **SVPC**

5 ISO VC - Positive

- External turning (KAPR 117.5°)
- Holds VC-style inserts, tightened by screw

6









7

Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVPCL1010H11	10	10	14.5	100	117.5°	VC∞1103					⦿
NT-SVPCL1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCL1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCL2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCL2525M16	25	25	32	150	117.5°	VC∞1604					●
RIGHT-HAND											
NT-SVPCR1010H11	10	10	14.5	100	117.5°	VC∞1103					⦿
NT-SVPCR1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCR1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCR2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCR2525M16	25	25	32	150	117.5°	VC∞1604					●

8

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

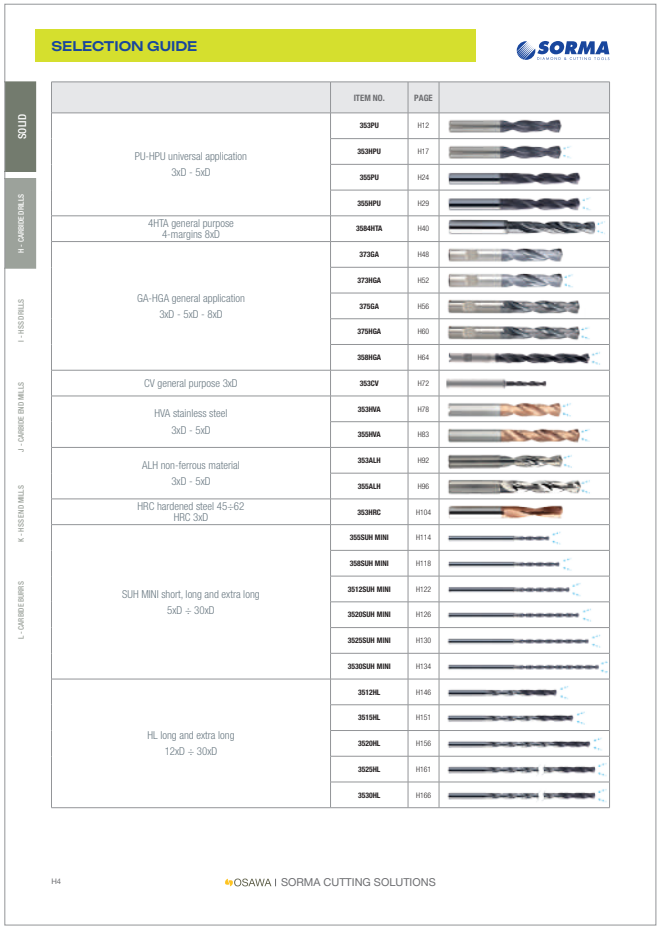
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVPC$^{L}/_{R}$oooo11	NT-ST25060T07B	NT-FT07			
NT-SVPC$^{L}/_{R}$oooo16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

9

How to read the catalogue - INDEXABLE

1	Chapter Capitolo	Kapitel Chapitre
2	Section Sezione	Abschnitt Section
3	Sub-chapter Sottocapitolo	Unterkapitel Sous-chapitre
4	ISO shape Geometria ISO	ISO-Geometrie Géométrie ISO
5	Insert shape Geometria dell'inserto	Geometrie der Wendeschneidplatte Géométrie de la plaquette
6	Main features Principali caratteristiche	Wesentliche Eigenschaften Principales caractéristiques
7	Icons Icone	Symbole Icône
8	Stock status. This value may be updated without prior notice. Disponibilità stock. Questa informazione può essere variata senza una precedente comunicazione.	Lagerbestand. Die Angaben können ohne vorherige Ankündigung geändert werden. Disponibilité des stocks. Les informations peuvent subir des modifications sans avis préalable.
9	Spare parts Parti di ricambio	Ersatzteile Pièces de rechange

Selection guide



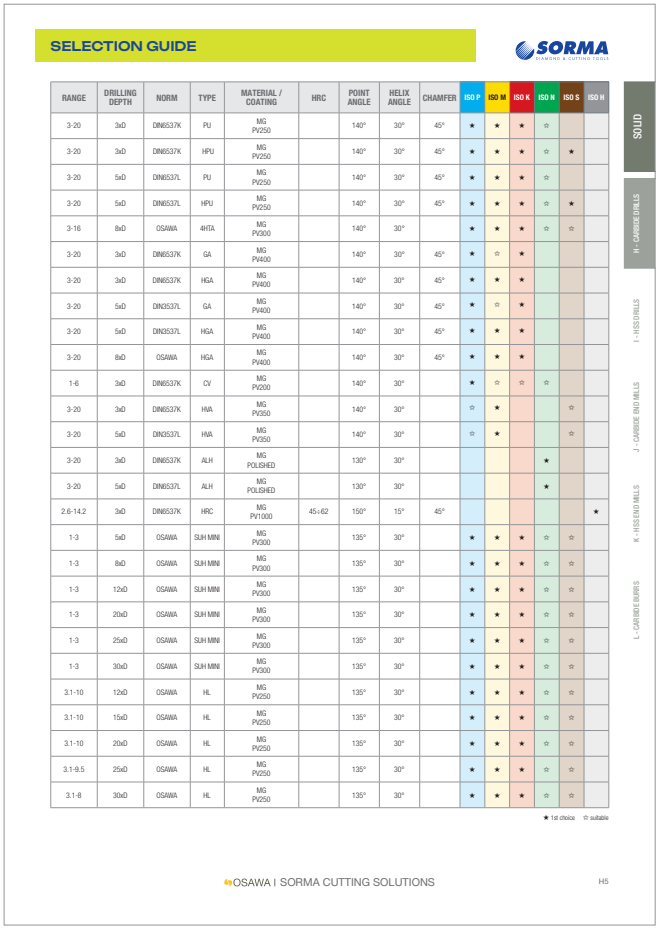
SELECTION GUIDE

SOLID | H - CARBIDE DRILLS | I - HSS DRILLS | J - CARBIDE END MILLS | K - HSS END MILLS | L - CARBIDE BURRS

	ITEM NO.	PAGE	
PU-HPU universal application 3xD - 5xD	353PU	H12	
	353HPU	H17	
	355PU	H24	
	355HPU	H29	
4HTA general purpose 4-margins 8xD	3584HTA	H40	
GA-HGA general application 3xD - 5xD - 8xD	373GA	H48	
	373HGA	H52	
	375GA	H56	
	375HGA	H60	
	358HGA	H64	
CV general purpose 3xD	353CV	H72	
HVA stainless steel 3xD - 5xD	353HVA	H78	
	355HVA	H83	
ALH non-ferrous material 3xD - 5xD	353ALH	H92	
	355ALH	H96	
HRC hardened steel 45÷62 HRC 3xD	353HRC	H104	
SUH MINI short, long and extra long 5xD ÷ 30xD	355SUH MINI	H114	
	358SUH MINI	H118	
	3512SUH MINI	H122	
	3520SUH MINI	H126	
	3525SUH MINI	H130	
	3530SUH MINI	H134	
HL long and extra long 12xD ÷ 30xD	3512HL	H146	
	3515HL	H151	
	3520HL	H156	
	3525HL	H161	
	3530HL	H166	

H4

OSAWA I SORMA CUTTING SOLUTIONS



SELECTION GUIDE

SOLID | H - CARBIDE DRILLS | I - HSS DRILLS | J - CARBIDE END MILLS | K - HSS END MILLS | L - CARBIDE BURRS

RANGE	DRILLING DEPTH	NORM	TYPE	MATERIAL / COATING	HRC	POINT ANGLE	HELIX ANGLE	CHAMFER	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
3-20	3xD	DIN6537K	PU	MG PV250		140°	30°	45°	★	★	★	☆		
3-20	3xD	DIN6537K	HPU	MG PV250		140°	30°	45°	★	★	★	☆	★	
3-20	5xD	DIN6537L	PU	MG PV250		140°	30°	45°	★	★	★	☆		
3-20	5xD	DIN6537L	HPU	MG PV250		140°	30°	45°	★	★	★	☆	★	
3-16	8xD	OSAWA	4HTA	MG PV300		140°	30°		★	★	★	☆	☆	
3-20	3xD	DIN6537K	GA	MG PV400		140°	30°	45°	★	☆	★			
3-20	3xD	DIN6537K	HGA	MG PV400		140°	30°	45°	★	★	★			
3-20	5xD	DIN3537L	GA	MG PV400		140°	30°	45°	★	☆	★			
3-20	5xD	DIN3537L	HGA	MG PV400		140°	30°	45°	★	★	★			
3-20	8xD	OSAWA	HGA	MG PV400		140°	30°	45°	★	★	★			
1-6	3xD	DIN6537K	CV	MG PV200		140°	30°		★	☆	☆	☆		
3-20	3xD	DIN6537K	HVA	MG PV350		140°	30°		☆	★			☆	
3-20	5xD	DIN3537L	HVA	MG PV350		140°	30°		☆	★			☆	
3-20	3xD	DIN6537K	ALH	MG POLISHED		130°	30°					★		
3-20	5xD	DIN6537L	ALH	MG POLISHED		130°	30°					★		
2.6-14.2	3xD	DIN6537K	HRC	MG PV1000	45÷62	150°	15°	45°						★
1-3	5xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	8xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	12xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	20xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	25xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	30xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
3.1-10	12xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-10	15xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-10	20xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-9.5	25xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-8	30xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	

★ 1st choice ☆ suitable

OSAWA I SORMA CUTTING SOLUTIONS

H5

An easy graphic index with tool and application information is available at the beginning of each section.

All'inizio di ogni macro sezione è disponibile un indice grafico con informazioni relative all'utensile e alle sue applicazioni.

Am Anfang von jedem Hauptabschnitt ist ein grafischer Index, mit Infos bezüglich des Werkzeugs und seinem Anwendungsfeld, vorhanden.

Un index graphique avec les informations relatives à l'outil et à ses applications est disponible au début de chaque chapitre.

Product table

1 G2 General purpose - 2 Square 3

SORMA DIAMOND & CUTTING TOOLS

4 G2CS2

5
- Cylindrical shank
- 2 flutes





6

P	M	K	N	S	H
★	☆	★	☆		

OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

7

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	2	**G2CS2010**	8
1.5	0/-0.020	4	h6	4.5	50	2	**G2CS2015**	
2	0/-0.020	2	h6	8	50	2	**G2CS2020S02**	●
2	0/-0.020	4	h6	6	50	2	**G2CS2020**	●
2.5	0/-0.020	4	h6	7	50	2	**G2CS2025**	●

SOLID

H - CARBIDE DRILLS

- HSS DRILLS

1	Chapter Capitolo	Kapitel Chapitre
2	Section Sezione	Abschnitt Section
3	Sub-chapter Sottocapitolo	Unterkapitel Sous-chapitre
4	ISO shape Geometria ISO	ISO-Geometrie Géométrie ISO
5	Main features Principali caratteristiche	Wesentliche Eigenschaften Principales caractéristiques
6	ISO material Materiali ISO	ISO-Materialien Géométrie ISO
7	Icons Icone	Symbole Icône
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Parameters table

G2 General purpose - Square

SOLID

H - CARBIDE DRILLS

I - HSS DRILLS

J - CARBIDE END MILLS

Cutting Parameters

G2CS2

SLOTTING

Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
1	0.004	0.003	0.003	0.005
2	0.008	0.007	0.006	0.010
3	0.012	0.010	0.009	0.016
4	0.016	0.014	0.012	0.021
5	0.020	0.017	0.015	0.026
6	0.025	0.021	0.019	0.033
8	0.032	0.027	0.024	0.042
10	0.038	0.032	0.029	0.049
12	0.045	0.038	0.034	0.059
14	0.052	0.044	0.039	0.068
16	0.060	0.051	0.045	0.078
18	0.070	0.060	0.053	0.091
20	0.080	0.068	0.060	0.104

< D3 mm: ap = 0.2D

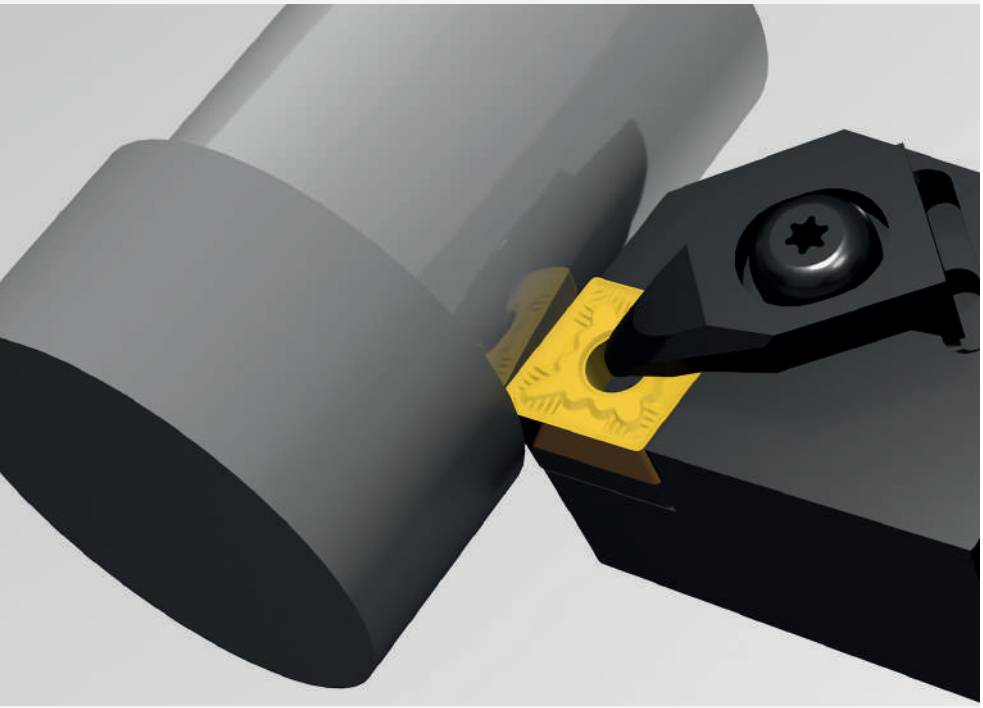
Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
DC	fz	fz	fz	fz

Cutting parameters table is available next to each product page for easier and faster consultation.

La tabella dei parametri di lavorazione è riportata di seguito ad ogni pagina prodotto per una consultazione più semplice e rapida.

Die Tabelle der Parameter folgt nach jeder Seite der Produkte, um auf dieser Weise sofort griffbereit zu sein.

Le tableau des paramètres d'usinage se trouve après chaque page produit pour une consultation plus facile et rapide.



TURNING

Carbide .A3
PCBN .A119
Diamond .A177
Ceramic .A215
Holders .A255



TURNING - Carbide

Grades selection guide .A4
Grades features .A5
Grades cross reference .A10
Chipbreakers selection guide .A12
Chipbreakers features .A16
Product selection .A66
Designation system .A68
Inserts range .A69
Parameters .A110

TURNING Grades selection guide - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

ISO 513		CARBIDE			CERMET	
		CVD COATED	PVD COATED	UNCOATED	PVD COATED	UNCOATED
P Steel	P01	JC8005	JPS015		JP4020	JU4015
	P10	JC8015	JPS120			
	P20	JC8025	JPS125			
	P30	JC8035				
	P40					
M Stainless steel	M01		JP9015			
	M10	JC9010			JP4020	
	M20	JC9025	JP9030			
	M30		JPS120			
	M40		JPS125			
K Cast iron	K01					
	K10	JC7010			JP4020	
	K20	JC7115	JPS125			
	K30	JC7020				
N Non-ferrous material	N01		JP6010			
	N10			JU6015		
	N20					
	N30					
S HRSA	S01		JP3015			
	S10		JPS120			
	S20		JPS125			
	S30					

HRSA: Heat resistant super alloy

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JC7010	carbide	1.830	CVD	$TiCN+Al_2O_3$	K	K05 K25	High wear resistance. First choice for grey cast iron general machining. Elevata resistenza all'usura. Prima scelta per lavorazioni generali di ghisa grigia. Hohe Verschleißfestigkeit. Erste Wahl für die allgemeine Bearbeitung von Grauguss. Haute résistance à l'usure. Premier choix pour usinage général de fonte grise.
JC7020	carbide	1.830	CVD	$TiCN+Al_2O_3$	K	K15 K30	High fracture resistance. Heavy interrupted cut on all kind of cast iron. Elevata resistenza alla rottura. Taglio fortemente interrotto su tutte le tipologie di ghisa. Hohe Bruchfestigkeit. Stark unterbrochener Schnitt bei allen Arten von Gusseisen. Haute résistance à la rupture. Coupe fortement interrompue sur tout type de fonte.
JC7115	carbide	1.830	CVD	$TiCN+Al_2O_3$	K	K10 K20	Well-balanced between wear and chipping resistance. First choice for nodular cast iron general machining. Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Prima scelta per la lavorazione di ghisa sferoidale. Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Erste Wahl für die allgemeine Bearbeitung von Sphäroguss. Bon équilibre entre résistance à l'usure et à l'écaillage Premier choix pour usinage général de fonte sphéroïdale.
JC8005	carbide	1.740	CVD	$TiCN+Al_2O_3$	P	P01 P10	High wear resistance. Excellent performance in high-speed cutting machining. Elevata resistenza all'usura. Prestazioni eccellenti nelle lavorazioni ad alta velocità. Hohe Verschleißfestigkeit. Hervorragende Leistung für Hochgeschwindigkeits- Schneidvorgänge. Haute résistance à l'usure. Excellentes performances dans l'usinage à haute vitesse de coupe
JC8015	carbide	1.740	CVD	$TiCN+Al_2O_3+TiN$	P	P10 P20	Good balance between wear and chipping resistance. High wear resistance, from medium to high speed cutting. Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Elevata resistenza all'usura, per velocità di taglio da medie ad alte. Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Hohe Verschleißfestigkeit, für mittlere bis hohe Schnittgeschwindigkeiten. Bon équilibre entre résistance à l'usure et à l'écaillage. Haute résistance à l'usure, pour vitesses de coupe moyennes à élevées.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JC8025	carbide	1.700	CVD	TiCN+Al_2O_3+TiN	P	P20 P30	All around grade suitable for a wide range of applications. Excellent reliability even on medium interruptions. Grado universale consigliato per un ampio intervallo di applicazioni. Eccellente affidabilità anche con taglio mediamente interrotto. Universelle Qualität, empfohlen für eine breite Palette von Anwendungen. Hervorragende Zuverlässigkeit auch bei mittleren Schnittunterbrechungen. Nuance universelle recommandée pour une large gamme d'applications. Excellente fiabilité y compris en cas de coupe moyennement interrompue.
JC8035	carbide	1.620	CVD	TiCN+Al_2O_3+TiN	P	P30 P40	Tough substrate and high chipping resistance coating. First choice for heavy machining. Substrato resistente e rivestimento ad alta resistenza alla scheggiatura. Prima scelta per lavorazioni pesanti. Robustes Grundmaterial und Beschichtung mit hoher Splitterfestigkeit. Erste Wahl für schwierige Bearbeitungen. Substrat résistant et revêtement doté d'une haute résistance à l'écaillage. Premier choix pour usinages intensifs.
JC9010	carbide	1.710	CVD	TiCN+Al_2O_3+TiN	M	M05 M15	High performance thin nano coating with superior features of adhesion to the substrate. Shows great wear resistance at high-speed continuous cutting. Sottile nano rivestimento a elevate prestazioni con migliori proprietà di adesione con il substrato. Mostra eccezionale resistenza all'usura con condizioni di taglio continuo a elevata velocità. Hochleistungsfähige, dünne Nanobeschichtung, die eine hervorragende Haftung auf dem Untergrund ermöglicht. Revêtement nanograin haute performance permettant une excellente adhérence au substrat.
JC9025	carbide	1.540	CVD	TiCN+Al_2O_3+TiN	M	M20 M30	Good balance between wear and chipping resistance. First choice for stainless steel machining. Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Prima scelta per lavorazione di acciai inossidabili. Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Erste Wahl für die Bearbeitung von rostfreien Stählen. Bon équilibre entre résistance à l'usure et à l'écaillage. Premier choix pour l'usinage d'aciers inoxydables.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP3015	micrograin carbide	1.950	PVD	TiAlN	S	S05 S25	Great stability at high temperature machining. Best choice for HRSA materials. Eccezionale stabilità nelle lavorazioni con elevata temperatura. La scelta migliore per superleghe resistenti al calore (HRSA). Hervorragende Stabilität bei der Bearbeitung bei hohen Temperaturen. Optimale Wahl für hitzebeständige Superlegierungen (HRSA). Stabilité exceptionnelle lors d'usinages à haute température. Meilleur choix pour superalliages résistants à la chaleur (HRSA).
JP4020	cermet	1.680	PVD	TiAlN	P	P10 P20	Universal grade for finishing on multiple materials under stable conditions and high cutting speed. Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
					M	M10 M20	
					K	K10 K20	
JP5015	micrograin carbide	1.900	PVD	TiAlN	P	P10 P20	PVD coated micrograin carbide grade that guarantees excellent performance on finishing and semi-finishing also on inox and super alloys. Qualità di metallo duro con rivestimento PVD che garantisce ottime prestazioni per la finitura e semifinitura anche di acciaio inossidabile e superleghe. PVD-beschichtete Hartmetallsorte, die hervorragende Leistung beim Schlichten und Vorschlichten auch bei Edelstahl und Superlegierungen garantiert. Nuance carbure revêtue PVD qui garantit d'excellentes performances pour la finition et la semi-finition même sur acier inoxydable et superalliages.
					M	M10 M20	
					S	S01 S10	
JP5120	micrograin carbide	1.830	PVD	TiAlN	P	P10 P20	Excellent performances on Stainless and HRSA thanks to special coating technology. The post-coating surface treatment effectively prevents built-up edge. Tecnologia speciale di rivestimento che bilancia resistenza all'usura e tenacità. Il trattamento superficiale post rivestimento previene efficacemente la formazione del tagliente di riporto. Die spezielle Beschichtungstechnologie sorgt für ein ausgewogenes Verhältnis zwischen Verschleißfestigkeit und Robustheit. Die Oberflächenbehandlung nach der Beschichtung verhindert die Bildung der Aufbauschneide effektiv. Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface post-revêtement empêche efficacement la formation d'arêtes rapportées.
					M	M10 M20	
					S	S01 S10	

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP5125	micrograin carbide	1.830	PVD	TiAlN	P M K S	P20 P30 M20 M30 K20 K30 S01 S10	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life. Substrato in metallo duro micrograna ad alto contenuto di Co ad alta tenacità e avanzata tecnologia di rivestimento. Uso universale con eccellente affidabilità e lunga vita utensile. Hochfestes mikrokörnige Hartmetallmaterial mit hohem Co-Gehalt und innovativer Beschichtungstechnologie. Universeller Einsatz mit ausgezeichneter Zuverlässigkeit und langer Standzeit. Substrat carbure micro-grain à teneur élevée en Co à haute ténacité et technologie de revêtement avancée. Utilisation universelle à excellente fiabilité et longue durée de vie.
JP6010	micrograin carbide	2.020	PVD	TiBCN	N	N05 N15	Special coating technology suitable for a wide range of applications on non-ferrous materials. L'alternativa performante ed economica agli utensili in PCD Speciale tecnologia di rivestimento adatta a un'ampia gamma di applicazioni su materiali non ferrosi. L'alternativa performante ed economica agli utensili in PCD Die spezielle Beschichtungstechnologie eignet sich für eine Vielzahl von Anwendungen mit Nichteisenmaterialien. Die leistungsstarke und wirtschaftlich\e Alternative zu PKD-Werkzeugen Technologie de revêtement spéciale adaptée à une large gamme d'applications sur matériaux non ferreux. L'alternative performante et économique aux outils PCD
JP9015	micrograin carbide	2.020	PVD	TiAlN	M	M10 M20	Micrograin carbide with high wear resistance. First choice for stainless steel finishing. Metallo duro micrograna con elevata resistenza all'usura. Prima scelta per la finitura di acciai inossidabili. Mikrokörniges Hartmetall mit hoher Verschleißfestigkeit. Erste Wahl für die Feinbearbeitung von rostfreien Stählen. Carbure micro-grain doté d'une haute résistance à l'usure. Premier choix pour la finition d'aciers inoxydables.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP9030	micrograin carbide	1.830	PVD	TiAlN	M	M25 M35	Micrograin carbide with superior stability at high temperature and high toughness. Great performance on interrupted cut machining of stainless steel. Metallo duro micrograna con superiore resistenza alle alte temperature ed elevata tenacità. Eccellenti prestazioni in condizioni di taglio interrotto di acciai inossidabili. Mikrokörniges Hartmetall mit ausgezeichneter Oxidationsbeständigkeit und großer Robustheit. Hervorragende Leistung bei unterbrochenen Schnittbedingungen bei rostfreien Stählen. Carbure micrograin doté d'une résistance supérieure à l'oxydation et d'une ténacité élevée. Excellentes performances dans des conditions de coupe interrompue d'aciers inoxydables.
JU4015	cermet	1.650	-	-	P	P05 P15	High wear resistance in high-speed continuous cutting. First choice for finishing when low surface roughness is the main priority. Elevata resistenza all'usura nel taglio continuo ad alta velocità. Prima scelta per la finitura quando la priorità è la bassa rugosità superficiale. Hohe Verschleißfestigkeit unter kontinuierlichen Hochgeschwindigkeits-Schnittbedingungen. Erste Wahl für die Feinbearbeitung, wenn es auf eine geringe Oberflächenrauhigkeit ankommt. Haute résistance à l'usure en coupe continue à grande vitesse. Premier choix pour la finition lorsqu'une faible rugosité de la surface est prioritaire.
JU6015	micrograin carbide	1.950	-	-	N	N10 N20	Uncoated carbide for univeral use, from finishing to roughing, on non-ferrous materials. Metallo duro non rivestito per uso universale, dalla finitura alla sgrossatura, su materiali non ferrosi. Unbeschichtetes Hartmetall für den universellen Einsatz, von der Schlichtbearbeitung bis zum Schruppen, bei Nichteisenmaterialien. Carbure non revêtu pour applications universelles, de la finition à l'ébauche, sur des matériaux non ferreux.

TURNING Grades cross reference - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

ISO 513		nikkoTOOLS		ISCAR		KENNAMETAL		KYOCERA		MITSUBISHI	
		carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
P	P01 - P10	JC8005	JU4015	IC8150	IC20N IC520N	KCP05B	KT315 KTP10	CA510 PR1705	TN610 PV710	MC6115 MS6015 UE6105	
	P10 - P20	JC8015 JP5120 JP5125	JP4020	IC8150 IC8250 IC807	IC30N IC530N	KCP10B KCU10		CA025P CA515 PR1705	TN620 PV720 CCX	MC6115 MS6015 UE6110 VP15TF	NX2525 VP25N AP25N
	P20 - P30	JC8025 JP5125		IC8250 IC8350		KCP25B KCP30B KCU25		CA025P CA525 PR1725	TN620 PV720	MC6125 MS7025 UE6120 VP15TF	NX3035 MP3025
	P30 - P40	JC8035		IC8350 IC830		KCP30B KCP40B		CA530 PR1535	PV730	MC6035 MS7025 UH6400	
M	M01 - M10	JC9010 JP5120 JP9015	JP4020	IC6015 IC807	IC20N IC520N		KT315 KTP10	CA6515	TN610 PV710	MC7015	
	M10 - M20	JC9010 JP9015 JP5125	JP4020	IC6015 IC807	IC30N IC530N	KCM15B KCU10		CA6515 PR1425 PR1725	TN620 PV720	MC7015 US7020 VP15TF	NX2525 VP25N AP25N
	M20 - M30	JC9025 JP5125		IC6025 IC830		KCM25B KCU25		CA6525 PR1425 PR1725	PV730	MC7025 MS7025 MS9025	
	M30 - M40	JP9030		IC6025 IC830		KCM35B		PR1535		MP7035 US735	
K	K01 - K10	JC7010	JP4020	IC5005		KCK05B	KT315 KTP10	CA310		MC5005 UC5105	
	K10 - K20	JC7010 JC7115	JP4020	IC5005 IC5010		KCK15B		CA315	PV710 CCX	MC5015 UC5115	NX2525 VP25N AP25N
	K20 - K30	JC7020		IC5010 IC8150		KCK20B		CA320		MC5015 UC5115 VP15TF	
N	N01 - N10	JP6010	-		-	KC5410	-	KW10 PDL010	-	HTI10	-
	N10 - N20	JP6010 JU6015	-	IC520 IC20	-	KC5410 K313	KT325	KW10	-	HTI10	-
	N20 - N30	JU6015	-	IC20	-	K313	-	PDL025	-		-
S HRSA	S01 - S10	JP3015	-	IC804	-	KCS10B	-	PR005S	-	MP9005	-
	S10 - S20	JP3015	-	IC804 IC806	-	KCS10B	-	PR015S	-	MP9015	-
	S20 - S30		-	IC806	-		-	PR1535	-	MP9025	-
S TITANIUM	S01 - S10	JP6010	-	IC804	-	KCS10B	-	SW05	-	MT9005	-
	S10 - S20	JU6015	-	IC804 IC806 IC20	-	K313	-		-	MT9015	-
	S20 - S30		-	IC806	-		-		-		-

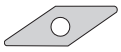
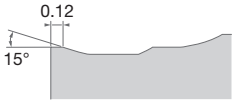
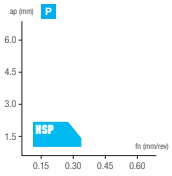
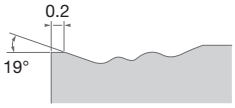
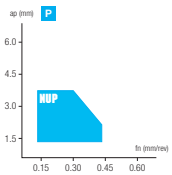
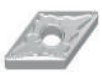
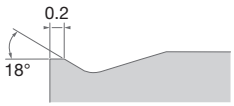
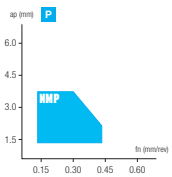
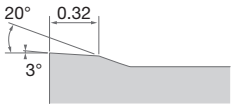
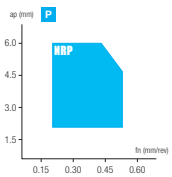
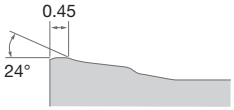
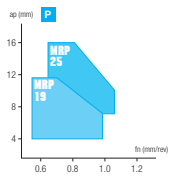
BLACK: CVD, UNDERLINED: PVD, RED: uncoated

SANDVIK		SECO		SUMITOMO		TAEGUTEC		TUNGALOY		WALTER	
carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
GC4305	CT5015 GC1525	TP0501		AC810P AC8015P	T1000A	TT4410 TT8105B	CT3000 PV3010	T9105 T9205	NS520	WPP05S	WEP10C
GC1125 GC4315 GC4415	CT5015 GC1525	TP1501	TP1020 TP1030	AC530U AC1030U AC8015P AC8020P	T1500A T1500Z	TT4410 TT8115B TT9020	CT7000 PV3030	SH725 T9115 T9215	AT9530 GT9530 NS9530	WPP10G WPP10S	WEP10C
GC1125 GC4325 GC4425		TP2501 TP25		AC530U AC1030U AC8020P AC8025P	T2500A T2500Z T3000Z	TT4430 TT5100 TT8125B TT9020		AH725 T9125 T9225	AT9530 GT9530 NS9530	WPP20G WPP20S WMP20S	
GC4335		TP3501 TP40		AC830P AC8035P		TT8135B		T9135 T9235		WKP30S WPP30G WPP30S	
GC1115		TS2000			T1000A	TT5080	CT3000 PV3010	T6215		WSM01	
GC1115 GC2015 GC2220	GC1525 CT5015	TM1501 TS2500	TP1020 TP1030	AC610M AC6020M	T1500A	TT4410 TT5080 TT9215	CT7000 PV3030	SH725 T6215	GT9530 NS9530	WMP20S WSM10S	
GC1125 GC2025 GC2220		CP500 TM2501		AC630M AC6030M		TT4430 TT9080 TT9225		AH630 AH725 GH330 T6120	GT9530 NS9530	WMP20S WSM20S	
GC2035		TM3501 TP40		AC1030U AC530U AC6040M		TT8020 TT8080 TT9235		AH645 T6130		WSM30S	
GC3210		TK0501		AC405K AC4010K	T1000A	TT7005		T505 T5105		WKK10S	
GC3210 GC3225		TK1501		AC415K AC4015K		TT7015	CT3000 PV3010	T515 T5115	GT9530 NS9530	WKK20S	
GC3225		TK1501		AC420K		TT7025		T5125		WKP30S	
H10	-		-		-	K10	-	KS05F	-	WNN10	-
H10	-	KX	-		-	K10	-	TH10	-	WNN10 WK1	-
	-	KX	-	H1	-		-		-		-
GC1105 S05F	-	TS2050	-	AC5005S AC510U	-	TT3005 TT5080	-	AH8005	-	WSM01 WSM10S	-
GC1105 S05F S205	-	TS2000	-	AC5015S AC520U	-	TT3010 TT9080	-	AH8015	-	WSM20S	-
GC1115 S205	-	TS2500	-	AC5025S	-	TT3020 TT9080	-	AH8015	-	WSM30S	-
	-	883	-	EH510	-	K10 TT4410	-	TH10	-	WS10 WSM10S	-
H13A	-	883	-	EH520	-	K10	-	KS20	-	WS10 WSM20S	-
H13A	-		-		-		-		-		-

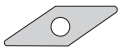
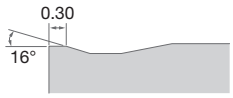
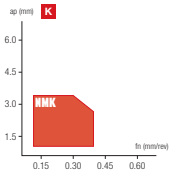
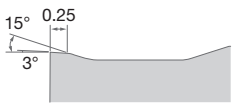
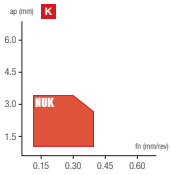
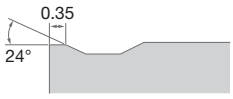
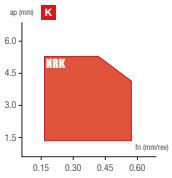
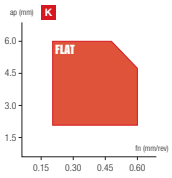
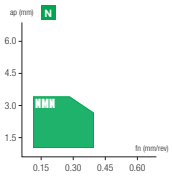
This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

TURNING Chipbreakers selection guide - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

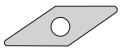
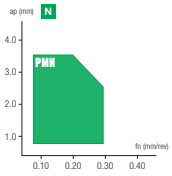
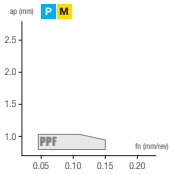
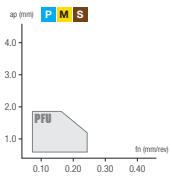
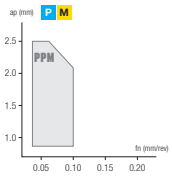
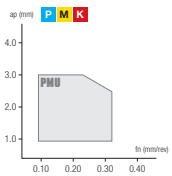
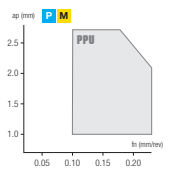
NEGATIVE types				C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
P	FINISHING	NSP			A71  SIZE 09 12	A78  SIZE 11 15	A87  SIZE 12	A93  SIZE 16	A101  SIZE 16	A105  SIZE 06 08
	MEDIUM	NUP			A72  SIZE 09 12 16 19	A79  SIZE 11 15	A87  SIZE 12	A94  SIZE 16 22	A101  SIZE 16	A105  SIZE 06 08
	MEDIUM	NMP			A71  SIZE 12 16 19	A78  SIZE 11 15	A87  SIZE 12	A93  SIZE 16 22	A101  SIZE 16	A105  SIZE 06 08
	ROUGHING	NRP			A74  SIZE 12 16 19 25	A80  SIZE 15	A88  SIZE 12 19 25	A95  SIZE 16 22		A107  SIZE 08
	HEAVY ROUGHING	MRP			A75  SIZE 19 25		A89 SIZE 19 25			
M	FINISHING	NSM			A71 SIZE 12	A78 SIZE 15		A93 SIZE 16	A101 SIZE 16	A105 SIZE 08
	MEDIUM	NMM			A72 SIZE 09 12 16 19	A79 SIZE 11 15	A87 SIZE 12 19	A94 SIZE 16 22	A101 SIZE 16	A106 SIZE 06 08
	ROUGHING	NRM			A74 SIZE 12 16 19	A80 SIZE 15	A88 SIZE 12 19	A95 SIZE 16		A107 SIZE 08
S	MEDIUM	NMS			A73 SIZE 12	A80 SIZE 15				A 106 SIZE 08

SORMA DIAMOND & CUTTING TOOLS

NEGATIVE types				C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
K	LIGHT TO MEDIUM MACHINING	NMK			A73  SIZE 12 16 19	A79  SIZE 15	A87  SIZE 12	A94  SIZE 16 22	A102  SIZE 16	A106  SIZE 08
		NUK			A73  SIZE 12	A79  SIZE 15		A94  SIZE 16	A102  SIZE 16	A106  SIZE 08
	ROUGHING	NRK			A75  SIZE 12 16 19	A80  SIZE 15	A88  SIZE 12 19	A95  SIZE 16 22	A102  SIZE 16	A107  SIZE 06 08
		Flat			A75  SIZE 12 16 19	A81  SIZE 15	A89  SIZE 09 12	A96  SIZE 16 22		A108  SIZE 08
N	UNIVERSAL	NMN			A73  SIZE 12	A79  SIZE 15	A88 SIZE 12	A95 SIZE 16	A102 SIZE 16	A106 SIZE 06 08
UNI	MEDIUM	NUX			A71 SIZE 12	A78 SIZE 15		A93 SIZE 16		A105 SIZE 08
		NMU				A78 SIZE 15		A93 SIZE 16		KNUX 55° A82 SIZE 16
	WIPER	NWU			A74 SIZE 12	A80 SIZE 15		A95 SIZE 16		A107 SIZE 08
		NWX			A74 SIZE 12					A107 SIZE 08

TURNING Chipbreakers selection guide - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

POSITIVE types				C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
N	UNIVERSAL	**PMN** 25° 0.60 12°		CC A70  SIZE 06 09 12	DC A77  SIZE 07 11	SC A86  SIZE 09 12	TC A91  SIZE 09 11 16	VC A100  SIZE 11 16 22	
UNI	FINISHING	**PPF** (ground chip breaker) 0.08 16°		CC A69  SIZE 06 09	DC A76  SIZE 07 11		TB, TP A90, A97 TC A91  SIZE 06 09 11	VB A98  SIZE 11	WB A103  SIZE 06
	FINISHING	**PFU** 15° 8°		CC A69  SIZE 06 09	DC A76  SIZE 07 11	SC A86  SIZE 09	TC A91  SIZE 11 16	VB A98  SIZE 11 16	
	MEDIUM	**PPM** (ground chip breaker) 0.08 16°		CC A69  SIZE 09	DC A76  SIZE 07 11		TP A97  SIZE 11	VB A98  SIZE 11	
	MEDIUM	**PMU** 19° 0.13 8°		CC A70  SIZE 06 09 12	DC A77  SIZE 07 11 15	SC A86  SIZE 09 12	TC A91  SIZE 09 11 16 22	VB, VC A98, A100  SIZE 11 16	WC A104  SIZE 12
	MEDIUM	**PPU** 3°		CC A69  SIZE 06 09	DC A76  SIZE 07 11			VC A100  SIZE 11 16	
	ROUGHING	**PRU** 0.18 18°		CC A70 SIZE 09 12	DC A77 SIZE 11	SC A86 SIZE 09 12	TC A92 SIZE 16	VB, VC A99, A100 SIZE 16	
MICRONEGA	MEDIUM	**SS** 5°		MCN A84 	MDN A85 				
	MEDIUM	**GM** 35° 0.05		MCN A84 	MDN A85 				

NSP

Chipbreaker

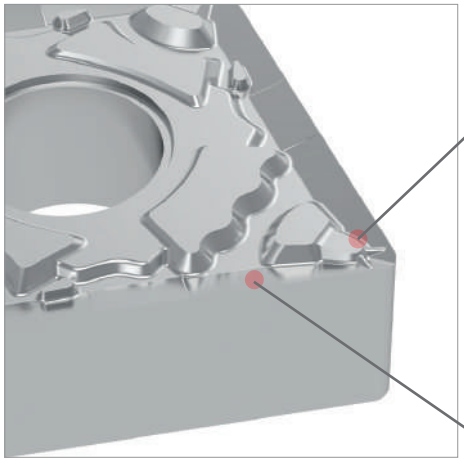
- Chipbreaker for steel, finishing and light cutting
- Butterfly geometry directs chip flow
- Variable rake angle and curved edge line for excellent chip control at small depths of cut
- High quality surface finishing

- Spanbrecher für Schlichtbearbeitung von Stählen unter leichten Schnittbedingungen
- Schmetterlingsgeometrie zur Lenkung der Spanabfuhr
- Variabler Spanwinkel und gekrümmte Schneidkante für hervorragende Spankontrolle bei kleinen Schnitttiefen
- Hochwertige Oberflächenqualität

- Rompitruciolo per finitura degli acciai, taglio leggero
- Geometria Butterfly che direziona il flusso del truciolo
- Angolo di spoglia variabile e tagliente ricurvo per eccellente controllo del truciolo a piccole profondità di taglio
- Finitura superficiale di elevata qualità

- Brise-copeaux pour la finition des aciers dans des conditions de coupe légères
- Géométrie en papillon qui dirige l'évacuation copeaux
- Angle de dépouille variable et ligne d'arête incurvée pour un excellent contrôle des copeaux dans les faibles profondeurs de coupe
- Finition de surface haute qualité

Features of NSP chipbreaker



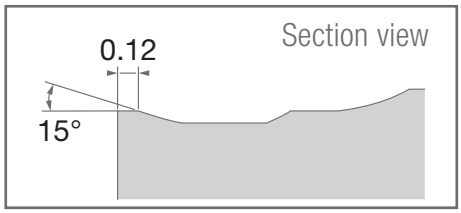
BUTTERFLY DOT

- High stability of chip flows at high feed
- Lower cutting force at low depth of cut and high feed

- Ottima stabilità del flusso del truciolo con elevati avanzamenti
- Forze di taglio ridotte a basse profondità di taglio ed elevati avanzamenti

- Hohe Spanflussstabilität bei großen Vorschüben
- Geringe Schnittkräfte bei kleinen Schnitttiefen und großen Vorschüben

- Grande stabilité de l'évacuation copeaux avec avances élevées
- Efforts de coupe réduits à faible profondeur de coupe et avances élevées



VARIABLE RAKE ANGLE AND CURVED EDGE LINE

- Less crater wears
- Excellent chip control at small depths of cut

- Minore usura per caratterizzazione
- Eccellente controllo del truciolo a piccole profondità di taglio

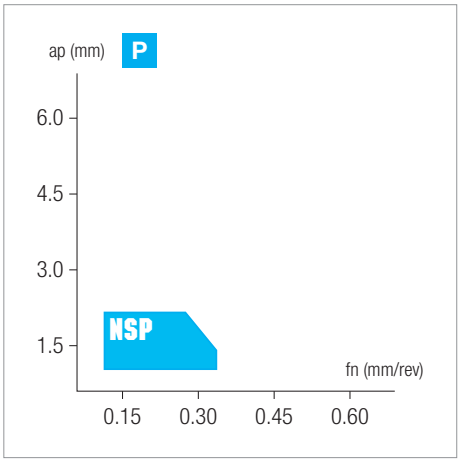
- Geringer Verschleiß der Vertiefung
- Hervorragende Spankontrolle bei kleinen Schnitttiefen

- Moindre usure en cratère
- Excellent contrôle des copeaux à de faibles profondeurs de coupe

NSP

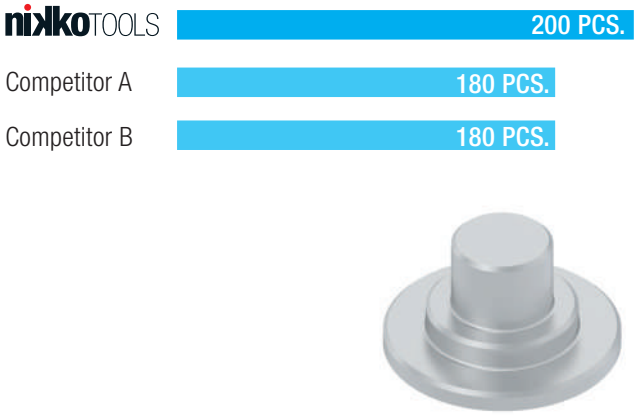
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG120408-NSP JC8005
Workpiece	Steel C45 (1.1191)
Parameters	Vc 350 m/min, fn 0.20 mm/rev, ap 1.0 mm, emulsion



NUP

Chipbreaker

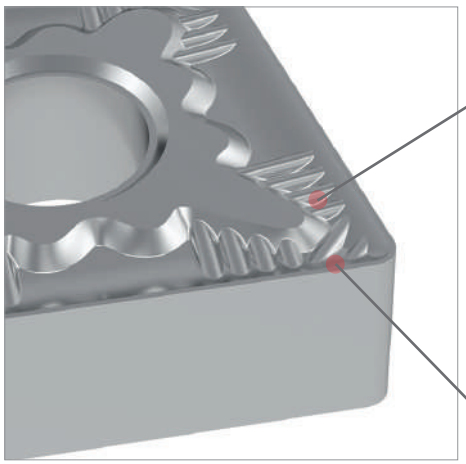
• Chipbreaker for steel, semi-finishing application and medium detph of cut
• Variable rake angle and cutting edge land designed for a perfect balance between toughness and sharpness
• Special groove design for higher strength and smoother chip flow
• Universal application

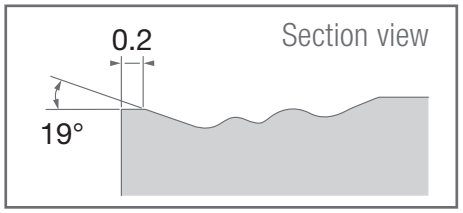
• Spanbrecher für Schruppschlichten von Stählen und mittlere Schnittbedingungen
• Variabler Spanwinkel und variable Schnitttiefe für ein optimales Verhältnis zwischen Robustheit und Schärfe
• Spezielles Nutendesign für erhöhte Robustheit und besseren Spanfluss
• Universelle Anwendung

• Rompitruciolo per applicazioni di semifinitura e media asportazione su acciaio
• Angolo di spoglia e spessore del pianetto variabili per un ottimo bilanciamento tra tenacità e taglienza
• Speciale disegno delle gole che migliora robustezza e flusso del truciolo
• Applicazione universale

• Brise-copeaux pour la semi-finition des aciers et profondeurs de coupe moyennes
• Angle de dépouille variable et arête de coupe conçue pour un bon équilibre entre ténacité et acuité
• Goujures spéciales conçues pour améliorer la résistance et l'évacuation des copeaux
• Application universelle

Features of NUP chipbreaker





SPECIAL GROOVES

• High chipping resistance
• Improves chip forming and chip control

• Elevata resistenza alla scheggiatura
• Migliora la foramazione e il controllo del truciolo

• Verbesserte Widerstandsfähigkeit
• Verbessert die Spanbildung und -kontrolle

• Haute résistance à l'écaillage
• Améliore la formation et le contrôle des copeaux

VARIABLE RAKE ANGLE AND EDGE WIDTH

• Perfect balance between toughness and sharpness
• Reliable cutting process for universal application

• Buon bilanciamento tra tenacità e taglienza
• Processo di taglio affidabile in applicazioni universali

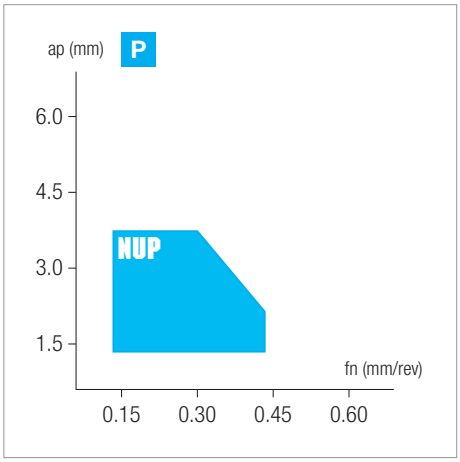
• Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
• Zuverlässiger Schneidprozess für universelle Anwendungen

• Bon équilibre entre ténacité et acuité
• Processus de coupe fiable dans le cadre d'applications universelles

NUP

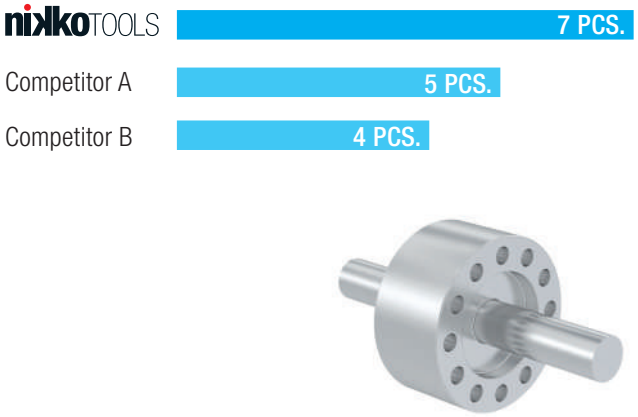
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG120412-NUP JC8025
Workpiece	Steel 41CrMoAl7 (1.8709)
Parameters	Vc 156 m/min, fn 0.3 mm/min, ap 3.1 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

NMP

Chipbreaker

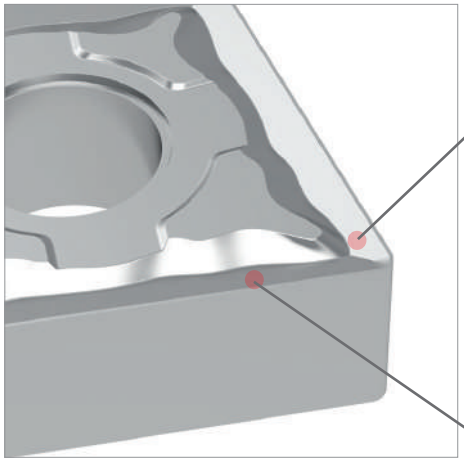
- Chipbreaker for steel semi-finishing application and medium detph of cut
- Strong cutting edge for reliable cutting process
- Large chip groove for smooth chip flow
- Excellent performance in carbon steel and alloy steel

- Spanbrecher für Schruppschlichten von Stählen und mittlere Schnittbedingungen
- Robuste Schneidkante für zuverlässige Schneidprozesse
- Breite Nut für einen reibungslosen Abtransport der Späne
- Hervorragende Leistung bei Kohlenstoff- und legierten Stählen

- Rompitruciolo per applicazioni di semifinitura e media asportazione su acciaio
- Tagliente robusto per processi di taglio affidabili
- Gole ampie per migliorare l'evacuazione dei trucioli
- Eccellenti prestazioni per le lavorazioni di acciai al carbonio e acciai legati

- Brise-copeaux pour semi-finition des aciers et profondeurs de coupe moyennes
- Arête de coupe robuste pour des processus de coupe fiables
- Large rainure à copeau pour une meilleure évacuation
- Excellentes performances pour les aciers au carbone et les aciers alliés

Features of NMP chipbreaker



STRONG CUTTING EDGE DESIGN

- Excellent chipping resistance and highly reliable
- Improves chip forming and chip control

- Ottima resistenza alle scheggiature ed elevata affidabilità
- Migliora la formazione e il controllo del truciolo

- Höhere Robustheit und Zuverlässigkeit
- Verbessert die Spanbildung und -kontrolle

- Meilleure robustesse et fiabilité
- Améliore la formation et le contrôle des copeaux

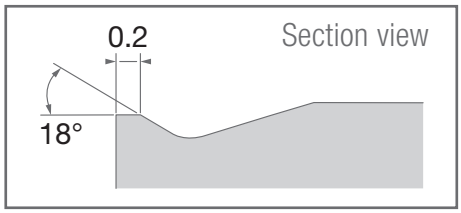
LARGE CHIP GROOVE

- For smooth chip flow

- Ottima evacuazione del truciolo

- Breite Nut für eine reibungslose Abfuhr der Späne

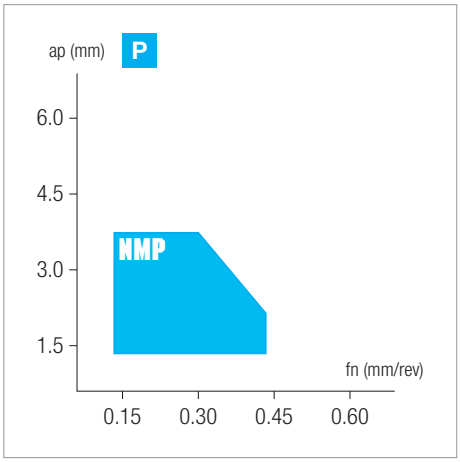
- Pour une évacuation fluide des copeaux



NMP

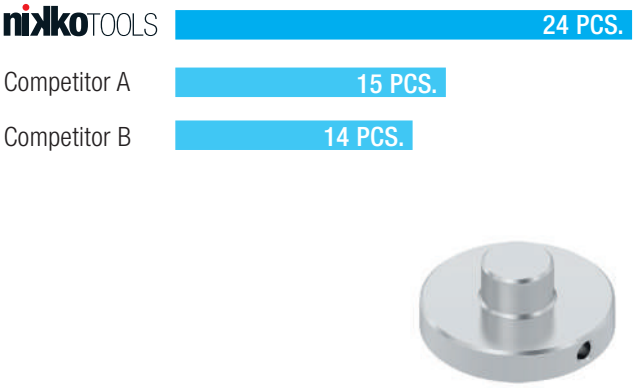
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG160608-NMP JC8015
Workpiece	Steel 31CrMoV9 (1.8519)
Parameters	Vc 190 m/min, fn 0.3 mm/min, ap 3 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

NRP

Chipbreaker

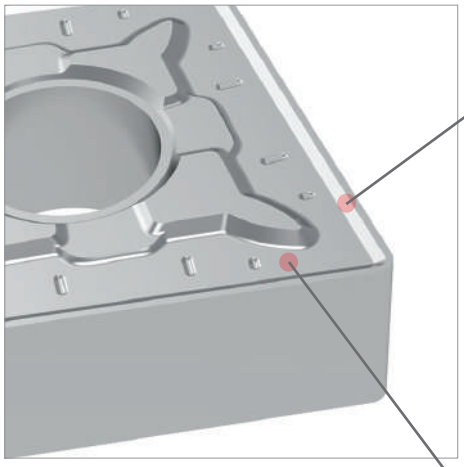
- Chipbreaker for steel, roughing application
- Strong cutting edge with variable rake angle
- Best choice for interrupted cut
- Excellent chip control at high feed rate

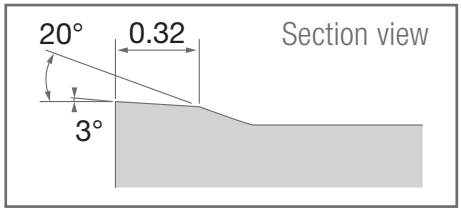
- Spanbrecher zum Schruppen von Stahl
- Robuste Schneidkante mit variablem Spanwinkel
- Beste Wahl für unterbrochene Schnittbedingungen
- Hervorragende Spankontrolle bei großen Vorschüben

- Rompitruciolo per sgrossatura di acciai
- Tagliente robusto con angolo di spoglia variabile
- Migliore scelta per condizioni di taglio interrotto
- Eccellente controllo del truciolo con alti avanzamenti

- Brise-copeaux pour l'ébauche dans les aciers
- Arête de coupe robuste avec angle de dépouille variable
- Le meilleur choix pour les coupes interrompues
- Excellent contrôle des copeaux avec des avances élevées

Features of NRP chipbreaker





VARIABLE RAKE ANGLE AND EDGE WIDTH

- Uniform chip control at different cutting depth
- Reduced cutting force and high chipping resistance
- Suitable for interrupted cutting

- Controllo uniforme del truciolo alle differenti profondità di taglio
- Ridotte forze di taglio e elevata tenacità
- Consigliato per condizioni di taglio interrotto

- Gleichmäßige Spankontrolle bei unterschiedlichen Schnitttiefen
- Geringe Schnittkräfte bei großer Robustheit
- Empfohlen für unterbrochene Schnittbedingungen

- Contrôle uniforme des copeaux à différentes profondeurs de coupe
- Efforts de coupe moindres et résistance élevée à l'écaillage
- Recommandé pour la coupe interrompue

LARGE CHIP GROOVE

- Excellent chip control at medium/high feed rate

- Eccellente controllo del truciolo con avanzamenti medio/alti

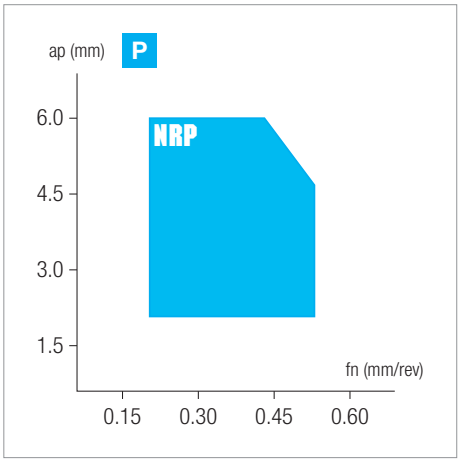
- Hervorragende Spankontrolle bei mittleren/großen Vorschüben

- Excellent contrôle des copeaux avec des avances moyennes/élevées

NRP

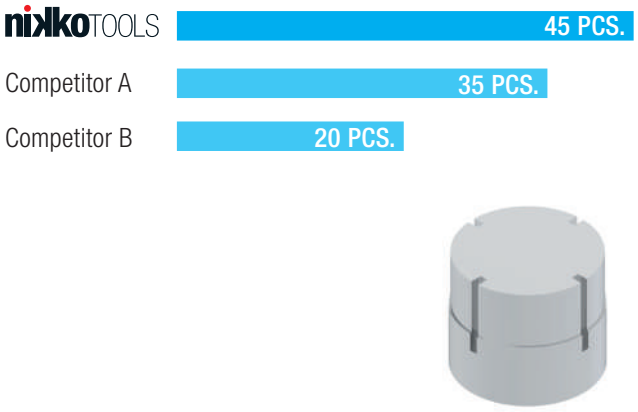
Chipbreaker

Application range - ISO 513



Use case

Tool type	WNMG080412-NRP JC8015
Workpiece	Steel 100Cr6 (1.3505)
Parameters	Vc 280 m/min, fn 0.35 mm/rev, ap 2.5 mm, emulsion, interrupted cut



MRP

Chipbreaker

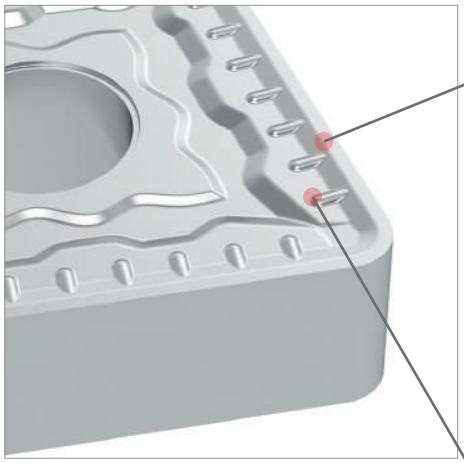
- Single side chipbreaker for steel heavy roughing
- Strong cutting edge with negative T land
- Reduced cutting force in heavy turning
- Suitable for high feed rate and high depth of cut operations

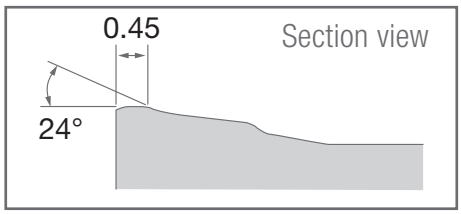
- Einseitiger Spanbrecher zum schweren Schruppen von Stählen
- Robuste Schneidkante mit negativer „T"-Fläche
- Geringere Schnittkräfte beim schweren Drehen
- Empfohlen für Bearbeitungen mit großen Vorschüben und Schnitttiefen

- Rompitruciolo monolaterale per sgrossatura pesante di acciai
- Tagliente robusto con pianetto negativo a "T"
- Ridotte forze di taglio in tornitura pesante
- Consigliato per lavorazioni con elevati avanzamenti e grandi profondità di taglio

- Brise-copeaux unilatéral pour l'ébauche intensive d'aciers
- Arête de coupe robuste avec « T » négatif
- Efforts de coupe réduits en tournage intensif
- Recommandé pour usinage avec avances élevées et grandes profondeurs de coupe

Features of MRP chipbreaker





STRAIGHT EDGE WITH NEGATIVE T LAND

- Very tough cutting edge
- Reduced cutting force
- Suitable for high feed rate and high depth of cut

- Tagliente molto robusto
- Forze di taglio ridotte
- Consigliato per elevati avanzamenti e grandi profondità di taglio

- Sehr robuste Schneidkante
- Geringere Schnittkräfte
- Empfohlen für große Vorschübe und Schnitttiefen

- Brise-copeaux unilatéral pour l'ébauche intensive d'aciers
- Arête de coupe robuste avec « T » négatif
- Efforts de coupe réduits en tournage intensif
- Recommandé pour des avances élevées et grandes profondeurs de coupe

BIG GUIDING DOTS DESIGN

- Guide the chip flow to the right direction

- Guidano il flusso del truciolo verso la giusta direzione

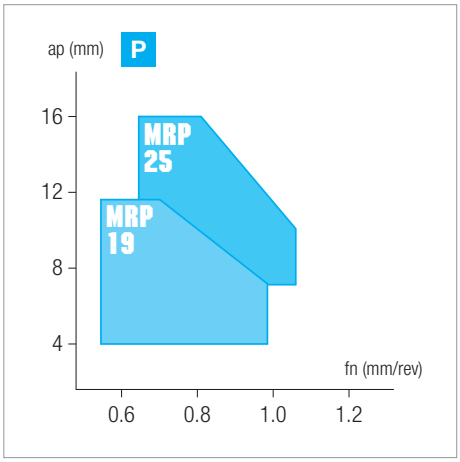
- Lenken den Spänefluss in die richtige Richtung

- Ils guident l'évacuation des copeaux dans la bonne direction

MRP

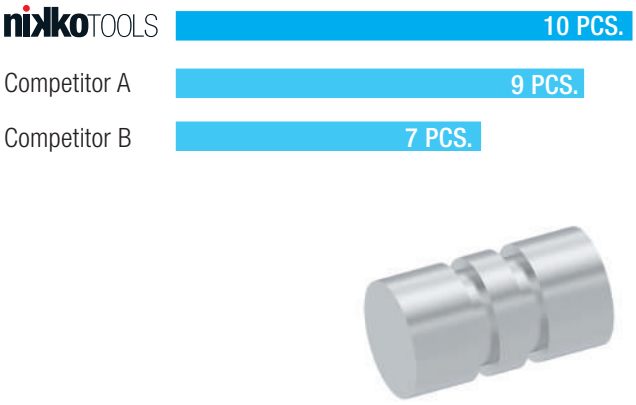
Chipbreaker

Application range - ISO 513



Use case

Tool type	SNMM250924-MRP JC8035
Workpiece	Steel 20MnCr5 (1.7147)
Parameters	Vc 80 m/min, fn 0.80 mm/rev, ap 10.0 mm, emulsion



NSM

Chipbreaker

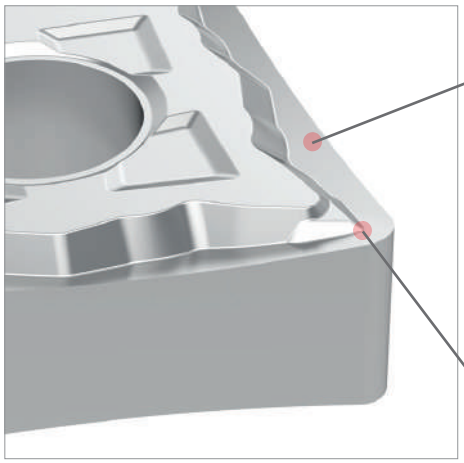
- Chipbreaker for stainless steel, finishing and light cutting
- Curved edge design
- Strong and sharp edge
- Excellent surface finishing

- Rompitruciolo per la finitura di acciai inossidabili, condizioni di taglio leggero
- Design con tagliente ricurvo
- Tagliente robusto e affilato
- Finitura superficiale di elevata qualità

- Spanteiler für die Feinbearbeitung von rostfreiem Stahl und leichte Schnittbedingungen
- Ausführung mit gekrümmter Schnittkante
- Robuste, aber dennoch scharfe Schneidkante
- Hochwertige Oberflächenqualität

- Brise-copeaux pour finition d'aciers inoxydables dans des conditions de coupe légères
- Arête de coupe incurvée
- Arête de coupe robuste et affûtée
- Finition de surface haute qualité

Features of NSM chipbreaker



CURVED CUTTING EDGE

- Sharp cutting edge with high stability
- Wide chip evacuation area

- Tagliente affilato con elevata stabilità
- Ampia area di evacuazione del truciolo

- Scharfe Schneidkante mit hoher Stabilität
- Großer Späneabfuhrbereich

- Arête de coupe affûtée doté d'une grande stabilité
- Large zone d'évacuation copeaux

SMALL NOSE DESIGN

- Excellent chip control even at small depths of cut

- Eccellente controllo del truciolo anche con piccole profondità di taglio

- Hervorragende Spankontrolle bei kleinen Schnitttiefen

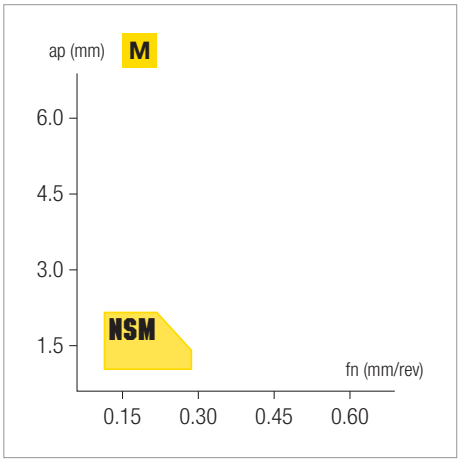
- Excellent contrôle des copeaux à de faibles profondeurs de coupe



NSM

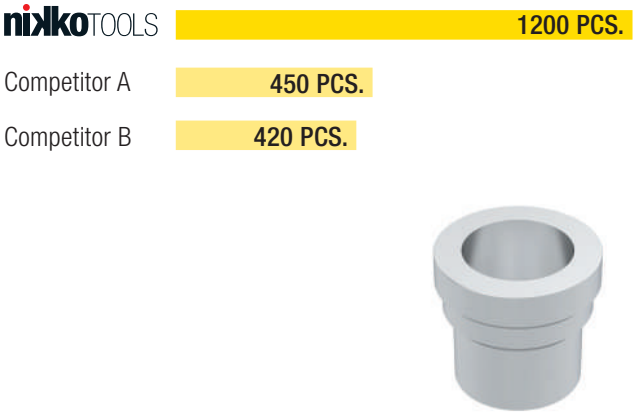
Chipbreaker

Application range - ISO 513



Use case

Tool type	TNMG160408-NSM JP9015
Workpiece	Stainless steel AISI304 (1.4301)
Parameters	Vc 240 m/min, fn 0.13 mm/min, ap 0.6 mm, emulsion



NMM

Chipbreaker

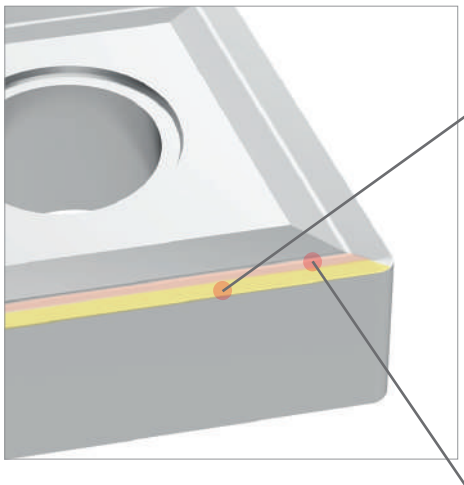
- Chipbreaker for stainless steel medium cutting
- Double rake angle design for good balance between toughness and sharpness
- Specific design for sticky material cutting
- Universal application on stainless steel

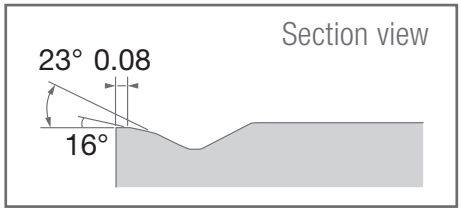
- Spanbrecher für rostfreie Stähle und mittlere Schnittbedingungen
- Ausführung mit doppeltem Spanwinkel für ein gutes Verhältnis zwischen Robustheit und Schärfe
- Spezifisches Design zum Schneiden haftender Materialien
- Universelle Anwendung bei rostfreien Stählen

- Rompitruciolo per acciai inossidabili, condizioni di taglio medio
- Design con doppio angolo di spoglia per buon bilanciamento tra tenacità e affilatura
- Disegno specifico per il taglio di materiali con tendenza all'incollaggio
- Applicazione universale su acciai inossidabili

- Brise-copeaux pour aciers inoxydables et conditions de coupe moyennes
- Conception à double angle de dépouille pour un bon équilibre entre ténacité et acuité
- Conception spécifique pour l'usinage de matériaux collants
- Application universelle sur aciers inoxydables

Features of NMM chipbreaker





DOUBLE RAKE ANGLE DESIGN

- Sharp but also tough edge
- Reliable cutting process for universal application
- Micro geometry suitable for sticky materials

- Tagliente affilato e tenace
- Processo di taglio affidabile in applicazioni universali
- Micro geometria adatta a materiali con tendenza all'incollaggio

- Scharfe und robuste Schneidkante
- Zuverlässiger Schneidprozess für universelle Anwendungen
- Mikrogeometrie, für pastöse Materialien geeignet

- Arête de coupe affûtée et robuste
- Processus de coupe fiable dans le cadre d'applications universelles
- Micro géométrie adaptée aux matériaux collants

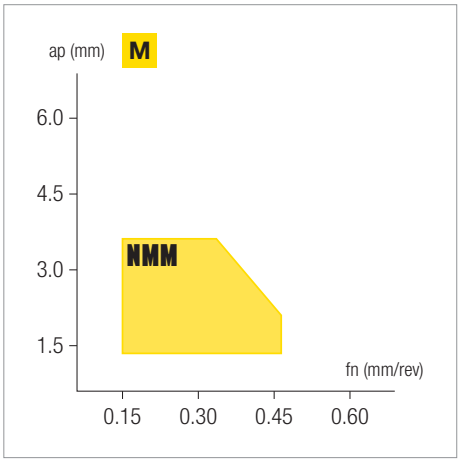
DEEP CHIP GROOVE DESIGN

- Wide and deep chip evacuation area
- Vano per l'evacuazione dei trucioli ampio e profondo
- Großer Spanabfuhrbereich bei mittleren Schnitttiefen
- Zone d'évacuation des copeaux large et profonde

NMM

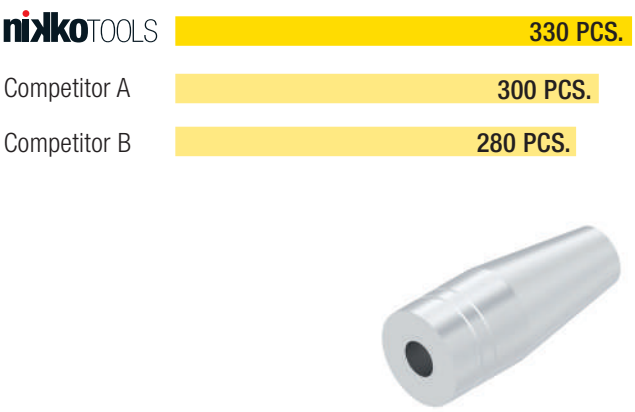
Chipbreaker

Application range - ISO 513



Use case

Tool type	TNMG160408-NMM JC9025
Workpiece	Stainless steel AISI304 (1.4301)
Parameters	Vc 180 m/min, fn 0.27 mm/rev, ap 2.5 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

NRM

Chipbreaker

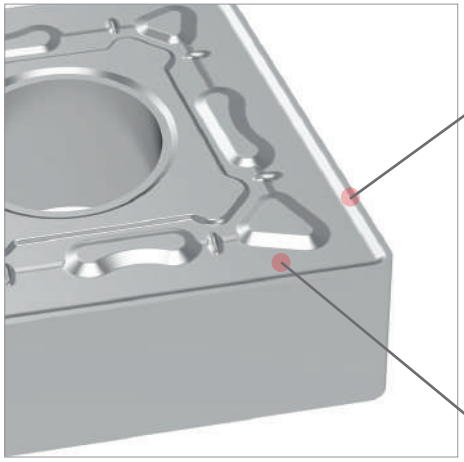
- Chipbreaker for stainless steel roughing
- Strong cutting edge with double rake angle
- Excellent chip control at high feed rate
- Efficient even on irregular and oxidized surfaces

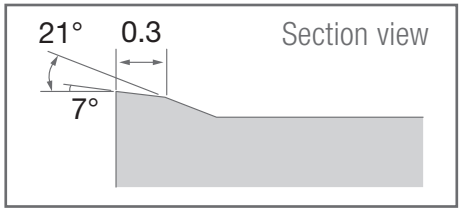
- Rompitruciolo per sgrossatura di acciai inossidabili
- Tagliente robusto con doppio angolo di spoglia
- Eccellente controllo del truciolo con alti avanzamenti
- Molto efficace anche su superfici irregolari e ossidate

- Spanbrecher zum Schruppen von rostfreien Stählen
- Robuste Schneidkante mit doppeltem Spanwinkel
- Hervorragende Spankontrolle bei großen Vorschüben
- Geeignet für ungleichmäßige und oxidierte Oberflächen

- Brise-copeaux pour l'ébauche d'aciers inoxydables
- Arête de coupe robuste avec double angle de dépouille
- Excellent contrôle des copeaux avec des avances élevées
- Convient aux surfaces irrégulières et oxydées

Features of NRM chipbreaker





LARGE AND POSITIVE EDGE WIDTH DESIGN

- Reduced cutting force combined with strong edge
- Suitable for removing irregular and oxidized surfaces

- Ridotte forze di taglio con tagliente robusto
- Consigliato per la rimozione di superfici irregolari e ossidate

- Geringe Schnittkräfte bei großer Robustheit
- Empfohlen zum Abtragen von ungleichmäßigen und oxidierten Oberflächen

- Efforts de coupe réduits avec une arête robuste
- Recommandé pour l'usinage de surfaces irrégulières et oxydées

BIG SHALLOW CHIP GROOVE

- Efficiently guides and evacuates a big volume of chips

- Eccellente controllo di grandi volumi di trucioli

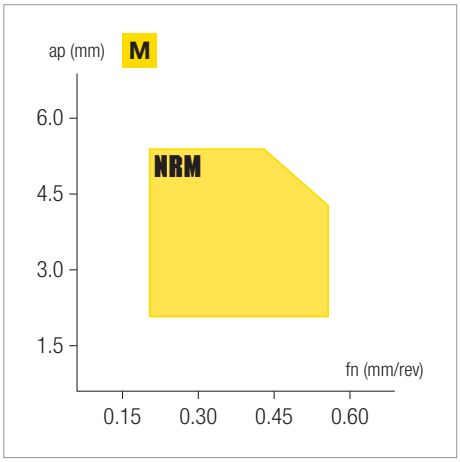
- Effiziente Führung und Abfuhr großer Mengen von Spänen

- Efficace pour guider et évacuer de gros volumes de copeaux

NRM

Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG160612-NRM JP9030
Workpiece	Stainless steel AISI303 (1.4305)
Parameters	Vc 120 m/min, fn 0.45 mm/rev, ap 4.0 mm, emulsion, interrupted

nikkoTOOLS	80 PCS.
Competitor A	70 PCS.
Competitor B	70 PCS.



NMS

Chipbreaker

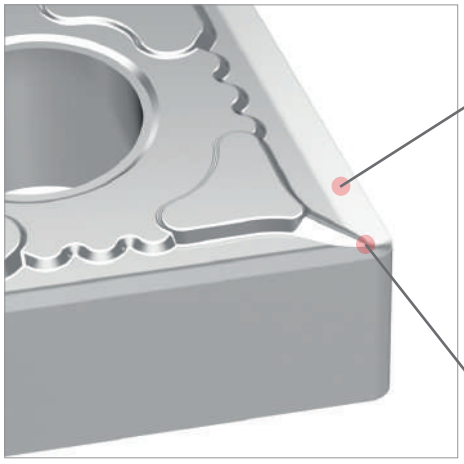
- Strong and positive edge for stainless steel and super alloy
- Variable edge and rake angle angle for semi-finishing or roughing
- High reliability and stability

- Robuste Schneidkante mit scharfem Spanwinkel für rostfreie Stähle und Superlegierungen
- Variable Schneidkante und Spanwinkel zum Schruppschlichten oder Schruppen
- Hohe Zuverlässigkeit und Stabilität

- Tagliente robusto e affilato per acciai inossidabili e superleghe
- Tagliente e angolo di spoglia variabili per semifinitura o sgrossatura
- Elevate affidabilità e stabilità

- Arête de coupe robuste et affûtée pour aciers inoxydables et superalliages
- Arête et angle de dépouille variables pour semi-finition ou ébauche
- Haute fiabilité et stabilité

Features of NMS chipbreaker



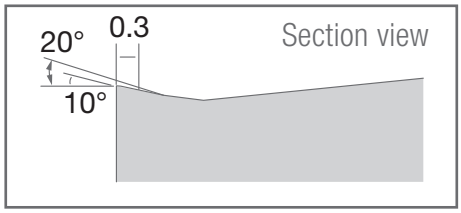
STRONG EDGE AND SHARP EDGE

- Strengthened edge width provides good reliability
- Sharp edge reduces cutting resistance

- Pianetto rinforzato che offre buona affidabilità
- Angolo di spoglia affilato che riduce la resistenza al taglio

- Schneidkante mit verstärkter Breite für eine hohe Zuverlässigkeit
- Scharfer Spanwinkel zur Reduzierung des Schneidwiderstands

- Largeur de l'arête renforcée pour une bonne fiabilité
- Arête vive réduisant les efforts de coupe



SHARP NOSE WITH OPEN CHIP GROOVE

- Guides chip flow and improves chip control
- Excellent chip control at small depths of cut

- Guida il flusso del truciolo e ne migliora il controllo
- Eccellente controllo del truciolo a piccole profondità di taglio

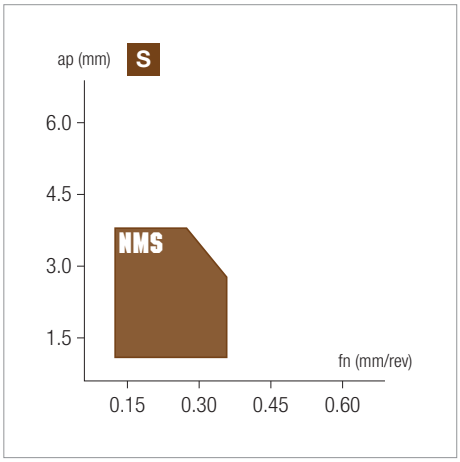
- Lenkt den Spanfluss und verbessert die Spankontrolle
- Hervorragende Spankontrolle bei kleinen Schnitttiefen

- Guide l'évacuation des copeaux et en améliore le contrôle
- Excellent contrôle des copeaux à de faibles profondeurs de coupe

NMS

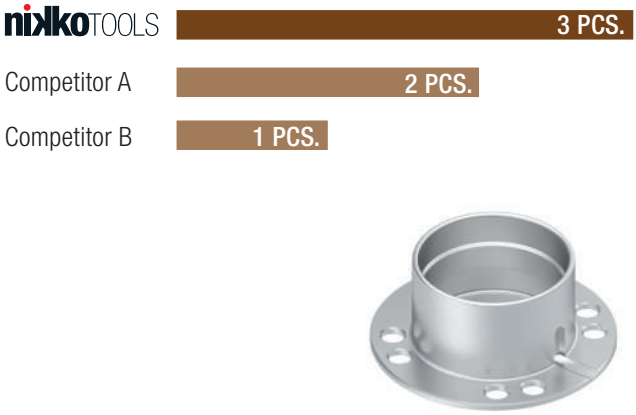
Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120408-NMS JP3015
Workpiece Inconel 718 (2.4668)
Parameters Vc 50 m/min, fn 0.20 mm/rev, ap 1.5 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

NUK

Chipbreaker

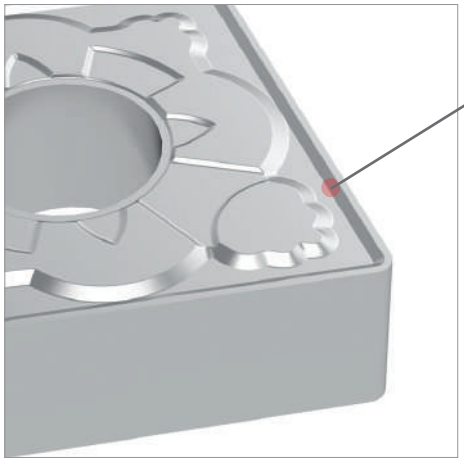
- Chipbreaker for cast iron light to medium cutting
- Effectively reduces burrs
- Specific for nodular cast iron

- Spanbrecher für Gusseisen und leichte bis mittlere Schnittbedingungen
- Effektiv bei der Reduzierung von Gratbildung
- Spezifisch für Sphäroguss

- Rompitruciolo per ghisa, condizioni di taglio da medie a leggere
- Efficace nel ridurre la formazione di bave
- Specifico per ghisa sferoidale

- Brise-copeaux pour la fonte dans des conditions de coupe de légère à moyenne
- Efficace pour réduire la formation de bavures
- Spécifique pour fonte sphéroïdale

Features of NUK chipbreaker



POSITIVE EDGE DESIGN

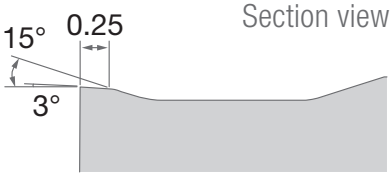
- Slightly sharper than conventional cast iron geometries
- Effectively reduces burrs
- Suitable for nodular cast iron

- Leggeremente più tagliente rispetto alle convenzionali geometrie per ghisa
- Efficace nel ridurre la formazione di bave
- Consigliato per ghisa sferoidale

- Etwas schärfer als die herkömmlichen Geometrien für Gusseisen
- Effektiv bei der Reduzierung von Gratbildung
- Empfohlen für Sphäroguss

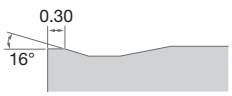
- Légèrement plus affûtée que les géométries conventionnelles pour la fonte
- Efficace pour réduire la formation de bavures
- Recommandé pour la fonte sphéroïdale

Section view

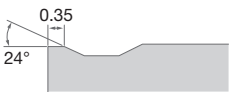


NUK

- NUK is the only cast iron geometry with positive edge. Other cast iron geometries have flat edge width.
- NUK è l'unica geometria positiva per ghisa Le altre geometrie per ghisa hanno il tagliente con bordo piatto
- NUK ist die einzige positive Geometrie für Gusseisen. Die anderen Geometrien für Gusseisen verfügen über eine Schneidkante mit flachem Rand
- NUK est la seule géométrie positive pour la fonte. Les autres géométries pour fonte ont une arête à bord plat



NMK



NRK

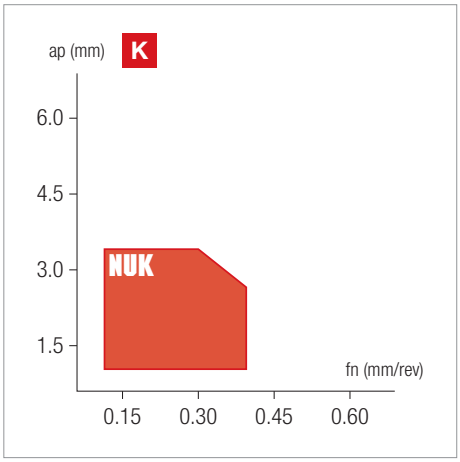


Flat

NUK

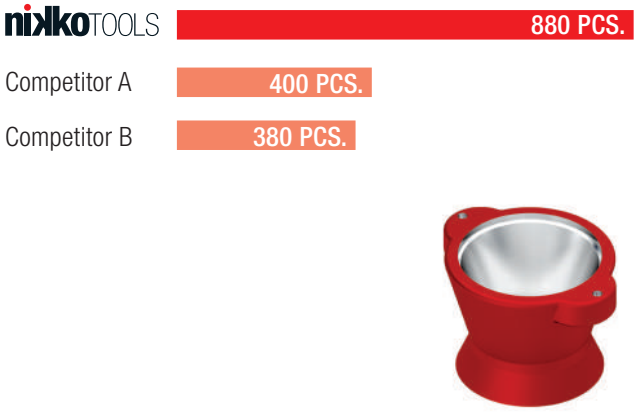
Chipbreaker

Application range - ISO 513



Use case

Tool type	DNMG150608-NUK JC7115
Workpiece	Grey cast iron GG25 (0.6025)
Parameters	Vc 170 m/min, fn 0.20 mm/rev, ap 0.5mm emulsion



NMK

Chipbreaker

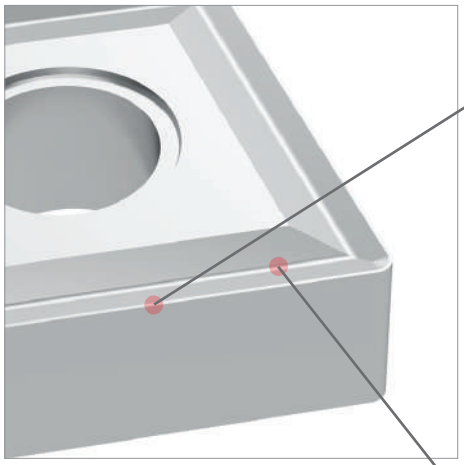
- Chipbreaker for cast iron, general machining
- Strong cutting edge
- Suitable for unstable machining
- Specific for cast iron boring operation

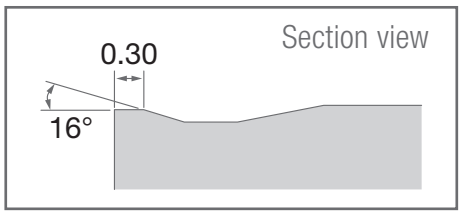
- Spanbrecher für allgemeine Anwendungen zum Schneiden von Gusseisen
- Verstärkte Schneidkanten
- Geeignet für die Bearbeitung unter instabilen Schnittbedingungen
- Speziell für das Bohren von Gusseisen

- Rompitruciolo per ghisa, applicazione generica
- Tagliente rinforzato
- Per lavorazioni instabili
- Specifico per operazioni di barenatura di ghisa

- Brise-copeaux pour applications générales d'usinage dans la fonte
- Arête de coupe renforcée
- Convient à l'usinage dans des conditions de coupe instables
- Spécifique aux opérations d'alésage dans la fonte

Features of NMK chipbreaker





REINFORCED CUTTING EDGE

- Strong cutting edge but with reduced cutting force
- Suitable for unstable cutting conditions
- Problem solver for cast iron boring

- Tagliente robusto con ridotta forza di taglio
- Adatto a condizioni di taglio instabili
- Perfetto per qualsiasi problematica nella barenatura di ghisa

- Robuste Schneidkante mit niedriger Schneidkraft
- Geeignet für instabile Schnittbedingungen
- Perfekt für jegliche Probleme bei der Bearbeitung von Gusseisen

- Arête de coupe robuste avec efforts de coupe réduits
- Convient aux conditions de coupe instables
- Parfait pour toute problématique d'alésage de fonte

OPEN CHIP GROOVE DESIGN

- Wide chip evacuation area at medium depth of cut

- Ampia area di evacuazione del truciolo a medie profondità di taglio

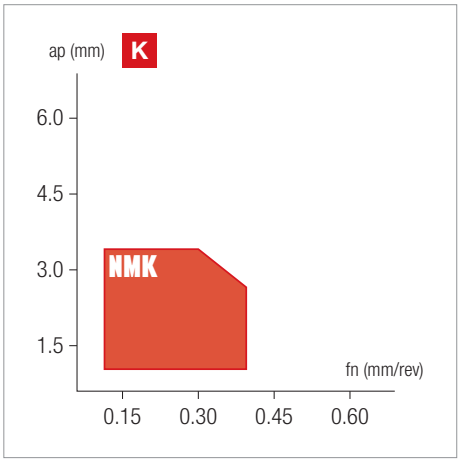
- Großer Spanabfuhrbereich bei mittleren Schnitttiefen

- Large zone d'évacuation des copeaux à des profondeurs de coupe moyennes

NMK

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120408-NMK
Workpiece Nodular cast iron GS500 (0.7050)
Parameters · Roughing Vc 250 m/min, fn 0.35 mm/min, ap 3 mm, emulsion
· Finishing Vc 320 m/min, fn 0.50 mm/min, ap 0.7 mm, emulsion

nikkoTOOLS	1200 PCS.
Competitor A	450 PCS.
Competitor B	420 PCS.



NRK

Chipbreaker

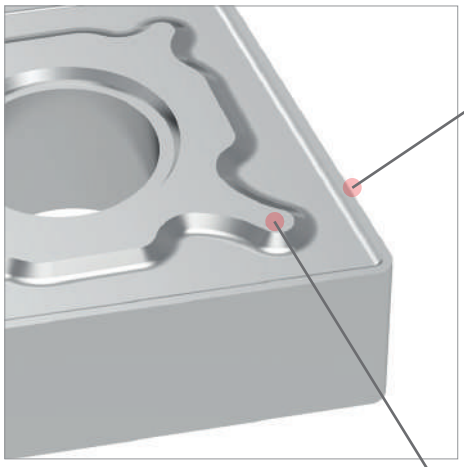
- Chipbreaker for cast iron roughing
- Replaces traditional flat top inserts
- Expert in removing black casted surface
- Extremely broad cutting range

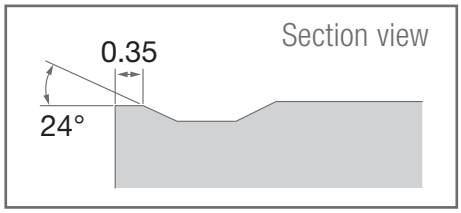
- Spanbrecher zum Schruppen von Guss
- Ersetzt herkömmliche flache Wendeschneidplatten
- Perfekt geeignet für die Abtragung von oxidierten Oberflächen
- Extrem großer Schnittbereich

- Rompitruciolo per sgrossatura della ghisa
- Sostituisce i convenzionali inserti piatti
- Esperto nella rimozione di crosta superficiale
- Campo applicativo estremamente ampio

- Brise-copeaux pour l'ébauche de la fonte
- Remplace les plaquettes à bouts plats conventionnelles
- Expert dans l'enlèvement de matières coulées
- Champ d'application extrêmement large

Features of NRK chipbreaker





STRONG CUTTING EDGE DESIGN

- Strong cutting edge and high reliability
- Suitabel for large depth of cut and high feed rate
- Suitable for removing irregular and oxidized surfaces

- Tagliente robusto e affidabile
- Consigliato per lavorazioni con grandi profondità di taglio e elevati avanzamenti
- Consigliato per la rimozione di superfici irregolari con crosta

- Robuste und zuverlässige Schneidkante
- Empfohlen für die Bearbeitung mit großen Schnitttiefen und Vorschüben
- Empfohlen zum Abtragen von ungleichmäßigen und oxidierten Oberflächen

- Arête de coupe robuste et fiable
- Recommandé pour l'usinage à grandes profondeurs de coupe et grandes avances
- Recommandé pour l'usinage de surfaces irrégulières et oxydées

PRECISION LAPPED SUPPORT SURFACE

- Improves the stability and reliability under unstable conditions

- Migliora stabilità e affidabilità iin condizioni di taglio instabili

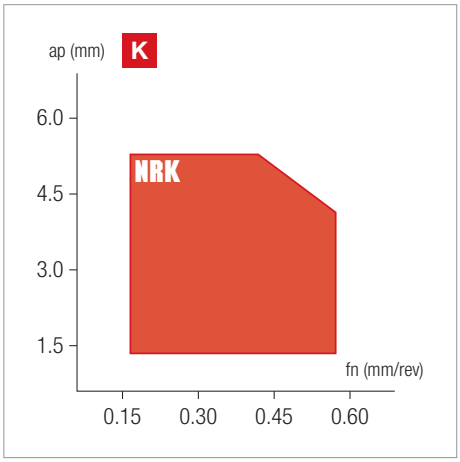
- Verbesserte Stabilität und Zuverlässigkeit bei instabilen Schnittbedingungen

- Améliore stabilité et fiabilité dans des conditions de coupe instables

NRK

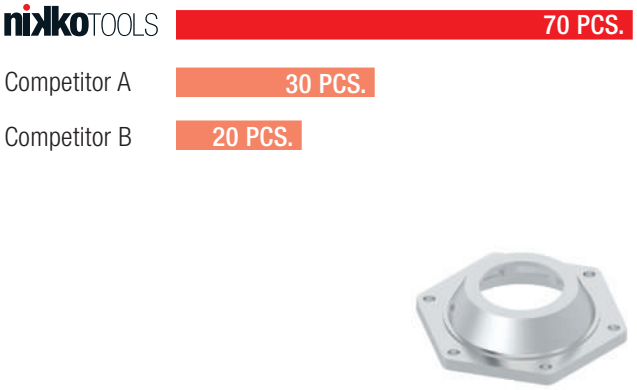
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG160616-NRK JC7115
Workpiece	Nodular cast iron GS500 (0.7050)
Parameters	Vc 180 m/min, fn 0.35 mm/min, ap 4 mm, emulsion



Flat

Chipbreaker

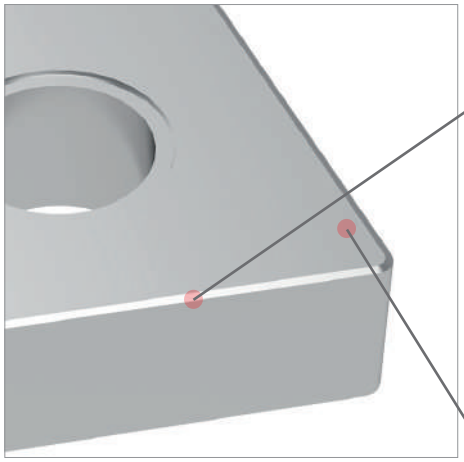
- Conventional solution for cast iron general machining
- Stable and reliable cutting process
- Mainly used for GG cast iron
- Wide application range

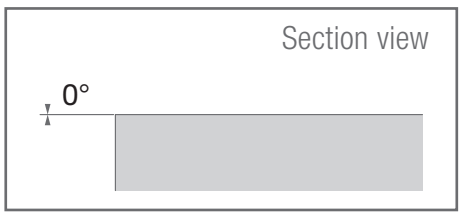
- Die konventionelle Lösung für die allgemeine Bearbeitung von Grauguss
- Stabiler und zuverlässiger Schneidprozess
- Wird hauptsächlich für Anwendungen mit Grauguss verwendet
- Extrem großer Schnittbereich

- Soluzione convenzionale per applicazioni generiche su ghisa grigia
- Processo di taglio stabile e affidabile
- Principalmente usato per applicazioni su ghisa grigia
- Campo applicativo estremamente ampio

- Solution conventionnelle pour l'usinage général de la fonte grise
- Processus de coupe stable et fiable
- Principalement utilisé pour des applications sur fonte grise
- Large plage d'applications

Features of Flat chipbreaker





SPECIAL MICRO GEOMETRY

- Special edge preparation for low cutting force despite the flat design
- Maintains stable and reliable cutting process

- Speciale preparazione del tagliente per bassi sforzi di taglio nonostante il design piatto.
- Garantisce stabilità e affidabilità

- Spezielle Schneidkantenpräparation für geringe Schnittkräfte trotz flacher Bauform.
- Gewährleistet stabile und zuverlässige Schneideprozesse

- Préparation spéciale des arêtes de coupe pour de faibles forces de coupe malgré une conception plae
- Processus de coupe stables et fiables

CLASSICAL FLAT CHIPBREAKER

- Versatility of use, wide Vc and fn range choice

- Versatilità di impiego, ampia scelta di Vc e fn

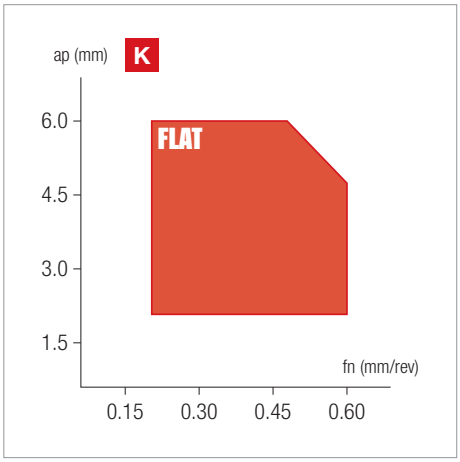
- Für verschiedene Schnittparameter erhältlich

- Utilisation polyvalente, large choix Vc et Fn

Flat

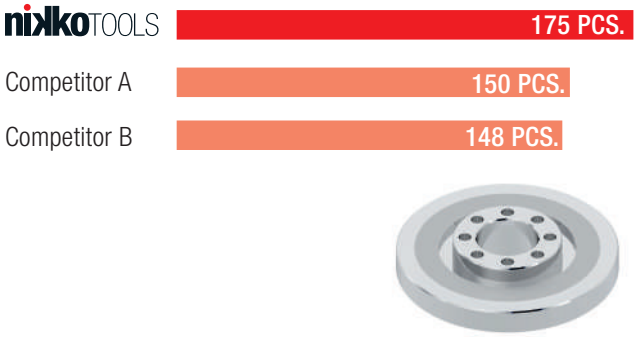
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMA120416 JC7010
Workpiece	Grey cast iron GG25 (0.6025)
Parameters	Vc 280 m/min, fn 0.40 mm/rev, ap 3.0 mm, emulsion, interrupted cut



NMN

Chipbreaker

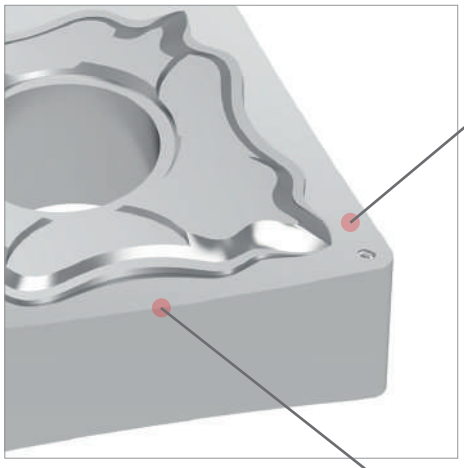
- Chipbreaker for non-ferrous materials
- High positive rake angle
- Ideal chip forming for smooth ejection
- Excellent surface finishing

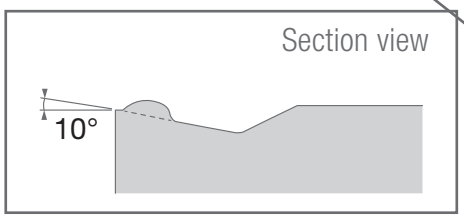
- Spanbrecher für Nichteisenmaterialien
- Geometrie mit stark positivem Spanwinkel
- Ideale Spanbildung und -abfuhr
- Ausgezeichnete Oberflächenqualität

- Rompitruciolo per materiali non ferrosi
- Geometria con angolo di spoglia fortemente positivo
- Formazione ed evacuazione del truciolo ideali
- Eccellente finitura superficiale

- Brise-copeaux pour matériaux non ferreux
- Géométrie à angle de dépouille fortement positif
- Formation et évacuation idéales des copeaux
- Excellente finition des surfaces

Features of NMN chipbreaker





CURVED EDGE WITH SPECIAL MICRO GEOMETRY

- Ottimo compromesso tra affilatura del tagliente e robustezza.
- Wide space for smooth chip evacuation
- Bends and guides the chips

- Ottimo compromesso tra affilatura del tagliente e robustezza.
- Ampia area di evacuazione del truciolo
- Piega e guida il truciolo

- Ausgezeichneter Kompromiss zwischen Schneidenschärfe und Stabilität.
- Großer Späneabfuhrbereich
- Biegt und leitet den Span

- Excellent compromis entre affûtage du tranchant et robustesse.
- Large zone d'évacuation des copeaux
- Plie et guide les copeaux

WIDE CHIP GROOVE AND LONG EDGE

- Effective in evacuating the chips
- Suitable for a wide range of cutting operations

- Efficace nell'evacuazione del truciolo
- Adatto per un ampio campo applicativo

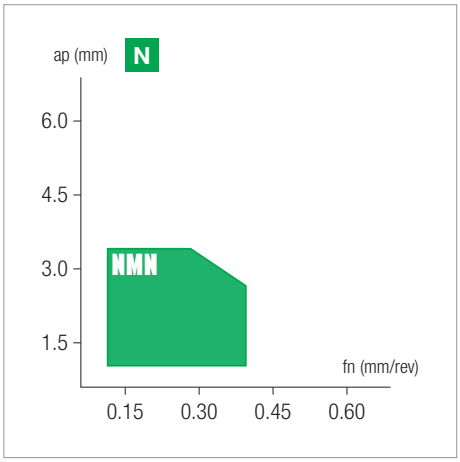
- Effektive Spanabfuhr
- Für eine Vielzahl von Schneidevorgängen geeignet

- Efficace pour l'évacuation des copeaux
- Convient à une large gamme d'opérations d'usinage

NMN

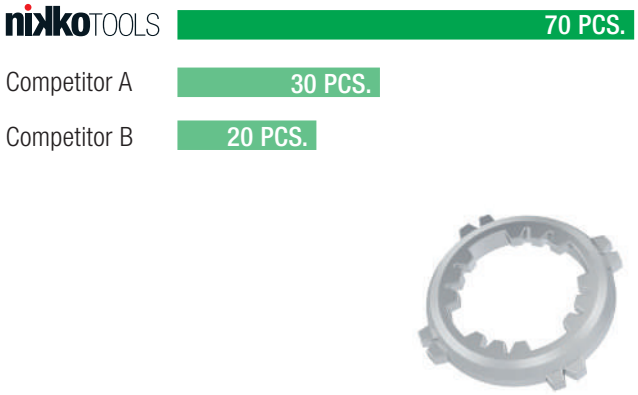
Chipbreaker

Application range - ISO 513



Use case

Tool type	DNGG150604-NMN JU6015
Workpiece	Copper alloy C101 (2.0060)
Parameters	Vc 250 m/min, fn 0.10 mm/min, ap 0.1 mm, emulsion



NUX

Chipbreaker

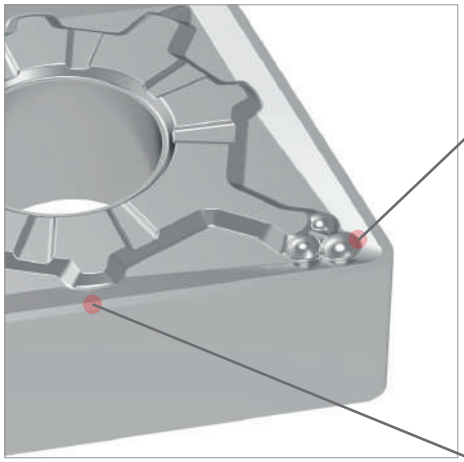
- Chipbreaker for universal application
- Double variable rake angle and edge geometry designed for toughness and high sharpness
- Good chip formation also with limited feed rate and cutting depth
- Universal application

- Rompitruciolo per applicazioni universali
- L'angolo di spoglia doppio e variabile unito alla particolare geometria del tagliente conferiscono elevata tenacità e taglienza.
- Buona formazione del truciolo anche con avanzamenti e profondità di taglio ridotti
- Applicazione universale

- Spanteiler für universelle Anwendungen
- Variabler Spanwinkel und variable Schneidkantenlänge für Robustheit und Schärfe
- Gute Spanbildung auch bei geringem Vorschub und geringerer Schnitttiefe
- Universelle Anwendung

- Brise-copeaux pour applications universelles
- Double angle de dépouille variable et géométrie d'arête conçus pour robustesse et acuité
- Bonne formation de copeaux y compris avec de faibles avances et profondeurs de coupe
- Application universelle

Features of NUX chipbreaker



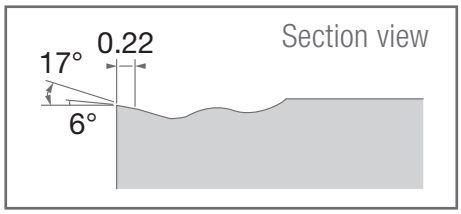
SPECIAL GROOVES

- High toughness and chipping resistance
- Improves chip forming and chip control

- Elevata stabilità e resistenza alle scheggiature
- Migliora la formazione e il controllo del truciolo

- Verbesserte Robustheit
- Verbessert die Spanbildung und -kontrolle

- Meilleure robustesse
- Améliore la formation et le contrôle des copeaux



VARIABLE RAKE ANGLE AND EDGE WIDTH

- Good balance of toughness and sharpness
- Reliable cutting process for universal application

- Buon bilanciamento tra tenacità e taglienza
- Processo di taglio affidabile in applicazioni universali

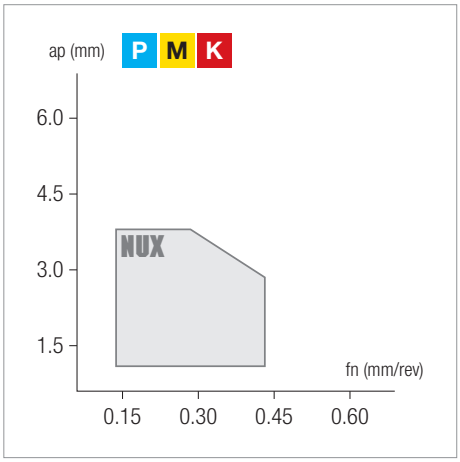
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Zuverlässiger Schneidprozess für universelle Anwendungen

- Bon équilibre entre robustesse et acuité
- Processus de coupe fiable dans le cadre d'applications universelles

NUX

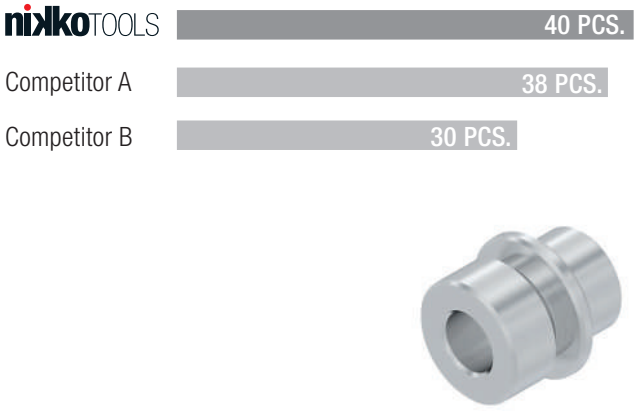
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG120404-NUX JC8015
Workpiece	Sintered steel
Parameters	Vc 300 m/min, fn 0.12 mm/rev, ap 1.7 mm, emulsion



NWU

Chipbreaker

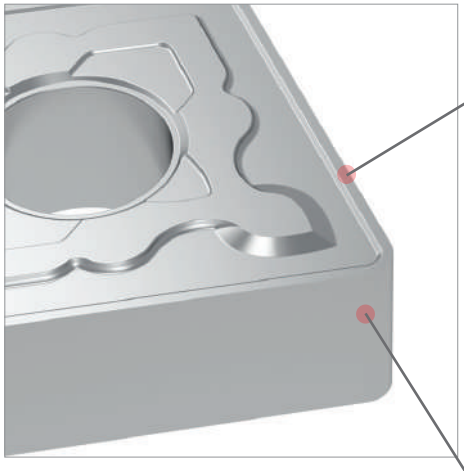
- Wiper chipbreaker for steel and cast iron
- Anti-vibration and smooth cutting process
- Reliable cutting edge with low cutting force
- Universal application

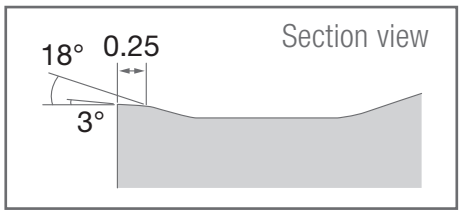
- Wiper Spanbrecher für Stähle und Gusseisen
- Vibrationssicheres und sanftes Schneiden
- Zuverlässige Schnittkante mit geringen Schnittkräften
- Universelle Anwendung

- Rompitruciolo di tipo Wiper per acciai e ghisa
- Anti-vibrazioni e taglio dolce
- Tagliente affidabile con ridotte forze di taglio
- Applicazione universale

- Brise-copeaux de type Wiper pour aciers et fonte
- Anti-vibration et coupe douce
- Arête de coupe fiable avec efforts de coupe réduits
- Application universelle

Features of NWU chipbreaker





DOUBLE RAKE ANGLE EDGE

- Good balance of toughness and sharpness
- Improves chip forming and chip control
- Suitable for wide application range

- Buon bilanciamento tra tenacità e taglienza
- Migliora la foramazione e il controllo del truciolo
- Consigliato per un ampio campo applicativo

- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Verbessert die Spanbildung und -kontrolle
- Für einen breiten Anwendungsbereich empfohlen

- Bon équilibre entre robustesse et acuité
- Améliore la formation et le contrôle des copeaux
- Recommandé pour une large gamme d'applications

MULTIPLE-CURVE WIPER LAND

- Effective in reducing vibrations
- Excellent surface quality

- Efficace nel ridurre le vibrazioni
- Eccellente qualità superficiale

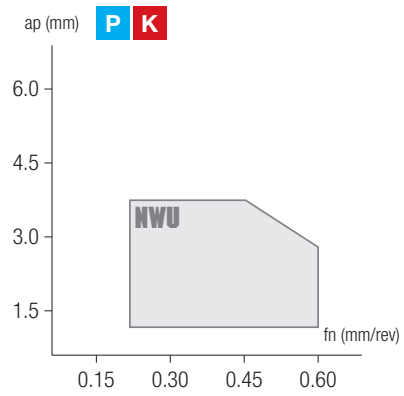
- Effektive Reduzierung von Vibrationen
- Hervorragende Oberflächenqualität

- Efficace pour réduire les vibrations
- Excellente qualité de surface

NWU

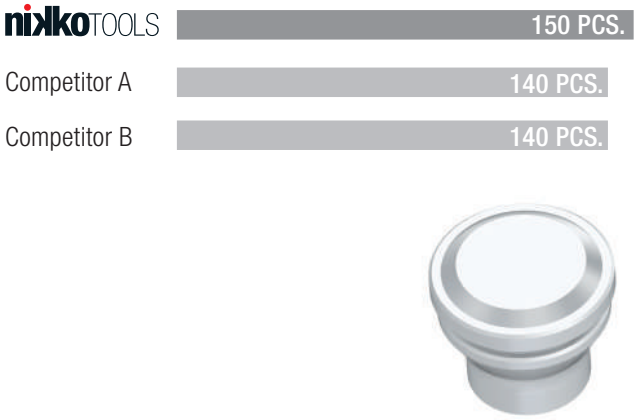
Chipbreaker

Application range - ISO 513



Use case

Tool type	DNMX150608-NWU JC7010
Workpiece	Grey cast iron GG25 (0.6025)
Parameters	Vc 350 m/min, fn 0.45 mm/rev, ap 1.0 mm, emulsion



For more application details, please check page A84.
Per maggiori dettagli applicativi, rif. pag. A84.
Für weitere Details zur Anwendung, siehe Seite A84.
Pour plus de détails sur les champs d'application, se reporter page A84.

NWX

Chipbreaker

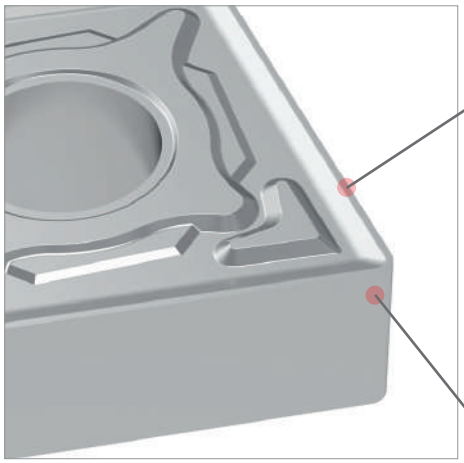
- Wiper chipbreaker for steel and cast iron
- Strong and reliable cutting edge
- Suitable for high feed rate and large depth of cut application
- Wide application range

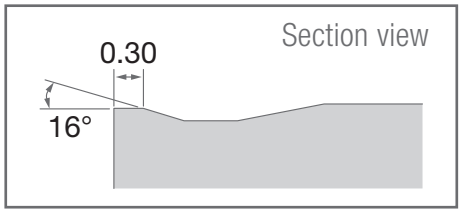
- Wiper Spanbrecher für Stähle und Gusseisen
- Robuste und zuverlässige Schneidkante
- Empfohlen für Bearbeitungen mit großen Vorschüben und Schnitttiefen
- Breiter Anwendungsbereich

- Rompitruciolo di tipo Wiper per acciai e ghisa
- Tagliente robusto e affidabile
- Consigliato per lavorazioni con elevati avanzamenti e grandi profondità di taglio
- Ampio campo applicativo

- Brise-copeaux de type Wiper pour aciers et fonte
- Arête decoupe robuste et fiable
- Recommandé pour usinage avec avances élevées et grandes profondeurs de coupe
- Large gamme d'applications

Features of NWX chipbreaker





STRONG CUTTING EDGE

- Tough and reliable geometry
- Suitable for high feed rate and large depth of cut

- Migliore robustezza e affidabilità
- Adatto a lavorazioni con elevati avanzamenti e grandi profondità di taglio

- Höhere Robustheit und Zuverlässigkeit
- Für die Bearbeitung mit großem Vorschub und großer Schnitttiefe geeignet

- Géométrie robuste et fiable
- Convient à l'usinage avec des avances élevées et de grandes profondeurs de coupe

MULTIPLE-CURVE WIPER LAND

- Effectively reduce vibration
- Excellent surface quality

- Efficace nel ridurre le vibrazioni
- Eccellente qualità superficiale

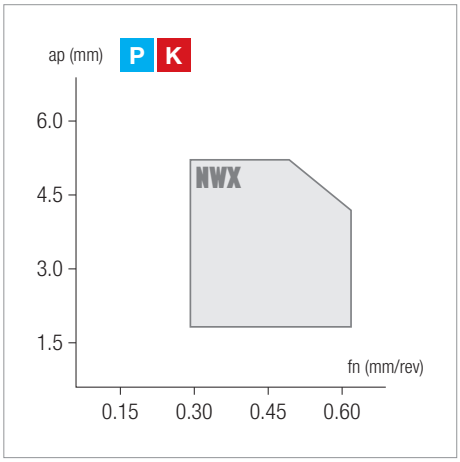
- Effektive Reduzierung von Vibrationen
- Hervorragende Oberflächenqualität

- Réduit efficacement les vibrations
- Excellente qualité de surface

NWX

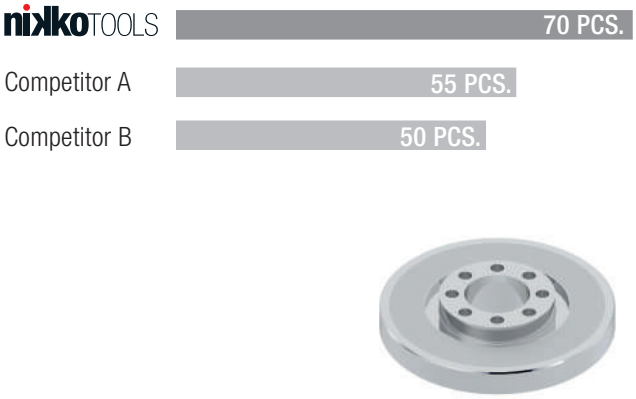
Chipbreaker

Application range - ISO 513



Use case

Tool type	CNMG120412-NWX JC7010
Workpiece	Grey cast iron GG25 (0.6025)
Parameters	Vc 260 m/min, fn 0.40 mm/rev, ap 2.5 mm, emulsion, interrupted cut



NMU$^{L}/_{R}$

Chipbreaker

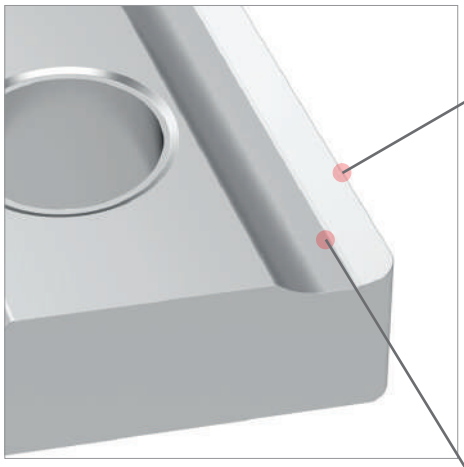
- Chipbreaker for universal use
- Highly positive geometry reduces workpiece deformation
- Excellent chip forming and guided chip evacuation
- Designed for unstable cutting conditions

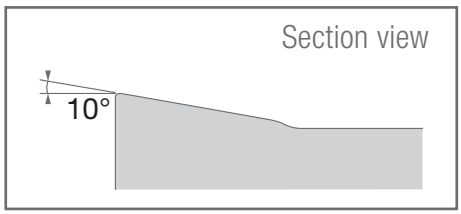
- Rompitruciolo per applicazioni universali
- Geometria fortemente positiva riduce la deformazione del pezzo lavorato
- Eccellente formazione ed evacuazione guidata del truciolo
- Adatto a condizioni di taglio instabili

- Spanbrecher für universelle Anwendungen
- Die stark positive Geometrie reduziert die Verformung des Werkstücks
- Hervorragende Spanbildung und geführte Spanabfuhr
- Geeignet für instabile Schnittbedingungen

- Brise-copeaux pour applications universelles
- La géométrie hautement positive réduit la déformation de la pièce usinée
- Excellente formation et évacuation des copeaux
- Convient aux conditions de coupe instables

Features of NMU$^{L}/_{R}$ chipbreaker





SHARP EDGE WITH SPECIAL MICRO GEOMETRY

- Excellent chip forming and guided chip evacuation direction
- Minimum bending effect on the workpiece
- Suitable for unstable set-ups

- Eccellente formazione ed evacuazione guidata del truciolo
- Minimo effetto di deformazione sul pezzo lavorato
- Consigliato per setup instabili

- Hervorragende Spanbildung und geführte Spanabfuhr
- Minimale Verformung des Werkstücks
- Für instabile Einrichtungen empfohlen

- Excellente formation et évacuation guidée des copeaux
- Minimum de déformation sur la pièce usinée
- Recommandé pour les configurations instables

WIDE CHIP GROOVE AND LONG EDGE

- Effective in evacuating the chips
- Suitable for a wide range of cutting operations

- Efficace nell'evacuazione del truciolo
- Adatto per un ampio campo applicativo

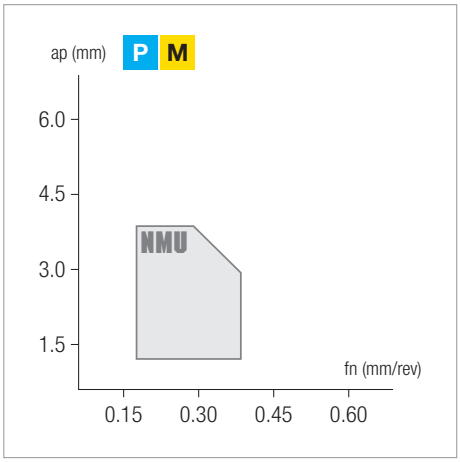
- Effektive Spanabfuhr
- Für eine Vielzahl von Schneidevorgängen geeignet

- Efficace pour l'évacuation des copeaux
- Convient à une large gamme d'opérations d'usinage

NMU$^{L}/_{R}$

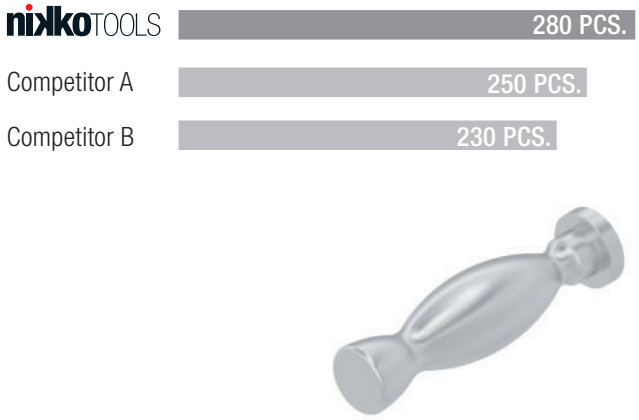
Chipbreaker

Application range - ISO 513



Use case

Tool type	DNMG150608R-NMU JC8025
Workpiece	Steel C40 (1.0511)
Parameters	Vc 200 m/min, fn 0.30 mm/rev, ap 2.0 mm, emulsion



PMN

Chipbreaker

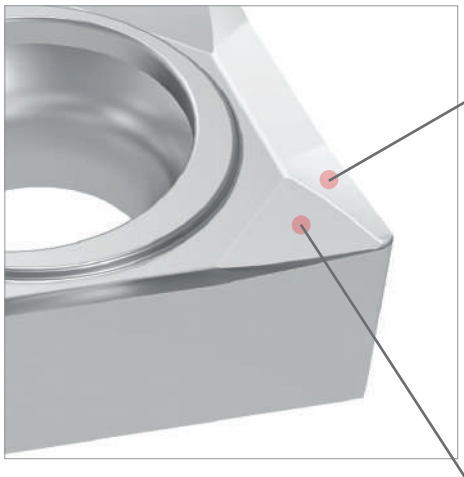
- Chipbreaker for non-ferrous materials
- Highly positive and fine polished geometry
- Excellent chip control
- Low vibration even at high feed

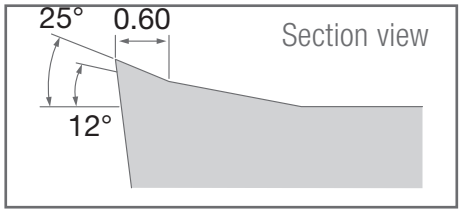
- Spanbrecher für Nichteisenmaterialien
- Starke positive Geometrie, fine polished
- Behutsame und geführte Spanabfuhr
- Verringert Vibrationen bei der Bearbeitung mit größeren Vorschüben

- Rompitruciolo per materiali non ferrosi
- Geometria fortemente positiva, lappata
- Eccellente controllo del truciolo
- Vibrazioni ridotte anche con avanzamenti elevati

- Brise-copeaux pour matériaux non ferreux
- Géométrie fortement positive et polie
- Évacuation fluide et guidée des copeaux
- Réduit les vibrations lors d'usinage à des avances plus élevées

Features of PMN chipbreaker





HIGHLY POSITIVE NARROW EDGE

- Smooth cutting process
- Improved reliability
- Fine surface finishing at higher feed rate

- Elevata taglienza
- Grande affidabilità
- Eccellente finitura superficiale anche con avanzamenti elevati

- Angenehm leichtgängiger Schneidprozess
- Verbesserte Zuverlässigkeit
- Präzise Oberflächenqualität mit hohen Vorschüben

- Coupe douce
- Optimisation de la fiabilité
- Finition de surface optimisée à des avances élevées

MIRROR-POLISHED SUPPORTING RAKE FACE

- Gives the sharp edge stronger support
- Guided smooth efficient chip flow

- Tagliente vivo ma al tempo stesso robusto
- Taglio dolce ed efficace evacuazione del truciolo

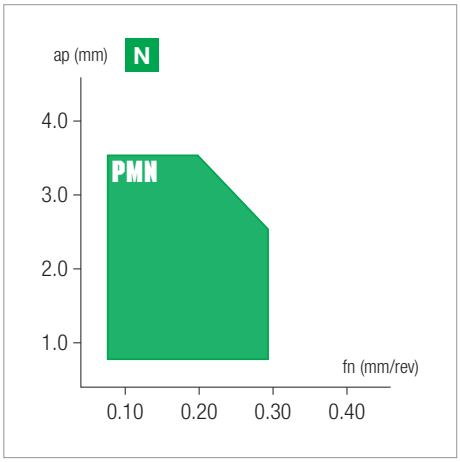
- Sorgt für einen sicheren Halt der scharfen Schneidkante
- Effektive und behutsame Spanabfuhr

- Donne à l'arête vive un support plus résistant
- Évacuation efficace et fluide des copeaux

PMN

Chipbreaker

Application range - ISO 513



Use case

Tool type	CCGX09T304-PMN JP6010
Workpiece	Alluminium alloy ERGAL (3.4365)
Parameters	Vc 350 m/min, fn 0.18 mm/min, ap 0.2 mm emulsion

nikkoTOOLS	4000 PCS.
Competitor A	1500 PCS.
Competitor B	1200 PCS.



PPF

Chipbreaker

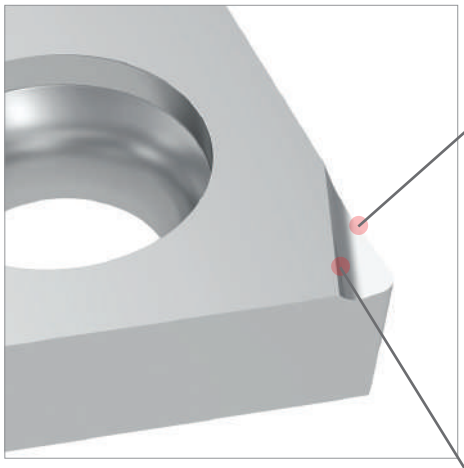
- Ground chipbreaker for small part finishing
- High precision and low cutting force
- Excellent chip control
- For steel and stainless steel finishing

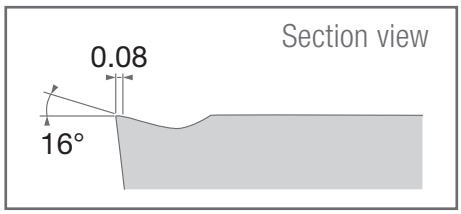
- Geschliffener Spanbrecher für die Feinbearbeitung kleiner Komponenten
- Hohe Präzision und geringe Schnittkraft
- Hervorragende Spanbildung und geführte Spanabfuhr
- Für die Feinbearbeitung von Stählen und rostfreien Stählen

- Rompitruciolo rettificcato per la finitura di piccoli componenti
- Elevata precisione e bassi sforzi di taglio
- Eccellente controllo del truciolo
- Per la finitura di acciai e acciai inossidabili

- Brise-copeaux rectifié pour la finition de petites pièces
- Haute précision et faible efforts de coupe
- Excellente formation et évacuation guidée des copeaux
- Pour la finition d'aciers et aciers inoxydables

Features of PPF chipbreaker





VARIABLE WIDTH AND SHARP EDGE DESIGN

- Sharp but strong cutting edge
- Minimum bending effect on the workpiece
- Excellent surface finishing

- Tagliente molto affilato e robusto
- Minimo effetto di deformazione sul pezzo lavorato
- Eccellente finitura superficiale

- Scharfe und robuste Schneidkante
- Minimale Verformung des Werkstücks
- Ausgezeichnete Oberflächenqualität

- Arête de coupe vive mais robuste
- Effet de déformation minimal sur la pièce usinée
- Excellente finition des surfaces

NARROW AND SHALLOW CHIP GROOVE

- Effectively breaks the chips
- Guides chip flow and reduces cutting resistance

- Spezza efficacemente il truciolo
- Guida l'evacuazione del truciolo e riduce la resistenza al taglio

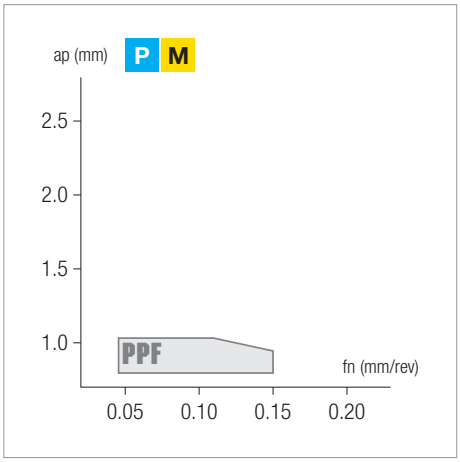
- Bricht den Span effektiv auf
- Führt die Spanabfuhr und verringert den Schnittwiderstand

- Bon fractionnement des copeaux
- Bonne évacuation des copeaux et efforts de coupe réduits

PPF

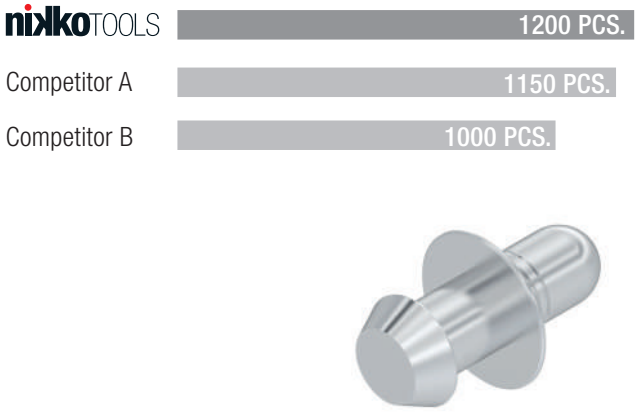
Chipbreaker

Application range - ISO 513



Use case

Tool type	TPEH110304L-PPF JU4015
Workpiece	Steel St 37-3 (1.0116)
Parameters	Vc 200 m/min, fn 0.05 mm/rev, ap 0.5 mm, emulsion



PFU

Chipbreaker

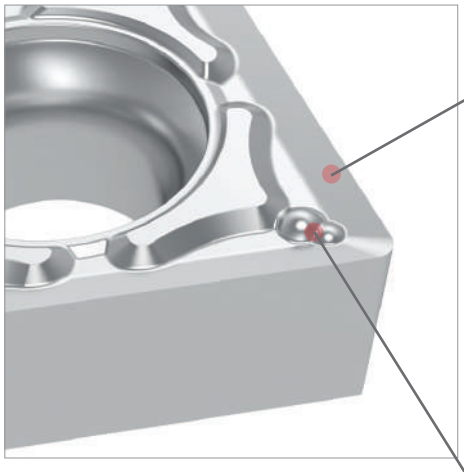
- Positive chipbreaker for ISO P, M, S materials light cutting
- Sharp edge for excellent surface quality
- Good chip formation also with low feed rate and small depth of cut
- Specifically designed for stainless steels and super alloys

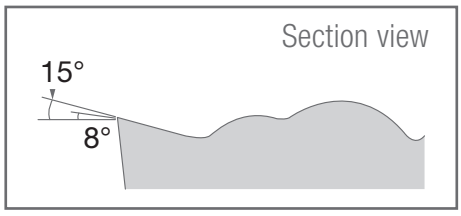
- Positiver Spanbrecher für ISO-Materialien P, M, S unter leichten Schnittbedingungen
- Scharfe Schneidkante für hervorragende Oberflächenqualität
- Gute Spanbildung auch bei geringem Vorschub und geringerer Schnitttiefe
- Speziell für rostfreie Stähle und Superlegierungen konzipiert

- Rompitruciolo positivo per materiali ISO P, M, S in condizioni di taglio leggero
- Tagliente affilato per eccellente finitura superficiale
- Buona formazione del truciolo anche con avanzamenti ridotti e basse profondità di taglio
- Progettato specificamente per acciai inossidabili e superleghe

- Brise-copeaux positif pour matériaux ISO P, M, S dans des conditions de coupe légère
- Arête de coupe vive pour une excellente finition de surface
- Bonne formation de copeaux y compris avec de faibles avances et profondeurs de coupe
- Conçu spécifiquement pour aciers inoxydables et superalliages

Features of PFU chipbreaker





SHARP CUTTING EDGE

- Good surface finish
- Very low vibration in boring process
- Designed for cutting stainless and super alloys

- Buona finitura superficiale
- Ridotte vibrazioni nelle operazioni di barenatura
- Specifico per il taglio di acciai inossidabili e superleghe

- Gute Oberflächenqualität
- Geringere Vibrationen beim Bohren
- Speziell zum Schneiden von rostfreien Stählen und Superlegierungen

- Bonne finition de surface
- Vibrations réduites lors d'opérations d'alésage
- Spécifique pour la coupe d'aciers inoxydables et de superalliages

BI-SPHERICAL DESIGN

- For perfect chip control even with low feed and small depth of cut

- Eccellente controllo truciolo anche con avanzamenti e profondità di taglio ridotti

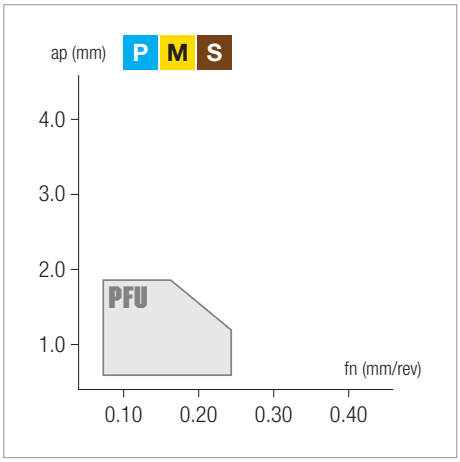
- Bricht die Späne bei niedrigem Vorschub und geringen Schnitttiefen und führt sie ab

- Brise et guide l'évacuation des copeaux dans des conditions d'avances réduites et de faibles profondeurs de coupe

PFU

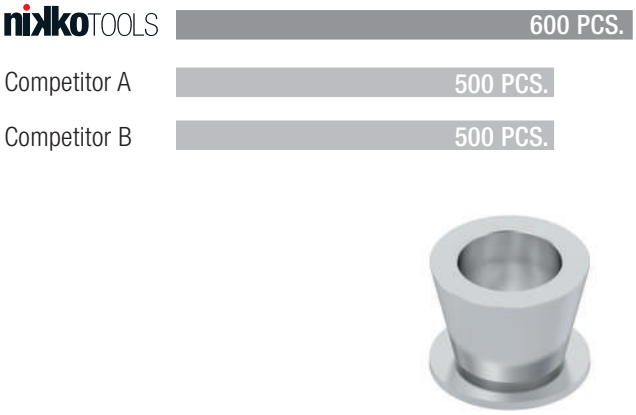
Chipbreaker

Application range - ISO 513



Use case

Tool type	DCMT11T304-PFU JP5120
Workpiece	Stainless steel AISI316 (1.4401)
Parameters	Vc 80 m/min, fn 0.15 mm/rev, ap 1.0 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

PPM

Chipbreaker

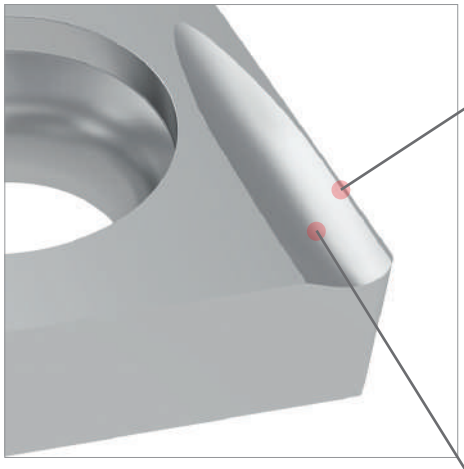
- Ground chipbreaker for small part universal machining
- Wide application range
- Reduced cutting force and stable cutting
- For steel and stainless steel general machining

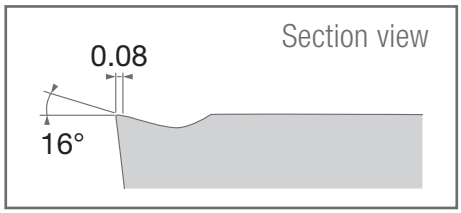
- Geschliffener Spanbrecher zur allgemeinen Bearbeitung von kleinen Komponenten
- Breiter Anwendungsbereich
- Geringe Schnittkräfte und stabiler und zuverlässiger Schnitt
- Für die allgemeine Bearbeitung von Stählen und rostfreien Stählen

- Rompitruciolo rettificato per la lavorazione di minuteria
- Ampio campo applicativo
- Ridotte forze di taglio e processo stabile
- Per lavorazione di acciai e acciai inossidabili

- Brise-copeaux rectifié pour l'usinage général de petites pièces
- Large gamme d'applications
- Coupe stable et efforts de coupe réduits
- Pour l'usinage général d'aciers et aciers inoxydables

Features of PPM chipbreaker





LONG GROUND CHIPBREAKER

- For wide range of cutting conditions
- Minimum bending effect on the workpiece
- Reduced cutting force and stable machining

- Per un ampio campo applicativo
- Minimo effetto di deformazione sul pezzo lavorato
- Ridotte forze di taglio e processo affidabile

- Für eine Vielzahl von Schnittbedingungen
- Minimale Verformung des Werkstücks
- Geringe Schnittkräfte und stabiler und zuverlässiger Schnitt

- Pour une large plage de conditions de coupe
- Effet de déformation minimal sur la pièce usinée
- Coupe stable et efforts de coupe réduits

WIDE CURVED GROUND CHIPBREAKER

- Suitable for wide range of cutting conditions
- Excellent chip control

- Consigliato per un ampio campo applicativo
- Spezza efficacemente il truciolo e ne favorisce l'evacuazione

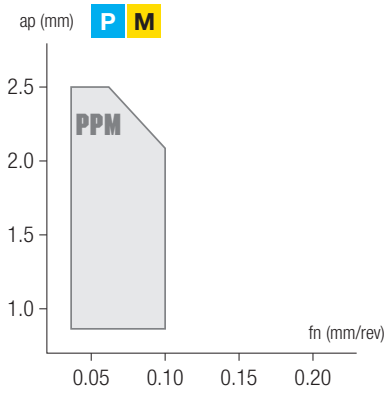
- Empfohlen für eine Vielzahl von Schnittbedingungen
- Bricht Späne effektiv auf und fördert deren Abfuhr

- Recommandé pour une large plage de conditions de coupe
- Fractionne efficacement les copeaux et en favorise l'évacuation

PPM

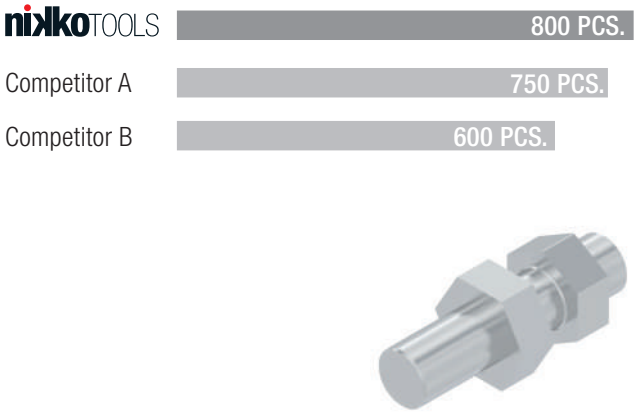
Chipbreaker

Application range - ISO 513



Use case

Tool type	DCET11T304R-PPM JP5125
Workpiece	Stainless steel AISI303 (1.4305)
Parameters	Vc 100 m/min, fn 0.10 mm/rev, ap 1.5 mm, emulsion



SORMA DIAMOND & CUTTING TOOLS

PMU

Chipbreaker

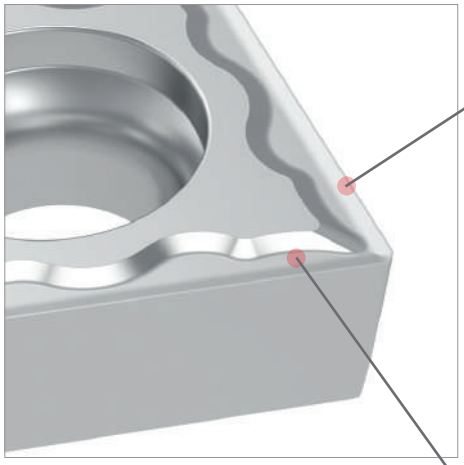
- High versatility chipbreaker for medium cutting
- Designed with tough and sharp edge
- Suitable for steel, stainless steel and cast iron
- Universal application

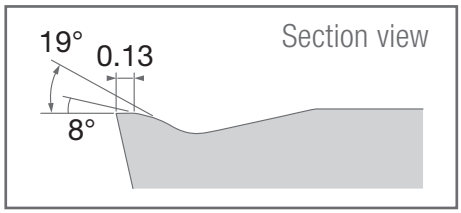
- Sehr vielseitiger Spanbrecher für mittlere Schnittbedingungen
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Für Anwendungen mit Stählen, rostfreien Stählen und Gusseisen
- Universelle Anwendung

- Rompitruciolo altamente versatile per condizioni di taglio medio
- Robusto e al tempo stesso molto affilato
- Per applicazioni su acciai, acciai inossidabili e ghisa
- Applicazione universale

- Brise-copeaux très polyvalent pour conditions de coupe moyenne
- Bon équilibre entre robustesse et acuité
- Pour applications sur aciers, aciers inoxydables et fonte
- Application universelle

Features of PMU chipbreaker





CURVED POSITIVE EDGE DESIGN

- Good combination of strength and sharpness
- Reduced cutting force
- Improved chip forming and chip control

- Buon bilanciamento tra robustezza e taglienza
- Forze di taglio ridotte
- Migliorata formazione e controllo del truciolo

- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Geringere Schnittkräfte
- Verbesserte Spanbildung und -kontrolle

- Bon équilibre entre robustesse et acuité
- Force de coupe réduite
- Meilleure formation et contrôle des copeaux

WIDE CHIP GROOVE

- Effective chip evacuation
- Reliable cutting process for universal application

- Efficace evacuazione del truciolo
- Processo di taglio affidabile in applicazioni universali

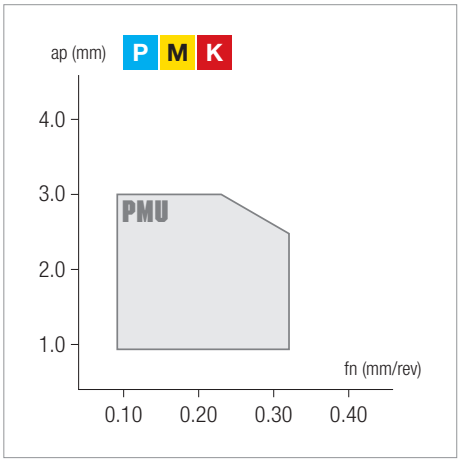
- Effektive Spanabfuhr
- Zuverlässiger Schneidprozess für universelle Anwendungen

- Évacuation efficace des copeaux
- Processus de coupe fiable dans le cadre d'applications universelles

PMU

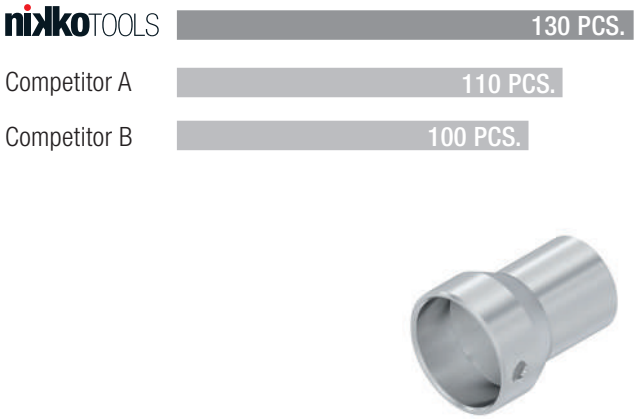
Chipbreaker

Application range - ISO 513



Use case

Tool type	DCMT150408-PMU JP5125
Workpiece	Steel 41CrAlMo7 (1.8509)
Parameters	Vc 180 m/min, fn 0.25 mm/rev, ap 1.5 mm, emulsion, light interrupted



PPU

Chipbreaker

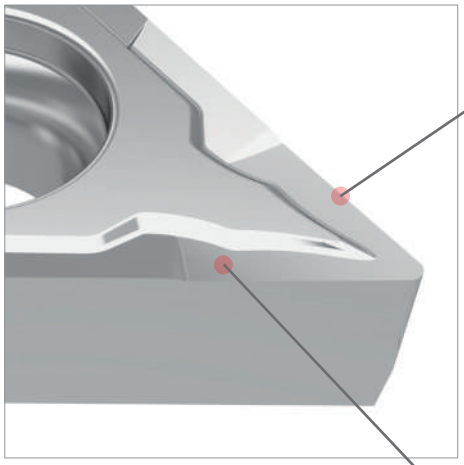
- Chipbreaker for internal universal cutting
- Low cutting force, stable machining even for interrupted boring application.
- Excellent choice for stainless steel and super alloys
- Precision ground

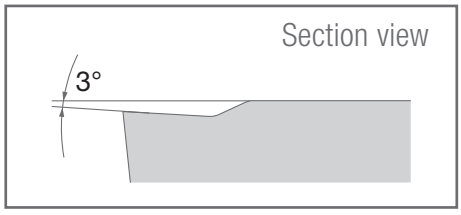
- Spanbrecher für universelle Anwendungen bei Innenbearbeitung
- Geringe Schnittkräfte, funktioniert auch bei unterbrochenen Rippenbohrungen
- Hervorragende Wahl für rostfreie Stähle und Superlegierungen
- Geschliffen

- Rompitruciolo per applicazioni universali di taglio interno
- Basse forze di taglio, affidabile anche per barenature con taglio interrotto (nervature)
- Scelta eccellente per acciai inossidabili e superleghe
- Rettificato di alta precisione

- Brise-copeaux pour applications universelles d'alésage
- Faibles efforts de coupe, fonctionne y compris dans des conditions de coupes interrompues
- Excellent choix pour les aciers inoxydables et superalliages
- Rectifié

Features of PPU chipbreaker





CURVED 3D CUTTING EDGE

- Low cutting force for stainless steel and sticky materials
- Good combination of strength and sharpness
- Improved chip forming and chip control

- Basse forze di taglio per acciai inossidabili e materiali pastosi
- Buon bilanciamento tra robustezza e affilatura
- Migliore formazione e controllo del truciolo

- Geringe Schnittkräfte für rostfreie Stähle und pastöse Materialien
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Verbesserte Spanbildung und -kontrolle

- Faibles efforts de coupe pour aciers inoxydables et matériaux collants
- Bon équilibre entre robustesse et acuité
- Meilleure formation et contrôle des copeaux

WIDE CHIP GROOVE

- Effective chip evacuation
- Reliable cutting process for universal application

- Efficace evacuazione del truciolo
- Processo di taglio affidabile in applicazioni universali

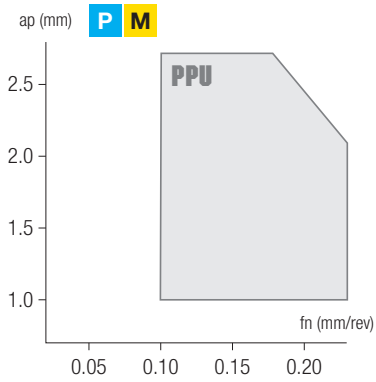
- Effektive Spanabfuhr
- Zuverlässiger Schneidprozess für universelle Anwendungen

- Évacuation efficace des copeaux
- Processus de coupe fiable dans le cadre d'applications universelles

PPU

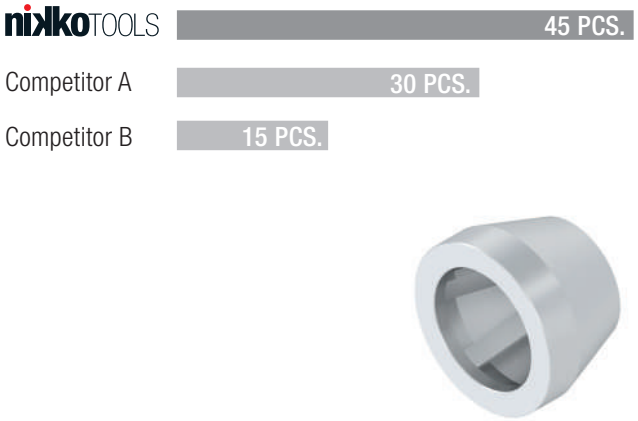
Chipbreaker

Application range - ISO 513



Use case

Tool type	DCGT11T308-PPU JP5125
Workpiece	AISI304
Parameters	Vc 300m/min ap 0.8 mm fn 0.2 mm/r dry, heavy interrupted



PRU

Chipbreaker

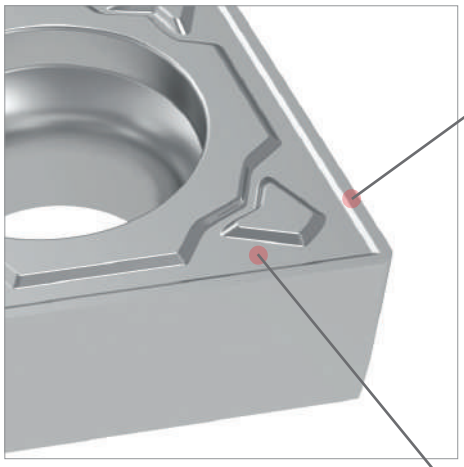
- Chipbreaker for roughing and interrupted cut conditions
- Strong and stable cutting edge
- Reduced cutting force and less vibration
- High toughness and stability feed rate

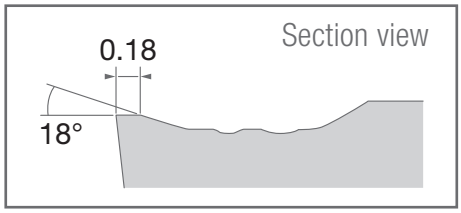
- Spanbrecher zum Schruppen und für unterbrochene Schnittbedingungen
- Robuste und zuverlässige Schneidkante
- Geringere Schnittkräfte und Vibrationen
- Für hohe Vorschübe geeignet

- Rompitruciolo per sgrossatura e condizioni di taglio interrotto
- Tagliente robusto e stablie
- Ridotti sforzi di taglio e minori vibrazioni
- Design per avanzamenti elevati

- Brise-copeaux pour ébauche dans des conditions de coupe interrompues
- Arête de coupe robuste et fiable
- Efforts de coupe réduits et moins de vibrations
- Convient aux avances élevées

Features of PRU chipbreaker





STRONG AND VARIABLE WIDTH DESIGN

- High toughness and stability
- Suitable for high feed rate
- Reduced cutting force and vibration

- Migliore robustezza e affidabilità
- Design per elevati avanzamenti
- Ridotti sforzi di taglio e minori vibrazioni

- Höhere Robustheit und Zuverlässigkeit
- Für hohe Vorschübe geeignet
- Geringere Schnittkräfte und Vibrationen

- Meilleures robustesse et fiabilité
- Convient aux avances élevées
- Efforts de coupe réduits et moins de vibrations

SHALLOW CHIP GROOVE

- Effectively breaks and guides the chips

- Spezza efficacemente il truciolo e ne guida l'evacuazione

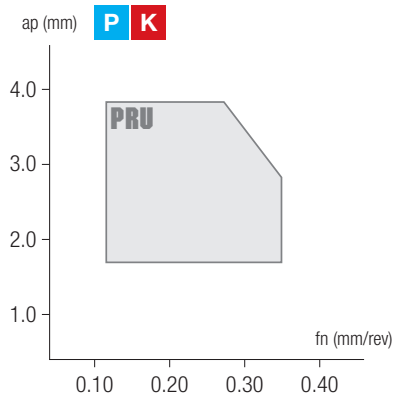
- Bricht Späne effektiv auf und führt deren Abfuhr

- Casse efficacement le copeau et en guide l'évacuation.

PRU

Chipbreaker

Application range - ISO 513



Use case

Tool type	TCMT16T308-PRU JC8025
Workpiece	Steel K100 (1.2008)
Parameters	Vc 80 m/min, fn 0.13 mm/rev, ap 4.0 mm, emulsion, heavy interrupted

nikkoTOOLS	50 PCS.
Competitor A	48 PCS.
Competitor B	45 PCS.

SORMA DIAMOND & CUTTING TOOLS

P		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	-	JP4020 / PFU	JC8005 / NUX	JC8005 / PMU	JC8005 / NRP	-
	1st CHOICE	**JU4015 / NSP**	**JU4015 / PFU**	**JC8015 / NUX**	**JC8015 / PMU**	**JC8015 / NRP**	**JC8025 / PRU**
	toughness	JC8005 / NSP	JC8005 / PFU	JC8025 / NUX	JC8025 / PMU	JC8025 / NRP	-
●	wear resistance	JC8005 / NSP	JC8005 / PFU	JC8015 / NUX	JC8015 / PMU	JC8015 / NRP	-
	1st CHOICE	**JC8015 / NSP**	**JC8015 / PFU**	**JC8025 / NUX**	**JC8025 / PMU**	**JC8025 / NRP**	**JC8025 / PRU**
	toughness	JC8025 / NSP	JC8025 / PFU	JC8035 / NUX	JP5125 / PMU	JC8035 / NRP	-
●	wear resistance	JC8015 / NSP	JC8015 / PFU	JC8025 / NUX	JC8025 / PMU	JC8025 / NRP	-
	1st CHOICE	**JC8025 / NSP**	**JC8025 / PFU**	**JC8035 / NUP**	**JP5125 / PMU**	**JC8035 / NRP**	**JC8025 / PRU**
	toughness	-	-	-	-	-	-

M		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	-	JP4020 / PFU	-	-	-	-
	1st CHOICE	**JP9015 / NSM**	**JP5120 / PFU**	**JC9010 / NUX**	**JC9010 / PMU**	**JC9010 / NRM**	**-**
	toughness	JP9030 / NSM	JP5125 / PFU	JC9025 / NUX	JP5120 / PMU	JC9025 / NRM	-
●	wear resistance	-	JP5120 / PFU	JC9010 / NUX	JC9010 / PMU	JC9010 / NRM	-
	1st CHOICE	**JP9015 / NSM**	**JP5125 / PFU**	**JC9025 / NUX**	**JC9025 / PMU**	**JC9025 / NRM**	**-**
	toughness	JP9030 / NSM	-	JP9030 / NMM	JP5125 / PMU (PPU)	JP9030 / NRM	-
●	wear resistance	JP9015 / NSM	JP5120 / PFU	JC9025 / NUX	JP5120 / PMU	JC9025 / NRM	-
	1st CHOICE	**JP9030 / NSM**	**JP5125 / PFU**	**JP9030 / NMM**	**JP5125 / PMU (PPU)**	**JP9030 / NRM**	**-**
	toughness	-	-	-	-	-	-

K		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	-	JP4020 / PMU	-	-	-	-
	1st CHOICE	**JC7115 / NUK**	**JC7010 / PMU**	**JC7010 / NMK**	**JC7010 / PMU**	**JC7010 / NRK**	**JC7010 / PRU**
	toughness	-	JC7020 / PMU	JC7020 / NMK	JC7020 / PMU	JC7020 / NRK	JC7020 / PRU
●	wear resistance	-	-	-	-	-	-
	1st CHOICE	**JC7115 / NUK**	**JC7010 / PMU**	**JC7010 / NMK**	**JC7010 / PMU**	**JC7010 / NRK**	**JC7010 / PRU**
	toughness	-	JC7020 / PMU	JC7020 / NMK	JC7020 / PMU	JC7020 / NRK	JC7020 / PRU
●	wear resistance	-	-	JC7010 / NMK	JC7010 / PMU	JC7010 / NRK	JC7010 / PRU
	1st CHOICE	**JC7115 / NUK**	**JC7010 / PMU**	**JC7020 / NMK**	**JC7020 / PMU**	**JC7020 / NRK**	**JC7020 / PRU**
	toughness	-	JC7020 / PMU	-	-	-	-

N		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	-	-	-	-	-	-
	▲ 1st CHOICE ▼	**JU6015 / NMN**	**JP6010 / PMN**	**JU6015 / NMN**	**JP6010 / PMN**	-	-
	toughness	-	JU6015 / PMN	-	JU6015 / PMN	-	-
●	wear resistance	-	JP6010 / PMN	-	JP6010 / PMN	-	-
	▲ 1st CHOICE ▼	**JU6015 / NMN**	**JU6015 / PMN**	**JU6015 / NMN**	**JU6015 / PMN**	-	-
	toughness	-	-	-	-	-	-
●	wear resistance	-	-	-	-	-	-
	▲ 1st CHOICE ▼	**JU6015 / NMN**	-	**JU6015 / NMN**	**JU6015 / PMN**	-	-
	toughness	-	-	-	-	-	-

S		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	-	JP5015 / PFU	-	-	-	-
	▲ 1st CHOICE ▼	-	**JP5120 / PFU**	**JP3015 / NMS**	**JP5120 / PMU**	-	-
	toughness	-	JP5125 / PFU	-	JP5125 / PPU (PMU)	-	-
●	wear resistance	-	JP5120 / PFU	-	JP5120 / PMU	-	-
	▲ 1st CHOICE ▼	-	**JP5125 / PFU**	**JP3015 / NMS**	**JP5125 / PPU (PMU)**	-	-
	toughness	-	-	-	-	-	-
●	wear resistance	-	-	-	-	-	-
	▲ 1st CHOICE ▼	-	-	-	-	-	-
	toughness	-	-	-	-	-	-

TURNING Designation system - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

C	N	M	G	12	04	08	R/L	-	N	U	M	JC	80	25
1	2	3	4	5	6	7	8		9	10	11	12	13	14

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

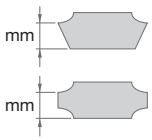
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

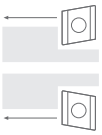
4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A	✓	✗	✗
G	✓	✗	double sided
M	✓	✗	single sided
N	✗	✗	✗
T	✓	40°÷60°	single sided
W	✓	40°÷60°	✗
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS
Symbol	(mm)
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.53



7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	DIRECTION
Symbol	Shape
L	
R	

9	CHIPBREAKER - design
N	negative double side
M	negative single side
P	positive

10	CHIPBREAKER - application
F or S	finishnig
M or U	medium
R or T	roughing

11	CHIPBREAKER - material
P, M, K, N, S, H	According to ISO 513
U, X	Universal

12	GRADE - coating
JC	CVD coating
JP	PVD coating
JU	uncoated

13	GRADE - material/application
10÷14	ISO H
20÷24	small parts
30÷34	ISO S
40÷44	CERMET
50÷54	UNIVERSAL
60÷64	ISO N
70÷74	ISO K
80÷84	ISO P
90÷94	ISO M

14	GRADE - features
xx	Classification according to ISO 513

CC

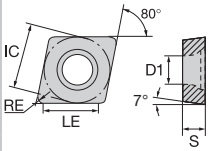
ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○	●	○	●	●	●	○	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	○		●	●	○	●	○	●	●	●	○		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱			✱		✱				✱			✱

Dimensions

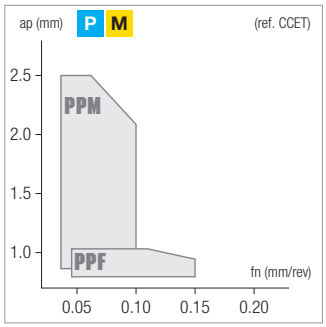


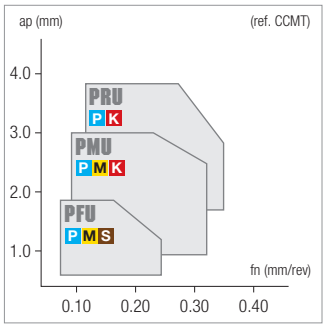
2 edges

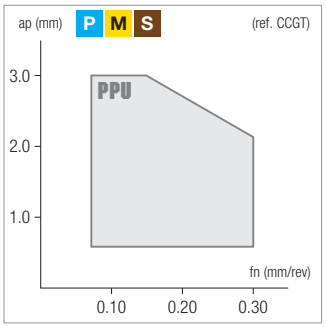
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)														
P			**200 380**	**170 360**	**140 330**			**180 400**	**100 220**	**90 200**	**70 180**		**200 380**		
M						**100 200**	**80 180**	**100 220**	**70 160**	**60 150**	**50 140**				
K	**130 380**	**110 300**						150 320		90 190	60 180				
N												**400 1400**		**200 1000**	
S									20 70	**20 70**	**20 70**				
H															

	Designation		RE	IC	S	D1	LE	Stock											
FINISHING	**PPF** P M	**CCET060202L/R-PPF**	0.20	6.35	2.38	2.8	6.2									○		◉	
		CCET060204L/R-PPF	0.40	6.35	2.38	2.8	6									○		○	
		CCET09T302L/R-PPF	0.20	9.525	3.97	4.4	9.5									◉		◉	
		CCET09T304L/R-PPF	0.40	9.525	3.97	4.4	9.3									◉		◉	
	 **ground chipbreaker** right-hand shown																		
FINISHING	**PFU** P M S	**CCMT060202-PFU**	0.20	6.35	2.38	2.8	6.2				●	●		◉	◉	●	●	●	
		CCMT060204-PFU	0.40	6.35	2.38	2.8	6			◉	●	●		●	●	●	●	●	
		CCMT09T302-PFU	0.20	9.525	3.97	4.4	9.5				◉	◉		○	◉	●	●	◉	
		CCMT09T304-PFU	0.40	9.525	3.97	4.4	9.3			◉	●	●		●	●	●	●	●	
		CCMT09T308-PFU	0.80	9.525	3.97	4.4	8.9				●	●		◉	◉	◉	●	●	
	 **sharp edge** low cutting force																		
MEDIUM	**PPM** P M	**CCET09T304L/R-PPM**	0.40	9.525	3.97	4.4	9.3									◉		◉	
	 **ground chipbreaker** right-hand shown																		
MEDIUM	**PPU** P M S	**CCGT060202-PPU**	0.20	6.35	2.38	2.8	6.2									●			
		CCGT060204-PPU	0.40	6.35	2.38	2.8	6									●			
		CCGT09T302-PPU	0.20	9.525	3.97	4.4	9.5									●			
		CCGT09T304-PPU	0.40	9.525	3.97	4.4	9.3									●			
		CCGT09T308-PPU	0.80	9.525	3.97	4.4	8.9									●			
	 **ground clearance** 3D chipbreaker																		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CC

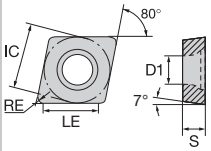
ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JPS015	JPS120	JPS125	JP6010	JU4015	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○	●	○	●	●	●	○	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	○		●	●	○	●	○	●	●	●	○		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱			✱		✱				✱			✱

Dimensions

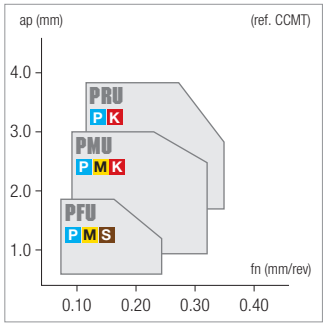


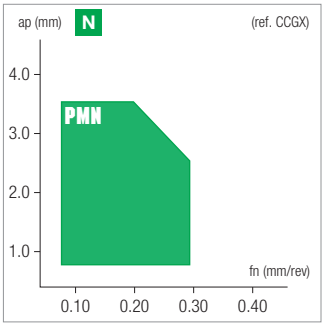
2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)														
P			200 380	170 360	140 330			180 400	100 220	90 200	70 180		200 380		
M						100 200	80 180	100 220	70 160	60 150	50 140				
K	130 380	110 300						150 320		90 190	60 180				
N												400 1400		200 1000	
S									20 70	20 70	20 70				
H															

	Designation		RE	IC	S	D1	LE	Stock											
MEDIUM	PMU P M K	CCMT060202-PMU	0.20	6.35	2.38	2.8	6.2				◉	●		◉	◉				●	
		CCMT060204-PMU	0.40	6.35	2.38	2.8	6	●			●	●	●	●	●			●	●	
		CCMT060208-PMU	0.80	6.35	2.38	2.8	5.6	●			◉	●		●					○	
		CCMT09T302-PMU	0.20	9.525	3.97	4.4	9.5				◉	●		◉	◉				◉	
		CCMT09T304-PMU	0.40	9.525	3.97	4.4	9.3	●			●	●	●	●	●		●	●	●	
		CCMT09T308-PMU	0.80	9.525	3.97	4.4	8.9	●	●		●	●	○	●	◉		●	●	◉	
		CCMT120404-PMU	0.40	12.7	4.76	5.5	12.5											◉		
		CCMT120404-PMU	0.40	12.7	4.76	5.5	12.5	●			●	●		●						
		CCMT120408-PMU	0.80	12.7	4.76	5.5	12.1	●	◉		●	●		●						
		CCMT120412-PMU	1.20	12.7	4.76	5.5	11.7	●			◉	◉		◉						
	1st choice all-around application																		
MEDIUM	PMN N	CCGX060202-PMN	0.20	6.35	2.38	2.8	6.2											○		●
		CCGX060204-PMN	0.40	6.35	2.38	2.8	6											○		●
		CCGX060208-PMN	0.80	6.35	2.38	2.8	5.6											○		●
		CCGX09T302-PMN	0.20	9.525	3.97	4.4	9.5											○		●
		CCGX09T304-PMN	0.40	9.525	3.97	4.4	9.3											◉		●
		CCGX09T308-PMN	0.80	9.525	3.97	4.4	8.9											●		●
		CCGX120402-PMN	0.20	12.7	4.76	5.5	12.7											○		○
		CCGX120404-PMN	0.40	12.7	4.76	5.5	12.5											●		●
		CCGX120408-PMN	0.80	12.7	4.76	5.5	12.1											●		●
	polished surface ground clearance																		
ROUGHING	PRU P K	CCMT09T304-PRU	0.40	9.525	3.97	4.4	9.3	◉				●								
		CCMT09T308-PRU	0.80	9.525	3.97	4.4	8.9	◉				●								
		CCMT120408-PRU	0.80	12.7	4.76	5.5	12.1	●				●								
		CCMT120412-PRU	1.20	12.7	4.76	5.5	11.7	◉				●								
	strong edge interrupted cut																		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CN

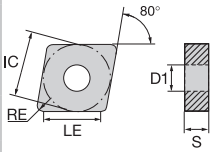
ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	⬌ 1st choice ⬌ suitable	⬌	⬌	⬌			⬌	⬌		⬌			⬌		⬌

Dimensions



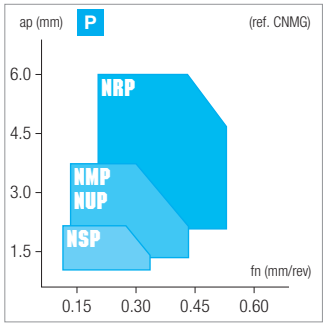
4 edges

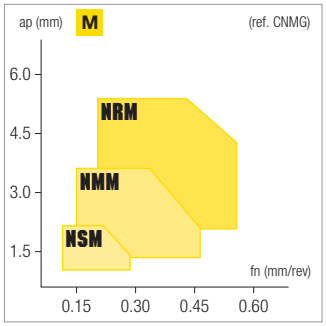
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

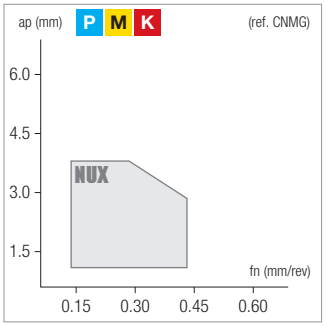
ISO																				
P				200 380	170 360	140 330	100 200						200 380							
M								100 200	80 180		60 160	50 130								
K	130 380	110 300	130 380																	
N														200 1000						
S										20 70										
H																				

		Designation	RE	IC	S	D1	LE	Stock
FINISHING	NSP P	CNMG090304-NSP	0.40	9.525	3.18	3.81	9.3	◉ ◉ ◉
		CNMG090308-NSP	0.80	9.525	3.18	3.81	8.9	◉ ◉ ◉
		CNMG120404-NSP	0.40	12.7	4.76	5.16	12.5	● ● ● ●
		CNMG120408-NSP	0.80	12.7	4.76	5.16	12.1	◉ ● ● ◉
FINISHING	NSM M	CNMG120404-NSM	0.40	12.7	4.76	5.16	12.5	● ●
		CNMG120408-NSM	0.80	12.7	4.76	5.16	12.1	● ●
MEDIUM	NUX P M K	CNMG120404-NUX	0.40	12.7	4.76	5.16	12.5	● ● ● ● ● ● ●
		CNMG120408-NUX	-	-	-	-	-	● ● ● ● ● ● ●
		CNMG120412-NUX	1.20	12.7	4.76	5.16	11.7	● ● ● ● ● ● ●
	universal use wide grades range							
MEDIUM	NMP P	CNMG120404-NMP	0.40	12.7	4.76	5.16	12.5	● ●
		CNMG120408-NMP	0.80	12.7	4.76	5.16	12.1	● ● ▽
		CNMG120412-NMP	1.20	12.7	4.76	5.16	11.7	● ●
		CNMG120416-NMP	1.60	12.7	4.76	5.16	11.3	● ◉
		CNMG160608-NMP	0.80	15.87	6.35	6.35	15.3	● ●
		CNMG160612-NMP	1.20	15.87	6.35	6.35	14.9	● ●
		CNMG160616-NMP	1.60	15.87	6.35	6.35	14.5	● ●
		CNMG190612-NMP	1.20	19.05	6.35	7.94	18.1	◉ ◉
		CNMG190616-NMP	1.60	19.05	6.35	7.94	17.7	● ◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CN

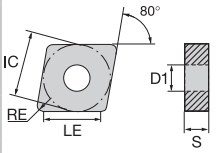
ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ◯ suitable	●	◯	●	●	●	◯		●	◯	●	●		●	●
General machining, medium cut	● 1st choice ◯ suitable	●	◯	●		●	●	◯	◯	●	●	●	●		●
Unstable machining, heavy cut	⬌ 1st choice ⇳ suitable	⇳	⬌	⇳			⇳	⬌		⇳			⬌		⇳

Dimensions



4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)														
P				**200 380**	**170 360**	**140 330**	**100 200**						**200 380**		
M								**100 200**	**80 180**		**60 160**	**50 130**			
K	**130 380**	**110 300**	**130 380**												
N														**200 1000**	
S										**20 70**					
H															

| | Designation | | RE | IC | S | D1 | LE | Stock | | | | | | | | | | | | | | |

SORMA DIAMOND & CUTTING TOOLS

CN

ISO - with hole

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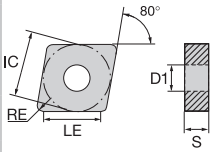
HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	⬛ 1st choice ⬚ suitable	⬚	⬛	⬚			⬚	⬛		⬚			⬛		⬚

Dimensions

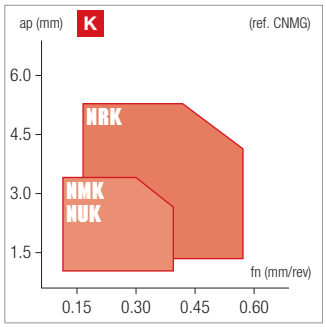


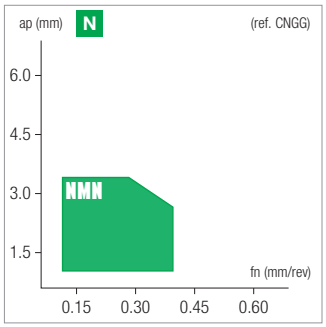
4 edges

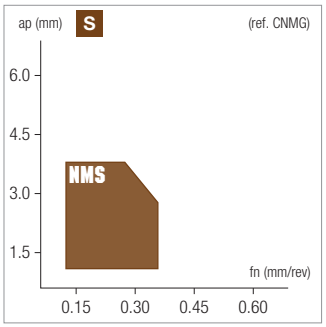
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				**200 380**	**170 360**	**140 330**	**100 200**						**200 380**						
M								**100 200**	**80 180**		**60 160**	**50 130**							
K	**130 380**	**110 300**	**130 380**																
N														**200 1000**					
S										**20 70**									
H																			

	Designation		RE	IC	S	D1	LE	Stock													
MEDIUM	**NMK** K	**CNMG120404-NMK**	0.40	12.7	4.76	5.16	12.5	●	◉												
		CNMG120408-NMK	0.80	12.7	4.76	5.16	12.1	●	●												
		CNMG120412-NMK	1.20	12.7	4.76	5.16	11.7	●	◉												
		CNMG120416-NMK	1.60	12.7	4.76	5.16	11.3	●	◉												
		CNMG160608-NMK	0.80	15.87	6.35	6.35	15.3	●	◉												
		CNMG160612-NMK	1.20	15.87	6.35	6.35	14.9	●	◉												
		CNMG160616-NMK	1.60	15.87	6.35	6.35	14.5	◉	◉												
		CNMG190612-NMK	1.20	19.05	6.35	7.94	18.1	◉	◉												
		CNMG190616-NMK	1.60	19.05	6.35	7.94	17.7	◉	◉												
MEDIUM	**NUK** K	**CNMG120404-NUK**	0.40	12.7	4.76	5.16	12.5			●											
		CNMG120408-NUK	0.80	12.7	4.76	5.16	12.1	▽		●											
		CNMG120412-NUK	1.20	12.7	4.76	5.16	11.7	▽		●											
	sharp edge reduces burrs																				
MEDIUM	**NMN** N	**CNGG120404-NMN**	0.40	12.7	4.76	5.16	12.5													●	
		CNGG120408-NMN	0.80	12.7	4.76	5.16	12.1													●	
	polished surface ground clearance																				
MEDIUM	**NMS** S	**CNMG120408-NMS**	0.80	12.7	4.76	5.16	12.1										●				
		CNMG120412-NMS	1.20	12.7	4.76	5.16	11.7										●				

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

CN

ISO - with hole

- The most popular insert shape due to high versatility
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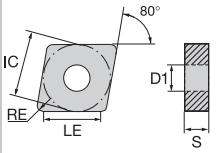
HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	⬌ 1st choice ⬌ suitable	⬌	⬌	⬌			⬌	⬌		⬌			⬌		⬌

Dimensions

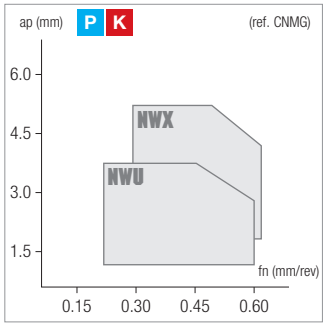


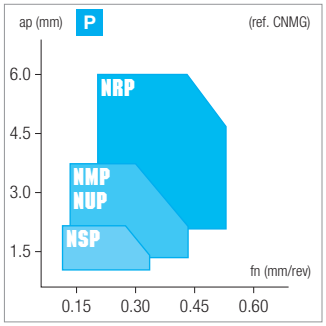
4 edges

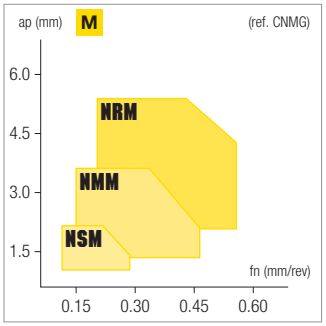
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				200 380	170 360	140 330	100 200						200 380						
M								100 200	80 180		60 160	50 130							
K	130 380	110 300	130 380																
N														200 1000					
S										20 70									
H																			

	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	NWU PK	CNMG120408-NWU	0.80	12.7	4.76	5.16	12.1	● ● ●
	 wiper universal type	CNMG120412-NWU	1.20	12.7	4.76	5.16	11.7	● ●
MEDIUM	NWX PK	CNMG120408-NWX	0.80	12.7	4.76	5.16	12.1	⦿ ● ●
	 wiper reinforced edge	CNMG120412-NWX	1.20	12.7	4.76	5.16	11.7	● ⦿ ●
ROUGHING	NRP P	CNMG120408-NRP	0.80	12.7	4.76	5.16	12.1	⦿ ● ● ●
		CNMG120412-NRP	1.20	12.7	4.76	5.16	11.7	● ● ● ●
		CNMG120416-NRP	1.60	12.7	4.76	5.16	11.3	⦿ ● ● ●
		CNMG160612-NRP	1.20	15.87	6.35	6.35	14.9	● ● ● ⦿
		CNMG160616-NRP	1.60	15.87	6.35	6.35	14.5	● ● ● ●
		CNMG190612-NRP	1.20	19.05	6.35	7.94	18.1	⦿ ⦿
		CNMG190616-NRP	1.60	19.05	6.35	7.94	17.7	○ ● ⦿
		CNMG190624-NRP	2.40	19.05	6.35	7.94	16.9	⦿ ● ⦿
		CNMG250924-NRP	2.40	25.4	9.52	9.12	23.4	⦿
ROUGHING	NRM M	CNMG120408-NRM	0.80	12.7	4.76	5.16	12.1	● ● ●
		CNMG120412-NRM	1.20	12.7	4.76	5.16	11.7	● ● ●
		CNMG120416-NRM	1.60	12.7	4.76	0	-	○
		CNMG160608-NRM	0.80	15.87	6.35	6.35	15.3	○
		CNMG160612-NRM	1.20	15.87	6.35	6.35	14.9	○ ● ●
		CNMG190612-NRM	1.20	19.05	6.35	7.94	18.1	○ ●
		CNMG190616-NRM	1.60	19.05	6.35	7.94	17.7	○ ●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

CN

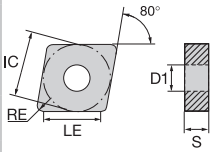
ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	1st choice / suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	1st choice / suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	1st choice / suitable	⇔	⇔	⇔			⇔	⇔		⇔			⇔		⇔

Dimensions



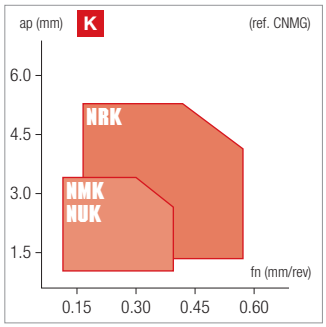
4 edges

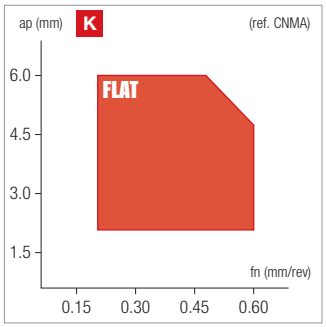
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

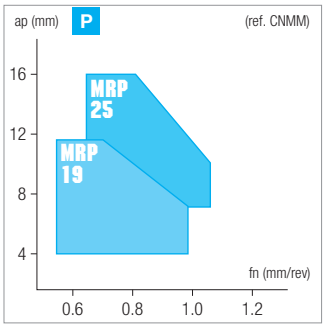
ISO															
P				200 380	170 360	140 330	100 200						200 380		
M								100 200	80 180		60 160	50 130			
K	130 380	110 300	130 380												
N														200 1000	
S										20 70					
H															

	Designation		RE	IC	S	D1	LE	Stock												
ROUGHING	NRK K	CNMG120408-NRK	0.80	12.7	4.76	5.16	12.1	●	●	●										
		CNMG120412-NRK	1.20	12.7	4.76	5.16	11.7	●	●	●										
		CNMG120416-NRK	1.60	12.7	4.76	5.16	11.3	⦿	●	○										
		CNMG160612-NRK	1.20	15.87	6.35	6.35	14.9	●	●	●										
		CNMG160616-NRK	1.60	15.87	6.35	6.35	14.5	●	●	●										
		CNMG160624-NRK	2.40	15.87	6.35	6.35	-	○												
		CNMG190612-NRK	1.20	19.05	6.35	7.94	18.1	⦿	⦿											
		CNMG190616-NRK	1.60	19.05	6.35	7.94	17.7	⦿	●											
ROUGHING	Flat top K	CNMA120404	0.40	12.7	4.76	5.16	12.5	⦿	⦿											
		CNMA120408	0.80	12.7	4.76	5.16	12.1	●	⦿	○										
		CNMA120412	1.20	12.7	4.76	5.16	11.7	●	⦿	●										
		CNMA120416	1.60	12.7	4.76	5.16	11.3	⦿	⦿											
		CNMA160612	1.20	15.87	6.35	6.35	14.9	●	⦿	●										
		CNMA160616	1.60	15.87	6.35	6.35	14.5	⦿	⦿	●										
		CNMA190612	1.20	19.05	6.35	7.94	18.1	⦿	⦿											
		CNMA190616	1.60	19.05	6.35	7.94	17.7	●	⦿											
		CNMA190624	2.40	19.05	6.35	7.94	-		○											
HEAVY	MRP P	CNMM190616-MRP	1.60	19.05	6.35	7.94	17.7						⦿	⦿						
		CNMM190624-MRP	2.40	19.05	6.35	7.94	16.9						⦿	●						
	single side 2 edges	CNMM250924-MRP	2.40	25.4	9.52	9.12	23.4						⦿	⦿						

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DC

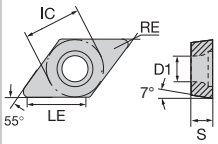
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip jamming in boring

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7010	**JC7115**	**JC8005**	**JC8015**	**JC8025**	**JC9010**	**JC9025**	**JP4020**	**JP5015**	**JP5120**	**JP5125**	**JP6010**	**JU4015**	**JU6015**
Stable machining, light cut	● 1st choice ○ suitable	●	●	●	●	○	●	○	●	●	●	○	●	●	●
General machining, medium cut	◔ 1st choice ◔ suitable	◔	◔		◔	◔	◔	◔	◔	◔	◔	◔	◔		◔
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱			✱		✱				✱			✱

Dimensions



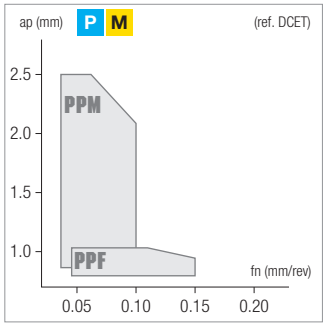
2 edges

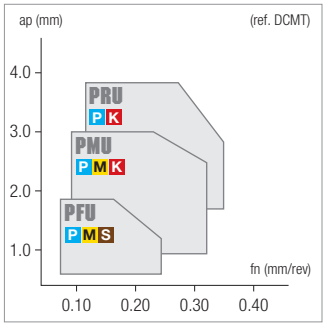
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

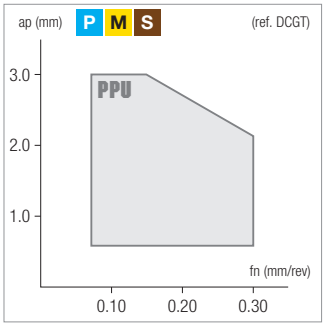
P			**200 380**	**170 360**	**140 330**			**180 400**	**100 220**	**90 200**	**70 180**		**200 380**		
M						**100 200**	**80 180**	**100 220**	**70 160**	**60 150**	**50 140**				
K	**130 380**	**130 380**						150 320		90 190	60 180				
N												**400 1400**		**200 1000**	
S									20 70	**20 70**	**20 70**				
H															

	Designation		RE	IC	S	D1	LE	Stock											
FINISHING	**PPF** P M	**DCET070202L/R-PPF**	0.20	6.35	2.38	2.8	7.6									◉		◉	
		DCET070204L/R-PPF	0.40	6.35	2.38	2.8	7.4									◉		◉	
		DCET11T302L/R-PPF	0.20	9.525	3.97	4.4	11.4									◉		●	
		DCET11T304L/R-PPF	0.40	9.525	3.97	4.4	11.2									●		●	
	ground chipbreaker right-hand shown																		
FINISHING	**PFU** P M S	**DCMT070202-PFU**	0.20	6.35	2.38	2.8	7.6				●	◉		◉	○	◉	●	●		●	
		DCMT070204-PFU	0.40	6.35	2.38	2.8	7.4				●	●		●	◉	●	●	●		●	
		DCMT11T302-PFU	0.20	9.525	3.97	4.4	11.4				●	●		●	○	●	●	●		○	
		DCMT11T304-PFU	0.40	9.525	3.97	4.4	11.2			●	●	●		●	●	●	●	●		●	
		DCMT11T308-PFU	0.80	9.525	3.97	4.4	10.8			●	●	●		●	◉	●	●	●		◉	
	sharp edge low cutting force																		
MEDIUM	**PPM** P M	**DCET070204L/R-PPM**	0.40	6.35	2.38	2.8	7.4									◉		◉	
		DCET11T302L/R-PPM	0.20	9.525	3.97	4.4	11.4									●		●	
		DCET11T304L/R-PPM	0.40	9.525	3.97	4.4	11.2									●		◉	
	ground chipbreaker right-hand shown																		
MEDIUM	**PPU** P M S	**DCGT070202-PPU**	0.20	6.35	2.38	2.8	7.6									●			
		DCGT070204-PPU	0.40	6.35	2.38	2.8	7.4									●			
		DCGT11T302-PPU	0.20	9.525	3.97	4.4	11.4									●			
		DCGT11T304-PPU	0.40	9.525	3.97	4.4	11.2									●			
		DCGT11T308-PPU	0.80	9.525	3.97	4.4	10.8									●			
	ground clearance 3D chipbreaker																		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DC

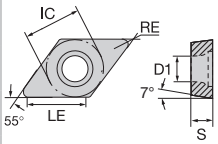
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip jamming in boring

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		JC7010	JC7115	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ◯ suitable	●	●	●	●	◯	●	◯	●	●	●	◯	●	●	●
General machining, medium cut	● 1st choice ◯ suitable	●	●		●	●	◯	●	◯	●	●	●	◯		●
Unstable machining, heavy cut	⬛ 1st choice ⬚ suitable	⬚	⬚			⬚		⬚				⬛			⬚

Dimensions



2 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	JC7010	JC7115	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
P			**200 380**	**170 360**	**140 330**			**180 400**	**100 220**	**90 200**	**70 180**		**200 380**	
M						**100 200**	**80 180**	**100 220**	**70 160**	**60 150**	**50 140**			
K	**130 380**	**130 380**						150 320		90 190	60 180			
N												**400 1400**		**200 1000**
S									20 70	**20 70**	**20 70**			
H														

	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	PMU P M K	DCMT070202-PMU	0.20	6.35	2.38	2.8	7.6	⦿ ● ⦿ ⦿ ⦿ ⦿ ⦿
		DCMT070204-PMU	0.40	6.35	2.38	2.8	7.4	● ● ● ● ⦿ ● ● ●
		DCMT070208-PMU	0.80	6.35	2.38	2.8	7	● ⦿ ● ⦿ ⦿
		DCMT11T302-PMU	0.20	9.525	3.97	4.4	11.4	● ● ⦿ ⦿ ●
		DCMT11T304-PMU	0.40	9.525	3.97	4.4	11.2	● ◯ ● ● ● ● ● ● ● ●
		DCMT11T308-PMU	0.80	9.525	3.97	4.4	10.8	● ◯ ● ● ● ● ⦿ ● ● ●
		DCMT11T312-PMU	1.20	9.525	3.97	4.4	10.4	●
		DCMT150404-PMU	0.40	12.7	4.76	5.5	15.1	⦿ ●
		DCMT150408-PMU	0.80	12.7	4.76	5.5	14.7	⦿ ◯ ● ●
		DCMT150412-PMU	1.20	12.7	4.76	5.5	14.3	◯ ◯ ⦿
MEDIUM	PMN N	DCGX070202-PMN	0.20	6.35	2.38	2.8	7.6	◯ ●
		DCGX070204-PMN	0.40	6.35	2.38	2.8	7.4	● ●
		DCGX070208-PMN	0.80	6.35	2.38	2.8	7	◯ ●
		DCGX11T302-PMN	0.20	9.525	3.97	4.4	11.4	● ●
		DCGX11T304-PMN	0.40	9.525	3.97	4.4	11.2	● ●
		DCGX11T308-PMN	0.80	9.525	3.97	4.4	10.8	● ●
ROUGHING	PRU P K	DCMT11T304-PRU	0.40	9.525	3.97	4.4	11.2	⦿ ●
		DCMT11T308-PRU	0.80	9.525	3.97	4.4	10.8	◯ ●



1st choice all-around application

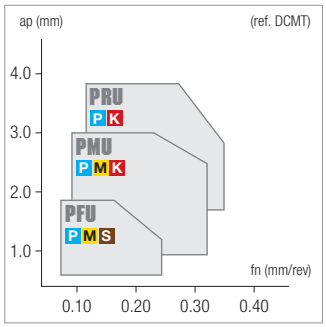


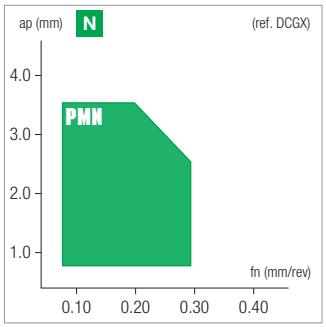
polished surface ground clearance



strong edge interrupted cut

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

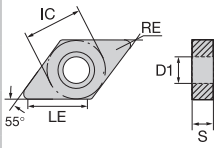
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HT PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	○	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱			✱	✱		✱				✱		✱

Dimensions



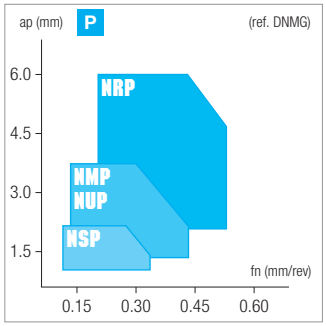
4 edges

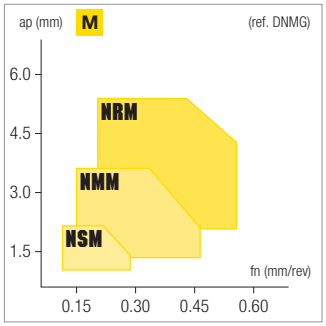
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

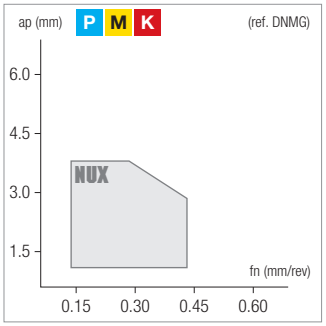
ISO	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015
P				**200 380**	**170 360**	**140 330**	**100 200**				**180 400**			**200 380**	
M								**100 200**	**80 180**		**100 220**	**60 160**	**50 130**		
K	**130 380**	**110 300**	**130 380**								**150 320**				
N															**200 1000**
S										**20 70**					
H															

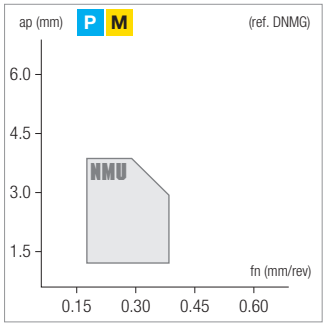
	Designation		RE	IC	S	D1	LE	Stock
FINISHING	NSP P	DNMG110404-NSP	0.40	9.525	4.76	3.81	11.2	⦿ ● ⦿
		DNMG110408-NSP	0.80	9.525	4.76	3.81	10.8	● ⦿ ⦿
		DNMG150604-NSP	0.40	12.7	6.35	5.16	15.1	● ● ○ ●
		DNMG150608-NSP	0.80	12.7	6.35	5.16	14.7	● ● ○ ○
FINISHING	NSM M	DNMG150604-NSM	0.40	12.7	6.35	5.16	15.1	● ●
		DNMG150608-NSM	0.80	12.7	6.35	5.16	14.7	● ●
MEDIUM	NUX P M K universal use wide grades range	DNMG150604-NUX	0.40	12.7	6.35	5.16	15.1	● ● ● ● ● ●
		DNMG150608-NUX	0.80	12.7	6.35	5.16	14.7	● ● ● ● ● ●
		DNMG150612-NUX	1.20	12.7	6.35	5.16	14.3	● ● ● ● ● ●
MEDIUM	NMU P M right-hand shown	DNMG150604L/R-NMU	0.40	12.7	6.35	5.16	15.1	● ●
		DNMG150608L/R-NMU	0.80	12.7	6.35	5.16	14.7	● ●
MEDIUM	NMP P	DNMG110404-NMP	0.40	9.525	4.76	3.81	11.2	○ ⦿
		DNMG110408-NMP	0.80	9.525	4.76	3.81	10.8	● ⦿ ●
		DNMG150604-NMP	0.40	12.7	6.35	5.16	15.1	● ●
		DNMG150608-NMP	0.80	12.7	6.35	5.16	14.7	● ●
		DNMG150612-NMP	1.20	12.7	6.35	5.16	14.3	● ●
		DNMG150616-NMP	1.60	12.7	6.35	5.16	13.9	⦿ ⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

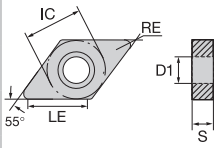
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HT PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	○	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲	✱	✲			✲	✱		✲				✱		✲

Dimensions



4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				**200 380**	**170 360**	**140 330**	**100 200**				**180 400**			**200 380**					
M								**100 200**	**80 180**		**100 220**	**60 160**	**50 130**						
K	**130 380**	**110 300**	**130 380**								150 320								
N															**200 1000**				
S										**20 70**									
H																			

	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	**NUP** P	**DNMG110404-NUP**	0.40	9.525	4.76	3.81	11.2	◉ ●
		DNMG110408-NUP	0.80	9.525	4.76	3.81	10.8	● ◉
		DNMG110412-NUP	1.20	9.525	4.76	3.81	10.4	◉ ◉
		DNMG150604-NUP	0.40	12.7	6.35	5.16	15.1	● ● ● ● ○
		DNMG150608-NUP	0.80	12.7	6.35	5.16	14.7	● ● ● ○ ● ○
		DNMG150612-NUP	1.20	12.7	6.35	5.16	14.3	● ● ◉ ○ ●
MEDIUM	**NMM** M	**DNMG110404-NMM**	0.40	9.525	4.76	3.81	11.2	● ◉
		DNMG110408-NMM	0.80	9.525	4.76	3.81	10.8	● ●
		DNMG150604-NMM	0.40	12.7	6.35	5.16	15.1	● ●
		DNMG150608-NMM	0.80	12.7	6.35	5.16	14.7	● ● ●
		DNMG150612-NMM	1.20	12.7	6.35	5.16	14.3	● ○
MEDIUM	**NMK** K	**DNMG150604-NMK**	0.40	12.7	6.35	5.16	15.1	● ◉
		DNMG150608-NMK	0.80	12.7	6.35	5.16	14.7	● ◉ ○
		DNMG150612-NMK	1.20	12.7	6.35	5.16	14.3	◉ ◉ ●
		DNMG150616-NMK	1.60	12.7	6.35	5.16	13.9	○
MEDIUM	**NUK** K	**DNMG150604-NUK**	0.40	12.7	6.35	5.16	15.1	●
		DNMG150608-NUK	0.80	12.7	6.35	5.16	14.7	●
		DNMG150612-NUK	1.20	12.7	6.35	5.16	14.3	●
MEDIUM	**NMN** N	**DNGG150604-NMN**	0.40	12.7	6.35	5.16	15.1	●
		DNGG150608-NMN	0.80	12.7	6.35	5.16	14.7	●

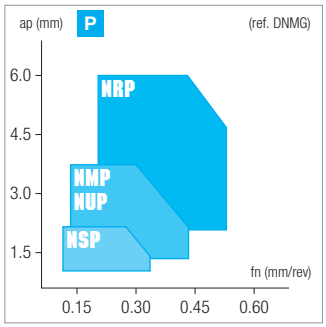


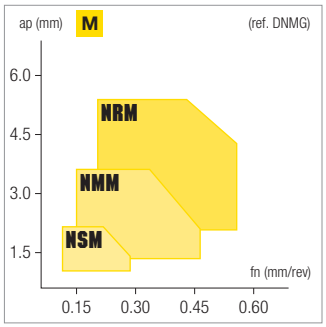
sharp edge
reduces burrs

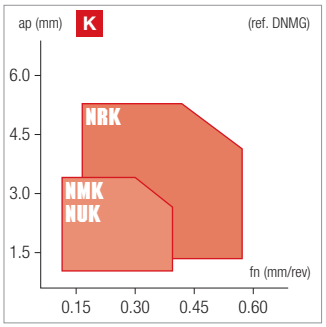


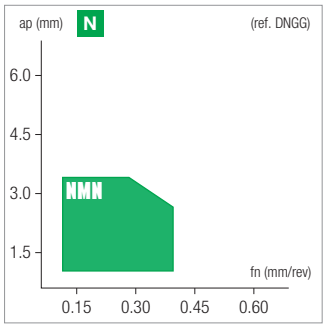
polished surface
ground clearance

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

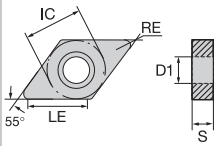
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HT PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	○	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱			✱	✱		✱				✱		✱

Dimensions



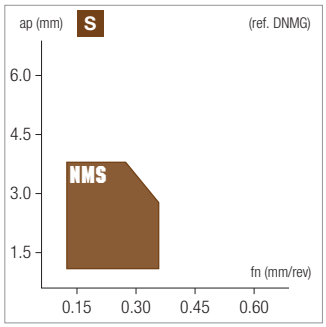
4 edges

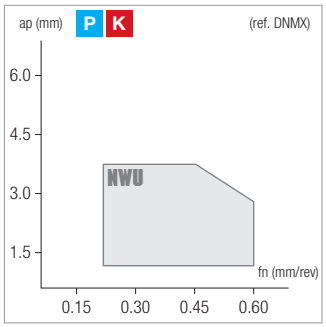
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

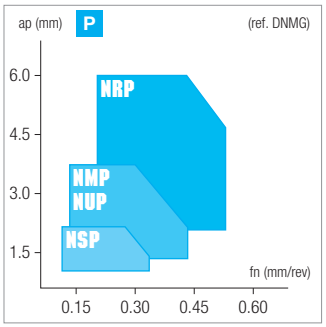
P				200 380	170 360	140 330	100 200				180 400			200 380						
M								100 200	80 180		100 220	60 160	50 130							
K	130 380	110 300	130 380								150 320									
N															200 1000					
S										20 70										
H																				

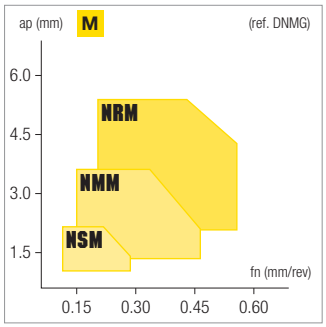
	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	NMS S	DNMG150608-NMS	0.80	12.7	6.35	5.16	14.7	●
		DNMG150612-NMS	1.20	12.7	6.35	5.16	14.3	●
MEDIUM	NWU P K	DNMX150608-NWU	0.80	12.7	6.35	5.16	14.7	● ○ ○
	 wiper universal type	DNMX150612-NWU	1.20	12.7	6.35	5.16	14.3	● ○
ROUGHING	NRP P	DNMG150608-NRP	0.80	12.7	6.35	5.16	14.7	⦿ ● ● ●
		DNMG150612-NRP	1.20	12.7	6.35	5.16	14.3	⦿ ● ● ⦿
		DNMG150616-NRP	1.60	12.7	6.35	5.16	13.9	● ⦿ ●
ROUGHING	NRM M	DNMG150608-NRM	0.80	12.7	6.35	5.16	14.7	● ●
		DNMG150612-NRM	1.20	12.7	6.35	5.16	14.3	● ●
ROUGHING	NRK K	DNMG150608-NRK	0.80	12.7	6.35	5.16	14.7	● ⦿ ●
		DNMG150612-NRK	1.20	12.7	6.35	5.16	14.3	● ⦿ ●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

DN

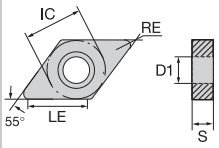
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HT PVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	○	●	●		●
Unstable machining, heavy cut	⬢ 1st choice ⬡ suitable	⬡	⬢	⬡			⬡	⬢		⬡				⬢		⬡

Dimensions



4 edges

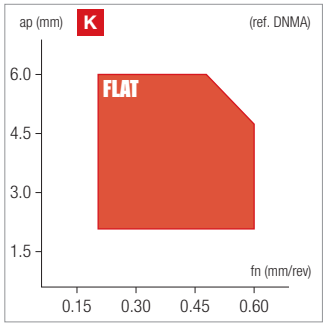
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

P				**200 380**	**170 360**	**140 330**	**100 200**				**180 400**			**200 380**					
M								**100 200**	**80 180**		**100 220**	**60 160**	**50 130**						
K	**130 380**	**110 300**	**130 380**								**150 320**								
N															**200 1000**				
S										**20 70**									
H																			

	Designation	RE	IC	S	D1	LE	Stock													
ROUGHING	**Flat top** K																			
	DNMA150608	0.80	12.7	6.35	5.16	14.7	●	⦿	○											
	DNMA150612	1.20	12.7	6.35	5.16	14.3	⦿	⦿	●											



★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

KN

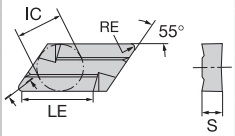
ISO - without hole

- Classic choice for copying from fine to rough turning
- Stable clamping with 55° point angle
- Positive on the secondary cutting edge side and over the nose radius, negative on the main cutting edge side, allows a larger in-copying angle
- Affords bulk strength and able to withstand heavy stresses

HC: Coated tungstein carbide
CVD: Chemical vapor deposition

		HC	CVD	JC8025
Stable machining, light cut	1st choice / suitable			○
General machining, medium cut	1st choice / suitable			●
Unstable machining, heavy cut	1st choice / suitable			⬡

Dimensions



2 edges

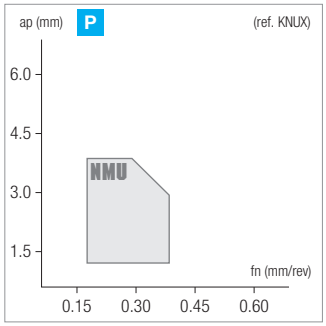
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**140** 330
M	
K	
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
MEDIUM	NMU P						
	KNUX160405L/R-NMU	0.50	9.525	4.76	-	16.1	●
	KNUX160410L/R-NMU	1.00	9.525	4.76	-	15.2	●



right-hand shown

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

MCC

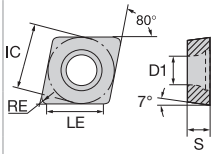
ISO - with hole

- 1st solution for micro-boring
- Precision ground insert with sharp geometry, tailored for microboring operation
- Micro boring bar with coolant both in steel (with Vortex technology) and in carbide
- Practical kits available (2 bars + 10 pcs inserts)

HF: Micrograin tungstein carbide
HT: Cermet
PVD: Physical vapor deposition

		HF PVD	HT
		JP5125	JU401S
Stable machining, light cut	● 1st choice ○ suitable	○	●
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable	●	

Dimensions



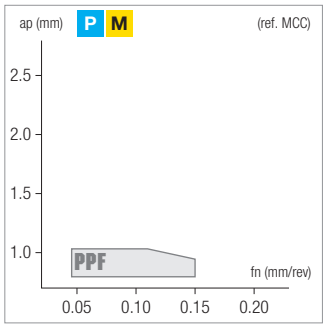
2 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	HF PVD	HT
P	**70** 180	**200** 380
M	**50** 140	
K	60 180	
N		
S	**20** 70	
H		

	Designation	RE	IC	S	D1	LE	Stock	
FINISHING	PPF P M	MCC.R02L-PPF	0.20	3.5	1.4	1.9	3.8	●	●
		MCC.R04L-PPF	0.40	3.5	1.4	1.9	3.8	●	◉
	ground chipbreaker left-hand shown								

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



HOLDER AND INSERT COUPLING

Insert L → Holder R

PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

MCN

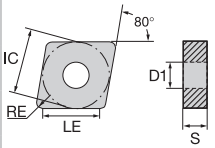
MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Pressed chip breaker optimizes chip control and emphasizes the economic advantage
- Precision ground chip breaker with stable seating in the pocket enables better surface finishing
- Special holders tailored with big clearance angle for boring application, effectively reduces the risk of chip-jamming

HF: Micrograin tungstein carbide
HT: Cermet
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD	HF PVD	HT
		JP5015	JP5025	JP5120	JP9030	JU4015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●		●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱		✱	

Dimensions

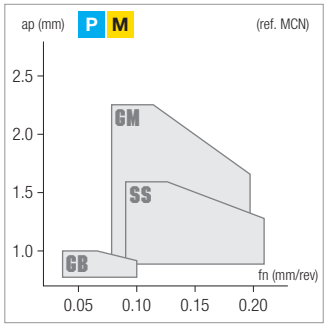


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)					
P	100 220	70 180	90 200		200 380	
M	70 160	50 140	60 150	50 130		
K		60 180	90 190			
N						
S	20 70		20 70			
H						

	Designation		RE	IC	S	D1	LE	Stock					
FINISHING	GB P M	MCN.R04G-GBL/R	0.40	7.5	3.18	3.6	7.2	▽					
	ground chipbreaker right-hand shown												
MEDIUM	GM P M	MCN.R04M-GM	0.40	7.5	3.18	3.6	7.2			⦿		⦿	
	1st choice chip control oriented	MCN.R08M-GM	0.80	7.5	3.18	3.6	6.8		▽				
MEDIUM	SS P M S	MCN.R04G-SS	0.40	7.5	3.18	3.6	7.2			⦿	▽	⦿	
	ground periphery polished surface												

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

MDN

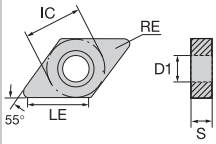
MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Pressed chip breaker optimizes chip control and emphasizes the economic advantage
- Precision ground chip breaker with stable seating in the pocket enables better surface finishing
- Special holders tailored with big clearance angle for boring application, effectively reduces the risk of chip-jamming

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
		JC8015	JP5015	JP5025	JP5120	JP9030	JU4015
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	●		●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable			✱		✱	

Dimensions

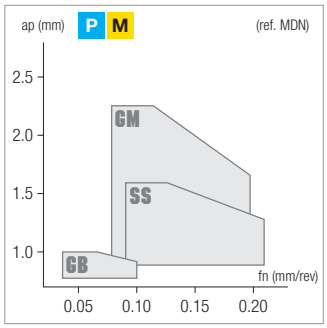


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																				
P	170 360	100 220	70 180	90 200		200 380															
M		70 160	50 140	60 150	50 130																
K			60 180	90 190																	
N																					
S		20 70		20 70																	
H																					

	Designation		RE	IC	S	D1	LE	Stock						
FINISHING	GB P M	MDN.R04G-GBL/R	0.40	7	3.18	3.6	8.1		▽					
	 ground chipbreaker right-hand shown													
MEDIUM	GM P M	MDN.R04M-GM	0.40	7	3.18	3.6	8.1	▽		▽	⦿		⦿	
	 1st choice chip control oriented	MDN.R08M-GM	0.80	7	3.18	3.6	7.7			▽				
MEDIUM	SS P M S	MDN.R04G-SS	0.40	7	3.18	3.6	8.1				⦿	▽	⦿	
	 ground periphery polished surface													

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

SC

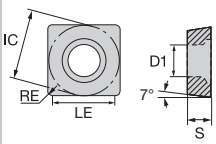
ISO - with hole

- Very strong 90° corner with excellent economy (4 edges on positive inserts)
- Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		JC7010	JC8015	JC8025	JC9010	JC9025	JP5120	JP5125	JP6010	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	●	○	●	○	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	●	●	●	○		●
Unstable machining, heavy cut	⯅ 1st choice ⯁ suitable	⯁		⯁		⯁		⯅			⯁

Dimensions

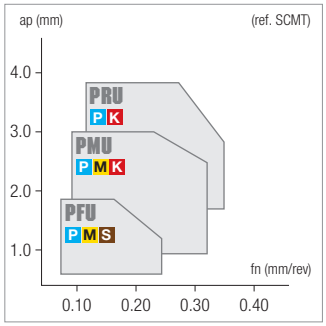


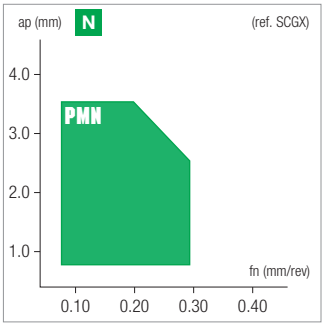
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)										
P		**170 360**	**140 330**			**90 200**	**70 180**		**200 380**		
M				**100 200**	**80 180**	**60 150**	**50 140**				
K	**130 380**					90 190	60 180				
N								**400 1400**		**200 1000**	
S						**20 70**	**20 70**				
H											

	Designation		RE	IC	S	D1	LE	Stock									
FINISHING	PFU P M S	SCMT09T304-PFU	0.40	9.525	3.97	4.4	9.1						●				
		SCMT09T308-PFU	0.80	9.525	3.97	4.4	8.7						●	○			
	sharp edge low cutting force																
MEDIUM	PMU P M K	SCMT09T304-PMU	0.40	9.525	3.97	4.4	9.1	⦿	●	●	○	●				○	
		SCMT09T308-PMU	0.80	9.525	3.97	4.4	8.7	●	⦿	●		●				○	
		SCMT120404-PMU	0.40	12.7	4.76	5.5	12.3		⦿	●							
		SCMT120408-PMU	0.80	12.7	4.76	5.5	11.9	●	●	●		●					
	1st choice all-around application																
MEDIUM	PMN N	SCGX09T304-PMN	0.40	9.525	3.97	4.4	9.1								○		●
		SCGX09T308-PMN	0.80	9.525	3.97	4.4	8.7								○		●
		SCGX120404-PMN	0.40	12.7	4.76	5.5	12.3								○		●
		SCGX120408-PMN	0.80	12.7	4.76	5.5	11.9								○		●
	polished surface ground clearance																
ROUGHING	PRU P K	SCMT09T308-PRU	0.80	9.525	3.97	4.4	8.7	●		⦿							
		SCMT120408-PRU	0.80	12.7	4.76	5.5	11.9	●		●							
	strong edge interrupted cut																

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

SN

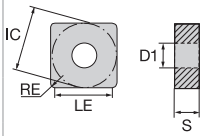
ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts)
- Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF
		JC7010	JC7020	JC7115	JC8015	JC8025	JC8035	JC9010	JC9025	JP9030	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○		●	○		●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	○	○	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲	✱	✲		✲	✱		✲	✱	✲

Dimensions

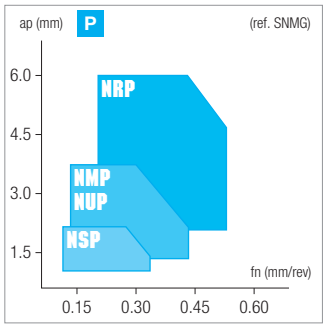


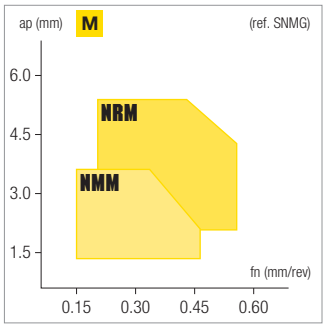
8 edges

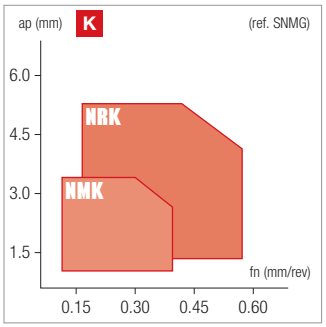
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				**170 360**	**140 330**	**100 200**													
M							**100 200**	**80 180**	**50 130**										
K	**130 380**	**110 300**	**130 380**																
N										**200 1000**									
S																			
H																			

	Designation		RE	IC	S	D1	LE	Stock											
FINISHING	NSP P	SNMG120408-NSP	0.80	12.7	4.76	5.16	11.9				●								
MEDIUM	NMP P	SNMG120404-NMP	0.40	12.7	4.76	5.16	12.3				⦿	●							
		SNMG120408-NMP	0.80	12.7	4.76	5.16	11.9				●	●							
		SNMG120412-NMP	1.20	12.7	4.76	5.16	11.5				⦿	⦿							
		SNMG120416-NMP	1.60	12.7	4.76	5.16	11.1				○	⦿							
MEDIUM	NUP P	SNMG120404-NUP	0.40	12.7	4.76	5.16	12.3				⦿	⦿							
		SNMG120408-NUP	0.80	12.7	4.76	5.16	11.9				⦿	●	○						
		SNMG120412-NUP	1.20	12.7	4.76	5.16	11.5				⦿	●	○						
		SNMG120416-NUP	1.60	12.7	4.76	5.16	11.1				○	⦿							
MEDIUM	NMM M	SNMG120404-NMM	0.40	12.7	4.76	5.16	12.3								●	⦿			
		SNMG120408-NMM	0.80	12.7	4.76	5.16	11.9								●	⦿			
		SNMG120412-NMM	1.20	12.7	4.76	5.16	11.5								⦿	⦿			
		SNMG120416-NMM	1.60	12.7	4.76	5.16	11.1								⦿	⦿			
		SNMG190612-NMM	1.20	19.05	6.35	7.94	17.9								⦿	⦿			
		SNMG190616-NMM	1.60	19.05	6.35	7.94	17.5								⦿	⦿			
MEDIUM	NMK K	SNMG120408-NMK	0.80	12.7	4.76	5.16	11.9	●	⦿	⦿									
		SNMG120412-NMK	1.20	12.7	4.76	5.16	11.5	⦿	⦿										

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

SN

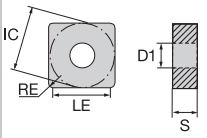
ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts)
- Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF
		JC7010	JC7020	JC7115	JC8015	JC8025	JC8035	JC9010	JC9025	JP9030	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○		●	○		●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	○	○	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱		✱	✱		✱	✱	✱

Dimensions

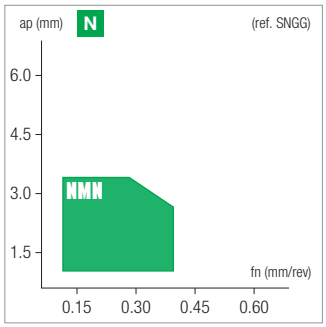


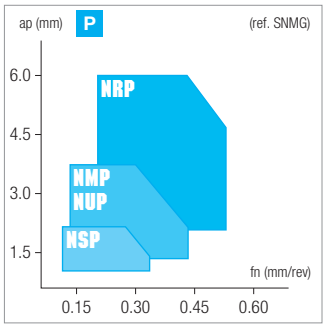
8 edges

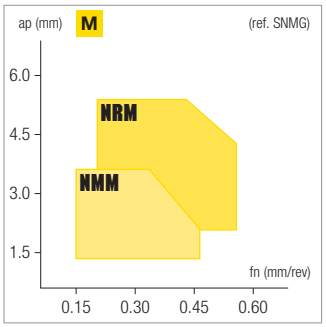
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				170 360	140 330	100 200													
M							100 200	80 180	50 130										
K	130 380	110 300	130 380																
N										200 1000									
S																			
H																			

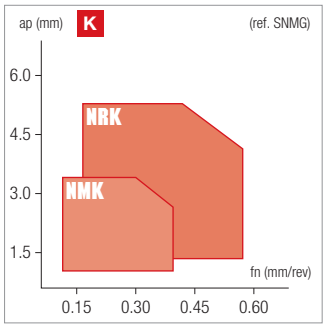
	Designation		RE	IC	S	D1	LE	Stock											
MEDIUM	NMN N	SNGG120404-NMN	0.40	12.7	4.76	5.16	12.3									○			
		SNGG120408-NMN	0.80	12.7	4.76	5.16	11.9									●			
		SNGG120412-NMN	1.20	12.7	4.76	5.16	11.5									▽			
	polished surface ground clearance																		
ROUGHING	NRP P	SNMG120408-NRP	0.80	12.7	4.76	5.16	11.9					●	◉						
		SNMG120412-NRP	1.20	12.7	4.76	5.16	11.5					◉	○						
		SNMG120416-NRP	1.60	12.7	4.76	5.16	11.1					◉	◉						
		SNMG190612-NRP	1.20	19.05	6.35	7.94	17.9					◉	○						
		SNMG190616-NRP	1.60	19.05	6.35	7.94	17.5					◉	◉						
		SNMG190624-NRP	2.40	19.05	6.35	7.94	16.7					◉	◉						
		SNMG250924-NRP	2.40	25.4	9.52	8.8	23					◉							
ROUGHING	NRM M	SNMG120408-NRM	0.80	12.7	4.76	5.16	11.9							○		●			
		SNMG120412-NRM	1.20	12.7	4.76	5.16	11.5							○		●			
		SNMG190612-NRM	1.20	19.05	6.35	7.94	17.9							○		●			
		SNMG190616-NRM	1.60	19.05	6.35	7.94	17.5							○		●			
ROUGHING	NRK K	SNMG120408-NRK	0.80	12.7	4.76	5.16	11.9	◉	◉	○									
		SNMG120412-NRK	1.20	12.7	4.76	5.16	11.5	◉	◉	○									
		SNMG120416-NRK	1.60	12.7	4.76	5.16	11.1	◉	●										
		SNMG150616-NRK	1.60	15.875	6.35	0	-			◉									
		SNMG190612-NRK	1.20	19.05	6.35	7.94	17.9	◉	◉										
		SNMG190616-NRK	1.60	19.05	6.35	7.94	17.5	◉	◉										

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SN

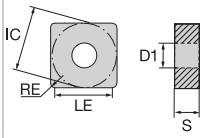
ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts)
- Mostly used for rough facing operations, especially on castings, forgings and roughsawed blanks
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF
		JC7010	JC7020	JC7115	JC8015	JC8025	JC8035	JC9010	JC9025	JP9030	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○		●	○		●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	○	○	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱		✱	✱		✱	✱	✱

Dimensions



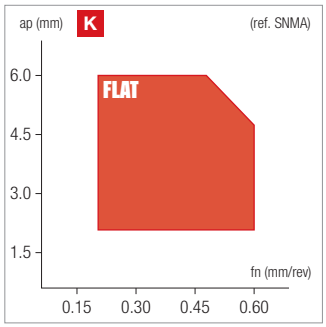
8 edges

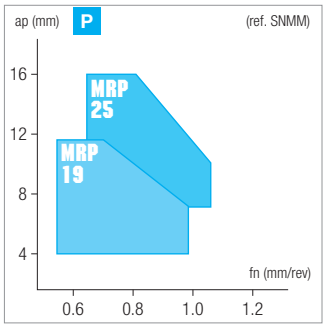
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO																			
P				170 360	140 330	100 200													
M							100 200	80 180	50 130										
K	130 380	110 300	130 380																
N										200 1000									
S																			
H																			

	Designation		RE	IC	S	D1	LE	Stock									
ROUGHING	Flat top K	SNMA090308	0.80	9.525	3.18	3.81	8.7	⦿									
		SNMA120408	0.80	12.7	4.76	5.16	11.9	●	⦿	○							
		SNMA120412	1.20	12.7	4.76	5.16	11.5	●	⦿	○							
		SNMA120416	1.60	12.7	4.76	5.16	11.1	⦿	⦿								
HEAVY	MRP P	SNMM190616-MRP	1.60	19.05	6.35	7.94	17.5					⦿	○				
		SNMM190624-MRP	2.40	19.05	6.35	7.94	16.7					⦿	⦿				
	single side 2 edges	SNMM250924-MRP	2.40	25.4	9.52	8.8	23					⦿	⦿				

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TB

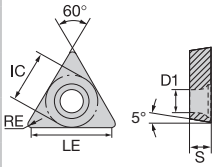
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling
- High surface quality due to very stable seating of the insert on the tool pocket
- Extra side clearance between the insert and the workpiece reduces risk of chip jamming

HF: Micrograin tungstein carbide
HT: Cermet
PVD: Physical vapor deposition

		HF PVD	HT
		JP5125	JU401S
Stable machining, light cut	● 1st choice ○ suitable	○	●
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	

Dimensions



3 edges

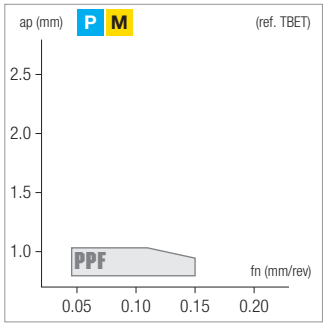
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																						
P	**70 180**	**200 380**																					
M	**50 140**																						
K	60 180																						
N																							
S	**20 70**																						
H																							

Designation		RE	IC	S	D1	LE	Stock	
FINISHING	PPF P M	TBET060102L/R-PPF	0.20	3.97	1.59	2.3	6.7	●	●
		TBET060104L/R-PPF	0.40	3.97	1.59	2.3	6.5	●	●



ground chipbreaker
right-hand shown

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TC

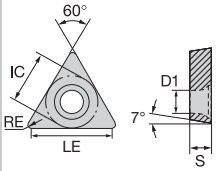
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- 80° C shape insert is recommended when a stronger edge is required

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC7115	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JP6010	JU4015	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	○	●	○	●	●	○	●	○	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	○	●	○	●	●	●	●	○		●
Unstable machining, heavy cut	⬌ 1st choice ⬌ suitable	⬌	⬌	⬌		⬌		⬌			⬌		⬌			⬌

Dimensions



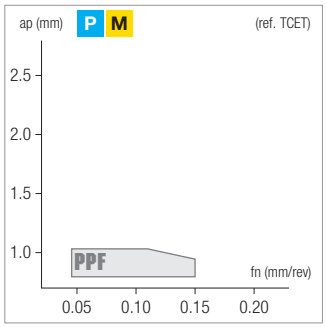
3 edges

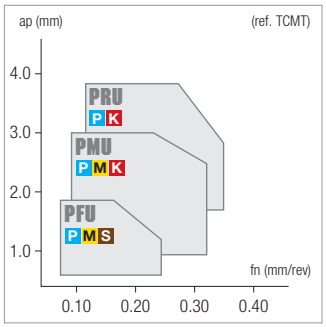
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

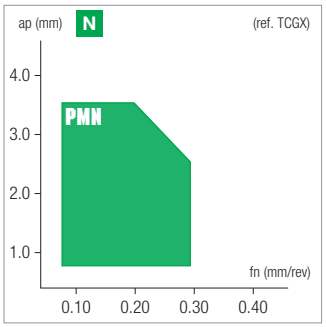
ISO																				
P				**170 360**	**140 330**			**180 400**	**100 220**	**70 180**	**90 200**	**70 180**		**200 380**						
M						**100 200**	**80 180**	**100 220**	**70 160**	**50 140**	**60 150**	**50 140**								
K	**130 380**	**110 300**	**130 380**					150 320		60 180	90 190	60 180								
N													**400 1400**		**200 1000**					
S									20 70		**20 70**	**20 70**								
H																				

	Designation		RE	IC	S	D1	LE	Stock
FINISHING	**PPF** P M	TCET110202L/R-PPF	0.20	6.35	2.38	2.8	10.5	⦿ ⦿
		TCET110204L/R-PPF	0.40	6.35	2.38	2.8	10.3	⦿ ⦿
	 **ground chipbreaker** right-hand shown							
FINISHING	**PFU** P M S	TCMT110202-PFU	0.20	6.35	2.38	2.8	10.5	⦿ ⦿ ● ● ● ▲ ●
		TCMT110204-PFU	0.40	6.35	2.38	2.8	10.3	● ● ● ● ● ● ⦿
		TCMT110208-PFU	0.80	6.35	2.38	2.8	9.9	●
		TCMT16T304-PFU	0.40	9.525	3.97	4.4	16.1	● ●
	 **sharp edge** low cutting force	TCMT16T308-PFU	0.80	9.525	3.97	4.4	15.7	● ●
MEDIUM	**PMU** P M K	TCMT090204-PMU	0.40	5.56	2.38	2.5	9	● ● ● ● ○
		TCMT110202-PMU	0.20	6.35	2.38	2.8	10.5	○ ● ⦿ ⦿ ▽ ⦿
		TCMT110204-PMU	0.40	6.35	2.38	2.8	10.3	● ● ⦿ ● ● ● ● ○
		TCMT110208-PMU	0.80	6.35	2.38	2.8	9.9	● ○ ● ● ● ● ⦿
		TCMT16T304-PMU	0.40	9.525	3.97	4.4	16.1	● ● ● ●
		TCMT16T308-PMU	0.80	9.525	3.97	4.4	15.7	● ⦿ ○ ● ● ● ● ● ⦿
	 **1st choice** all-around application	TCMT16T312-PMU	1.20	9.525	3.97	4.4	15.3	● ● ⦿
		TCMT220408-PMU	0.80	12.7	4.76	5.5	21.2	⦿ ●
MEDIUM	**PMN** N	TCGX090204-PMN	0.40	5.56	2.38	2.5	9	○ ●
		TCGX110202-PMN	0.20	6.35	2.38	2.8	10.5	○ ○
		TCGX110204-PMN	0.40	6.35	2.38	2.8	10.3	● ●
		TCGX110208-PMN	0.80	6.35	2.38	2.8	9.9	○ ●
		TCGX16T302-PMN	0.20	9.525	3.97	4.4	16.3	○ ●
		TCGX16T304-PMN	0.40	9.525	3.97	4.4	16.1	● ●
	 **polished surface** ground clearance	TCGX16T308-PMN	0.80	9.525	3.97	4.4	15.7	● ●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TC

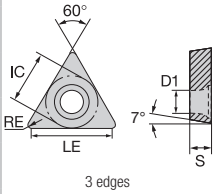
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- 80° C shape insert is recommended when a stronger edge is required

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7010	JC7020	JC7115	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JP6010	JU4015	JU6015
Stable machining, light cut (● 1st choice ○ suitable)	●	○	●	●	○	●	○	●	●	○	●	○	●	●	●
General machining, medium cut	●	○	●	●	●	○	●	○	●	●	●	●	○		●
Unstable machining, heavy cut	✱	✱	○		○		○			✱		✱			○

Dimensions



3 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

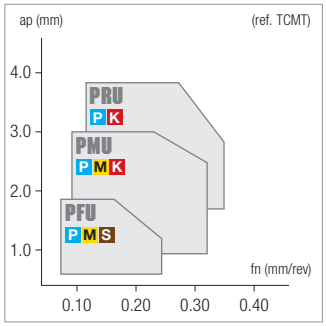
P				170 360	140 330			180 400	100 220	70 180	90 200	70 180		200 380	
M						100 200	80 180	100 220	70 160	50 140	60 150	50 140			
K	130 380	110 300	130 380					150 320		60 180	90 190	60 180			
N													400 1400		200 1000
S									20 70		20 70	20 70			
H															

	Designation	RE	IC	S	D1	LE	Stock
ROUGHING	PRU (P K) — TCMT16T304-PRU	0.40	9.525	3.97	4.4	16.1	○ ●
	TCMT16T308-PRU	0.80	9.525	3.97	4.4	15.7	● ●



strong edge
interrupted cut

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

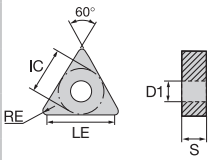
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD JC7010	HC CVD JC7020	HC CVD JC7115	HC CVD JC8005	HC CVD JC8015	HC CVD JC8025	HC CVD JC8035	HC CVD JC9010	HC CVD JC9025	HF PVD JP9015	HF PVD JP9030	HT JU4015	HF JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●		●
Unstable machining, heavy cut	⬛ 1st choice ⬜ suitable	⬜	⬛	⬜			⬜	⬛		⬜		⬛		⬜

Dimensions

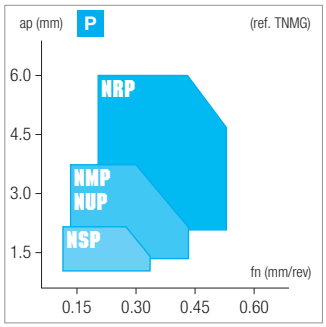


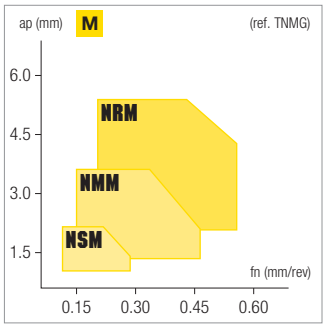
6 edges

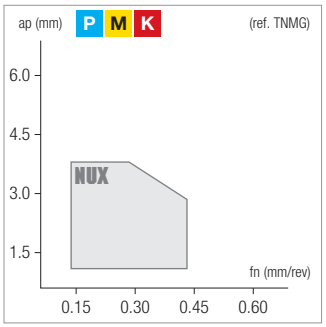
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				200 380	170 360	140 330	100 200					200 380							
M								100 200	80 180	60 160	50 130								
K	130 380	110 300	130 380																
N													200 1000						
S																			
H																			

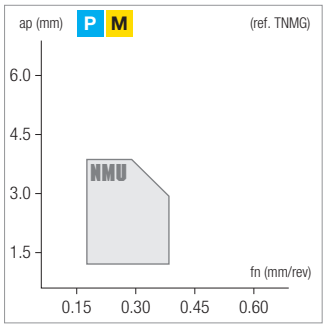
	Designation		RE	IC	S	D1	LE	Stock
FINISHING	NSP P	TNMG160404-NSP	0.40	9.525	4.76	3.81	16.1	⦿ ● ● ●
		TNMG160408-NSP	0.80	9.525	4.76	3.81	15.7	⦿ ● ● ⦿
FINISHING	NSM M	TNMG160404-NSM	0.40	9.525	4.76	3.81	16.1	● ○
		TNMG160408-NSM	0.80	9.525	4.76	3.81	15.7	▲ ○
MEDIUM	NUX P M K universal use wide grades range	TNMG160404-NUX	0.40	9.525	4.76	3.81	16.1	● ● ● ● ● ● ●
		TNMG160408-NUX	0.80	9.525	4.76	3.81	15.7	● ● ● ● ● ● ●
		TNMG160412-NUX	1.20	9.525	4.76	3.81	15.3	● ● ● ● ● ● ●
MEDIUM	NMU P M right-hand shown	TNMG160404L/R-NMU	0.40	9.525	4.76	3.81	16.1	⦿ ● ●
		TNMG160408L/R-NMU	0.80	9.525	4.76	3.81	15.7	○ ● ●
MEDIUM	NMP P	TNMG160404-NMP	0.40	9.525	4.76	3.81	16.1	● ●
		TNMG160408-NMP	0.80	9.525	4.76	3.81	15.7	● ● ▽
		TNMG160412-NMP	1.20	9.525	4.76	3.81	15.3	⦿ ⦿
		TNMG220404-NMP	0.40	12.7	4.76	0	-	⦿
		TNMG220408-NMP	0.80	12.7	4.76	5.16	21.2	⦿ ●
		TNMG220412-NMP	1.20	12.7	4.76	5.16	20.8	⦿ ●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66
CUTTING CONDITIONS p. A110
GRADES FEATURES p. A4
HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

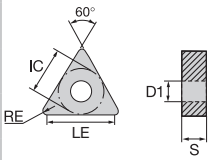
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱			✱	✱		✱		✱		✱

Dimensions



6 edges

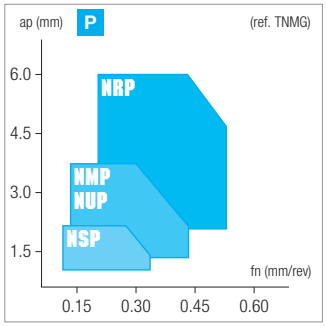
Vc(m/min) - suggested cutting speed range (bold: 1st choice)

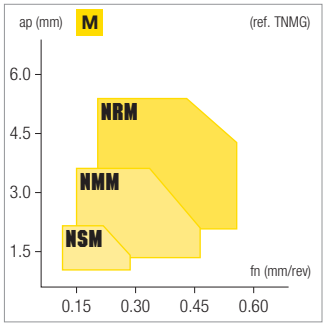
ISO															
P				**200 380**	**170 360**	**140 330**	**100 200**					**200 380**			
M								**100 200**	**80 180**	**60 160**	**50 130**				
K	**130 380**	**110 300**	**130 380**												
N													**200 1000**		
S															
H															

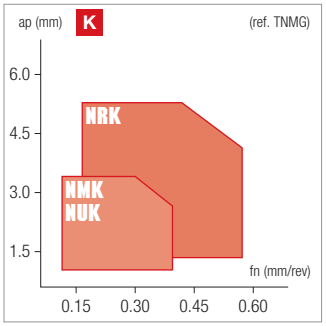
	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	**NUP** P	TNMG160404-NUP	0.40	9.525	4.76	3.81	16.1	⦿ ● ● ● ● ⦿
		TNMG160408-NUP	0.80	9.525	4.76	3.81	15.7	● ● ● ○ ● ⦿
		TNMG160412-NUP	1.20	9.525	4.76	3.81	15.3	● ⦿ ⦿ ○ ⦿
		TNMG220408-NUP	0.80	12.7	4.76	5.16	21.2	⦿ ⦿
		TNMG220412-NUP	1.20	12.7	4.76	5.16	20.8	⦿ ⦿
		TNMG220416-NUP	1.60	12.7	4.76	5.16	20.4	⦿ ⦿
MEDIUM	**NMM** M	TNMG160404-NMM	0.40	9.525	4.76	3.81	16.1	● ● ● ▽
		TNMG160408-NMM	0.80	9.525	4.76	3.81	15.7	● ● ● ▽
		TNMG160412-NMM	1.20	9.525	4.76	3.81	15.3	⦿ ○ ⦿
		TNMG220408-NMM	0.80	12.7	4.76	5.16	21.2	⦿ ⦿
		TNMG220412-NMM	1.20	12.7	4.76	5.16	20.8	○ ⦿
		TNMG220416-NMM	1.60	12.7	4.76	5.16	20.4	○ ●
MEDIUM	**NMK** K	TNMG160404-NMK	0.40	9.525	4.76	3.81	16.1	● ⦿
		TNMG160408-NMK	0.80	9.525	4.76	3.81	15.7	● ⦿
		TNMG160412-NMK	1.20	9.525	4.76	3.81	15.3	● ⦿
		TNMG160416-NMK	1.60	9.525	4.76	3.81	14.9	⦿ ⦿ ○
		TNMG220408-NMK	0.80	12.7	4.76	5.16	21.2	⦿ ⦿
		TNMG220412-NMK	1.20	12.7	4.76	5.16	20.8	● ⦿
		TNMG220416-NMK	1.60	12.7	4.76	5.16	20.4	⦿ ⦿
MEDIUM	**NUK** K	TNMG160404-NUK	0.40	9.525	4.76	3.81	16.1	●
		TNMG160408-NUK	0.80	9.525	4.76	3.81	15.7	●
		TNMG160412-NUK	1.20	9.525	4.76	3.81	15.3	●

sharp edge
reduces burrs

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

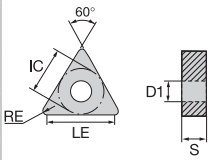
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD JC7010	HC CVD JC7020	HC CVD JC7115	HC CVD JC8005	HC CVD JC8015	HC CVD JC8025	HC CVD JC8035	HC CVD JC9010	HC CVD JC9025	HF PVD JP9015	HF PVD JP9030	HT JU4015	HF JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●		●
Unstable machining, heavy cut	⯅ 1st choice ⯁ suitable	⯁	⯅	⯁			⯁	⯅		⯁		⯅		⯁

Dimensions

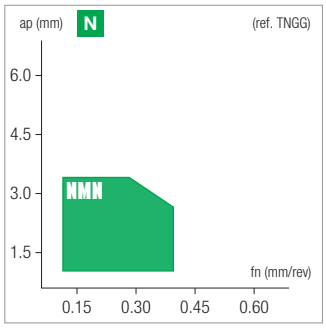


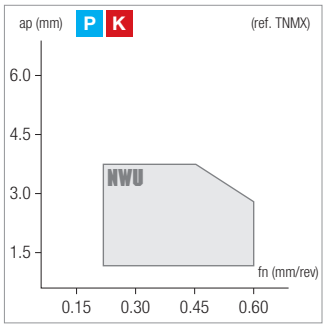
6 edges

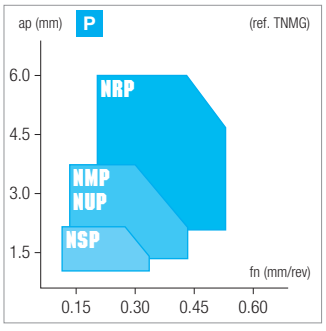
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P				200 380	170 360	140 330	100 200					200 380								
M								100 200	80 180	60 160	50 130									
K	130 380	110 300	130 380																	
N													200 1000							
S																				
H																				

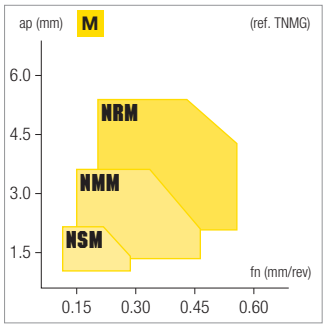
	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	NMN N	TNGG160404-NMN	0.40	9.525	4.76	3.81	16.1	●
		TNGG160408-NMN	0.80	9.525	4.76	3.81	15.7	●
		TNGG160412-NMN	1.20	9.525	4.76	3.81	15.3	▽
	polished surface ground clearance							
MEDIUM	NWU P K	TNMX160408-NWU	0.80	9.525	4.76	3.81	15.7	● ○
		TNMX160412-NWU	1.20	9.525	4.76	3.81	15.3	⦿ ○
	 wiper universal type							
ROUGHING	NRP P	TNMG160408-NRP	0.80	9.525	4.76	3.81	15.7	● ⦿
		TNMG160412-NRP	1.20	9.525	4.76	3.81	15.3	⦿ ○
		TNMG220412-NRP	1.20	12.7	4.76	5.16	20.8	⦿ ⦿
		TNMG220416-NRP	1.60	12.7	4.76	5.16	20.4	⦿ ○
ROUGHING	NRM M	TNMG160408-NRM	0.80	9.525	4.76	3.81	15.7	○ ●
		TNMG160412-NRM	1.20	9.525	4.76	3.81	15.3	○ ○
								
ROUGHING	NRK K	TNMG160408-NRK	0.80	9.525	4.76	3.81	15.7	● ⦿ ○
		TNMG160412-NRK	1.20	9.525	4.76	3.81	15.3	● ⦿ ○
		TNMG220408-NRK	0.80	12.7	4.76	5.16	21.2	⦿ ⦿
		TNMG220412-NRK	1.20	12.7	4.76	5.16	20.8	⦿ ⦿
		TNMG220416-NRK	1.60	12.7	4.76	5.16	20.4	⦿ ⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

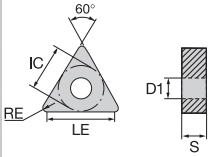
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●		●
Unstable machining, heavy cut	⬛ 1st choice ⬡ suitable	⬡	⬛	⬡			⬡	⬛		⬡		⬛		⬡

Dimensions

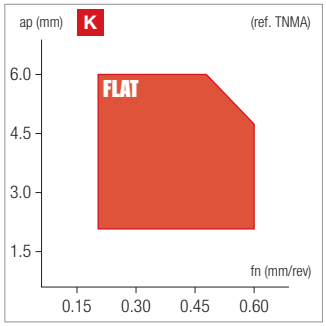


6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P				**200 380**	**170 360**	**140 330**	**100 200**					**200 380**								
M								**100 200**	**80 180**	**60 160**	**50 130**									
K	**130 380**	**110 300**	**130 380**																	
N													**200 1000**							
S																				
H																				

	Designation	RE	IC	S	D1	LE	Stock													
ROUGHING	**Flat top** K																			
	TNMA160404	0.80	9.525	4.76	3.81	16.1	⦿	⦿												
	TNMA160408	0.80	9.525	4.76	3.81	15.7	●	⦿	○											
	TNMA160412	1.20	9.525	4.76	3.81	15.3	●	⦿	○											
	TNMA160416	1.60	9.525	4.76	3.81	14.9	⦿	⦿												
	TNMA220408	0.80	12.7	4.76	5.16	21.2	●	⦿												
	TNMA220412	1.20	12.7	4.76	5.16	20.8	●	⦿												
	TNMA220416	1.60	12.7	4.76	5.16	20.4	⦿	⦿												

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TP

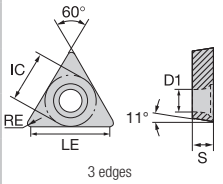
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduces the risk of chip jamming

HF: Micrograin tungstein carbide
HT: Cermet
PVD: Physical vapor deposition

		HF PVD	HT
		JP5125	JU401S
Stable machining, light cut	● 1st choice ○ suitable	○	●
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable	●	

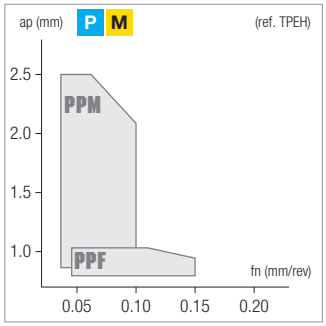
Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	70 180	200 380
M	50 140	
K	60 180	
N		
S	20 70	
H		

	Designation		RE	IC	S	D1	LE	Stock	
FINISHING	PPF P M	TPEH090202L/R-PPF	0.20	5.56	2.38	3	9.7	●	●
		TPEH090204L/R-PPF	0.40	5.56	2.38	3	9.5	●	●
		TPEH110302L/R-PPF	0.20	6.35	3.18	3.3	10.8	●	●
		TPEH110304L/R-PPF	0.40	6.35	3.18	3.3	10.6	●	●
	 ground chipbreaker right-hand shown								
MEDIUM	PPM P M	TPEH110304L/R-PPM	0.40	6.35	3.18	3.3	10.6	●	●
	 ground chipbreaker right-hand shown								

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VB

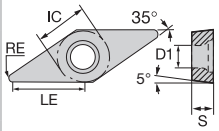
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailsock
- Positive style can be used for external and internal applications, in many cases can have improved performances

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
		JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JU4015
Stable machining, light cut	● 1st choice ◯ suitable	●	●	●	◯	●	◯	●	●	◯	●	◯	●
General machining, medium cut	● 1st choice ◯ suitable	●		●	●	◯	●	◯	●	●	●	●	
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲			✲		✲			✱		✱	

Dimensions

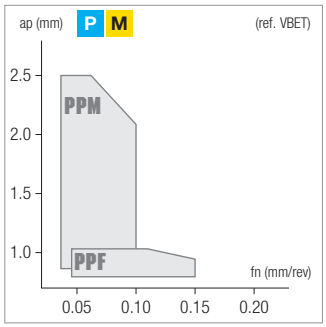


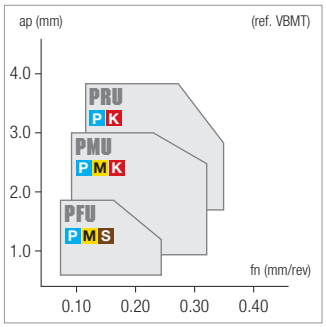
2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
P		**200 380**	**170 360**	**140 330**			**180 400**	**100 220**	**70 180**	**90 200**	**70 180**	**200 380**
M					**100 200**	**80 180**	**100 220**	**70 160**	**50 140**	**60 150**	**50 140**	
K	**130 380**						150 320		60 180	90 190	60 180	
N												
S								20 70		**20 70**	**20 70**	
H												

	Designation		RE	IC	S	D1	LE	Stock										
FINISHING	**PPF** P M	VBET110302L/R-PPF	0.20	6.35	3.18	2.8	10.9										⦿	⦿
		VBET110304L/R-PPF	0.40	6.35	3.18	2.8	10.7										⦿	⦿
	 **ground chipbreaker** right-hand shown																	
FINISHING	**PFU** P M S	VBMT110304-PFU	0.40	6.35	3.18	2.8	10.7						⦿	⦿		●	●	⦿
		VBMT160402-PFU	0.20	9.525	4.76	4.4	16.4									●	○	
		VBMT160404-PFU	0.40	9.525	4.76	4.4	16.2		●	●	●		●	●	●	●	●	●
		VBMT160408-PFU	0.80	9.525	4.76	4.4	15.8		●	●	●		●	○	⦿	●	▲	⦿
	 **sharp edge** low cutting force																	
MEDIUM	**PPM** P M	VBET110302L/R-PPM	0.20	6.35	3.18	2.8	10.9										○	⦿
		VBET110304L/R-PPM	0.40	6.35	3.18	2.8	10.7										⦿	⦿
	 **ground chipbreaker** right-hand shown																	
MEDIUM	**PMU** P M K	VBMT160404-PMU	0.40	9.525	4.76	4.4	16.2	●		●	●	●	●				●	●	⦿
		VBMT160408-PMU	0.80	9.525	4.76	4.4	15.8	●		●	●		●				●	●	⦿
	 **1st choice** all-around application																	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

VB

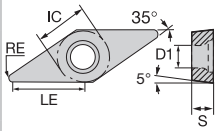
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Positive style can be used for external and internal applications, in many cases can have improved performances

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JU4015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
Stable machining, light cut	● 1st choice ◯ suitable	●	●	●	◯	●	◯	●	●	◯	●	◯	●
General machining, medium cut	● 1st choice ◯ suitable	●		●	●	◯	●	◯	●	●	●	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱			✱		✱			✱		✱	

Dimensions



2 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

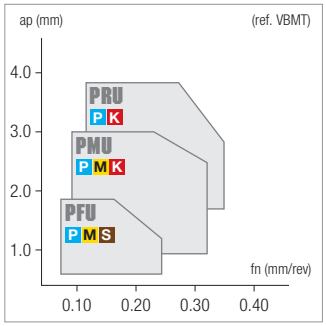
ISO	JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JU4015
P		**200** 380	**170** 360	**140** 330			**180** 400	**100** 220	**70** 180	**90** 200	**70** 180	**200** 380
M					**100** 200	**80** 180	**100** 220	**70** 160	**50** 140	**60** 150	**50** 140	
K	**130** 380						150 320		60 180	90 190	60 180	
N												
S								20 70		**20** 70	**20** 70	
H												

	Designation		RE	IC	S	D1	LE	Stock
ROUGHING	PRU P K	VBMT160408-PRU	0.80	9.525	4.76	4.4	15.8	○ ●



strong edge
interrupted cut

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VC

ISO - with hole

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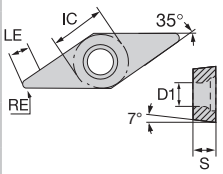
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Positive style can be used for external and internal applications, in many cases can have improved performances

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF	HF
		JC7010	JC8015	JC8025	JC9025	JP5125	JP6010	JU4015	JU6010	JU6015
Stable machining, light cut	● 1st choice ◯ suitable	●	●	◯	◯	◯	●	●		●
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	●	●	◯			●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲		✲	✲	✱				✲

Dimensions

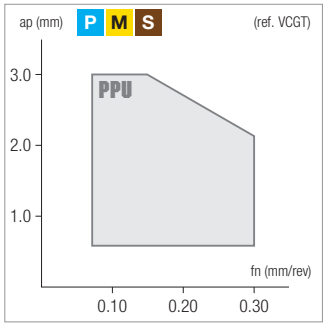


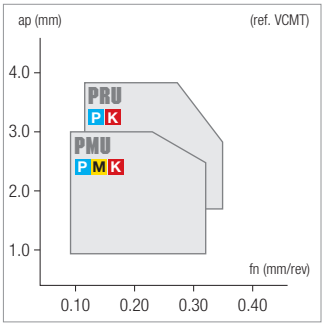
2 edges

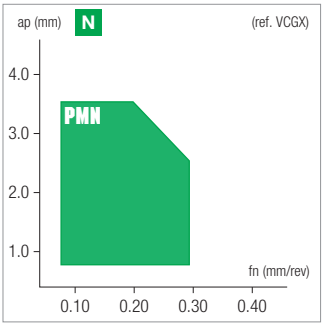
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P		**170 360**	**140 330**		**70 180**		**200 380**													
M				**80 180**	**50 140**															
K	**130 380**				60 180															
N						**400 1400**		**200**	**200 1000**											
S					**20 70**															
H																				

	Designation		RE	IC	S	D1	LE	Stock								
MEDIUM	**PPU** P M S	VCGT110302-PPU	0.20	6.35	3.18	2.8	10.9					●				
		VCGT110304-PPU	0.40	6.35	3.18	2.8	10.7					●				
		VCGT160402-PPU	0.20	9.525	4.76	4.4	16.4					●				
		VCGT160404-PPU	0.40	9.525	4.76	4.4	16.2					●				
	ground clearance 3D chipbreaker	VCGT160408-PPU	0.80	9.525	4.76	4.4	15.8					●				
MEDIUM	**PMU** P M K	VCMT110304-PMU	0.40	6.35	3.18	2.8	10.7	⦿	●	●	●			●		
		VCMT110308-PMU	0.80	6.35	3.18	2.8	10.3				⦿					
		VCMT160404-PMU	0.40	9.525	4.76	4.4	16.2	●	●	●	●	●		○		
	1st choice all-around application	VCMT160408-PMU	0.80	9.525	4.76	4.4	15.8	●	●	●	●	●		●		
MEDIUM	**PMN** N	VCGX110302-PMN	0.20	6.35	3.18	2.8	10.9						○			●
		VCGX110304-PMN	0.40	6.35	3.18	2.8	-						●			●
		VCGX110308-PMN	0.80	6.35	3.18	2.8	10.3						○			●
		VCGX160402-PMN	0.20	9.525	4.76	4.4	16.4						○			●
		VCGX160404-PMN	0.40	9525	4.76	0	-						●			●
	polished surface ground clearance	VCGX160408-PMN	0.80	9525	4.76	0	-						●			●
		VCGX160412-PMN	1.20	9.525	4.76	4.4	15.4						○			○
		VCGX220512-PMN	1.20	12.7	5.56	5.5	20.9						○			○
		VCGX220516-PMN	1.60	12.7	5.56	5.5	20.5						○		▽	○
		VCGX220530-PMN	3.00	12.7	5.56	5.5	-						○			●
ROUGHING	**PRU** P K	VCMT160404-PRU	0.40	9.525	4.76	4.4	16.2	⦿		○						
		VCMT160408-PRU	0.80	9.525	4.76	4.4	15.8	●		●						
	strong edge interrupted cut															

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VN

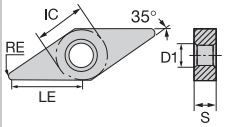
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Lighter ap and fn are recommended for this shape
- Double sided style should mainly be used for external applications

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ⛶ suitable	⛶	✱	⛶			⛶	⛶		✱		⛶

Dimensions



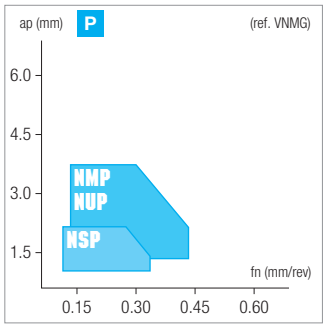
4 edges

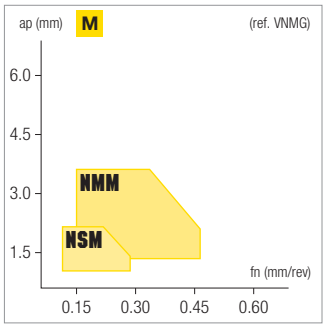
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015
P				**200** 380	**170** 360	**140** 330				**200** 380	
M							**80** 180	**60** 160	**50** 130		
K	**130** 380	**110** 300	**130** 380								
N											**200** 1000
S											
H											

	Designation		RE	IC	S	D1	LE	Stock
FINISHING	NSP P	VNMG160404-NSP	0.40	9.525	4.76	3.81	16.2	● ● ● ⦿
		VNMG160408-NSP	0.80	9.525	4.76	3.81	15.8	● ● ⦿ ⦿
FINISHING	NSM M	VNMG160404-NSM	0.40	9.525	4.76	3.81	16.2	● ●
		VNMG160408-NSM	0.80	9.525	4.76	3.81	15.8	● ●
MEDIUM	NMP P	VNMG160404-NMP	0.40	9.525	4.76	3.81	16.2	● ● ▽
		VNMG160408-NMP	0.80	9.525	4.76	3.81	15.8	● ● ▽
		VNMG160412-NMP	1.20	9.525	4.76	3.81	15.4	⦿ ●
MEDIUM	NUP P	VNMG160404-NUP	0.40	9.525	4.76	3.81	16.2	⦿ ⦿ ⦿
		VNMG160408-NUP	0.80	9.525	4.76	3.81	15.8	⦿ ⦿ ⦿
		VNMG160412-NUP	1.20	9.525	4.76	3.81	15.4	⦿ ⦿
MEDIUM	NMM M	VNMG160404-NMM	0.40	9.525	4.76	3.81	16.2	● ⦿ ▽
		VNMG160408-NMM	0.80	9.525	4.76	3.81	15.8	⦿ ⦿ ▽

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VN

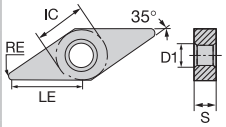
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Lighter ap and fn are recommended for this shape
- Double sided style should mainly be used for external applications

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○	○	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ⇳ suitable	⇳	✱	⇳			⇳	⇳		✱		⇳

Dimensions

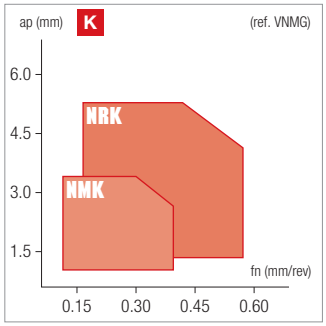


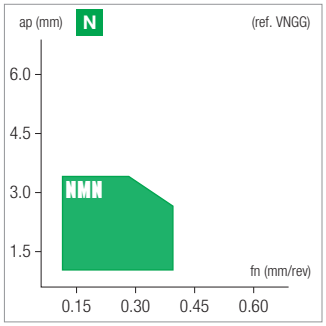
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
P				**200** **380**	**170** **360**	**140** **330**				**200** **380**		
M							**80** **180**	**60** **160**	**50** **130**			
K	**130** **380**	**110** **300**	**130** **380**									
N											**200** **1000**	
S												
H												

	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	**NMK** K	**VNMG160404-NMK**	0.40	9.525	4.76	3.81	16.2	⦿ ⦿
		VNMG160408-NMK	0.80	9.525	4.76	3.81	15.8	● ⦿
		VNMG160412-NMK	1.20	9.525	4.76	3.81	15.4	⦿ ⦿
MEDIUM	**NUK** K	**VNMG160404-NUK**	0.40	9.525	4.76	3.81	16.2	○
	sharp edge reduces burrs	**VNMG160408-NUK**	0.80	9.525	4.76	3.81	15.8	○
		VNMG160412-NUK	1.20	9.525	4.76	3.81	15.4	○
MEDIUM	**NMN** N	**VNGG160404-NMN**	0.40	9.525	4.76	3.81	16.2	○
	polished surface ground clearance	**VNGG160408-NMN**	0.80	9.525	4.76	3.81	15.8	○
ROUGHING	**NRK** K	**VNMG160408-NRK**	0.80	9.525	4.76	3.81	15.8	⦿ ⦿
		VNMG160412-NRK	1.20	9.525	4.76	3.81	15.4	⦿ ⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WB

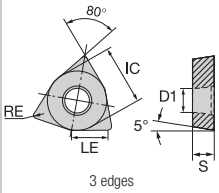
ISO - with hole

- 3-corner 80° diamond shape that can increase economy compared to C-shape inserts
- Generally used on more moderate depths of cut and feedrates than C-shape inserts
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungstein carbide
HT: Cermet
PVD: Physical vapor deposition

		HF PVD	HT
		JP5125	JU4015
Stable machining, light cut	● 1st choice ○ suitable	○	●
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable	●	

Dimensions



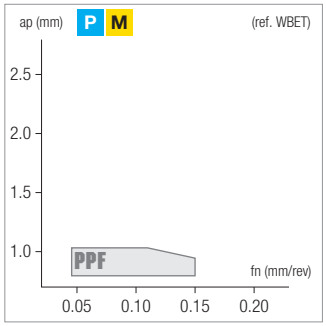
3 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	70 180	200 380
M	50 140	
K	60 180	
N		
S	20 70	
H		

	Designation	RE	IC	S	D1	LE	Stock	
FINISHING	PPF P M WBET060102L/R-PPF	0.20	3.97	1.59	2.3	2.3	●	⦿
	WBET060104L/R-PPF	0.40	3.97	1.59	2.3	2.1	⦿	⦿


ground chipbreaker
right-hand shown

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WC

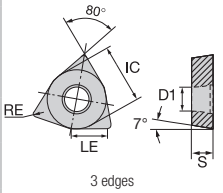
ISO - with hole

- 3-corner 80° diamond shape that can increase economy compared to C-shape inserts
- Generally used on more moderate depths of cut and feedrates than C-shape inserts
- Lighter ap is recommended compared to C shape inserts

HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition

		JC7010	JC8015	JC8025	JC9025	JU4015
		HC CVD	HC CVD	HC CVD	HC CVD	HT
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	○	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●	
Unstable machining, heavy cut	● 1st choice ○ suitable	⇔		⇔	⇔	

Dimensions



3 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

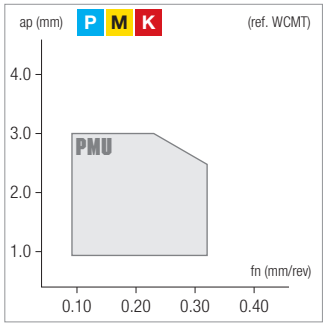
ISO	JC7010	JC8015	JC8025	JC9025	JU4015
P		170 360	140 330		200 380
M				80 180	
K	130 380				
N					
S					
H					

Designation		RE	IC	S	D1	LE	Stock
MEDIUM — PMU P M K	WCMT12T304-PMU	0.40	9.525	3.97	4.4	6.1	⦿ ⦿ ⦿ ⦿ ⦿
	WCMT12T308-PMU	0.80	9.525	3.97	4.4	5.7	⦿ ⦿ ⦿ ⦿ ⦿



1st choice
all-around application

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WN

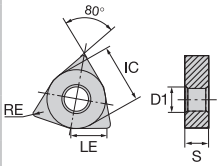
ISO - with hole

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	⬌ 1st choice ⬌ suitable	⬌	⬌	⬌			⬌	⬌		⬌			⬌		⬌

Dimensions

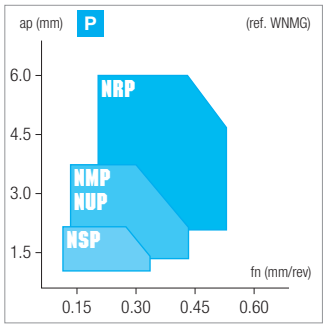


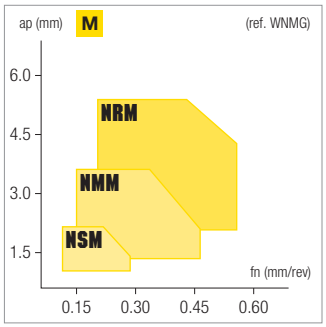
6 edges

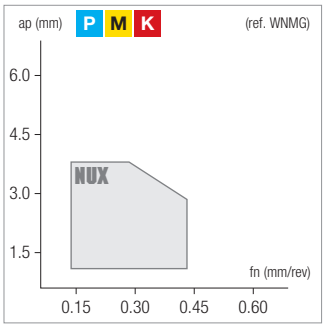
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				**200 380**	**170 360**	**140 330**	**100 200**						**200 380**						
M								**100 200**	**80 180**		**60 160**	**50 130**							
K	**130 380**	**110 300**	**130 380**																
N														**200 1000**					
S										**20 70**									
H																			

	Designation		RE	IC	S	D1	LE	Stock
FINISHING	**NSP** P	**WNMG060404-NSP**	0.40	9.525	4.76	3.81	6.1	● ⦿
		WNMG060408-NSP	0.80	9.525	4.76	3.81	5.7	⦿ ⦿ ⦿
		WNMG080404-NSP	0.40	12.7	4.76	5.16	8.3	● ⦿ ● ⦿
		WNMG080408-NSP	0.80	12.7	4.76	5.16	7.9	● ● ● ⦿
FINISHING	**NSM** M	**WNMG080404-NSM**	0.40	12.7	4.76	5.16	8.3	● ●
		WNMG080408-NSM	0.80	12.7	4.76	5.16	7.9	● ●
MEDIUM	**NUX** P M K	**WNMG080404-NUX**	0.40	12.7	4.76	5.16	8.3	● ● ● ● ● ● ●
		WNMG080408-NUX	0.80	12.7	4.76	5.16	7.9	● ● ● ● ● ● ●
		WNMG080412-NUX	1.20	12.7	4.76	5.16	7.5	● ● ● ● ● ● ●
	universal use wide grades range							
MEDIUM	**NMP** P	**WNMG060404-NMP**	0.40	9.525	4.76	3.81	6.1	⦿ ●
		WNMG060408-NMP	0.80	9.525	4.76	3.81	5.7	● ●
		WNMG080404-NMP	0.40	12.7	4.76	5.16	8.3	⦿ ● ▽
		WNMG080408-NMP	0.80	12.7	4.76	5.16	7.9	● ● ▽
		WNMG080412-NMP	1.20	12.7	4.76	5.16	7.5	● ●
		WNMG080416-NMP	1.60	12.7	4.76	5.16	7.1	⦿ ⦿
MEDIUM	**NUP** P	**WNMG060404-NUP**	0.40	9.525	4.76	3.81	6.1	⦿ ● ⦿
		WNMG060408-NUP	0.80	9.525	4.76	3.81	5.7	⦿ ● ● ⦿
		WNMG080404-NUP	0.40	12.7	4.76	5.16	8.3	● ● ● ● ⦿
		WNMG080408-NUP	0.80	12.7	4.76	5.16	7.9	● ● ● ○ ● ○
		WNMG080412-NUP	1.20	12.7	4.76	5.16	7.5	● ● ● ○ ⦿
		WNMG080416-NUP	1.60	12.7	4.76	5.16	7.1	⦿ ⦿ ⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WN

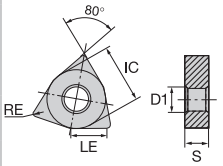
ISO - with hole

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	● 1st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ⇳ suitable	⇳	✱	⇳			⇳	✱		⇳			✱		⇳

Dimensions



6 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

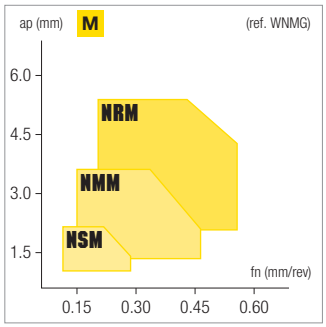
ISO	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
P				**200** 380	**170** 360	**140** 330	**100** 200						**200** 380	
M								**100** 200	**80** 180		**60** 160	**50** 130		
K	**130** 380	**110** 300	**130** 380											
N														**200** 1000
S										**20** 70				
H														

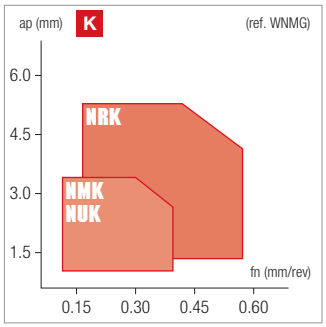
Designation		RE	IC	S	D1	LE	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
MEDIUM	**NMM** M																			
	WNMG060404-NMM	0.40	9.525	4.76	3.81	6.1								○	●			⦿		
	WNMG060408-NMM	0.80	9.525	4.76	3.81	5.7								○	●		⦿	●		
	WNMG060412-NMM	1.20	9.525	4.76	3.81	5.3									⦿			⦿		
	WNMG080404-NMM	0.40	12.7	4.76	5.16	8.3								●	●			●	▽	
	WNMG080408-NMM	0.80	12.7	4.76	5.16	7.9								●	●			●	▽	
	WNMG080412-NMM	1.20	12.7	4.76	5.16	7.5								⦿	●		○	●		
MEDIUM	**NMK** K																			
	WNMG080404-NMK	0.40	12.7	4.76	5.16	8.3	●	⦿												
	WNMG080408-NMK	0.80	12.7	4.76	5.16	7.9	●	⦿												
	WNMG080412-NMK	1.20	12.7	4.76	5.16	7.5	●	⦿												
MEDIUM	**NUK** K																			
	WNMG080404-NUK	0.40	12.7	4.76	5.16	8.3			●											
	WNMG080408-NUK	0.80	12.7	4.76	5.16	7.9			●											
	WNMG080412-NUK	1.20	12.7	4.76	5.16	7.5			●											
MEDIUM	**NMN** N																			
	WNGG060404-NMN	0.40	9.525	4.76	3.81	6.1														●
	WNGG060408-NMN	0.80	9.525	4.76	3.81	5.7														○
	WNGG080404-NMN	0.40	12.7	4.76	5.16	8.3														●
	WNGG080408-NMN	0.80	12.7	4.76	5.16	7.9														●
MEDIUM	**NMS** S																			
	WNMG080408-NMS	0.80	12.7	4.76	5.16	7.9										●				
	WNMG080412-NMS	1.20	12.7	4.76	5.16	7.5										●				

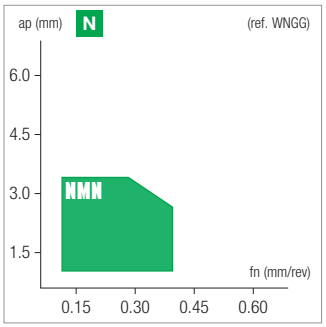
sharp edge reduces burrs

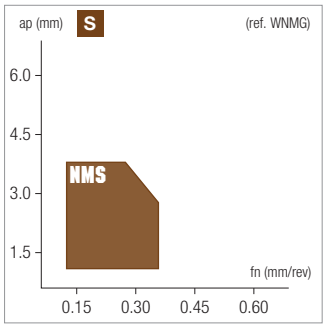
polished surface ground clearance

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WN

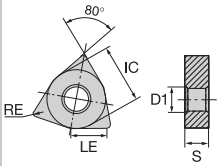
ISO - with hole

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
Stable machining, light cut	● 1st choice ◯ suitable	●	◯	●	●	●	◯		●	◯	●	●		●	●
General machining, medium cut	● 1st choice ◯ suitable	●	◯	●		●	●	◯	◯	●	●	●	●		●
Unstable machining, heavy cut	⬌ 1st choice ⬍ suitable	⬍	⬌	⬍			⬍	⬌		⬍			⬌		⬍

Dimensions

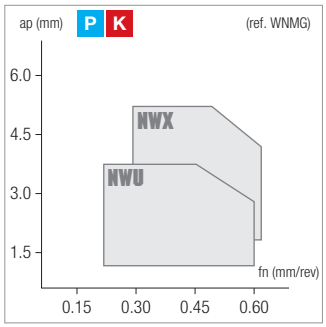


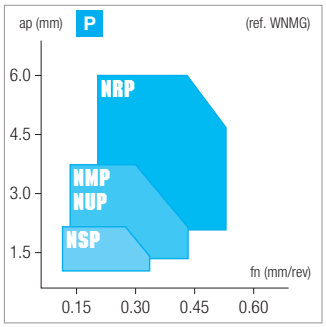
6 edges

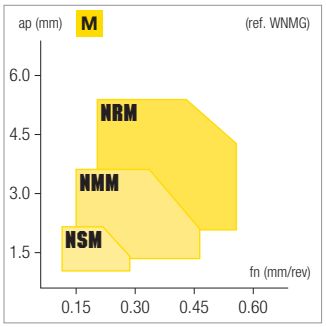
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P				200 380	170 360	140 330	100 200						200 380						
M								100 200	80 180		60 160	50 130							
K	130 380	110 300	130 380																
N														200 1000					
S										20 70									
H																			

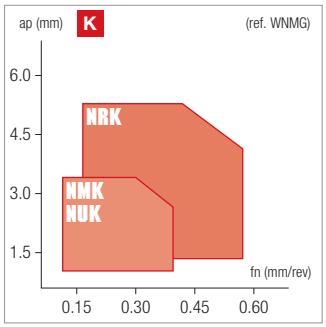
	Designation		RE	IC	S	D1	LE	Stock
MEDIUM	NWU P K	WNMG080408-NWU	0.80	12.7	4.76	5.16	7.9	● ○ ○ ⦿
		WNMG080412-NWU	1.20	12.7	4.76	5.16	7.5	⦿ ⦿
	wiper universal type							
MEDIUM	NWX P K	WNMG080408-NWX	0.80	12.7	4.76	5.16	7.9	○ ● ⦿
		WNMG080412-NWX	1.20	12.7	4.76	5.16	7.5	⦿
	wiper reinforced edge							
ROUGHING	NRP P	WNMG080408-NRP	0.80	12.7	4.76	5.16	7.9	● ● ● ●
		WNMG080412-NRP	1.20	12.7	4.76	5.16	7.5	● ● ● ●
		WNMG080416-NRP	1.60	12.7	4.76	5.16	7.1	⦿ ⦿ ●
ROUGHING	NRM M	WNMG080408-NRM	0.80	12.7	4.76	5.16	7.9	● ● ●
		WNMG080412-NRM	1.20	12.7	4.76	5.16	7.5	● ● ●
ROUGHING	NRK K	WNMG060408-NRK	0.80	9.525	4.76	3.81	5.7	● ●
		WNMG080408-NRK	0.80	12.7	4.76	5.16	7.9	● ● ●
		WNMG080412-NRK	1.20	12.7	4.76	5.16	7.5	● ● ●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WN

ISO - with hole

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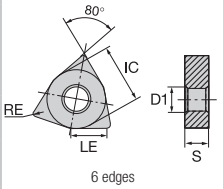
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
Stable machining, light cut (● 1st choice ○ suitable)	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut (● 1st choice ○ suitable)	●	○	●		●	●	○	○	●	●	●	●		●
Unstable machining, heavy cut (● 1st choice ⇔ suitable)	⇔	●	⇔			⇔	●		⇔			●		⇔

Dimensions



6 edges

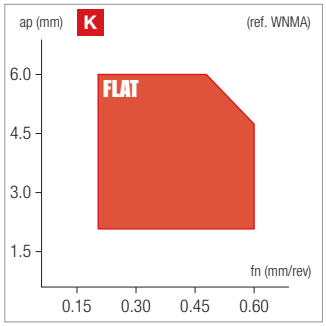
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO														
P				200 380	170 360	140 330	100 200						200 380	
M								100 200	80 180		60 160	50 130		
K	130 380	110 300	130 380											
N														200 1000
S										20 70				
H														

Designation		RE	IC	S	D1	LE	Stock												
ROUGHING — Flat top K	WNMA080408	0.80	12.7	4.76	5.16	7.9	●	⦿	○										
	WNMA080412	1.20	12.7	4.76	5.16	7.5	●	⦿	○										
	WNMA080416	1.60	12.7	4.76	5.16	7.1	⦿	⦿	⦿										



★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66 | CUTTING CONDITIONS p. A110 | GRADES FEATURES p. A4 | HOLDERS p. A255

PRODUCT SELECTION p. **A**66 | CUTTING CONDITIONS p. **A**110 | GRADES FEATURES p. **A**4 | HOLDERS p. **A**255

TURNING Parameters - cutting speed - CARBIDE

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	JC8005 min	JC8005 start	JC8005 max	JC8015 min	JC8015 start	JC8015 max	JC8025 min	JC8025 start	JC8025 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	200	**290**	380	180	**270**	360	170	**250**	330
			170	**245**	320	160	**225**	290			
						140	**195**	250			
P3 - P4	Medium and high alloy steel (ex. 1.7225/42CrMo4, 1.3505/100Cr6)	200 ÷ 300	180	**260**	340	160	**240**	320	150	**220**	290
			150	**225**	300	140	**205**	270			
						130	**190**	250			
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X40CrMoV5-1/ORVAR, Hardox400®)	300 ÷ 400	160	**240**	320	140	**220**	300	140	**205**	270
			130	**205**	280	130	**190**	250			
						120	**170**	220			

ISO 513	MATERIAL	HARDNESS HB	JC9010 min	JC9010 start	JC9010 max	JC9025 min	JC9025 start	JC9025 max	JP4020 min	JP4020 start	JP4020 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X20Cr13/AISI420)	≤ 200	140	**200**	260	120	**180**	240	140	**210**	280
			120	**180**	240	110	**165**	220	120	**190**	260
						100	**150**	200			
P8	Precipitation hardening stainless steel (ex. 1.4548/X5CrNiCuNb17-4/17-4-PH)	≤ 450	100	**130**	160	80	**110**	140	100	**140**	180
			90	**120**	150	70	**100**	130	90	**125**	160
						60	**90**	120			
M1	Austenitic stainless steel (ex. 1.4305/X10CrNiS18-9/AISI303)	> 200	120	**160**	200	100	**90**	180	120	**170**	220
			100	**140**	180	90	**130**	170	100	**150**	200
						80	**120**	160			
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X5CrNiMo17-12-2/AISI316)		100	**140**	180	80	**120**	160	100	**150**	200
			90	**125**	160	70	**110**	150	90	**135**	180
						60	**100**	140			

ISO 513	MATERIAL	HARDNESS HB	JC7010 min	JC7010 start	JC7010 max	JC7115 min	JC7115 start	JC7115 max	JC7020 min	JC7020 start	JC7020 max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	180	**280**	380	180	**280**	380	150	**225**	300
			150	**225**	300	150	**225**	300	120	**170**	220
			130	**195**	260	130	**195**	260	110	**155**	200
K2	Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350	150	**200**	250	150	**200**	250	140	**180**	220
			130	**175**	220	130	**175**	220	120	**160**	200
			120	**160**	200	120	**160**	200	100	**145**	180
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	140	**190**	240	140	**190**	240	120	**165**	210
			120	**165**	210	120	**165**	210	110	**145**	180
			110	**155**	200	110	**155**	200	100	**125**	150

ISO 513	MATERIAL	HARDNESS HB	JP6010 min	JP6010 start	JP6010 max	JU6015 min	JU6015 start	JU6015 max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		600	**1000**	1400	400	**700**	1000
			400	**600**	800	300	**500**	700
						200	**400**	600
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		200	**400**	600	200	**300**	400
			200	**300**	400	200	**250**	300
						100	**150**	200

ISO 513	MATERIAL	HARDNESS HB	JP3015 min	JP3015 start	JP3015 max	JP5015 min	JP5015 start	JP5015 max	JP5125 min	JP5125 start	JP5125 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		30	**50**	70	30	**50**	70	30	**50**	70
			20	**40**	60	20	**40**	60	20	**40**	60
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		40	**60**	80	40	**60**	80	40	**60**	80
			30	**50**	70	30	**50**	70	30	**50**	70

JC8035				JP4020				JP5015				JP5120				JP5125				JU4015			
	min	start	max		min	start	max		min	start	max		min	start	max		min	start	max		min	start	max
				●	200	**300**	400	●	120	**170**	220	●	100	**150**	200	○	100	**140**	180	●	200	**290**	380
⟳	120	**160**	200	⟳	180	**260**	340	●	100	**140**	180	●	90	**130**	170	●	80	**120**	160				
⧓	100	**130**	160													⧓	70	**100**	130				
				●	190	**275**	360	●	100	**140**	180	●	90	**130**	170	○	80	**120**	160	●	180	**260**	340
⟳	100	**140**	180	⟳	180	**260**	340	●	90	**125**	160	●	80	**110**	140	●	70	**100**	120				
⧓	90	**125**	160													⧓	60	**80**	100				
								●	90	**120**	150	●	80	**110**	150	○	70	**100**	130				
⟳	90	**120**	150					●	80	**110**	140	●	70	**100**	130	●	60	**90**	120				
⧓	80	**110**	140													⧓	60	**80**	100				

JP5015				JP5120				JP5125				JP9015				JP9030			
	min	start	max		min	start	max		min	start	max		min	start	max		min	start	max
●	120	**170**	220	●	100	**150**	200	○	100	**140**	180	●	120	**170**	220				
●	100	**140**	180	●	90	**130**	170	●	80	**120**	160	●	100	**140**	180	●	80	**120**	160
								⧓	70	**100**	130					⧓	70	**100**	130
●	80	**100**	120	●	70	**90**	110	○	60	**80**	100	●	80	**100**	120				
●	70	**90**	110	●	60	**80**	100	●	50	**70**	90	●	70	**90**	110	●	50	**70**	90
								⧓	50	**60**	70					⧓	50	**60**	70
●	80	**120**	160	●	70	**110**	150	○	60	**100**	140	●	80	**120**	160				
●	70	**110**	150	●	60	**100**	140	●	50	**90**	130	●	70	**110**	150	●	50	**90**	130
								⧓	50	**80**	110					⧓	50	**80**	110
●	70	**110**	150	●	70	**100**	130	○	60	**90**	120	●	70	**110**	150				
●	60	**100**	140	●	60	**90**	120	●	60	**80**	100	●	60	**100**	140	●	60	**80**	100
								⧓	50	**70**	90					⧓	50	**70**	90

JP4020				JP5120				JP5125			
	min	start	max		min	start	max		min	start	max
●	180	**250**	320	●	110	**150**	190	○	100	**140**	180
⟳	150	**215**	280	●	90	**130**	170	●	80	**115**	150
								⧓	60	**90**	120
●	160	**210**	260	●	90	**130**	170	○	80	**120**	160
⟳	145	**180**	215	●	80	**110**	140	●	70	**95**	120
								⧓	60	**80**	100
●	145	**185**	225	●	80	**110**	140	○	70	**105**	140
⟳	130	**165**	200	●	70	**100**	130	●	60	**90**	120
								⧓	50	**75**	100

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CCET060202$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.07**	0.10
CCET060204$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.08**	0.12
CCET09T302$^{L}/_{R}$-PPF	0.10	**0.50**	0.90	0.04	**0.08**	0.12
CCET09T304$^{L}/_{R}$-PPF	0.10	**0.50**	0.90	0.04	**0.90**	0.14
CCET09T304$^{L}/_{R}$-PPM	0.50	**1.50**	2.50	0.04	**0.07**	0.10
CCGT060202-PPU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
CCGT060204-PPU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
CCGX060202-PMN	0.30	**1.50**	2.70	0.05	**0.10**	0.15
CCGX060204-PMN	0.30	**1.50**	2.70	0.06	**0.13**	0.20
CCGX060208-PMN	0.30	**1.50**	2.70	0.08	**0.16**	0.24
CCGT09T302-PPU	0.60	**1.80**	3.00	0.06	**0.13**	0.20
CCGT09T304-PPU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
CCGT09T308-PPU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
CCGX09T302-PMN	0.50	**2.00**	3.50	0.06	**0.11**	0.16
CCGX09T304-PMN	0.50	**2.00**	3.50	0.08	**0.16**	0.24
CCGX09T308-PMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
CCGX120402-PMN	0.50	**3.00**	5.50	0.08	**0.14**	0.20
CCGX120404-PMN	0.50	**3.00**	5.50	0.10	**0.20**	0.30
CCGX120408-PMN	0.50	**3.00**	5.50	0.15	**0.25**	0.35
CCMT060202-PFU	0.20	**0.80**	1.40	0.04	**0.08**	0.12
CCMT060202-PMU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
CCMT060204-PFU	0.20	**0.80**	1.40	0.05	**0.11**	0.17
CCMT060204-PMU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
CCMT060208-PMU	0.50	**1.50**	2.50	0.08	**0.16**	0.24
CCMT09T302-PFU	0.30	**1.00**	1.70	0.05	**0.10**	0.15
CCMT09T302-PMU	0.60	**1.80**	3.00	0.06	**0.13**	0.20
CCMT09T304-PFU	0.30	**1.00**	1.70	0.06	**0.14**	0.22
CCMT09T304-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
CCMT09T304-PRU	1.50	**2.50**	3.50	0.10	**0.19**	0.28
CCMT09T308-PFU	0.30	**1.00**	1.70	0.08	**0.16**	0.24
CCMT09T308-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
CCMT09T308-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
CCMT120404-PMU	0.80	**2.20**	3.60	0.08	**0.17**	0.26
CCMT120408-PMU	0.80	**2.20**	3.60	0.10	**0.22**	0.32
CCMT120408-PRU	1.50	**3.00**	4.50	0.14	**0.26**	0.38
CCMT120412-PMU	0.80	**2.20**	3.60	0.12	**0.24**	0.36
CCMT120412-PRU	1.50	**3.00**	4.50	0.16	**0.28**	0.40
CNGG120404-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
CNGG120408-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35
CNMA120404	2.00	**4.00**	6.00	0.15	**0.25**	0.35
CNMA120408	2.00	**4.00**	6.00	0.25	**0.35**	0.45
CNMA120412	2.00	**4.00**	6.00	0.35	**0.45**	0.55
CNMA120416	2.00	**4.00**	6.00	0.45	**0.55**	0.65
CNMA160612	4.00	**7.00**	10.00	0.45	**0.60**	0.75
CNMA160616	4.00	**7.00**	10.00	0.50	**0.65**	0.80
CNMA190612	6.00	**9.00**	12.00	0.50	**0.65**	0.80
CNMA190616	6.00	**9.00**	12.00	0.55	**0.70**	0.85
CNMG090304-NMM	0.70	**1.50**	2.30	0.13	**0.20**	0.27
CNMG090304-NSP	0.30	**0.70**	1.10	0.06	**0.12**	0.18
CNMG090304-NUP	0.70	**1.50**	2.30	0.08	**0.15**	0.22
CNMG090308-NMM	0.70	**1.50**	2.30	0.18	**0.25**	0.32
CNMG090308-NSP	0.30	**0.70**	1.10	0.08	**0.16**	0.24
CNMG090308-NUP	0.70	**1.50**	2.30	0.12	**0.20**	0.28
CNMG120404-NMK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
CNMG120404-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
CNMG120404-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
CNMG120404-NSM	0.40	**1.20**	2.00	0.08	**0.14**	0.20
CNMG120404-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CNMG120404-NUK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
CNMG120404-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
CNMG120404-NUX	1.00	**2.50**	4.00	0.10	**0.20**	0.30
CNMG120408-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
CNMG120408-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
CNMG120408-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
CNMG120408-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
CNMG120408-NRM	2.00	**3.50**	5.00	0.20	**0.35**	0.50
CNMG120408-NRP	2.00	**4.00**	6.00	0.25	**0.35**	0.45
CNMG120408-NSM	0.40	**1.20**	2.00	0.10	**0.18**	0.26
CNMG120408-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34
CNMG120408-NUK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
CNMG120408-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
CNMG120408-NUX	1.00	**2.50**	4.00	0.15	**0.25**	0.35
CNMG120408-NWU	0.50	**1.50**	2.50	0.20	**0.40**	0.60
CNMG120408-NWX	1.00	**2.50**	4.00	0.20	**0.40**	0.60
CNMG120412-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
CNMG120412-NMM	1.00	**2.50**	4.00	0.25	**0.35**	0.45
CNMG120412-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
CNMG120412-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
CNMG120412-NRM	2.00	**3.50**	5.00	0.25	**0.40**	0.55
CNMG120412-NRP	2.00	**4.00**	6.00	0.30	**0.40**	0.50
CNMG120412-NUK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
CNMG120412-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
CNMG120412-NUX	1.00	**2.50**	4.00	0.18	**0.30**	0.42
CNMG120412-NWU	0.50	**1.50**	2.50	0.25	**0.45**	0.65
CNMG120412-NWX	1.00	**2.50**	4.00	0.25	**0.45**	0.65
CNMG120416-NMK	0.50	**2.00**	3.50	0.25	**0.35**	0.45
CNMG120416-NMM	1.00	**2.50**	4.00	0.30	**0.40**	0.50
CNMG120416-NMP	1.50	**2.50**	3.50	0.25	**0.35**	0.45
CNMG120416-NRK	1.50	**4.00**	6.50	0.30	**0.40**	0.50
CNMG120416-NRP	2.00	**4.00**	6.00	0.35	**0.45**	0.55
CNMG120416-NUP	1.00	**2.50**	4.00	0.20	**0.35**	0.50
CNMG160608-NMK	2.00	**4.00**	6.00	0.25	**0.35**	0.45
CNMG160608-NMM	2.00	**4.50**	7.00	0.25	**0.35**	0.45
CNMG160608-NMP	3.00	**4.50**	6.00	0.20	**0.30**	0.40
CNMG160608-NRM	3.00	**5.50**	8.00	0.25	**0.40**	0.55
CNMG160608-NUP	2.00	**4.50**	7.00	0.18	**0.30**	0.42
CNMG160612-NMK	2.00	**4.00**	6.00	0.30	**0.40**	0.50
CNMG160612-NMM	2.00	**4.50**	7.00	0.30	**0.40**	0.50
CNMG160612-NMP	3.00	**4.50**	6.00	0.25	**0.35**	0.45
CNMG160612-NRK	3.00	**6.00**	9.00	0.40	**0.55**	0.70
CNMG160612-NRM	3.00	**5.50**	8.00	0.30	**0.45**	0.60
CNMG160612-NRP	4.00	**6.00**	8.00	0.35	**0.50**	0.65
CNMG160612-NUP	2.00	**4.50**	7.00	0.22	**0.35**	0.48
CNMG160616-NMK	2.00	**4.00**	6.00	0.35	**0.45**	0.55
CNMG160616-NMM	2.00	**4.50**	7.00	0.35	**0.45**	0.55
CNMG160616-NMP	3.00	**4.50**	6.00	0.30	**0.40**	0.50
CNMG160616-NRK	3.00	**6.00**	9.00	0.45	**0.60**	0.75
CNMG160616-NRP	4.00	**6.00**	8.00	0.40	**0.55**	0.70
CNMG190608-NUP	3.00	**6.00**	9.00	0.22	**0.35**	0.48
CNMG190612-NMK	3.00	**5.00**	7.00	0.35	**0.45**	0.55
CNMG190612-NMM	3.00	**6.00**	9.00	0.35	**0.45**	0.55
CNMG190612-NMP	4.00	**6.00**	8.00	0.30	**0.40**	0.50
CNMG190612-NRK	5.00	**8.00**	11.00	0.45	**0.60**	0.75
CNMG190612-NRM	5.00	**7.50**	10.00	0.40	**0.55**	0.70
CNMG190612-NRP	6.00	**8.00**	10.00	0.40	**0.55**	0.70
CNMG190612-NUP	3.00	**6.00**	9.00	0.25	**0.40**	0.55

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CNMG190616-NMK	3.00	**5.00**	7.00	0.40	**0.50**	0.60
CNMG190616-NMM	3.00	**6.00**	9.00	0.40	**0.50**	0.60
CNMG190616-NMP	4.00	**6.00**	8.00	0.32	**0.45**	0.58
CNMG190616-NRK	5.00	**8.00**	11.00	0.50	**0.65**	0.80
CNMG190616-NRM	5.00	**7.50**	10.00	0.45	**0.60**	0.75
CNMG190616-NRP	6.00	**8.00**	10.00	0.45	**0.60**	0.75
CNMG190616-NUP	3.00	**6.00**	9.00	0.30	**0.45**	0.60
CNMG190624-NRP	6.00	**8.00**	10.00	0.50	**0.65**	0.80
CNMG250924-NRP	6.00	**10.00**	14.00	0.50	**0.70**	0.90
CNMM190616-MRP	6.00	**9.00**	12.00	0.60	**0.75**	0.90
CNMM190624-MRP	6.00	**9.00**	12.00	0.65	**0.80**	0.95
CNMM250924-MRP	8.00	**12.00**	16.00	0.70	**0.90**	1.10
DCET070202$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.07**	0.10
DCET070204$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.08**	0.12
DCET070204$^{L}/_{R}$-PPM	0.40	**1.00**	1.60	0.03	**0.06**	0.09
DCET11T302$^{L}/_{R}$-PPF	0.10	**0.50**	0.90	0.04	**0.08**	0.12
DCET11T302$^{L}/_{R}$-PPM	0.50	**1.50**	2.50	0.04	**0.06**	0.08
DCET11T304^{L}/M-PPF	0.10	**0.50**	0.90	0.04	**0.90**	0.14
DCET11T304^{L}/M-PPM	0.50	**1.50**	2.50	0.04	**0.07**	0.10
DCGT070202-PPU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
DCGT070204-PPU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
DCGX070202-PMN	0.30	**1.50**	2.70	0.05	**0.10**	0.15
DCGX070204-PMN	0.30	**1.50**	2.70	0.06	**0.13**	0.20
DCGX070208-PMN	0.30	**1.50**	2.70	0.08	**0.16**	0.24
DCGT11T302-PPU	0.60	**1.80**	3.00	0.06	**0.13**	0.20
DCGT11T304-PPU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
DCGT11T308-PPU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
DCGX11T302-PMN	0.50	**2.00**	3.50	0.06	**0.11**	0.16
DCGX11T304-PMN	0.50	**2.00**	3.50	0.08	**0.16**	0.24
DCGX11T308-PMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
DCMT070202-PFU	0.20	**0.80**	1.40	0.04	**0.08**	0.12
DCMT070202-PMU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
DCMT070204-PFU	0.20	**0.80**	1.40	0.05	**0.11**	0.17
DCMT070204-PMU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
DCMT070208-PMU	0.50	**1.50**	2.50	0.08	**0.16**	0.24
DCMT11T302-PFU	0.30	**1.00**	1.70	0.05	**0.10**	0.15
DCMT11T302-PMU	0.60	**1.80**	3.00	0.06	**0.13**	0.20
DCMT11T304-PFU	0.30	**1.00**	1.70	0.06	**0.14**	0.22
DCMT11T304-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
DCMT11T304-PRU	1.50	**2.50**	3.50	0.10	**0.19**	0.28
DCMT11T308-PFU	0.30	**1.00**	1.70	0.08	**0.16**	0.24
DCMT11T308-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
DCMT11T308-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
DCMT11T312-PMU	0.60	**1.80**	3.00	0.10	**0.22**	0.34
DCMT150404-PMU	0.80	**2.20**	3.60	0.08	**0.17**	0.26
DCMT150408-PMU	0.80	**2.20**	3.60	0.10	**0.22**	0.32
DCMT150412-PMU	0.80	**2.20**	3.60	0.12	**0.24**	0.36
DNGG150604-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
DNGG150608-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35
DNMA150608	2.00	**4.00**	6.00	0.15	**0.25**	0.35
DNMA150612	2.00	**4.00**	6.00	0.35	**0.45**	0.55
DNMG110404-NMM	0.70	**1.50**	2.30	0.13	**0.20**	0.27
DNMG110404-NMP	1.00	**1.50**	2.00	0.10	**0.15**	0.20
DNMG110404-NSP	0.30	**0.70**	1.10	0.06	**0.12**	0.18
DNMG110404-NUP	0.70	**1.50**	2.30	0.08	**0.15**	0.22
DNMG110408-NMM	0.70	**1.50**	2.30	0.18	**0.25**	0.32
DNMG110408-NMP	1.00	**1.50**	2.00	0.15	**0.20**	0.25
DNMG110408-NSP	0.30	**0.70**	1.10	0.08	**0.16**	0.24

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
DNMG110408-NUP	0.70	**1.50**	2.30	0.12	**0.20**	0.28
DNMG110412-NUP	0.70	**1.50**	2.30	0.15	**0.25**	0.35
DNMG150604$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.15	**0.25**	0.35
DNMG150604-NMK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
DNMG150604-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
DNMG150604-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
DNMG150604-NSM	0.40	**1.20**	2.00	0.08	**0.14**	0.20
DNMG150604-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22
DNMG150604-NUK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
DNMG150604-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
DNMG150604-NUX	1.00	**2.50**	4.00	0.10	**0.20**	0.30
DNMG150608$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.20	**0.30**	0.40
DNMG150608-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
DNMG150608-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
DNMG150608-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
DNMG150608-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
DNMG150608-NRM	2.00	**3.50**	5.00	0.20	**0.35**	0.50
DNMG150608-NRP	2.00	**4.00**	6.00	0.25	**0.35**	0.45
DNMG150608-NSM	0.40	**1.20**	2.00	0.10	**0.18**	0.26
DNMG150608-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34
DNMG150608-NUK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
DNMG150608-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
DNMG150608-NUX	1.00	**2.50**	4.00	0.15	**0.25**	0.35
DNMG150612-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
DNMG150612-NMM	1.00	**2.50**	4.00	0.25	**0.35**	0.45
DNMG150612-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
DNMG150612-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
DNMG150612-NRM	2.00	**3.50**	5.00	0.25	**0.40**	0.55
DNMG150612-NRP	2.00	**4.00**	6.00	0.30	**0.40**	0.50
DNMG150612-NUK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
DNMG150612-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
DNMG150612-NUX	1.00	**2.50**	4.00	0.18	**0.30**	0.42
DNMG150616-NMK	0.50	**2.00**	3.50	0.25	**0.35**	0.45
DNMG150616-NMP	1.50	**2.50**	3.50	0.25	**0.35**	0.45
DNMG150616-NRP	2.00	**4.00**	6.00	0.35	**0.45**	0.55
DNMX150608-NWU	0.50	**1.50**	2.50	0.20	**0.40**	0.60
DNMX150612-NWU	0.50	**1.50**	2.50	0.25	**0.45**	0.65
KNUX160405$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.15	**0.25**	0.35
KNUX160410$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.20	**0.30**	0.40
MCC.R02L-PPF	0.05	**0.20**	0.35	0.03	**0.05**	0.07
MCC.R04L-PPF	0.05	**0.20**	0.35	0.04	**0.06**	0.08
MCN.R02G-SS	0.60	**1.20**	1.80	0.08	**0.14**	0.20
MCN.R04-GB$^{L}/_{R}$	0.20	**0.50**	0.80	0.05	**0.10**	0.15
MCN.R04G-SS	0.60	**1.20**	1.80	0.10	**0.17**	0.24
MCN.R04M-GM	0.80	**1.50**	2.20	0.08	**0.15**	0.22
MCN.R08M-GM	0.80	**1.50**	2.20	0.10	**0.17**	0.24
MDN.R02G-SS	0.60	**1.20**	1.80	0.08	**0.14**	0.20
MDN.R04-GB$^{L}/_{R}$	0.20	**0.50**	0.80	0.05	**0.10**	0.15
MDN.R04G-SS	0.60	**1.20**	1.80	0.10	**0.17**	0.24
MDN.R04M-GM	0.80	**1.50**	2.20	0.08	**0.15**	0.22
MDN.R08M-GM	0.80	**1.50**	2.20	0.10	**0.17**	0.24
SCGX09T304-PMN	0.50	**2.00**	3.50	0.08	**0.16**	0.24
SCGX09T308-PMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
SCGX120404-PMN	0.50	**3.00**	5.50	0.10	**0.20**	0.30
SCGX120408-PMN	0.50	**3.00**	5.50	0.15	**0.25**	0.35
SCMT09T304-PFU	0.30	**1.00**	1.70	0.06	**0.14**	0.22
SCMT09T304-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
SCMT09T308-PFU	0.30	**1.00**	1.70	0.08	**0.16**	0.24

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
SCMT09T308-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
SCMT09T308-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
SCMT120404-PMU	0.80	**2.20**	3.60	0.08	**0.17**	0.26
SCMT120408-PMU	0.80	**2.20**	3.60	0.10	**0.22**	0.32
SCMT120408-PRU	1.50	**3.00**	4.50	0.14	**0.26**	0.38
SNGG120404-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
SNGG120408-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35
SNGG120412-NMN	0.50	**2.00**	3.50	0.20	**0.30**	0.40
SNMA090308	1.00	**2.00**	3.00	0.22	**0.30**	0.38
SNMA120408	2.00	**4.00**	6.00	0.25	**0.35**	0.45
SNMA120412	2.00	**4.00**	6.00	0.35	**0.45**	0.55
SNMA120416	2.00	**4.00**	6.00	0.45	**0.55**	0.65
SNMG120404-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
SNMG120404-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
SNMG120404-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22
SNMG120404-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
SNMG120408-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
SNMG120408-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
SNMG120408-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
SNMG120408-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
SNMG120408-NRM	2.00	**3.50**	5.00	0.20	**0.35**	0.50
SNMG120408-NRP	2.00	**4.00**	6.00	0.25	**0.35**	0.45
SNMG120408-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34
SNMG120408-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
SNMG120412-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
SNMG120412-NMM	1.00	**2.50**	4.00	0.25	**0.35**	0.45
SNMG120412-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
SNMG120412-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
SNMG120412-NRM	2.00	**3.50**	5.00	0.25	**0.40**	0.55
SNMG120412-NRP	2.00	**4.00**	6.00	0.30	**0.40**	0.50
SNMG120412-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
SNMG120416-NMM	1.00	**2.50**	4.00	0.30	**0.40**	0.50
SNMG120416-NMP	1.50	**2.50**	3.50	0.25	**0.35**	0.45
SNMG120416-NRK	1.50	**4.00**	6.50	0.30	**0.40**	0.50
SNMG120416-NRP	2.00	**4.00**	6.00	0.35	**0.45**	0.55
SNMG120416-NUP	1.00	**2.50**	4.00	0.20	**0.35**	0.50
SNMG190612-NMM	3.00	**6.00**	9.00	0.35	**0.45**	0.55
SNMG190612-NRK	5.00	**8.00**	11.00	0.45	**0.60**	0.75
SNMG190612-NRM	5.00	**7.50**	10.00	0.40	**0.55**	0.70
SNMG190612-NRP	6.00	**8.00**	10.00	0.40	**0.55**	0.70
SNMG190616-NMM	3.00	**6.00**	9.00	0.40	**0.50**	0.60
SNMG190616-NRK	5.00	**8.00**	11.00	0.50	**0.65**	0.80
SNMG190616-NRM	5.00	**7.50**	10.00	0.45	**0.60**	0.75
SNMG190616-NRP	6.00	**8.00**	10.00	0.45	**0.60**	0.75
SNMG190624-NRP	6.00	**8.00**	10.00	0.50	**0.65**	0.80
SNMG250924-NRP	6.00	**10.00**	14.00	0.50	**0.70**	0.90
SNMM190616-MRP	6.00	**9.00**	12.00	0.60	**0.75**	0.90
SNMM190624-MRP	6.00	**9.00**	12.00	0.65	**0.80**	0.95
SNMM250924-MRP	8.00	**12.00**	16.00	0.70	**0.90**	1.10
TBET060102$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.03	**0.06**	0.09
TBET060104$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.04	**0.07**	0.10
TCET110202$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.07**	0.10
TCET110204$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.08**	0.12
TCGX090204-PMN	0.30	**1.00**	1.70	0.05	**0.11**	0.17
TCGX110202-PMN	0.30	**1.50**	2.70	0.05	**0.10**	0.15
TCGX110204-PMN	0.30	**1.50**	2.70	0.06	**0.13**	0.20
TCGX110208-PMN	0.30	**1.50**	2.70	0.08	**0.16**	0.24
TCGX16T302-PMN	0.50	**2.00**	3.50	0.06	**0.11**	0.16

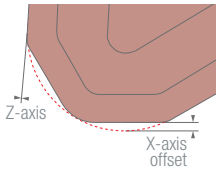
DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
TCGX16T304-PMN	0.50	**2.00**	3.50	0.08	**0.16**	0.24
TCGX16T308-PMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
TCMT090204-PMU	0.50	**1.00**	1.50	0.05	**0.09**	0.13
TCMT110202-PFU	0.20	**0.80**	1.40	0.04	**0.08**	0.12
TCMT110202-PMU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
TCMT110204-PFU	0.20	**0.80**	1.40	0.05	**0.11**	0.17
TCMT110204-PMU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
TCMT110208-PFU	0.20	**0.80**	1.40	0.06	**0.13**	0.20
TCMT110208-PMU	0.50	**1.50**	2.50	0.08	**0.16**	0.24
TCMT16T304-PFU	0.30	**1.00**	1.70	0.06	**0.14**	0.22
TCMT16T304-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
TCMT16T304-PRU	1.50	**2.50**	3.50	0.10	**0.19**	0.28
TCMT16T308-PFU	0.30	**1.00**	1.70	0.08	**0.16**	0.24
TCMT16T308-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
TCMT16T308-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
TCMT16T312-PMU	0.60	**1.80**	3.00	0.10	**0.22**	0.34
TCMT220408-PMU	0.80	**2.20**	3.60	0.10	**0.22**	0.32
TNGG160404-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
TNGG160408-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35
TNGG160412-NMN	0.50	**2.00**	3.50	0.20	**0.30**	0.40
TNMA160404	2.00	**4.00**	6.00	0.15	**0.25**	0.35
TNMA160408	2.00	**4.00**	6.00	0.25	**0.35**	0.45
TNMA160412	2.00	**4.00**	6.00	0.35	**0.45**	0.55
TNMA160416	2.00	**4.00**	6.00	0.45	**0.55**	0.65
TNMA220408	4.00	**7.00**	10.00	0.35	**0.50**	0.65
TNMA220412	4.00	**7.00**	10.00	0.45	**0.60**	0.75
TNMA220416	4.00	**7.00**	10.00	0.50	**0.65**	0.80
TNMG160404$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.15	**0.25**	0.35
TNMG160404-NMK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
TNMG160404-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
TNMG160404-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
TNMG160404-NSM	0.40	**1.20**	2.00	0.08	**0.14**	0.20
TNMG160404-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22
TNMG160404-NUK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
TNMG160404-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
TNMG160404-NUX	1.00	**2.50**	4.00	0.10	**0.20**	0.30
TNMG160408$^{L}/_{R}$-NMU	1.00	**2.50**	4.00	0.20	**0.30**	0.40
TNMG160408-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
TNMG160408-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
TNMG160408-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
TNMG160408-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
TNMG160408-NRM	2.00	**3.50**	5.00	0.20	**0.35**	0.50
TNMG160408-NRP	2.00	**4.00**	6.00	0.25	**0.35**	0.45
TNMG160408-NSM	0.40	**1.20**	2.00	0.10	**0.18**	0.26
TNMG160408-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34
TNMG160408-NUK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
TNMG160408-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
TNMG160408-NUX	1.00	**2.50**	4.00	0.15	**0.25**	0.35
TNMG160412-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
TNMG160412-NMM	1.00	**2.50**	4.00	0.25	**0.35**	0.45
TNMG160412-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
TNMG160412-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
TNMG160412-NRM	2.00	**3.50**	5.00	0.25	**0.40**	0.55
TNMG160412-NRP	2.00	**4.00**	6.00	0.30	**0.40**	0.50
TNMG160412-NUK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
TNMG160412-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
TNMG160412-NUX	1.00	**2.50**	4.00	0.18	**0.30**	0.42
TNMG160416-NMK	0.50	**2.00**	3.50	0.25	**0.35**	0.45

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
TNMG220408-NMK	2.00	**4.00**	6.00	0.25	**0.35**	0.45
TNMG220408-NMM	2.00	**4.50**	7.00	0.25	**0.35**	0.45
TNMG220408-NMP	3.00	**4.50**	6.00	0.20	**0.30**	0.40
TNMG220408-NRK	3.00	**6.00**	9.00	0.35	**0.50**	0.65
TNMG220408-NUP	2.00	**4.50**	7.00	0.18	**0.30**	0.42
TNMG220412-NMK	2.00	**4.00**	6.00	0.30	**0.40**	0.50
TNMG220412-NMM	2.00	**4.50**	7.00	0.30	**0.40**	0.50
TNMG220412-NMP	3.00	**4.50**	6.00	0.25	**0.35**	0.45
TNMG220412-NRK	3.00	**6.00**	9.00	0.40	**0.55**	0.70
TNMG220412-NRP	4.00	**6.00**	8.00	0.35	**0.50**	0.65
TNMG220412-NUP	2.00	**4.50**	7.00	0.22	**0.35**	0.48
TNMG220416-NMK	2.00	**4.00**	6.00	0.35	**0.45**	0.55
TNMG220416-NMM	2.00	**4.50**	7.00	0.35	**0.45**	0.55
TNMG220416-NRK	3.00	**6.00**	9.00	0.45	**0.60**	0.75
TNMG220416-NRP	4.00	**6.00**	8.00	0.40	**0.55**	0.70
TNMG220416-NUP	2.00	**4.50**	7.00	0.24	**0.40**	0.56
TNMX160408-NWU	0.50	**1.50**	2.50	0.20	**0.40**	0.60
TNMX160412-NWU	0.50	**1.50**	2.50	0.25	**0.45**	0.65
TPEH090202$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.03	**0.06**	0.09
TPEH090204$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.04	**0.70**	0.10
TPEH110302$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.07**	0.10
TPEH110304$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.08**	0.12
TPEH110304$^{L}/_{R}$-PPM	0.40	**1.00**	1.60	0.03	**0.06**	0.09
VBET110302$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.07**	0.10
VBET110302$^{L}/_{R}$-PPM	0.40	**1.00**	1.60	0.03	**0.05**	0.07
VBET110304$^{L}/_{R}$-PPF	0.10	**0.40**	0.70	0.04	**0.08**	0.12
VBET110304$^{L}/_{R}$-PPM	0.40	**1.00**	1.60	0.03	**0.06**	0.09
VBMT110304-PFU	0.20	**0.80**	1.40	0.05	**0.11**	0.17
VBMT160402-PFU	0.30	**1.00**	1.70	0.05	**0.10**	0.15
VBMT160404-PFU	0.30	**1.00**	1.70	0.06	**0.14**	0.22
VBMT160404-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
VBMT160408-PFU	0.30	**1.00**	1.70	0.08	**0.16**	0.24
VBMT160408-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
VBMT160408-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
VCGT110302-PPU	0.50	**1.50**	2.50	0.05	**0.10**	0.15
VCGT110304-PPU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
VCGX110302-PMN	0.30	**1.50**	2.70	0.05	**0.10**	0.15
VCGX110304-PMN	0.30	**1.50**	2.70	0.06	**0.13**	0.20
VCGX110308-PMN	0.30	**1.50**	2.70	0.08	**0.16**	0.24
VCGT160402-PPU	0.60	**1.80**	3.00	0.06	**0.13**	0.20
VCGT160404-PPU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
VCGT160408-PPU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
VCGX160402-PMN	0.50	**2.00**	3.50	0.06	**0.11**	0.16
VCGX160404-PMN	0.50	**2.00**	3.50	0.08	**0.16**	0.24
VCGX160408-PMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
VCGX160412-PMN	0.50	**2.00**	3.50	0.12	**0.24**	0.36
VCGX220512-PMN	1.00	**3.00**	5.00	0.14	**0.27**	0.40
VCGX220516-PMN	1.00	**3.00**	5.00	0.14	**0.30**	0.46
VCGX220530-PMN	1.00	**3.00**	5.00	0.20	**0.40**	0.60
VCMT110304-PMU	0.50	**1.50**	2.50	0.06	**0.13**	0.20
VCMT110308-PMU	0.50	**1.50**	2.50	0.08	**0.16**	0.24
VCMT160404-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
VCMT160404-PRU	1.50	**2.50**	3.50	0.10	**0.19**	0.28
VCMT160408-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
VCMT160408-PRU	1.50	**2.50**	3.50	0.12	**0.22**	0.32
VNGG160404-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
VNGG160408-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
VNMG160404-NMK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
VNMG160404-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
VNMG160404-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
VNMG160404-NSM	0.40	**1.20**	2.00	0.08	**0.14**	0.20
VNMG160404-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22
VNMG160404-NUK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
VNMG160404-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
VNMG160408-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
VNMG160408-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
VNMG160408-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
VNMG160408-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
VNMG160408-NSM	0.40	**1.20**	2.00	0.10	**0.18**	0.26
VNMG160408-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34
VNMG160408-NUK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
VNMG160408-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
VNMG160412-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
VNMG160412-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
VNMG160412-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
VNMG160412-NUK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
VNMG160412-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
WBET060102$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.03	**0.06**	0.09
WBET060104$^{L}/_{R}$-PPF	0.10	**0.30**	0.50	0.04	**0.07**	0.10
WCMT12T304-PMU	0.60	**1.80**	3.00	0.07	**0.16**	0.25
WCMT12T308-PMU	0.60	**1.80**	3.00	0.08	**0.19**	0.30
WNGG060404-NMN	0.30	**1.00**	1.70	0.08	**0.15**	0.22
WNGG060408-NMN	0.30	**1.00**	1.70	0.10	**0.20**	0.30
WNGG080404-NMN	0.50	**2.00**	3.50	0.10	**0.20**	0.30
WNGG080408-NMN	0.50	**2.00**	3.50	0.15	**0.25**	0.35
WNMA080408	2.00	**4.00**	6.00	0.25	**0.35**	0.45
WNMA080412	2.00	**4.00**	6.00	0.35	**0.45**	0.55
WNMA080416	2.00	**4.00**	6.00	0.45	**0.55**	0.65
WNMG060404-NMM	0.70	**1.50**	2.30	0.13	**0.20**	0.27
WNMG060404-NMP	1.00	**1.50**	2.00	0.10	**0.15**	0.20
WNMG060404-NSP	0.30	**0.70**	1.10	0.06	**0.12**	0.18
WNMG060404-NUP	0.70	**1.50**	2.30	0.08	**0.15**	0.22
WNMG060408-NMM	0.70	**1.50**	2.30	0.18	**0.25**	0.32
WNMG060408-NMP	1.00	**1.50**	2.00	0.15	**0.20**	0.25
WNMG060408-NRK	1.00	**2.00**	3.00	0.15	**0.25**	0.35
WNMG060408-NSP	0.30	**0.70**	1.10	0.08	**0.16**	0.24
WNMG060408-NUP	0.70	**1.50**	2.30	0.12	**0.20**	0.28
WNMG060412-NMM	0.70	**1.50**	2.30	0.20	**0.28**	0.36
WNMG080404-NMK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
WNMG080404-NMM	1.00	**2.50**	4.00	0.15	**0.25**	0.35
WNMG080404-NMP	1.50	**2.50**	3.50	0.12	**0.20**	0.28
WNMG080404-NSM	0.40	**1.20**	2.00	0.08	**0.14**	0.20
WNMG080404-NSP	0.40	**1.20**	2.00	0.08	**0.15**	0.22
WNMG080404-NUK	0.50	**2.00**	3.50	0.10	**0.20**	0.30
WNMG080404-NUP	1.00	**2.50**	4.00	0.10	**0.20**	0.30
WNMG080404-NUX	1.00	**2.50**	4.00	0.10	**0.20**	0.30
WNMG080408-NMK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
WNMG080408-NMM	1.00	**2.50**	4.00	0.20	**0.30**	0.40
WNMG080408-NMP	1.50	**2.50**	3.50	0.16	**0.25**	0.34
WNMG080408-NRK	1.50	**4.00**	6.50	0.20	**0.30**	0.40
WNMG080408-NRM	2.00	**3.50**	5.00	0.20	**0.35**	0.50
WNMG080408-NRP	2.00	**4.00**	6.00	0.25	**0.35**	0.45
WNMG080408-NSM	0.40	**1.20**	2.00	0.10	**0.18**	0.26
WNMG080408-NSP	0.40	**1.20**	2.00	0.10	**0.22**	0.34

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
WNMG080408-NUK	0.50	**2.00**	3.50	0.15	**0.25**	0.35
WNMG080408-NUP	1.00	**2.50**	4.00	0.15	**0.25**	0.35
WNMG080408-NUX	1.00	**2.50**	4.00	0.15	**0.25**	0.35
WNMG080408-NWU	0.50	**1.50**	2.50	0.20	**0.40**	0.60
WNMG080408-NWX	1.00	**2.50**	4.00	0.20	**0.40**	0.60
WNMG080412-NMK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
WNMG080412-NMM	1.00	**2.50**	4.00	0.25	**0.35**	0.45
WNMG080412-NMP	1.50	**2.50**	3.50	0.20	**0.30**	0.40
WNMG080412-NRK	1.50	**4.00**	6.50	0.25	**0.35**	0.45
WNMG080412-NRM	2.00	**3.50**	5.00	0.25	**0.40**	0.55
WNMG080412-NRP	2.00	**4.00**	6.00	0.30	**0.40**	0.50
WNMG080412-NUK	0.50	**2.00**	3.50	0.20	**0.30**	0.40
WNMG080412-NUP	1.00	**2.50**	4.00	0.18	**0.30**	0.42
WNMG080412-NUX	1.00	**2.50**	4.00	0.18	**0.30**	0.42
WNMG080412-NWU	0.50	**1.50**	2.50	0.25	**0.45**	0.65
WNMG080416-NMP	1.50	**2.50**	3.50	0.25	**0.35**	0.45
WNMG080416-NRP	2.00	**4.00**	6.00	0.35	**0.45**	0.55
WNMG080416-NUP	1.00	**2.50**	4.00	0.20	**0.35**	0.50

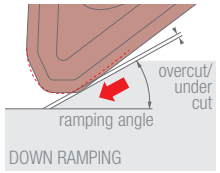
I. X-axis, Z-axis offset



INSERT RADIUS	DNMX1506oo	
	X-AXIS	Z-AXIS
0,8	0,065	0
1,2	0,058	0

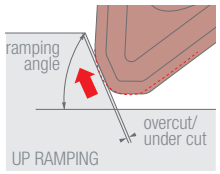
INSERT RADIUS	TNMX1604oo	
	X-AXIS	Z-AXIS
0,8	0,063	0
1,2	0,066	0

II. Ramping offset



INSERT RADIUS	DNMX1506oo (KAPR 93°)					
	0°	5°	10°	15°	20°	25°
0,8	0	0,021	0,037	0,049	0,056	0,058
1,2	0	0,022	0,039	0,049	0,053	0,052

TNMX1604oo - NO NEED TO ADJUST



INSERT RADIUS	DNMX1506oo (KAPR 93°)									
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
0,8	0	0,019	0,034	0,046	0,054	0,057	0,057	0,052	0,044	0,031
1,2	0	0,017	0,03	0,041	0,047	0,05	0,05	0,046	0,038	0,028
INSERT RADIUS	50°	55°	60°	65°	70°	75°	80°	85°	90°	
0,8	0,015	-0,005	-0,029	-0,021	-0,008	0	0,004	0,004	0	
1,2	0,013	-0,004	-0,025	-0,015	-0,001	0,006	0,008	0,005	0	

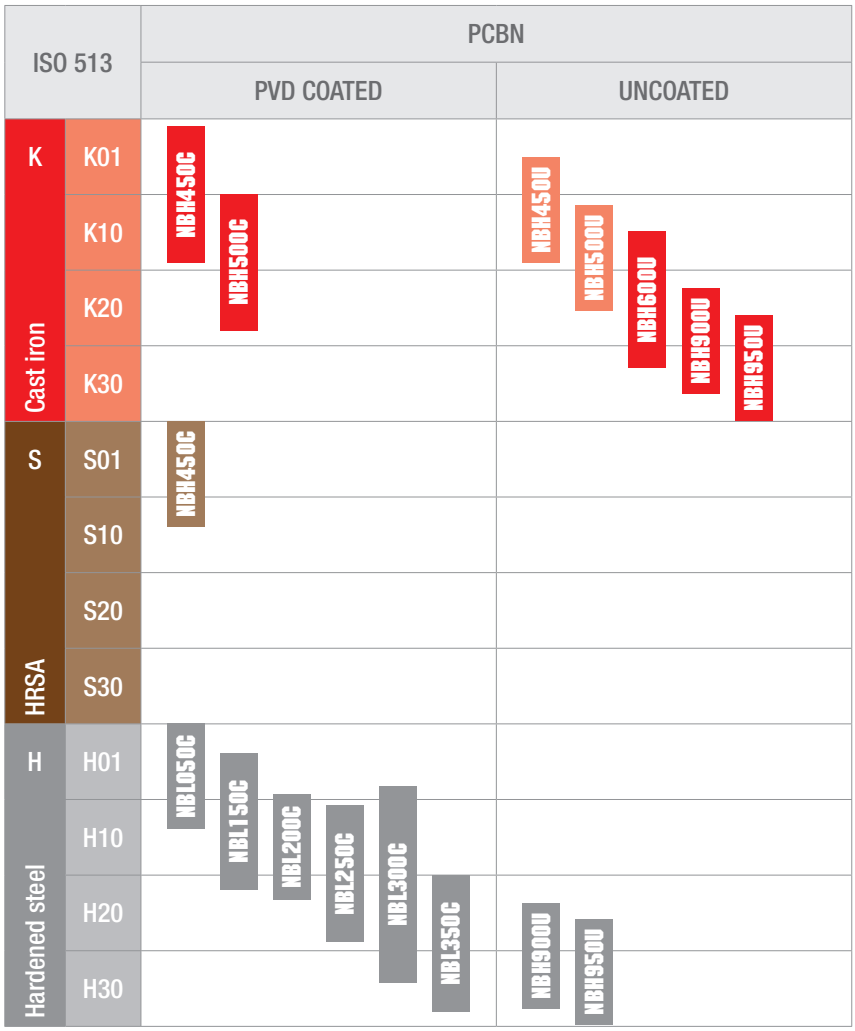
INSERT RADIUS	TNMX1604oo (KAPR 93°)									
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
0,8	0	0,017	0,03	0,041	0,048	0,053	0,053	0,051	0,045	0,035
1,2	0	0,018	0,033	0,044	0,052	0,056	0,057	0,054	0,048	0,038
INSERT RADIUS	50°	55°	60°	65°	70°	75°	80°	85°	90°	
0,8	0,023	0,007	-0,011	-0,032	-0,023	-0,009	-0,001	0,003	0	
1,2	0,025	0,008	-0,011	-0,034	-0,026	-0,012	-0,004	0	0	

III. For radius with relatively high precision request, it's not suggested to use wiper inserts, please use conventional radius turning inserts.



TURNING - PCBN

Grades selection guide .A120
Grades features .A121
Grades cross reference .A124
Edge preparations selection guide .A125
Edge preparations features .A130
Product selection .A142
Designation system .A143
Inserts range .A144
Parameters .A172



HRSA: Heat resistant super alloy

SORMA DIAMOND & CUTTING TOOLS

GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NBL050C	Low volume CBN 40%	2.700	PVD	AlTiN	H	H01 H10	Great performance on high speed machining under continuous cutting conditions. Eccellenti prestazioni in lavorazioni a elevata velocità in condizioni di taglio continuo. Ausgezeichnete Leistung bei der Hochgeschwindigkeitsbearbeitung auf kontinuierlichen Schnittbedingungen. Extrême ténacité dans des conditions de coupe fortement interrompues.
NBL050CX	Low volume CBN 40%	2.700	PVD	AlCrN	H	H01 H10	Same substrate of NBL050C with a different coating that enhances the sharpness of cutting edge preparation. Stesso substrato di NBL050C con un diverso rivestimento che esalta l'affilatura della preparazione del tagliente. Dasselbe Grundmaterial wie NBL050C mit anderer Beschichtung, die die Schärfe der Schneidkantenpräparation erhöht. Même substrat que le NBL050C avec un revêtement différent qui améliore l'affûtage de préparation du tranchant.
NBL150C	Low volume CBN 50%	2.900	PVD	AlTiN	H	H05 H15	First choice for continuous cut machining. High reliability under various cutting conditions, from low to high cutting speed. Prima scelta per condizioni di taglio continuo. Alta affidabilità in differenti condizioni di taglio, per velocità di taglio da basse a elevate. Beste Wahl für kontinuierliche Schnittbedingungen. Hohe Zuverlässigkeit unter verschiedenen Schnittbedingungen, bei niedrigen bis hohen Schnittgeschwindigkeiten. Premier choix pour conditions de coupe continue. Haute fiabilité dans différentes conditions de coupe, pour vitesses de coupe lentes à élevées.
NBL200C	Low volume CBN 55%	3.000	PVD	$AlTiNSi_3N_4$	H	H10 H20	New universal grade mainly combined with full solid style and solid brazing. Coating layer with extreme hardness allows great wear resistance. Nuovo grado universale principalmente combinato con full solid e solid brazing. Strato di rivestimento con estrema durezza che assicura eccellente resistenza all'usura. Die neue universelle Qualität wird hauptsächlich mit den Voll-CBN Platten und den Platten mit Vertical Brazing Volllöttechnologie kombiniert. Eine extrem harte Beschichtung sorgt für eine hervorragende Verschleißfestigkeit. Nouvelle nuance universelle principalement associée au format entièrement solide et au tout brasage. Couche de revêtement extrêmement dure qui assure une excellente résistance à l'usure.
NBL250C	Low volume CBN 60%	3.200	PVD	AlTiN	H	H10 H25	First choice for general machining even with light to medium interruptions. Prima scelta per lavorazioni generiche anche in caso di leggero o medio taglio interrotto. Erste Wahl für allgemeine Bearbeitungen unter leichten bis mittleren Schnittbedingungen. Premier choix pour usinages généraux, y compris dans des conditions de coupe avec interruptions légères à moyennes.

SORMA DIAMOND & CUTTING TOOLS

NBL300C	Low volume CBN 70%	3.300	PVD	AlTiN	H	H10 H30	All-around grade with a perfect balance between toughness and wear resistance. Can be applied both on interrupted and continuous cut. Grado universale con un perfetto bilanciamento tra tenacità e resistenza all'usura. Può essere usato per taglio interrotto e taglio continuo. Universalqualität mit einem perfekten Verhältnis von Robustheit und Verschleißfestigkeit. Kann für unterbrochene und kontinuierliche Schneidevorgänge eingesetzt werden. Qualité universelle avec équilibre parfait entre ténacité et résistance à l'usure. Peut être utilisé dans des conditions de coupe interrompue et de coupe continue.
NBL350C	Low volume CBN 75%	3.400	PVD	AlTiN	H	H20 H35	Extreme toughness for heavy interrupted cut. Tenacità estrema per condizioni di taglio fortemente interrotto. Extreme Robustheit für stark unterbrochene Schnittbedingungen. Extrême ténacité dans des conditions de coupe fortement interrompues.
NBH450C	High volume CBN 95%	4.400	PVD	TiCN+TiN	K	K01 K20	First choice for grey cast iron finishing at very high cutting condition and with great wear resistance. Prima scelta per la finitura di ghisa grigia a velocità di taglio molto elevate e con eccellente resistenza all'usura. Erste Wahl für die Bearbeitung von Grauguss bei hohen Schnittgeschwindigkeiten und mit ausgezeichneter Verschleißfestigkeit. Premier choix pour finition de fonte grise à des vitesses de coupe très élevées, avec une excellente résistance à l'usure.
NBH450U	High volume CBN 95%	4.400	-	-	K	K01 K20	Same as NBH450C but uncoated. Generally suggested under interrupted conditions. Come NBH450C ma non rivestito. Generalmente consigliato per condizioni di taglio interrotto. Wie NBH450C, aber unbeschichtet. Generell empfohlen für unterbrochene Schnittbedingungen. Identique au NBH450C mais non revêtu. Généralement recommandé dans des conditions de coupe interrompues.
NBH500C	High volume CBN 90%	4.200	PVD	AlTiN	K	K10 K25	Main choice for grey cast iron machining with negative inserts, both for finishing and roughing. Mostly available for full solid geometries. Scelta principale per finitura e semifinitura di ghisa grigia con inserti negativi. Principalmente disponibile per geometrie integrali. Erste Wahl für das Schlichten und Schruppschlichten von Grauguss mit negativen Wendeschneidplatten. Überwiegend für Voll-CBN Platten verfügbar. Premier choix pour la finition et la semi-finition de fonte grise avec plaquettes négatives. Principalement disponible pour des géométries "full" PCBN.
NBH500U	High volume CBN 90%	4.200	-	-	K	K10 K25	Same as NBH500C but uncoated. Generally suggested under most severe cutting conditions.. Come NBH500C ma non rivestito. Generalmente consigliato per le condizioni di taglio più gravose. Wie NBH500C, aber unbeschichtet. Generell empfohlen für schwierigste Schnittbedingungen. Identique au NBH500C mais non revêtu. Généralement recommandé dans des conditions de coupe les plus exigeantes.

NBH600U	High volume CBN 90%	3.800	-	-	K	K20 K30	Tough grade for severe applications on cast iron. Coarse CBN grain combined with a metallic binder for maximum stability even on interrupted cut. Grado tenace per applicazioni gravose sulla ghisa. CBN di grana gorssa con legante metallico per affidabilità massima anche su taglio interrotto. Robuste Qualität für schwere Anwendungen mit Gusseisen. Grobes CBN-Pulver in Kombination mit einem Metallbindemittel für maximale Zuverlässigkeit auch bei unterbrochenen Schnittbedingungen. Nuance tenace pour applications intensives sur fonte. Poudre CBN grossière combinée à un liant métallique pour une fiabilité maximale y compris dans des conditions de coupe interrompues.
NBH900U	High volume CBN 80%	3.500	-	-	H	H25 H35	Universal grade for severe applications both on ISO K and ISO H materials. High reliability on roughing operations. Grado universale per applicazioni gravose su materiali dei gruppi ISO K e ISO H. Elevata affidabilità nelle operazioni di sgrossatura. Universelle Qualität für schwere Anwendungen bei Materialien der Gruppen ISO K und ISO H. Hohe Zuverlässigkeit bei der Vorbearbeitung. Nuance universelle pour applications intensives sur les matériaux des groupes ISO K et ISO H. Haute fiabilité dans les opérations d'ébauche.
					K	K25 K35	
NBH950U	High volume CBN 90%	4.000	-	-	H	H30 H35	Extreme toughness mainly for cast iron machining but applicable, as alternative grade, even on hardened steel. Tenacità estrema, principalmente per lavorazione della ghisa, consigliato come grado alternativo anche per acciai temprati. Extreme Robustheit, hauptsächlich für Gusseisen, auch empfohlen als eine alternative Qualität für gehärtete Stähle. Ténacité extrême, principalement pour la fonte, recommandée comme nuance alternative y compris pour aciers trempés.
					K	K30 K35	

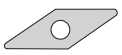
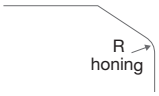
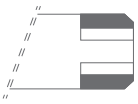
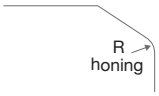
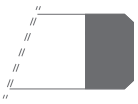
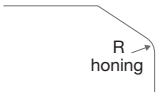
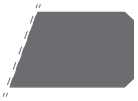
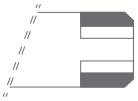
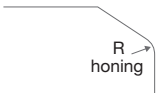
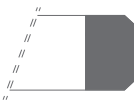
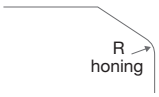
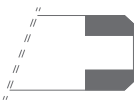
SORMA DIAMOND & CUTTING TOOLS

ISO 513		nikkoTOOLS	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SUMITOMO	TAEGUTEC	TUNGALOY	WALTER
K	K01 - K10	NBH450C	IB05S IB10K IB10S	KB1345 KB5630	KBN475	BC5110 MB710	CB7525	CBN200 CK2065	BNC500	TB7015	BX930	
	K10 - K20	NBH500C NBH600U	IB90 IB90A	KB1340 KB1345 KBK45	KBN60M	MB4120 MB730	CB7525	CBN200 CBN300 CBN300P CBN400C	BN500 BN7000 BNC8115	TB7015 TB7020	BX480	WBK20
	K20 - K30	NBH600U NBH900U NBH950U	IB20KD IB90A	KB1340 KBK45	KBN900	MBS140	CB7925	CBN500	BNS800 BNS8125	TB7020	BXC90	WBK30
H	H01 - H10	NBL050C NBL150C	IB05H IB10H IB10HC IB50	KBH10B	KBN05M KBN10M KBN510	BC8105 BC8110 MB8110	CB7015 CB7105 CB7115	CBN010 CBN150 CBN060K CH0550	BN1000 BNC100 BNC2010 BNC2115 BNX10	TB610	BX310 BXM10	WBH10 WBH10C
	H10 - H20	NBL200C NBL250C NBL300C	IB20H IB20HC IB25HA IB55	KBH20B	KBN25M KBN525	BC8120 BC8220 MB8120	CB7025 CB7125	CBN060K CH2540	BN2000 BNC160 BNC200 BNC2020 BNC2125 BNC8115 BNX20	TB650	BX330 BX360 BXA20 BXM20 BXC50	WBH20
	H20 - H30	NBL300C NBL350C NBH900U NBH950U	IB25HC IB90	KB5630	KBN35M	BC8130 MB8130	CB7135 CB7925	CH3515	BNC300 BNC8115 BNX25	TB670	BX380	

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

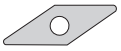
SORMA DIAMOND & CUTTING TOOLS

		NEGATIVE type with hole		C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
K	UNIVERSAL	UE  R honing S01520	 carbide backed	A146  SIZE 12	A153  SIZE 15		A163  SIZE 16	A170  SIZE 16	
		UE  R honing S01525	 vertical brazing	A146  SIZE MCN	A153  SIZE MDN	A159  SIZE 12	A163  SIZE 16	A170  SIZE 16	A171  SIZE 08
		UE  R honing S02020	 full solid	A146  SIZE 09 12	A153  SIZE 15	A159  SIZE 12	A163  SIZE 16		A171  SIZE 08
	SHARP	SE  T01020	 carbide backed	A147  SIZE 12					
H	UNIVERSAL	UE  R honing S01225	 vertical brazing	A146  SIZE MCN	A153  SIZE MDN	A159  SIZE 12	A163  SIZE 16	A170  SIZE 16	A171  SIZE 08
		UE  R honing S01225	 solid brazing		A153 SIZE 15				
		UE R honing S02020	 full solid	A146 SIZE 09 12					

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies brazing process.
solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.
vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.
full solid: Full PCBN structure, maximizes performances and reduces the cost per edge. High cutting speed and depth of cut can be applied.

TURNING Edge preparations - PCBN

SORMA DIAMOND & CUTTING TOOLS

NEGATIVE type with hole				C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
H	SHARP	SE	S01015	vertical brazing	A155  SIZE MCN 12	A153  SIZE MDN 15		A163  SIZE 16	A170  SIZE 16	A171  SIZE 08
		SE	S01015	solid brazing	A154  SIZE 15				
	REINFORCED	RE	S01535	vertical brazing	A147  SIZE 12			A164  SIZE 16		A171  SIZE 08
		RE	S01535	solid brazing	A154  SIZE 15					
		RE	S01535	full solid	A147  SIZE 09					
	WIPER	WE	S01015	vertical brazing	A148  SIZE 12					
	CHIPBREAKER	CF	S01035	vertical brazing	A148  SIZE 12					
		CM	S01235	vertical brazing	A148  SIZE 12					

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies brazing process.
solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.
vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.
full solid: Full PCBN structure, maximizes performances and reduces the cost per edge. High cutting speed and depth of cut can be applied.

SORMA DIAMOND & CUTTING TOOLS

		NEGATIVE type without hole		C	R	S	T		
				80°	-	90°	60°		
K	UNIVERSAL	**UE** R honing S02020	full solid	A150 SIZE 09 12	A158 SIZE 06 09 12	A160 SIZE 09 12	A165 SIZE 11 16		
		UE R honing S02020	full solid with dimple	A150 SIZE 12		A160 SIZE 12			
	SHARP	**SE** T01020	full solid		A158 SIZE 09				
	REINFORCED	**RE** R honing S02525 (size 09) - S10020 (size 12)	full solid		A158 SIZE 09 12				
		RH R honing S04025	full solid		A158 SIZE 09				
H	UNIVERSAL	**UE** R honing S02020	full solid	A150 SIZE 09 12	A158 SIZE 09 12	A160 SIZE 09 12	A165 SIZE 11 16		
	SHARP	**SE** T01020	full solid		A158 SIZE 09				
	REINFORCED	**RE** R honing S02525 (size 09) - S10020 (size 12)	full solid		A158 SIZE 09 12				

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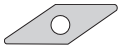
SORMA DIAMOND & CUTTING TOOLS

				C	D	R	T	V	
POSITIVE type with hole									
				80°	55°	-	60°	35°	
K	UNIVERSAL	UE R honing S01520	carbide backed	CC A144  SIZE 06 09	DC A151  SIZE 11		TC A161  SIZE 09 11 16	VB A167  SIZE 16	
		UE R honing S02020	full solid			RC A157  SIZE 09 12			
	SHARP	SE T01020	carbide backed				TC A161  SIZE 11		
	REINFORCED	RE R honing S01530	carbide backed				TC A162  SIZE 11 16	VB A168  SIZE 16	
H	UNIVERSAL	UE R honing S01225	solid brazing	CC A144  SIZE 06 09 12	DC A151  SIZE 07 11		TC, TP A161, A166  SIZE 09 11 16	VB, VC A167, A169  SIZE 11 16	
	SHARP	SE R honing S01015	solid brazing	CC A144  SIZE 06 09	DC A151  SIZE 07 11		TC, TP A161, A166  SIZE 11 16	VB, VC A167, A169  SIZE 11 16	
		SF T01015	solid brazing	CC A144, A145  SIZE 06 09	DC A151  SIZE 07 11			VB A167  SIZE 11 16	
	REINFORCED	RE R honing S01535	solid brazing	CC A145  SIZE 06 09	DC A152  SIZE 07 11		TC, TP A162, A166  SIZE 11 16	VB A168  SIZE 16	

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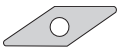
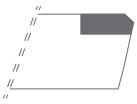
full solid: Full PCBN structure, maximizes performances and reduces the cost per edge. High cutting speed and depth of cut can be applied.

POSITIVE type with hole			C	D	R	T	V	
								
			80°	55°	-	60°	35°	
H	WIPER	WE R honing S01015	 solid brazing	CC A145  SIZE 06 09				

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies brazing process.
solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.
vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.
full solid: Full PCBN structure, maximizes performances and reduces the cost per edge. High cutting speed and depth of cut can be applied.

UE

Edge preparation

- First choice for general machining application under variable cutting conditions from continuous to interrupted cut
- Available in a broad range of grades both for cast iron and hardened steel machining
- UE universal edge can be supplied in different PCBN formats, carbide backed, solid brazing, vertical brazing and full solid
- Best compromise for sharp and strong cutting edge design

- Erste Wahl für die allgemeine Bearbeitung unter verschiedenen Schnittbedingungen, vom kontinuierlichen bis zum unterbrochenen Schnitt.
- Erhältlich in einer Vielzahl von Qualitäten für die Bearbeitung von Gusseisen und gehärteten Stählen
- Die Universalschneidkante (UE) ist in verschiedenen PCBN-Typen erhältlich: Grundmaterial aus Hartmetall, integrales Löten, vertikales Löten und full solid
- Optimaler Kompromiss zwischen Schärfe und Robustheit der Schneidkante

- Prima scelta per lavorazioni generali in condizioni di taglio variabili, da taglio continuo a interrotto.
- Disponibile in un'ampia gamma di gradi per la lavorazione di ghisa e acciai temprati
- Il tagliente universale (UE) può essere fornito in diverse tipologie PCBN: supporto in metallo duro, brasatura integrale, brasatura verticale e integrale
- Miglior compromesso tra taglienza e robustezza del tagliente

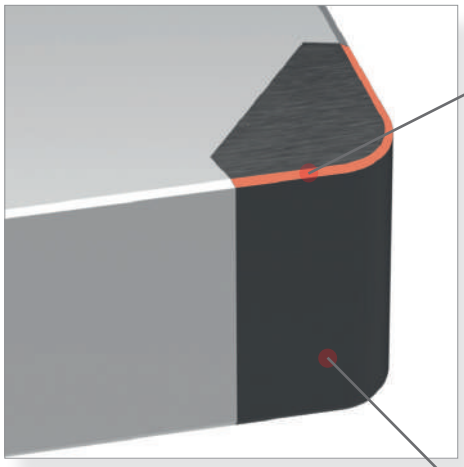
- Premier choix pour les applications générales d'usinage dans des conditions de coupe variables, de la coupe continue à la coupe interrompue.
- Disponible dans une large gamme de nuances pour l'usinage de fonte et d'aciers trempés
- L'arête de coupe universelle (UE) est disponible dans différents types de PCBN : support en carbure, brasage intégral, brasage vertical et entièrement solide
- Meilleur compromis entre acuité et résistance de l'arête de coupe

SORMA DIAMOND & CUTTING TOOLS

UE

Edge preparation

Features of UE edge preparation



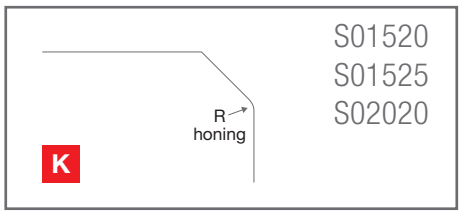
UNIVERSAL EDGE

- The edge preparation has been optimized according to insert style and workpiece material
- Chamfer width from 0.12 mm to 0.20 mm with an angle of 20°- 25°

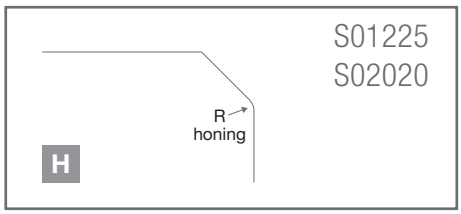
- La preparazione del tagliente è stata ottimizzata in base al campo di applicazione e al materiale da lavorare.
- Larghezza smusso da 0.12 a 0.20 mm con angolo di 20°- 25°

- Die Schneidkantenpräparation ist auf den Einsatzbereich und das zu bearbeitende Material optimiert
- Fasenbreite 0,12 bis 0,20 mm bei einem Winkel von 20° bis 25°

- La préparation des arêtes de coupe a été optimisée en fonction du domaine d'application et du matériau à usiner
- Largeur de chanfrein de 0,12 à 0,20 mm avec angle de 20 ° - 25 °



S01520
S01525
S02020



S01225
S02020

MULTIPLE SOLUTIONS

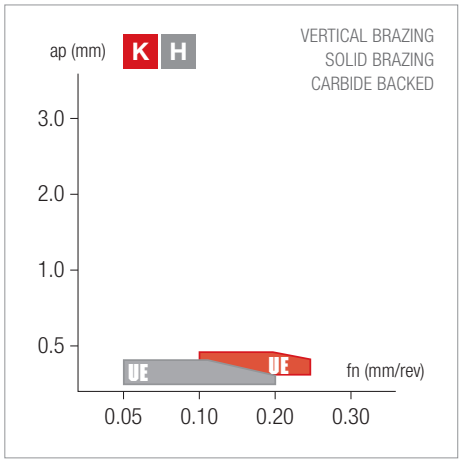
- All NIKKO PCBN format available: full solid, vertical brazing, solid tip, and carbide backed

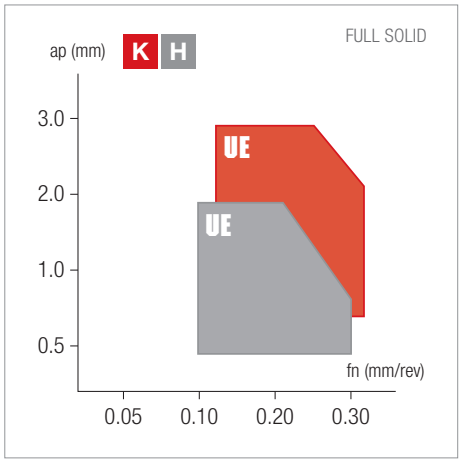
- Tutti i formati Nikko Tools PCBN disponibili: integrale, brasatura verticale, riporto integrale, supporto in carburo

- Alle von Nikko Tools erhältlichen PCBN-Formate: Vollmassiv, vertikales Löten, Volllötung, Grundmaterial aus Hartmetall

- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure

Application range - ISO 513





DIMPLED INSERTS AVAILABLE



- High performance alternative to conventional Si3N4 ceramic for cast iron roughing.
- Alternativa ad alte prestazioni rispetto alla convenzionale ceramica Si3N4 per sgrossatura della ghisa.
- Leistungsfähige Alternative zu herkömmlicher Si3N4-Keramik zum Schruppen von Gusseisen.
- Alternative hautes performances à la céramique Si3N4 traditionnelle pour l'ébauche de la fonte.

SE

Edge preparation

• Recommended for continuous cut application under stable conditions
• Cutting forces reduced by 10% in comparison with most common general purpose design
• Sharpe edge preparation with high wear-resistant CBN grade drastically reduces burrs formation

• Empfohlen für kontinuierliche Schneidanwendungen unter stabilen Schnittbedingungen
• 10 % geringere Schnittkräfte im Vergleich zu herkömmlichen Standardausführungen für allgemeine Anwendungen
• Scharfe Kantenpräparation mit hochverschleißfester CBN-Qualität, wodurch die Gratbildung deutlich reduziert wird

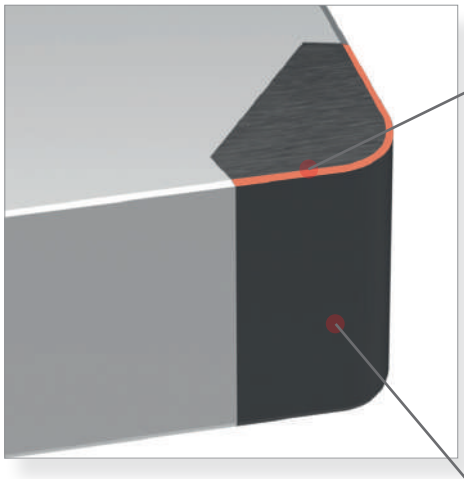
• Raccomandato per applicazioni con taglio continuo in condizioni di taglio stabili
• Forze di taglio ridotte del 10% rispetto ai più comuni design per applicazioni generiche
• La geometria molto affilata unita al grado CBN con elevata resistenza all'usura riducono la formazione di bave.

• Recommandé pour applications de coupe continues dans des conditions de coupe stables
• Efforts de coupe réduits de 10 % par rapport aux conceptions pour applications générales les plus courantes
• Préparation de l'arête de coupe avec nuance CBN très résistante à l'usure qui réduit considérablement la formation de bavures

SE

Edge preparation

Features of SE edge preparation



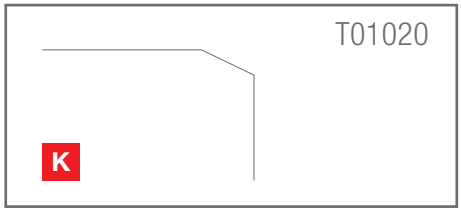
SHARP EDGE

- The edge preparation has been optimized according to insert style and workpiece material
- The chamfer width is 0.10 mm with angle from 15° to 20°

- La preparazione del tagliente ottimizzata in accordo allo stile dell'inserto e al materiale
- Larghezza smusso 0.10 mm con angolo da 15° a 20°

- Optimierte Schneidkantenpräparation je nach Ausführung und Material der Wendeschneidplatte
- Fasenbreite 0,10 mm mit einem Winkel von 15° bis 20°

- Préparation d'arête optimisée en fonction du type de plaquette et de la matière
- Largeur de chanfrein 0,10 mm avec angle de 15 ° à 20 °



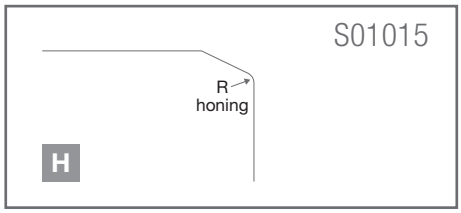
MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid tip, and carbide backed

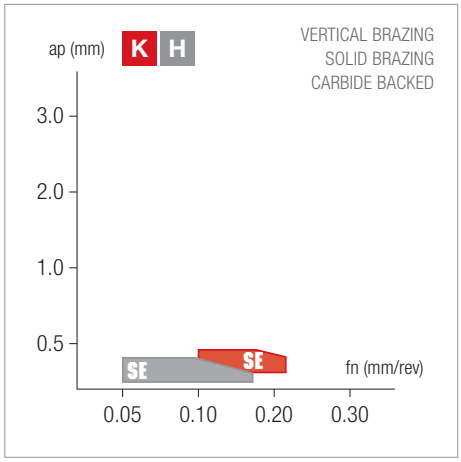
- Tutti i formati Nikko Tools PCBN disponibili: integrale, brasatura verticale, brasatura integrale, supporto in metallo duro

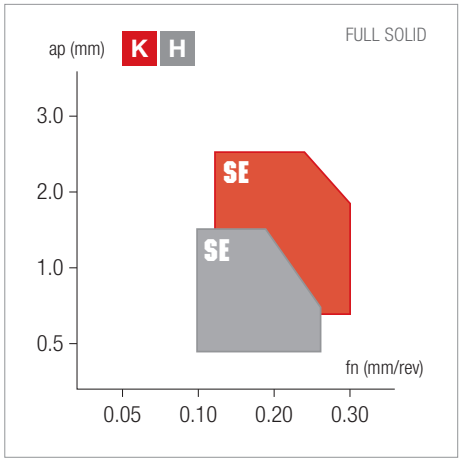
- Alle von Nikko Tools erhältlichen PCBN-Formate: Vollmassiv, vertikales Löten, Volllötung, Grundmaterial aus Hartmetall

- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure



Application range - ISO 513





T TYPE AVAILABLE FOR ISO K

- T land without honing prevent burrs formation on cast iron machining.
- Pianetto a T senza onatura che previene la formazione di bave nella lavorazione della ghisa.
- T-Fläche ohne Honen, was die Gratbildung bei der Bearbeitung von Gusseisen verhindert.
- Plaquette en T sans honing qui évite la formation de bavures lors de l'usinage de la fonte.

SF

Edge preparation

• Recommended for small parts high precision machining under continuous cutting conditions
• Low cutting force allows machining of thin workpieces avoiding vibrations, obtaining strict dimensional tolerances
• SF for super fine finishing is combined with a special version of NBL050C named NBL050CX with a coating specifically studied to enhance the sharp action of this geometry

• Empfohlen für die Präzisionsbearbeitung von sehr kleinen Komponenten unter kontinuierlichen Schnittbedingungen
• Die geringen Schnittkräfte ermöglichen die Bearbeitung dünner Teile, vermeiden Vibrationen und erreichen genaue Maßtoleranzen.
• Die SF-Geometrie für die präzise Feinstbearbeitung wird mit einer speziellen Ausführung des NBL050C, dem NBL050CX, kombiniert, der über eine spezielle Beschichtung verfügt, die die Schneidwirkung verbessert

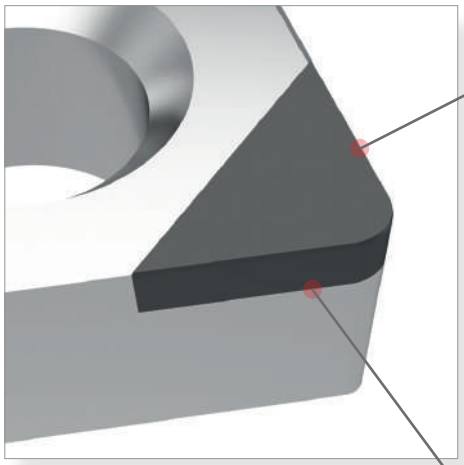
• Raccomandato per lavorazioni di minuteria di alta precisione in condizioni di taglio continuo
• Le basse forze di taglio consentono la lavorazione di pezzi sottili, evitando vibrazioni e ottenendo rigorose tolleranze dimensionali.
• La geometria SF per superfinitura di precisione è combinata con una versione speciale di NBL050C chiamata NBL050CX con un rivestimento specificamente studiato per esaltarne la taglienza

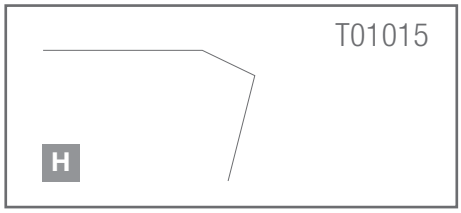
• Recommandé pour les usinages haute précision de très petites pièces dans des conditions de coupe continues
• Les faibles efforts de coupe permettent l'usinage de pièces fines, évitant les vibrations et atteignant des tolérances dimensionnelles serrées.
• La géométrie SF pour superfinition de précision est associée à une version spéciale du NBL050C dénommée NBL050CX dotée d'un revêtement pour renforcer l'action de coupe de la géométrie

SF

Edge preparation

Features of SF edge preparation





SUPER FINE

- The edge preparation has been optimized for small part machining and best dimensional tolerances
- The chamfer width is 0.10 mm with an angle of 15°, without honing

- La preparazione del tagliente è ottimizzata per la lavorazione di particolari di piccole dimensioni e l'ottenimento delle migliori tolleranze dimensionali
- Larghezza smusso 0.10 mm con angolo di 15°, senza onatura

- Optimierte Schneidenkantenpräparation für die Bearbeitung kleiner Details und zum Erreichen der besten Maßtoleranzen
- Fasenbreite 0,10 mm bei 15° Winkel, ohne Honen

- Préparation d'arête optimisée pour l'usinage de détails aux dimensions réduites et l'obtention de meilleures tolérances dimensionnelles
- Largeur de chanfrein 0,10 mm avec angle de 15 °, sans rodage

SOLID BRAZING

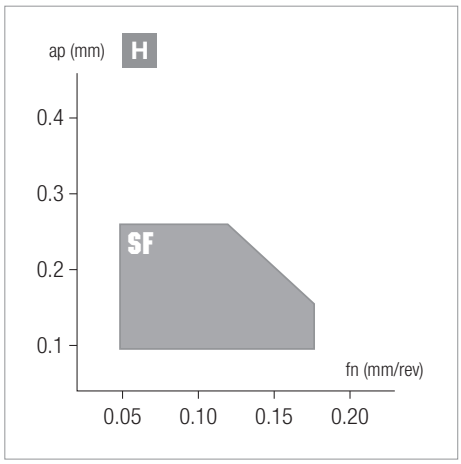
- Direct brazing between PCBN and carbide, with special vacuum technology, produces a pure and stable cutting material

- La saldobrasatura con speciale tecnologia vacuum brazing tra PCBN e metallo duro, cosente di ottenere un tagliente puro e stabile

- Das Schweißlöten von PCBN und Hartmetall mit spezieller Vakuumtechnik sorgt für ein sauberes und zuverlässiges Schneidmaterial

- Le brasage direct entre PCBN et carbure, avec une technologie spéciale sous vide, produit un matériau de coupe pur et fiable

Application range - ISO 513



SHARP AND PRECISE

- Only for positive inserts.
  Perfect solution for very small radii.
  0.1 radius can be produced as semi-standard product.
- Solo per inserti positivi.
  La soluzione perfetta per raggi molto piccoli.
  Il raggio 0.1 può essere prodotto come semi-standard.
- Nur für positive Wendeschneidplatten.
  Die perfekte Lösung für sehr kleine Radien.
  Der Radius 0,1 kann als Semi-Standard hergestellt werden.
- Uniquement pour plaquettes positives.
  Parfaite solution pour les très petits rayons.
  Le rayon 0,1 peut être produit en semi-standard.

RE

Edge preparation

• Specifically designed to grant high reliability on heavy-interrupted cut
• In case of hardened steel machining a larger chamfer angle improves the cutting edge strength
• RE reinforced edge is always combined with high toughness grades
• RE geometry on solid type CBN round inserts is a great solution for roll machining in steel industry

• Progettato specificamente per assicurare elevata affidabilità in condizioni di taglio fortemente interrotto.
• Nel caso di acciai temprati, un ampio angolo di spoglia migliora la robustezza del tagliente
• La geometria RE con tagliente rinforzato è sempre combinata a gradi di elevata tenacità
• La geometria RE su inserti tondi integrali CBN è la soluzione ottimale per la lavorazione dei rulli nell'industria siderurgica

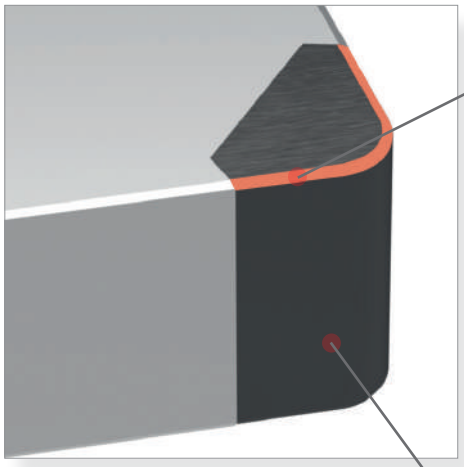
• Speziell für hohe Zuverlässigkeit unter stark unterbrochenen Schnittbedingungen entwickelt.
• Bei gehärtetem Stahl verbessert ein breiter Spanwinkel die Robustheit der Schneidkante
• Die RE-Geometrie mit verstärkter Schneidkante wird stets mit Qualitäten hoher Robustheit kombiniert
• Die RE-Geometrie als Voll-CBN-Wendeschneidplatten ist eine hervorragende Lösung für die Walzenbearbeitung in der Stahlindustrie

• Spécialement conçu pour garantir une fiabilité élevée dans des conditions de coupe fortement interrompues.
• Dans le cas des aciers trempés, un angle de dépouille important améliore la résistance de l'arête de coupe
• La géométrie RE à arête de coupe renforcée est toujours associée à des nuances de haute ténacité
• La géométrie RE sur plaquettes rondes intégrales CBN est une excellente solution pour l'usinage des rouleaux dans l'industrie sidérurgique

RE

Edge preparation

Features of RE edge preparation



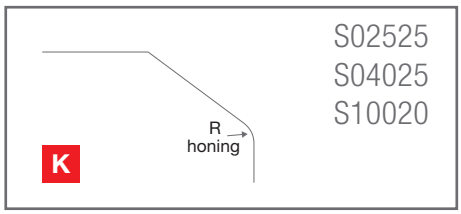
REINFORCED EDGE

- Big chamfer and angle to keep the cutting edge strong
- The chamfer width starts from 0.15 mm for brazed type and reaches 1 mm for solid

- Grande smusso e ampio angolo di spoglia per mantenere il tagliente robusto
- Larghezza smusso: parte da 0.15 mm per tipologia saldobrasata e arriva a 1 mm nella versione integrale

- Große Fase und breiter Spanwinkel für eine robuste Schneidkante
- Fasenbreite: ab 0,15 mm für die schweißgelötete Ausführung und bis zu 1 mm in der Voll CBN Ausführung

- Grand chanfrein et grand angle de dépouille pour maintenir une arête de coupe robuste
- Largeur de chanfrein : commence à 0,15 mm pour le type brasé, jusqu'à 1 mm dans la version intégrale



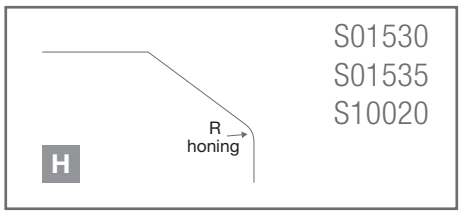
MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid brazing, and carbide backed

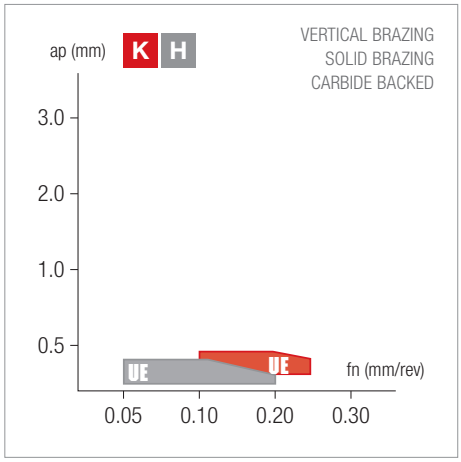
- Tutti i formati Nikko Tools PCBN disponibili: interamente solido, brasatura verticale, intera brasatura, supporto in metallo duro

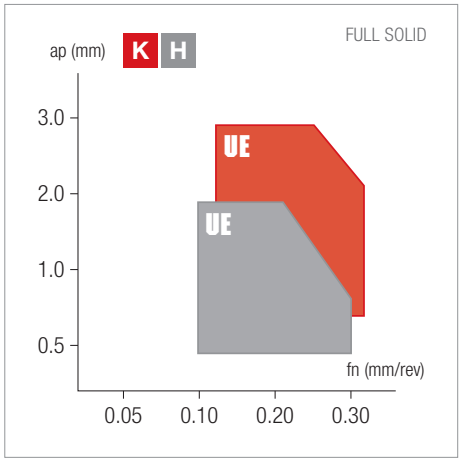
- Alle von Nikko Tools erhältlichen PCBN-Formate: Voll CBN, vertikales Löten, Volllötung, Grundmaterial aus Hartmetall

- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure



Application range - ISO 513





- Cutting forces could be slightly higher compared to general purpouse type, stable clamping and equipments are strongly recommended.
- Le forze di taglio possono risultare leggermente più elevate rispetto alle tipologie per uso generale: si raccomanda l'uso di attrezzature e un fissaggio stabile.
- Die Schnittkräfte können etwas höher sein als bei Allzwecktypen: Es wird empfohlen, Werkzeuge und eine sichere Befestigung zu verwenden.
- Les efforts de coupe peuvent être légèrement supérieurs par rapport aux types d'applications générales : un serrage stable et des équipements sont recommandés.

WE

Edge preparation

• Wiper geometry with special arc design for maximum performance and low cutting forces
• Improves productivity when used at high feed machining; reaches ground surface quality at conventional cutting conditions
• WE wiper edge is available in a broad range of grades for hardened steel

• Wendeschneidplattengeometrie mit speziellem Bogendesign für maximale Leistung und geringe Schnittkräfte
• Verbessert die Produktivität bei der Verwendung mit großen Vorschüben; verbessert die Qualität der geschliffenen Oberfläche unter konventionellen Schnittbedingungen
• Die Wendeschneidplattengeometrie WE (Wiper Edge) ist in einer Vielzahl von Qualitäten für gehärtete Stähle erhältlich

• Geometria raschiante con speciale disegno ad arco per le massime prestazioni e basse forze di taglio
• Migliora la produttività quando usato con elevati avanzamenti; raggiunge la qualità delle superfici rettificate in condizioni di taglio convenzionali
• Geometria raschiante WE (wiper edge) disponibile in un'ampia gamma di gradi per acciai temprati

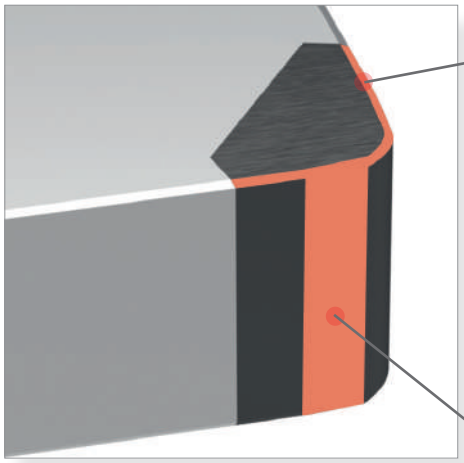
• Géométrie WIPER avec conception en arc spéciale pour des performances maximales et de faibles efforts de coupe
• Améliore la productivité si utilisé à des avances élevées ; atteint la qualité des surfaces rectifiées dans des conditions de coupe conventionnelles
• Géométrie wiper WE disponible dans une large gamme de nuances pour aciers trempés

SORMA DIAMOND & CUTTING TOOLS

WE

Edge preparation

Features of WE edge preparation



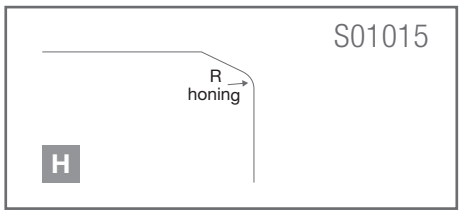
WIPER EDGE

- Small chamfer and reduced angle for a very smooth cutting action
- The chamfer width is 0.1 mm with an inclination of 15°

- Piccolo smusso e ridotto angolo per azione di taglio estremamente leggera
- Larghezza smusso di 0.1 mm con inclinazione di 15°

- Kleine Fase und kleiner Winkel für extrem behutsames Schneiden
- Fasenbreite von 0,1 mm bei 15° Neigung

- Petit chanfrein et angle réduit pour une coupe extrêmement douce
- Largeur de chanfrein de 0,1 mm avec inclinaison de 15 °



ARC GEOMETRY

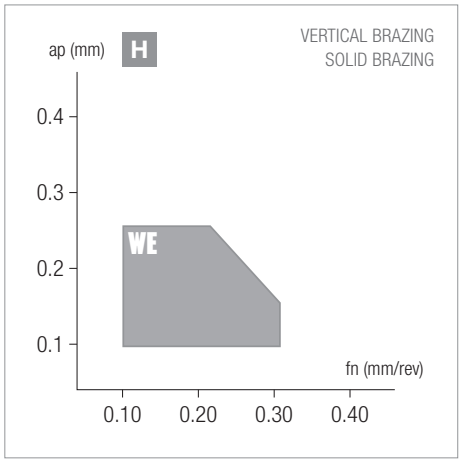
- Multiple arc wiper instead of conventional straight wiper land effectively reduces vibrations, creates better surface and suitable for wider feed range

- Il pianetto raschiante multicurva, rispetto ai pianetti raschianti convenzionali diritti, riduce efficacemente le vibrazioni per ottenere migliori superfici e si adatta a un ampio intervallo di avanzamenti

- Die mehrkurvige Wendeschneidplatte reduziert im Vergleich zu herkömmlichen geraden Schneidplatten effektiv die Vibration für bessere Oberflächen und passt sich an eine Vielzahl von Vorschüben an

- La plaquette WIPER ARC multiple, par rapport aux plaquettes wiper droites classiques, réduit efficacement les vibrations pour obtenir de meilleures surfaces et s'adapte à une plage d'avances plus large

Application range - ISO 513



SPECIAL DESIGN UPON REQUEST

- Wiper "concept" can be applied to any shape and it can be provided even in combination of full solid grades.
- Il concetto di raschiante può essere usato per qualsiasi geometria anche se le più comuni sono quelle con angolo di 80° che possono essere fornite anche in conbinazione a gradi integrali.
- Das Wendeschneidplattenkonzept kann für jede beliebige Geometrie verwendet werden, auch wenn die gängigsten Geometrien die mit einem Winkel von 80° sind, die auch in einer Kombination mit integralen Qualitäten geliefert werden können.
- Le concept de wiper peut être appliqué à n'importe quelle forme, bien que les plus courantes soient celles avec un angle de 80 ° qui peuvent également être fournies en combinaison avec des qualités intégrales.

CF/CM

Edge preparation

• Solution for surface hardened or sintered steel workpieces like gears and shafts;
• The edge preparation is suitable for interrupted cut on hardened surfaces and sintered steel at high hardness;
• The stepped chipbreaker effectively controlls the chips especially when cutting the softer part under the hardened laye
• Tailor-made solutions can be realized both for negative and positive inserts

• Rompitruciolo 3D per il miglior controllo truciolo anche nelle applicazioni più complesse.
• CM è specializzato nella rimozione dello strato cementato, mentre CF è principalmente per acciai temprati in cui l'evacuazione del truciolo è impegnativa (tipica applicazione: tornitura interna)
• Si possono realizzare soluzioni su misura per inserti negativi e positivi

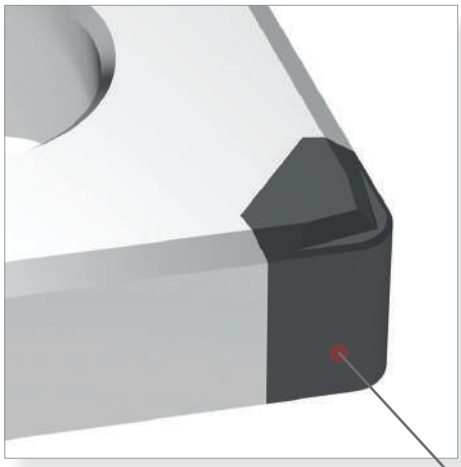
• 3D-Spanbrecher für optimierte Fluss- und Spankontrolle bei schwierigen Anwendungen.
• CM ist auf das Abtragen der gehärteten Schicht spezialisiert, wohingegen CF vor allem für gehärtete Stähle geeignet ist, bei denen die Spanabfuhr schwierig ist (typische Anwendung: Innendrehen)
• Es können kundenspezifische Lösungen für negative und positive Wendeschneidplatten realisiert werden

• Brise-copeaux 3D pour évacuation copeau optimisée et contrôle des copeaux dans les applications les plus exigeantes.
• CM est spécialisé dans l'enlèvement de la couche de cémentation, tandis que CF est principalement destiné aux aciers trempés où l'évacuation des copeaux est exigeante (application typique : tournage interne)
• La création de solutions sur mesure est possible pour les plaquettes négatives et positives

CF/CM

Edge preparation

Features of CF/CM edge preparation



SMART DESIGN

- Excellent performance thanks to the chipbreaker and cutting edge design.
- Small chamfer to reduce cutting forces and 35° angle for a higher strength

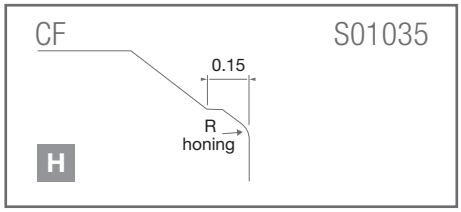
- Prestazioni eccellenti grazie allallo speciale design di rompitruciolo e tagliente
- Piccolo smusso per ridurre le forze di taglio e 35° per maggiore robustezza

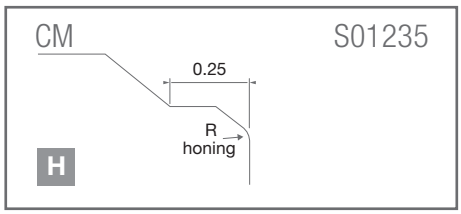
- Hervorragende Leistung durch die Trennung von Spanbrecher und Schneidkante
- Kleine Fase zur Reduzierung der Schnittkräfte und 35° für mehr Robustheit

- Excellentes performances grâce à la séparation entre le brise-copeaux et l'arête de coupe
- Petit chanfrein pour réduire les efforts de coupe et un angle à 35 ° pour une solidité accrue

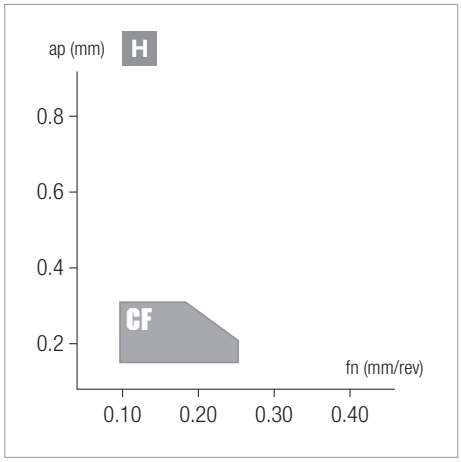
GREAT RELIABILITY

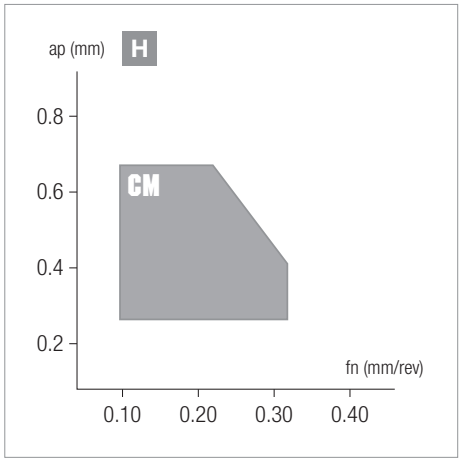
- Available with stable and reliable vertical brazing technology
- Disponibile con tecnologia di brasatura verticale stabile e affidabile
- Erhältlich mit stabiler und zuverlässiger vertikaler Löttechnologie
- Disponible avec une technologie de brasage verticale stable et fiable



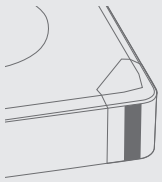


Application range - ISO 513





CHIPBREAKER+WIPER AVAILABLE



- The combined types CFW and CMW are also available. Perfect chip control and great surface finishing in one step.
- Disponibili anche le tipologie combinate CFW e CMW. Perfetto controllo del truciolo e ottima finitura superficiale in un unico passaggio.
- Auch kombinierte CFW- und CMW-Typen sind erhältlich. Perfekte Spankontrolle und hervorragende Oberflächenqualität in einem einzigen Arbeitsgang.
- Les types combinés CFW et CMW sont également disponibles. Contrôle parfait des copeaux et excellente finition de surface en une seule passe.

K		BRAZED TIP		FULL SOLID			
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE		
●	wear resistance	-	-	-	-		
	1st CHOICE	**NBH450C / UE**	**NBH450C / UE**	**NBH500C / UE**	**-**		
	toughness	NBH500C / UE	-	NBH600U / UE	-		
⬢	wear resistance	NBH450C / UE	-		-		
	1st CHOICE	**NBH500C / UE**	**NBH450C / UE**	**NBH500C / UE**	**-**		
	toughness	NBH900U / UE	NBH450U / RE	NBH600U / UE	-		
✣	wear resistance	NBH500C / UE	-	NBH500C / UE	-		
	1st CHOICE	**NBH900U / RE**	**-**	**NBH600U / UE**	**-**		
	toughness	-	-	NBH900U / UE	-		

H		BRAZED TIP		BRAZED TIP (WIPER)		FULL SOLID	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
●	wear resistance	NBL050C / SE	NBL050C / SE	-	-	-	-
	1st CHOICE	**NBL150C / UE**	**NBL150C / SE**	**NBL050C / WE**	**NBL050C / WE**	**NBL200C / UE**	**-**
	toughness	NBL250C / UE	NBL250C / UE	NBL150C / WE	NBL150C / WE	NBL250C / UE	-
⬢	wear resistance	NBL150C / UE	NBL150C / UE	NBL050C / WE	NBL050C / WE	NBL200C / UE	-
	1st CHOICE	**NBL250C / UE**	**NBL250C / UE**	**NBL150C / WE**	**NBL150C / WE**	**NBL250C / UE**	**-**
	toughness	NBL300C / UE	NBL300C / UE	NBL250C / WE	-	NBH900U / UE	-
✣	wear resistance	NBL300C / UE	NBL300C / UE	-	-	-	-
	1st CHOICE	**NBL350C / RE**	**NBL350C / RE**	**-**	**-**	**NBH900U / RE**	**-**
	toughness	NBH900U / RE	-	-	-	NBH950U / RE	-

SORMA DIAMOND & CUTTING TOOLS

C	N	M	G	12	04	08	S	-	4	V	-	UE	NBL	250	C
1	2	3	4	5	6	7	8		9	10		11	12	13	14

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

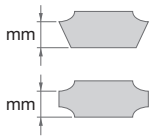
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A	✓	✗	✗
G	✓	✗	double sided
M	✓	✗	single sided
N	✗	✗	✗
T	✓	40°÷60°	single sided
W	✓	40°÷60°	✗
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS
Symbol	(mm)
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.53



7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	EDGE PREPARATION	
Symbol	Shape	
E	honing	
F	sharp edge	
S	honing + chamfering	
T	chamfering	

9	NUMBER OF EDGES
...	number of cutting edges (only for brazed type)

10	BRAZING TYPE
C	carbide backed
S	solid brazing
V	vertical brazing

11	EDGE PREPARATION
SE	sharp edge
UE	universal edge
RE	reinforced edge
WE	wiper edge
CBx	chipbreaker (CBF finishing, CBM medium)

12	GRADE - features
NBL	low content CBN
NBH	high content CBN

13	GRADE - material
000÷390	ISO H
400÷690	ISO K
700÷790	ISO S
800÷890	sintered materials
900÷990	universal

14	GRADE - coating
C	coated
U	uncoated
X	special

CC

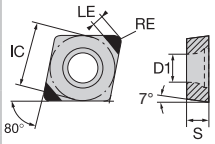
ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, effectively reduces the risk of chip jamming when boring
- 80° corner can be used for both turning and facing operations
- Solid brazing type provides better stability and reliability than conventional carbide backed brazing type

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD																
		NBH450C	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C																
Stable machining, light cut	● 1st choice ○ suitable	●	●	●	●	○	○																	
General machining, medium cut	● 1st choice ○ suitable	●			○	●	●	○																
Unstable machining, heavy cut	⯅ 1st choice ⯅ suitable	⯅					⯅	⯅																

Dimensions



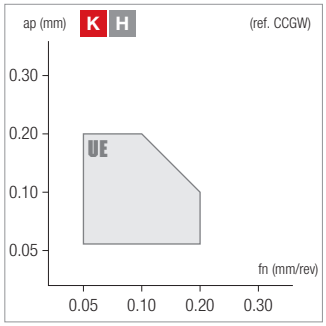
2 edges

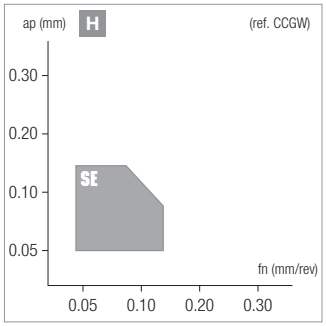
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

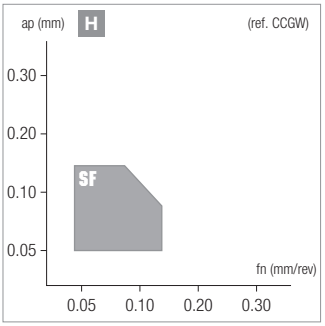
ISO								
P								
M								
K	340 1000							
N								
S								
H		120 280	120 280	90 220	90 180	60 180	60 150	

	Designation		RE	IC	S	D1	LE	Stock							
UNIVERSAL	UE H	CCGW060202S-UE-2S	0.20	6.35	2.38	2.8	2.8		○		○				
		CCGW060204S-UE-2S	0.40	6.35	2.38	2.8	2.8		◉		●	●	●	○	
		CCGW060208S-UE-2S	0.80	6.35	2.38	2.8	2.7				○	○	○		
		CCGW09T302S-UE-2S	0.20	9.525	3.97	4.4	2.8		○		○			○	
		CCGW09T304S-UE-2S	0.40	9.525	3.97	4.4	2.8		●		●	●	●	○	
		CCGW09T308S-UE-2S	0.80	9.525	3.97	4.4	2.7				●	●	●	○	
		CCGW120404S-UE-2S	0.40	12.7	4.76	5.5	2.8					○			
		CCGW120408S-UE-2S	0.80	12.7	4.76	5.5	2.7					○			
	solid tip														
UNIVERSAL	UE K	CCGW060204S-UE-2C	0.40	6.35	2.38	2.8	2.8	●							
		CCGW060208S-UE-2C	0.80	6.35	2.38	2.8	2.7	○							
		CCGW09T304S-UE-2C	0.40	9.525	3.97	4.4	2.8	●							
		CCGW09T308S-UE-2C	0.80	9.525	3.97	4.4	2.7	●							
		CCGW120408S-UE-2C	0.80	12.7	4.76	5.5	2.7	○							
	carbide backed														
SHARP	SE H	CCGW060202S-SE-2S	0.20	6.35	2.38	2.8	2.8		○		●				
		CCGW060204S-SE-2S	0.40	6.35	2.38	2.8	2.8		●		●				
		CCGW060208S-SE-2S	0.80	6.35	2.38	2.8	2.7				○				
		CCGW09T302S-SE-2S	0.20	9.525	3.97	4.4	2.8		○		●				
		CCGW09T304S-SE-2S	0.40	9.525	3.97	4.4	2.8		●		●				
		CCGW09T308S-SE-2S	0.80	9.525	3.97	4.4	2.7				○				
	solid tip														
SHARP	SF H	CCGW060202T-SF-2S	0.20	6.35	2.38	2.8	2.8			○					
		CCGW060204T-SF-2S	0.40	6.35	2.38	2.8	2.8			●					
		CCGW09T304T-SF-2S	0.40	9.525	3.97	4.4	2.8			◉					
		CCGW09T308T-SF-2S	0.80	9.525	3.97	4.4	2.7			○					
	solid tip **without hone**														

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CC

ISO - with hole

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- Clearance angle 7°, effectively reduces the risk of chip jamming when boring
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		BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD																
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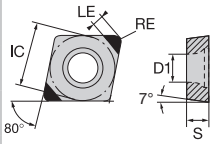
Stable machining, light cut	● 1st choice ○ suitable	●	●	●	●	○	○																	
General machining, medium cut	● 1st choice ○ suitable	●			○	●	●	○																
Unstable machining, heavy cut	● 1st choice ○ suitable	○					○	●																

Dimensions



2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																							
P																								
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K	340 1000																							
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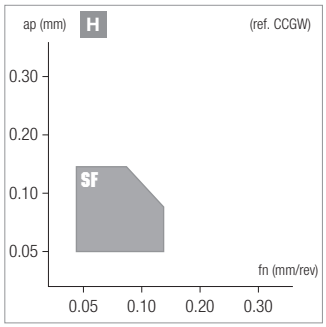
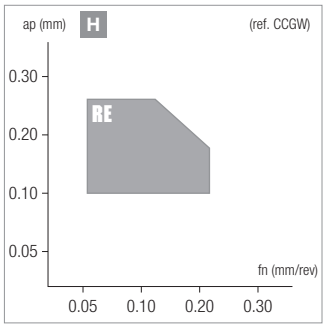
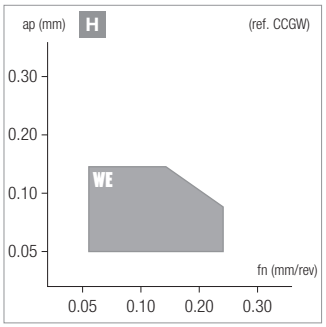
S																								
H		120 280	120 280	90 220	90 180	60 180	60 150																	

	Designation		RE	IC	S	D1	LE	Stock																
SHARP	SF H	CCGW060204T-SF-2C	0.40	6.35	2.38	2.8	2.8			●														
	carbide backed **without hone**																							
REINFORCED	RE H	CCGW060204S-RE-2S	0.40	6.35	2.38	2.8	2.8							●										
		CCGW060208S-RE-2S	0.80	6.35	2.38	2.8	2.7							○										
		CCGW09T304S-RE-2S	0.40	9.525	3.97	4.4	2.8							●										
		CCGW09T308S-RE-2S	0.80	9.525	3.97	4.4	2.7							○										
	solid tip **interrupted cut**																							
WIPER	WE H	CCGW060204S-WE-2S	0.40	6.35	2.38	2.8	2.8		●		●													
		CCGW09T304S-WE-2S	0.40	9.525	3.97	4.4	2.8		●		●													
		CCGW09T308S-WE-2S	0.80	9.525	3.97	4.4	2.7		○		●													
	solid tip **roughness oriented**																							

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

CN

ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Vertical brazing type and solid type CBN show better performance in interrupted machining
- The use of **chip breaker on CBN** brazed tips effectively improves chip flow control

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

| | | |

SORMA DIAMOND & CUTTING TOOLS

CN

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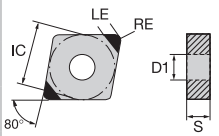
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Vertical brazing type and solid type CBN show better performance in interrupted machining
- The use of **chip breaker on CBN** brazed tips effectively improves chip flow control

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

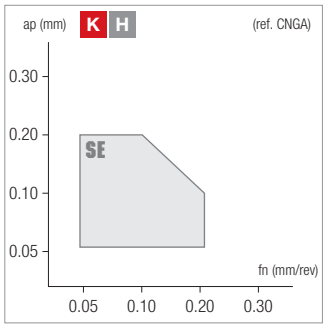
		BH PVD	BH	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
		NBH45OC	NBH45OU	NBH5OOC	NBH6OOU	NBH9OOU	NBL05OC	NBL15OC	NBL2OOC	NBL25OC	NBL3OOC	NBL35OC
Stable machining, light cut	● 1st choice ○ suitable	●	●	○		○	●	●	●	○	○	
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	●		○	●	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱	✱	✱					✱	✱
Dimensions												
ISO	**Vc(m/min) - suggested cutting speed range** (bold: 1st choice)											
P												
M												
K		340 1000	340 1000	300 1500	300 1200	300 1100						
N												
S												
H						40 160	120 280	90 220	90 200	90 180	60 180	60 150

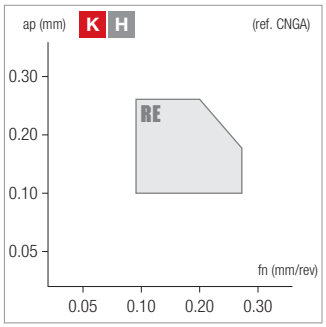


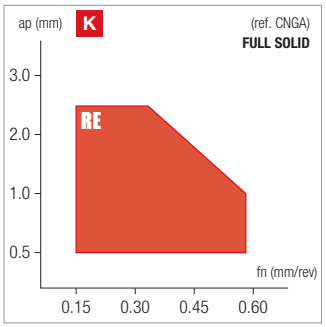
4 edges

	Designation		RE	IC	S	D1	LE	Stock
SHARP	SE K	CNGA120408T-SE-4V	0.80	12.7	4.76	5.16	2.5	○
	vertical brazing **without hone**							
SHARP	SE K	CNGA120408T-SE-4C	0.80	12.7	4.76	5.16	2.5	○
	carbide backed **without hone**							
REINFORCED	RE K H	CNGA120404S-RE-4V	0.40	12.7	4.76	5.16	2.6	○ ●
		CNGA120408S-RE-4V	0.80	12.7	4.76	5.16	2.5	○ ●
		CNGA120412S-RE-4V	1.20	12.7	4.76	5.16	2.5	◉ ●
	vertical brazing **interrupted cut**							
REINFORCED	RE K	CNGA090308S-RE	0.80	9.525	3.18	3.81	8.9	○
	full solid **interrupted cut**							

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CN

ISO - with hole

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- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
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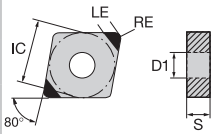
- The use of **chip breaker on CBN** brazed tips effectively improves chip flow control

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD											
		NBH45OC	NBH45OU	NBH5OOC	NBH6OOU	NBH9OOU	NBL05OC	NBL15OC	NBL2OOC	NBL25OC	NBL3OOC	NBL35OC											
Stable machining, light cut	● 1st choice ◯ suitable	●	●	◯		◯	●	●	●	◯	◯												
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	◯	●		◯	●	●	●	◯											
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲	✲	✱	✱	✱					✲	✱											

Dimensions



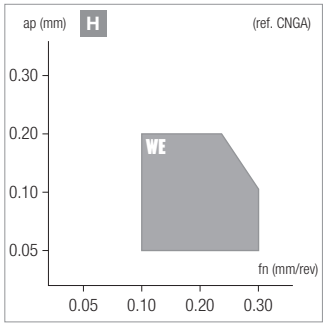
4 edges

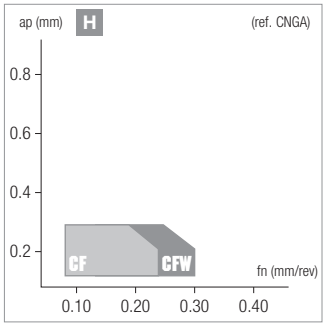
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

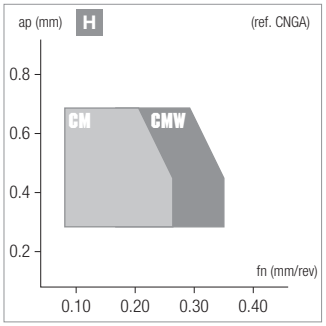
P																							
M																							
K	340 1000	340 1000	300 1500	300 1200	300 1100																		
N																							
S																							
H					40 160	120 280	90 220	90 200	90 180	60 180	60 150												

	Designation		RE	IC	S	D1	LE	Stock															
WIPER	WE H	CNGA120404S-WE-4V	0.40	12.7	4.76	5.16	2.6						○	○		○							
		CNGA120408S-WE-4V	0.80	12.7	4.76	5.16	2.5						●	●		○	○						
	vertical brazing roughness oriented	CNGA120412S-WE-4V	1.20	12.7	4.76	5.16	2.5						●	●		○	○						
CHIPBREAKER	CF H	CNGA120404S-CF-4V	0.40	12.7	4.76	5.16	2.6										●						
		CNGA120408S-CF-4V	0.80	12.7	4.76	5.16	2.5										◉						
	vertical brazing finishing	CNGA120412S-CF-4V	1.20	12.7	4.76	5.16	2.5										◉						
CHIPBREAKER	CFW H	CNGA120408S-CFW-4V	0.80	12.7	4.76	5.16	2.5										●						
		CNGA120412S-CFW-4V	1.20	12.7	4.76	5.16	2.5										●						
	vertical brazing finishing with WIPER																						
CHIPBREAKER	CM H	CNGA120408S-CM-4V	0.80	12.7	4.76	5.16	2.5										●						
		CNGA120412S-CM-4V	1.20	12.7	4.76	5.16	2.5										●						
	vertical brazing medium																						

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

CN

ISO - with hole

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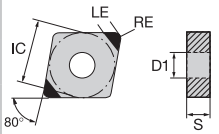
- Vertical brazing type and solid type CBN show better performance in interrupted machining
- The use of **chip breaker on CBN** brazed tips effectively improves chip flow control

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		NBH450C	NBH450U	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C
		BH PVD	BH	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
Stable machining, light cut	● 1st choice ◯ suitable	●	●	◯		◯	●	●	●	◯	◯	
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	◯	●		◯	●	●	●	◯
Unstable machining, heavy cut	⯅ 1st choice ⯃ suitable	⯃	⯃	⯅	⯅	⯅					⯃	⯅

Dimensions



4 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

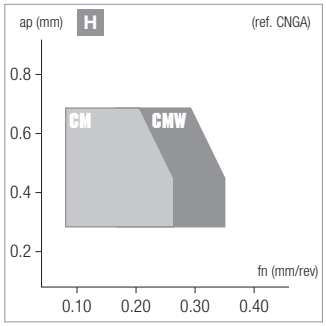
ISO	NBH450C	NBH450U	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C
P											
M											
K	340 **1000**	340 **1000**	300 **1500**	300 **1200**	300 **1100**						
N											
S											
H					40 **160**	120 **280**	90 **220**	90 **200**	90 **180**	60 **180**	60 **150**

Designation		RE	IC	S	D1	LE	Stock
CHIPBREAKER — CMW H	CNGA120408S-CMW-4V	0.80	12.7	4.76	5.16	2.5	●
	CNGA120412S-CMW-4V	1.20	12.7	4.76	5.16	2.5	●



vertical brazing
medium with **WIPER**

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

CN

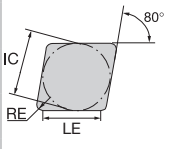
ISO - without hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Solid style CBN has stronger performance in interrupted applications

BH: High CBN volume
PVD: Physical vapor deposition

		BH	BH	BH
		PVD		
		NBH500C	NBH900U	NBH950U
Stable machining, light cut	● 1st choice ○ suitable	○	○	
General machining, medium cut	● 1st choice ○ suitable	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱

Dimensions

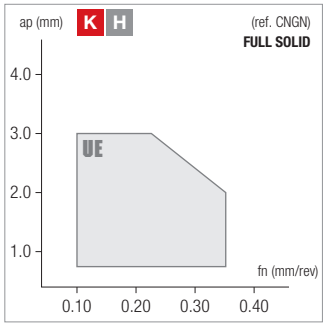


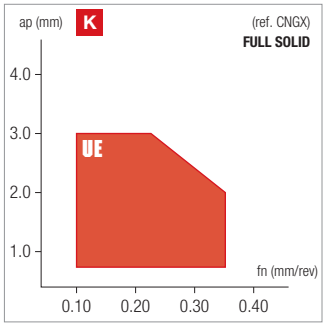
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P			
M			
K	300 1500	300 1100	300 800
N			
S			
H		40 160	40 160

	Designation	RE	IC	S	D1	LE	Stock		
UNIVERSAL	UE K H  full solid	CNGN090308S-UE	0.80	9.525	3.18	-	8.9		○	
		CNGN090312S-UE	1.20	9.525	3.18	-	8.5		◉	▽
		CNGN090316S-UE	1.60	9.525	3.18	-	8.1		○	
		CNGN120408S-UE	0.80	12.7	4.76	-	12.1		◉	
		CNGN120412S-UE	1.20	12.7	4.76	-	11.7		○	
		CNGN120416S-UE	1.60	12.7	4.76	-	11.3		○	
UNIVERSAL	UE K  full solid **dimpled type**	CNGX120712S-UE	1.20	12.7	4.76	-	11.7	◉		
		CNGX120716S-UE	1.60	12.7	4.76	-	11.3	●		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DC

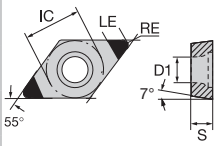
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip-jamming in boring
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		NBH400C	NBH450C	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C
		BH PVD	BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
Stable machining, light cut	● 1st choice ○ suitable		●	●	●	●	○	○	
General machining, medium cut	● 1st choice ○ suitable		●			○	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✲					✲	✱

Dimensions

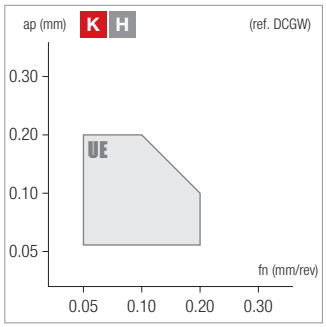


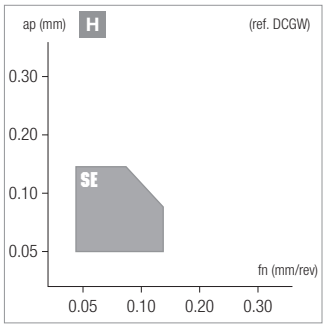
2 edges

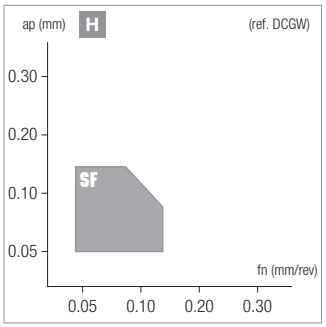
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P																				
M																				
K	340 1000	340 1000																		
N																				
S																				
H			120 280	120 280	90 220	90 180	60 180	60 150												

	Designation		RE	IC	S	D1	LE	Stock								
UNIVERSAL	UE H	DCGW070202S-UE-2S	0.20	6.35	2.38	2.8	2.5			○		●				
		DCGW070204S-UE-2S	0.40	6.35	2.38	2.8	2.4			●		●	●	○	○	
		DCGW070208S-UE-2S	0.80	6.35	2.38	2.8	2					○	○	○		
		DCGW11T302S-UE-2S	0.20	9.525	3.97	4.4	2.5			○		●		●		
		DCGW11T304S-UE-2S	0.40	9.525	3.97	4.4	2.4			●		●	●	●	○	
	solid tip	DCGW11T308S-UE-2S	0.80	9.525	3.97	4.4	2					●	●	●	○	
UNIVERSAL	UE K	DCGW11T304S-UE-2C	0.40	9.525	3.97	4.4	2.4		●							
		DCGW11T308S-UE-2C	0.80	9.525	3.97	4.4	2	○	○							
	carbide backed															
SHARP	SE H	DCGW070202S-SE-2S	0.20	6.35	2.38	2.8	2.5			○		●				
		DCGW070204S-SE-2S	0.40	6.35	2.38	2.8	2.4			●		●				
		DCGW070208S-SE-2S	0.80	6.35	2.38	2.8	2					○				
		DCGW11T302S-SE-2S	0.20	9.525	3.97	4.4	2.5			○		●				
		DCGW11T304S-SE-2S	0.40	9.525	3.97	4.4	2.4			▲		●				
	solid tip	DCGW11T308S-SE-2S	0.80	9.525	3.97	4.4	2				●	●	○	○		
SHARP	SF H	DCGW070202T-SF-2S	0.20	6.35	2.38	2.8	2.5				◉					
		DCGW070204T-SF-2S	0.40	6.35	2.38	2.8	2.4				◉					
		DCGW11T302T-SF-2S	0.20	9.525	3.97	4.4	2.5				●					
		DCGW11T304T-SF-2S	0.40	9.525	3.97	4.4	2.4				●					
	solid tip **without hone**	DCGW11T308T-SF-2S	0.80	9.525	3.97	4.4	2				◉					

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DC

ISO - with hole

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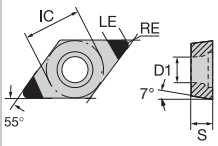
- 7° clearance angle, less risk of chip-jamming in boring
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		NBH400C	NBH450C	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C
		BH PVD	BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
Stable machining, light cut	● 1st choice ◯ suitable		●	●	●	●	◯	◯	
General machining, medium cut	● 1st choice ◯ suitable		●			◯	●	●	◯
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱					✱	✱

Dimensions



2 edges

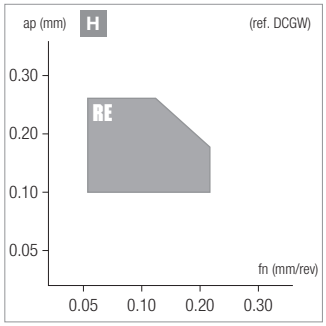
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																				
P																					
M																					
K	340 1000	340 1000																			
N																					
S																					
H			120 280	120 280	90 220	90 180	60 180	60 150													

Designation		RE	IC	S	D1	LE	Stock
REINFORCED RE H	DCGW070204S-RE-2S	0.40	6.35	2.38	2.8	2.4	○
	DCGW070208S-RE-2S	0.80	6.35	2.38	2.8	2	○
	DCGW11T304S-RE-2S	0.40	9.525	3.97	4.4	2.4	●
	DCGW11T308S-RE-2S	0.80	9.525	3.97	4.4	2	●



solid tip
interrupted cut

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

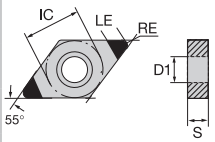
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Vertical brazing and solid type has impressive performance on interrupted applications
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

	BH PVD	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
	NBH450C	**NBH500C**	**NBH600U**	**NBH900U**	**NBL050C**	**NBL150C**	**NBL250C**	**NBL300C**	**NBL350C**
Stable machining, light cut (● 1st choice ○ suitable)	●	○		○	●	●	○	○	
General machining, medium cut (● 1st choice ○ suitable)	●	●	○	●		○	●	●	○
Unstable machining, heavy cut (✱ 1st choice ✱ suitable)	✱	✱	✱	✱				✱	✱
ISO	**Vc(m/min) - suggested cutting speed range** (bold: 1st choice)								
P									
M									
K	340 1000	300 1500	300 1200	300 1100					
N									
S									
H				40 160	120 280	90 220	90 180	60 180	60 150

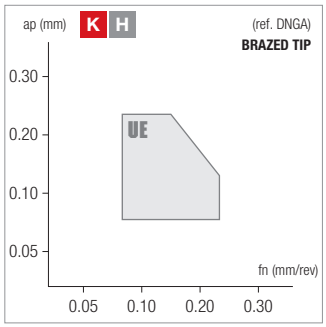
Dimensions

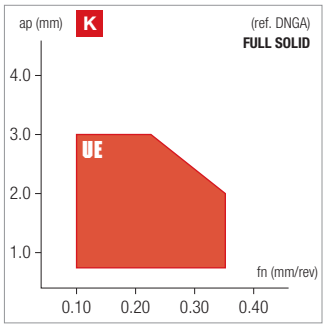


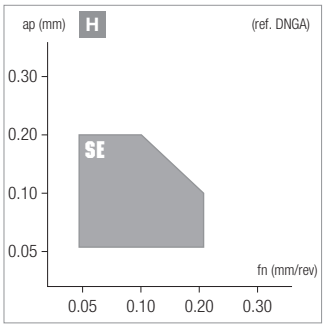
4 edges

	Designation		RE	IC	S	D1	LE	Stock								
UNIVERSAL	UE K H	DNGA150404S-UE-4V	0.40	12.7	4.76	5.16	2.7						○	●		
		DNGA150408S-UE-4V	0.80	12.7	4.76	5.16	2.3						○	○		
		DNGA150604S-UE-4V	0.40	12.7	6.35	5.16	2.7				◉					
		DNGA150608S-UE-4V	0.80	12.7	6.35	5.16	2.3		●		○					
	vertical brazing	DNGA150612S-UE-4V	1.20	12.7	6.35	5.16	2				◉					
UNIVERSAL	UE H	DNGA150604S-UE-4S	0.40	12.7	6.35	5.16	2.4					○	●	●	●	○
		DNGA150608S-UE-4S	0.80	12.7	6.35	5.16	2					○	●	●	●	○
	solid tip	DNGA150612S-UE-4S	1.20	12.7	6.35	5.16	2.1					○	○	○	○	○
UNIVERSAL	UE K	DNGA150608S-UE-4C	0.80	12.7	6.35	5.16	2	○								
	carbide backed															
UNIVERSAL	UE K	DNGA150608S-UE	0.80	12.7	6.35	5.16	14.7		●	○						
		DNGA150612S-UE	0.80	12.7	6.35	5.16	14.3		●	○						
	full solid **high depth of cut**															
SHARP	SE H	DNGA150404S-SE-4V	0.40	12.7	4.76	5.16	2.7					○	○			
		DNGA150408S-SE-4V	0.80	12.7	4.76	5.16	2.3					○	○			
	vertical brazing															

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

ISO - with hole

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- Vertical brazing and solid type has impressive performance on interrupted applications
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

| | | |

SORMA DIAMOND & CUTTING TOOLS

MCN

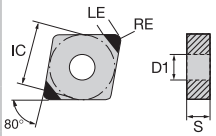
MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Special holders tailored with big clearance angle for boring application, effectively reduces the risk of chip-jamming
- Vertical brazed type CBN provides the Micro-Nega family with advanced opportunity

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BL PVD	BL PVD	BH PVD
		NBS150	**NBS250**	**NBS450**
Stable machining, light cut	● 1st choice ○ suitable	●	○	●
General machining, medium cut	● 1st choice ○ suitable	◔	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable			◈

Dimensions

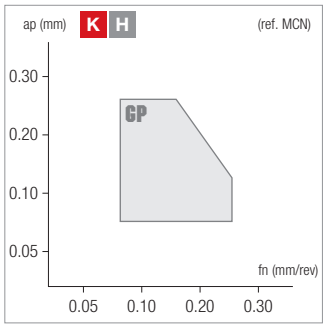


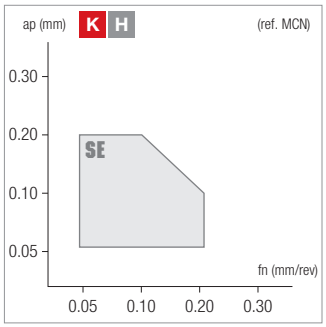
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P			
M			
K			**340 1000**
N			
S			
H	**90 220**	**90 180**	

	Designation	RE	IC	S	D1	LE	Stock		
UNIVERSAL	GP K H	**MCN.R02S-GP-4V**	0.20	7.5	3.18	3.6	2.2		○	▽
		MCN.R04S-GP-4V	0.40	7.5	3.18	3.6	2.2		○	▽
	 vertical brazing	**MCN.R08S-GP-4V**	0.80	7.5	3.18	3.6	2.1		○	▽
SHARP	CC H	**MCN.R04S-CC-4V**	0.40	7.5	3.18	3.6	2.2	●		
		**MCN.R08S-CC-4V**	0.80	7.5	3.18	3.6	2.1	○		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

MDN

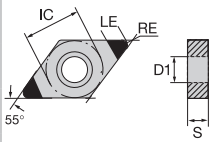
MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Special holders tailored with big clearance angle for boring application, effectively reduces the risk of chip-jamming
- Vertical brazed type CBN provides the Micro-Nega family with advanced opportunity

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BL PVD	BL PVD	BH PVD
		NBS150	NBS250	NBS450
Stable machining, light cut	● 1st choice ○ suitable	●	○	●
General machining, medium cut	● 1st choice ○ suitable	○	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable			○

Dimensions

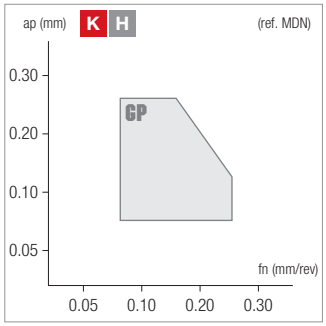


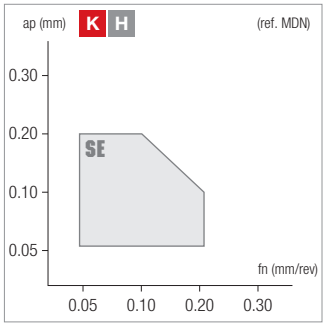
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P																						
M																						
K			**340 1000**																			
N																						
S																						
H	**90 220**	**90 180**																				

	Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	GP K H	MDN.R02S-GP-4V	0.20	7	3.18	3.6	2.4		○	▽	
		MDN.R04S-GP-4V	0.40	7	3.18	3.6	2.2		○	▽	
	 vertical brazing	MDN.R08S-GP-4V	0.80	7	3.18	3.6	1.8		○	▽	
SHARP	CC H	MDN.R02S-CC-4V	0.20	7	3.18	3.6	2.4	○			
		MDN.R04S-CC-4V	0.40	7	3.18	3.6	2.2	○			
		MDN.R08S-CC-4V	0.80	7	3.18	3.6	1.8	○			

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

RC

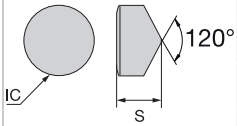
ISO - without hole

- Very strong and universal use insert shape
- With a high volume tough grade, able to cope with the challenges in heavy load applications
- Stable sitting on the holder pocket

BH: High CBN volume

		BH	NBH600U
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable	◯	
Unstable machining, heavy cut	● 1st choice ◯ suitable	●	

Dimensions



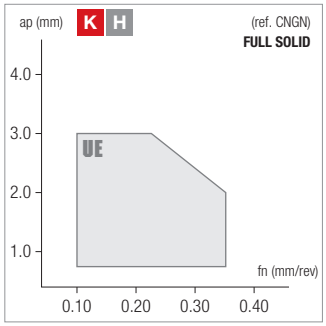
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**300 1200**
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
UNIVERSAL	UE K						
	RCGX090700S-UE	4.76	9.525	7.94	-	-	◉
	RCGX120700S-UE	6.35	12.7	7.94	-	-	◉



full solid

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

RN

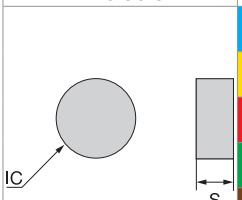
ISO - without hole

- Very strong and universal use insert shape
- Could be used both in turning and profile milling
- With a wide range of grade choices, able to cope with challenges in Several applications

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BH	BH	BH	BL PVD	BL PVD																
		NBH500C	NBH500U	NBH900U	NBH950U	NBH990U	NBL200C	NBL250C																
Stable machining, light cut	1st choice / suitable	○	○	○			●	○																
General machining, medium cut	1st choice / suitable	●	●	●	◔		●	●																
Unstable machining, heavy cut	1st choice / suitable	✱	✱	✱	✱																			

Dimensions

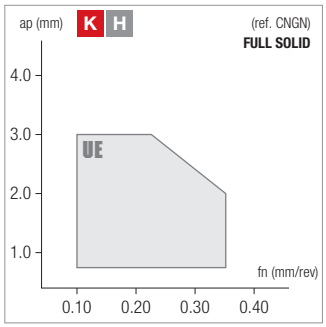


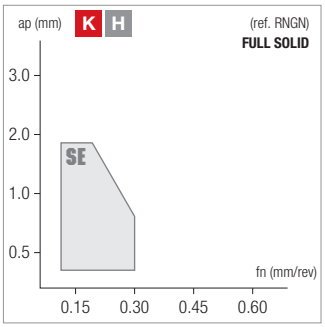
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

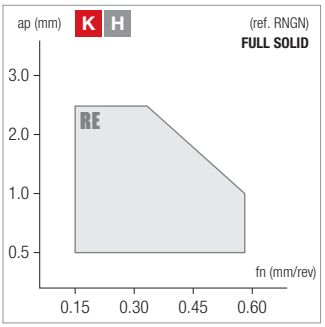
ISO																								
P																								
M																								
K	300 1500	300 1500	300 1100	300 800	300 800																			
N																								
S																								
H			40 160	40 160	40 160	90 200	90 180																	

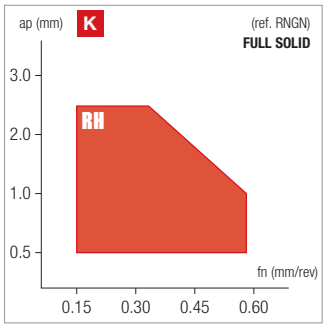
Designation			RE	IC	S	D1	LE	Stock																
UNIVERSAL	UE K H	RNGN060300S-UE	3.18	6.35	3.18	-	-	○																
		RNGN090300S-UE	4.76	9.525	3.18	-	-	●		●	●	▽	●	○										
		RNGN120300S-UE	6.35	12.7	3.18	-	-			○	●	▽												
		RNGN120400S-UE	6.35	12.7	4.76	-	-	●		●	●		●	●										
	full solid																							
SHARP	SE K H	RNGN090300T-SE	4.76	9.525	3.18	-	-	●					⦿											
	full solid **without hone**																							
REINFORCED	RE K H	RNGN090300S-RE	4.76	9.525	3.18	-	-	⦿																
		RNGN120400S-RE	6.35	12.7	4.76	-	-			●	○													
	full solid **interrupted cut**																							
REINFORCED	RH K	RNGN090300S-RH	4.76	9.525	3.18	-	-		⦿															
	full solid																							

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SN

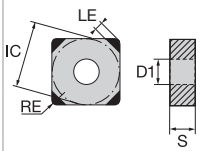
ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts), especially with vertical brazing or solid type CBNs
- Mostly used for rough facing operations
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BH	BL PVD	BL PVD
		NBH500C	NBH600U	NBH900U	NBL150C	NBL250C
Stable machining, light cut	● 1st choice ○ suitable	○		○	●	○
General machining, medium cut	● 1st choice ○ suitable	●	○	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱		
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)					
P						
M						
K		300 1500	300 1200	300 1100		
N						
S						
H				40 160	90 220	90 180

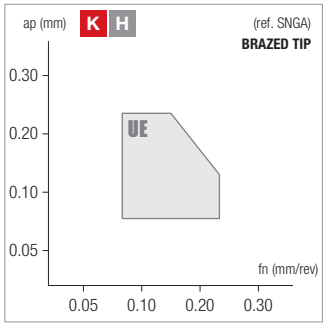
Dimensions

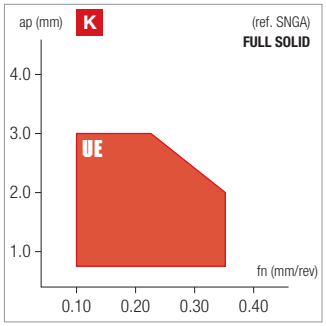


8 edges

	Designation	RE	IC	S	D1	LE	Stock					
UNIVERSAL	UE K H	SNGA120404S-UE-8V	0.40	12.7	4.76	5.16	2.2			◉		
		SNGA120408S-UE-8V	0.80	12.7	4.76	5.16	2.2			○	○	○
		SNGA120412S-UE-8V	1.20	12.7	4.76	5.16	2.2			◉		
	vertical brazing											
UNIVERSAL	UE K	SNGA120408S-UE	0.80	12.7	4.76	5.16	11.9	○	○			
		SNGA120412S-UE	1.20	12.7	4.76	5.16	11.5	○	○			
	full solid **high depth of cut**											

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

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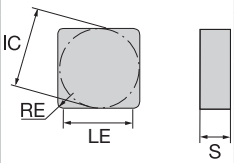
BH: High CBN volume
PVD: Physical vapor deposition

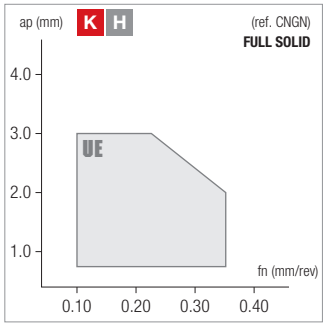
	BH PVD	BH	BH	BH	
	NBH500C	NBH600U	NBH900U	NBH950U	
Stable machining, light cut	● 1st choice ◯ suitable	◯		◯	
General machining, medium cut	● 1st choice ◯ suitable	●	◯	●	◯
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱	✱
Dimensions	**ISO**	**Vc(m/min) - suggested cutting speed range** (bold: 1st choice)			
	P				
	M				
	K	300 1500	300 1200	300 1100	300 800
	N				
	S				
	H			40 160	40 160

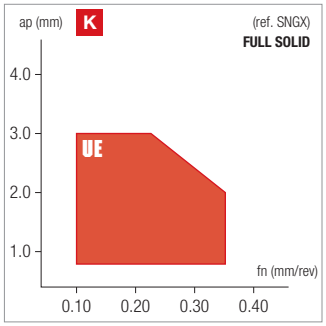


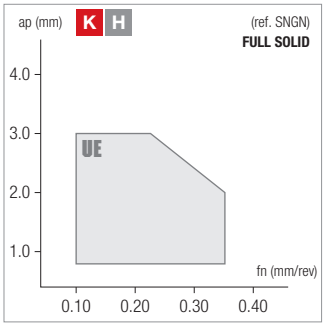
8 edges

	Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	UE K H	SNGN090308S-UE	0.80	9.525	3.18	-	8.7			◯	
		SNGN090312S-UE	1.20	9.525	3.18	-	8.3			⦿	▽
		SNGN090316S-UE	1.60	9.525	3.18	-	7.9			◯	
		SNGN120408S-UE	0.80	12.7	4.76	-	11.9			◯	
		SNGN120412S-UE	1.20	12.7	4.76	-	11.5			●	◯
		SNGN120416S-UE	1.60	12.7	4.76	-	11.1			◯	
	full solid										
UNIVERSAL	UE K	SNGX120412S-UE	1.20	12.7	4.76	-	11.5		●		
		SNGX120712S-UE	1.20	12.7	7.94	-	11.5	●			
		SNGX120716S-UE	1.60	12.7	7.94	-	11.1	⦿			
	full solid **dimpled type**										
SHARP	SE K H	SNGN120412T-SE	1.20	12.7	4.76	-	-			▽	
	full solid **without hone**										

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TC

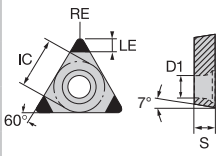
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- 80° C shape insert is recommended when a stronger edge is required

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD
		NBH450C	NBH450U	NBL050C	NBL150C	NBL250C	NBL350C
Stable machining, light cut	● 1st choice ○ suitable	●	●	●	●	○	
General machining, medium cut	● 1st choice ○ suitable	●	●		○	●	○
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱				✱

Dimensions

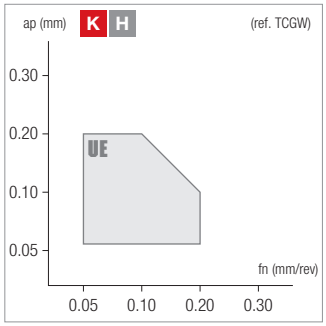


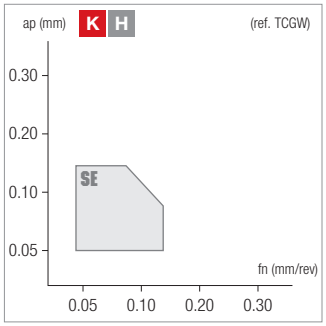
3 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
P							
M							
K	**340** **1000**	**340** **1000**					
N							
S							
H			**120** **280**	**90** **220**	**90** **180**	**60** **150**

Designation			RE	IC	S	D1	LE	Stock					
UNIVERSAL	UE H	TCGW110204S-UE-3S	0.40	6.35	2.38	2.8	2.5			○	●	●	
		TCGW110208S-UE-3S	0.80	6.35	2.38	2.8	2.2				◉	●	
		TCGW16T304S-UE-3S	0.40	9.525	3.97	4.4	2.5			○	○	●	
	solid tip	TCGW16T308S-UE-3S	0.80	9.525	3.97	4.4	2.2				○	●	
UNIVERSAL	UE K	TCGW090204S-UE-3C	0.40	5.56	2.38	2.5	2.5	○					
		TCGW110204S-UE-3C	0.40	6.35	2.38	2.8	2.5	●					
		TCGW110208S-UE-3C	0.80	6.35	2.38	2.8	2.2	●					
		TCGW16T304S-UE-3C	0.40	9.525	3.97	4.4	2.5	●					
	carbide backed	TCGW16T308S-UE-3C	0.80	9.525	3.97	4.4	2.2	●					
SHARP	SE H	TCGW110204S-SE-3S	0.40	6.35	2.38	2.8	2.5			○	●		
		TCGW110208S-SE-3S	0.80	6.35	2.38	2.8	2.2				○		
		TCGW16T304S-SE-3S	0.40	9.525	3.97	4.4	2.5			○	○		
	solid tip	TCGW16T308S-SE-3S	0.80	9.525	3.97	4.4	2.2				○		
SHARP	SE K	TCGW110204T-SE-3C	0.40	6.35	2.38	2.8	2.5	○					
	carbide backed **without hone**												

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

TC

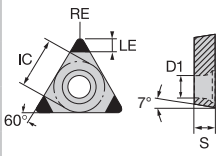
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- 80° C shape insert is recommended when a stronger edge is required

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

	BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD
	NBH450C	**NBH450U**	**NBL050C**	**NBL150C**	**NBL250C**	**NBL350C**
Stable machining, light cut (● 1st choice ○ suitable)	●	●	●	●	○	
General machining, medium cut	●	●		○	●	○
Unstable machining, heavy cut	✱	✱				✱

Dimensions



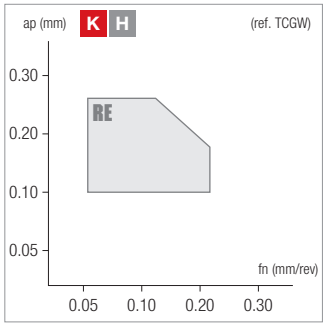
3 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

	BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD
P						
M						
K	**340 1000**	**340 1000**				
N						
S						
H			**120 280**	**90 220**	**90 180**	**60 150**

	Designation	RE	IC	S	D1	LE	Stock
REINFORCED	RE H — solid tip, **interrupted cut**						
	TCGW110204S-RE-3S	0.40	6.35	2.38	2.8	2.5	○
	TCGW110208S-RE-3S	0.80	6.35	2.38	2.8	2.2	○
	TCGW16T304S-RE-3S	0.40	9.525	3.97	4.4	2.5	○
	TCGW16T308S-RE-3S	0.80	9.525	3.97	4.4	2.2	○
REINFORCED	RE K — carbide backed, **interrupted cut**						
	TCGW110208S-RE-3C	0.80	6.35	2.38	2.8	2.2	●
	TCGW16T308S-RE-3C	0.80	9.525	3.97	4.4	2.2	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

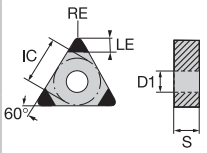
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- T16 has a similar depth of cut as CN12

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH PVD	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
		NBH45OC	NBH50OC	NBH60OU	NBH90OU	NBL05OC	NBL15OC	NBL25OC	NBL30OC	NBL35OC
Stable machining, light cut	● 1st choice ○ suitable	●	○		○	●	●	○	○	
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●		○	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲	✱	✱	✱				✲	✱

Dimensions

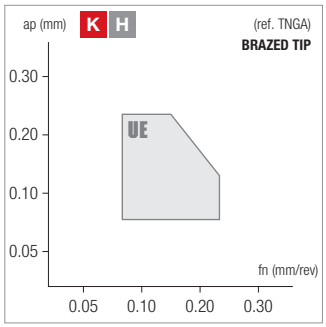


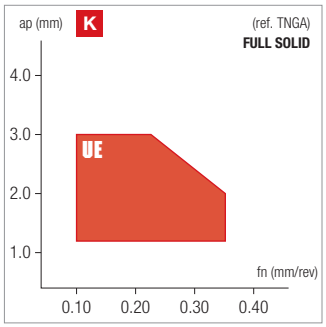
6 edges

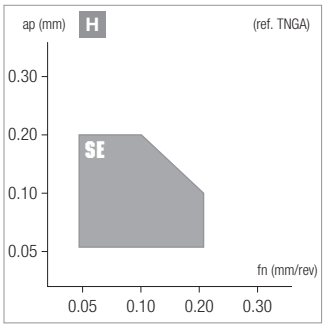
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)									
P										
M										
K	340 1000	300 1500	300 1200	300 1100						
N										
S										
H				40 160	120 280	90 220	90 180	60 180	60 150	

	Designation		RE	IC	S	D1	LE	Stock								
UNIVERSAL	UE K H	TNGA160404S-UE-6V	0.40	9.525	4.76	3.81	2.9		●		◉	○	●	●	●	○
		TNGA160408S-UE-6V	0.80	9.525	4.76	3.81	2.6		●		◉	●	●	●	●	○
	 vertical brazing	TNGA160412S-UE-6V	1.20	9.525	4.76	3.81	2.4		○		◉	○	○	○	○	○
UNIVERSAL	UE K	TNGA160404S-UE-6C	0.40	9.525	4.76	3.81	2.5	○								
		TNGA160408S-UE-6C	0.80	9.525	4.76	3.81	2.2	○								
	 carbide backed	TNGA160412S-UE-6C	1.20	9.525	4.76	3.81	2.4	○								
UNIVERSAL	UE K	TNGA160408S-UE							●	○						
	 full solid **high depth of cut**	TNGA160412S-UE							○	○						
SHARP	SE H	TNGA160404S-SE-6V	0.40	9.525	4.76	3.81	2.9					○	○			
		TNGA160408S-SE-6V	0.80	9.525	4.76	3.81	2.6					○	○			
	 vertical brazing	TNGA160412S-SE-6V	1.20	9.525	4.76	3.81	2.4					○	○			

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

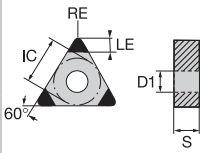
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- T16 has a similar depth of cut as CN12

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH	BL PVD
		NBH900U	NBL200C
Stable machining, light cut	● 1st choice ○ suitable	○	●
General machining, medium cut	● 1st choice ◔ suitable	◔	◔
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	

Dimensions

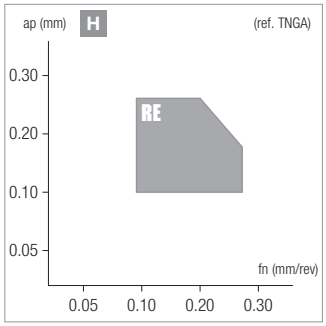


6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P		
M		
K	300 1100	
N		
S		
H	40 160	90 200

Designation	RE	IC	S	D1	LE	Stock
REINFORCED RE H — vertical brazing **interrupted cut**						
TNGA160404S-RE-6V	0.40	9.525	4.76	3.81	2.9	○
TNGA160408S-RE-6V	0.80	9.525	4.76	3.81	2.6	○
TNGA160412S-RE-6V	1.20	9.525	4.76	3.81	2.4	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

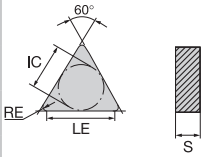
ISO - without hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- T16 has a similar depth of cut as CN12

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

		BH	BL / PVD																				
		NBH900U	NBL200C																				
Stable machining, light cut	● 1st choice ○ suitable	○	●																				
General machining, medium cut	● 1st choice ○ suitable	●	●																				
Unstable machining, heavy cut	● 1st choice ○ suitable	●																					

Dimensions



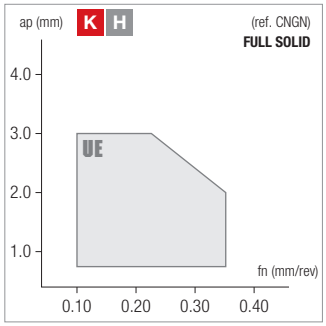
6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**300 1100**
N	
S	
H	**40 160** **90 200**

	Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL	UE K H	TNGN160408S-UE	0.80	9.525	4.76	-	15.7	⦿	●

full solid

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A**255

TP

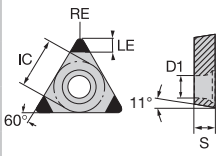
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduces the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- Edge is 80° C shape insert is recommended when a stronger edge is required

BL: Low CBN volume
PVD: Physical vapor deposition

	BL PVD	BL PVD	BL PVD
	NBL150C	NBL250C	NBL350C
Stable machining, light cut (● 1st choice ○ suitable)	●	○	
General machining, medium cut (● 1st choice ○ suitable)	○	●	○
Unstable machining, heavy cut (✱ 1st choice ✱ suitable)			✱

Dimensions



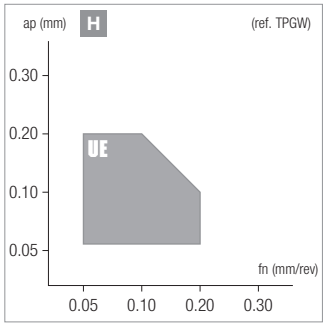
3 edges

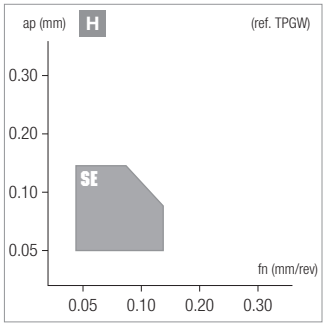
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

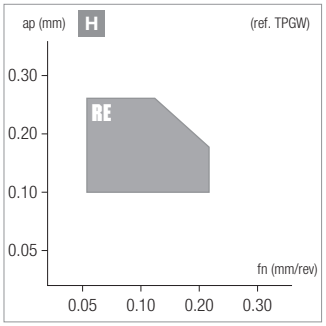
P			
M			
K			
N			
S			
H	**90** 220	**90** 180	**60** 150

	Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	UE H	TPGW110302S-UE-3S	0.20	6.35	3.18	3.3	2.6		○		
		TPGW110304S-UE-3S	0.40	6.35	3.18	3.3	2.5		●	○	
		TPGW110308S-UE-3S	0.80	6.35	3.18	3.3	2.2		◉		
	solid tip										
SHARP	SE H	TPGW110304S-SE-3S	0.40	6.35	3.18	3.3	2.5	○			
		TPGW110308S-SE-3S	0.80	6.35	3.18	3.3	2.2	○			
	solid tip										
REINFORCED	RE H	TPGW110304S-RE-3S	0.40	6.35	3.18	3.3	2.5			○	
	solid tip **interrupted cut**										

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VB

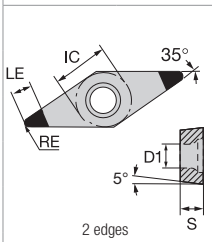
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
		NBH450C	**NBH450U**	**NBL050C**	**NBL050CX**	**NBL150C**	**NBL250C**	**NBL300C**	**NBL350C**
Stable machining, light cut	● 1st choice ○ suitable	●	●	●	●	●	○	○	
General machining, medium cut	● 1st choice ○ suitable	●	●			○	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲	✲					✲	✱

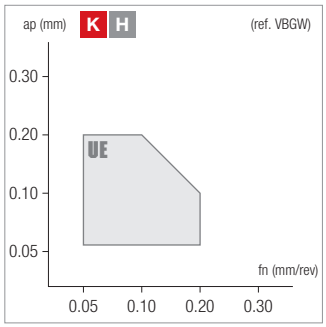
Dimensions

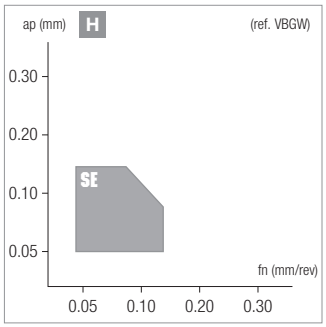


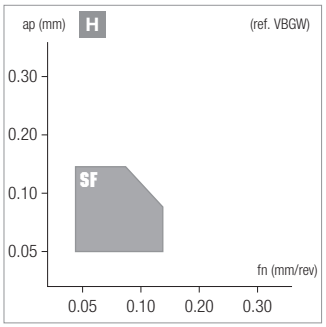
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P																						
M																						
K	340 1000	340 1000																				
N																						
S																						
H			120 280	120 280	90 220	90 180	60 180	60 150														

Designation			RE	IC	S	D1	LE	Stock								
UNIVERSAL	UE H	VBGW110302S-UE-2S	0.20	6.35	3.18	2.8	3					○				
		VBGW110304S-UE-2S	0.40	6.35	3.18	2.8	2.5			○		●	○			
		VBGW160402S-UE-2S	0.20	9.525	4.76	4.4	3					●				
		VBGW160404S-UE-2S	0.40	9.525	4.76	4.4	2.5			●		●	●	●	○	
	solid tip	VBGW160408S-UE-2S	0.80	9.525	4.76	4.4	2.2			●		●	●	●	○	
UNIVERSAL	UE K	VBGW160404S-UE-2C	0.40	9.525	4.76	4.4	2.5	○								
	carbide backed	VBGW160408S-UE-2C	0.80	9.525	4.76	4.4	2.2	○								
SHARP	SE H	VBGW110302S-SE-2S	0.20	6.35	3.18	2.8	3					●				
		VBGW110304S-SE-2S	0.40	6.35	3.18	2.8	2.5			▲		●				
		VBGW160402S-SE-2S	0.20	9.525	4.76	4.4	3					●				
		VBGW160404S-SE-2S	0.40	9.525	4.76	4.4	2.5			●		●				
	solid tip	VBGW160408S-SE-2S	0.80	9.525	4.76	4.4	2.2			◉		●				
SHARP	SF H	VBGW110302T-SF-2S	0.20	6.35	3.18	2.8	3				●					
		VBGW110304T-SF-2S	0.40	6.35	3.18	2.8	2.5				○					
		VBGW160402T-SF-2S	0.20	9.525	4.76	4.4	3				○					
		VBGW160404T-SF-2S	0.40	9.525	4.76	4.4	2.5				◉					
	solid tip **without hone**	VBGW160408T-SF-2S	0.80	9.525	4.76	4.4	2.2				◉					

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. **A142** | CUTTING CONDITIONS p. **A177** | GRADES FEATURES p. **A120** | HOLDERS p. **A255**

SORMA DIAMOND & CUTTING TOOLS

VB

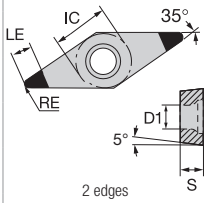
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
		NBH450C	NBH450U	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C
Stable machining, light cut	● 1st choice ◯ suitable	●	●	●	●	●	◯	◯	
General machining, medium cut	● 1st choice ◯ suitable	●	●			◯	●	●	◯
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱					✱	✱

Dimensions

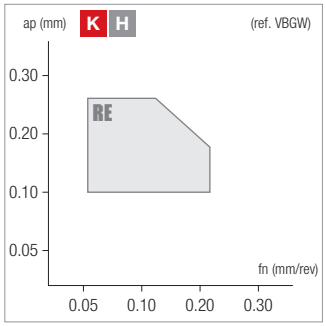


ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
P								
M								
K	340 **1000**	340 **1000**						
N								
S								
H			120 **280**	120 **280**	90 **220**	90 **180**	60 **180**	60 **150**

	Designation	RE	IC	S	D1	LE	Stock
REINFORCED	RE H — solid tip **interrupted cut**						
	VBGW160404S-RE-2S	0.40	9.525	4.76	4.4	2.5	◯
	VBGW160408S-RE-2S	0.80	9.525	4.76	4.4	2.2	◯
REINFORCED	RE K — carbide backed **interrupted cut**						
	VBGW160404S-RE-2C	0.40	9.525	4.76	4.4	2.5	○
	VBGW160408S-RE-2C	0.80	9.525	4.76	4.4	2.2	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VC

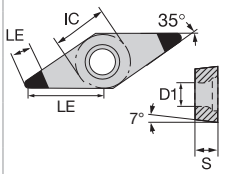
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)

BL: Low CBN volume
PVD: Physical vapor deposition

		BL PVD	BL PVD
		NBL150C	NBL250C
Stable machining, light cut	● 1st choice ○ suitable	●	○
General machining, medium cut	● 1st choice ○ suitable	○	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

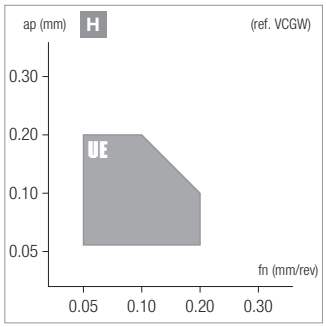


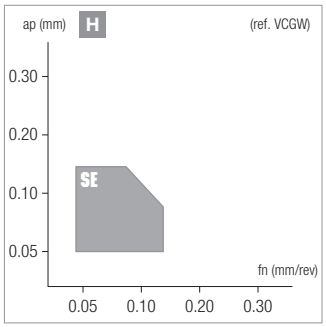
2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P			
M			
K			
N			
S			
H	90 220	90 180	

	Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL	UE H	VCGW110304S-UE-2S	0.40	6.35	3.18	2.8	2.5		●
		VCGW160404S-UE-2S	0.40	9.525	4.76	4.4	2.5		●
		VCGW160408S-UE-2S	0.80	9.525	4.76	4.4	2.2		●
	 solid tip								
SHARP	SE H	VCGW110304S-SE-2S	0.40	6.35	3.18	2.8	2.5	●	
		VCGW160404S-SE-2S	0.40	9.525	4.76	4.4	2.5	●	
		VCGW160408S-SE-2S	0.80	9.525	4.76	4.4	2.2	○	
	 solid tip								

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VN

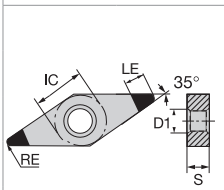
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- Lighter ap and fn are recommended for this shape
- Double sided style should mainly be used for external applications

BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition

			BH PVD	BH PVD	BL PVD	BL PVD																									
			NBH45OC	NBH50OC	NBL15OC	NBL25OC																									
Stable machining, light cut	1st choice	suitable	●	○	●	○																									
General machining, medium cut	1st choice	suitable	●	●	◐	●																									
Unstable machining, heavy cut	1st choice	suitable	✱	✱																											

Dimensions



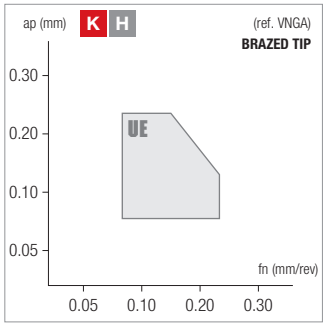
4 edges

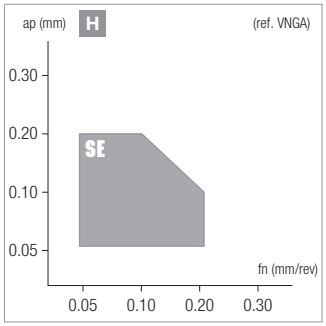
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO																															
P																															
M																															
K	340 1000	300 1500																													
N																															
S																															
H			90 220	90 180																											

Designation			RE	IC	S	D1	LE	Stock				
UNIVERSAL	UE K H	VNGA160404S-UE-4V	0.40	9.525	4.76	3.81	2.2		●		○	
	 vertical brazing	VNGA160408S-UE-4V	0.80	9.525	4.76	3.81	2.3		●		○	
UNIVERSAL	UE K	VNGA160404S-UE-4C	0.40	9.525	4.76	3.81	2.5	○				
	 carbide backed	VNGA160408S-UE-4C	0.80	9.525	4.76	3.81	2.2	○				
SHARP	SE H	VNGA160404S-SE-4V	0.40	9.525	4.76	3.81	2.2			○		
	 vertical brazing	VNGA160408S-SE-4V	0.80	9.525	4.76	3.81	2.3			○		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

WN

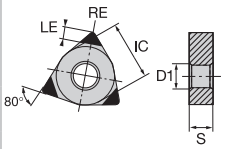
ISO - with hole

- 6-corner 80° diamond shape that can increase economy compared to CNGA-style inserts
- Generally used on more moderate depths of cut and feedrates than CNGA-style inserts
- Lighter ap is recommended compared to C shape inserts

BH: High CBN volume
BL: Low CBN volume
PVD: Physical vapor deposition

		BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD														
		NBH500C	NBH600U	NBH900U	NBL150C	NBL250C	NBL300C	NBL350C														
Stable machining, light cut	● 1st choice ○ suitable	○		○	●	○	○															
General machining, medium cut	● 1st choice ○ suitable	●	○	●	○	●	●	○														
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✱	✱	✱			✲	✱														

Dimensions

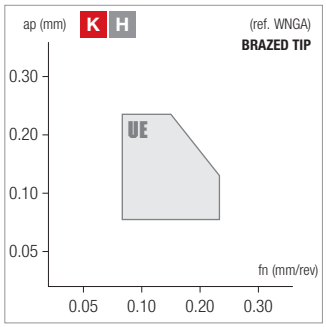


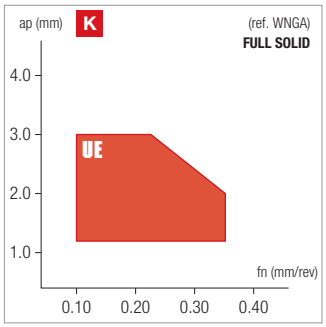
6 edges

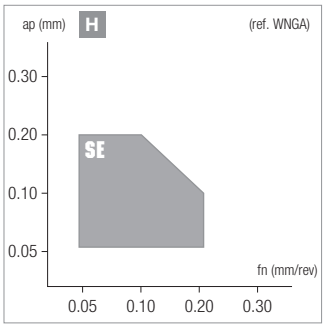
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P																						
M																						
K	300 1500	300 1200	300 1100																			
N																						
S																						
H			40 160	90 220	90 180	60 180	60 150															

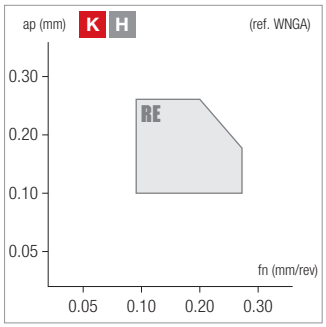
	Designation		RE	IC	S	D1	LE	Stock							
UNIVERSAL	UE K H	WNGA080404S-UE-6V	0.40	12.7	4.76	5.16	2.6			○		○	○	○	
		WNGA080408S-UE-6V	0.80	12.7	4.76	5.16	2.6			○		●	●	○	
		WNGA080412S-UE-6V	1.20	12.7	4.76	5.16	2.5			○		○	○	○	
	vertical brazing														
UNIVERSAL	UE K	WNGA080408S-UE	0.80	12.7	4.76	5.16	7.9	○	○						
		WNGA080412S-UE	1.20	12.7	4.76	5.16	7.5	○	○						
	full solid **high depth of cut**														
SHARP	SE H	WNGA080404S-SE-6V	0.40	12.7	4.76	5.16	2.6				○				
		WNGA080408S-SE-6V	0.80	12.7	4.76	5.16	2.6				○				
	vertical brazing														
REINFORCED	RE K H	WNGA080404S-RE-6V	0.40	12.7	4.76	5.16	2.6			○				○	
		WNGA080408S-RE-6V	0.80	12.7	4.76	5.16	2.6			○				●	
		WNGA080412S-RE-6V	1.20	12.7	4.76	5.16	2.5			◉				○	
	vertical brazing **interrupted cut**														

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









PRODUCT SELECTION p. A142 | CUTTING CONDITIONS p. A177 | GRADES FEATURES p. A120 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	NBH450C			NBH450U			NBH500C		
			min	start	max	min	start	max	min	start	max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	400	**700**	1000	400	**700**	1000	500	**1000**	1500
			380	**650**	920	380	**650**	920	400	**900**	1400
			340	**600**	860	340	**600**	860	300	**800**	1300
ISO 513	MATERIAL	HARDNESS HRC	NBL050C / CX			NBL150C			NBL200C		
			min	start	max	min	start	max	min	start	max
H1	Case-hardened steel (ex. 1.7131/16MnCr5)	50 ÷ 56	120	**200**	280	100	**160**	220	100	**150**	200
						90	**150**	210	90	**135**	180
H2	Bearing steel, quenched and tempered steel (ex.1.3505/100Cr6)	54 ÷ 62	100	**170**	240	100	**150**	200	100	**140**	180
						90	**140**	190	90	**130**	170
H3	Hardened tool steel (ex 1.2436/X210CrW12)	60 ÷ 65	100	**140**	180	80	**130**	180	80	**120**	160
						70	**120**	170	70	**110**	150
H4	White cast iron (ex 0.9625/G-X260NiCr42)	54 ÷ 62									

Complete workpiece materials p. **M**1.

	NBH500U			NBH600U			NBH900U			NBH950U								
	min	start	max	min	start	max	min	start	max	min	start	max						
◯	500	**1000**	1500				◯ 500	**800**	1100									
●	400	**900**	1400	⟳ 400	**800**	1200	● 400	**700**	1000	⟳ 400	**600**	800						
✱	300	**800**	1300	✱ 300	**600**	900	✱ 300	**600**	900	✱ 300	**500**	700						
	NBL250C			**NBL300C**			**NBL350C**			**NBH500C**			**NBH900U**			**NBH950U**		
	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max
◯	100	**140**	180	◯ 80	**130**	180												
●	90	**130**	170	● 70	**120**	170	⟳ 70	**110**	150									
				✱ 60	**110**	160	✱ 60	**100**	140									
◯	80	**130**	180	◯ 80	**120**	160							◯ 80	**130**	180			
●	70	**120**	170	● 70	**110**	150	⟳ 70	**100**	130				● 70	**120**	170			
				✱ 60	**100**	140	✱ 60	**90**	120				✱ 65	**110**	155			
◯	70	**110**	150	◯ 70	**100**	130							◯ 70	**110**	150			
●	60	**100**	140	● 60	**90**	120	⟳ 60	**80**	100				● 60	**100**	140			
				✱ 50	**80**	110	✱ 50	**70**	90				✱ 60	**90**	120			
										◯ 100	**140**	180	◯ 80	**130**	180			
										● 90	**130**	170	● 70	**120**	170	⟳ 80	**130**	180
										✱ 80	**120**	160	✱ 50	**100**	150	✱ 70	**110**	150

Complete workpiece materials p. **M**1.

TURNING Parameters - depth of cut and feed rate - PCBN

SORMA DIAMOND & CUTTING TOOLS

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CCGW060202S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
CCGW060202S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
CCGW060202T-SF-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
CCGW060204S-RE-2S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
CCGW060204S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
CCGW060204S-UE-2C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CCGW060204S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CCGW060204S-WE-2S	0.05	**0.10**	0.15	0.07	**0.14**	0.21
CCGW060204T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
CCGW060208S-RE-2S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
CCGW060208S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
CCGW060208S-UE-2C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CCGW060208S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CCGW09T302S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
CCGW09T302S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
CCGW09T304S-RE-2S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
CCGW09T304S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
CCGW09T304S-UE-2C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CCGW09T304S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CCGW09T304S-WE-2S	0.05	**0.10**	0.15	0.07	**0.14**	0.21
CCGW09T304T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
CCGW09T308S-RE-2S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
CCGW09T308S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
CCGW09T308S-UE-2C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CCGW09T308S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CCGW09T308S-WE-2S	0.05	**0.10**	0.15	0.07	**0.15**	0.23
CCGW09T308T-SF-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
CCGW120404S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CCGW120408S-UE-2C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CCGW120408S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CNGA090308S-RE	0.50	**1.50**	2.50	0.08	**0.16**	0.24
CNGA090308S-UE	0.50	**1.50**	2.50	0.10	**0.20**	0.30
CNGA120404S-CF-4V	0.08	**0.17**	0.26	0.08	**0.14**	0.20
CNGA120404S-RE-4V	0.08	**0.17**	0.26	0.08	**0.14**	0.20
CNGA120404S-SE-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
CNGA120404S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
CNGA120404S-WE-4V	0.06	**0.13**	0.20	0.10	**0.17**	0.24
CNGA120408S-CF-4V	0.08	**0.17**	0.26	0.08	**0.15**	0.22
CNGA120408S-CFW-4V	0.08	**0.17**	0.26	0.10	**0.19**	0.28
CNGA120408S-CM-4V	0.30	**0.50**	0.70	0.08	**0.16**	0.24
CNGA120408S-CMW-4V	0.30	**0.50**	0.70	0.10	**0.20**	0.30
CNGA120408S-RE-4V	0.08	**0.17**	0.26	0.08	**0.16**	0.24
CNGA120408S-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CNGA120408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
CNGA120408S-UE-4C	0.07	**0.16**	0.25	0.08	**0.15**	0.22
CNGA120408S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
CNGA120408S-WE-4V	0.06	**0.13**	0.20	0.10	**0.19**	0.28
CNGA120408T-SE-4C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CNGA120408T-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
CNGA120412S-CF-4V	0.08	**0.17**	0.26	0.08	**0.16**	0.24
CNGA120412S-CFW-4V	0.08	**0.17**	0.26	0.10	**0.20**	0.30
CNGA120412S-CM-4V	0.30	**0.50**	0.70	0.08	**0.17**	0.26
CNGA120412S-CMW-4V	0.30	**0.50**	0.70	0.10	**0.22**	0.34
CNGA120412S-RE-4V	0.08	**0.17**	0.26	0.08	**0.17**	0.26
CNGA120412S-SE-4V	0.06	**0.13**	0.20	0.06	**0.14**	0.22
CNGA120412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
CNGA120412S-UE-4C	0.07	**0.16**	0.25	0.08	**0.16**	0.24
CNGA120412S-UE-4V	0.07	**0.16**	0.25	0.08	**0.16**	0.24

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CNGA120412S-WE-4V	0.06	**0.13**	0.20	0.10	**0.20**	0.30
CNGN090308S-UE	0.50	**1.50**	2.50	0.10	**0.20**	0.30
CNGN090312S-UE	0.50	**1.50**	2.50	0.10	**0.23**	0.36
CNGN090316S-UE	0.50	**1.50**	2.50	0.10	**0.25**	0.40
CNGN120408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
CNGN120412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
CNGN120416S-UE	1.00	**2.00**	3.00	0.10	**0.25**	0.40
CNGX120712S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
CNGX120716S-UE	1.00	**2.00**	3.00	0.10	**0.25**	0.40
DCGW070202S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
DCGW070202S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
DCGW070202T-SF-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
DCGW070204S-RE-2S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
DCGW070204S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
DCGW070204S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DCGW070204T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
DCGW070208S-RE-2S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
DCGW070208S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
DCGW070208S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DCGW11T302S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
DCGW11T302S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
DCGW11T302T-SF-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
DCGW11T304S-RE-2S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
DCGW11T304S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
DCGW11T304S-UE-2C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DCGW11T304S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DCGW11T304T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
DCGW11T308S-RE-2S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
DCGW11T308S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
DCGW11T308S-UE-2C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
DCGW11T308S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
DCGW11T308T-SF-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
DNGA150404S-SE-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DNGA150404S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
DNGA150408S-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
DNGA150408S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
DNGA150604S-RE-4S	0.08	**0.17**	0.26	0.08	**0.14**	0.20
DNGA150604S-SE-4S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
DNGA150604S-UE-4S	0.07	**0.16**	0.25	0.08	**0.14**	0.20
DNGA150604S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
DNGA150608S-RE-4S	0.08	**0.17**	0.26	0.08	**0.16**	0.24
DNGA150608S-SE-4S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
DNGA150608S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
DNGA150608S-UE-4C	0.07	**0.16**	0.25	0.08	**0.15**	0.22
DNGA150608S-UE-4S	0.07	**0.16**	0.25	0.08	**0.15**	0.22
DNGA150608S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
DNGA150612S-RE-4S	0.08	**0.17**	0.26	0.08	**0.17**	0.26
DNGA150612S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
DNGA150612S-UE-4S	0.07	**0.16**	0.25	0.08	**0.16**	0.24
DNGA150612S-UE-4V	0.07	**0.16**	0.25	0.08	**0.16**	0.24
MCC.R02S-CS-1C	0.05	**0.10**	0.15	0.04	**0.06**	0.08
MCC.R02T-CC-1C	0.05	**0.10**	0.15	0.04	**0.06**	0.08
MCC.R02T-GP-1C	0.06	**0.13**	0.20	0.05	**0.10**	0.15
MCC.R04T-GP-1C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
MCN.R02S-GP-4V	0.07	**0.16**	0.25	0.06	**0.12**	0.18
MCN.R02S-SE-4V	0.06	**0.13**	0.20	0.05	**0.10**	0.15
MCN.R02S-UE-4V	0.07	**0.16**	0.25	0.06	**0.12**	0.18
MCN.R04S-CC-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
MCN.R04S-GP-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
MCN.R04S-SE-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
MCN.R04S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
MCN.R08S-CC-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
MCN.R08S-GP-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
MCN.R08S-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
MCN.R08S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
MDN.R02S-CC-4V	0.06	**0.13**	0.20	0.05	**0.10**	0.15
MDN.R02S-GP-4V	0.07	**0.16**	0.25	0.06	**0.12**	0.18
MDN.R02S-SE-4V	0.06	**0.13**	0.20	0.05	**0.10**	0.15
MDN.R02S-UE-4V	0.07	**0.16**	0.25	0.06	**0.12**	0.18
MDN.R04S-CC-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
MDN.R04S-GP-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
MDN.R04S-SE-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
MDN.R04S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
MDN.R08S-CC-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
MDN.R08S-GP-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
MDN.R08S-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
MDN.R08S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
RCGX090700S-UE	0.50	**1.50**	2.50	0.10	**0.30**	0.50
RCGX120700S-UE	0.50	**2.00**	3.50	0.10	**0.35**	0.60
RNGN060300S-UE	0.50	**1.00**	1.50	0.10	**0.20**	0.30
RNGN090300S-RE	0.50	**1.50**	2.50	0.15	**0.35**	0.55
RNGN090300S-RH	0.50	**1.50**	2.50	0.15	**0.35**	0.55
RNGN090300S-UE	0.50	**1.50**	2.50	0.10	**0.30**	0.50
RNGN090300T-SE	0.20	**1.00**	1.80	0.10	**0.20**	0.30
RNGN120300S-UE	0.50	**2.00**	3.50	0.10	**0.35**	0.60
RNGN120400S-RE	0.50	**2.00**	3.50	0.10	**0.45**	0.80
RNGN120400S-UE	0.50	**2.00**	3.50	0.10	**0.35**	0.60
SNGA120404S-UE-8V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
SNGA120408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
SNGA120408S-UE-8V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
SNGA120412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
SNGA120412S-UE-8V	0.07	**0.16**	0.25	0.08	**0.16**	0.24
SNGN090308S-UE	0.50	**1.50**	2.50	0.10	**0.20**	0.30
SNGN090312S-UE	0.50	**1.50**	2.50	0.10	**0.23**	0.36
SNGN090316S-UE	0.50	**1.50**	2.50	0.10	**0.25**	0.40
SNGN090412S-UE	0.50	**1.50**	2.50	0.10	**0.23**	0.36
SNGN120408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
SNGN120412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
SNGN120416S-UE	1.00	**2.00**	3.00	0.10	**0.25**	0.40
SNGX120412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
SNGX120712S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
SNGX120716S-UE	1.00	**2.00**	3.00	0.10	**0.25**	0.40
TCGW090204S-UE-3C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TCGW110204S-RE-3S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
TCGW110204S-SE-3S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
TCGW110204S-UE-3C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TCGW110204S-UE-3S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TCGW110204T-SE-3C	0.05	**0.10**	0.15	0.04	**0.08**	0.12
TCGW110208S-RE-3C	0.08	**0.16**	0.25	0.06	**0.14**	0.22
TCGW110208S-RE-3S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
TCGW110208S-SE-3S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
TCGW110208S-UE-3C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
TCGW110208S-UE-3S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
TCGW16T304S-RE-3S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
TCGW16T304S-SE-3S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
TCGW16T304S-UE-3C	0.06	**0.13**	0.20	0.06	**0.12**	0.18

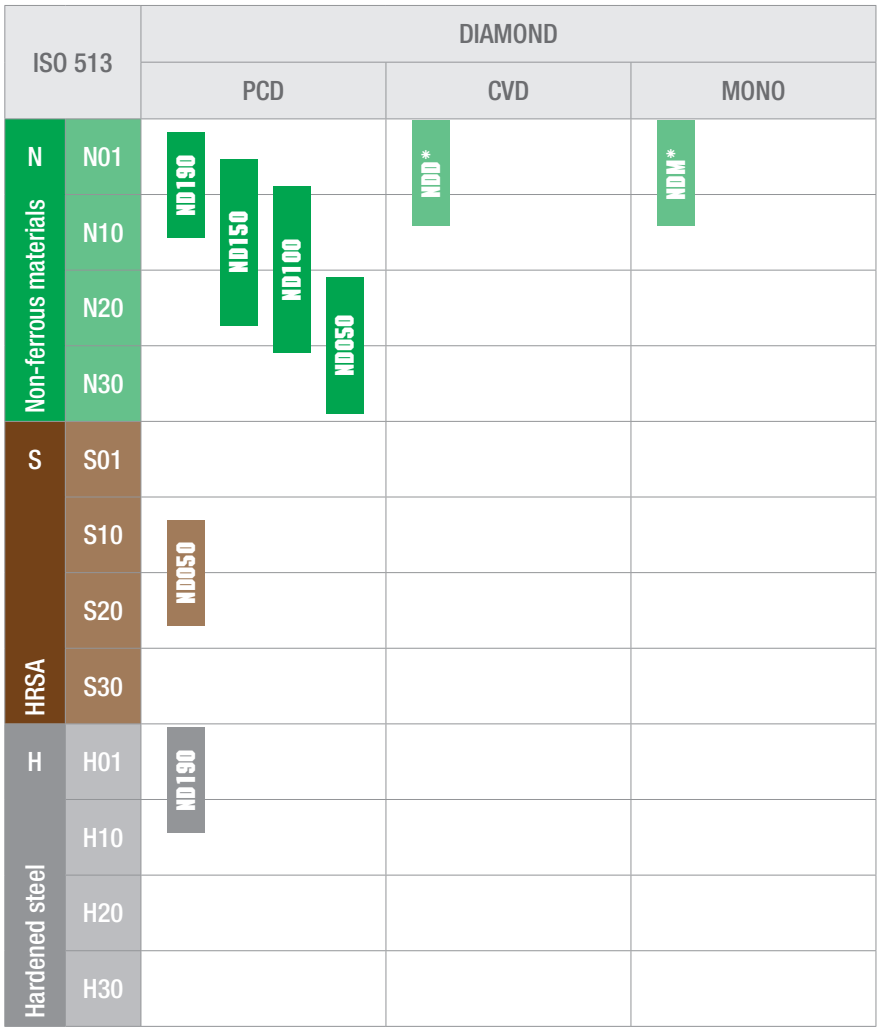
DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
TCGW16T304S-UE-3S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TCGW16T308S-RE-3C	0.08	**0.16**	0.25	0.06	**0.14**	0.22
TCGW16T308S-RE-3S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
TCGW16T308S-SE-3S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
TCGW16T308S-UE-3C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
TCGW16T308S-UE-3S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
TNGA160404S-RE-6V	0.08	**0.17**	0.26	0.08	**0.14**	0.20
TNGA160404S-SE-6V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TNGA160404S-UE-6C	0.07	**0.16**	0.25	0.08	**0.14**	0.20
TNGA160404S-UE-6V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
TNGA160408S-RE-6V	0.08	**0.17**	0.26	0.08	**0.16**	0.24
TNGA160408S-SE-6V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
TNGA160408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
TNGA160408S-UE-6C	0.07	**0.16**	0.25	0.08	**0.15**	0.22
TNGA160408S-UE-6V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
TNGA160412S-RE-6V	0.08	**0.17**	0.26	0.08	**0.17**	0.26
TNGA160412S-SE-6V	0.06	**0.13**	0.20	0.06	**0.14**	0.22
TNGA160412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
TNGA160412S-UE-6C	0.07	**0.16**	0.25	0.08	**0.16**	0.24
TNGA160412S-UE-6V	0.07	**0.16**	0.25	0.08	**0.16**	0.24
TNGN110308S-UE	0.50	**1.50**	2.50	0.10	**0.20**	0.30
TNGN160408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
TPGW090204S-UE-3S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TPGW110302S-UE-3S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
TPGW110304S-RE-3S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
TPGW110304S-SE-3S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
TPGW110304S-UE-3S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
TPGW110308S-SE-3S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
TPGW110308S-UE-3S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
VBGW110302S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
VBGW110302S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
VBGW110302T-SF-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
VBGW110304S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VBGW110304S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VBGW110304T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VBGW160402S-SE-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
VBGW160402S-UE-2S	0.06	**0.13**	0.20	0.05	**0.10**	0.15
VBGW160402T-SF-2S	0.05	**0.10**	0.15	0.04	**0.06**	0.08
VBGW160404S-RE-2C	0.08	**0.16**	0.25	0.06	**0.13**	0.20
VBGW160404S-RE-2S	0.08	**0.16**	0.25	0.06	**0.13**	0.20
VBGW160404S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VBGW160404S-UE-2C	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VBGW160404S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VBGW160404T-SF-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VBGW160408S-RE-2C	0.08	**0.16**	0.25	0.06	**0.14**	0.22
VBGW160408S-RE-2S	0.08	**0.16**	0.25	0.06	**0.14**	0.22
VBGW160408S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
VBGW160408S-UE-2C	0.06	**0.13**	0.20	0.06	**0.13**	0.20
VBGW160408S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
VBGW160408T-SF-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
VCGW110304S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VCGW110304S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VCGW160404S-SE-2S	0.05	**0.10**	0.15	0.04	**0.08**	0.12
VCGW160404S-UE-2S	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VCGW160408S-SE-2S	0.05	**0.10**	0.15	0.05	**0.10**	0.15
VCGW160408S-UE-2S	0.06	**0.13**	0.20	0.06	**0.13**	0.20
VNGA160404S-SE-4V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
VNGA160404S-UE-4C	0.07	**0.16**	0.25	0.08	**0.14**	0.20

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
VNGA160404S-UE-4V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
VNGA160408S-SE-4V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
VNGA160408S-UE-4C	0.07	**0.16**	0.25	0.08	**0.15**	0.22
VNGA160408S-UE-4V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
WNGA080404S-RE-6V	0.08	**0.17**	0.26	0.08	**0.14**	0.20
WNGA080404S-SE-6V	0.06	**0.13**	0.20	0.06	**0.12**	0.18
WNGA080404S-UE-6V	0.07	**0.16**	0.25	0.08	**0.14**	0.20
WNGA080408S-RE-6V	0.08	**0.17**	0.26	0.08	**0.16**	0.24
WNGA080408S-SE-6V	0.06	**0.13**	0.20	0.06	**0.13**	0.20
WNGA080408S-UE	1.00	**2.00**	3.00	0.10	**0.20**	0.30
WNGA080408S-UE-6V	0.07	**0.16**	0.25	0.08	**0.15**	0.22
WNGA080412S-RE-6V	0.08	**0.17**	0.26	0.08	**0.17**	0.26
WNGA080412S-UE	1.00	**2.00**	3.00	0.10	**0.23**	0.36
WNGA080412S-UE-6V	0.07	**0.16**	0.25	0.08	**0.16**	0.24



TURNING - Diamond

Grades selection guide .A178
Grades features .A179
Gradess cross reference .A181
Edge preparations selection guide .A182
Edge preparations features .A184
Product selection .A192
Designation system .A193
Inserts range . A194
Parameters .A212



HRSA: Heat resistant super alloyw

*NDD-CVD diamond and NDM-monocrystalline diamond are available upon request

SORMA DIAMOND & CUTTING TOOLS

GRADE	COMPOSITION	HARDNESS HV	GRAIN SIZE	BINDER	APPLICATION		FEATURES
ND050 new name: **NDP001**	diamond 85%	5.000	~ 1 µm	Wc + Co	N	N20 N35	Excellent surface finishing and very good toughness. First choice for titanium alloys machining. Eccellente finitura superficiale e ottima tenacità. Prima scelta per lavorazione di leghe di titanio. Ausgezeichnete Oberflächenqualität und hervorragende Robustheit. Erste Wahl für die Bearbeitung von Titan-Legierungen. Excellente finition de surface et excellente ténacité. Premier choix pour l'usinage d'alliages de titane.
ND100 new name: **NDP010**	diamond 95%	6.000	10 µm	Wc + Co	N	N10 N30	First choice for all-around applications on non-ferrous materials. Prima scelta per lavorazioni universali su materiali non ferrosi. Erste Wahl für die universelle Bearbeitung von Nichteisenmaterialien. Premier choix pour usinages universels sur matériaux non ferreux.
ND150 new name: **NDP302**	diamond 95%	7.000	multi-modal 30 + 2 µm	Wc + Co	N	N05 N25	Multi-modal grade for a perfect combination between toughness and wear resistance. Good solution for high silicon aluminium and bi-metal applications. Grado multimodale per una perfetta combinazione fra tenacità e resistenza all'usura. Buona soluzione per applicazioni su alluminio ad alto tenore di silicio e bi-metalli. Multimodale Qualität für eine perfekte Kombination aus Robustheit und Verschleißfestigkeit. Gute Lösung für Anwendungen mit Aluminium mit hohem Siliziumgehalt und Bimetallen. Qualité multimodale pour une combinaison parfaite entre ténacité et résistance à l'usure. Bonne solution pour applications sur aluminium à haute teneur en silicium et bi-métaux.
ND190 new name: **NDP025**	diamond 90%	7.000	25 µm	Wc + Co	N	N01 N15	Excellent wear resistance. First choice for high silicon aluminium alloys (Si > 13%), tungsten carbide and ceramic. Eccellente resistenza all'usura. Prima scelta per leghe di alluminio ad alto contenuto in silicio (Si > 13%), metallo duro in tungsteno e ceramica. Hervorragende Verschleißfestigkeit. Erste Wahl für Aluminiumlegierungen mit hohem Siliziumgehalt (Si > 13 %), Hartmetall und Keramik. Excellente résistance à l'usure. Premier choix pour alliages d'aluminium à haute teneur en silicium (Si > 13 %), carbure et céramique.
NDD CVD diamond	-	8.000	-	binder free	N	N01 N10	Longer tool life compared to PCD grades. Best performance on abrasive materials such as AlSi, graphite, CFRP carbon fiber-reinforced plastic. Migliore vita utensile confrontata con i gradi PCD. Migliori prestazioni su materiali abrasivi quali AlSi, grafite, e materiali plastici rinforzati in fibra di carbonio (CFRP). Verbesserte Standzeit gegenüber den PCD-Qualitäten. Bessere Leistung bei abrasiven Materialien wie AlSi, Graphit und kohlenstofffaserverstärktem Kunststoff (CFK). Meilleure durée de vie de l'outil par rapport aux nuances PCD. Performances optimisées sur des matériaux abrasifs tels que l'AlSi, le graphite et les plastiques renforcés en fibre de carbone (CFRP).

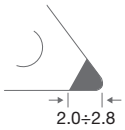
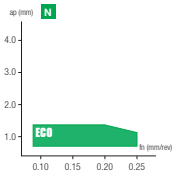
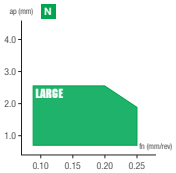
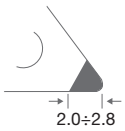
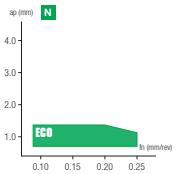
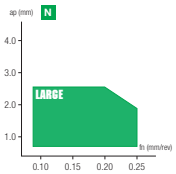
NDD-CVD diamond and NDM-monocrystalline diamond are available upon request
ND120: same features of ND100

GRADE	COMPOSITION	HARDNESS HV	GRAIN SIZE	BINDER	APPLICATION		FEATURES
NDM Monocrystalline diamond	-	10.000	-	binder free	N	N01 N05	Best surface finishing reaching nanometers roughness value not reachable with conventional polycrystalline tools. Eccezionale finitura superficiale con valori di rugosità nanometrici, irraggiungibili con utensili policristallini convenzionali. Verbesserte Oberflächenqualität (Rauheitswerte im Nanometerbereich), wie sie mit herkömmlichen polykristallinen Werkzeugmaterialien nicht erreicht werden kann. Meilleure finition de surface (valeurs de rugosité de l'ordre du nanomètre), inatteignable avec des outils polycristallins conventionnels.

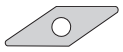
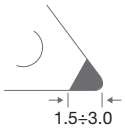
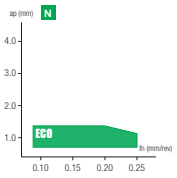
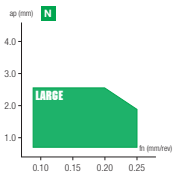
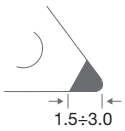
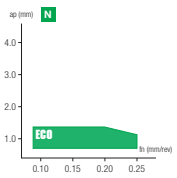
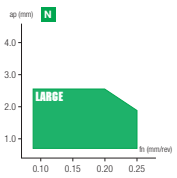
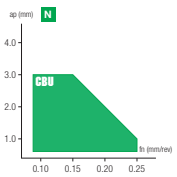
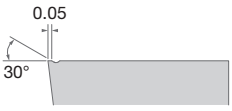
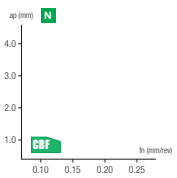
NDD-CVD diamond and NDM-monocrystalline diamond are available upon request
ND120: same features of ND100

ISO 513		nikkoTOOLS	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SUMITOMO	TAEGUTEC	TUNGALOY	WALTER
N	N01 - N10	ND150 ND190		KD1405		MD205 MD220		PCD30	DA90	TD810	DX140 DX160	
	N10 - N20	ND100 ND150	ID5	KD1425	KPD010	MD220 MD230	CD10	PCD20	DA150	KP300	DX120 DX140	WDN10
	N20 - N30	ND050 ND100	ID5	KD1400	KPD001 KPD010	MD230 MD2030	CD05 CD10	PCD20	DA1000 DA2200	TD830	DX110 DX120	WDN10

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

NEGATIVE type with hole				C	D	T	W		
									
				80°	55°	60°	80°		
N	SLANT TIP	ECO			A196  SIZE 12	A199  SIZE 15	A205  SIZE 16	A211  SIZE 08		
		LARGE			A196  SIZE 12	A199  SIZE 15	A205  SIZE 16	A211  SIZE 08		
	FLAT TIP	ECO			A196  SIZE 12	A199  SIZE 15	A205  SIZE 16	A211  SIZE 08		
		LARGE			A196  SIZE 12	A199  SIZE 15	A205  SIZE 16	A211  SIZE 08		

SORMA DIAMOND & CUTTING TOOLS

POSITIVE type with hole			C	D	T	V		
								
			80°	55°	60°	35°		
N	SLANT TIP	**ECO** 		CC A194  SIZE 06 09 12	DC A197  SIZE 07 11	TC, TP A203, A206  SIZE 08 09 11 16	VB, VC A207, A209  SIZE 11 16		
		LARGE 		CC A194  SIZE 06 09 12	DC A197  SIZE 07 11	TC A203  SIZE 11 16	VB, VC A207, A209  SIZE 16		
	FLAT TIP	**ECO** 		CC A194  SIZE MCC 06 09 12	DC A197  SIZE 07 11	TC, TP A203, A206  SIZE 08 09 11 16	VB, VC A207, A209  SIZE 11 16		
		LARGE 		CC A194  SIZE 06 09 12	DC A197  SIZE 07 11	TC A203  SIZE 11 16	VB, VC A207, A209  SIZE 16		
	3D CHIPBREAKER	**CBU** 		CC A195  SIZE 06 09	DC A198  SIZE 07 11	TC A204  SIZE 11 16	VC A209  SIZE 11 16		
		CBF 		CC A195  SIZE 06	DC A198  SIZE 07	TC, TP A204, A206  SIZE 09 11 16	VB A207  SIZE 11 16		
		CBG		CC A195 SIZE 09	DC A149 SIZE 11	TC A204 SIZE 09 11	VB A208 SIZE 11 16		
	FULL EDGE	**1S**		CC A195 SIZE 06 09 12	DC A198 SIZE 07 11	TC A204 SIZE 09 11 16	VC A210 SIZE 11 16		
	FULL FACE	**FF**		CC A195 SIZE 06 09	DC A198 SIZE 07 11	TC A204 SIZE 11 16			

Slant tip

Cutting edge

• The diamond tip is brazed with an inclination of 7°÷10°. This solution is available both for eco and large tip dimensions
• Positive rake angle effectively reduces vibrations and burrs formation
• Creating smaller cutting force, the slant tip is especially helpful on long shaft and thin wall work piece machining
• TPossible to provide tailored combination of small radii with extra clearance on the flank face

• La placchetta diamantata è saldobrasata con un'inclinazione di 7°÷10°. Soluzione disponibile per riporto PCD nelle dimensioni eco e grande
• L'angolo di spoglia positivo riduce efficacemente le vibrazioni e la formazione di bave
• Generando piccole forze di taglio, la placchetta PCD inclinata è particolarmente utile nella lavorazione di alberi lunghi e pareti sottili
• Design che permette di combinare spoglia aggiuntiva e raggi di piccole dimensioni

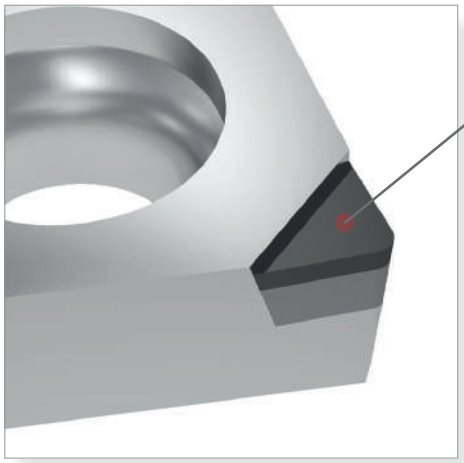
• Die PKD Wendeplatte wird in einem Winkel von 7°÷10° gelötet. Lösung für Bestückungen in Eco- und Großformaten erhältlich
• Der positive Spanwinkel reduziert effektiv Vibrationen und Gratbildung
• Die geiegnete Wendeplatte erzeugt geringe Schnittkräfte und ist besonders bei der Bearbeitung langer Wellen und dünner Wände nützlich
• Design, das die Kombination von zusätzlichem Span und kleinen Radien ermöglicht

• La pointe diamant est brasée avec une inclinaison de 7 °÷10 °. Solution aussi bien disponible pour l'éco que pour les grandes dimensions de pointes
• L'angle de dépouille positif réduit efficacement les vibrations et la formation de bavures
• Générant de faibles efforts de coupe, la pointe inclinée est particulièrement utile lors de l'usinage d'arbres longs et de parois fines
• Conception permettant de combiner un râteau supplémentaire et de petits rayons

Slant tip

Cutting edge

Features of Slant tip cutting edge



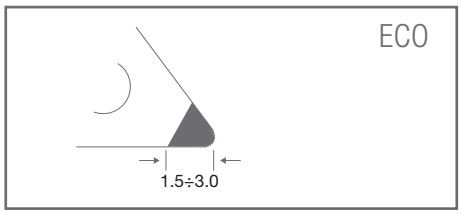
LIGHT CUTTING ACTION

- The cutting edge is completely sharp (F type) as for all NIKKO TOOLS diamond solutions
- The rake angle of all slant type is from 7° to 10°

- Tagliente interamente affilato (tipo F) come in tutte le soluzioni diamantate Nikko Tools
- The rake angle of all slant types is from 7° to 10°

- Vollständig geschliffene Schneidkante (F-Typ) wie bei allen Diamantlösungen von Nikko Tools
- Der Spanwinkel aller schrägen Typen variiert zwischen 7° und 10°

- L'arête de coupe est entièrement affûtée (type F) comme dans toutes les solutions diamantées Nikko Tools
- L'angle de dépouille de tous les types inclinés varie entre 7 ° et 10 °



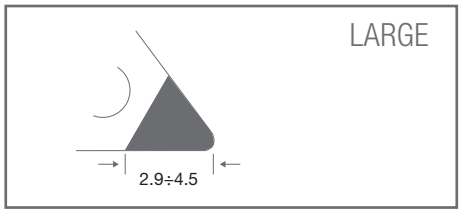
BROAD RANGE

- The availability of different tip sizes allows to face both finishing and roughing applications

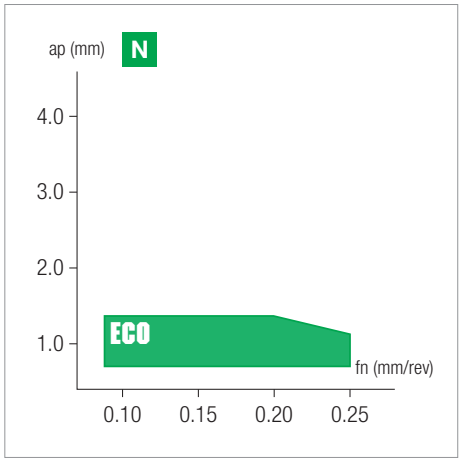
- La disponibilità di taglienti saldobrasati con differenti dimensioni consente di affrontare applicazioni di finitura e di sgrossatura

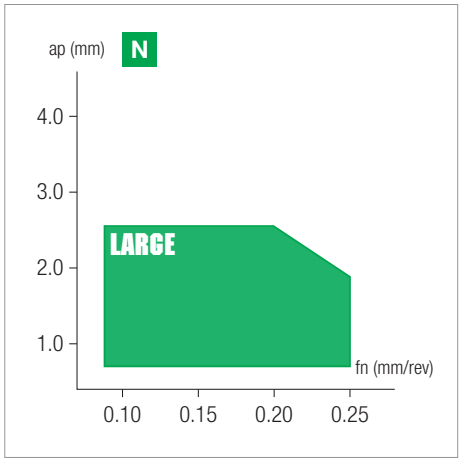
- Die Verfügbarkeit von Platten in verschiedenen Größen ermöglicht sowohl Schlicht- als auch Schruppanwendungen

- La disponibilité de différentes dimensions de pointes permet d'aborder les applications de finition et d'ébauche

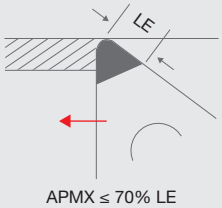


Application range - ISO 513





MAXIMUM ap



APMX ≤ 70% LE

- The maximun depth of cut (APMX) can be calculated as 70% of diamond tip lenght.
- La profondità massima di taglio (APMX) può essere calcolata come il 70% della lunghezza della punta diamantata.
- Die maximale Schnitttiefe (APMX) kann als 70 % der Länge der PKD Bestückung berechnet werden.
- La profondeur de coupe maximale (APMX) peut être calculée comme 70 % de la longueur de la pointe diamantée

Flat tip

Cutting edge

• All-around solution for every kind of operations on non-ferrous materials. The diamond tip is completely flat and is available both with eco and large tip dimensions
• Reliable and strong cutting edge able to produce excellent surface finishing
• The flat cutting edge can be used on both continuous and interrupted cutting

• Soluzione universale per qualsiasi tipo di operazione su materiali non ferrosi. Il tagliente saldobrasato completamente piatto, è disponibile nelle dimensioni eco e grande
• Tagliente affidabile e robusto in grado di ottenere eccellente finitura superficiale
• Tagliente piatto utilizzabile per condizioni di taglio continuo e taglio interrotto.

• Universallösung für jede Art von Bearbeitung von Nichteisenmaterialien. Komplett flache PKD Wendeplatte, erhältlich in verschiedenen Bestückungen - Eco und Groß
• Zuverlässige und robuste Schneidkante mit hervorragender Oberflächenqualität
• Die flache Schneidkante kann für kontinuierliche und unterbrochene Schnittbedingungen eingesetzt werden.

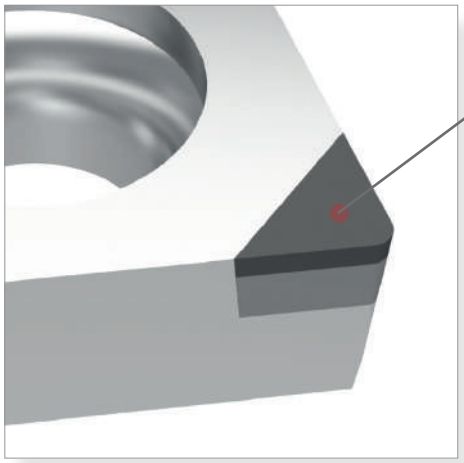
• Solution universelle pour tout type d'opération sur matériaux non ferreux. Pointe diamantée entièrement plate, disponible en formats éco et grand
• Arête de coupe fiable et robuste apportant une excellente finition de surface
• L'arête de coupe plate peut être utilisée dans des conditions de coupe continues et de coupe interrompues.

SORMA DIAMOND & CUTTING TOOLS

Flat tip

Cutting edge

Features of Flat tip cutting edge



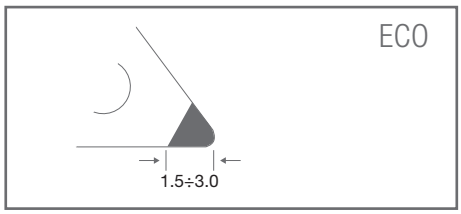
RELIABLE CUTTING EDGE

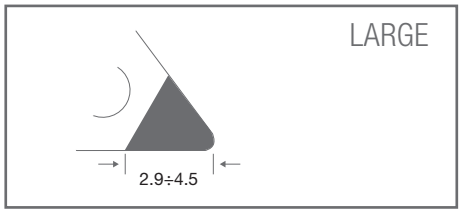
- Sharp edge and strong rake face for smooth and stable machining
- First choice for universal use

- Tagliente affilato e spoglia robusta per ottenere taglienza e stabilità
- Prima scelta per uso universale

- Scharfe Schneidkante in Verbindung mit einer stabilen Spanfläche für ein ausgewogenes Maß an Schnittkantenrobustheit
- Erste Wahl für universellen Einsatz

- Arête vive combinée à une solide surface de dépouille pour une coupe douce et un usinage stable
- Premier choix pour une utilisation universelle





BROAD RANGE

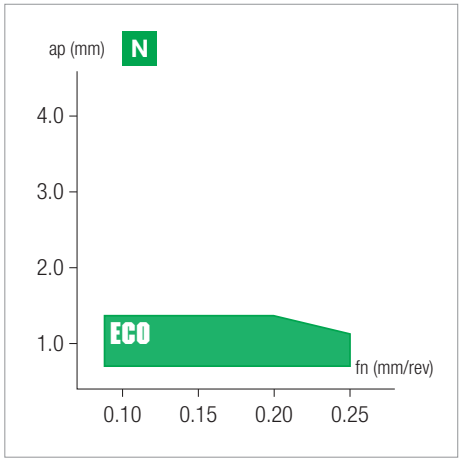
- Different tip sizes available covering various applications from finishing to roughing

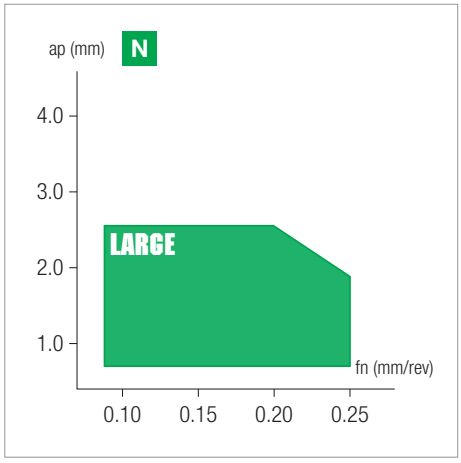
- Taglienti saldobrasati con differenti dimensioni a copertura di diverse applicazioni, dalla finitura alla sgrossatura

- Die Bohrer sind in verschiedenen Größen erhältlich, um unterschiedliche Anwendungen abzudecken, vom Schlichten bis zum Schruppen

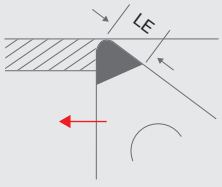
- La disponibilité de différentes dimensions de pointes permet d'aborder les applications de finition et d'ébauche

Application range - ISO 513





MAXIMUM ap



APMX ≤ 70% LE

- The maximun depht of cut (APMX) can be calculated as 70% of diamond tip lenght.
- La profondità massima di taglio (APMX) può essere calcolata come il 70% della lunghezza della punta diamantata.
- Die maximale Schnitttiefe (APMX) kann als 70 % der Länge der PKD Bestückung berechnet werden.
- La profondeur de coupe maximale (APMX) peut être calculée comme 70 % de la longueur de la pointe diamantée

CBU - 3D chipbreaker

Cutting edge

• 3D laser chipbreaker geometry for excellent chip control
• Variable edge allows reliable performances from finishing to roughing
• Recommended for mass production and automated workpiece handling thanks to the excellent chip control
• Effectively avoids twisted chips scratching the workpiece surface

• Die programmierte Geometrie wird durch modernste Lasertechnologie umgesetzt und bietet eine hervorragende Spankontrolle
• Variable Schneidkante zur Anpassung der Geometrie für die Bearbeitung vom Schlichten bis zum Schruppen
• Empfohlen für die Herstellung von Großserien, insbesondere bei automatisiertem Werkstück-Handling, aufgrund der verbesserten Spankontrolle
• Beugt effektiv dem Verkratzen der bereits bearbeiteten Oberfläche durch verdrehte Späne vor

• Rompitruicolo 3D ricavato con tecnologia laser, garantisce ottimo controllo trucioli
• La geometria variabile del tagliente permette lavorazioni che vanno dalla finitura alla sgrossatura
• Raccomandato per produzione di grandi lotti, specialmente con movimentazione automatizzata dei pezzi, grazie al migliore controllo del truciolo
• Evita efficacemente che il truciolo attorcigliato graffi la superficie già lavorata

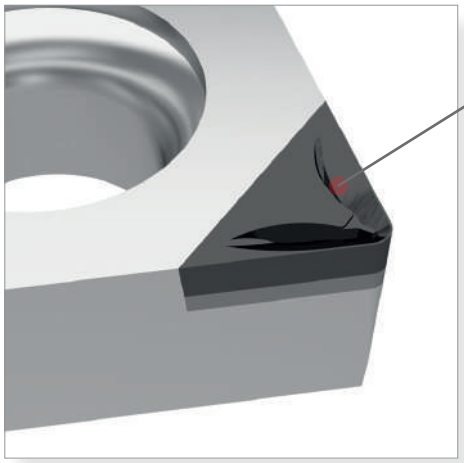
• Géométrie du brise copeau laser 3D pour un contrôle optimal des copeaux
• Arête variable, permet une solution fiable pour l'usinage de la finition à l'ébauche
• Recommandé pour la production de grandes séries et à la manipulation automatisée des pièces, grâce à un meilleur contrôle des copeaux
• Empêche efficacement le recyclage des copeaux qui peut rayer la surface déjà usinée

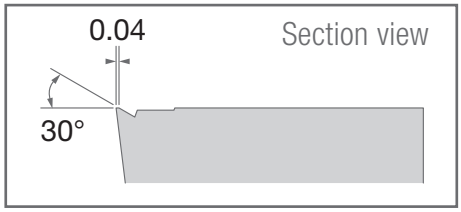
SORMA DIAMOND & CUTTING TOOLS

CBU - 3D chipbreaker

Cutting edge

Features of CBU chipbreaker





STATE OF THE ART GEOMETRY

• Optimized rake face and tailored chip groove effectively improve the chip control performances
• Variable land to support broad range of applications from finishing to roughing

• Superficie di spoglia ottimizzata e scanalatura ad hoc per effettivo miglioramento delle prestazioni nel controllo del truciolo
• Pianetto variabile per supportare ampio campo applicativo, dalla finitura alla sgrossatura

• Optimierte Spanfläche und Ad-hoc-Nuten für die effektive Leistungsverbesserung bei der Spankontrolle
• Variable Fläche für ein breites Anwendungsspektrum vom Schlichten bis zum Schruppen

• Face de dépouille optimisée et goujure à copeau sur mesure pour une amélioration efficace des performances de contrôle des copeaux
• Support variable pour prendre en charge une large gamme d'applications, de la finition à l'ébauche

BROAD RANGE

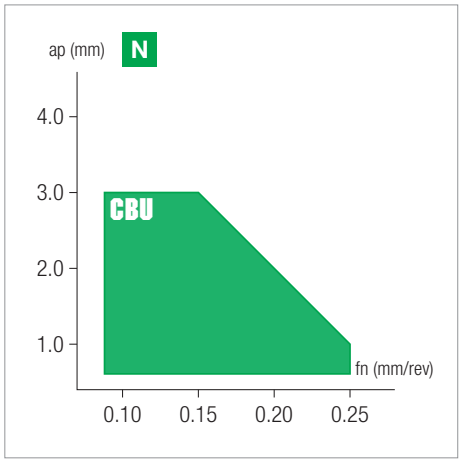
• Most common shapes and radii available as standard
• Tailor-made also possible upon request

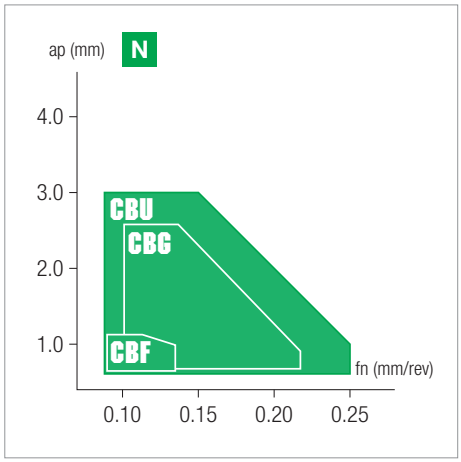
• Forme e raggi più comuni disponibili come standard
• Disponibili su richiesta versioni personalizzate

• Standardmäßig sind die meisten gängigen Formen und Radien erhältlich
• Auf Anfrage sind kundenspezifische Ausführungen erhältlich

• Formes et rayons les plus courants disponibles en version standard
• Versions sur mesure disponibles sur demande

Application range - ISO 513





MAXIMUM ap

CBF finishing — CBG medium

CBU NEW universal

• CBU cover the application range of our previous series (CBF, CBG) with improved performances.
• CBU copre l'intervallo applicativo delle precedenti serie Nikko Tools (CBF, CBG) con prestazioni migliorate.
• CBU deckt den Anwendungsbereich der bisherigen Nikko Tools-Serien (CBF, CBG) ab, jedoch mit verbesserter Leistung.
• CBU couvre la gamme d'applications des séries précédentes de Nikko Tools (CBF, CBG) avec une optimisation des performances.

Full Face/Full Edge

Cutting edge

• Extra large diamond tip or full face style for tough applications and large depth of cut.
• Best solutions for high depth of cut of high feed rate, chamfering application and whenever a long diamond tip is necessary due to a specific workpiece shape
• For full edge type (1S), it is generally necessary to define the cutting direction (R or L)

• Plachetta diamantata extra large o full face per applicazioni gravose e profondità di taglio elevate.
• Migliore soluzione per grandi profondità di taglio con alti avanzamenti, lavorazione di smussi e in tutti i casi in cui sia richiesta una lunga punta diamantata per le particolari dimensioni del pezzo da lavorare
• Nel tipo a tagliente pieno (1S) è generalmente necessario definire la direzione di taglio (R/L, destra o sinistra)

• Diamant, extragroß und volle Schneidkante oder volle Fläche, für schwere oder spezielle Schnittbedingungen
• Optimale Lösung für große Schnitttiefen mit hohen Vorschüben, für die Bearbeitung von Fasen und in allen Fällen, in denen ein PKD Wendeplatte mit langer Bestückung, aufgrund der besonderen Abmessungen des Werkstücks, erforderlich ist
• Beim Vollschnittkantentyp (1S) ist es generell notwendig, die Schnittrichtung anzugeben (R/L, rechts oder links)

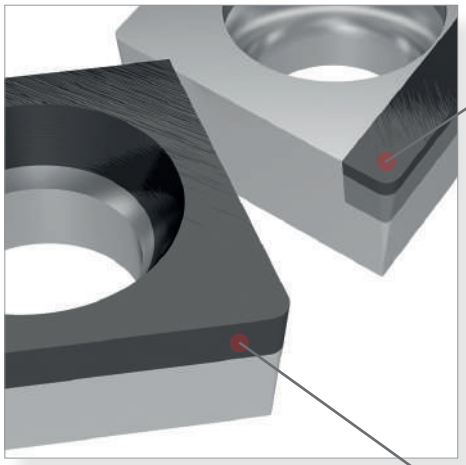
• Pointe diamant extra-large ou surface complète pour applications intensives et grandes profondeurs de coupe
• La meilleure solution pour les grandes profondeurs de coupe à avances élevées, le chanfreinage et chaque fois qu'une pointe longue diamantée est nécessaire en raison de la forme spécifique de la pièce à usiner.
• Pour le type arête complète (1S), il est généralement nécessaire de définir la direction de coupe (R/L, droite ou gauche)

SORMA DIAMOND & CUTTING TOOLS

Full Face/Full Edge

Cutting edge

Features of long cutting edge types



Flat design

1S - FULL EDGE

- Increased tip length allows higher depth of cut in comparison with conventional type
- Very common for long chamfering application

- Massima lunghezza del tagliente per maggiore profondità di taglio rispetto alle tipologie convenzionali
- Molto comune nelle applicazioni con lunghi smussi

- Größere Schnittkante für mehr Schnitttiefe als bei herkömmlichen Typen
- Sehr gängig bei Anwendungen mit langen Fasen

- Longueur de pointe optimisée pour une plus grande profondeur de coupe par rapport aux types conventionnels
- Très courant dans les applications avec de longs chanfreins

FF - FULL FACE

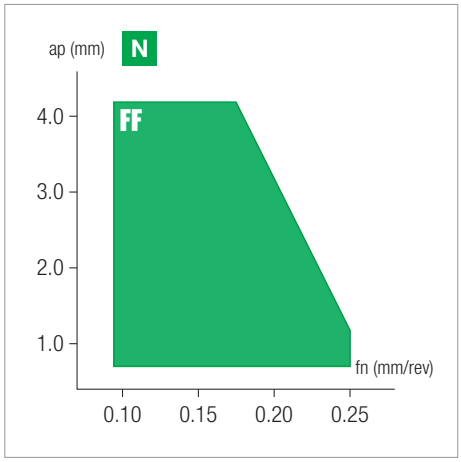
- Great cost effective solution due to multiple cutting edges available
- Maximum connection strength between PCD layer and carbide support

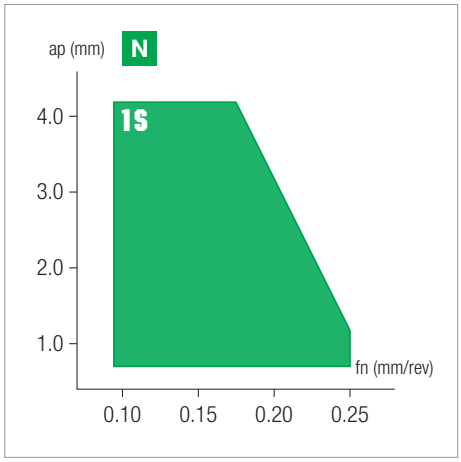
- Soluzione con costo/tagliente molto contenuto
- Massimo ancoraggio tra supporto in metallo duro e PCD

- Hervorragende kostengünstige Lösung durch Verfügbarkeit von mehreren Schneidkanten
- Maximale Verbindungskraft zwischen PCD-Schicht und Hartmetall-Grundmaterial

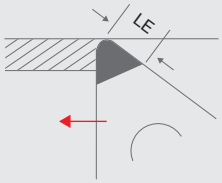
- Excellente solution économique grâce aux multiples arêtes de coupe disponibles
- Force de connexion maximale entre la couche PCD et le support en carbure

Application range - ISO 513





MAXIMUM ap



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- La profondeur de coupe maximale (APMX) peut être calculée comme 70 % de la longueur de la pointe diamantée

N		STANDARD TIP		CHIPBREAKER			
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE		
●	wear resistance	ND150	ND150	-	-		
	▲ 1st CHOICE ▼	**ND100**	**ND100**	**-**	**NDP010 / CBU**		
	toughness	ND050	ND050	-	-		
◖	wear resistance	ND150	ND150	-	-		
	▲ 1st CHOICE ▼	**ND100**	**ND100**	**-**	**NDP010 / CBU**		
	toughness	ND050	ND050	-	-		
⬡	wear resistance	ND100	ND100	-	-		
	▲ 1st CHOICE ▼	**ND050**	**ND050**	**-**	**-**		
	toughness	-	-	-	-		

SORMA DIAMOND & CUTTING TOOLS

D	C	G	X	11	T3	04	-	CBU	-	NDP	010
1	2	3	4	5	6	7		8		9	10

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

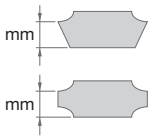
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A	✓	✗	✗
G	✓	✗	double sided
M	✓	✗	single sided
N	✗	✗	✗
T	✓	40°÷60°	single sided
W	✓	40°÷60°	✗
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS
Symbol	(mm)
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.53



7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	EDGES GEOMETRY
1S	full edge
CBU	3D chipbreaker
FF	full face
LRG	large tip size
-	eco tip size

9	GRADE - features
NDD	CVD diamond
NDM	monocrystalline diamond
NDP	PCD polycristalline diamond

10	GRADE - grit size
xxx	diamond grit (µm)

SORMA DIAMOND & CUTTING TOOLS

CC

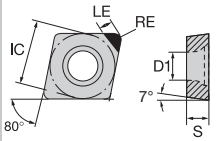
ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, effectively reduces the risk of chip jamming when boring
- 80° corner can be used for both turning and facing operations
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

		DP ND050	DP ND100	DP ND120	DP ND150	DP ND190	DP NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱					

Dimensions



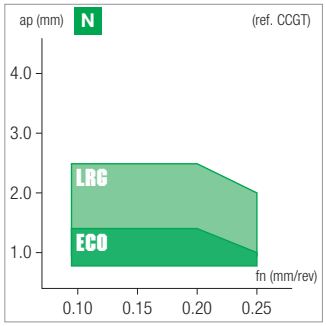
1 edge

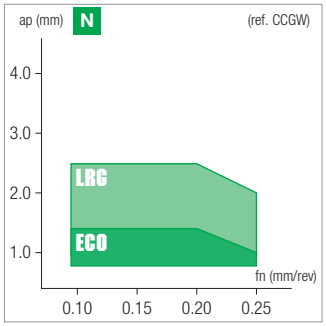
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	DP ND050	DP ND100	DP ND120	DP ND150	DP ND190	DP NDP010
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400
S	40 100					
H						

	Designation		RE	IC	S	D1	LE	Stock					
SLANT TIP	eco N S	CCGT060202	0.20	6.35	2.38	2.8	2.8		●				
		CCGT060204	0.40	6.35	2.38	2.8	2.8	○	●		○		
		CCGT060208	0.80	6.35	2.38	2.8	2.7		○				
		CCGT09T302	0.20	9.525	3.97	4.4	2.8		●				
	7° tip angle	CCGT09T304	0.40	9.525	3.97	4.4	2.8	◉	●		○	○	
		CCGT09T308	0.80	9.525	3.97	4.4	2.7	○	●		○	○	
		CCGT120404	0.40	12.7	4.76	5.5	2.8		●				
		CCGT120408	0.80	12.7	4.76	5.5	2.7		○				
SLANT TIP	LRG N	CCGT060204-LRG	0.40	6.35	2.38	2.8	3.2		○				
		CCGT09T304-LRG	0.40	9.525	3.97	4.4	4.3		◉				
		CCGT09T308-LRG	0.80	9.525	3.97	4.4	4.2		●				
		CCGT120404-LRG	0.40	12.7	4.76	5.5	4.3		○				
	large tip 7° tip angle	CCGT120408-LRG	0.80	12.7	4.76	5.5	4.2		○				
FLAT TIP	eco N S	CCGW060202	0.20	6.35	2.38	2.8	2.8	○	●		○		
		CCGW060204	0.40	6.35	2.38	2.8	2.8	◉	●		◉		
		CCGW060208	0.80	6.35	2.38	2.8	2.7	○	○		○		
		CCGW09T302	0.20	9.525	3.97	4.4	2.8		●				
		CCGW09T304	0.40	9.525	3.97	4.4	2.8	●	●		○	◉	
		CCGW09T308	0.80	9.525	3.97	4.4	2.7	◉	●		○	◉	
		CCGW120404	0.40	12.7	4.76	5.5	2.8	○	○		○		
		CCGW120408	0.80	12.7	4.76	5.5	2.7	○	○		○		
FLAT TIP	LRG N	CCGW060204-LRG	0.40	6.35	2.38	2.8	3.2		○				
		CCGW09T304-LRG	0.40	9.525	3.97	4.4	4.3		●				
		CCGW09T308-LRG	0.80	9.525	3.97	4.4	4.2		○				
		CCGW120404-LRG	0.40	12.7	4.76	5.5	4.3		●				
	large tip	CCGW120408-LRG	0.80	12.7	4.76	5.5	4.2		○				

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

CC

ISO - with hole

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- 3D Chip breaker type enables excellent chip flow and chip control
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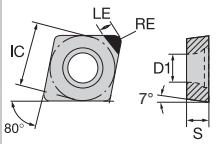
DP: Polycrystalline diamond

	DP	DP	DP	DP	DP	DP
	ND050	**ND100**	**ND120**	**ND150**	**ND190**	**NDP010**
Stable machining, light cut (● 1st choice ○ suitable)	○	●	●	●	●	●
General machining, medium cut (● 1st choice ○ suitable)	●	●	●	○		●
Unstable machining, heavy cut (● 1st choice ○ suitable)	○					

Dimensions



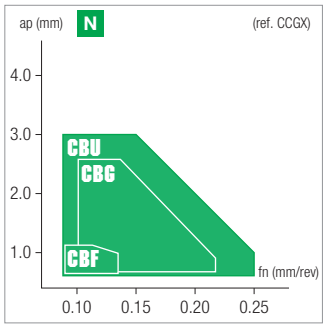
1 edge

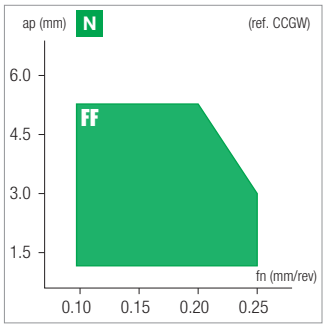
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

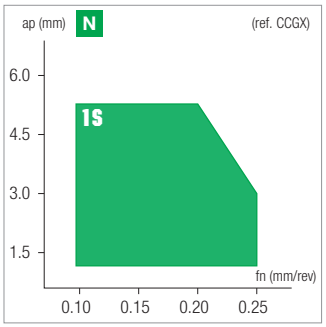
ISO						
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400
S	40 100					
H						

	Designation		RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER	**CBU** N	**CCGX060202-CBU**	0.20	6.35	2.38	2.8	3.3						●
		CCGX060204-CBU	0.40	6.35	2.38	2.8	3.1						●
		CCGX060208-CBU	0.80	6.35	2.38	2.8	2.6						●
		CCGX09T304-CBU	0.40	9.525	3.97	4.4	3.5						●
	universal use	**CCGX09T308-CBU**	0.80	9.525	3.97	4.4	3.3						●
3D CHIPBREAKER	**CBF** N	**CCGX060202-CBF**	0.20	6.35	2.38	2.8	3.3			▽			
		CCGX060204-CBF	0.40	6.35	2.38	2.8	3.3			▽			
	finisfhing												
FULL FACE	**FF** N	**CCGW060204-FF**	0.40	6.35	2.38	2.8	-						○
		CCGW09T304-FF	0.40	9.525	3.97	4.4	9.3						●
	high depth of cut												
FULL EDGE	**1S** N	**CCGX060204L/R-1S**	0.40	6.35	2.38	2.8	6		○				
		CCGX09T304L/R-1S	0.40	9.525	3.97	4.4	9.3		○				
		CCGX120412L/R-1S	1.20	12.7	4.76	0	-						○
	high depth of cut right-hand shown												

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A121** | GRADES FEATURES p. **A178** | HOLDERS p. **A255**

SORMA DIAMOND & CUTTING TOOLS

CN

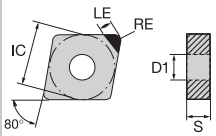
ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Flat tip offers economical solution

DP: Polycrystalline diamond

		DP	ND100
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

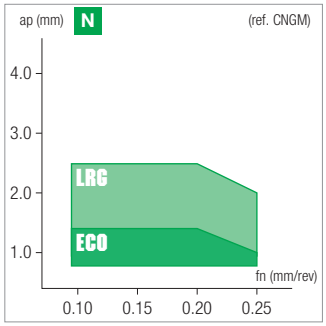


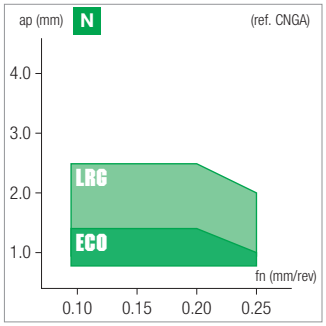
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**450** 2400
S	
H	

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	eco N  7° tip angle	CNGM120404	0.40	12.7	4.76	5.16	2.8	●
		CNGM120408	0.80	12.7	4.76	5.16	2.7	●
SLANT TIP	LRG N  large tip 7° tip angle	CNGM120404-LRG	0.40	12.7	4.76	5.16	4.3	○
		CNGM120408-LRG	0.80	12.7	4.76	5.16	4.2	○
FLAT TIP	eco N 	CNGA120404	0.40	12.7	4.76	5.16	2.8	○
		CNGA120408	0.80	12.7	4.76	5.16	2.7	●
FLAT TIP	LRG N  large tip	CNGA120404-LRG	0.40	12.7	4.76	5.16	4.3	○
		CNGA120408-LRG	0.80	12.7	4.76	5.16	4.2	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A212** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

DC

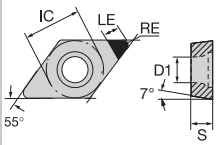
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip-jamming in boring
- Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

		DP ND050	DP ND100	DP ND120	DP ND150	DP ND190	DP NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱					

Dimensions



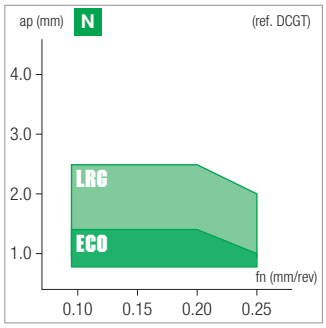
1 edge

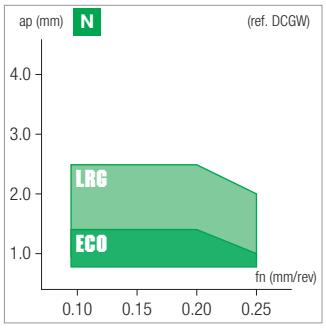
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	DP ND050	DP ND100	DP ND120	DP ND150	DP ND190	DP NDP010
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400
S	40 100					
H						

	Designation		RE	IC	S	D1	LE	Stock					
SLANT TIP	eco N S  7° tip angle	DCGT070202	0.20	6.35	2.38	2.8	2.5		●				
		DCGT070204	0.40	6.35	2.38	2.8	2.4		●				
		DCGT070208	0.80	6.35	2.38	2.8	2		◉				
		DCGT11T302	0.20	9.525	3.97	4.4	2.5		●				
		DCGT11T304	0.40	9.525	3.97	4.4	2.4	○	●		○	○	
		DCGT11T308	0.80	9.525	3.97	4.4	2	○	●		○	○	
SLANT TIP	LRG N  large tip 7° tip angle	DCGT070204-LRG	0.40	6.35	2.38	2.8	2.9		○				
		DCGT11T304-LRG	0.40	9.525	3.97	4.4	3.9		●				
		DCGT11T308-LRG	0.80	9.525	3.97	4.4	3.5		●				
FLAT TIP	eco N S 	DCGW070202	0.20	6.35	2.38	2.8	2.5	◉	●		○		
		DCGW070204	0.40	6.35	2.38	2.8	2.4	○	●		○		
		DCGW070208	0.80	6.35	2.38	2.8	2	○	○		○		
		DCGW11T302	0.20	9.525	3.97	4.4	2.5	○	●		○		
		DCGW11T304	0.40	9.525	3.97	4.4	2.4	◉	●		●	○	
		DCGW11T308	0.80	9.525	3.97	4.4	2	●	●		○	○	
FLAT TIP	LRG N  large tip	DCGW070204-LRG	0.40	6.35	2.38	2.8	2.9		●				
		DCGW11T304-LRG	0.40	9.525	3.97	4.4	3.9		●				
		DCGW11T308-LRG	0.80	9.525	3.97	4.4	3.5		○				
		DCGW11T312-LRG	1.20	9.525	3.97	4.4	-						○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A121 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DC

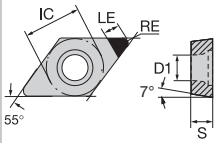
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip-jamming in boring
- Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

		DP	DP	DP	DP	DP	DP
		ND050	ND100	ND120	ND150	ND190	NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●	●
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	◯		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱					

Dimensions

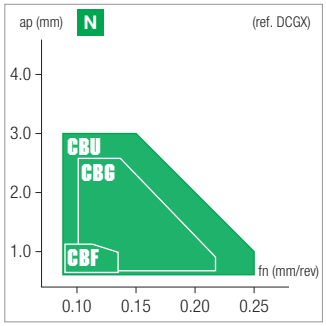


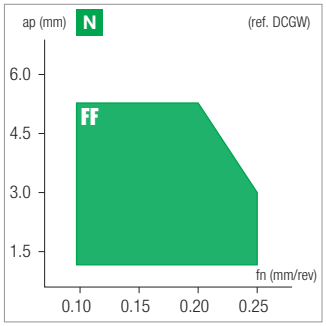
1 edge

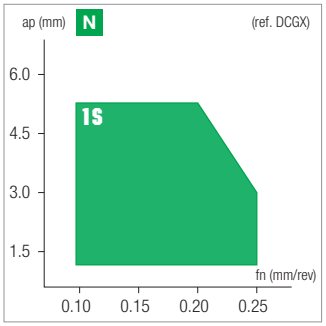
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)					
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400
S	40 100					
H						

Designation			RE	IC	S	D1	LE	Stock
3D CHIPBREAKER	CBU N  universal use	DCGX070202-CBU	0.20	6.35	2.38	2.8	3.4	●
		DCGX070204-CBU	0.40	6.35	2.38	2.8	3.2	●
		DCGX11T301-CBU	0.10	9.525	3.97	4.4	-	○
		DCGX11T302-CBU	0.20	9.525	3.97	4.4	4.2	●
		DCGX11T308-CBU	0.80	9.525	3.97	4.4	3.6	●
3D CHIPBREAKER	CBF N  finisfhing	DCGX070202-CBF	0.20	6.35	2.38	2.8	3	▽
FULL FACE	FF N  high depth of cut	DCGW070204-FF	0.40	6.35	2.38	2.8	7.4	●
		DCGW11T304-FF	0.40	9.525	3.97	4.4	11.2	●
		DCGW11T308-FF	0.80	9.525	3.97	4.4	10.8	●
FULL EDGE	1S N  high depth of cut right-hand shown	DCGX070204L/R-1S	0.40	6.35	2.38	2.8	7.4	◉
		DCGX11T304L/R-1S	0.40	9.525	3.97	4.4	11.2	○
		DCGX11T308L/R-1S	0.80	9.525	3.97	4.4	10.8	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

DN

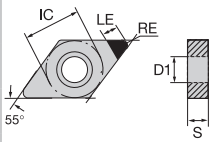
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- 7° clearance angle, less risk of chip-jamming in boring
- Slant tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

		DP	ND100
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

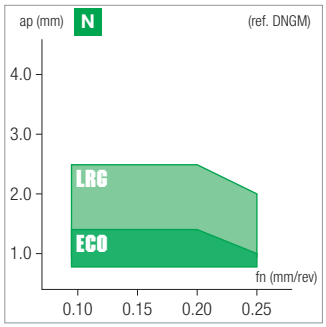


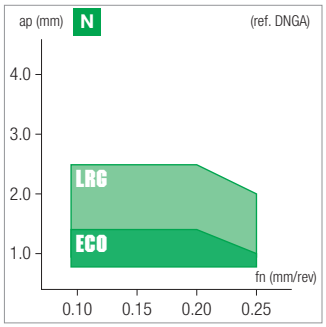
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**450** 2400
S	
H	

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	eco N  7° tip angle	DNGM150604	0.40	12.7	6.35	5.16	2.4	○
		DNGM150608	0.80	12.7	6.35	5.16	2	○
SLANT TIP	LRG N  large tip 7° tip angle	DNGM150604-LRG	0.40	12.7	6.35	5.16	3.9	○
		DNGM150608-LRG	0.80	12.7	6.35	5.16	3.5	○
FLAT TIP	eco N 	DNGA150604	0.40	12.7	6.35	5.16	2.4	○
		DNGA150608	0.80	12.7	6.35	5.16	2	○
FLAT TIP	LRG N  large tip	DNGA150604-LRG	0.40	12.7	6.35	5.16	3.9	○
		DNGA150608-LRG	0.80	12.7	6.35	5.16	3.5	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A121** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

MCC

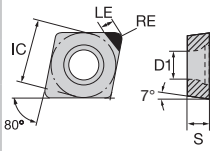
ISO - with hole

- 1st solution for micro-boring
- Precision brazed and ground insert for microboring operation, completing the micro CC family
- Micro boring bar with coolant both in steel (with Vortex technology) and in carbide

DP: Polycrystalline diamond

		DP	DP	DP
		ND050	ND120	ND190
Stable machining, light cut	● 1st choice ○ suitable	○	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	
Unstable machining, heavy cut	● 1st choice ○ suitable	⬡		

Dimensions

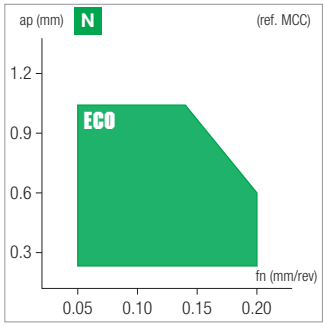


1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																				
P																					
M																					
K																					
N	400 2000	450 2400	400 1000																		
S	40 100																				
H																					

Designation		RE	IC	S	D1	LE	Stock		
FLAT TIP eco N S	MCC.R02	0.20	3.5	1.4	1.9	1.5	○	○	○
	MCC.R04	0.40	3.5	1.4	1.9	1.5	○	○	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

MCN

MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- MicroNega family's PCD Solution, compatible with the entire holder range of MicroNega system
- Chip breaker type enables excellent chip flow and chip control, greatly improves the boring application
- Flat large tip offers economical solution allowing much bigger ap

DP: Polycrystalline diamond

DP

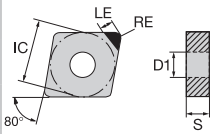
ND120

Stable machining, light cut — 1st choice ◯ suitable

General machining, medium cut — 1st choice ◯ suitable

Unstable machining, heavy cut — 1st choice ◯ suitable

Dimensions



1 edge

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

P

M

K

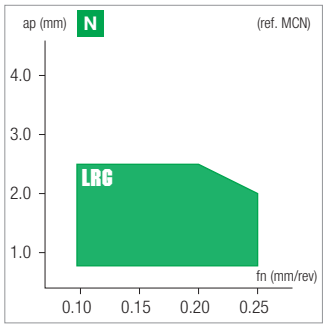
N 450 2400

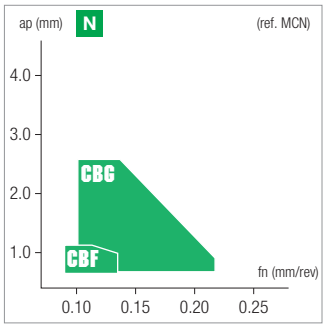
S

H

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	LRG N  large tip 7° tip angle	MCN.R02G-LRG	0.20	7.5	3.18	3.6	3.3	⦿
		MCN.R04G-LRG	0.40	7.5	3.18	3.6	3.3	⦿
		MCN.R08G-LRG	0.80	7.5	3.18	3.6	3.2	⦿
3D CHIPBREAKER	CBF N  finisfhing	MCN.R02G-CBF	0.20	7.5	3.18	3.6	3.3	⦿
		MCN.R04G-CBF	0.40	7.5	3.18	3.6	3.3	⦿
3D CHIPBREAKER	CBG N  medium	MCN.R04G-CBG	0.40	7.5	3.18	3.6	3.3	⦿
		MCN.R08G-CBG	0.80	7.5	3.18	3.6	3.2	⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A121** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

MDN

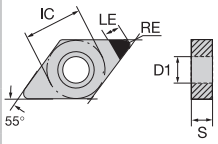
MicroNega

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- MicroNega family's PCD Solution, compatible with the entire holder range of MicroNega system
- Chip breaker type enables excellent chip flow and chip control, greatly improves the boring application
- Flat large tip offers economical solution allowing much bigger ap

DP: Polycrystalline diamond

		DP	ND120
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

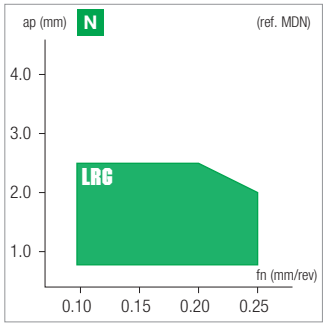


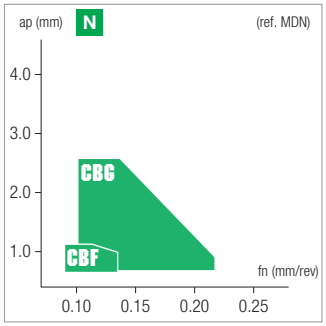
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**450** 2400
S	
H	

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	LRG N  large tip 7° tip angle	MDN.R02G-LRG	0.20	7	3.18	3.6	3.1	⦿
		MDN.R04G-LRG	0.40	7	3.18	3.6	2.9	⦿
		MDN.R08G-LRG	0.80	7	3.18	3.6	2.5	⦿
3D CHIPBREAKER	CBF N  finisfhing	MDN.R02G-CBF	0.20	7	3.18	3.6	3.1	⦿
		MDN.R04G-CBF	0.40	7	3.18	3.6	2.9	⦿
3D CHIPBREAKER	CBG N  medium	MDN.R04G-CBG	0.40	7	3.18	3.6	2.9	⦿
		MDN.R08G-CBG	0.80	7	3.18	3.6	2.5	⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A212** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

TC

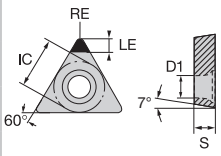
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

		DP	DP	DP	DP	DP
		ND050	ND100	ND120	ND150	NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	●
Unstable machining, heavy cut	● 1st choice ○ suitable	☆				

Dimensions

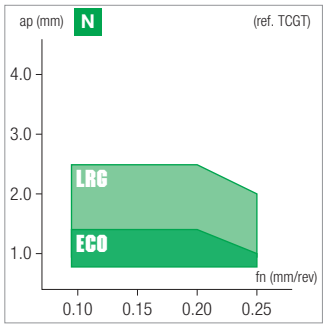


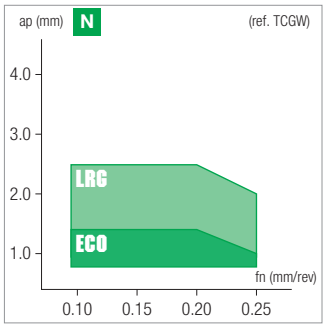
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P																						
M																						
K																						
N	400 2000	450 2400	450 2400	350 800	450 2400																	
S	40 100																					
H																						

	Designation		RE	IC	S	D1	LE	Stock					
SLANT TIP	eco N	TCGT090202	0.20	5.56	2.38	2.5	2.6		○				
		TCGT090204	0.40	5.56	2.38	2.5	2.5		○				
		TCGT110202	0.20	6.35	2.38	2.8	2.6		○				
		TCGT110204	0.40	6.35	2.38	2.8	2.5		●				
		TCGT110208	0.80	6.35	2.38	2.8	2.2		○				
	7° tip angle	TCGT16T304	0.40	9.525	3.97	4.4	2.5		○				
		TCGT16T308	0.80	9.525	3.97	4.4	2.2		○				
SLANT TIP	LRG N	TCGT110204-LRG	0.40	6.35	2.38	2.8	4		○				
		TCGT110208-LRG	0.80	6.35	2.38	2.8	3.7		○				
		TCGT16T304-LRG	0.40	9.525	3.97	4.4	4		○				
	large tip 7° tip angle	TCGT16T308-LRG	0.80	9.525	3.97	4.4	3.7		○				
FLAT TIP	eco N S	TCGW090202	0.20	5.56	2.38	2.5	2.6		○				
		TCGW090204	0.40	5.56	2.38	2.5	2.5		●				
		TCGW110202	0.20	6.35	2.38	2.8	2.6		○				
		TCGW110204	0.40	6.35	2.38	2.8	2.5	⦿	●		○		
		TCGW110208	0.80	6.35	2.38	2.8	2.2	○	○		○		
		TCGW16T304	0.40	9.525	3.97	4.4	2.5		●				
		TCGW16T308	0.80	9.525	3.97	4.4	2.2	⦿	●		○		
FLAT TIP	LRG N	TCGW110204-LRG	0.40	6.35	2.38	2.8	4		○				
		TCGW110208-LRG	0.80	6.35	2.38	2.8	3.7		○				
		TCGW16T304-LRG	0.40	9.525	3.97	4.4	4		●				
	large tip	TCGW16T308-LRG	0.80	9.525	3.97	4.4	3.7		●				

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A121 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TC

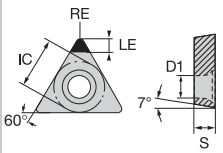
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

		DP	DP	DP	DP	DP
		ND050	ND100	ND120	ND150	NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱				

Dimensions

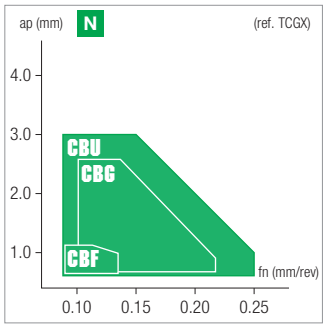


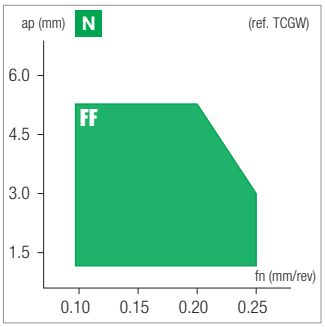
1 edge

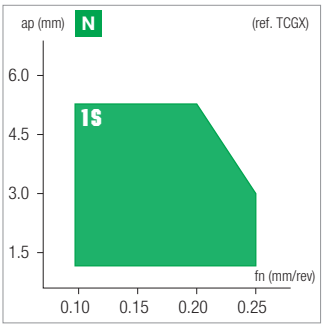
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)					
	ND050	ND100	ND120	ND150	NDP010	
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	450 2400	
S	40 100					
H						

Designation			RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER	CBU N	TCGX110204-CBU	0.40	6.35	2.38	2.8	3.4					●	
		TCGX16T304-CBU	0.40	9.525	3.97	4.4	4.5					●	
		TCGX16T308-CBU	0.80	9.525	3.97	4.4	4.1					●	
	universal use												
3D CHIPBREAKER	CBF N	TCGX090202-CBF	0.20	5.56	2.38	2.5	3.6			▽			
		TCGX110202-CBF	0.20	6.35	2.38	2.8	4.1			▽			
		TCGX110204-CBF	0.40	6.35	2.38	2.8	4			▽			
		TCGX16T304-CBF	0.40	9.525	3.97	4.4	4			▽			
	finisfhing												
3D CHIPBREAKER	CBG N	TCGX090204-CBG	0.40	5.56	2.38	2.5	3.5			▽			
		TCGX110204-CBG	0.40	6.35	2.38	2.8	4			▽			
		TCGX110208-CBG	0.80	6.35	2.38	2.8	3.7			▽			
	medium												
FULL FACE	FF N	TCGW110204-FF	0.40	6.35	2.38	2.8	10.3					◉	
		TCGW16T304-FF	0.40	9.525	3.97	4.4	16.1					●	
	high depth of cut												
FULL EDGE	1S N	TCGX090204-1S	0.40	5.56	2.38	2.5	9		○				
		TCGX110204-1S	0.40	6.35	2.38	2.8	10.3		●				
		TCGX16T304-1S	0.40	9.525	3.97	4.4	16.1		●				
	high depth of cut right-hand shown												

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

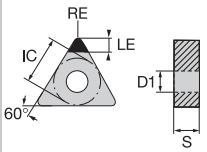
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- 7° angle tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both 7° angle and flat style

DP: Polycrystalline diamond

		DP	ND100
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

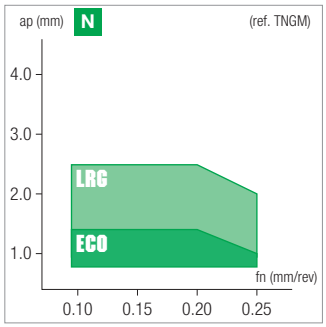


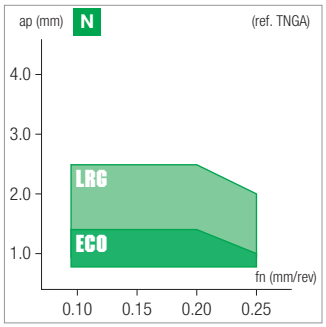
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**450** 2400
S	
H	

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	eco N	TNGM160404	0.40	9.525	4.76	3.81	2.5	●
	 7° tip angle	TNGM160408	0.80	9.525	4.76	3.81	2	○
SLANT TIP	LRG N	TNGM160404-LRG	0.40	9.525	4.76	3.81	4	○
	 large tip 7° tip angle	TNGM160408-LRG	0.80	9.525	4.76	3.81	3.7	○
FLAT TIP	eco N	TNGA160404	0.40	9.525	4.76	3.81	2.5	○
		TNGA160408	0.80	9.525	4.76	3.81	2	○
FLAT TIP	LRG N	TNGA160404-LRG	0.40	9.525	4.76	3.81	4	○
	 large tip	TNGA160408-LRG	0.80	9.525	4.76	3.81	3.7	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A121 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TP

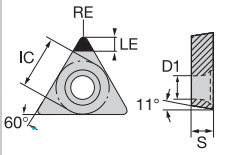
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- 7° angle tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both 7° angle and flat style

DP: Polycrystalline diamond

		DP	DP	DP
		ND050	ND100	ND120
Stable machining, light cut	● 1st choice ○ suitable	○	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable	○		

Dimensions

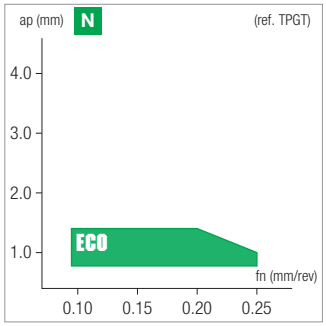


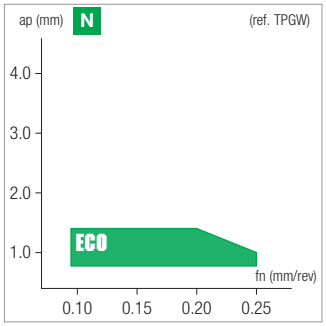
1 edge

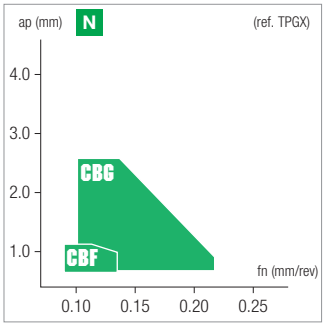
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P			
M			
K			
N	400 2000	450 2400	450 2400
S	40 100		
H			

	Designation		RE	IC	S	D1	LE	Stock			
SLANT TIP	eco N S	TPGT080202	0.20	4.76	2.38	2.3	2.6	○	○		
		TPGT080204	0.40	4.76	2.38	2.3	2.5		●		
		TPGT090202	0.20	4.76	2.38	2.3	2.6		○		
		TPGT090204	0.40	4.76	2.38	2.3	2.5		○		
		TPGT110302	0.20	4.76	2.38	2.3	2.6		○		
	7° tip angle	TPGT110304	0.40	4.76	2.38	2.3	2.2		●		
FLAT TIP	eco N	TPGW080202	0.20	4.76	2.38	2.3	2.6		○		
		TPGW080204	0.40	4.76	2.38	2.3	2.5		○		
		TPGW090202	0.20	5.56	2.38	3	2.6		○		
		TPGW090204	0.40	5.56	2.38	3	2.5		●		
		TPGW110302	0.20	6.35	3.18	3.3	2.6		○		
		TPGW110304	0.40	6.35	3.18	3.3	2.2		○		
3D CHIPBREAKER	CBF N	TPGX090204-CBF	0.40	5.56	2.38	3	3.1			▽	
	finisfhing										

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VB

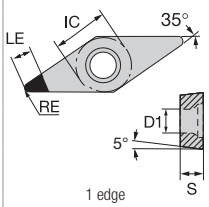
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- 3D Chip breaker type enables excellent chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

		DP ND050	DP ND100	DP ND120	DP ND150	DP ND190
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱				

Dimensions

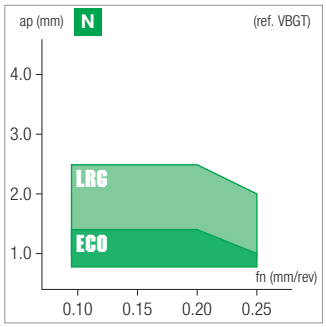


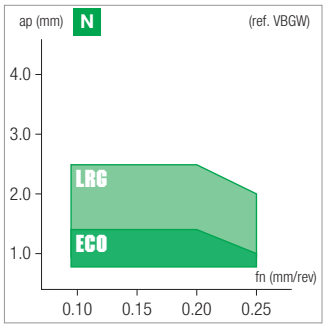
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

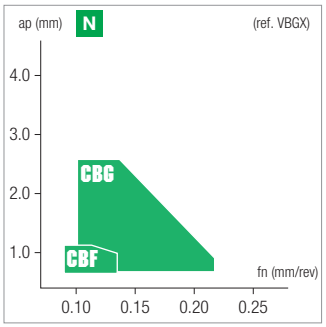
ISO	DP ND050	DP ND100	DP ND120	DP ND150	DP ND190
P					
M					
K					
N	400 2000	450 2400	450 2400	350 800	400 1000
S	40 100				
H					

	Designation		RE	IC	S	D1	LE	Stock				
SLANT TIP	eco N S	VBGT110302	0.20	6.35	3.18	2.8	3		◉		◉	
		VBGT110304	0.40	6.35	3.18	2.8	2.5		○			
		VBGT160404	0.40	9.525	4.76	4.4	2.5	●	●		○	○
	7° tip angle	VBGT160408	0.80	9.525	4.76	4.4	2.2	◉	●		◉	○
SLANT TIP	LRG N	VBGT160404-LRG	0.40	9.525	4.76	4.4	4.5		●			
		VBGT160408-LRG	0.80	9.525	4.76	4.4	3.7		●			
	large tip 7° tip angle											
FLAT TIP	eco N S	VBGW110302	0.20	6.35	3.18	2.8	3	◉	◉		○	
		VBGW110304	0.40	6.35	3.18	2.8	2.5	○	◉		○	
		VBGW160404	0.40	9.525	4.76	4.4	2.5	○	●		○	○
		VBGW160408	0.80	9.525	4.76	4.4	2.2	○	○		○	○
FLAT TIP	LRG N	VBGW160404-LRG	0.40	9.525	4.76	4.4	4.5		●			
		VBGW160408-LRG	0.80	9.525	4.76	4.4	3.7		●			
	large tip											
3D CHIPBREAKER	CBF N	VBGX110302-CBF	0.20	6.35	3.18	2.8	5			▽		
		VBGX110304-CBF	0.40	6.35	3.18	2.8	4.5			▽		
	finisfhing	VBGX160404-CBF	0.40	9.525	4.76	4.4	4.5			▽		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A121 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VB

ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
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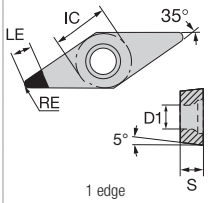
- 3D Chip breaker type enables excellent chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

		ND050	ND100	ND120	ND150	ND190
		DP	DP	DP	DP	DP
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	○	
Unstable machining, heavy cut	● 1st choice ○ suitable	○				

Dimensions

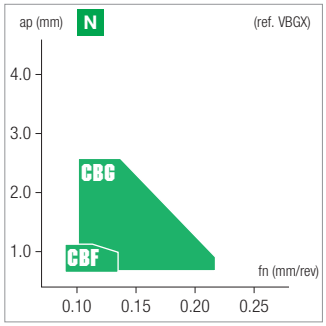


ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO						
P						
M						
K						
N	400 2000	450 2400	450 2400	350 800	400 1000	
S	40 100					
H						

Designation		RE	IC	S	D1	LE	Stock
3D CHIPBREAKER — CBG N	VBGX110304-CBG	0.40	6.35	3.18	2.8	4.5	▽
 medium	VBGX160408-CBG	0.80	9.525	4.76	4.4	3.7	▽

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A212** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

VC

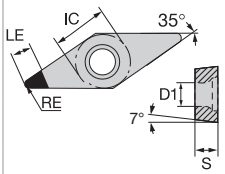
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge type allows max. ap and special applications

DP: Polycrystalline diamond

		DP	DP	DP	DP	DP
		ND050	ND100	ND150	ND190	NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	○		●
Unstable machining, heavy cut	● 1st choice ○ suitable	○				

Dimensions

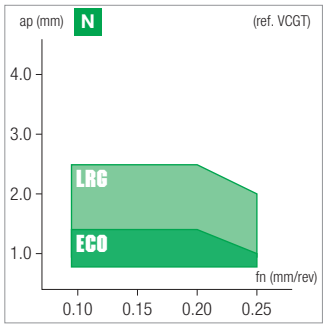


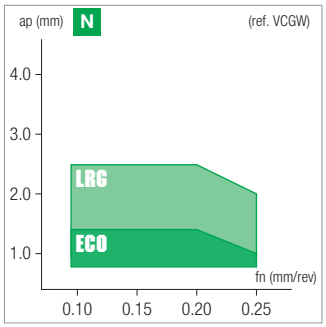
1 edges

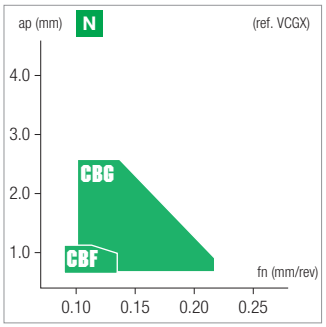
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**400 2000** **450 2400** **350 800** **400 1000** **450 2400**
S	**40 100**
H	

	Designation		RE	IC	S	D1	LE	Stock					
SLANT TIP	eco N S	VCGT110302	0.20	6.35	3.18	2.8	3	○	●				
		VCGT110304	0.40	6.35	3.18	2.8	2.5		○				
		VCGT160402	0.20	9.525	4.76	4.4	3		●				
		VCGT160404	0.40	9.525	4.76	4.4	2.5	○	●	◉	○		
	7° tip angle	VCGT160408	0.80	9.525	4.76	4.4	2.2	◉	●	◉	○		
SLANT TIP	LRG N	VCGT160404-LRG	0.40	9.525	4.76	4.4	4.5		●				
		VCGT160408-LRG	0.80	9.525	4.76	4.4	3.7		◉				
	large tip 7° tip angle												
FLAT TIP	eco N S	VCGW110302	0.20	6.35	3.18	2.8	3	◉	●				
		VCGW110304	0.40	6.35	3.18	2.8	2.5		●				
		VCGW160404	0.40	9.525	4.76	4.4	2.5	○	●	○	○		
		VCGW160408	0.80	9.525	4.76	4.4	2.2	◉	○	○	○		
FLAT TIP	LRG N	VCGW110304-LRG	0.40	6.35	3.18	2.8	4.5		●				
		VCGW160404-LRG	0.40	9.525	4.76	4.4	4.5		●				
		VCGW160408-LRG	0.80	9.525	4.76	4.4	3.7		●				
	large tip	VCGW160412-LRG	1.20	9.525	4.76	4.4	3.3		○				
3D CHIPBREAKER	CBU N	VCGX110302-CBU	0.20	6.35	3.18	2.8	4.5					●	
		VCGX110304-CBU	0.40	6.35	3.18	2.8	4					●	
		VCGX160404-CBU	0.40	9.525	4.76	4.4	5					●	
	universal use	VCGX160408-CBU	0.80	9.525	4.76	4.4	4.4					●	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A121 | GRADES FEATURES p. A178 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

VC

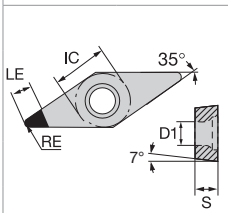
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge type allows max. ap and special applications

DP: Polycrystalline diamond

		DP ND050	DP ND100	DP ND150	DP ND190	DP NDP010
Stable machining, light cut	● 1st choice ○ suitable	○	●	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	○		●
Unstable machining, heavy cut	● 1st choice ○ suitable	○				

Dimensions



1 edges

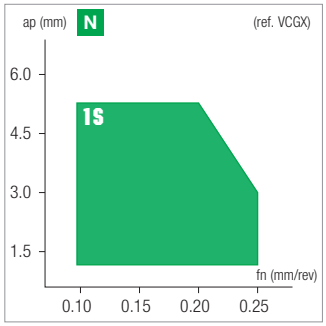
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																				
P																					
M																					
K																					
N	400 2000	450 2400	350 800	400 1000	450 2400																
S	40 100																				
H																					

Designation		RE	IC	S	D1	LE	Stock					
FULL EDGE 1S N	VCGX110304L/R-1S	0.40	6.35	3.18	2.8	10.7		⦿				
	VCGX160404L/R-1S	0.40	9.525	4.76	4.4	16.2		⦿				



high depth of cut
right-hand shown

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A192 | CUTTING CONDITIONS p. A212 | GRADES FEATURES p. A178 | HOLDERS p. A255

WN

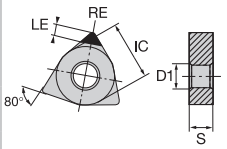
ISO - with hole

- Generally used on more moderate depths of cut and feedrates than 80° C shape inserts
- Slant tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

		DP	ND100
Stable machining, light cut	● 1st choice ◯ suitable	●	
General machining, medium cut	● 1st choice ◯ suitable	●	
Unstable machining, heavy cut	● 1st choice ◯ suitable		

Dimensions

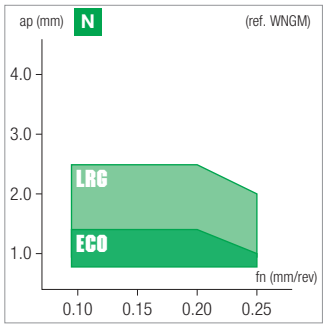


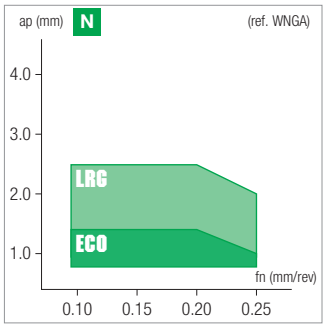
1 edge

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**450** 2400
S	
H	

	Designation		RE	IC	S	D1	LE	Stock
SLANT TIP	eco N  7° tip angle	WNGM080404	0.40	12.7	4.76	5.16	2.8	◉
		WNGM080408	0.80	12.7	4.76	5.16	2.7	●
SLANT TIP	LRG N  large tip 7° tip angle	WNGM080404-LRG	0.40	12.7	4.76	5.16	4.3	○
		WNGM080408-LRG	0.80	12.7	4.76	5.16	4.2	○
FLAT TIP	eco N 	WNGA080404	0.40	12.7	4.76	5.16	2.8	○
		WNGA080408	0.80	12.7	4.76	5.16	2.7	○
FLAT TIP	LRG N  large tip	WNGA080404-LRG	0.40	12.7	4.76	5.16	4.3	○
		WNGA080408-LRG	0.80	12.7	4.76	5.16	4.2	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A192** | CUTTING CONDITIONS p. **A121** | GRADES FEATURES p. **A178** | HOLDERS p. **A**255

TURNING Parameters - cutting speed - DIAMOND

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL		ND050 (NDP001)				ND100 / ND120 (NDP010)				ND150 (NDP302)				ND190 (NDP025)			
			min	start	max		min	start	max		min	start	max		min	start	max	
N1	Aluminium alloys Si ≤ 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)	○	600	**1300**	2000	●	600	**1500**	2400									
		●	450	**1100**	1750	●	450	**1300**	2150									
		⬡	400	**1000**	1600													
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)					●	300	**500**	700	●	400	**600**	800	●	400	**700**	1000	
						●	250	**400**	550	◯	350	**500**	650					
N3	Copper alloy (ex. 2.0060/E-Cu57)	○	400	**800**	1200	●	400	**900**	1400									
		●	350	**700**	1050	●	350	**800**	1250									
		⬡	300	**600**	900													
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)	○	50	**75**	100													
		●	45	**60**	75													
		⬡	40	**50**	60													

Complete workpiece materials p. **M**1.

SORMA DIAMOND & CUTTING TOOLS

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CCGT060202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
CCGT060204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGT060204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGT060208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGT09T302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
CCGT09T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGT09T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGT09T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGT09T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
CCGT120404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGT120404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGT120408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGT120408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
CCGW060202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
CCGW060204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGW060204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGW060208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGW09T302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
CCGW09T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGW09T304-FF	0.50	**3.00**	5.50	0.10	**0.15**	0.20
CCGW09T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGW09T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGW09T308-FF	0.50	**3.00**	5.50	0.15	**0.20**	0.25
CCGW09T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
CCGW120404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CCGW120404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGW120408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CCGW120408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
CCGX060202-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
CCGX060202-CBU	0.20	**1.50**	2.80	0.04	**0.08**	0.12
CCGX060204-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
CCGX060204-CBG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CCGX060204-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
CCGX060204$^{L}/_{R}$-1S	0.50	**2.00**	3.50	0.10	**0.15**	0.20
CCGX060208-CBU	0.20	**1.50**	2.80	0.08	**0.18**	0.26
CCGX09T304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
CCGX09T304-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
CCGX09T304$^{L}/_{R}$-1S	0.50	**3.00**	5.50	0.10	**0.15**	0.20
CCGX09T308-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
CCGX09T308-CBU	0.20	**1.50**	2.80	0.08	**0.18**	0.26
CNGA120404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CNGA120404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CNGA120408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CNGA120408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
CNGM120404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
CNGM120404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
CNGM120408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
CNGM120408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
DCGT070202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
DCGT070204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DCGT070204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DCGT070208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DCGT11T302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
DCGT11T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DCGT11T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DCGT11T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DCGT11T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
DCGW070202	0.40	**1.00**	1.60	0.05	**0.10**	0.15

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
DCGW070204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DCGW070204-FF	0.50	**2.00**	3.50	0.10	**0.15**	0.20
DCGW070204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DCGW070208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DCGW11T302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
DCGW11T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DCGW11T304-FF	0.50	**3.00**	5.50	0.10	**0.15**	0.20
DCGW11T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DCGW11T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DCGW11T308-FF	0.50	**3.00**	5.50	0.15	**0.20**	0.25
DCGW11T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
DCGX070202-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
DCGX070202-CBU	0.20	**1.50**	2.80	0.04	**0.08**	0.12
DCGX070204-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
DCGX070204$^{L}/_{R}$-1S	0.50	**2.00**	3.50	0.10	**0.15**	0.20
DCGX11T302-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
DCGX11T302-CBU	0.20	**1.50**	2.80	0.04	**0.08**	0.12
DCGX11T304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
DCGX11T304-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
DCGX11T304$^{L}/_{R}$-1S	0.50	**3.00**	5.50	0.10	**0.15**	0.20
DCGX11T308-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
DCGX11T308-CBU	0.20	**1.50**	2.80	0.08	**0.18**	0.26
DCGX11T308$^{L}/_{R}$-1S	0.50	**3.00**	5.50	0.15	**0.20**	0.25
DNGA150604	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DNGA150604-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DNGA150608	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DNGA150608-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
DNGM150604	0.40	**1.00**	1.60	0.10	**0.15**	0.20
DNGM150604-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
DNGM150608	0.40	**1.00**	1.60	0.15	**0.20**	0.25
DNGM150608-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
MCC.R02	0.20	**0.60**	1.00	0.05	**0.10**	0.15
MCC.R04	0.20	**0.60**	1.00	0.10	**0.15**	0.20
MCN.R02G-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
MCN.R02G-LRG	0.40	**1.20**	2.00	0.05	**0.10**	0.15
MCN.R04G-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
MCN.R04G-CBG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
MCN.R04G-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
MCN.R08G-CBG	0.40	**1.20**	2.00	0.15	**0.20**	0.25
MCN.R08G-LRG	0.40	**1.20**	2.00	0.15	**0.20**	0.25
MDN.R02G-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
MDN.R02G-LRG	0.40	**1.20**	2.00	0.05	**0.10**	0.15
MDN.R04G-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
MDN.R04G-CBG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
MDN.R04G-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
MDN.R08G-CBG	0.40	**1.20**	2.00	0.15	**0.20**	0.25
MDN.R08G-LRG	0.40	**1.20**	2.00	0.15	**0.20**	0.25
TCGT090202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TCGT090204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGT110202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TCGT110204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGT110204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TCGT110208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TCGT110208-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
TCGT16T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGT16T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TCGT16T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TCGT16T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
TCGW090202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TCGW090204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGW110202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TCGW110204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGW110204-FF	0.50	**2.00**	3.50	0.10	**0.15**	0.20
TCGW110204-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TCGW110208	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TCGW110208-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
TCGW16T304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TCGW16T304-FF	0.50	**3.00**	5.50	0.10	**0.15**	0.20
TCGW16T304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TCGW16T308	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TCGW16T308-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
TCGX090202-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
TCGX090204-1S	0.50	**1.50**	2.50	0.10	**0.15**	0.20
TCGX090204-CBG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TCGX110202-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
TCGX110204-1S	0.50	**2.00**	3.50	0.10	**0.15**	0.20
TCGX110204-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
TCGX110204-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
TCGX110204-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
TCGX110208-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
TCGX16T304-1S	0.50	**3.00**	5.50	0.10	**0.15**	0.20
TCGX16T304-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
TCGX16T304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
TCGX16T304-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
TCGX16T308-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
TCGX16T308-CBU	0.20	**1.50**	2.80	0.08	**0.18**	0.26
TNGA160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TNGA160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TNGA160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TNGA160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
TNGM160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TNGM160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
TNGM160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
TNGM160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
TPGT080202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGT080204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGT090202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGT090204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGT110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGT110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGW080202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGW080204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGW090202	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGW090204	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGW110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
TPGW110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
TPGX090202-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
TPGX090204-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
TPGX090204-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
TPGX110302-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
TPGX110304-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
TPGX110304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
TPGX110308-CBF	0.20	**0.60**	1.00	0.10	**0.15**	0.20
VBGT110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
VBGT110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VBGT160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
VBGT160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
VBGT160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
VBGT160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
VBGW110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
VBGW110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VBGW160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VBGW160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
VBGW160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
VBGW160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
VBGX110302-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
VBGX110304-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
VBGX110304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
VBGX160404-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
VBGX160404-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
VBGX160408-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
VCGT110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
VCGT110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VCGT160402	0.40	**1.00**	1.60	0.05	**0.10**	0.15
VCGT160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VCGT160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
VCGT160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
VCGT160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
VCGW110302	0.40	**1.00**	1.60	0.05	**0.10**	0.15
VCGW110304	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VCGW110304-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
VCGW160404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
VCGW160404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
VCGW160408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
VCGW160408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
VCGW160412-LRG	0.40	**1.50**	2.60	0.20	**0.25**	0.30
VCGX110302-CBF	0.20	**0.60**	1.00	0.04	**0.08**	0.12
VCGX110302-CBU	0.20	**1.50**	2.80	0.04	**0.08**	0.12
VCGX110304-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
VCGX110304-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
VCGX110304-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
VCGX110304$^{L}/_{R}$-1S	0.50	**2.00**	3.50	0.10	**0.15**	0.20
VCGX160404-CBF	0.20	**0.60**	1.00	0.05	**0.10**	0.15
VCGX160404-CBG	0.50	**1.50**	2.50	0.10	**0.15**	0.20
VCGX160404-CBU	0.20	**1.50**	2.80	0.04	**0.12**	0.20
VCGX160404$^{L}/_{R}$-1S	0.50	**3.00**	5.50	0.10	**0.15**	0.20
VCGX160408-CBG	0.50	**1.50**	2.50	0.15	**0.20**	0.25
VCGX160408-CBU	0.20	**1.50**	2.80	0.08	**0.18**	0.26
WNGA080404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
WNGA080404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
WNGA080408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
WNGA080408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20
WNGM080404	0.40	**1.00**	1.60	0.10	**0.15**	0.20
WNGM080404-LRG	0.40	**1.20**	2.00	0.10	**0.15**	0.20
WNGM080408	0.40	**1.00**	1.60	0.15	**0.20**	0.25
WNGM080408-LRG	0.40	**1.50**	2.60	0.10	**0.15**	0.20



TURNING - Ceramic

Grades selection guide .A216
Grades features .A217
Grades cross reference .A219
Edge preparations selection guide .A220
Edge preparations features .A224
Product selection .A232
Designation system .A233
Inserts range . A234
Parameters .A250

ISO 513		CERAMIC				
		Si_3N_4	Al_2O_3 MIXED	PVD COATED Al_2O_3 MIXED	SiAlON	WHISKER
K Cast iron	K01	NSN350	NAC200			
	K10	NSN400				
	K20	NSN450				
	K30					
S HRSA	S01					NWR700
	S10				NSA6000	NWR750
	S20				NSA650	
	S30					
H Hardened steel	H01		NAC200	NAC150		
	H10		NAC250			
	H20					
	H30					

HRSA: Heat resistant super alloy

SORMA DIAMOND & CUTTING TOOLS

GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NAC150	Al_2O_3+TiCN	2.200	PVD	TiN	H	H01 H15	Coated ceramic improves tool life, yellow surface helps to identify wear status. La ceramica rivestita migliora la durata dell'utensile; la superficie gialla facilita il controllo dello stato di usura. Die beschichtete Keramik verbessert die Standzeit des Werkzeugs; die gelbe Oberfläche dient zur Erkennung der Verschleißentwicklung La céramique revêtue améliore la durée de vie de l'outil ; la surface jaune permet d'identifier l'évolution de l'usure
NAC200	Al_2O_3+TiCN	2.300	-	-	K	K01 K20	First choice for finishing of hardened steel and cast iron in stable conditions. Prima scelta per finitura di acciai temprati e ghisa in condizioni di taglio stabili. Erste Wahl für die Feinbearbeitung von gehärteten Stählen und Gusseisen unter stabilen Schnittbedingungen. Premier choix pour la finition d'aciers trempés et de fonte dans des conditions de coupe stables.
					H	H01 H20	
NAC250	Al_2O_3+TiC	2.100	-	-	H	H10 H25	Tough ceramic for general purpose applications with high reliability. Ceramica tenace per impiego generico con elevata affidabilità. Robuste Keramik für allgemeine Zwecke mit hoher Zuverlässigkeit. Céramique tenace à usage générique d'une grande fiabilité.
NSN350	Si_3N_4	1.700	-	-	K	K05 K20	High wear resistance for continuous cut applications at very high cutting speed. Elevata resistenza all'usura per applicazioni con condizioni di taglio continuo ad alte velocità di taglio. Hohe Verschleißfestigkeit für Anwendungen mit kontinuierlichen Schnittbedingungen bei hohen Schnittgeschwindigkeiten. Haute résistance à l'usure pour applications avec des conditions de coupe continue à des vitesses de coupe élevées.
NSN400	Si_3N_4	1.700	-	-	K	K05 K30	First choice for roughing of grey cast iron even with interrupted cut. Prima scelta per sgrossatura di ghisa grigia anche con taglio interrotto. Erste Wahl für das Schruppen von Grauguss, auch bei unterbrochenem Schnitt. Premier choix pour le dégrossissage de la fonte grise, y compris en coupe interrompue.
NSN450	Si_3N_4	1.600	-	-	K	K20 K30	Toughest silicon nitride grade for very difficult applications. Il più tenace grado in nitruro di silicio per applicazioni molto difficili. Die härteste Qualität aus Siliziumnitrid für sehr schwierige Anwendungen. La nuance de nitrure de silicium la plus tenace pour applications très difficiles.

TURNING Grades features - CERAMIC

SORMA DIAMOND & CUTTING TOOLS

GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NWR700	Al_2O_3+SiC	2.100	-	-	S	S01 S15	Reinforced alumina ceramic with excellent flank and notch wear resistance, first choice for high speed stable machining of heat resistant super alloys. Ceramica di allumina rinforzata con eccellente resistenza all'usura del fianco e dell'intaglio, prima scelta per lavorazioni stabili ad alta velocità di superleghe resistenti al calore. Verstärkte Aluminiumoxidkeramik mit hervorragendem Flanken- und Schlitzverschleiß, die erste Wahl für die stabile Hochgeschwindigkeitsbearbeitung von hitzebeständigen Superlegierungen. Céramique d'alumine renforcée dotée d'une excellente usure du flanc et de l'entaille, premier choix pour usinages stables à grande vitesse de superalliages résistants à la chaleur.
NWR750	Al_2O_3+SiC	2.100	-	-	S	S05 S20	Reinforced alumina ceramic with improved toughness, suitable even on heavy interrupted cut. Ceramica di allumina rinforzata con elevata tenacità, applicabile anche con condizioni di taglio fortemente interrotto. Verstärkte Aluminiumoxidkeramik mit verbesserter Robustheit, auch bei stark unterbrochenen Schnittbedingungen einsetzbar. Céramique d'alumine renforcée à ténacité optimisée, applicable y compris dans des conditions de coupe très interrompue.
NSA6000	SiAlON	1.800	-	-	S	S10 S30	First choice for heat resistance super alloys (HRSA) machining with variable cutting conditions. Toughness and wear resistance are well-balanced. Prima scelta per superleghe resistenti al calore (HRSA) in condizioni di taglio variabili. Buon bilanciamento fra tenacità e resistenza all'usura. Erste Wahl für hitzebeständige Superlegierungen (HRSA) unter unterschiedlichen Schnittbedingungen. Gutes Verhältnis zwischen Robustheit und Verschleißfestigkeit. Premier choix pour superalliages résistants à la chaleur (HRSA) dans des conditions de coupe variables. Bon équilibre entre ténacité et résistance à l'usure.
NSA650	SiAlON	1.700	-	-	S	S15 S35	Excellent thermal and shock resistance for severe applications on HRSA. Eccellente resistenza termica e agli urti per applicazioni gravose su superleghe resistenti al calore (HRSA). Hervorragende Hitze- und Zähigkeit für schwere Anwendungen mit hitzebeständigen Superlegierungen (HRSA). Excellente résistance thermique et aux chocs pour applications intensives sur superalliages résistants à la chaleur (HRSA).

SORMA DIAMOND & CUTTING TOOLS

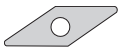
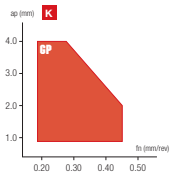
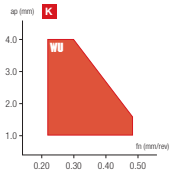
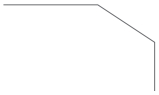
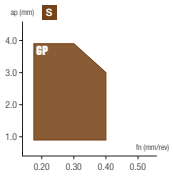
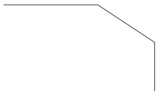
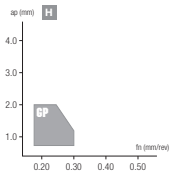
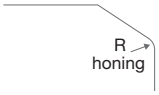
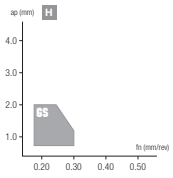
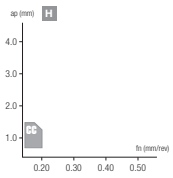
ISO 513		nikkoTOOLS	CERAMTEC	ISCAR	KENNAMETAL	KYOCERA	NTK	SANDVIK	TAEGUTEC	TUNGALOY	UNION	WALTER
K	K01 - K10	NSN350 NSN400	SL654C SL658C	IS6 IS8	KYK10	KS6015	SX6	CC6190 GC1690	AS500	FX105	SN500 SN600	WCK10
	K10 - K20	NSN400 NSN450	SL500 SL550C SL506 SL606	IS8 IS80	KY3500 KYK25	CS7050 KS6050	SX6	CC6190	AS500	CX710 FX105	NC400 SN300 SN400	WCK10
	K20 - K30	NSN450	SL508 SL608		KY3500	KS6050	SP9 SX9		AS10	CX710	SN300	
S HRSA	S01 - S10	NWR700 NWR750		IW7		CF1	WA1 WA5	CC670	TC430		SW400 SW800	WWS20
	S10 - S20	NSA6000	LST320	IS25 IS9	KY4300 KYS25	KS6030 KS6040	SX7 SX3	CC6060 CC6160	TC3020	TS200	SN800	WIS10
	S20 - S30	NSA6000 NSA650	LST320	IS35	KY1540 KYS30	KS6040	SX3 SX9	CC6065 CC6160	TC3030	TS200 TS300	SN1000	
H	H01 - H10	NAC150 NAC200	SH2	IN22 IN420	KY1615 KY4400	A66N PT600M	HC7 ZC7	CC6050	AB20 AB2010	LX11	ST500 ST900 TC300 TM300	
	H10 - H20	NAC200 NAC250	SH2 SH4	IN23	KY1615	A65	HC2	CC650	AB30	LX11 LX21	ST100 ST300 TC100	
	H20 - H30											

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

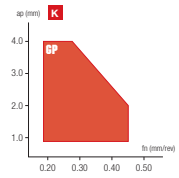
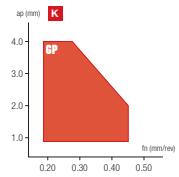
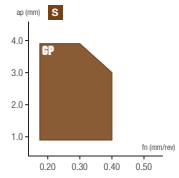
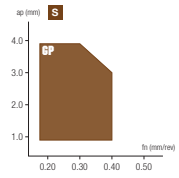
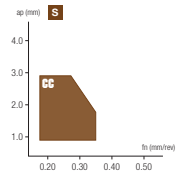
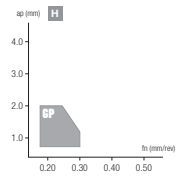
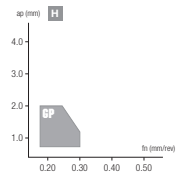
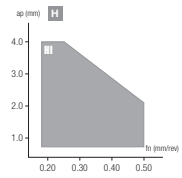
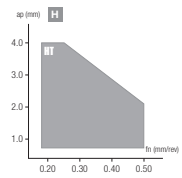
This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

TURNING Edge preparations selection guide - CERAMIC

SORMA DIAMOND & CUTTING TOOLS

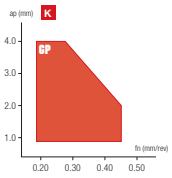
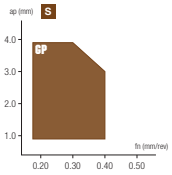
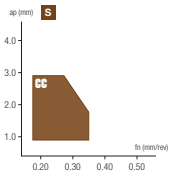
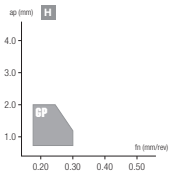
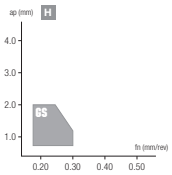
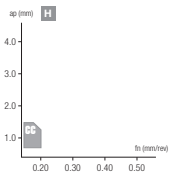
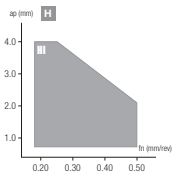
NEGATIVE type with hole				C	D	S	T	V	W
									
				80°	55°	90°	60°	35°	80°
K	UNIVERSAL	GP	 T02020		A235  SIZE 12 16	A237  SIZE 15	A242  SIZE 12	A244  SIZE 16	A247  SIZE 16	A248  SIZE 08
	WIPER	WU	 T02020		A235  SIZE 12				
S	UNIVERSAL	GP	 T02020		A235  SIZE 12					
H	UNIVERSAL	GP	 T02020		A235  SIZE 12 16	A237  SIZE 15	A242  SIZE 12	A244  SIZE 16	A247  SIZE 16	A248  SIZE 08
		GS	 R honing S01525 (NAC150) - S02020 (NAC200)		A235  SIZE 12	A237  SIZE 15		A244  SIZE 16	A247  SIZE 16	
	SHARP	CC	 T01020		A235  SIZE 12	A237  SIZE 15	A242  SIZE 12	A244  SIZE 16	A247 SIZE 16	A248 SIZE 08
	WIPER	WU	T02020		A235 SIZE 12					

SORMA DIAMOND & CUTTING TOOLS

		NEGATIVE type without hole		C	D	R	S	T	
									
				80°	55°	-	90°	60°	
K	UNIVERSAL	**GP** T02020		A236 SIZE 12		A240 SIZE 12	A243 SIZE 12	A245 SIZE 16	
		GP T02020 WITH DIMPLE		A236 SIZE 12			A243 SIZE 12		
S	UNIVERSAL	**GP** T02020		A236 SIZE 12		A240 SIZE 12 19	A243 SIZE 12		
		GP T02020 WITH DIMPLE		A236 SIZE 12			A243 SIZE 12		
	SHARP	**CC** T01020				A240 SIZE 12			
H	UNIVERSAL	**GP** T02020		A236 SIZE 12	A238 SIZE 15	A240 SIZE 12	A243 SIZE 12		
		GP T02020 WITH DIMPLE		A236 SIZE 12			A243 SIZE 12		
	REINFORCED	**HI** R honing P15015		A236 SIZE 12		A240 SIZE 12	A243 SIZE 12 19		
		HT K15015				A240 SIZE 12			

TURNING Edge preparations selection guide - CERAMIC

SORMA DIAMOND & CUTTING TOOLS

POSITIVE type				C	R	S	T		
				80°	-	90°	60°		
K	UNIVERSAL	GP T02020		CC A234 SIZE 09 12		SC A241 SIZE 09 12	TP A246 SIZE 11 16		
S	UNIVERSAL	GP T02020			RC A239 SIZE 06 09 12				
	SHARP	CC T01020			RC A239 SIZE 06 09 12				
H	UNIVERSAL	GP T02020			RC A239 SIZE 06 09 12		TP A246 SIZE 11 16		
		GS R honing S01525			RC A239 SIZE 06		TP A246 SIZE 11 16		
	SHARP	CC T01020					TP A246 SIZE 11 16		
	REINFORCED	HI R honing RCGX09/12: P15015 RCGX15/19: P20015			RC A239 SIZE 09 12 15 19				

CC

Edge preparation

• Recommended for stable continuous cutting conditions
• Sharp edge reduces cutting forces and burrs formation
• CC Continuous Cut edge preparation is generally combined with mixed ceramics for hardened steel and with SiAlON (only round inserts) for HRSA machining

• Empfohlen für stabile und kontinuierliche Schnittbedingungen
• Die scharfe Schneide reduziert Schnittkräfte und Gratbildung
• Die Präparation der CC-Schneidkante (Continuous Cut) wird im Allgemeinen mit einer Mischung aus Keramik für gehärtete Stähle und SiAlON (nur für runde Wendeschneidplatten) für die Bearbeitung von hitzebeständigen Superlegierungen (HRSA) kombiniert

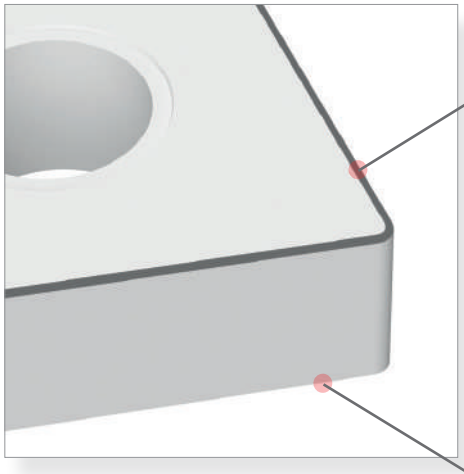
• Raccomandato per condizioni stabili di taglio continuo
• Tagliente affilato che riduce forze di taglio e formazione di bave
• La preparazione del tagliente CC (Continuous Cut) è generalmente combinata con ceramiche miste per acciai temprati e con SiAlON (solo per inserti rotondi) per lavorazione di superleghe resistenti al calore (HRSA)

• Recommandé pour des conditions stables de coupe continue
• L'arête de coupe affûté réduit les forces de coupe et la formation de bavures
• La préparation de l'arête de coupe CC (Continuous Cut) est généralement associée à un mélange de céramiques pour aciers trempés et de SiAlON (pour inserts ronds uniquement) pour l'usinage de superalliages résistants à la chaleur (HRSA)

CC

Edge preparation

Features of CC edge preparation



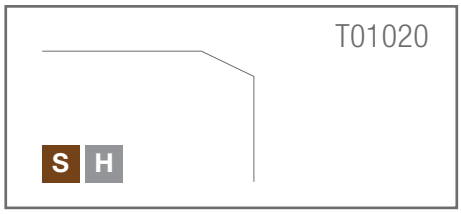
LOW CUTTING FORCE

- The edge preparation has been optimized for low cutting forces action
- The chamfer width is 0.10 mm with an angle of 20° without round honing

- Preparazione del tagliente ottimizzata per azione con basse forze di taglio
- Larghezza smusso 0.10 mm con angolo di 20°, senza onatura

- Optimierte Präparation der Schneidkante für den Einsatz mit geringen Schneidkräften
- Fasenbreite 0,10 mm bei 20° Winkel, ohne Honen

- Préparation optimisée de l'arête de coupe pour une faible force de coupe
- Largeur de chanfrein 0,10 mm avec angle de 20 °, sans rodage



BROAD RANGE

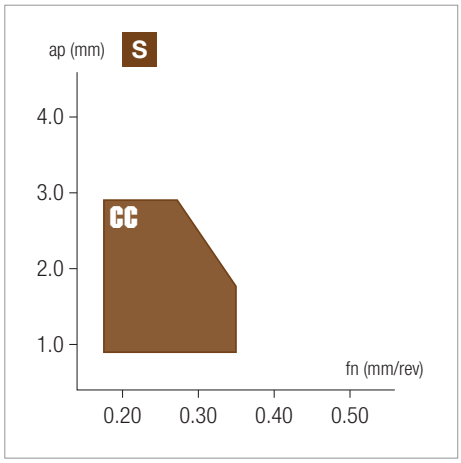
- Available in most common shapes and radii, both positive and negative

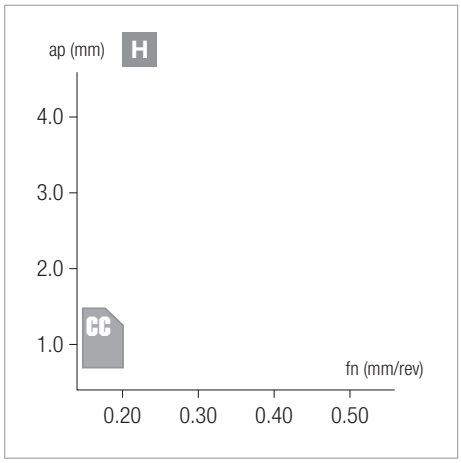
- Rompitruciolo positivi e negativi disponibilii nelle più comuni forme e raggi

- Positive und negative Spanbrecher in den gängigsten Formen und Radien erhältlich

- Positive und negative Spanteiler in den gängigsten Formen und Radien erhältlich

Application range - ISO 513





CC SiAION

- In combination with NSA grades must be considered the first choice for general purpose machining.
- Combinato con gradi NSA è da considerare prima scelta per Impiego generico.
- Zusammen mit den NSA-Qualitäten die erste Wahl für den allgemeinen Einsatz.
- Combiné avec les qualités NSA, il est considéré comme le premier choix pour un usage générique.

GP/GS

Edge preparation

• First choice for almost every kind of applications on cast iron (NSN series) and hardened steel (NAC series)
• Sharp and tough edge for stable machining
• GP General Purpose is available in combination of 3 ceramic families: Silicon nitride, whisker reinforced and alumina mixed ceramic. GS (general purpose with honing) is only combined with NAC series

• Erste Wahl für nahezu alle Anwendungen mit Gusseisen (NSN-Serie) und gehärteten Stählen (NAC-Serie)
• Ausgewogenes Verhältnis zwischen Schärfe und Robustheit
• GP (Allzweck) ist in Kombination von 3 Keramikfamilien erhältlich: Siliziumnitrid, Whisker reinforced und Aluminiumoxid-Keramikmischung. GS (Allzweck mit Honen) nur in Verbindung mit der Serie NAC

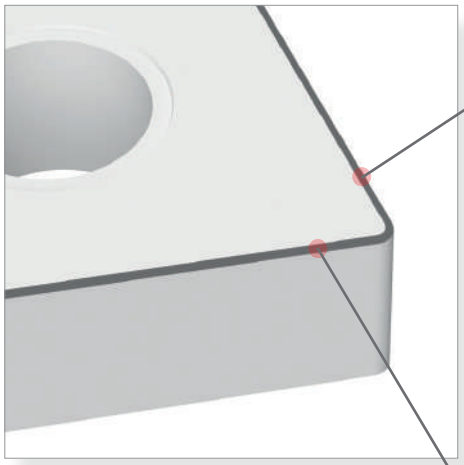
• Prima scelta per quasi tutte le applicazioni su ghisa (serie NSN) e acciai temprati (serie NAC)
• Buon bilanciamento tra taglienza e robustezza
• GP (impiego generico) disponibile in combinazione di 3 famiglie di ceramica: nitruro di silicio, whisker reinforced e mix di ceramica di allumina. GS (impiego generico con onatura) combinato solo con serie NAC

• Premier choix pour la quasi totalité des applications sur fonte (série NSN) et aciers trempés (série NAC)
• Bon équilibre entre affûtage et solidité
• GP (usage générique) disponible en association avec 3 familles de céramiques : nitrure de silicium, whisker renforcé et mélange céramique alumine. GS (usage générique avec rodage) uniquement combiné avec la série NAC

GP/GS

Edge preparation

Features of “G” edge preparation



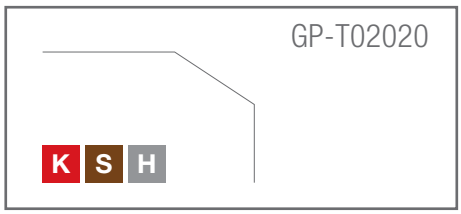
GP - FIRST CHOICE

- Suitable from continuous to light interrupted cut. Guarantees reliable performances
- The most common chamfer shape is 0.20mm width and 20° angle.

- Adatto per condizioni di taglio da continuo a leggermente interrotto. Assicura prestazioni affidabili
- Larghezza smusso, nella maggior parte dei casi, di 0.20 mm con angolo di 20°

- Geeignet für kontinuierliche bis leicht unterbrochene Schnittbedingungen. Sorgt für zuverlässige Leistung
- Fasenbreite, in den meisten Fällen 0,20 mm bei 20° Winkel

- Convient aux conditions de coupe continue à légèrement interrompue. Garantit des performances fiables
- Largeur de chanfrein, dans la plupart des cas, 0,20 mm avec un angle de 20 °



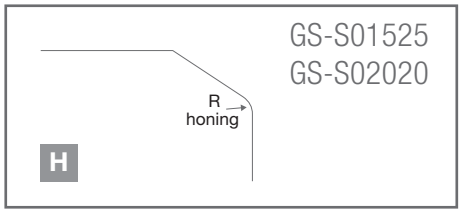
GS - STRENGTHEN THE EDGE

- Same features of GP but with an additional reinforced honing

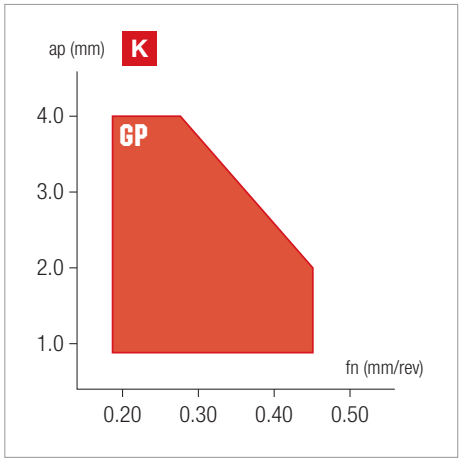
- Stesse caratteristiche di GP con addizionale con onatura di rinforzo

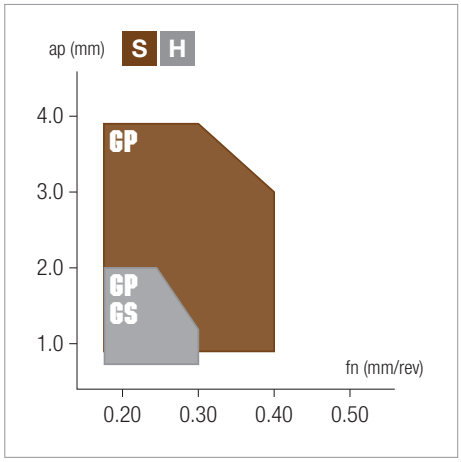
- Die gleichen Eigenschaften wie GP mit zusätzlichem verstärkenden Honen

- Mêmes caractéristiques que GP avec rodage de renfort



Application range - ISO 513





ISO H FIRST CHOICE

- In combination with NSA grades must be considered as first choice for general purpose machining.
- Combinato con gradi NSA è da considerare prima scelta per Impiego generico.
- Zusammen mit den NSA-Qualitäten die erste Wahl für den allgemeinen Einsatz.
- Combiné avec les qualités NSA, il est considéré comme le premier choix pour un usage générique.

HI

Edge preparation

• Edge geometry designed to endure heavy cutting conditions
• HI edge preparation is focused on hard material machining and is available mainly in combination with NAC series
• Commonly utilized in machining of steel rolls

• Angefaster Standard-Rand, verbunden mit einem breiten Fasenwinkel, für harte Schnittbedingungen ausgelegt
• Präparation der Schneidkante HI für die Bearbeitung harter Materialien, hauptsächlich in Verbindung mit der NAC-Serie erhältlich
• Häufig bei der Bearbeitung von Stahlwalzen verwendet

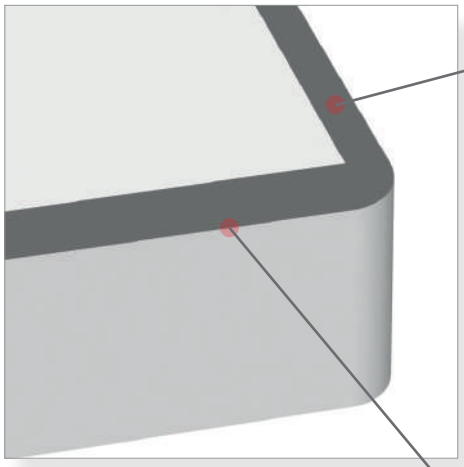
• Geometria del tagliente progettata per sopportare condizioni di taglio gravose
• Preparazione del tagliente HI focalizzata sulla lavorazione di materiali duri, disponibile principalmente in combinazione con la serie NAC
• Comunemente impiegato nella lavorazione di rulli in acciaio

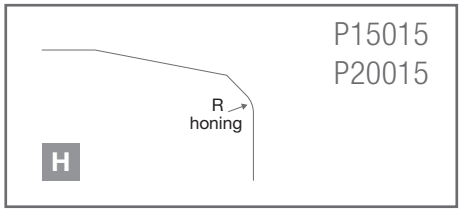
• Bord biseauté standard lié à un grand angle de chanfrein, conçu pour résister à des conditions de coupe intenses
• Préparation du tranchant HI axée sur l'usinage de matériaux durs, principalement disponible en association avec la série NAC
• Couramment utilisé dans l'usinage de rouleaux en acier

HI

Edge preparation

Features of HI edge preparation





DOUBLE CHAMFER

- Main chamfer size starts from 1,5 mm and can reach 2 mm for biggest inserts, with an angle of 15°
- Secondary chamfer width is 0.20 mm with an angle from 25° to 30°

- Dimensioni dello smusso da 1,5mm fino a 2mm negli inserti più grandi, con angolo di 15°
- Larghezza smusso secondario 0.20 mm con angolo da 25° a 30°

- Hauptfase von 1,5 mm bis 2 mm bei den größten Wendeschneidplatten, mit einem Winkel von 15°
- Sekundäre Fasenbreite 0,20 mm mit einem Winkel von 25° bis 30°

- Taille principale du chanfrein de 1,5 mm à 2 mm dans les inserts plus grands, avec un angle de 15 °
- Chanfrein secondaire de 0,20 mm de largeur avec angle de 25 ° à 30 °

REINFORCING HONING

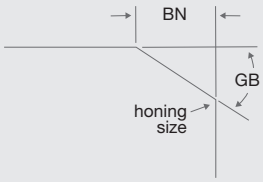
- As further reinforcement, the cutting edge honing has been increased compared to general purpose edge preparation

- Come rinzorzo ulteriore, l'onatura del tagliente è stata incrementata rispetto alla preparazione del tagliente per impiego generico.

- Als zusätzliche Verstärkung wurde das Honen der Schneidkante im Vergleich zur Präparation der Allzweckschneidkante erhöht.

- En guise de renforcement supplémentaire, le rodage du tranchant a été augmenté par rapport à la préparation du tranchant destiné à un usage générique.

SPECIAL CHAMFER UPON REQUEST



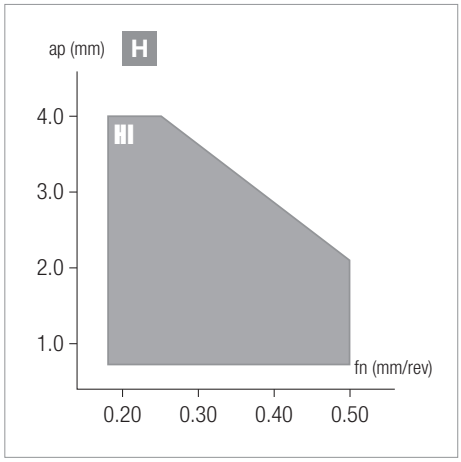
Big chamfer type is generally combined with round inserts for which we can provide even tailor-made solutions.
HT type, for example is a round insert with a double chamfered geometry without round honing.

Tipologia con grande smusso generalmente combinata a inserti rotondi per i quali possiamo fornire anche soluzioni su misura.
Esempio di tipologia HT: inserto tondo con geometria a doppio smusso senza onatura.

Die großen Fasen werden gewöhnlich mit runden Wendeschneidplatten kombiniert, für die wir auch kundenspezifische Lösungen anbieten können.
Beispiel für den HT-Typ: runde Wendeschneidplatten mit doppelt abgeschrägter Geometrie ohne Honen.

Die großen Fasen werden gewöhnlich mit runden Wendeschneidplatten kombiniert, für die wir auch kundenspezifische Lösungen anbieten können.
Beispiel für den HT-Typ: runde Wendeschneidplatten mit doppelt abgeschrägter Geometrie ohne Honen.

Application range - ISO 513



WU

Edge preparation

• Could be used at higher feed rate to improve productivity or at standard feed rate to reach excellent surface quality
• WU wiper edge is available in combination with silicon nitride grade (NSN400) for grey cast iron and mixed alumina ceramic (NAC200) for hardened steel
• Combined with standard 80° shapes (CNGA)

• Può essere impiegato con avanzamenti elevati per migliorare la produttività o con avanzamenti standard per raggiungere eccellente qualità superficiale
• Tagliente WU raschiante disponibile in combinazione con grado in nitruro di silicio (NSN400) per ghisa grigia e ceramica di allumina mista (NAC) per acciai temprati
• Combinato con forme standard 80° (CNGA)

• Kann mit hohen Vorschüben zur Erhöhung der Produktivität oder mit Standardvorschüben für eine hervorragende Oberflächenqualität verwendet werden
• WU-Wendeschneidplatte erhältlich in Kombination mit der Qualität Siliziumnitrid (NSN400) und Aluminiumoxidkeramik (NAC) für gehärtete Stähle
• Kombiniert mit Standard 80°-Formen (CNGA)

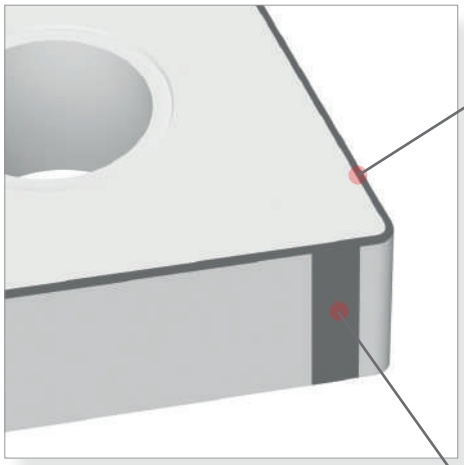
• Il peut être employé à des avances élevées pour améliorer la productivité ou à des avances standards pour obtenir une excellente qualité de surface
• Arête de coupe racleur WU disponible en association avec une nuance de nitrure de silicium (NSN400) et un mélange de céramique d'alumine (NAC) pour aciers trempés
• Associé avec des formes standards 80 ° (CNGA)

SORMA DIAMOND & CUTTING TOOLS

WU

Edge preparation

Features of WU edge preparation



T02020

K H

GENERAL PURPOSE

- Small T land chamfer without honing designed for low cutting forces and good accuracy
- The chamfer width is 0.2 mm with an inclination of 20°

- Smusso ridotto senza onatura per basse forze di taglio e buona accuratezza
- Larghezza smusso di 0.2 mm con inclinazione di 20°

- Kleine Fase der T-Fläche ohne Honen für geringe Schnittkräfte und gute Genauigkeit
- Fasenbreite von 0,2 mm bei 20° Neigung

- Petit biseautage sur plaquette en T sans rodage pour de faibles forces de coupe et une bonne précision
- Largeur de chanfrein de 0,2 mm avec inclinaison de 20 °

ARC WIPER

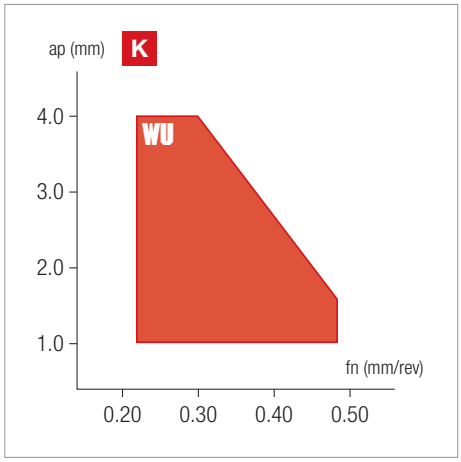
- A big arc at optimized position as wiper geometry instead of conventional straight wiper land, effectively reduces vibration and ensures better surface quality

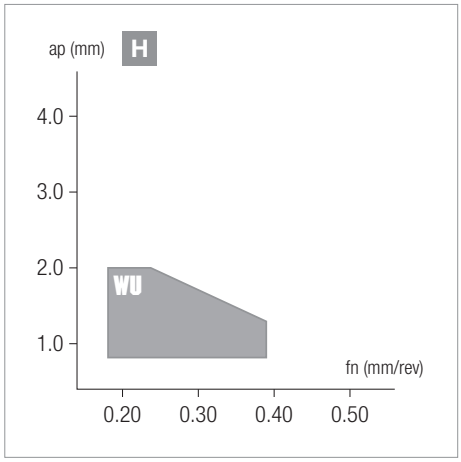
- Grande arco in posizione ottimizzata come geometria raschiante al posto del convenzionale pianetto raschiante diritto per efficace riduzione delle vibrazioni e migliore qualità superficiale

- Großer Bereich in optimierter Position als Wendeschneidplattengeometrie anstelle der herkömmlichen geraden Schneidplatte für effektive Reduzierung von Vibrationen und verbesserte Oberflächenqualität

- Grand arc en position optimisée comme géométrie racleuse au lieu de la plaquette de racleuse droite conventionnelle pour une réduction efficace des vibrations et une qualité de surface optimisée

Application range - ISO 513





NOT ONLY FOR FINISHING

- The wiper edge design can create better surface quality at medium or higher feed cutting conditions
- Quando è usato in condizioni di taglio con avanzamenti medi o elevati, il design del tagliente raschiante realizza una migliore qualità superficiale.
- Beim Einsatz unter Schnittbedingungen mit mittleren oder großen Vorschüben sorgt das Design der Wendeschneidplatte für eine bessere Oberflächenqualität.
- Si utilisée dans des conditions de coupe à avance moyenne ou élevée, la conception du tranchant racleur permet d'obtenir une meilleure qualité de surface.

K		SILICON NITRIDE AND MIXED CERAMICS					
		NEGATIVE	POSITIVE				
●	wear resistance	NAC200 / CC	NAC200 / CC				
	▲ 1st CHOICE ▼	**NSN400 / GP**	**NSN400 / GP**				
	toughness	NSN450 / GP	-				
◐	wear resistance	NAC200 / GP	NAC200 / GP				
	▲ 1st CHOICE ▼	**NSN400 / GP**	**NSN400 / GP**				
	toughness	NSN450 / GP	-				
✱	wear resistance	-	-				
	▲ 1st CHOICE ▼	**NSN400 / GP**	**NSN400 / GP**				
	toughness	NSN450 / GP	-				

S		WHISKER CERAMICS AND SiAlON					
		NEGATIVE	POSITIVE				
●	wear resistance	-	-				
	▲ 1st CHOICE ▼	**NWR700 / GP**	**NWR700 / GP**				
	toughness	NWR750 / GP	NWR750 / GP				
◐	wear resistance	NWR750 / GP	NWR750 / GP				
	▲ 1st CHOICE ▼	**NSA6000 / CC**	**NSA6000 / CC**				
	toughness	NSA650 / GP	NSA650 / GP				
✱	wear resistance	NWR750 / GP	NWR750 / GP				
	▲ 1st CHOICE ▼	**NSA6000 / GP**	**NSA6000 / GP**				
	toughness	NSA650 / GP	NSA650 / GP				

H		Al_2O_3 MIXED CERAMICS					
		NEGATIVE	POSITIVE				
●	wear resistance	NAC150 / CC	NAC150 / CC				
	▲ 1st CHOICE ▼	**NAC200 / CC**	**NAC200 / CC**				
	toughness	-	-				
◐	wear resistance	NAC150 / GS	NAC150 / GS				
	▲ 1st CHOICE ▼	**NAC200 / GP**	**NAC200 / GP**				
	toughness	NAC250 / GP	NAC250 / GP				
✱	wear resistance	NAC200 / HI	NAC200 / HI				
	▲ 1st CHOICE ▼	**NAC250 / HI**	**NAC250 / HI**				
	toughness	-	-				

C	N	G	A	12	04	08	-	GP	-	NAC	200
1	2	3	4	5	6	7		8		9	10

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

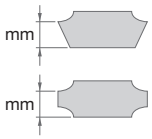
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A	✓	✗	✗
G	✓	✗	double sided
M	✓	✗	single sided
N	✗	✗	✗
T	✓	40°÷60°	single sided
W	✓	40°÷60°	✗
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS
Symbol	(mm)
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.53



7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	EDGE PREPARATION
CC	sharp edge
GP, GS	universal edge
HI	reinforced edge
WU	wiper edge

9	GRADE - features
NAC	Mixed Al_2O_3 ceramic
NSA	SiAlON
NSN	Silicon nitride
NWR	Whisker reinforced

10	GRADE - material
000÷290	ISO H
300÷590	ISO K
600÷790	ISO S

SORMA DIAMOND & CUTTING TOOLS

CC

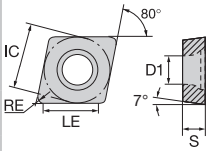
ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, bigger than 5°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

CN: Silicon nitride

		CN	NSN400
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

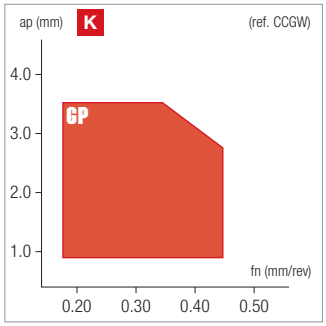


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**400** 1000
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
UNIVERSAL GP K	**CCGW09T308-GP**	0.80	9.525	3.97	4.4	8.9	○
	CCGW09T312-GP	1.20	9.525	3.97	4.4	8.5	○
	CCGW120408-GP	0.80	12.7	4.76	5.5	12.1	○
	CCGW120412-GP	1.20	12.7	4.76	5.5	11.7	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

CN

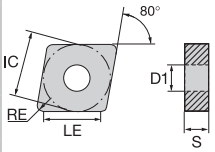
ISO - with hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

CM: Mixed ceramic
CC: Coated ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

		NAC150	NAC200	NAC250	NSA6000	NSN350	NSN400	NSN450
		CC PVD	CM	CM	CN	CN	CN	CN
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	○	●	●	○
General machining, medium cut	● 1st choice ○ suitable	◔	◕	◕	◕	◔	◕	◕
Unstable machining, heavy cut	⬢ 1st choice ⬡ suitable				⬡			

Dimensions

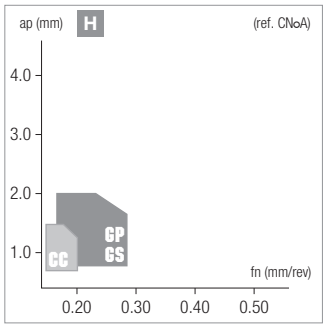


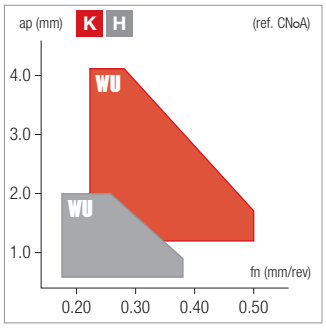
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)							
P								
M								
K		400 600			500 1000	400 1000	400 800	
N								
S				150 400				
H	100 200	70 180	60 150					

Designation			RE	IC	S	D1	LE	Stock						
UNIVERSAL	GP K S H	CNGA120404-GP	0.40	12.7	4.76	5.16	12.5		●					
		CNGA120408-GP	0.80	12.7	4.76	5.16	12.1		●	●	●			
		CNGA120412-GP	1.20	12.7	4.76	5.16	11.7		●	●	○		⦿	
		CNGA120416-GP	1.60	12.7	4.76	5.16	-		⦿					
		CNGA160612-GP	1.20	15.87	6.35	6.35	14.9		⦿					
		CNGA160616-GP	1.60	15.87	6.35	6.35	14.5		○					
		CNMA120408-GP	0.80	12.7	4.76	5.16	12.1					○	●	○
		CNMA120412-GP	1.20	12.7	4.76	5.16	11.7					○	●	○
		CNMA120416-GP	1.60	12.7	4.76	5.16	11.3					○	⦿	○
		CNMA160612-GP	1.20	15.87	6.35	6.35	14.9						⦿	
		CNMA160616-GP	1.60	15.87	6.35	6.35	14.5						⦿	
UNIVERSAL	GS H	CNGA120404-GS	0.40	12.7	4.76	5.16	12.5	●						
		CNGA120408-GS	0.80	12.7	4.76	5.16	12.1	●	●					
		CNGA120412-GS	1.20	12.7	4.76	5.16	11.7	●	○					
SHARP	CC H	CNGA120404-CC	0.40	12.7	4.76	5.16	12.5	○	●					
		CNGA120408-CC	0.80	12.7	4.76	5.16	12.1	●	●					
		CNGA120412-CC	1.20	12.7	4.76	5.16	11.7	○	○					
WIPER	WU K H	CNGA120410-WU	1.00	12.7	4.76	5.16	11.9		○				⦿	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

CN

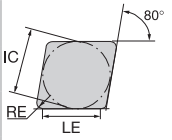
ISO - without hole

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

CN: Silicon nitride
CM: Mixed ceramic
CR: Reinforced ceramic

		NAC200	NAC250	NSA600	NSA6000	NSA650	NSN350	NSN400	NSN450	NWR700	NWR750
		CM	CM	CN	CN	CN	CN	CN	CN	CR	CR
Stable machining, light cut	● 1st choice ○ suitable	●	○	○	○		●	●	○	●	○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●	○	○	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable				✱						

Dimensions

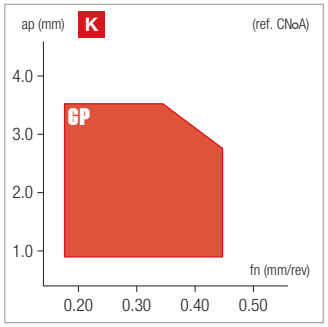


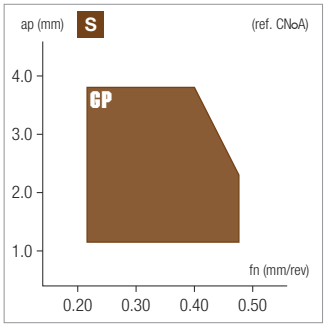
4 edges

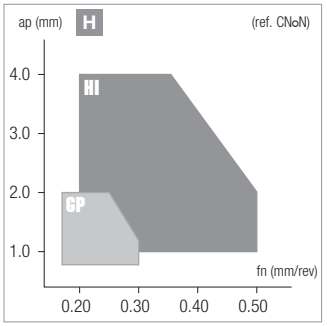
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)										
	NAC200	NAC250	NSA600	NSA6000	NSA650	NSN350	NSN400	NSN450	NWR700	NWR750	
P											
M											
K	400 600					500 1000	400 1000	400 800			
N											
S			150 350	150 400	150 250				250 500	200 450	
H	70 180	60 150									

	Designation		RE	IC	S	D1	LE	Stock									
UNIVERSAL	GP K S H	CNGN120416-GP	1.60	12.7	4.76	-	-										▽
		CNGN120708-GP	0.80	12.7	7.94	-	12.1	○		▽				○			
		CNGN120712-GP	1.20	12.7	7.94	-	11.7			▽		▽		○		○	○
		CNGN120716-GP	1.60	12.7	7.94	-	11.3			◉	◉			○		○	○
		CNMN120412-GP	1.20	12.7	4.76	-	11.7							○			
		CNMN120416-GP	1.60	12.7	4.76	-	11.3							○			
UNIVERSAL	GP K S H	CNGX120708-GP	0.80	12.7	7.94	-	12.1	●									
		CNGX120712-GP	1.20	12.7	7.94	-	11.7	●									
		CNMX120712-GP	1.20	12.7	7.94	-	11.7			▽	▲			●			
	dimpled type	CNMX120716-GP	1.60	12.7	7.94	-	11.3				▲		◉	◉	◉		
REINFORCED	HI H	CNGN120712-HI	1.20	12.7	7.94	-	11.7		○								
		CNGN120716-HI	1.60	12.7	7.94	-	11.3		○								

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

DN

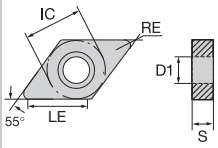
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- 7° clearance angle, less risk of chip jamming in boring

CC: Coated ceramic
CM: Mixed ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

	CC PVD	CM	CM	CN
	NAC150	**NAC200**	**NAC250**	**NSN400**
Stable machining, light cut (● 1st choice ○ suitable)	●	●	○	●
General machining, medium cut	◔	◕	◕	◕
Unstable machining, heavy cut	✱	✲		

Dimensions

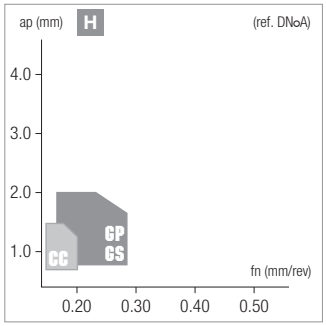


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
P				
M				
K		400 600		**400** **1000**
N				
S				
H	**100** **200**	**70** **180**	**60** **150**	

	Designation	RE	IC	S	D1	LE	Stock				
UNIVERSAL	GP K H	**DNGA150604-GP**	0.40	12.7	6.35	5.16	15.1		●		
		DNGA150608-GP	0.80	12.7	6.35	5.16	14.7		●	●	▽
		DNGA150612-GP	1.20	12.7	6.35	5.16	14.3		●	○	
		DNGA150616-GP	1.60	12.7	6.35	5.16	13.9		○		
		DNMA150612-GP	1.20	12.7	6.35	5.16	-				▽
UNIVERSAL	GS H	**DNGA150604-GS**	0.40	12.7	6.35	5.16	15.1	○			
		DNGA150608-GS	0.80	12.7	6.35	5.16	14.7	●	●		
SHARP	CC H	**DNGA150604-CC**	0.40	12.7	6.35	5.16	15.1	○	●		
		DNGA150608-CC	0.80	12.7	6.35	5.16	14.7	○			
		DNGA150612-CC	1.20	12.7	6.35	5.16	14.3	○	○		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

DN

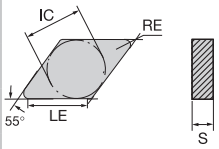
ISO - without hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- 7° clearance angle, less risk of chip jamming in boring

CM: Mixed ceramic

		CM	NAC200
Stable machining, light cut	● 1st choice ◯ suitable	●	
General machining, medium cut	● 1st choice ◯ suitable	●	
Unstable machining, heavy cut	● 1st choice ◯ suitable		

Dimensions

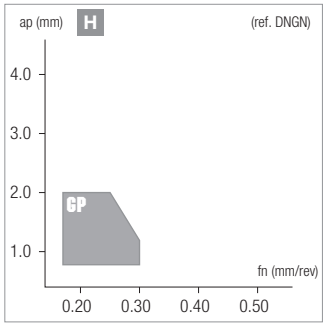


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	400 600
N	
S	
H	70 180

	Designation	RE	IC	S	D1	LE	Stock
UNIVERSAL GP H	DNGN150712-GP	1.20	12.7	7.94	-	14.3	○
	DNGN150716-GP	1.60	12.7	7.94	-	13.9	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

RC

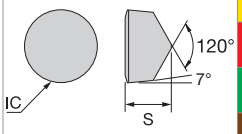
ISO - without hole

- Very strong and robust shape and style, able to confront several challenges during the machining process
- Tapered tail secures the seating in the insert pocket of the holder
- Different edge preparation with wide range of grades covering the majority of application area

CN: Silicon nitride
CM: Mixed ceramic
CC: Coated ceramic
CR: Reinforced ceramic
PVD: Physical vapor deposition

		CC PVD	CM	CM	CN	CR	CR
		NAC150	NAC200	NAC250	NSA6000	NWR700	NWR750
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	○	●	○
General machining, medium cut	● 1st choice ○ suitable	○	●	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable				✲		

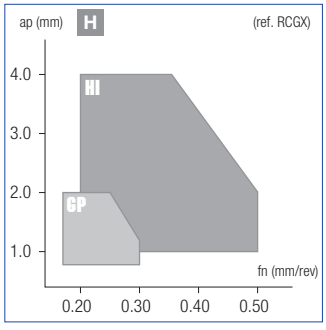
Dimensions

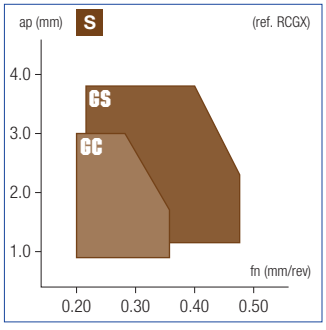


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	400 600
N	
S	150 400 / 250 500 / 200 450
H	100 200 / 70 180 / 60 150

	Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL	GP S H	RCGX060700-GP	3.18	6.35	7.94	-	-		●				
		RCGX090700-GP	4.76	9.525	7.94	-	-	○	●	○		○	○
		RCGX120700-GP	6.35	12.7	7.94	-	-	○	○	○		○	○
UNIVERSAL	GS H	RCGX060600-GS	3.18	6.35	6.35	-	-		○				
SHARP	CC S	RCGX060600-CC	3.18	6.35	6.35	-	-				○		
		RCGX090700-CC	4.76	9.525	7.94	-	-				○		
		RCGX120700-CC	6.35	12.7	7.94	-	-				●		
REINFORCED	HI H	RCGX090700-HI	4.76	9.525	7.94	-	-	◉	●	○			
		RCGX120700-HI	6.35	12.7	7.94	-	-	●	●	●			
		RCGX151000-HI	7.94	15.87	10	-	-		○	●			
		RCGX191000-HI	9.53	19.05	10	-	-			○			

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

RN

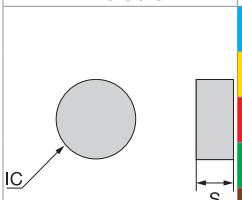
ISO - without hole

- Very strong and robust shape and style, able to confront several challenges during the machining process
- Different edge preparation with wide range of grades covering the majority of application area
- Other thicknesses available upon request

CM: Mixed ceramic
CR: Reinforced ceramic
CC: Coated ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

		NAC150	NAC200	NAC250	NSA6000	NSA6000	NSA650	NSN400	NWR700	NWR750
		CC PVD	CM	CM	CN	CN	CN	CN	CR	CR
Stable machining, light cut	● 1st choice ◯ suitable	●	●	◯	◯	◯		●	●	◯
General machining, medium cut	● 1st choice ◯ suitable	◯	●	●	◯	●	◯	●	◯	●
Unstable machining, heavy cut	● 1st choice ◯ suitable					◯				

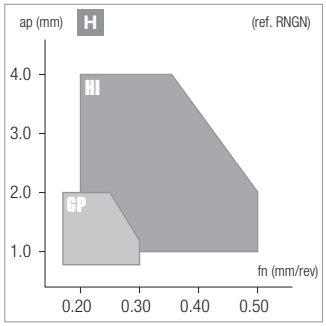
Dimensions

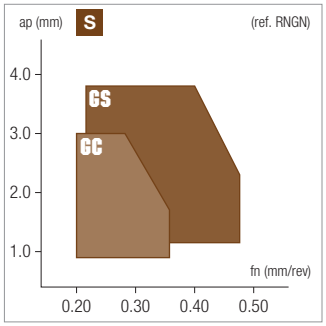


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)									
P										
M										
K		400 600					**400 1000**			
N										
S				**150 350**	**150 400**	**150 250**		**250 500**	**200 450**	
H	**100 200**	**70 180**	**60 150**							

	Designation		RE	IC	S	D1	LE	Stock							
UNIVERSAL	GP K S H	RNGN120400-GP	6.35	12.7	4.76	-	-		●					◯	◯
		RNGN120700-GP	6.35	12.7	7.94	-	-	◯	◯	◯	▽		▽	◯	◯	◯
		RNGN190700-GP	9.53	19.05	7.94	-	-							▽	
SHARP	CC S	RNGN120400-CC	6.35	12.7	4.76	-	-					●				
		RNGN120700-CC	6.35	12.7	7.94	-	-					●				
LOW FORCE	E S	RNGN120700E	6.35	12.7	7.94	-	-					◯				
REINFORCED	HI H	RNGN120700-HI	6.35	12.7	7.94	-	-	●	●	●						
REINFORCED	HT H	RNGN120700-HT	6.35	12.7	7.94	-	-	⦿		⦿						

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

SC

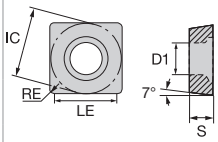
ISO - with hole

- Very strong 90° corner with excellent economy (4 edges on positive inserts)
- Mostly used on roughing
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

CN: Silicon nitride

		CN	NSN400
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

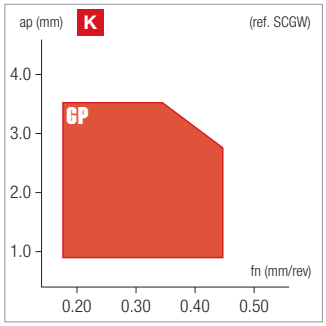


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**400** **1000**
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
UNIVERSAL	GP K 						
	SCGW09T308-GP	0.80	9.525	3.97	4.4	8.7	○
	SCGW120408-GP	0.80	12.7	4.76	5.5	11.9	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

SN

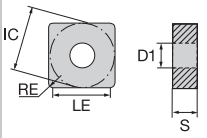
ISO - with hole

- Very strong 90° corner with excellent economy (4 edges on positive inserts)
- Mostly used on roughing
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

CM: Mixed ceramic
CN: Silicon nitride

		CM	CN
		NAC200	NSN400
Stable machining, light cut	● 1st choice ◯ suitable	●	●
General machining, medium cut	● 1st choice ◯ suitable	●	●
Unstable machining, heavy cut	● 1st choice ◯ suitable		

Dimensions



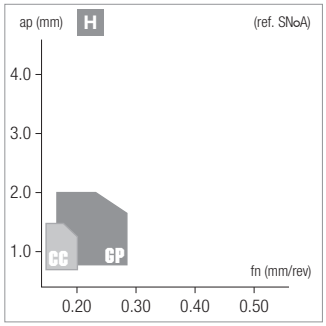
8 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	CM	CN
P		
M		
K	400 600	**400 1000**
N		
S		
H	**70 180**	

	Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL	GP K H	SNGA120404-GP	0.40	12.7	4.76	5.16	12.3	●	
		SNGA120408-GP	0.80	12.7	4.76	5.16	11.9	●	
		SNGA120412-GP	1.20	12.7	4.76	5.16	11.5	●	
		SNMA120408-GP	0.80	12.7	4.76	5.16	11.9		●
		SNMA120412-GP	1.20	12.7	4.76	5.16	11.5		●
		SNMA120416-GP	1.60	12.7	4.76	5.16	11.1		○
SHARP	CC H	SNGA120404-CC	0.40	12.7	4.76	5.16	12.3	◉	
		SNGA120408-CC	0.80	12.7	4.76	5.16	11.9	○	
		SNGA120412-CC	1.20	12.7	4.76	5.16	11.5	○	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SN

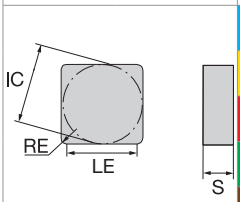
ISO - without hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts), especially with solid type CBNs
- Mostly used for rough facing operations
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

CN: Silicon nitride
CR: Reinforced ceramic
CM: Mixed ceramic
CC: Coated ceramic
PVD: Physical vapor deposition

		CC PVD	CM	CM	CN	CN	CN	CN	CR
		NAC150	**NAC200**	**NAC250**	**NSA600**	**NSA6000**	**NSN400**	**NSN450**	**NWR750**
Stable machining, light cut	● 1st choice ◯ suitable	●	●	◯	◯	◯	●	◯	◯
General machining, medium cut	● 1st choice ◯ suitable	◯	●	●	◯	●	●	●	●
Unstable machining, heavy cut	● 1st choice ◯ suitable					◯			

Dimensions

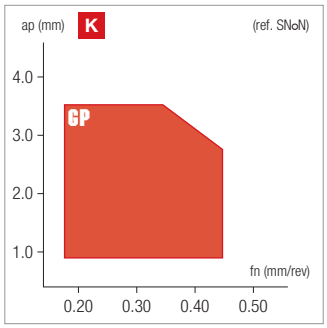


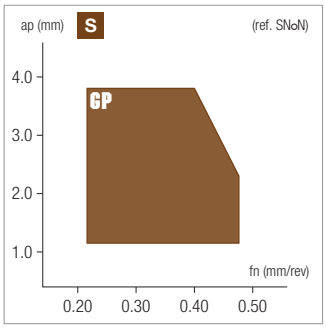
8 edges

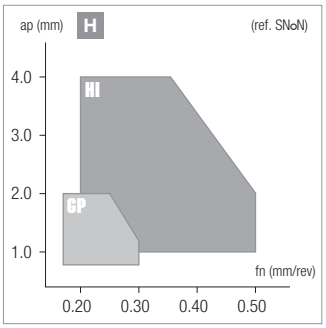
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P																				
M																				
K		400 600				400 1000	400 800													
N																				
S				150 350	150 400			200 450												
H	100 200	70 180	60 150																	

Designation			RE	IC	S	D1	LE	Stock								
UNIVERSAL	GP K S H	SNGN120404-GP	0.40	12.7	4.76	-	-					▽				
		SNGN120408-GP	0.80	12.7	4.76	-	11.9					●				
		SNGN120412-GP	1.20	12.7	4.76	-	11.5					○	●	⦿	▽	
		SNGN120708-GP	0.80	12.7	7.94	-	11.9	⦿	●							
		SNGN120712-GP	1.20	12.7	7.94	-	11.5		●							
		SNGN120716-GP	1.60	12.7	7.94	-	11.1		○				⦿			
		SNMN120416-GP	1.60	12.7	4.76	-	11.1						⦿			
UNIVERSAL	GP K S H	SNGX120708-GP	0.80	12.7	7.94	-	11.9		⦿							
		SNGX120712-GP	1.20	12.7	7.94	-	11.5		●							
		SNMX120712-GP	1.20	12.7	7.94	-	11.5					▲	○			
	dimpled type	SNMX120716-GP	1.60	12.7	7.94	-	11.1				▽	▲	●			
REINFORCED	HI H	SNGN120716-HI	1.60	12.7	7.94	-	11.1			○						
		SNGN120724-HI	2.40	12.7	7.94	-	10.3		○							
		SNGN190720-HI	2.00	19.05	7.94	-	-		⦿	⦿						

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

SORMA DIAMOND & CUTTING TOOLS

TN

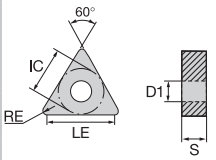
ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation
- Edge is 80° C shape insert is recommended when a stronger edge is required

CC: Coated ceramic
CM: Mixed ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

		NAC150	NAC200	NAC250	NSN400
		CC PVD	CM	CM	CN
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	●
General machining, medium cut	● 1st choice ○ suitable	○	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable				

Dimensions

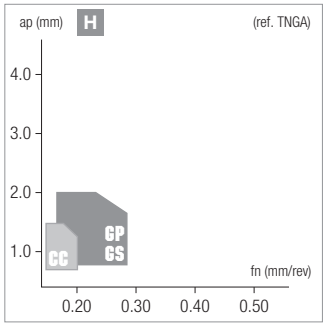


6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
P					
M					
K		400 600		**400 1000**	
N					
S					
H	**100 200**	**70 180**	**60 150**		

	Designation		RE	IC	S	D1	LE	Stock				
UNIVERSAL	GP K H	TNGA160404-GP	0.40	9.525	4.76	3.81	16.1		●			
		TNGA160408-GP	0.80	9.525	4.76	3.81	15.7		●	●	○	
		TNGA160412-GP	1.20	9.525	4.76	3.81	15.3		●	◉	◉	
UNIVERSAL	GS H	TNGA160404-GS	0.40	9.525	4.76	3.81	16.1	●	○			
		TNGA160408-GS	0.80	9.525	4.76	3.81	15.7	●	●			
		TNGA160412-GS	1.20	9.525	4.76	3.81	15.3	◉				
SHARP	CC H	TNGA160404-CC	0.40	9.525	4.76	3.81	16.1	●	●			
		TNGA160408-CC	0.80	9.525	4.76	3.81	15.7	●	●			
		TNGA160412-CC	1.20	9.525	4.76	3.81	15.3		◉			

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

TN

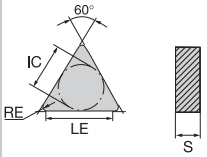
ISO - without hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation
- Edge is 80° C shape insert is recommended when a stronger edge is required

CN: Silicon nitride

		CN	NSN400
Stable machining, light cut	● 1st choice ○ suitable	●	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



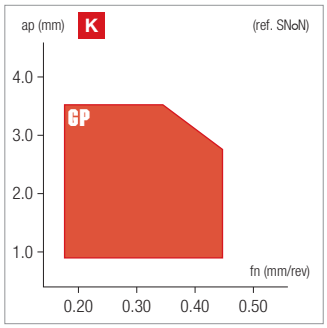
6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	400 1000
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
UNIVERSAL	GP K						
	TNGN160408-GP	0.80	9.525	4.76	-	15.7	◉
	TNGN160708-GP	0.80	9.525	7.94	-	15.7	○
	TNGN160712-GP	1.20	9.525	7.94	-	15.3	○



★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

TP

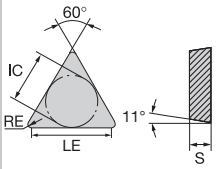
ISO - without hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 3 cutting edges
- Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation
- Edge is 80° C shape insert is recommended when a stronger edge is required

CC: Coated ceramic
CM: Mixed ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

		CC PVD	CM	CN
		NAC150	NAC200	NSN400
Stable machining, light cut	● 1st choice ◯ suitable	●	●	●
General machining, medium cut	● 1st choice ◯ suitable	◯	●	●
Unstable machining, heavy cut	● 1st choice ◯ suitable			

Dimensions

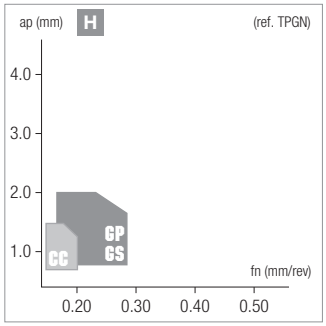


3 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P			
M			
K		400 600	**400** **1000**
N			
S			
H	**100** **200**	**70** **180**	

	Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL	GP K H	TPGN110304-GP	0.40	6.35	3.18	-	10.6		●	○
		TPGN110308-GP	0.80	6.35	3.18	-	10.2		◉	◉
		TPGN160304-GP	0.40	9.525	3.18	-	16.1		●	○
		TPGN160308-GP	0.80	9.525	3.18	-	15.7		●	◉
		TPGN160312-GP	1.20	9.525	3.18	-	15.3			◉
UNIVERSAL	GS H	TPGN110302-GS	0.20	6.35	3.18	-	10.8	○		
		TPGN110304-GS	0.40	6.35	3.18	-	10.6	○		
		TPGN110308-GS	0.80	6.35	3.18	-	10.2	○		
		TPGN160304-GS	0.40	9.525	3.18	-	16.1	●		
		TPGN160308-GS	0.80	9.525	3.18	-	15.7	●		
SHARP	CC H	TPGN110302-CC	0.20	6.35	3.18	-	10.8	○	●	
		TPGN110304-CC	0.40	6.35	3.18	-	10.6	○	●	
		TPGN110308-CC	0.80	6.35	3.18	-	10.2	◉	○	
		TPGN160304-CC	0.40	9.525	3.18	-	16.1	●	●	
		TPGN160308-CC	0.80	9.525	3.18	-	15.7	●	●	
		TPGN160312-CC	1.20	9.525	3.18	-	15.3		○	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

VN

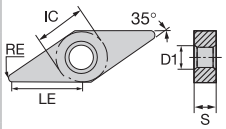
ISO - with hole

- 1st choice for complex shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/ live center
- Lighter ap and fn are recommended for this shape
- Double sided style should mainly be used for external applications

CC: Coated ceramic
CM: Mixed ceramic
CN: Silicon nitride
PVD: Physical vapor deposition

		CC PVD	CM	CM	CN
		NAC150	NAC200	NAC250	NSN400
Stable machining, light cut	● 1st choice ○ suitable	●	●	○	●
General machining, medium cut	● 1st choice ○ suitable	○	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable				

Dimensions



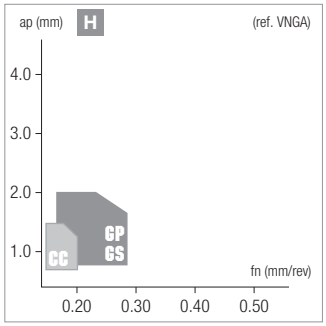
4 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO					
P					
M					
K		400 600		**400 1000**	
N					
S					
H	**100 200**	**70 180**	**60 150**		

	Designation		RE	IC	S	D1	LE	Stock				
UNIVERSAL	GP K H	VNGA160404-GP	0.40	9.525	4.76	3.81	16.2		●		○	
		VNGA160408-GP	0.80	9.525	4.76	3.81	15.8		●	○	◉	
		VNGA160412-GP	1.20	9.525	4.76	3.81	15.4		○	○	○	
UNIVERSAL	GS H	VNGA160404-GS	0.40	9.525	4.76	3.81	16.2	○	●			
		VNGA160408-GS	0.80	9.525	4.76	3.81	15.8	◉	●			
		VNGA160412-GS	1.20	9.525	4.76	3.81	15.4	○				
SHARP	CC H	VNGA160404-CC	0.40	9.525	4.76	3.81	16.2	○				
		VNGA160408-CC	0.80	9.525	4.76	3.81	15.8	◉	●			
		VNGA160412-CC	1.20	9.525	4.76	3.81	15.4	○				

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A232 | CUTTING CONDITIONS p. A250 | GRADES FEATURES p. A216 | HOLDERS p. A255

WN

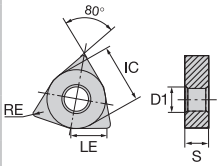
ISO - with hole

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Lighter ap is recommended compared to C shape inserts

CM: Mixed ceramic
CN: Silicon nitride

		CM	CN
		NAC200	NSN400
Stable machining, light cut	● 1st choice ◯ suitable	●	●
General machining, medium cut	● 1st choice ◯ suitable	●	●
Unstable machining, heavy cut	● 1st choice ◯ suitable		

Dimensions

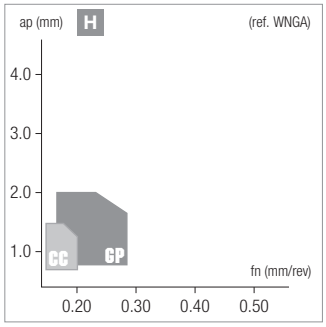


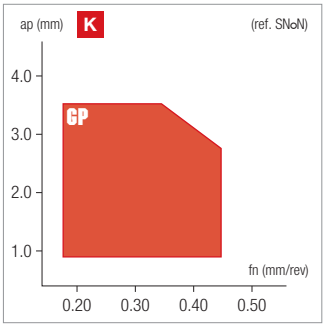
6 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
	CM	CN
P		
M		
K	400 600	**400** **1000**
N		
S		
H	70 180	

	Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL	GP K H	WNGA080404-GP	0.40	12.7	4.76	5.16	8.3	●	
		WNGA080408-GP	0.80	12.7	4.76	5.16	7.9	●	○
		WNGA080412-GP	1.20	12.7	4.76	5.16	7.5	●	●
SHARP	CC H	WNGA080404-CC	0.40	12.7	4.76	5.16	8.3	●	
		WNGA080408-CC	0.80	12.7	4.76	5.16	7.9	●	
		WNGA080412-CC	1.20	12.7	4.76	5.16	7.5	○	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

PRODUCT SELECTION p. **A232** | CUTTING CONDITIONS p. **A250** | GRADES FEATURES p. **A216** | HOLDERS p. **A**255

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	NAC200 min	NAC200 start	NAC200 max	NSN350 min	NSN350 start	NSN350 max	NSN400 min	NSN400 start	NSN400 max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	400	**500**	600	600	**800**	1000	500	**750**	1000
						500	**700**	900	400	**650**	900
K2	Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350	300	**400**	500				450	**600**	750
									400	**500**	600
ISO 513	MATERIAL	HARDNESS HRC	NAC150 min	NAC150 start	NAC150 max	NAC200 min	NAC200 start	NAC200 max	NAC250 min	NAC250 start	NAC250 max
H1	Case-hardened steel (ex. 1.7131/16MnCr5)	50 ÷ 56	100	**150**	200	80	**130**	180	70	**110**	150
						70	**110**	150	60	**100**	140
H2	Bearing steel, quenched and tempered steel (ex.1.3505/100Cr6)	54 ÷ 62	80	**130**	180	70	**100**	130	60	**90**	120
						60	**80**	100	50	**60**	70
ISO 513	MATERIAL	HARDNESS HRC	NSA6000 min	NSA6000 start	NSA6000 max	NSA650 min	NSA650 start	NSA650 max	NWR700 min	NWR700 start	NWR700 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)	50 ÷ 56	200	**300**	400				300	**400**	500
			180	**250**	320	150	**200**	250	250	**300**	350
			150	**200**	250						

Complete workpiece materials p. **M**1.

	NSN450 min	start	max					
●	400	**600**	800					
⚙	400	**500**	600					
	NWR750 min	start	max					
○	250	**350**	450					
●	200	**250**	300					

Complete workpiece materials p. **M**1.

TURNING Parameters - depth of cut and feed rate - CERAMIC

SORMA DIAMOND & CUTTING TOOLS

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
CCGW09T308-GP K	1.00	**2.00**	3.00	0.12	**0.23**	0.34
CCGW09T312-GP K	1.00	**2.00**	3.00	0.13	**0.26**	0.36
CCGW120408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CCGW120412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNGA120404-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
CNGA120404-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
CNGA120404-GS H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
CNGA120408-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
CNGA120408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
CNGA120408-GP S	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CNGA120408-GS H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
CNGA120410-WU H	0.40	**1.20**	2.00	0.12	**0.26**	0.40
CNGA120410-WU K	1.00	**2.50**	4.00	0.20	**0.35**	0.50
CNGA120412-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
CNGA120412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
CNGA120412-GP S	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNGA120412-GS H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
CNGA160612-GP H	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CNGA160616-GP H	1.00	**2.50**	4.00	0.15	**0.30**	0.45
CNGN120708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
CNGN120708-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CNGN120708-GP S	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CNGN120712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
CNGN120712-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNGN120712-GP S	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNGN120712-HI H	1.00	**2.50**	4.00	0.16	**0.28**	0.40
CNGN120716-GP H	0.40	**1.20**	2.00	0.14	**0.26**	0.38
CNGN120716-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
CNGN120716-GP S	1.00	**2.50**	4.00	0.18	**0.33**	0.48
CNGN120716-HI H	1.00	**2.50**	4.00	0.20	**0.32**	0.44
CNGX120708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
CNGX120712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
CNMA120408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
CNMA120412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNMA120416-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
CNMA160612-GP K	2.00	**4.00**	6.00	0.20	**0.35**	0.50
CNMA160616-GP K	2.00	**4.00**	6.00	0.22	**0.38**	0.54
CNMN120412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNMN120416-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
CNMX120712-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
CNMX120716-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
DNGA150604-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
DNGA150604-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
DNGA150604-GS H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
DNGA150608-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
DNGA150608-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
DNGA150608-GS H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
DNGA150612-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
DNGA150612-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
DNGA150612-GS H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
DNGA150616-GP H	0.40	**1.20**	2.00	0.14	**0.26**	0.38
DNGN150708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
DNGN150712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
DNGN150716-GP H	0.40	**1.20**	2.00	0.14	**0.26**	0.38
RCGX060600-CC S	1.00	**1.50**	2.00	0.18	**0.28**	0.38
RCGX060600-GS H	0.40	**1.20**	2.00	0.10	**0.24**	0.38
RCGX060700-GP H	0.40	**1.20**	2.00	0.10	**0.24**	0.38
RCGX060700-GP S	1.00	**2.00**	3.00	0.18	**0.32**	0.46

DESIGNATION	DEPTH OF CUT ap (mm)			FEED RATE fn (mm/rev)		
	min	start	max	min	start	max
RCGX090700-CC S	1.00	**2.00**	3.00	0.22	**0.32**	0.42
RCGX090700-GP H	0.60	**1.80**	3.00	0.12	**0.26**	0.40
RCGX090700-GP S	1.00	**2.50**	4.00	0.22	**0.38**	0.54
RCGX090700-HI H	0.60	**1.80**	3.00	0.15	**0.30**	0.45
RCGX120700-CC S	1.00	**2.00**	3.00	0.22	**0.32**	0.42
RCGX120700-GP H	0.60	**1.80**	3.00	0.12	**0.26**	0.40
RCGX120700-GP S	1.00	**2.50**	4.00	0.22	**0.38**	0.54
RCGX120700-HI H	0.60	**1.80**	3.00	0.15	**0.30**	0.45
RCGX151000-HI H	1.00	**2.50**	4.00	0.20	**0.40**	0.60
RCGX191000-HI H	1.00	**2.50**	4.00	0.25	**0.45**	0.65
RNGN120400-CC S	1.00	**2.00**	3.00	0.22	**0.32**	0.42
RNGN120400-GP H	0.60	**1.80**	3.00	0.12	**0.26**	0.40
RNGN120400-GP S	1.00	**2.50**	4.00	0.22	**0.38**	0.54
RNGN120700-CC S	1.00	**2.00**	3.00	0.22	**0.36**	0.50
RNGN120700-GP H	0.60	**1.80**	3.00	0.12	**0.26**	0.40
RNGN120700-GP S	1.00	**2.50**	4.00	0.22	**0.32**	0.42
RNGN120700-HI H	0.60	**1.80**	3.00	0.15	**0.30**	0.45
RNGN120700-HT H	0.60	**1.80**	3.00	0.15	**0.30**	0.45
SCGW09T308-GP K	1.00	**2.00**	3.00	0.12	**0.23**	0.34
SCGW120408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
SNGA120404-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
SNGA120404-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
SNGA120408-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
SNGA120408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
SNGA120412-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
SNGA120412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
SNGN120408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
SNGN120412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
SNGN120708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
SNGN120712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
SNGN120716-GP H	0.40	**1.20**	2.00	0.14	**0.26**	0.38
SNGN120716-HI H	1.00	**2.50**	4.00	0.20	**0.32**	0.44
SNGN120720-HI H	1.00	**2.50**	4.00	0.22	**0.35**	0.48
SNGN120724-HI H	1.00	**2.50**	4.00	0.24	**0.37**	0.50
SNGX120708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
SNGX120712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
SNMA120408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
SNMA120412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
SNMA120416-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
SNMN120416-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
SNMX120712-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
SNMX120716-GP K	1.00	**2.50**	4.00	0.18	**0.33**	0.48
TNGA160404-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
TNGA160404-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
TNGA160404-GS H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
TNGA160408-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
TNGA160408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
TNGA160408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
TNGA160408-GS H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
TNGA160412-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
TNGA160412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
TNGA160412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
TNGA160412-GS H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
TNGN160408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
TNGN160708-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
TNGN160708-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
TNGN160712-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
TNGN160712-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TPGN110302-CC H	0.20	**0.60**	1.00	0.04	**0.06**	0.08
TPGN110302-GP H	0.40	**0.80**	1.20	0.05	**0.10**	0.15
TPGN110302-GS H	0.40	**0.80**	1.20	0.05	**0.10**	0.15
TPGN110304-CC H	0.20	**0.60**	1.00	0.04	**0.07**	0.10
TPGN110304-GP H	0.40	**0.80**	1.20	0.04	**0.11**	0.18
TPGN110304-GP K	1.00	**2.00**	3.00	0.10	**0.20**	0.30
TPGN110304-GS H	0.40	**0.80**	1.20	0.04	**0.11**	0.18
TPGN110308-CC H	0.20	**0.60**	1.00	0.05	**0.09**	0.13
TPGN110308-GP H	0.40	**0.80**	1.20	0.06	**0.15**	0.24
TPGN110308-GP K	1.00	**2.00**	3.00	0.12	**0.23**	0.34
TPGN110308-GS H	0.40	**0.80**	1.20	0.06	**0.15**	0.24
TPGN160304-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
TPGN160304-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
TPGN160304-GP K	1.00	**2.50**	4.00	0.12	**0.23**	0.34
TPGN160304-GS H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
TPGN160308-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
TPGN160308-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
TPGN160308-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
TPGN160308-GS H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
TPGN160312-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
TPGN160312-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
VNGA160404-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
VNGA160404-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
VNGA160404-GP K	1.00	**2.50**	4.00	0.12	**0.23**	0.34
VNGA160404-GS H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
VNGA160408-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
VNGA160408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
VNGA160408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
VNGA160408-GS H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
VNGA160412-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
VNGA160412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
VNGA160412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46
VNGA160412-GS H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
WNGA080404-CC H	0.20	**0.70**	1.20	0.04	**0.08**	0.12
WNGA080404-GP H	0.40	**1.20**	2.00	0.06	**0.14**	0.22
WNGA080408-CC H	0.20	**0.70**	1.20	0.05	**0.10**	0.15
WNGA080408-GP H	0.40	**1.20**	2.00	0.10	**0.20**	0.30
WNGA080408-GP K	1.00	**2.50**	4.00	0.14	**0.27**	0.40
WNGA080412-CC H	0.20	**0.70**	1.20	0.06	**0.13**	0.20
WNGA080412-GP H	0.40	**1.20**	2.00	0.12	**0.23**	0.34
WNGA080412-GP K	1.00	**2.50**	4.00	0.16	**0.31**	0.46



TURNING - Holders

Designation system .A256
Holders selection .A258
Clamping system details .A266
Boring bars features .A272
Holders range .A277

TURNING Designation system - EXTERNAL HOLDERS

NT	-	D	C	L	N	R	20	20	K	-	12	X
		1	2	3	4	5	6	7	8		9	10

ACCORDING TO NIKKO STANDARD (OPTIONAL);
"-CH" = COOL HOLDERS, HIGH PRESSURE COOLANT HOLDERS.

1	CLAMPING SYSTEM
C	top clamp
D	double clamp
M	multi-lock
P	lever-lock
S	screw clamp

2	INSERT SHAPE
C	80° rhombic
D	55° rhombic
R	round
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

3	CUTTING ANGLE (KAPR)			
A	90° without offset	90°	N	63°
B	75°	75°	P	117.5°
C	90°	90°	Q	45°
D	45° neutral	45°	R	75°
E	60°	60°	S	45°
F	90°	90°	T	60°
G	90° without offset	90°	U	93°
H	107.5°	107.5°	V	72.5°
J	93°	93°	W	60°
K	75°	75°	Y	85°
L	95°	95°		

4	INSERT RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

5	DIRECTION
Symbol	Shape
L	
N	
R	

6	SHANK HEIGHT (H)
∞	H

7	SHANK WIDTH (B)
∞	B

8	HOLDER LENGTH (LF)
Symbol	LF
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
X	NIKKO norm

9	INSERT SIZE

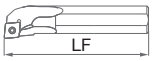
10	ACCORDING TO NIKKO NORM (OPTIONAL)

SORMA DIAMOND & CUTTING TOOLS

NT	-	V	12	M	-	S	C	L	C	R/L	06	-	14
		1	2	3		4	5	6	7	8	9		10

1	HOLDER STYLE
A	steel boring bar with coolant hole
C	carbide boring bar without coolant hole
E	carbide boring bar with coolant hole
S	steel boring bar without coolant hole
V	High quality steel boring bar with Vortex design and coolant hole

2	BORING BAR DIAMETER (DCON)
	

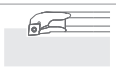
3	HOLDER LENGHT (LF)
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
S	250 mm
T	300 mm
U	350 mm
V	400 mm
W	450 mm
Y	500 mm
X	NIKKO norm

4	CLAMPING SYSTEM
C	top clamp
D	double clamp
M	multi-lock
P	lever-lock
S	screw clamp

5	INSERT SHAPE
C	80° rhombic
D	55° rhombic
R	round
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

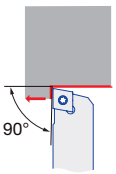
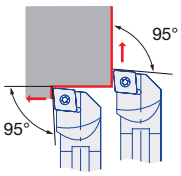
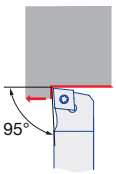
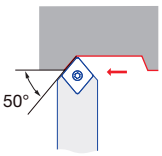
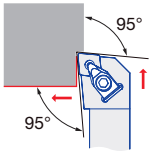
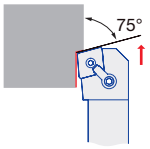
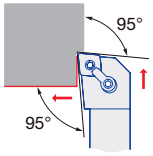
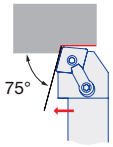
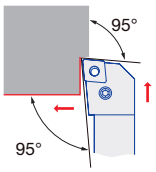
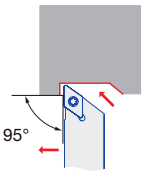
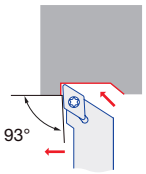
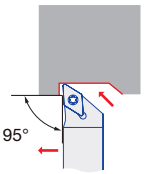
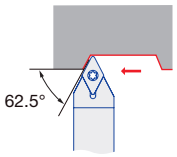
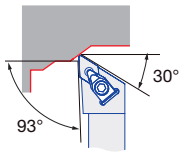
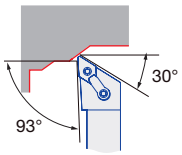
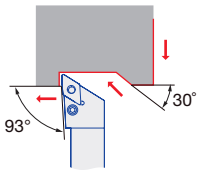
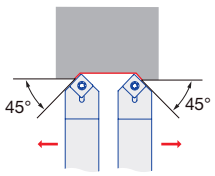
6	CUTTING ANGLE (KAPR)				
A	90° without offset		N	63°	
B	75°		P	117.5°	
C	90°		Q	45°	
D	45° neutral		R	75°	
E	60°		S	45°	
F	90°		T	60°	
G	90° without offset		U	93°	
H	107.5°		V	72.5°	
J	93°		W	60°	
K	75°		Y	85°	
L	95°				

7	INSERT RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

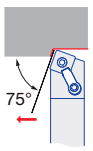
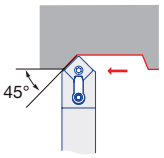
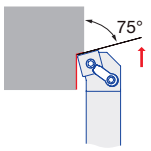
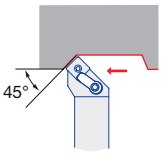
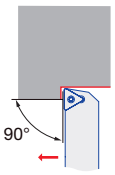
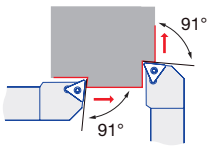
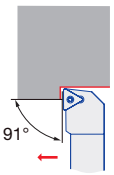
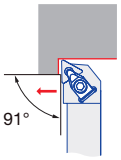
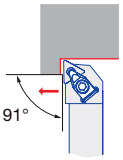
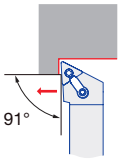
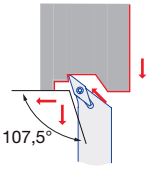
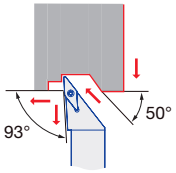
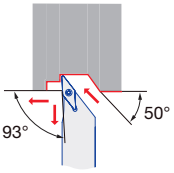
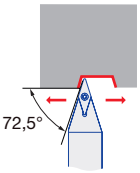
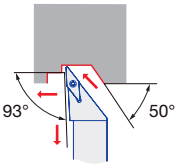
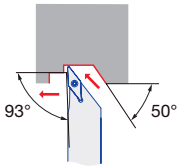
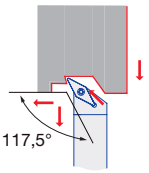
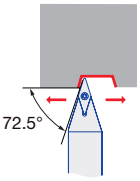
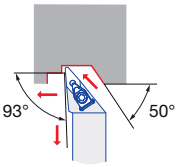
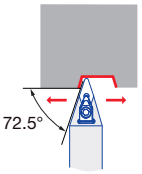
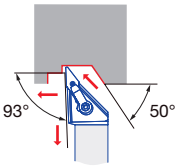
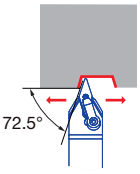
8	DIRECTION
Symbol	Shape
L	
R	

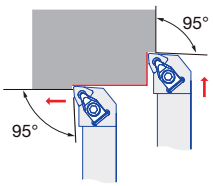
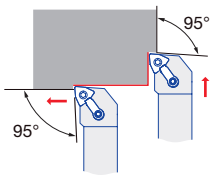
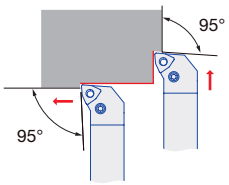
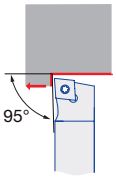
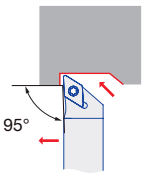
9	INSERT SIZE

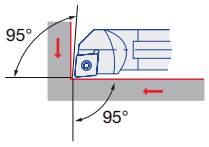
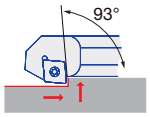
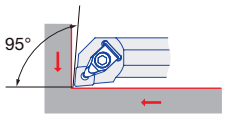
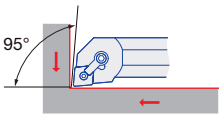
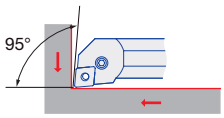
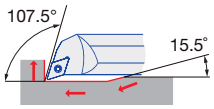
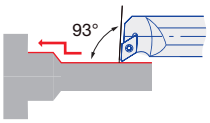
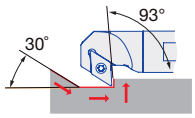
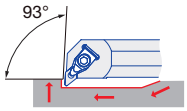
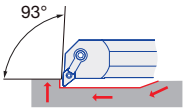
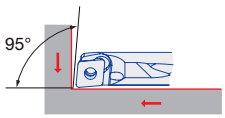
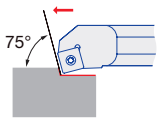
10	MINIMUM BORE DIAMETER (DMIN)

CCoo	SCAC  A277	SCLC S  A279	SCLC N  A278	SCMC  A280
CNoo	DCLN  A288	MCKN  A289	MCLN  A290	MCRN  A291
CNoo	PCLN  A292			
DCoo	SDAC  A296	SDJC  A297	SDJC N  A298	SDNC  A300
DNoo	DDJN  A310	MDJN  A311	PDJN  A312	
SCoo	SSDC  A323			

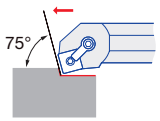
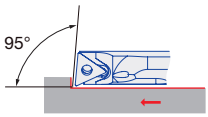
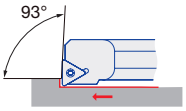
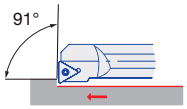
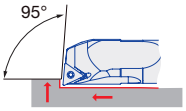
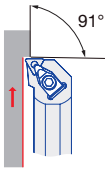
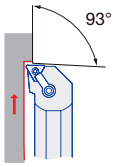
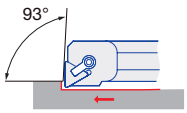
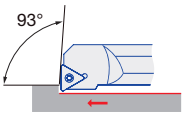
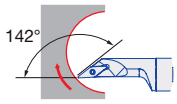
SORMA DIAMOND & CUTTING TOOLS

SNoo	MSBN  A328	MSDN  A329	MSKN  A330	MSSN  A331
TCoo	STAC  A335	STFC  A336	STGC  A337	
TNoo	DTGN  A342	DTJN  A343	MTJN  A344	
VBoo	SVHB  A349	SVJB  A350	SVJB N  A351	SVVB  A352
VCoo	SVJC  A354	SVJC N  A355	SVPC  A356	SVVC  A357
VNoo	DVJN  A362	DVVN  A363	MVJN  A364	MVVN  A365

WNoo	DWLN  A370	MWLN  A371	PWLN  A372	
MicroNega	MCN  A317	MDN  A319		

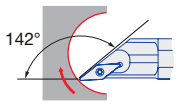
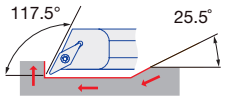
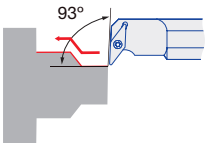
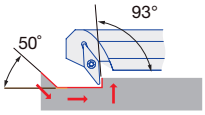
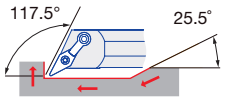
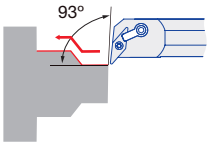
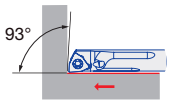
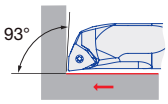
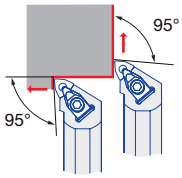
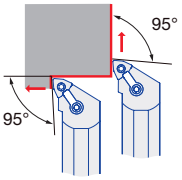
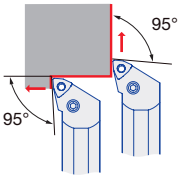
CCoo	SCLC  DMIN: 8 mm	A A281 E A283 S A284 V A286	SCZC  DMIN: 12 mm	S A285				
CNoo	DCLN  DMIN: 32 mm	A A293	MCLN  DMIN: 25 mm	S A296	PCLN  DMIN: 32 mm	A A294		
DCoo	SDQC  DMIN: 13 mm	S A304 V A307	SDUC  DMIN: 13 mm	A A302 E A303 S A305 V A308	SDZC  DMIN: 14 mm	S A306 V A309		
DNoo	DDUN  DMIN: 32 mm	A A313	MDUN  DMIN: 40 mm	S A314				
MCC	MICRO-CC  DMIN: 5 mm	E A315 V A316						
SCoo	SSKC  DMIN: 16 mm	S A324						

A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

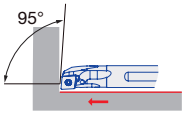
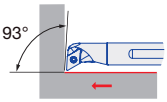
SNoo	MSKN  DMIN: 25 mm	S A332		
TBoo	STLB  DMIN: 7 mm	V A334	STUB  DMIN: 10 mm	S A333
TCoo	STFC  DMIN: 12 mm	A A338 E A339 S A340	STLC  DMIN: 14 mm	V A341
TNoo	DTFN  DMIN: 32 mm	A A345	MTUN  DMIN: 25 mm	S A346
TPoo	CTUP  DMIN: 16 mm	S A347	STUP  DMIN: 12 mm	S A348
VBoo	SVJB  DMIN: 25 mm	V A353		

A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

SORMA DIAMOND & CUTTING TOOLS

VCoo	**SVJC**  DMIN: 14 mm S A358	**SVQC**  DMIN: 22 mm S A359	**SVUC**  DMIN: 22 mm S A360
VCoo	**SVZC**  DMIN: 30 mm S A361		
VNoo	**MVQN**  DMIN: 33 mm S A366	**MVUN**  DMIN: 37 mm S A367	
WBoo	**SWUB**  DMIN: 6 mm V A368		
WCoo	**SWUC**  DMIN: 14 mm V A369		
WNoo	**DWLN**  DMIN: 32 mm A A373	**MWLN**  DMIN: 22 mm S A375	**PWLN**  DMIN: 30 mm A A374

A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

	MCN	MDN	
MicroNega	 DMIN: 10 mm V A318	 DMIN: 15 mm V A320	

A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

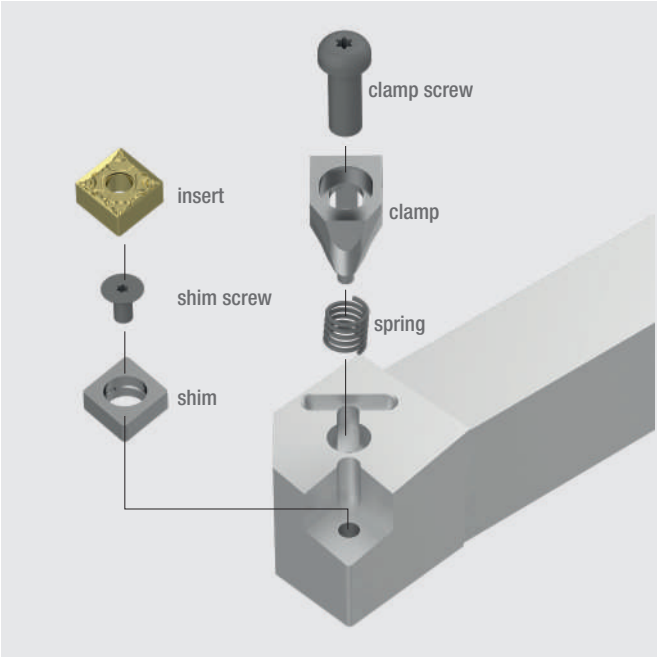
D CLAMPING

- Fast and reliable double clamping system
- The insert is pushed down against the holder's seat with a single action.
- Excellent repeatability and accuracy thanks to the strong clamping forces that assure a perfect contact between shim and insert.
- Optimized design to avoid chip interferences.

- Doppio sistema di serraggio rapido e affidabile
- L'inserto viene spinto verso il basso e contro la sede con una singola operazione.
- Eccellenti ripetibilità e precisione grazie alla forza di serraggio che assicura perfetto contatto con il sotto-plachetta
- Design ottimizzato per evitare interferenze del truciolo.

- Schnelles und zuverlässiges Doppelspannsystem
- Die Wendeschneidplatte wird in einem Arbeitsgang nach unten und gegen die Aufnahme gedrückt.
- Hervorragende Wiederholbarkeit und Genauigkeit durch hohe Spannkräfte, die den perfekten Kontakt zwischen Ausgleichsstücken und Wendeschneidplatte gewährleisten.
- Optimierte Ausführung zur Vermeidung von Spaninterferenzen.

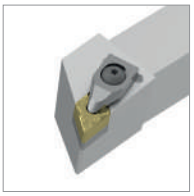
- Double système de serrage rapide et fiable
- La plaquette est poussée vers le bas et contre le logement en une seule opération.
- Excellente répétabilité et précision grâce à d'importantes forces de serrage qui assurent un contact parfait entre l'assise et la plaquette.
- Conception optimisée pour éviter les bourrages copeaux.



D CLAMPING

EXTERNAL


DCLN (CN○○)


DDJN (DN○○)


DTGN (TN○○)


DTJN (TN○○)


DVJN (VN○○)


DWLN (WN○○)

INTERNAL


A DCLN (CN○○)


A DDUN (DN○○)


A DTFN (TN○○)


A DWLN (WN○○)

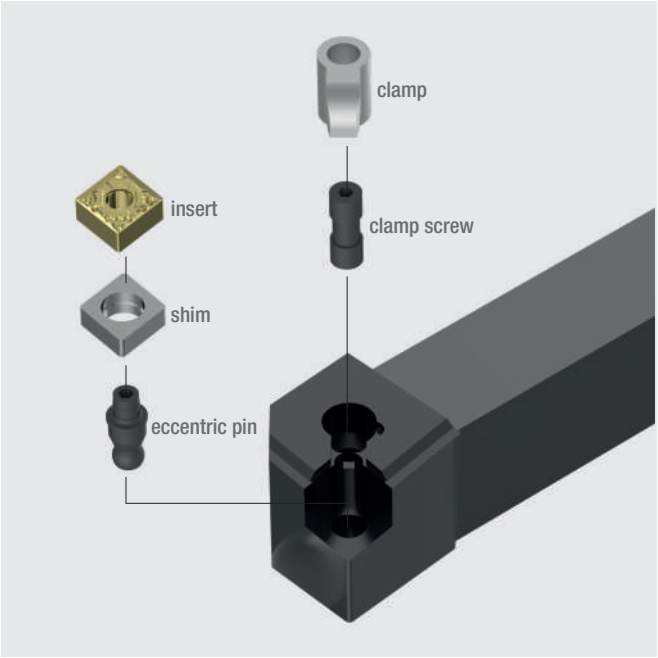
M CLAMPING

• Combination of top clamping and eccentric pin-lock.
• Rigid clamping, perfect for ceramic and solid PCBN inserts.
• Good solution for heavy machining, double clamping ensures the strenght to support strong stress.
• If necessary, only for light-cut, can be used without top clamp.

• Kombination aus oberer Spannung und exzentrischem Sicherungsstift.
• Starre Klemmung, perfekt für Keramik und Voll- PCBN-Wendeschneidplatten.
• Diese hervorragende Lösung für die schwere Bearbeitung ist dank der doppelten Spannung sehr belastbar.
• Kann bei Bedarf auch ohne obere Klemme verwendet werden, jedoch nur unter stabilen Schnittbedingungen.

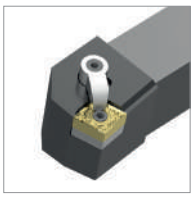
• Combinazione di serraggio superiore e perno di bloccaggio eccentrico.
• Serraggio rigido, perfetto per inserti in ceramica e inserti PCBN integrali.
• Ottima soluzione per lavorazioni pesanti, il doppio serraggio assicura resistenza alle forti sollecitazioni.
• Può essere usato senza staffa, se necessario, solo in condizioni di taglio stabili.

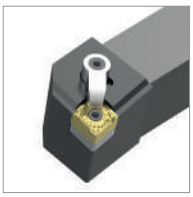
• Combinaison d'un serrage par bride sur le dessus et d'un pion de serrage exentrique
• Serrage rigide, idéal pour plaquettes en Céramique et PCBN
• Excellente solution pour l'usinage dure, le double serrage assure une résistance aux fortes sollicitations.
• Peut être utilisé sans brides sur le dessus si nécessaire uniquement dans des conditions de coupe stables.

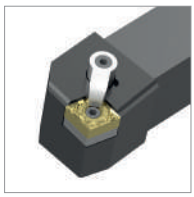


M CLAMPING

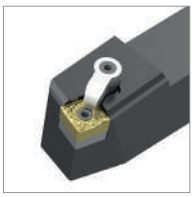
EXTERNAL

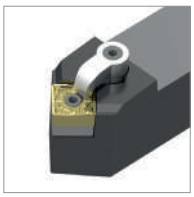

MCKN (CNoo)


MCLN (CNoo)


MCRN (CNoo)


MDJN (DNoo)


MSBN (SNoo)


MSDNN (SNoo)

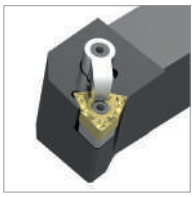

MSKN (SNoo)


MSSN (SNoo)


MTJN (TNoo)


MVJN (VNoo)


MVVVNN (VNoo)


MWLN (WNoo)

INTERNAL


S MCLN (CNoo)


S MDUN (DNoo)


S MSKN (SNoo)


S MTUN (TNoo)


S MVQN (VNoo)


S MVUN (VNoo)


S MWLN (WNoo)

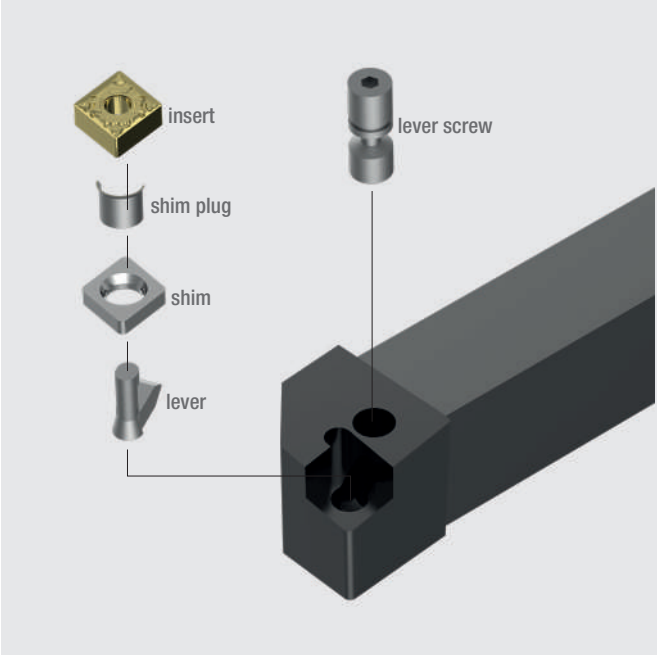
P CLAMPING

- Economical and easy-to-use solution.
- Recommended for light and medium cut applications.
- No clamp on the top guarantees a smooth chip flow.
- Quick insert replacement.

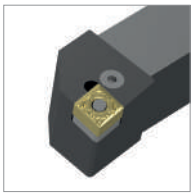
- Kostengünstige und einfach anzuwendende Lösung.
- Empfohlen für Anwendungen mit stabilen bis mittleren Schnittbedingungen.
- Die fehlende Klammer an der Oberseite sorgt für eine einwandfreie Abfuhr der Späne.
- Schneller Austausch der Wendeschneidplatte.

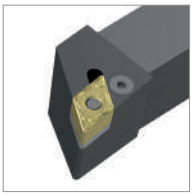
- Soluzione economica e di facile impiego.
- Raccomandato per applicazioni con condizioni di taglio da stabile a medie.
- L'assenza della staffa evita potenziali interferenze nell'evacuazione dei trucioli.
- Rapida sostituizone dell'inserto.

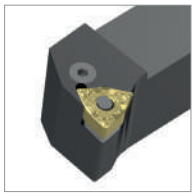
- Solution économique et simple d'utilisation
- Recommandé pour des applications dans des conditions de coupe stables à moyennes.
- L'absence de serrage sur la partie supérieure garantit une bonne évacuation des copeaux.
- Changement rapide de la plaquette



EXTERNAL


PCLN (CNoo)


PDJN (DNoo)


PWLN (WNoo)

INTERNAL


A PCLN (CNoo)


A PWLN (WNoo)

SORMA DIAMOND & CUTTING TOOLS

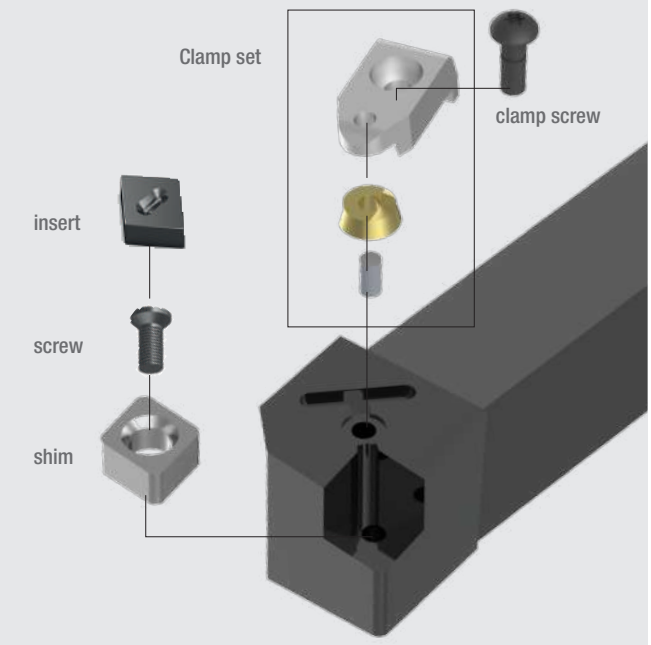
ADVANCED TURNING HOLDERS

• Reliable clamping system for full solid CBN or ceramic insert, flat top, and with dimple
• Clamp made of steel and with a carbide part for fixing the CBN/ ceramic inserts.
• Highly wear-resistant carbide interface; it can maintain the same clamping precision and reliability throughout roughing processes and through repeated changing of CBN/ceramic inserts
• The steel body of the clamp can effectively absorb vibrations from machining processes and protect the CBN/ceramic inserts

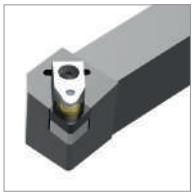
• Zuverlässiges Spannsystem für VOLL CBN-, Keramik-, Flat Top- und Wendeplatten mit Indexierungen
• Die Klemmel besteht aus Stahl, mit einer VHM Spitze zur fixierung der CBN/Keramikplatte
• Dieses Teil besteht aus verscheissfestem VHM, und kann die gleiche Genauigkeit, auch bei Schruppprozessen und ständigem Wechsel der Wendeplatte aus CBN/Keramik, garantieren
• Der Stahlhalter kann auf optimaler Weise schwingungen dämpfen, und somit die CBN/Keramikplatte schützen

• Sistema di bloccaggio affidabile per inserti in CBN o ceramica, pieni, con superficie superiore piana e con fossetta.
• Fissaggio in acciaio e con una porzione in metallo duro per il fissaggio degli inserti in CBN/ceramica.
• Interfaccia in metallo duro altamente resistente all'usura; assicura la stessa precisione e affidabilità di bloccaggio nelle lavorazioni di sgrossatura e anche dopo ripetute sostituzioni degli inserti in CBN/ceramica.
• Il corpo in acciaio assorbe efficacemente le vibrazioni derivanti dalle lavorazioni meccaniche e protegge gli inserti in CBN/ceramica.

• Système de serrage fiable pour plaquettes en CBN massif ou en céramique, à sommet plat et à alvéoles.
• Pince en acier avec une partie en carbure pour la fixation des plaquettes CBN/céramique
• nterface en carbure hautement résistante à l'usure ; elle peut maintenir la même précision de serrage et la même fiabilité tout au long des processus d'ébauche et lors des changements répétés des palquettes CBN/céramique
• Le corps en acier de la pince peut absorber efficacement les vibrations des processus d'usinage et protéger les plaquettes CBN/céramique

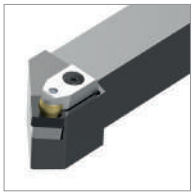


EXTERNAL


CCLN (CNoo)


CSKN (SNoo)


CSRN (SNoo)


CSSN (SNoo)


CRDN (RNoo)


CRSN (RNoo)

VORTEXBAR

Technology for internal machining

• Special design for excellent chip evacuation, preventing clogging even with long chips.
• High quality tool steel reduces vibrations even with significant overhang (max 5xD)
• Broad range of dimensions and geometries, for turning, back turning, profiling and threading.
• Internal coolant channels available on the whole line-up.

• Design esclusivo che permette un ottima evacuazione anche nelle barenature di materiali a truciolo lungo.
• Acciaio per utensili di alta qualità che riduce le vibrazioni anche con elevate sporgenze (max 5xD).
• Ampia gamma di dimensioni e geometrie per tornitura, tornitura in tiro, profilatura e filettatura.
• Intera gamma disponibile con refrigerazione interna.

• Ausführung mit spezieller Schneidkante für hervorragende Spanabfuhr, verhindert das Festklemmen auch bei langen Spänen.
• Hochwertiger Werkzeugstahl, der selbst bei großen Überkragungen (max. 5xD) Vibrationen reduziert.
• Breites Angebot an Abmessungen und Geometrien zum Drehen, Ziehen, Profilieren und Gewindedrehen.
• Alle Produkte sind mit internen Kühlkanälen erhältlich.

• Conception spéciale pour une excellente évacuation des copeaux, évite le bourrage y compris avec de longs copeaux.
• Acier à outil de haute qualité qui réduit les vibrations y compris avec de longs porte à faux (max 5xD).
• Large gamme de dimensions et géométries pour le tournage, le tournage en tirant, l'usinage de gorges et le filetage.
• Gamme complète disponible avec arrosage interne.



VORTEXBAR

Technology for internal machining



V SCLC (CCoo)



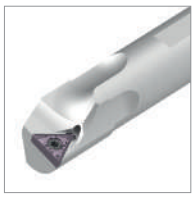
V SDQC (DCoo)



V SDUC (DCoo)



V SDZC (DCoo)



V STLC (TCoo)



V SVJB (VBoo)



V SWUC (WCoo)



V SIR
Threading



NDB I
Grooving

SORMA DIAMOND & CUTTING TOOLS

CARBIDE BAR

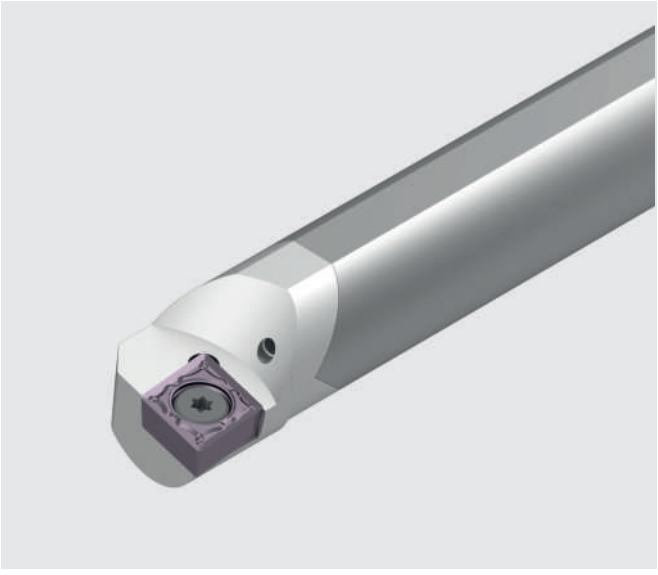
Technology for internal machining

- High quality carbide boring bar for precision machining, prevents vibrations even with long overhang (max 7xD).
- Excellent strength thanks to a very stable “V” shape brazing.
- Suggested for precision machining when the highest standards of quality are required (surface finishing, hole accuracy, tool life).
- Internal coolant channels available on the whole line-up.

- Barra per barenatura in metallo duro di alta qualità per lavorazioni di precisione, previene le vibrazioni anche con elevate sporgenze (max 7xD)
- Eccellente robustezza grazie alla brasatura con forma a “V” altamente stabile
- Consigliato per lavorazioni di precisione che richiedono i più elevati standard di qualità (rugosità, tolleranze e vita utensile migliorate)
- Intera gamma disponibile con canali di refrigerazione interna.

- Qualitativ hochwertige Hartmetall-Bohrstange für Präzisionsbearbeitung, die selbst bei großem Überkragungen (max. 7xD) Vibrationen verhindert
- Hervorragende Robustheit durch hochstabile V-förmige Lötung
- Empfohlen für Präzisionsbearbeitungen, die höchste Qualitätsstandards erfordern (verbesserte Rauheit, Toleranzen und Standzeiten der Werkzeuge)
- Alle Produkte sind mit internen Kühlkanälen erhältlich.

- Barre d’alésage en carbure de haute qualité pour usinages de précision, évite les vibrations y compris avec des porte à faux élevés (max 7xD)
- Excellente robustesse grâce au brasage en forme de V très stable
- Recommandé pour usinages de précision qui nécessitent les standards qualité les plus exigeants (rugosité, tolérances et durée de vie des outils améliorées)
- Gamme complète disponible avec arrosage interne.

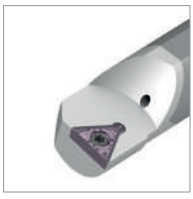




E SCLC (CC∞)



E SDUC (DC∞)



E STFC (TC∞)

SORMA DIAMOND & CUTTING TOOLS

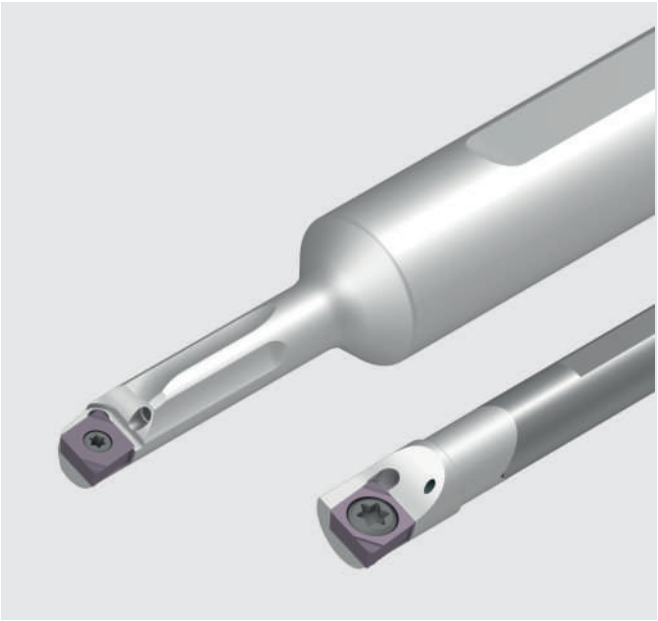
MICROBORING

• Complete line-up of small tools for internal machining, starting from 5 mm hole diameter, with high precision ground inserts (carbide and advanced materials).
• MicroVortex types combine high quality tool steel and advanced head design, reducing vibrations and reaching perfect chip evacuation.
• Micro CC holder is available also in high quality carbide for most demanding applications (longer overhang and hardened material machining in combination with PCBN inserts)..
• Internal coolant channels available on the whole line-up.

• Komplette Linie von kleinen Werkzeugen für die interne Bearbeitung, ab 5 mm Durchmesser, mit hochpräzisen Wendeschneidplatten (Hartmetall und innovative Materialien), die mechanisch eingespannt werden.
• Der MicroVortex kombiniert hochwertige Werkzeuge und ein innovatives Kopfdesign, was Vibrationen reduziert und eine perfekte Spanabfuhr ermöglicht.
• Der Micro CC-Werkzeughalter ist auch aus hochwertigem Hartmetall für schwierigere Anwendungen (große Überstände, Bearbeitung von harten Materialien) erhältlich.
• Alle Produkte sind mit internen Kühlkanälen erhältlich.

• Linea completa di piccoli utensili per lavorazioni interne, a partire da diametro di 5 mm, con inserti rettificati precisi (metallo duro e materiali avanzati).
• La tipologia MicroVortex combina utensili di elevata qualità e disegno avanzato della testa, che riducono le vibrazioni e consentono una perfetta evacuazione del truciolo.
• Il portautensile Micro CC è disponibile anche in metallo duro di alta qualità per le applicazioni più gravose (elevate sporgenze, barenatura di materiali temprati in combinazione con inserti PCBN).
• Intera gamma disponibile con canali di refrigerazione interna.

• Gamme complète de petits outils pour l'alésage, à partir du diamètre 5 mm, avec plaquettes rectifiées haute précision (carbure et matériaux avancés).
• Le type MicroVortex combine des outils haute qualité et une conception avancée, qui réduisent les vibrations et permettent une parfaite évacuation des copeaux.
• Le porte-outil Micro CC est également disponible en carbure de haute qualité pour les applications les plus difficiles (longs porte à faux, usinage de matériaux durs).
• Gamme complète disponible avec arrosage interne.



VORTEX



V MCC



V STLB (TBoo)



V SWUB (WBoo)

CARBIDE



E MCC



V SIR
Threading

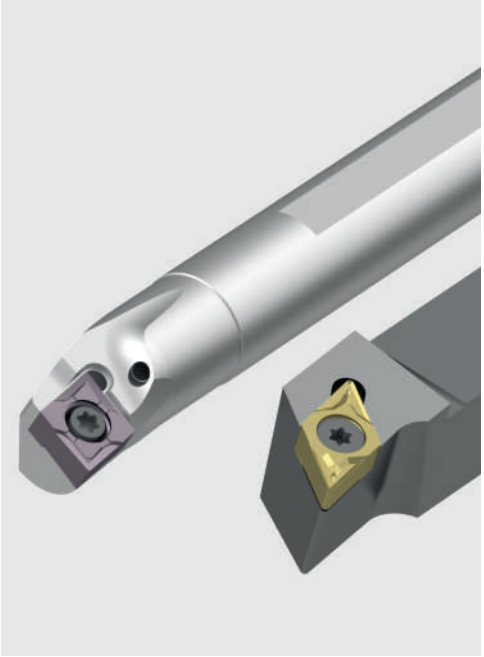
MICRONEGA

• Small negative as technical and economical alternative to positive inserts for external and internal turning operations.
• From semi-finishing to medium machining, available both with economical sintered chipbreaker (GM) and precision ground type (SS) for higher accuracy and lower cutting force.
• External small dimension tool holders, for small parts machining, without head offset.
• Internal boring bar with VORTEX technology that improves chip ejection thanks to the innovative head design.

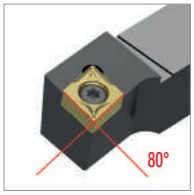
• Kleine negative Wendeschneidplatten als Alternative zu positiven Wendeschneidplatten für externe und interne Drehbearbeitungen.
• Vom Schruppschlichten unter mittleren Schnittbedingungen, erhältlich in Ausführungen mit dem günstigeren gesinterten Spanbrecher (Typ GM) bis zum geschliffenen (Typ SS) für maximale Genauigkeit und geringe Schnittkräfte.
• Werkzeughalter mit kleinen Außenabmessungen, für die Bearbeitung kleiner Details, ohne Kopfversatz.
• Interne Bohrstangen mit VORTEX-Technologie, was die Spanabfuhr durch ein innovatives Kopfdesign verbessert.

• Sistema di “mini” inserti negativi quale alternativa tecnica ed economica rispetto ai convenzionali inserti positivi per tornitura esterna ed interna.
• Dalla semifinitura alla media asportazione, disponibile con rompitruciolo sinterizzato, più economico, (tipo GM) e nella versione rettificata (tipo SS) per lavorazioni precise e basse forze di taglio.
• Portautensili per esterni di piccole dimensioni, per la lavorazione di piccoli particolari, senza offset della testa.
• Barre di barenatura con tecnologia VORTEX che migliora l’evacuazione del truciolo grazie all’innovativo design della testa.

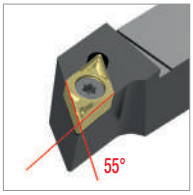
• Petites plaquettes négatives comme alternative aux positives pour des opérations de tournage exter et inter.
• De la semi-finition à la moyenne ébauche, disponibles dans les versions avec un brise-copeaux brut de frittage plus économique (type GM) aux versions rectifiées (type SS) pour une précision maximale et de faibles forces de coupe.
• Porte-outils à encombrement réduit, pour l’usinage de petites pièces, sans déport de tête.
• Barres d’alésage dotée de la technologie VORTEX qui améliore l’évacuation des copeaux grâce au design innovant de la tête.



EXTERNAL



MCN

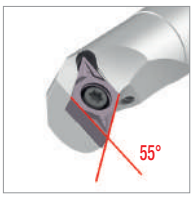


MDN

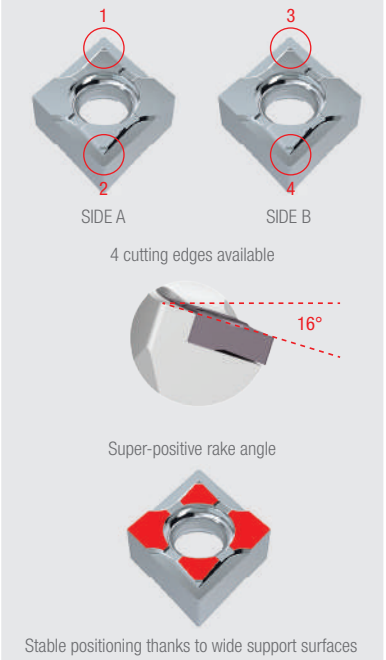
INTERNAL



MCN



MDN

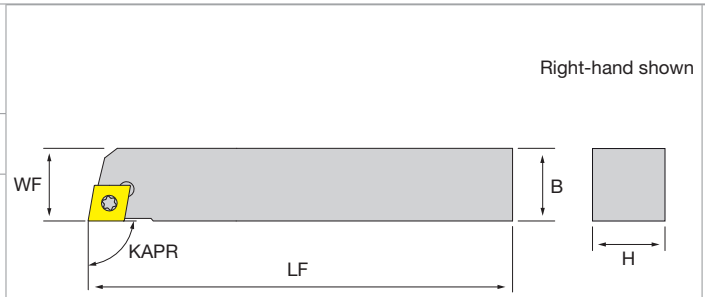


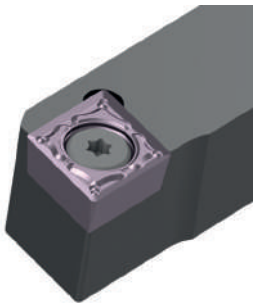
SORMA DIAMOND & CUTTING TOOLS

SCAC

ISO CC - Positive

- External turning (KAPR 90°)
- Holds CC-style inserts, tightened by screw
- Suitable for lathes without offset









Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SCACL0808K06	8	8	8	125	90°	CC∞0602					◉
NT-SCACL1010K06	10	10	10	125	90°	CC∞0602					◉
NT-SCACL1212K06	12	12	12	125	90°	CC∞0602					◉
NT-SCACL1212K09	12	12	12	125	90°	CC∞09T3					◉
NT-SCACL1616K09	16	16	16	125	90°	CC∞09T3					◉
RIGHT-HAND											
NT-SCACR0808K06	8	8	8	125	90°	CC∞0602					◉
NT-SCACR1010K06	10	10	10	125	90°	CC∞0602					●
NT-SCACR1212K06	12	12	12	125	90°	CC∞0602					●
NT-SCACR1212K09	12	12	12	125	90°	CC∞09T3					●
NT-SCACR1616K09	16	16	16	125	90°	CC∞09T3					●
NT-SCACR2020K12	20	20	20	125	90°	CC∞1204					◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

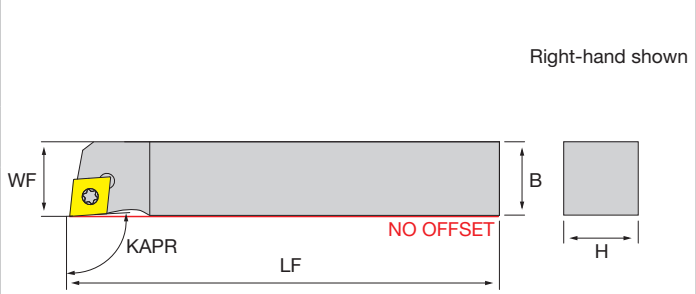
Spare parts	Insert screw	Flag wrench
NT-SCAC^{L}/$_{R}$oooo06	NT-ST25060T07B	NT-FT07
NT-SCAC^{L}/$_{R}$oooo09	NT-ST25060T07B	NT-FT07
NT-SCAC^{L}/$_{R}$oooo12	NT-ST40140T15	NT-FT15

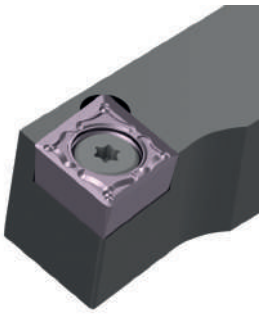
SORMA DIAMOND & CUTTING TOOLS

SCLC N

ISO CC - Positive

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SCLCL0808H06N	8	8	8	100	95°	CC∞0602					◉
NT-SCLCL1010K06N	10	10	10	125	95°	CC∞0602					◉
NT-SCLCL1212K09N	12	12	12	125	95°	CC∞09T3					●
NT-SCLCL1616K09N	16	16	16	125	95°	CC∞09T3					●
RIGHT-HAND											
NT-SCLCR0808H06N	8	8	8	100	95°	CC∞0602					◉
NT-SCLCR1010K06N	10	10	10	125	95°	CC∞0602					●
NT-SCLCR1212K09N	12	12	12	125	95°	CC∞09T3					●
NT-SCLCR1616K09N	16	16	16	125	95°	CC∞09T3					●

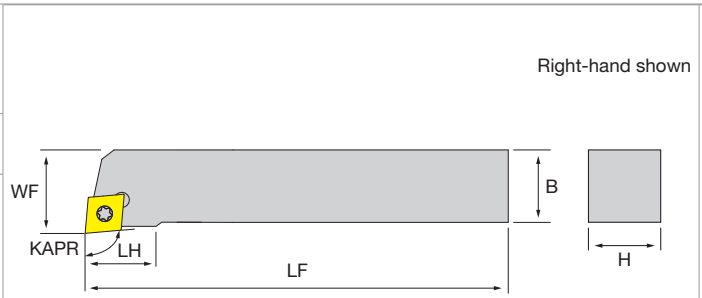
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

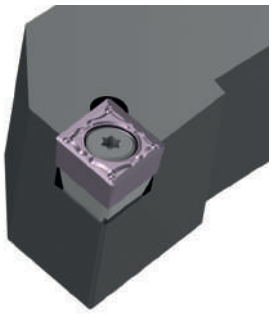
Spare parts	Insert screw	Flag wrench
		
NT-SCLC^{L}/$_{R}$oooo06N	NT-ST25060T07B	NT-FT07
NT-SCLC^{L}/$_{R}$oooo09N	NT-ST35089T15	NT-FT15

SCLC S

ISO CC - Positive

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- With shim







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SCLCL2020K09S	20	20	25	125	22	95°	CC∞09T3				●
NT-SCLCL2525M09S	25	25	32	150	25	95°	CC∞09T3				●
NT-SCLCL2020K12S	20	20	25	125	22	95°	CC∞1204				●
NT-SCLCL2525M12S	25	25	32	150	25	95°	CC∞1204				●
RIGHT-HAND											
NT-SCLCR2020K09S	20	20	25	125	22	95°	CC∞09T3				●
NT-SCLCR2525M09S	25	25	32	150	25	95°	CC∞09T3				●
NT-SCLCR2020K12S	20	20	25	125	22	95°	CC∞1204				●
NT-SCLCR2525M12S	25	25	32	150	25	95°	CC∞1204				●

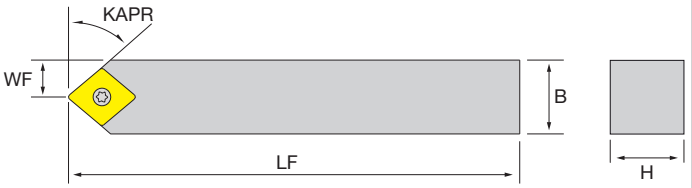
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

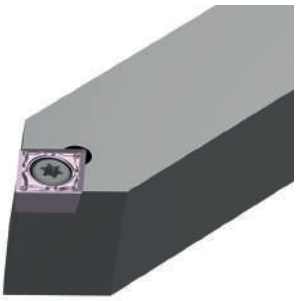
Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
					
NT-SCLC^{L}/$_{R}$OOOOO09S	NT-SH011	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15
NT-SCLC^{L}/$_{R}$OOOOO12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15

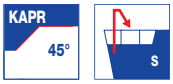
SCMC

ISO CC - Positive

- External turning (KAPR 50°), Neutral position
- Holds CC-style inserts, tightened by screw







Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SCMCN2020K09	20	20	10	125	50°	CC∞09T3					◉
NT-SCMCN2525M09	25	25	12.5	150	50°	CC∞09T3					◉

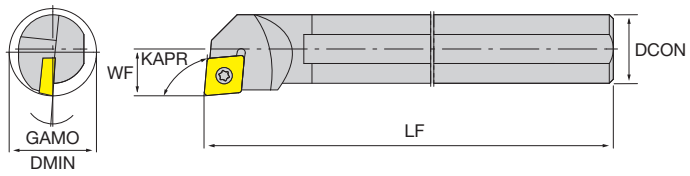
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

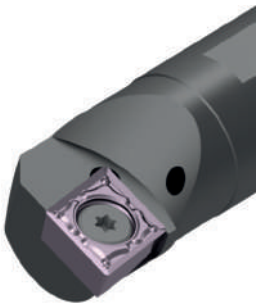
Spare parts	Insert screw	Flag wrench
		
NT-SCMCN∞∞∞∞09	NT-ST35089T15	NT-FT15

A SCLC

ISO CC - Positive

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CC-style inserts, tightened by screws





KAPR 95° | S | STEEL MAX 3XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A08H-SCLCL06	10	8	5	100	95°	13°	CC∞0602				●
NT-A10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-A12M-SCLCL06	14	12	7	150	95°	9°	CC∞0602				●
NT-A16Q-SCLCL06	18	16	9	180	95°	7°	CC∞0602				●
NT-A12M-SCLCL09	14	12	7	150	95°	13°	CC∞09T3				●
NT-A16Q-SCLCL09	18	16	9	180	95°	9°	CC∞09T3				●
NT-A20R-SCLCL09	22	20	11	200	95°	5°	CC∞09T3				●
RIGHT-HAND											
NT-A10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-A12M-SCLCR06	14	12	7	150	95°	9°	CC∞0602				●
NT-A16Q-SCLCR06	18	16	9	180	95°	7°	CC∞0602				●
NT-A08H-SCLCR06	10	8	5	100	95°	13°	CC∞0602				●
NT-A12M-SCLCR09	14	12	7	150	95°	13°	CC∞09T3				●
NT-A16Q-SCLCR09	18	16	9	180	95°	9°	CC∞09T3				●
NT-A20R-SCLCR09	22	20	11	200	95°	5°	CC∞09T3				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-A08H-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-A10K-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-A12M-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-A16Q-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-A12M-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15
NT-A16Q-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15
NT-A20R-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

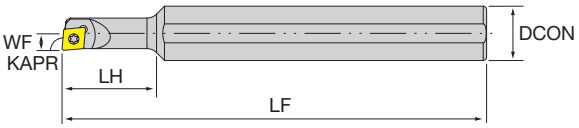
Holder L → Insert R

A16K SCLC

ISO CC - Positive

- Internal turning (KAPR 95°)
- Small diameter steel boring bar with internal coolant and reduced neck
- Holds CC-style inserts, tightened by screws









Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-A16K-07-SCLCL06-L20	8	16	4	125	20	95°	15°	CC∞0602			●
NT-A16K-08-SCLCL06-L20	9	16	4.5	125	20	95°	12°	CC∞0602			●
NT-A16K-09-SCLCL06-L25	10	16	5	125	25	95°	11°	CC∞0602			◉
RIGHT-HAND WITH REDUCED NECK											
NT-A16K-07-SCLCR06-L20	8	16	4	125	20	95°	15°	CC∞0602			●
NT-A16K-08-SCLCR06-L20	9	16	4.5	125	20	95°	12°	CC∞0602			◉
NT-A16K-09-SCLCR06-L25	10	16	5	125	25	95°	11°	CC∞0602			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-A16K-∞-SCLC$^{L}/_{R}$06-L∞	NT-ST25060T07B	NT-FT07

HOLDER AND INSERT COUPLING

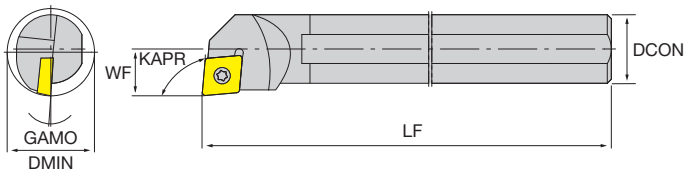
Holder R → Insert L

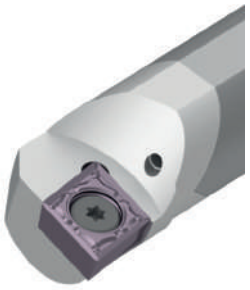
Holder L → Insert R

E SCLC

ISO CC - Positive

- Internal turning (KAPR 95°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds CC-style inserts, tightened by screws





KAPR 95° | S | CARBIDE MAX 7XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E08K-SCLCL06	10	8	5	125	95°	14°	CC∞0602				●
NT-E10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-E12M-SCLCL06	14	12	7	150	95°	10°	CC∞0602				●
NT-E12M-SCLCL09	16	12	8	150	95°	10°	CC∞09T3				●
NT-E16R-SCLCL09	18	16	9	200	95°	10°	CC∞09T3				●
NT-E20R-SCLCL09	22	20	11	200	95°	8°	CC∞09T3				◉
RIGHT-HAND											
NT-E08K-SCLCR06	10	8	5	125	95°	14°	CC∞0602				●
NT-E10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-E12M-SCLCR06	14	12	7	150	95°	10°	CC∞0602				●
NT-E12M-SCLCR09	16	12	8	150	95°	10°	CC∞09T3				●
NT-E16R-SCLCR09	18	16	9	200	95°	10°	CC∞09T3				●
NT-E20R-SCLCR09	22	20	11	200	95°	8°	CC∞09T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-E08K-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-E10K-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-E12M-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-E12M-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15
NT-E16R-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15
NT-E20R-SCLCL09	NT-ST35073T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

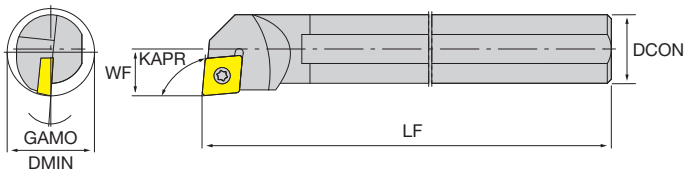
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

S SCLC

ISO CC - Positive

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds CC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-SCLCL06	10	8	5	100	95°	13°	CC∞0602				●
NT-S10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-S12M-SCLCL06	14	12	7	150	95°	9°	CC∞0602				●
NT-S16Q-SCLCL06	18	16	9	180	95°	7°	CC∞0602				◉
NT-S12M-SCLCL09	14	12	7	150	95°	13°	CC∞09T3				●
NT-S16Q-SCLCL09	18	16	9	180	95°	9°	CC∞09T3				●
NT-S20R-SCLCL09	22	20	11	200	95°	5°	CC∞09T3				●
NT-S20R-SCLCL12	25	20	13	200	95°	8°	CC∞1204				●
NT-S25R-SCLCL12	32	25	17	200	95°	8°	CC∞1204				●
NT-S32S-SCLCL12S	40	32	22	250	95°	6°	CC∞1204				●
NT-S40T-SCLCL12S	50	40	27	300	95°	4°	CC∞1204				●
RIGHT-HAND											
NT-S08H-SCLCR06	10	8	5	100	95°	13°	CC∞0602				●
NT-S10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-S12M-SCLCR06	14	12	7	150	95°	9°	CC∞0602				●
NT-S16Q-SCLCR06	18	16	9	180	95°	7°	CC∞0602				●
NT-S12M-SCLCR09	14	12	7	150	95°	13°	CC∞09T3				●
NT-S16Q-SCLCR09	18	16	9	180	95°	9°	CC∞09T3				●
NT-S20R-SCLCR09	22	20	11	200	95°	5°	CC∞09T3				●
NT-S20R-SCLCR12	25	20	13	200	95°	8°	CC∞1204				●
NT-S25R-SCLCR12	32	25	17	200	95°	8°	CC∞1204				●
NT-S32S-SCLCR12S	40	32	22	250	95°	6°	CC∞1204				●
NT-S40T-SCLCR12S	50	40	27	300	95°	4°	CC∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-S08H-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S10K-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S12M-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S16Q-SCLC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S12M-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15	-	-	-
NT-S16Q-SCLC$^{L}/_{R}$09	NT-ST35073T15	NT-FT15	-	-	-
NT-S20R-SCLC$^{L}/_{R}$09	NT-ST35089T15	NT-FT15	-	-	-
NT-S20R-SCLC$^{L}/_{R}$12	NT-ST40115T15	NT-FT15	-	-	-
NT-S25R-SCLC$^{L}/_{R}$12	NT-ST40115T15	NT-FT15	-	-	-
NT-S32R-SCLC$^{L}/_{R}$12S	NT-ST40140T15	NT-FT15	NT-SH001	NT-SR001	NT-WR040
NT-S40T-SCLC$^{L}/_{R}$12S	NT-ST40140T15	NT-FT15	NT-SH001	NT-SR001	NT-WR040

HOLDER AND INSERT COUPLING

Holder R → Insert L

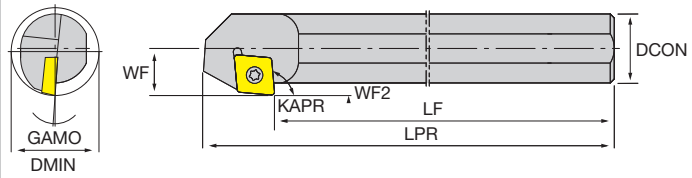
Holder L → Insert R

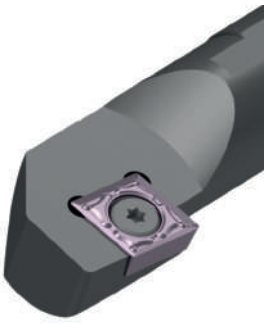
SORMA DIAMOND & CUTTING TOOLS

S SCZC

ISO CC - Positive

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds CC-style inserts, tightened by screws





KAPR 93° | S | STEEL MAX 3XD

Designation	DMIN	DCON	WF	WF2	LF	LH	KAPR	GAMO	MIID		Stock
LEFT-HAND											
NT-S08H-SCZCL06	12	8	6.5	2.5	100	-	93°	13°	CC∞0602		◉
NT-S10K-SCZCL06	14	10	7.5	2.5	125	-	93°	12°	CC∞0602		◉
NT-S12M-SCZCL06	16	12	8.5	2.5	150	-	93°	10°	CC∞0602		◉
NT-S16Q-SCZCL09	21	16	11.5	3.5	180	-	93°	10°	CC∞09T3		◉
NT-S20R-SCZCL09	25	20	13.5	3.5	200	-	93°	8°	CC∞09T3		◉
NT-S25R-SCZCL09	32	25	16	3.5	200	-	93°	8°	CC∞09T3		◉
RIGHT-HAND											
NT-S08H-SCZCR06	12	8	6.5	2.5	100	-	93°	13°	CC∞0602		◉
NT-S10K-SCZCR06	14	10	7.5	2.5	125	-	93°	12°	CC∞0602		◉
NT-S12M-SCZCR06	16	12	8.5	2.5	150	-	93°	10°	CC∞0602		◉
NT-S16Q-SCZCR09	21	16	11.5	3.5	180	-	93°	10°	CC∞09T3		◉
NT-S20R-SCZCR09	25	20	13.5	3.5	200	-	93°	8°	CC∞09T3		◉
NT-S25R-SCZCR09	32	25	16	3.5	200	-	93°	8°	CC∞09T3		◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S08H-SCZC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-S10K-SCZC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-S12M-SCZC$^{L}/_{R}$06	NT-ST25060T07B	NT-FT07
NT-S16Q-SCZC$^{L}/_{R}$09	NT-ST35089T15	NT-FT15
NT-S20R-SCZC$^{L}/_{R}$09	NT-ST35089T15	NT-FT15
NT-S25R-SCZC$^{L}/_{R}$09	NT-ST35089T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert R

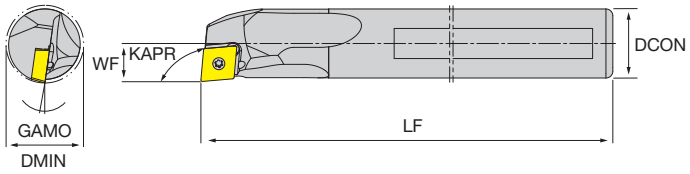
Holder L → Insert L

SORMA DIAMOND & CUTTING TOOLS

V SCLC

ISO CC - Positive

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds CC-style inserts, tightened by screws
- Special chip evacuation path





KAPR 95° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V08H-SCLCL06-10	10	8	5	100	95°	14°	CC∞0602				●
NT-V10K-SCLCL06-12	12	10	6	125	95°	12°	CC∞0602				●
NT-V12M-SCLCL06-14	14	12	7	150	95°	10°	CC∞0602				●
NT-V12M-SCLCL09-14	14	12	7	150	95°	12°	CC∞09T3				●
NT-V16Q-SCLCL09-18	18	16	9	180	95°	10°	CC∞09T3				●
NT-V20R-SCLCL09-22	22	20	11	200	95°	8°	CC∞09T3				●
NT-V25S-SCLCL09-27	27	25	13.5	250	95°	6°	CC∞09T3				●
NT-V20R-SCLCL12-25	25	20	13	200	95°	7°	CC∞1204				◉
NT-V25S-SCLCL12-32	32	25	17	250	95°	5°	CC∞1204				●
RIGHT-HAND											
NT-V08H-SCLCR06-10	10	8	5	100	95°	14°	CC∞0602				●
NT-V10K-SCLCR06-12	12	10	6	125	95°	12°	CC∞0602				●
NT-V12M-SCLCR06-14	14	12	7	150	95°	10°	CC∞0602				●
NT-V12M-SCLCR09-14	14	12	7	150	95°	12°	CC∞09T3				●
NT-V16Q-SCLCR09-18	18	16	9	180	95°	10°	CC∞09T3				●
NT-V20R-SCLCR09-22	22	20	11	200	95°	8°	CC∞09T3				●
NT-V25S-SCLCR09-27	27	25	13.5	250	95°	6°	CC∞09T3				●
NT-V20R-SCLCR12-25	25	20	13	200	95°	7°	CC∞1204				●
NT-V25S-SCLCR12-32	32	25	17	250	95°	5°	CC∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-V08H-SCLC$^{L}/_{R}$06-10	NT-ST25060T07B	NT-FT07
NT-V10K-SCLC$^{L}/_{R}$06-12	NT-ST25060T07B	NT-FT07
NT-V12M-SCLC$^{L}/_{R}$06-14	NT-ST25060T07B	NT-FT07
NT-V12M-SCLC$^{L}/_{R}$09-14	NT-ST35073T15	NT-FT15
NT-V16Q-SCLC$^{L}/_{R}$09-18	NT-ST35073T15	NT-FT15
NT-V20R-SCLC$^{L}/_{R}$09-22	NT-ST35089T15	NT-FT15
NT-V25S-SCLC$^{L}/_{R}$09-27	NT-ST35089T15	NT-FT15
NT-V20R-SCLC$^{L}/_{R}$12-25	NT-ST40115T15	NT-FT15
NT-V25S-SCLC$^{L}/_{R}$12-32	NT-ST40115T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

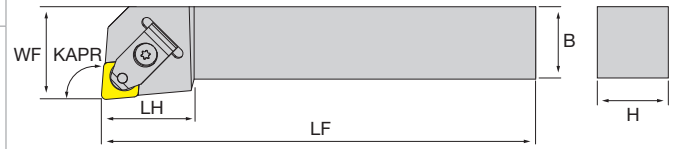
Holder L → Insert R

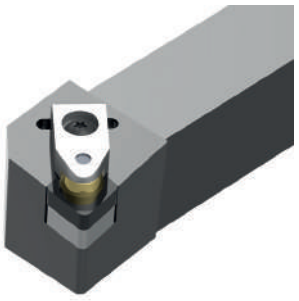
SORMA DIAMOND & CUTTING TOOLS

CCLN

ISO CN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert







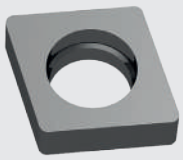


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CCLNR2525M12	25	25	32	150	32	95°	CN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

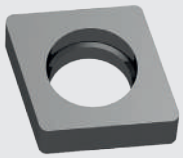
Spare parts	L wrench	Clamping set	Shim screw	Shim
				
NT-CCLNR2525M12	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH031

CNoN1207oo



NT-SH035
For 07 thickness, please order separately the correct shim

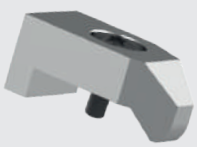
CNoX1207oo



NT-SH035
For 07 thickness, please order separately the correct shim

+

CNoX1207oo



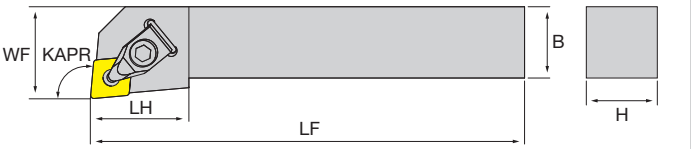
NT-CS153
For dimple top inserts, please order separately the correct clamp

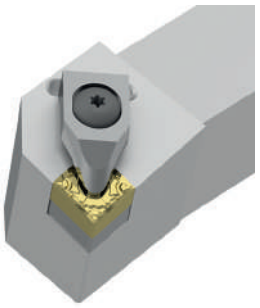
SORMA DIAMOND & CUTTING TOOLS

DCLN

ISO CN - Negative

- External turning (KAPR 95°)
- Holds CN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DCLNL1616H09X	16	16	20	100	33	95°	CN∞0903				◉
NT-DCLNL2020K09X	20	20	25	125	30	95°	CN∞0903				◉
NT-DCLNL2525M09X	25	25	32	150	30	95°	CN∞0903				◉
NT-DCLNL2020K12X	20	20	25	125	40	95°	CN∞1204				●
NT-DCLNL2525M12X	25	25	32	150	36	95°	CN∞1204				●
NT-DCLNL3225P12X	32	25	32	170	36	95°	CN∞1204				●
RIGHT-HAND											
NT-DCLNR1616H09X	16	16	20	100	33	95°	CN∞0903				◉
NT-DCLNR2020K09X	20	20	25	125	30	95°	CN∞0903				●
NT-DCLNR2525M09X	25	25	32	150	30	95°	CN∞0903				●
NT-DCLNR2020K12X	20	20	25	125	40	95°	CN∞1204				●
NT-DCLNR2525M12X	25	25	32	150	36	95°	CN∞1204				●
NT-DCLNR3225P12X	32	25	32	170	36	95°	CN∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

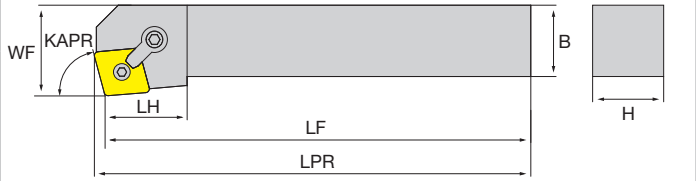
Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DCLN^{L}/$_{R}$∞∞09X	NT-SH012	NT-ST031	NT-WR020 / NT-TX15	NT-CS250	NT-SG250	NT-SC250
NT-DCLN^{L}/$_{R}$∞∞12X	NT-SH030	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

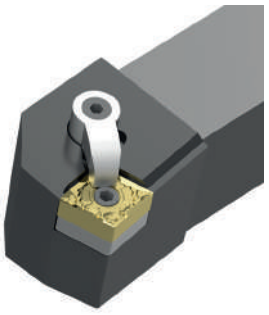
SORMA DIAMOND & CUTTING TOOLS

MCKN

ISO CN - Negative

- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing



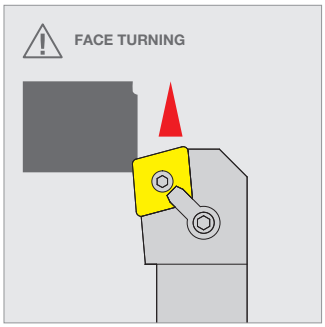




Designation	H	B	WF	LF	LH	LPR	KAPR	MIID			Stock
LEFT-HAND											
NT-MCKNL2020K12	20	20	25	122	37	125	75°	CN∞1204			●
NT-MCKNL2525M12	25	25	32	147	34	150	75°	CN∞1204			●
NT-MCKNL3232P12	32	32	40	167	40	170	75°	CN∞1204			●
NT-MCKNL3232P16	32	32	40	167	40	170	75°	CN∞1606			◉
RIGHT-HAND											
NT-MCKNR2020K12	20	20	25	122	37	125	75°	CN∞1204			◉
NT-MCKNR2525M12	25	25	32	147	34	150	75°	CN∞1204			●
NT-MCKNR3232P12	32	32	40	167	40	170	75°	CN∞1204			●
NT-MCKNR3232P16	32	32	40	167	40	170	75°	CN∞1606			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCKN^{L}/$_{R}$ooooo12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCKN^{L}/$_{R}$ooooo16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

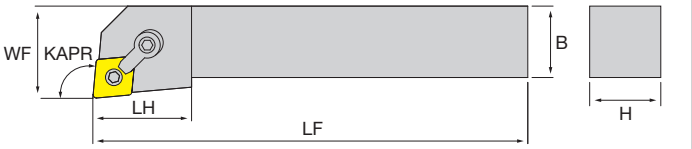


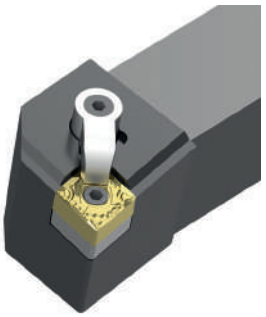
SORMA DIAMOND & CUTTING TOOLS

MCLN

ISO CN - Negative

- External turning (KAPR 95°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MCLNL2020K12	20	20	25	125	33	95°	CN∞1204				●
NT-MCLNL2525M12	25	25	32	150	33	95°	CN∞1204				●
NT-MCLNL3232P12	32	32	40	170	33	95°	CN∞1204				●
NT-MCLNL2525M16	25	25	32	150	33	95°	CN∞1606				●
NT-MCLNL3232P16	32	32	40	170	33	95°	CN∞1606				●
NT-MCLNL3232P19	32	32	40	170	38	95°	CN∞1906				◉
NT-MCLNL4040S19	40	40	50	250	38	95°	CN∞1906				◉
RIGHT-HAND											
NT-MCLNR2020K12	20	20	25	125	33	95°	CN∞1204				●
NT-MCLNR2525M12	25	25	32	150	33	95°	CN∞1204				●
NT-MCLNR3232P12	32	32	40	170	33	95°	CN∞1204				●
NT-MCLNR2525M16	25	25	32	150	33	95°	CN∞1606				●
NT-MCLNR3232P16	32	32	40	170	33	95°	CN∞1606				●
NT-MCLNR3232P19	32	32	40	170	38	95°	CN∞1906				◉
NT-MCLNR4040S19	40	40	50	250	38	95°	CN∞1906				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

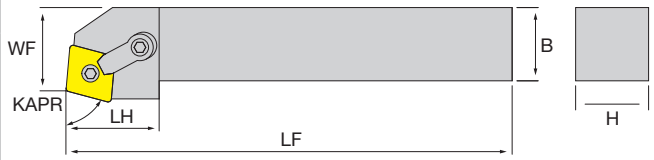
Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCLN^{L}/$_{R}$oooo12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCLN^{L}/$_{R}$oooo16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030
NT-MCLN^{L}/$_{R}$oooo19	NT-SH080	NT-SP050	NT-CS015	NT-SC070	NT-WR040

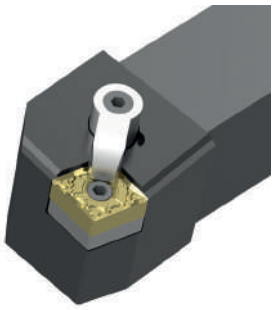
SORMA DIAMOND & CUTTING TOOLS

MCRN

ISO CN - Negative

- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing, especially facing



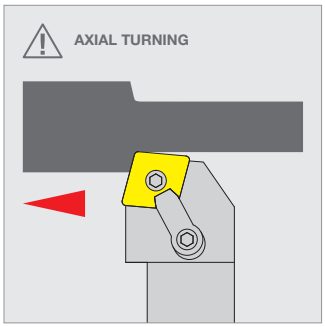




Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MCRNL2020K12	20	20	22	125	37	75°	CN∞1204				◉
NT-MCRNL2525M12	25	25	27	150	34	75°	CN∞1204				●
NT-MCRNL3232P12	32	32	35	170	40	75°	CN∞1204				◉
NT-MCRNL3232P16	32	32	35	170	40	75°	CN∞1606				◉
RIGHT-HAND											
NT-MCRNR2020K12	20	20	22	125	37	75°	CN∞1204				●
NT-MCRNR2525M12	25	25	27	150	34	75°	CN∞1204				●
NT-MCRNR3232P12	32	32	35	170	40	75°	CN∞1204				◉
NT-MCRNR3232P16	32	32	35	170	40	75°	CN∞1606				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCRN^{L}/$_{R}$∞∞12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCRN^{L}/$_{R}$∞∞16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

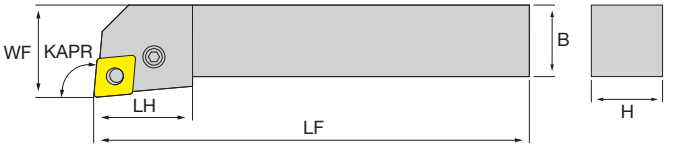


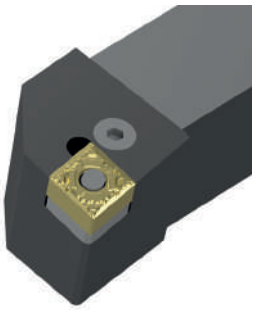
SORMA DIAMOND & CUTTING TOOLS

PCLN

ISO CN - Negative

- External turning (KAPR 95°)
- Holds CN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PCLNL1616H09	16	16	20	100	20	95°	CN∞0903				◉
NT-PCLNL2020K09	20	20	25	125	20	95°	CN∞0903				◉
NT-PCLNL2525M09	25	25	32	150	23	95°	CN∞0903				◉
NT-PCLNL2020K12	20	20	25	125	26	95°	CN∞1204				●
NT-PCLNL2525M12	25	25	32	150	26	95°	CN∞1204				●
RIGHT-HAND											
NT-PCLNR1616H09	16	16	20	100	20	95°	CN∞0903				●
NT-PCLNR2020K09	20	20	25	125	20	95°	CN∞0903				◉
NT-PCLNR2525M09	25	25	32	150	23	95°	CN∞0903				◉
NT-PCLNR2020K12	20	20	25	125	26	95°	CN∞1204				●
NT-PCLNR2525M12	25	25	32	150	26	95°	CN∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

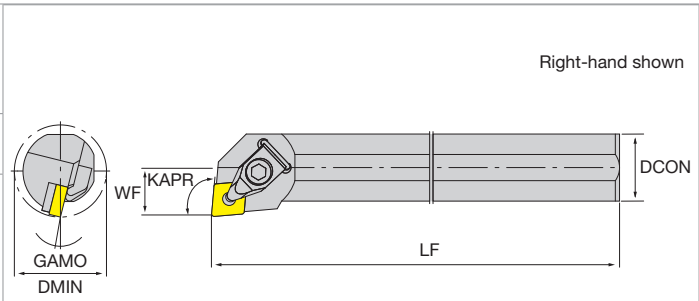
Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
					
NT-PCLN$^{L}/_{RO0000}$09	NT-SH012	NT-SR012	NT-LL012	NT-SC015	NT-WR025
NT-PCLN$^{L}/_{RO0000}$12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030

SORMA DIAMOND & CUTTING TOOLS

A DCLN

ISO CN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening





KAPR 95° | D | STEEL MAX 3XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DCLNL12	32	25	17	200	95°	14°	CN∞1204				●
NT-A32S-DCLNL12	40	32	22	250	95°	14°	CN∞1204				●
NT-A40T-DCLNL12	50	40	27	300	95°	12°	CN∞1204				●
RIGHT-HAND											
NT-A25R-DCLNR12	32	25	17	200	95°	14°	CN∞1204				●
NT-A32S-DCLNR12	40	32	22	250	95°	14°	CN∞1204				●
NT-A40T-DCLNR12	50	40	27	300	95°	12°	CN∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

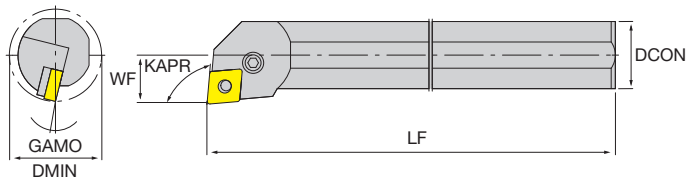
Spare parts	Shim	Shim screw	L wrench	Clamp	Spring
NT-A∞∞-DCLN$^{L}_{R}$12	NT-SH035	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200

SORMA DIAMOND & CUTTING TOOLS

A PCLN

ISO CN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CN-style inserts
- Easy to use Levers-lock clamping. Suitable for long-chip materials







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-PCLNL12	32	25	17	200	95°	11°	CN∞1204				●
NT-A32S-PCLNL12	40	32	22	250	95°	11°	CN∞1204				●
NT-A40T-PCLNL12	50	40	27	300	95°	10°	CN∞1204				●
RIGHT-HAND											
NT-A25R-PCLNR12	32	25	17	200	95°	11°	CN∞1204				●
NT-A32S-PCLNR12	40	32	22	250	95°	11°	CN∞1204				●
NT-A40T-PCLNR12	50	40	27	300	95°	10°	CN∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

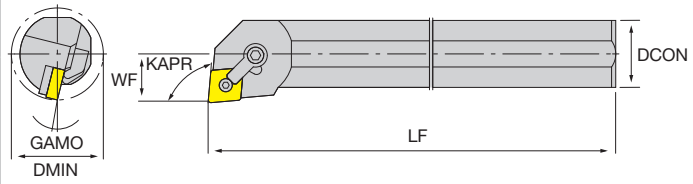
Spare parts	Elastic plug	Lever	Screw lever	L wrench	Shim
NT-A25R-PCLN$^{L}/_{R}$12	NT-SR015	NT-LL015	NT-SC015	NT-WR025	
NT-A32S-PCLN$^{L}/_{R}$12	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH035
NT-A40T-PCLN$^{L}/_{R}$12	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH035

SORMA DIAMOND & CUTTING TOOLS

S MCLN

ISO CN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MCLNL12	25	20	13	200	95°	17°	CN∞1204				●
NT-S25R-MCLNL12	32	25	17	200	95°	14°	CN∞1204				●
NT-S32S-MCLNL12	40	32	22	250	95°	14°	CN∞1204				●
NT-S40T-MCLNL12	50	40	27	300	95°	12°	CN∞1204				●
NT-S50U-MCLNL12	63	50	35	350	95°	12°	CN∞1204				●
NT-S40T-MCLNL16	50	40	27	300	95°	11°	CN∞1606				●
NT-S50U-MCLNL16	63	50	35	350	95°	12°	CN∞1606				●
NT-S50U-MCLNL19	63	50	35	350	95°	12°	CN∞1906				◉
RIGHT-HAND											
NT-S20R-MCLNR12	25	20	13	200	95°	17°	CN∞1204				●
NT-S25R-MCLNR12	32	25	17	200	95°	14°	CN∞1204				●
NT-S32S-MCLNR12	40	32	22	250	95°	14°	CN∞1204				●
NT-S40T-MCLNR12	50	40	27	300	95°	12°	CN∞1204				●
NT-S50U-MCLNR12	63	50	35	350	95°	12°	CN∞1204				●
NT-S40T-MCLNR16	50	40	27	300	95°	11°	CN∞1606				◉
NT-S50U-MCLNR16	63	50	35	350	95°	12°	CN∞1606				●
NT-S50U-MCLNR19	63	50	35	350	95°	12°	CN∞1906				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

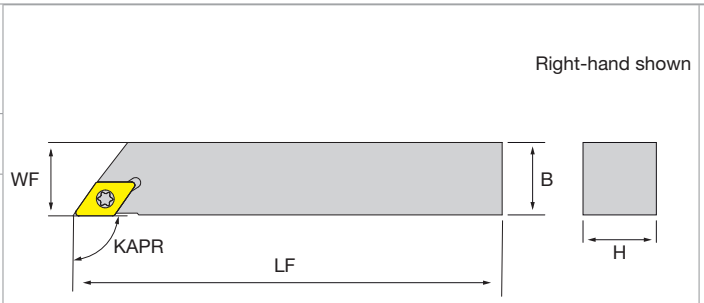
Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S20R-MCLN$^{L}_{R}$12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	-
NT-S25R-MCLN$^{L}_{R}$12	NT-SP010	NT-WR030 / NT-WR025	NT-CS010	NT-SC010	-
NT-S32S-MCLN$^{L}_{R}$12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S40T-MCLN$^{L}_{R}$12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S50U-MCLN$^{L}_{R}$12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S40T-MCLN$^{L}_{R}$16	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-SH055
NT-S50U-MCLN$^{L}_{R}$16	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-SH055
NT-S50U-MCLN$^{L}_{R}$19	NT-SP050	NT-WR040 / NT-WR030	NT-CS015	NT-SC070	NT-SH080

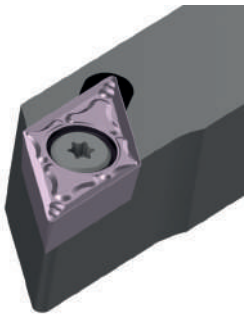
SORMA DIAMOND & CUTTING TOOLS

SDAC

ISO DC - Positive

- External turning (KAPR 90°)
- Holds DC-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SDACL0808K07	8	8	8	125	90°	DC∞0702					◉
NT-SDACL1010K07	10	10	10	125	90°	DC∞0702					◉
NT-SDACL1212K07	12	12	12	125	90°	DC∞0702					●
NT-SDACL1212K11	12	12	12	125	90°	DC∞11T3					●
NT-SDACL1616K11	16	16	16	125	90°	DC∞11T3					●
RIGHT-HAND											
NT-SDACR0808K07	8	8	8	125	90°	DC∞0702					◉
NT-SDACR1010K07	10	10	10	125	90°	DC∞0702					●
NT-SDACR1212K07	12	12	12	125	90°	DC∞0702					●
NT-SDACR1212K11	12	12	12	125	90°	DC∞11T3					●
NT-SDACR1616K11	16	16	16	125	90°	DC∞11T3					●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

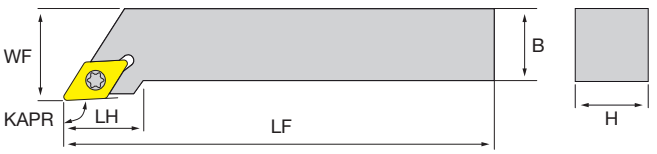
Spare parts	Insert screw	Flag wrench
		
NT-SDAC^{L}/$_{R}$∞∞∞07	NT-ST25060T07B	NT-FT07
NT-SDAC^{L}/$_{R}$∞∞∞11	NT-ST35089T15B	NT-FT15

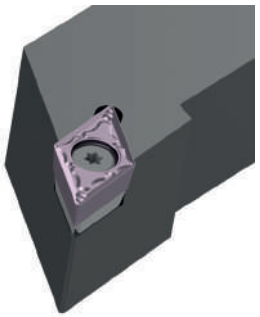
SORMA DIAMOND & CUTTING TOOLS

SDJC

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SDJCL1616H11	16	16	20	100	18	93°	DC∞11T3				●
NT-SDJCL2020K11	20	20	25	125	23	93°	DC∞11T3				●
NT-SDJCL2525M11	25	25	32	150	27	93°	DC∞11T3				●
RIGHT-HAND											
NT-SDJCR1616H11	16	16	20	100	18	93°	DC∞11T3				●
NT-SDJCR2020K11	20	20	25	125	23	93°	DC∞11T3				●
NT-SDJCR2525M11	25	25	32	150	27	93°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

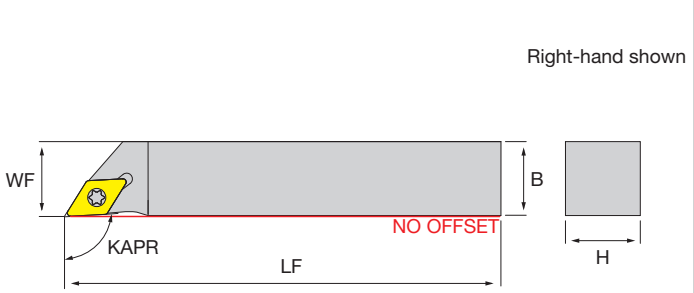
Spare parts	Insert screw	Flag wrench
		
NT-SDJC$^{L}/_{R}$○○○○11	NT-ST35089T15B	NT-FT15

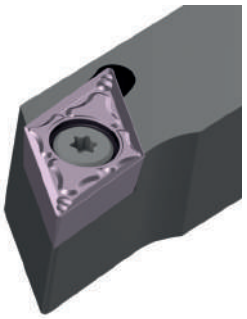
SORMA DIAMOND & CUTTING TOOLS

SDJC N

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SDJCL0808K07N	8	8	8	125	93°	DC∞0702					◉
NT-SDJCL1010K07N	10	10	10	125	93°	DC∞0702					◉
NT-SDJCL1212K07N	12	12	12	125	93°	DC∞0702					◉
NT-SDJCL1212K11N	12	12	12	125	93°	DC∞11T3					●
NT-SDJCL1616K11N	16	16	16	125	93°	DC∞11T3					●
RIGHT-HAND											
NT-SDJCR0808K07N	8	8	8	125	93°	DC∞0702					◉
NT-SDJCR1010K07N	10	10	10	125	93°	DC∞0702					●
NT-SDJCR1212K07N	12	12	12	125	93°	DC∞0702					●
NT-SDJCR1212K11N	12	12	12	125	93°	DC∞11T3					●
NT-SDJCR1616K11N	16	16	16	125	93°	DC∞11T3					●

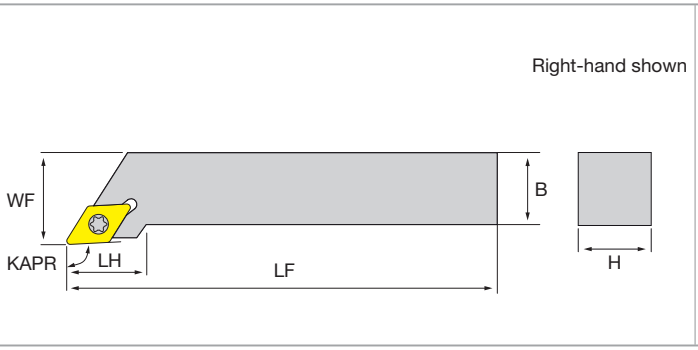
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

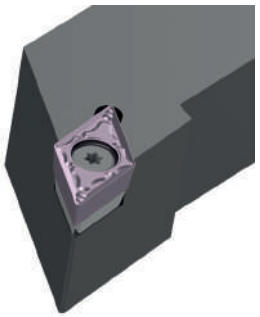
Spare parts	Insert screw	Flag wrench
		
NT-SDJC^{L}/$_{R}$∞∞∞07N	NT-ST25060T07B	NT-FT07
NT-SDJC^{L}/$_{R}$∞∞∞11N	NT-ST35089T15B	NT-FT15

SDJC S

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- With shim







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SDJCL2020K11S	20	20	25	125	22	93°	DC∞11T3				●
NT-SDJCL2525M11S	25	25	32	150	25	93°	DC∞11T3				●
RIGHT-HAND											
NT-SDJCR2020K11S	20	20	25	125	22	93°	DC∞11T3				●
NT-SDJCR2525M11S	25	25	32	150	25	93°	DC∞11T3				●

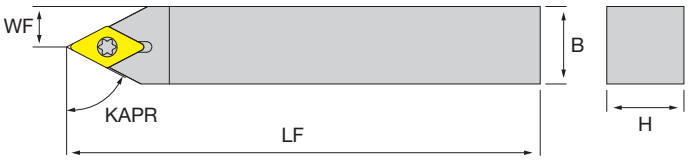
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

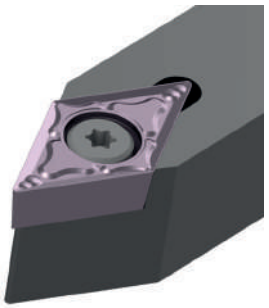
Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
					
NT-SDJC$^{L/R}$OOOOO11S	NT-SH007	NT-SR010	NT-WR035	NT-ST35089T15B	NT-FT15

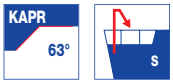
SDNC

ISO DC - Positive

- External turning (KAPR 62.5°), Neutral position
- Holds DC-style inserts, tightened by screw







Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SDNCN0808H07	8	8	4	100	62.5°	DC∞0702					◉
NT-SDNCN1010H07	10	10	5	100	62.5°	DC∞0702					◉
NT-SDNCN1212H11	12	12	6	100	62.5°	DC∞11T3					●
NT-SDNCN1616H11	16	16	8	100	62.5°	DC∞11T3					●
NT-SDNCN2020K11	20	20	10	125	62.5°	DC∞11T3					●
NT-SDNCN2525M11	25	25	12.5	150	62.5°	DC∞11T3					●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

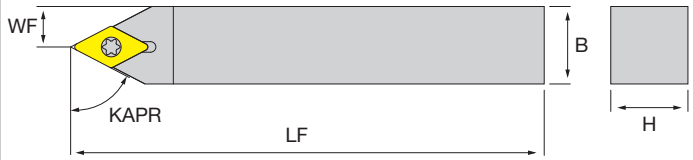
Spare parts	Insert screw	Flag wrench
		
NT-SDNCN∞∞∞∞07	NT-ST25060T07B	NT-FT07
NT-SDNCN∞∞∞∞11	NT-ST35089T15B	NT-FT15

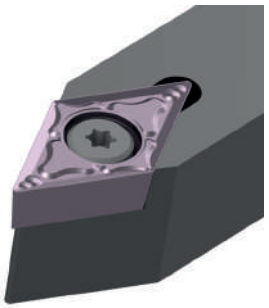
SORMA DIAMOND & CUTTING TOOLS

SDNC S

ISO DC - Positive

- External turning (KAPR 62.5°), Neutral position
- Holds DC-style inserts, tightened by screw
- With shim









Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SDNCN2020K11S	20	20	10	125	62.5°	DC∞11T3					◉
NT-SDNCN2525M11S	25	25	12.5	150	62.5°	DC∞11T3					◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

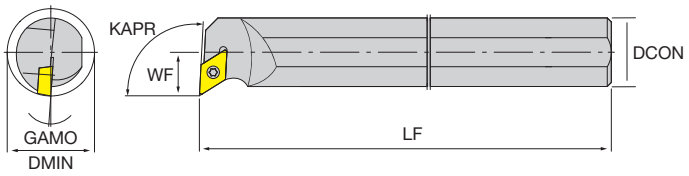
Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
NT-SDNCN∞∞∞∞11S	NT-SH007	NT-SR010	NT-WR035	NT-ST35089T15B	NT-FT15

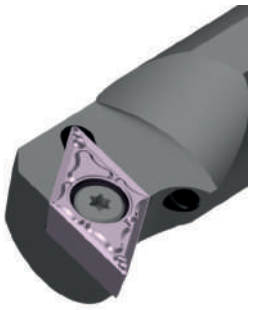
SORMA DIAMOND & CUTTING TOOLS

A SDUC

ISO DC - Positive

- Internal turning (KAPR 93°)
- Steel boring bar with internal coolant through
- Holds DC-style inserts, tightened by screws





KAPR 93° | S | STEEL MAX 3XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A10M-SDUCL07	13	10	7	150	93°	10°	DC∞0702				●
NT-A12M-SDUCL07	16	12	9	150	93°	8°	DC∞0702				●
NT-A16Q-SDUCL07	20	16	1	180	93°	6°	DC∞0702				●
NT-A20R-SDUCL07	25	20	13	200	93°	5°	DC∞0702				◉
NT-A16Q-SDUCL11	20	16	1	180	93°	7°	DC∞11T3				●
NT-A20R-SDUCL11	25	20	13	200	93°	8°	DC∞11T3				●
RIGHT-HAND											
NT-A10M-SDUCR07	13	10	7	150	93°	10°	DC∞0702				●
NT-A12M-SDUCR07	16	12	9	150	93°	8°	DC∞0702				●
NT-A16Q-SDUCR07	20	16	1	180	93°	6°	DC∞0702				●
NT-A20R-SDUCR07	25	20	13	200	93°	5°	DC∞0702				◉
NT-A16Q-SDUCR11	20	16	1	180	93°	7°	DC∞11T3				●
NT-A20R-SDUCR11	25	20	13	200	93°	8°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Aooo-SDUC$^{L}/_{R}$07	NT-ST25060T07B	NT-FT07
NT-Aooo-SDUC$^{L}/_{R}$11	NT-ST35089T15B	NT-FT15

HOLDER AND INSERT COUPLING

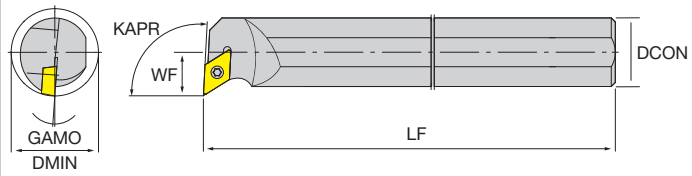
Holder R → Insert L

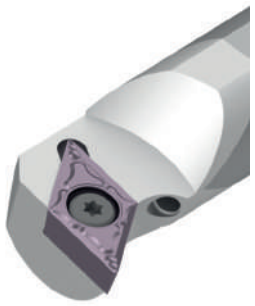
Holder L → Insert R

E SDUC

ISO DC - Positive

- Internal turning (KAPR 93°)
- Carbide boring bar with internal coolant
- through. Maximum overhang: 7xDCON
- Holds DC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E10K-SDUCL07	13	10	7	125	93°	15°	DC∞0702				●
NT-E12M-SDUCL07	16	12	9	150	93°	10°	DC∞0702				●
NT-E16R-SDUCL11	20	16	11	200	93°	10°	DC∞11T3				●
NT-E20R-SDUCL11	25	20	13	200	93°	10°	DC∞11T3				●
RIGHT-HAND											
NT-E10K-SDUCR07	13	10	7	125	93°	15°	DC∞0702				●
NT-E12M-SDUCR07	16	12	9	150	93°	10°	DC∞0702				●
NT-E16R-SDUCR11	20	16	11	200	93°	10°	DC∞11T3				●
NT-E20R-SDUCR11	25	20	13	200	93°	10°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-E○○○-SDUC$^{L}_{R}$07	NT-ST25060T07B	NT-FT07
NT-E○○○-SDUC$^{L}_{R}$11	NT-ST35089T15B	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

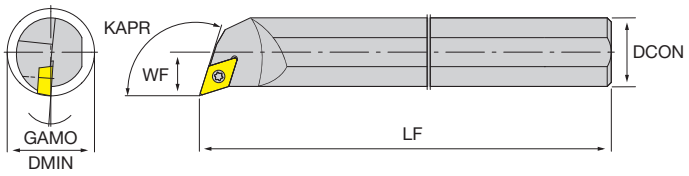
Holder L → Insert R

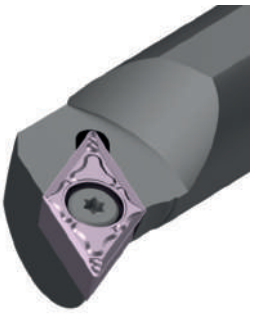
SORMA DIAMOND & CUTTING TOOLS

S SDQC

ISO DC - Positive

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws





KAPR 107,5° | S | STEEL MAX 3XD

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10M-SDQCL07	13	10	7	150	107.5°	10°	DC∞0702				●
NT-S12M-SDQCL07	16	12	9	150	107.5°	8°	DC∞0702				●
NT-S16Q-SDQCL07	20	16	11	180	107.5°	6°	DC∞0702				●
NT-S20R-SDQCL07	25	20	13	200	107.5°	6°	DC∞0702				◉
NT-S16Q-SDQCL11	20	16	11	180	107.5°	6°	DC∞11T3				●
NT-S20R-SDQCL11	25	20	13	200	107.5°	8°	DC∞11T3				●
NT-S25R-SDQCL11	32	25	17	200	107.5°	4°	DC∞11T3				●
NT-S32S-SDQCL11	40	32	22	250	107.5°	4°	DC∞11T3				●
RIGHT-HAND											
NT-S10M-SDQCR07	13	10	7	150	107.5°	10°	DC∞0702				●
NT-S12M-SDQCR07	16	12	9	150	107.5°	8°	DC∞0702				●
NT-S16Q-SDQCR07	20	16	11	180	107.5°	6°	DC∞0702				●
NT-S20R-SDQCR07	25	20	13	200	107.5°	6°	DC∞0702				◉
NT-S16Q-SDQCR11	20	16	11	180	107.5°	6°	DC∞11T3				●
NT-S20R-SDQCR11	25	20	13	200	107.5°	8°	DC∞11T3				●
NT-S25R-SDQCR11	32	25	17	200	107.5°	4°	DC∞11T3				●
NT-S32S-SDQCR11	40	32	22	250	107.5°	4°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Sooo-SDQC$^{L}/_{R}$07	NT-ST25060T07B	NT-FT07
NT-Sooo-SDQC$^{L}/_{R}$11	NT-ST35089T15B	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

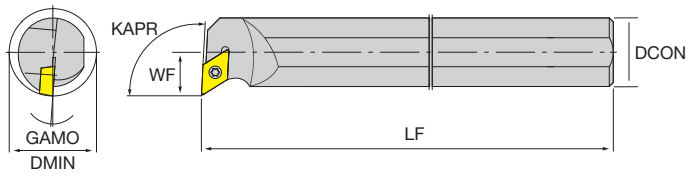
Holder L → Insert R

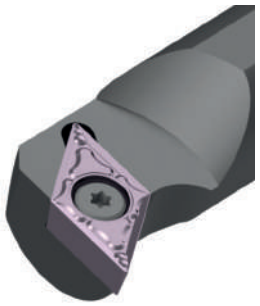
SORMA DIAMOND & CUTTING TOOLS

S SDUC

ISO DC - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10M-SDUCL07	13	10	7	150	93°	10°	DC∞0702				●
NT-S12M-SDUCL07	16	12	9	150	93°	8°	DC∞0702				●
NT-S16Q-SDUCL07	20	16	11	180	93°	6°	DC∞0702				●
NT-S20R-SDUCL07	25	20	13	200	93°	5°	DC∞0702				◉
NT-S16Q-SDUCL11	20	16	11	180	93°	7°	DC∞11T3				●
NT-S20R-SDUCL11	25	20	13	200	93°	8°	DC∞11T3				●
NT-S25R-SDUCL11	32	25	17	200	93°	4°	DC∞11T3				●
NT-S32S-SDUCL11	40	32	22	250	93°	4°	DC∞11T3				●
NT-S40T-SDUCL11	50	40	24	300	93°	2°	DC∞11T3				◉
RIGHT-HAND											
NT-S10M-SDUCR07	13	10	7	150	93°	10°	DC∞0702				●
NT-S12M-SDUCR07	16	12	9	150	93°	8°	DC∞0702				●
NT-S16Q-SDUCR07	20	16	11	180	93°	6°	DC∞0702				●
NT-S20R-SDUCR07	25	20	13	200	93°	5°	DC∞0702				●
NT-S16Q-SDUCR11	20	16	11	180	93°	7°	DC∞11T3				●
NT-S20R-SDUCR11	25	20	13	200	93°	8°	DC∞11T3				●
NT-S25R-SDUCR11	32	25	17	200	93°	4°	DC∞11T3				●
NT-S32S-SDUCR11	40	32	22	250	93°	4°	DC∞11T3				●
NT-S40T-SDUCR11	50	40	24	300	93°	2°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S○○○-SDUC$^{L}/_{R}$07	NT-ST25060T07B	NT-FT07
NT-S○○○-SDUC$^{L}/_{R}$11	NT-ST35089T15B	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

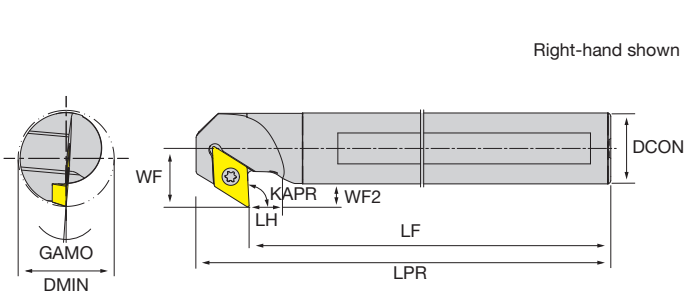
Holder L → Insert R

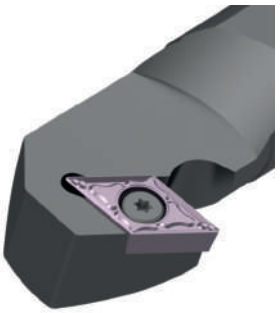
SORMA DIAMOND & CUTTING TOOLS

S SDZC

ISO DC - Positive

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws





KAPR 93° | S | STEEL MAX 3XD

Designation	DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID	Stock
LEFT-HAND											
NT-S10M-SDZCL07	14	10	8.5	3.5	139	11	150	93°	10°	DC∞0702	◉
NT-S12M-SDZCL07	17	12	10.5	4.5	139	11	150	93°	9°	DC∞0702	◉
NT-S16Q-SDZCL07	21	16	12.5	4.5	169	11	180	93°	8°	DC∞0702	◉
NT-S20R-SDZCL11	26	20	15.5	5.5	184	16	200	93°	8°	DC∞11T3	◉
NT-S25R-SDZCL11	33	25	18	5.5	180	20	200	93°	6°	DC∞11T3	◉
NT-S32S-SDZCL11S	38	32	21.5	5.5	230	20	250	93°	4°	DC∞11T3	◉
RIGHT-HAND											
NT-S10M-SDZCR07	14	10	8.5	3.5	139	11	150	93°	10°	DC∞0702	◉
NT-S12M-SDZCR07	17	12	10.5	4.5	139	11	150	93°	9°	DC∞0702	●
NT-S16Q-SDZCR07	21	16	12.5	4.5	169	11	180	93°	8°	DC∞0702	◉
NT-S20R-SDZCR11	26	20	15.5	5.5	184	16	200	93°	8°	DC∞11T3	●
NT-S25R-SDZCR11	33	25	18	5.5	180	20	200	93°	6°	DC∞11T3	◉
NT-S32S-SDZCR11S	38	32	21.5	5.5	230	20	250	93°	4°	DC∞11T3	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-Sooo-SDZC$^{L}_{R}$07	NT-ST25060T07B	NT-FT07	-	-	-
NT-Sooo-SDZC$^{L}_{R}$11	NT-ST35089T15B	NT-FT15	-	-	-
NT-Sooo-SDZC$^{L}_{R}$11S	NT-ST35089T15B	NT-FT15	NT-SH007	NT-SR010	NT-WR035

HOLDER AND INSERT COUPLING

Holder R → Insert R

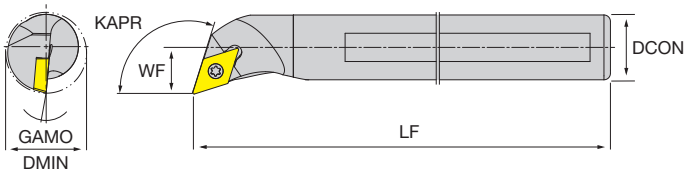
Holder L → Insert L

SORMA DIAMOND & CUTTING TOOLS

V SDQC

ISO DC - Positive

- Internal turning (KAPR 107.5°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V10K-SDQCL07-13	13	10	7.7	125	107.5°	10°	DC∞0702				●
NT-V12M-SDQCL07-16	16	12	9.7	150	107.5°	8°	DC∞0702				●
NT-V16Q-SDQCL07-20	20	16	11.7	180	107.5°	6°	DC∞0702				●
NT-V20R-SDQCL07-25	25	20	13.7	200	107.5°	5°	DC∞0702				◉
NT-V16Q-SDQCL11-20	20	16	11.5	180	107.5°	6°	DC∞11T3				●
NT-V20R-SDQCL11-25	25	20	14.4	200	107.5°	5°	DC∞11T3				●
NT-V25S-SDQCL11-30	30	25	16.9	250	107.5°	4°	DC∞11T3				●
RIGHT-HAND											
NT-V10K-SDQCR07-13	13	10	7.7	125	107.5°	10°	DC∞0702				●
NT-V12M-SDQCR07-16	16	12	9.7	150	107.5°	8°	DC∞0702				●
NT-V16Q-SDQCR07-20	20	16	11.7	180	107.5°	6°	DC∞0702				●
NT-V20R-SDQCR07-25	25	20	13.7	200	107.5°	5°	DC∞0702				●
NT-V16Q-SDQCR11-20	20	16	11.5	180	107.5°	6°	DC∞11T3				●
NT-V20R-SDQCR11-25	25	20	14.4	200	107.5°	5°	DC∞11T3				●
NT-V25S-SDQCR11-30	30	25	16.9	250	107.5°	4°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V○○○-SDQC$^{L}/_{R}$07-○○	NT-ST25060T07B	NT-FT07
NT-V○○○-SDQC$^{L}/_{R}$11-○○	NT-ST35089T15B	NT-FT15

COOLANT HOLE POSITION



Improved chip evacuation thanks to optimized direction of coolant jet

HOLDER AND INSERT COUPLING

Holder R → Insert L

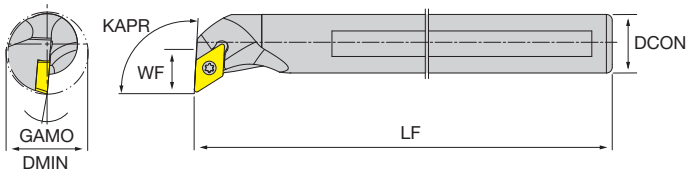
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

V SDUC

ISO DC - Positive

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path





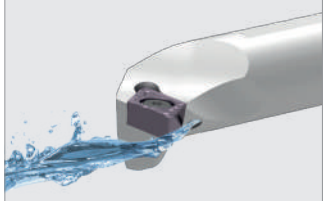
KAPR 93° | s | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V10K-SDUCL07-14	14	10	8.7	125	93°	5°	DC∞0702				●
NT-V12M-SDUCL07-16	16	12	9.7	150	93°	5°	DC∞0702				●
NT-V16Q-SDUCL07-20	20	16	11.7	180	93°	5°	DC∞0702				●
NT-V20R-SDUCL07-25	25	20	13.7	200	93°	5°	DC∞0702				●
NT-V16Q-SDUCL11-23	23	16	14.5	180	93°	5°	DC∞11T3				●
NT-V20R-SDUCL11-27	27	20	16.5	200	93°	5°	DC∞11T3				●
NT-V25S-SDUCL11-32	32	25	19	250	93°	5°	DC∞11T3				●
RIGHT-HAND											
NT-V10K-SDUCR07-14	14	10	8.7	125	93°	5°	DC∞0702				●
NT-V12M-SDUCR07-16	16	12	9.7	150	93°	5°	DC∞0702				●
NT-V16Q-SDUCR07-20	20	16	11.7	180	93°	5°	DC∞0702				●
NT-V20R-SDUCR07-25	25	20	13.7	200	93°	5°	DC∞0702				●
NT-V16Q-SDUCR11-23	23	16	14.5	180	93°	5°	DC∞11T3				●
NT-V20R-SDUCR11-27	27	20	16.5	200	93°	5°	DC∞11T3				●
NT-V25S-SDUCR11-32	32	25	19	250	93°	5°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞∞-SDUC$^{L}/_{R}$07-∞	NT-ST25060T07B	NT-FT07
NT-V∞∞-SDUC$^{L}/_{R}$11-∞	NT-ST35089T15B	NT-FT15

COOLANT HOLE POSITION



Improved chip evacuation thanks to optimized direction of coolant jet

HOLDER AND INSERT COUPLING

Holder R → Insert L

Holder L → Insert R

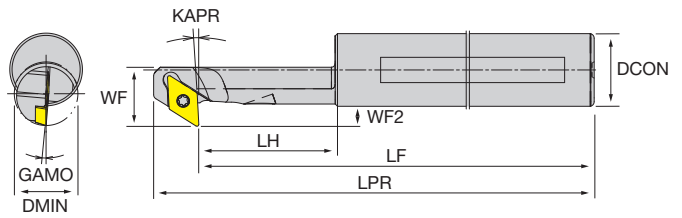
SORMA DIAMOND & CUTTING TOOLS

V SDZC

ISO DC - Positive

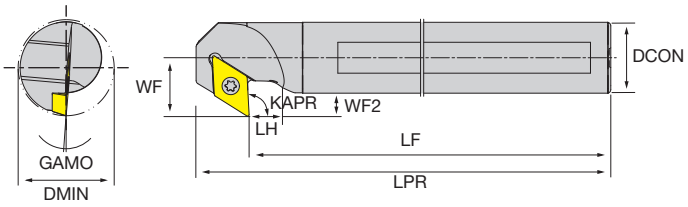
- Internal back turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path

Reduced neck — Right-hand shown





Right-hand shown





KAPR 93° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID	Stock
LEFT-HAND WITH REDUCED NECK											
NT-V16Q-SDZCL07-14	14	16	12.4	4.4	169.5	30	180	93°	5°	DC∞0702	●
NT-V20R-SDZCL11-20	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3	◉
LEFT-HAND											
NT-V10L-SDZCL07-14	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702	◉
NT-V12M-SDZCL07-16	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702	◉
NT-V16Q-SDZCL07-20	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702	◉
NT-V16Q-SDZCL11-23	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3	◉
NT-V20R-SDZCL11-27	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3	◉
NT-V25S-SDZCL11-32	32	25	19	6.5	235	15	250	93°	5°	DC∞11T3	●
RIGHT-HAND WITH REDUCED NECK											
NT-V16Q-SDZCR07-14	14	16	12.4	4.4	169.5	30	180	93°	5°	DC∞0702	◉
NT-V20R-SDZCR11-20	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3	●
RIGHT-HAND											
NT-V10L-SDZCR07-14	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702	●
NT-V12M-SDZCR07-16	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702	◉
NT-V16Q-SDZCR07-20	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702	◉
NT-V16Q-SDZCR11-23	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3	◉
NT-V20R-SDZCR11-27	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3	●
NT-V25S-SDZCR11-32	32	25	19	6.5	235	15	250	93°	5°	DC∞11T3	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V○○○-SDZC$^{L}_{R}$07-○○	NT-ST25060T07B	NT-FT07
NT-V○○○-SDZC$^{L}_{R}$11-○○	NT-ST35089T15B	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert R

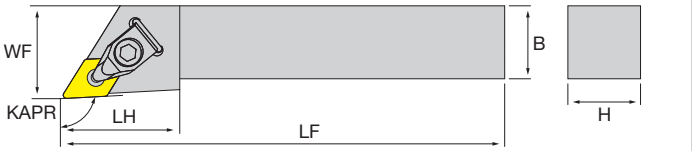
Holder L → Insert L

SORMA DIAMOND & CUTTING TOOLS

DDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening





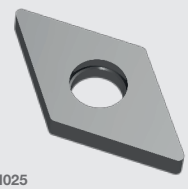


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DDJNL1616H11X	16	16	20	100	36	93°	DN∞1104				◉
NT-DDJNL2020K11X	20	20	25	125	36	93°	DN∞1104				●
NT-DDJNL2525M11X	25	25	32	150	36	93°	DN∞1104				●
NT-DDJNL2020K1506X	20	20	25	125	43	93°	DN∞1506				●
NT-DDJNL2525M1506X	25	25	32	150	43	93°	DN∞1506				●
NT-DDJNL3225P1506X	32	25	32	170	43	93°	DN∞1506				●
RIGHT-HAND											
NT-DDJNR1616H11X	16	16	20	100	36	93°	DN∞1104				◉
NT-DDJNR2525M11X	25	25	32	150	36	93°	DN∞1104				●
NT-DDJNR2020K1506X	20	20	25	125	43	93°	DN∞1506				●
NT-DDJNR2525M1506X	25	25	32	150	43	93°	DN∞1506				●
NT-DDJNR3225P1506X	32	25	32	170	43	93°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DDJN^{L}/$_{R}$oooo11X	NT-SH007	NT-ST250	NT-WR020 / NT-TX15	NT-CS250	NT-SG250	NT-SC250
NT-DDJN^{L}/$_{R}$oooo1506X	NT-SH045	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

DNOO1504OO



NT-SH025

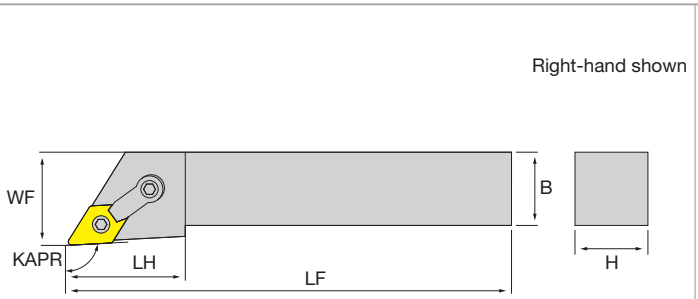
For 04 thickness, please order separately the correct shim

SORMA DIAMOND & CUTTING TOOLS

MDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







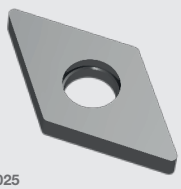


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MDJNL2020K1506	20	20	25	125	36	93°	DN∞1506				●
NT-MDJNL2525M1506	25	25	32	150	36	93°	DN∞1506				●
NT-MDJNL3232P1506	32	32	40	170	43	93°	DN∞1506				●
RIGHT-HAND											
NT-MDJNR2020K1506	20	20	25	125	36	93°	DN∞1506				●
NT-MDJNR2525M1506	25	25	32	150	36	93°	DN∞1506				●
NT-MDJNR3232P1506	32	32	40	170	43	93°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
					
NT-MDJN$^{L}/_{R}$○○○○○1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030

DN○○15**04**○○



NT-SH025

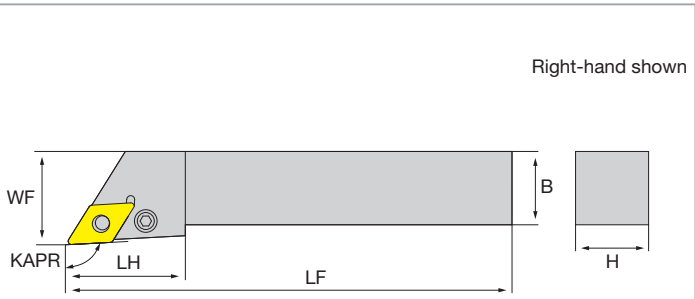
For 04 thickness, please order separately the correct shim

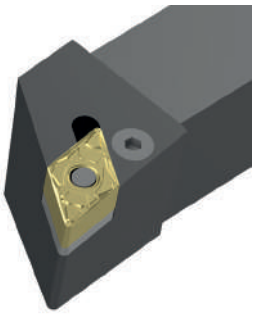
SORMA DIAMOND & CUTTING TOOLS

PDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PDJNL2525M1506	25	25	32	150	36	93°	DN∞1506				●
RIGHT-HAND											
NT-PDJNR2525M1506	25	25	32	150	36	93°	DN∞1506				●

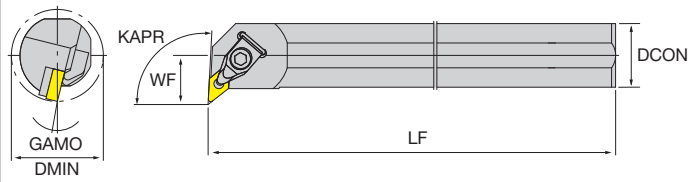
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
					
NT-PDJN^{L}/$_{RO0606}$1506	NT-SH020	NT-SR020	NT-LL020	NT-SC020	NT-WR020

A DDUN

ISO DN - Negative

- Internal turning (KAPR 93°)
- Steel boring bar with internal coolant through
- Holds DN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening





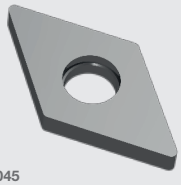
KAPR 93° | D | STEEL MAX 3XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DDUNL1506	32	25	17	200	93°	16°	DN∞1506				●
NT-A32S-DDUNL1506	40	32	22	250	93°	12°	DN∞1506				●
NT-A40T-DDUNL1506	50	40	27	300	93°	10°	DN∞1506				●
RIGHT-HAND											
NT-A25R-DDUNR1506	32	25	17	200	93°	16°	DN∞1506				●
NT-A32S-DDUNR1506	40	32	22	250	93°	12°	DN∞1506				●
NT-A40T-DDUNR1506	50	40	27	300	93°	10°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-A∞∞-DDUN$^{L}_{R}$1506	NT-SH020	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

DN∞1504∞



NT-SH045

For 04 thickness, please order separately the correct shim

HOLDER AND INSERT COUPLING

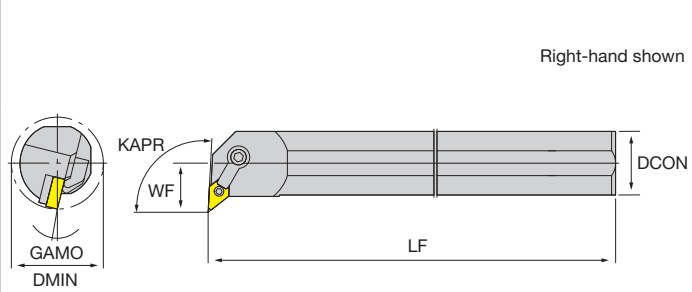
Holder R → Insert L

Holder L → Insert R

S MDUN

ISO DN - Negative

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force





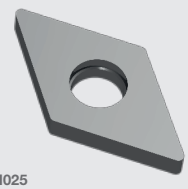


Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S32S-MDUNL1506	40	32	22	250	93°	17°	DN∞1506				●
NT-S40T-MDUNL1506	50	40	27	300	93°	15°	DN∞1506				●
NT-S50U-MDUNL1506	63	50	35	350	93°	12°	DN∞1506				●
RIGHT-HAND											
NT-S32S-MDUNR1506	40	32	22	250	93°	17°	DN∞1506				●
NT-S40T-MDUNR1506	50	40	27	300	93°	15°	DN∞1506				●
NT-S50U-MDUNR1506	63	50	35	350	93°	12°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-S32S-MDUN$^{L}/_{R}$1506	NT-SH045	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MDUN$^{L}/_{R}$1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030
NT-S50U-MDUN$^{L}/_{R}$1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030

DNOO1504OO



NT-SH025

For 04 thickness, please order separately the correct shim

HOLDER AND INSERT COUPLING

Holder R → Insert L

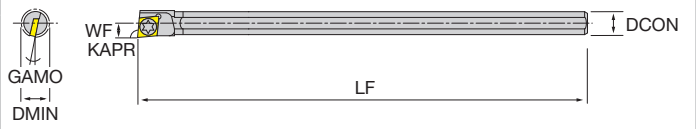
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

E MCC

Micro CC - Positive

- Internal turning (KAPR 95°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds MCC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
RIGHT-HAND											
NT-E04G-MICRO-CC-RH	5	4	2.5	90	95°	15°	MCC				●
NT-E05H-MICRO-CC-RH	6	5	3	100	95°	13°	MCC				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-Eᴏᴏᴏ-MICRO-CC-RH	NT-ST16031T06	NT-FT06

SLEEVE AVAILABLE



Please find all the available sleeves at chapter F-ACCESSORIES

HOLDER AND INSERT COUPLING

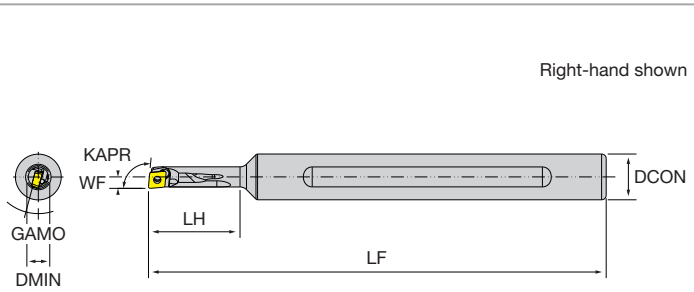
Holder R ⟶ Insert L

SORMA DIAMOND & CUTTING TOOLS

V MCC

Micro CC - Positive

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds MCC-style inserts, tightened by screws
- Special chip evacuation path







Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-V10H-MICRO-CC-LH-06	6	10	3	100	25	95°	13°	MCC			○
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-MICRO-CC-RH-05	5	10	2.5	100	20	95°	15°	MCC			●
NT-V10H-MICRO-CC-RH-06	6	10	3	100	25	95°	13°	MCC			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-V10H-MICRO-CC-$^{L}/_{R}$H-oo	NT-ST25060T07B	NT-FT07

HOLDER AND INSERT COUPLING

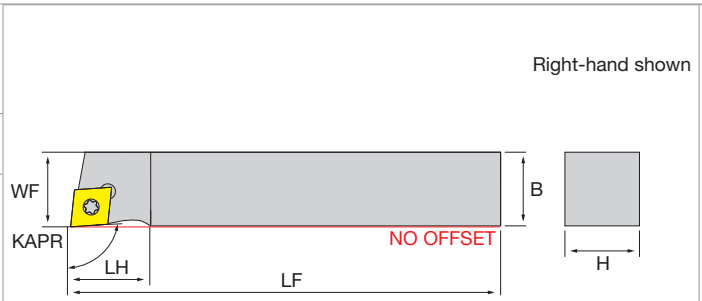
Holder R ⟶ Insert L

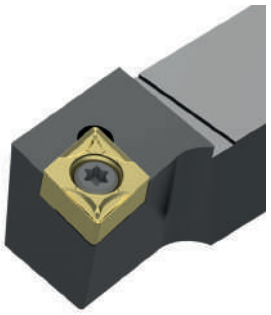
SORMA DIAMOND & CUTTING TOOLS

EX MCN

MicroNega - MCN

- External turning (KAPR 95°)
- Holds MCN-style inserts, tightened by screw
- Suitable for lathes without offset









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-EX10H-MICRO-CN-LH	10	10	10	100	15	95°	MCN				◉
NT-EX12H-MICRO-CN-LH	12	12	12	100	15	95°	MCN				◉
NT-EX16K-MICRO-CN-LH	16	16	16	125	15	95°	MCN				◉
NT-EX20K-MICRO-CN-LH	20	20	20	120	15	95°	MCN				▽
NT-EX25M-MICRO-CN-LH	25	25	25	150	15	95°	MCN				▽
RIGHT-HAND											
NT-EX10H-MICRO-CN-RH	10	10	10	100	15	95°	MCN				◉
NT-EX12H-MICRO-CN-RH	12	12	12	100	15	95°	MCN				●
NT-EX16K-MICRO-CN-RH	16	16	16	125	15	95°	MCN				◉
NT-EX20K-MICRO-CN-RH	20	20	20	120	15	95°	MCN				▽
NT-EX25M-MICRO-CN-RH	25	25	25	150	15	95°	MCN				▽

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-EXooo-MICRO-CN-L/RH	NT-ST30070T10	NT-FT10

EXCELLENT STABILITY



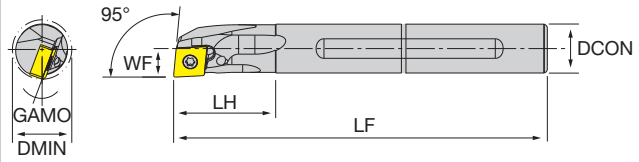
The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

SORMA DIAMOND & CUTTING TOOLS

V MCN

MicroNega - MCN

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through
- Holds MCN-style inserts, tightened by screws
- Special chip evacuation path





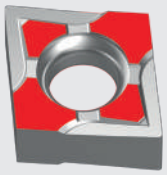
KAPR 95° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND											
NT-V08H-MICRO-CN-LH-10	10	8	5.5	100	20	95°	24°	MCN			◉
NT-V10K-MICRO-CN-LH-12	12	10	6	125	21	95°	21°	MCN			●
NT-V12M-MICRO-CN-LH-14	14	12	7	150	25	95°	20°	MCN			●
NT-V16Q-MICRO-CN-LH-18	18	16	9	180	31	95°	17°	MCN			●
NT-V20R-MICRO-CN-LH-22	22	20	11	200	37	95°	17°	MCN			●
RIGHT-HAND											
NT-V08H-MICRO-CN-RH-10	10	8	5.5	100	20	95°	24°	MCN			●
NT-V10K-MICRO-CN-RH-12	12	10	6	125	21	95°	21°	MCN			●
NT-V12M-MICRO-CN-RH-14	14	12	7	150	25	95°	20°	MCN			●
NT-V16Q-MICRO-CN-RH-18	18	16	9	180	31	95°	17°	MCN			●
NT-V20R-MICRO-CN-RH-22	22	20	11	200	37	95°	17°	MCN			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Vooo-MICRO-CN-L/RH-oo	NT-ST30070T10	NT-FT10

EXCELLENT STABILITY



The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

HOLDER AND INSERT COUPLING

Holder R → Insert L

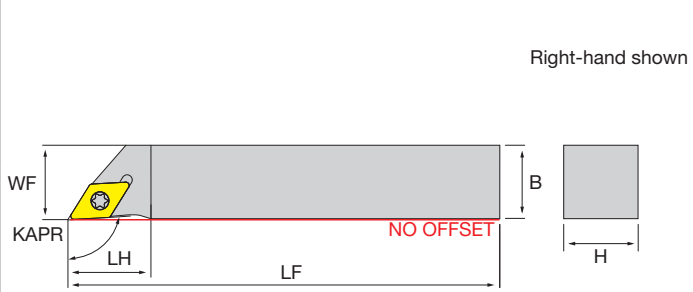
Holder L → Insert R

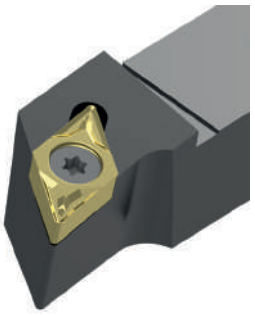
SORMA DIAMOND & CUTTING TOOLS

EX MDN

MicroNega - MDN

- External turning (KAPR 95°)
- Holds MDN-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-EX10H-MICRO-DN-LH	10	10	10	100	18	95°	MDN				◉
NT-EX12H-MICRO-DN-LH	12	12	12	100	18	95°	MDN				●
NT-EX16K-MICRO-DN-LH	16	16	16	125	18	95°	MDN				◉
NT-EX20K-MICRO-DN-LH	20	20	20	120	15	95°	MDN				▽
NT-EX25M-MICRO-DN-LH	25	25	25	150	15	95°	MDN				▽
RIGHT-HAND											
NT-EX10H-MICRO-DN-RH	10	10	10	100	18	95°	MDN				◉
NT-EX12H-MICRO-DN-RH	12	12	12	100	18	95°	MDN				●
NT-EX16K-MICRO-DN-RH	16	16	16	125	18	95°	MDN				◉
NT-EX20K-MICRO-DN-RH	20	20	20	120	15	95°	MDN				▽
NT-EX25M-MICRO-DN-RH	25	25	25	150	15	95°	MDN				▽

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-EXooo-MICRO-DN-$^{L}/_{R}$H	NT-ST30070T10	NT-FT10

EXCELLENT STABILITY

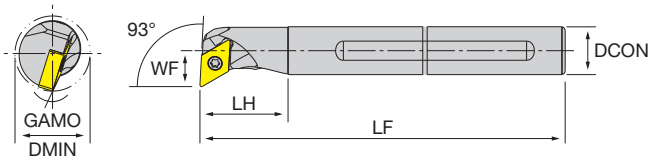


The design of MDN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

V MDN

MicroNega - MDN

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through
- Holds MDN-style inserts, tightened by screws
- Special chip evacuation path





KAPR 93° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND											
NT-V10K-MICRO-DN-LH-15	15	10	9.8	125	19	93°	19°	MDN			●
NT-V12M-MICRO-DN-LH-16	16	12	9	150	22	93°	17°	MDN			●
NT-V16Q-MICRO-DN-LH-20	20	16	11	180	22	93°	15°	MDN			●
NT-V20R-MICRO-DN-LH-25	25	20	13	200	23	93°	13°	MDN			●
RIGHT-HAND											
NT-V10K-MICRO-DN-RH-15	15	10	9.8	125	19	93°	19°	MDN			●
NT-V12M-MICRO-DN-RH-16	16	12	9	150	22	93°	17°	MDN			●
NT-V16Q-MICRO-DN-RH-20	20	16	11	180	22	93°	15°	MDN			●
NT-V20R-MICRO-DN-RH-25	25	20	13	200	23	93°	13°	MDN			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Vooo-MICRO-DN-L/RH-oo	NT-ST30070T10	NT-FT10

EXCELLENT STABILITY



The design of MDN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

HOLDER AND INSERT COUPLING

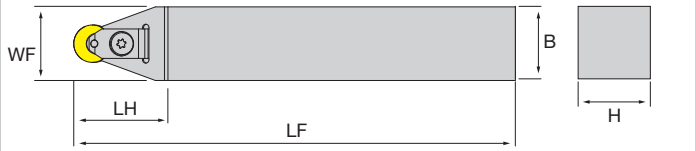
Holder R → Insert L

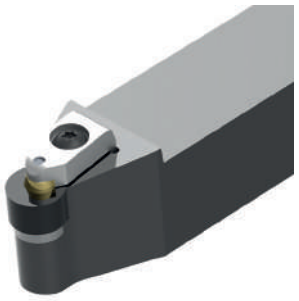
Holder L → Insert R

CRDNN

ISO RN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert



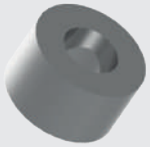


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-CRDNN2525M09	25	25	12.5	150	32	-	RNGN0903				▲
NT-CRDNN2525M12	25	25	12.5	150	32	-	RNGN1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
				
NT-CRDNN2525M09	NT-WR030	NT-CS154	NT-ST110	NT-SH100
NT-CRDNN2525M12	NT-TX15	NT-CS155	NT-ST110	NT-SH102

RNGN120700



NT-SH101

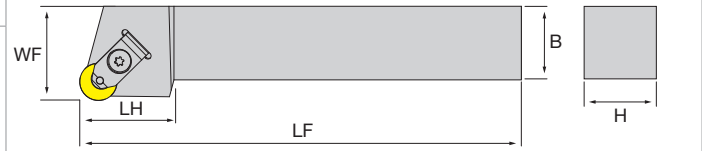
For 07 thickness, please order separately the correct shim

SORMA DIAMOND & CUTTING TOOLS

CRSN

ISO RN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert





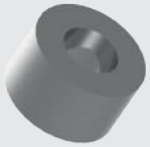


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CRSNR2525M09	25	25	32	150	32	-	RNGN0903				▲
NT-CRSNR2525M12	25	25	32	150	32	-	RNGN1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
				
NT-CRSNR2525M09	NT-WR030	NT-CS110	NT-ST110	NT-SH100
NT-CRSNR2525M12	NT-TX15	NT-CS120	NT-ST110	NT-SH102

RNGN120700



NT-SH101

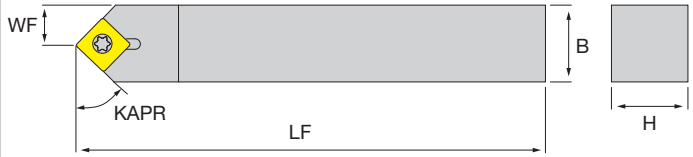
For 07 thickness, please order separately the correct shim

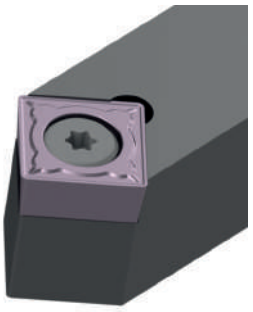
SORMA DIAMOND & CUTTING TOOLS

SSDC

ISO SC - Positive

- External turning (KAPR 45°), Neutral position
- Holds SC-style inserts, tightened by screw









Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SSDCN2020K09	20	20	10	125	45°	SC∞09T3					◉
NT-SSDCN2525M09	25	25	12.5	150	45°	SC∞09T3					●
NT-SSDCN2020K12	20	20	10	125	45°	SC∞1204					●
NT-SSDCN2525M12	25	25	12.5	150	45°	SC∞1204					●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

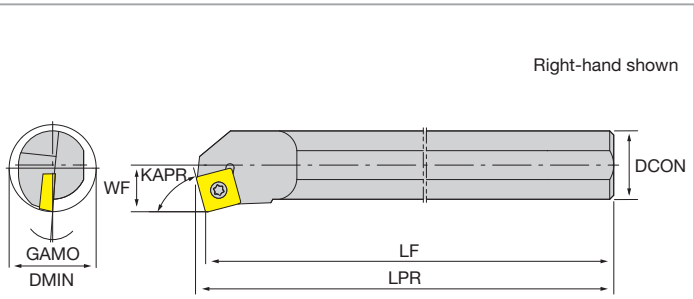
Spare parts	Insert screw	Flag wrench
NT-SSDCN∞∞∞09	NT-ST40090T15	NT-FT15
NT-SSDCN∞∞∞12	NT-ST40115T15	NT-FT15

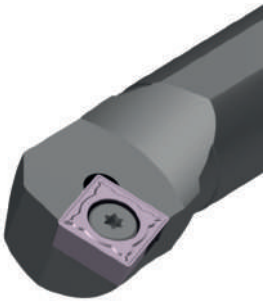
SORMA DIAMOND & CUTTING TOOLS

S SSKC

ISO SC - Positive

- Internal turning (KAPR 75°)
- Steel boring bar without internal coolant
- Holds SC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-SSKCL09	16	12	8.5	147	75°	12°	SC∞09T3				◉
NT-S16Q-SSKCL09	20	16	11	177	75°	11°	SC∞09T3				◉
NT-S20R-SSKCL09	25	20	13	196	75°	6°	SC∞09T3				◉
NT-S25R-SSKCL09	31	25	15	198	75°	6°	SC∞09T3				◉
NT-S25R-SSKCL12	32	25	17	196	75°	7°	SC∞1204				◉
NT-S32S-SSKCL12	40	32	22	246	75°	7°	SC∞1204				◉
RIGHT-HAND											
NT-S12M-SSKCR09	16	12	8.5	147	75°	12°	SC∞09T3				◉
NT-S16Q-SSKCR09	20	16	11	177	75°	11°	SC∞09T3				◉
NT-S20R-SSKCR09	25	20	13	196	75°	6°	SC∞09T3				◉
NT-S25R-SSKCR09	31	25	15	198	75°	6°	SC∞09T3				◉
NT-S25R-SSKCR12	32	25	17	196	75°	7°	SC∞1204				◉
NT-S32S-SSKCR12	40	32	22	246	75°	7°	SC∞1204				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

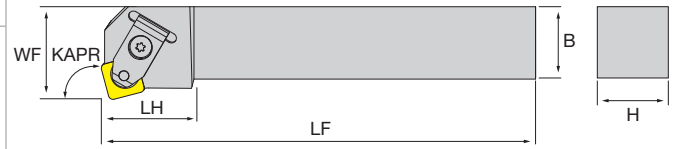
Spare parts	Insert screw	Flag wrench
		
NT-Sooo-SSKC$^{L}/_{R}$09	NT-ST40090T15	NT-FT15
NT-Sooo-SSKC$^{L}/_{R}$12	NT-ST40115T15	NT-FT15

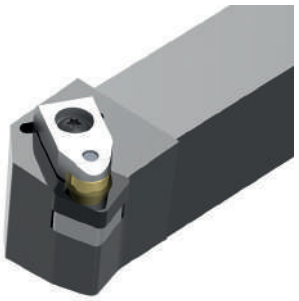
SORMA DIAMOND & CUTTING TOOLS

CSKN

ISO SN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert







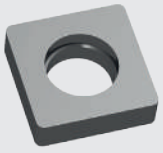


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSKNR2525M12	25	25	32	150	32	75°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

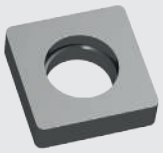
Spare parts	L wrench	Clamping set	Shim screw	Shim
				
NT-CSKNR2525M12	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071

SNON1207OO



NT-SH072
For 07 thickness, please order separately the correct shim

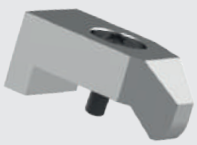
SNOX1207OO



NT-SH072
For 07 thickness, please order separately the correct shim

+

SNOX1207OO

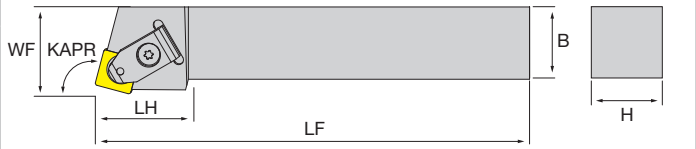


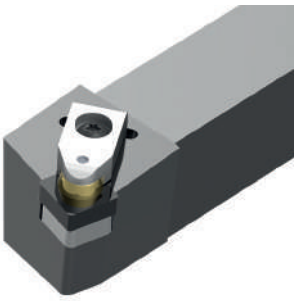
NT-CS153
For dimple top inserts, please order separately the correct clamp

CSRN

ISO SN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert





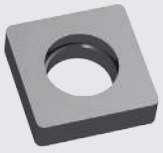


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSRNR2525M12	25	25	27	150	32	75°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

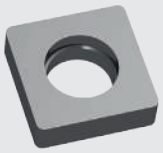
Spare parts	L wrench	Clamping set	Shim screw	Shim
				
	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071

SNON1207∞



NT-SH072
For 07 thickness, please order separately the correct shim

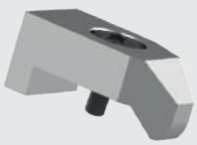
SNOX1207∞



NT-SH072
For 07 thickness, please order separately the correct shim

+

SNOX1207∞



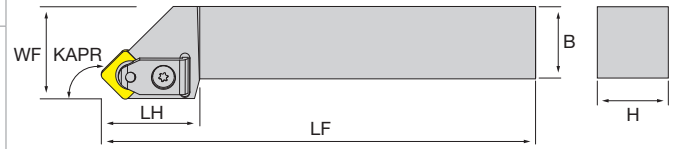
NT-CS153
For dimple top inserts, please order separately the correct clamp

SORMA DIAMOND & CUTTING TOOLS

CSSN

ISO SN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert







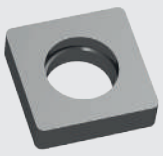


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSSNR2525M12	25	25	32	150	34	45°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

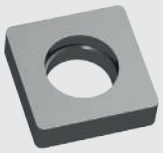
Spare parts	L wrench	Clamping set	Shim screw	Shim
	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071

SNON1207∞



NT-SH072
For 07 thickness, please order separately the correct shim

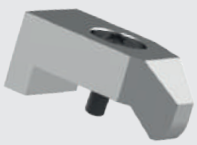
SNOX1207∞



NT-SH072
For 07 thickness, please order separately the correct shim

+

SNOX1207∞

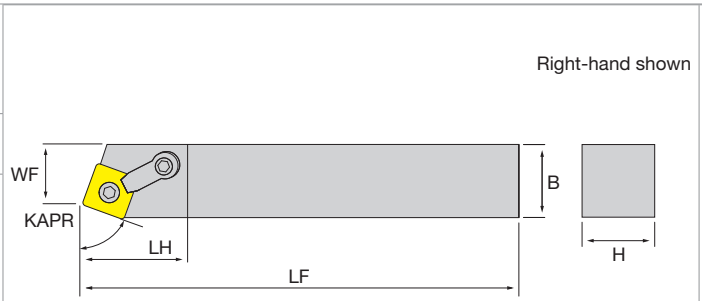


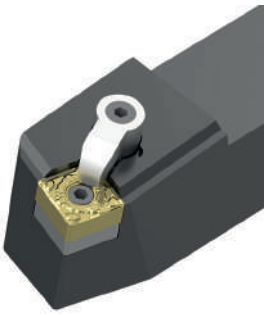
NT-CS153
For dimple top inserts, please order separately the correct clamp

MSBN

ISO SN - Negative

- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



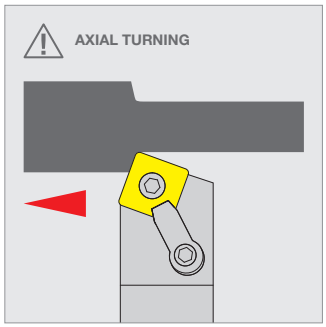




Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MSBNL2020K12	20	20	17	125	37	75°	SN∞1204				◉
NT-MSBNL2525M12	25	25	22	150	37	75°	SN∞1204				●
NT-MSBNL3232P12	32	32	27	170	42	75°	SN∞1204				◉
NT-MSBNL3232P19	32	32	27	170	42	75°	SN∞1906				◉
NT-MSBNL4040S19	40	40	35	250	42	75°	SN∞1906				◉
RIGHT-HAND											
NT-MSBNR2020K12	20	20	17	125	37	75°	SN∞1204				◉
NT-MSBNR2525M12	25	25	22	150	37	75°	SN∞1204				◉
NT-MSBNR3232P12	32	32	27	170	42	75°	SN∞1204				◉
NT-MSBNR3232P19	32	32	27	170	42	75°	SN∞1906				◉
NT-MSBNR4040S19	40	40	35	250	42	75°	SN∞1906				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSBN^{L}/$_{R}$∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSBN^{L}/$_{R}$∞∞∞19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

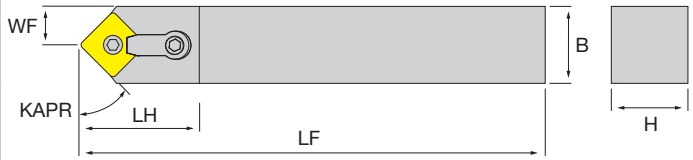


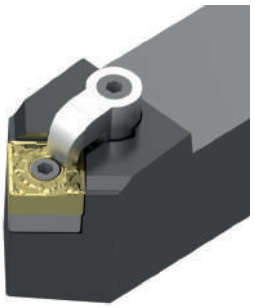
SORMA DIAMOND & CUTTING TOOLS

MSDN

ISO SN - Negative

- External turning (KAPR 45°), Neutral position
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-MSDNN2020K12	20	20	10	125	35	45°	SN∞1204				●
NT-MSDNN2525M12	25	25	12.5	150	37	45°	SN∞1204				●
NT-MSDNN3232P12	32	32	16	170	43	45°	SN∞1204				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

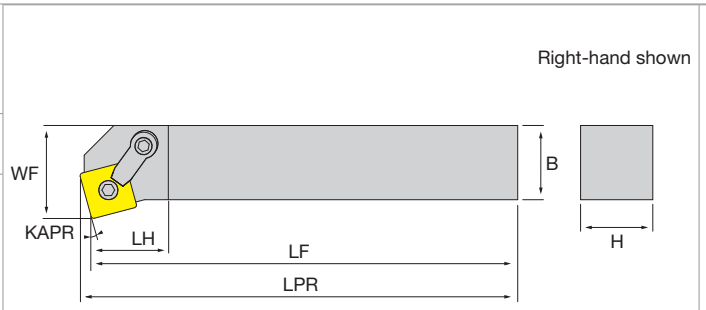
Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
					
NT-MSDNN∞∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030

SORMA DIAMOND & CUTTING TOOLS

MSKN

ISO SN - Negative

- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



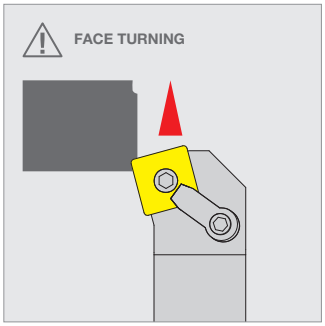




Designation	H	B	WF	LF	LH	LPR	KAPR	MIID			Stock
LEFT-HAND											
NT-MSKNL2020K12	20	20	25	122	37	125	75°	SN∞1204			●
NT-MSKNL2525M12	25	25	32	147	37	150	75°	SN∞1204			●
NT-MSKNL3232P12	32	32	40	167	42	170	75°	SN∞1204			◉
NT-MSKNL4040S19	40	40	50	247	42	250	75°	SN∞1906			◉
RIGHT-HAND											
NT-MSKNR2020K12	20	20	25	122	37	125	75°	SN∞1204			●
NT-MSKNR2525M12	25	25	32	147	37	150	75°	SN∞1204			●
NT-MSKNR3232P12	32	32	40	167	42	170	75°	SN∞1204			◉
NT-MSKNR4040S19	40	40	50	247	42	250	75°	SN∞1906			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
					
NT-MSKN^{L}/$_{R}$oooo12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSKN^{L}/$_{R}$oooo19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

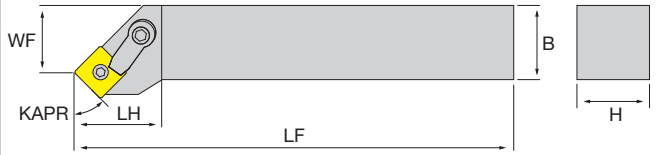


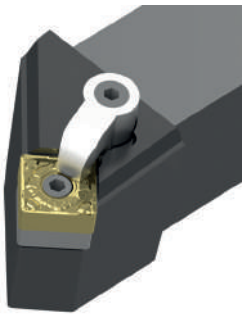
SORMA DIAMOND & CUTTING TOOLS

MSSN

ISO SN - Negative

- External turning (KAPR 45°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force









Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-MSSNL2020K12	20	20	25	125	45°	SN∞1204					●
NT-MSSNL2525M12	25	25	32	150	45°	SN∞1204					●
NT-MSSNL3232P12	32	32	40	170	45°	SN∞1204					◉
NT-MSSNL3232P19	32	32	40	170	45°	SN∞1906					◉
NT-MSSNL4040S19	40	40	40	250	45°	SN∞1906					◉
RIGHT-HAND											
NT-MSSNR2020K12	20	20	25	125	45°	SN∞1204					●
NT-MSSNR2525M12	25	25	32	150	45°	SN∞1204					●
NT-MSSNR3232P12	32	32	40	170	45°	SN∞1204					◉
NT-MSSNR3232P19	32	32	40	170	45°	SN∞1906					◉
NT-MSSNR4040S19	40	40	40	250	45°	SN∞1906					◉

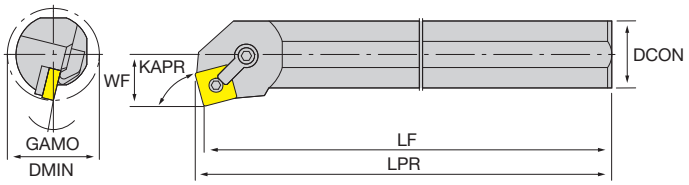
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSSN$^{L}/_{R}$oooo12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSSN$^{L}/_{R}$oooo19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

S MSKN

ISO SN - Negative

- Internal turning (KAPR 75°)
- Steel boring bar without internal coolant
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MSKNL12	25	20	13	200	75°	17°	SN∞1204				◉
NT-S25R-MSKNL12	32	25	17	200	75°	14°	SN∞1204				◉
NT-S32S-MSKNL12	40	32	22	250	75°	14°	SN∞1204				◉
NT-S40T-MSKNL12	50	40	27	300	75°	15°	SN∞1204				◉
NT-S50U-MSKNL12	63	50	35	350	75°	12°	SN∞1204				◉
NT-S50U-MSKNL19	63	50	35	350	75°	8°	SN∞1906				◉
RIGHT-HAND											
NT-S20R-MSKNR12	25	20	13	200	75°	17°	SN∞1204				◉
NT-S25R-MSKNR12	32	25	17	200	75°	14°	SN∞1204				◉
NT-S32S-MSKNR12	40	32	22	250	75°	14°	SN∞1204				◉
NT-S40T-MSKNR12	50	40	27	300	75°	15°	SN∞1204				◉
NT-S50U-MSKNR12	63	50	35	350	75°	12°	SN∞1204				◉
NT-S50U-MSKNR19	63	50	35	350	75°	8°	SN∞1906				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

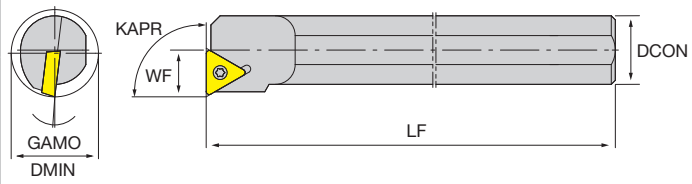
Spare parts	Eccentric pin	Clamp	Clamp screw	L wrench	Shim
NT-S20R-MSKN$^{L}_{R}$12	NT-SP035	NT-CS030	NT-SC030	NT-WR025	-
NT-S25R-MSKN$^{L}_{R}$12	NT-SP035	NT-CS030	NT-SC030	NT-WR025 / NT-WR030	-
NT-S32S-MSKN$^{L}_{R}$12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S40T-MSKN$^{L}_{R}$12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S50U-MSKN$^{L}_{R}$12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S50U-MSKN$^{L}_{R}$19	NT-SP050	NT-CS015	NT-SC070	NT-WR030 / NT-WR040	NT-SH090

SORMA DIAMOND & CUTTING TOOLS

S STUB

ISO TB - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TB style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-STUBL06-10	10	8	4	100	93°	12°	TB∞0601				◉
RIGHT-HAND											
NT-S08H-STUBR06-10	10	8	4	100	93°	12°	TB∞0601				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S08H-STUB$^{L}/_{R}$06-∞	NT-ST20038T06	NT-FT06

HOLDER AND INSERT COUPLING

Holder R → Insert L

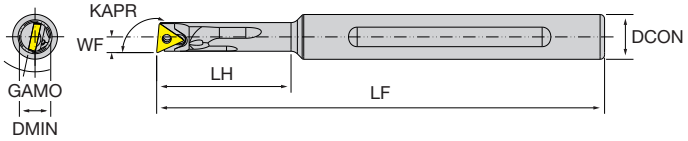
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

V STLB

ISO TB - Positive

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds TB style inserts, tightened by screws
- Special chip evacuation path





KAPR 95° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-STLBR06-07	7	10	3.5	100	30	95°	12°	TB∞0601			●
NT-V10H-STLBR06-08	8	10	4	100	35	95°	12°	TB∞0601			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V10H-STLB$^{L}/_{R}$06-∞	NT-ST20038T06	NT-FT06

HOLDER AND INSERT COUPLING

Holder R → Insert L

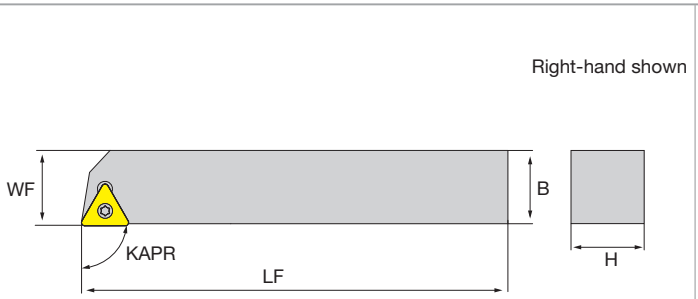
Holder L → Insert R

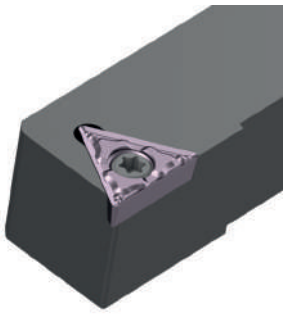
SORMA DIAMOND & CUTTING TOOLS

STAC

ISO TC - Positive

- External turning (KAPR 90°)
- Holds TC-style inserts, tightened by screw









Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-STACL0808H09	8	8	8.5	100	90°	TC∞0902					◉
NT-STACL1010H09	10	10	10.5	100	90°	TC∞0902					◉
NT-STACL1212H11	12	12	12.5	100	90°	TC∞1102					◉
NT-STACL1616H11	16	16	16.5	100	90°	TC∞1102					◉
RIGHT-HAND											
NT-STACR0808H09	8	8	8.5	100	90°	TC∞0902					◉
NT-STACR1010H09	10	10	10.5	100	90°	TC∞0902					◉
NT-STACR1212H11	12	12	12.5	100	90°	TC∞1102					◉
NT-STACR1616H11	16	16	16.5	100	90°	TC∞1102					◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

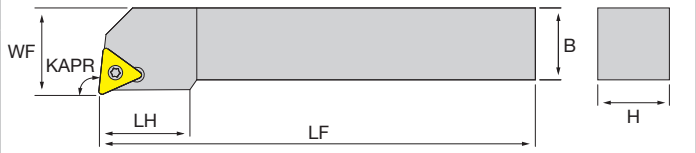
Spare parts	Insert screw	Flag wrench
		
NT-STAC^{L}/$_{R}$OOOOO09	NT-ST22049T07	NT-FT07
NT-STAC^{L}/$_{R}$OOOOO11	NT-ST25060T07B	NT-FT07

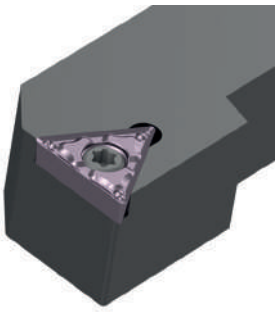
SORMA DIAMOND & CUTTING TOOLS

STFC

ISO TC - Positive

- External turning (KAPR 91°)
- Holds TC-style inserts, tightened by screw







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-STFCL0808H09	8	8	10	100	12	91°	TC∞0902				◉
NT-STFCL1010H09	10	10	12	100	12	91°	TC∞0902				◉
NT-STFCL1212H11	12	12	16	100	17	91°	TC∞1102				◉
NT-STFCL1616H11	16	16	20	100	18	91°	TC∞1102				◉
NT-STFCL2020K16	20	20	25	125	22	91°	TC∞16T3				◉
NT-STFCL2525M16	25	25	32	150	25	91°	TC∞16T3				◉
RIGHT-HAND											
NT-STFCR0808H09	8	8	10	100	12	91°	TC∞0902				◉
NT-STFCR1010H09	10	10	12	100	12	91°	TC∞0902				◉
NT-STFCR1212H11	12	12	16	100	17	91°	TC∞1102				●
NT-STFCR1616H11	16	16	20	100	18	91°	TC∞1102				◉
NT-STFCR2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STFCR2525M16	25	25	32	150	25	91°	TC∞16T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

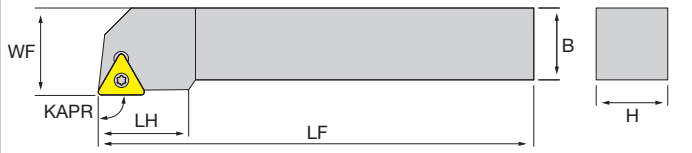
Spare parts	Insert screw	Flag wrench
		
NT-STFC^{L}/$_{RO0000}$09	NT-ST22049T07	NT-FT07
NT-STFC^{L}/$_{RO0000}$11	NT-ST25060T07B	NT-FT07
NT-STFC^{L}/$_{RO0000}$16	NT-ST40090T15	NT-FT15

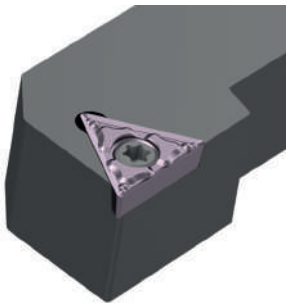
SORMA DIAMOND & CUTTING TOOLS

STGC

ISO TC - Positive

- External turning (KAPR 91°)
- Holds TC-style inserts, tightened by screw









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-STGCL1212H11	12	12	16	100	17	91°	TC∞1102				◉
NT-STGCL1616H11	16	16	20	100	18	91°	TC∞1102				◉
NT-STGCL2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STGCL2525M16	25	25	32	150	25	91°	TC∞16T3				●
RIGHT-HAND											
NT-STGCR1212H11	12	12	16	100	17	91°	TC∞1102				◉
NT-STGCR1616H11	16	16	20	100	18	91°	TC∞1102				◉
NT-STGCR2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STGCR2525M16	25	25	32	150	25	91°	TC∞16T3				●

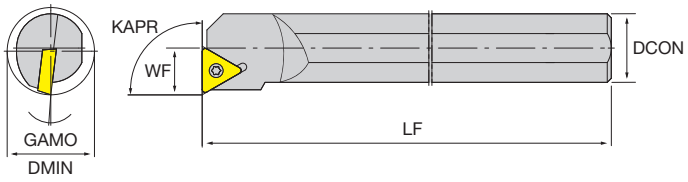
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

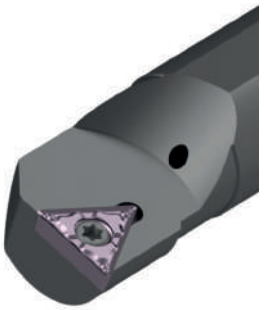
Spare parts	Insert screw	Flag wrench
		
NT-STGC$^{L}/_{R}$oooo11	NT-ST25060T07B	NT-FT07
NT-STGC$^{L}/_{R}$oooo16	NT-ST40090T15	NT-FT15

A STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Steel boring bar with internal coolant through
- Holds TC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A10K-STFCL11	14	10	7	125	91°	12°	TC∞1102				◉
NT-A12M-STFCL11	14	12	7	150	91°	10°	TC∞1102				◉
NT-A16Q-STFCL11	18	16	9	180	91°	8°	TC∞1102				●
NT-A20R-STFCL11	25	20	13	200	91°	3°	TC∞1102				◉
RIGHT-HAND											
NT-A10K-STFCR11	14	10	7	125	91°	12°	TC∞1102				●
NT-A12M-STFCR11	14	12	7	150	91°	10°	TC∞1102				●
NT-A16Q-STFCR11	18	16	9	180	91°	8°	TC∞1102				●
NT-A20R-STFCR11	25	20	13	200	91°	3°	TC∞1102				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-A∞∞-STFC$^{L}/_{R}$11	NT-ST25060T07B	NT-FT07

HOLDER AND INSERT COUPLING

Holder R → Insert L

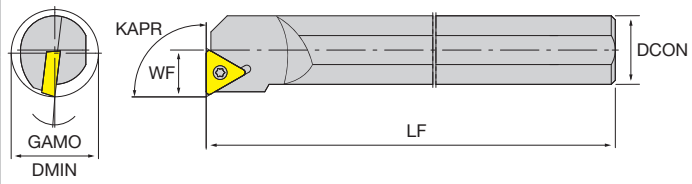
Holder L → Insert R

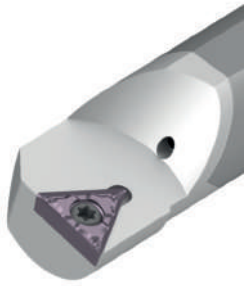
SORMA DIAMOND & CUTTING TOOLS

E STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds TC-style inserts, tightened by screws





KAPR 91° | S | CARBIDE MAX 7XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E10K-STFCL11	12	10	6	125	91°	10°	TC∞1102				◉
NT-E12M-STFCL11	16	12	8	150	91°	10°	TC∞1102				●
NT-E16R-STFCL11	20	16	10	200	91°	12°	TC∞1102				●
NT-E20R-STFCL11	25	20	13	200	91°	12°	TC∞1102				●
RIGHT-HAND											
NT-E10K-STFCR11	12	10	6	125	91°	10°	TC∞1102				●
NT-E12M-STFCR11	16	12	8	150	91°	10°	TC∞1102				●
NT-E16R-STFCR11	20	16	10	200	91°	12°	TC∞1102				●
NT-E20R-STFCR11	25	20	13	200	91°	12°	TC∞1102				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-E○○○-STFC$^{L}/_{R}$11	NT-ST25060T07B	NT-FT07

HOLDER AND INSERT COUPLING

Holder R → Insert L

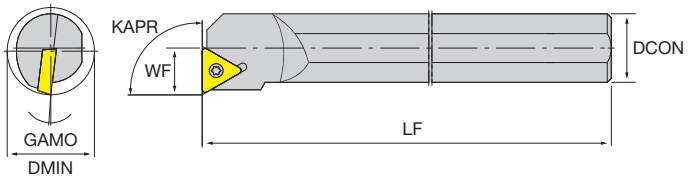
Holder L → Insert R

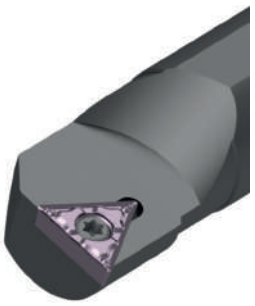
SORMA DIAMOND & CUTTING TOOLS

S STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Steel boring bar without internal coolant
- Holds TC-style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-STFCL09	12	8	6	100	91°	15°	TC∞0902				◉
NT-S10K-STFCL09	14	10	7	125	91°	15°	TC∞0902				◉
NT-S12M-STFCL09	16	12	9	150	91°	10°	TC∞0902				◉
NT-S10K-STFCL11	14	10	7	125	91°	12°	TC∞1102				●
NT-S12M-STFCL11	14	12	7	150	91°	10°	TC∞1102				●
NT-S16Q-STFCL11	18	16	9	180	91°	8°	TC∞1102				●
NT-S20R-STFCL11	25	20	13	200	91°	3°	TC∞1102				◉
NT-S20R-STFCL16	25	20	13	200	91°	8°	TC∞16T3				●
NT-S25R-STFCL16	32	25	17	200	91°	6°	TC∞16T3				●
NT-S32S-STFCL16	39	32	22	250	91°	4°	TC∞16T3				◉
RIGHT-HAND											
NT-S08H-STFCR09	12	8	6	100	91°	15°	TC∞0902				●
NT-S10K-STFCR09	14	10	7	125	91°	15°	TC∞0902				●
NT-S12M-STFCR09	16	12	9	150	91°	10°	TC∞0902				●
NT-S10K-STFCR11	14	10	7	125	91°	12°	TC∞1102				●
NT-S12M-STFCR11	14	12	7	150	91°	10°	TC∞1102				●
NT-S16Q-STFCR11	18	16	9	180	91°	8°	TC∞1102				●
NT-S20R-STFCR11	25	20	13	200	91°	3°	TC∞1102				●
NT-S20R-STFCR16	25	20	13	200	91°	8°	TC∞16T3				●
NT-S25R-STFCR16	32	25	17	200	91°	6°	TC∞16T3				●
NT-S32S-STFCR16	39	32	22	250	91°	4°	TC∞16T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Sooo-STFC$^{L}/_{R}$09	NT-ST22049T07	NT-FT07
NT-Sooo-STFC$^{L}/_{R}$11	NT-ST25060T07B	NT-FT07
NT-Sooo-STFC$^{L}/_{R}$16	NT-ST40090T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

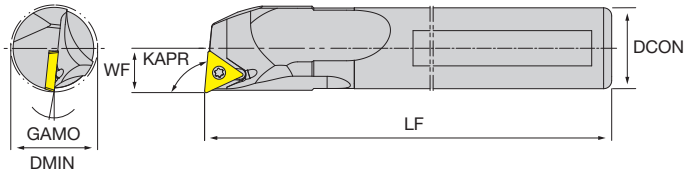
Holder L → Insert R

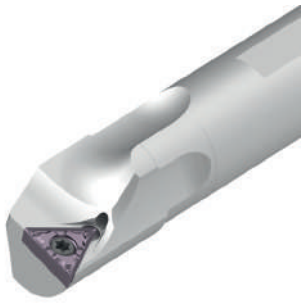
SORMA DIAMOND & CUTTING TOOLS

V STLC

ISO TC - Positive

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds TC-style inserts, tightened by screws
- Special chip evacuation path





KAPR 95° | S | VORTEX STEEL MAX 5XD | INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V08H-STLCL09-10	10	8	5	100	95°	14°	TC∞0902				◉
NT-V10K-STLCL09-12	12	10	6	125	95°	12°	TC∞0902				◉
NT-V12M-STLCL09-14	14	12	7	150	95°	10°	TC∞0902				◉
NT-V10K-STLCL11-12	12	10	6	125	95°	12°	TC∞1102				●
NT-V12M-STLCL11-14	14	12	7	150	95°	10°	TC∞1102				●
NT-V16Q-STLCL11-18	18	16	9	180	95°	8°	TC∞1102				●
NT-V20R-STLCL11-22	22	20	11	200	95°	6°	TC∞1102				●
NT-V20R-STLCL16-25	25	20	12.5	200	95°	8°	TC∞16T3				●
NT-V25S-STLCL16-32	32	25	16	250	95°	6°	TC∞16T3				●
RIGHT-HAND											
NT-V08H-STLCR09-10	10	8	5	100	95°	14°	TC∞0902				◉
NT-V10K-STLCR09-12	12	10	6	125	95°	12°	TC∞0902				●
NT-V12M-STLCR09-14	14	12	7	150	95°	10°	TC∞0902				◉
NT-V10K-STLCR11-12	12	10	6	125	95°	12°	TC∞1102				●
NT-V12M-STLCR11-14	14	12	7	150	95°	10°	TC∞1102				●
NT-V16Q-STLCR11-18	18	16	9	180	95°	8°	TC∞1102				●
NT-V20R-STLCR11-22	22	20	11	200	95°	6°	TC∞1102				●
NT-V20R-STLCR16-25	25	20	12.5	200	95°	8°	TC∞16T3				●
NT-V25S-STLCR16-32	32	25	16	250	95°	6°	TC∞16T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-Vooo-STLC$^{L}/_{R}$09-oo	NT-ST22049T07	NT-FT07
NT-Vooo-STLC$^{L}/_{R}$11-oo	NT-ST25060T07B	NT-FT07
NT-Vooo-STLC$^{L}/_{R}$16-oo	NT-ST40090T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

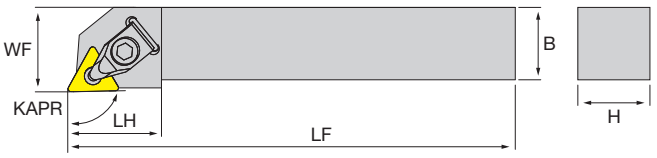
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

DTGN

ISO TN - Negative

- External turning (KAPR 91°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DTGNL2020K16X	20	20	25	125	33	91°	TN∞1604				●
NT-DTGNL2525M16X	25	25	32	150	33	91°	TN∞1604				●
RIGHT-HAND											
NT-DTGNR2020K16X	20	20	25	125	33	91°	TN∞1604				●
NT-DTGNR2525M16X	25	25	32	150	33	91°	TN∞1604				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

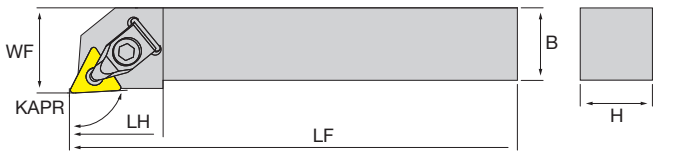
Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
						
NT-DTGN^{L}/$_{R}$○○○○○16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

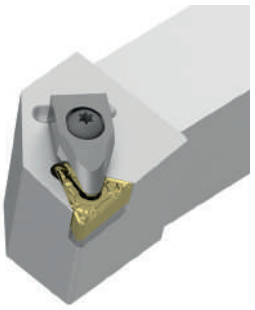
SORMA DIAMOND & CUTTING TOOLS

DTJN

ISO TN - Negative

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DTJNL2020K16X	20	20	25	125	33	93°	TN∞1604				●
NT-DTJNL2525M16X	25	25	32	150	33	93°	TN∞1604				●
RIGHT-HAND											
NT-DTJNR2020K16X	20	20	25	125	33	93°	TN∞1604				●
NT-DTJNR2525M16X	25	25	32	150	33	93°	TN∞1604				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

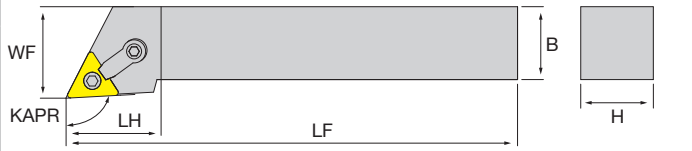
Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
						
NT-DTJN$^{L}/_{R}$ooooo16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

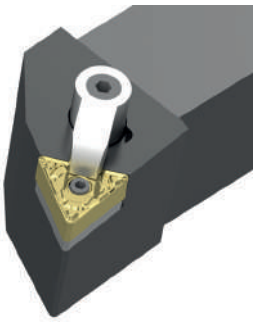
SORMA DIAMOND & CUTTING TOOLS

MTJN

ISO TN - Negative

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MTJNL2020K16	20	20	25	125	33	93°	TN∞1604				●
NT-MTJNL2525M16	25	25	32	150	35	93°	TN∞1604				●
NT-MTJNL3232P16	32	32	40	170	43	93°	TN∞1604				●
NT-MTJNL2525M22	25	25	32	150	43	93°	TN∞2204				◉
NT-MTJNL3225P22	32	25	32	170	43	93°	TN∞2204				◉
RIGHT-HAND											
NT-MTJNR2020K16	20	20	25	125	33	93°	TN∞1604				●
NT-MTJNR2525M16	25	25	32	150	35	93°	TN∞1604				●
NT-MTJNR3232P16	32	32	40	170	43	93°	TN∞1604				●
NT-MTJNR2525M22	25	25	32	150	43	93°	TN∞2204				●
NT-MTJNR3225P22	32	25	32	170	43	93°	TN∞2204				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

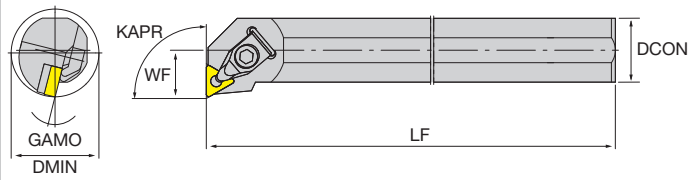
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
					
NT-MTJN$^{L}_{R}$2020K16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN$^{L}_{R}$2525M16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN$^{L}_{R}$3232P16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN$^{L}_{R}$2525M22	NT-SH008	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070
NT-MTJN$^{L}_{R}$3225P22	NT-SH008	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070

SORMA DIAMOND & CUTTING TOOLS

A DTFN

ISO TN - Negative

- Internal turning (KAPR 91°)
- Steel boring bar with internal coolant through
- Holds TN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DTFNL16	32	25	17	200	91°	13°	TN∞1604				●
NT-A32S-DTFNL16	40	32	22	250	91°	13°	TN∞1604				●
RIGHT-HAND											
NT-A25R-DTFNR16	32	25	17	200	91°	13°	TN∞1604				●
NT-A32S-DTFNR16	40	32	22	250	91°	13°	TN∞1604				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
						
NT-A○○○-DTFN$^{L}/_{R}$16	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

HOLDER AND INSERT COUPLING

Holder R → Insert L

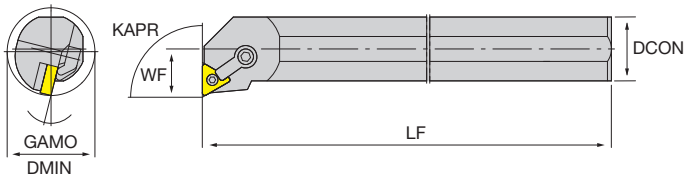
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

S MTUN

ISO TN - Negative

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MTUNL16	25	20	13	200	93°	17°	TN∞1604				●
NT-S25R-MTUNL16	32	25	17	200	93°	12°	TN∞1604				●
NT-S32S-MTUNL16	40	32	22	250	93°	10°	TN∞1604				●
NT-S40T-MTUNL16	50	40	27	300	93°	10°	TN∞1604				●
NT-S50U-MTUNL16	63	50	35	350	93°	8°	TN∞1604				●
NT-S40T-MTUNL22	50	40	27	300	93°	15°	TN∞2204				◉
NT-S50U-MTUNL22	63	50	35	350	93°	12°	TN∞2204				◉
RIGHT-HAND											
NT-S20R-MTUNR16	25	20	13	200	93°	17°	TN∞1604				●
NT-S25R-MTUNR16	32	25	17	200	93°	12°	TN∞1604				●
NT-S32S-MTUNR16	40	32	22	250	93°	10°	TN∞1604				●
NT-S40T-MTUNR16	50	40	27	300	93°	10°	TN∞1604				●
NT-S50U-MTUNR16	63	50	35	350	93°	8°	TN∞1604				●
NT-S40T-MTUNR22	50	40	27	300	93°	15°	TN∞2204				◉
NT-S50U-MTUNR22	63	50	35	350	93°	12°	TN∞2204				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S20R-MTUN$^{L}/_{R}$16	NT-SP030	NT-WR020 / NT-WR025	NT-CS030	NT-SC030	-
NT-S25R-MTUN$^{L}/_{R}$16	NT-SP030	NT-WR020 / NT-WR030	NT-CS010	NT-SC008	-
NT-S32S-MTUN$^{L}/_{R}$16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S40T-MTUN$^{L}/_{R}$16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S50U-MTUN$^{L}/_{R}$16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S40T-MTUN$^{L}/_{R}$22	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070	NT-SH008
NT-S50U-MTUN$^{L}/_{R}$22	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070	NT-SH008

HOLDER AND INSERT COUPLING

Holder R → Insert L

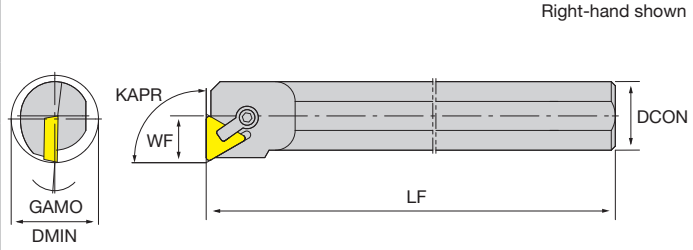
Holder L → Insert R

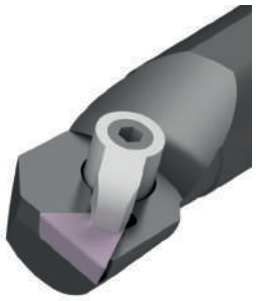
SORMA DIAMOND & CUTTING TOOLS

S CTUP

ISO TP - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TP style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-CTUPL11	16	12	9	150	93°	6°	TP∞1103				◉
NT-S16Q-CTUPL11	20	16	11	180	93°	3°	TP∞1103				◉
NT-S20R-CTUPL11	25	20	13	200	93°	3°	TP∞1103				◉
NT-S25R-CTUPL16	32	25	17	200	93°	3°	TP∞1603				◉
NT-S32S-CTUPL16	40	32	22	250	93°	3°	TP∞1603				◉
RIGHT-HAND											
NT-S12M-CTUPR11	16	12	9	150	93°	6°	TP∞1103				●
NT-S16Q-CTUPR11	20	16	11	180	93°	3°	TP∞1103				◉
NT-S20R-CTUPR11	25	20	13	200	93°	3°	TP∞1103				●
NT-S25R-CTUPR16	32	25	17	200	93°	3°	TP∞1603				●
NT-S32S-CTUPR16	40	32	22	250	93°	3°	TP∞1603				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

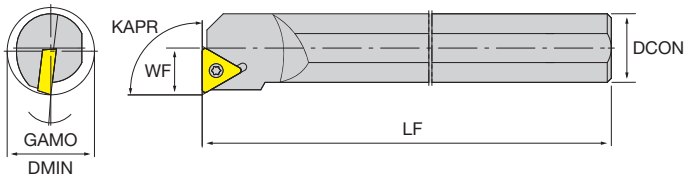
Spare parts	Clamping set	L wrench	Clamp	Clamp screw	Shim	Shim screw	Flag wrench
							
NT-S12M-CTUP$^{L}_{R}$11	NT-CS003	NT-WR025	-	-	-	-	-
NT-S16Q-CTUP$^{L}_{R}$11	-	NT-WR025	NT-CS005	NT-SC005	-	-	-
NT-S20R-CTUP$^{L}_{R}$11	-	NT-WR025	NT-CS005	NT-SC005	-	-	-
NT-S25R-CTUP$^{L}_{R}$16	-	NT-WR030	NT-CS010	NT-SC008	NT-SH002	NT-ST022	NT-FT06
NT-S32S-CTUP$^{L}_{R}$16	-	NT-WR030	NT-CS010	NT-SC008	NT-SH002	NT-ST022	NT-FT06

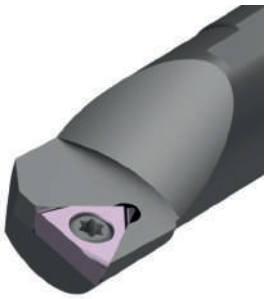
SORMA DIAMOND & CUTTING TOOLS

S STUP

ISO TP - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TP style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10K-STUPL09	12	10	6	125	93°	8°	TP∞0902				◉
NT-S12M-STUPL09	14	12	7	150	93°	5°	TP∞0902				◉
NT-S10K-STUPL11	12	10	6	125	93°	8°	TP∞1103				◉
NT-S12M-STUPL11	14	12	7	150	93°	7°	TP∞1103				◉
NT-S16Q-STUPL11	18	16	9	180	93°	4°	TP∞1103				◉
RIGHT-HAND											
NT-S10K-STUPR09	12	10	6	125	93°	8°	TP∞0902				●
NT-S12M-STUPR09	14	12	7	150	93°	5°	TP∞0902				◉
NT-S10K-STUPR11	12	10	6	125	93°	8°	TP∞1103				●
NT-S12M-STUPR11	14	12	7	150	93°	7°	TP∞1103				●
NT-S16Q-STUPR11	18	16	9	180	93°	4°	TP∞1103				◉
NT-S20R-STUPR11	22	20	11	200	93°	2°	TP∞1103				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-S10K-STUP$^{L}/_{R}$09	NT-ST30058T10	NT-FT10
NT-S12M-STUP$^{L}/_{R}$09	NT-ST30058T10	NT-FT10
NT-S10K-STUP$^{L}/_{R}$11	NT-ST30058T10	NT-FT10
NT-S12M-STUP$^{L}/_{R}$11	NT-ST30058T10	NT-FT10
NT-S16Q-STUP$^{L}/_{R}$11	NT-ST30058T10	NT-FT10
NT-S20R-STUP$^{L}/_{R}$11	NT-ST30058T10	NT-FT10

HOLDER AND INSERT COUPLING

Holder R → Insert L

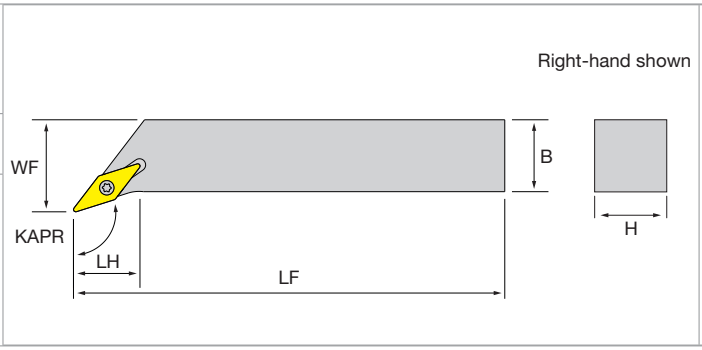
Holder L → Insert R

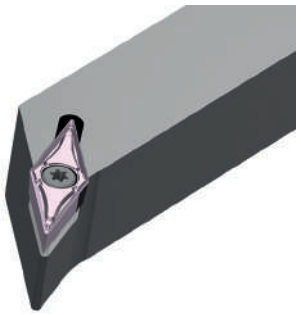
SORMA DIAMOND & CUTTING TOOLS

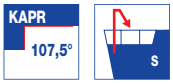
SVHB

ISO VB - Positive

- External turning (KAPR 107.5°)
- Holds VB/VC-style inserts, tightened by screw







Designation	H	B	WF	LF	LH	LPR	KAPR	MIID			Stock
LEFT-HAND											
NT-SVHBL2525M16	25	25	32	150	23	-	107.5°	VB∞1604			◉
RIGHT-HAND											
NT-SVHBR2525M16	25	25	32	150	23	-	107.5°	VB∞1604			◉

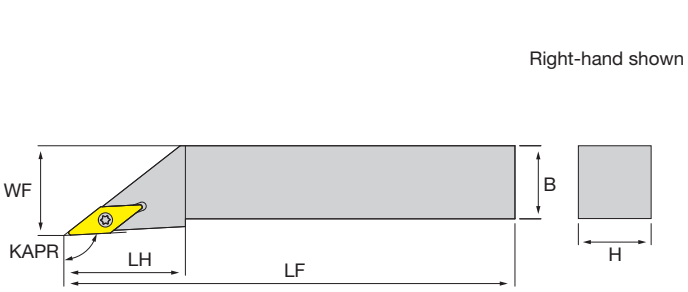
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

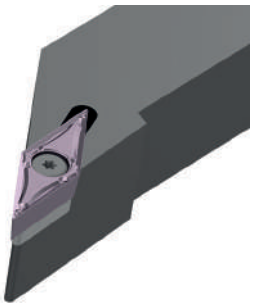
Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
					
NT-SVHB$^{L}/_{R}$2525M16	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVJB

ISO VB - Positive

- External turning (KAPR 93°)
- Holds VB/VC-style inserts, tightened by screw







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SVJBL2020K11	20	20	25	125	22	93°	VB∞1103				●
NT-SVJBL2020K16	20	20	25	125	33	93°	VB∞1604				●
NT-SVJBL2525M16	25	25	32	150	38	93°	VB∞1604				●
NT-SVJBL3232P16	-	-	-	-	-	-	VB∞1604				◉
RIGHT-HAND											
NT-SVJBR2020K11	20	20	25	125	22	93°	VB∞1103				●
NT-SVJBR2020K16	20	20	25	125	33	93°	VB∞1604				●
NT-SVJBR2525M16	25	25	32	150	38	93°	VB∞1604				●
NT-SVJBR3232P16	-	-	-	-	-	-	VB∞1604				◉

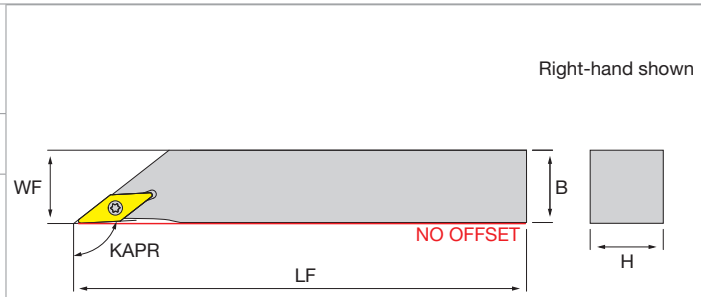
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

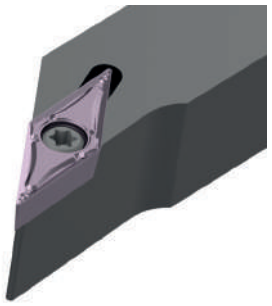
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJB$^{L}/_{R}$∞∞∞11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJB$^{L}/_{R}$∞∞∞16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVJB N

ISO VB - Positive

- External turning (KAPR 93°)
- Holds VB/VC-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVJBL1212K11N	12	12	12	125	93°	VB∞1103					●
NT-SVJBL1616K11N	16	16	16	125	93°	VB∞1103					●
NT-SVJBL1616H16N	16	16	16	100	93°	VB∞1604					●
RIGHT-HAND											
NT-SVJBR1212K11N	12	12	12	125	93°	VB∞1103					●
NT-SVJBR1616K11N	16	16	16	125	93°	VB∞1103					●
NT-SVJBR1616H16N	16	16	16	100	93°	VB∞1604					●

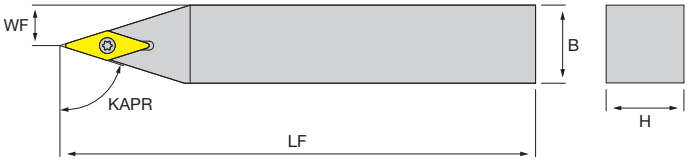
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

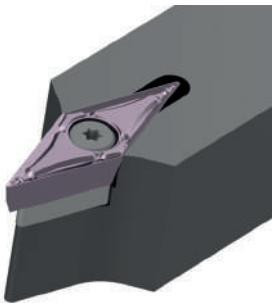
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJB$^{L}/_{R}$∞∞∞11N	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJB$^{L}/_{R}$∞∞∞16N	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

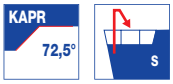
SVVB

ISO VB - Positive

- External turning (KAPR 72.5°), Neutral position
- Holds VB/VC-style inserts, tightened by screw







Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SVVBN2020K11	20	20	10	125	72.5°	VB∞1103					●
NT-SVVBN2525M11	25	25	12.5	150	72.5°	VB∞1103					●
NT-SVVBN2020K16	20	20	10	125	72.5°	VB∞1604					●
NT-SVVBN2525M16	25	25	12.5	150	72.5°	VB∞1604					●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

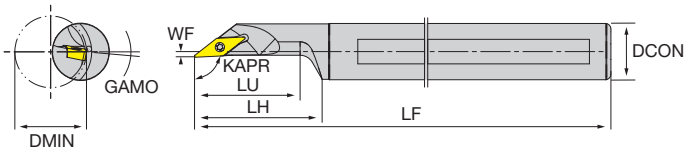
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
					
NT-SVVBN○○○○11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVVBN○○○○16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SORMA DIAMOND & CUTTING TOOLS

V SVJB

ISO VB - Positive

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds VB/VC-style inserts, tightened by screws
- Special chip evacuation path







Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-V20R-SVJBL11-25	25	20	2	200	48	93°	5°	VB∞1103			●
NT-V25S-SVJBL11-30	30	25	3.5	250	58	93°	5°	VB∞1103			●
RIGHT-HAND WITH REDUCED NECK											
NT-V20R-SVJBR11-25	25	20	2	200	48	93°	5°	VB∞1103			●
NT-V25S-SVJBR11-30	30	25	3.5	250	58	93°	5°	VB∞1103			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-V∞∞-SVJB$^{L}/_{R}$11-∞	NT-ST25060T07B	NT-FT07

HOLDER AND INSERT COUPLING

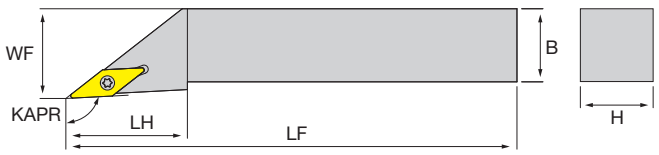
Holder R → Insert L

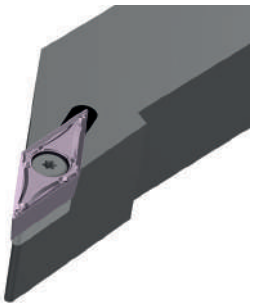
Holder L → Insert R

SVJC

ISO VC - Positive

- External turning (KAPR 93°)
- Holds VC/VB-style inserts, tightened by screw







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SVJCL2020K11	20	20	25	125	22	93°	VC∞1103				●
NT-SVJCL2020K16	20	20	25	125	33	93°	VC∞1604				●
NT-SVJCL2525M16	25	25	32	150	38	93°	VC∞1604				●
RIGHT-HAND											
NT-SVJCR2020K11	20	20	25	125	22	93°	VC∞1103				●
NT-SVJCR2020K16	20	20	25	125	33	93°	VC∞1604				●
NT-SVJCR2525M16	25	25	32	150	38	93°	VC∞1604				●

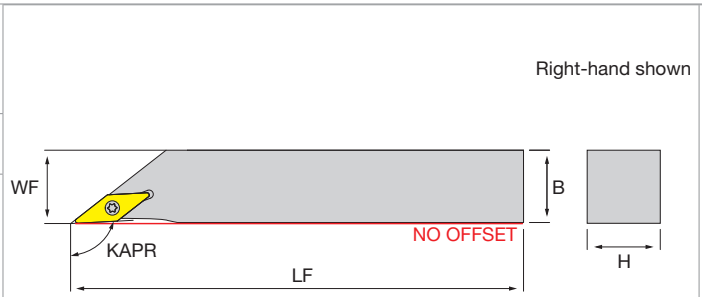
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

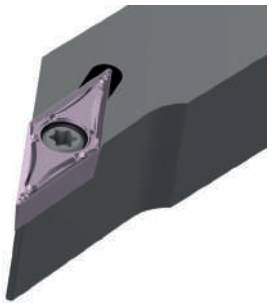
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJC$^{L}/_{R}$oooo11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJC$^{L}/_{R}$oooo16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVJC N

ISO VC - Positive

- External turning (KAPR 93°)
- Holds VC/VB-style inserts, tightened by screw
- Suitable for lathes without offset







Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVJCL1010K11N	10	10	10	125	93°	VC∞1103					◉
NT-SVJCL1212K11N	12	12	12	125	93°	VC∞1103					●
NT-SVJCL1616K11N	16	16	16	125	93°	VC∞1103					●
NT-SVJCL1616H16N	16	16	16	100	93°	VC∞1604					●
RIGHT-HAND											
NT-SVJCR1010K11N	10	10	10	125	93°	VC∞1103					◉
NT-SVJCR1212K11N	12	12	12	125	93°	VC∞1103					●
NT-SVJCR1616K11N	16	16	16	125	93°	VC∞1103					●
NT-SVJCR1616H16N	16	16	16	100	93°	VC∞1604					●

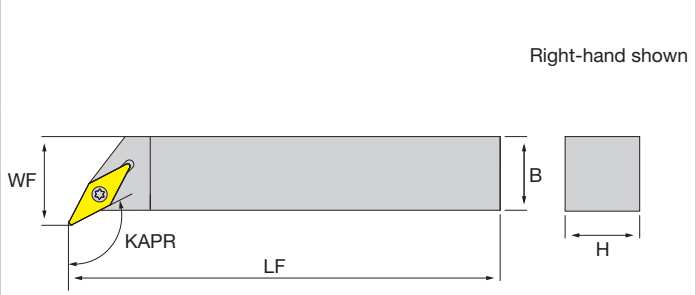
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

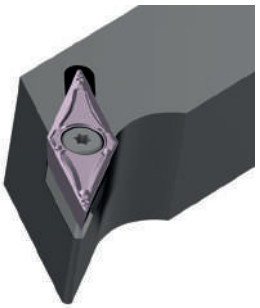
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJC^{L}/$_{R}$oooo11N	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJC^{L}/$_{R}$oooo16N	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVPC

ISO VC - Positive

- External turning (KAPR 117.5°)
- Holds VC/VB-style inserts, tightened by screw









Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVPCL1010H11	10	10	14.5	100	117.5°	VC∞1103					◉
NT-SVPCL1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCL1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCL2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCL2525M16	25	25	32	150	117.5°	VC∞1604					●
RIGHT-HAND											
NT-SVPCR1010H11	10	10	14.5	100	117.5°	VC∞1103					◉
NT-SVPCR1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCR1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCR2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCR2525M16	25	25	32	150	117.5°	VC∞1604					●

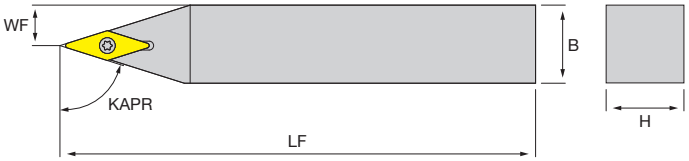
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

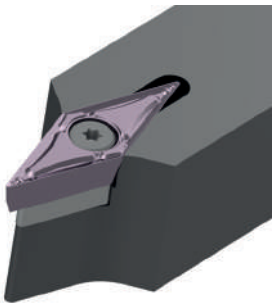
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
					
NT-SVPC$^{L}/_{R}$oooo11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVPC$^{L}/_{R}$oooo16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVVC

ISO VC - Positive

- External turning (KAPR 72.5°), Neutral position
- Holds VC/VB-style inserts, tightened by screw









Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SVVCN1010H11	10	10	5	100	72.5°	VC∞1103					◉
NT-SVVCN1212H11	12	12	6	100	72.5°	VC∞1103					●
NT-SVVCN1616H11	16	16	8	100	72.5°	VC∞1103					●
NT-SVVCN2020K16	20	20	10	125	72.5°	VC∞1604					●
NT-SVVCN2525M16	25	25	12.5	150	72.5°	VC∞1604					●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

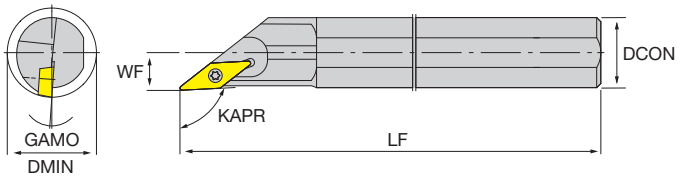
Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVVCN∞∞∞∞11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVVCN∞∞∞∞16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

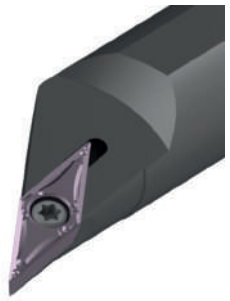
SORMA DIAMOND & CUTTING TOOLS

S SVJC

ISO VC - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VC/VB style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-SVJCL11	14	12	7	150	93°	7°	VC∞1103				◉
NT-S16Q-SVJCL11	18	16	9	180	93°	7°	VC∞1103				●
NT-S16Q-SVJCL16	18	16	9	180	93°	7°	VC∞1604				●
NT-S20R-SVJCL16	21	20	10.5	200	93°	6°	VC∞1604				●
NT-S25R-SVJCL16	27	25	13.5	200	93°	6°	VC∞1604				◉
NT-S32S-SVJCL16	34	32	17	250	93°	4°	VC∞1604				●
NT-S40T-SVJCL16	44	40	22	300	93°	4°	VC∞1604				◉
RIGHT-HAND											
NT-S12M-SVJCR11	14	12	7	150	93°	7°	VC∞1103				●
NT-S16Q-SVJCR11	18	16	9	180	93°	7°	VC∞1103				●
NT-S16Q-SVJCR16	18	16	9	180	93°	7°	VC∞1604				●
NT-S20R-SVJCR16	21	20	10.5	200	93°	6°	VC∞1604				●
NT-S25R-SVJCR16	27	25	13.5	200	93°	6°	VC∞1604				●
NT-S32S-SVJCR16	34	32	17	250	93°	4°	VC∞1604				●
NT-S40T-SVJCR16	44	40	22	300	93°	4°	VC∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S○○○-SVJC$^{L}_{R}$11	NT-ST25060T07B	NT-FT07
NT-S○○○-SVJC$^{L}_{R}$16	NT-ST35089T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

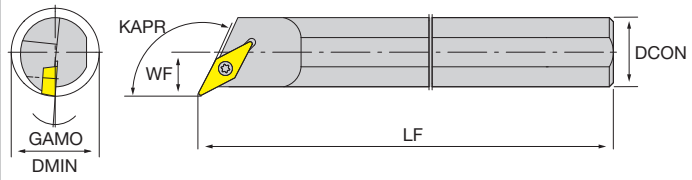
Holder L → Insert R

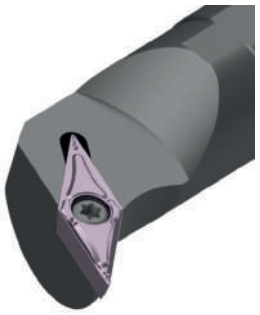
SORMA DIAMOND & CUTTING TOOLS

S SVQC

ISO VC - Positive

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds VC/VB style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-SVQCL11	22	16	13	180	107.5°	7°	VC∞1103				●
NT-S20R-SVQCL11	27	20	15	200	107.5°	6°	VC∞1103				◉
NT-S20R-SVQCL16	30	20	19	200	107.5°	8°	VC∞1604				◉
NT-S25R-SVQCL16	34	25	20.5	200	107.5°	4°	VC∞1604				●
NT-S32S-SVQCL16	41	32	22.5	250	107.5°	8°	VC∞1604				●
NT-S40T-SVQCL16	50	40	27	300	107.5°	6°	VC∞1604				◉
RIGHT-HAND											
NT-S16Q-SVQCR11	22	16	13	180	107.5°	7°	VC∞1103				●
NT-S20R-SVQCR11	27	20	15	200	107.5°	6°	VC∞1103				◉
NT-S20R-SVQCR16	30	20	19	200	107.5°	8°	VC∞1604				●
NT-S25R-SVQCR16	34	25	20.5	200	107.5°	4°	VC∞1604				●
NT-S32S-SVQCR16	41	32	22.5	250	107.5°	8°	VC∞1604				◉
NT-S40T-SVQCR16	50	40	27	300	107.5°	6°	VC∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Sooo-SVQC$^{L}_{R}$11	NT-ST25060T07B	NT-FT07
NT-Sooo-SVQC$^{L}_{R}$16	NT-ST35089T15	NT-FT15

HOLDER AND INSERT COUPLING

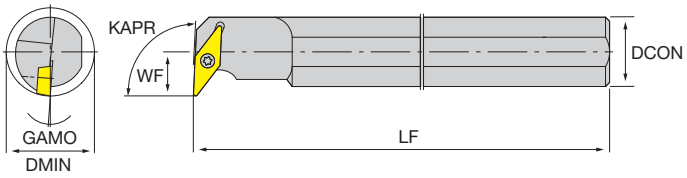
Holder R → Insert L

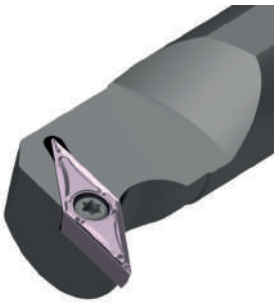
Holder L → Insert R

S SVUC

ISO VC - Positive

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VC/VB style inserts, tightened by screws







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-SVUCL11	22	16	13	180	93°	7°	VC∞1103				●
NT-S20R-SVUCL11	27	20	15	200	93°	6°	VC∞1103				●
NT-S20R-SVUCL16	31	20	19	200	93°	8°	VC∞1604				●
NT-S25R-SVUCL16	33	25	20.5	200	93°	7°	VC∞1604				◉
NT-S32S-SVUCL16	42	32	22.5	250	93°	5°	VC∞1604				●
NT-S40T-SVUCL16	51	40	27	300	93°	4°	VC∞1604				◉
RIGHT-HAND											
NT-S16Q-SVUCR11	22	16	13	180	93°	7°	VC∞1103				●
NT-S20R-SVUCR11	27	20	15	200	93°	6°	VC∞1103				●
NT-S20R-SVUCR16	31	20	19	200	93°	8°	VC∞1604				●
NT-S25R-SVUCR16	33	25	20.5	200	93°	7°	VC∞1604				●
NT-S32S-SVUCR16	42	32	22.5	250	93°	5°	VC∞1604				●
NT-S40T-SVUCR16	51	40	27	300	93°	4°	VC∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-Sooo-SVUC$^{L}_{R}$11	NT-ST25060T07B	NT-FT07
NT-Sooo-SVUC$^{L}_{R}$16	NT-ST35089T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert L

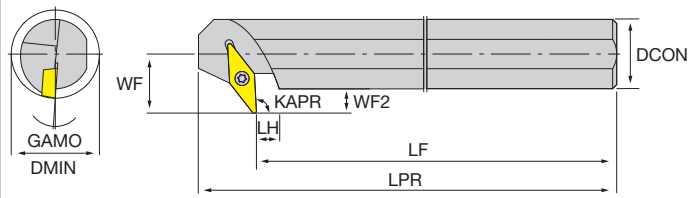
Holder L → Insert R

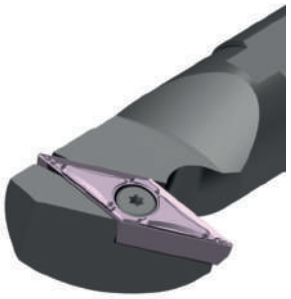
SORMA DIAMOND & CUTTING TOOLS

S SVZC

ISO VC - Positive

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VC/VB style inserts, tightened by screws







Designation	DMIN	DCON	WF	WF2	LF	LPR	KAPR	GAMO	MIID		Stock
LEFT-HAND											
NT-S20R-SVZCL16	30	20	17	7	183	217	93°	7.5°	VC∞1604		◉
NT-S25R-SVZCL16	35	25	19.5	7	180	220	93°	7.5°	VC∞1604		◉
NT-S32S-SVZCL16	40	32	23	7	230	270	93°	7.5°	VC∞1604		◉
RIGHT-HAND											
NT-S20R-SVZCR16	30	20	17	7	183	217	93°	7.5°	VC∞1604		◉
NT-S25R-SVZCR16	35	25	19.5	7	180	220	93°	7.5°	VC∞1604		●
NT-S32S-SVZCR16	40	32	23	7	230	270	93°	7.5°	VC∞1604		◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S∞∞-SVZC$^{L}_{R}$16	NT-ST35089T15	NT-FT15

HOLDER AND INSERT COUPLING

Holder R → Insert R

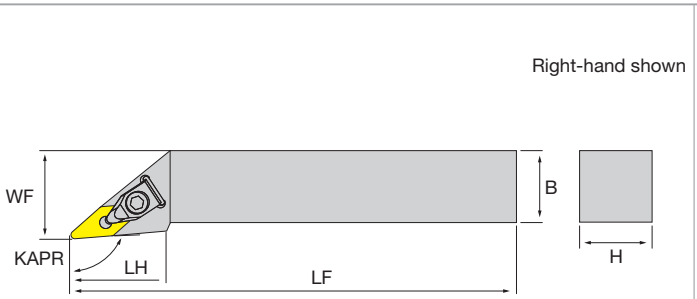
Holder L → Insert L

SORMA DIAMOND & CUTTING TOOLS

DVJN

ISO VN - Negative

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DVJNL2020K16X	20	20	25	125	50	93°	VN∞1604				●
NT-DVJNL2525M16X	25	25	32	150	46	93°	VN∞1604				●
RIGHT-HAND											
NT-DVJNR2020K16X	20	20	25	125	50	93°	VN∞1604				●
NT-DVJNR2525M16X	25	25	32	150	46	93°	VN∞1604				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

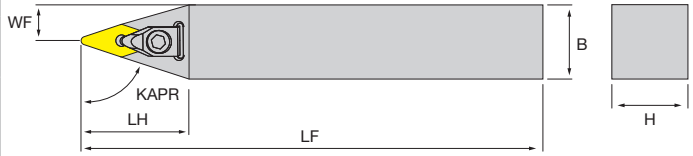
Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DVJN$^{L}/_{R}$oooo16X	NT-SH075	NT-ST250	NT-TX15 / NT-TX20	NT-CS210 / NT-CS200	NT-SG200	NT-SC200

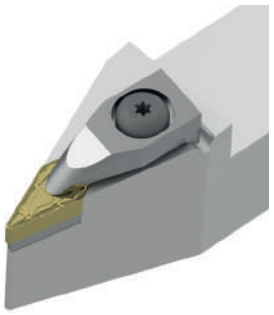
SORMA DIAMOND & CUTTING TOOLS

DVVN

ISO VN - Negative

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-DVVNN2020K16X	20	20	10	125	47	72.5°	VN∞1604				●
NT-DVVNN2525M16X	25	25	12.5	150	47	72.5°	VN∞1604				●

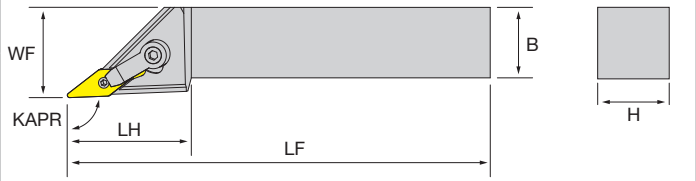
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
						
NT-DVVNN∞∞∞16X	NT-SH075	NT-ST250	NT-TX15 / NT-TX20	NT-CS210 / NT-CS200	NT-SG200	NT-SC200

MVJN

ISO VN - Negative

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MVJNL2020K16	20	20	25	125	39	93°	VN∞1604				●
NT-MVJNL2525M16	25	25	32	150	44	93°	VN∞1604				●
NT-MVJNL3232P16	32	32	40	170	45	93°	VN∞1604				◉
RIGHT-HAND											
NT-MVJNR2020K16	20	20	25	125	39	93°	VN∞1604				●
NT-MVJNR2525M16	25	25	32	150	44	93°	VN∞1604				●
NT-MVJNR3232P16	32	32	40	170	45	93°	VN∞1604				◉

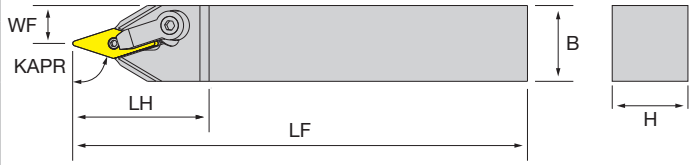
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MVJN$^{L}/_{R}$∞∞∞16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS075	NT-SC010

MVVN

ISO VN - Negative

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-MVVNN2020K16	20	20	10	125	45	72.5°	VN∞1604				◉
NT-MVVNN2525M16	25	25	12.5	150	45	72.5°	VN∞1604				●
NT-MVVNN3232P16	32	32	16	170	45	72.5°	VN∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

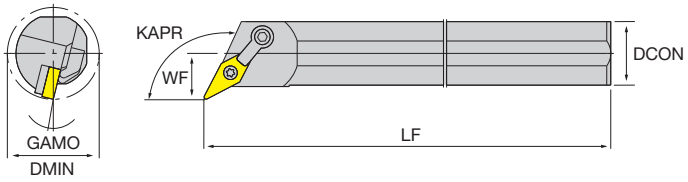
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
					
NT-MVVNN∞∞∞∞16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS075	NT-SC010

SORMA DIAMOND & CUTTING TOOLS

S MVQN

ISO VN - Negative

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S25R-MVQNL16	33	25	20	200	107.5°	12°	VN∞1604				◉
NT-S32S-MVQNL16	40	32	23	250	107.5°	17°	VN∞1604				◉
NT-S40T-MVQNL16	50	40	27	300	107.5°	15°	VN∞1604				◉
NT-S50U-MVQNL16	63	50	33	350	107.5°	12°	VN∞1604				◉
RIGHT-HAND											
NT-S25R-MVQNR16	33	25	20	200	107.5°	12°	VN∞1604				◉
NT-S32S-MVQNR16	40	32	23	250	107.5°	17°	VN∞1604				◉
NT-S40T-MVQNR16	50	40	27	300	107.5°	15°	VN∞1604				◉
NT-S50U-MVQNR16	63	50	33	350	107.5°	12°	VN∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

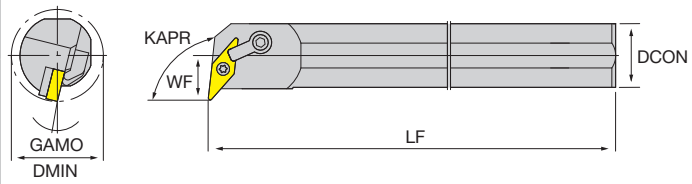
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-S25R-MVQN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S32S-MVQN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S40T-MVQN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010
NT-S50U-MVQN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010

SORMA DIAMOND & CUTTING TOOLS

S MVUN

ISO VN - Negative

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S25R-MVUNL16	37	25	20	200	93°	12°	VN∞1604				◉
NT-S32S-MVUNL16	40	32	22	250	93°	12°	VN∞1604				◉
NT-S40T-MVUNL16	50	40	27	300	93°	15°	VN∞1604				◉
NT-S50U-MVUNL16	63	50	32	350	93°	12°	VN∞1604				◉
RIGHT-HAND											
NT-S25R-MVUNR16	37	25	20	200	93°	12°	VN∞1604				●
NT-S32S-MVUNR16	40	32	22	250	93°	12°	VN∞1604				●
NT-S40T-MVUNR16	50	40	27	300	93°	15°	VN∞1604				●
NT-S50U-MVUNR16	63	50	32	350	93°	12°	VN∞1604				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

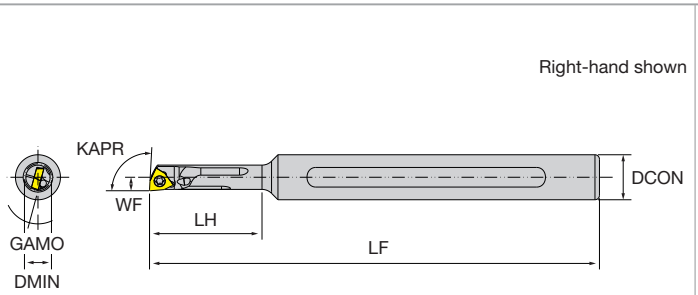
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-S25R-MVUN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S32S-MVUN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S40T-MVUN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010
NT-S50U-MVUN$^{L}_{R}$16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010

SORMA DIAMOND & CUTTING TOOLS

V SWUB

ISO WB - Positive

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds WB-style inserts, tightened by screws
- Special chip evacuation path







Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-SWUBR06-06	6	10	3	100	25	93°	15°	WB∞0601			●
NT-V10H-SWUBR06-07	7	10	3.5	100	30	93°	13°	WB∞0601			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-V10H-SWUBL/R06-∞	NT-ST20038T06	NT-FT06

HOLDER AND INSERT COUPLING

Holder R → Insert L

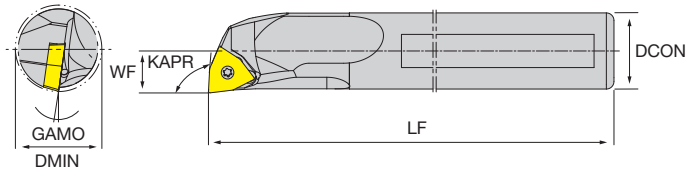
Holder L → Insert R

SORMA DIAMOND & CUTTING TOOLS

V SWUC

ISO WC - Positive

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds WC-style inserts, tightened by screws
- Special chip evacuation path







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V12M-SWUCL12-14	14	12	7	150	93°	13°	WC∞12T3				◉
NT-V16Q-SWUCL12-18	18	16	9	180	93°	10°	WC∞12T3				◉
NT-V20R-SWUCL12-22	22	20	11	200	93°	8°	WC∞12T3				◉
NT-V25S-SWUCL12-27	27	25	13.5	250	93°	8°	WC∞12T3				◉
RIGHT-HAND											
NT-V12M-SWUCR12-14	14	12	7	150	93°	13°	WC∞12T3				◉
NT-V16Q-SWUCR12-18	18	16	9	180	93°	10°	WC∞12T3				◉
NT-V20R-SWUCR12-22	22	20	11	200	93°	8°	WC∞12T3				◉
NT-V25S-SWUCR12-27	27	25	13.5	250	93°	8°	WC∞12T3				◉

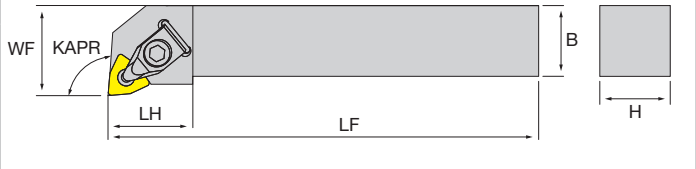
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

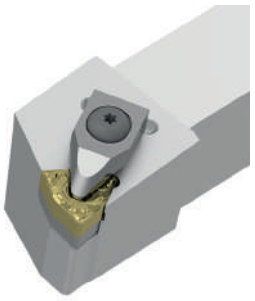
Spare parts	Insert screw	Flag wrench
NT-V∞∞-SWUC$^{L}/_{R}$12-∞	NT-ST40090T15	NT-FT15

DWLN

ISO WN - Negative

- External turning (KAPR 95°)
- Holds WN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening







Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DWLNL1616H06X	16	16	20	100	33	95°	WN∞0604				●
NT-DWLNL2020K06X	20	20	25	125	33	95°	WN∞0604				●
NT-DWLNL2020K08X	20	20	25	125	40	95°	WN∞0804				●
NT-DWLNL2525M06X	25	25	32	150	33	95°	WN∞0604				●
NT-DWLNL2525M08X	25	25	32	150	40	95°	WN∞0804				●
NT-DWLNL3225P08X	32	25	32	170	40	95°	WN∞0804				●
RIGHT-HAND											
NT-DWLNR1616H06X	16	16	20	100	33	95°	WN∞0604				●
NT-DWLNR2020K06X	20	20	25	125	33	95°	WN∞0604				●
NT-DWLNR2020K08X	20	20	25	125	40	95°	WN∞0804				●
NT-DWLNR2525M06X	25	25	32	150	33	95°	WN∞0604				●
NT-DWLNR2525M08X	25	25	32	150	40	95°	WN∞0804				●
NT-DWLNR3225P08X	32	25	32	170	40	95°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

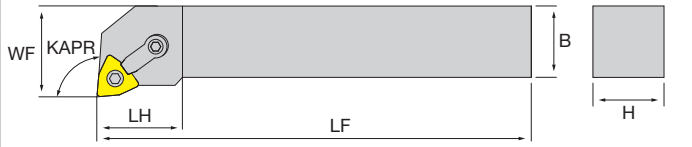
Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
NT-DWLN$^{L}/_{R}$∞∞∞∞06X	NT-SH003	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DWLN$^{L}/_{R}$∞∞∞∞08X	NT-SH010	NT-ST200	NT-CS200	NT-SG200	NT-SC200	NT-WR025 / NT-TX20

SORMA DIAMOND & CUTTING TOOLS

MWLN

ISO WN - Negative

- External turning (KAPR 95°)
- Holds WN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MWLNL2020K06	20	20	25	125	33	95°	WN∞0604				◉
NT-MWLNL2020K08	20	20	25	125	33	95°	WN∞0804				●
NT-MWLNL2525M06	25	25	32	150	26	95°	WN∞0604				◉
NT-MWLNL2525M08	25	25	32	150	26	95°	WN∞0804				●
NT-MWLNL3232P08	32	32	40	170	26	95°	WN∞0804				●
RIGHT-HAND											
NT-MWLNR2020K06	20	20	25	125	33	95°	WN∞0604				◉
NT-MWLNR2020K08	20	20	25	125	33	95°	WN∞0804				●
NT-MWLNR2525M06	25	25	32	150	26	95°	WN∞0604				◉
NT-MWLNR2525M08	25	25	32	150	26	95°	WN∞0804				●
NT-MWLNR3232P08	32	32	40	170	26	95°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

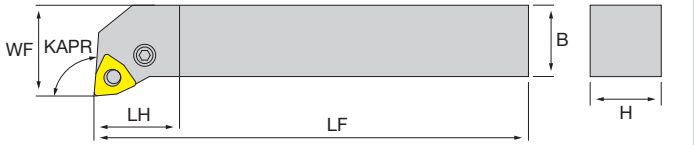
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MWLN^{L}/$_{RO}$$_{O}$$_{O}$$_{O}$$_{O}$$_{O}$06	NT-SH003	NT-SP020	NT-WR020 / NT-WR025	NT-CS009	NT-SC030
NT-MWLN^{L}/$_{RO}$$_{O}$$_{O}$$_{O}$$_{O}$$_{O}$08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010

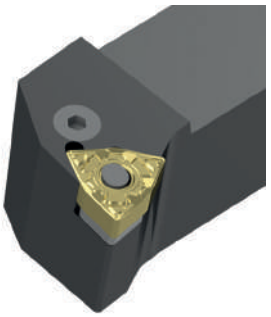
SORMA DIAMOND & CUTTING TOOLS

PWLN

ISO WN - Negative

- External turning (KAPR 95°)
- Holds WN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials









Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PWLNL2020K08	20	20	25	125	20	95°	WN∞0804				●
NT-PWLNL2525M08	25	25	32	150	26	95°	WN∞0804				●
RIGHT-HAND											
NT-PWLNR2020K08	20	20	25	125	20	95°	WN∞0804				●
NT-PWLNR2525M08	25	25	32	150	26	95°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

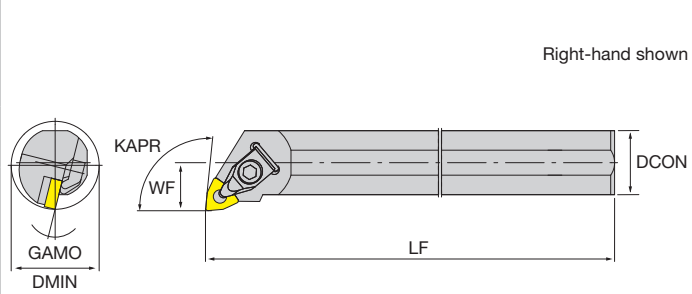
Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
					
NT-PWLN$^{L}/_{R}$oooo08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030

SORMA DIAMOND & CUTTING TOOLS

A DWLN

ISO WN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds WN-style inserts
- Double pushing and pulling action with a single movement.
- Quick and safe tightening







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DWLNL08	32	25	17	200	95°	14°	WN∞0804				●
NT-A32S-DWLNL08	40	32	22	250	95°	14°	WN∞0804				●
NT-A40T-DWLNL08	50	40	27	300	95°	12°	WN∞0804				●
RIGHT-HAND											
NT-A25R-DWLNR08	32	25	17	200	95°	14°	WN∞0804				●
NT-A32S-DWLNR08	40	32	22	250	95°	14°	WN∞0804				●
NT-A40T-DWLNR08	50	40	27	300	95°	12°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

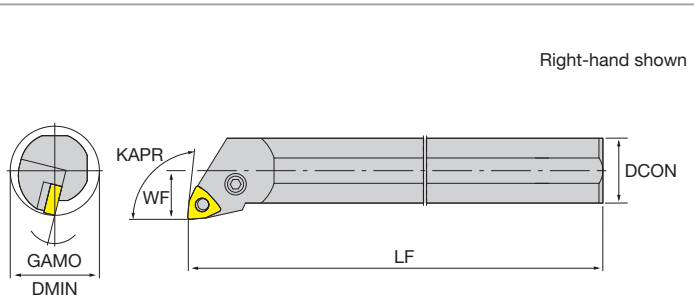
Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
						
NT-A∞∞∞-DWLN$^{L}/_{R}$08	NT-SH015	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

SORMA DIAMOND & CUTTING TOOLS

A PWLN

ISO WN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds WN-style inserts
- Easy to use Levers-lock clamping. Suitable for long-chip materials







Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-PWLNL08	30	25	17	200	95°	12°	WN∞0804				●
NT-A32S-PWLNL08	40	32	22	250	95°	10°	WN∞0804				●
NT-A40T-PWLNL08	48	40	27	300	95°	8°	WN∞0804				●
RIGHT-HAND											
NT-A25R-PWLNR08	30	25	17	200	95°	12°	WN∞0804				●
NT-A32S-PWLNR08	40	32	22	250	95°	10°	WN∞0804				●
NT-A40T-PWLNR08	48	40	27	300	95°	8°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

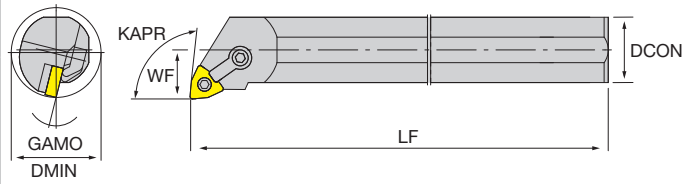
Spare parts	Elastic plug	Lever	Screw lever	L wrench	Shim
NT-A25R-PWLN$^{L}/_{R}$08	NT-SR015	NT-LL015	NT-SC015	NT-WR025	-
NT-A32S-PWLN$^{L}/_{R}$08	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH015
NT-A40T-PWLN$^{L}/_{R}$08	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH015

SORMA DIAMOND & CUTTING TOOLS

S MWLN

ISO WN - Negative

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds WN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



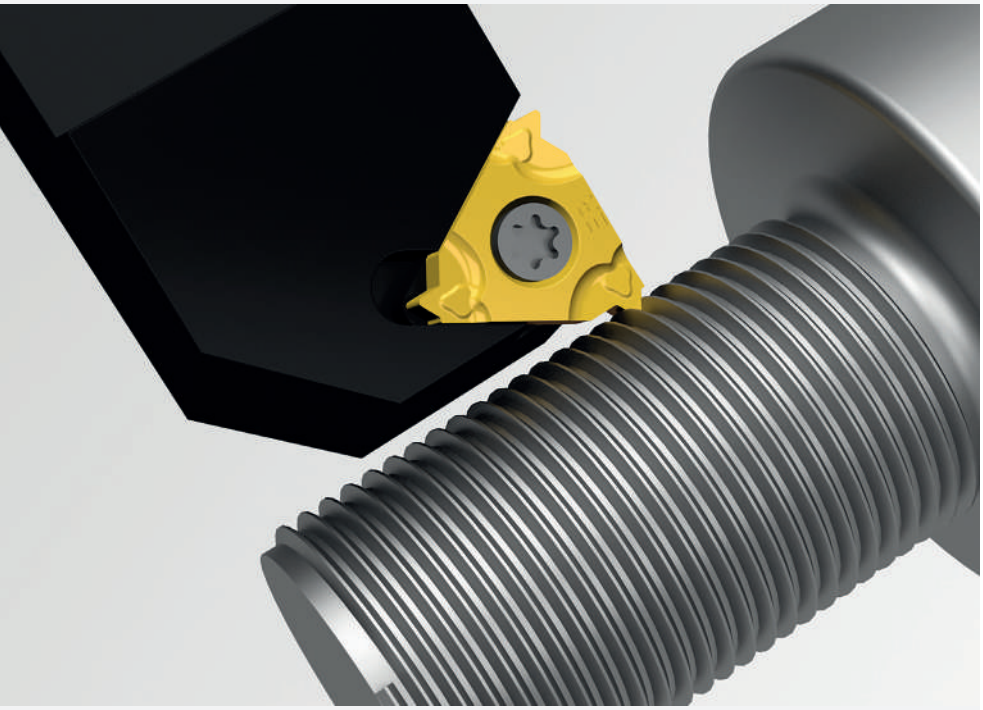




Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-MWLNL06	22	16	11	180	95°	18°	WN∞0604				◉
NT-S20R-MWLNL08	25	20	13	200	95°	17°	WN∞0804				●
NT-S25R-MWLNL08	32	25	17	200	95°	14°	WN∞0804				●
NT-S32S-MWLNL08	40	32	22	250	95°	14°	WN∞0804				●
NT-S40T-MWLNL08	50	40	27	300	95°	12°	WN∞0804				●
NT-S50U-MWLNL08	63	50	35	350	95°	12°	WN∞0804				●
RIGHT-HAND											
NT-S16Q-MWLNR06	22	16	11	180	95°	18°	WN∞0604				◉
NT-S20R-MWLNR08	25	20	13	200	95°	17°	WN∞0804				●
NT-S25R-MWLNR08	32	25	17	200	95°	14°	WN∞0804				●
NT-S32S-MWLNR08	40	32	22	250	95°	14°	WN∞0804				●
NT-S40T-MWLNR08	50	40	27	300	95°	12°	WN∞0804				●
NT-S50U-MWLNR08	63	50	35	350	95°	12°	WN∞0804				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S16Q-MWLN$^{L}_{R}$06	NT-SP030	NT-WR020 / NT-WR025	NT-CS030	NT-SC030	-
NT-S20R-MWLN$^{L}_{R}$08	NT-SP035	NT-WR025	NT-CS030	NT-SC030	-
NT-S25R-MWLN$^{L}_{R}$08	NT-SP035	NT-WR025 / NT-WR030	NT-CS010	NT-SC008	-
NT-S32S-MWLN$^{L}_{R}$08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010
NT-S40T-MWLN$^{L}_{R}$08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010
NT-S50U-MWLN$^{L}_{R}$08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010



THREADING

Grades selection guide .B2
Grades features .B3
Holders selection guide .B4
External threads .B5
Internal threads .B15
Parameters .B28

THREADING Grades selection guide

SORMA DIAMOND & CUTTING TOOLS

ISO 513		CARBIDE	PCBN	DIAMOND
		PVD COATED	PVD COATED	PCD
P Steel	P01			
	P10	JPS120		
	P20	JPS125		
	P30			
	P40			
M Stainless steel	M01			
	M10	JPS120		
	M20	JPS125		
	M30			
	M40			
K Cast iron	K01			
	K10	JPS120		
	K20	JPS125		
	K30			
N Non-ferrous materials	N01			
	N10			
	N20			ND050
	N30			
S HRSA	S01		JPS120	
	S10		JPS125	
	S20			
	S30			

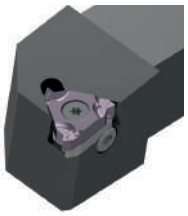
ISO 513		CARBIDE	PCBN	DIAMOND
		PVD COATED	PVD COATED	PCD
H Hardened steel	H01			
	H10			
	H20		NB1350C	
	H30			

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP5120	micrograin carbide	1.830	PVD	TiAlN	P M S	P10 P20 M10 M20 S01 S10	Excellent performances on Stainless and HRSA thanks to special coating technology. The post-coating surface treatment effectively prevents built-up edge. Speciale tecnologia di rivestimento che bilancia resistenza all'usura e tenacità. Il trattamento superficiale post rivestimento previene efficacemente la formazione del tagliente di riporto. Hervorragende Leistungen bei der Bearbeitung von rostfreim Stahl und Sonderlegierungen, dank der speziellen Beschichtung. Die zusätzliche Behandlung nach der Beschichtung verhindert Aufbauschneiden. Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface après revêtement empêche efficacement la formation de bavures.
JP5125	micrograin carbide	1.830	PVD	TiAlN	P M K S	P20 P30 M20 M30 K20 K30 S01 S10	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life. Substrato in metallo duro micrograna ad alto contenuto di Co ad alta tenacità e tecnologia di rivestimento avanzata. Uso universale con eccellente affidabilità e lunga vita utensile. VHM Mikrokörnung mit hohem CO Anteil, und vortgeschrittene Beschichtung. Für allgemeine Anwendung, wenn hohe zuverlässigkeit und Standzeit gewünscht sind. Substrat en métal dur à grains fins avec une teneur élevée en cobalt, offrant une grande ténacité et une technologie de revêtement avancée. Usage universel avec une fiabilité exceptionnelle et une longue durée de vie de l'outil.
NBL350C	Low volume CBN 75%	3.400	PVD	AlTiN	H	H20 H35	Hardened steel machining with a perfect combination of toughness and wear resistance. Lavorazione di acciai temprati con perfetta combinazione tra tenacità e resistenza all'usura. Für Bearbeitung von gehärteten Stählen, mit einer perfekten Kombination zwischen verscheissbeständigkeit und Zähigkeit. Usinage des aciers trempés avec une combinaison parfaite de ténacité et de résistance à l'usure.
NDO50 new name: **NDP001**	diamond 85%	5.000	-	-	N	N10 N35	High productivity threading of non-ferrous materials. Excellent surface finishing and very good toughness. Filettatura a elevata produttività di materiali non ferrosi. Eccellente finitura superficiale e ottima tenacità. Gewindebearbeitung von NE-Metallen die hohe Produktivität garantieren kann. Optimales Oberflächenfinishing und hohe Zähigkeit. Filetage à haute productivité des matériaux non ferreux. Excellente qualité de finition de surface et ténacité remarquable.

THREADING Holders selection guide

SORMA DIAMOND & CUTTING TOOLS

	EXTERNAL	INTERNAL
	B10	B23
	 SQUARE SHANK	 BORING BAR
Pressed type inserts	✓	✓
Ground type inserts*	✓	✓
Advanced material inserts	✓	✓
Available sizes	16 - 22	07 - 11 - 16 - 22
Right and left thread	✓	✓
Workpiece material	P M K N S H	P M K N S H
Full profile	M - UN - W - NPT - BSPT	M - UN - W - NPT - BSPT
Partial profile	55° - 60°	55° - 60°
M ISO Metric 60°	0.50 - 0.70 - 0.75 - 0.80 - 1.00 - 1.25 - 1.50 - 1.75 - 2.00 - 2.50 - 3.00 - 3.50 - 4.00 - 4.50 - 5.00 (mm)	0.50 - 0.75 - 1.00 - 1.25 - 1.50 - 1.75 - 2.00 - 2.50 - 3.00 - 3.50 - 4.00 - 4.50 - 5.00 (mm)
W Whitworth 55°	19 - 14 - 11 (TPI)	19 - 14 - 11 (TPI)
UN American unified 60°	24 - 20 - 18 - 16 - 14 - 12 - 08 (TPI)	24 - 20 - 18 - 16 - 14 - 12 - 08 (TPI)
NPT American tapered pipe 60°	18 - 11.5 - 14 (TPI)	18 - 11.5 - 14 (TPI)
BSPT British tapered pipe 55°	28 - 19 - 14 - 11 (TPI)	28 - 19 - 14 - 11 (TPI)
60° partial profile 60°	**A** 0.50 ÷ 1.50 (mm) / 48 ÷ 16 (TPI) **G** 1.75 ÷ 3.00 (mm) / 14 ÷ 8 (TPI) **AG** 0.50 ÷ 3.00 (mm) / 48 ÷ 8 (TPI) **N** 3.50 ÷ 5.00 (mm) / 7 ÷ 5 (TPI)	**A** 0.50 ÷ 1.50 (mm) / 48 ÷ 16 (TPI) **G** 1.75 ÷ 3.00 (mm) / 14 ÷ 8 (TPI) **AG** 0.50 ÷ 3.00 (mm) / 48 ÷ 8 (TPI) **N** 3.50 ÷ 5.00 (mm) / 7 ÷ 5 (TPI)
55° partial profile 55°	**A** 48 ÷ 16 (TPI) **G** 14 ÷ 8 (TPI) **AG** 48 ÷ 8 (TPI) **N** 7 ÷ 5 (TPI)	**A** 48 ÷ 16 (TPI) **G** 14 ÷ 8 (TPI) **AG** 48 ÷ 8 (TPI) **N** 7 ÷ 5 (TPI)
Holder sizes	square: 12 - 16 - 20 - 25 mm	cylindrical: 10 - 12 - 16 - 20 - 25 - 32 mm
Minimum entering hole	-	8 mm
Special features	holders without offset for swiss type machining	boring bar with VORTEX technology and internal coolant

*Ground inserts can be tailored to cover virtually any thread type and pitch.



THREADING External threads

Inserts .B6
Holders .B10
Table “Number of passes” .B12

SORMA DIAMOND & CUTTING TOOLS

Triangular

ER/L ISO

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
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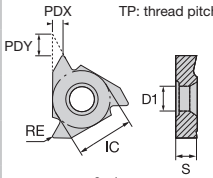
- **BSPT**: tapered pipe threads

HF: Micrograin tungstein carbide
BL: Low CBN volume
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	NDO50
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✱	✲

Dimensions



	S	D1
16E	3.65	4.00
22E	4.71	5.00

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
P	**90 200**	**70 180**		
M	**60 150**	**50 140**		
K	90 190	60 180		
N				**400 2000**
S	**20 70**	**20 70**		**40 100**
H			**60 150**	

	Designation		RE	TP	TPI	PDX	PDY	Stock				
M - FULL	TPM P M  pressed type chip control oriented	16ER100ISO-TPM	0.14	1	-	0.7	0.8	●	●			
		16ER125ISO-TPM	0.18	1.25	-	0.9	0.8	●	●			
		16ER150ISO-TPM	0.22	1.5	-	1	0.8	●	●			
		16ER175ISO-TPM	0.25	1.75	-	1.2	1.2	●	●			
		16ER200ISO-TPM	0.29	2	-	1.3	1.2	●	●			
		16ER250ISO-TPM	0.36	2.5	-	1.5	1.2	●	●			
		16ER300ISO-TPM	0.43	3	-	1.5	1.2	●	●			
		22ER350ISO-TPM	0.45	3.5	-	2.3	1.6		●			
		22ER400ISO-TPM	0.52	4	-	2.3	1.6		●			
		22ER450ISO-TPM	0.58	4.5	-	2.4	1.7		●			
		22ER500ISO-TPM	0.63	5	-	2.5	1.7		●			
M - FULL	preci P M  precision ground sharpness oriented	16ER050ISO	0.07	0.5	-	0.6	0.6		●			
		16ER070ISO	0.10	0.7	-	0.6	0.6		●			
		16ER075ISO	0.11	0.75	-	0.6	0.6		●			
		16ER080ISO	0.12	0.8	-	0.6	0.6		●			
		16ER100ISO	0.15	1	-	0.7	0.7		●			
		16ER125ISO	0.18	1.25	-	0.9	0.8		●			
		16ER150ISO	0.22	1.5	-	1	0.8		●			
		16ER175ISO	0.25	1.75	-	1.2	0.9		●			
		16ER200ISO	0.29	2	-	1.3	1		●			
		16ER250ISO	0.36	2.5	-	1.5	1		●			
		16ER300ISO	0.43	3	-	1.6	1.2		●			

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
- Best cost-performance ratio

Precision ground

- Achieves the higher precision
- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

SORMA DIAMOND & CUTTING TOOLS

Triangular

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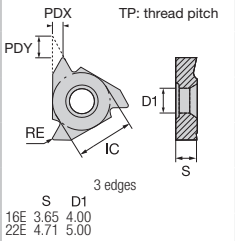
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ◯ suitable	●	◯		◯
General machining, medium cut	● 1st choice ◯ suitable	●	●	◯	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✱	✲

Dimensions



	S	D1
16E	3.65	4.00
22E	4.71	5.00

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
P	**90 200**	**70 180**			
M	**60 150**	**50 140**			
K	90 190	60 180			
N				**400 2000**	
S	**20 70**	**20 70**		**40 100**	
H			**60 150**		

	Designation	RE	TP	TPI	PDX	PDY	Stock				
M - FULL	**preci** P M  **left-hand threading** precision ground	16EL050ISO	0.07	0.5	-	0.6	0.6		●		
		16EL075ISO	0.11	0.75	-	0.6	0.6		●		
		16EL100ISO	0.15	1	-	0.7	0.7		●		
		16EL125ISO	0.18	1.25	-	0.9	0.8		●		
		16EL150ISO	0.22	1.5	-	1	0.8		●		
		16EL175ISO	0.25	1.75	-	1.2	0.9		●		
		16EL200ISO	0.29	2	-	1.3	1		●		
		16EL250ISO	0.36	2.5	-	1.5	1		●		
		16EL300ISO	0.43	3	-	1.6	1.2		●		
M - FULL	**1C** N S  **PCD** carbide backed single edge	16ER100ISO-1C	0.15	1	-	0.7	-				⦿
		16ER125ISO-1C	0.16	1.25	-	0.9	-				⦿
		16ER150ISO-1C	0.22	1.5	-	1	-				●
		16ER175ISO-1C	0.26	1.75	-	1.2	-				⦿
		16ER200ISO-1C	0.29	2	-	1.3	-				⦿
		16ER250ISO-1C	0.37	2.5	-	1.5	-				⦿
		16ER300ISO-1C	0.43	3	-	1.5	-				⦿
M - FULL	**1S** H  **PCBN** with solid tip single edge	16ER100ISO-1S	0.15	1	-	0.7	-			⦿	
		16ER125ISO-1S	0.16	1.25	-	0.9	-			⦿	
		16ER150ISO-1S	0.22	1.5	-	1	-			○	
		16ER175ISO-1S	0.26	1.75	-	1.2	-			⦿	
		16ER200ISO-1S	0.29	2	-	1.3	-			⦿	
		16ER250ISO-1S	0.37	2.5	-	1.5	-			⦿	
		16ER300ISO-1S	0.43	3	-	1.5	-			⦿	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

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ADVANCED THREADING

⚠ **PCBN for ISO H**

Please increase the number of passes when machining hardened steel with PCBN inserts. Keep the maximum infeed value lower than 0.10 mm

SORMA DIAMOND & CUTTING TOOLS

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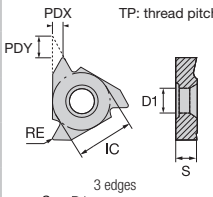
		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	✱	✱

Dimensions



	S	D1
16E	3.65	4.00
22E	4.71	5.00

ISO	HF PVD JP5120	HF PVD JP5125	BL PVD NBL350C	DP ND050
	Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
P	**90 200**	**70 180**		
M	**60 150**	**50 140**		
K	90 190	60 180		
N				**400 2000**
S	**20 70**	**20 70**		**40 100**
H			**60 150**	

	Designation		RE	TP	TPI	PDX	PDY	Stock				
W - FULL	TPM P M	16ER11W-TPM	0.30	-	11	1.5	1.2	●	●			
		16ER14W-TPM	0.24	-	14	1.5	1.2	●	●			
		16ER19W-TPM	0.17	-	19	1	0.8		●			
	pressed type chip control oriented											
UN - FULL	TPM P M	16ER08UN-TPM	0.46	-	8	1.7	1.3		●			
		16ER12UN-TPM	0.31	-	12	1.5	1.2		●			
		16ER14UN-TPM	0.26	-	14	1.5	1.2		●			
		16ER16UN-TPM	0.23	-	16	1.1	0.9		●			
		16ER18UN-TPM	0.20	-	18	1	0.8		●			
		16ER20UN-TPM	0.18	-	20	0.9	0.8		●			
		16ER24UN-TPM	0.15	-	24	0.8	0.8		●			
	pressed type chip control oriented											
NPT - FULL	TPM P M	16ER11.5NPT-TPM	0.25	-	11.5	1.5	1.2		●			
		16ER14NPT-TPM	0.22	-	14	1.5	1.2		●			
		16ER18NPT-TPM	0.20	-	18	1	0.8		●			
	pressed type chip control oriented											
NPT - FULL	preci P M	16ER11.5NPT	0.07	-	11.5	1.5	1.1		●			
		16ER14NPT	0.06	-	14	1	0.8		●			
	precision ground sharpness oriented											

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

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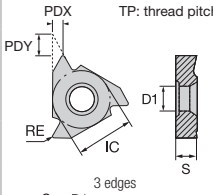
DP: Polycrystalline diamond
PVD: Physical vapor deposition

	HF PVD	HF PVD	BL PVD	DP
	JP5120	JP5125	NBL350C	NDO50
Stable machining, light cut (● 1st choice ○ suitable)	●	○		○
General machining, medium cut (● 1st choice ○ suitable)	●	●	○	●
Unstable machining, heavy cut (● 1st choice ○ suitable)		●	●	○

Dimensions



	S	D1
16E	3.65	4.00
22E	4.71	5.00

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																							
P	**90 200**	**70 180**																						
M	**60 150**	**50 140**																						
K	90 190	60 180																						
N				**400 2000**																				
S	**20 70**	**20 70**		**40 100**																				
H			**60 150**																					

	Designation		RE	TP	TPI	PDX	PDY	Stock			
BSPT - FULL	TPM P M  pressed type chip control oriented	16ER11BSPT-TPM	0.30	-	11	1.5	1.2		●		
		16ER14BSPT-TPM	0.24	-	14	1.5	1.2		●		
		16ER19BSPT-TPM	0.17	-	19	1	0.8		●		
		16ER28BSPT-TPM	0.11	-	28	0.8	0.7		●		
60° - PARTIAL	TPM P M  pressed type chip control oriented	16ERA60-TPM	0.08	A60	A60	0.9	0.8		●		
		16ERAG60-TPM	0.08	AG60	AG60	1.5	1.1		●		
		16ERG60-TPM	0.25	G60	G60	1.7	1.2		●		
		22ERN60-TPM	0.51	N60	N60	2.5	1.7		●		
55° - PARTIAL	TPM P M  pressed type chip control oriented	16ERA55-TPM	0.08	-	A55	0.9	0.8		●		
		16ERAG55-TPM	0.08	-	AG55	1.5	1.1		●		
		16ERG55-TPM	0.21	-	G55	1.7	1.2		●		
		22ERN55-TPM	0.44	-	N55	2.5	1.7		●		
TR - FULL	preci P M  precision ground sharpness oriented	22ER600TR	-	-	-	-	-		◉		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

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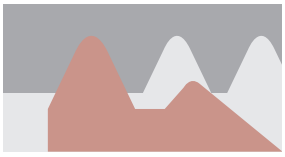
PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 55° PITCH RANGES

	BSW-BSF-BSP
A55	48÷16
AG55	48÷8
G55	14÷8
N55	7÷5

PARTIAL PROFILE 60° PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16
AG60	0.50÷3.00	48÷8
G60	1.75÷3.00	14÷8
N60	3.50÷5.00	7÷5

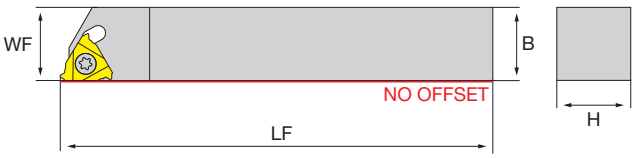
SORMA DIAMOND & CUTTING TOOLS

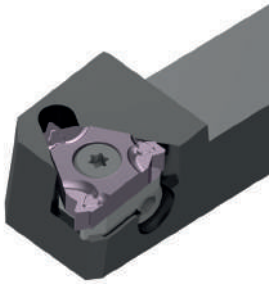
SE

ISO 16-22

- External threading holder
- Tightened by screws
- Available with shim
- Holds both pressed type and ground type threading inserts

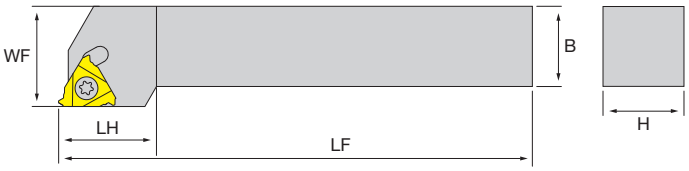
Right-hand shown

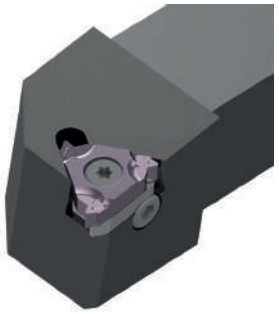




Standard design

Right-hand shown

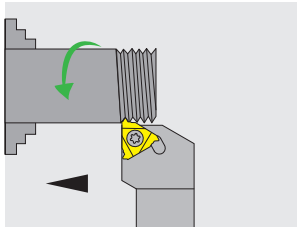




Designation	H	B	WF	LF	LH	MIID					Stock
LEFT-HAND WITHOUT OFFSET											
NT-SEL1212H16N	12	12	12	100	-	16EL					◉
NT-SEL1616H16N	16	16	16	100	-	16EL					◉
LEFT-HAND											
NT-SEL1616H16	16	16	20	100	22	16EL					●
NT-SEL2020K16	20	20	25	125	25	16EL					●
NT-SEL2525M16	25	25	32	150	25	16EL					●
RIGHT-HAND WITHOUT OFFSET											
NT-SER1212H16N	12	12	12	100	-	16ER					●
NT-SER1616H16N	16	16	16	100	-	16ER					◉
RIGHT-HAND											
NT-SER1616H16	16	16	20	100	22	16ER					●
NT-SER2020K16	20	20	25	125	25	16ER					●
NT-SER2525M16	25	25	32	150	25	16EL					●
NT-SER2525M22	25	25	32	150	29	22ER					●
NT-SER3232P22	32	32	40	170	32	22ER					●

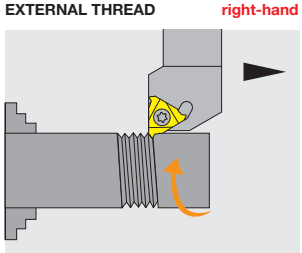
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

EXTERNAL THREAD right-hand



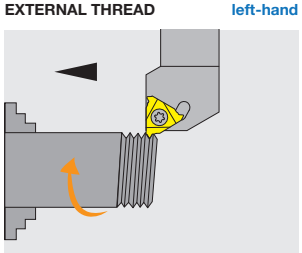
Insert: ER Rotation: counterclockwise
Holder: R Direction: towards chuck

EXTERNAL THREAD right-hand



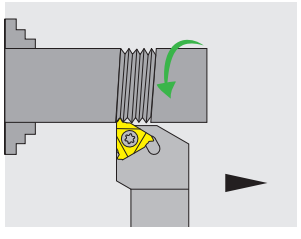
Insert: EL Rotation: clockwise
Holder: L Direction: from chuck

EXTERNAL THREAD left-hand



Insert: EL Rotation: clockwise
Holder: L Direction: towards chuck

EXTERNAL THREAD left-hand

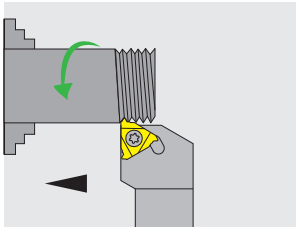


Insert: ER Rotation: counterclockwise
Holder: R Direction: from chuck

SORMA DIAMOND & CUTTING TOOLS

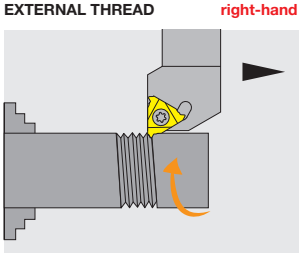
Spare parts	Shim	Locking screw	L wrench	Insert screw	Flag wrench
NT-SELooooo**16N**o	NT-SH065	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SERooooo**16N**o	NT-SH060	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SERooooo**22N**o	NT-SH066	NT-SC004	NT-WR030	NT-ST40140T15	NT-FT15

EXTERNAL THREAD right-hand



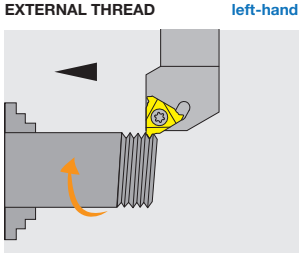
Insert: ER Rotation: counterclockwise
Holder: R Direction: towards chuck

EXTERNAL THREAD right-hand



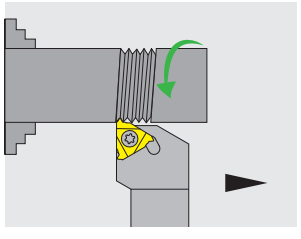
Insert: EL Rotation: clockwise
Holder: L Direction: from chuck

EXTERNAL THREAD left-hand



Insert: EL Rotation: clockwise
Holder: L Direction: towards chuck

EXTERNAL THREAD left-hand



Insert: ER Rotation: counterclockwise
Holder: R Direction: from chuck

M - External ISO-metric threads

TP	6.00	5.50	5.00	4.50	4.00	3.50	3.00	2.50	2.00	1.75	1.50	1.25	1.00	0.80	0.75	0.70	0.50
NO. OF INFEEDS	RADIAL INFEED PER PASS																
1	0.46	0.43	0.41	0.37	0.34	0.34	0.28	0.27	0.24	0.22	0.22	0.21	0.18	0.17	0.16	0.14	0.11
2	0.43	0.40	0.39	0.34	0.32	0.31	0.26	0.24	0.22	0.20	0.20	0.17	0.16	0.15	0.14	0.12	0.09
3	0.35	0.32	0.32	0.28	0.25	0.25	0.21	0.20	0.18	0.17	0.17	0.14	0.12	0.12	0.11	0.10	0.07
4	0.30	0.28	0.27	0.24	0.22	0.21	0.18	0.17	0.16	0.14	0.14	0.11	0.11	0.08	0.07	0.07	0.06
5	0.29	0.26	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.08	–	–	–	–
6	0.26	0.24	0.24	0.22	0.18	0.18	0.15	0.15	0.12	0.10	0.08	0.08	–	–	–	–	–
7	0.24	0.21	0.22	0.20	0.17	0.16	0.14	0.12	0.11	0.10	–	–	–	–	–	–	–
8	0.23	0.20	0.20	0.18	0.15	0.15	0.13	0.11	0.08	0.08	–	–	–	–	–	–	–
9	0.22	0.19	0.19	0.17	0.14	0.14	0.12	0.11	–	–	–	–	–	–	–	–	–
10	0.19	0.18	0.18	0.16	0.13	0.12	0.11	0.08	–	–	–	–	–	–	–	–	–
11	0.18	0.17	0.16	0.14	0.12	0.11	0.10	–	–	–	–	–	–	–	–	–	–
12	0.16	0.15	0.15	0.13	0.12	0.08	0.08	–	–	–	–	–	–	–	–	–	–
13	0.15	0.14	0.12	0.12	0.11	–	–	–	–	–	–	–	–	–	–	–	–
14	0.13	0.13	0.10	0.10	0.08	–	–	–	–	–	–	–	–	–	–	–	–
15	0.13	0.12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.10	0.10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL INFEED	3.82	3.52	3.19	2.87	2.53	2.23	1.92	1.60	1.25	1.13	0.93	0.81	0.65	0.52	0.48	0.43	0.33

green background are standard items all other sizes can make specials

W - External Whitworth threads

TP	4	4.5	5	6	7	8	9	10	11	12	14	16	18	19	20	26	28
NO. OF INFEEDS	RADIAL INFEED PER PASS																
1	0.49	0.46	0.45	0.38	0.37	0.32	0.30	0.29	0.28	0.28	0.24	0.24	0.23	0.22	0.21	0.19	0.18
2	0.46	0.43	0.43	0.36	0.35	0.30	0.28	0.27	0.26	0.26	0.22	0.22	0.22	0.22	0.21	0.18	0.17
3	0.38	0.38	0.38	0.30	0.29	0.24	0.23	0.22	0.22	0.22	0.18	0.19	0.19	0.18	0.17	0.15	0.14
4	0.36	0.33	0.32	0.26	0.25	0.21	0.20	0.19	0.19	0.18	0.15	0.16	0.16	0.14	0.14	0.12	0.12
5	0.34	0.29	0.28	0.22	0.22	0.19	0.18	0.17	0.16	0.16	0.13	0.13	0.13	0.12	0.11	0.08	0.08
6	0.31	0.25	0.25	0.21	0.19	0.17	0.15	0.15	0.14	0.14	0.11	0.11	0.08	0.08	0.08	-	-
7	0.29	0.24	0.22	0.19	0.18	0.15	0.14	0.14	0.13	0.13	0.09	0.08	-	-	-	-	-
8	0.27	0.22	0.20	0.17	0.16	0.14	0.13	0.13	0.12	0.08	0.08	-	-	-	-	-	-
9	0.24	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.08	-	-	-	-	-	-	-	-
10	0.22	0.18	0.18	0.15	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-
11	0.20	0.17	0.17	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	-
12	0.19	0.16	0.15	0.14	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-
13	0.17	0.15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEED	4.29	3.82	3.44	2.90	2.50	2.17	1.93	1.76	1.58	1.45	1.20	1.13	1.01	0.96	0.92	0.72	0.69

green background are standard items all other sizes can make specials

UN - External UN threads

TP	4	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
NO. OF INFEEDS	RADIAL INFEED PER PASS																	
1	0.47	0.45	0.43	0.36	0.35	0.30	0.28	0.27	0.27	0.27	0.25	0.23	0.22	0.23	0.20	0.19	0.17	0.17
2	0.44	0.41	0.40	0.34	0.33	0.28	0.26	0.26	0.25	0.26	0.24	0.22	0.21	0.21	0.19	0.17	0.15	0.15
3	0.40	0.39	0.36	0.27	0.26	0.25	0.21	0.20	0.20	0.20	0.18	0.17	0.16	0.16	0.15	0.14	0.11	0.13
4	0.36	0.31	0.31	0.23	0.22	0.21	0.20	0.17	0.19	0.18	0.17	0.15	0.14	0.14	0.12	0.12	0.09	0.08
5	0.32	0.26	0.26	0.22	0.21	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.10	0.08	0.08	-
6	0.27	0.23	0.23	0.20	0.19	0.16	0.15	0.15	0.14	0.13	0.12	0.11	0.11	0.08	0.08	-	-	-
7	0.25	0.21	0.20	0.18	0.17	0.14	0.14	0.14	0.12	0.12	0.11	0.10	0.08	-	-	-	-	-
8	0.23	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.11	0.08	0.08	0.08	-	-	-	-	-	-
9	0.22	0.18	0.19	0.15	0.14	0.12	0.12	0.11	0.08	-	-	-	-	-	-	-	-	-
10	0.21	0.17	0.18	0.14	0.12	0.12	0.11	0.08	-	-	-	-	-	-	-	-	-	-
11	0.19	0.16	0.17	0.13	0.11	0.11	0.08	-	-	-	-	-	-	-	-	-	-	-
12	0.18	0.15	0.15	0.12	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-
13	0.16	0.14	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEED	4.07	3.62	3.29	2.71	2.33	2.08	1.84	1.66	1.52	1.39	1.29	1.19	1.05	0.94	0.84	0.70	0.60	0.53

green background are standard items all other sizes can make specials

NPT - External NPT threads

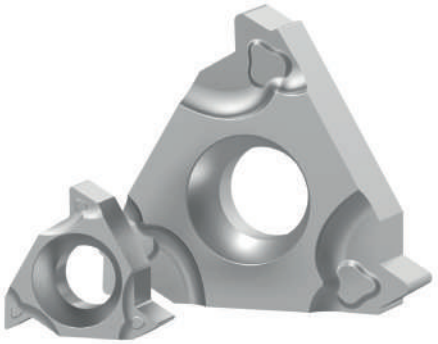
TP	8	11.5	14	18	27
NO. OF INFEEDS	RADIAL INFEED PER PASS				
1	0.28	0.25	0.24	0.22	0.19
2	0.25	0.22	0.22	0.18	0.15
3	0.22	0.18	0.17	0.15	0.13
4	0.19	0.16	0.15	0.14	0.11
5	0.18	0.16	0.14	0.13	0.09
6	0.18	0.14	0.13	0.12	0.08
7	0.17	0.14	0.12	0.10	-
8	0.17	0.12	0.10	0.08	-
9	0.16	0.12	0.10	-	-
10	0.16	0.10	0.08	-	-
11	0.14	0.09	-	-	-
12	0.13	0.08	-	-	-
13	0.12	-	-	-	-
14	0.11	-	-	-	-
15	0.08	-	-	-	-
TOTAL INFEED	2.54	1.76	1.45	1.12	0.75

green background are standard items all other sizes can make specials

BSPT - British tapered pipe threads

TP	11	14	19	28
NO. OF INFEEDS	RADIAL INFEED PER PASS			
1	0.25	0.24	0.22	0.17
2	0.23	0.20	0.19	0.14
3	0.21	0.17	0.15	0.11
4	0.18	0.14	0.12	0.10
5	0.16	0.12	0.12	0.06
6	0.14	0.12	0.06	-
7	0.13	0.11	-	-
8	0.12	0.06	-	-
9	0.06	-	-	-
TOTAL INFEED	1.58	1.20	0.86	0.58

green background are standard items all other sizes can make specials



THREADING Internal threads

Inserts Micro .B16
Holders Micro .B17
Inserts ISO 11 - 16 - 22 .B18
Holders ISO 11 - 16 - 22 .B23
Table “Number of passes” .B26

SORMA DIAMOND & CUTTING TOOLS

Triangular

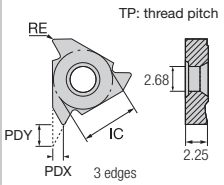
IR Micro 07

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD	JP5125
Stable machining, light cut	● 1st choice ◯ suitable			◯
General machining, medium cut	● 1st choice ◯ suitable			●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable			✱

Dimensions

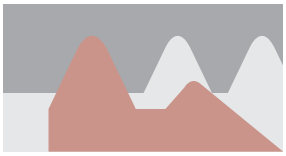


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**70** 180
M	**50** 140
K	60 180
N	
S	**20** 70
H	

	Designation		RE	TP	TPI	PDX	PDY	Stock
60° - PARTIAL	TPM P M  pressed type chip control oriented	07IRA60-TPM	0.08	A60	A60	0.7	0.6	●
55° - PARTIAL	TPG P M  ground profile	07IRA55-TPG	0.08	-	A55	0.7	0.6	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 07IR PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16

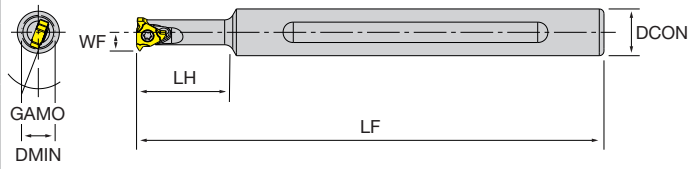
	BSW-BSF-BSP
A55	48÷16

SORMA DIAMOND & CUTTING TOOLS

V SI micro

IR Micro 07

- Internal threading holder
- Vortex boring bar (High standard steel)
- Special chip evacuation path
- With coolant through







VORTEX STEEL
MAX 5XD

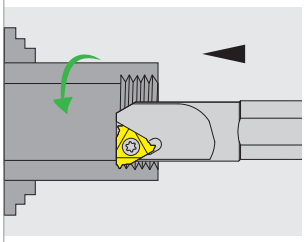
INTERNAL COOLANT

Designation	DMIN	DCON	WF	LF	LH	GAMO	MIID				Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-SIR07-08	8	10	4	100	20	21°	07IR				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

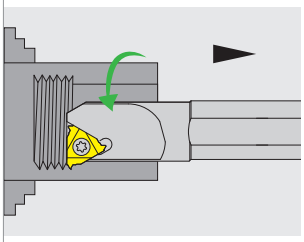
Spare parts	Insert screw	Flag wrench
		
NT-V10H-SIR07-08	NT-ST22049T07	NT-FT07

INTERNAL THREAD right-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: towards chuck

INTERNAL THREAD left-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: from chuck

SORMA DIAMOND & CUTTING TOOLS

Triangular

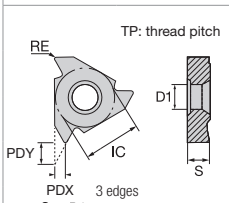
IR/L ISO

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads

HF: Micrograin tungstein carbide
BL: Low CBN volume
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	✱	✱

Dimensions



	S	D1
11I	3.18	3.20
16I	3.65	4.00
22I	4.71	5.00

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	JP5120	JP5125	NBL350C	ND050
P	**90 200**	**70 180**		
M	**60 150**	**50 140**		
K	90 190	60 180		
N				**400 2000**
S	**20 70**	**20 70**		**40 100**
H			**60 150**	

Designation	RE	TP	TPI	PDX	PDY	JP5120	JP5125	NBL350C	ND050	Stock
M - FULL — TPM P M — 11IR100ISO-TPM	0.07	1	-	0.7	0.8		●			
11IR125ISO-TPM	0.09	1.25	-	0.9	0.8		●			
11IR150ISO-TPM	0.11	1.5	-	1	0.8		●			
11IR175ISO-TPM	0.13	1.75	-	1.1	0.9		●			
11IR200ISO-TPM	0.15	2	-	1.1	0.9		●			
16IR100ISO-TPM	0.07	1	-	0.7	0.8	●	●			
16IR125ISO-TPM	0.09	1.25	-	0.9	0.8	⦿	●			
16IR150ISO-TPM	0.11	1.5	-	1	0.8	●	●			
16IR175ISO-TPM	0.13	1.75	-	1.2	1.2	⦿	●			
16IR200ISO-TPM	0.15	2	-	1.3	1.2	●	●			
16IR250ISO-TPM	0.18	2.5	-	1.5	1.2	●	●			
16IR300ISO-TPM	0.22	3	-	1.5	1.2	●	●			
22IR350ISO-TPM	0.22	3.5	-	2.3	1.6		●			
22IR400ISO-TPM	0.25	4	-	2.3	1.6		●			
22IR450ISO-TPM	0.28	4.5	-	2.4	1.6		●			
22IR500ISO-TPM	0.32	5	-	2.3	1.6		●			



pressed type
chip control oriented

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed
- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
- Best cost-performance ratio

Precision ground
- Achieves the higher precision
- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

SORMA DIAMOND & CUTTING TOOLS

Triangular

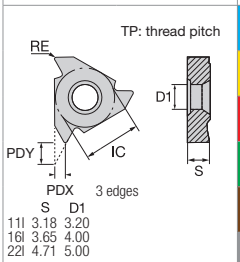
IR/L ISO

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads

HF: Micrograin tungstein carbide
BL: Low CBN volume
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✱	✲

Dimensions



	S	D1
11I	3.18	3.20
16I	3.65	4.00
22I	4.71	5.00

ISO																							
P	**90** 200	**70** 180																					
M	**60** 150	**50** 140																					
K	90 190	60 180																					
N				**400** 2000																			
S	**20** 70	**20** 70		**40** 100																			
H			**60** 150																				

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

Designation	RE	TP	TPI	PDX	PDY	Stock				
M - FULL										
preci P M										
11IR050ISO	0.04	0.5	-	0.6	0.6		○			
11IR075ISO	0.05	0.75	-	0.6	0.6		●			
11IR100ISO	0.07	1	-	0.7	0.6		●			
11IR125ISO	0.09	1.25	-	0.9	0.8		◉			
11IR14NPT	-	-	-	-	-		○			
11IR150ISO	0.11	1.5	-	1	0.8		●			
11IR175ISO	0.13	1.75	-	1.1	0.9		●			
11IR200ISO	0.15	2	-	1.3	1		●			
16IR100ISO	0.07	1	-	0.7	0.6		●			
16IR125ISO	0.09	1.25	-	0.9	0.8		●			
16IR150ISO	0.11	1.5	-	1	0.8		●			
16IR175ISO	0.13	1.75	-	1.2	0.9		●			
16IR200ISO	0.14	2	-	1.3	1		●			
16IR250ISO	0.18	2.5	-	1.5	1.1		●			
16IR300ISO	0.22	3	-	1.5	1.1		●			



precision ground
sharpness oriented

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

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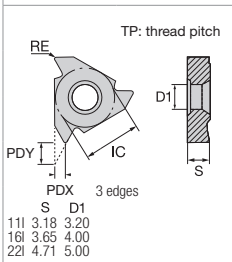
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	✱	✱

Dimensions



S	D1
11I 3.18	3.20
16I 3.65	4.00
22I 4.71	5.00

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	JP5120	JP5125	NBL350C	ND050
P	**90** 200	**70** 180		
M	**60** 150	**50** 140		
K	90 190	60 180		
N				**400** 2000
S	**20** 70	**20** 70		**40** 100
H			**60** 150	

	Designation	RE	TP	TPI	PDX	PDY	JP5120	JP5125	NBL350C	ND050	Stock
M - FULL	**preci** P M **left-hand threading** precision ground										
	11IL050ISO	0.04	0.5	-	0.6	0.6		⦿			
	11IL075ISO	0.05	0.75	-	0.6	0.6		⦿			
	11IL100ISO	0.07	1	-	0.7	0.6		●			
	11IL125ISO	0.09	1.25	-	0.9	0.8		●			
	11IL150ISO	0.11	1.5	-	1	0.8		●			
	11IL175ISO	0.13	1.75	-	1.1	0.9		⦿			
	11IL200ISO	0.14	2	-	1.3	1		⦿			
	16IL100ISO	0.07	1	-	0.7	0.6		●			
	16IL125ISO	0.09	1.25	-	0.9	0.8		●			
	16IL150ISO	0.11	1.5	-	1	0.8		●			
	16IL175ISO	0.13	1.75	-	1.2	0.9		●			
	16IL200ISO	0.14	2	-	1.3	1		●			
	16IL250ISO	0.18	2.5	-	1.5	1.1		●			
	16IL300ISO	0.22	3	-	1.5	1.1		●			
M - FULL	**1C** N S **PCD** carbide backed single edge										
	16IR100ISO-1C	0.08	1	-	0.7	0.8				⦿	
	16IR125ISO-1C	0.09	1.25	-	0.9	-				⦿	
	16IR150ISO-1C	0.11	1.5	-	1	-				●	
	16IR175ISO-1C	0.13	1.75	-	1.2	-				⦿	
	16IR200ISO-1C	0.15	2	-	1.3	-				⦿	
	16IR250ISO-1C	0.18	2.5	-	1.5	-				⦿	
	16IR300ISO-1C	0.22	3	-	1.5	-				⦿	
M - FULL	**1S** H **PCBN** with solid tip single edge										
	16IR100ISO-1S	0.08	1	-	0.7	0.8			⦿		
	16IR125ISO-1S	0.09	1.25	-	0.9	-			⦿		
	16IR150ISO-1S	0.11	1.5	-	1	-			⦿		
	16IR175ISO-1S	0.13	1.75	-	1.2	-			⦿		
	16IR200ISO-1S	0.15	2	-	1.3	-			⦿		
	16IR250ISO-1S	0.18	2.5	-	1.5	-			⦿		
	16IR300ISO-1S	0.22	3	-	1.5	-			⦿		

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

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ADVANCED THREADING

⚠ **PCBN for ISO H**

Please increase the number of passes when machining hardened steel with PCBN inserts. Keep the maximum infeed value lower than 0.10 mm

SORMA DIAMOND & CUTTING TOOLS

Triangular

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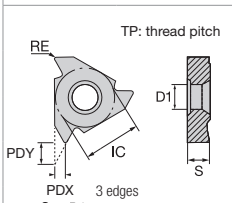
BL: Low CBN volume
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✱	✲

Dimensions



	S	D1
11I	3.18	3.20
16I	3.65	4.00
22I	4.71	5.00

ISO	HF PVD JP5120	HF PVD JP5125	BL PVD NBL350C	DP ND050
Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
P	**90 200**	**70 180**		
M	**60 150**	**50 140**		
K	90 190	60 180		
N				**400 2000**
S	**20 70**	**20 70**		**40 100**
H			**60 150**	

	Designation		RE	TP	TPI	PDX	PDY	Stock			
W - FULL	TPM P M  pressed type chip control oriented	11IR14W-TPM	0.24	-	14	1.1	0.9		●		
		16IR11W-TPM	0.30	-	11	1.5	1.2	●	●		
		16IR14W-TPM	0.24	-	14	1.5	1.2	●	●		
		16IR19W-TPM	0.17	-	19	1	0.8		◉		
UN - FULL	TPM P M  pressed type chip control oriented	16IR08UN-TPM	0.23	-	8	1.7	1.3		●		
		16IR12UN-TPM	0.16	-	12	1.5	1.2		●		
		16IR14UN-TPM	0.13	-	14	1.5	1.2		●		
		16IR16UN-TPM	0.12	-	16	1.1	0.9		●		
		16IR18UN-TPM	0.10	-	18	1	0.8		●		
		16IR20UN-TPM	0.09	-	20	0.9	0.8		●		
		16IR24UN-TPM	0.08	-	24	0.8	0.8		●		
NPT - FULL	TPM P M  pressed type chip control oriented	16IR11.5NPT-TPM	0.25	-	11.5	1.5	1.2		●		
		16IR14NPT-TPM	0.22	-	14	1.5	1.2		●		
		16IR18NPT-TPM	0.20	-	18	1	0.8		◉		
NPT - FULL	preci P M  precision ground sharpness oriented	16IR11.5NPT	0.07	-	11.5	1.5	1.1		●		
		16IR14NPT	0.06	-	14	1	0.8		●		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 60° PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16
AG60	0.50÷3.00	48÷8
G60	1.75÷3.00	14÷8
N60	3.50÷5.00	7÷5

SORMA DIAMOND & CUTTING TOOLS

Triangular

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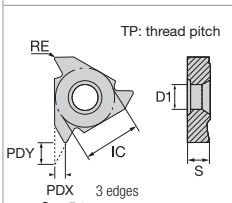
DP: Polycrystalline diamond
PVD: Physical vapor deposition

		HF PVD	HF PVD	BL PVD	DP
		JP5120	JP5125	NBL350C	ND050
Stable machining, light cut	● 1st choice ○ suitable	●	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✱	✲

Dimensions



	S	D1
11I	3.18	3.20
16I	3.65	4.00
22I	4.71	5.00

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P	**90 200**	**70 180**																				
M	**60 150**	**50 140**																				
K	90 190	60 180																				
N				**400 2000**																		
S	**20 70**	**20 70**		**40 100**																		
H			**60 150**																			

	Designation		RE	TP	TPI	PDX	PDY	Stock				
BSPT - FULL	TPM P M	16IR11BSPT-TPM	0.30	-	11	1.5	1.2		●			
		16IR14BSPT-TPM	0.24	-	14	1.5	1.2		●			
		16IR19BSPT-TPM	0.17	-	19	1	0.8		●			
		16IR28BSPT-TPM	0.11	-	28	0.8	0.7		●			
	pressed type chip control oriented											
60° - PARTIAL	TPM P M	11IRA60-TPM	0.08	A60	A60	0.9	0.8		●			
		16IRA60-TPM	0.08	A60	A60	0.9	0.8		●			
		16IRAG60-TPM	0.08	AG60	AG60	1.5	1.1		●			
		16IRG60-TPM	0.13	G60	G60	1.7	1.2		●			
		22IRN60-TPM	0.25	N60	N60	2.5	1.7		●			
	pressed type chip control oriented											
55° - PARTIAL	TPM P M	11IRA55-TPM	0.08	-	A55	0.9	0.8		●			
		16IRA55-TPM	0.08	-	A55	0.9	0.8		●			
		16IRAG55-TPM	0.08	-	AG55	1.5	1.1		●			
		16IRG55-TPM	0.21	-	G55	1.7	1.2		●			
		22IRN55-TPM	0.44	-	N55	2.5	1.7		●			
	pressed type chip control oriented											

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 55° PITCH RANGES

	BSW-BSF-BSP
A55	48÷16
AG55	48÷8
G55	14÷8
N55	7÷5

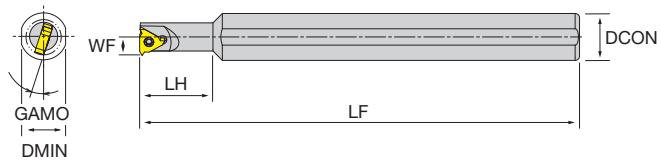
SORMA DIAMOND & CUTTING TOOLS

SI

ISO 11-16-22

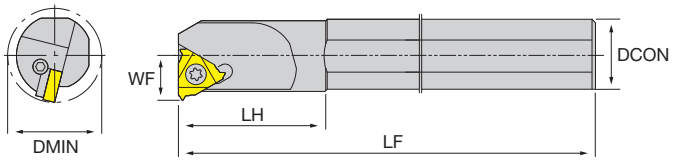
- Internal threading holder
- Steel boring bar
- Without coolant through
- Small diameters with reduced neck

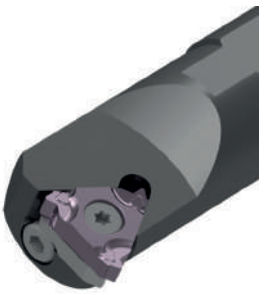
Reduced neck — Right-hand shown





Standard design — Right-hand shown



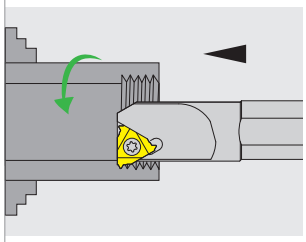


STEEL
MAX 3XD

Designation	DMIN	DCON	WF	LF	LH	GAMO	MIID				Stock
LEFT-HAND											
NT-SIL2016-16	20	16	10	150	35	15°	16IL				●
NT-SIL2420S-16	24	20	12	180	35	15°	16IL				●
NT-SIL3025S-16	30	25	15	200	35	15°	16IL				●
NT-SIL3732S-16	37	32	18.5	250	35	15°	16IL				●
NT-SIL3025S-22	30	25	16	200	35	15°	-				○
NT-SIL3732S-22	37	32	19.5	250	35	15°	-				○
NT-SIL4440S-22	44	40	24.5	300	35	15°	-				○
RIGHT-HAND WITH REDUCED NECK											
NT-SIR1012-11	10	12	5.2	150	25	21°	11IR				●
NT-SIR1216-11	12	16	6.3	150	25	18°	11IR				●
NT-SIR1516-11	15	16	7.5	150	25	15°	11IR				●
RIGHT-HAND											
NT-SIR2016-16	20	16	10	150	35	15°	16IR				●
NT-SIR2420S-16	24	20	12	180	35	15°	16IR				●
NT-SIR3025S-16	30	25	15	200	35	15°	16IR				●
NT-SIR3732S-16	37	32	18.5	250	35	15°	16IR				●
NT-SIR3025S-22	30	25	16	200	35	15°	22IR				●
NT-SIR3732S-22	37	32	19.5	250	35	15°	22IR				●
NT-SIR4440S-22	44	40	24.5	300	35	15°	22IR				◉

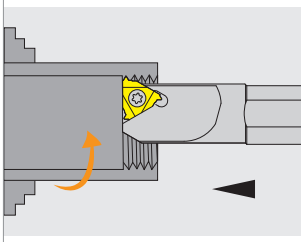
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

INTERNAL THREAD right-hand



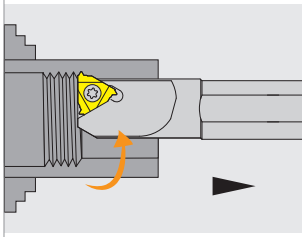
Insert: IR Rotation: counterclockwise
Holder: R Direction: towards chuck

INTERNAL THREAD left-hand



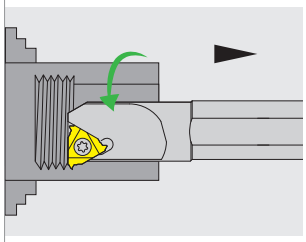
Insert: IL Rotation: clockwise
Holder: L Direction: towards chuck

INTERNAL THREAD right-hand



Insert: IL Rotation: clockwise
Holder: L Direction: from chuck

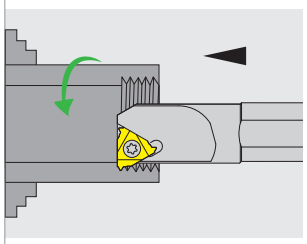
INTERNAL THREAD left-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: from chuck

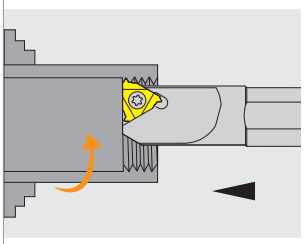
Spare parts	Insert screw 	Flag wrench 	Shim 	Locking screw 	L wrench 
NT-SI$^{L}_{R}$oooo-11	NT-ST25059T08	NT-FT08	-	-	-
NT-SI$^{L}_{R}$oooo-16	NT-ST35089T15	NT-FT15	-	-	-
NT-SILoooo-16	NT-ST35120T15	NT-FT15	NT-SH060	NT-SC003	NT-WR025
NT-SIRoooo-16	NT-ST35120T15	NT-FT15	NT-SH065	NT-SC003	NT-WR025
NT-SIRoooo-22	NT-ST40140T15	NT-FT15	NT-SH067	NT-SC004	NT-WR030
NT-SILoooo-22	NT-ST35120T15	NT-FT15	NT-SH060	NT-SC003	NT-WR025

INTERNAL THREAD right-hand



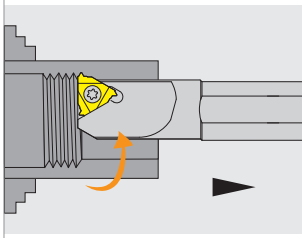
Insert: IR Rotation: counterclockwise
Holder: R Direction: towards chuck

INTERNAL THREAD left-hand



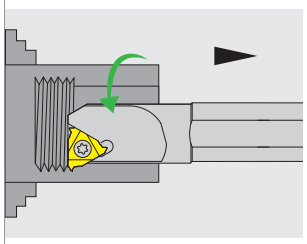
Insert: IL Rotation: clockwise
Holder: L Direction: towards chuck

INTERNAL THREAD right-hand



Insert: IL Rotation: clockwise
Holder: L Direction: from chuck

INTERNAL THREAD left-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: from chuck

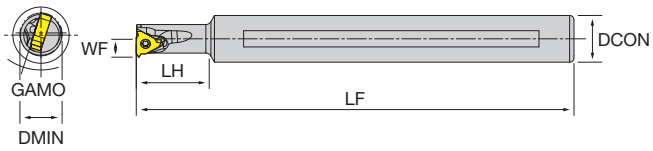
SORMA DIAMOND & CUTTING TOOLS

V SI

ISO 11-16

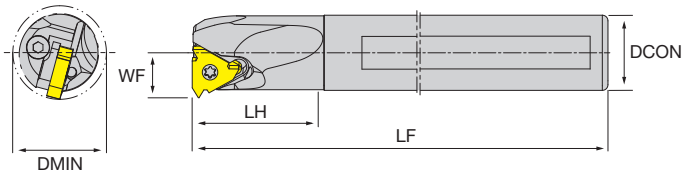
- Internal threading holder
- Vortex boring bar (High standard steel)
- Special chip evacuation path
- With coolant through

Reduced neck — Right-hand shown





Standard design — Right-hand shown









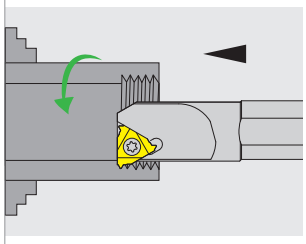


Designation	DMIN	DCON	WF	LF	LH	GAMO	MIID				Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V16M-SIR11-12	12	16	6.3	150	25	18°	11IR				●
NT-V16M-SIR11-15	15	16	7.5	150	25	18°	11IR				●
RIGHT-HAND											
NT-V10M-SIR11-10	10	10	5.2	150	25	21°	11IR				●
NT-V16M-SIR16-20	20	16	10	150	35	15°	16IR				●
NT-V20Q-SIR16-24	24	20	12	180	35	15°	16IR				●
NT-V25R-SIR16-30	30	25	15	200	35	15°	16IR				●
NT-V32S-SIR16-37	37	32	18.5	250	35	15°	16IR				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

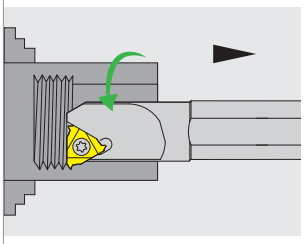
Spare parts	Insert screw	Flag wrench	Shim	Locking screw	L wrench
NT-V∞M-SIR11-∞	NT-ST25059T08	NT-FT08	-	-	-
NT-V16M-SIR16-20	NT-ST35089T15	NT-FT15	-	-	-
NT-V20Q-SIR16-24	NT-ST35120T15	NT-FT15	NT-SH065	NT-SC003	NT-WR025
NT-V25R-SIR16-30	NT-ST35120T15	NT-FT15	NT-SH065	NT-SC003	NT-WR025
NT-V32S-SIR16-37	NT-ST35120T15	NT-FT15	NT-SH065	NT-SC003	NT-WR025

INTERNAL THREAD right-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: towards chuck

INTERNAL THREAD left-hand



Insert: IR Rotation: counterclockwise
Holder: R Direction: from chuck

M - Internal ISO-metric threads

TP	6.00	5.50	5.00	4.50	4.00	3.50	3.00	2.50	2.00	1.75	1.50	1.25	1.00	0.80	0.75	0.70	0.50
NO. OF INFEEDS	RADIAL INFEED PER PASS																
1	0.46	0.43	0.42	0.37	0.34	0.32	0.28	0.26	0.23	0.22	0.20	0.17	0.17	0.17	0.16	0.13	0.10
2	0.43	0.40	0.40	0.34	0.31	0.30	0.26	0.25	0.21	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.08
3	0.35	0.33	0.32	0.28	0.24	0.24	0.21	0.18	0.17	0.15	0.15	0.14	0.11	0.11	0.10	0.10	0.07
4	0.30	0.26	0.26	0.23	0.21	0.19	0.16	0.15	0.15	0.13	0.13	0.10	0.09	0.07	0.07	0.07	0.06
5	0.26	0.22	0.22	0.21	0.18	0.17	0.14	0.13	0.12	0.10	0.11	0.09	0.08	-	-	-	-
6	0.22	0.20	0.20	0.19	0.15	0.15	0.13	0.12	0.11	0.09	0.08	0.08	-	-	-	-	-
7	0.20	0.18	0.17	0.16	0.14	0.14	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-
8	0.19	0.17	0.16	0.15	0.13	0.13	0.11	0.10	0.08	0.08	-	-	-	-	-	-	-
9	0.18	0.16	0.16	0.14	0.12	0.12	0.10	0.10	-	-	-	-	-	-	-	-	-
10	0.16	0.15	0.15	0.13	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-	-	-
11	0.15	0.14	0.14	0.12	0.11	0.10	0.09	-	-	-	-	-	-	-	-	-	-
12	0.15	0.14	0.14	0.12	0.10	0.08	0.08	-	-	-	-	-	-	-	-	-	-
13	0.14	0.13	0.12	0.11	0.10	-	-	-	-	-	-	-	-	-	-	-	-
14	0.13	0.12	0.10	0.10	0.08	-	-	-	-	-	-	-	-	-			-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEED	3.54	3.25	2.96	2.65	2.33	2.05	1.78	1.48	1.17	1.05	0.85	0.75	0.60	0.49	0.46	0.42	0.31

green background are standard items all other sizes can make specials

W - Internal Whitworth threads

TP	4	4.5	5	6	7	8	9	10	11	12	14	16	18	19	20	26	28
NO. OF INFEEDS	RADIAL INFEED PER PASS																
1	0.49	0.46	0.45	0.38	0.37	0.32	0.30	0.29	0.28	0.28	0.24	0.24	0.23	0.22	0.21	0.19	0.18
2	0.46	0.43	0.43	0.36	0.35	0.30	0.28	0.27	0.26	0.26	0.22	0.22	0.22	0.22	0.21	0.18	0.17
3	0.38	0.38	0.38	0.30	0.29	0.24	0.23	0.22	0.22	0.22	0.18	0.19	0.19	0.18	0.17	0.15	0.14
4	0.36	0.33	0.32	0.26	0.25	0.21	0.20	0.19	0.19	0.18	0.15	0.16	0.16	0.14	0.14	0.12	0.12
5	0.34	0.29	0.28	0.22	0.22	0.19	0.18	0.17	0.16	0.16	0.13	0.13	0.13	0.12	0.11	0.08	0.08
6	0.31	0.25	0.25	0.21	0.19	0.17	0.15	0.15	0.14	0.14	0.11	0.11	0.08	0.08	0.08	-	-
7	0.29	0.24	0.22	0.19	0.18	0.15	0.14	0.14	0.13	0.13	0.09	0.08	-	-	-	-	-
8	0.27	0.22	0.20	0.17	0.16	0.14	0.13	0.13	0.12	0.08	0.08	-	-	-	-	-	-
9	0.24	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.08	-	-	-	-	-	-	-	-
10	0.22	0.18	0.18	0.15	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-
11	0.20	0.17	0.17	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	-
12	0.19	0.16	0.15	0.14	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-
13	0.17	0.15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEED	4.29	3.82	3.44	2.90	2.50	2.17	1.93	1.76	1.58	1.45	1.20	1.13	1.01	0.96	0.92	0.72	0.69

green background are standard items all other sizes can make specials

SORMA DIAMOND & CUTTING TOOLS

UN - Internal UN threads

TP	4	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
NO. OF INFEEDS	RADIAL INFEED PER PASS																	
1	0.44	0.41	0.42	0.35	0.34	0.30	0.28	0.27	0.27	0.27	0.25	0.23	0.22	0.23	0.20	0.18	0.17	0.17
2	0.41	0.38	0.38	0.33	0.32	0.28	0.26	0.25	0.23	0.23	0.20	0.18	0.18	0.17	0.16	0.15	0.14	0.14
3	0.39	0.34	0.33	0.25	0.24	0.22	0.19	0.18	0.18	0.18	0.15	0.14	0.14	0.14	0.13	0.13	0.09	0.10
4	0.33	0.28	0.27	0.21	0.21	0.18	0.16	0.15	0.15	0.15	0.13	0.13	0.12	0.12	0.10	0.10	0.08	0.08
5	0.28	0.23	0.23	0.18	0.17	0.15	0.14	0.13	0.13	0.13	0.12	0.11	0.10	0.10	0.09	0.08	0.08	-
6	0.24	0.20	0.20	0.16	0.15	0.13	0.13	0.12	0.11	0.11	0.11	0.10	0.09	0.08	0.08	-	-	-
7	0.22	0.19	0.18	0.15	0.14	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.08	-	-	-	-	-
8	0.21	0.18	0.17	0.14	0.13	0.11	0.11	0.10	0.10	0.08	0.08	0.08	-	-	-	-	-	-
9	0.20	0.17	0.16	0.13	0.12	0.11	0.10	0.10	0.08	-	-	-	-	-	-	-	-	-
10	0.18	0.16	0.15	0.12	0.12	0.10	0.09	0.08	-	-	-	-	-	-	-	-	-	-
11	0.17	0.15	0.14	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-	-	-	-	-
12	0.16	0.14	0.14	0.11	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-
13	0.15	0.14	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.14	0.13	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEED	3.74	3.32	2.99	2.46	2.13	1.88	1.66	1.49	1.36	1.25	1.14	1.06	0.93	0.84	0.76	0.64	0.56	0.49

green background are standard items all other sizes can make specials

NPT - Internal NPT threads

TP	8	11.5	14	18	27.0
NO. OF INFEEDS	RADIAL INFEED PER PASS				
1	0.28	0.28	0.28	0.28	0.28
2	0.25	0.25	0.25	0.25	0.25
3	0.22	0.22	0.22	0.22	0.22
4	0.19	0.19	0.19	0.19	0.19
5	0.18	0.18	0.18	0.18	0.18
6	0.18	0.18	0.18	0.18	0.18
7	0.17	0.17	0.17	0.17	0.17
8	0.17	0.17	0.17	0.17	0.17
9	0.16	0.16	0.16	0.16	0.16
10	0.16	0.16	0.16	0.16	0.16
11	0.14	0.14	0.14	0.14	0.14
12	0.13	0.13	0.13	0.13	0.13
13	0.12	0.12	0.12	0.12	0.12
14	0.11	0.11	0.11	0.11	0.11
15	0.08	0.08	0.08	0.08	0.08
TOTAL INFEED	2.54	1.76	1.45	1.12	0.75

green background are standard items all other sizes can make specials

BSPT - British tapered pipe threads

TP	11	14	19	28
NO. OF INFEEDS	RADIAL INFEED PER PASS			
1	0.25	0.24	0.22	0.17
2	0.23	0.20	0.19	0.14
3	0.21	0.17	0.15	0.11
4	0.18	0.14	0.12	0.10
5	0.16	0.12	0.12	0.06
6	0.14	0.12	0.06	-
7	0.13	0.11	-	-
8	0.12	0.06	-	-
9	0.06	-	-	-
TOTAL INFEED	1.58	1.20	0.86	0.58

green background are standard items all other sizes can make specials

THREADING Parameters - cutting speed

SORMA DIAMOND & CUTTING TOOLS

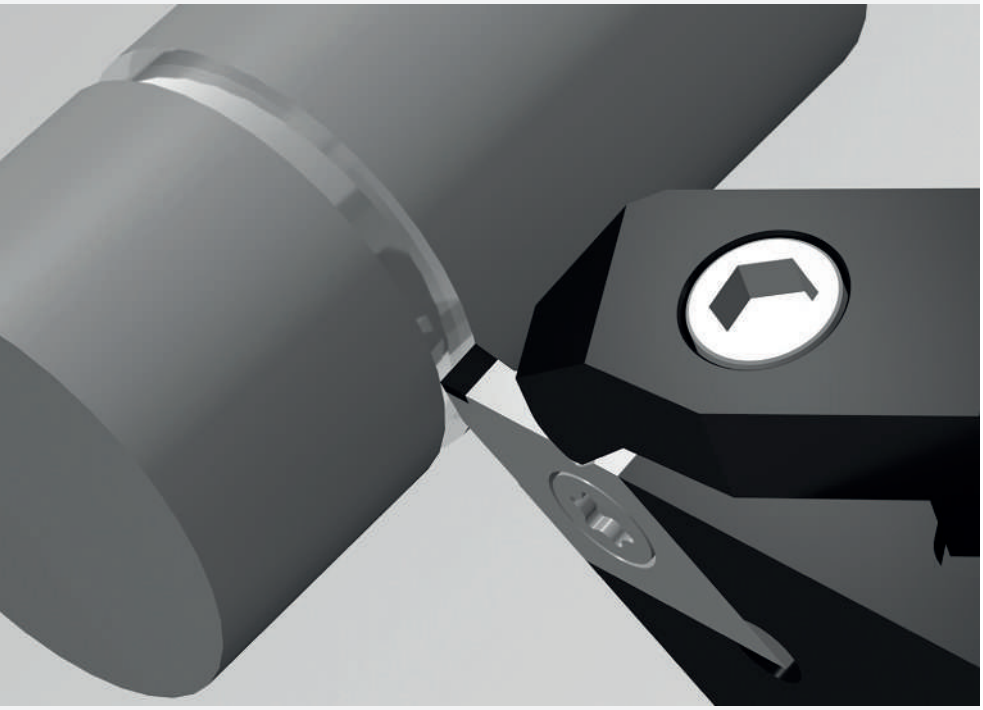
ISO 513	MATERIAL	HARDNESS HB	JP5120 min	JP5120 start	JP5120 max	JP5125 min	JP5125 start	JP5125 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100	**150**	200	100	**140**	180
			90	**130**	170	80	**120**	160
						70	**100**	130
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	90	**130**	170	80	**120**	160
			80	**110**	140	70	**100**	120
						60	**80**	100
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	80	**110**	150	70	**100**	130
			70	**100**	130	60	**90**	120
						60	**80**	100
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100	**150**	200	100	**140**	180
			90	**130**	170	80	**120**	160
						70	**100**	130
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	70	**90**	110	60	**80**	100
			60	**80**	100	50	**70**	90
						50	**60**	70
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	70	**110**	150	60	**100**	140
			60	**100**	140	50	**90**	130
						50	**80**	110
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		70	**100**	130	60	**90**	120
			60	**90**	120	60	**80**	100
						50	**70**	90
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	110	**150**	190	100	**140**	180
			90	**135**	160	80	**115**	150
						60	**90**	120
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	90	**130**	170	80	**120**	160
			80	**105**	130	70	**95**	120
						60	**80**	100
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	80	**115**	150	70	**105**	140
			70	**100**	130	60	**90**	120
						50	**75**	100

ISO 513	MATERIAL	HARDNESS HB	ND050 (NDP001) min	ND050 (NDP001) start	ND050 (NDP001) max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		400	**1000**	1600
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		250	**400**	550
N3	Copper alloy (ex. 2.0060/E-Cu57)		300	**600**	900
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		50	**75**	100

Complete workpiece materials p. **M**1.

ISO 513	MATERIAL	HARDNESS HB	NBL350C min	NBL350C start	NBL350C max		
H1	Case-hardened steel (ex. 1.7131/16 MnCr 5)	50 ÷ 56	●	60	**100**	140	
H2	Bearing steel, quenched and tempered steel (ex.1.3505/100 Cr 6)	54 ÷ 62	●	60	**90**	120	
H3	Hardened tool steel (ex 1.2436/X 210 CrW 12/2312)	60 ÷ 65	●	50	**70**	90	

Complete workpiece materials p. **M**1.



GROOVING

Grades selection guide .C2
Grades features .C4
Holders selection guide .C6
NDB .C7
NCG .C15
BGF .C17

GROOVING Grades selection guide

SORMA DIAMOND & CUTTING TOOLS

ISO 513		CARBIDE			PCBN	DIAMOND
		CVD COATED	PVD COATED	UNCOATED	UNCOATED	PCD
P Steel	P01					
	P10	JC8025	JPS120			
	P20		JPS125			
	P30		JPS130			
	P40					
M Stainless steel	M01					
	M10		JPS120			
	M20		JPS125			
	M30		JPS130			
	M40					
K Cast iron	K01				NBH450U	
	K10	JC7010	JPS120			
	K20		JPS125			
	K30					
N Non-ferrous materials	N01					
	N10			JUG015		ND120
	N20					
	N30					
S HRSA	S01		JPS120			
	S10		JPS125			
	S20					
	S30					

ISO 513		CARBIDE			PCBN	DIAMOND
		CVD COATED	PVD COATED	UNCOATED	UNCOATED	PCD
H Hardened steel	H01					
	H10					
	H20				NBH4500 NB350	
	H30					

GROOVING Grades features

SORMA DIAMOND & CUTTING TOOLS

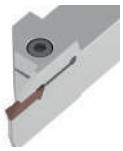
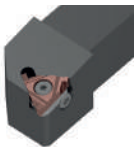
GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JC7010	carbide	1.830	CVD	$TiCN+Al_2O_3$	K	K05 K25	High wear resistance. First choice for grey cast iron general machining. Elevata resistenza all'usura. Prima scelta per lavorazioni generali di ghisa grigia. Hohe Verschleißfestigkeit. Erste Wahl für die allgemeine Bearbeitung von Grauguss. Haute résistance à l'usure. Premier choix pour usinage général de fonte grise.
JC8025	carbide	1.700	CVD	$TiCN+Al_2O_3+TiN$	P	P20 P30	All around grade suitable for a wide range of applications. Excellent reliability even on medium interrupted cut. Grado universale consigliato per un ampio campo di applicazioni. Eccellente affidabilità anche con taglio mediamente interrotto. Universelle Qualität, empfohlen für eine breite Palette von Anwendungen. Hervorragende Zuverlässigkeit auch bei mittleren Schnittunterbrechungen. Nuance universelle recommandée pour une large gamme d'applications. Excellente fiabilité y compris en cas de coupe moyennement interrompue.
JP5120	micrograin carbide	1.830	PVD	TiAlN	P M S	P10 P20 M10 M20 S01 S10	Excellent performances on Stainless and HRSA thanks to special coating technology. The post-coating surface treatment effectively prevents built-up edge. Tecnologia speciale di rivestimento che bilancia resistenza all'usura e tenacità. Il trattamento superficiale post rivestimento previene efficacemente la formazione del tagliente di riporto. Die spezielle Beschichtungstechnologie sorgt für ein ausgewogenes Verhältnis zwischen Verschleißfestigkeit und Robustheit. Die Oberflächenbehandlung nach der Beschichtung verhindert die Bildung der Aufbauschneide effektiv. Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface post-revêtement empêche efficacement la formation d'arêtes de coupe rapportées.
JP5125	micrograin carbide	1.830	PVD	TiAlN	P M K S	P20 P30 M20 M30 K20 K30 S01 S10	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life. Substrato in metallo duro micrograna ad alto contenuto di Co ad alta tenacità e avanzata tecnologia di rivestimento. Uso universale con eccellente affidabilità e lunga vita utensile. Hochfestes mikrokörnige Hartmetallmaterial mit hohem Co-Gehalt und innovativer Beschichtungstechnologie. Universeller Einsatz mit ausgezeichneter Zuverlässigkeit und langer Standzeit. Substrat en carbure micro-grain haute teneur en Co à haute ténacité et technologie de revêtement avancée. Application universelle à excellente fiabilité et longue durée de vie.

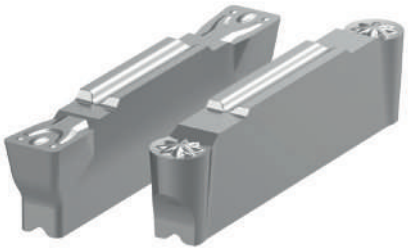
SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP5130	micrograin carbide	1.830	PVD	TiAlN	P	P20 P35	High toughness substrate combined with super-smooth coating designed for precision applications. Substrato molto tenace combinato a rivestimento super-liscio progettato per applicazioni di precisione. Sehr robustes Grundmaterial in Kombination mit einer besonders glatten Beschichtung, die für Präzisionsanwendungen entwickelt wurde. Substrat très résistant combiné à un revêtement mince conçu pour des applications de précision.
					M	M20 M35	
JU6015	micrograin carbide	1.950	-	-	N	N10 N20	Uncoated carbide for universal use, from finishing to roughing, on non-ferrous materials. Metallo duro non rivestito per uso universale, dalla finitura alla sgrossatura, su materiali non ferrosi. Unbeschichtetes Hartmetall für den universellen Einsatz, von der Schlichtbearbeitung bis zum Schruppen, bei Nichteisenmaterialien. Carbure non revêtu pour application universelle, de la finition à l'ébauche, sur des matériaux non ferreux.
NB350	Low volume CBN 75%	3.400	-	-	H	H20 H35	Hardened steel machining with a perfect combination between toughness and wear resistance. Available only for BGF system. Lavorazione di acciai temprati con perfetta combinazione tra tenacità e resistenza all'usura. Disponibile solo per il sistema BGF. Bearbeitung von gehärteten Stählen mit perfekter Kombination aus Robustheit und Verschleißfestigkeit. Nur für das BGF-System verfügbar. Usinage d'aciers trempés avec une combinaison parfaite entre ténacité et résistance à l'usure. Disponible uniquement pour le système BGF.
NBH450U	High volume CBN 95%	4.400	-	-	K	K01 K20	Grey cast iron machinining at very high cutting condition and with great wear resistance. Available only for BGF system. Lavorazioni di ghisa grigia con velocità di taglio molto elevate ed eccellente resistenza all'usura. Disponibile solo per il sistema BGF. Bearbeitung von Grauguss mit sehr hohen Schnittgeschwindigkeiten und hervorragender Verschleißfestigkeit. Nur für das BGF-System verfügbar. Usinage de fonte grise à des vitesses de coupe très élevées et une excellente résistance à l'usure. Disponible uniquement pour le système BGF.
ND120	diamond 95%	6.000	-	-	N	N10 N30	High productivity grooving of non-ferrous materials. Available only for BGF system. Scanalatura a elevata produttività di materiali non ferrosi. Disponibile solo per il sistema BGF. Hochproduktives Nutenfräsen von Nichteisenmaterialien. Nur für das BGF-System verfügbar. Usinage de gorges haute productivité de matériaux non ferreux. Disponible uniquement pour le système BGF.

GROOVING Holders selection guide

SORMA DIAMOND & CUTTING TOOLS

	NDB	NCG	BGF
	C10	C16	C19
	 EXTERNAL  INTERNAL	 EXTERNAL  INTERNAL	 EXTERNAL
Pressed type inserts	✓	✗	✗
Ground type inserts	✓	✓	✓
Available sizes (CW)	2.00 / 3.00 / 4.00 / 5.00 / 6.00 / 8.00 mm	1.10 ÷ 2.15 mm	1.00 ÷ 4.00 mm
Maximum depth (CDX)	14 / 20 / 25 / 25 / 30 / 30 mm	1.30 ÷ 1.85 mm	1.80 ÷ 4.50 mm
Coolant holes	✓	✗	✗
Workpiece material	P M K N	P M	K N H
No. of cutting edges	2	3	1
No. of geometries	6	1	2
Special features	All-around system	Can be installed on threading tool holders	Easy tailor-made
Grooving	✓	✓	✓
Turning	✓	✗	✗
Profiling	✓	✗	✗
Cut-off	✓	✗	✗
Versatility	■■■■■	■■■■■	■■■■□
Strength	■■■■□	■■■□□	■■■■■
Precision	■■■□□	■■■■■	■■■■□
Finishing	■■■■□	■■■■□	■■■■□
Range	■■■■□	■■■□□	■■■□□



GROOVING NDB

Inserts .C8
Holders .C10
Parameters .C13

SORMA DIAMOND & CUTTING TOOLS

NDBD

NDB system

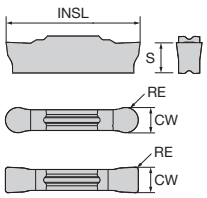
- Double sided grooving insert
- Available for PMKN materials
- Max. grooving depth depends on INSL value and holder specifications
- Improved holding system, automatically positioned, reliable and efficient
- CW Tollerance

GT-RT-CT ±0.050 mm
GA-RA ±0.025 mm

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD	HF PVD
		JC7010	JC8025	JP5120	JP5125	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	○	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●	●
Unstable machining, heavy cut	⬢ 1st choice ⬡ suitable	⬡	⬡		⬢	⬡

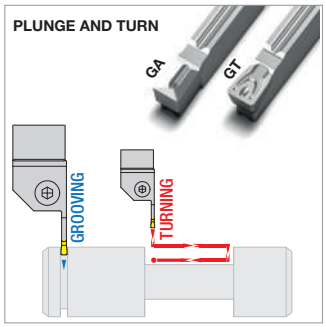
Dimensions

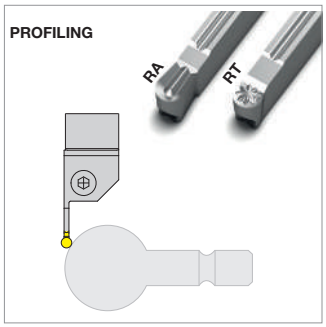


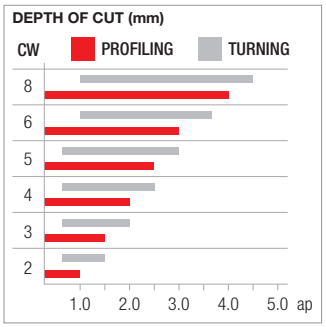
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P		140 330	90 200	70 180																		
M			60 150	50 140																		
K	130 380		90 190	60 180																		
N					200 1000																	
S			20 70	20 70																		
H																						

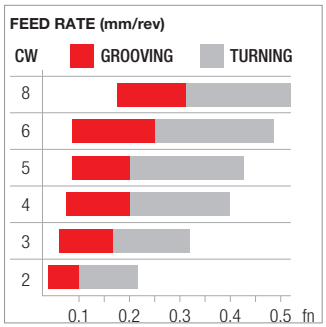
		Designation	CW	RE	INSL	S		Stock					
PLUNGE & TURN	GT P M K	NDBD20R02M-GT	2	0.20	16	3.5		●	●		●		
		NDBD30R04M-GT	3	0.40	21	4.8		●	●		●		
		NDBD40R04M-GT	4	0.40	21	4.8		●	●				
		NDBD50R04M-GT	5	0.40	26	5.8		●	●		●		
	straight edge pressed type	NDBD60R04M-GT	6	0.40	26	5.8					●		
		NDBD60R08M-GT	6	0.80	26	5.8		●	●		●		
		NDBD80R08M-GT	8	0.80	31	6.5		●	●				
PLUNGE & TURN	GA N	NDBD20R02G-GA	2	0.20	16	3.5						●	
		NDBD30R04G-GA	3	0.40	21	4.8						●	
	ALU straight edge ground and polished	NDBD40R04G-GA	4	0.40	21	4.8						●	
PROFILING	RT P M K	NDBD20R10M-RT	2	1.00	16	3.5					●		
		NDBD30R15M-RT	3	1.50	21	4.8					●		
		NDBD40R20M-RT	4	2.00	21	4.8		●			●		
		NDBD50R25M-RT	5	2.50	26	5.8		●			●		
	full radius edge pressed type	NDBD60R30M-RT	6	3.00	26	5.8		●			◉		
		NDBD80R40M-RT	8	4.00	31	6.5					●		
PROFILING	RA N	NDBD20R10G-RA	2	1.00	16	3.5						●	
		NDBD30R15G-RA	3	1.50	21	4.8						●	
	ALU full radius ground and polished	NDBD40R20G-RA	4	2.00	21	4.8						●	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









SORMA DIAMOND & CUTTING TOOLS

NDBD

NDB system

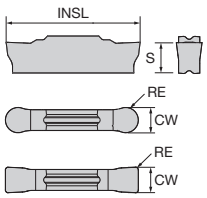
- Double sided grooving insert
- Available for PMKN materials
- Max. grooving depth depends on INSL value and holder specifications
- Improved holding system, automatically positioned, reliable and efficient
- CW Tollerance

GT-RT-CT ±0.050 mm
GA-RA ±0.025 mm

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD	HF
		JC7010	JC8025	JP5120	JP5125	JU6015
Stable machining, light cut	● 1st choice ○ suitable	●	○	●	○	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●	●
Unstable machining, heavy cut	⬢ 1st choice ⬡ suitable	⬡	⬡		⬢	⬡

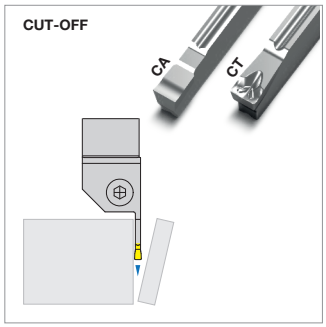
Dimensions

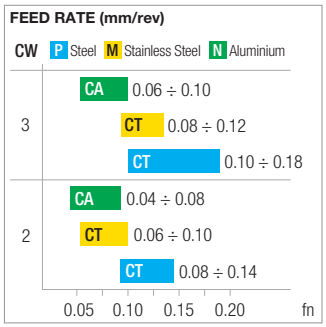


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																				
P		**140 330**	**90 200**	**70 180**																	
M			**60 150**	**50 140**																	
K	**130 380**		90 190	60 180																	
N					**200 1000**																
S			**20 70**	**20 70**																	
H																					

	Designation		CW	RE	INSL	S		Stock					
CUT-OFF	CT P M	NDBD30R02M-CT	3	0.20	21	4.8				●	⦿		
	concave edge, medium feed rate												
CUT-OFF	CA N	NDBD20R02G-CA	2	0.20	16	3.5						●	
	ALU concave edge, ground and polished	NDBD30R02G-CA	3	0.20	21	4.8						●	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





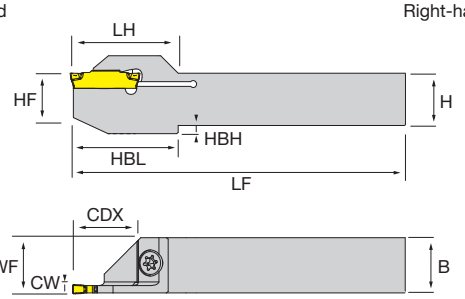
SORMA DIAMOND & CUTTING TOOLS

NDB E

NDB system

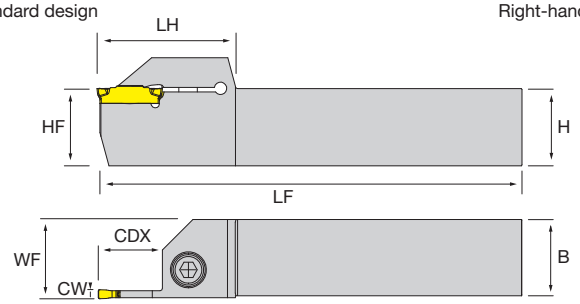
- External holders for NDB double sided grooving insert
- Different grooving depth (CDX) available for different groove width
- Clamp fastened and loosened by screw
- Improved holding system, automatically positioned, reliable and efficient

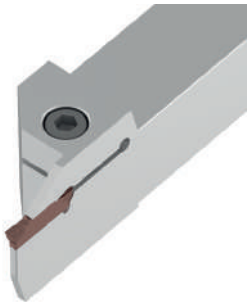
Radial reinforced — Right-hand shown





Standard design — Right-hand shown





GROOVING | TURNING | PROFILING | CUT-OFF

Designation	CW	CDX	H	B	WF	LF	LH	HF	HBL	HBH	Stock
LEFT-HAND WITH RADIAL REINFORCEMENT											
NDB EL1212-2-CDX14	2	14	12	12	12.2	120	29	12	26	2	●
NDB EL1616-2-CDX14	2	14	16	16	16.2	120	29	16	26	2	●
NDB EL1616-3-CDX20	3	20	16	16	16.3	120	35	16	32	2	●
LEFT-HAND											
NDB EL2020-2-CDX14	2	14	20	20	21	125	38	20	-	-	●
NDB EL1616-3-CDX10	3	10	16	16	16.2	120	35	16	-	-	●
NDB EL2020-3-CDX10	3	10	20	20	21	125	38	20	-	-	●
NDB EL2020-3-CDX20	3	20	20	20	21	125	40	20	-	-	●
NDB EL2525-3-CDX10	3	10	25	25	26	150	40	25	-	-	●
NDB EL2525-3-CDX20	3	20	25	25	26	150	45	25	-	-	●
NDB EL2020-4-CDX10	4	10	20	20	21	125	35	20	-	-	●
NDB EL2020-4-CDX25	4	25	20	20	21	125	50	20	-	-	●
NDB EL2525-4-CDX10	4	10	25	25	26	150	40	25	-	-	●
NDB EL2525-4-CDX25	4	25	25	25	26	150	50	25	-	-	●
NDB EL2525-5-CDX10	5	10	25	25	26	150	40	25	-	-	●
NDB EL2525-5-CDX25	5	25	25	25	26	150	50	25	-	-	●
NDB EL2525-6-CDX15	6	15	25	25	26	150	45	25	-	-	●
NDB EL2525-6-CDX30	6	30	25	25	26	150	56	25	-	-	●
NDB EL2525-8-CDX15	8	15	25	25	26.5	150	43	25	-	-	●
NDB EL2525-8-CDX30	8	30	25	25	27	150	55	25	-	-	●
RIGHT-HAND WITH RADIAL REINFORCEMENT											
NDB ER1212-2-CDX14	2	14	12	12	12.2	120	29	12	26	2	●
NDB ER1616-2-CDX14	2	14	16	16	16.2	120	29	16	26	2	●
NDB ER1616-3-CDX20	3	20	16	16	16.3	120	35	16	32	2	●
RIGHT-HAND											
NDB ER2020-2-CDX14	2	14	20	20	21	125	38	20	-	-	●
NDB ER1616-3-CDX10	3	10	16	16	16.2	120	35	16	-	-	●
NDB ER2020-3-CDX10	3	10	20	20	21	125	38	20	-	-	●
NDB ER2020-3-CDX20	3	20	20	20	21	125	40	20	-	-	●
NDB ER2525-3-CDX10	3	10	25	25	26	150	40	25	-	-	●
NDB ER2525-3-CDX20	3	20	25	25	26	150	45	45	-	-	●
NDB ER2020-4-CDX10	4	10	20	20	21	125	35	20	-	-	●
NDB ER2020-4-CDX25	4	25	20	20	21	125	50	20	-	-	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	CW	CDX	H	B	WF	LF	LH	HF	HBL	HBH	Stock
NDB ER2525-4-CDX10	4	10	25	25	26	150	40	25	-	-	●
NDB ER2525-4-CDX25	4	25	25	25	26	150	50	25	-	-	●
NDB ER2525-5-CDX10	5	10	25	25	26	150	40	25	-	-	●
NDB ER2525-5-CDX25	5	25	25	25	26	150	50	25	-	-	●
NDB ER2525-6-CDX15	6	15	25	25	26	150	45	25	-	-	●
NDB ER2525-6-CDX30	6	30	25	25	26	150	56	25	-	-	●
NDB ER2525-8-CDX15	8	15	25	25	26.5	150	43	25	-	-	●
NDB ER2525-8-CDX30	8	30	25	25	27	150	55	25	-	-	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

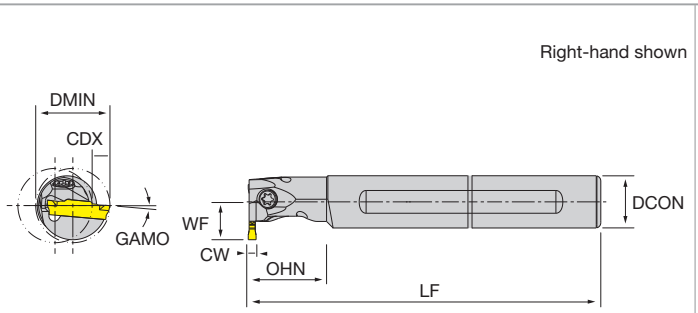
Spare parts	Locking screw 	Flag wrench 	L wrench 
NDB E$^{L}/_{R}$1212-2-CDX14	NT-ST076	NT-FT15	-
NDB E$^{L}/_{R}$1616-2-CDX14	NT-ST077	NT-FT15	-
NDB E$^{L}/_{R}$1616-3-CDX10	NT-SC001	-	NT-WR040
NDB E$^{L}/_{R}$1616-3-CDX20	NT-ST077	NT-FT15	-
NDB E$^{L}/_{R}$2020-○-CDX∞	NT-SC001	-	NT-WR040
NDB E$^{L}/_{R}$2525-○-CDX∞	NT-SC002	-	NT-WR040

SORMA DIAMOND & CUTTING TOOLS

NDB I

NDB system

- Internal holders for NDB double-headed grooving insert
- Vortex boring bar (anti-vibration steel) with coolant through
- Special chip evacuation path
- Clamp tightened by screw





VORTEX STEEL MAX 5XD | INTERNAL COOLANT | GROOVING | TURNING | PROFILING

Designation	CW	CDX	DMIN	DCON	WF	LF	OHN	GAMO			Stock
LEFT-HAND											
NDB IL1620V-2-CDX04	2	4	20	16	11.5	150	25	15°			●
NDB IL2025V-2-CDX06	2	6	25	20	14.5	180	30	15°			●
NDB IL2025V-3-CDX06	3	6	25	20	14.5	180	30	15°			●
NDB IL2532V-3-CDX08	3	8	32	25	19	200	40	15°			●
NDB IL3240V-3-CDX10	3	10	40	32	23.5	220	50	15°			●
NDB IL2532V-4-CDX08	4	8	32	25	19	200	40	15°			●
NDB IL3240V-4-CDX10	4	10	40	32	23.5	220	50	15°			●
RIGHT-HAND											
NDB IR1620V-2-CDX04	2	4	20	16	11.5	150	25	15°			●
NDB IR2025V-2-CDX06	2	6	25	20	14.5	180	30	15°			●
NDB IR2025V-3-CDX06	3	6	25	20	14.5	180	30	15°			●
NDB IR2532V-3-CDX08	3	8	32	25	19	200	40	15°			●
NDB IR3240V-3-CDX10	3	10	40	32	23.5	220	50	15°			●
NDB IR2532V-4-CDX08	4	8	32	25	19	200	40	15°			●
NDB IR3240V-4-CDX10	4	10	40	32	23.5	220	50	15°			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Locking screw	L wrench
		
NDB I$^{L}/_{R}$1620V-2-CDX04	NT-ST40115T15	NT-TX15
NDB I$^{L}/_{R}$○○○○V-○-CDX○○	NT-ST051	NT-TX20

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	JC8025 min	JC8025 start	JC8025 max	JP5120 min	JP5120 start	JP5120 max	JP5125 min	JP5125 start	JP5125 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	170	**250**	330	100	**150**	200	100	**140**	180
			160	**225**	290	90	**130**	170	80	**120**	160
			140	**195**	250				70	**100**	130
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	150	**220**	290	90	**130**	170	80	**120**	160
			140	**205**	270	80	**110**	140	70	**100**	120
			130	**190**	250				60	**80**	100
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	140	**205**	270	80	**115**	150	70	**100**	130
			130	**190**	250	70	**100**	130	60	**90**	120
			120	**170**	220				60	**80**	100

ISO 513	MATERIAL	HARDNESS HB	JP5120 min	JP5120 start	JP5120 max	JP5125 min	JP5125 start	JP5125 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100	**150**	200	100	**140**	180
			90	**130**	170	80	**120**	160
						70	**100**	130
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	70	**90**	110	60	**80**	100
			60	**80**	100	50	**70**	90
						50	**60**	70
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	70	**110**	150	60	**100**	140
			60	**100**	140	50	**90**	130
						50	**80**	110
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		70	**100**	130	60	**90**	120
			60	**90**	120	60	**80**	100
						50	**70**	90

ISO 513	MATERIAL	HARDNESS HB	JC7010 min	JC7010 start	JC7010 max	JP5120 min	JP5120 start	JP5120 max	JP5125 min	JP5125 start	JP5125 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	180	**280**	380	110	**150**	190	100	**140**	180
			150	**225**	300	90	**130**	170	80	**115**	150
			130	**195**	260				60	**90**	120
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	150	**200**	250	90	**130**	170	80	**120**	160
			130	**175**	220	80	**110**	140	70	**95**	120
			120	**160**	200				60	**80**	100
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	140	**190**	240	80	**110**	140	70	**105**	140
			120	**165**	210	70	**100**	130	60	**90**	120
			110	**155**	200				50	**75**	100

ISO 513	MATERIAL	HARDNESS HB	JU6015 min	JU6015 start	JU6015 max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		400	**700**	1000
			300	**500**	700
			200	**400**	600
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		200	**300**	400
			200	**250**	300
			100	**150**	200

Complete workpiece materials p. **M**1.

GROOVING Parameters - depth of cut and feed rate - MULTIFUNCTION

	DESIGNATION	Grooving			Turning and Profiling						Cut-off		
		FEED RATE			DEPTH OF CUT			FEED RATE			FEED RATE		
		fn (mm/rev)			ap (mm)			fn (mm/rev)			fn (mm/rev)		
		min	start	max	min	start	max	min	start	max	min	start	max
STRAIGHT EDGE	NDBD20R02o-Go	0.06	**0.08**	0.10	0.30	**0.90**	1.50	0.10	**0.13**	0.16	-	-	-
	NDBD30R04o-Go	0.07	**0.10**	0.13	0.40	**1.20**	2.00	0.16	**0.18**	0.20	-	-	-
	NDBD40R04o-Go	0.10	**0.12**	0.14	0.50	**1.50**	2.50	0.18	**0.21**	0.24	-	-	-
	NDBD50R04o-Go	0.11	**0.15**	0.19	0.60	**1.80**	3.00	0.20	**0.25**	0.30	-	-	-
	NDBD60R08o-Go	0.13	**0.19**	0.25	0.70	**2.10**	3.50	0.24	**0.33**	0.42	-	-	-
	NDBD80R08o-Go	0.18	**0.26**	0.34	0.80	**2.65**	4.50	0.32	**0.44**	0.56	-	-	-
FULL RADIUS	NDBD20R10o-Ro	0.06	**0.09**	0.12	0.00	**0.50**	1.00	0.14	**0.18**	0.22	-	-	-
	NDBD30R15o-Ro	0.08	**0.11**	0.14	0.00	**0.75**	1.50	0.18	**0.23**	0.28	-	-	-
	NDBD40R20o-Ro	0.10	**0.13**	0.16	0.00	**1.00**	2.00	0.20	**0.27**	0.34	-	-	-
	NDBD50R25o-Ro	0.12	**0.16**	0.20	0.00	**1.25**	2.50	0.24	**0.33**	0.42	-	-	-
	NDBD60R30o-Ro	0.13	**0.19**	0.25	0.00	**1.50**	3.00	0.24	**0.37**	0.50	-	-	-
	NDBD80R40o-Ro	0.18	**0.26**	0.34	0.00	**2.00**	4.00	0.32	**0.49**	0.66	-	-	-
CONCAVE EDGE	NDBD20R02M-CA	-	-	-	-	-	-	-	-	-	0.04	**0.06**	0.08
	NDBD30R04M-CA	-	-	-	-	-	-	-	-	-	0.06	**0.08**	0.10
	NDBD30R04M-CT	-	-	-	-	-	-	-	-	-	0.08	**0.13**	0.18



GROOVING NCG

Inserts .C16

SORMA DIAMOND & CUTTING TOOLS

NCG

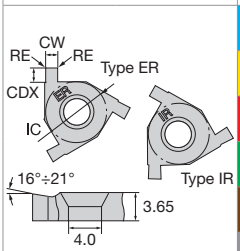
Circlip grooving

- Triple head top mounted grooving insert
- Available for P/M materials
- According to DIN 471/472
- Can share holders with 16IR/ER threading inserts
- CW Tollerance **0/+0.02**

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD	JP5130
Stable machining, light cut	● 1st choice ◯ suitable			
General machining, medium cut	● 1st choice ◯ suitable		●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	

Dimensions



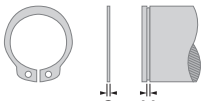
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**180** 60
M	**110** 50
K	
N	
S	
H	

	Designation	CW	CDX	RE	IC	Stock
EXTERNAL	ER P M					
	NCG16ER 110-010	1.1	1.3	0.10	9.525	●
	NCG16ER 130-010	1.3	1.6	0.10	9.525	●
	NCG16ER 160-010	1.6	1.85	0.10	9.525	●
	NCG16ER 185-010	1.85	1.85	0.10	9.525	●
	NCG16ER 215-010	2.15	1.85	0.10	9.525	●
INTERNAL	IR P M					
	NCG16IR 110-010	1.1	1.3	0.10	9.525	●
	NCG16IR 130-010	1.3	1.6	0.10	9.525	●
	NCG16IR 160-010	1.6	1.85	0.10	9.525	●
	NCG16IR 185-010	1.85	1.85	0.10	9.525	●
	NCG16IR 215-010	2.15	1.85	0.10	9.525	●

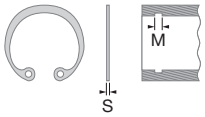
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

CIRCLIP RINGS

DIN 471 EXTERNAL



DIN 472 INTERNAL



GROOVE TOLERANCES

RING (S)	GROOVE (M)	TOLL.	INSERT
1.00	1.10	H13	NCG 16 ER/IR 110-010
1.20	1.30	H13	NCG 16 ER/IR 130-010
1.50	1.60	H13	NCG 16 ER/IR 160-010
1.75	1.85	H13	NCG 16 ER/IR 185-010
2.00	2.15	H13	NCG 16 ER/IR 215-010

NCG cutting speed (m/min)

P1-P2	Low carbon and soft steel	60÷180
P3-P4	Medium and high alloy steel	60÷160
P5-P6	High tensile strength steel	60÷140
P7	Ferritic stainless steel	60÷120
P8	PH stainless steel	40÷70
M1	Austenitic stainless steel	50÷110
M2-M3	Difficult stainless steel	40÷80

NCG feed rate (mm/rev)

	ER	IR
NCG 16 ER/IR 110-010	0.03÷0.07	0.01÷0.05
NCG 16 ER/IR 130-010	0.04÷0.08	0.02÷0.06
NCG 16 ER/IR 160-010	0.04÷0.08	0.02÷0.06
NCG 16 ER/IR 185-010	0.04÷0.10	0.03÷0.07
NCG 16 ER/IR 215-010	0.04÷0.10	0.03÷0.07



GROOVING BGF

Inserts .C18
Holders .C19

SORMA DIAMOND & CUTTING TOOLS

BGF

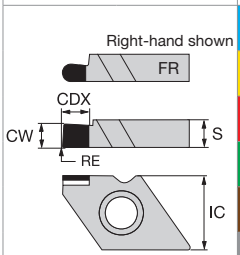
Advanced Grooving

- Tangentially mounted brazed-tip advance material grooving inserts
- Available with PCD and CBN type for K / H or N materials
- Reliable and quick change clamping system
- CW Tollerance **±0.050 mm**

BH: High CBN volume
BL: Low CBN volume
DP: Polycrystalline diamond

		BL	BH	DP
		NB350	NBH450U	ND120
Stable machining, light cut	● 1st choice ◯ suitable		●	●
General machining, medium cut	● 1st choice ◯ suitable	◯	●	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	

Dimensions



Vc(m/min) - suggested cutting speed range (bold: 1st choice)

ISO	BL	BH	DP
P			
M			
K		340 1000	
N			450 2400
S			
H	60 150		

	Designation		CW	CDX	RE	IC		Stock		
LEFT-HAND	L K H	BGFL 100-010	1	1.8	0.10	12.7			○	
		BGFL 150-010	1.5	2.6	0.10	12.7			○	
		BGFL 200-020	2	3	0.20	12.7			○	
		BGFL 250-020	2.5	3.5	0.20	12.7		▽	○	
		BGFL 300-020	3	4.5	0.20	12.7			○	
		BGFL 350-020	3.5	4.5	0.20	12.7		▽	○	
	straight edge carbide backed	BGFL 400-020	4	4.5	0.20	12.7			○	
LEFT-HAND	L - FR K	BGFL 100-050FR	1	1.8	0.50	12.7			○	
		BGFL 150-075FR	1.5	2.6	0.75	12.7			○	
		BGFL 200-100FR	2	3	1.00	12.7			○	
		BGFL 250-125FR	2.5	3.5	1.25	12.7			○	
		BGFL 300-150FR	3	4.5	1.50	12.7			○	
		BGFL 350-175FR	3.5	4.5	1.75	12.7			○	
	full radius carbide backed	BGFL 400-200FR	4	4.5	2.00	12.7			○	
RIGHT-HAND	R K H	BGFR 100-010	1	1.8	0.10	12.7			○	○
		BGFR 150-010	1.5	2.6	0.10	12.7			○	○
		BGFR 200-020	2	3	0.20	12.7			○	○
		BGFR 250-020	2.5	3.5	0.20	12.7		▽	○	○
		BGFR 300-020	3	4.5	0.20	12.7			○	○
		BGFR 350-020	3.5	4.5	0.20	12.7			○	○
	straight edge carbide backed	BGFR 400-020	4	4.5	0.20	12.7		○	○	○
RIGHT-HAND	R - FR K H	BGFR 100-050FR	1	1.8	0.50	12.7			○	○
		BGFR 150-075FR	1.5	2.6	0.75	12.7			○	○
		BGFR 200-100FR	2	3	1.00	12.7			○	○
		BGFR 250-125FR	2.5	3.5	1.25	12.7			○	○
		BGFR 300-150FR	3	4.5	1.50	12.7		▽	○	○
		BGFR 350-175FR	3.5	4.5	1.75	12.7			○	○
	full radius carbide backed	BGFR 400-200FR	4	4.5	2.00	12.7			○	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

BGF cutting speed (m/min)

N1	Alluminium alloy Si ≤ 12%	450÷2400
N2	Alluminium alloy Si > 12%	250÷700
N3	Copper alloy	350÷1400
H1	Case-hardened steel	60÷150
H2	Bearing steel	60÷130
H3	Hardened tool steel	50÷100

BGF feed rate (mm/rev)

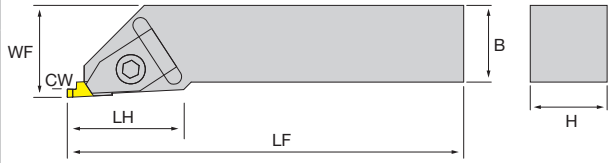
	N	K H
BGF ER/IR 100	0.04÷0.12	0.04÷0.06
BGF ER/IR 150	0.04÷0.12	0.04÷0.06
BGF ER/IR 200	0.06÷0.14	0.04÷0.08
BGF ER/IR 250	0.06÷0.14	0.04÷0.08
BGF ER/IR 300	0.06÷0.14	0.04÷0.08
BGF ER/IR 350	0.08÷0.16	0.06÷0.10
BGF ER/IR 400	0.08÷0.16	0.06÷0.10

SORMA DIAMOND & CUTTING TOOLS

BGF-HLD

Advanced Grooving

- External holders for tangential mounted advanced grooving insert
- Clamp tightened by screw





GROOVING

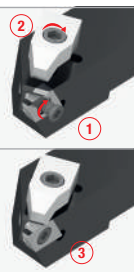
Designation	H	B	WF	LF	LH	WT					Stock
LEFT-HAND											
BGF-HLD 2020L	20	20	30	150	45	-					◉
BGF-HLD 2525L	25	25	30	150	45	-					◉
RIGHT-HAND											
BGF-HLD 2020R	20	20	30	150	45	-					●
BGF-HLD 2525R	25	25	30	150	45	-					◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Clamp	Clamp screw	L wrench
BGF-HLD ∞∞∞∞L	NT-ST50110T20	NT-FT15	NT-CS300L	NT-SC300	NT-WR040
BGF-HLD ∞∞∞∞R	NT-ST50110T20	NT-FT15	NT-CS300R	NT-SC300	NT-WR040

RELIABLE CLAMPING

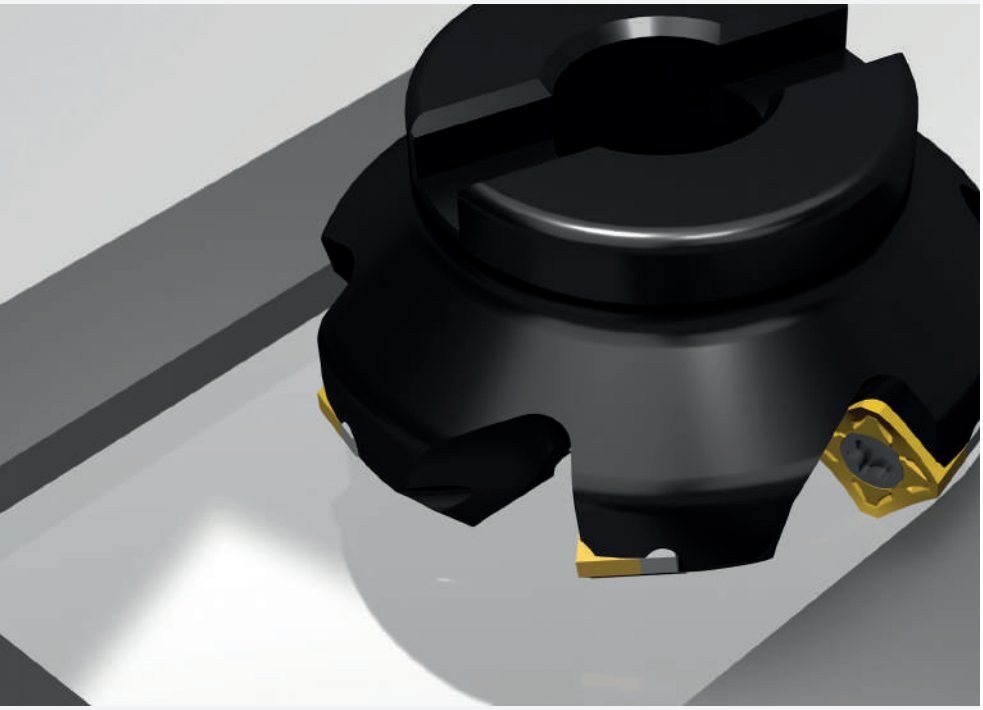
1. Install the insert and screw lightly
2. Firmly fix the clamp
3. Tighten the insert screw completely.



HOLDER AND INSERT COUPLING

Holder R → Insert R

Holder L → Insert L



MILLING

Grades selection guide .D2
Grades features .D4
Grades cross reference .D10
Application guide .D12
Shouldering .D15
Facing .D53
High feed .D89
Profiling .D103
Chamfering .D121
Advanced .D127

MILLING Grades selection guide

SORMA DIAMOND & CUTTING TOOLS

ISO 513		CARBIDE			CERMET	PCBN	DIAMOND	CERAMIC	
		CVD COATED	PVD COATED	UNCOATED	UNCOATED	UNCOATED	PCD	Si_3N_4	Al_2O_3 mixed
P Steel	P01				JU4525				
	P10	JC8520							
	P20		JP8625 JP8725						
	P30	JC8530	JP5530						
	P40								
M Stainless steel	M01								
	M10								
	M20	JC9540	JP5530						
	M30		JP9535-JP9635						
	M40		JP9545						
K Cast iron	K01	JC7515				NBH450U		NSN350	NAC200
	K10	JC8520	JP7615			NBH550U		NSN400	
	K20	JC7530	JP7525			NBH900U			
	K30					NBH950U			
N Non-ferrous material	N01						ND150		
	N10		JP6525	JU6520			ND120		
	N20								
	N30								
S Heat resistance alloy	S01								
	S10		JP9535-JP9635						
	S20	JC9540							
	S30		JP9545						
H Hardened steel	H01					NBH450U			
	H10					NBH900U			
	H20					NBH950U			
	H30								

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JC7515	carbide	1.950	CVD	$TiCN+Al_2O_3$	K	K05 K20	CVD special coating with extreme wear resistance. Recommended for grey cast iron machining at high cutting speed. Speciale rivestimento in CVD con estrema resistenza all'usura. Raccomandato per lavorazioni di ghisa grigia a elevate velocità di taglio. Spezielle CVD-Beschichtung mit extremer Verschleißfestigkeit. Empfohlen für die Bearbeitung von Grauguss bei hohen Schnittgeschwindigkeiten. Revêtement spécial CVD à résistance extrême à l'usure. Recommandé pour l'usinage de fonte grise à des vitesses de coupe élevées.
JC8520	carbide	1.640	CVD	$TiCN+Al_2O_3$	P	P10 P20	High wear resistance on steel machining at high cutting speed, very good performance also in cast iron machining as a complementary solution. Elevata resistenza all'usura nella lavorazione di acciai a elevate velocità di taglio, ottime prestazioni anche sulla ghisa come soluzione complementare. Hohe Verschleißfestigkeit bei der Stahlbearbeitung mit hohen Schnittgeschwindigkeiten, auch gut geeignet für Gusseisen als ergänzende Lösung. Haute résistance à l'usure lors de l'usinage d'aciers à des vitesses de coupe élevées, excellentes performances également sur la fonte comme solution complémentaire.
					K	K15 K25	
JC9540	carbide	1.560	CVD	$TiCN+Al_2O_3$	M	M25 M40	Tough substrate with high stability at high temperature. High wear resistance on stainless steel and HRSA machining. Substrato tenace con elevata stabilità alle alte temperature. Elevata resistenza all'usura nella lavorazione di acciai inossidabili e superleghe resistenti al calore (HRSA). Robustes Grundmaterial mit hoher Temperaturstabilität. Hohe Verschleißfestigkeit beim Bearbeiten von rostfreien Stählen und hitzebeständigen Superlegierungen (HRSA). Substrat résistant doté d'une grande stabilité à hautes températures. Haute résistance à l'usure lors de l'usinage d'aciers inoxydables et de superalliages à haute résistance à la chaleur (HRSA).
					S	S20 S30	
JP5530	micrograin carbide	1.840	PVD	TiAlN	P	P20 P40	Universal grade mainly for steel application but also available for ISO M and ISO K machining. Grado universale principalmente per applicazioni su acciai; anche utilizzabile su materiali dei gruppi ISO M e K. Universalqualität vor allem für Stahlanwendungen; auch für Materialien der ISO-Gruppen M und K erhältlich. Nuance universelle principalement pour applications sur aciers ; également disponible pour matériaux des groupes ISO M et K.
					M	M25 M30	
					K	K25 K30	

MILLING Grades features

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP6525	micrograin carbide	1700	PVD	TiBCN	N	N05 N25	High performance coated grade for non-ferrous materials. Very low friction coefficient reduces welding and improves surface finishing. Grado rivestito ad alte prestazioni per materiali non ferrosi. Il coefficiente di attrito molto basso riduce l'incollaggio migliora la finitura superficiale. Hochleistungsfähige beschichtete Qualität für Nichteisenmaterialien. Der sehr geringe Reibungskoeffizient reduziert das Verkleben und verbessert die Oberflächenqualität. Nuance revêtue hautes performances pour matériaux non ferreux. Le très faible coefficient de frottement réduit le collage et améliore les finitions de surface.
JP7525	carbide	1.840	PVD	TiAlN	K	K15 K35	First choice for ISO K machining guarantees very long tool life. Perfect performance both on grey and nodular cast iron. Prima scelta per materiali ISO K garantisce lunga vita utensile. Prestazioni perfette su ghisa grigia e ghisa sferoidale. Erste Wahl für ISO K-Materialien garantiert eine lange Lebensdauer. Perfekte Leistung bei Grau- und Sphäroguss. Premier choix pour matériaux ISO K à lgarantit une longue durée de vie. Performances parfaites sur fonte grise et fonte sphéroïdale.
JP7615	carbide	1.840	PVD	TiAlN	K	K10 K20	A hard multilayered PVD coating for high performance milling on of cast iron under stable conditions. Available only for RekPlus series, until stock exhaustion. Rivestimento duro PVD multistrato per fresatura ad alto rendimento su ghisa in condizioni di taglio stabili. Disponibile solo per la serie RekPlus, fino a esaurimento scorte. Harte mehrschichtige PVD-Beschichtung für dHochleistungsfräsen von Gusseisen unter stabilen Schnittbedingungen. Nur verfügbar für die RekPlus-Serie, solange der Vorrat reicht. Revêtement PVD multicouche dur pour fraisage haute performance de fonte dans des conditions de coupe stables. Disponible uniquement pour la série RekPlus, jusqu'à épuisement des stocks.
JP8625	micrograin carbide	1.600	PVD	TiAlN	P	P15 P25	Micrograin PVD grade for general machining of steel under various cutting conditions. Available only for RekPlus series, until stock exhaustion. Grado micrograna PVD per lavorazioni generiche di acciai in differenti condizioni di taglio. Disponibile solo per la serie RekPlus, fino a esaurimento scorte. PVD-Qualität mit Mikrokörnung für die allgemeine Bearbeitung von Stählen unter unterschiedlichen Schnittbedingungen. Nur verfügbar für die RekPlus-Serie, solange der Vorrat reicht. Nuance PVD micro-grain pour usinages généraux d'aciers dans différentes conditions de coupe. Disponible uniquement pour la série RekPlus, jusqu'à épuisement des stocks.

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP8725	micrograin carbide	1.840	PVD	AlCrN	P	P15 P30	First choice for steel applications. The new substrate contributes to a great performance improvement compared to conventional products. Prima scelta per applicazioni su acciai. Il nuovo substrato contribuisce a eccellenti miglioramenti delle prestazioni rispetto ai prodotti convenzionali. Erste Wahl für Stahlanwendungen. Das neue Grundmaterial sorgt für hervorragende Leistungsverbesserungen gegenüber herkömmlichen Produkten. Premier choix pour les applications sur l'acier. Le nouveau substrat contribue à d'excellentes améliorations en termes de performances par rapport aux produits conventionnels.
JP9535	micrograin carbide	1.640	PVD	TiAlN	M	M20 M35	First choice for stainless steel machining under general cutting conditions. Also suitable for titanium thanks to a great stability at high temperature. Prima scelta per acciai inossidabili in condizioni di taglio generiche. Consigliato anche per il titanio grazie all'elevata stabilità alle alte temperature. Erste Wahl für rostfreie Stähle unter allgemeinen Schnittbedingungen. Aufgrund seiner hohen Temperaturstabilität auch für Titan empfohlen. Premier choix pour les aciers inoxydables dans des conditions de coupe générales. Également recommandé pour le titane en raison de sa grande stabilité aux hautes températures.
					S	S15 S25	
JP9635	micrograin carbide	1.640	PVD	TiAlN	M	M20 M35	Micrograin PVD grade for general machining of stainless steel under various cutting conditions. Available only for RekPlus series, until stock exhaustion. Grado micrograna PVD per lavorazioni generiche di acciai inossidabili in differenti condizioni di taglio. Disponibile solo per la serie RekPlus, fino a esaurimento scorte. PVD-Qualität mit Mikrokörnung für die allgemeine Bearbeitung von rostfreien Stählen unter unterschiedlichen Schnittbedingungen. Nur verfügbar für die RekPlus-Serie, solange der Vorrat reicht. Nuance PVD micro-grain pour usinages généraux d'aciers inoxydables dans différentes conditions de coupe. Disponible uniquement pour la série RekPlus, jusqu'à épuisement des stocks.
					S	S15 S25	
JP9545	carbide	1.560	PVD	TiAlSiN	M	M35 M45	Ultra tough substrate with high stability at high temperature. Perfect choice for difficult to cut materials under sever cutting conditions. Substrato ultra tenace con elevata stabilità alle alte temperature. Scelta perfetta per materiali difficili da lavorare in condizioni di taglio gravose. Sehr robustes Grundmaterial mit hoher Temperaturstabilität. Ideal für Materialien, die unter schwierigen Schnittbedingungen schwer zu bearbeiten sind. Substrat ultra-résistant doté d'une grande stabilité à hautes températures. Choix idéal pour les matériaux difficiles à usiner dans des conditions de coupe intensives.
					S	S25 S35	

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JU4525	cermet	1.560	-	-	P	P05 P15	Uncoated cermet for high speed machining of steel. Excellent solution for finishing application under stable conditions. Cermet non rivestito per lavorazioni ad alta velocità degli acciai. Soluzione ottimale per la finitura in condizioni di taglio stabili. Unbeschichtetes Cermet für die Bearbeitung von Stählen mit hoher Geschwindigkeit. Optimale Lösung für die Bearbeitung unter stabilen Schnittbedingungen. Cermet non revêtu pour usinages à grande vitesse des aciers. Solution optimale pour la finition dans des conditions de coupe stables.
JU6520	micrograin carbide	1.560	-	-	N	N10 N30	Uncoated grade for non-ferrous materials. The micrograin substrate toughness allows the production of very sharp ground cutting edges. Grado non rivestito per materiali non ferrosi. La tenacità del substrato micrograna consente la realizzazione di taglienti rettificati molto affilati. Unbeschichtete Qualität für Nichteisenmaterialien. Die Robustheit des mikrokörnigen Grundmaterials ermöglicht sehr scharfe Schleifkanten. Nuance non revêtue pour matériaux non ferreux. La ténacité du substrat micro-grain permet l'obtention d'arêtes rectifiées très affûtées.
NAC200	Al_2O_3+TiCN	2.300	-	-	K	K01 K20	Suitable for finishing application of cast iron and hardened steel in case of very stable cutting conditions. Adatto alla finitura di ghisa e acciai temprati in condizioni di taglio molto stabili. Geeignet für die Bearbeitung von Gusseisen und gehärteten Stählen für sehr stabile Schnittbedingungen. Convient à la finition de la fonte et des aciers trempés dans des conditions de coupe très stables.
					H	H01 H20	
NBH450U	High volume CBN 95%	4.400	-	-	K	K01 K20	First choice for grey cast iron finishing at very high cutting condition and with great wear resistance. Prima scelta per la finitura di ghisa grigia a velocità di taglio molto elevate e con eccellente resistenza all'usura. Erste Wahl für die Bearbeitung von Grauguss bei hohen Schnittgeschwindigkeiten und mit ausgezeichneter Verschleißfestigkeit. Premier choix pour finition de fonte grise à des vitesses de coupe très élevées, avec une excellente résistance à l'usure.
NBH550U	High volume CBN 80%	3.500	-	-	K	K20 K30	First choice for grey cast iron roughing at very high cutting conditions (until 2000 m/min) which are not possible to reach with conventional products. Prima scelta per sgrossatura di ghisa grigia a velocità di taglio estremamente elevate (fino a 2000 m/min). Produttività irraggiungibile con i prodotti convenzionali. Erste Wahl für das Schruppen von Grauguss bei extrem hohen Schnittgeschwindigkeiten (bis zu 2000 m/min). Eine mit herkömmlichen Produkten nicht zu erreichende Produktivität. Premier choix pour l'ébauche de la fonte grise à des vitesses de coupe extrêmement élevées (jusqu'à 2 000 m/min). Rendement inaccessible avec les produits conventionnels.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NBH900U	High volume CBN 80%	3.500	-	-	H K	H25 H35 K25 K35	Universal grade for severe applications both on ISO K and ISO H materials. High reliability on roughing operations. Grado universale per applicazioni gravose su materiali dei gruppi ISO K e ISO H. Elevata affidabilità nelle operazioni di sgrossatura. Universelle Qualität für schwere Anwendungen bei Materialien der Gruppen ISO K und ISO H. Hohe Zuverlässigkeit bei der Vorbearbeitung. Nuance universelle pour applications intensives sur les matériaux des groupes ISO K et ISO H. Haute fiabilité dans les opérations d'ébauche.
NBH950U	High volume CBN 90%	4.000	-	-	H K	H30 H35 K30 K35	Extreme toughness mainly for cast iron machining and also suitable, as alternative grade, for hardened steel machining. Tenacità estrema, principalmente per lavorazione della ghisa, consigliato come grado alternativo anche per acciai temprati. Extreme Robustheit, hauptsächlich für Gusseisen, auch empfohlen als eine alternative Qualität für gehärtete Stähle. Ténacité extrême, principalement pour la fonte, recommandée comme nuance alternative y compris pour aciers trempés.
ND120	diamond 95%	6.000	-	-	N	N10 N30	First choice for all-around application on non-ferrous materials. Prima scelta per lavorazioni universali su materiali non ferrosi. Erste Wahl für die universelle Bearbeitung von Nichteisenmaterialien. Premier choix pour usinages universels sur matériaux non ferreux.
ND150 new name: **NDP302**	diamond 95%	7.000	-	-	N	N05 N25	Multi-modal grade featuring a perfect balance between toughness and wear resistance. Good solution for high silicon aluminium and bi-metal applications. Grado multimodale con perfetto bilanciamento tra tenacità e resistenza all'usura. Buona soluzione per applicazioni su alluminio ad alto tenore di silicio e bi-metalli. Multimodale Qualität für ein perfektes Verhältnis zwischen Robustheit und Verschleißfestigkeit. Gute Lösung für Anwendungen mit Aluminium mit hohem Siliziumgehalt und Bimetallen. Nuance combinée pour un équilibre parfait entre ténacité et résistance à l'usure. Bonne solution pour applications sur aluminium à haute teneur en silicium et bi-métaux.
NSA6000	SiAlON	1.800	-	-	S	S10 S30	First choice for heat resistant super alloys (HRSA) machining with variable cutting conditions. Perfect balance between toughness and wear resistance. Prima scelta per superleghe resistenti al calore (HRSA) in condizioni di taglio variabili. Perfetto bilanciamento tra tenacità e resistenza all'usura. Erste Wahl für hitzebeständige Superlegierungen (HRSA) unter unterschiedlichen Schnittbedingungen. Perfektes Verhältnis zwischen Robustheit und Verschleißfestigkeit. Premier choix pour superalliages résistants à la chaleur (HRSA) dans des conditions de coupe variables. Équilibre parfait entre ténacité et résistance à l'usure.

SORMA DIAMOND & CUTTING TOOLS

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NSN350	Si_3N_4	1.700	-	-	K	K05 K20	High wear resistance for stable applications. Elevata resistenza all'usura in applicazioni stabili. Hohe Verschleißfestigkeit bei stabilen Anwendungen. Haute résistance à l'usure dans des applications stables.
NSN400	Si_3N_4	1.700	-	-	K	K05 K30	First choice for roughing machining of grey cast iron even with interrupted cut. Prima scelta per sgrossatura di ghisa grigia anche con taglio interrotto. Erste Wahl für das Schruppen von Grauguss, auch bei unterbrochenem Schnitt. Premier choix pour le dégrossissage de la fonte grise, y compris en coupe interrompue.

SORMA DIAMOND & CUTTING TOOLS

ISO 513		nikkoTOOLS		ISCAR		KENNAMETAL		KYOCERA		MITSUBISHI	
		carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
P	P01 - P10	JC8520	JU4525	IC5400	IC30N		KTPK20		TN100M		
	P10 - P20	JC8520 JP5530 JP8725	JU4525	IC5400 IC5500 IC808	IC30N		KTPK20	PR1225 PR1525	TN100M PV60M	MC7020 MP6120 VP15TF	NX2525
	P20 - P30	JP8725		IC5500 IC808 IC830		KCPK30 KC522M KC725M KCPM40		PR1225 PR1525		MP6130 VP20RT	NX4545
	P30 - P40	JP5530		IC330 IC830 IC845		KC725M KCPK30 KCPM40		PR1230 PR1535		MP6130 VP30RT	
M	M01 - M10				IC30N		KTPK20		TN100M PV60M		NX2525
	M10 - M20	JP9535		IC808	IC30N	KC522M		PR1525		VP15TF	NX4545
	M20 - M30	JC9530 JP9535		IC5820 IC380 IC830		KC522M KCPM40		CA6535 PR1525 PR1535		MC7020 MP7130 VP20RT	
	M30 - M40	JC9540 JP5530 JP9535 JP9545		IC5820 IC830 IC840 IC882		KC725M KCPM40 KCSM40		CA6535 PR1535		MP7140 VP30RT	
K	K01 - K10	JC7515 JC8520		IC5100	IC30N	KCK15	KTPK20	PR1210 PR1510	TN100M PV60M	MC5020	NX2525
	K10 - K20	JC7515 JC8520 JP7525 JP7615		IC5100 IC810		KCK15 KCK20		CA420M PR1210 PR1510		MC5020 MP8010	
	K20 - K30	JP7525		IC810		KCK20 KCPK30		CA420M PR1210 PR1510		VP15TF	
N	N01 - N10	JP6525	-		-	KC410M	-	KW10	-		-
	N10 - N20	JP6525 JU6525	-	IC28	-	KC410M K313	-	KW10 GW25	-	HTI10 LC15TF	-
	N20 - N30	JU6525	-	IC28	-	KC422M	-	GW25	-	TF15	-
S HRSA	S01 - S10	JC9540 JP5530	-	IC808	-		-		-		-
	S10 - S20	JP9535 JP9635	-	IC830	-	KC522M KCSM30	-	CA6535 PR1535	-	MP9120	-
	S20 - S30	JC9540 JP5530	-	IC380 IC840	-	KC725M KCSM40	-	CA6535 PR1535	-	MP9130 VP15TF	-
S TITANIUM	S01 - S10		-		-		-		-		-
	S10 - S20	JP6525 JP9535 JU6520	-	IC28 IC808	-	KCSM30	-	GW25 PR1535	-	MP9120	-
	S20 - S30	JP9535	-	IC28 IC808	-	KCSM30 KCSM40	-	PR1535	-	MP9130 VP15TF	-

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

SORMA DIAMOND & CUTTING TOOLS

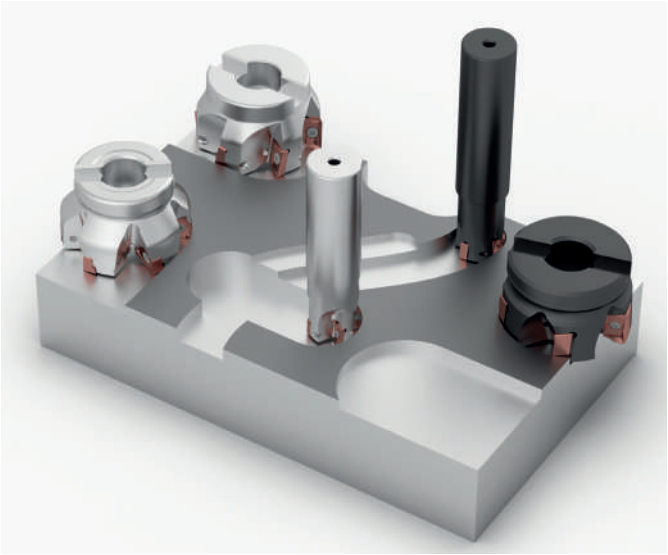
SANDVIK		SECO		SUMITOMO		TAEGUTEC		TUNGALOY		WALTER	
carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
GC1010	CT530	MP1501	MP1020	ACP100	T2500A	TT2510	CT7000	AH110 AH710	NS740		
GC1130 GC4220	CT530	MP1501	MP1020	ACP100 ACP200	T2500A	TT7080	CT7000	AH725 T3225	NS740	WKP25S	
GC1130 GC4330		MP2501 MP3000 F40M		ACP200 ACP300 ACU2500		TT7080 TT8080		AH130 AH725 T3130 T3225		WKP25S WKP35G	
GC4340		F40M MM4500 MP3501		ACP300		TT8080 TT8020 TT8525B		AH140 AH3135 T3130		WKP35G WSP45S	
	CT530		MP1020		T2500A		CT7000		NS740		
		MS2050		ACM200 ACU2500		TT9030 TT9080		AH725			
GC2030		F40M MP2050 MS2050		ACM200 ACP300		TT9080 TT8080		AH130 AH725 T3130 T3225		WSM35S	
GC1040 GC2040		F40M MP2050 MM4500 T350M		ACM300 ACP300		TT8080 TT8020		AH140 AH3135		WSM45X WSM35S WSP45S	
GC3220	CT530	MK1500	MP1020	ACK200	T2500A	TT2510	CT7000	T1115 T1215	NS740	WAK15	
GC1020 GC3220 GC3330		MK1500 MK2050 MP1501		ACK2000 ACK3000		TT6080 TT7515		AH120 T1115 T1215		WKP25S WKK25S	
GC1020 GC3040		MK2050		ACK3000		TT6080		AH120		WKP35S WKK25S	
H10	-	H15	-		-	K10	-	KS05F TH10	-	WK10	-
H10	-	H15	-	H20	-	K10	-	KS05F TH10	-	WK10 WXN15	-
	-	H25	-	H20	-		-		-		-
	-		-		-		-	AH120	-		-
GC1130 S30T	-	MS2500	-	ACM200	-	TT9540	-	AH725	-	WSM35S	-
S40T	-	MS2050 F40M	-	ACM300	-	TT9540	-		-	WSM45X	-
	-		-		-		-	AH120	-	WK10	-
GC1130 S30T	-	MS2500	-	ACM200	-	K10	-	AH725	-	WK10 WSM35S	-
S40T	-	MS2050 F40M	-	ACM300	-	TT3540	-		-	WSM45X	-

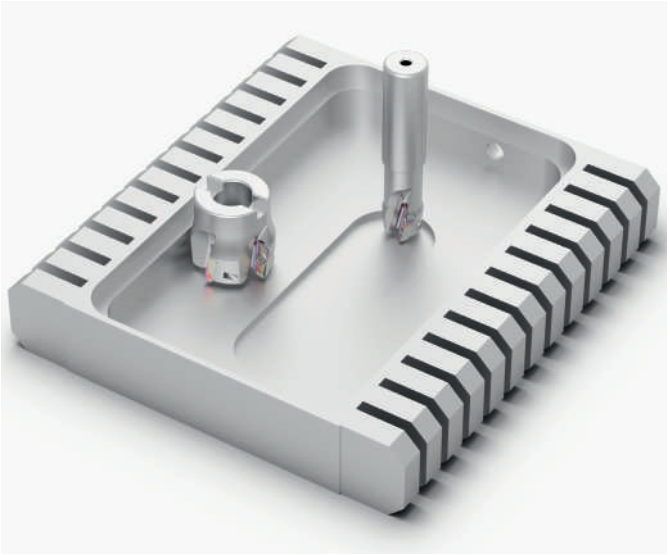
This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

SHOULDERING

quick guide D16

REKPLUS	P M K N S	D18
DOUBLEREK	P M K	D28
DOUBLE3GON	P M K N S	D36
ISO APKT	P M N	D50
ALUREK	N	D44

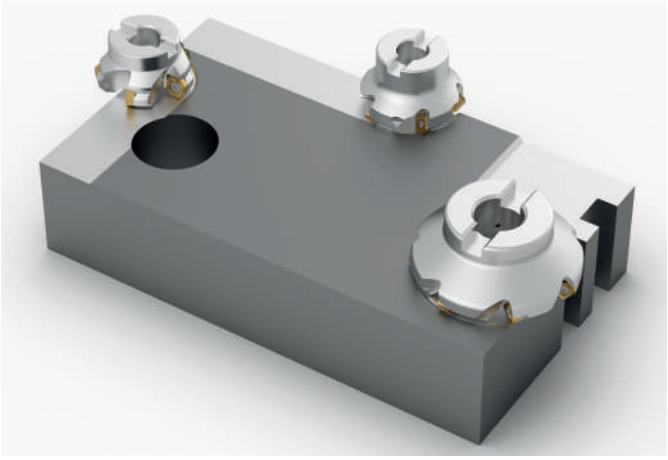




FACING

quick guide D54

4FACEPLUS	P M K N S	D56
OKTOPLUS	P M K N S	D66
DOUBLE4FACE	P M K N S	D74
ISO SEHX	P K N	D86
DOUBLEHEX	K	D80



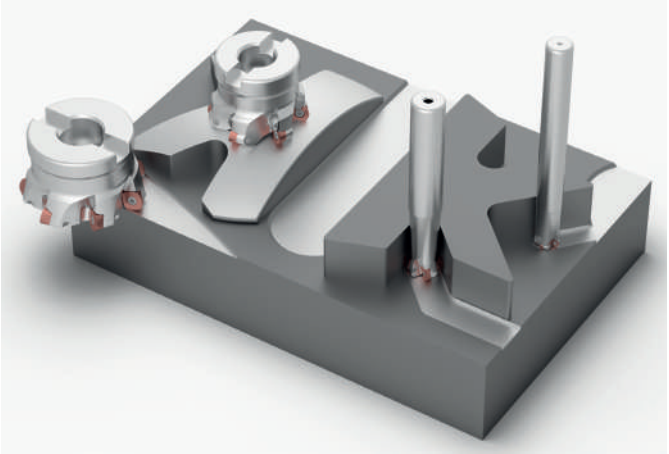


SORMA DIAMOND & CUTTING TOOLS

HIGH FEED PROFILING

quick guide D90
quick guide D104

HF4PLUS	P M K S	D92
ROUNDPLUS	P M K S	D106



CHAMFERING

quick guide D122

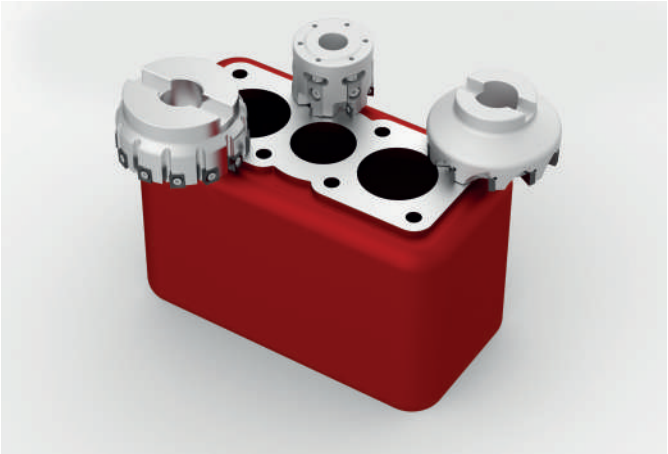
CHAMFERSQUARE	P M K N	D123

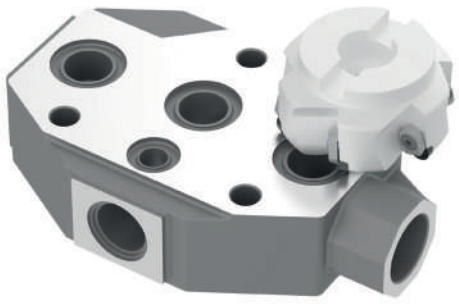


ADVANCED

quick guide D128

TANGENTIAL	K	D132
XP SERIES	K N	D134
ROUND SERIES	S H	D130
SQUARE SERIES	K	D136





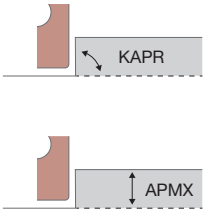


MILLING Shouldering

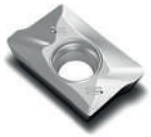
Quick guide .D16

REKPLUS .D18
DOUBLEREK .D28
DOUBLE3GON .D36
ALUREK .D44
ISO APKT .D50

SORMA DIAMOND & CUTTING TOOLS



	REKPLUS	DOUBLEREK	DOUBLE3CON
	D18	D28	D36
	 SCREW-IN	 SCREW-IN	 SCREW-IN
	 CYLINDRICAL	 CYLINDRICAL	 CYLINDRICAL
	 ARBOR	 ARBOR	 ARBOR
KAPR	90°	90°	90°
Insert sizes	11 / 16	10 / 17	04 / 08
APMX	8 / 15	7 / 15	3 / 7
Tool diameter	Ø16 - Ø100	Ø16 - Ø125	Ø20 - Ø160
Coolant holes	✓	✓	✓
Workpiece material	P M K N S	P M K	P M K N S
No. of cutting edges	2	4	6
No. of geometries	5	2	4
Special features	cylindrical 10xD cutters		
Side Milling	✓	✓	✓
Slotting	✓	✓	✓
Face Milling	✓	✓	✓
Ramping	✓	✗	✗
Helical Interpolation	✓	✗	✗
Machine load	■■■□□	■■■□□	■■■□□
Strength	■■■■□	■■■■■	■■■□□
Precision	■■■■□	■■■■□	■■■■■
Finishing	■■■□□	■■■■■	■■■■□
Range	■■■■□	■■■□□	■■■□□

	ALUREK	ISO APKT
	D44	D50
KAPR APMX	 SCREW-IN  CYLINDRICAL  ARBOR	 Only insert is available.
KAPR	90°	90°
Insert sizes	19	10 / 16
APMX	19	9 / 15
Tool diameter	Ø25 - Ø50	-
Coolant holes	✓	-
Workpiece material	N	P M N
No. of cutting edges	2	2
No. of geometries	1	2
Special features	PVD coated grade for non-ferrous materials	-
Side Milling	✓	✓
Slotting	✓	✓
Face Milling	✓	✓
Ramping	✓	✓
Helical Interpolation	✓	✗
Machine load	■□□□□	■■■■□
Strenght	■■■□□	■■■□□
Precision	■■■■□	■■■□□
Finishing	■■■■□	■■■□□
Range	■■□□□	■□□□□

REKPLUS

Positive shoulder milling system

Application

- Shoulder milling
- Long overhang milling
- Profiling and Pocketing
- Linear and helical ramping

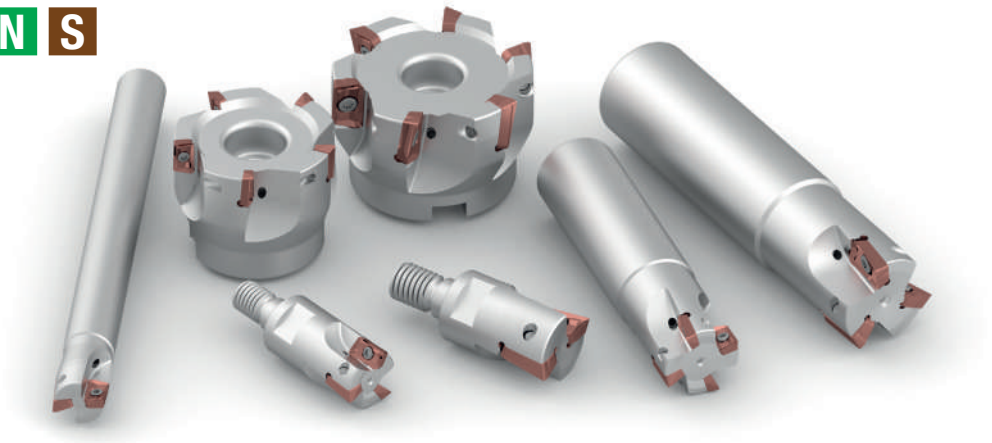
- Eckfräser
- Fräsen mit langen Überständen
- Profilierung und Taschenbildung
- Lineare und spiralförmige Rampenbearbeitung

- Fresatura di spallamento
- Fresatura con lunghe sporgenze
- Profilatura ed esecuzione di tasche
- Lavorazioni in rampa lineare ed elicoidale

- Surfaçage Dressage
- Usinage avec longs porte à faux
- Rainurage et usinage de poches
- Usinages en ramping et interpolation hélicoïdale

Application range - ISO 513

P M K N S



Features and benefits

- Inserts with helical geometry produce high precision 90° souldering.
- The straight geometries are suitable for roughing without special finishing needs and ensure excellent competitiveness.
- Wide range of coolant through milling holders: shell mill type, cylindircal shank (weldon also available) type up to 10xD length, screw-on type with 10xD carbide and steel extension arbors

- Wendeschneidplatten mit spiralförmiger Geometrie ermöglichen die Herstellung hochpräziser gerader Eckfräsungen.
- Die geraden Geometrien werden für die Schruppbearbeitung ohne besondere Anforderungen an die Feinbearbeitung empfohlen und gewährleisten eine hervorragende Produktivität.
- Umfangreiches Sortiment an Fräskörpern mit zylindrischer Aufnahme (einschließlich Weldon-Typ), Standardlängen und 10xD, mit Schraubaufnahme und 10xD- Erweiterungen, alle mit innerer Kühlmittelzuführung.ì

- Inserti con geometria elicoidale possono produrre spallamenti retti di elevata precisione.
- Le geometrie dritte sono consigliate per sgrossatura senza particolari requisiti di finitura e assicurano un costo/tagliente competitivo.
- Vasta gamma di corpi fresa con refrigerazione interna: a manicotto, stelo cilindrico (anche Weldon disponibile) con lunghezze fino a 10xD e testine filettate con prolunghe in metallo duro e acciaio fino a 10xD

- Des plaquettes à géométrie hélicoïdale pour un usinage de haute précision à 90°
- Les géométries droites sont recommandées pour l'ébauche sans exigences particulières de finition et assurent une excellente compétitivité.
- Gamme extrêmement complète de corps de fraises avec type de montage mandrin, queue cylindrique (y compris de type Weldon), jusqu'à 10xD, avec embout vissé et rallonges 10xD, tous dotés de refroidissement interne.

SORMA DIAMOND & CUTTING TOOLS

REKPLUS

Positive shoulder milling system

Milling holders

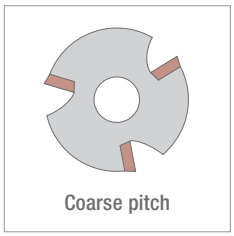
- Arbor type
- Cylindrical shank type (up to 10xD)
- Screw-on type
- Extension arbors (steel/carbide 10xD)
- From D16 to D100

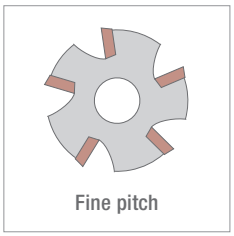
- Hülsenaufnahme
- Aufnahme zylindrisch (bis 10xD)
- Gewindeaufnahme
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D16 bis D100

- Attacco a manicotto
- Attacco cilindrico (fino a 10xD)
- Attacco filettato
- Porlunghe (acciaio/metallo duro 10xD)
- Da D16 a D100

- type mandrin
- queue cylindrique (jusqu'à 10xD)
- embout vissé
- Rallonges (acier/carbure 10xD)
- De D16 à D100


Extension arbors


Coarse pitch


Fine pitch

Inserts

- 2 cutting edges
- Edge length 11 and 16
- Gradi di metallo duro nudo e rivestito CVD e PVD
- Geometries: HSC, HGP, GP, TE, AL

- 2 Schneidkanten
- Länge der Schneidkante 11 und 16
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: HSC, HGP, GP, TE, AL

- 2 taglienti
- Lunghezza del tagliente 11 e 16
- CVD and PVD coated and uncoated carbide grades
- Geometrie: HSC, HGP, GP, TE, AL

- 2 arêtes de coupe
- Taille de plaquettes 11 et 16
- Nuances carbure revêtues CVD et PVD
- Géométries : HSC, HGP, GP, TE, AL

HSC P M S


SIZE
11 16

HGP P M K


SIZE
11 16


0.4


0.8


1.2

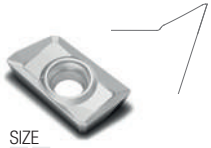

1.6


2.0

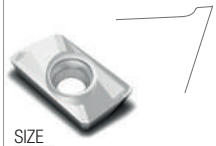

3.1

- **Helical geometries are available with a wide range of radii**
- **Geometrie elicoidali disponibili in un'ampia gamma di raggi.**
- **Spiralförmige Geometrien in einer Vielzahl von Radien erhältlich.**
- **Géométries hélicoïdales disponibles dans une large gamme de rayons.**

GP P M K


SIZE
11 16

TE P K


SIZE
11 16

AL N

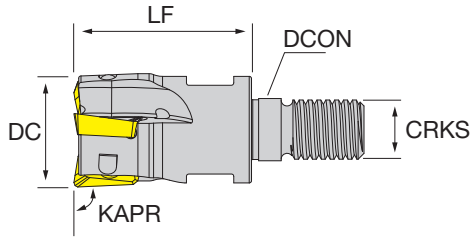

SIZE
11 16

NT-RKP

RekPlus

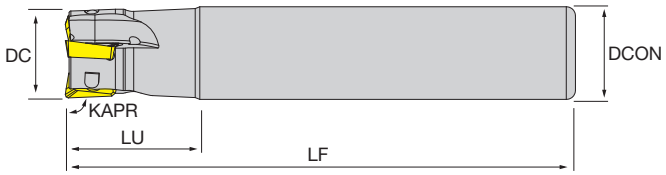
- Positive type precision shoulder milling system, with coolant through
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- 10xD cylindrical body and screw-in type for applications that need long-overhang
- Reliable machining process guaranteed by high quality Swiss screws

Screw-in



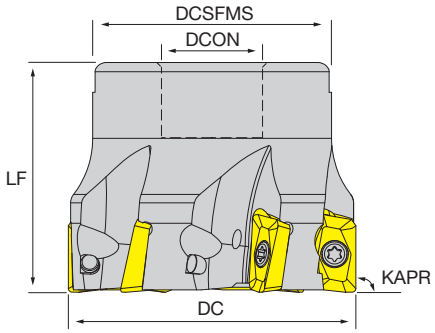


Cylindrical





Arbor





90° KAPR | INTERNAL COOLANT | MEDIUM | ROUGHING | SIDE MILLING | SLOTTING | FACING | POCKETING | RAMPING | HELICAL | LONG | MULTIPLE | VERTICAL

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
SCREW-IN											
NT-RKP11 D016-M08-Z02	16	2	8.5	25	-	-	M8	0.03	NT-RKP11		●
NT-RKP11 D020-M10-Z03	20	3	10.5	38	-	-	M10	0.07	NT-RKP11		●
NT-RKP11 D025-M12-Z03	25	3	12.5	38	-	-	M12	0.12	NT-RKP11		●
NT-RKP11 D025-M12-Z04	25	4	12.5	38	-	-	M12	0.11	NT-RKP11		●
NT-RKP11 D032-M16-Z04	32	4	17	43	-	-	M16	0.23	NT-RKP11		●
NT-RKP11 D032-M16-Z05	32	5	17	43	-	-	M16	0.22	NT-RKP11		●
NT-RKP16 D025-M12-Z02	25	2	12.5	38	-	-	M12	0.11	NT-RKP16		●
NT-RKP16 D032-M16-Z03	32	3	17	43	-	-	M16	0.19	NT-RKP16		●
NT-RKP16 D040-M16-Z04	40	4	17	43	-	-	M16	0.24	NT-RKP16		●
CYLINDRICAL SHANK											
NT-RKP11 D016-S16-Z02	16	2	16	100	25	-	-	0.13	NT-RKP11		●
NT-RKP11 D020-S16-Z03	20	3	16	110	30	-	-	0.15	NT-RKP11		●
NT-RKP11 D020-S20-Z03	20	3	20	110	30	-	-	0.23	NT-RKP11		●
NT-RKP11 D025-S25-Z03	25	3	25	120	35	-	-	0.41	NT-RKP11		●
NT-RKP11 D025-S25-Z04	25	4	25	120	35	-	-	0.4	NT-RKP11		●
NT-RKP11 D028-S25-Z04	28	4	25	120	35	-	-	-	NT-RKP11		◉
NT-RKP11 D030-S25-Z04	30	4	25	130	35	-	-	-	NT-RKP11		◉
NT-RKP11 D032-S32-Z04	32	4	32	130	35	-	-	0.74	NT-RKP11		●
NT-RKP11 D032-S32-Z05	32	5	32	130	35	-	-	0.73	NT-RKP11		●
NT-RKP16 D025-S25-Z02	25	2	25	120	35	-	-	0.4	NT-RKP16		●
NT-RKP16 D032-S32-Z03	32	3	32	130	45	-	-	0.71	NT-RKP16		●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
CYLINDRICAL SHANK - REDUCED SHANK											
NT-RKP11 D025-S20-Z03	25	3	20	120	35	-	-	0.28	NT-RKP11		●
NT-RKP11 D032-S25-Z04	32	4	25	130	35	-	-	0.49	NT-RKP11		●
NT-RKP16 D040-S32-Z04	40	4	32	150	45	-	-	0.89	NT-RKP16		⦿
CYLINDRICAL SHANK - LONG TYPE (10XD)											
NT-RKP11 D016-S15-Z02-L	16	2	15	160	25	-	-	0.19	NT-RKP11		●
NT-RKP11 D016-S16-Z02-L	16	2	16	160	25	-	-	0.21	NT-RKP11		●
NT-RKP11 D017-S16-Z02-L	17	2	16	170	25	-	-	0.23	NT-RKP11		●
NT-RKP11 D020-S19-Z03-L	20	3	19	200	30	-	-	0.39	NT-RKP11		●
NT-RKP11 D020-S20-Z03-L	20	3	20	200	30	-	-	0.43	NT-RKP11		●
NT-RKP11 D021-S20-Z03-L	21	3	20	210	30	-	-	0.46	NT-RKP11		●
NT-RKP11 D025-S24-Z03-L	25	3	24	250	35	-	-	0.82	NT-RKP11		●
NT-RKP11 D025-S25-Z03-L	25	3	25	250	35	-	-	0.89	NT-RKP11		●
NT-RKP11 D026-S25-Z03-L	26	3	25	260	35	-	-	0.94	NT-RKP11		●
WELDON SHANK											
NT-RKP11 D016-W16-Z02	16	2	16	80	25	-	-	0.1	NT-RKP11		●
NT-RKP11 D020-W20-Z03	20	3	20	90	30	-	-	0.18	NT-RKP11		●
NT-RKP11 D025-W25-Z04	25	4	25	100	35	-	-	0.32	NT-RKP11		●
ARBOR MOUNTING											
NT-RKP11 D032-F16-Z04	32	4	16	40	-	28	-	0.11	NT-RKP11		●
NT-RKP11 D040-F16-Z05	40	5	16	40	-	35	-	0.22	NT-RKP11		●
NT-RKP11 D040-F16-Z06	40	6	16	40	-	35	-	0.3	NT-RKP11		●
NT-RKP11 D050-F22-Z05	50	5	22	40	-	40	-	0.33	NT-RKP11		●
NT-RKP11 D050-F22-Z07	50	7	22	40	-	40	-	0.37	NT-RKP11		●
NT-RKP11 D063-F22-Z06	63	6	22	40	-	50	-	0.59	NT-RKP11		●
NT-RKP11 D063-F22-Z08	63	8	22	40	-	50	-	0.57	NT-RKP11		●
NT-RKP11 D080-F27-Z07	80	7	27	50	-	60	-	1.21	NT-RKP11		●
NT-RKP11 D080-F27-Z10	80	10	27	50	-	60	-	1.07	NT-RKP11		●
NT-RKP16 D040-F16-Z04	40	4	16	40	-	35	-	0.19	NT-RKP16		●
NT-RKP16 D040-F16-Z05	40	5	16	40	-	35	-	0.18	NT-RKP16		●
NT-RKP16 D050-F22-Z04	50	4	22	40	-	40	-	0.29	NT-RKP16		●
NT-RKP16 D050-F22-Z05	50	5	22	40	-	40	-	0.27	NT-RKP16		●
NT-RKP16 D063-F22-Z05	63	5	22	40	-	50	-	0.53	NT-RKP16		●
NT-RKP16 D063-F22-Z06	63	6	22	40	-	50	-	0.51	NT-RKP16		●
NT-RKP16 D080-F27-Z06	80	6	27	50	-	60	-	1.09	NT-RKP16		●
NT-RKP16 D080-F27-Z08	80	8	27	50	-	60	-	1.06	NT-RKP16		●
NT-RKP16 D100-F32-Z07	100	7	32	50	-	80	-	1.9	NT-RKP16		●
NT-RKP16 D100-F32-Z09	100	9	32	50	-	80	-	1.85	NT-RKP16		●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-RKP11 Dooo-ooo-Zoo	NT-ST25056T08HQ	NT-FTB08
NT-RKP16 Dooo-ooo-Zoo	NT-ST40095T15HQ	NT-FTB15

SORMA DIAMOND & CUTTING TOOLS

RKP

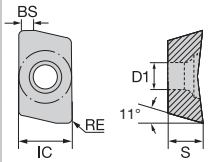
RekPlus

- HGP and HSC are high precision helical type geometries to guarantee your shouldering precision
- GP, TE and SC are economical straight type geometries
- Available in different radii besides R0.8, such as R0.4, 1.2, 1.6, 2.0, 3.1
- Available with cermet and several carbide grades covering PMKNS applications
- Aluminum type available with different radii. For more possibilities for non ferrous materials, please go to AluRek series

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7515	**JP5520**	**JP5530**	**JP7525**	**JP7615**	**JP8625**	**JP8725**	**JP9535**	**JP9635**	**JU4525**	**JU6520**
Stable machining, light cut	● 1st choice ○ suitable	●	○			○	○	○		●	●
General machining, medium cut	● 1st choice ◔ suitable	●	●	●	●	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✲	✱				✱	✱		

Dimensions



2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P		**100 260**	**100 260**			**100 260**	**100 280**			**130 300**									
M		60 180	60 180					**80 200**	**80 180**										
K	**180 360**			**140 300**	**140 300**														
N											**300 1100**								
S								**20 60**	**20 50**										
H																			

	Designation		RE	IC	S	D1	BS	Stock
GENERAL	HGP P M K S	NT-RKP11R04M-HGP	0.40	6.35	3.5	2.8	1.2	● ●
		NT-RKP11R08M-HGP	0.80	6.35	3.5	2.8	0.8	●
		NT-RKP11R12M-HGP	1.20	6.35	3.5	2.8	0.5	● ◉
		NT-RKP11R16M-HGP	1.60	6.35	3.5	2.8	-	● ●
	helical type all-around application	NT-RKP16R08M-HGP	0.80	9.525	4.76	4.5	1.6	● ● ●
		NT-RKP16R12M-HGP	1.20	9.525	4.76	4.5	0.9	● ●
		NT-RKP16R16M-HGP	1.60	9.525	4.76	4.5	0.1	● ●
		NT-RKP16R20M-HGP	2.00	9.525	4.76	4.5	-	● ●
		NT-RKP16R31M-HGP	3.10	9.525	4.76	4.5	-	● ●
GENERAL	GP P M K S	NT-RKP11R08M-GP	0.80	6.35	3.5	2.8	1.9	● ● ● ● ◉
		NT-RKP16R08M-GP	0.80	9.525	4.76	4.5	2	▽ ● ◉ ● ● ◉
LOW FORCE	HSC P M S	NT-RKP11R04M-HSC	0.40	6.35	3.5	2.8	1.2	● ●
		NT-RKP11R08M-HSC	0.80	6.35	3.5	2.8	0.7	●
		NT-RKP11R12M-HSC	1.20	6.35	3.5	2.8	0.5	◉ ●
	helical type low cutting force	NT-RKP16R08M-HSC	0.80	9.525	4.76	4.5	1.6	● ●
		NT-RKP16R12M-HSC	1.20	9.525	4.76	4.5	0.9	◉ ●
LOW FORCE	SC P	NT-RKP11R08M-SC	0.80	6.35	3.5	2.8	1.9	▽ ▽
		NT-RKP16R08M-SC	0.80	9.525	4.76	4.5	2	▽

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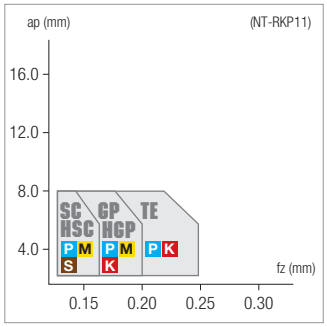
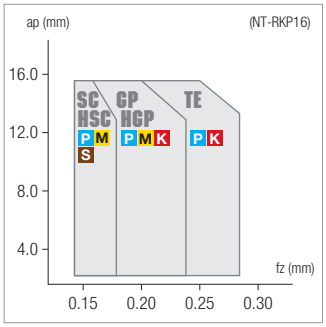
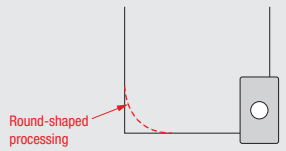




MODIFICATION OF THE CUTTER BODY

When using inserts with corner radius larger than 1.6 mm the cutter body must be modified



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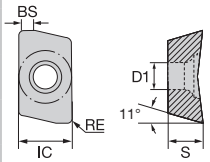
		HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7515	JP5520	JP5530	JP7525	JP7615	JP8625	JP8725	JP9535	JP9635	JU4525	JU6520
Stable machining, light cut	● 1st choice ○ suitable	●	○			○	○	○			●	●
General machining, medium cut	● 1st choice ◔ suitable	◔	◔	◔	◔	◔	◔	◔	◔	◔		◔
Unstable machining, heavy cut	⯅ 1st choice ⯃ suitable			⯃	⯅				⯅	⯅		

Dimensions

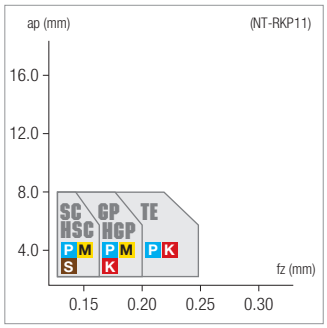


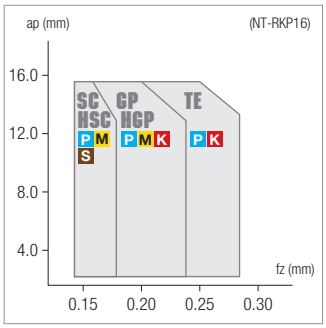
2 edges

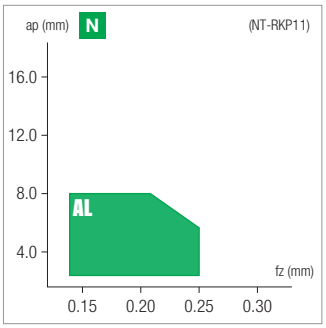
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
P		100 260	100 260			100 260	100 280			130 300		
M		60 180	60 180					80 200	80 180			
K	180 360			140 300	140 300							
N											300 1100	
S								20 60	20 50			
H												

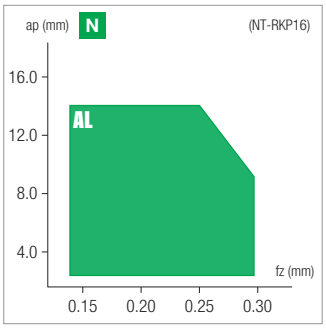
	Designation		RE	IC	S	D1	BS	Stock									
REINFORCED	TE P K	NT-RKP11R08M-TE	0.80	6.35	3.5	2.8	1.9			●	⦿			●				
		NT-RKP16R08M-TE	0.80	9.525	4.76	4.5	2.2			⦿	⦿			●				
ALUMINIUM	AL N	NT-RKP11R04G-AL	0.40	6.35	3.5	2.8	1.9										●
		NT-RKP11R08G-AL	0.80	6.35	3.5	2.8	1.9										●
	polished surface periphery ground	NT-RKP16R08G-AL	0.80	9.525	4.76	4.5	2.2										●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion









MILLING Parameters - cutting speed - REKPLUS

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JP8625 min	JP8625 start	JP8625 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	**140**	180	100	**140**	180	100	**150**	200
			30%	160	**200**	240	160	**200**	240	160	**210**	260
			10%	220	**240**	260	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	**120**	160	80	**120**	160	90	**130**	170
			30%	120	**160**	200	120	**160**	200	130	**170**	210
			10%	180	**200**	220	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	**90**	120	60	**90**	120	80	**110**	140
			30%	100	**130**	160	100	**130**	160	120	**150**	180
			10%	140	**170**	200	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max	JP9635 min	JP9635 start	JP9635 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	**100**	140	80	**120**	160	80	**110**	140
			30%	80	**130**	180	100	**150**	200	100	**140**	180
			10%	100	**160**	220	120	**180**	240	120	**170**	220
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				60	**90**	120	60	**80**	100
			30%				70	**100**	130	70	**90**	110
			10%				80	**110**	140	80	**100**	120
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	**90**	120	80	**110**	140	80	**100**	120
			30%	80	**120**	160	100	**140**	180	100	**130**	160
			10%	100	**140**	180	120	**160**	200	120	**150**	180
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				70	**100**	130	70	**90**	110
			30%				80	**110**	140	80	**100**	120
							90	**120**	150	90	**110**	130
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP7525 min	JP7525 start	JP7525 max	JP7615 min	JP7615 start	JP7615 max			
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	140	**180**	220	140	**180**	220			
			30%	160	**210**	260	160	**210**	260			
			10%	180	**240**	300	180	**240**	300			
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	100	**140**	180	100	**140**	180			
			30%	120	**170**	220	120	**170**	220			
			10%	140	**200**	260	140	**200**	260			
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	90	**120**	150	90	**120**	150			
			30%	120	**150**	180	120	**150**	180			
			10%	150	**180**	210	150	**180**	210			
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500						
			30%	400	**600**	800						
			10%	500	**800**	1100						
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300						
			30%	300	**350**	400						
			10%	400	**450**	500						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP9535 min	JP9535 start	JP9535 max	JP9635 min	JP9635 start	JP9635 max			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	20	**30**	40	20	**25**	30			
			30%	30	**40**	50	30	**35**	40			
			10%	40	**50**	60	40	**45**	50			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%	40	**50**	60	30	**40**	50			
			30%	50	**60**	70	40	**50**	60			
			10%	60	**70**	80	50	**60**	70			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

SORMA DIAMOND & CUTTING TOOLS

JU4525						
min	start	max				
130	**180**	230				
200	**240**	280				
260	**280**	300				
120	**150**	180				
180	**210**	240				
230	**250**	270				
90	**120**	150				
150	**180**	210				
190	**220**	250				

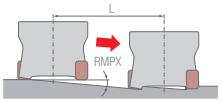
Complete workpiece materials p. **H**1.

SORMA DIAMOND & CUTTING TOOLS

DESIGNATION	ae/DC	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
NT-RKP11RooM-HGP	100%	1.00	**2.50**	4.00	0.06	**0.09**	0.12
	30%	1.00	**4.50**	8.00	0.08	**0.11**	0.14
	10%	1.00	**4.50**	8.00	0.10	**0.15**	0.20
NT-RKP16RooM-HGP	100%	1.00	**4.00**	7.00	0.10	**0.13**	0.16
	30%	1.00	**8.00**	15.00	0.12	**0.16**	0.20
	10%	1.00	**8.00**	15.00	0.16	**0.20**	0.24
NT-RKP11RooM-HSC	100%	1.00	**2.50**	4.00	0.04	**0.07**	0.10
	30%	1.00	**4.50**	8.00	0.06	**0.09**	0.12
	10%	1.00	**4.50**	8.00	0.08	**0.12**	0.16
NT-RKP16RooM-HSC	100%	1.00	**4.00**	7.00	0.06	**0.10**	0.14
	30%	1.00	**8.00**	15.00	0.10	**0.13**	0.16
	10%	1.00	**8.00**	15.00	0.12	**0.15**	0.18

DESIGNATION	ae/DC	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
NT-RKP11R08M-GP	100%	1.00	**2.50**	4.00	0.06	**0.09**	0.12
	30%	1.00	**4.50**	8.00	0.08	**0.11**	0.14
	10%	1.00	**4.50**	8.00	0.10	**0.15**	0.20
NT-RKP16R08M-GP	100%	1.00	**4.00**	7.00	0.10	**0.13**	0.16
	30%	1.00	**8.00**	15.00	0.12	**0.16**	0.20
	10%	1.00	**8.00**	15.00	0.16	**0.20**	0.24
NT-RKP11R08M-SC	100%	1.00	**2.50**	4.00	0.04	**0.07**	0.10
	30%	1.00	**4.50**	8.00	0.06	**0.09**	0.12
	10%	1.00	**4.50**	8.00	0.08	**0.12**	0.16
NT-RKP11R08M-TE	100%	1.00	**2.50**	4.00	0.08	**0.11**	0.14
	30%	1.00	**4.50**	8.00	0.10	**0.14**	0.18
	10%	1.00	**4.50**	8.00	0.12	**0.17**	0.22
NT-RKP16R08M-TE	100%	1.00	**4.00**	7.00	0.12	**0.15**	0.18
	30%	1.00	**8.00**	15.00	0.14	**0.18**	0.22
	10%	1.00	**8.00**	15.00	0.18	**0.23**	0.28
NT-RKP11RooG-AL	100%	1.00	**2.50**	4.00	0.08	**0.14**	0.20
	30%	1.00	**4.50**	8.00	0.10	**0.17**	0.24
	10%	1.00	**4.50**	8.00	0.12	**0.20**	0.28
NT-RKP16RooG-AL	100%	1.00	**4.00**	7.00	0.11	**0.18**	0.25
	30%	1.00	**8.00**	15.00	0.14	**0.22**	0.30
	10%	1.00	**8.00**	15.00	0.16	**0.25**	0.34

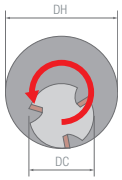
Parameters for ramping



NT-RKP11			NT-RKP16		
DC	RMPX	L	DC	RMPX	L
16	4.2°	10.8	25	5.0°	9.0
17	3.9°	11.5	32	1.7°	24.3
20	2.9°	15.4	40	1.1°	36.5
21	2.7°	16.6			
25	2.0°	21.5			
26	1.9°	22.4			
32	1.4°	29.5			
40	1.0°	39.3			

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling



NT-RKP11 R0.4			NT-RKP11 R0.8/1.2/1.6		
DC	DH min.	DH max.	DC	DH min.	DH max.
16	20	32	16	21	31
17	22	34	17	23	33
20	28	40	20	29	39
21	30	42	21	31	41
25	38	50	25	39	49
26	40	52	26	41	51
32	52	64	32	53	63
40	68	80	40	69	79

NT-RKP16 R0.8			NT-RKP16 R1.2/1.6/2.0			NT-RKP16 R3.1		
DC	DH min.	DH max.	DC	DH min.	DH max.	DC	DH min.	DH max.
25	32	49	25	33	49	25	35	47
32	46	63	32	47	63	32	49	61
40	62	79	40	63	79	40	65	77

DH min.: min. cutting dia.; DH max.: max. cutting dia.

DOUBLEREK

Double sided shoulder milling system for high productivity

Application

- Shoulder milling
- Shoulder milling with high precision multiple passes
- Long overhang shoulder milling

- Eckfräser
- Bund mit wiederholten Arbeitsgängen
- Bund mit großen Überständen

- Fresatura di spallamento
- Spallamento preciso multi-passata
- Spallamento con elevate sporgenze

- Surfaçage Dressage
- Passes multiples de haute précision
- Usinage avec longs porte à faux

Application range - ISO 513

P M K



Features and benefits

- Very robust system allowing the use of the entire side cutting edge (up to 15 mm with the DRK17 insert)
- Super positive rake with helical geometry, extremely smooth cutting action.
- Fully ground inserts for precision machining and excellent finishes.
- Thick and strong insert ensures better heat dissipation and excellent mechanical strength.
- Secure and reliable positioning in seats guarantees better precision especially in tough conditions.

- Erhältlich in großen und kleinen Größen, ermöglicht die axiale Entfernungen von bis zu 15 mm.
- Super positiver Spanwinkel mit spiralförmiger Geometrie, extrem sanftes Schneidverhalten.
- Geschliffene Wendeschneidplatten für Präzisionsbearbeitungen und hervorragende Feinbearbeitung.
- Dicker als herkömmliche Wendeschneidplatten gleicher Größe; gewährleistet eine bessere Wärmeableitung und ausgezeichnete mechanische Festigkeit.
- Sichere und zuverlässige Installation, die vor allem bei hoher Belastung eine bessere Genauigkeit gewährleistet.

- Sistema molto robusto che permette di utilizzare intera altezza del tagliente laterale (fino a 15 mm con l'inserto DRK17)
- Angolo di spoglia super positivo con geometria elicoidale, azione di taglio estremamente dolce.
- Inserti rettificati per lavorazioni di precisione e finiture eccellenti.
- Spessore più elevato rispetto agli inserti convenzionali della stessa dimensione; assicurano migliore dissipazione del calore ed eccellente resistenza meccanica.
- Posizionamento in sede sicuro e affidabile che garantisce una migliore precisione, specialmente in condizoini di carico gravose.

- Disponible en deux tailles de plaquettes, permet de prendre des profondeurs de passe jusqu'à 15 mm.
- Angle de dépouille super positif à géométrie hélicoïdale, action de coupe extrêmement douce.
- Plaquettes rectifiées pour usinages de précision et excellentes finitions.
- Plaquettes épaisses et robustes; garantissent une meilleure dissipation thermique ainsi qu'une excellente résistance mécanique.
- Montage fiable et sécurisé qui garantit une meilleure précision, notamment dans des conditions difficiles.

SORMA DIAMOND & CUTTING TOOLS

DOUBLEREK

Double sided shoulder milling system for high productivity

Milling holders

- Shell mill type
- Cylindrical shank type
- Screw-in type
- Extension arbors (steel/carbide 10xD)
- From D16 to D125

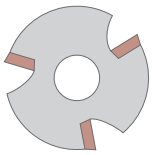
- Hülsenaufnahme
- Aufnahme zylindrisch
- Gewindeaufnahme
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D16 bis D125

- Attacco a manicotto
- Attacco cilindrico
- Attacco filettato
- Prolunghe (acciaio/metallo duro 10xD)
- Da D16 a D125

- type mandrin
- queue cylindrique
- embout vissé
- rallonge (acier/carbure 10xD)
- Du D16 au D125



Precise and stable positioning



Coarse pitch



Fine pitch

Inserts

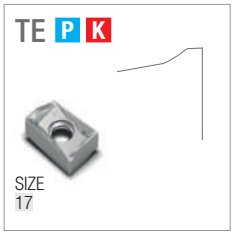
- 4 cutting edges
- Edge length 10 and 17
- CVD and PVD coated carbide grades
- Geometries: GP, TE

- 4 Schneidkanten
- Länge der Schneidkante 10 und 17
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: GP, TE

- 4 taglienti
- Lunghezza del tagliente 10 e 17
- Gradi in metallo duro rivestito CVD e PVD
- Geometrie: GP, TE

- 4 arêtes de coupe
- Taille de plaquettes 10 et 17
- Nuances carbure revêtues CVD et PVD
- Géométries : GP, TE



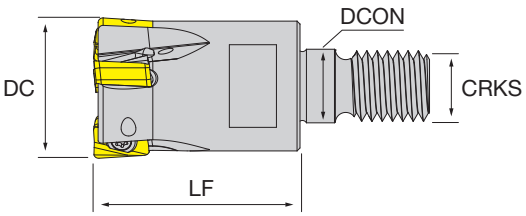


NT-DRK

DoubleRek

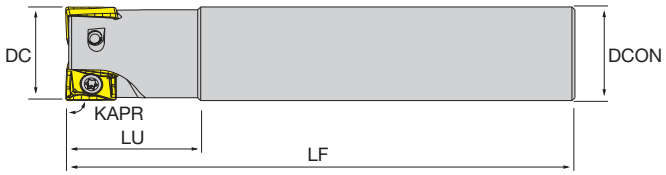
- Double-sided precision shoulder milling system, with coolant through
- Low resistance robust helical shoulder milling system, provides precision, good surface and reliability
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw in type holders

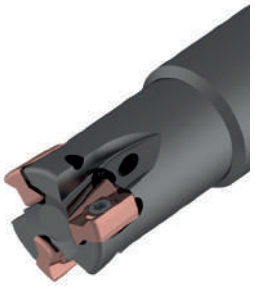
Screw-in



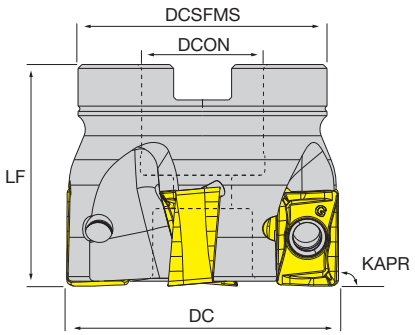


Cylindrical





Arbor





90° KAPR | INTERNAL COOLANT | FINISHING | MEDIUM | ROUGHING | SIDE MILLING | SLOTTING | FACING | LONG | MULTIPLE

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
SCREW-IN											
NT-DRK10 D016-M08-Z02	16	2	8.5	25	-	-	M8	0.03	NT-DRK10		●
NT-DRK10 D020-M10-Z03	20	3	10.5	30	-	-	M10	0.05	NT-DRK10		●
NT-DRK10 D025-M12-Z03	25	3	12.5	35	-	-	M12	0.1	NT-DRK10		●
NT-DRK10 D032-M16-Z04	32	4	17	43	-	-	M16	0.22	NT-DRK10		●
CYLINDRICAL SHANK											
NT-DRK10 D016-S16-Z02	16	2	16	100	25	-	-	0.13	NT-DRK10		●
NT-DRK10 D020-S20-Z03	20	3	20	110	30	-	-	0.23	NT-DRK10		●
NT-DRK10 D025-S25-Z03	25	3	25	120	35	-	-	0.41	NT-DRK10		●
NT-DRK10 D032-S32-Z04	32	4	32	130	45	-	-	0.74	NT-DRK10		●
NT-DRK17 D032-S32-Z02	32	2	32	130	45	-	-	0.69	NT-DRK17		●
NT-DRK17 D040-S32-Z03	40	3	32	150	40	-	-	0.89	NT-DRK17		●
ARBOR MOUNTING											
NT-DRK10 D032-F16-Z04	32	4	16	35	-	30	-	0.1	NT-DRK10		●
NT-DRK10 D040-F16-Z05	40	5	16	40	-	30	-	0.18	NT-DRK10		●
NT-DRK10 D050-F22-Z05	50	5	22	40	-	40	-	0.31	NT-DRK10		●
NT-DRK10 D050-F22-Z07	50	7	22	40	-	40	-	0.3	NT-DRK10		●
NT-DRK10 D063-F22-Z06	63	6	22	40	-	55	-	0.62	NT-DRK10		●
NT-DRK10 D063-F22-Z08	63	8	22	40	-	55	-	0.62	NT-DRK10		●
NT-DRK10 D080-F27-Z07	80	7	27	50	-	63	-	1.26	NT-DRK10		●
NT-DRK10 D080-F27-Z10	80	10	27	50	-	63	-	1.24	NT-DRK10		◉
NT-DRK17 D050-F22-Z04	50	4	22	40	-	45	-	0.29	NT-DRK17		●
NT-DRK17 D063-F22-Z05	63	5	22	40	-	56	-	0.54	NT-DRK17		●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
NT-DRK17 D063-F22-Z06	63	6	22	40	-	56	-	0.51	NT-DRK17		●
NT-DRK17 D080-F27-Z06	80	6	27	50	-	63	-	1.13	NT-DRK17		●
NT-DRK17 D080-F27-Z07	80	7	27	50	-	63	-	1.1	NT-DRK17		●
NT-DRK17 D100-F32-Z07	100	7	32	50	-	78	-	1.71	NT-DRK17		●
NT-DRK17 D100-F32-Z09	100	9	32	50	-	78	-	1.71	NT-DRK17		●
NT-DRK17 D125-F40-Z08	125	8	40	63	-	80	-	3.2	NT-DRK17		●
NT-DRK17 D125-F40-Z10	125	10	40	63	-	80	-	3.15	NT-DRK17		●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-DRK10 Dooo-ooo-Zoo	NT-ST25078P08	NT-FTP08
NT-DRK17 Dooo-ooo-Zoo	NT-ST45111T15	NT-FTB15

SORMA DIAMOND & CUTTING TOOLS

DRK

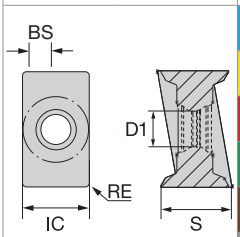
DoubleRek

- GP and TE are both helical geometries with reduced cutting resistance
- Precise and enhanced positioning guarantees more reliability in machining
- Available in several grades covering wide application range

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7515	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JP9545
		HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HC PVD
Stable machining, light cut	● 1st choice ○ suitable	●	●				○		
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✲ suitable			✱	✲	✱		✱	✱

Dimensions



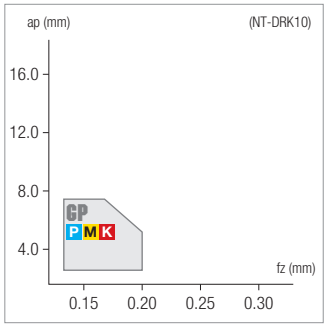
4 edges

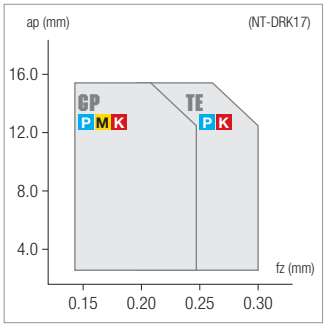
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	JC7515	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JP9545
P		**130 300**		**100 260**		**100 280**		
M			**90 210**	60 180			**80 200**	**60 180**
K	**180 360**	160 320			**140 300**			
N								
S			**30 70**				**20 60**	**20 50**
H								

	Designation		RE	IC	S	D1	BS	Stock
GENERAL	GP P M K S	NT-DRK10R08K-GP	0.80	5.82	5.45	2.9	0.9	● ● ● ● ● ● ●
	GP P M K S	NT-DRK17R08K-GP	0.80	11.2	10.94	5.2	3.2	● ● ● ● ● ● ●
REINFORCED	TE P K	NT-DRK17R12K-TE	1.20	11.2	10.94	5.2	3.2	● ◉ ● ● ●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	100	**150**	200
			30%	200	**240**	280	160	**200**	240	160	**210**	260
			10%	260	**280**	300	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	90	**130**	170
			30%	160	**200**	240	120	**160**	200	130	**170**	210
			10%	220	**240**	260	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120	80	**110**	140
			30%	120	**160**	200	100	**130**	160	120	**150**	180
			10%	200	**220**	240	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max	JP9545 min	JP9545 start	JP9545 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	80	**120**	160	60	**100**	140
			30%	110	**160**	210	100	**150**	200	80	**130**	180
			10%	130	**190**	250	120	**180**	240	100	**160**	220
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130	60	**90**	120	50	**80**	110
			30%	80	**110**	140	70	**100**	130	60	**90**	120
			10%	90	**120**	150	80	**110**	140	70	**100**	130
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	80	**110**	140	60	**90**	120
			30%	110	**150**	190	100	**140**	180	80	**120**	160
			10%	130	**170**	210	120	**160**	200	100	**140**	180
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140	70	**100**	130	60	**90**	120
			30%	90	**120**	150	80	**110**	140	70	**100**	130
				100	**130**	160	90	**120**	150	80	**110**	140
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	160	**200**	240	140	**180**	220
			30%	200	**260**	320	180	**230**	280	160	**210**	260
			10%	220	**290**	360	200	**260**	320	180	**240**	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	120	**160**	200	100	**140**	180
			30%	160	**220**	280	140	**190**	240	120	**170**	220
			10%	200	**260**	320	160	**220**	280	140	**200**	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	100	**130**	160	90	**120**	150
			30%	140	**180**	220	120	**160**	200	120	**150**	180
			10%	180	**220**	260	140	**190**	240	150	**180**	210
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max	JP9545 min	JP9545 start	JP9545 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40	20	**25**	30
			30%	40	**50**	60	30	**40**	50	30	**35**	40
			10%	50	**60**	70	40	**50**	60	40	**45**	50
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60	30	**40**	50
			30%				50	**60**	70	40	**50**	60
			10%				60	**70**	80	50	**60**	70

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

DESIGNATION	ae/Dc	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
NT-DRK10R08K-GP	100%	1.00	**2.50**	4.00	0.08	**0.10**	0.12
	30%	1.00	**4.00**	7.00	0.10	**0.13**	0.16
	10%	1.00	**4.00**	7.00	0.12	**0.16**	0.20
NT-DRK17R08K-GP	100%	1.00	**4.00**	7.00	0.11	**0.18**	0.21
	30%	1.00	**8.00**	15.00	0.14	**0.20**	0.26
	10%	1.00	**8.00**	15.00	0.16	**0.23**	0.30
NT-DRK17R12K-TE	100%	1.00	**4.00**	7.00	0.13	**0.19**	0.25
	30%	1.00	**8.00**	15.00	0.16	**0.23**	0.30
	10%	1.00	**8.00**	15.00	0.20	**0.27**	0.34

DOUBLE3GON

Double ended trigonal shoulder milling system

Application

- Shoulder milling
- Shoulder milling withhigh precision multi-passes (max. 7mm with WNEX08 insert)
- Long overhang shoulder milling

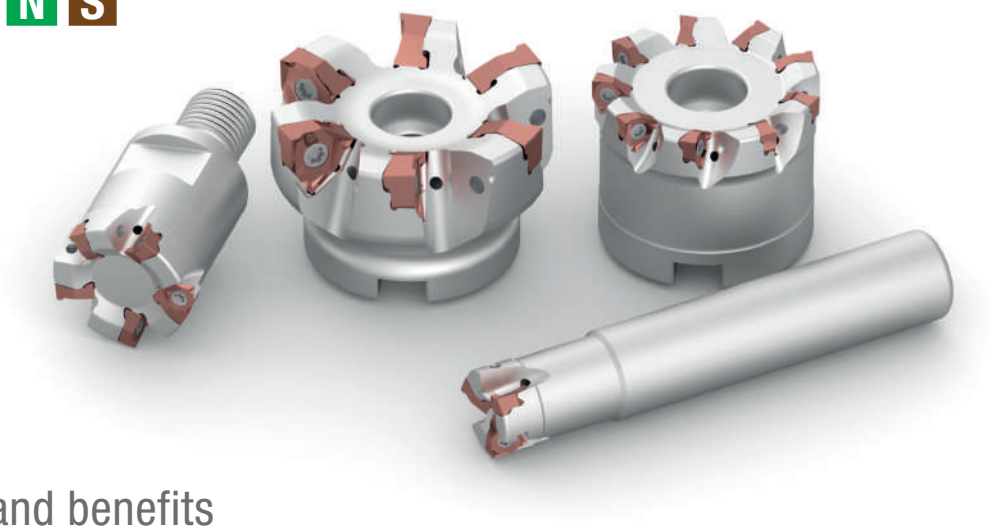
- Eckfräser
- Bund mit wiederholten Arbeitsgängen
- Bund mit großen Überständen

- Fresatura di spallamento
- Spallamento preciso multi passata (max. 7mm con inserto WNEX08)
- Spallamento con sporgenze elevate

- Surfaçage Dressage
- Passes multiples de haute précision (max 7mm)
- Usinage avec longs porte à faux

Application range - ISO 513

P M K N S



Features and benefits

- High precision 90° side milling.
- Reduced cost per edge compared with conventional shoulder milling systems.
- Very strong system thanks to the negative trigonal and reliable installation.
- Full range of carbide geometries, radii and grades.
- High performance holders with special surface treatment to ensure longer life.

- Hohe Genauigkeit beim 90°-Seitenfräsen.
- Geringere Kosten pro Schneidkante im Vergleich zu herkömmlichen Eckfrässystemen.
- Sehr robustes System durch negative Trigon-Wendeschneidplatten und zuverlässige Installation.
- Komplettes Sortiment an Hartmetallgeometrien, Radien und Qualitäten.
- Ultrapräzise Fräskörper mit spezieller Oberflächenbehandlung, die eine lange Standzeit gewährleistet.

- Elevata precisione nella fresatura laterale a 90°.
- Ridotto costo per tagliente rispetto ai convenzionali sistemi di fresatura di spallamento.
- Sistema molto robusto grazie ai trigoni negativi e “al posizionamento in sede.
- Gamma completa di geometrie in metallo duro, raggi e gradi.
- Corpi fresa ad alte prestazioni con speciale trattamento superficiale che assicura lunga durata.

- Usinage de Haute précision à 90°
- Coût à l’arête réduit par rapport aux fraises à surfacer dresser standard.
- Système très robuste grâce à des plaquettes trigones négatives et à un montage fiable.
- Large gamme de géométries, rayons et nuances.
- Corps de fraises « ultra précis » avec traitement de surface spécial assurant leur longue durée de vie.

DOUBLE3GON

Double ended trigonal shoulder milling system

Milling holders

- Shell mill type
- Cylindrical shank type
- Screw-on type
- Extension arbors (steel/carbide 10xD)
- From D20 to D160

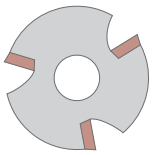
- Hülsenaufnahme
- Aufnahme zylindrisch
- Gewindeaufnahme
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D20 bis D160

- Attacco a manicotto
- Attacco cilindrico
- Attacco filettato
- Prolunghe (acciaio/metallo duro 10xD)
- Da D20 a D160

- type mandrin
- queue cylindrique
- embout vissé
- rallonge (acier/carbure 10xD)
- Du D20 à D160



Extension arbors



Coarse pitch



Fine pitch

Inserts

- 6 cutting edges
- Edge length 04 and 08
- Complete insert range with more geometries and carbide grades for excellent performances on several workpiece materials.
- Geometries: SC, GP, TE, AL

- 6 Schneidkanten
- Länge der Schneidkante 04 und 08
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, TE, AL

- 6 taglienti
- Lunghezza del tagliente 04 e 08
- Gamma inserti completa con più geometrie e qualità di metallo duro per poter lavorare più materiali.
- Geometrie: SC, GP, TE, AL

- 6 arêtes de coupe
- Taille de plaquette 04 et 08
- Nuances carbure revêtues CVD et PVD
- Géométries : SC, GP, TE, AL

SC P M S



SIZE
08

GP P M K



SIZE
04 08

TE P K



SIZE
08

AL N



SIZE
08

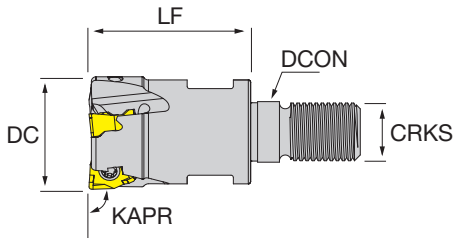
SORMA DIAMOND & CUTTING TOOLS

NT-WX

Double3Gon

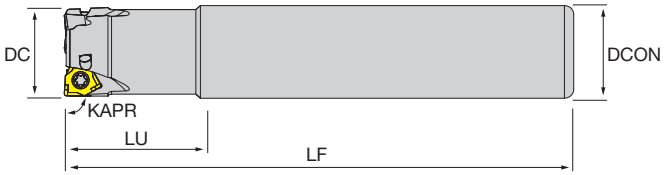
- Double sided trigonal type shoulder milling system, with coolant through
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders
- Reliable machining process guaranteed by high quality Swiss screws

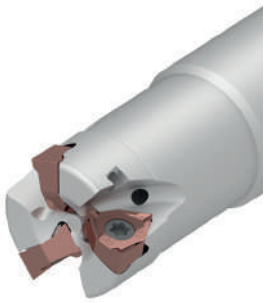
Screw-in



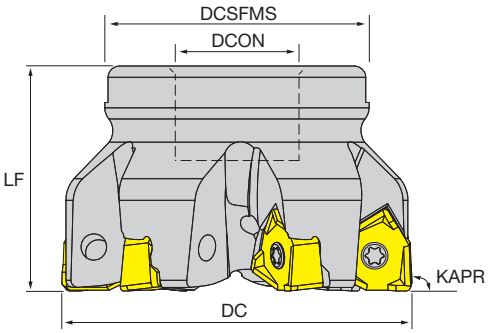


Cylindrical





Arbor





90° KAPR | INTERNAL COOLANT | MEDIUM | ROUGHING | SIDE MILLING | SLOTTING | FACING | MULTIPLE

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
SCREW-IN											
NT-WX04H D020-M10-Z03	20	3	10.5	28	-	-	M10	0.05	WNEX0403		●
NT-WX04H D025-M12-Z03	25	3	12.5	30	-	-	M12	-	WNEX0403		○
NT-WX04H D025-M12-Z04	25	4	12.5	30	-	-	M12	0.09	WNEX0403		●
NT-WX04H D032-M16-Z04	32	4	17	40	-	-	M16	-	WNEX0403		○
NT-WX04H D032-M16-Z05	32	5	17	40	-	-	M16	0.2	WNEX0403		◉
CYLINDRICAL SHANK											
NT-WX04H D020-S16-Z03	20	3	16	110	20	-	-	0.16	WNEX0403		◉
NT-WX04H D020-S20-Z03	20	3	20	110	28	-	-	0.23	WNEX0403		●
NT-WX04H D025-S20-Z04	25	4	20	120	22	-	-	0.27	WNEX0403		●
NT-WX04H D025-S25-Z04	25	4	25	120	30	-	-	0.4	WNEX0403		●
NT-WX04H D032-S25-Z05	32	5	25	130	25	-	-	0.47	WNEX0403		◉
NT-WX04H D032-S32-Z05	32	5	32	130	40	-	-	0.72	WNEX0403		●
ARBOR MOUNTING											
NT-WX04H D040-F16-Z05	40	5	16	40	-	35	-	-	WNEX0403		○
NT-WX04H D040-F16-Z07	40	7	16	40	-	35	-	0.22	WNEX0403		●
NT-WX04H D050-F22-Z06	50	6	22	40	-	47	-	-	WNEX0403		○
NT-WX04H D050-F22-Z09	50	9	22	40	-	47	-	0.38	WNEX0403		●
NT-WX04H D063-F22-Z08	63	8	22	40	-	47	-	-	WNEX0403		○
NT-WX04H D063-F22-Z10	63	10	22	40	-	47	-	-	WNEX0403		○
NT-WX08H D050-F22-Z04	50	4	22	40	-	47	-	0.31	WNEX0806		●
NT-WX08H D050-F22-Z05	50	5	22	40	-	47	-	0.33	WNEX0806		●
NT-WX08H D063-F22-Z06	63	6	22	40	-	47	-	0.43	WNEX0806		●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
NT-WX08H D063-F27-Z06	63	6	27	40	-	47	-	0.63	WNEX0806		●
NT-WX08H D063-F22-Z07	63	7	22	40	-	47	-	0.42	WNEX0806		●
NT-WX08H D080-F27-Z07	80	7	27	50	-	62	-	0.99	WNEX0806		●
NT-WX08H D080-F27-Z09	80	9	27	50	-	62	-	0.96	WNEX0806		●
NT-WX08H D100-F32-Z08	100	8	32	50	-	77	-	-	WNEX0806		●
NT-WX08H D100-F32-Z11	100	11	32	50	-	77	-	1.45	WNEX0806		●
NT-WX08H D125-F40-Z11	125	11	40	63	-	80	-	2.38	WNEX0806		●
NT-WX08H D160-F40-Z12	160	12	40	63	-	85	-	3.86	WNEX0806		◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-WX04H Dooo-ooo-Zoo	NT-ST25056T08HQ	NT-FTB08
NT-WX08H Dooo-ooo-Zoo	NT-ST40110T15HQ	NT-FTB15

SORMA DIAMOND & CUTTING TOOLS

WN

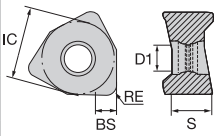
Double3Gon

- Double-sided trigonal inserts offering 6 edges!
- Stable sitting in the pocket guarantees more reliability in machining
- Available in several grades covering wide application range

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF
		JC7515	JC8520	JC9540	JP5530	JP5540	JP7525	JP8725	JP9525	JP9535	JU6520
Stable machining, light cut	● 1st choice ○ suitable	●	●					○	○		●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	○	●	●	○	●	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable			✱	✲	✱	✱			✱	

Dimensions

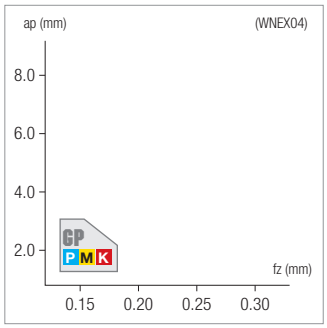


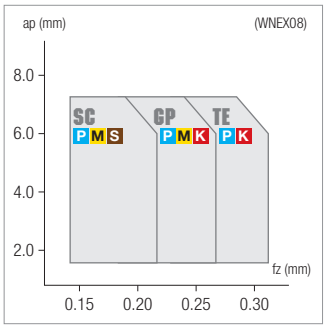
6 edges

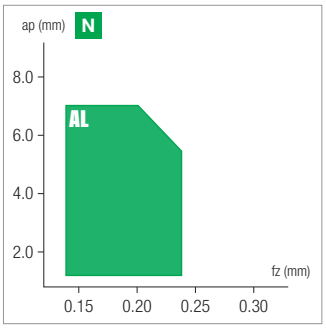
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)										
P		**130 300**		**100 260**	**80 220**		**100 280**				
M			**90 210**	60 180	**60 180**			**80 200**	**80 200**		
K	**180 360**	160 320				**140 300**					
N										**300 1100**	
S			**30 70**		**20 50**				**20 60**		
H											

		Designation	RE	IC	S	D1	BS	Stock									
GENERAL	GP P M K S	WNEX040304R-GP	0.40	6.7	3.3	3.1	0.9			●	●		●	●	▽	●	
		WNEX040308R-GP	0.80	6.7	3.3	3.1	0.9						●				
		WNEX080608R-GP	0.80	12.5	6.5	4.6	1.5	●	●	●	●		●	●		●	
LOW FORCE	SC M S	WNEX080608R-SC	0.80	12.5	6.5	4.6	1.5			●						●	
REINFORCED	TE P M K S	WNEX080608R-TE	0.80	12.5	6.5	4.6	1.5	●			●	●	●	●	▽	▲	
ALUMINUM	AL	WNEX080608R-AL	0.80	12.5	6.5	4.6	1.5										●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	100	**150**	200
			30%	200	**240**	280	160	**200**	240	160	**210**	260
			10%	260	**280**	300	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	90	**130**	170
			30%	160	**200**	240	120	**160**	200	130	**170**	210
			10%	220	**240**	260	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120	80	**110**	140
			30%	120	**160**	200	100	**130**	160	120	**150**	180
			10%	200	**220**	240	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5530 min	JP5530 start	JP5530 max			
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	60	**100**	140			
			30%	110	**160**	210	80	**130**	180			
			10%	130	**190**	250	100	**160**	220			
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130						
			30%	80	**110**	140						
			10%	90	**120**	150						
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	60	**90**	120			
			30%	110	**150**	190	80	**120**	160			
			10%	130	**170**	210	100	**140**	180			
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140						
			30%	90	**120**	150						
				100	**130**	160						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	160	**200**	240	140	**180**	220
			30%	200	**260**	320	180	**230**	280	160	**210**	260
			10%	220	**290**	360	200	**260**	320	180	**240**	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	120	**160**	200	100	**140**	180
			30%	160	**220**	280	140	**190**	240	120	**170**	220
			10%	200	**260**	320	160	**220**	280	140	**200**	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	100	**130**	160	90	**120**	150
			30%	140	**180**	220	120	**160**	200	120	**150**	180
			10%	180	**220**	260	140	**190**	240	150	**180**	210
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500						
			30%	400	**600**	800						
			10%	500	**800**	1100						
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300						
			30%	300	**350**	400						
			10%	400	**450**	500						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max						
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50						
			30%	40	**50**	60						
			10%	50	**60**	70						
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%									
			30%									
			10%									

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
WNEX0403ooR-GP	100%	0.60	**1.00**	1.40	0.05	**0.10**	0.15
	30%	0.60	**1.80**	3.00	0.06	**0.12**	0.18
	10%	0.60	**1.80**	3.00	0.07	**0.14**	0.20
WNEX0806ooR-GP	100%	1.00	**2.50**	4.00	0.11	**0.18**	0.21
	30%	1.00	**4.00**	7.00	0.14	**0.20**	0.26
	10%	1.00	**4.00**	7.00	0.16	**0.23**	0.30
WNEX0806ooR-SC	100%	1.00	**2.50**	4.00	0.08	**0.13**	0.18
	30%	1.00	**4.00**	7.00	0.10	**0.16**	0.22
	10%	1.00	**4.00**	7.00	0.12	**0.20**	0.26
WNEX0806ooR-TE	100%	1.00	**2.50**	4.00	0.13	**0.19**	0.25
	30%	1.00	**4.00**	7.00	0.16	**0.23**	0.30
	10%	1.00	**4.00**	7.00	0.20	**0.27**	0.34
WNEX080608R-AL	100%	1.00	**2.50**	4.00	0.08	**0.14**	0.20
	30%	1.00	**4.00**	7.00	0.10	**0.17**	0.24
	10%	1.00	**4.00**	7.00	0.12	**0.20**	0.28

ALUREK

Positive shoulder milling, high precision and high productivity

Application

- Shoulder milling
- Long overhang milling
- Profiling and Pocketing
- Linear and helical ramping

- Eckfräser
- Fräsen mit langen Auskragungen
- Profilierung und Taschenfraesen
- Lineare und spiralförmige Rampenbearbeitung

- Fresatura di spallamento
- Fresatura con lunghe sporgenze
- Profilatura ed esecuzione di tasche
- Lavorazioni in rampa lineare ed elicoidale

- Surfaçage Dressage
- Usinage avec longs porte à faux
- Rainurage et usinage de poches
- Usinages en ramping et interpolation hélicoïdale

Application range - ISO 513

N



Features and benefits

- 90° helical geometry insert for high precision shouldering
- Transparent-looking advanced PVD coated carbide inserts provides excellent wear-resistence and anti-adhesion, can be an optimal alternative solution to PCD milling.
- Different radii of inserts available.
- Smart-Lock at the back of the insert and on the cutter seats, guarantees a more reliable machining process and better surface finishing.
- Wide range of milling holders (shell type, cylindircal shank, screw-on+extension arbors) with coolant through.
- 10xD extension arbors available in both steel and carbide.

- Wendeschneidplatten mit spiralförmiger Geometrie ermöglichen die Herstellung hochpräziser gerader Eckfräsungen.
- Die fortgeschrittene durchsichtige PVD Beschichtung erzielt eine hervorragende Verschleiss- und Aufklebebestaendigkeit, und kann somit als optimaler Ersatz von PKD betrachtet werden.
- In verschiedenen Radien erhältlich.
- Das Smart-Lock-System auf der Rückseite der Wendeschneidplatte und in den Aufnahmen sorgt für eine höhere Prozesssicherheit sowie eine bessere Oberflächenqualität.
- Fräskörper mit regulären Abmessungen mit zylindrischer Aufnahme, mit Gewinde und mit Hülse, alle mit innerer Kühlmittelzufuhr.
- Erweiterungshülsen 10xD aus Stahl und Hartmetall erhältlich.

- Inserti con geometria 90° elicoidale per spallamenti precisi.
- Il rivestimento PVD avanzato dall'aspetto trasparente sull'inserto di metallo duro offrono un'eccellente resistenza all'usura e all'adesione e possono rappresentare una soluzione alternativa ottimale alla fresatura PCD.
- Disponibili in diversi raggi.
- Il sistema Smart-Lock sul retro dell'inserto e nelle sedi assucura maggiore affidabilità del processo e migliore finitura superficiale.
- Vasta gamma di corpi fresa (a manicotto, gambo cilindirco e testine filettate con prolunghe) con refrigerazione interna.
- Prolunghe 10xD disponibili in acciaio e metallo duro.

- Des plaquettes à géométrie hélicoïdale pour un usinage de haute précision à 90°.
- Les plaquettes en carbure revêtues d'un PVD avancé d'aspect transparent offrent une excellente résistance à l'usure et anti-adhérence, et peuvent constituer une solution alternative optimale au fraisage PCD.
- Disponibles avec différents rayons.
- Le système Smart-Lock à l'arrière de la plaquette et dans les logements assure une plus grande fiabilité de l'usinage et une meilleure finition de surface.
- Large choix de type de montage, mandrin, queue cylindrique, embout vissé avec rallonge, avec arrosage interne.
- Rallonges 10xD disponibles en acier et carbure.

ALUREK

Positive shoulder milling, high precision and high productivity

Milling holders

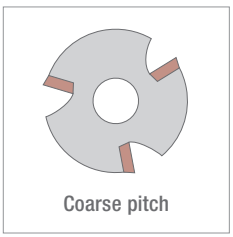
- Shell mill type
- Cylindrical shank type (up to 10xD)
- Screw-in type
- Extension arbors (steel/carbide 10xD)
- From D25 to D50

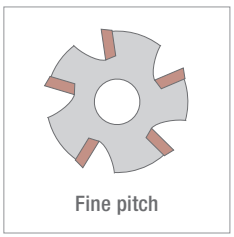
- Hülsenaufnahme
- Aufnahme zylindrisch (bis 10xD)
- Gewindeaufnahme
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D25 bis D50

- Attacco a manicotto
- Attacco cilindrico (fino a 10xD)
- Attacco filettato
- Prolunghe (acciaio/metallo duro 10xD)
- Da D25 a D50

- type mandrin
- Queue cylindrique (jusqu'à 10xD)
- embout vissé
- Rallonge (acier/carbure 10xD)
- Du D25 à D50


Smart-Lock


Coarse pitch


Fine pitch

Inserts

- 2 cutting edges
- Edge length 19
- PVD coated carbide grade, specific for ISO N
- Geometries: AL
- With Smart-Lock

- 2 Schneidkanten
- Länge der Schneidkante 19
- PVD-beschichtete Hartmetallqualität speziell für Materialien der ISO N-Gruppe
- Geometrien: AL
- Mit Smart-Lock

- 2 taglienti
- Lunghezza del tagliente 19
- Grado in metallo duro rivestito PVD specifico per materiali del gruppo ISO N
- Geometrie: AL
- Con Smart-Lock

- 2 arêtes de coupe
- Taille de plaquette 19
- Nuance carbure revêtue PVD spécifique aux matériaux du groupe ISO N
- Géométries : AL
- Avec Smart-Lock




Smart-Lock on the back

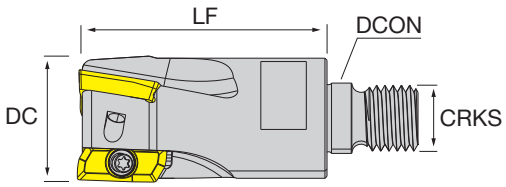


NT-ALU90

AluRek

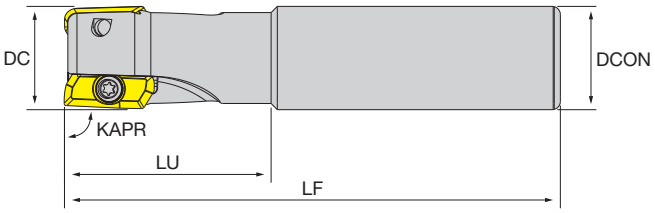
- Highly positive and fine polished precision shoulder milling system tailored for aluminum and non-ferrous materials
- All with coolant through
- With Nikko smart-lock at the back of the insert and on the seat, offering better reliability and surface finishing
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2

Screw-in



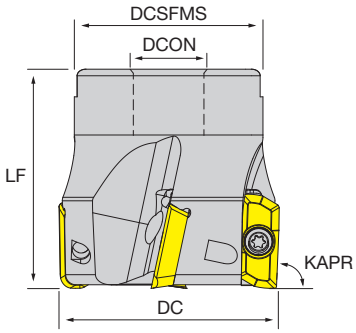


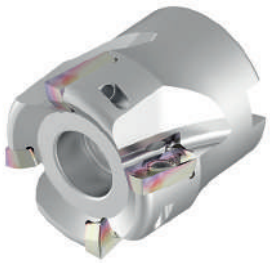
Cylindrical





Arbor





90° KAPR | INTERNAL COOLANT | MEDIUM | ROUGHING | SIDE MILLING | SLOTTING | FACING | RAMPING | HELICAL | LONG | MULTIPLE | VERTICAL

Designation	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	WT	MIID		Stock
SCREW-IN											
NT-ALU9019 D025-M12-Z2	25	2	12.5	50	-	-	M12	-	NT-ALU9019		●
NT-ALU9019 D032-M16-Z3	32	3	17	60	-	-	M16	-	NT-ALU9019		●
CYLINDRICAL SHANK											
NT-ALU9019 D025-S25-Z2	25	2	25	120	50	-	-	-	NT-ALU9019		●
NT-ALU9019 D032-S32-Z3	32	3	32	130	60	-	-	-	NT-ALU9019		●
ARBOR MOUNTING											
NT-ALU9019 D040-F16-Z3	40	3	16	50	-	33	-	-	-	NT-ALU9019	●
NT-ALU9019 D050-F22-Z3	50	3	22	50	-	43	-	-	-	NT-ALU9019	●
NT-ALU9019 D050-F22-Z4-H2	50	8	22	60	-	43	-	32	-	NT-ALU9019	◉
NT-ALU9019 D050-F22-Z4	50	4	22	50	-	43	-	-	-	NT-ALU9019	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-ALU9019 Dooo-ooo-Zoo	NT-ST40090T15	NT-FTB15

ALU90

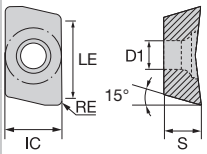
AluRek

- PVD coated micro-grain grade, optimal cost effective solution between uncoated carbide inserts and PCD
- With Nikko smart lock at the back, provides better surface finishing
- Sharp but reliable geometry, polished surface, precision ground high performance solution
- Multiple radii available, R0.2 / 0.8 / 3.2

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD
			JP6525
Stable machining, light cut	1st choice / suitable		●
General machining, medium cut	1st choice / suitable		●
Unstable machining, heavy cut	1st choice / suitable		

Dimensions

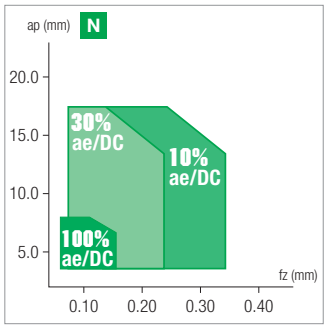


2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	
N	**400** 1400
S	
H	

Designation	RE	IC	S	D1	LE	Stock
N  NT-ALU9019R02H-AL	0.20	9.5	4.76	4.6	19	●
NT-ALU9019R08H-AL	0.80	9.5	4.76	4.6	19	●
NT-ALU9019R32H-AL	3.20	9.5	4.76	4.6	19	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SORMA DIAMOND & CUTTING TOOLS

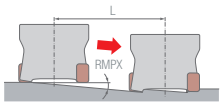
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP6525 min	JP6525 start	JP6525 max		
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	400	**500**	600		
			30%	600	**800**	1000		
			10%	800	**1100**	1400		
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**350**	500		
			30%	300	**450**	600		
			10%	400	**550**	700		

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
NT-ALU9019RooH-AL	100%	1.00	**4.00**	7.00	0.06	**0.10**	0.14
	30%	1.00	**9.00**	17.00	0.08	**0.15**	0.22
	10%	1.00	**9.00**	17.00	0.10	**0.20**	0.30

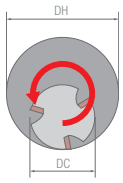
Parameters for ramping



ALU9019					
DC	RMPX	L			
25	3.4°	3.0			
32	2.5°	2.9			
40	1.4°	2.1			
50	0.7°	1.4			

RMPX: max. ramping angle; L: max. ramping path

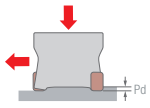
Parameters for helical milling



ALU9019 R0.2			ALU9019 R0.8			ALU9019 R3.2			
DC	DH min.	DH max.	DC	DH min.	DH max.	DC	DH min.	DH max.	
25	32	49	25	33	48	25	37	47	
32	46	63	32	47	62	32	51	61	
40	62	79	40	63	78	40	67	77	
50	82	99	50	83	98	50	87	97	

DH min.: min. cutting dia.; DH max.: max. cutting dia.

Peck milling



Pd maximum pecking depth			
Pd = 1 mm			

SORMA DIAMOND & CUTTING TOOLS

AP

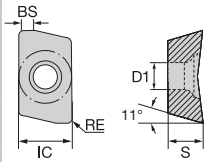
ISO type

- Positive shoulder milling insert for general purpose use
- 2 geometries available, GP for universal use, AL for aluminum and non-ferrous materials
- AL geometry is highly sharp, periphery ground and fine polished

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

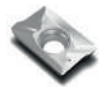
		HF	PVD	JP5520
Stable machining, light cut	● 1st choice ○ suitable		○	
General machining, medium cut	● 1st choice ◔ suitable		●	
Unstable machining, heavy cut	✱ 1st choice ⬡ suitable			

Dimensions

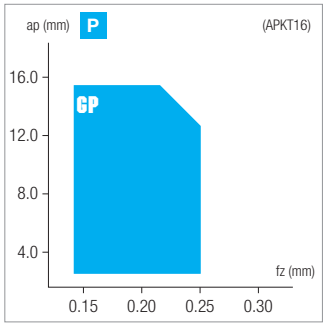


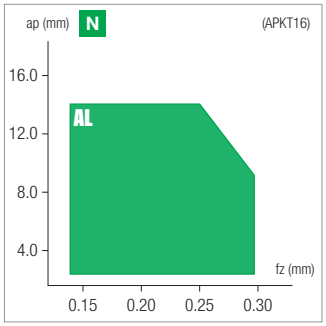
2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**100 260**
M	60 180
K	
N	
S	
H	

Designation		RE	IC	S	D1	BS	Stock
GENERAL GP P	APKT1003PDSR-GP	0.50	6.7	3.18	3.15	0.9	●
	APKT1604PDSR-GP	1.00	9.525	4.76	4.4	1.9	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



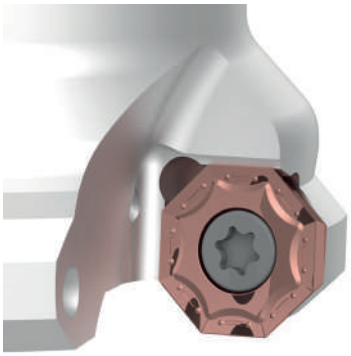


ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5520 min	JP5520 start	JP5520 max		
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	**150**	200		
			30%	160	**210**	260		
			10%	220	**250**	280		
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	90	**130**	170		
			30%	130	**170**	210		
			10%	190	**210**	230		
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	80	**110**	140		
			30%	120	**150**	180		
			10%	160	**190**	220		
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max		
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500		
			30%	400	**600**	800		
			10%	500	**800**	1100		
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300		
			30%	300	**350**	400		
			10%	400	**450**	500		

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
APKT1003PDSR-GP	100%	1.00	**2.50**	4.00	0.06	**0.11**	0.16
	30%	1.00	**4.00**	7.00	0.08	**0.14**	0.20
	10%	1.00	**4.00**	7.00	0.10	**0.16**	0.22
APKT1604PDSR-GP	100%	1.00	**4.00**	7.00	0.08	**0.14**	0.19
	30%	1.00	**7.00**	13.00	0.10	**0.17**	0.24
	10%	1.00	**7.00**	13.00	0.12	**0.20**	0.28
APKT1003PDFR-AL	100%	1.00	**2.50**	4.00	0.08	**0.14**	0.20
	30%	1.00	**4.00**	7.00	0.10	**0.17**	0.24
	10%	1.00	**4.00**	7.00	0.12	**0.20**	0.28
APKT1604PDFR-AL	100%	1.00	**4.00**	7.00	0.08	**0.16**	0.24
	30%	1.00	**7.00**	13.00	0.10	**0.20**	0.30
	10%	1.00	**7.00**	13.00	0.12	**0.24**	0.36

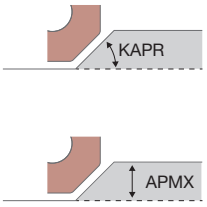


MILLING Facing

Quick guide .D54

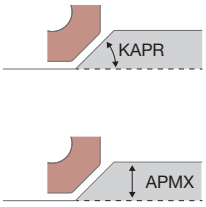
4FACEPLUS .D56
OKTOPLUS .D66
DOUBLE4FACE .D74
DOUBLEHEX .D80
ISO SEHX .D86

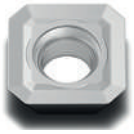
SORMA DIAMOND & CUTTING TOOLS



	4FACEPLUS	OKTOPLUS	DOUBLE4FACE
	D56	D66	D74
	 ARBOR	 ARBOR	 ARBOR
KAPR	45°	43°	45°
Insert sizes	13	05 / 06	12
APMX	6	3 / 4	3
Tool diameter	Ø40 - Ø200	Ø50 - Ø160	Ø50 - Ø160
Coolant holes	✗	✓	✓
Workpiece material	P M K N S	P M K N S	P M K N S
No. of cutting edges	4	8	8
No. of geometries	8	5	5
Special features	single edge Wiper type	double edge Wiper type	double edge Wiper type
Face Milling	✓	✓	✓
Intermittent Milling	✓	✓	✓
Machine load	■■■□□	■■■□□	■■■□□
Strenght	■■■□□	■■■□□	■■■■□
Precision	■■■■□	■■■□□	■■■■□
Finishing	■■■■□	■■■□□	■■■■□
Range	■■■■■	■■■□□	■■■■□

SORMA DIAMOND & CUTTING TOOLS



	DOUBLEHEX	ISO SEHX
	D80	D86
	 ARBOR	 Only insert is available.
KAPR	60° (45° on request)	45°
Insert sizes	09	12
APMX	6	5
Tool diameter	Ø80 - Ø160	-
Coolant holes	✗	-
Workpiece material	K	P M K N
No. of cutting edges	12	4
No. of geometries	4	4
Special features	solid PCBN and ceramic available	-
Face Milling	✓	✓
Intermittent Milling	✓	✓
Machine load	■■■■□	■■□□□
Strenght	■■■■■	■■■□□
Precision	■■■□□	■■□□□
Finishing	■■■□□	■■■□□
Range	■■■■□	■□□□□

4FACEPLUS

Face milling system for general machining

Application

- Face milling system with positive 4-cutting-edge inserts.
- Reliable even for irregular hard skin removal
- General face milling even on irregular surfaces
- Machining of linear and helical ramping

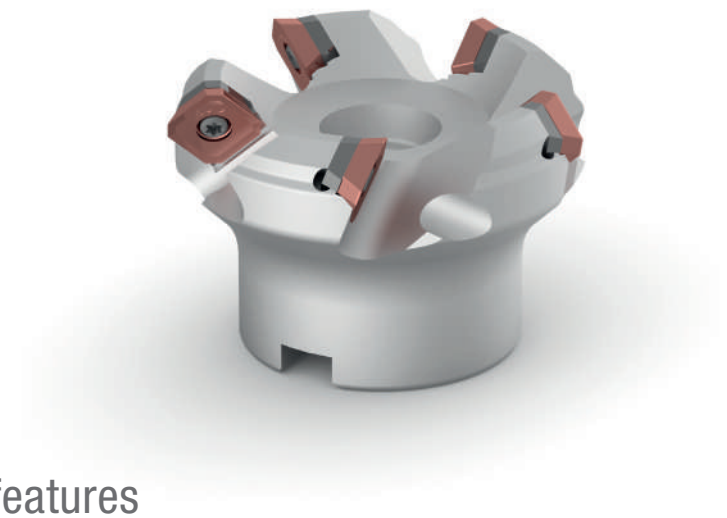
- Schlichtfräsen/Schrippschlichtfräsen/Schruppfräsen
- Entfernung von Verkrustungen
- Allgemeines Fräsen von unterbrochenen Flächen
- Lineare und spiralförmige Rampenbearbeitung

- Sistema di spianatura con inserti positivi a 4 taglienti
- Efficace anche nella rimozione della crosta superficiale
- Fresatura generica anche su superfici irregolari
- Lavorazioni in rampa lineare ed elicoidale

- Coupe positive
- Fiable même en conditions d'usinage instables
- Applications générales, même en coupes interrompues
- Usinages en ramping et interpolation hélicoïdale

Application range - ISO 513

P M K N S



Advantages and features

- High productivity and easy to use.
- Light cutting action with low spindle load.
- Inserts available in E tolerance (ground type) and M tolerance (pressed type) and also in wiper geometry for excellent surface finish.

- Hohe Produktivität und einfache Handhabung.
- Leichter Schnitt mit geringem Verschleiß.
- Erhältlich mit E-Toleranz (geschliffen) und Toleranz M (gepresst).
- Erhältlich mit Wiper-Geometrie für ein gutes Oberflächenergebnis.

- Elevata produttività e di facile utilizzo.
- Azione di taglio leggero con basso assorbimento di potenza.
- Inserti diponisbili in tolleranza E (rettificati) e tolleranza M (stampati) e anche con geometria wiper per ottima finitura superficiale.

- Rendement élevé et facile à utiliser.
- Faibles efforts de coupe et peu de consommation de puissance
- Disponible avec tolérance E (rectifiée) et tolérance M (brut de frittage).
- Disponible avec une géométrie Wiper pour une bonne finition de surface.

SORMA DIAMOND & CUTTING TOOLS

4FACEPLUS

Face milling system for general machining

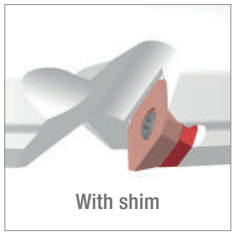
Milling holders

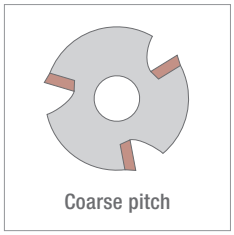
- Shell mill type with shim
- From D50 to D200

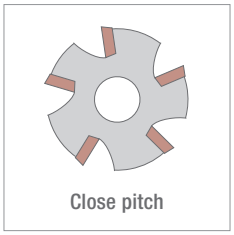
- Hülsenaufnahme mit Ausgleichsscheibe
- D50 bis D200

- Attacco a manicotto con sottoplacchetta
- Da D50 a D200

- Type mandrin avec assise
- Du D50 à D200


With shim


Coarse pitch


Close pitch

Inserts

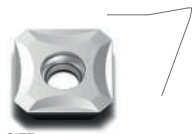
- 4 cutting edges
- Edge length 13 with APMX = 6 mm
- CVD and PVD coated and uncoated carbide grades.
- Geometries: SC, GP, TE, AL, GG, GH, Flat, WU

- 4 Schneidkanten
- Länge der Schneidkante 13 mit APMX = 6 mm
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, TE, AL, GG, GH, Flat, WU

- 4 taglienti
- Lunghezza del tagliente 13 con APMX = 6 mm
- Gradi in metallo duro nudo e rivestito CVD e PVD
- Geometrie: SC, GP, TE, AL, GG, GH, Flat, WU

- 4 arêtes de coupe
- Taille de plaquette 13 avec APMX = 6 mm
- Nuances en carbure revêtues CVD et PVD
- Géométries : SC, GP, TE, AL, GG, GH, Flat, WU

SC P M S


SIZE 13

GP P M


SIZE 13

TE P


SIZE 13

AL N


SIZE 13

GG K


SIZE 13

GH K


SIZE 13

FLAT K


SIZE 13

WU P K

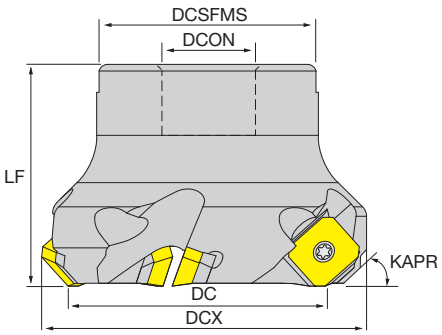

SIZE 13

SORMA DIAMOND & CUTTING TOOLS

NT-SE

4FacePlus

- Positive general face milling cutters
- With shims to protect the insert seats
- Kapr 45°, without coolant through





45° KAPR | FACING | INTERMITTENT

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT	MIID			Stock
ARBOR MOUNTING											
NT-SE13 D040-F16-Z03	40	3	16	40	35	53	-	SE∞13T3			◉
NT-SE13 D050-F22-Z04	50	4	22	40	40	63	0.41	SE∞13T3			●
NT-SE13 D050-F22-Z05	50	5	22	50	40	63	0.39	SE∞13T3			●
NT-SE13 D063-F22-Z05	63	5	22	50	50	76	0.71	SE∞13T3			●
NT-SE13 D063-F22-Z06	63	6	22	50	50	76	0.7	SE∞13T3			●
NT-SE13 D080-F27-Z06	80	6	27	50	60	93	1.06	SE∞13T3			●
NT-SE13 D080-F27-Z08	80	8	27	50	60	93	1.02	SE∞13T3			●
NT-SE13 D100-F32-Z07	100	7	32	50	80	113	1.56	SE∞13T3			●
NT-SE13 D100-F32-Z10	100	10	32	50	80	113	1.54	SE∞13T3			●
NT-SE13 D125-F40-Z08	125	8	40	63	100	138	2.92	SE∞13T3			●
NT-SE13 D125-F40-Z12	125	12	40	63	100	138	3.04	SE∞13T3			●
NT-SE13 D160-F40-Z10	160	10	40	63	100	173	4.06	SE∞13T3			●
NT-SE13 D200-F60-Z12	200	12	60	63	130	213	6.34	SE∞13T3			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
					
NT-SE13 Dooo-Foo-Zoo	NT-ST35120T15	NT-FTB15	NT-SH004	NT-SR002	NT-WR035

SE

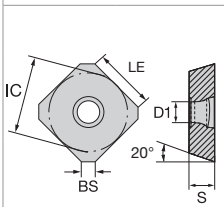
4FacePlus

- Positive general face milling inserts
- Several carbide grades with PVD and CVD coatings and also cermet grades available, covering a wide range of applications
- Sharp/universal/robust/cast iron specific/ wiper geometries available

HT: Cermet
HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7530	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU4525	JU6520
Stable machining, light cut	● 1st choice ○ suitable		●				○		●	●
General machining, medium cut	● 1st choice ○ suitable	○	○	●	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲		✱	✲	✱		✱		

Dimensions



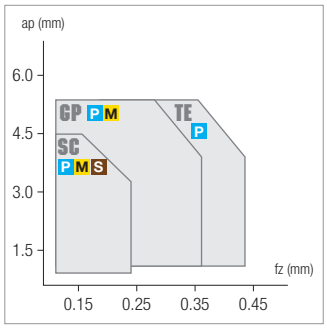
4 edges

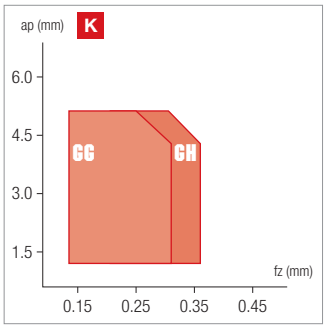
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO										
P		**130 300**		**100 260**		**100 280**		**130 300**		
M			**90 210**	60 180			**80 200**			
K	**160 320**	160 320			**140 300**					
N									**300 1100**	
S			**30 70**				**20 60**			
H										

	Designation		BS	IC	S	D1	LE	Stock									
GENERAL	GP P M S	SEET13T3AGEN-GP	1.2	13.4	3.97	4.4	8.8				●		●	●	●		
		SEMT13T3AGEN-GP	1.2	13.4	3.97	4.4	8.8		●	●	●		●	●			
GENERAL	GG K	SEET13T3AGSN-GG	1.3	13.4	3.97	4.4	8.8					●					
																	
LOW FORCE	SC P M S	SEET13T3AGEN-SC	1.7	13.4	3.97	4.4	8.8			●	●		●	●			
																	
REINFORCED	TE P	SEET13T3AGSN-TE	1.2	13.4	3.97	4.4	8.8				●						
		SEMT13T3AGSN-TE	1.2	13.4	3.97	4.4	8.8		●		●		●				
REINFORCED	GH K	SEET13T3AGSN-GH	1.3	13.4	3.97	4.4	8.8					●					
																	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





SORMA DIAMOND & CUTTING TOOLS

SE

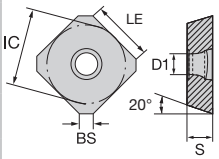
4FacePlus

- Positive general face milling inserts
- Several carbide grades with PVD and CVD coatings and also cermet grades available, covering a wide range of applications
- Sharp/universal/robust/cast iron specific/ wiper geometries available

HT: Cermet
HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
		JC7530	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU4525	JU6520
Stable machining, light cut	● 1st choice ◯ suitable		●				◯		●	●
General machining, medium cut	● 1st choice ◯ suitable	◯	◯	●	●	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲		✱	✲	✱		✱		

Dimensions

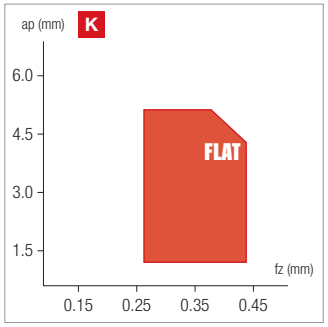


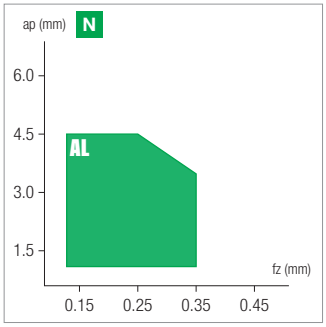
4 edges

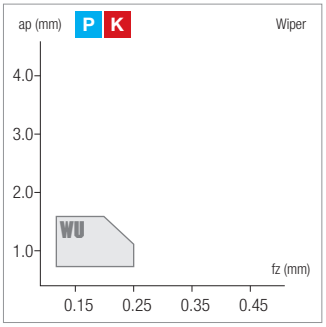
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
P		**130 300**		**100 260**		**100 280**		**130 300**											
M			**90 210**	60 180			**80 200**												
K	**160 320**	160 320			**140 300**														
N									**300 1100**										
S			**30 70**				**20 60**												
H																			

	Designation		BS	IC	S	D1	LE	Stock
REINFORCED	**Flat Top** K	**SEEW13T3AGSN**	7.5	13.4	3.97	4.4	8.8	▽
ALUMINIUM	**AL** N	**SEET13T3AGFN-AL**	2.2	13.4	3.97	4.4	8.8	●
	polished surface periphery ground							
WIPER	**WU** P K	**SEET13T3-WU**	7.5	13.4	3.97	4.4	8.8	● ●
	1 edge							

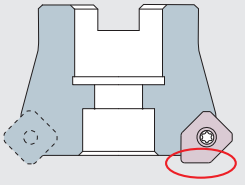
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







WIPER POSITION



The wiper insert must be mounted face towards the centre of the holder.
Only 1 wiper insert per setup.

MILLING Parameters - cutting speed - 4FACEPLUS

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	100	**150**	200
			30%	200	**240**	280	160	**200**	240	160	**210**	260
			10%	260	**280**	300	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	90	**130**	170
			30%	160	**200**	240	120	**160**	200	130	**170**	210
			10%	220	**240**	260	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120	80	**110**	140
			30%	120	**160**	200	100	**130**	160	120	**150**	180
			10%	200	**220**	240	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	60	**100**	140	80	**120**	160
			30%	110	**160**	210	80	**130**	180	100	**150**	200
			10%	130	**190**	250	100	**160**	220	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130				60	**90**	120
			30%	80	**110**	140				70	**100**	130
			10%	90	**120**	150				80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	60	**90**	120	80	**110**	140
			30%	110	**150**	190	80	**120**	160	100	**140**	180
			10%	130	**170**	210	100	**140**	180	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140				70	**100**	130
			30%	90	**120**	150				80	**110**	140
				100	**130**	160				90	**120**	150
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max			
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	**200**	240	140	**180**	220			
			30%	180	**230**	280	160	**210**	260			
			10%	200	**260**	320	180	**240**	300			
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**160**	200	100	**140**	180			
			30%	140	**190**	240	120	**170**	220			
			10%	160	**220**	280	140	**200**	260			
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**130**	160	90	**120**	150			
			30%	120	**160**	200	120	**150**	180			
			10%	140	**190**	240	150	**180**	210			
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500						
			30%	400	**600**	800						
			10%	500	**800**	1100						
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300						
			30%	300	**350**	400						
			10%	400	**450**	500						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40			
			30%	40	**50**	60	30	**40**	50			
			10%	50	**60**	70	40	**50**	60			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60			
			30%				50	**60**	70			
			10%				60	**70**	80			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

SORMA DIAMOND & CUTTING TOOLS

JU4525						
min	start	max				
130	**180**	230				
200	**240**	280				
260	**280**	300				
120	**150**	180				
180	**210**	240				
230	**250**	270				
90	**120**	150				
150	**180**	210				
190	**220**	250				

Complete workpiece materials p. **M**1.

MILLING Parameters - depth of cut and feed rate - 4FACEPLUS

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SEoT13T3AGEN-GP	100%	1.00	**3.00**	5.00	0.08	**0.15**	0.22
	30%	1.00	**3.00**	5.00	0.10	**0.19**	0.28
	10%	1.00	**3.00**	5.00	0.12	**0.22**	0.32
SEET13T3AGEN-SC	100%	0.50	**2.50**	4.50	0.06	**0.11**	0.16
	30%	0.50	**2.50**	4.50	0.08	**0.14**	0.20
	10%	0.50	**2.50**	4.50	0.09	**0.16**	0.23
SEoT13T3AGSN-TE	100%	1.00	**3.00**	5.00	0.11	**0.20**	0.29
	30%	1.00	**3.00**	5.00	0.14	**0.25**	0.36
	10%	1.00	**3.00**	5.00	0.16	**0.29**	0.42
SEoT13T3AGSN-GG	100%	0.50	**2.50**	4.50	0.10	**0.18**	0.26
	30%	0.50	**2.50**	4.50	0.12	**0.22**	0.32
	10%	0.50	**2.50**	4.50	0.14	**0.26**	0.38
SEoT13T3AGSN-GH	100%	1.00	**3.00**	5.00	0.13	**0.23**	0.33
	30%	1.00	**3.00**	5.00	0.16	**0.28**	0.40
	10%	1.00	**3.00**	5.00	0.19	**0.33**	0.47
SEEW13T3AGSN	100%	1.00	**3.00**	5.00	0.14	**0.24**	0.34
	30%	1.00	**3.00**	5.00	0.18	**0.30**	0.42
	10%	1.00	**3.00**	5.00	0.21	**0.35**	0.49
SEET13T3AGFN-AL	100%	0.50	**2.50**	4.50	0.06	**0.11**	0.16
	30%	0.50	**2.50**	4.50	0.08	**0.14**	0.20
	10%	0.50	**2.50**	4.50	0.09	**0.16**	0.23
SEET13T3-WU	100%	0.50	**1.00**	1.50	0.06	**0.13**	0.20
	30%	0.50	**1.00**	1.50	0.08	**0.16**	0.24
	10%	0.50	**1.00**	1.50	0.09	**0.18**	0.27

OKTOPLUS

8 edges face milling system

Application

- Face milling system with positive 8-cutting-edge inserts
- Reliable even for irregular hard skin removal
- General face milling, even on irregular surfaces

- Schlichtfräsen/Schrippschlichtfräsen/Schruppfräsen
- Entfernung von Verkrustungen
- Allgemeines Fräsen von unterbrochenen Flächen

- Sistema di spianatura con inserti positivi a 8 taglienti
- Efficace anche nella rimozione della crosta superficiale
- Fresatura generica, anche su superfici irregolari

- Surfaçage avec plaquettes 8 arêtes de coupe
- Fiable même en conditions d'usinage instables
- Applications générales, même en coupes interrompues

Application range - ISO 513

P M K N S



Advantages and features

- Super-positive cutter with a very light cutting action.
- Great performances even on circular interpolation milling.
- Excellent performances on difficult to machine materials (ISO M and ISO S).
- Extremely complete range of chipbreakers in both ground (E tolerance) and pressed (M tolerance) versions.

- Super positive Schneidkante mit extrem sanfter Schneidbewegung.
- Ausgezeichnete Leistungen auch beim Fräsen mit Kreisinterpolation.
- Hervorragende Leistung bei schwer zu bearbeitenden Materialien (ISO-Gruppen M und S).
- Komplettes Angebot an Spanteilern in geschliffener (Tol. E) und geprägter (Tol. M) Ausführung.

- Tagliente super positivo con azione di taglio estremamente delicata.
- Eccellenti prestazioni anche in fresatura con interpolazione circolare.
- Prestazioni eccellenti su materiali difficili da lavorare (Gruppi ISO M ed S).
- Gamma di rompitruciolo estremamente completa nelle versioni rettificato (toll. E) e stampato (toll. M).

- Géométrie super positive avec de faibles efforts de coupe
- Excellentes performances également en interpolation hélicoidale
- Excellentes performances sur matériaux difficiles à usiner (groupes ISO M et S).
- Gamme extrêmement complète de brise-copeaux dans les versions rectifiées (tol. E) et brut de frittage (tol. M).

SORMA DIAMOND & CUTTING TOOLS

OKTOPLUS

8 edges face milling system

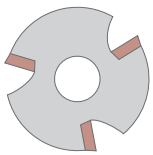
Milling holders

- Shell mill through coolant type
- From D50 to D160

- Hülsenaufnahme mit Kühlmittel
- D50 bis D160

- Attacco a manicotto con refrigerante interno
- Da D50 a D160

- Type mandrin avec arrosage interne
- Du D50 à D160



Coarse pitch



Fine pitch

Inserts

- 8 cutting edges
- Edge length 06 with APMX = 4 mm and 05 with APMX = 3
- CVD and PVD coated and uncoated carbide grades
- Geometries: SC, GP, TE, AL, WU

- 8 Schneidkanten
- Länge der Schneidkante 06 mit APMX = 4 mm und 05 mit APMX = 3
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, TE, AL, WU

- 8 taglienti
- Lunghezza del tagliente 06 con APMX = 4 mm e 05 con APMX = 3
- Gradi in metallo duro nudo e rivestito CVD e PVD
- Geometrie: SC, GP, TE, AL, WU

- 8 arêtes de coupe
- Taille de plaquette 06 avec APMX = 4 mm et 05 avec APMX = 3
- Nuances en carbure revêtues CVD et PVD
- Géométries : SC, GP, TE, AL, WU

OKTOPLUS OD

SC P M S



SIZE 06

GP P M K



SIZE 06

TE P K



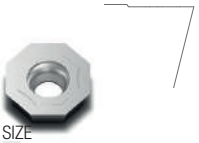
SIZE 06

AL N



SIZE 06

WU P K



SIZE 06

OKTOPLUS OF

GP K



05

AL N



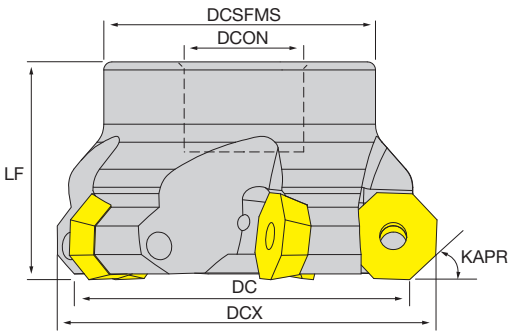
05

SORMA DIAMOND & CUTTING TOOLS

NT-OD

OktoPlus OD

- Positive general face milling cutters
- For octagonal inserts with 8 cutting edges
- Kapr 43°
- With coolant through





INTERNAL COOLANT | FACING | INTERMITTENT

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT	MIID			Stock
ARBOR MOUNTING											
NT-OD06H D050-F22-Z04	50	4	22	40	48	60	0.34	OD∞0605			●
NT-OD06H D063-F22-Z05	63	5	22	40	50	73	0.52	OD∞0605			●
NT-OD06H D080-F27-Z06	80	6	27	50	60	90	1.05	OD∞0605			●
NT-OD06H D100-F32-Z07	100	7	32	50	70	110	1.48	OD∞0605			◉
NT-OD06H D125-F40-Z08	125	8	40	63	80	135	2.6	OD∞0605			◉
NT-OD06H D160-F40-Z10	160	10	40	63	85	170	3.96	OD∞0605			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-OD06H Dooo-Foo-Zoo	NT-ST50110T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

OD

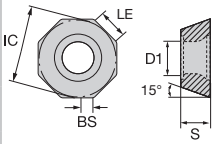
OktoPlus

- Positive general face milling inserts
- 8 cutting edges
- Kapr 43°
- Several carbide grades with PVD and CVD coating grades available, covering a wide range of applications
- Sharp/universal/robust/wiper geometries available

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		JC7515	JP5520	JP5530	JP7525	JP9535	JU6520
		HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF
Stable machining, light cut	● 1st choice ◯ suitable	●	◯				●
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable			✲	✱	✱	

Dimensions



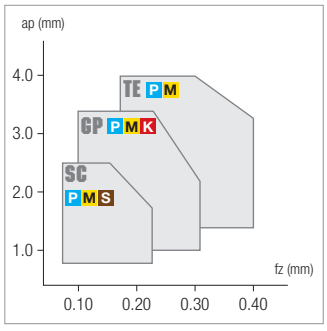
8 edges

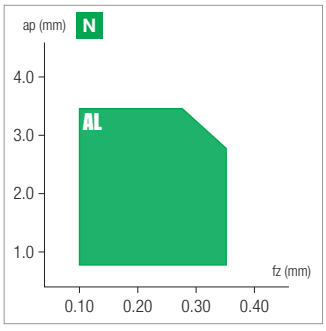
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

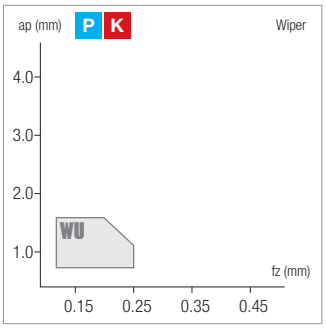
ISO	JC7515	JP5520	JP5530	JP7525	JP9535	JU6520
P		100 260	100 260			
M		60 180	60 180		80 200	
K	180 360			140 300		
N						300 1100
S					20 60	
H						

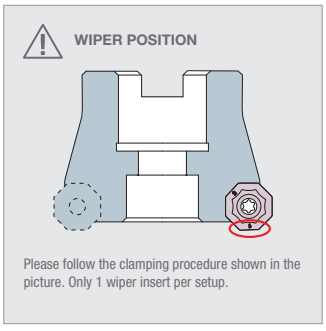
	Designation		BS	IC	S	D1	LE	JC7515	JP5520	JP5530	JP7525	JP9535	JU6520
GENERAL	GP P M K S	ODKT060508-GP	1.8	15.875	5.56	5.5	5				▽	●	
		ODMT060508-GP	1.8	15.875	5.56	5.5	5	⦿	▽	●	○	●	
LOW FORCE	SC P M S	ODKT060508-SC	1.8	15.875	5.56	5.5	5		▽	▽		○	
REINFORCED	TE P K	ODMT060508-TE	1.8	15.875	5.56	5.5	5	○		○	⦿		
ALUMINUM	AL N	ODKT060508-AL	1.8	15.875	5.56	5.5	5						●
	polished surface periphery ground												
WIPER	WU P K	ODKW060508-WU	6.4	15.875	5.56	5.5	5		▽	⦿	⦿		
	2 edges												

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







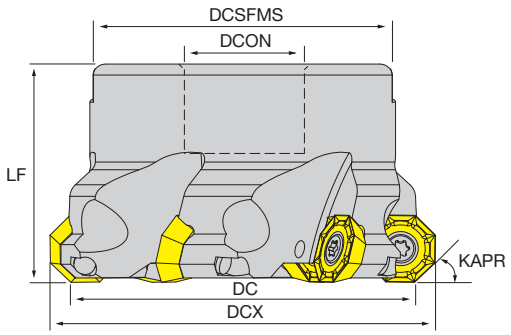


SORMA DIAMOND & CUTTING TOOLS

NT-OF

OktoPlus OF

- Positive general face milling cutters
- For octagonal inserts with 8 cutting edges
- Kapr 43°
- With coolant through





INTERNAL COOLANT

FACING

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT	MIID			Stock
ARBOR MOUNTING											
NT-OF05H D050-F22-Z05	50	5	22	40	47	58	0.34	OFKT05T3			●
NT-OF05H D063-F22-Z06	63	6	22	40	56	71	0.58	OFKT05T3			●
NT-OF05H D080-F27-Z07	80	7	27	50	60	88	0.91	OFKT05T3			●
NT-OF05H D100-F32-Z08	100	8	32	50	70	108	1.4	OFKT05T3			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-OF05H Dooo-Foo-Zoo	NT-ST40110T15HQ	NT-FTB15

OF

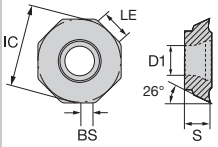
OktoPlus

- Positive general face milling inserts
- 8 cutting edges
- Kapr 43°
- Several carbide grades with PVD and CVD coating grades available, covering a wide range of applications
- Universal and ALU geometries available

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
CVD: Chemical vapor deposition

		HC CVD	HF
		JC7530	JU6520
Stable machining, light cut	● 1st choice ◯ suitable		●
General machining, medium cut	● 1st choice ◯ suitable	◯	●
Unstable machining, heavy cut	● 1st choice ◯ suitable	◯	

Dimensions



8 edges

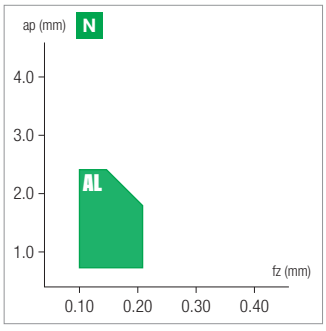
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
	JC7530	JU6520
P		
M		
K	**160 320**	
N		**300 1100**
S		
H		

	Designation		BS	IC	S	D1	LE	JC7530	JU6520	Stock
GENERAL	GP K	OFKT05T305-GP	1.1	12.7	3.97	4.4	4	⦿		
ALUMINIUM	AL N	OFKT05T305-AL	1.1	12.7	3.97	4.4	4		⦿	



polished surface
periphery ground

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	**140**	180
			30%	160	**200**	240
			10%	220	**240**	260
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	**120**	160
			30%	120	**160**	200
			10%	180	**200**	220
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	**90**	120
			30%	100	**130**	160
			10%	140	**170**	200

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	**100**	140	90	**130**	170	80	**120**	160
			30%	80	**130**	180	110	**160**	210	100	**150**	200
			10%	100	**160**	220	130	**190**	250	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				70	**100**	130	60	**90**	120
			30%				80	**110**	140	70	**100**	130
			10%				90	**120**	150	80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	**90**	120	90	**120**	150	80	**110**	140
			30%	80	**120**	160	110	**150**	190	100	**140**	180
			10%	100	**140**	180	130	**170**	210	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				80	**110**	140	70	**100**	130
			30%				90	**120**	150	80	**110**	140
							100	**130**	160	90	**120**	150

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JP7525 min	JP7525 start	JP7525 max	JC7530 min	JC7530 start	JC7530 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	140	**180**	220	160	**200**	240
			30%	200	**260**	320	160	**210**	260	180	**230**	280
			10%	220	**290**	360	180	**240**	300	200	**260**	320
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	100	**140**	180	120	**160**	200
			30%	160	**220**	280	120	**170**	220	140	**190**	240
			10%	200	**260**	320	140	**200**	260	160	**220**	280
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	90	**120**	150			
			30%	140	**180**	220	120	**150**	180			
			10%	180	**220**	260	150	**180**	210			

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500
			30%	400	**600**	800
			10%	500	**800**	1100
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300
			30%	300	**350**	400
			10%	400	**450**	500

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40
			30%	40	**50**	60	30	**40**	50
			10%	50	**60**	70	40	**50**	60
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60
			30%				50	**60**	70
			10%				60	**70**	80

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
OFKT05T305-GP	100%	1.00	**2.00**	3.00	0.08	**0.12**	0.16
	30%	1.00	**2.00**	3.00	0.10	**0.15**	0.20
	10%	1.00	**2.00**	3.00	0.12	**0.18**	0.24
ODoT060508-GP	100%	1.00	**2.50**	4.00	0.10	**0.18**	0.26
	30%	1.00	**2.50**	4.00	0.12	**0.22**	0.32
	10%	1.00	**2.50**	4.00	0.14	**0.26**	0.38
ODKT060508-SC	100%	0.50	**2.00**	3.50	0.08	**0.14**	0.20
	30%	0.50	**2.00**	3.50	0.10	**0.17**	0.24
	10%	0.50	**2.00**	3.50	0.12	**0.20**	0.28
ODoT060508-TE	100%	1.00	**2.50**	4.00	0.12	**0.21**	0.30
	30%	1.00	**2.50**	4.00	0.14	**0.26**	0.38
	10%	1.00	**2.50**	4.00	0.16	**0.30**	0.44
OFKT05T305-AL	100%	0.50	**1.50**	2.50	0.08	**0.11**	0.14
	30%	0.50	**1.50**	2.50	0.10	**0.14**	0.18
	10%	0.50	**1.50**	2.50	0.12	**0.17**	0.22
ODKT060508-AL	100%	0.50	**2.00**	3.50	0.08	**0.14**	0.20
	30%	0.50	**2.00**	3.50	0.10	**0.17**	0.24
	10%	0.50	**2.00**	3.50	0.12	**0.20**	0.28
ODKW060508-WU	100%	0.50	**1.00**	1.50	0.06	**0.13**	0.20
	30%	0.50	**1.00**	1.50	0.08	**0.16**	0.24
	10%	0.50	**1.00**	1.50	0.09	**0.18**	0.27

DOUBLE4FACE

Double sided face milling system

Application

- Face milling system with double sided 8-cutting-edge inserts.
- Affective even for irregular hard skin removal
- General face milling, even on irregular surfaces

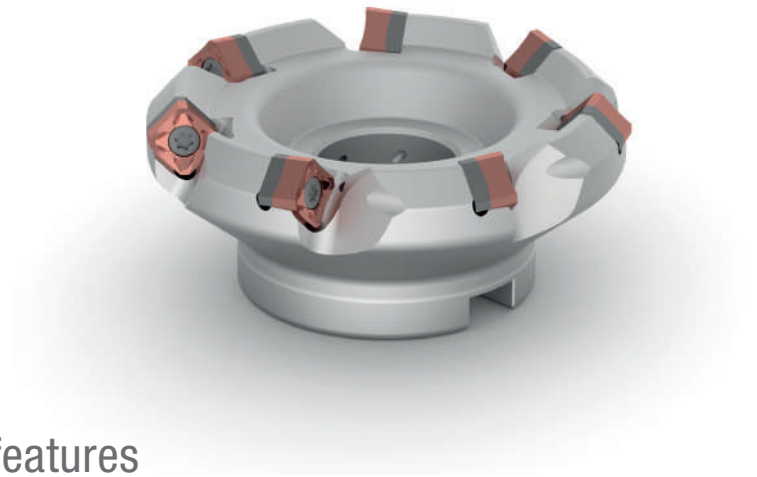
- Schlichtfräsen/Schrippschlichtfräsen/Schruppfräsen
- Entfernung von Verkrustungen
- Allgemeines Fräsen von unterbrochenen Flächen

- Sistema per spianatura con inserti bilaterali a 8 taglienti
- Efficace anche nella rimozione della crosta superficiale
- Spianatura anche di superfici irregolari

- Surfaçage
- Fiable même en conditions d'usinage instables
- Applications générales, même en coupes interrompues

Application range - ISO 513

P M K N S



Advantages and features

- Curved geometry generates low cutting force and smooth cutting process.
- Shim style cutter in the entire range guarantees stable machining and operational.
- Complete range covering ISO P, M, K, N, S materials (with both PVD and CVD coating).
- Inserts available in E tolerance for high precision machining and M tolerance for general machining

- Die gekrümmte Geometrie erzeugt geringe Schnittkräfte und gleichmäßige Schnitte.
- Der verdickte Körper in der gesamten Serie gewährleistet eine hohe operative Stabilität.
- Komplettes Angebot an Qualitäten für die Bearbeitung von Materialien der ISO-Gruppen P, M, K, N, S (mit PVD- und CVD-Beschichtung).
- Präzise Wendeschneidplatten mit E-Toleranz oder geformte Wendeschneidplatten mit M-Toleranz - beide mit hoher Genauigkeit und extrem kosteneffizienten Lösungen erhältlich.

- La geometria ricurva genera bassi sforzi di taglio.
- I corpi con sottoplacchetta assicurano elevata stabilità del processo.
- Gamma completa di gradi che copre le lavorazioni su materiali dei gruppi ISO P, M, K, N, S (con rivestimento PVD e CVD).
- Inserti disponibili in classe E per lavorazioni precise e classe M per lavorazioni generiche.

- La géométrie incurvée génère de faibles efforts de coupe et des coupes douces.
- Le corps avec assises sur toute la gamme assure un usinage stable.
- Gamme complète de nuances couvrant l'usinage de matériaux des groupes ISO P, M, K, N, S (avec revêtement PVD et CVD).
- Plaquettes disponibles en tolérance E pour un susinage de haute précision et en tolérance M pour les applications générales

SORMA DIAMOND & CUTTING TOOLS

DOUBLE4FACE

Double sided face milling system

Milling holders

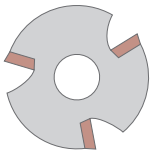
- Shell mill type with shim
- From D50 to D160

- Hülsenaufnahme mit Ausgleichsscheibe
- D50 bis D160

- Attacco a manicotto con sottoplacchetta
- Da D50 a D160

- Type mandrin avec assises
- Du D50 à D160


With shim


Coarse pitch


Fine pitch


Extra fine pitch

Inserts

- 8 cutting edges
- Edge length 12 with APMX = 3 mm
- CVD and PVD coated and uncoated carbide grades
- Geometries: SC, GP, TE, AL, WU wiper

- 8 Schneidkanten
- Länge der Schneidkante 12 mit APMX = 3 mm
- CVD- und PVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, TE, AL, WU wiper

- 8 taglienti
- Lunghezza del tagliente 12 con APMX = 3 mm
- Gradi in metallo duro nudo e rivestito CVD e PVD
- Geometrie: SC, GP, TE, AL, WU wiper

- 8 arêtes de coupe
- Taille plaquette 12 avec APMX = 3 mm
- Nuances en carbure revêtues CVD et PVD
- Géométries : SC, GP, TE, AL, WU wiper

SC P M S


SIZE
12

GP P M K


SIZE
12

TE P K


SIZE
12

AL N


SIZE
12

WU P K

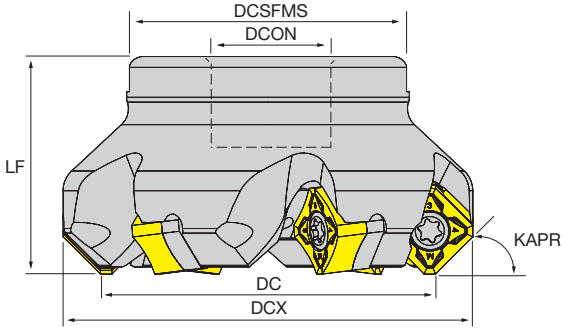

SIZE
12

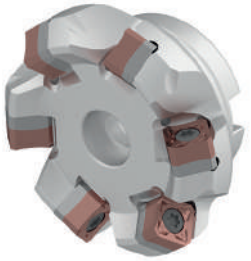
SORMA DIAMOND & CUTTING TOOLS

NT-SX

Double4Face

- Double-sided face milling cutters, Kapr 45°
- With shims to protect the insert seats
- For double-sided square inserts with 8 cutting edges
- With coolant through





45° KAPR | INTERNAL COOLANT | FACING | INTERMITTENT

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT				Stock
ARBOR MOUNTING											
NT-SX12H D050-F22-Z04	50	4	22	40	48	64	0.48				●
NT-SX12H D050-F22-Z05	50	5	22	40	48	64	0.46				●
NT-SX12H D063-F22-Z05	63	5	22	50	52	77	0.69				●
NT-SX12H D063-F22-Z06	63	6	22	50	52	77	0.67				●
NT-SX12H D080-F27-Z06	80	6	27	50	60	94	1.29				●
NT-SX12H D080-F27-Z07	80	7	27	50	60	94	1.27				●
NT-SX12H D080-F27-Z08	80	8	27	50	60	94	1.25				●
NT-SX12H D100-F32-Z07	100	7	32	50	70	114	1.64				●
NT-SX12H D100-F32-Z08	100	8	32	50	70	114	1.62				●
NT-SX12H D100-F32-Z09	100	9	32	50	70	114	1.59				●
NT-SX12H D125-F40-Z10	125	10	40	63	80	139	2.92				●
NT-SX12H D160-F40-Z12	160	12	40	63	85	174	4.36				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SX12H Dooo-Foo-Zoo	NT-ST40136T15	NT-FTB15	NT-SH009	NT-SR009	NT-WR040

SN

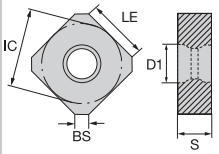
Double4Face

- Double-sided face milling inserts
- 8 cutting edges
- Curved design effectively reduces cutting force
- Kapr 45°
- Several carbide grades with PVD and CVD coating grades available, covering a wide range of applications

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		JC7515	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU6520
		HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF
Stable machining, light cut	● 1st choice ○ suitable	●	●				○		●
General machining, medium cut	● 1st choice ○ suitable	●	○	●	●	●	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable			✱	✲	✱		✱	

Dimensions



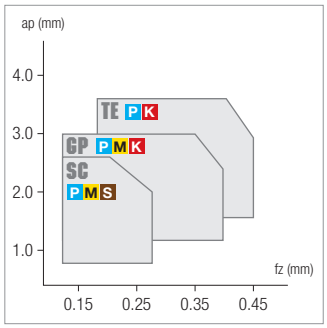
8 edges

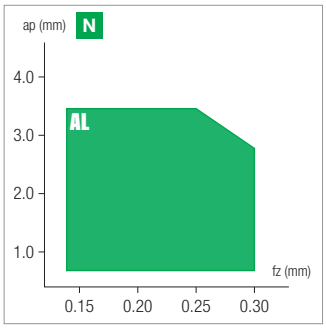
ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

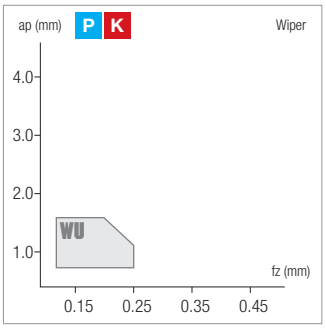
ISO	JC7515	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU6520
P		**130 300**		**100 260**		**100 280**		
M			**90 210**	60 180			**80 200**	
K	**180 360**	160 320			**140 300**			
N								**300 1100**
S			**30 70**				**20 60**	
H								

	Designation		BS	IC	S	D1	LE	Stock
GENERAL	GP P M K S	SNEX1205ANEN-GP	1.6	12.7	6.35	5.9	9.1	● ● ● ▲ ● ▲
		SNMX1205ANEN-GP	1.6	12.7	6.35	5.9	9.1	● ● ● ● ▲ ● ▲
LOW FORCE	SC P M K S	SNEX1205ANEN-SC	1.6	12.7	6.35	5.9	9.1	● ● ● ⦿ ● ●
REINFORCED	TE P K	SNEX1205ANSN-TE	1.6	12.7	6.35	5.9	9.1	⦿ ● ●
		SNMX1205ANSN-TE	1.6	12.7	6.35	5.9	9.1	▲ ● ● ● ●
ALUMINUM	AL N	SNEX1205ANFN-AL	1.6	12.7	6.35	5.9	9.1	●
WIPER	WU P K	SNEX1205-WU	5.1	12.7	6.35	5.9	9.1	⦿ ○ ⦿

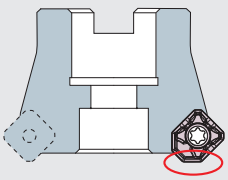
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion







WIPER POSITION



The wiper insert must be mounted face towards the centre of the holder.
Only 1 wiper insert per setup.

MILLING Parameters - depth of cut and feed rate - DOUBLE4FACE

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	100	**150**	200
			30%	200	**240**	280	160	**200**	240	160	**210**	260
			10%	260	**280**	300	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	90	**130**	170
			30%	160	**200**	240	120	**160**	200	130	**170**	210
			10%	220	**240**	260	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120	80	**110**	140
			30%	120	**160**	200	100	**130**	160	120	**150**	180
			10%	200	**220**	240	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	60	**100**	140	80	**120**	160
			30%	110	**160**	210	80	**130**	180	100	**150**	200
			10%	130	**190**	250	100	**160**	220	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130				60	**90**	120
			30%	80	**110**	140				70	**100**	130
			10%	90	**120**	150				80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	60	**90**	120	80	**110**	140
			30%	110	**150**	190	80	**120**	160	100	**140**	180
			10%	130	**170**	210	100	**140**	180	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140				70	**100**	130
			30%	90	**120**	150				80	**110**	140
				100	**130**	160				90	**120**	150
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	160	**200**	240	140	**180**	220
			30%	200	**260**	320	180	**230**	280	160	**210**	260
			10%	220	**290**	360	200	**260**	320	180	**240**	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	120	**160**	200	100	**140**	180
			30%	160	**220**	280	140	**190**	240	120	**170**	220
			10%	200	**260**	320	160	**220**	280	140	**200**	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	100	**130**	160	90	**120**	150
			30%	140	**180**	220	120	**160**	200	120	**150**	180
			10%	180	**220**	260	140	**190**	240	150	**180**	210
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500						
			30%	400	**600**	800						
			10%	500	**800**	1100						
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300						
			30%	300	**350**	400						
			10%	400	**450**	500						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40			
			30%	40	**50**	60	30	**40**	50			
			10%	50	**60**	70	40	**50**	60			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60			
			30%				50	**60**	70			
			10%				60	**70**	80			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SNoX1205ANEN-GP	100%	1.00	**2.00**	3.00	0.13	**0.21**	0.29
	30%	1.00	**2.00**	3.00	0.16	**0.26**	0.36
	10%	1.00	**2.00**	3.00	0.20	**0.31**	0.42
SNEX1205ANEN-SC	100%	0.50	**1.50**	2.50	0.06	**0.12**	0.18
	30%	0.50	**1.50**	2.50	0.08	**0.15**	0.22
	10%	0.50	**1.50**	2.50	0.10	**0.18**	0.26
SNoX1205ANSN-TE	100%	1.00	**2.00**	3.00	0.16	**0.25**	0.34
	30%	1.00	**2.00**	3.00	0.20	**0.32**	0.44
	10%	1.00	**2.00**	3.00	0.24	**0.38**	0.52
SNEX1205ANFN-AL	100%	0.50	**1.50**	2.50	0.10	**0.20**	0.30
	30%	0.50	**1.50**	2.50	0.12	**0.25**	0.38
	10%	0.50	**1.50**	2.50	0.14	**0.28**	0.42
SNEX1205-WU	100%	0.50	**1.00**	1.50	0.06	**0.13**	0.20
	30%	0.50	**1.00**	1.50	0.08	**0.16**	0.24
	10%	0.50	**1.00**	1.50	0.10	**0.19**	0.28

DOUBLEHEX

Double sided face milling system for cast iron

Application

- Face milling system for cast iron with double sided 12-cutting-edge inserts.
- Adapted for interrupted surfaces
- Effective for casted hard skin removal

- Schruppfräsen oder Schruppschlichtfräsen von Grauguss
- Geeignet für unterbrochene Oberflächen
- Zum Entfernen von Schmelzkrusten geeignet

- Sistema per spianatura di ghisa con inserti bilaterali a 12 taglienti.
- Efficace anche nella rimozione della crosta superficiale
- Spianatura anche di superfici irregolari.

- Surfaçage
- Fiable même en conditions d'usinage instables
- Applications générales, même en coupes interrompues

Application range - ISO 513

K



Advantages and features

- Milling holders available in fine and extra-fine pitch style. The large numer of teeth allows very high table feed and extraordinary productivity.
- wide range of inserts available in E tolerance for high precision machining and M tolerance for general machining
- 3 types of chipbreakers in CVD and PVD coated carbide grades.
- Wide range including carbide, full solid PCBN and silicon nitride inserts.
- Very competitive cost/edge

- Fräser mit feiner und extrafeiner Teilung erhältlich. Die Dichte der Zähne im Fräskörper ermöglicht einen hohen Vorschub bei außergewöhnlicher Produktivität.
- Präzise Wendeschneidplatten in E- oder M-Toleranz, hochpräzise oder sehr kostengünstige Lösungen erhältlich.
- 3 verschiedene Spanbrecher, beide kombiniert mit PVD- und CVD-beschichteten Qualitäten.
- Die Wendeschneidplatten sind auch aus integralem PCBN und Siliziumnitrid erhältlich.
- Extrem attraktive Kosten pro Schneidkante.

- Frese disponibili con passo fine ed extra fine. La densità dei denti nel corpo fresa consente elevati avanzamenti con eccezionale produttività.
- Inserti precisi in tolleranza E o in tolleranza M, disponibili soluzione a elevata precisione o soluzioni altamente economiche.
- 3 diversi rompitruciolo entrambi combinati con gradi rivestiti PVD e CVD.
- Inserti disponibili anche in PCBN integrale e nitruro di silicio.
- Costo per tagliente estremamente competitivo.

- Fraises disponibles en pas fin et extra fin. Le nombre élevé de dents sur le corps de fraise permet des avances élevées avec un rendement exceptionnel.
- Plaquettes disponibles en tolérance E pour un susinage de haute précision et en tolérance M pour les applications générales
- 3 brise-copeaux différents combinés à des nuances revêtues PVD et CVD.
- Plaquettes également disponibles en PCBN intégral et en nitrure de silicium.
- Coût par arêtes extrêmement compétitif.

DOUBLEHEX

Double sided face milling system for cast iron

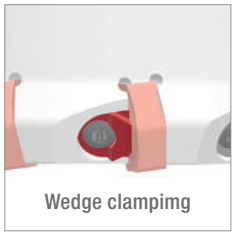
Milling holders

- Shell mill type with shim
- From D80 to D160

- Hülsenaufnahme
- D80 bis D160

- Attacco a manicotto con sottoplacchetta
- Da D80 a D160

- Type mandrin
- Du D80 à D160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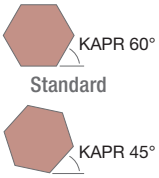
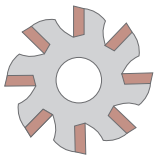


On request


Fine pitch


Extra fine pitch

Inserts

- 12 cutting edges
- Edge length 09 with APMX = 6 mm
- CVD and PVD coated carbide grades, full solid PCBN and ceramic
- Geometries: GL, GG, GH, Advanced

- 12 Schneidkanten
- Länge der Schneidkante 09 mit APMX = 6 mm
- Hartmetallqualitäten mit PVD- und CVD-Beschichtung, integrales PCBN und Keramik
- Geometrien: GL, GG, GH, Advanced

- 12 taglienti
- Lunghezza del tagliente 09 con APMX = 6 mm
- Gradi in metallo duro rivestito CVD e PVD, PCBN integrale e ceramica
- Geometrie: GL, GG, GH, Advanced

- 12 arêtes de coupe
- Taille de plaquette 09 avec APMX = 6 mm
- Nuances en carbure revêtues PVD et CVD, PCBN intégral et céramique
- Géométries : GL, GG, GH, avancées









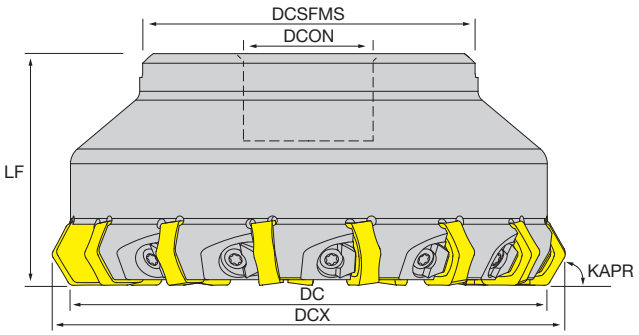


SORMA DIAMOND & CUTTING TOOLS

NT-HN

DoubleHex

- Double-sided face milling cutters specially for cast iron
- For hexagonal inserts with 12 cutting edges
- Kapr 60° and 45° upon request
- Extra fine pitch available





60° KAPR | 45° KAPR | FACING | INTERMITTENT

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT				Stock
ARBOR MOUNTING											
NT-HN09 D080-F27-Z08	80	8	27	50	60	90	1.28				◉
NT-HN09 D080-F27-Z10	80	10	27	50	60	90	1.23				●
NT-HN0945 D080-F27-Z10	80	10	27	50	60	92.4	1.3				◉
NT-HN09 D100-F32-Z10	100	10	32	50	80	110	1.87				●
NT-HN09 D100-F32-Z14	100	14	32	50	80	110	1.8				◉
NT-HN09 D125-F40-Z12	125	12	40	63	88	135	3.55				●
NT-HN09 D125-F40-Z15	125	15	40	63	88	135	3.33				◉
NT-HN09 D160-F40-Z15	160	15	40	63	120	170	5.1				◉
NT-HN09 D160-F40-Z20	160	20	40	63	120	170	4.98				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Wedge	Wedge screw	L wrench
			
NT-HN09 Dooo-Foo-Zoo	NT-WD090	NT-SC090	NT-WR030

HN

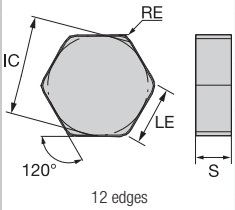
DoubleHex

- Double-sided face milling inserts specially for cast iron
- Hexagonal inserts with 12 cutting edges
- Coated carbide, CBN and ceramic grades available, covering a wide range of applications
- Geometries featuring different applications on cast iron, from light to heavy cutting

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
BH: High CBN volume
CN: Silicon nitride
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

	HC CVD	HF PVD	BH	CN
	JC7515	JP7525	NBH550U	NSN400
Stable machining, light cut (● 1st choice ◯ suitable)	●			●
General machining, medium cut (● 1st choice ◯ suitable)	●	●	●	●
Unstable machining, heavy cut (✱ 1st choice ✱ suitable)		✱	✱	

Dimensions

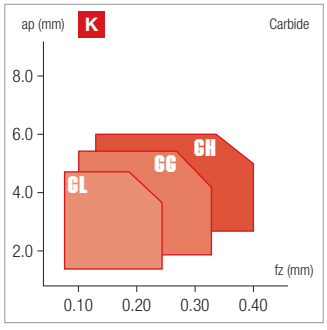


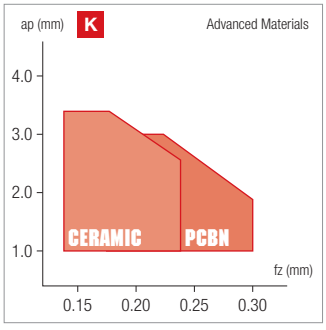
12 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	180 360 / 140 300 / 800 2000 / 400 1000
N	
S	
H	

	Designation		RE	IC	S	LE	AN	Stock
GENERAL	GG K	HNEX090520-GG	2.00	16.2	5.56	9.35	0°	○ ●
		HNMX090520-GG	2.00	16.2	5.56	9.35	0°	⦿ ●
LOW FORCE	GL K	HNEX090510-GL	1.00	16.2	5.56	9.35	0°	⦿ ⦿
		HNEX090520-GL	2.00	16.2	5.56	9.35	0°	⦿ ⦿
REINFORCED	GH K	HNEX090516-GH	1.60	16.2	5.56	9.35	0°	● ⦿
		HNEX090530-GH	3.00	16.2	5.56	9.35	0°	⦿ ⦿
		HNMX090516-GH	1.60	16.2	5.56	9.35	0°	⦿ ⦿
ADVANCED	UE K	HNEN090520S-UE	2.00	16.2	5.56	9.35	0°	⦿
	PCBN full solid							
ADVANCED	UE K	HNEN090520T-UE	2.00	16.2	5.56	9.35	0°	●
		HNEN090530T-UE	3.00	16.2	5.56	9.35	0°	⦿
	CERAMIC silicon nitride							

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JP7525 min	JP7525 start	JP7525 max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	140	**180**	220	
			30%	200	**260**	320	160	**210**	260	
			10%	220	**290**	360	180	**240**	300	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	100	**140**	180	
			30%	160	**220**	280	120	**170**	220	
			10%	200	**260**	320	140	**200**	260	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	90	**120**	150	
			30%	140	**180**	220	120	**150**	180	
			10%	180	**220**	260	150	**180**	210	

ISO 513	MATERIAL	HARDNESS HB	ae/DC	NBH550U min	NBH550U start	NBH550U max	NSN400 min	NSN400 start	NSN400 max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	800	**1000**	1200	400	**600**	800	
			30%	1000	**1300**	1600	550	**750**	950	
			10%	1200	**1600**	2000	800	**900**	1000	

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **H**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
HNoX090520-GG	100%	1.00	**3.00**	5.00	0.10	**0.25**	0.40
	30%	1.00	**3.00**	5.00	0.13	**0.32**	0.51
	10%	1.00	**3.00**	5.00	0.16	**0.38**	0.60
HNEX0905oo-GL	100%	0.50	**2.50**	4.50	0.08	**0.22**	0.36
	30%	0.50	**2.50**	4.50	0.10	**0.27**	0.44
	10%	0.50	**2.50**	4.50	0.12	**0.32**	0.52
HNoX0905oo-GH	100%	1.00	**3.50**	6.00	0.13	**0.31**	0.50
	30%	1.00	**3.50**	6.00	0.16	**0.39**	0.62
	10%	1.00	**3.50**	6.00	0.19	**0.46**	0.73
HNEN0905ooo-UE	100%	1.00	**2.00**	3.00	0.13	**0.28**	0.43
	30%	1.00	**2.00**	3.00	0.16	**0.35**	0.54
	10%	1.00	**2.00**	3.00	0.20	**0.41**	0.62

SORMA DIAMOND & CUTTING TOOLS

SE

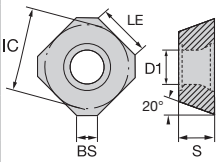
ISO type

- Positive type general face milling inserts
- 4 cutting edges
- Kapr 45°
- Several carbide grades with PVD and CVD coating grades available, covering a wide range of applications
- 3D geometries, general machining, low force, reinforced and aluminium types available

HF: Micrograin tungstein carbide
HT: Cermet
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HF PVD	HF PVD	HT	HF
		JC9540	JP8725	JP9535	JU4525	JU6520
Stable machining, light cut	● 1st choice ○ suitable		○		●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	●		●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱		✱		

Dimensions



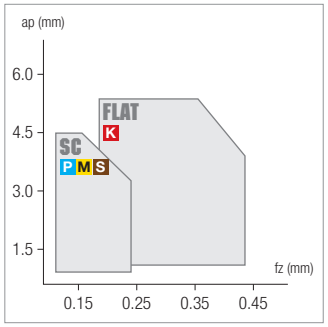
4 edges

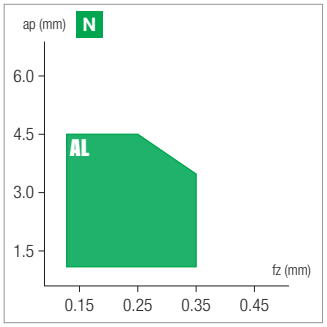
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P		**100 280**		**130 300**																		
M	**90 210**		**80 200**																			
K																						
N					**300 1100**																	
S	**30 70**		**20 60**																			
H																						

	Designation		BS	IC	S	D1	LE	Stock					
LOW FORCE	SC P M S	SEHX1204AFEN-SC	1.6	12.7	4.76	5.5	8.2	⦿	●	○	⦿		
ALUMINIUM	AL N	SEHX1204AFFN-AL	2.5	12.7	4.76	5.5	8.2					●	

polished surface
periphery ground

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



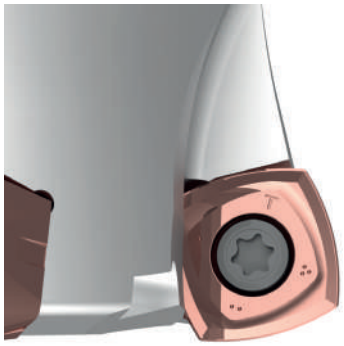


ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP8725 min	JP8725 start	JP8725 max	JU4525 min	JU4525 start	JU4525 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	100%	100	**150**	200	130	**180**	230
			30%	160	**210**	260	200	**240**	280
			10%	220	**250**	280	260	**280**	300
P3 - P4	Medium and high alloy steel (ex. 1.7225/42CrMo4, 1.3505/100Cr6)	200 ÷ 300	100%	90	**130**	170	120	**150**	180
			30%	130	**170**	210	180	**210**	240
			10%	190	**210**	230	230	**250**	270
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X40CrMoV5-1/ORVAR, Hardox400®)	300 ÷ 400	100%	80	**110**	140	90	**120**	150
			30%	120	**150**	180	150	**180**	210
			10%	160	**190**	220	190	**220**	250
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	80	**120**	160
			30%	110	**160**	210	100	**150**	200
			10%	130	**190**	250	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130	60	**90**	120
			30%	80	**110**	140	70	**100**	130
			10%	90	**120**	150	80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	80	**110**	140
			30%	110	**150**	190	100	**140**	180
			10%	130	**170**	210	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140	70	**100**	130
			30%	90	**120**	150	80	**110**	140
				100	**130**	160	90	**120**	150
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7530 min	JC7530 start	JC7530 max			
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	**200**	240			
			30%	180	**230**	280			
			10%	200	**260**	320			
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**160**	200			
			30%	140	**190**	240			
			10%	160	**220**	280			
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max			
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500			
			30%	400	**600**	800			
			10%	500	**800**	1100			
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300			
			30%	300	**350**	400			
			10%	400	**450**	500			
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40
			30%	40	**50**	60	30	**40**	50
			10%	50	**60**	70	40	**50**	60
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60
			30%				50	**60**	70
			10%				60	**70**	80

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SEHX1204AFEN-SC	100%	0.50	**2.00**	3.50	0.06	**0.11**	0.16
	30%	0.50	**2.00**	3.50	0.08	**0.14**	0.20
	10%	0.50	**2.00**	3.50	0.09	**0.16**	0.23
SEHX1204AFFN-AL	100%	0.50	**2.50**	4.50	0.08	**0.17**	0.28
	30%	0.50	**2.50**	4.50	0.10	**0.22**	0.34
	10%	0.50	**2.50**	4.50	0.12	**0.26**	0.40



MILLING High Feed

Quick guide .D90

HF4PLUS .D92

	HF4PLUS SD	HF4PLUS SP
	D94	D97
KAPR / APMX	 SCREW-IN  ARBOR	 SCREW-IN  CYLINDRICAL  ARBOR
KAPR	13°	13°
Insert sizes	10 / 12 / 15	07
APMX	1.5 / 2 / 3	1
Tool diameter	Ø35 - Ø125	Ø20 - Ø52
Coolant holes	✓	✓
Workpiece material	P M K S	P M K S
No. of cutting edges	4	4
No. of geometries	4	2
Special features	special geometry for ISO S	-
Face Milling	✓	✓
Long Overhang	✓	✓
Ramping	✓	✓
Pocketing	✓	✓
Helical Interpolation	✓	✓
Machine load	■■■□□	■■□□□
Strenght	■■■■■	■■■□□
Range	■■■■■	■■■■□

HF4PLUS

High feed milling system, high productivity

Application

- High feed milling
- Profiling and contouring
- Linear or helical ramping
- Pocketing

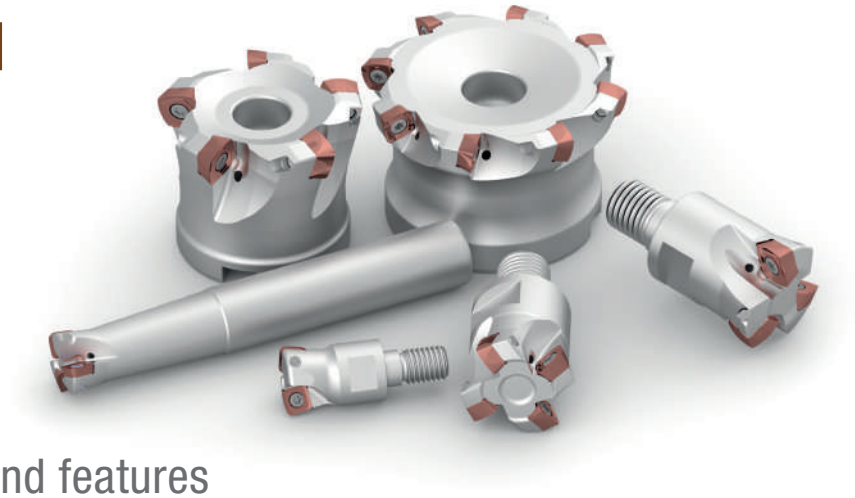
- Schruppschlichtfräsen oder Schruppfräsen von Oberflächen
- Profilierung und Konturierung
- Lineare und spiralförmige Rampenbearbeitung
- Taschenfraesen

- Fresatura ad alto avanzamento
- Profilatura e contornatura
- Lavorazioni in rampa lineare e elicoidale
- Esecuzione di tasche

- Fraisage grande avance
- Rainurage et contournage
- Ramping rectiligne et hélicoïdale
- Usinage de poches

Application range - ISO 513

P M K S



Advantages and features

- High feed machining that effectively reduces cycle time and improves efficiency.
- Versatile in operations and simplifies the process (suitable for face milling, ramping, helical pocketing, vertical milling)
- Multiple-curve edge design improves strenght and reliability.
- Insert sizes from small to large: 07, 10, 12 and 15

- Bearbeitung mit hohem Vorschub, wodurch die Zykluszeit effektiv reduziert und die Prozesseffizienz verbessert wird.
- Vielseitiges System, das Prozesse vereinfacht (kann Planfräsen, Rampenbearbeitung, Spiralschlichten von Taschen, Ausbohrungen und Ansenkungen ausführen, kombiniert Schruppen und Schruppschlichten).
- Die Ausführung mit mehrfach gekrümmter Schneidkante erhöht die Robustheit und Zuverlässigkeit.
- Erhältlich in den Größen 07 (Mini), 10 (gängigste), 12 (häufiger Gebrauch) und 15 (größte).

- Sistema ad alto avanzamento per ridurre il tempo ciclo e migliorare l'efficienza.
- Sistema versatile, semplifica i processi (adatto per spianatura, rampa, esecuzione elicoidale di tasche, fresatura a tuffo).
- Design con tagliente multicurva che migliora robustezza e affidabilità.
- Dimensioni inserti disponibili: 07, 10, 12, 15

- Usinage à avance élevée qui réduit efficacement le temps de cycle et améliore l'efficacité du processus.
- Système polyvalent qui simplifie les process (possibilité de réaliser du surfaçage, ramping, interpolation hélicoïdale, tréflage)
- Conception de l'arête multi-courbe améliorant résistance et fiabilité.
- Tailles de plaquettes disponibles 07, 10 , 12 et 15

SORMA DIAMOND & CUTTING TOOLS

HF4PLUS

High feed milling system, high productivity

Milling holders

- Shell mill type
- Cylindrical shank type
- Screw-in type
- Extension arbors (steel/carbide 10xD)
- From D20 to D125

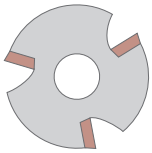
- Hülsenaufnahme
- Aufnahme zylindrisch
- Aufschraubsystem
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D20 bis D125

- Attacco a manicotto
- Attacco cilindrico
- Attacco filettato
- Prolunghe (acciaio/metallo duro 10xD)
- Da D20 a D125

- Type mandrin
- Queue cylindrique
- Embout vissé
- Rallonge (acier/carbure 10xD)
- Du D20 à D125



Extension arbors



Coarse pitch



Fine pitch

Inserts

- 4 edges
- Edge length 07, 10, 12 and 15
- CVD and PVD coated carbide grades
- Geometries: SC, GP, SS, TE

- 4 Schneidkanten
- Länge der Schneidkante 07, 10, 12 und 15
- PVD- und CVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, SS, TE

- 4 taglienti
- Lunghezza del tagliente 07, 10, 12 e 15
- Gradi in metallo duro rivestito CVD e PVD
- Geometrie: SC, GP, SS, TE

- 4 arêtes de coupe
- Taille de plaquette 07, 10, 12 et 15
- Nuances carbure revêtues PVD et CVD
- Géométries : SC, GP, SS, TE







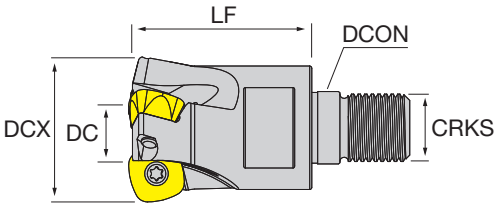


NT-SD

HF4Plus SD

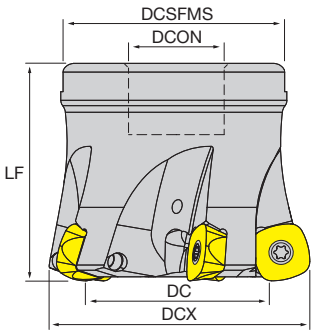
- High feed milling system with positive square inserts, with coolant through
- Diverse combination of diameters and pitches, available with different insert sizes
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw in type holders

Screw-in





Arbor





MEDIUM | ROUGHING | FACING | LONG OVERHANG | POCKETING | RAMPING | HELICAL | LONG | MULTIPLE

Designation	DCX	CICT	DC	DCON	LF	CRKS	WT	MIID			Stock
SCREW-IN											
NT-SD10HF D035-M16-Z04	35	4	20	17	40	M16	0.18	SDMT1004			●
NT-SD10HF D042-M16-Z05	42	5	27	17	40	M16	0.23	SDMT1004			●
NT-SD12HF D032-M16-Z02	32	2	12.5	17	43	M16	0.18	SDMT1205			◉
NT-SD12HF D035-M16-Z03	35	3	15.5	17	43	M16	0.19	SDMT1205			●
NT-SD12HF D040-M16-Z04	40	4	20.5	17	43	M16	0.2	SDMT1205			○
NT-SD12HF D042-M16-Z04	42	4	22.5	17	43	M16	0.22	SDMT1205			●
ARBOR MOUNTING											
NT-SD10HF D050-F22-Z06	50	6	35	22	50	-	0.38	SDMT1004			●
NT-SD10HF D052-F22-Z06	52	6	37	22	50	-	0.39	SDMT1004			●
NT-SD10HF D063-F27-Z07	63	7	48	27	50	-	0.65	SDMT1004			●
NT-SD10HF D066-F27-Z07	66	7	51	27	50	-	0.72	SDMT1004			●
NT-SD10HF D080-F27-Z08	80	8	65	27	50	-	1	SDMT1004			●
NT-SD12HF D042-F16-Z04	42	4	22.5	16	40	-	0.19	SDMT1205			●
NT-SD12HF D050-F22-Z04	50	4	30.5	22	50	-	0.37	SDMT1205			●
NT-SD12HF D050-F22-Z05	50	5	30.5	22	50	-	0.35	SDMT1205			●
NT-SD12HF D052-F22-Z04	52	4	32.5	22	50	-	0.39	SDMT1205			●
NT-SD12HF D052-F22-Z05	52	5	32.5	22	50	-	0.37	SDMT1205			●
NT-SD12HF D063-F22-Z04	63	4	43.5	22	50	-	0.56	SDMT1205			●
NT-SD12HF D063-F27-Z04	63	4	43.5	27	50	-	0.58	SDMT1205			◉
NT-SD12HF D063-F22-Z05	63	5	43.5	22	50	-	0.54	SDMT1205			●
NT-SD12HF D063-F27-Z05	63	5	43.5	27	50	-	0.56	SDMT1205			●
NT-SD12HF D066-F27-Z06	66	6	46.5	27	50	-	0.68	SDMT1205			●
NT-SD12HF D080-F27-Z06	80	6	60.5	27	50	-	0.94	SDMT1205			●
NT-SD12HF D080-F27-Z07	80	7	60.5	27	50	-	0.99	SDMT1205			●
NT-SD12HF D100-F32-Z07	100	7	60.5	32	50	-	1.6	SDMT1205			●
NT-SD15HF D080-F27-Z05	80	5	61	27	50	-	0.8	SDMT1505			●
NT-SD15HF D080-F27-Z06	80	6	61	27	50	-	0.6	SDMT1505			●
NT-SD15HF D100-F32-Z06	100	6	81	32	50	-	1.2	SDMT1505			▲
NT-SD15HF D125-F40-Z07	125	7	106	40	63	-	2.28	SDMT1505			▲
NT-SD15HF-EX D160-F40-Z08	160	8	141	-	63	-	-	SDMT1505			◉
NT-SD15HF D200-F60-Z10	200	10	181	-	63	-	-	SDMT1505			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-SD10HF Dooo-ooo-Zoo	NT-ST35095T15HQ	NT-FTB15
NT-SD12HF Dooo-ooo-Zoo	NT-ST40110T15HQ	NT-FTB15
NT-SD15HF Dooo-ooo-Zoo	NT-ST50110T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

SD

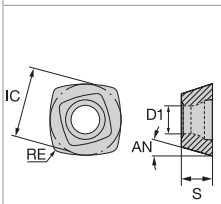
HF4Plus

- GP geometry is for general purpose use
- SC and SS geometries are sharper, for M and S materials
- TE edge is reinforced and stronger
- Available with Several carbide grades covering PMKS applications
- For the program radius and various other parameters for CNC program please go to the technical instruction page, it varies with sizes and geometries

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HC PVD
		JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JP9545
Stable machining, light cut	● 1st choice ○ suitable	●				○		
General machining, medium cut	● 1st choice ○ suitable	○	●	●	●	●	●	○
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	✱	✱		✱	✱

Dimensions

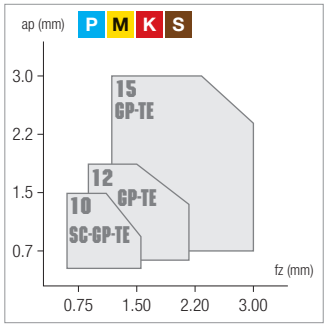


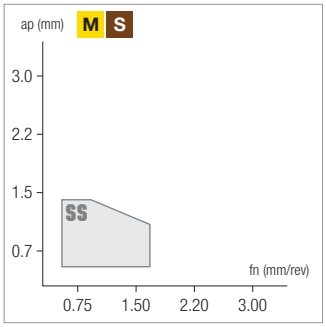
4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
P	**130 300**		**100 260**		**100 280**		
M		**90 210**	60 180			**80 200**	**60 180**
K	160 320			**140 300**			
N							
S		**30 70**				**20 60**	**20 50**
H							

		Designation	RE	IC	S	D1	AN	Stock						
GENERAL	GP P M K S	SDMT100410R-GP	1.00	10	4.76	4	15°	●	●	●	●	●	●	●
		SDMT120512R-GP	1.20	12.7	5.56	4.4	15°	●	●	●	●	●	●	
		SDMT150512R-GP	1.20	15.875	5.56	5.5	15°	●	●			●	●	
BASSI SFORZI	SC P M S	SDMT100410R-SC	1.00	10	4.76	4	15°			●			●	
SHARP	SS M S	SDMT120512R-SS	1.20	12.7	5.56	4.4	15°		●				○	
REINFORCED	TE P M S	SDMT100410R-TE	1.00	10	4.76	4	15°			●		●	◉	
		SDMT120512R-TE	1.20	12.7	5.56	4.4	15°	●		●		●		
		SDMT150512R-TE	1.20	15.875	5.56	5.5	15°	●				●		

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





Rp SUGGESTED PROGRAMMING RADIUS

SDMT 10	2.5
SDMT 12	3.5
SDMT 15	5.0

more details at page D83

SDMT12-SS

SS geometry generates a bigger milling cutter diameter compared to GP and TE types.

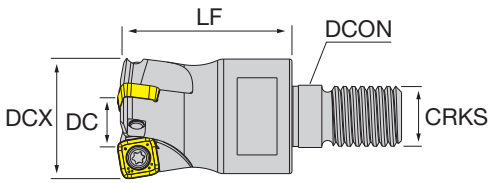
Please add **0.85 mm** to DCX values and **0.40 mm** to LF values, shown on page D78.

NT-SP

HF4Plus SP

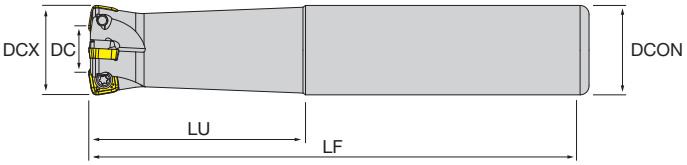
- High feed milling system with positive square inserts, with coolant through
- Diverse combination of diameters and pitches available, focus on small diameters
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw in type holders

Screw-in



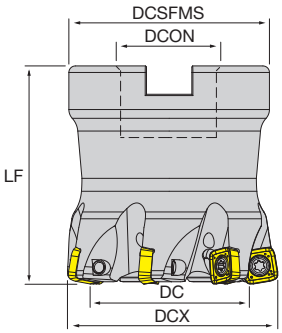


Cylindrical





Arbor





MEDIUM | ROUGHING | FACING | LONG OVERHANG | POCKETING | RAMPING | HELICAL | LONG | MULTIPLE

Designation	DCX	CICT	DC	DCON	LF	LU	CRKS	WT	MIID		Stock
SCREW-IN											
NT-SP07HF D020-M10-Z02	20	2	7.3	10.5	30	-	M10	0.05	SPMT07T2		⦿
NT-SP07HF D020-M10-Z03	20	3	7.3	10.5	30	-	M10	0.04	SPMT07T2		●
NT-SP07HF D025-M12-Z03	25	3	12.3	12.5	35	-	M12	0.1	SPMT07T2		●
NT-SP07HF D025-M12-Z04	25	4	12.3	12.5	35	-	M12	0.1	SPMT07T2		●
NT-SP07HF D032-M16-Z04	32	4	19.3	17	40	-	M16	0.19	SPMT07T2		●
NT-SP07HF D032-M16-Z05	32	5	19.3	17	40	-	M16	0.17	SPMT07T2		●
NT-SP07HF D035-M16-Z05	35	5	22.3	17	40	-	M16	0.2	SPMT07T2		●
NT-SP07HF D042-M16-Z06	42	6	29.3	17	40	-	M16	0.24	SPMT07T2		⦿
CYLINDRICAL SHANK											
NT-SP07HF D020-S20-Z03	20	3	7.3	20	130	50	-	0.26	SPMT07T2		●
NT-SP07HF D025-S25-Z03	25	3	12.3	25	140	60	-	0.44	SPMT07T2		●
NT-SP07HF D025-S25-Z04	25	4	12.3	25	140	60	-	0.4	SPMT07T2		●
NT-SP07HF D032-S32-Z05	32	5	19.3	32	150	70	-	0.79	SPMT07T2		●
ARBOR MOUNTING											
NT-SP07HF D040-F16-Z05	40	5	27.3	16	40	-	35	0.21	SPMT07T2		●
NT-SP07HF D040-F16-Z06	40	6	27.3	16	40	-	35	0.2	SPMT07T2		●
NT-SP07HF D042-F16-Z05	42	5	29.3	16	40	-	35	0.22	SPMT07T2		●
NT-SP07HF D042-F16-Z06	42	6	29.3	16	40	-	35	0.21	SPMT07T2		●
NT-SP07HF D050-F22-Z07	50	7	37.3	22	50	-	46	0.41	SPMT07T2		●
NT-SP07HF D052-F22-Z07	52	7	39.3	22	50	-	46	0.44	SPMT07T2		●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-SP07HF Dooo-ooo-Zoo	NT-ST30070T10HQ	NT-FTB10

SP

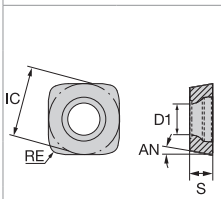
HF4Plus

- GP geometry is for general purpose use
- SC is sharper for M and S materials
- Available with several carbide grades covering PMKS applications
- For the program radius and various other parameters for CNC program please go to the technical instruction page

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HC PVD
		JC8520	**JC9540**	**JP5530**	**JP7525**	**JP9535**	**JP9545**
Stable machining, light cut	● 1st choice ◯ suitable	●					
General machining, medium cut	● 1st choice ◯ suitable	◯	●	●	●	●	◯
Unstable machining, heavy cut	✱ 1st choice ✲ suitable		✱	✲	✱	✱	✱

Dimensions

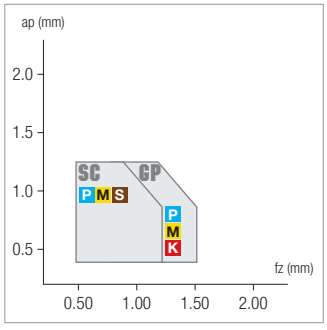


4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P	**130 300**		**100 260**																			
M		**90 210**	60 180		**80 200**	**60 180**																
K	160 320			**140 300**																		
N																						
S		**30 70**			**20 60**	**20 50**																
H																						

	Designation		RE	IC	S	D1	AN	Stock							
GENERAL	GP P M K S	**SPMT07T210R-GP**	1.00	7.8	2.8	3.5	11°	●	●	●	●	●	●	●	
LOW FORCE	SC P M S	**SPMT07T210R-SC**	1.00	7.8	2.8	3.5	11°			●			●		

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



Rp SUGGESTED PROGRAMMING RADIUS

SPMT 07	**2.0**

more details at page D83

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	100	**150**	200
			30%	200	**240**	280	160	**200**	240	160	**210**	260
			10%	260	**280**	300	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	90	**130**	170
			30%	160	**200**	240	120	**160**	200	130	**170**	210
			10%	220	**240**	260	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120	80	**110**	140
			30%	120	**160**	200	100	**130**	160	120	**150**	180
			10%	200	**220**	240	140	**170**	200	160	**190**	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max	JP9545 min	JP9545 start	JP9545 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	80	**120**	160	60	**100**	140
			30%	110	**160**	210	100	**150**	200	80	**130**	180
			10%	130	**190**	250	120	**180**	240	100	**160**	220
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130	60	**90**	120	50	**80**	110
			30%	80	**110**	140	70	**100**	130	60	**90**	120
			10%	90	**120**	150	80	**110**	140	70	**100**	130
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	80	**110**	140	60	**90**	120
			30%	110	**150**	190	100	**140**	180	80	**120**	160
			10%	130	**170**	210	120	**160**	200	100	**140**	180
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140	70	**100**	130	60	**90**	120
			30%	90	**120**	150	80	**110**	140	70	**100**	130
				100	**130**	160	90	**120**	150	80	**110**	140
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max			
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	**200**	240	140	**180**	220			
			30%	180	**230**	280	160	**210**	260			
			10%	200	**260**	320	180	**240**	300			
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**160**	200	100	**140**	180			
			30%	140	**190**	240	120	**170**	220			
			10%	160	**220**	280	140	**200**	260			
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**130**	160	90	**120**	150			
			30%	120	**160**	200	120	**150**	180			
			10%	140	**190**	240	150	**180**	210			
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max	JP9545 min	JP9545 start	JP9545 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40	20	**25**	30
			30%	40	**50**	60	30	**40**	50	30	**35**	40
			10%	50	**60**	70	40	**50**	60	40	**45**	50
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60	30	**40**	50
			30%				50	**60**	70	40	**50**	60
			10%				60	**70**	80	50	**60**	70

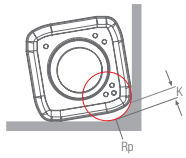
ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

DESIGNATION	ae/DCX	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
SPMT07T210R-GP	100%	0.20	**0.60**	1.00	0.40	**0.70**	1.00
	30%	0.20	**0.60**	1.00	0.50	**0.90**	1.30
	10%	0.20	**0.60**	1.00	0.60	**1.10**	1.60
SDMT100410R-GP	100%	0.30	**0.90**	1.50	0.40	**0.75**	1.10
	30%	0.30	**0.90**	1.50	0.50	**1.00**	1.50
	10%	0.30	**0.90**	1.50	0.60	**1.20**	1.60
SDMT120512R-GP	100%	0.40	**1.20**	2.00	0.60	**0.90**	1.20
	30%	0.40	**1.20**	2.00	0.70	**1.10**	1.50
	10%	0.40	**1.20**	2.00	0.80	**1.30**	1.80
SDMT150512R-GP	100%	0.60	**1.80**	3.00	0.60	**1.00**	1.40
	30%	0.60	**1.80**	3.00	0.80	**1.30**	1.80
	10%	0.60	**1.80**	3.00	0.90	**1.50**	2.10
SPMT07T210R-SC	100%	0.20	**0.60**	1.00	0.30	**0.60**	0.90
	30%	0.20	**0.60**	1.00	0.40	**0.80**	1.20
	10%	0.20	**0.60**	1.00	0.50	**0.90**	1.40
SDMT100410R-SC	100%	0.30	**0.90**	1.50	0.30	**0.70**	1.10
	30%	0.30	**0.90**	1.50	0.40	**0.90**	1.40
	10%	0.30	**0.90**	1.50	0.50	**1.00**	1.50

DESIGNATION	ae/DCX	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
SDMT100410R-TE	100%	0.30	**0.90**	1.50	0.60	**0.90**	1.20
	30%	0.30	**0.90**	1.50	0.70	**1.20**	1.60
	10%	0.30	**0.90**	1.50	0.80	**1.40**	1.60
SDMT120512R-TE	100%	0.40	**1.20**	2.00	0.70	**1.00**	1.30
	30%	0.40	**1.20**	2.00	0.90	**1.30**	1.70
	10%	0.40	**1.20**	2.00	1.00	**1.50**	2.00
SDMT150512R-TE	100%	0.60	**1.80**	3.00	0.80	**1.20**	1.60
	30%	0.60	**1.80**	3.00	1.00	**1.50**	2.00
	10%	0.60	**1.80**	3.00	1.20	**1.80**	2.40
SDMT120512R-SS	100%	0.40	**0.70**	1.00	0.50	**0.80**	1.10
	30%	0.40	**0.70**	1.00	0.60	**1.00**	1.40
	10%	0.40	**0.70**	1.00	0.70	**1.20**	1.70

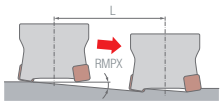
Approximate programming radius adjustment (Rp)



SPMT07			SDMT10			SDMT12 *			SDMT15		
Rp	undercut K	overcut r	Rp	undercut K	overcut r	Rp	undercut K	overcut r	Rp	undercut K	overcut r
1.5	0.69	0	2	1.18	0	3	1.28	0	4.5	1.15	0
2	**0.61**	**0**	**2.5**	**1.02**	**0**	**3.5**	**1.11**	**0**	**5**	**0.99**	**0**
2.5	0.54	0.08	3	0.86	0.02	4	0.95	0.02	5.5	0.82	0.14
3	0.46	0.24	3.5	0.70	0.13	4.5	0.79	0.14	6	0.67	0.03

*for SDMT12-SS programming radius adjustment please see next page. Green background are suggested values.

Parameters for ramping

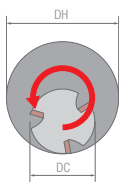


SPMT07			SDMT10			SDMT12 *			SDMT15		
DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L
20	3.5°	2.5	35	1.6°	2	32	4.0°	4.5	80	1°	
25	3.0°	1.6	42	1.5°	1.7	40	2.4°	3.4	100	0.7°	
32	1.2°	1.4	50	0.8°	1.5	42	2.1°	3.2	125	0.5°	
35	1.2°	1.5	52	1.0°	2	50	1.5°	2.9			
40	1.0°	1.3	63	0.6°	1.8	52	1.0°	2			
42	0.9°	1.3	66	0.6°	1.8	63	1.0°	2.5			
52	0.6°	1.2	80	0.4°	1.6	66	0.9°	2.5			
						80	0.7°	2.2			
						100					

*for SDMT12-SS guide for ramping please see next page.

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

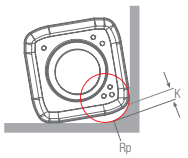


SPMT07			SDMT10			SDMT12 *			SDMT15		
DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.
20	28	40	35	54	70	32	46	64	80	136	157
25	38	50	42	68	84	40	62	80	100	176	197
32	52	64	50	84	100	42	66	84	125	226	247
35	58	70	52	88	104	50	82	100			
40	68	80	63	110	126	52	86	104			
42	72	84	66	116	132	63	108	126			
52	92	104	80	144	160	66	114	132			
						80	142	160			
						100					

*for SDMT12-SS guide for helical milling please see next page.

DH min.: min. cutting dia.; DH max.: max. cutting dia.

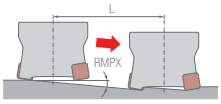
Approximate programming radius adjustment (Rp)



SDMT12-SS		
Rp	undercut K	overcut r
3	1.52	0
3.5	**1.45**	**0**
4	1.28	0.07

Green background are suggested values.

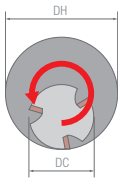
Parameters for ramping



SDMT12-SS		
DCX	RMPX	L
32	5.5°	6
40	3.7°	5.2
42	3.3°	5
50	2.4°	4.4
52	2.2°	4.2
63	1.5°	3.7
66	1.4°	3.5
80	1.0°	3.3

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling



SDMT12-SS		
DCX	DH min.	DH max.
32	42	64
40	58	80
42	62	84
50	78	100
52	82	104
63	104	126
66	110	132
80	138	160

DH min.: min. cutting dia.; DH max.: max. cutting dia.

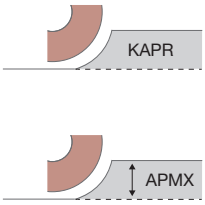


MILLING Profiling

Quick guide .D104

ROUNDPLUS .D106

SORMA DIAMOND & CUTTING TOOLS



	ROUNDPLUS RC	ROUNDPLUS RD	ROUNDPLUS RP
	D108	D110	D115
	 ARBOR	 SCREW-IN  CYLINDRICAL  ARBOR	 ARBOR
KAPR	variable	variable	variable
Insert sizes	12 / 16 / 20	05 / 07 / 10 / 12 / 16	12
APMX	3 / 4 / 5	1.25 / 1.75 / 2.5 / 3 / 4	3
Tool diameter	Ø063 - Ø160	Ø9 - Ø125	Ø42 - Ø80
Coolant holes	✓	✓	✓
Workpiece material	P M S	P M K S	P M S
No. of cutting edges	variable	variable	variable
No. of geometries	1	3	3
Special features	indexing faces	-	-
Face Milling	✓	✓	✓
Profiling	✓	✓	✓
Long Overhang	✓	✓	✓
Ramping	✓	✓	✓
Pocketing	✓	✓	✓
Helical Interpolation	✓	✓	✓
Machine load	■■■■□	■■■□□	■■■□□
Strenght	■■■■■	■■■■□	■■■□□
Range	■■■□□	■■■■■	■■□□□

ROUNDPLUS

Profiling and face milling system

Application

- Versatile milling system for profiling and facing applications
- Suitable for ramping and helical interpolation of pockets
- Finishing/Semifinishing and Rough face milling

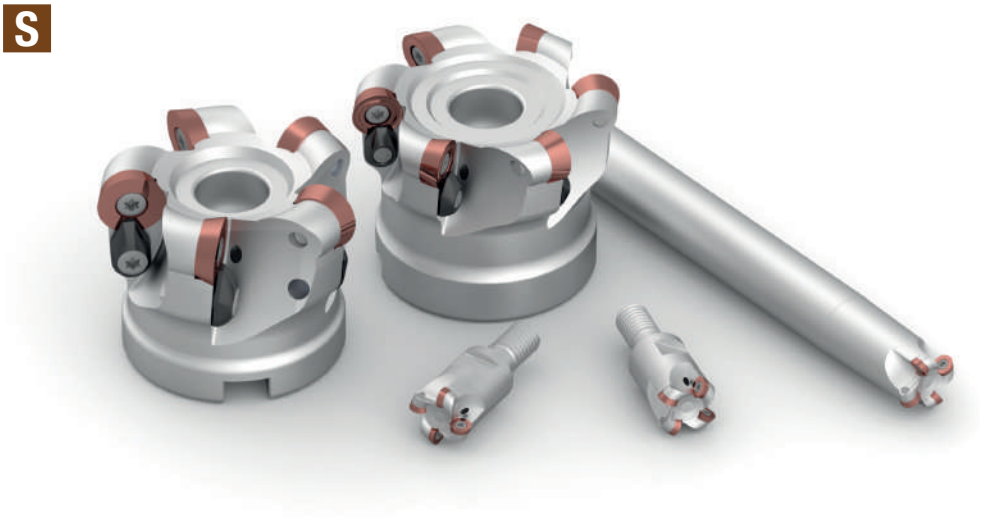
- Schlichtprofilierung oder-fräsen/Schruppschlichtprofilierung oder -fräsen/Schruppprofilierung oder -fräsen
- Schlichtfräsen/Schruppschlichtfräsen/Schruppfräsen
- Die Bearbeitung von Rampen und die Ausführung von Taschen ist möglich

- Sistema di fresatura versatile per profilatura e spianatura
- Adatto alla lavorazione in rampa e all'esecuzione elicodiale di tasche
- Finitura, semi finitura e sgrossatura

- Système de fraisage polyvalent pour les pllications de copiage et surfaçage
- Convient également pour le ramping et l'interpolation hélicoidale
- Finition, semi-finition et ebauche

Application range - ISO 513

P M K S



Advantages and features

- Comprehensive range of insert geometries for finishing, semi finishing and roughing.
- Wide range of milling holders from D9 to D160
- Strong and low cutting force system for stable working and long overhanging application (up to 10xD)
- Multi-functional tool featuring exceptional machining versatility.

- Wendeplatten mit Geometrien zum Schlichten/Schruppschlichten/ Schruppen verfügbar.
- Verschiedene Fräskörper von D9 bis D160 erhältlich.
- Niedrige Schnittkräfte bei guter Robustheit, überhängende Bearbeitung möglich (bis zu 10xD).
- Multifunktionswerkzeug mit guter Flexibilität bei verschiedenen Bearbeitungen.

- Gamma completa di inserti per finitura, semi finitura e sgrossatura.
- Gamma di corpi fresa disponibili da D9 a D160.
- Sistema robusto con bassi sforzi di taglio che consente lavorazioni stabili e con grandi sporgenze (fino a 10xD).
- Utensile multifunzione con buona flessibilità nelle diverse lavorazioni.

- Gamme complète de géométries pour la finition, semi-finition et ébauche
- Gamme de corps de fraise disponibles du D9 au D160.
- Faibles efforts de coupe, permet un usinage avec longs porte à faux (jusqu'à 10xD).
- Outil polyvalent offrant une large gamme d'usinabilité

SORMA DIAMOND & CUTTING TOOLS

ROUNDPLUS

Profiling and face milling system

Cutter bodies

- Shell mill type
- Cylindrical shank type (up to 10xD)
- Screw-in type
- Extension arbors (steel/carbide 10xD)
- From D9 to D160

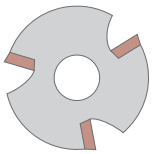
- Hülsenaufnahme
- Aufnahme zylindrisch (bis 10xD)
- Aufschraubsystem
- Erweiterungshülsen (Stahl/Hartmetall 10xD)
- D9 bis D160

- Attacco a manicotto
- Attacco cilindrico (fino a 10xD)
- Attacco filettato
- Prolunghe (acciaio/metallo duro 10xD)
- Da D9 a D160

- Type mandrin
- Queue cylindrique (jusqu'à 10xD)
- Embout vissé
- Rallonge (acier/carbure 10xD)
- Du D9 à D160



Extension arbors



Coarse pitch



Fine pitch

Inserts

- Multi-edges
- IC 05 / 07 / 10 / 12 / 16 / 20
- CVD and PVD coated carbide grades
- Geometries: SC, GP, Flat

- Mehrzahn
- IC 05 / 07 / 10 / 12 / 16 / 20
- PVD- und CVD-beschichtete Hartmetallqualitäten
- Geometrien: SC, GP, Flat

- Multitagliente
- IC 05 / 07 / 10 / 12 / 16 / 20
- Gradi in metallo duro rivestito CVD e PVD
- Geometrie: SC, GP, Flat

- Arêtes de coupe multiples
- IC 05 / 07 / 10 / 12 / 16 / 20
- Nuances carbure revêtues PVD et CVD
- Géométries : SC, GP, Flat

SC P M



SIZE RD 10 12 16 | SIZE RP 12

GP P M S



SIZE RD 10 12 16 | SIZE RP 12

FLAT P K



SIZE RD 07 10 12 16 | SIZE RP 12

FLAT-D6 P



SIZE RD 12

FLAT-D8 P



SIZE RD 12

RCEX inserts



with 8 indexes for easy positioning

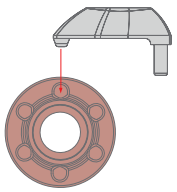
GP P M S



SIZE 16 20

RDEW12 with dots

The clamp NT-CS014 has been designed to facilitate the inserts repositioning.
· The rounded front part perfectly fits in the dots on the insert top face.
· The same clamp fits on flat type inserts and positive inserts with geometries GP and SC.

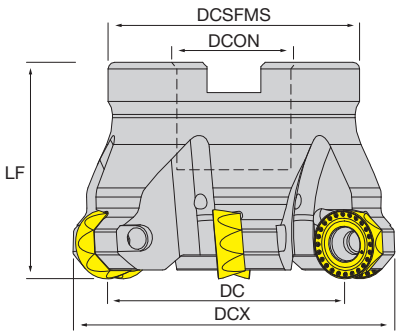


SORMA DIAMOND & CUTTING TOOLS

NT-RC

RoundPlus RC index

- Positive general face milling cutters for RC inserts
- All with coolant through
- Very robust milling solution for massive chip removal application





FINISHING | MEDIUM | ROUGHING | FACING | PROFILING | LONG OVERHANG | RAMPING | POCKETING | HELICAL

Designation	DCX	CICT	DC	DCON	LF	DCSFMS	WT	MIID			Stock
ARBOR MOUNTING											
NT-RC16H D063-F22-Z05	63	5	47	22	50	45	0.46	RCEX1606			●
NT-RC16H D080-F27-Z06	80	6	54	27	50	58	0.78	RCEX1606			●
NT-RC16H D100-F32-Z06	100	6	84	32	50	70	1.26	RCEX1606			●
NT-RC20H D100-F32-Z06	100	6	80	32	50	70	1.19	RCEX2006			●
NT-RC20H D125-F40-Z07	125	7	105	40	63	90	2.71	RCEX2006			●
NT-RC20H D160-F40-Z08	160	8	140	40	63	100	3.98	RCEX2006			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	T wrench
			
NT-RC16H D100-ooo-Zoo	NT-ST50110T20	-	NT-TT20
NT-RC16H Dooo-ooo-Zoo	NT-ST50110T20	NT-FTB20	-
NT-RC20H Dooo-ooo-Zoo	NT-ST60160T25	-	NT-TT25

RC

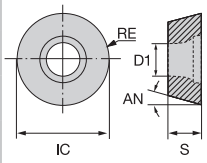
RoundPlus RC index

- GP geometry is for general purpose use
- 8 index facets for seating
- Both PVD and CVD coated carbide grades available
- Very reliable and cost effective solution for massive metal removal operations

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD
		JC8520	**JC9540**	**JP8725**	**JP9535**
Stable machining, light cut	● 1st choice ○ suitable	●		○	
General machining, medium cut	● 1st choice ○ suitable	○	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱		✱

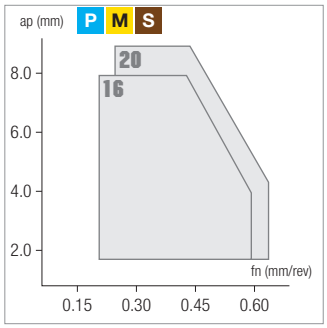
Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P	**130 300**			**100 280**																		
M		**90 210**			**80 200**																	
K	160 320																					
N																						
S		**30 70**			**20 60**																	
H																						

	Designation	RE	IC	S	D1	AN	Stock				
GENERAL	GP P M S	**RCEX1606M0E-GP-8X**	8.00	16	6.35	5.5	7°	●	●	●	●
	 with 8 indexes	**RCEX2006M0E-GP-8X**	10.00	20	6.35	6.5	7°	●	●	●	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SUGGESTED APMX

to make use of all the cutting edges.

SIZE	INDEXES	APMX
RC16	8	2.34 mm
RC20	8	2.93 mm

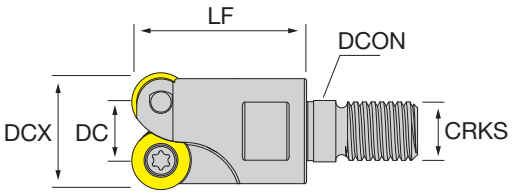
SORMA DIAMOND & CUTTING TOOLS

NT-RD

RoundPlus RD

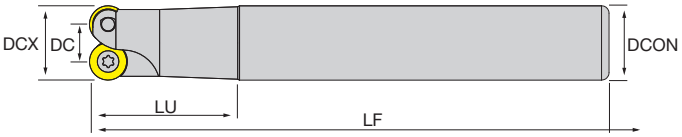
- Positive general face milling cutters for RD inserts, with or without coolant through, various options available
- Very convenient multipurpose tool, at small depth of cut could be used as highfeed, at bigger depth of cut is robust with big radii, can also do profiling and copy milling
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw in type holders

Screw-in



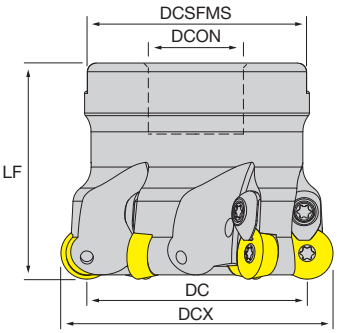


Cylindrical





Arbor





FINISHING | MEDIUM | ROUGHING | FACING | PROFILING | LONG OVERHANG | RAMPING | POCKETING | HELICAL

Designation	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID	Stock
SCREW-IN											
NT-RD05 D012-M06-Z2	12	2	7	6.5	18	-	-	M6	0.01	RDEW0501	▽
NT-RD05 D012-M06-Z3	12	3	7	6.5	18	-	-	M6	0.01	RDEW0501	▽
NT-RD05 D013-M06-Z2	13	2	8	6.5	18	-	-	M6	0.01	RDEW0501	▽
NT-RD05 D013-M06-Z3	13	3	8	6.5	18	-	-	M6	0.01	RDEW0501	▽
NT-RD05 D016-M08-Z4	16	4	11	8.5	23	-	-	M8	0.03	RDEW0501	▽
NT-RD05 D017-M08-Z4	17	4	12	8.5	23	-	-	M8	0.03	RDEW0501	▽
NT-RD07 D016-M08-Z2	16	2	9	8.5	23	-	-	M8	0.03	RDEW0702	▽
NT-RD07H D016-M08-Z03	16	3	9	8.5	23	-	-	M8	0.02	RDEW0702	●
NT-RD07 D017-M08-Z2	17	2	10	8.5	23	-	-	M8	0.03	RDEW0702	▽
NT-RD07 D017-M08-Z3	17	3	10	8.5	23	-	-	M8	0.03	RDEW0702	▽
NT-RD07H D020-M10-Z03	20	3	13	10.5	30	-	-	M10	0.06	RDEW0702	●
NT-RD07 D021-M10-Z2	21	2	14	10.5	30	-	-	M10	0.06	RDEW0702	▽
NT-RD07 D021-M10-Z3	21	3	14	10.5	30	-	-	M10	0.05	RDEW0702	▽
NT-RD07H D025-M12-Z04	25	4	18	12.5	35	-	-	M12	0.09	RDEW0702	●
NT-RD07 D025-M12-Z5	25	5	18	12.5	35	-	-	M12	0.11	RDEW0702	▽
NT-RD07 D026-M12-Z4	26	4	19	12.5	35	-	-	M12	0.1	RDEW0702	▽
NT-RD07 D026-M12-Z5	26	5	19	12.5	35	-	-	M12	0.11	RDEW0702	▽
NT-RD07 D035-M16-Z5	35	5	28	17	43	-	-	M16	0.24	RDEW0702	▽
NT-RD07H D035-M16-Z06	35	6	28	17	43	-	-	M16	0.22	RDEW0702	⦿
NT-RD10H D020-M10-Z02	20	2	10	10.5	20	-	-	M10	0.05	RD∞1003	●
NT-RD10H D025-M12-Z03	25	3	15	12.5	35	-	-	M12	0.09	RD∞1003	●
NT-RD10H D026-M12-Z03	26	3	16	12.5	35	-	-	M12	0.09	RD∞1003	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID	Stock
NT-RD10H D030-M12-Z03	30	3	20	12.5	35	-	-	M12	0.11	RD∞1003	●
NT-RD10H D032-M16-Z03	32	3	22	17	43	-	-	M16	0.2	RD∞1003	●
NT-RD10H D032-M16-Z04	32	4	22	17	43	-	-	M16	0.18	RD∞1003	●
NT-RD10H D035-M16-Z03	35	3	25	17	43	-	-	M16	0.22	RD∞1003	○
NT-RD10H D035-M16-Z04	35	4	25	17	43	-	-	M16	0.2	RD∞1003	●
NT-RD10H D040-M16-Z04	40	4	30	17	43	-	-	M16	0.24	RD∞1003	●
NT-RD10H D042-M16-Z05	42	5	32	17	43	-	-	M16	0.21	RD∞1003	◉
CYLINDRICAL SHANK											
NT-RD05 D009-S08-Z2-L100	9	2	4	8	100	12	-	-	0.04	RDEW0501	▽
NT-RD05H D010-S10-Z02	10	2	5	10	100	18	-	-	0.05	RDEW0501	●
NT-RD05 D011-S10-Z2-L100	11	2	6	10	100	15	-	-	0.06	RDEW0501	▽
NT-RD05H D012-S12-Z03	12	3	7	12	100	22	-	-	0.07	RDEW0501	●
NT-RD05 D013-S12-Z3-L100	13	3	8	12	100	18	-	-	0.08	RDEW0501	▽
NT-RD05H D016-S16-Z04	16	4	11	16	150	30	-	-	0.21	RDEW0501	●
NT-RD07H D016-S16-Z02	16	2	9	16	150	25	-	-	0.21	RDEW0702	●
NT-RD07H D017-S16-Z02	17	2	10	16	150	20	-	-	0.2	RDEW0702	●
NT-RD07H D020-S20-Z03	20	3	13	20	150	35	-	-	0.33	RDEW0702	●
NT-RD07 D021-S20-Z3-L150	21	3	14	20	150	25	-	-	0.35	RDEW0702	▽
NT-RD07H D025-S25-Z05	25	5	18	25	150	40	-	-	0.51	RDEW0702	●
NT-RD07 D026-S25-Z5-L150	26	5	19	25	150	25	-	-	0.55	RDEW0702	▽
NT-RD07 D035-S32-Z6-L150	35	6	28	32	150	30	-	-	0.92	RDEW0702	▽
NT-RD10H D020-S20-Z02	20	2	10	20	150	40	-	-	0.32	RD∞1003	●
NT-RD10H D021-S20-Z02	21	2	11	20	150	25	-	-	0.34	RD∞1003	○
NT-RD10H D025-S25-Z03	25	3	15	25	150	40	-	-	0.5	RD∞1003	●
NT-RD10H D026-S25-Z03	26	3	16	25	150	25	-	-	0.52	RD∞1003	●
NT-RD10H D030-S25-Z03	30	3	20	25	150	25	-	-	0.53	RD∞1003	●
NT-RD10H D032-S32-Z03	32	3	22	32	150	40	-	-	0.82	RD∞1003	●
NT-RD10H D035-S32-Z04	35	4	25	32	150	35	-	-	0.85	RD∞1003	◉
ARBOR MOUNTING											
NT-RD10H D042-F16-Z05	42	5	32	16	40	-	35	-	0.2	RD∞1003	●
NT-RD10H D052-F22-Z06	52	6	42	22	40	-	46	-	0.33	RD∞1003	●
NT-RD12H D040-F16-Z04	40	4	28	16	50	-	38	-	0.22	RD∞1204	○
NT-RD12H D042-F16-Z04	42	4	30	16	50	-	38	-	0.25	RD∞1204	●
NT-RD12H D050-F22-Z04	50	4	38	22	50	-	46	-	0.35	RD∞1204	●
NT-RD12H D050-F22-Z05	50	5	38	22	50	-	46	-	0.37	RD∞1204	●
NT-RD12H D052-F22-Z04	52	4	40	22	50	-	46	-	0.4	RD∞1204	◉
NT-RD12H D052-F22-Z05	52	5	40	22	50	-	46	-	0.42	RD∞1204	●
NT-RD12H D063-F22-Z05	63	5	51	22	50	-	52	-	0.56	RD∞1204	●
NT-RD12H D063-F22-Z06	63	6	51	22	50	-	52	-	0.58	RD∞1204	●
NT-RD12H D066-F22-Z06	66	6	54	22	50	-	56	-	0.71	RD∞1204	●
NT-RD12H D080-F27-Z07	80	7	68	27	50	-	60	-	0.93	RD∞1204	●
NT-RD16H D063-F22-Z05	63	5	47	22	50	-	52	-	0.5	RD∞1604	◉
NT-RD16 D066-F22-Z5	66	5	50	22	50	-	56	-	0.62	RD∞1604	●
NT-RD16H D066-F27-Z05	66	5	50	27	50	-	56	-	0.56	RD∞1604	▲
NT-RD16H D080-F27-Z05	80	5	64	27	50	-	60	-	0.85	RD∞1604	●
NT-RD16H D080-F27-Z06	80	6	64	27	50	-	60	-	0.87	RD∞1604	●
NT-RD16H D100-F32-Z07	100	7	84	32	50	-	70	-	1.22	RD∞1604	●
NT-RD16H D125-F40-Z08	125	8	109	40	63	-	90	-	2.5	RD∞1604	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 	Clamping set 
NT-RD05o DCX ≤ 10	NT-ST20033T06	NT-FTB06	-
NT-RD05o DCX ≥ 11	NT-ST20040T06	NT-FTB06	-
NT-RD07o Doo-oo-Zoo	NT-ST25056T08HQ	NT-FTB08	-
NT-RD10o DCX = 30	NT-ST35095T15HQ	NT-FTB15	-
NT-RD10o DCX ≤ 26	NT-ST35070T15	NT-FTB15	-
NT-RD10o DCX ≥ 32	NT-ST35095T15HQ	NT-FTB15	NT-CS013
NT-RD12H Doo-oo-Zoo	NT-ST40110T15HQ	NT-FTB15	NT-CS014
NT-RD16 Doo-oo-Zoo	NT-ST45110T20	-	NT-CS021
NT-RD16H Doo-oo-Zoo	NT-ST45110T20	-	NT-CS021

SORMA DIAMOND & CUTTING TOOLS

RD

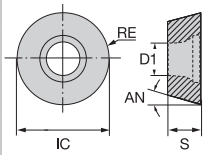
RoundPlus RD

- GP geometry is for general purpose use, SC geometry is sharper
- Reinforced with chamfer edge type available in multiple sizes
- Both PVD and CVD coated different carbide grades available
- Different dots fits with the same universal clamp on our cutters
- Very reliable and cost efficient solution for multiple purpose and massive metal removal operations

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
	JC7515	**JC9540**	**JP5520**	**JP5530**	**JP7525**	**JP8725**	**JP9535**	**JU4525**
Stable machining, light cut (● 1st choice ○ suitable)	●		○			○		●
General machining, medium cut (● 1st choice ○ suitable)	●	●	●	●	●	●	●	
Unstable machining, heavy cut (✱ 1st choice ✱ suitable)		✱		✱	✱		✱	

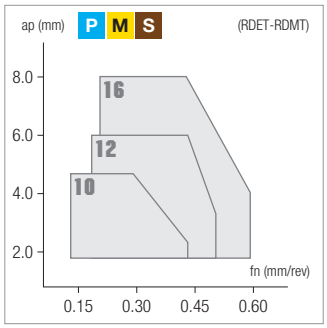
Dimensions

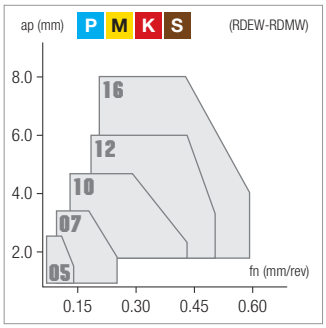


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)							
P			100 260	100 260		100 280		130 300
M		90 210	60 180	60 180			80 200	
K	180 360				140 300			
N								
S		30 70					20 60	
H								

	Designation		RE	IC	S	D1	AN	Stock
GENERAL	GP P M S	RDET0803M0E-GP	4.00	8	3.18	2.9	15°	○
		RDET1003M0E-GP	5.00	10	3.18	4.4	15°	● ●
		RDET10T3M0E-GP	5.00	10	3.97	4.4	15°	⦿ ⦿
		RDET1204M0E-GP	6.00	12	4.76	4.4	15°	● ● ● ●
		RDET1604M0E-GP	8.00	16	4.76	5.5	15°	⦿ ●
		RDMT1204M0E-GP	6.00	12	4.76	4.4	15°	●
LOW FORCE	SC P	RDET1003M0E-SC	5.00	10	3.18	4.4	15°	▽
		RDET10T3M0E-SC	5.00	10	3.97	4.4	15°	▽
		RDET1204M0E-SC	6.00	12	4.76	4.4	15°	●
		RDET1604M0E-SC	8.00	16	4.76	5.5	15°	▽ ⦿ ●
REINFORCED	M0E P M K S	RDEW0501M0E	2.50	5	1.51	2.2	15°	● ⦿ ● ○
	flat type honed edge	RDEW0702M0E	3.50	7	2.38	2.8	15°	● ▽
REINFORCED	M0T P K	RDEW0702M0T	3.50	7	2.38	2.8	15°	● ● ●
		RDEW1003M0T	5.00	10	3.18	4.4	15°	● ● ●
		RDEW10T3M0T	5.00	10	3.97	4.4	15°	▽ ⦿
		RDEW1204M0T	6.00	12	4.76	4.4	15°	● ● ●
		RDEW1604M0T	8.00	16	4.76	5.5	15°	● ●
	flat type chamfered edge	RDMW1604M0T	8.00	16	4.76	5.5	15°	● ●
REINFORCED	M0T-D6 P	RDEW1605M0T-D6	8.00	16	5.66	5.5	15°	▽
		RDMW1204M0T-D6	6.00	12	4.76	4.4	15°	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





SUGGESTED APMX

to make use of all the cutting edges.

SIZE	INDEXES	APMX
RD12	6	3.00 mm
RD12	8	1.76 mm
RD16	6	3.99 mm
RD16	8	2.34 mm

SORMA DIAMOND & CUTTING TOOLS

RD

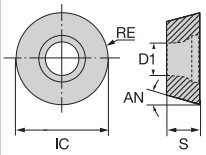
RoundPlus RD

- GP geometry is for general purpose use, SC geometry is sharper
- Reinforced with chamfer edge type available in multiple sizes
- Both PVD and CVD coated different carbide grades available
- Different dots fits with the same universal clamp on our cutters
- Very reliable and cost efficient solution for multiple purpose and massive metal removal operations

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
HT: Cermet
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
		JC7515	**JC9540**	**JP5520**	**JP5530**	**JP7525**	**JP8725**	**JP9535**	**JU4525**
Stable machining, light cut	● 1st choice ◯ suitable	●		◯			◯		●
General machining, medium cut	● 1st choice ◯ suitable	●	●	●	●	●	●	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱		✱	✱		✱	

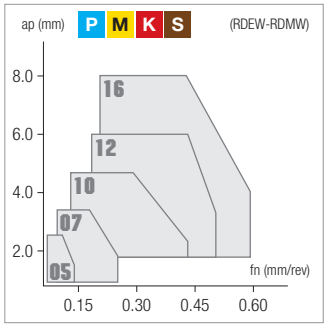
Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
P			**100 260**	**100 260**		**100 280**		**130 300**												
M		**90 210**	60 180	60 180			**80 200**													
K	**180 360**				**140 300**															
N																				
S		**30 70**					**20 60**													
H																				

Designation		RE	IC	S	D1	AN	Stock								
REINFORCED	**M0T-D8** P K														
	RDEW1204M0T-D8	6.00	12	4.76	4.4	15°				⦿					
	RDEW12T3M0T-D8	6.00	12	3.97	4.4	15°				⦿		●			
	RDMW1204M0T-D8	6.00	12	4.76	4.4	15°	○			⦿					
	RDMW1605M0T-D8	8.00	16	5.66	5.5	15°				●					

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SUGGESTED APMX

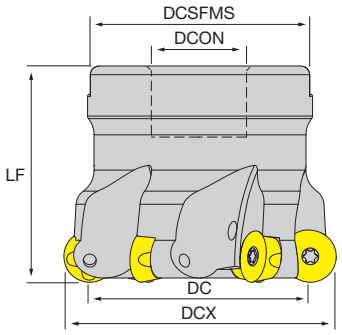
to make use of all the cutting edges.

SIZE	INDEXES	APMX
RD12	6	3.00 mm
RD12	8	1.76 mm
RD16	6	3.99 mm
RD16	8	2.34 mm

NT-RPX

RoundPlus RP index

- Positive general face milling cutters for RP inserts
- All with coolant through
- High clearance angle useful for M and S material roughing





FINISHING | MEDIUM | ROUGHING | FACING | PROFILING | LONG OVERHANG | RAMPING | POCKETING | HELICAL

Designation	DCX	CICT	DC	DCON	LF	DCSFMS	WT	MIID			Stock
ARBOR MOUNTING											
NT-RPX12H D042-F16-Z04	42	4	30	16	50	38	0.26	RP∞1204			●
NT-RPX12H D050-F22-Z05	50	5	38	22	50	46	0.4	RP∞1204			●
NT-RPX12H D052-F22-Z05	52	5	40	22	50	46	0.4	RP∞1204			●
NT-RPX12H D063-F22-Z06	63	6	51	22	50	52	0.59	RP∞1204			●
NT-RPX12H D066-F22-Z06	66	6	54	22	50	56	0.73	RP∞1204			●
NT-RPX12H D080-F27-Z07	80	7	68	27	50	60	0.94	RP∞1204			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-RPX12H Dooo-Foo-Zoo	NT-ST40110T15HQ	NT-FTB15

RP

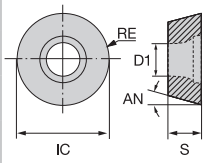
RoundPlus RP index

- GP geometry is for general purpose use
- 8 index facets for seating
- Both PVD and CVD coated carbide grades available

HF: Micrograin tungstein carbide
HC: Coated tungstein carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

		HC CVD	HF PVD	HF PVD
		JC9540	JP5530	JP9535
Stable machining, light cut	1st choice / suitable			
General machining, medium cut	1st choice / suitable	●	●	●
Unstable machining, heavy cut	1st choice / suitable	✱	✲	✱

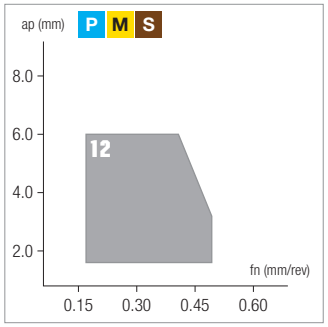
Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
P		**100 260**		
M	**90 210**	60 180	**80 200**	
K				
N				
S	**30 70**		**20 60**	
H				

	Designation		RE	IC	S	D1	AN	Stock		
GENERAL	GP M S	RPET1204M0T-GP-4X	6.00	12	4.76	4.4	11°	●		
	4 indexes chamfered edge									
LOW FORCE	SC P M S	RPET1204M0E-SC-4X	6.00	12	4.76	4.4	11°	●	⦿	●
	4 indexes chamfered edge									
REINFORCED	TB M S	RPMT1204M0T-TB-8X	6.00	12	4.76	4.4	11°	●		
	8 indexes chamfered edge									

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SUGGESTED APMX

to make use of all the cutting edges.

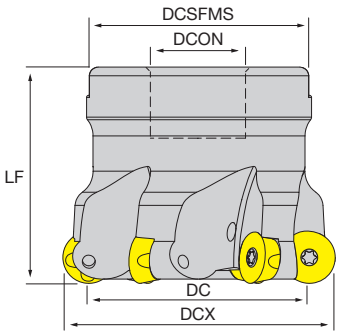
SIZE	INDEXES	APMX
RP12	4	6.00 mm
RP12	8	1.76 mm

SORMA DIAMOND & CUTTING TOOLS

NT-RP

RoundPlus RP

- Positive general face milling cutters for RP inserts
- All with coolant through
- High clearance angle useful for M and S material roughing





FINISHING | MEDIUM | ROUGHING | FACING | PROFILING | LONG OVERHANG | RAMPING | POCKETING | HELICAL

Designation	DCX	CICT	DC	DCON	LF	DCSFMS	WT	MIID			Stock
ARBOR MOUNTING											
NT-RP12H D042-F16-Z04	42	4	30	16	50	38	0.26	RP∞1204			○
NT-RP12H D050-F22-Z05	50	5	38	22	50	46	0.4	RP∞1204			●
NT-RP12H D052-F22-Z05	52	5	40	22	50	46	0.4	RP∞1204			●
NT-RP12H D063-F22-Z06	63	6	51	22	50	52	0.59	RP∞1204			●
NT-RP12H D066-F22-Z06	66	6	54	22	50	56	0.73	RP∞1204			◉
NT-RP12H D080-F27-Z07	80	7	68	27	50	60	0.94	RP∞1204			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Clamping set
			
NT-RP12H Dooo-Foo-Zoo	NT-ST40110T15HQ	NT-FTB15	NT-CS013

RP

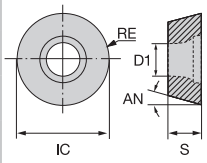
RoundPlus RP

- Sharp / general purpose /reinforced with chamfer edge types available
- Flat top surface or with geometries all fit with the same universal-clamp on our cutters
- Both PVD and CVD coated different carbide grades available
- Very reliable and cost efficient solution for roughing, especially on stainless steel or heat resistant super alloys

HC: Coated tungstein carbide
HF: Micrograin tungstein carbide
CVD: Chemical vapor deposition
PVD: Physical vapor deposition

	HC CVD	HF PVD	HF PVD	HF PVD
	JC9540	**JP5530**	**JP8725**	**JP9535**
Stable machining, light cut (● 1st choice ○ suitable)			○	
General machining, medium cut (● 1st choice ◔ suitable)	●	●	●	●
Unstable machining, heavy cut (✱ 1st choice ✲ suitable)	✱	✲		✱

Dimensions

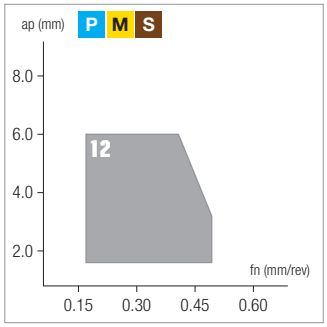


ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

ISO	HC CVD	HF PVD	HF PVD	HF PVD
P		**100 260**	**100 280**	
M	**90 210**	60 180		**80 200**
K				
N				
S	**30 70**			**20 60**
H				

Designation		RE	IC	S	D1	AN	Stock			
GENERAL	GP P M S	**RPET1204M0E-GP**	6.00	12	4.76	4.4	11°	●		●	●
	 with chipbreaker **honed edge**	**RPMT1204M0E-GP**	6.00	12	4.76	4.4	11°	●	●	●	⦿
REINFORCED	M0T P	**RPEW1204M0T**	6.00	12	4.76	4.4	11°		●		
		**RPMW1204M0T**	6.00	12	4.76	4.4	11°		●	●	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SUGGESTED APMX

to make use of all the cutting edges.

SIZE	INDEXES	APMX
RP12	4	6.00 mm
RP12	8	1.76 mm

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max	JU4225 min	JU4225 start	JU4225 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	**140**	180	100	**150**	200	130	**180**	230
			30%	160	**200**	240	160	**210**	260	200	**240**	280
			10%	220	**240**	260	220	**250**	280	260	**280**	300
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	**120**	160	90	**130**	170	120	**150**	180
			30%	120	**160**	200	130	**170**	210	180	**210**	240
			10%	180	**200**	220	190	**210**	230	230	**250**	270
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	**90**	120	80	**110**	140	90	**120**	150
			30%	100	**130**	160	120	**150**	180	150	**180**	210
			10%	140	**170**	200	160	**190**	220	190	**220**	250
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	60	**100**	140	80	**120**	160
			30%	110	**160**	210	80	**130**	180	100	**150**	200
			10%	130	**190**	250	100	**160**	220	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130				60	**90**	120
			30%	80	**110**	140				70	**100**	130
			10%	90	**120**	150				80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	60	**90**	120	80	**110**	140
			30%	110	**150**	190	80	**120**	160	100	**140**	180
			10%	130	**170**	210	100	**140**	180	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140				70	**100**	130
			30%	90	**120**	150				80	**110**	140
				100	**130**	160				90	**120**	150
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP7525 min	JP7525 start	JP7525 max						
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	140	**180**	220						
			30%	160	**210**	260						
			10%	180	**240**	300						
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	100	**140**	180						
			30%	120	**170**	220						
			10%	140	**200**	260						
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	90	**120**	150						
			30%	120	**150**	180						
			10%	150	**180**	210						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP9535 min	JP9535 start	JP9535 max			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**30**	40			
			30%	40	**50**	60	30	**40**	50			
			10%	50	**60**	70	40	**50**	60			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	**50**	60			
			30%				50	**60**	70			
			10%				60	**70**	80			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

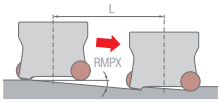
MILLING Parameters - depth of cut and feed rate - ROUNDPLUS

SORMA DIAMOND & CUTTING TOOLS

DESIGNATION	ae/DCX	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
IC=10 GP chipbreaker	100%	0.50	**1.50**	2.50	0.10	**0.18**	0.26
	30%	1.00	**3.00**	5.00	0.12	**0.21**	0.30
	10%	1.00	**3.00**	5.00	0.16	**0.28**	0.40
IC=12 GP and TB chipbreaker	100%	1.00	**2.00**	3.00	0.12	**0.23**	0.34
	30%	1.00	**3.50**	6.00	0.16	**0.28**	0.40
	10%	1.00	**3.50**	6.00	0.20	**0.35**	0.50
IC=16 GP chipbreaker	100%	1.00	**2.50**	4.00	0.16	**0.28**	0.40
	30%	1.00	**4.50**	8.00	0.20	**0.33**	0.46
	10%	1.00	**4.50**	8.00	0.24	**0.42**	0.60
IC=20 GP chipbreaker	100%	1.00	**3.00**	5.00	0.18	**0.33**	0.48
	30%	1.00	**5.50**	10.00	0.22	**0.40**	0.58
	10%	1.00	**5.50**	10.00	0.30	**0.50**	0.70
IC=12 SC chipbreaker	100%	1.00	**2.00**	3.00	0.12	**0.20**	0.28
	30%	1.00	**3.50**	6.00	0.14	**0.24**	0.34
	10%	1.00	**3.50**	6.00	0.16	**0.28**	0.40
IC=16 SC chipbreaker	100%	1.00	**2.50**	4.00	0.14	**0.25**	0.36
	30%	1.00	**4.50**	8.00	0.18	**0.30**	0.42
	10%	1.00	**4.50**	8.00	0.22	**0.35**	0.48

DESIGNATION	ae/DCX	DEPTH OF CUT ap (mm)			FEED RATE fz (mm)		
		min	start	max	min	start	max
IC=05 Flat (MOE)	100%	0.25	**0.75**	1.25	0.04	**0.06**	0.08
	30%	0.50	**1.50**	2.50	0.06	**0.08**	0.10
	10%	0.50	**1.50**	2.50	0.08	**0.10**	0.12
IC=07 Flat (MOE, MOT)	100%	0.25	**1.00**	1.75	0.08	**0.12**	0.16
	30%	0.50	**2.00**	3.50	0.10	**0.15**	0.20
	10%	0.50	**2.00**	3.50	0.12	**0.18**	0.24
IC=10 Flat (MOT)	100%	0.50	**1.50**	2.50	0.12	**0.20**	0.28
	30%	1.00	**3.00**	5.00	0.15	**0.25**	0.35
	10%	1.00	**3.00**	5.00	0.18	**0.30**	0.42
IC=12 Flat (MOT)	100%	1.00	**2.00**	3.00	0.16	**0.27**	0.38
	30%	1.00	**3.50**	6.00	0.20	**0.34**	0.48
	10%	1.00	**3.50**	6.00	0.24	**0.40**	0.56
IC=16 Flat (MOT)	100%	1.00	**2.50**	4.00	0.19	**0.32**	0.45
	30%	1.00	**4.50**	8.00	0.24	**0.40**	0.56
	10%	1.00	**4.50**	8.00	0.28	**0.47**	0.66

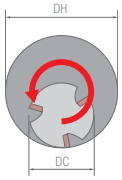
Parameters for ramping



NT-RD05H			NT-RD07H			NT-RD10H			
DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L	
10	6.2°	2.1	16	4.7°	2.6	20	9.4°	6.6	
12	4.4°	1.8	17	4.1°	2.4	21	6.6°	4.8	
13	3.6°	1.6	20	3.3°	2.2	25	4.4°	3.9	
16	2.0°	1.0	25	2.3°	2.0	26	4.3°	3.9	
17	2.0°	1.0	35	2.0°	1.0	30	3.2°	3.4	
						32	1.2°	1.5	
						35	1.0°	1.4	
						40	0.9°	1.4	
						42	0.8°	1.3	
						52	0.6°	0.9	

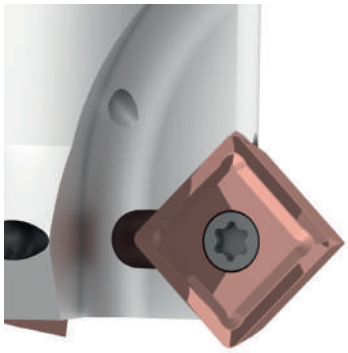
RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling



NT-RD05H			NT-RD07H			NT-RD10H			
DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.	
10	12	18	16	24	30	20	22	38	
12	16	22	17	26	32	21	24	40	
13	18	24	20	32	38	25	32	48	
16	24	30	25	42	48	26	34	50	
17	26	32	35	62	68	30	42	58	
						32	46	62	
						35	52	68	
						40	62	78	
						42	66	82	
						52	86	102	

DH min.: min. cutting dia.; DH max.: max. cutting dia.

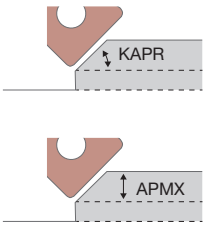


MILLING Chamfering

Quick guide .D122

CHAMFERSQUARE .D123

SORMA DIAMOND & CUTTING TOOLS



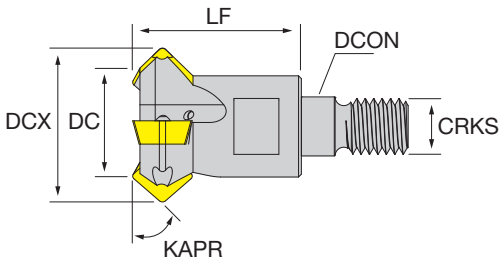
	CHAMFERSQUARE
	D123
	 SCREW-IN
	 CYLINDRICAL
KAPR	45°
Insert sizes	05 / 07 / 09
APMX	4.2 / 6.34 / 8.2
Tool diameter	Ø12 - Ø32
Coolant holes	✓
Workpiece material	P M K N
No. of cutting edges	4
No. of geometries	2
Special features	-
Chamfering	✓
Machine load	■■□□□
Strenght	■■■□□
Precision	■■■□□
Finishing	■■■□□
Range	■■■■□

NT-CHS45

ChamferSquare

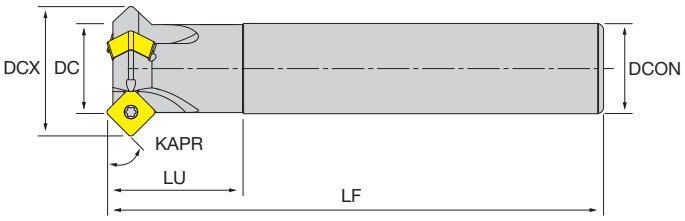
- Positive chamfering cutters for SP inserts
- All with coolant through
- Please select insert size according to your chamfer length
- Inserts could also be mounted on DRS drills

Screw-in





Cylindrical





45° KAPR | INTERNAL COOLANT | CHAMFERING

Designation	DC	CICT	DCX	DCON	LF	LU	CRKS	WT			Stock
SCREW-IN											
NT-CHS45 D12/19-M06-Z3-05	12	3	19	6.5	20	-	M6	-			●
NT-CHS45 D16/22-M08-Z4-05	16	4	22	8.5	25	-	M8	-			●
NT-CHS45 D20/30-M10-Z3-07	20	3	30	10.5	30	-	M10	-			●
NT-CHS45 D25/37-M12-Z3-09	25	3	37	12.5	35	-	M12	-			●
NT-CHS45 D32/44-M16-Z4-09	32	4	44	17	40	-	M16	-			●
CYLINDRICAL SHANK											
NT-CHS45 D12/19-S12-Z3-05	12	3	19	12	80	20	-	-			●
NT-CHS45 D16/22-S16-Z4-05	16	4	22	16	100	25	-	-			●
NT-CHS45 D20/30-S20-Z3-07	20	3	30	20	110	30	-	-			●
NT-CHS45 D25/37-S25-Z3-09	25	3	37	25	120	35	-	-			●
NT-CHS45 D32/44-S32-Z4-09	32	4	44	32	130	40	-	-			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-CHS45 Doo/oo-ooo-Zo-05	NT-ST20047T06	NT-FTB06
NT-CHS45 Doo/oo-ooo-Zo-07	NT-ST25060T07B	NT-FTB07
NT-CHS45 Doo/oo-ooo-Zo-09	NT-ST35051T15	NT-FTB15

SORMA DIAMOND & CUTTING TOOLS

SP

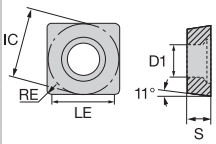
Square positive

- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available
- Several PVD coated carbide grades available
- Inserts could also be mounted both on drilling DRS system and milling ChamferSquare

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD	HF
		JP5530	JP8725	JP9535	JU6520
Stable machining, light cut	● 1st choice ○ suitable		○		●
General machining, medium cut	● 1st choice ◔ suitable	●	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✲ suitable	✲		✱	

Dimensions



4 edges

ISO — **Vc(m/min) - suggested cutting speed range** (bold: 1st choice)

P	**100** **260**	**100** **280**		
M	60 180		**80** **200**	
K				
N				**300** **1100**
S			**20** **60**	
H				

	Designation	RE	IC	S	D1	LE	Stock			
GENERAL	GP P M S	SPMX060204-GP	0.40	6	2.38	2.8	5.2	●	●	●	
		SPMX07T308-GP	0.80	7.94	3.97	2.8	6.34	●	●	●	
		SPMX090408-GP	0.80	9.8	4.3	4.2	8.2	●	●	●	
ALUMINIUM	AL N	SPGX060204-AL	0.40	6	2.38	2.8	5.2				●
		SPGX07T308-AL	0.80	7.94	3.97	2.8	6.34				●
		SPGX090408-AL	0.80	9.8	4.3	4.2	8.2				●

periphery ground
polished surface

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	**140**	180	100	**150**	200
			30%	160	**200**	240	160	**210**	260
			10%	220	**240**	260	220	**250**	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	**120**	160	90	**130**	170
			30%	120	**160**	200	130	**170**	210
			10%	180	**200**	220	190	**210**	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	**90**	120	80	**110**	140
			30%	100	**130**	160	120	**150**	180
			10%	140	**170**	200	160	**190**	220

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	**100**	140	80	**120**	160
			30%	80	**130**	180	100	**150**	200
			10%	100	**160**	220	120	**180**	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				60	**90**	120
			30%				70	**100**	130
			10%				80	**110**	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	**90**	120	80	**110**	140
			30%	80	**120**	160	100	**140**	180
			10%	100	**140**	180	120	**160**	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				70	**100**	130
			30%				80	**110**	140
							90	**120**	150

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500
			30%	400	**600**	800
			10%	500	**800**	1100
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300
			30%	300	**350**	400
			10%	400	**450**	500

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP9535 min	JP9535 start	JP9535 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	20	**30**	40
			30%	30	**40**	50
			10%	40	**50**	60
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%	40	**50**	60
			30%	50	**60**	70
			10%	60	**70**	80

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. **M**1.

DESIGNATION	ae/Dc	FEED RATE		
		fz (mm)		
		min	start	max
SPMX050204-GP	100%	0.08	**0.13**	0.18
	30%	0.10	**0.16**	0.22
	10%	0.12	**0.19**	0.26
SPMX07T308-GP	100%	0.10	**0.16**	**0.22**
	30%	0.12	**0.20**	**0.28**
	10%	0.14	**0.24**	**0.34**
SPMX090408-GP	100%	0.11	**0.19**	**0.27**
	30%	0.14	**0.24**	**0.34**
	10%	0.16	**0.28**	**0.40**
SPGX050204-AL	100%	0.06	**0.10**	**0,14**
	30%	0.08	**0.13**	**0.18**
	10%	0.09	**0.15**	**0,21**
SPGX07T308-AL	100%	0.08	**0.13**	**0.18**
	30%	0.10	**0.16**	**0.22**
	10%	0.12	**0.19**	**0.26**
SPGX090408-AL	100%	0.10	**0.16**	**0,22**
	30%	0.12	**0.19**	**0.26**
	10%	0.14	**0.23**	**0.32**

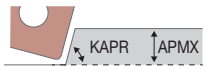
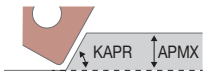


MILLING Advanced

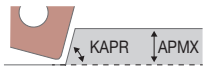
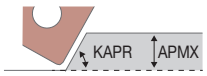
Quick guide .D128

ROUND SERIES .D130
TANGENTIAL .D132
XP SERIES .D134
SQUARE SERIES .D136

SORMA DIAMOND & CUTTING TOOLS

	ROUND	SQUARE	TANGENTIAL
	D130	D136	D132
NT-SN1288  NT-SN1275  NT-XP08 NT-SP12  NT-RN12 	 ARBOR	 ARBOR 75°  ARBOR 88°	 ARBOR
KAPR	variable	75° / 88°	90°
Insert sizes	12	12	12
APMX	3		3 / 7
Tool diameter	Ø50 - Ø100	Ø50 - Ø125	Ø50 - Ø125
Coolant holes	✓	✓	✓
Workpiece material	S H	K	K
No. of cutting edges	variable	8	8
No. of geometries	3	4	1
Special features		chipbreaker type available	
Face Milling	✓	✓	✓
Side Milling	✗	✗	✓
Machine load	■■■■□	■■■□□	■■■□□
Strenght	■■■■■	■■■□□	■■■■□
Precision	■■■□□	■■■□□	■■■□□
Finishing	■■■□□	■■■□□	■■■□□
Range	■■■□□	■■■■□	■■■□□

SORMA DIAMOND & CUTTING TOOLS

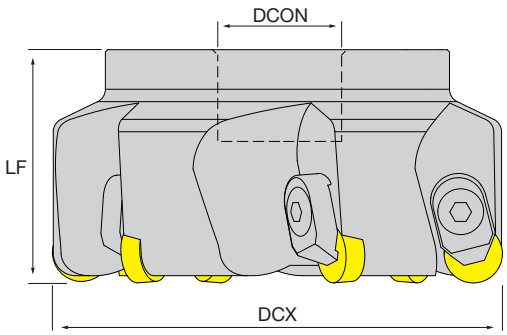
	XP SERIES
	D134
NT-SN1288  NT-SN1275  NT-XP08 NT-SP12  NT-RN12 	 ARBOR ALU  ARBOR STEEL
KAPR	90°
Insert sizes	08
APMX	3 (PCD) / 1 (PCBN)
Tool diameter	Ø50 - Ø125
Coolant holes	-
Workpiece material	K N
No. of corners	1 (PCD) / 2 (PCBN)
No. of geometries	1
Special features	
Face Milling 	✓
Side Milling 	✓
Machine load	■■□□□
Strenght	■■■□□
Precision	■■■■□
Finishing	■■■■□
Range	■■■□□

SORMA DIAMOND & CUTTING TOOLS

NT-RN12

Round series

- Milling holder for doublesided solid round inserts without holes
- For dry cut milling
- Please select according to the thickness of the inserts







Designation	DCX	CICT	DCON	LF	DCSFMS	WT	MIID				Stock
ARBOR MOUNTING											
NT-RN12 D050-F22-Z4	50	4	22	50	45	-	RNGN1204				○
NT-RN12 D063-F22-Z4	63	4	22	50	45	-	RNGN1204				◉
NT-RN12 D080-F27-Z5	80	5	27	50	58	-	RNGN1204				●
NT-RN12 D100-F32-Z6	100	6	32	50	75	-	RNGN1204				◉
NT-RN12X D050-F22-Z4	50	4	22	50	45	-	RNGN1207				●
NT-RN12X D063-F22-Z4	63	4	22	50	45	-	RNGN1207				◉
NT-RN12X D080-F27-Z5	80	5	27	50	58	-	RNGN1207				◉
NT-RN12X D100-F32-Z6	100	6	32	50	60	-	RNGN1207				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Clamp	Clamp screw	Spring	L wrench
				
NT-RN12o Dooo-Foo-Zoo	NT-CS028	NT-SC035	NT-SG028	NT-WR030

SORMA DIAMOND & CUTTING TOOLS

RN

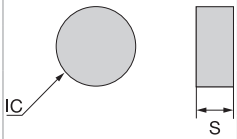
Round Series

- Solid CBN and solid ceramic inserts for advanced milling
- Different thickness and edge preparation available upon request
- Very reliable and cost efficient solution for multiple purpose use on S/H materials
- Wider range available on request

BH: High CBN volume
CN: Silicon nitride

		BH	BH	CN
		NBH900U	NBH55U	NSA6000
Stable machining, light cut	● 1st choice ○ suitable	○		○
General machining, medium cut	● 1st choice ○ suitable	●	○	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	✱	✱

Dimensions



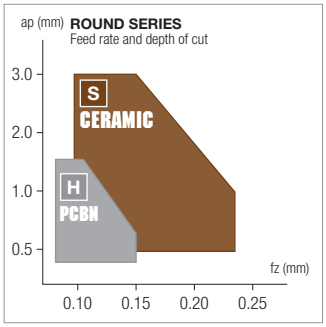
ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
P				
M				
K	**300** 1100	**300** 800		
N				
S			**150** 400	
H	**40** 160	**40** 160		

	Designation		RE	IC	S	AN		Stock		
PCBN	UE H	RNGN120400S-UE	-	-	-	-		●	●	
	full solid									
CERAMIC	E S	RNGN120700E	-	-	-	-				○
	SiAlON round honing									
CERAMIC	CC S	RNGN120400-CC	-	-	-	-				●
	SiAlON chamfered edge	RNGN120700-CC	-	-	-	-				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

ROUND SERIES cutting speed (m/min)

S1	HRSA good machinability <25 HRC	800÷1200
S2	HRSA medium machinability 25÷35 HRC	800÷1200
S3	HRSA low machinability 25÷45 HRC	600÷1200
H1	Case-hardened steel	100÷300
H2	Bearing steel	200÷400
H3	Hardened tool steel	150÷350

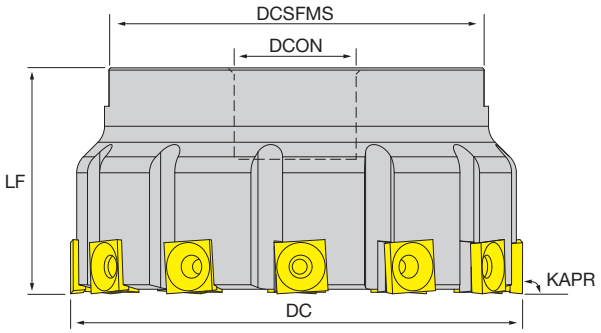


SORMA DIAMOND & CUTTING TOOLS

NT-SP-TAN

Tangential series

- Milling holder for tangential solid square inserts
- For dry cut milling
- Kapr 90°
- More teeth density comparing to flat-mount type





90° KAPR | FACING | ROUGHING | INTERMITTENT | SIDE MILLING

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT	MIID			Stock
ARBOR MOUNTING											
NT-SP12-TAN D050-F22-Z5	50	5	22	50	45	50	-	SPHX1205			◉
NT-SP12-TAN D063-F22-Z7	63	7	22	50	50	63	-	SPHX1205			◉
NT-SP12-TAN D080-F27-Z8	80	8	27	50	60	80	-	SPHX1205			◉
NT-SP12-TAN D100-F32-Z12	100	12	32	50	85	100	-	SPHX1205			◉
NT-SP12-TAN D125-F40-Z15	125	15	40	50	85	125	-	SPHX1205			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-SP12-TAN Dooo-Foo-Zoo	NT-ST40101T15	NT-FTB15

SPHX

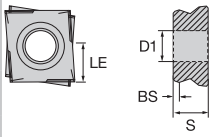
Tangential

- Tangentially mounted positive ceramic for advanced milling
- 8 cutting edges available
- Very robust and reliable solution for cast iron advanced milling
- Better surface quality with tangential solution when the clamping isn't stable

CN: Silicon nitride

		CN	CN
		NSN350	NSN400
Stable machining, light cut	● 1st choice ○ suitable	●	●
General machining, medium cut	● 1st choice ○ suitable	○	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

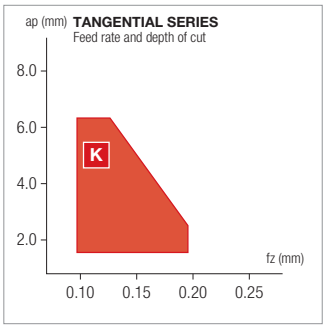


8 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P																						
M																						
K	**500 1000**	**400 1000**																				
N																						
S																						
H																						

	Designation		BS	S	D1	LE	AN	Stock		
GENERAL	**GP** K	**SPHX1205PCTR-GP**	0.8	5.5	5.1	6.6	12°	●	●	
	 CERAMIC silicon nitride									
WIPER	**WE** K	**SPHX1205PCTR-WE**	-	5.5	5.1	6.6	12°		⦿	
	 CERAMIC silicon nitride									

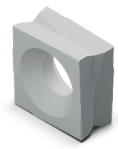
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



TANGENTIAL SERIES
cutting speed (m/min)

K1	Gray cast iron

CERAMIC NSN m/min 600÷1200
roughing and finishing

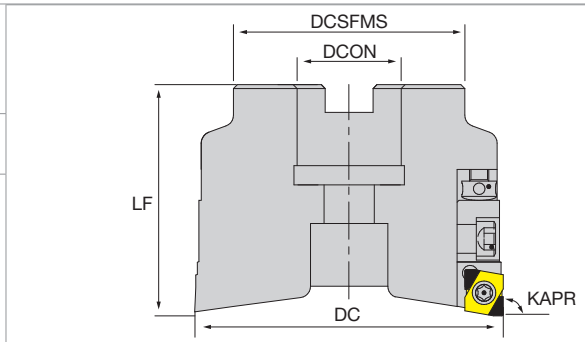


SORMA DIAMOND & CUTTING TOOLS

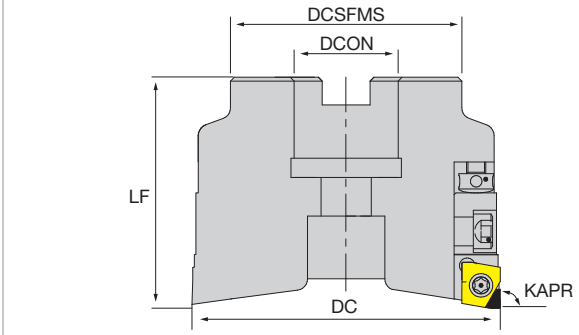
NT-XP

XP series

- Milling holder for brazed tip XP type inserts
- For dry cut milling
- Kapr 90°
- Both aluminum light body and robust steel body available









90° KAPR | FINISHING | FACING | INTERMITTENT | SIDE MILLING

Designation	DC	CICT	DCON	LF	DCSFMS	DCX	WT	MIID			Stock
STEEL MILLING CUTTER WITH ADJUSTABLE CARTRIDGES											
NT-XP08-ST D050-F16-Z05	50	5	16	50	32	50	-	XPG∞0802			●
NT-XP08-ST D063-F22-Z06	63	6	22	50	44	63	-	XPG∞0802			●
NT-XP08-ST D080-F27-Z07	80	7	27	50	60	80	-	XPG∞0802			●
NT-XP08-ST D100-F32-Z08	100	8	32	50	80	100	-	XPG∞0802			◉
ALUMINIUM MILLING CUTTER WITH ADJUSTABLE CARTRIDGES											
NT-XP08-AL D063-F22-Z05	63	5	22	50	44	63	-	XPG∞0802			◉
NT-XP08-AL D080-F27-Z07	80	7	27	50	60	80	-	XPG∞0802			◉
NT-XP08-AL D100-F32-Z08	100	8	32	50	80	100	-	XPG∞0802			◉
NT-XP08-AL D125-F40-Z10	125	10	40	63	105	125	-	XPG∞0802			◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Cartridge	Cartridge screw	L wrench	Setting screw	Insert screw	Chip cover
NT-XP08-AL Dooo-Foo-Zoo	NT-CRD-XP08	NT-CW040	NT-WR040	NT-AD040	NT-ST40100T15 / NT-ST30070T10HQ	NT-CH030
NT-XP08-ST Dooo-Foo-Zoo	NT-CRD-XP08	NT-CW040	NT-WR040	NT-AD040	NT-ST30070T10HQ	-

XP

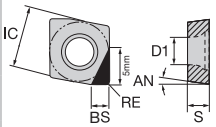
XP series

- Brazed-tip type insert available in both PCBN and PCD
- 2 cutting edges for PCBN, 1 cutting edge for PCD
- Edge length/RE/BS can be tailor made upon requests
- Different grades and edge preparation also available upon requests

BH: High CBN volume
DP: Polycrystalline diamond

		BH	DP	DP
		NBH450U	ND120	ND150
Stable machining, light cut	● 1st choice ○ suitable	●	●	●
General machining, medium cut	● 1st choice ○ suitable	●	●	○
Unstable machining, heavy cut	● 1st choice ○ suitable	○		

Dimensions

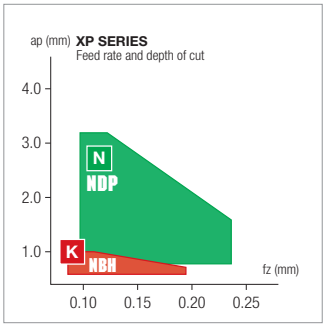


DIAMOND 1 edge - PCBN 2 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	340 1000
N	450 2400
	350 800
S	
H	

	Designation		RE	IC	S	D1	BS	Stock		
DIAMOND	F - 1C N	XPGT080204F-1C	0.40	7.91	2.38	3.6	2.5		●	○
		XPGT080208F-1C	0.80	7.91	2.38	3.6	2.5		●	○
	 sharp edge carbide backed									
PCBN	UE K	XPGW080204S-UE-2C	0.40	7.91	2.38	3.6	2.5	●		
		XPGW080208S-UE-2C	0.80	7.91	2.38	3.6	2.5	●		
	 chamfer + hone carbide backed									

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



XP SERIES cutting speed (m/min)

K1	Gray cast iron	500÷2000
N1	Aluminium alloy Si ≤ 12	1000÷3000
N2	Aluminium alloy Si > 12	300÷1000

K **PCBN NBH** only finishing

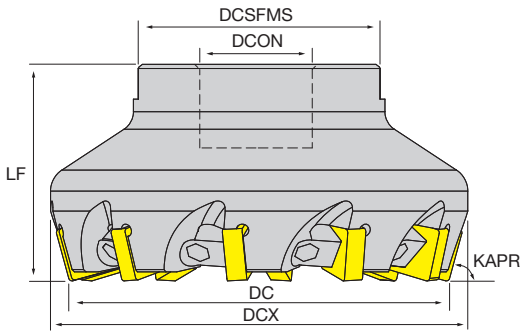
N **DIAMOND NDP** roughing and finishing

SORMA DIAMOND & CUTTING TOOLS

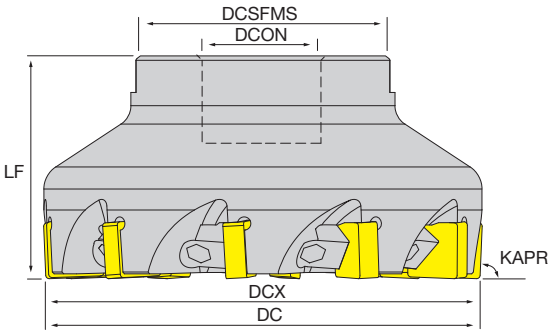
NT-SN

Square series

- Milling holder for doublesided solid square inserts without holes
- For dry cut milling
- Kapr 75° and 88° available
- Wider range available on request









75° KAPR | 88° KAPR | ROUGHING | FACING | INTERMITTENT

Designation	DC	CICT	DCX	DCON	LF	DCSFMS	WT	MIID			Stock
NT-SN1275 - KAPR 75°											
NT-SN1275 D050-F22-Z05	50	5	57.5	22	50	45	-	SN∞N1204			⦿
NT-SN1275 D063-F22-Z06	63	6	70	22	50	45	-	SN∞N1204			●
NT-SN1275 D080-F27-Z08	80	8	87.5	27	50	58	-	SN∞N1204			●
NT-SN1275 D100-F32-Z10	100	10	107	32	50	60	-	SN∞N1204			●
NT-SN1275 D125-F40-Z12	125	12	132.1	40	50	85	-	SN∞N1204			⦿
NT-SN1288 - KAPR 88°											
NT-SN1288 D063-F22-Z06	63	6	-	22	50	45	-	SN∞N1204			●
NT-SN1288 D080-F27-Z08	80	8	-	27	50	58	-	SN∞N1204			●
NT-SN1288 D100-F32-Z10	100	10	-	32	50	60	-	SN∞N1204			●
NT-SN1288 D125-F40-Z12	125	12	-	40	50	85	-	SN∞N1204			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Wedge	Wedge screw	L wrench
			
NT-SN12∞ D∞∞-F∞-Z∞	NT-WD070	NT-SC060	NT-WR030

SNXN

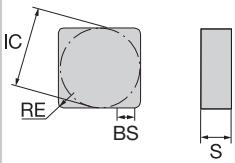
Square PCBN

- Solid square-shape solid CBN advanced milling
- Different sizes and edge preparation available upon request
- Very reliable and cost efficient solution for roughing cast iron
- Grades for hardened steels are uppon request

BH: High CBN volume

		BH	NBH550U
Stable machining, light cut	1st choice / suitable		
General machining, medium cut	1st choice / suitable	●	
Unstable machining, heavy cut	1st choice / suitable	●	

Dimensions

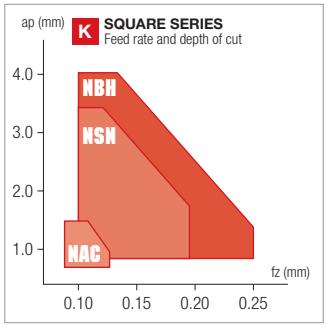


8 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**800 2000**
N	
S	
H	

	Designation		RE	IC	S	BS	AN	Stock
PCBN	**EN** K  full solid for **75°** milling cutters	**SNXN1204EN**	-	12.7	4.76	1.4	-	●
PCBN	**HN** K  full solid for **88°** milling cutters	**SNXN1204HN**	-	12.7	4.76	1.8	-	●
PCBN	**CB** K  full solid **ground chipbreaker**	**SNXN120412-CB**	1.20	12.7	4.76	-	0°	⦿
	K 	**SNXN090412S-UE**	-	-	-	-	-	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SQUARE SERIES cutting speed (m/min)

K1	Gray cast iron

PCBN NBH 800÷2000
roughing and finishing

CERAMIC NSN 600÷1200
roughing and finishing

CERAMIC NAC 400÷800
only finishing

SNXN

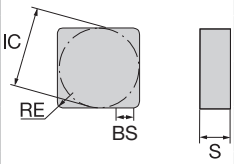
Square CERAMIC

- Square-shape ceramic inserts for advanced milling
- Different sizes and edge preparation available upon request
- Very reliable and cost efficient solution for multiple purpose use on K/H materials

CM: Mixed ceramic
CN: Silicon nitride

		CM	CN
		NAC200	NSN400
Stable machining, light cut	● 1st choice ◯ suitable	●	●
General machining, medium cut	● 1st choice ◯ suitable	●	●
Unstable machining, heavy cut	● 1st choice ◯ suitable		

Dimensions

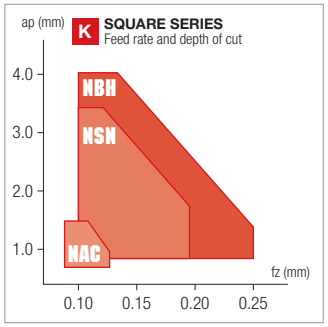


8 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																							
P																								
M																								
K	400 600	**400 1000**																						
N																								
S																								
H	70 180																							

Designation			RE	IC	S	BS	AN	Stock	
CERAMIC	**EN** H	**SNXN1204EN**	-	12.7	4.76	1.4	0°	●	●
	 Si3N4 and Al2O3 for **75°** milling cutters								
CERAMIC	**HN** H	**SNXN1204HN**	-	12.7	4.76	1.8	0°	●	●
	 Si3N4 and Al2O3 for **88°** milling cutters								
CERAMIC	**CB** K	**SNXN120412-CB**	1.20	12.7	4.76	-	0°		●
	 Si3N4 **ground chipbreaker**								

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



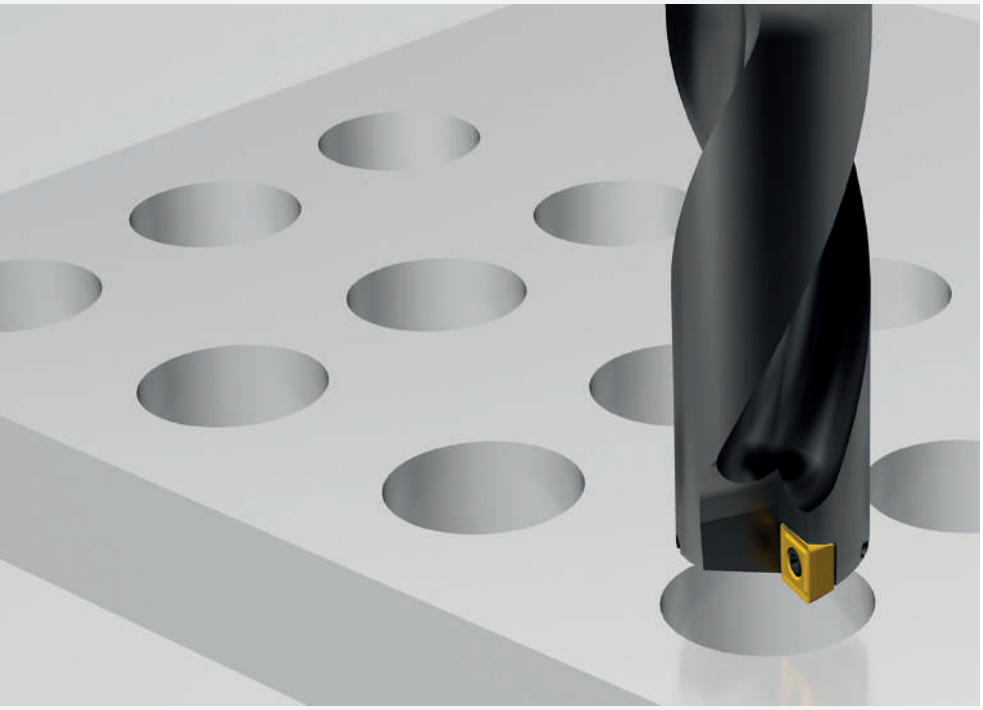
SQUARE SERIES cutting speed (m/min)

K1	Gray cast iron

PCBN NBH 800÷2000
roughing and finishing

CERAMIC NSN 600÷1200
roughing and finishing

CERAMIC NAC 400÷800
only finishing



DRILLING

Grades selection guide .E2
Grades features .E3
Quick guide .E6
Indexable drills - DRS .E8
Modular heads - DEX .E32
Combined series - DXP .E62
Multi-functional - SPOT DRILL .E78
Iso Trigon - ISO WCMX .E81

DRILLING Grades selection guide

SORMA DIAMOND & CUTTING TOOLS

ISO 513		CARBIDE			
		PVD COATED			UNCOATED
		DEX	DXP	DRS	DRS
P Steel	P01				
	P10	JP5725	JP5725	JP8725	
	P20	JP5630		JP5530	
	P30				
	P40				
M Stainless steel	M01				
	M10				
	M20	JP5630		JP5530 JP9535	
	M30				
	M40				
K Cast iron	K01				
	K10	JP7625 JP5725	JP5725	JP5530 JP9535	
	K20				
	K30				
N Non-ferrous material	N01				
	N10				JU6520
	N20				
	N30				
S Heat resistance	S01				
	S10			JP9535	
	S20				
	S30				

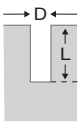
SORMA DIAMOND & CUTTING TOOLS

GRADE	SYSTEM	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP5725	DEX - DXP	1.840	PVD	AlTiN	P K	P15 P30 K10 K30	High performance grade for steel drilling with a perfect combination between toughness and wear resistance. A very good choice even for nodular cast iron machining. Grado ad alte prestazioni per la foratura degli acciai, con una perfetta combinazione tra tenacità e resistenza all'usura. Ottima scelta anche per la lavorazione di ghisa sferoidale. Hochleistungsqualität für das Bohren von Stählen, mit einer perfekten Kombination aus Robustheit und Verschleißfestigkeit. Auch zur Bearbeitung von Sphäroguss hervorragend geeignet. Nuance hautes performances pour le perçage des aciers, alliage parfait entre ténacité et résistance à l'usure. Également un excellent choix pour l'usinage de fonte sphéroïdale.
JP5630	DEX	1.700	PVD	TiSiN	P M	P30 M30	First choice for stainless steel and free-cutting steels. Tough substrate and special coating with low friction coefficient specifically developed for sticky materials. Prima scelta per acciai inossidabili e acciai automatici. Substrato tenace e rivestimento speciale con basso coefficiente di attrito, specificamente sviluppato per materiali con tendenza all'incollamento. Erste Wahl für rostfreie und Automatenstähle. Robustes Grundmaterial und spezielle Beschichtung mit niedrigem Reibungskoeffizienten, spezifisch entwickelt für haftende Materialien. Premier choix pour aciers inoxydables et aciers de décolletage. Substrat résistant et revêtement spécial à faible coefficient de frottement, spécialement conçu pour les matériaux adhésifs.
JP7625	DEX	1.840	PVD	TiAlCrN	K	K10 K30	Very hard coating film specifically studied for abrasive materials machining. First choice for grey cast iron in combination with TE chamfered geometry. Rivestimento molto duro specificamente studiato per lavorazione di materiali abrasivi. Prima scelta per ghisa grigia in combinazione con geometria smussata TE. Sehr harte Beschichtung, speziell für die Bearbeitung abrasiver Materialien entwickelt. Erste Wahl bei Grauguss in Kombination mit gefaster TE-Geometrie. Revêtement très dur spécialement conçu pour l'usinage de matériaux abrasifs. Premier choix pour fonte grise en association avec la géométrie chanfreinée TE.
JP5530	DRS	1.840	PVD	TiAlN	P M K	P20 P40 M25 M30 K25 K30	Universal grade mainly for steel application but also suitable for ISO M and ISO K machining. Grado universale principalmente per applicazioni su acciai; adatto anche per ISO M e ISO K Universalqualität vor allem für Stahlanwendungen; auch für Materialien der ISO-Gruppen M und K erhältlich. Nuance universelle principalement pour applications sur aciers ; également disponible pour matériaux des groupes ISO M et K.

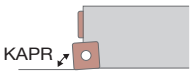
SORMA DIAMOND & CUTTING TOOLS

GRADE	SYSTEM	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP8725	DRS	1.840	PVD	AlCrN	P	P15 P30	First choiche for steel applications. The new substrate contributes to a great performance improvement compared to conventional products. Prima scelta per applicazioni su acciai. Il nuovo substrato contribuisce a eccezionali miglioramenti nelle prestazioni rispetto ai prodotti convenzionali. Erste Wahl für Stahlanwendungen. Das neue Grundmaterial sorgt für hervorragende Leistungsverbesserungen gegenüber herkömmlichen Produkten. Premier choix pour les applications sur l'acier. Le nouveau substrat contribue à des améliorations exceptionnelles en termes de performances par rapport aux produits conventionnels.
JP9535	DRS	1.640	PVD	TiAlN	M	M20 M35	First choice for stainless steel machining under general cutting conditions. Also suitable for titanium thanks to a great stability at high temperatures. Also recommended on cast iron Prima scelta per acciai inossidabili in condizioni di taglio generiche. Consigliato anche per il titanio grazie all'elevata stabilità alle alte temperature. Raccomandato anche per ghisa. Erste Wahl für rostfreie Stähle unter allgemeinen Schnittbedingungen. Aufgrund seiner hohen Temperaturstabilität auch für Titan empfohlen. Premier choix pour les aciers inoxydables dans des conditions de coupe générales. Également recommandé pour le titane en raison de sa grande stabilité aux hautes températures.
					K	K25 K30	
					S	S15 S25	
JU6520	DRS	1.560	-	-	N	N10 N30	Uncoated grade for non-ferrous materials. The micrograin substrate allows production of very sharp ground cutting edges. Grado non rivestito per materiali non ferrosi. La tenacità del substrato micrograna consente l'ottenimento di taglienti rettificati molto affilati. Unbeschichtete Qualität für Nichteisenmaterialien. Die Robustheit des mikrokörnigen Grundmaterials ermöglicht sehr scharfe Schleifkanten. Nuance non revêtue pour matériaux non ferreux. Le substrat micro-grain permet l'obtention d'arêtes rectifiées très affûtées.

SORMA DIAMOND & CUTTING TOOLS



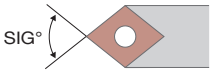
DRS



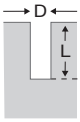
DEX
DXP



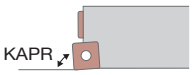
SPOTdrill



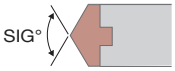
	DRS	DRS PILOT	DEX
	E8	E24	E32
			
Tool diameter	Ø12.50 - Ø50.00	Ø18.00 - Ø30.00	Ø10.00 - Ø26.00
L / D	2 - 3 - 4 - 5	6 - 9	3 - 5 - 8 (12 upon request)
Coolant holes	✓	✓	✓
Effective cutting edges	1	1	2
Point angle	KAPR 85°	SIG pilot 118° - KAPR 87.5°	SIG 140°
Workpiece material	P M K N	P M K N	P M K
No. of edges	4	4	1
No. of geometries	2	2 (periferic) - 1(pilot)	4 (2 upon request)
Special features	-	HSS center pilot	-
Plain Surface	✓	✓	✓
Slant Surface	✓	✗	✗
Concave Surface	✓	✓	✓
Convex Surface	✓	✓	✓
Stacked Plates	✗	✗	✓
Pipes	✓	✓	✓
Half Hole	✓	✗	✗
Hole Expansion	✓	✗	✗
Precision	■■□□□	■■□□□	■■■□□
Productivity	■■■□□	■■■□□	■■■■■
Cost per hole	■■□□□	■■■□□	■■■■□
Range	■■■■□	■■■□□	■■■■□



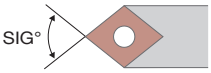
DRS



DEX
DXP



SPOTdrill



	DXP	SPOTDRILL
	E62	E78
		 SCREW-IN  CYLINDRICAL
Tool diameter	Ø30.00 - Ø60.00	Ø14.00
L / D	3 - 6 - 8 - 10	-
Coolant holes	✓	✗
Effective cutting edge	2	2
Point angle	SIG pilot 140°	SIG 90°
Workpiece material	P K	P M K N
No. of edges	peripheral 2 / 3	4
No. of geometries	1	2
Special features	Chipbreaker for small chips	-
Plain Surface	✓	Spotting
Slant Surface	✗	
Concave Surface	✓	Engraving
Convex Surface	✓	
Stacked Plates	✓	V-Grooving
Pipes	✓	
Half Hole	✗	Chamfering
Hole Expansion	✗	
Precision	■■■□□	
Productivity	■■■■□	
Cost per hole	■■■■□	
Range	■■■■■	

DRS DRILLS

Indexable drilling system for universal machining

Application



- Flat surface
- Slant surface
- Concave surface
- Convex surface
- Pipes
- Half hole
- Hole expansion

- Flache Flächen
- Schräge Flächen
- Konkave Flächen
- Konvexe Flächen
- Rohre
- Halblöcher
- Erweiterung von Löchern

- Superfici piane
- Superfici inclinate
- Superfici concave
- Superfici convesse
- Tubi
- Mezzi fori
- Espansione fori

- Surfaces planes
- Surfaces inclinées
- Surfaces concaves
- Surfaces convexes
- Tubes
- Demi-trous
- Expansion des trous

Application range - ISO 513

P M K N



Features and benefits

- Versatile system for universal applications.
- Highly cost-efficient system.
- Helical flute style available in 2xD and 3xD, straight flute style in 4xD and 5xD to improve chip evacuation.

- Sehr universelles Bohrsystem, das für unterschiedliche Bedingungen geeignet ist.
- Sehr kosteneffektives System.
- Ausführung mit spiralförmigen Nuten in den Größen 2xD und 3xD und mit geraden Nuten in den Größen 4xD und 5xD zur Verbesserung der Spanabfuhr.

- Sistema di foratura molto versatile per applicazioni universali
- Sistema a elevata efficienza economica.
- Versione con gole elicoidali disponibile nelle dimensioni 2xD e 3xD e con gola dritta nelle dimensioni 4xD e 5xD per migliorare l'evacuazione del truciolo.

- Système de perçage universel pour applications générales
- Système trés économique.
- Disponible en goujures hélicoidales en 2xD et 3xD et à goujures droites en 4xD et 5xD pour une meilleure évacuation des copeaux.

DRS DRILLS

Indexable drilling system for universal machining

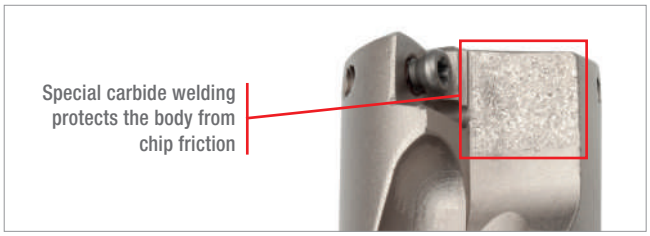
Drilling holders

- Weldon shank with internal coolant
- 2/ 3/ 4/ 5xD available from D13 to D50
- Special lengths and step types available upon request

- Weldon-Aufnahme mit Innenkühlung
- 2/ 3/ 4/ 5xD erhältlich von D13 bis D50
- Sonderlängen und Stufenkörper auf Anfrage erhältlich

- Attacco Weldon con refrigerante interno
- 2/ 3/ 4/ 5xD disponibili da D13 a D50
- Lunghezze speciali e geometria a gradino disponibili su richiesta

- Queue Weldon avec arrosage interne
- Disponibles du D 13 à D50 en 2/ 3/ 4/ 5xD
- Longueurs spéciales et corps « étagés » disponibles sur demande





2D - 3D Twisted flute, coolant holes with "Y" design



4D - 5D Straight flute, coolant holes with "II" design

Inserts

- Available sizes 05/06/07/09/11/14
- PVD coated carbide (ISO P, M, K, S) or uncoated carbide (ISO N)
- Geometries: GP, AL

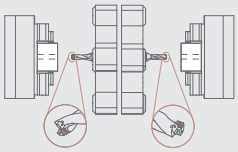
- Erhältliche Größen 05/06/07/09/11/14
- PVD-beschichtete Hartmetallqualitäten oder unbeschichtete Qualitäten für ISO-Materialien N
- Geometrien: GP, AL

- Dimensioni disponibili 05/06/07/09/11/14
- Gradi in metallo duro rivestito (ISO P, M, K, S) e non rivestito (ISO N)
- Geometrie: GP, AL

- Tailles plaquettes 05/06/07/09/11/14
- Nuances carbure revêtues PVD ou nuances non revêtues pour matériaux ISO N
- Géométries : GP, AL



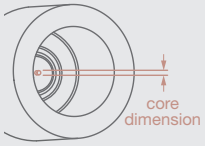




Lathe installation

It's recommended to set the outer insert facing the operator as shown in the drawing, both for main and sub-spindle to achieve the best results.

Following this suggestion, generally, the inner insert will be set below the center which is the recommended situation for optimal operation.



Quick check of the center height

To check if the machine axis is correctly aligned, a test hole should be drilled checking the remaining core on the hole bottom.

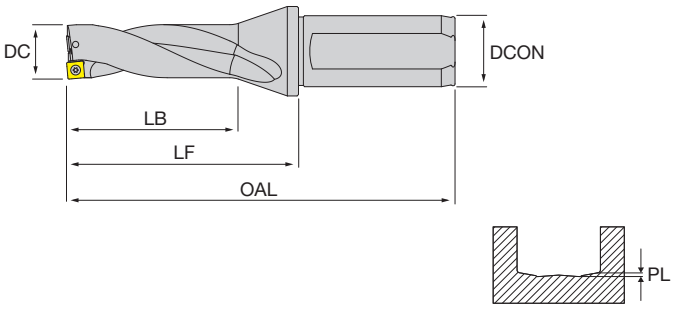
Center-height adjustment is necessary when no core remains or if the core diameter is larger than 1mm.

SORMA DIAMOND & CUTTING TOOLS

NT-DRS-2D

DRS drill

- Body for SP inserts with **helical flutes**
- Please select insert size according to the drill diameter
- Under **stable conditions**, hole tolerance
  -0.20/+0.10 mm (D<=27mm)
  -0.10/+0.20 mm (D> 27mm)





2xD | INTERNAL COOLANT | PLAIN | SLANT | CONCAVE | CONVEX | PIPES | HALF HOLE | HOLE EXPANSION

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-2D D13.00-S20-05	13	20	94	44	26	0.4	0.5	SP∞X05			●
NT-DRS-2D D14.00-S20-05	14	20	96	46	28	0.4	0.5	SP∞X05			●
NT-DRS-2D D15.00-S20-05	15	20	99	49	30	0.4	0.5	SP∞X05			●
NT-DRS-2D D16.00-S25-06	16	25	108	52	32	0.5	0.5	SP∞X06			●
NT-DRS-2D D17.00-S25-06	17	25	110	54	34	0.5	0.5	SP∞X06			●
NT-DRS-2D D18.00-S25-06	18	25	113	57	36	0.5	0.5	SP∞X06			●
NT-DRS-2D D19.00-S25-06	19	25	115	59	38	0.5	0.5	SP∞X06			●
NT-DRS-2D D20.00-S25-06	20	25	119	63	40	0.5	0.5	SP∞X06			●
NT-DRS-2D D21.00-S25-06	21	25	121	65	42	0.5	0.25	SP∞X06			●
NT-DRS-2D D22.00-S25-07	22	25	123	67	44	0.5	0.5	SP∞X07			▲
NT-DRS-2D D23.00-S32-07	23	32	131	71	46	0.5	0.5	SP∞X07			●
NT-DRS-2D D24.00-S32-07	24	32	134	74	48	0.5	0.5	SP∞X07			●
NT-DRS-2D D25.00-S32-07	25	32	137	77	50	0.5	0.5	SP∞X07			●
NT-DRS-2D D26.00-S32-07	26	32	139	79	52	0.6	0.25	SP∞X07			●
NT-DRS-2D D27.00-S32-07	27	32	141	81	54	0.6	0.25	SP∞X07			●
NT-DRS-2D D28.00-S32-09	28	32	144	84	56	0.8	0.5	SP∞X09			●
NT-DRS-2D D29.00-S32-09	29	32	146	86	58	0.8	0.5	SP∞X09			●
NT-DRS-2D D30.00-S32-09	30	32	151	91	60	0.8	0.5	SP∞X09			●
NT-DRS-2D D31.00-S32-09	31	32	154	94	62	0.8	0.25	SP∞X09			●
NT-DRS-2D D32.00-S32-09	32	32	156	96	64	0.8	0.25	SP∞X09			●
NT-DRS-2D D33.00-S32-09	33	32	159	99	66	0.8	0.25	SP∞X09			●
NT-DRS-2D D34.00-S40-11	34	40	171	101	68	0.9	0.5	SP∞X11			●
NT-DRS-2D D35.00-S40-11	35	40	174	104	70	0.9	0.5	SP∞X11			●
NT-DRS-2D D36.00-S40-11	36	40	177	107	72	0.9	0.5	SP∞X11			●
NT-DRS-2D D37.00-S40-11	37	40	180	110	74	0.9	0.5	SP∞X11			◉
NT-DRS-2D D38.00-S40-11	38	40	183	113	76	0.9	0.5	SP∞X11			●
NT-DRS-2D D39.00-S40-11	39	40	185	115	78	0.9	0.5	SP∞X11			●
NT-DRS-2D D40.00-S40-11	40	40	188	118	80	0.9	0.25	SP∞X11			●
NT-DRS-2D D41.00-S40-11	41	40	191	121	82	0.9	0.25	SP∞X11			●
NT-DRS-2D D42.00-S40-14	42	40	193	123	84	1	0.5	SP∞X14			◉
NT-DRS-2D D43.00-S40-14	43	40	196	126	86	1	0.5	SP∞X14			●
NT-DRS-2D D44.00-S40-14	44	40	198	128	88	1	0.5	SP∞X14			●
NT-DRS-2D D45.00-S40-14	45	40	202	132	90	1	0.5	SP∞X14			◉
NT-DRS-2D D46.00-S40-14	46	40	205	135	92	1	0.5	SP∞X14			◉
NT-DRS-2D D47.00-S40-14	47	40	207	137	94	1	0.5	SP∞X14			●
NT-DRS-2D D48.00-S40-14	48	40	210	140	96	1	0.25	SP∞X14			●
NT-DRS-2D D49.00-S40-14	49	40	212	142	98	1	0.25	SP∞X14			●
NT-DRS-2D D50.00-S40-14	50	40	215	145	100	1	0.25	SP∞X14			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

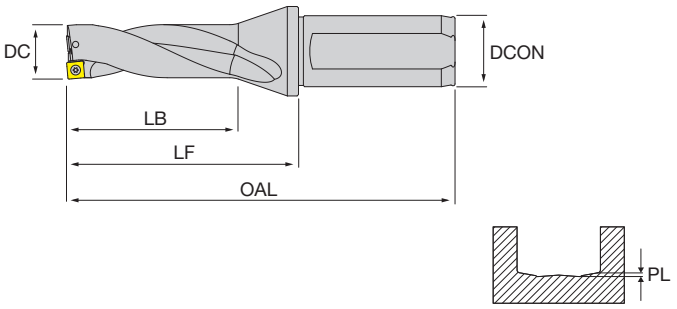
Spare parts	Insert screw 	Flag wrench 
NT-DRS-2D Doo.oo-Soo-05	NT-ST20043T06	NT-FTB06
NT-DRS-2D Doo.oo-Soo-06	NT-ST22055T06	NT-FTB06
NT-DRS-2D Doo.oo-Soo-07	NT-ST25060T07B	NT-FTB07
NT-DRS-2D Doo.oo-Soo-09	NT-ST35080T15	NT-FTB15
NT-DRS-2D Doo.oo-Soo-11	NT-ST40100T15	NT-FTB15
NT-DRS-2D Doo.oo-Soo-14	NT-ST50108T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

NT-DRS-3D

DRS drill

- Body for SP inserts with **helical flutes**
- Please select insert size according to the drill diameter
- Under **stable conditions**, hole tolerance
  -0.20/+0.10 mm (D<=27mm)
  -0.10/+0.20 mm (D> 27mm)





3xD | INTERNAL COOLANT | PLAIN | SLANT | CONCAVE | CONVEX | PIPES | HALF HOLE | HOLE EXPANSION

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-3D D12.50-S20-05	12.5	20	107	57	39	0.4	0.5	SP∞X05			●
NT-DRS-3D D13.00-S20-05	13	20	107	57	39	0.4	0.5	SP∞X05			●
NT-DRS-3D D13.50-S20-05	13.5	20	110	60	42	0.4	0.5	SP∞X05			●
NT-DRS-3D D14.00-S20-05	14	20	110	60	42	0.4	0.5	SP∞X05			●
NT-DRS-3D D14.50-S20-05	14.5	20	114	64	45	0.4	0.5	SP∞X05			●
NT-DRS-3D D15.00-S20-05	15	20	114	64	45	0.4	0.5	SP∞X05			●
NT-DRS-3D D15.50-S25-06	15.5	25	124	68	48	0.5	0.5	SP∞X06			●
NT-DRS-3D D16.00-S25-06	16	25	124	68	48	0.5	0.5	SP∞X06			●
NT-DRS-3D D16.50-S25-06	16.5	25	127	71	51	0.5	0.5	SP∞X06			●
NT-DRS-3D D17.00-S25-06	17	25	127	71	51	0.5	0.5	SP∞X06			●
NT-DRS-3D D17.50-S25-06	17.5	25	131	75	54	0.5	0.5	SP∞X06			●
NT-DRS-3D D18.00-S25-06	18	25	131	75	54	0.5	0.5	SP∞X06			●
NT-DRS-3D D18.50-S25-06	18.5	25	134	78	57	0.5	0.5	SP∞X06			●
NT-DRS-3D D19.00-S25-06	19	25	134	78	57	0.5	0.5	SP∞X06			●
NT-DRS-3D D19.50-S25-06	19.5	25	139	83	60	0.5	0.5	SP∞X06			●
NT-DRS-3D D20.00-S25-06	20	25	139	83	60	0.5	0.5	SP∞X06			●
NT-DRS-3D D20.50-S25-06	20.5	25	142	86	63	0.5	0.25	SP∞X06			●
NT-DRS-3D D21.00-S25-06	21	25	142	86	63	0.5	0.25	SP∞X06			●
NT-DRS-3D D21.50-S25-06	21.5	25	145	89	66	0.5	0.25	SP∞X06			●
NT-DRS-3D D22.00-S25-07	22	25	145	89	66	0.5	0.5	SP∞X07			●
NT-DRS-3D D22.50-S32-07	22.5	32	154	94	69	0.5	0.5	SP∞X07			●
NT-DRS-3D D23.00-S32-07	23	32	154	94	69	0.5	0.5	SP∞X07			●
NT-DRS-3D D23.50-S32-07	23.5	32	158	98	72	0.5	0.5	SP∞X07			●
NT-DRS-3D D24.00-S32-07	24	32	158	98	72	0.5	0.5	SP∞X07			●
NT-DRS-3D D24.50-S32-07	24.5	32	162	102	75	0.5	0.5	SP∞X07			●
NT-DRS-3D D25.00-S32-07	25	32	162	102	75	0.5	0.5	SP∞X07			●
NT-DRS-3D D25.50-S32-07	25.5	32	165	105	78	0.6	0.5	SP∞X07			●
NT-DRS-3D D26.00-S32-07	26	32	165	105	78	0.6	0.25	SP∞X07			●
NT-DRS-3D D26.50-S32-07	26.5	32	168	108	81	0.6	0.25	SP∞X07			●
NT-DRS-3D D27.00-S32-07	27	32	168	108	81	0.6	0.25	SP∞X07			●
NT-DRS-3D D27.50-S32-07	27.5	32	172	112	84	0.6	0.25	SP∞X07			●
NT-DRS-3D D28.00-S32-09	28	32	172	112	84	0.8	0.5	SP∞X09			●
NT-DRS-3D D28.50-S32-09	28.5	32	175	115	87	0.8	0.5	SP∞X09			●
NT-DRS-3D D29.00-S32-09	29	32	175	115	87	0.8	0.5	SP∞X09			●
NT-DRS-3D D29.50-S32-09	29.5	32	181	121	90	0.8	0.5	SP∞X09			●
NT-DRS-3D D30.00-S32-09	30	32	181	121	90	0.8	0.5	SP∞X09			●
NT-DRS-3D D31.00-S32-09	31	32	185	125	93	0.8	0.25	SP∞X09			●
NT-DRS-3D D32.00-S32-09	32	32	188	128	96	0.8	0.25	SP∞X09			●
NT-DRS-3D D33.00-S32-09	33	32	192	132	99	0.8	0.25	SP∞X09			●
NT-DRS-3D D34.00-S40-11	34	40	205	135	102	0.9	0.5	SP∞X11			●
NT-DRS-3D D35.00-S40-11	35	40	209	139	105	0.9	0.5	SP∞X11			●
NT-DRS-3D D36.00-S40-11	36	40	213	143	108	0.9	0.5	SP∞X11			●
NT-DRS-3D D37.00-S40-11	37	40	217	147	111	0.9	0.5	SP∞X11			●
NT-DRS-3D D38.00-S40-11	38	40	221	151	114	0.9	0.5	SP∞X11			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-3D D39.00-S40-11	39	40	224	154	117	0.9	0.25	SP∞X11			●
NT-DRS-3D D40.00-S40-11	40	40	228	158	120	0.9	0.25	SP∞X11			●
NT-DRS-3D D41.00-S40-11	41	40	232	162	123	0.9	0.5	SP∞X11			●
NT-DRS-3D D42.00-S40-14	42	40	235	165	126	1	0.5	SP∞X14			●
NT-DRS-3D D43.00-S40-14	43	40	239	169	129	1	0.5	SP∞X14			●
NT-DRS-3D D44.00-S40-14	44	40	242	172	132	1	0.5	SP∞X14			●
NT-DRS-3D D45.00-S40-14	45	40	247	177	135	1	0.5	SP∞X14			●
NT-DRS-3D D46.00-S40-14	46	40	251	181	138	1	0.5	SP∞X14			●
NT-DRS-3D D47.00-S40-14	47	40	254	184	141	1	0.5	SP∞X14			◉
NT-DRS-3D D48.00-S40-14	48	40	258	188	144	1	0.25	SP∞X14			●
NT-DRS-3D D49.00-S40-14	49	40	261	191	147	1	0.25	SP∞X14			●
NT-DRS-3D D50.00-S40-14	50	40	265	195	150	1	0.25	SP∞X14			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

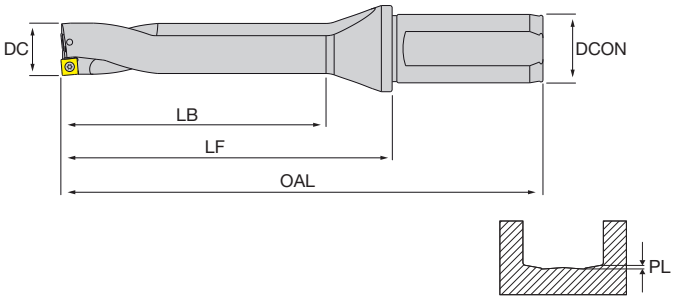
Spare parts	Insert screw 	Flag wrench 
NT-DRS-3D Doo.oo-Soo-05	NT-ST20043T06	NT-FTB06
NT-DRS-3D Doo.oo-Soo-06	NT-ST22055T06	NT-FTB06
NT-DRS-3D Doo.oo-Soo-07	NT-ST25060T07B	NT-FTB07
NT-DRS-3D Doo.oo-Soo-09	NT-ST35080T15	NT-FTB15
NT-DRS-3D Doo.oo-Soo-11	NT-ST40100T15	NT-FTB15
NT-DRS-3D Doo.oo-Soo-14	NT-ST50108T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

NT-DRS-4D

DRS drill

- Body for SP inserts with **straight flutes**
- Please select insert size according to the drill diameter
- Under **stable conditions**, hole tolerance **-0.20/+0.10 mm** (D<=16mm) **-0.05/+0.30 mm** (D> 16mm)





4xD | INTERNAL COOLANT | PLAIN | SLANT | CONCAVE | CONVEX | PIPES | HALF HOLE | HOLE EXPANSION

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-4D D12.50-S20-05	12.5	20	120	70	52	0.4	0.5	SP∞X05			●
NT-DRS-4D D13.00-S20-05	13	20	120	70	52	0.4	0.5	SP∞X05			●
NT-DRS-4D D13.50-S20-05	13.5	20	124	74	56	0.4	0.5	SP∞X05			●
NT-DRS-4D D14.00-S20-05	14	20	124	74	56	0.4	0.5	SP∞X05			●
NT-DRS-4D D14.50-S20-05	14.5	20	129	79	60	0.4	0.5	SP∞X05			●
NT-DRS-4D D15.00-S20-05	15	20	129	79	60	0.4	0.5	SP∞X05			●
NT-DRS-4D D15.50-S25-06	15.5	25	140	84	64	0.5	0.5	SP∞X06			●
NT-DRS-4D D16.00-S25-06	16	25	140	84	64	0.5	0.5	SP∞X06			●
NT-DRS-4D D16.50-S25-06	16.5	25	144	88	68	0.5	0.5	SP∞X06			●
NT-DRS-4D D17.00-S25-06	17	25	144	88	68	0.5	0.5	SP∞X06			●
NT-DRS-4D D17.50-S25-06	17.5	25	149	93	72	0.5	0.5	SP∞X06			●
NT-DRS-4D D18.00-S25-06	18	25	149	93	72	0.5	0.5	SP∞X06			●
NT-DRS-4D D18.50-S25-06	18.5	25	153	97	76	0.5	0.5	SP∞X06			●
NT-DRS-4D D19.00-S25-06	19	25	153	97	76	0.5	0.5	SP∞X06			●
NT-DRS-4D D19.50-S25-06	19.5	25	159	103	80	0.5	0.5	SP∞X06			●
NT-DRS-4D D20.00-S25-06	20	25	159	103	80	0.5	0.5	SP∞X06			●
NT-DRS-4D D20.50-S25-06	20.5	25	163	107	84	0.5	0.25	SP∞X06			●
NT-DRS-4D D21.00-S25-06	21	25	163	107	84	0.5	0.25	SP∞X06			●
NT-DRS-4D D21.50-S25-06	21.5	25	167	111	88	0.5	0.25	SP∞X06			●
NT-DRS-4D D22.00-S25-07	22	25	167	111	88	0.5	0.5	SP∞X07			●
NT-DRS-4D D22.50-S32-07	22.5	32	177	117	92	0.5	0.5	SP∞X07			●
NT-DRS-4D D23.00-S32-07	23	32	177	117	92	0.5	0.5	SP∞X07			●
NT-DRS-4D D23.50-S32-07	23.5	32	182	122	96	0.5	0.5	SP∞X07			●
NT-DRS-4D D24.00-S32-07	24	32	182	122	96	0.5	0.5	SP∞X07			●
NT-DRS-4D D24.50-S32-07	24.5	32	187	127	100	0.5	0.5	SP∞X07			●
NT-DRS-4D D25.00-S32-07	25	32	187	127	100	0.5	0.5	SP∞X07			●
NT-DRS-4D D25.50-S32-07	25.5	32	191	131	104	0.6	0.5	SP∞X07			●
NT-DRS-4D D26.00-S32-07	26	32	191	131	104	0.6	0.25	SP∞X07			●
NT-DRS-4D D26.50-S32-07	26.5	32	195	135	108	0.6	0.25	SP∞X07			●
NT-DRS-4D D27.00-S32-07	27	32	195	135	108	0.6	0.25	SP∞X07			●
NT-DRS-4D D27.50-S32-07	27.5	32	200	140	112	0.6	0.25	SP∞X07			●
NT-DRS-4D D28.00-S32-09	28	32	200	140	112	0.8	0.5	SP∞X09			●
NT-DRS-4D D28.50-S32-09	28.5	32	204	144	116	0.8	0.5	SP∞X09			●
NT-DRS-4D D29.00-S32-09	29	32	204	144	116	0.8	0.5	SP∞X09			●
NT-DRS-4D D29.50-S32-09	29.5	32	211	151	120	0.8	0.5	SP∞X09			●
NT-DRS-4D D30.00-S32-09	30	32	211	151	120	0.8	0.5	SP∞X09			●
NT-DRS-4D D31.00-S32-09	31	32	216	156	124	0.8	0.25	SP∞X09			●
NT-DRS-4D D32.00-S32-09	32	32	220	160	128	0.8	0.25	SP∞X09			●
NT-DRS-4D D33.00-S32-09	33	32	225	165	132	0.8	0.25	SP∞X09			●
NT-DRS-4D D34.00-S40-11	34	40	239	169	136	0.9	0.5	SP∞X11			●
NT-DRS-4D D35.00-S40-11	35	40	244	174	140	0.9	0.5	SP∞X11			●
NT-DRS-4D D36.00-S40-11	36	40	249	179	144	0.9	0.5	SP∞X11			●
NT-DRS-4D D37.00-S40-11	37	40	254	184	148	0.9	0.5	SP∞X11			●
NT-DRS-4D D38.00-S40-11	38	40	259	189	152	0.9	0.5	SP∞X11			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-4D D39.00-S40-11	39	40	263	193	156	0.9	0.25	SP∞X11			●
NT-DRS-4D D40.00-S40-11	40	40	268	198	160	0.9	0.25	SP∞X11			●
NT-DRS-4D D41.00-S40-11	41	40	273	203	164	0.9	0.5	SP∞X11			◉
NT-DRS-4D D42.00-S40-14	42	40	277	207	168	1	0.5	SP∞X14			●
NT-DRS-4D D43.00-S40-14	43	40	282	212	172	1	0.5	SP∞X14			●
NT-DRS-4D D44.00-S40-14	44	40	286	216	176	1	0.5	SP∞X14			●
NT-DRS-4D D45.00-S40-14	45	40	292	222	180	1	0.5	SP∞X14			●
NT-DRS-4D D46.00-S40-14	46	40	297	227	184	1	0.5	SP∞X14			●
NT-DRS-4D D47.00-S40-14	47	40	301	231	188	1	0.5	SP∞X14			●
NT-DRS-4D D48.00-S40-14	48	40	306	236	192	1	0.25	SP∞X14			●
NT-DRS-4D D49.00-S40-14	49	40	310	240	196	1	0.25	SP∞X14			▲
NT-DRS-4D D50.00-S40-14	50	40	315	245	200	1	0.25	SP∞X14			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

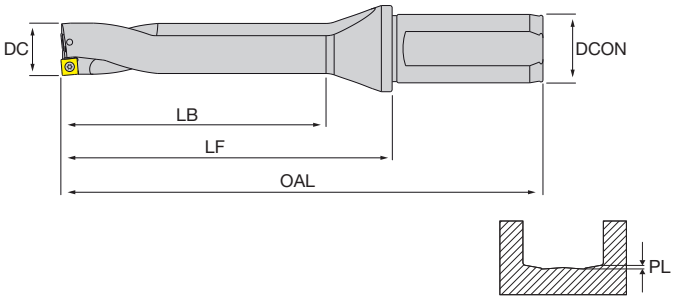
Spare parts	Insert screw 	Flag wrench 
NT-DRS-4D Doo.oo-Soo-05	NT-ST20043T06	NT-FTB06
NT-DRS-4D Doo.oo-Soo-06	NT-ST22055T06	NT-FTB06
NT-DRS-4D Doo.oo-Soo-07	NT-ST25060T07B	NT-FTB07
NT-DRS-4D Doo.oo-Soo-09	NT-ST35080T15	NT-FTB15
NT-DRS-4D Doo.oo-Soo-11	NT-ST40100T15	NT-FTB15
NT-DRS-4D Doo.oo-Soo-14	NT-ST50108T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

NT-DRS-5D

DRS drill

- Body for SP inserts with straight flutes
- Please select insert size according to the drill diameter
- Under **stable conditions**, hole tolerance **-0.20/+0.10 mm** (D<=16mm) **-0.05/+0.35 mm** (D> 16mm)





5xD | INTERNAL COOLANT | PLAIN | SLANT | CONCAVE | CONVEX | PIPES | HALF HOLE | HOLE EXPANSION

Designation	DC	DCON	OAL	LF	LB	PL	ADJLX	MIID			Stock
NT-DRS-5D D13.00-S20-05	13	20	133	83	65	0.4	0.5	SP∞X05			▲
NT-DRS-5D D14.00-S20-05	14	20	138	88	70	0.4	0.5	SP∞X05			●
NT-DRS-5D D15.00-S20-05	15	20	144	94	75	0.4	0.5	SP∞X05			●
NT-DRS-5D D16.00-S25-06	16	25	156	100	80	0.5	0.5	SP∞X06			●
NT-DRS-5D D17.00-S25-06	17	25	161	105	85	0.5	0.5	SP∞X06			●
NT-DRS-5D D18.00-S25-06	18	25	167	111	90	0.5	0.5	SP∞X06			●
NT-DRS-5D D19.00-S25-06	19	25	172	116	95	0.5	0.5	SP∞X06			●
NT-DRS-5D D20.00-S25-06	20	25	179	123	100	0.5	0.5	SP∞X06			●
NT-DRS-5D D21.00-S25-06	21	25	184	128	105	0.5	0.25	SP∞X06			●
NT-DRS-5D D22.00-S25-07	22	25	189	133	110	0.5	0.5	SP∞X07			●
NT-DRS-5D D23.00-S32-07	23	32	200	140	115	0.5	0.5	SP∞X07			●
NT-DRS-5D D24.00-S32-07	24	32	206	146	120	0.5	0.5	SP∞X07			●
NT-DRS-5D D25.00-S32-07	25	32	212	152	125	0.5	0.5	SP∞X07			●
NT-DRS-5D D26.00-S32-07	26	32	217	157	130	0.6	0.25	SP∞X07			●
NT-DRS-5D D27.00-S32-07	27	32	222	162	135	0.6	0.25	SP∞X07			●
NT-DRS-5D D28.00-S32-09	28	32	228	168	140	0.8	0.5	SP∞X09			●
NT-DRS-5D D29.00-S32-09	29	32	233	173	145	0.8	0.5	SP∞X09			●
NT-DRS-5D D30.00-S32-09	30	32	241	181	150	0.8	0.5	SP∞X09			●
NT-DRS-5D D31.00-S32-09	31	32	247	187	155	0.8	0.25	SP∞X09			●
NT-DRS-5D D32.00-S32-09	32	32	252	192	160	0.8	0.25	SP∞X09			●
NT-DRS-5D D33.00-S32-09	33	32	258	198	165	0.8	0.25	SP∞X09			●
NT-DRS-5D D34.00-S40-11	34	40	273	203	170	0.9	0.5	SP∞X11			●
NT-DRS-5D D35.00-S40-11	35	40	279	209	175	0.9	0.5	SP∞X11			●
NT-DRS-5D D36.00-S40-11	36	40	285	215	180	0.9	0.5	SP∞X11			●
NT-DRS-5D D37.00-S40-11	37	40	291	221	185	0.9	0.5	SP∞X11			●
NT-DRS-5D D38.00-S40-11	38	40	297	227	190	0.9	0.5	SP∞X11			●
NT-DRS-5D D39.00-S40-11	39	40	302	232	195	0.9	0.5	SP∞X11			●
NT-DRS-5D D40.00-S40-11	40	40	308	238	200	0.9	0.25	SP∞X11			●
NT-DRS-5D D41.00-S40-11	41	40	314	244	205	0.9	0.25	SP∞X11			●
NT-DRS-5D D42.00-S40-14	42	40	319	249	210	1	0.5	SP∞X14			●
NT-DRS-5D D43.00-S40-14	43	40	325	255	215	1	0.5	SP∞X14			●
NT-DRS-5D D44.00-S40-14	44	40	330	260	220	1	0.5	SP∞X14			●
NT-DRS-5D D45.00-S40-14	45	40	337	267	225	1	0.5	SP∞X14			●
NT-DRS-5D D46.00-S40-14	46	40	343	273	230	1	0.5	SP∞X14			●
NT-DRS-5D D47.00-S40-14	47	40	348	278	235	1	0.5	SP∞X14			●
NT-DRS-5D D48.00-S40-14	48	40	354	284	240	1	0.25	SP∞X14			●
NT-DRS-5D D49.00-S40-14	49	40	359	289	245	1	0.25	SP∞X14			●
NT-DRS-5D D50.00-S40-14	50	40	365	295	250	1	0.25	SP∞X14			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw 	Flag wrench 
NT-DRS-5D Doo.oo-Soo-05	NT-ST20043T06	NT-FTB06
NT-DRS-5D Doo.oo-Soo-06	NT-ST22055T06	NT-FTB06
NT-DRS-5D Doo.oo-Soo-07	NT-ST25060T07B	NT-FTB07
NT-DRS-5D Doo.oo-Soo-09	NT-ST35080T15	NT-FTB15
NT-DRS-5D Doo.oo-Soo-11	NT-ST40100T15	NT-FTB15
NT-DRS-5D Doo.oo-Soo-14	NT-ST50108T20	NT-FTB20

SORMA DIAMOND & CUTTING TOOLS

SP

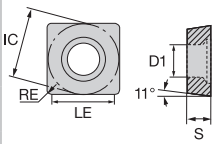
Square positive

- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available
- Several PVD coated carbide grades available
- Inserts could also be mounted both on drilling DRS system and milling ChamferSquare

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD	HF
		JP5530	JP8725	JP9535	JU6520
Stable machining, light cut	● 1st choice ○ suitable		○		●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable	○		●	

Dimensions



4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																							
P	**100 260**	**100 280**																						
M	60 180		**80 200**																					
K																								
N				**300 1100**																				
S			**20 60**																					
H																								

	Designation		RE	IC	S	D1	LE	Stock				
GENERAL	GP P M S	SPMX050204-GP	0.40	5	2.38	2.5	4.2	●	●	●		
		SPMX060204-GP	0.40	6	2.38	2.8	5.2	●	●	●		
		SPMX07T308-GP	0.80	7.94	3.97	2.8	6.34	●	●	●		
		SPMX090408-GP	0.80	9.8	4.3	4.2	8.2	●	●	●		
		SPMX110408-GP	0.80	11.5	4.76	4.4	9.9	●	●	●		
		SPMX140512-GP	1.20	14.3	5.2	5.5	11.9	●	●	●		
ALUMINIUM	AL N	SPGX050204-AL	0.40	5	2.38	2.5	4.2				●	
		SPGX060204-AL	0.40	6	2.38	2.8	5.2				●	
		SPGX07T308-AL	0.80	7.94	3.97	2.8	6.34				●	
		SPGX090408-AL	0.80	9.8	4.3	4.2	8.2				●	
		SPGX110408-AL	0.80	11.5	4.76	4.4	9.9				●	
		SPGX140512-AL	1.20	14.3	5.2	5.5	11.9				●	

periphery ground
polished surface

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	DC 12.50 ÷ 15.00			DC 15.50 ÷ 21.50			DC 22.00 ÷ 27.50		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	2xD - 3xD	0.05	**0.07**	0.09	0.05	**0.08**	0.11	0.05	**0.09**	0.13
			4xD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.04	**0.08**	0.12
			5xD	0.04	**0.05**	0.06	0.04	**0.06**	0.08	0.04	**0.07**	0.10
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	2xD - 3xD	0.07	**0.10**	0.13	0.07	**0.11**	0.15	0.09	**0.13**	0.17
			4xD	0.06	**0.09**	0.12	0.06	**0.10**	0.14	0.08	**0.12**	0.16
			5xD	0.06	**0.08**	0.10	0.06	**0.09**	0.12	0.08	**0.11**	0.14
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	2xD - 3xD	0.07	**0.09**	0.11	0.07	**0.10**	0.13	0.09	**0.12**	0.15
			4xD	0.06	**0.08**	0.10	0.06	**0.09**	0.12	0.08	**0.11**	0.14
			5xD	0.06	**0.07**	0.08	0.06	**0.08**	0.10	0.08	**0.10**	0.12
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	2xD - 3xD	0.06	**0.09**	0.12	0.06	**0.10**	0.14	0.06	**0.11**	0.16
			4xD	0.05	**0.08**	0.11	0.05	**0.09**	0.13	0.05	**0.10**	0.15
			5xD	0.05	**0.06**	0.07	0.05	**0.08**	0.11	0.05	**0.09**	0.13
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	2xD - 3xD	0.05	**0.08**	0.11	0.05	**0.09**	0.13	0.05	**0.10**	0.15
			4xD	0.04	**0.07**	0.10	0.04	**0.08**	0.12	0.04	**0.09**	0.14
			5xD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.04	**0.08**	0.12
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	2xD - 3xD	0.06	**0.08**	0.10	0.06	**0.09**	0.12	0.06	**0.10**	0.14
			4xD	0.05	**0.07**	0.09	0.05	**0.08**	0.11	0.05	**0.09**	0.13
			5xD	0.05	**0.06**	0.07	0.05	**0.06**	0.07	0.05	**0.08**	0.11
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		2xD - 3xD	0.05	**0.07**	0.09	0.05	**0.08**	0.11	0.05	**0.09**	0.13
			4xD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.04	**0.08**	0.12
			5XD	0.04	**0.05**	0.06	0.04	**0.06**	0.08	0.04	**0.07**	0.10
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	2xD - 3xD	0.07	**0.10**	0.13	0.09	**0.13**	0.17	0.11	**0.15**	0.19
			4xD	0.06	**0.09**	0.12	0.08	**0.12**	0.16	0.10	**0.14**	0.18
			5xD	0.06	**0.08**	0.10	0.08	**0.11**	0.14	0.10	**0.13**	0.16
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	2xD - 3xD	0.07	**0.09**	0.11	0.08	**0.12**	0.16	0.09	**0.14**	0.19
			4xD	0.06	**0.08**	0.10	0.07	**0.11**	0.15	0.08	**0.13**	0.18
			5xD	0.06	**0.07**	0.08	0.07	**0.10**	0.13	0.08	**0.12**	0.16
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		2xD - 3xD	0.07	**0.11**	0.15	0.07	**0.12**	0.17	0.09	**0.14**	0.19
			4xD	0.06	**0.10**	0.14	0.06	**0.11**	0.16	0.08	**0.13**	0.18
			5xD	0.06	**0.09**	0.12	0.06	**0.10**	0.14	0.08	**0.12**	0.16
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		2xD - 3xD	0.07	**0.10**	0.13	0.07	**0.11**	0.15	0.09	**0.13**	0.17
			4xD	0.06	**0.09**	0.12	0.06	**0.10**	0.14	0.08	**0.12**	0.16
			5xD	0.06	**0.08**	0.10	0.06	**0.09**	0.12	0.08	**0.11**	0.14

Complete workpiece materials p. **M**1.

(fn: mm/rev)

DC 28.00 ÷ 33.00			DC 34.00 ÷ 41.00			DC 42.00 ÷ 50.00					
min	start	max	min	start	max	min	start	max			
0.06	**0.10**	0.14	0.07	**0.11**	0.15	0.07	**0.12**	0.17			
0.05	**0.09**	0.13	0.06	**0.10**	0.14	0.06	**0.11**	0.16			
0.05	**0.08**	0.11	0.06	**0.09**	0.12	0.06	**0.10**	0.14			
0.09	**0.14**	0.19	0.11	**0.16**	0.21	0.11	**0.17**	0.23			
0.08	**0.13**	0.18	0.10	**0.15**	0.20	0.10	**0.16**	0.22			
0.08	**0.12**	0.16	0.10	**0.14**	0.18	0.10	**0.15**	0.20			
0.09	**0.13**	0.17	0.09	**0.14**	0.19	0.11	**0.16**	0.21			
0.08	**0.12**	0.16	0.08	**0.13**	0.18	0.10	**0.15**	0.20			
0.08	**0.11**	0.14	0.08	**0.12**	0.16	0.10	**0.14**	0.18			
0.07	**0.12**	0.17	0.08	**0.12**	0.18	0.09	**0.14**	0.19			
0.06	**0.11**	0.16	0.07	**0.11**	0.17	0.08	**0.13**	0.18			
0.06	**0.10**	0.14	0.07	**0.10**	0.13	0.08	**0.12**	0.16			
0.06	**0.11**	0.16	0.07	**0.12**	0.17	0.09	**0.13**	0.17			
0.05	**0.10**	0.15	0.06	**0.11**	0.16	0.08	**0.12**	0.16			
0.05	**0.09**	0.13	0.06	**0.10**	0.14	0.08	**0.11**	0.14			
0.07	**0.11**	0.15	0.08	**0.12**	0.16	0.09	**0.13**	0.17			
0.06	**0.10**	0.14	0.07	**0.11**	0.15	0.08	**0.12**	0.16			
0.06	**0.09**	0.12	0.07	**0.10**	0.13	0.08	**0.11**	0.14			
0.06	**0.10**	0.14	0.07	**0.11**	0.15	0.09	**0.12**	0.15			
0.05	**0.09**	0.13	0.06	**0.10**	0.14	0.08	**0.11**	0.14			
0.05	**0.08**	0.11	0.06	**0.09**	0.12	0.08	**0.10**	0.12			
0.11	**0.17**	0.23	0.13	**0.19**	0.25	0.15	**0.21**	0.27			
0.10	**0.16**	0.22	0.12	**0.18**	0.24	0.14	**0.20**	0.26			
0.10	**0.15**	0.20	0.12	**0.17**	0.22	0.14	**0.19**	0.24			
0.11	**0.16**	0.21	0.13	**0.17**	0.21	0.15	**0.19**	0.23			
0.10	**0.15**	0.20	0.12	**0.16**	0.20	0.14	**0.18**	0.22			
0.10	**0.14**	0.18	0.12	**0.15**	0.18	0.14	**0.17**	0.20			
0.09	**0.15**	0.21	0.11	**0.17**	0.23	0.13	**0.18**	0.23			
0.08	**0.14**	0.20	0.10	**0.16**	0.22	0.12	**0.17**	0.22			
0.08	**0.13**	0.18	0.10	**0.15**	0.20	0.12	**0.16**	0.20			
0.09	**0.14**	0.19	0.11	**0.16**	0.21	0.13	**0.17**	0.21			
0.08	**0.13**	0.18	0.10	**0.15**	0.20	0.12	**0.16**	0.20			
0.08	**0.12**	0.16	0.10	**0.14**	0.18	0.12	**0.15**	0.18			

Complete workpiece materials p. **M**1.

(fn: mm/rev)

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	2XD ÷ 5XD	120	**180**	240	120	**180**	240	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	2XD ÷ 5XD	100	**150**	200	100	**150**	200	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	2XD ÷ 5XD	80	**120**	160	80	**120**	160	
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max	
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	2XD ÷ 5XD	50	**90**	130	80	**120**	160	
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	2XD ÷ 5XD		-		60	**90**	120	
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	2XD ÷ 5XD	40	**70**	100	80	**120**	160	
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		2XD ÷ 5XD		-		60	**100**	140	
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max				
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	2XD ÷ 5XD	120	**150**	180				
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	2XD ÷ 5XD	100	**120**	140				
ISO 513	MATERIAL	HARDNESS HB	L/D	JU6520 min	JU6520 start	JU6520 max				
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		2XD ÷ 5XD	240	**320**	400				
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		2XD ÷ 5XD	160	**230**	300				

Complete workpiece materials p. **M**1.

DRS PILOT

Indexable drilling system for extra deep holes

Application



- Flat surface
- Concave surface
- Convex surface
- Pipes

- Flache Flächen
- Konkave Flächen
- Konvexe Flächen
- Rohre

- Superfici piane
- Superfici concave
- Superfici convesse
- Tubi

- Surfaces planes
- Surfaces concaves
- Surfaces convexes
- Tubes

Application range - ISO 513

P M K N



Features and benefits

- Versatile system for universal application
- Highly cost-efficient system for deep hole drilling.
- The use of pilot provides better centering effect.
- Straight flute design improves chip evacuation and strengthens the body.

- Sehr universelles Bohrsystem, das für unterschiedliche Bedingungen geeignet ist.
- Sehr kosteneffektives System für tiefe Bohrungen.
- Die Verwendung der Zentrierspitze sorgt für eine bessere Zentrierung.
- Die Ausführung mit geraden Nuten verbessert die Spanabfuhr und stärkt den Bohrerkörper.

- Sistema di foratura versatile per applicazione universale.
- Sistema a elevata efficienza economica per forature profonde.
- L'uso della punta pilota assicura un miglior centraggio.
- Il design a gole dritte migliora l'evacuazione del truciolo e rinforza il corpo punta.

- Système de perçage universel pour applications générales
- Système à haut rendement économique pour perçages profonds.
- L'utilisation du foret pilote assure un meilleur centrage.
- La conception à goujure droite améliore l'évacuation des copeaux et renforce le corps du foret.

DRS PILOT

Indexable drilling system for extra deep holes

Drilling holders

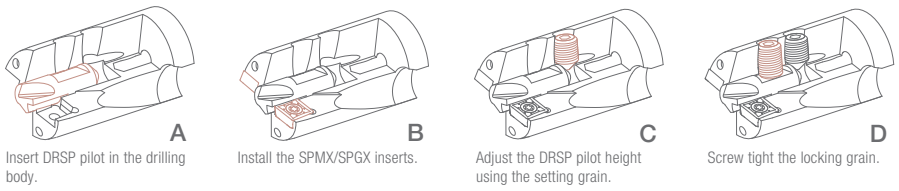
- Weldon shank with internal coolant
- 6xD and 9xD available from D18 to D30
- Special length and step type available upon request

- Weldon-Aufnahme mit internem Kühlschmiermittel
- 6xD und 9xD erhältlich von D18 bis D30
- Sonderlängen und Stufenkörper auf Anfrage erhältlich

- Attacco Weldon con refrigerante interno
- 6xD e 9xD disponibili da D18 a D30
- Lunghezze speciali e geometria a gradino disponibili su richiesta

- Queue Weldon avec arrosage interne
- Disponibles en 6xD et 9xD du D18 à D30
- Longueurs spéciales et corps « étagés » disponibles sur demande

Installation of inserts and pilot drill



A — Insert DRSP pilot in the drilling body.

B — Install the SPMX/SPGX inserts.

C — Adjust the DRSP pilot height using the setting grain.

D — Screw tight the locking grain.

⚠ For pilot adjustement see page E22.
Regolazioni punta pilota: vedere pag. E22.
Einstellung der Zentrierspitze: siehe Seite E22.
For pilot adjustement see page E22.

Inserts

- Available sizes 05/06/07
- PVD coated carbide (ISO P, M, K, S) or uncoated carbide (ISO N)
- Geometries: GP, AL
- Pilot drill made of coated premium HSS

- Erhältliche Größen 05/06/07
- PVD-beschichtete Hartmetallqualitäten oder unbeschichtete Qualitäten für ISO-Materialien N
- Geometrien: GP, AL
- Zentrierspitze aus hochwertig beschichtetem Hochleistungsstahl (HSS)

- Dimensioni disponibili 05/06/07
- Gradi in metallo duro rivestito (ISO P, M, K, S) e non rivestito (ISO N)
- Geometrie: GP, AL
- Punta pilota in acciaio super rapido (HSS premium) rivestito

- Tailles plaquettes 05/06/07
- Nuances carbure revêtues PVD ou nuances non revêtues pour matériaux ISO N
- Géométries : GP, AL
- Foret pilote revêtu HSS de qualité supérieure

GP P M K



SIZE
05 06 07

AL N



SIZE
05 06 07

Pilot P M K N



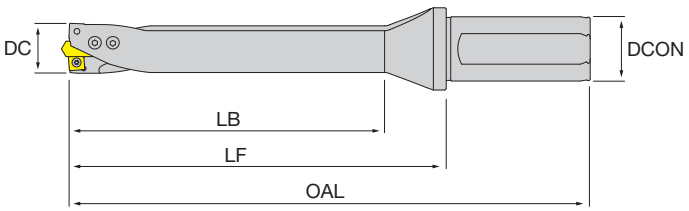
SIZE
06 08

SORMA DIAMOND & CUTTING TOOLS

NT-DRS-6D

DRS pilot

- 6xD indexable drill body with pilot and seats for SP inserts with straight flutes
- Under **stable conditions**, hole tolerance
  -0.20/+0.10 mm (D<=16mm)
  -0.05/+0.35 mm (D> 16mm)



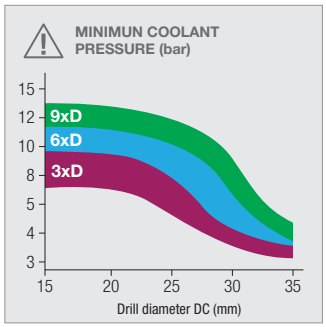


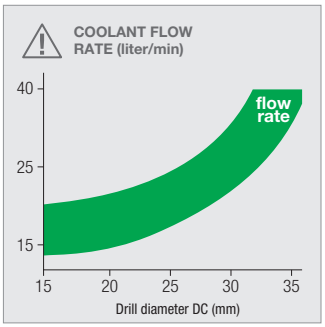
6xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | PIPES

Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DRS-6D D18.00-S25-05P6	18	25	191	135	112	DRSP06	SP∞X05				◉
NT-DRS-6D D19.00-S25-05P6	19	25	197	141	118	DRSP06	SP∞X05				○
NT-DRS-6D D20.00-S25-06P6	20	25	203	147	124	DRSP06	SP∞X06				◉
NT-DRS-6D D21.00-S25-06P6	21	25	209	153	130	DRSP06	SP∞X06				◉
NT-DRS-6D D22.00-S25-06P6	22	25	215	159	136	DRSP06	SP∞X06				◉
NT-DRS-6D D23.00-S32-06P6	23	32	228	168	142	DRSP06	SP∞X06				◉
NT-DRS-6D D24.00-S32-06P6	24	32	234	174	148	DRSP06	SP∞X06				◉
NT-DRS-6D D25.00-S32-06P6	25	32	240	180	154	DRSP06	SP∞X06				◉
NT-DRS-6D D26.00-S32-07P8	26	32	246	186	160	DRSP08	SP∞X07				◉
NT-DRS-6D D27.00-S32-07P8	27	32	252	192	166	DRSP08	SP∞X07				◉
NT-DRS-6D D28.00-S32-07P8	28	32	258	198	172	DRSP08	SP∞X07				◉
NT-DRS-6D D29.00-S32-07P8	29	32	264	204	178	DRSP08	SP∞X07				○
NT-DRS-6D D30.00-S32-07P8	30	32	270	210	184	DRSP08	SP∞X07				◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Pilot drill	Insert screw	Flag wrench	Locking grain	Setting grain	L wrench
NT-DRS-6D (DC 18-19)	DRSP06-GP	NT-ST20043T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 20-22)	DRSP06-GP	NT-ST22055T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 23-25)	DRSP06-GP	NT-ST22055T06	NT-FTB06	NT-ST044	NT-ST045	NT-WR025
NT-DRS-6D (DC 26-30)	DRSP08-GP	NT-ST25060T07B	NT-FTB07	NT-ST046	NT-ST047	NT-WR030



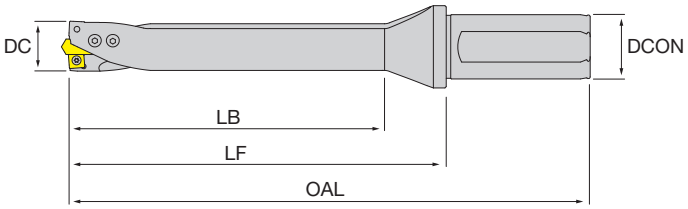


SORMA DIAMOND & CUTTING TOOLS

NT-DRS-9D

DRS pilot

- 9xD indexable drill body with pilot and seats for SP inserts with straight flutes
- Under **stable conditions**, hole tolerance **-0.20/+0.10 mm** (D<=16mm) **-0.05/+0.35 mm** (D> 16mm)



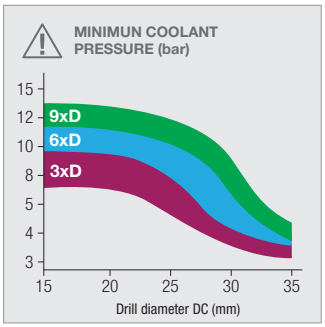


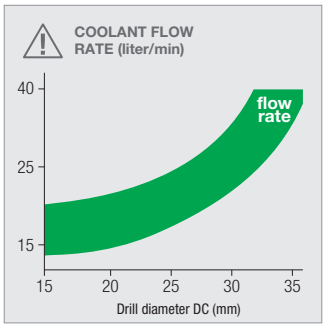
9xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | PIPES

Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DRS-9D D18.00-S25-05P6	18	25	245	189	166	DRSP06	SP∞X05				●
NT-DRS-9D D19.00-S25-05P6	19	25	254	198	175	DRSP06	SP∞X05				●
NT-DRS-9D D20.00-S25-06P6	20	25	263	207	184	DRSP06	SP∞X06				●
NT-DRS-9D D21.00-S25-06P6	21	25	272	216	193	DRSP06	SP∞X06				●
NT-DRS-9D D22.00-S25-06P6	22	25	281	225	202	DRSP06	SP∞X06				●
NT-DRS-9D D23.00-S32-06P6	23	32	297	237	211	DRSP06	SP∞X06				○
NT-DRS-9D D24.00-S32-06P6	24	32	306	246	220	DRSP06	SP∞X06				●
NT-DRS-9D D25.00-S32-06P6	25	32	315	255	229	DRSP06	SP∞X06				●
NT-DRS-9D D26.00-S32-07P8	26	32	324	264	238	DRSP08	SP∞X07				●
NT-DRS-9D D27.00-S32-07P8	27	32	333	273	247	DRSP08	SP∞X07				●
NT-DRS-9D D28.00-S32-07P8	28	32	342	282	256	DRSP08	SP∞X07				●
NT-DRS-9D D29.00-S32-07P8	29	32	351	291	265	DRSP08	SP∞X07				●
NT-DRS-9D D30.00-S32-07P8	30	32	360	300	274	DRSP08	SP∞X07				●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Pilot drill	Insert screw	Flag wrench	Locking grain	Setting grain	L wrench
NT-DRS-9D (DC 18-19)	DRSP06-GP	NT-ST20043T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-9D (DC 20-22)	DRSP06-GP	NT-ST22055T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-9D (DC 23-25)	DRSP06-GP	NT-ST22055T06	NT-FTB06	NT-ST044	NT-ST045	NT-WR025
NT-DRS-9D (DC 26-30)	DRSP08-GP	NT-ST25060T07B	NT-FTB07	NT-ST046	NT-ST047	NT-WR030





SORMA DIAMOND & CUTTING TOOLS

SP

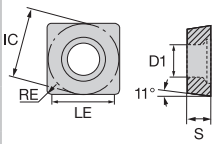
Square positive

- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available
- Several PVD coated carbide grades available
- Inserts could also be mounted both on drilling DRS system and milling ChamferSquare

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		JP5530	JP8725	JP9535	JU6520
		HF PVD	HF PVD	HF PVD	HF
Stable machining, light cut	● 1st choice ○ suitable		○		●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable	○		●	

Dimensions



4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
P	**100 260**	**100 280**			
M	60 180		**80 200**		
K					
N				**300 1100**	
S			**20 60**		
H					

	Designation	RE	IC	S	D1	LE	JP5530	JP8725	JP9535	JU6520	Stock
GENERAL	GP P M S	SPMX050204-GP	0.40	5	2.38	2.5	4.2	●	●	●		
		SPMX060204-GP	0.40	6	2.38	2.8	5.2	●	●	●		
		SPMX07T308-GP	0.80	7.94	3.97	2.8	6.34	●	●	●		
ALUMINIUM	AL N	SPGX050204-AL	0.40	5	2.38	2.5	4.2				●	
		SPGX060204-AL	0.40	6	2.38	2.8	5.2				●	
	periphery ground polished surface	SPGX07T308-AL	0.80	7.94	3.97	2.8	6.34				●	

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

DRSP

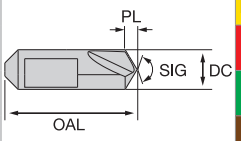
Pilot

- TIN coated HSS pilot for DRS PILOT drills
- 1 Pilot is already pre-mounted on DRS Pilot drill body
- Universal use for PMKN materials
- Cannot be mounted on DEX Pilot

HSS: High speed steel
PVD: Physical vapor deposition

		HSS	PVD	HSS TiN
Stable machining, light cut	1st choice / suitable			
General machining, medium cut	1st choice / suitable		●	
Unstable machining, heavy cut	1st choice / suitable			

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**90 200**
M	**50 130**
K	**90 150**
N	**160 320**
S	
H	

	Designation	DC	OAL	PL	SIG		Stock
GENERAL	GP P M K N						
	DRSP06-GP	6	20	1.5	118		●
	DRSP08-GP	8	25	2.1	118		●



★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

DRILLING Parameters - cutting speed - DRS PILOT

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max	JP8725 min	JP8725 start	JP8725 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	6XD	100	**150**	200	100	**150**	200
			9XD	90	**130**	170	90	**130**	170
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	6XD	80	**120**	160	80	**120**	160
			9XD	70	**105**	140	70	**105**	140
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	6XD	65	**95**	125	65	**95**	125
			9XD	55	**85**	115	55	**85**	115
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max	JP9535 min	JP9535 start	JP9535 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	6XD	40	**80**	120	70	**100**	130
			9XD	30	**60**	90	50	**80**	110
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	6XD		-		60	**80**	100
			9XD		-		50	**70**	90
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	6XD	35	**60**	85	70	**100**	130
			9XD	30	**50**	70	50	**80**	110
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		6XD		-		60	**90**	120
			9XD		-		50	**80**	110
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530 min	JP5530 start	JP5530 max			
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	6XD	110	**130**	150			
			9XD	90	**110**	130			
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	6XD	80	**100**	120			
			9XD	70	**90**	110			
ISO 513	MATERIAL	HARDNESS HB	L/D	JU6520 min	JU6520 start	JU6520 max			
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		6XD	200	**260**	320			
			9XD	160	**220**	280			
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		6XD	120	**180**	240			
			9XD	100	**150**	200			

Complete workpiece materials p. **M**1.

ISO 513	MATERIAL	HARDNESS HB	L/D	DC 18.00 ÷ 19.00			DC 20.00 ÷ 25.00			DC 26.00 ÷ 30.00		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	6XD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.05	**0.08**	0.11
			9XD	0.04	**0.05**	0.06	0.04	**0.06**	0.08	0.05	**0.07**	0.09
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	6XD	0.06	**0.09**	0.12	0.08	**0.11**	0.14	0.08	**0.12**	0.16
			9XD	0.06	**0.08**	0.10	0.08	**0.10**	0.12	0.08	**0.11**	0.14
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	6XD	0.06	**0.08**	0.10	0.08	**0.10**	0.12	0.08	**0.11**	0.14
			9XD	0.06	**0.07**	0.08	0.08	**0.09**	0.10	0.08	**0.10**	0.12
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	6XD	0.05	**0.08**	0.11	0.05	**0.09**	0.13	0.06	**0.10**	0.14
			9XD	0.05	**0.07**	0.09	0.05	**0.08**	0.11	0.06	**0.09**	0.12
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	6XD	0.04	**0.07**	0.10	0.04	**0.08**	0.12	0.05	**0.09**	0.13
			9XD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.05	**0.08**	0.11
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	6XD	0.05	**0.06**	0.07	0.05	**0.08**	0.11	0.06	**0.09**	0.12
			9XD	0.04	**0.05**	0.06	0.05	**0.07**	0.09	0.06	**0.08**	0.10
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		6XD	0.04	**0.06**	0.08	0.04	**0.07**	0.10	0.05	**0.08**	0.11
			9XD	0.03	**0.05**	0.07	0.04	**0.06**	0.08	0.05	**0.07**	0.09
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	6XD	0.08	**0.11**	0.14	0.10	**0.13**	0.16	0.10	**0.15**	0.20
			9XD	0.08	**0.10**	0.12	0.10	**0.12**	0.14	0.10	**0.14**	0.18
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	6XD	0.07	**0.10**	0.13	0.08	**0.12**	0.16	0.10	**0.14**	0.18
			9XD	0.07	**0.08**	0.11	0.08	**0.11**	0.14	0.10	**0.13**	0.16
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		6XD	0.06	**0.10**	0.14	0.08	**0.12**	0.16	0.08	**0.13**	0.18
			9XD	0.06	**0.09**	0.12	0.08	**0.11**	0.14	0.08	**0.12**	0.16
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		6XD	0.06	**0.09**	0.12	0.08	**0.11**	0.14	0.08	**0.12**	0.16
			9XD	0.06	**0.08**	0.10	0.08	**0.10**	0.12	0.08	**0.11**	0.14

Complete workpiece materials p. **M**1.

(fn: mm/rev)

DEX DRILLS

Drilling system with exchangeable head

Application



- Flat surface
- Concave surface
- Convex surface
- Stacked plates
- Pipes

- Flache Flächen
- Konkave Flächen
- Konvexe Flächen
- Paketbohren
- Rohre

- Superfici piane
- Superfici concave
- Superfici convesse
- Foratura a pacco
- Tubi

- Surfaces planes
- Surfaces concaves
- Surfaces convexes
- Perçage en empilement
- Tubes

Application range - ISO 513

P M K N S



Features and benefits

- Drills with highly reliable exchangeable head system.
- Exchangeable head with 3D geometry, for high feed rate and high efficiency machining.
- Excellent technical and economical alternative to solid carbide drills

- Sehr zuverlässiges mechanisches Schnellwechsel-Bohrsystem.
- Wechseleinsätze aus Hartmetall mit 3D-Geometrie für große Vorschübe ermöglichen eine hocheffiziente Bearbeitung.
- Kosteneffektives Preis/Leistungsverhältnis pro Bohrung, gute Alternative zum Nachschleifen herkömmlicher Hartmetallbohrer.

- Punte con sistema di cambio cuspide altamente affidabile.
- Cuspidi in metallo duro con geometria 3D per elevati avanzamenti ed elevata efficienza operativa.
- Ottima alternativa tecnica ed economica alle punte in metallo duro integrale.

- Forets avec système d'embout interchangeable très fiable
- Embouts en carbure à géométrie 3D pour avances élevées garantissent un usinage haute efficacité.
- Excellente alternative technique et économique aux forets carbure monobloc

SORMA DIAMOND & CUTTING TOOLS

DEX DRILLS

Drilling system with exchangeable head

Drilling holders

- Weldon shank with internal coolant
- 3xD, 5xD and 8xD available from D10 to D26
- Special length (1.5D and 12D) and step type available upon request

- Weldon-Aufnahme mit internem Kühlschmiermittel
- 3xD, 5xD und 8xD erhältlich von D10 bis D26
- Sonderlängen (1.5D und 12D) und abgestufte Körper auf Anfrage erhältlich

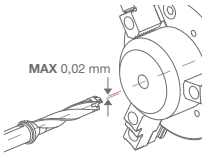
- Attacco Weldon con refrigerante interno
- 3xD, 5xD e 8xD disponibili da D10 a D26
- Lunghezze speciali (1.5D e 12D) e geometria a gradino disponibili su richiesta

- Queue Weldon avec arrosage interne
- Disponibles en 3xD et 5xD du D10 au D26
- Longueurs spéciales (1,5D, 8D et 12D) et corps « étagés » disponibles sur demande



Center of arbor deviation must be under 0.02mm.

Milling machine



Keep under 0.02mm the maximum deviation between drill and workpiece.

Lathe

Inserts

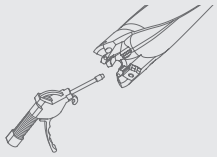
- Available D10-26, can make special diameters or step type
- PVD coated carbide grades
- Geometries: GP, SC, TE, FT (flat)

- In den Größen D10-26 erhältlich, auch Sonderdurchmesser oder Stufenkörper können realisiert werden
- PVD-beschichtete Hartmetallqualitäten
- Geometrien: GP, SC, TE, FT (flat)

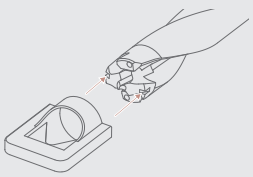
- Disponibili D10-26, si possono realizzare diametri speciali o geometria a gradino.
- Gradi in metallo duro rivestito PVD
- Geometrie: GP, SC, TE, FT (flat)

- Disponibles du D10-26, possibilité de réaliser des diamètres spéciaux ou des corps « étagés »
- Nuances en carbure revêtues PVD
- Géométries : GP, SC, TE, FT (plat)

DRILLING HEADS INSTALLATON



- Clean pocket with air blast.
  Put insert into drill holder.
- Pulire la sede con aria compressa.
  Posizionare l'inserto nella sede.
- Die Tasche mit Druckluft reinigen.
  Die Wendeschneidplatten in die Aufnahme einsetzen.
- Nettoyer le logement à l'air comprimé.
  Positionner l'embout dans le logement.

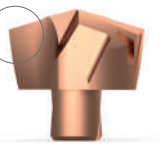


- Set wrench into slots on insert flanks.
  Slowly turn the wrench clockwise until stop.
- Posizionare la chiave nelle guide sui fianchi della cuspide.
  Girare lentamente la chiave in senso orario fino all'arresto.
- Den Schlüssel in die Führungen an den Seiten der Wendeschneidplatte einsetzen.
  Den Schlüssel langsam im Uhrzeigersinn drehen, bis zum Anschlag.
- Placer la clé dans les guides sur les côtés de l'embout.
  Tourner lentement la clé dans le sens horaire jusqu'en butée.

GP P K



SC P M



TE K



FT P K

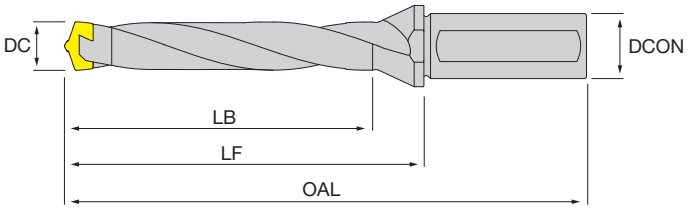


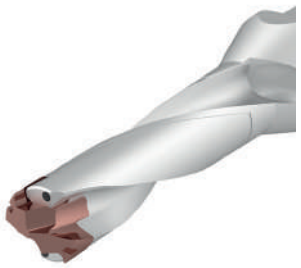
SORMA DIAMOND & CUTTING TOOLS

NT-DEX-3D

DEX drill

- Different drill heads can fits into the same body, please check MIID column
- Special diameters or stepped type available upon requests
- Under **stable conditions**, hole tolerance **0/+0.10 mm**



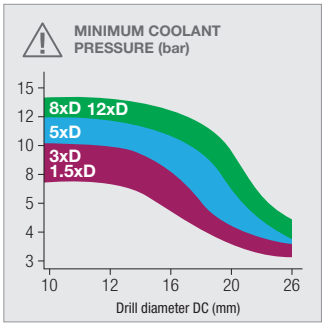


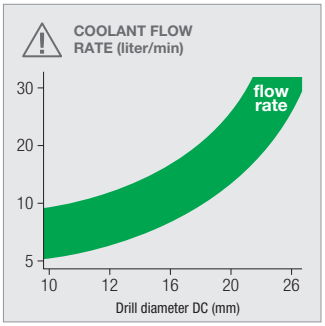
3xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

Designation	DC	DCON	OAL	LF	LB	MIID					Stock
NT-DEX-3D D10-S16F	10	16	95	47	38	DEX10∞					●
NT-DEX-3D D11-S16F	11	16	98	50	39	DEX11∞					●
NT-DEX-3D D12-S16F	12	16	104	56	44	DEX12∞					●
NT-DEX-3D D13-S16F	13	16	108	60	47	DEX13∞					●
NT-DEX-3D D14-S16F	14	16	112	64	50	DEX14∞					●
NT-DEX-3D D15-S20F	15	20	118	68	53	DEX15∞					●
NT-DEX-3D D16-S20F	16	20	122	72	56	DEX16∞					●
NT-DEX-3D D17-S20F	17	20	126	76	59	DEX17∞					●
NT-DEX-3D D18-S25F	18	25	136	80	62	DEX18∞					●
NT-DEX-3D D19-S25F	19	25	140	84	65	DEX19∞					●
NT-DEX-3D D20-S25F	20	25	144	88	68	DEX20∞					●
NT-DEX-3D D21-S25F	21	25	152	96	75	DEX21∞					●
NT-DEX-3D D22-S25F	22	25	157	101	81	DEX22∞					●
NT-DEX-3D D23-S32F	23	32	165	105	82	DEX23∞					●
NT-DEX-3D D24-S32F	24	32	170	110	86	DEX24∞					●
NT-DEX-3D D25/26-S32F	25	32	175	115	89	DEX25∞					●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Wrench
NT-DEX-3D (DC10-11)	NT-WR1011
NT-DEX-3D (DC12-17)	NT-WR1217
NT-DEX-3D (DC18-20)	NT-WR1820
NT-DEX-3D (DC21-25)	NT-WR2126



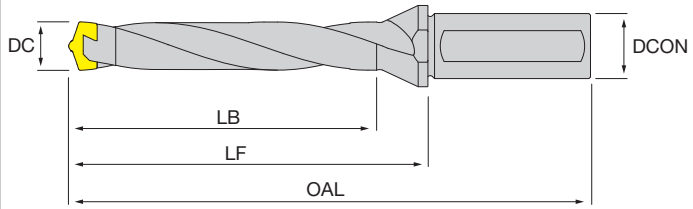


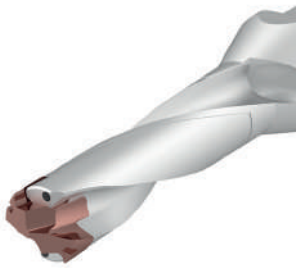
SORMA DIAMOND & CUTTING TOOLS

NT-DEX-5D

DEX drill

- Different drill heads can fits into the same body, please check MIID column
- Special diameters or stepped type available upon requests
- Under **stable conditions**, hole tolerance **0/+0.10 mm**



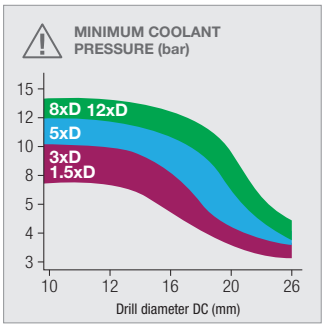


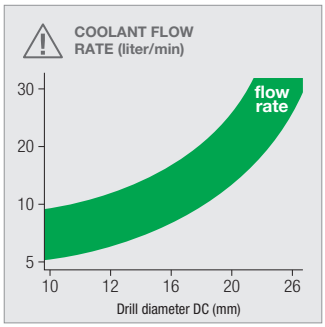
5xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

Designation	DC	DCON	OAL	LF	LB	MIID					Stock
NT-DEX-5D D10-S16F	10	16	116	68	59	DEX10∞					●
NT-DEX-5D D11-S16F	11	16	121	73	62	DEX11∞					●
NT-DEX-5D D12-S16F	12	16	130	82	70	DEX12∞					●
NT-DEX-5D D13-S16F	13	16	136	88	75	DEX13∞					●
NT-DEX-5D D14-S16F	14	16	142	94	80	DEX14∞					●
NT-DEX-5D D15-S20F	15	20	150	100	85	DEX15∞					●
NT-DEX-5D D16-S20F	16	20	156	106	90	DEX16∞					●
NT-DEX-5D D17-S20F	17	20	162	112	95	DEX17∞					●
NT-DEX-5D D18-S25F	18	25	174	118	100	DEX18∞					●
NT-DEX-5D D19-S25F	19	25	180	124	105	DEX19∞					●
NT-DEX-5D D20-S25F	20	25	186	130	110	DEX20∞					●
NT-DEX-5D D21-S25F	21	25	194	138	117	DEX21∞					●
NT-DEX-5D D22-S25F	22	25	201	145	125	DEX22∞					●
NT-DEX-5D D23-S32F	23	32	211	151	128	DEX23∞					●
NT-DEX-5D D24-S32F	24	32	218	158	134	DEX24∞					●
NT-DEX-5D D25/26-S32F	25	32	225	165	139	DEX25∞					●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Wrench
NT-DEX-5D (DC10-11)	NT-WR1011
NT-DEX-5D (DC12-17)	NT-WR1217
NT-DEX-5D (DC18-20)	NT-WR1820
NT-DEX-5D (DC21-25)	NT-WR2126



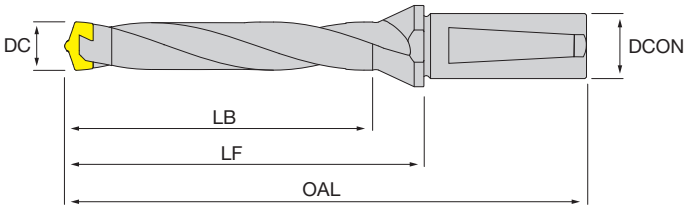


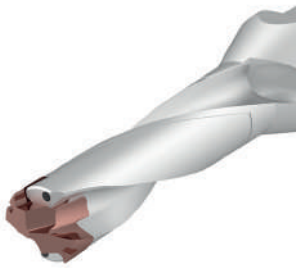
SORMA DIAMOND & CUTTING TOOLS

NT-DEX-8D

DEX drill

- Different drill heads can fits into the same body, please check MIID column
- Special diameters or stepped type available upon requests
- Under **stable conditions**, hole tolerance **0/+0.10 mm**



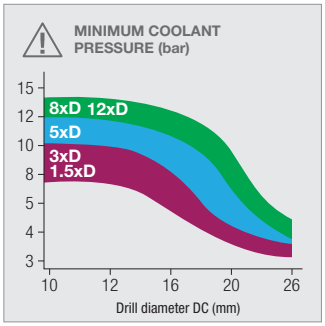


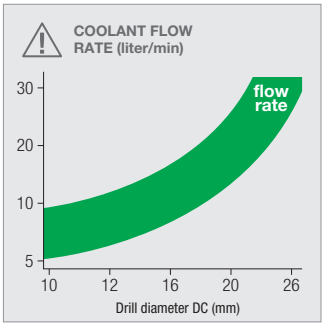
8xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

Designation	DC	DCON	OAL	LF	LB	MIID					Stock
NT-DEX-8D D10-S16F	10	16	158	110	99	DEX10∞					●
NT-DEX-8D D11-S16F	11	16	168	120	108	DEX11∞					●
NT-DEX-8D D12-S16F	12	16	176	128	118	DEX12∞					●
NT-DEX-8D D13-S16F	13	16	185	137	126	DEX13∞					●
NT-DEX-8D D14-S16F	14	16	192	144	134	DEX14∞					●
NT-DEX-8D D15-S20F	15	20	208	158	144	DEX15∞					●
NT-DEX-8D D16-S20F	16	20	214	164	152	DEX16∞					●
NT-DEX-8D D17-S20F	17	20	227	177	162	DEX17∞					●
NT-DEX-8D D18-S25F	18	25	245	189	171	DEX18∞					●
NT-DEX-8D D19-S25F	19	25	252	196	179	DEX19∞					●
NT-DEX-8D D20-S25F	20	25	264	208	189	DEX20∞					●
NT-DEX-8D D21-S25F	21	25	273	217	198	DEX21∞					●
NT-DEX-8D D22-S25F	22	25	279	223	207	DEX22∞					●
NT-DEX-8D D23-S32F	23	32	299	239	215	DEX23∞					●
NT-DEX-8D D24-S32F	24	32	308	248	225	DEX24∞					●
NT-DEX-8D D25/26-S32F	25	32	319	259	235	DEX25∞					●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Wrench
NT-DEX-8D (DC10-11)	NT-WR1011
NT-DEX-8D (DC12-17)	NT-WR1217
NT-DEX-8D (DC18-20)	NT-WR1820
NT-DEX-8D (DC21-25)	NT-WR2126





SORMA DIAMOND & CUTTING TOOLS

DEX

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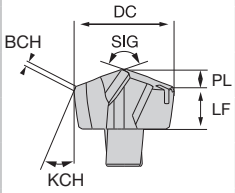
HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD
		JP5625	JP5725
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	55 **160**	55 **160**
M		
K	60 **140**	60 **140**
N		
S		
H		

	Designation	DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 10 P K 	DEX1000-GP	10	38	0.3	1.78	4.42	●
		DEX1010-GP	10.1	38	0.3	1.8	4.4	○
		DEX1020-GP	10.2	38	0.3	1.82	4.38	●
		DEX1030-GP	10.3	38	0.3	1.84	4.36	●
		DEX1040-GP	10.4	38	0.3	1.86	4.34	●
		DEX1050-GP	10.5	38	0.3	1.88	4.32	●
		DEX1060-GP	10.6	38	0.3	1.9	4.3	●
		DEX1070-GP	10.7	38	0.3	1.92	4.28	○
		DEX1080-GP	10.8	38	0.3	1.94	4.26	●
		DEX1090-GP	10.9	38	0.3	1.96	4.24	○
GENERAL	GP 11 P K 	DEX1100-GP	11	38	0.4	1.98	4.62	●
		DEX1110-GP	11.1	38	0.4	2	4.6	○
		DEX1120-GP	11.2	38	0.4	2.02	4.58	●
		DEX1130-GP	11.3	38	0.4	2.04	4.56	◉
		DEX1140-GP	11.4	38	0.4	2.06	4.54	○
		DEX1150-GP	11.5	38	0.4	2.08	4.52	●
		DEX1160-GP	11.6	38	0.4	2.1	4.5	○
		DEX1170-GP	11.7	38	0.4	2.12	4.48	○
		DEX1180-GP	11.8	38	0.4	2.14	4.46	◉
		DEX1190-GP	11.9	38	0.4	2.16	4.44	○

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GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

GP - Outer corner



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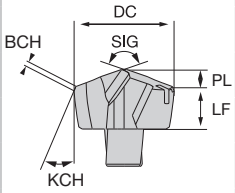
		JP5625	JP5725
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



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P	**55 160**	**55 160**
M		
K	**60 140**	**60 140**
N		
S		
H		

	Designation		DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 12 P K	DEX1200-GP	12	38	0.4	2.18	4.82		●
		DEX1210-GP	12.1	38	0.4	2.2	4.8		●
		DEX1220-GP	12.2	38	0.4	2.22	4.78		●
		DEX1230-GP	12.3	38	0.4	2.24	4.76		●
		DEX1240-GP	12.4	38	0.4	2.26	4.74	●	▲
		DEX1250-GP	12.5	38	0.4	2.27	4.73		●
		DEX1260-GP	12.6	38	0.4	2.29	4.71		●
		DEX1270-GP	12.7	38	0.4	2.31	4.69		●
		DEX1280-GP	12.8	38	0.4	2.33	4.67	●	▲
		DEX1290-GP	12.9	38	0.4	2.35	4.645		◉
GENERAL	GP 13 P K	DEX1300-GP	13	38	0.4	2.37	5.23		●
		DEX1310-GP	13.1	38	0.4	2.38	5.22		●
		DEX1320-GP	13.2	38	0.4	2.4	5.2		●
		DEX1330-GP	13.3	38	0.4	2.42	5.18		◉
		DEX1340-GP	13.4	38	0.4	2.44	5.16	◉	▲
		DEX1350-GP	13.5	38	0.4	2.46	5.14		●
		DEX1360-GP	13.6	38	0.4	2.47	5.13		◉
		DEX1370-GP	13.7	38	0.4	2.49	5.11		◉
		DEX1380-GP	13.8	38	0.4	2.51	5.09		●
		DEX1390-GP	13.9	38	0.4	2.53	5.07	●	▲

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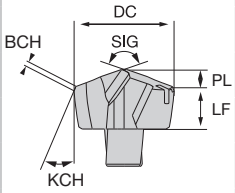
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



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P	55 **160**	55 **160**
M		
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N		
S		
H		

	Designation		DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 14 P K	DEX1400-GP	14	38	0.4	2.55	5.55		●
		DEX1410-GP	14.1	38	0.4	2.57	5.53		●
		DEX1420-GP	14.2	38	0.4	2.58	5.52		●
		DEX1430-GP	14.3	38	0.4	2.6	5.5		●
		DEX1440-GP	14.4	38	0.4	2.62	5.48		◉
		DEX1450-GP	14.5	38	0.4	2.64	5.46		●
		DEX1460-GP	14.6	38	0.4	2.66	5.44		●
		DEX1470-GP	14.7	38	0.4	2.68	5.42		●
		DEX1480-GP	14.8	38	0.4	2.69	5.41	●	▲
		DEX1490-GP	14.9	38	0.4	2.71	5.39	●	▲
GENERAL	GP 15 P K	DEX1500-GP	15	38	0.5	2.73	5.97		●
		DEX1505-GP	15.05	38	0.5	2.74	5.96		○
		DEX1510-GP	15.1	38	0.5	2.75	5.95		●
		DEX1520-GP	15.2	38	0.5	2.77	5.93		●
		DEX1530-GP	15.3	38	0.5	2.78	5.92		●
		DEX1540-GP	15.4	38	0.5	2.8	5.9		◉
		DEX1550-GP	15.5	38	0.5	2.82	5.88		●
		DEX1560-GP	15.6	38	0.5	2.84	5.86		●
		DEX1570-GP	15.7	38	0.5	2.86	5.84		●
		DEX1580-GP	15.8	38	0.5	2.88	5.82		●
		DEX1590-GP	15.9	38	0.5	2.89	5.81		●

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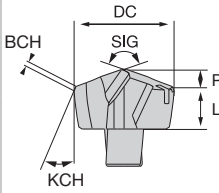
		HF PVD JP5625	HF PVD JP5725
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



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P	**55 160**	**55 160**
M		
K	**60 140**	**60 140**
N		
S		
H		

	Designation		DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 16 P K	DEX1600-GP	16	38	0.5	2.91	5.89		●
		DEX1610-GP	16.1	38	0.5	2.93	5.87		●
		DEX1620-GP	16.2	38	0.5	2.95	5.85		●
		DEX1630-GP	16.3	38	0.5	2.97	5.83		◉
		DEX1640-GP	16.4	38	0.5	2.98	5.82		●
		DEX1650-GP	16.5	38	0.5	3	5.8		●
		DEX1660-GP	16.6	38	0.5	3.02	5.78	●	▲
		DEX1670-GP	16.7	38	0.5	3.04	5.76		●
		DEX1680-GP	16.8	38	0.5	3.06	5.74		●
		DEX1690-GP	16.9	38	0.5	3.08	5.72		●
GENERAL	GP 17 P K	DEX1700-GP	17	38	0.5	3.09	6.81		●
		DEX1710-GP	17.1	38	0.5	3.11	6.79		●
		DEX1720-GP	17.2	38	0.5	3.13	6.77		◉
		DEX1730-GP	17.3	38	0.5	3.15	6.77	●	▲
		DEX1740-GP	17.4	38	0.5	3.17	6.73		●
		DEX1750-GP	17.5	38	0.5	3.18	6.72		●
		DEX1760-GP	17.6	38	0.5	3.2	6.7		●
		DEX1770-GP	17.7	38	0.5	3.22	6.68		●
		DEX1780-GP	17.8	38	0.5	3.24	6.66		●
		DEX1790-GP	17.9	38	0.5	3.26	6.64		●

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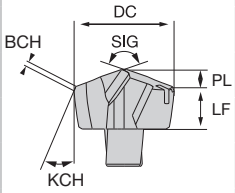
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	55 160	55 160
M		
K	60 140	60 140
N		
S		
H		

	Designation	DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 18 P K 	DEX1800-GP	18	38	0.5	3.28	7.22	●
		DEX1810-GP	18.1	38	0.5	3.29	7.21	●
		DEX1820-GP	18.2	38	0.5	3.31	7.19	●
		DEX1830-GP	18.3	38	0.5	3.33	7.17	●
		DEX1840-GP	18.4	38	0.5	3.35	7.15	◉
		DEX1850-GP	18.5	38	0.5	3.37	7.13	●
		DEX1860-GP	18.6	38	0.5	3.38	7.12	●
		DEX1870-GP	18.7	38	0.5	3.4	7.1	●
		DEX1880-GP	18.8	38	0.5	3.42	7.08	● ▲
		DEX1890-GP	18.9	38	0.5	3.44	7.06	●
GENERAL	GP 19 P K 	DEX1900-GP	19	38	0.6	3.46	7.54	●
		DEX1910-GP	19.1	38	0.6	3.48	7.52	● ▲
		DEX1920-GP	19.2	38	0.6	3.49	7.51	◉
		DEX1930-GP	19.3	38	0.6	3.51	7.49	◉
		DEX1940-GP	19.4	38	0.6	3.53	7.47	◉ ▲
		DEX1950-GP	19.5	38	0.6	3.55	7.45	●
		DEX1960-GP	19.6	38	0.6	3.57	7.43	◉ ▲
		DEX1970-GP	19.7	38	0.6	3.59	7.41	●
		DEX1980-GP	19.8	38	0.6	3.6	7.4	●
		DEX1990-GP	19.9	38	0.6	3.62	7.38	●

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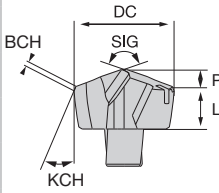
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



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P	55 160	55 160
M		
K	60 140	60 140
N		
S		
H		

	Designation		DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 20 P K	DEX2000-GP	20	38	0.6	3.64	7.96		●
		DEX2010-GP	20.1	38	0.6	3.66	7.94		●
		DEX2020-GP	20.2	38	0.6	3.68	7.92		●
		DEX2030-GP	20.3	38	0.6	3.69	7.91		◉
		DEX2040-GP	20.4	38	0.6	3.71	7.89	●	▲
		DEX2050-GP	20.5	38	0.6	3.73	7.87		●
		DEX2060-GP	20.6	38	0.6	3.75	7.85		●
		DEX2070-GP	20.7	38	0.6	3.77	7.83		●
		DEX2080-GP	20.8	38	0.6	3.79	7.81	◉	▲
		DEX2090-GP	20.9	38	0.6	3.8	7.8		●
GENERAL	GP 21 P K	DEX2100-GP	21	38	0.6	3.82	8.28		●
		DEX2150-GP	21.5	38	0.6	3.91	8.19		●
GENERAL	GP 22 P K	DEX2200-GP	22	38	0.6	4	8.7		●
		DEX2250-GP	22.5	38	0.6	4.09	8.61		●
GENERAL	GP 23 P K	DEX2300-GP	23	38	0.7	4.18	9.12		●
		DEX2350-GP	23.5	38	0.7	4.28	9.02		●
		DEX2380-GP	23.8	38	0.7	4.31	8.99		●

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SORMA DIAMOND & CUTTING TOOLS

DEX

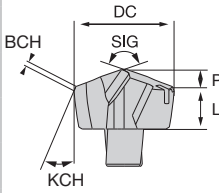
DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD, 5xD or 8xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5 and 12xD available upon requests

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD JP5625	HF PVD JP5725
Stable machining, light cut	● 1st choice ○ suitable	○	○
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	55 **160**	55 **160**
M		
K	60 **140**	60 **140**
N		
S		
H		

	Designation	DC	KCH	BCH	PL	LF	Stock	
GENERAL	GP 24 P K 	DEX2400-GP	24	38	0.7	4.36	9.54	●
		DEX2450-GP	24.5	38	0.7	4.46	9.44	●
GENERAL	GP 25 P K 	DEX2500-GP	25	38	0.7	4.55	9.95	●
		DEX2550-GP	25.5	38	0.7	4.64	9.86	◉
GENERAL	GP 26 P K 	DEX2600-GP	26	38	0.7	4.73	9.86	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

GP - Outer corner



Small chamfer for very good edge protection in general machining.

GP - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

SORMA DIAMOND & CUTTING TOOLS

DEX

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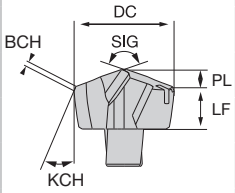
	HF	PVD	JP5630
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable		●
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯

Dimensions

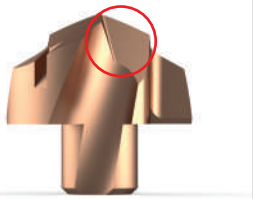


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**160** 55
M	**80** 30
K	
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 10 P M 	DEX1000-SC	10	38	0.2-0.5	1.78	4.42	●
		DEX1010-SC	10.1	38	0.2-0.5	1.8	4.4	○
		DEX1020-SC	10.2	38	0.2-0.5	1.82	4.38	●
		DEX1030-SC	10.3	38	0.2-0.5	1.84	4.36	●
		DEX1040-SC	10.4	38	0.2-0.5	1.86	4.34	●
		DEX1050-SC	10.5	38	0.2-0.5	1.88	4.32	●
		DEX1060-SC	10.6	38	0.2-0.5	1.9	4.3	○
		DEX1070-SC	10.7	38	0.2-0.5	1.92	4.28	○
		DEX1080-SC	10.8	38	0.2-0.5	1.94	4.26	●
		DEX1090-SC	10.9	38	0.2-0.5	1.96	4.24	○
LOW FORCE	SC 11 P M 	DEX1100-SC	11	38	0.2-0.5	1.98	4.62	●
		DEX1110-SC	11.1	38	0.2-0.5	2	4.6	◉
		DEX1120-SC	11.2	38	0.2-0.5	2.02	4.58	○
		DEX1130-SC	11.3	38	0.2-0.5	2.04	4.56	◉
		DEX1140-SC	11.4	38	0.2-0.5	2.06	4.54	○
		DEX1150-SC	11.5	38	0.2-0.5	2.08	4.52	●
		DEX1160-SC	11.6	38	0.2-0.5	2.1	4.5	○
		DEX1170-SC	11.7	38	0.2-0.5	2.12	4.48	○
		DEX1180-SC	11.8	38	0.2-0.5	2.14	4.46	●
		DEX1190-SC	11.9	38	0.2-0.5	2.16	4.44	○

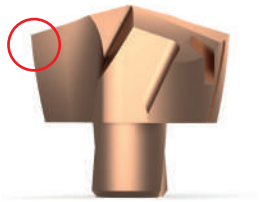
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



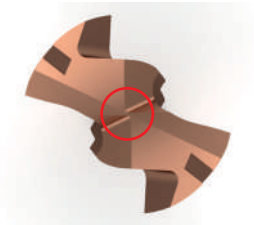
Flutes and gash design ensure fast chip evacuation and low cutting force on diffi cult to cut materials.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

DEX

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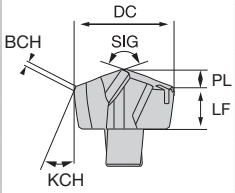
PVD: Physical vapor deposition

		HF	PVD	JP5630
Stable machining, light cut	● 1st choice ◯ suitable			
General machining, medium cut	● 1st choice ◯ suitable		●	
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯	

Dimensions

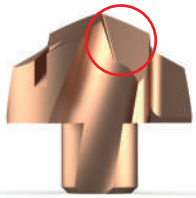


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**55 160**
M	**30 80**
K	
N	
S	
H	

	Designation	DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 12 P M 	DEX1200-SC	12	38	0.2-0.5	2.18	4.82	●
		DEX1210-SC	12.1	38	0.2-0.5	2.2	4.8	◉
		DEX1220-SC	12.2	38	0.2-0.5	2.22	4.78	●
		DEX1230-SC	12.3	38	0.2-0.5	2.24	4.76	◉
		DEX1240-SC	12.4	38	0.2-0.5	2.26	4.74	○
		DEX1250-SC	12.5	38	0.2-0.5	2.27	4.73	●
		DEX1260-SC	12.6	38	0.2-0.5	2.29	4.71	●
		DEX1270-SC	12.7	38	0.2-0.5	2.31	4.69	○
		DEX1280-SC	12.8	38	0.2-0.5	2.33	4.67	○
		DEX1290-SC	12.9	38	0.2-0.5	2.35	4.645	○
LOW FORCE	SC 13 P M 	DEX1300-SC	13	38	0.2-0.5	2.37	5.23	●
		DEX1310-SC	13.1	38	0.2-0.5	2.38	5.22	●
		DEX1320-SC	13.2	38	0.2-0.5	2.4	5.2	○
		DEX1330-SC	13.3	38	0.2-0.5	2.42	5.18	◉
		DEX1340-SC	13.4	38	0.2-0.5	2.44	5.16	○
		DEX1350-SC	13.5	38	0.2-0.5	2.46	5.14	●
		DEX1360-SC	13.6	38	0.2-0.5	2.47	5.13	○
		DEX1370-SC	13.7	38	0.2-0.5	2.49	5.11	○
		DEX1380-SC	13.8	38	0.2-0.5	2.51	5.09	○
		DEX1390-SC	13.9	38	0.2-0.5	2.53	5.07	◉

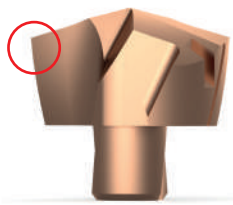
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



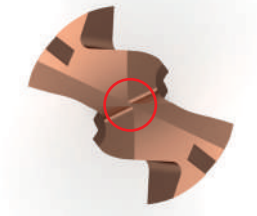
Flutes and gash design ensure fast chip evacuation and low cutting force on diffi cult to cut materials.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Chisel edge



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DEX

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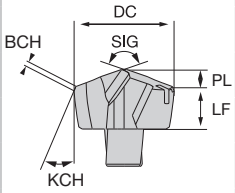
	HF	PVD	JP5630
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable		●
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯

Dimensions

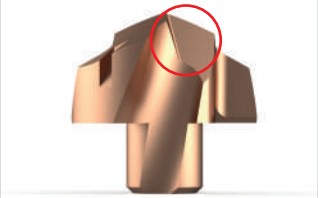


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**160** 55
M	**80** 30
K	
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 14 P M	DEX1400-SC	14	38	0.2-0.5	2.55	5.55	●
		DEX1410-SC	14.1	38	0.2-0.5	2.57	5.53	●
		DEX1420-SC	14.2	38	0.2-0.5	2.58	5.52	●
		DEX1430-SC	14.3	38	0.2-0.5	2.6	5.5	◯
		DEX1440-SC	14.4	38	0.2-0.5	2.62	5.48	◯
		DEX1450-SC	14.5	38	0.2-0.5	2.64	5.46	●
		DEX1460-SC	14.6	38	0.2-0.5	2.66	5.44	●
		DEX1470-SC	14.7	38	0.2-0.5	2.68	5.42	◯
		DEX1480-SC	14.8	38	0.2-0.5	2.69	5.41	●
		DEX1490-SC	14.9	38	0.2-0.5	2.71	5.39	●
LOW FORCE	SC 15 P M	DEX1500-SC	15	38	0.2-0.5	2.73	5.97	●
		DEX1510-SC	15.1	38	0.2-0.5	2.75	5.95	◉
		DEX1520-SC	15.2	38	0.2-0.5	2.77	5.93	●
		DEX1530-SC	15.3	38	0.2-0.5	2.78	5.92	◉
		DEX1540-SC	15.4	38	0.2-0.5	2.8	5.9	◯
		DEX1550-SC	15.5	38	0.2-0.5	2.82	5.88	●
		DEX1560-SC	15.6	38	0.2-0.5	2.84	5.86	◯
		DEX1570-SC	15.7	38	0.2-0.5	2.86	5.84	●
		DEX1580-SC	15.8	38	0.2-0.5	2.88	5.82	●
		DEX1590-SC	15.9	38	0.2-0.5	2.89	5.81	◯

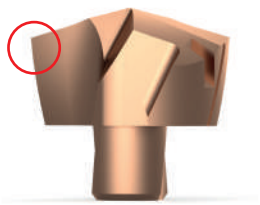
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on diffi cult to cut materials.

SC - Outer corner



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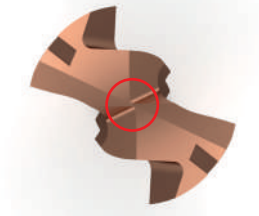
SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

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DEX

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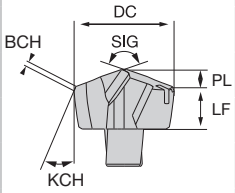
		HF	PVD	JP5630
Stable machining, light cut	● 1st choice ◯ suitable			
General machining, medium cut	● 1st choice ◯ suitable		●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable		✱	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**160** 55
M	**80** 30
K	
N	
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H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 16 P M 	DEX1600-SC	16	38	0.2-0.5	2.91	5.89	●
		DEX1610-SC	16.1	38	0.2-0.5	2.93	5.87	◉
		DEX1620-SC	16.2	38	0.2-0.5	2.95	5.85	●
		DEX1630-SC	16.3	38	0.2-0.5	2.97	5.83	●
		DEX1640-SC	16.4	38	0.2-0.5	2.98	5.82	○
		DEX1650-SC	16.5	38	0.2-0.5	3	5.8	●
		DEX1660-SC	16.6	38	0.2-0.5	3.02	5.78	◉
		DEX1670-SC	16.7	38	0.2-0.5	3.04	5.76	◉
		DEX1680-SC	16.8	38	0.2-0.5	3.06	5.74	○
		DEX1690-SC	16.9	38	0.2-0.5	3.08	5.72	○
LOW FORCE	SC 17 P M 	DEX1700-SC	17	38	0.2-0.5	3.09	6.81	●
		DEX1710-SC	17.1	38	0.2-0.5	3.11	6.79	◉
		DEX1720-SC	17.2	38	0.2-0.5	3.13	6.77	○
		DEX1730-SC	17.3	38	0.2-0.5	3.15	6.75	○
		DEX1740-SC	17.4	38	0.2-0.5	3.17	6.73	○
		DEX1750-SC	17.5	38	0.2-0.5	3.18	6.72	●
		DEX1760-SC	17.6	38	0.2-0.5	3.2	6.7	○
		DEX1770-SC	17.7	38	0.2-0.5	3.22	6.68	◉
		DEX1780-SC	17.8	38	0.2-0.5	3.24	6.66	●
		DEX1790-SC	17.9	38	0.2-0.5	3.26	6.64	○

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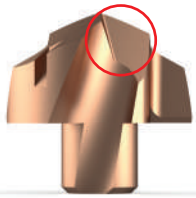
SC - Gash geometry



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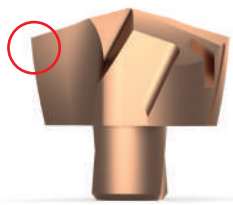
SC - Outer corner



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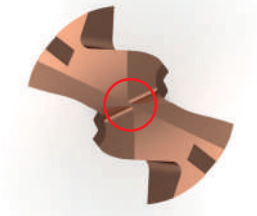
SC - Chisel edge



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	HF	PVD	JP5630
Stable machining, light cut	● 1st choice ○ suitable		
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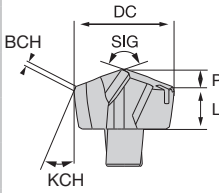
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions

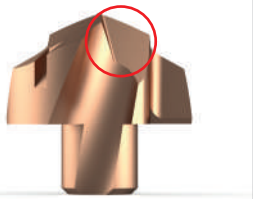


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**160** 55
M	**80** 30
K	
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 18 P M 	DEX1800-SC	18	38	0.2-0.5	3.28	7.22	●
		DEX1810-SC	18.1	38	0.2-0.5	3.29	7.21	◉
		DEX1820-SC	18.2	38	0.2-0.5	3.31	7.19	○
		DEX1830-SC	18.3	38	0.2-0.5	3.33	7.17	◉
		DEX1840-SC	18.4	38	0.2-0.5	3.35	7.15	○
		DEX1850-SC	18.5	38	0.2-0.5	3.37	7.13	●
		DEX1860-SC	18.6	38	0.2-0.5	3.38	7.12	○
		DEX1870-SC	18.7	38	0.2-0.5	3.4	7.1	◉
		DEX1880-SC	18.8	38	0.2-0.5	3.42	7.08	○
		DEX1890-SC	18.9	38	0.2-0.5	3.44	7.06	○
LOW FORCE	SC 19 P M 	DEX1900-SC	19	38	0.2-0.5	3.46	7.54	●
		DEX1910-SC	19.1	38	0.2-0.5	3.48	7.52	○
		DEX1920-SC	19.2	38	0.2-0.5	3.49	7.51	◉
		DEX1930-SC	19.3	38	0.2-0.5	3.51	7.49	◉
		DEX1940-SC	19.4	38	0.2-0.5	3.53	7.47	○
		DEX1950-SC	19.5	38	0.2-0.5	3.55	7.45	●
		DEX1960-SC	19.6	38	0.2-0.5	3.57	7.43	○
		DEX1970-SC	19.7	38	0.2-0.5	3.59	7.41	●
		DEX1980-SC	19.8	38	0.2-0.5	3.6	7.4	○
		DEX1990-SC	19.9	38	0.2-0.5	3.62	7.38	◉

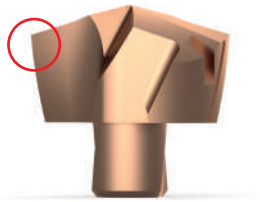
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



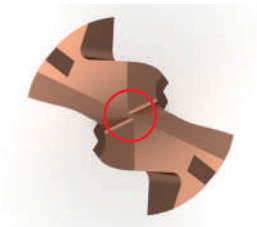
Flutes and gash design ensure fast chip evacuation and low cutting force on diffi cult to cut materials.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SORMA DIAMOND & CUTTING TOOLS

DEX

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
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- Diameters out of catalogue can be made upon request
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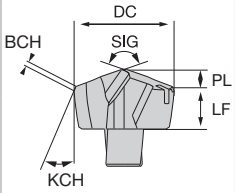
HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

	HF	PVD	JP5630
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable		●
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯

Dimensions

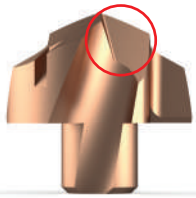


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**160** 55
M	**80** 30
K	
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 20 P M	DEX2000-SC	20	38	0.2-0.5	3.64	7.96	●
		DEX2010-SC	20.1	38	0.2-0.5	3.66	7.94	◯
		DEX2020-SC	20.2	38	0.2-0.5	3.68	7.92	●
		DEX2030-SC	20.3	38	0.2-0.5	3.69	7.91	◯
		DEX2040-SC	20.4	38	0.2-0.5	3.71	7.89	◯
		DEX2050-SC	20.5	38	0.2-0.5	3.73	7.87	●
		DEX2060-SC	20.6	38	0.2-0.5	3.75	7.85	◯
		DEX2070-SC	20.7	38	0.2-0.5	3.77	7.83	◯
		DEX2080-SC	20.8	38	0.2-0.5	3.79	7.81	◯
		DEX2090-SC	20.9	38	0.2-0.5	3.8	7.8	◯
LOW FORCE	SC 21 P M	DEX2100-SC	21	38	0.2-0.5	3.82	8.28	●
		DEX2150-SC	21.5	38	0.2-0.5	3.91	8.19	●
LOW FORCE	SC 22 P M	DEX2200-SC	22	38	0.2-0.5	4	8.7	●
		DEX2230-SC	22.3	38	0.2-0.5	4.05	8.65	◯
		DEX2250-SC	22.5	38	0.2-0.5	4.09	8.61	●
LOW FORCE	SC 23 P M	DEX2300-SC	23	38	0.2-0.5	4.18	9.12	●
		DEX2350-SC	23.5	38	0.2-0.5	4.28	9.02	◉

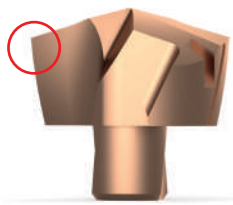
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



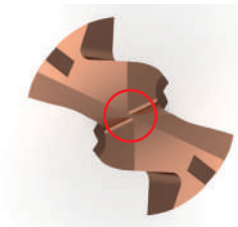
Flutes and gash design ensure fast chip evacuation and low cutting force on diffi cult to cut materials.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SORMA DIAMOND & CUTTING TOOLS

DEX

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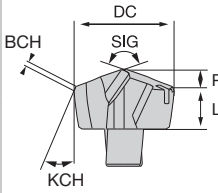
HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD
		JP5630	
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable	●	
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱	

Dimensions

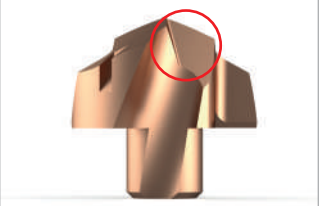


ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**55 160**
M	**30 80**
K	
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
LOW FORCE	SC 24 P M	DEX2400-SC	24	38	0.2-0.5	4.36	9.54	●
		DEX2450-SC	24.5	38	0.2-0.5	4.46	9.44	●
LOW FORCE	SC 25 P M	DEX2500-SC	25	38	0.2-0.5	4.55	9.95	●
		DEX2550-SC	25.5	38	0.2-0.5	4.64	9.86	●
LOW FORCE	SC 26 P M	DEX2600-SC	26	38	0.2-0.5	4.73	9.86	●
		DEX2650-SC	26.5	38	0.2-0.5	4.82	9.77	⦿

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SC - Gash geometry



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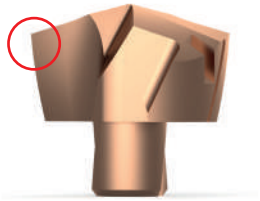
SC - Outer corner



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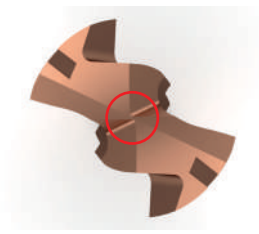
SC - Chisel edge



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SORMA DIAMOND & CUTTING TOOLS

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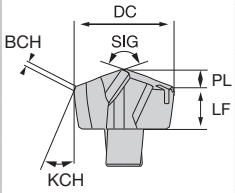
		HF	PVD	JP7625
Stable machining, light cut	● 1st choice ◯ suitable			
General machining, medium cut	● 1st choice ◯ suitable			●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable			✱

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**70** 160
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
REINFORCED	TE 10 K	DEX1000-TE	10	30	1	1.78	4.42	●
		DEX1020-TE	10.2	30	1	1.82	4.38	⦿
		DEX1030-TE	10.3	30	1	1.84	4.36	⦿
		DEX1050-TE	10.5	30	1.1	1.88	4.32	⦿
REINFORCED	TE 11 K	DEX1100-TE	11	30	1.1	1.98	4.62	⦿
		DEX1150-TE	11.5	30	1.2	2.08	4.52	⦿
REINFORCED	TE 12 K	DEX1200-TE	12	30	1.2	2.18	4.82	⦿
		DEX1250-TE	12.5	30	1.3	2.27	4.73	●
REINFORCED	TE 13 K	DEX1300-TE	13	30	1.3	2.37	5.23	⦿
		DEX1350-TE	13.5	30	1.4	2.46	5.14	●
REINFORCED	TE 14 K	DEX1400-TE	14	30	1.4	2.55	5.55	●
		DEX1450-TE	14.5	30	1.5	2.64	5.46	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

TE - Gash geometry



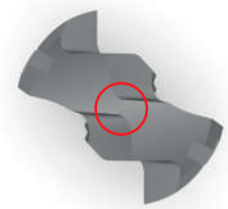
Gashing design allows good chip evacuation and reduce thrust load.

TE - Outer corner



Big negative chamfer for higher performance on cast iron machining.

TE - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

SORMA DIAMOND & CUTTING TOOLS

DEX

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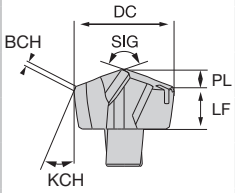
	HF	PVD	JP7625
Stable machining, light cut	● 1st choice ◯ suitable		
General machining, medium cut	● 1st choice ◯ suitable		●
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**70** 160
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
REINFORCED	TE 15 K 	DEX1500-TE	15	30	1.5	2.73	5.97	●
		DEX1550-TE	15.5	30	1.6	2.82	5.88	●
		DEX1580-TE	15.8	30	1.6	2.88	5.82	○
REINFORCED	TE 16 K 	DEX1600-TE	16	30	1.6	2.91	5.89	●
		DEX1650-TE	16.5	30	1.7	3	5.8	◉
REINFORCED	TE 17 K 	DEX1700-TE	17	30	1.7	3.09	6.81	●
		DEX1750-TE	17.5	30	1.8	3.18	6.72	●
REINFORCED	TE 18 K 	DEX1800-TE	18	30	1.8	3.28	7.22	◉
		DEX1850-TE	18.5	30	1.9	3.37	7.13	◉
REINFORCED	TE 19 K 	DEX1900-TE	19	30	1.9	3.46	7.54	●
		DEX1950-TE	19.5	30	2	3.55	7.45	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

TE - Gash geometry



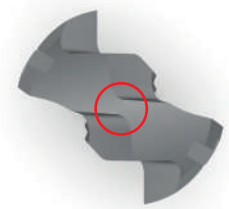
Gashing design allows good chip evacuation and reduce thrust load.

TE - Outer corner



Big negative chamfer for higher performance on cast iron machining.

TE - Chisel edge



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DEX

DEX drill

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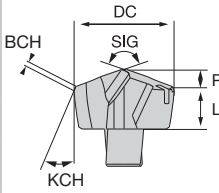
HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD	JP7625
Stable machining, light cut	● 1st choice ◯ suitable			
General machining, medium cut	● 1st choice ◯ suitable		●	
Unstable machining, heavy cut	● 1st choice ◯ suitable		◯	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**70** 160
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
REINFORCED	TE 20 K	DEX2000-TE	20	30	2	3.64	7.96	●
		DEX2050-TE	20.5	30	2.1	3.73	7.87	○
		DEX2070-TE	20.7	30	2.1	3.77	7.83	●
		DEX2080-TE	20.8	30	2.1	3.79	7.81	●
REINFORCED	TE 21 K	DEX2100-TE	21	30	2.1	3.82	8.28	⦿
		DEX2150-TE	21.5	30	2.2	3.91	8.19	⦿
		DEX2170-TE	21.7	30	2.2	3.93	8.17	⦿
		DEX2180-TE	21.8	30	2.2	3.94	8.16	●
REINFORCED	TE 22 K	DEX2200-TE	22	30	2.2	4	8.7	●
		DEX2250-TE	22.5	30	2.3	4.09	8.61	●
REINFORCED	TE 23 K	DEX2300-TE	23	30	2.3	4.18	9.12	⦿
		DEX2350-TE	23.5	30	2.4	4.28	9.02	⦿
REINFORCED	TE 24 K	DEX2400-TE	24	30	2.4	4.36	9.54	⦿
		DEX2450-TE	24.5	30	2.5	4.46	9.44	●

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TE - Gash geometry



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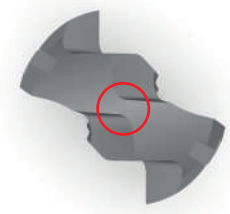

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DEX

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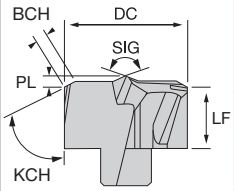
		HF	PVD	JP7625
Stable machining, light cut	● 1st choice ○ suitable			
General machining, medium cut	● 1st choice ○ suitable		●	
Unstable machining, heavy cut	● 1st choice ○ suitable		○	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	
M	
K	**70** 160
N	
S	
H	

	Designation		DC	KCH	BCH	PL	LF	Stock
REINFORCED	TE 25 K 	DEX2500-TE	25	30	2.5	4.55	9.95	⦿
		DEX2550-TE	25.5	30	2.6	4.64	9.86	⦿
REINFORCED	TE 26 K 	DEX2600-TE	26	30	2.6	4.73	9.86	●

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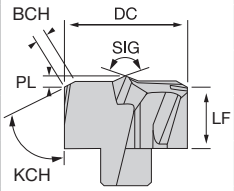
		HF PVD	HF PVD	HF PVD
		JP5625	JP5630	JP5725
Stable machining, light cut	● 1st choice ○ suitable	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	●
Unstable machining, heavy cut	✱ 1st choice ⬡ suitable		⬡	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P	55 160	55 160	55 160
M		30 80	
K	60 140		60 140
N			
S			
H			

	Designation		DC	KCH	BCH	PL	LF	Stock		
FLAT	FT 10 P M K	DEX1000-FT	10	38	0.25-0.35	1.78	4.42			○
		DEX1050-FT	10.5	38	0.25-0.35	1.88	4.32			○
FLAT	FT 11 P M K	DEX1100-FT	11	38	0.25-0.35	1.98	4.62			○
		DEX1150-FT	11.5	38	0.25-0.35	2.08	4.52			◉
FLAT	FT 12 P M K	DEX1200-FT	12	38	0.25-0.35	2.18	4.82			○
		DEX1250-FT	12.5	38	0.25-0.35	2.27	4.73			○
FLAT	FT 13 P M K	DEX1300-FT	13	38	0.25-0.35	2.37	5.23			○
		DEX1350-FT	13.5	38	0.25-0.35	2.46	5.14			●
FLAT	FT 14 P M K	DEX1400-FT	14	38	0.25-0.35	2.55	5.55			○
		DEX1450-FT	14.5	38	0.25-0.35	2.64	5.46			○

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CUTTING CONDITIONS



Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

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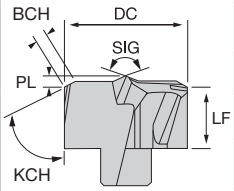
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD
		JP5625	JP5630	JP5725
Stable machining, light cut	● 1st choice ○ suitable	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	●
Unstable machining, heavy cut	✱ 1st choice ⬡ suitable		⬡	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P	55 160	55 160	55 160
M		30 80	
K	60 140		60 140
N			
S			
H			

	Designation		DC	KCH	BCH	PL	LF	Stock		
FLAT	FT 15 P M K	DEX1500-FT	15	38	0.25-0.35	2.73	5.97			○
		DEX1550-FT	15.5	38	0.25-0.35	2.82	5.88			○
FLAT	FT 16 P M K	DEX1600-FT	16	38	0.25-0.35	2.91	5.89			○
		DEX1650-FT	16.5	38	0.25-0.35	3	5.8			●
	FT 16	DEX1670-FT	-	-	-	-	-			○
FLAT	FT 17 P M K	DEX1700-FT	17	38	0.25-0.35	3.09	6.81		○	○
		DEX1750-FT	17.5	38	0.25-0.35	3.18	6.72			○
		DEX1780-FT	17.8	38	0.25-0.35	3.24	6.66			○
FLAT	FT 18 P M K	DEX1800-FT	18	38	0.25-0.35	3.28	7.22			●
		DEX1850-FT	18.5	38	0.25-0.35	3.37	7.13			○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

CUTTING CONDITIONS



Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

SORMA DIAMOND & CUTTING TOOLS

DEX

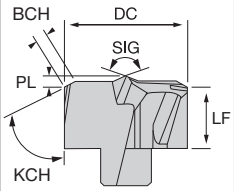
DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD, 5xD or 8xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5 and 12xD available upon requests

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD
		JP5625	JP5630	JP5725
Stable machining, light cut	● 1st choice ○ suitable	○		○
General machining, medium cut	● 1st choice ○ suitable	●	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable		○	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P	**55 160**	**55 160**	**55 160**
M		**30 80**	
K	**60 140**		**60 140**
N			
S			
H			

	Designation		DC	KCH	BCH	PL	LF	Stock			
FLAT	FT 19 P M K	DEX1900-FT	19	38	0.25-0.35	3.46	7.54			●	
		DEX1950-FT	19.5	38	0.25-0.35	3.55	7.45			○	
FLAT	FT 20 P M K	DEX2000-FT	20	38	0.25-0.35	3.64	7.96			●	
		DEX2050-FT	20.5	38	0.25-0.35	3.73	7.87			○	
FLAT	FT 21 P M K	DEX2100-FT	21	38	0.25-0.35	3.82	8.28			●	
		DEX2150-FT	21.5	38	0.25-0.35	3.91	8.19			○	
FLAT	FT 22 P M K	DEX2200-FT	22	38	0.25-0.35	4	8.7	●		▲	
		DEX2250-FT	22.5	38	0.25-0.35	4.09	8.61			○	
FLAT	FT 23 P M K	DEX2300-FT	23	38	0.25-0.35	4.18	9.12			◉	
		DEX2350-FT	23.5	38	0.25-0.35	4.28	9.02			○	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

DEX

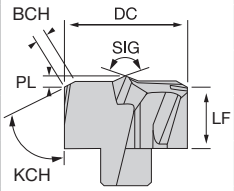
DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD, 5xD or 8xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5 and 12xD available upon requests

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD	HF PVD
		JP5625	JP5630	JP5725
Stable machining, light cut	● 1st choice ◯ suitable	◯		◯
General machining, medium cut	● 1st choice ◯ suitable	●	●	●
Unstable machining, heavy cut	⬢ 1st choice ⬡ suitable		⬡	

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
P	55 160	55 160	55 160
M		30 80	
K	60 140		60 140
N			
S			
H			

	Designation		DC	KCH	BCH	PL	LF	Stock		
FLAT	FT 24 P M K	DEX2400-FT	24	38	0.25-0.35	4.36	9.54			●
		DEX2450-FT	24.5	38	0.25-0.35	4.46	9.44			○
FLAT	FT 25 P M K	DEX2500-FT	25	38	0.25-0.35	4.55	9.95			●
		DEX2550-FT	25.5	38	0.25-0.35	4.64	9.86			○
FLAT	FT 26 P M K	DEX2600-FT	26	38	0.25-0.35	4.73	9.86			●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5630 min	JP5630 start	JP5630 max	JP5725 min	JP5725 start	JP5725 max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 5xD	80	**120**	160	80	**120**	160	
			8xD	65	**100**	135	65	**100**	135	
			12xD	55	**85**	115	55	**85**	115	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 5xD		-		60	**90**	120	
			8xD		-		50	**75**	100	
			12xD		-		40	**60**	80	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 5xD		-		40	**60**	80	
			8xD		-		35	**50**	65	
			12xD		-		30	**40**	50	

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5630 min	JP5630 start	JP5630 max				
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	3xD - 5xD	60	**80**	100				
			8xD	50	**65**	80				
			12xD	40	**55**	70				
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	3xD - 5xD	30	**40**	50				
			8xD	25	**35**	45				
			12xD	25	**30**	35				
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	3xD - 5xD	40	**60**	80				
			8xD	35	**50**	65				
			12xD	30	**40**	50				
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		3xD - 5xD	30	**50**	70				
			8xD	25	**40**	55				
			12xD	20	**35**	50				

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5725 min	JP5725 start	JP5725 max	JP7625 min	JP7625 start	JP7625 max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 5xD	80	**110**	140	100	**130**	160	
			8xD	70	**90**	110	80	**100**	120	
			12xD	60	**80**	100	70	**90**	110	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 5xD	80	**100**	120	100	**120**	140	
			8xD	70	**90**	110	80	**100**	120	
			12xD	60	**80**	100	70	**90**	110	

Complete workpiece materials p. **H**1.

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	DC 10.00 ÷ 10.99			DC 11.00 ÷ 11.99			DC 12.00 ÷ 12.99		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 5xD	0.10	**0.16**	0.22	0.10	**0.17**	0.24	0.12	**0.19**	0.26
			8xD	0.08	**0.13**	0.18	0.08	**0.14**	0.20	0.10	**0.15**	0.20
			12xD		-			-		0.08	**0.13**	0.18
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 5xD	0.12	**0.19**	0.26	0.12	**0.20**	0.28	0.14	**0.22**	0.30
			8xD	0.10	**0.15**	0.20	0.10	**0.16**	0.22	0.11	**0.17**	0.23
			12xD		-			-		0.10	**0.15**	0.20
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 5xD	0.12	**0.18**	0.24	0.12	**0.19**	0.26	0.14	**0.21**	0.28
			8xD	0.10	**0.14**	0.18	0.10	**0.15**	0.20	0.11	**0.16**	0.21
			12xD		-			-		0.10	**0.14**	0.18
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	3xD - 5xD	0.11	**0.15**	0.19	0.11	**0.16**	0.21	0.13	**0.18**	0.23
			8xD	0.09	**0.14**	0.15	0.09	**0.13**	0.17	0.11	**0.15**	0.19
			12xD		-			-		0.09	**0.12**	0.15
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	3xD - 5xD	0.09	**0.14**	0.19	0.09	**0.15**	0.21	0.11	**0.16**	0.21
			8xD	0.07	**0.11**	0.15	0.07	**0.12**	0.17	0.09	**0.13**	0.17
			12xD		-			-		0.08	**0.11**	0.14
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	3xD - 5xD	0.10	**0.14**	0.18	0.10	**0.15**	0.20	0.12	**0.16**	0.20
			8xD	0.08	**0.11**	0.14	0.08	**0.12**	0.16	0.10	**0.13**	0.16
			12xD		-			-		0.08	**0.11**	0.14
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		3xD - 5xD	0.10	**0.13**	0.16	0.10	**0.14**	0.18	0.12	**0.15**	0.18
			8xD	0.08	**0.10**	0.12	0.08	**0.11**	0.14	0.10	**0.12**	0.14
			12xD		-			-		0.08	**0.10**	0.12
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 5xD	0.14	**0.22**	0.30	0.14	**0.24**	0.34	0.16	**0.26**	0.36
			8xD	0.11	**0.18**	0.25	0.11	**0.19**	0.27	0.12	**0.20**	0.28
			12xD		-			-		0.11	**0.18**	0.25
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 5xD	0.12	**0.18**	0.24	0.12	**0.20**	0.28	0.13	**0.21**	0.29
			8xD	0.10	**0.15**	0.20	0.10	**0.16**	0.22	0.11	**0.17**	0.23
			12xD		-			-		0.09	**0.14**	0.19

Complete workpiece materials p. **M**1.

(fn: mm/rev)

DC 13.00 ÷ 13.99			DC 14.00 ÷ 14.99			DC 15.00 ÷ 16.99			DC 17.00 ÷ 19.99			DC 20.00 ÷ 22.99			DC 23.00 ÷ 26.00		
min	start	max	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max
0.12	**0.20**	0.28	0.16	**0.23**	0.30	0.16	**0.25**	0.34	0.16	**0.29**	0.42	0.20	**0.32**	0.44	0.20	**0.34**	0.48
0.10	**0.16**	0.22	0.12	**0.18**	0.24	0.12	**0.20**	0.28	0.12	**0.23**	0.34	0.16	**0.26**	0.36	0.16	**0.27**	0.38
0.08	**0.14**	0.20	0.11	**0.16**	0.21	0.11	**0.17**	0.23	0.11	**0.20**	0.29	0.14	**0.22**	0.30	0.14	**0.24**	0.34
0.14	**0.23**	0.32	0.18	**0.26**	0.34	0.18	**0.29**	0.40	0.18	**0.33**	0.48	0.24	**0.37**	0.50	0.24	**0.40**	0.56
0.11	**0.18**	0.25	0.14	**0.20**	0.26	0.14	**0.23**	0.32	0.14	**0.26**	0.38	0.20	**0.30**	0.40	0.20	**0.32**	0.44
0.10	**0.16**	0.22	0.13	**0.18**	0.23	0.13	**0.20**	0.27	0.13	**0.23**	0.33	0.17	**0.26**	0.35	0.17	**0.28**	0.39
0.14	**0.22**	0.30	0.18	**0.25**	0.32	0.18	**0.28**	0.38	0.18	**0.32**	0.46	0.24	**0.36**	0.48	0.24	**0.38**	0.52
0.11	**0.17**	0.23	0.14	**0.20**	0.26	0.14	**0.22**	0.30	0.14	**0.25**	0.36	0.20	**0.29**	0.38	0.20	**0.31**	0.42
0.10	**0.15**	0.20	0.13	**0.17**	0.21	0.13	**0.20**	0.27	0.13	**0.23**	0.33	0.17	**0.25**	0.33	0.17	**0.27**	0.37
0.13	**0.19**	0.25	0.17	**0.22**	0.27	0.17	**0.24**	0.31	0.17	**0.27**	0.37	0.22	**0.31**	0.40	0.22	**0.32**	0.42
0.11	**0.16**	0.21	0.14	**0.18**	0.22	0.14	**0.19**	0.24	0.14	**0.22**	0.30	0.18	**0.25**	0.32	0.18	**0.26**	0.34
0.09	**0.13**	0.17	0.12	**0.15**	0.18	0.12	**0.17**	0.22	0.12	**0.19**	0.26	0.15	**0.21**	0.27	0.15	**0.22**	0.29
0.11	**0.17**	0.23	0.15	**0.20**	0.25	0.15	**0.22**	0.29	0.15	**0.25**	0.35	0.19	**0.28**	0.37	0.19	**0.29**	0.39
0.09	**0.14**	0.19	0.11	**0.16**	0.21	0.12	**0.17**	0.22	0.12	**0.20**	0.28	0.15	**0.22**	0.29	0.15	**0.23**	0.31
0.08	**0.12**	0.16	0.09	**0.13**	0.17	0.10	**0.15**	0.20	0.10	**0.17**	0.24	0.13	**0.19**	0.25	0.13	**0.20**	0.27
0.12	**0.17**	0.22	0.16	**0.20**	0.24	0.16	**0.22**	0.28	0.16	**0.25**	0.34	0.20	**0.28**	0.36	0.20	**0.29**	0.38
0.10	**0.14**	0.18	0.12	**0.16**	0.20	0.12	**0.17**	0.22	0.12	**0.19**	0.26	0.16	**0.22**	0.28	0.16	**0.23**	0.30
0.08	**0.12**	0.16	0.11	**0.14**	0.17	0.11	**0.15**	0.19	0.11	**0.17**	0.23	0.14	**0.20**	0.26	0.14	**0.21**	0.28
0.12	**0.16**	0.20	0.16	**0.19**	0.22	0.16	**0.20**	0.24	0.16	**0.23**	0.30	0.20	**0.26**	0.32	0.20	**0.27**	0.34
0.10	**0.13**	0.16	0.12	**0.15**	0.18	0.12	**0.16**	0.20	0.12	**0.18**	0.24	0.16	**0.21**	0.26	0.16	**0.22**	0.28
0.08	**0.11**	0.14	0.11	**0.13**	0.15	0.11	**0.14**	0.17	0.11	**0.16**	0.21	0.14	**0.18**	0.22	0.14	**0.19**	0.24
0.16	**0.28**	0.40	0.22	**0.32**	0.42	0.22	**0.35**	0.48	0.22	**0.40**	0.58	0.28	**0.45**	0.62	0.28	**0.48**	0.68
0.12	**0.22**	0.32	0.18	**0.26**	0.34	0.18	**0.28**	0.38	0.18	**0.32**	0.46	0.22	**0.36**	0.50	0.22	**0.38**	0.54
0.11	**0.19**	0.27	0.15	**0.22**	0.29	0.15	**0.25**	0.35	0.15	**0.27**	0.39	0.20	**0.32**	0.44	0.20	**0.34**	0.48
0.13	**0.22**	0.31	0.18	**0.26**	0.34	0.18	**0.28**	0.38	0.18	**0.32**	0.46	0.22	**0.36**	0.50	0.22	**0.38**	0.54
0.11	**0.18**	0.25	0.14	**0.20**	0.26	0.14	**0.22**	0.30	0.14	**0.25**	0.36	0.18	**0.27**	0.40	0.18	**0.30**	0.42
0.09	**0.15**	0.21	0.13	**0.18**	0.23	0.13	**0.20**	0.27	0.13	**0.23**	0.33	0.15	**0.25**	0.35	0.15	**0.26**	0.37

Complete workpiece materials p. **M**1.

(fn: mm/rev)

SORMA DIAMOND & CUTTING TOOLS

DXP

Combined indexable+exchangeable head drilling system for extra deep holes

Application



- Flat surface
- Concave surface
- Convex surface
- Stacked plates
- Pipes

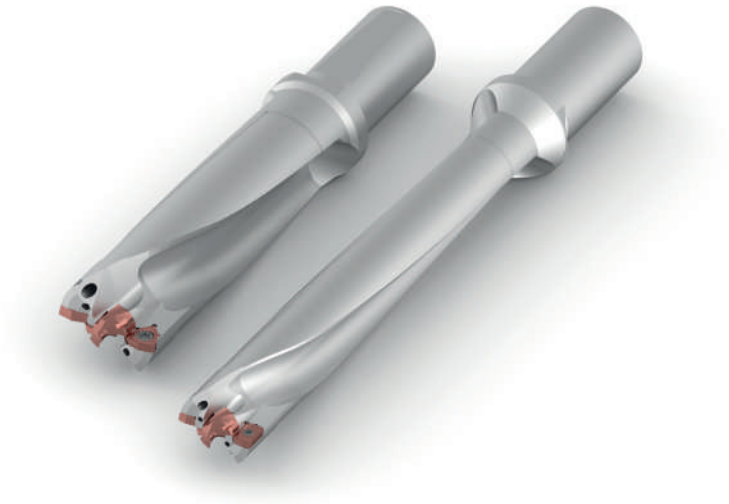
- Flache Flächen
- Konkave Flächen
- Konvexe Flächen
- Paketbohren
- Rohre

- Superfici piane
- Superfici concave
- Superfici convesse
- Foratura a pacco
- Tubi

- Surfaces planes
- Surfaces concaves
- Surfaces convexes
- Perçage en empilement
- Tubes

Application range - ISO 513

P K



Features and benefits

- High performance drilling system for large diameter holes.
- Pilot drill enables better centering in deep hole drilling also available in 3xD for those looking for better centering
- Suitable for high feed drilling.

- Modulares System für tiefe Hochleistungsbohrungen.
- Die Zentrierspitze ermöglicht eine bessere Zentrierung beim Bohren von tiefen Löchern (auch in 3xD erhältlich für eine noch bessere Zentrierung).
- Ideal für große Vorschübe bei mechanisch befestigten Lösungen.

- Sistema per forature di grandi diametri a elevate prestazioni.
- La punta pilota consente un migliore centraggio nella foratura di fori profondi (disponibile anche in 3xD per quanti cercano un migliore centraggio).
- Scelta ideale per foratura con elevati avanzamenti.

- Système modulaire de perçage haute performance pour trous profonds
- Le foret pilote permet un meilleur centrage lors du perçage de trous profonds (également disponible en 3xD pour les personnes qui souhaitent optimiser le centrage).
- Choix idéal pour des avances élevées

SORMA DIAMOND & CUTTING TOOLS

DXP

Combined indexable+exchangeable head drilling system for extra deep holes

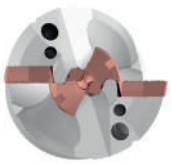
Drilling holders

- Weldon shank with internal coolant
- 3/ 6/ 8/ 10xD available from D30 to D60
- Special length and step type available upon request

- Weldon-Aufnahme mit internem Kühlschmiermittel
- 3/ 6/ 8/ 10xD erhältlich von D30 bis D60
- Sonderlängen und Stufenkörper auf Anfrage erhältlich

- Attacco Weldon con refrigerante interno
- 3/ 6/ 8/ 10xD disponibili da D30 a D60
- Lunghezze speciali e geometria a gradino disponibili su richiesta

- Queue Weldon avec arrosage interne
- Disponibles en 3/ 6/ 8/ 10xD du D30 au D60
- Longueurs spéciales et corps « étagés » disponibles sur demande



4 holes design

Inserts

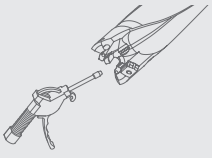
- Pilot head available from D15 to D28 with HC geometry for perfect self-centering and reduced drilling force.
- Peripheral insert featuring CS geometry (Chip Splitter) designed to efficiently break and eject chips

- Zentrierspitzen von D15 bis D28 mit HC-Geometrie für perfekte Selbstzentrierung und geringe Bohrkräfte erhältlich.
- Periphere Wendeschneidplatten mit CS (Chip Splitter)-Geometrie zur effektiven Zerteilung und Abfuhr von Spänen

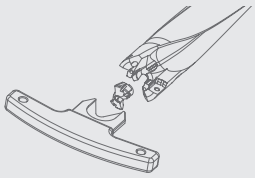
- Punta pilota disponibile da D15 a D28 con geometria HC per un perfetto autocentraggio e ridotte forze di foratura.
- Inserti periferici con geometria CS (Chip Splitter) progettati per rompere ed evacuare efficacemente i trucioli

- Foret pilote disponible du D15 au D28 à géométrie HC pour un auto-centrage parfait avec des efforts de coupe moindre.
- Plaquettes périphériques à géométrie CS (Chip Splitter) conçue pour fragmenter et évacuer efficacement les copeaux

DRILLING HEADS INSTALLATON



- Clean pocket with air blast.
  Put insert into drill holder.
- Pulire la sede con aria compressa.
  Posizionare l'inserto nella sede.
- Die Tasche mit Druckluft reinigen.
  Die Wendeschneidplatten in die Aufnahme einsetzen.
- Nettoyer le logement à l'air comprimé.
  Positionner la plaquette dans le logement.



- Set wrench into slots on insert flanks.
  Slowly turn the wrench clockwise until stop.
- Posizionare la chiave nelle guide sui fianchi della cuspide.
  Girare lentamente la chiave in senso orario fino all'arresto.
- Den Schlüssel in die Führungen an den Seiten der Wendeschneidplatte einsetzen.
  Den Schlüssel langsam im Uhrzeigersinn drehen, bis zum Anschlag.
- Placer la clé dans les guides sur les côtés de la plaquette
  Tourner lentement la clé dans le sens horaire jusqu'en butée.

HC P K

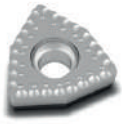


CS P K



SIZE
04

CS P K



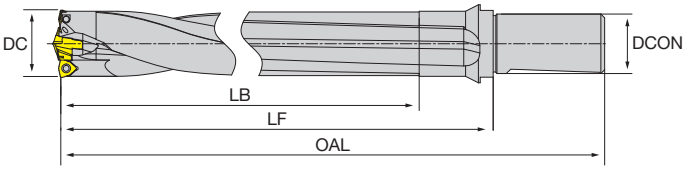
SIZE
05 06 08 10

SORMA DIAMOND & CUTTING TOOLS

NT-DXP-03

DEX pilot

- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others
- Under **stable conditions**, hole tolerance **0/+0.10 mm**

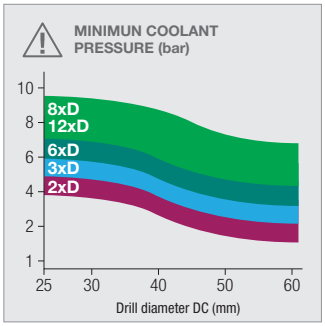


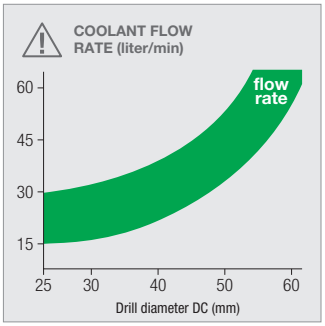


3xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

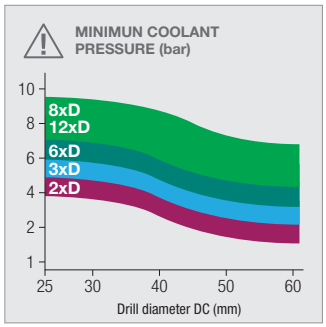
Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DXP-03 D30-S32-P16E04	30	32	185	125	99.9	DXP-P16	DXP-E04				◉
NT-DXP-03 D31-S32-P17E04	31	32	189	129	103.9	DXP-P17	DXP-E04				◉
NT-DXP-03 D32-S32-P15E05	32	32	194	134	105.7	DXP-P15	DXP-E05				◉
NT-DXP-03 D33-S32-P16E05	33	32	196	136	107.8	DXP-P16	DXP-E05				◉
NT-DXP-03 D34-S32-P16E05	34	32	199	139	110.8	DXP-P16	DXP-E05				◉
NT-DXP-03 D35-S32-P18E05	35	32	204	144	116.5	DXP-P18	DXP-E05				◉
NT-DXP-03 D36-S32-P18E05	36	32	206	146	118.5	DXP-P18	DXP-E05				◉
NT-DXP-03 D37-S32-P16E06	37	32	209	149	119.8	DXP-P16	DXP-E06				◉
NT-DXP-03 D38-S32-P16E06	38	32	214	154	122.8	DXP-P16	DXP-E06				◉
NT-DXP-03 D39-S32-P18E06	39	32	217	157	127.5	DXP-P18	DXP-E06				◉
NT-DXP-03 D40-S32-P18E06	40	32	234	164	131.5	DXP-P18	DXP-E06				◉
NT-DXP-03 D41-S32-P19E06	41	32	236	166	134	DXP-P19	DXP-E06				◉
NT-DXP-03 D42-S50-P19E06	42	50	240	170	137	DXP-P19	DXP-E06				◉
NT-DXP-03 D43-S50-P16E08	43	50	243	173	137.8	DXP-P16	DXP-E08				◉
NT-DXP-03 D44-S50-P18E08	44	50	246	176	142.5	DXP-P18	DXP-E08				◉
NT-DXP-03 D45-S50-P18E08	45	50	249	179	145.5	DXP-P18	DXP-E08				◉
NT-DXP-03 D46-S50-P19E08	46	50	252	182	149	DXP-P19	DXP-E08				◉
NT-DXP-03 D47-S50-P20E08	47	50	255	185	152.6	DXP-P20	DXP-E08				◉
NT-DXP-03 D48-S50-P21E08	48	50	259	189	156.1	DXP-P21	DXP-E08				◉
NT-DXP-03 D49-S50-P22E08	49	50	262	192	159.7	DXP-P22	DXP-E08				◉
NT-DXP-03 D50-S50-P23E08	50	50	265	195	163.3	DXP-P23	DXP-E08				◉
NT-DXP-03 D51-S50-P24E08	51	50	269	199	167.9	DXP-P24	DXP-E08				◉
NT-DXP-03 D52-S50-P25E08	52	50	280	210	170.5	DXP-P25	DXP-E08				◉
NT-DXP-03 D53-S50-P26E08	53	50	274	204	173.5	DXP-P26	DXP-E08				◉
NT-DXP-03 D54-S50-P27E08	54	50	278	208	178.5	DXP-P27	DXP-E08				◉
NT-DXP-03 D55-S50-P28E08	55	50	280	210	180.5	DXP-P28	DXP-E08				◉
NT-DXP-03 D56-S50-P20E10	56	50	283	213	179.6	DXP-P20	DXP-E10				◉
NT-DXP-03 D57-S50-P21E10	57	50	286	216	183.1	DXP-P21	DXP-E10				◉
NT-DXP-03 D58-S50-P22E10	58	50	289	219	186.7	DXP-P22	DXP-E10				◉
NT-DXP-03 D59-S50-P23E10	59	50	292	222	190.3	DXP-P23	DXP-E10				◉
NT-DXP-03 D60-S50-P24E10	60	50	295	225	193.9	DXP-P24	DXP-E10				◉

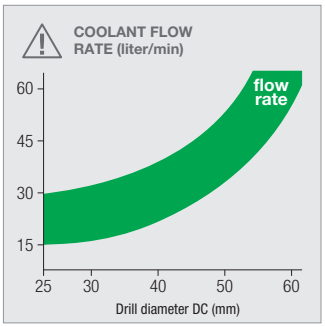
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





Spare parts	Wrench	Insert screw	Flag wrench
NT-DXP-03 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-03 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-03 (DC 32-34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-03 (DC 35-36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-03 (DC 37-38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 39-42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 44-47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 48-55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-03 (DC 57-60)	NT-WR2128	NT-ST50100T20	NT-FTB20



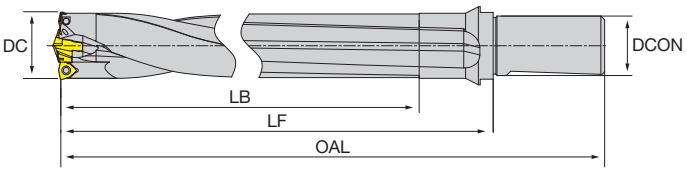


SORMA DIAMOND & CUTTING TOOLS

NT-DXP-06

DEX pilot

- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others
- Under **stable conditions**, hole tolerance **0/+0.10 mm**

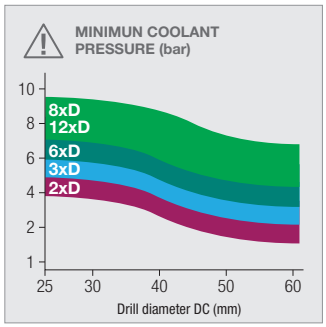


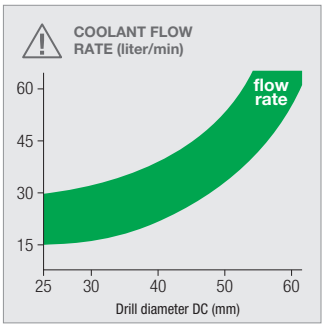


6xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

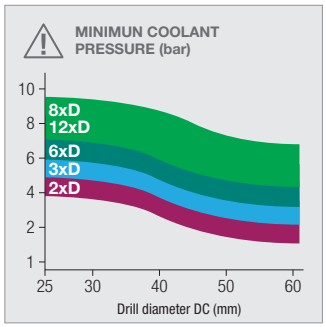
Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DXP-06 D30-S32-P16E04	30	32	275	215	189.9	DXP-P16	DXP-E04				◉
NT-DXP-06 D31-S32-P17E04	31	32	282	222	196.9	DXP-P17	DXP-E04				◉
NT-DXP-06 D32-S32-P15E05	32	32	289	229	200.7	DXP-P15	DXP-E05				◉
NT-DXP-06 D33-S32-P16E05	33	32	295	235	206.8	DXP-P16	DXP-E05				◉
NT-DXP-06 D34-S32-P16E05	34	32	301	241	212.8	DXP-P16	DXP-E05				◉
NT-DXP-06 D35-S32-P18E05	35	32	309	249	221.5	DXP-P18	DXP-E05				◉
NT-DXP-06 D36-S32-P18E05	36	32	314	254	226.5	DXP-P18	DXP-E05				◉
NT-DXP-06 D37-S32-P16E06	37	32	320	260	230.8	DXP-P16	DXP-E06				◉
NT-DXP-06 D38-S32-P16E06	38	32	328	268	236.8	DXP-P16	DXP-E06				◉
NT-DXP-06 D39-S32-P18E06	39	32	334	274	244.5	DXP-P18	DXP-E06				◉
NT-DXP-06 D40-S32-P18E06	40	32	353	283	250.5	DXP-P18	DXP-E06				◉
NT-DXP-06 D41-S32-P19E06	41	32	359	289	257	DXP-P19	DXP-E06				◉
NT-DXP-06 D42-S50-P19E06	42	50	366	296	263	DXP-P19	DXP-E06				◉
NT-DXP-06 D43-S50-P16E08	43	50	372	302	266.8	DXP-P16	DXP-E08				◉
NT-DXP-06 D44-S50-P18E08	44	50	378	308	274.5	DXP-P18	DXP-E08				◉
NT-DXP-06 D45-S50-P18E08	45	50	384	314	280.5	DXP-P18	DXP-E08				◉
NT-DXP-06 D46-S50-P19E08	46	50	390	320	287	DXP-P19	DXP-E08				◉
NT-DXP-06 D47-S50-P20E08	47	50	396	326	293.6	DXP-P20	DXP-E08				◉
NT-DXP-06 D48-S50-P21E08	48	50	403	333	300.1	DXP-P21	DXP-E08				◉
NT-DXP-06 D49-S50-P22E08	49	50	409	339	306.7	DXP-P22	DXP-E08				◉
NT-DXP-06 D50-S50-P23E08	50	50	415	345	313.3	DXP-P23	DXP-E08				◉
NT-DXP-06 D51-S50-P24E08	51	50	421	351	319.9	DXP-P24	DXP-E08				◉
NT-DXP-06 D52-S50-P25E08	52	50	427	357	326.5	DXP-P25	DXP-E08				◉
NT-DXP-06 D53-S50-P26E08	53	50	433	363	332.5	DXP-P26	DXP-E08				◉
NT-DXP-06 D54-S50-P27E08	54	50	440	370	340.5	DXP-P27	DXP-E08				◉
NT-DXP-06 D55-S50-P28E08	55	50	445	375	345.5	DXP-P28	DXP-E08				◉
NT-DXP-06 D56-S50-P20E10	56	50	451	381	347.6	DXP-P20	DXP-E10				◉
NT-DXP-06 D57-S50-P21E10	57	50	457	387	354.1	DXP-P21	DXP-E10				◉
NT-DXP-06 D58-S50-P22E10	58	50	463	393	360.7	DXP-P22	DXP-E10				◉
NT-DXP-06 D59-S50-P23E10	59	50	469	399	367.3	DXP-P23	DXP-E10				◉
NT-DXP-06 D60-S50-P24E10	60	50	475	405	373.9	DXP-P24	DXP-E10				◉

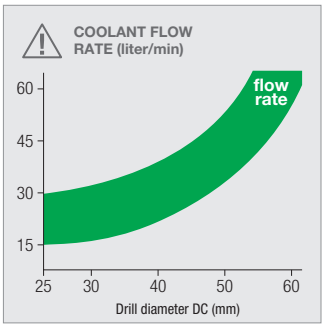
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





Spare parts	Wrench	Insert screw	Flag wrench
NT-DXP-06 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-06 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-06 (DC 32-34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-06 (DC 35-36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-06 (DC 37-38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 39-42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 44-47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 48-55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-06 (DC 57-60)	NT-WR2128	NT-ST50100T20	NT-FTB20



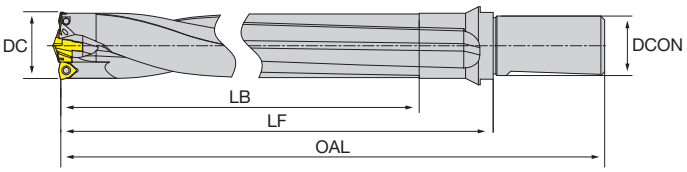


SORMA DIAMOND & CUTTING TOOLS

NT-DXP-08

DEX pilot

- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others
- Under **stable conditions**, hole tolerance **0/+0.10 mm**

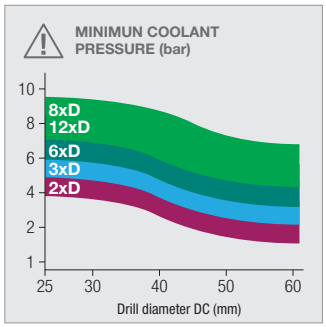


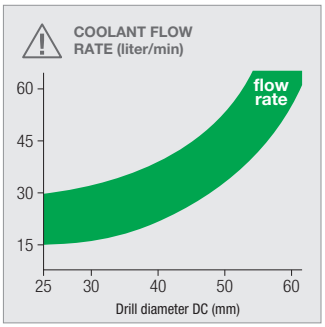


8xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

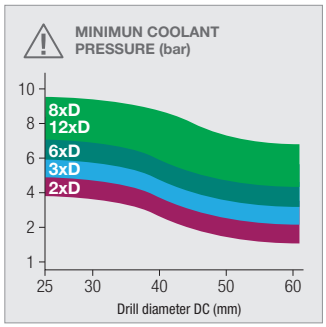
Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DXP-08 D30-S32-P16E04	30	32	335	275	249.9	DXP-P16	DXP-E04				◉
NT-DXP-08 D31-S32-P17E04	31	32	344	284	258.9	DXP-P17	DXP-E04				◉
NT-DXP-08 D32-S32-P15E05	32	32	353	293	264.7	DXP-P15	DXP-E05				◉
NT-DXP-08 D33-S32-P16E05	33	32	361	301	272.8	DXP-P16	DXP-E05				◉
NT-DXP-08 D34-S32-P16E05	34	32	369	309	280.8	DXP-P16	DXP-E05				◉
NT-DXP-08 D35-S32-P18E05	35	32	379	319	291.5	DXP-P18	DXP-E05				◉
NT-DXP-08 D36-S32-P18E05	36	32	386	326	298.5	DXP-P18	DXP-E05				◉
NT-DXP-08 D37-S32-P16E06	37	32	394	334	304.8	DXP-P16	DXP-E06				◉
NT-DXP-08 D38-S32-P16E06	38	32	404	344	312.8	DXP-P16	DXP-E06				◉
NT-DXP-08 D39-S32-P18E06	39	32	412	352	322.5	DXP-P18	DXP-E06				◉
NT-DXP-08 D40-S32-P18E06	40	32	433	363	330.5	DXP-P18	DXP-E06				◉
NT-DXP-08 D41-S32-P19E06	41	32	441	371	339	DXP-P19	DXP-E06				◉
NT-DXP-08 D42-S50-P19E06	42	50	450	380	347	DXP-P19	DXP-E06				◉
NT-DXP-08 D43-S50-P16E08	43	50	458	388	352.8	DXP-P16	DXP-E08				◉
NT-DXP-08 D44-S50-P18E08	44	50	466	396	362.5	DXP-P18	DXP-E08				◉
NT-DXP-08 D45-S50-P18E08	45	50	474	404	370.5	DXP-P18	DXP-E08				◉
NT-DXP-08 D46-S50-P19E08	46	50	482	412	379	DXP-P19	DXP-E08				◉
NT-DXP-08 D47-S50-P20E08	47	50	490	420	387.6	DXP-P20	DXP-E08				◉
NT-DXP-08 D48-S50-P21E08	48	50	499	429	396.1	DXP-P21	DXP-E08				◉
NT-DXP-08 D49-S50-P22E08	49	50	507	437	404.7	DXP-P22	DXP-E08				◉
NT-DXP-08 D50-S50-P23E08	50	50	515	445	413.3	DXP-P23	DXP-E08				◉
NT-DXP-08 D51-S50-P24E08	51	50	523	453	421.9	DXP-P24	DXP-E08				◉
NT-DXP-08 D52-S50-P25E08	52	50	531	461	430.5	DXP-P25	DXP-E08				◉
NT-DXP-08 D53-S50-P26E08	53	50	539	469	438.5	DXP-P26	DXP-E08				◉
NT-DXP-08 D54-S50-P27E08	54	50	548	478	448.5	DXP-P27	DXP-E08				◉
NT-DXP-08 D55-S50-P28E08	55	50	555	485	455.5	DXP-P28	DXP-E08				◉
NT-DXP-08 D56-S50-P20E10	56	50	563	493	459.6	DXP-P20	DXP-E10				◉
NT-DXP-08 D57-S50-P21E10	57	50	571	501	468.1	DXP-P21	DXP-E10				◉
NT-DXP-08 D58-S50-P22E10	58	50	579	509	476.7	DXP-P22	DXP-E10				◉
NT-DXP-08 D59-S50-P23E10	59	50	587	517	485.3	DXP-P23	DXP-E10				◉
NT-DXP-08 D60-S50-P24E10	60	50	595	525	493.9	DXP-P24	DXP-E10				◉

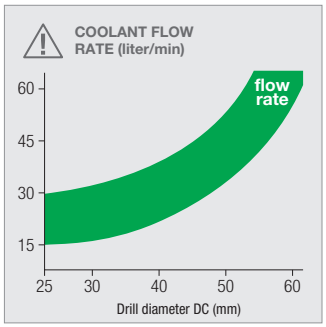
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





Spare parts	Wrench	Insert screw	Flag wrench
NT-DXP-08 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-08 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-08 (DC 32-34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-08 (DC 35-36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-08 (DC 37-38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 39-42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 44-47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 48-55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-08 (DC 57-60)	NT-WR2128	NT-ST50100T20	NT-FTB20



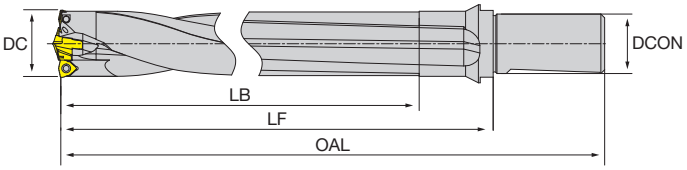


SORMA DIAMOND & CUTTING TOOLS

NT-DXP-10

DEX pilot

- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others
- Under **stable conditions**, hole tolerance **0/+0.10 mm**

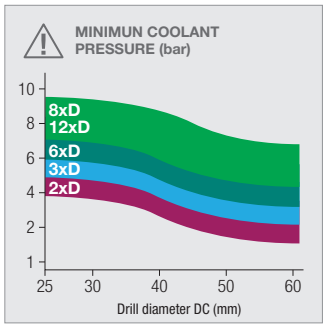


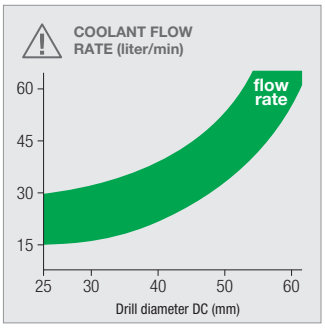


10xD | INTERNAL COOLANT | PLAIN | CONCAVE | CONVEX | STACKED | PIPES

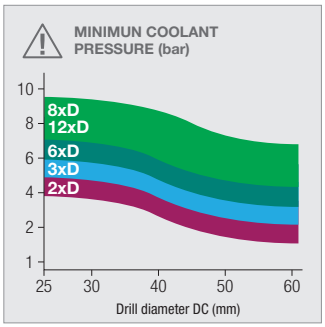
Designation	DC	DCON	OAL	LF	LB	PILOT	MIID				Stock
NT-DXP-10 D30-S32-P16E04	30	32	395	335	319.9	DXP-P16	DXP-E04				◉
NT-DXP-10 D31-S32-P17E04	31	32	406	346	320.9	DXP-P17	DXP-E04				◉
NT-DXP-10 D32-S32-P15E05	32	32	417	357	328.7	DXP-P15	DXP-E05				◉
NT-DXP-10 D33-S32-P16E05	33	32	427	367	338.8	DXP-P16	DXP-E05				◉
NT-DXP-10 D34-S32-P16E05	34	32	437	377	328.8	DXP-P16	DXP-E05				◉
NT-DXP-10 D35-S32-P18E05	35	32	448	388	360.5	DXP-P18	DXP-E05				◉
NT-DXP-10 D36-S32-P18E05	36	32	458	398	370.5	DXP-P18	DXP-E05				◉
NT-DXP-10 D37-S32-P16E06	37	32	468	408	378.8	DXP-P16	DXP-E06				◉
NT-DXP-10 D38-S32-P16E06	38	32	480	420	388.8	DXP-P16	DXP-E06				◉
NT-DXP-10 D39-S32-P18E06	39	32	490	430	400.5	DXP-P18	DXP-E06				◉
NT-DXP-10 D40-S32-P18E06	40	32	513	443	410.5	DXP-P18	DXP-E06				◉
NT-DXP-10 D41-S32-P19E06	41	32	523	453	421	DXP-P19	DXP-E06				◉
NT-DXP-10 D42-S50-P19E06	42	50	534	464	431	DXP-P19	DXP-E06				◉
NT-DXP-10 D43-S50-P16E08	43	50	544	474	438.8	DXP-P16	DXP-E08				◉
NT-DXP-10 D44-S50-P18E08	44	50	554	484	450.5	DXP-P18	DXP-E08				◉
NT-DXP-10 D45-S50-P18E08	45	50	564	494	460.5	DXP-P18	DXP-E08				◉
NT-DXP-10 D46-S50-P19E08	46	50	574	504	471	DXP-P19	DXP-E08				◉
NT-DXP-10 D47-S50-P20E08	47	50	584	514	481.6	DXP-P20	DXP-E08				◉
NT-DXP-10 D48-S50-P21E08	48	50	595	525	492.1	DXP-P21	DXP-E08				◉
NT-DXP-10 D49-S50-P22E08	49	50	605	535	502.7	DXP-P22	DXP-E08				◉
NT-DXP-10 D50-S50-P23E08	50	50	615	545	513.3	DXP-P23	DXP-E08				◉
NT-DXP-10 D51-S50-P24E08	51	50	625	555	523.9	DXP-P24	DXP-E08				◉
NT-DXP-10 D52-S50-P25E08	52	50	635	565	534.5	DXP-P25	DXP-E08				◉
NT-DXP-10 D53-S50-P26E08	53	50	645	575	544.5	DXP-P26	DXP-E08				◉
NT-DXP-10 D54-S50-P27E08	54	50	656	586	556.5	DXP-P27	DXP-E08				◉
NT-DXP-10 D55-S50-P28E08	55	50	665	595	565.5	DXP-P28	DXP-E08				◉
NT-DXP-10 D56-S50-P20E10	56	50	675	605	571.6	DXP-P20	DXP-E10				◉
NT-DXP-10 D57-S50-P21E10	57	50	685	615	582.1	DXP-P21	DXP-E10				◉
NT-DXP-10 D58-S50-P22E10	58	50	695	625	592.7	DXP-P22	DXP-E10				◉
NT-DXP-10 D59-S50-P23E10	59	50	705	635	603.3	DXP-P23	DXP-E10				◉
NT-DXP-10 D60-S50-P24E10	60	50	715	645	613.9	-	DXP-E10				◉

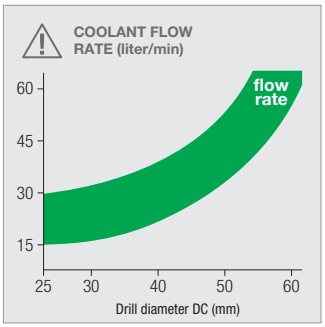
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion





Spare parts	Wrench	Insert screw	Flag wrench
NT-DXP-10 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-10 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-10 (DC 32-34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-10 (DC 35-36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-10 (DC 37-38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 39-42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 44-47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 48-55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-10 (DC 57-60)	NT-WR2128	NT-ST50100T20	NT-FTB20





SORMA DIAMOND & CUTTING TOOLS

DXP-P

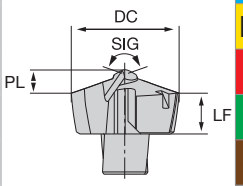
Pilot

- PVD coated carbide pilot HC (high concentricity) pilot is for general purpose use
- DXP pilot may look like a DEX drill head but they're not interchangeable
- Step drills can be made upon request

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD
		JP5725	
Stable machining, light cut	● 1st choice ○ suitable	○	
General machining, medium cut	● 1st choice ○ suitable	●	
Unstable machining, heavy cut	● 1st choice ○ suitable		

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**55 160**
M	
K	**60 140**
N	
S	
H	

	Designation	DC	TCDC	SIG	PL	LF	Stock
GENERAL	**DXP-P15-HC**	15	k6	150	3.05	5.65	◉
HC P K	**DXP-P16-HC**	16	k6	150	3.25	5.55	◉
 perfect centering	**DXP-P17-HC**	17	k6	150	3.35	6.55	◉
	DXP-P18-HC	18	k6	150	3.5	7	◉
	DXP-P19-HC	19	k6	150	3.83	7.17	◉
	DXP-P20-HC	20	k6	150	4.03	7.57	◉
	DXP-P21-HC	21	k6	150	4.23	7.87	◉
	DXP-P22-HC	22	k6	150	4.51	8.19	◉
	DXP-P23-HC	23	k6	150	4.8	8.5	●
	DXP-P24-HC	24	k6	150	4.9	9	◉
	DXP-P25-HC	25	k6	150	4.92	9.58	◉
	DXP-P26-HC	26	k6	150	5.16	9.34	◉
	DXP-P27-HC	27	k6	150	5.41	10.09	◉
	DXP-P28-HC	28	k6	150	5.62	9.88	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

DXP-E

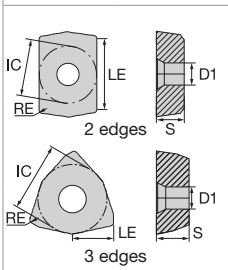
Peripheral insert

- New generation "Chip Splitter"
- Specially waved edge splits the chips, improves heat dissipation, prolongs the tool life, improves hole quality
- Peripheral inserts for DXP drill
- Step drills can be made upon request

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF	PVD	JP5725
Stable machining, light cut	1st choice / suitable		◯	
General machining, medium cut	1st choice / suitable		●	
Unstable machining, heavy cut	1st choice / suitable			

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
P	**55 160**
M	
K	**60 140**
N	
S	
H	

	Designation	RE	IC	S	D1	LE	Stock
GENERAL	CS P K	DXP-E04-CS	0.40	7.26	3.79	2.85	10.76	◯
	 chip splitter							
	CS P K	DXP-E05-CS	0.80	8	3.75	3.4	5.29	⦿
		DXP-E06-CS	0.80	10	3.75	4.4	6.62	◯
		DXP-E08-CS	0.80	12	4.75	4.4	7.94	●
		DXP-E10-CS	0.80	15	5.25	5.5	9.92	◯
	 chip splitter							

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ◯ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5725 min	JP5725 start	JP5725 max		
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 6xD	80	**120**	160		
			8xD	65	**100**	135		
			10xD	55	**85**	115		
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 6xD	60	**90**	120		
			8xD	50	**75**	100		
			10xD	40	**60**	80		
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 6xD	40	**60**	80		
			8xD	35	**50**	65		
			10xD	30	**40**	50		
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 6xD	80	**110**	140		
			8xD	70	**90**	110		
			10xD	60	**80**	100		
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 6xD	80	**100**	120		
			8xD	70	**90**	110		
			10xD	60	**80**	100		

Complete workpiece materials p. **M**1.

DRILLING Parameters - feed rate - DXP

SORMA DIAMOND & CUTTING TOOLS

ISO 513	MATERIAL	HARDNESS HB	L/D	DC 30.00 ÷ 35.00			DC 36.00 ÷ 40.00			DC 41.00 ÷ 45.00		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 6xD	0.16	**0.22**	0.28	0.18	**0.25**	0.32	0.18	**0.27**	0.36
			8xD	0.12	**0.17**	0.22	0.14	**0.20**	0.26	0.14	**0.21**	0.28
			10xD	0.10	**0.15**	0.20	0.12	**0.17**	0.22	0.12	**0.18**	0.24
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 6xD	0.18	**0.25**	0.32	0.20	**0.28**	0.36	0.20	**0.31**	0.42
			8xD	0.14	**0.20**	0.26	0.16	**0.22**	0.28	0.16	**0.25**	0.34
			10xD	0.12	**0.17**	0.22	0.14	**0.19**	0.24	0.14	**0.22**	0.30
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 6xD	0.18	**0.24**	0.30	0.20	**0.27**	0.34	0.20	**0.30**	0.40
			8xD	0.14	**0.19**	0.24	0.16	**0.21**	0.26	0.16	**0.24**	0.32
			10xD	0.12	**0.16**	0.20	0.14	**0.18**	0.22	0.14	**0.21**	0.28
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 6xD	0.20	**0.27**	0.34	0.22	**0.30**	0.38	0.22	**0.33**	0.44
			8xD	0.16	**0.21**	0.26	0.18	**0.24**	0.30	0.18	**0.27**	0.36
			10xD	0.14	**0.18**	0.22	0.16	**0.21**	0.26	0.16	**0.23**	0.30
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 6xD	0.16	**0.22**	0.28	0.18	**0.24**	0.30	0.18	**0.28**	0.36
			8xD	0.12	**0.17**	0.22	0.14	**0.19**	0.24	0.14	**0.21**	0.28
			10xD	0.10	**0.15**	0.20	0.12	**0.16**	0.20	0.12	**0.18**	0.24

Complete workpiece materials p. **M**1.

(fn: mm/rev)

DC 46.00 ÷ 50.00			DC 51.00 ÷ 55.00			DC 56.00 ÷ 60.00					
min	start	max	min	start	max	min	start	max			
0.20	**0.30**	0.40	0.20	**0.32**	0.44	0.22	**0.34**	0.46			
0.16	**0.24**	0.32	0.16	**0.26**	0.36	0.18	**0.27**	0.36			
0.14	**0.21**	0.28	0.14	**0.22**	0.30	0.16	**0.24**	0.32			
0.22	**0.29**	0.46	0.22	**0.36**	0.50	0.24	**0.38**	0.52			
0.18	**0.27**	0.36	0.18	**0.27**	0.40	0.20	**0.31**	0.42			
0.16	**0.24**	0.32	0.16	**0.26**	0.36	0.16	**0.26**	0.36			
0.22	**0.33**	0.44	0.22	**0.35**	0.48	0.24	**0.37**	0.50			
0.18	**0.27**	0.36	0.18	**0.28**	0.38	0.20	**0.30**	0.40			
0.16	**0.23**	0.30	0.16	**0.25**	0.34	0.16	**0.26**	0.36			
0.24	**0.36**	0.48	0.24	**0.38**	0.52	0.26	**0.40**	0.54			
0.20	**0.29**	0.38	0.20	**0.31**	0.42	0.20	**0.32**	0.44			
0.16	**0.25**	0.34	0.16	**0.26**	0.36	0.18	**0.28**	0.38			
0.20	**0.29**	0.38	0.20	**0.31**	0.42	0.20	**0.32**	0.44			
0.16	**0.23**	0.30	0.16	**0.25**	0.34	0.16	**0.26**	0.36			
0.14	**0.20**	0.26	0.14	**0.22**	0.30	0.14	**0.22**	0.30			

Complete workpiece materials p. **M**1.

SPOT DRILL

High quality multipurpose system

Application



- Spotting
- Engraving
- V-Grooving
- Chamfering

- Spotting
- Gravieren
- V-Nut
- Anfasen

- Spotting
- Incisione
- Scanalatura a V
- Smussatura

- Pointage
- Gravure
- Rainurage en V
- Chanfreinage

Application range - ISO 513

P M K N



Features and benefits

- Highly universal system for chamfering, engraving, spot drilling and V slot milling
- Versatile and easy to use.
- Inserts available with different radii and for diverse workpiece materials.

- Sehr universelles System zum Anfasen, Gravieren, Zentrierbohren und Punktbohren oder Fräsen von V Nuten.
- Komfortabel in der Anwendung und sehr flexibel.
- Wendeschneidplatten mit verschiedenen Radien und für die Anwendung mit verschiedenen Materialien erhältlich.

- Sistema altamente universale per smussature, incisioni, esecuzione di centrini e fresatura di cave a V..
- Versatile e facile da utilizzare.
- Inserti disponibili con diversi raggi e per applicazione su diversi materiali.

- Système hautement universel pour le chanfreinage, la gravure, centrage et rainures en V
- Polyvalent et simple d'utilisation
- Plaquettes disponibles en différents rayons et pour diverses applications matières

SPOT DRILL

High quality multipurpose system

Drilling holders

- Cylindrical shank and screw-on types.
- Drilling diameter range: from 2.4mm to 14mm
- Smart kit including 1 holder + 4 inserts.
- Extension arbors (steel/carbide 10xD)

- Zylindrische Aufnahme und Gewindeaufnahme
- Max. Bohrdurchmesser 14 mm, min. Bohrdurchmesser 2,4 mm
- Smart-Kit mit 1 Werkzeughalter und 4 Wendeschneidplatten erhältlich.
- Erweiterungshülsen (Stahl/Carbon 10xD)

- Attacco cilindrico e attacco filettato
- Gamma di foratura: da 2.4mm a 14mm
- Disponibile Smart kit con 1 portautensile e 4 inserti.
- Prolunghe (acciaio/metallo duro 10xD)

- Queue cylindrique et embout vissé
- Diamètre de perçage maximum 14 mm, diamètre de perçage minimum 2,4 mm
- Kit de démarrage disponible avec 1 porte-outil et 4 plaquettes.
- Rallonge (acier/carbure 10xD)



Extension arbors

Inserts

- Available R03/08 for PMK, R04/08 for aluminium
- PVD coated carbide (ISO P, M, K, S) or uncoated carbide (ISO N)
- Geometries: GP, AL

- R03/08 erhältlich für PMK, R04/08 für Aluminium
- PVD-beschichtete Hartmetallqualitäten (ISO P, M, K, S) oder unbeschichtete Qualitäten für ISO-Materialien N
- Geometrien: GP, AL

- Disponibile R03/08 per PMK, R04/08 per alluminio
- Gradi in metallo duro rivestito (ISO P, M, K, S) e non rivestito (ISO N)
- Geometrie: GP, AL

- Disponible R03/08 pour PMK, R04/08 pour aluminium
- Nuances carbure revêtues PVD (ISO P, M, K, S) ou nuances non revêtues pour matériaux ISO N
- Géométries : GP, AL

GP P M K



SIZE
11

AL N



SIZE
11

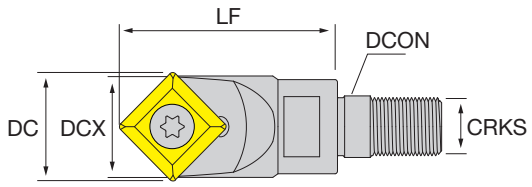
SORMA DIAMOND & CUTTING TOOLS

NT-SPOT

SPOT drill

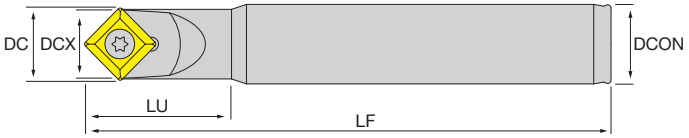
- Spot drill system with SPOT inserts
- Multifunctional system for maximum versatility
- Inserts cannot be mounted on DRS drills or ChamferSquare milling holders

Screw-in





Cylindrical





45° KAPR | CHAMFERING | SPOTTING | ENGRAVING | V-GROOVING

Designation	DC	CICT	DCON	LF	CRKS	WT	MIID				Stock
NT-SPOT D14-M08-L052	14	1	8.5	35	M8	-	SPOT11				●
NT-SPOT D14-S16-L100	14	1	16	100	30	-	SPOT11				●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-SPOT D14-ooo-Looo	NT-ST35080T15	NT-FTB15

SPOT

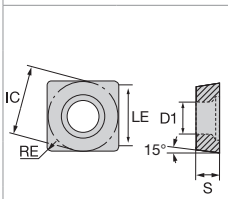
SPOTdrill

- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available
- Several PVD coated or uncoated carbide grades available
- Multiple radii available for each geometry
- Inserts cannot be mounted on DRS drills or ChamferSquare milling holders

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD JP7525	HF PVD JP8725	HF PVD JP9535	HF JU6520
Stable machining, light cut	● 1st choice ○ suitable		○		●
General machining, medium cut	● 1st choice ○ suitable	●	●	●	●
Unstable machining, heavy cut	✱ 1st choice ✱ suitable	✱		✱	

Dimensions



4 edges

ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																					
P		**100 280**																				
M			**80 200**																			
K	**140 300**																					
N				**300 1100**																		
S			**20 60**																			
H																						

	Designation		RE	IC	S	D1	LE	Stock				
GENERAL	GP P M K S	**SPOT11 R03-GP**	0.30	11	3.97	4.3	10.4	●	●	●		
		SPOT11 R08-GP	0.80	11	3.97	4.3	9.4	●	●	●		
ALUMINIUM	AL N	**SPOT11 R04-AL**	0.40	11	3.97	4.3	10.2				●	
	polished surface	**SPOT11 R08-AL**	0.80	11	3.97	4.3	9.4				●	

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

ISO 513	MATERIAL	HARDNESS HB	JP8725 min	JP8725 start	JP8725 max		
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	120	**180**	240		
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100	**150**	200		
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	80	**120**	160		
ISO 513	MATERIAL	HARDNESS HB	JP9535 min	JP9535 start	JP9535 max		
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	80	**120**	160		
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	60	**90**	120		
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	80	**120**	160		
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		60	**100**	140		
ISO 513	MATERIAL	HARDNESS HB	JP7525 min	JP7525 start	JP7525 max		
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100	**130**	160		
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100	**110**	120		
ISO 513	MATERIAL	HARDNESS HB	JU6520 min	JU6520 start	JU6520 max		
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		240	**320**	400		
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		160	**230**	300		

Complete workpiece materials p. **H**1.

WC

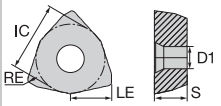
ISO - with hole

- ISO drilling inserts with geometry for general purposes
- PVD coated carbide grade for universal use
- Inserts could be mounted on ISO drill bodies with seats of the same IC circle

HF: Micrograin tungstein carbide
PVD: Physical vapor deposition

		HF PVD	HF PVD
		JP5530	JP9535
Stable machining, light cut	● 1st choice ○ suitable		
General machining, medium cut	● 1st choice ○ suitable	●	●
Unstable machining, heavy cut	● 1st choice ○ suitable	○	●

Dimensions



ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	
P	**100 260**	
M	60 180	**80 200**
K		
N		
S		**20 60**
H		

	Designation	RE	IC	S	D1	LE	Stock	
GENERAL	GP P M S							
	WCMX030208-GP	0.80	5.56	2.38	2.8	-	●	
	WCMX040208-GP	0.80	6.35	2.38	2.9	-	●	
	WCMX050308-GP	0.80	7.94	3.18	3.4	-	●	◉
	WCMX06T308-GP	0.80	9.52	3.97	3.8	-	●	
	WCMX080412-GP	1.20	12.7	4.76	4.4	-	●	



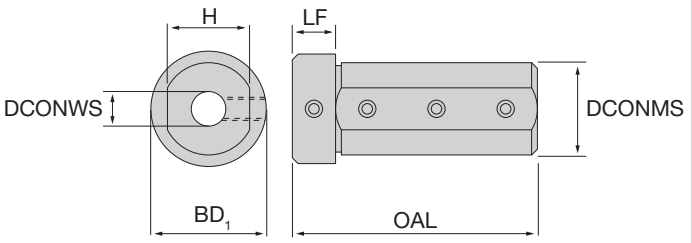
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

ACCESSORIES

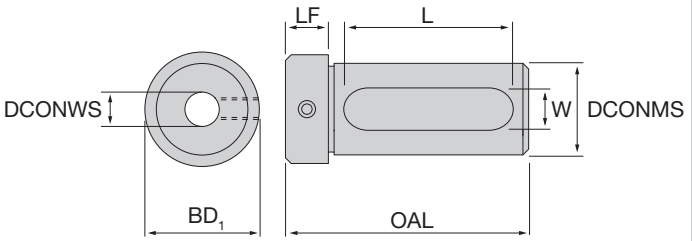
Sleeves .F2
Threaded extensions .F5

SORMA DIAMOND & CUTTING TOOLS

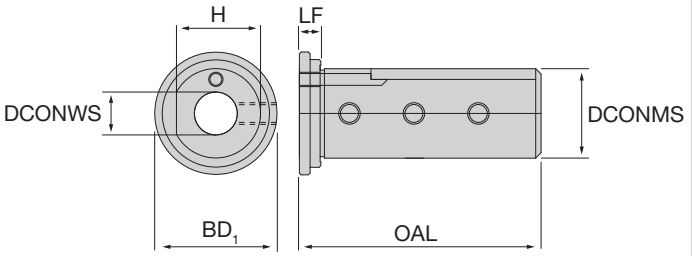
NT-SLB













Designation	DCONWS	DCONMS	OAL	H	LF	BD1	L	W			Stock
SCREW LOCK SLEEVE											
NT-SLB S03 D16-L62	3	16	62	14.5	7	20	-	-			◉
NT-SLB S04 D16-L62	4	16	62	14.5	7	20	-	-			●
NT-SLB S04 D20-L67	4	20	67	17.5	7	27	-	-			○
NT-SLB S04 D32-L85	4	32	80	29.5	15	38	-	-			●
NT-SLB S05 D16-L62	5	16	62	14.5	7	20	-	-			◉
NT-SLB S05 D20-L67	5	20	67	17.5	7	27	-	-			●
NT-SLB S05 D32-L85	5	32	85	29.5	15	38	-	-			○
NT-SLB S05 D40-L100	5	40	100	38	15	46	-	-			●
NT-SLB S06 D16-L62	6	16	62	14.5	7	20	-	-			●
NT-SLB S06 D20-L52	6	20	52	17.5	7	25	-	-			◉
NT-SLB S06 D20-L67	6	20	67	17.5	7	27	-	-			●
NT-SLB S06 D32-L85	6	32	85	29.5	15	38	-	-			○
NT-SLB S06 D40-L100	6	40	100	38	15	46	-	-			◉
NT-SLB S07 D20-L67	7	20	67	17.5	7	27	-	-			◉
NT-SLB S07 D32-L85	7	32	85	29.5	15	38	-	-			◉
NT-SLB S07 D40-L100	7	40	100	38	15	46	-	-			◉
NT-SLB S08 D16-L62	8	16	62	14.5	7	20	-	-			●
NT-SLB S08 D20-L52	8	20	52	17.5	7	25	-	-			●
NT-SLB S08 D20-L67	8	20	67	17.5	7	27	-	-			◉
NT-SLB S08 D32-L85	8	32	85	29.5	15	38	-	-			●
NT-SLB S08 D40-L100	8	40	100	38	15	46	-	-			●
NT-SLB S08 D50-L100	8	50	100	48	15	58	-	-			◉
NT-SLB S10 D20-L52	10	20	52	17.5	7	25	-	-			●
NT-SLB S10 D20-L67	10	20	67	17.5	7	27	-	-			●
NT-SLB S10 D32-L100	10	32	100	29.5	15	38	-	-			●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Designation	DCONWS	DCONMS	OAL	H	LF	BD1	L	W			Stock
NT-SLB S10 D40-L100	10	40	100	38	15	46	-	-			●
NT-SLB S10 D50-L100	10	50	100	48	15	58	-	-			●
NT-SLB S12 D20-L52	12	20	52	17.5	7	25	-	-			●
NT-SLB S12 D20-L67	12	20	67	17.5	7	27	-	-			◉
NT-SLB S12 D32-L100	12	32	100	29.5	15	38	-	-			●
NT-SLB S12 D40-L100	12	40	100	38	15	46	-	-			●
NT-SLB S12 D50-L100	12	50	100	48	15	58	-	-			●
NT-SLB S14 D32-L100	14	32	100	29.5	15	38	-	-			●
NT-SLB S14 D40-L100	14	40	100	38	15	46	-	-			●
NT-SLB S14 D50-L100	14	50	100	48	15	58	-	-			◉
NT-SLB S15 D32-L100	15	32	100	29.5	15	38	-	-			◉
NT-SLB S15 D40-L100	15	40	100	38	15	46	-	-			◉
NT-SLB S16 D32-L100	16	32	100	29.5	15	38	-	-			●
NT-SLB S16 D40-L100	16	40	100	38	15	46	-	-			●
NT-SLB S16 D50-L100	16	50	100	48	15	58	-	-			●
NT-SLB S18 D32-L100	18	32	100	29.5	15	38	-	-			◉
NT-SLB S18 D40-L100	18	40	100	38	15	46	-	-			◉
NT-SLB S18 D50-L100	18	50	100	48	15	58	-	-			◉
NT-SLB S20 D50-L100	20	50	100	48	15	58	-	-			●
NT-SLB S25 D50-L100	25	50	100	48	15	58	-	-			●
TROUGH HOLE SLEEVE											
NT-SLB S10 D16-L62	10	16	62	-	7	20	50	11			◉
NT-SLB S12 D16-L62	12	16	62	-	7	20	50	11			◉
NT-SLB S14 D20-L67	14	20	67	-	7	27	55	13			◉
NT-SLB S14 D25-L64	14	25	64	-	6	35	51	12			◉
NT-SLB S15 D20-L67	15	20	67	-	7	27	55	13			◉
NT-SLB S15 D25-L64	15	25	64	-	6	35	51	12			◉
NT-SLB S16 D20-L52	16	20	52	-	7	25	40	11			●
NT-SLB S16 D20-L67	16	20	67	-	7	27	55	13			◉
NT-SLB S16 D25-L64	16	25	64	-	6	35	51	12			●
NT-SLB S17 D25-L64	17	25	64	-	6	35	51	12			◉
NT-SLB S18 D25-L64	18	25	64	-	6	35	51	12			◉
NT-SLB S20 D25-L64	20	25	64	-	6	35	51	12			●
NT-SLB S20 D32-L100	20	32	100	-	15	38	77	14			●
NT-SLB S20 D40-L100	20	40	100	-	15	46	77	14			●
NT-SLB S22 D25-L64	22	25	64	-	6	35	51	12			●
NT-SLB S22 D32-L100	22	32	100	-	15	38	77	14			◉
NT-SLB S22 D40-L100	22	40	100	-	15	46	77	14			●
NT-SLB S25 D32-L100	25	32	100	-	15	38	77	14			●
NT-SLB S25 D40-L100	25	40	100	-	15	46	77	14			●
NT-SLB S32 D40-L100	32	40	100	-	15	46	77	14			●
NT-SLB S32 D50-L100	32	50	100	-	15	46	77	14			●
NT-SLB S40 D50-L100	40	50	100	-	15	58	77	14			●
SCREW LOCK WITH COOLANT SLEEVE											
NT-SLB S04 D25-L64	4	25	64	23.5	6	35	-	-			◉
NT-SLB S05 D25-L64	5	25	64	23.5	6	35	-	-			◉
NT-SLB S06 D25-L64	6	25	64	23.5	6	35	-	-			◉
NT-SLB S07 D25-L64	7	25	64	23.5	6	35	-	-			◉
NT-SLB S08 D25-L64	8	25	64	23.5	6	35	-	-			●
NT-SLB S09 D25-L64	9	25	64	23.5	6	35	-	-			◉
NT-SLB S10 D25-L64	10	25	64	23.5	6	35	-	-			●
NT-SLB S11 D25-L64	11	25	64	23.5	6	35	-	-			◉
NT-SLB S12 D25-L64	12	25	64	23.5	6	35	-	-			●

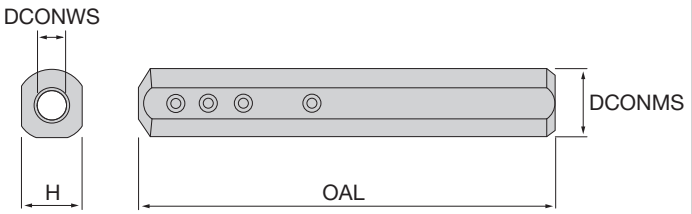
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

NT-SLV

Sleeves for boring bars

- Sleeves with central hole for gripping micro boring bars
- Can firmly grip carbide and steel boring bars, easily fix and adjust overhang





Designation	DCONWS	DCONMS	OAL	H							Stock
SCREW LOCK SLEEVE											
NT-SLV S03 D16-L100	3	16	100	14							⦿
NT-SLV S04 D16-L100	4	16	100	14							●
NT-SLV S05 D16-L100	5	16	100	14							●
NT-SLV S06 D16-L100	6	16	100	14							●

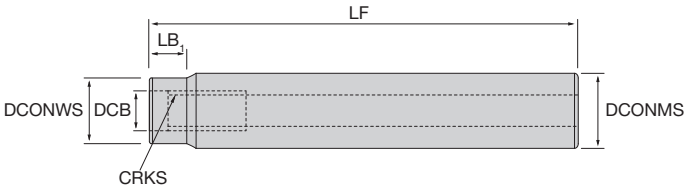
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

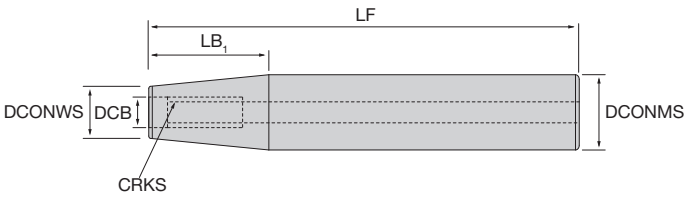
NT-ARB

Arbors for screw-in cutters

- Steel arbors
- Central coolant hole
- Screw-in cutters connection threads
- Available in conical type and shrink-neck type
- Steel arbors can help absorb vibrations in case of rough surfaces or unstable conditions









Designation	DCONMS	CRKS	DCONWS	DCB	LF	LB1					Stock
TAPERED ARBOR											
NT-ARB D16-M06-150T	16	M6	11	6.5	150	40					●
NT-ARB D16-M06-200T	16	M6	11	6.5	200	40					◉
NT-ARB D20-M08-200T	20	M8	14	8.5	200	50					◉
NT-ARB D20-M08-250T	20	M8	14	8.5	250	50					◉
NT-ARB D25-M10-200T	25	M10	18	10.5	200	60					●
NT-ARB D25-M10-250T	25	M10	18	10.5	250	60					●
NT-ARB D32-M12-250T	32	M12	23	12.5	250	70					◉
NT-ARB D32-M12-350T	32	M12	23	12.5	350	70					●
ARBOR WITH REDUCED NECK											
NT-ARB D12-M06-120	12	M6	11	6.5	120	10					●
NT-ARB D16-M08-150	16	M8	14	8.5	150	10					●
NT-ARB D16-M08-200	16	M8	14	8.5	200	10					●
NT-ARB D20-M10-150	20	M10	18	10.5	150	12					●
NT-ARB D20-M10-250	20	M10	18	10.5	250	12					●
NT-ARB D25-M12-200	25	M12	23	12.5	200	15					●
NT-ARB D25-M12-300	25	M12	23	12.5	300	15					●
NT-ARB D32-M16-200	32	M16	29	17	200	18					●
NT-ARB D32-M16-350	32	M16	29	17	350	18					●

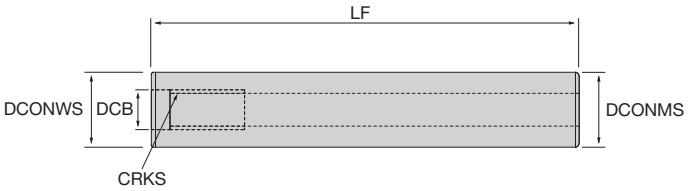
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

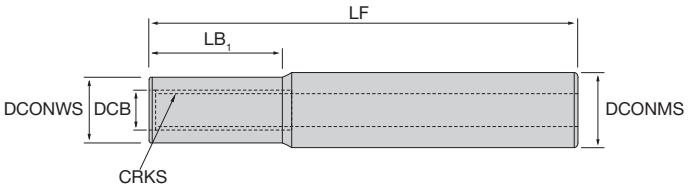
NT-ARB-HM

Arbors for screw-in cutters

- Carbide arbors
- Central coolant hole
- Screw-in cutters connection threads
- Available in straight type and shrink-neck type
- High rigidity for high precision machining under stable conditions









Designation	DCONMS	CRKS	DCONWS	DCB	LF	LB1					Stock
STRAIGHT SHANK ARBOR											
NT-ARB-HM D11-M06-150	11	M6	11	6.5	150	-					▽
NT-ARB-HM D12-M06-100	12	M6	12	6.5	100	-					●
NT-ARB-HM D12-M06-150	12	M6	12	6.5	150	-					●
NT-ARB-HM D12-M06-200	12	M6	12	6.5	200	-					●
NT-ARB-HM D16-M08-100	16	M8	16	8.5	100	-					●
NT-ARB-HM D16-M08-150	16	M8	16	8.5	150	-					●
NT-ARB-HM D16-M08-200	16	M8	16	8.5	200	-					●
NT-ARB-HM D20-M10-100	20	M10	20	10.5	100	-					●
NT-ARB-HM D20-M10-150	20	M10	20	10.5	150	-					●
NT-ARB-HM D20-M10-200	20	M10	20	10.5	200	-					●
NT-ARB-HM D20-M10-300	20	M10	20	10.5	300	-					●
NT-ARB-HM D25-M12-100	25	M12	25	12.5	100	-					●
NT-ARB-HM D25-M12-150	25	M12	25	12.5	150	-					◉
NT-ARB-HM D25-M12-200	25	M12	25	12.5	200	-					●
NT-ARB-HM D25-M12-300	25	M12	25	12.5	300	-					◉
ARBOR WITH REDUCED NECK											
NT-ARB-HM D12-11-M06-100	12	M6	11	6.5	100	37					●
NT-ARB-HM D12-11-M06-150	12	M6	11	6.5	150	52					●
NT-ARB-HM D16-13.8-M08-150	16	M8	13.8	8.5	150	42					●
NT-ARB-HM D16-13.8-M08-200	16	M8	13.8	8.5	200	57					●
NT-ARB-HM D20-18.2-M10-150	20	M10	18.2	10.5	150	54					●
NT-ARB-HM D20-18.2-M10-200	20	M10	18.2	10.5	200	78					●

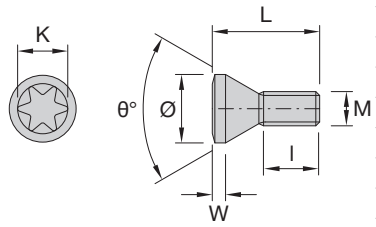
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SPARE PARTS

Insert screws .G2
Pins, clamps,clamp screws .G5
Shims .G6
Wrenches .G9
Miscellaneous .G11

Insert screws

NT-ST



Designation	M	Ø	L	l	W	θ	K	Torque		Chapter
NT-ST16031T06	M1.6X0.35	2.6	3.3	1	0.8	60	T6	0.2		A
NT-ST20033T06	M2.0X0.40	2.7	3.3	2.2	0.5	60	T6	0.4		D
NT-ST20038T06	M2.0X0.40	2.7	3.8	2.6	0.6	60	T6	0.4		A
NT-ST20040T06	M2.0X0.40	2.7	4	2.9	0.5	60	T6	0.5		D
NT-ST20043T06	M2.0X0.40	2.7	4.3	2.5	1	60	T6	0.4		E
NT-ST20043T06B	M2.0X0.40	2.7	4.7	2.9	1	60	T6	0.4		D
NT-ST20047T06	M2.0X0.40	2.7	4.7	-	-	60	T6	0.4		D
NT-ST22049T07	M2.2X0.45	3.1	4.9	3.3	0.5	60	T7	0.7		A,B
NT-ST22055T06	M2.2X0.45	3	5.5	4	0.8	60	T6	0.7		E
NT-ST25050T07	M2.5X0.45	3.1	5	3.1	1	60	T7	0.9		A
NT-ST25056T08HQ	M2.5X0.45	3.5	5.6	3.4	0.6	60	T8	1.2		D
NT-ST25059T08	M2.5X0.45	4	6	3.9	0.5	60	T8	0.9		B
NT-ST25060T07	M2.5X0.45	3.5	6	3.6	0.5	60	T7	0.9		A
NT-ST25060T07B	M2.5X0.45	3.5	6	4.1	0.5	60	T7	0.9		A,D,E
NT-ST25060T08	M2.5X0.45	3.85	6	3.9	0.95	60	T8	1.2		D
NT-ST25078P08	M2.5X0.45	3.5	7.8	6	0	60	IP8	0.9		D
NT-ST25080T09	M2.5X0.45	3.5	7.8	5.9	0.5	60	T9	1.2		E
NT-ST30058T10	M3.0X0.50	4.3	5.8	4.4	1	90	T10	1.5		A
NT-ST30068T10	M3.0X0.50	4.3	6.8	5.4	0.5	90	T10	1.5		A
NT-ST30070T09	M3.0X0.50	4.2	7.2	4	1	60	T9	1.5		D
NT-ST30070T10	M3.0X0.50	4.3	7	5.1	0.5	60	T10	1.5		A
NT-ST30070T10HQ	M3.0X0.50	4.4	7	4.4	0.9	60	T10	2		D
NT-ST30080T10	M3.0X0.50	4.3	8	5.7	2.9	60	T10	1.5		E
NT-ST35051T15	M3.5X0.60	5.1	8.8	6	1.3	60	T15	2.3		D
NT-ST35070T15	M3.5X0.60	5.3	7	4.6	0.8	60	T15	2.3		D
NT-ST35073T15	M3.5X0.60	5.5	7.3	4.3	0.5	60	T15	2.3		A
NT-ST35080T15	M3.5X0.60	5.5	8	5.5	1	60	T15	2.3		E
NT-ST35089T15	M3.5X0.60	5.5	8.9	5.9	0.7	60	T15	2.3		A,B
NT-ST35089T15B	M3.5X0.60	5.1	8.9	6	1.2	60	T15	2.3		A
NT-ST35095T15HQ	M3.5X0.60	5.3	9.5	6	1.5	60	T15	3		D
NT-ST35115T15	M3.5X0.60	5.5	11.5	8	1.3	60	T15	2.3		A,B
NT-ST35120T15	M3.5X0.60	5.3	12	9.5	0.9	60	T15	2.3		B,D
NT-ST40090T15	M4.0X0.70	5.5	9	6.1	1	60	T15	3.4		A,D
NT-ST40095T15HQ	M4.0X0.70	5.5	9.5	6.6	1	60	T15	4.5		D
NT-ST40100T15	M4.0X0.70	5.5	10	7	1.2	60	T15	3.4		D,E
NT-ST40101T15	M4.0X0.70	6.5	10.1	8	0.5	90	T15	3.4		D
NT-ST40110T15HQ	M4.0X0.70	5.5	11	8.2	1.6	60	T15	4.5		D
NT-ST40115T15	M4.0X0.50	6.8	11.5	8.6	1.3	60	T15	3.4		A,C
NT-ST40136T15	M4.0X0.70	7.1	13.6	10	0.9	60	T15	3.4		D
NT-ST40140T15	M4.0X0.50	6.8	13.8	10.1	1	60	T15	3.4		A,B
NT-ST45110T20	M4.5X0.75	6.8	11	7.9	1.1	60	T20	4.9		D
NT-ST45111T15	M4.5X0.75	6.8	11.1	8.2	0.5	60	T15	3.4		D
NT-ST50100T20	M5.0X0.80	6.4	12.1	8.4	1	40	T20	4.9		E
NT-ST50108T20	M5.0X0.80	6.4	10.8	5.5	1	43	T20	6.7		E
NT-ST50110T20	M5.0X0.80	7	11	8.2	1.1	60	T20	6.7		C,D
NT-ST60160T25	M6.0X1.00	8.5	16	11.5	0.9	60	T25	11.4		D

SORMA DIAMOND & CUTTING TOOLS

	Designation		M	L	l	K						Chapter
Clamp screws - double type	NT-SC double thread	NT-SC005	M5.0X0.80	15	5	2.5						A
		NT-SC008	M6.0X1.00	24	7	3						A
		NT-SC010	M6.0X1.00	30	7	3						A
		NT-SC030	M5.0X0.80	18	7	2.5						A
		NT-SC070	M6.0X1.00	30	7	4						A
Clamp screws	NT-SC	NT-SC035	M6.0X1.00	10	15	6.3	3.7	3				D
		NT-SC200	M6.0X1.00	9.7	24	20.2	3.8	T20				A
		NT-SC250	M4.0X0.70	6.8	18.8	15.2	3.6	T15				A
		NT-SC300	M5.0X0.80	8.3	15.9	4.9	-	-				C

	Designation		M	L	l	K						Chapter
Wedge screws	NT-SC	NT-SC060	M6.0X1.00	17	2.5	3						D
		NT-SC090	M6.0X1.00	20.2	3.5	3						D

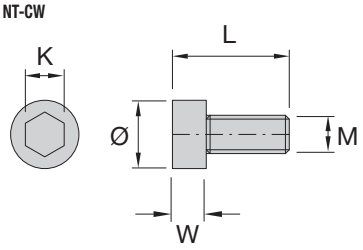
	Designation		M	Ø	L	l	W	θ	K			Chapter
Shim screws	NT-ST	NT-ST022	M2.0X0.40	3	5	3	0.5	60	T6			A
		NT-ST031	M3.0X0.50	6	8	6	0.1	90	2			A
		NT-ST130	M4.0X0.70	7.45	10	-	-	90	2.5			A
		NT-ST200	M4.0X0.70	7.9	10	7	0.7	90	2.5			A
		NT-ST250	M4.0X0.70	6.3	7.5	5.2	0.5	90	T15			A

	Designation		M	Ø	L	l	W	K				Chapter
Lever screws	NT-SC	NT-SC015	M6.0X1.00	5.95	7	3	-	-				A
		NT-SC020	M8.0X1.00	8	10	6	-	-				A
		NT-SC025	M8.0X1.00	8	7	6	-	-				A

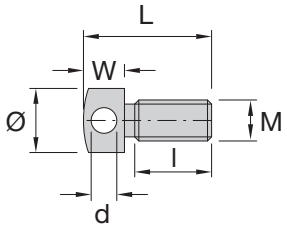
	Designation		M	Ø	L	l	W	K				Chapter
Locking screws	NT-SC flat support	NT-SC001	M5.0X0.80	8.5	20	6	-	-				C
		NT-SC002	M6.0X1.00	10	20	5	-	-				C
		NT-SC003	M3.0X0.50	5.5	6	3	-	-				B
		NT-SC004	M4.0X0.70	7	8	4	-	-				B

SORMA DIAMOND & CUTTING TOOLS

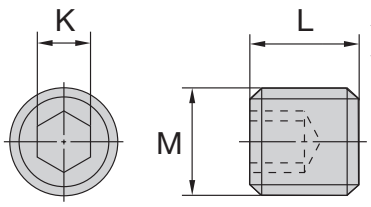
	Designation		M	Ø	L	l	W	K				Chapter
Cartridge screws	NT-CW	NT-CW040	M5.0X0.80	8.5	16.5	11.5	5	4				D



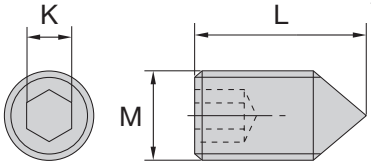
	Designation		M	Ø	D1	L	l	W				Chapter
Adjusting screws	NT-AD	NT-AD040	M5.0X0.80	9	2	14	8	6				D



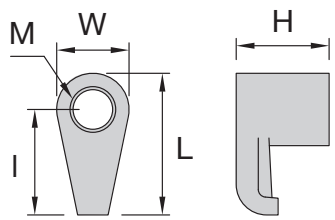
	Designation		M	L	K							Chapter
Locking grains	NT-ST	NT-ST042	M5.0X0.80	6	2.5							E
		NT-ST044	M5.0X0.80	8	2.5							E
		NT-ST046	M6.0X1.00	10	3							E
		NT-ST095	M4.0X0.70	-	4							A



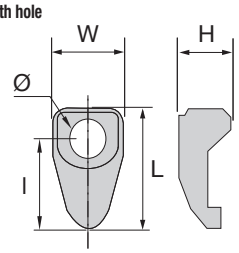
	Designation		M	L	K							Chapter
Setting grains	NT-ST	NT-ST043	M5.0X0.80	6	2.5							E
		NT-ST045	M5.0X0.80	8	2.5							E
		NT-ST047	M6.0X1.00	10	3							E



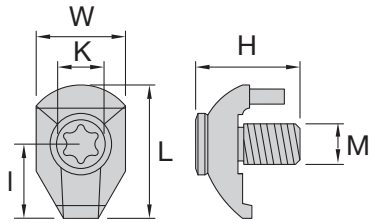
	Designation		M	L	l	W	H					Chapter
Clamps	NT-CS COOL holders	NT-CS005	M5.0X0.80	13.6	10	7.8	7.1					A
		NT-CS009	M5.0X0.80	14.9	11	7.8	11					A
		NT-CS010	M6.0X1.00	18.2	13	9.4	13.5					A
		NT-CS015	M8.0X1.00	22.3	17	10.8	17.4					A
		NT-CS025	M6.0X1.00	21.5	17	9.4	13.7					A
		NT-CS030	M5.0X0.80	16.9	12.5	7.9	7.9					A
		NT-CS070	M8.0X1.00	19.4	13.5	10.7	16.8					A
		NT-CS075	M6.0X1.00	24.5	19.5	9.7	13.7					A



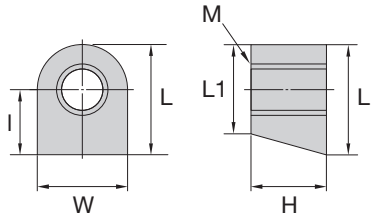
	Designation		M	L	l	W	H					Chapter
Clamps	NT-CS with hole	NT-CS028	6.3	20	12	12	6					D
		NT-CS200	6.4	26	17.5	13	11					A
		NT-CS210	6.4	29	20.3	12.1	11					A
		NT-CS250	4.2	21	13.3	11	10					A
		NT-CS300L	5.5	28	15.2	15	12.5					C
		NT-CS300R	5.5	28	15.2	15	12.5					C



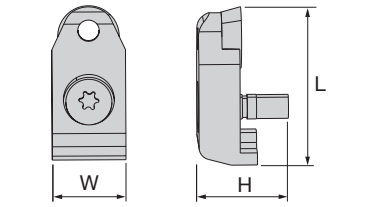
	Designation		M	L	I	W	H	K			Chapter
clamping set	NT-CS clamp+screw	NT-CS003	M4.0X0.70	13.5	7.5	7.7	14.3	2.5			A
		NT-CS013	M3.5X0.60	11.5	6.4	7.7	9	T15			D
		NT-CS014	M3.5X0.60	11.5	6.4	7.7	9	T15			D
		NT-CS021	M5.0X0.80	16.5	9.5	9.25	11	T20			D



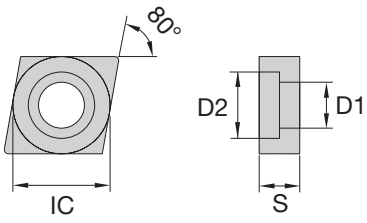
	Designation		M	L	L1	I	W	H			Chapter
Wedges	NT-WD	NT-WD070	M6.0X1.00	11.8	9.6	7.3	9	7.5			D
		NT-WD090	M6.0X1.00	9.96	7.8	5.96	10	9.5			D



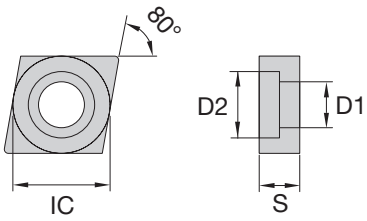
	Designation		W	H	L						Chapter
Clamps	NT-CS clamp+screw	NT-CS152	12	16.7	25						A
		NT-CS153	11.5	16	23.5						A
		NT-CS154	9	16	20						A
		NT-CS1525	10	16	21.5						A



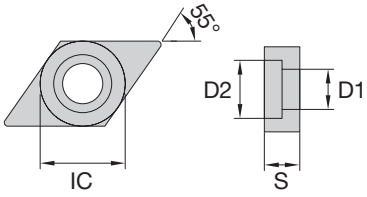
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (CC∞)										
	NT-SH001	11.4	3.9	6.6	8.2						A
	NT-SH011	8.5	3.2	5.4	6.7						A



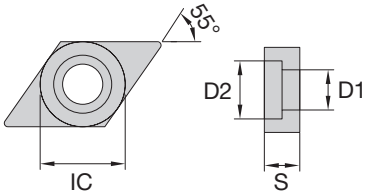
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (CN∞)										
	NT-SH012	9.3	3.2	4.9	6.8						A
	NT-SH030	12.4	4.8	7.5	8.2						A
	NT-SH031	-	-	-	-						A
	NT-SH035	12.6	3.2	6.9	8.5						A
	NT-SH055	15.5	4.8	9.9	11						A
	NT-SH080	18.7	4.8	11.4	12.3						A



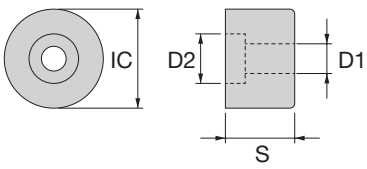
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (DC∞)										
	NT-SH007	6.9	3.2	5.4	6.7						A



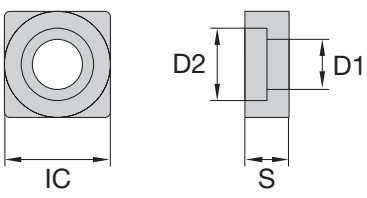
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (DN∞)										
	NT-SH020	8.5	3.2	6.9	8.9						A
	NT-SH025	8.2	6.5	7.5	8						
	NT-SH045	8.2	4.6	7.5	8						A



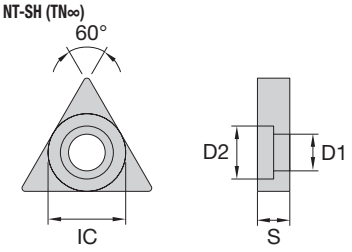
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (RN∞)										
	NT-SH100	-	-	-	-						A
	NT-SH101	-	-	-	-						A
	NT-SH102	-	-	-	-						A



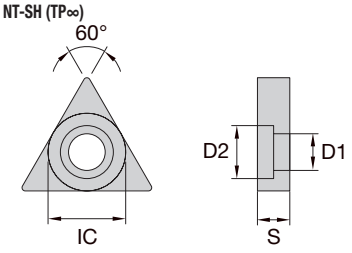
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (SN∞)										
	NT-SH070	12.3	4.8	7.5	8.2						A
	NT-SH071	11.6	6.4	6.8	8.7						A
	NT-SH072	11.6	3.2	6.8	8.7						A
	NT-SH090	18.7	4.8	11.3	13						A



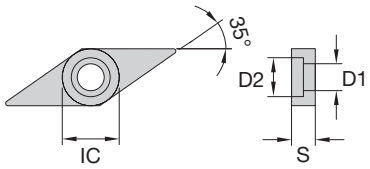
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (TN∞)										
	NT-SH005	6.7	3.2	5.8	6.6						A
	NT-SH006	6.6	3.2	4.8	6.6						A
	NT-SH008	8.3	4.9	7.5	8.2						A



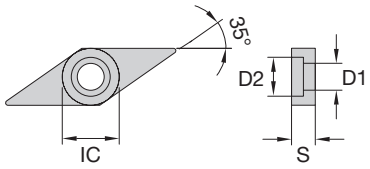
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (TP∞)										
	NT-SH002	5.5	3.2	2.4	5.3						A



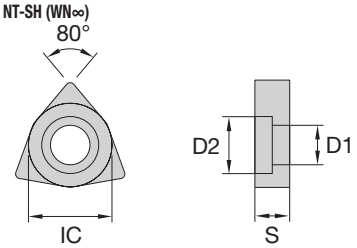
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (VB∞-VC∞)										
	NT-SH050	6.8	3.2	5.4	6.6						A



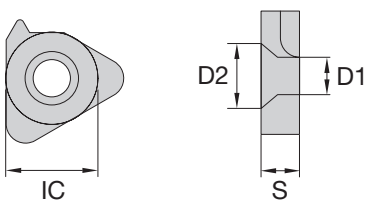
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (VN∞)										
	NT-SH075	6.8	3.2	5.9	6.6						A



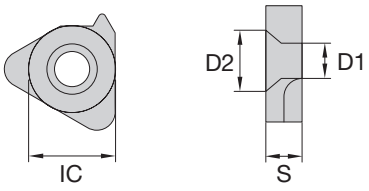
Designation		IC	S	D1	D2						Chapter
Shims for turning	NT-SH (WN∞)										
	NT-SH003	6.6	3.3	5.9	6.7						A
	NT-SH010	8	4.8	7.3	8						A
	NT-SH015	8.8	3.2	6.8	9						A



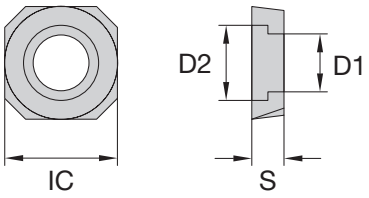
Designation		IC	S	D1	D2						Chapter
Shims for threading	NT-SH (ER-IL)										
	NT-SH060	9.5	3.2	4.5	6.4						B
	NT-SH060+1°	9.5	3.2	4.5	6						B
	NT-SH060-1°	9.5	3.2	4.5	6						B
	NT-SH066	12.6	4	5.1	-						B



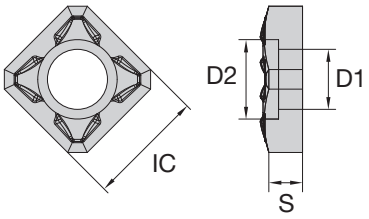
	Designation		IC	S	D1	D2						Chapter
Shims for threading	NT-SH (IR-EL)	NT-SH065	9.5	3.2	4.5	6.4						B
		NT-SH067	12.6	4	5.1	-						B



	Designation		IC	S	D1	D2						Chapter
Shims for milling	NT-SH (4FacePlus)	NT-SH004	10.7	3	5.2	6.9						D

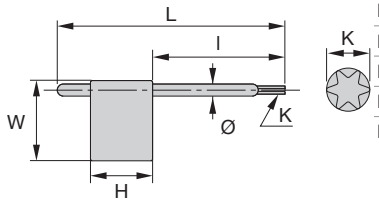


	Designation		IC	S	D1	D2						Chapter
Shims for milling	NT-SH (Double4Face)	NT-SH009	12.6	3.15	6.7	8.7						D

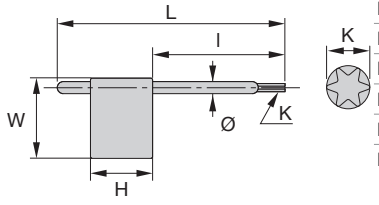


SORMA DIAMOND & CUTTING TOOLS

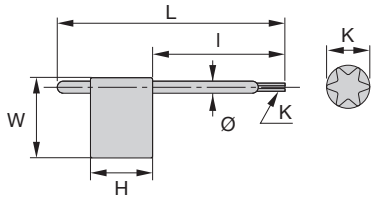
	Designation	Ø	L	l	W	H	K				Chapter
Flag wrenches	NT-FT yellow (torx)										
	NT-FT06	3.5	82	45	23	23	T6				A
	NT-FT07	3.5	84	47	23	23	T7				A,B
	NT-FT08	3.5	82	45	23	23	T8				B
	NT-FT09	3	73	37	23	19	T9				E
	NT-FT10	3.5	83	46	23	23	T10				A
	NT-FT15	3.5	83	46	23	23	T12				A,B,C



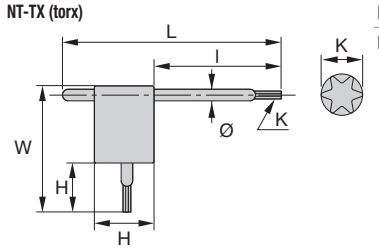
	Designation	Ø	L	l	W	H	K				Chapter
Flag wrenches	NT-FT blue (torx)										
	NT-FTB06	3	85	49	21	22	T6				D,E
	NT-FTB07	3	85	49	21	22	T7				D,E
	NT-FTB08	3	85	49	21	22	T8				D
	NT-FTB09	3	85	49	21	22	T9				E
	NT-FTB10	3	85	49	21	22	T10				D,E
	NT-FTB15	4	85	49	29	24	T15				D,E
	NT-FTB20	4	90	52	29	24	T20				D,E



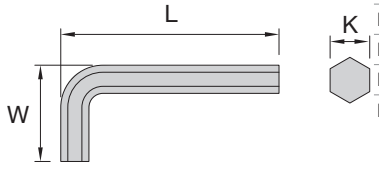
	Designation	Ø	L	l	W	H	K				Chapter
Flag wrenches	NT-FT yellow (torx plus)										
	NT-FTP08	3.5	88	51	23	23	IP8				D



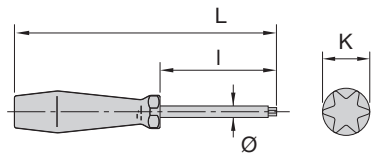
	Designation	Ø	L	l	W	H	K				Chapter
L wrenches	NT-TX (torx)										
	NT-TX15	3.5	57	57	19	23	T15				A,C
	NT-TX20	4	62	57	23	23	T20				A,C



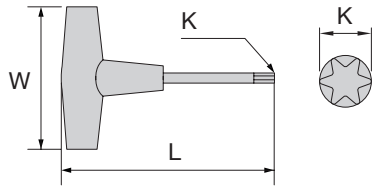
	Designation	Ø	L	W	K						Chapter
L wrenches	NT-WR (hexagonal)										
	NT-WR020	-	51	18	2						A
	NT-WR025	-	53	18	2.5						A,B,E
	NT-WR030	-	66	23	3						A,B,D,E
	NT-WR035	-	69	25	3.5						A,D
	NT-WR040	-	74	29	4						A,C,D
	NT-WR050	-	-	-	5						



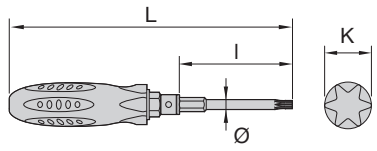
	Designation	Ø	L	l	K						Chapter
Screwdrivers	NT-DT										
	NT-DT20	5	175	80	T20						



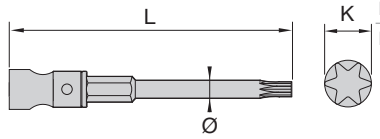
	Designation		L	W	K							Chapter
T wrenches	NT-TT	NT-TT20	120	100	T20							D
		NT-TT25	120	100	T25							D



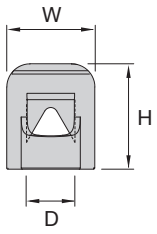
	Designation		Ø	L	l	K	Torque					Chapter
Screwdrivers	NT-TSD with torque control	NT-TSD TX08	3	200	60	T8	1.2					
		NT-TSD TX10	3.9	200	60	T10	2					
		NT-TSD TX15	4	200	60	T15	3					



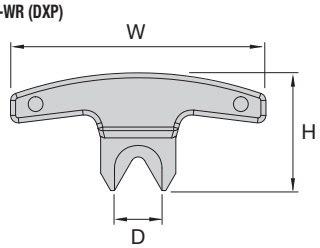
	Designation		Ø	L	K							Chapter
Screwdrivers	BIT Interchangeable	BIT IP08	3	70	IP8							
		BIT TX08	3	70	T8							
		BIT TX10	4	70	T10							
		BIT TX15	4	70	T15							



	Designation		W	H	D							Chapter
Drilling heads wrench	NT-WR (DEX)	NT-WR1011	24	30	12							E
		NT-WR1217	34	39	18							E
		NT-WR1820	38	45	22							E
		NT-WR2126	45	54	29							E



	Designation		W	H	D							Chapter
Drilling heads wrench	NT-WR (DXP)	NT-WR1416	102	47.1	17							E
		NT-WR1720	102	47.1	19							E
		NT-WR2128	102	47.1	29							E



SORMA DIAMOND & CUTTING TOOLS

	Designation		M	L	I	Ø	D1	K				Chapter
Eccentric pin	NT-SP	NT-SP010	M6.0X1.00	17.7	4.5	5	7.8	3				A
		NT-SP020	M5.0X0.80	14	3.4	3.7	6.2	2				A
		NT-SP025	M6.0X1.00	19.2	4.5	5	7.8	2.5				A
		NT-SP030	M5.0X0.80	11	3.4	3.7	5.6	2				A
		NT-SP035	M5.0X0.80	11	4.4	5	5.6	2				A
		NT-SP040	M8.0X1.00	21.8	4.7	6.2	10.3	3				A
		NT-SP050	M10.0X1.00	21.8	4.7	7.8	11.8	4				A

	Designation		Ø	L	I	W						Chapter
Levers	NT-LL	NT-LL012	3.4	12	9.9	3.6						A
		NT-LL015	4.4	10	13.6	4.7						A
		NT-LL020	5	14.5	14.3	4.6						A

	Designation		Ø	H	W							Chapter
Shim plugs	NT-SR	NT-SR012	6.2	5.8	3.5							A
		NT-SR015	6.5	3	4.5							A
		NT-SR020	8.6	7	4							A

	Designation		Ø	L								Chapter
Springs	NT-SG	NT-SG028	3.5	8								D
		NT-SG200	8	16								A
		NT-SG250	5.5	12								A

	Designation		M	H	W	Ø						Chapter
Cartridges	NT-CRD	NT-CRD-XP08	M3.0X0.50	29.5	11	5.5						D

	Designation		D1	L	H	W						Chapter
Chip cover	NT-CH	NT-CH030	6	13	14	8						D



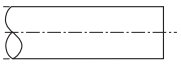
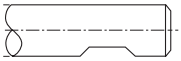
CARBIDE DRILLS

Caption .H2
Selection Guide .H4
TYPHOON PU - HPU universal application - 3xD, 5xD .H9
TYPHOON 4HTA general purpose 4-margins - 8xD .H37
TYPHOON GA - HGA general application - 3xD, 5xD, 8xD .H45
TYPHOON CV general purpose - 3xD .H69
TYPHOON HVA stainless steel - 3xD, 5xD .H75
TYPHOON ALH non-ferrous materials - 3xD, 5xD .H89
TYPHOON HRC hardened steel 45÷62 HRC - 3xD .H101
TYPHOON SUH MINI short, long and extra long - 5xD, 30xD .H107
TYPHOON HL long and extra-long - 12xD, 30xD .H139
TYPHOON HSD step drill for 90° chamfering - 3xD .H171
C-SD-TA NC spotting .H177

SORMA DIAMOND & CUTTING TOOLS

STOCK *		
●	stock standard stock standard	Standard Lager stock standard
◉	non-stock standard (no MOQ) non-standard stock (no MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
○	non-stock standard (MOQ) non-standard stock (MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
▲	upcoming product prossima introduzione	kommende Produkt prochaine introduction
▽	stock exhaustion esaurimento stock	Vorraterschöpfung épuisement du stock

APPLICATION GUIDELINES / INDICAZIONI PER L'APPLICAZIONE / LEITFADEN ZUR ANWENDUNG / INDICATIONS POUR L'APPLICATION		
★	1st choice 1a scelta	1. Wahl 1er choix
☆	suitable adatto	geeignet adapté

SHANK / ATTACCO / SCHAFT / QUEUE		
	cylindrical shank attacco cilindrico	zylindrischer Schaft queue cylindrique
	Weldon	

GEOMETRY / GEOMETRIA / GEOMETRIE / GÉOMÉTRIE		
	universal application applicazione universale	Universelle Anwendung application universelle
	universal application with inside coolant applicazione universale con refrigerazione interna	Universelle Anwendung mit IK application universelle avec arrosage par centre
	4 guides with inside coolant 4 fasi con refrigerazione interna	4 Führungsfasen mit IK 4 listels avec arrosage par centre
	general application applicazione generale	allgemeine Anwendung application général
	general application with inside coolant applicazione generale con refrigerazione interna	universelle Anwendung mit IK application général avec arrosage par centre
	general purpose uso generico	allgemeine Anwendung usinage général
	stainless steel with inside coolant acciaio inossidabile con refrigerazione interna	edelstahl mit IK acier inoxydable avec arrosage par centre

* The stock category of items in this catalogue may change without prior notice
La categoria di stock dei prodotti a catalogo può variare senza preavviso
Die Einstufung der Produkte kann sich jederzeit ändern
La catégorie de stock des articles dans ce catalogue peut être modifiée sans préavis.

CAPTION

SORMA DIAMOND & CUTTING TOOLS

GEOMETRY · GEOMETRIA · GEOMETRIE · GÉOMÉTRIE

ALU · SIG 130° · FHA 30°	aluminium with inside coolant alluminio con refrigerazione interna	Aluminium mit IK aluminium avec arrosage par centre
HRC · SIG 150° · FHA 15° · CH-45°	hardened steel acciaio temprato	Hartstahl acier trempé
SUH MINI · SIG 135° · FHA 30°	for deep holes Ø1÷3mm, with inside coolant per fori profondi Ø1÷3mm, con refrigerazione interna	für tiefe Löcher Ø1÷3mm, mit IK pour trous profonds Ø1÷3mm, avec arrosage par centre
HL · SIG 135° · FHA 30°	for deep holes, with inside coolant per fori profondi, con refrigerazione interna	für tiefe Löcher , mit IK pour trous profonds, avec arrosage par centre
HSD · SIG 140° · FHA 30°	universal application with inside coolant applicazione universale con refrigerazione interna	Universelle Anwendung mit IK application universelle avec arrosage par centre
SD · SIG 90° · SIG 120° · FHA 30°	NC starting drill punte da centri NC	Mikrokörnung micrograin

MATERIAL · MATERIALE · WERKSTOFF · MATIÈRE

MG ...	micrograin micrograna	Mikrokörnung micrograin

SURFACE TREATMENT · TRATTAMENTO SUPERFICIALEE · OBERFLÄCHENBEHANDLUNG · TRAITMENT DE SURFAC

... BR	uncoated non rivestito	unbeschichtet non revêtu
... POLISHED	polished lappato	geläppt poli

COATINGS · RIVESTIMENTI · BESCHICHTUNGEN · REVÊTEMENTS

		... PV200	... PV250	... PV300	... PV350	... PV400	... PV1000
hardness (HV) durezza (HV)	Härte (HV) dureté (HV)	3300	3300	3300	3350	3400	3600
friction coefficient coefficiente d'attrito	Reibungskoeffizient coefficent de frottement	0.3	0.3	0.3	0.3	0.3	0.25
thickness (µ) spessore (µ)	dicke (µ) épaisseur (µ)	3	2.5÷3.5	2.5÷3.5	2.5÷3.5	2÷4	2÷3
max working temperature (°C) temperatura max (°C)	hochste Temperatur (°C) température maximale (°C)	950°	900°	1100°	1100°	1150°	1200°

	ITEM NO.	PAGE	
PU-HPU universal application 3xD - 5xD	**353PU**	H12	
	353HPU	H17	
	355PU	H24	
	355HPU	H29	
4HTA general purpose 4-margins 8xD	**3584HTA**	H40	
GA-HGA general application 3xD - 5xD - 8xD	**373GA**	H48	
	373HGA	H52	
	375GA	H56	
	375HGA	H60	
	358HGA	H64	
CV general purpose 3xD	**353CV**	H72	
HVA stainless steel 3xD - 5xD	**353HVA**	H78	
	355HVA	H83	
ALH non-ferrous material 3xD - 5xD	**353ALH**	H92	
	355ALH	H96	
HRC hardened steel 45÷62 HRC 3xD	**353HRC**	H104	
SUH MINI short, long and extra long 5xD ÷ 30xD	**355SUH MINI**	H114	
	358SUH MINI	H118	
	3512SUH MINI	H122	
	3520SUH MINI	H126	
	3525SUH MINI	H130	
	3530SUH MINI	H134	
HL long and extra long 12xD ÷ 30xD	**3512HL**	H146	
	3515HL	H151	
	3520HL	H156	
	3525HL	H161	
	3530HL	H166	

SORMA DIAMOND & CUTTING TOOLS

RANGE	DRILLING DEPTH	NORM	TYPE	MATERIAL / COATING	HRC	POINT ANGLE	HELIX ANGLE	CHAMFER	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
3-20	3xD	DIN6537K	PU	MG PV250		140°	30°	45°	★	★	★	☆		
3-20	3xD	DIN6537K	HPU	MG PV250		140°	30°	45°	★	★	★	☆	★	
3-20	5xD	DIN6537L	PU	MG PV250		140°	30°	45°	★	★	★	☆		
3-20	5xD	DIN6537L	HPU	MG PV250		140°	30°	45°	★	★	★	☆	★	
3-16	8xD	OSAWA	4HTA	MG PV300		140°	30°		★	★	★	☆	☆	
3-20	3xD	DIN6537K	GA	MG PV400		140°	30°	45°	★	☆	★			
3-20	3xD	DIN6537K	HGA	MG PV400		140°	30°	45°	★	★	★			
3-20	5xD	DIN3537L	GA	MG PV400		140°	30°	45°	★	☆	★			
3-20	5xD	DIN3537L	HGA	MG PV400		140°	30°	45°	★	★	★			
3-20	8xD	OSAWA	HGA	MG PV400		140°	30°	45°	★	★	★			
1-6	3xD	DIN6537K	CV	MG PV200		140°	30°		★	☆	☆	☆		
3-20	3xD	DIN6537K	HVA	MG PV350		140°	30°		☆	★			☆	
3-20	5xD	DIN3537L	HVA	MG PV350		140°	30°		☆	★			☆	
3-20	3xD	DIN6537K	ALH	MG POLISHED		130°	30°					★		
3-20	5xD	DIN6537L	ALH	MG POLISHED		130°	30°					★		
2.6-14.2	3xD	DIN6537K	HRC	MG PV1000	45÷62	150°	15°	45°						★
1-3	5xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	8xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	12xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	20xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	25xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
1-3	30xD	OSAWA	SUH MINI	MG PV300		135°	30°		★	★	★	☆	☆	
3.1-10	12xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-10	15xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-10	20xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-9.5	25xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	
3.1-8	30xD	OSAWA	HL	MG PV250		135°	30°		★	★	★	☆	☆	

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
HSD step drill for 90° chamfering	**372HSD**	H174	
NC spotting 90° - 120°	**C-SD-TA 90**	H179	
	C-SD-TA 120	H180	

SELECTION GUIDE

RANGE	DRILLING DEPTH	NORM	TYPE	MATERIAL / COATING	HRC	POINT ANGLE	HELIX ANGLE	CHAMFER	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
2.5-11.22	3xD	OSAWA	HSD	MG PV300		140°	30°		★	★			★	
6-16		OSAWA	SD	MG PV200		90°	30°		★	★	★	★	☆	
6-16		OSAWA	SD	MG PV200		120°	30°		★	★	★	★	☆	

★ 1st choice ☆ suitable



TYPHOON PU-HPU

HIGH PERFORMANCE - UNIVERSAL APPLICATION

Universal high performance drills
for ISO P, M, K, N, S.

Punte universali ad alto rendimento
per applicazione su materiali ISO P, M, K, N, S.

Universelle Hochleistungsbohrer für Anwendungen
auf den Materialien ISO P, M, K, N, S.

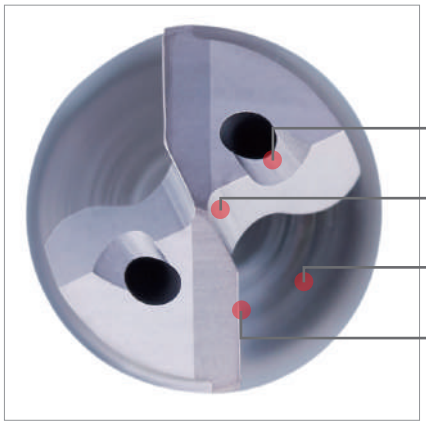
Forets universels haute performance pour des
applications sur des matériaux ISO P, M, K, N, S.

PU-HPU

High performance - universal application

Features of PU-HPU drills



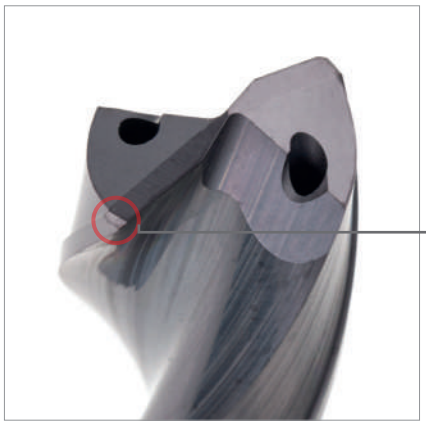


CHAMFERED COOLANT HOLES

THICKER CHISEL EDGE

WIDE FLUTES

STRAIGHT EDGE DESIGN



45° CHAMFER

PU-HPU

High performance - universal application

Features and Benefits

- Self-centering geometry for accurate holes
- Wide flute for smoother chip ejection
- Straight cutting edge for edge protection and short chip shape
- Thicker chisel edge enables higher feed rate
- 45° chamfer for wear and chipping protection
- Specific substrate and innovative coating for great wear resistance and long tool life even at high cutting speed

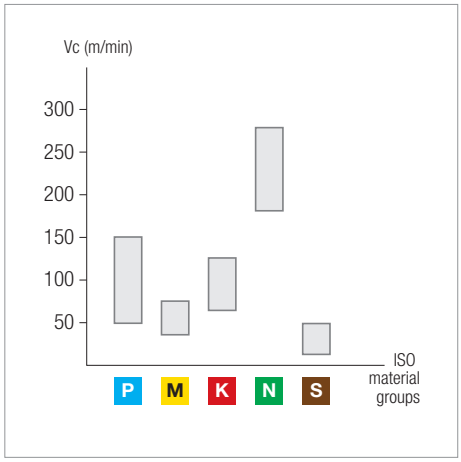
- Selbstzentrierender Schliff für präzise Bohrungen
- Breite Geometrie der Nuten für eine verbesserte Späneabführung
- Gerade Geometrie der Schneidkante, äußerst robust, wodurch kurze Späne erzeugt werden
- Verstärkte transversale Geometrie der Schneidkante für erhöhte Vorschübe
- 45° Schutzfase der Schneidkanten zum Schutz gegen Verschleiß und Absplittern
- Spezieller Hartmetallsubstrat und Beschichtung zur Gewährleistung einer langen Lebensdauer auch bei hohen Schnittgeschwindigkeiten

- Affilatura autocentrante per fori precisi
- Gole ampie per una migliore evacuazione dei trucioli
- Il tagliente rettilineo garantisce maggior resistenza alla scheggiatura e formazione di trucioli corti
- Geometria del tagliente trasversale inspessita per consentire avanzamenti più elevati
- Spigoli del tagliente smussati a 45° per proteggerli da usura e scheggiature
- Substrato in metallo duro e rivestimento specifici per garantire lunga durata anche a velocità di taglio elevate

- Affûtage autocentré pour des trous précis
- Géométrie des goujures large pour une évacuation meilleure des copeaux
- Géométrie de l'arête rectiligne très robuste, elle permet de former des copeaux courts
- Géométrie de l'arête transversale épaissie pour permettre des avancements plus élevés
- Angles de l'arête biseautés à 45° pour les protéger de l'usure et des éclats
- Substrat en carbure et revêtement spécifique pour garantir une longue durée à des vitesses de coupe élevées

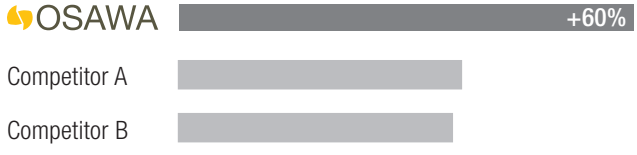
Application range - ISO 513

P M K N S



Use case

Tool Type	355HPU
Workpiece	W.-Nr 1.7225 42CrMo 4
Parameters	Vc 140 m/min, fn 0.21 mm/rev
Diameter	8 mm
Coolant	internal
Hole depth	40 mm
Machining time:	

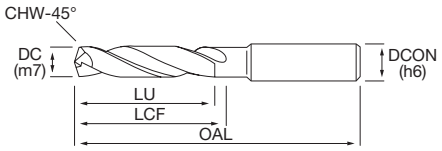


SORMA DIAMOND & CUTTING TOOLS

353PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





3xD | DIN 6537K | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	**353PU0300**	●
3.1	+0.016/+0.004	6	h6	14	20	62	**353PU0310**	●
3.2	+0.016/+0.004	6	h6	14	20	62	**353PU0320**	●
3.3	+0.016/+0.004	6	h6	14	20	62	**353PU0330**	●
3.4	+0.016/+0.004	6	h6	14	20	62	**353PU0340**	●
3.5	+0.016/+0.004	6	h6	14	20	62	**353PU0350**	●
3.6	+0.016/+0.004	6	h6	14	20	62	**353PU0360**	●
3.7	+0.016/+0.004	6	h6	14	20	62	**353PU0370**	●
3.8	+0.016/+0.004	6	h6	17	24	66	**353PU0380**	●
3.9	+0.016/+0.004	6	h6	17	24	66	**353PU0390**	●
4	+0.016/+0.004	6	h6	17	24	66	**353PU0400**	●
4.1	+0.016/+0.004	6	h6	17	24	66	**353PU0410**	●
4.2	+0.016/+0.004	6	h6	17	24	66	**353PU0420**	●
4.3	+0.016/+0.004	6	h6	17	24	66	**353PU0430**	●
4.4	+0.016/+0.004	6	h6	17	24	66	**353PU0440**	●
4.5	+0.016/+0.004	6	h6	17	24	66	**353PU0450**	●
4.6	+0.016/+0.004	6	h6	17	24	66	**353PU0460**	●
4.7	+0.016/+0.004	6	h6	17	24	66	**353PU0470**	●
4.8	+0.016/+0.004	6	h6	20	28	66	**353PU0480**	●
4.9	+0.016/+0.004	6	h6	20	28	66	**353PU0490**	●
5	+0.016/+0.004	6	h6	20	28	66	**353PU0500**	●
5.1	+0.016/+0.004	6	h6	20	28	66	**353PU0510**	●
5.2	+0.016/+0.004	6	h6	20	28	66	**353PU0520**	●
5.3	+0.016/+0.004	6	h6	20	28	66	**353PU0530**	●
5.4	+0.016/+0.004	6	h6	20	28	66	**353PU0540**	●
5.5	+0.016/+0.004	6	h6	20	28	66	**353PU0550**	●
5.6	+0.016/+0.004	6	h6	20	28	66	**353PU0560**	●
5.7	+0.016/+0.004	6	h6	20	28	66	**353PU0570**	●
5.8	+0.016/+0.004	6	h6	20	28	66	**353PU0580**	●
5.9	+0.016/+0.004	6	h6	20	28	66	**353PU0590**	●
6	+0.016/+0.004	6	h6	20	28	66	**353PU0600**	●
6.1	+0.021/+0.006	8	h6	24	34	79	**353PU0610**	●
6.2	+0.021/+0.006	8	h6	24	34	79	**353PU0620**	●
6.3	+0.021/+0.006	8	h6	24	34	79	**353PU0630**	●
6.4	+0.021/+0.006	8	h6	24	34	79	**353PU0640**	●
6.5	+0.021/+0.006	8	h6	24	34	79	**353PU0650**	●
6.6	+0.021/+0.006	8	h6	24	34	79	**353PU0660**	●
6.7	+0.021/+0.006	8	h6	24	34	79	**353PU0670**	●
6.8	+0.021/+0.006	8	h6	24	34	79	**353PU0680**	●
6.9	+0.021/+0.006	8	h6	24	34	79	**353PU0690**	●
7	+0.021/+0.006	8	h6	24	34	79	**353PU0700**	●
7.1	+0.021/+0.006	8	h6	29	41	79	**353PU0710**	●
7.2	+0.021/+0.006	8	h6	29	41	79	**353PU0720**	●
7.3	+0.021/+0.006	8	h6	29	41	79	**353PU0730**	●
7.4	+0.021/+0.006	8	h6	29	41	79	**353PU0740**	●

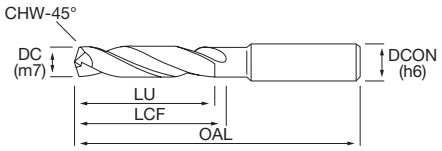
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





3xD | DIN 6537K | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	**353PU0750**	●
7.6	+0.021/+0.006	8	h6	29	41	79	**353PU0760**	●
7.7	+0.021/+0.006	8	h6	29	41	79	**353PU0770**	●
7.8	+0.021/+0.006	8	h6	29	41	79	**353PU0780**	●
7.9	+0.021/+0.006	8	h6	29	41	79	**353PU0790**	●
8	+0.021/+0.006	8	h6	29	41	79	**353PU0800**	●
8.1	+0.021/+0.006	10	h6	35	47	89	**353PU0810**	●
8.2	+0.021/+0.006	10	h6	35	47	89	**353PU0820**	●
8.3	+0.021/+0.006	10	h6	35	47	89	**353PU0830**	●
8.4	+0.021/+0.006	10	h6	35	47	89	**353PU0840**	●
8.5	+0.021/+0.006	10	h6	35	47	89	**353PU0850**	●
8.6	+0.021/+0.006	10	h6	35	47	89	**353PU0860**	●
8.7	+0.021/+0.006	10	h6	35	47	89	**353PU0870**	●
8.8	+0.021/+0.006	10	h6	35	47	89	**353PU0880**	●
8.9	+0.021/+0.006	10	h6	35	47	89	**353PU0890**	●
9	+0.021/+0.006	10	h6	35	47	89	**353PU0900**	●
9.1	+0.021/+0.006	10	h6	35	47	89	**353PU0910**	●
9.2	+0.021/+0.006	10	h6	35	47	89	**353PU0920**	●
9.3	+0.021/+0.006	10	h6	35	47	89	**353PU0930**	●
9.4	+0.021/+0.006	10	h6	35	47	89	**353PU0940**	●
9.5	+0.021/+0.006	10	h6	35	47	89	**353PU0950**	●
9.6	+0.021/+0.006	10	h6	35	47	89	**353PU0960**	●
9.7	+0.021/+0.006	10	h6	35	47	89	**353PU0970**	●
9.8	+0.021/+0.006	10	h6	35	47	89	**353PU0980**	●
9.9	+0.021/+0.006	10	h6	35	47	89	**353PU0990**	●
10	+0.021/+0.006	10	h6	35	47	89	**353PU1000**	●
10.1	+0.025/+0.007	12	h6	40	55	102	**353PU1010**	●
10.2	+0.025/+0.007	12	h6	40	55	102	**353PU1020**	●
10.3	+0.025/+0.007	12	h6	40	55	102	**353PU1030**	●
10.4	+0.025/+0.007	12	h6	40	55	102	**353PU1040**	●
10.5	+0.025/+0.007	12	h6	40	55	102	**353PU1050**	●
10.6	+0.025/+0.007	12	h6	40	55	102	**353PU1060**	●
10.7	+0.025/+0.007	12	h6	40	55	102	**353PU1070**	●
10.8	+0.025/+0.007	12	h6	40	55	102	**353PU1080**	●
10.9	+0.025/+0.007	12	h6	40	55	102	**353PU1090**	●
11	+0.025/+0.007	12	h6	40	55	102	**353PU1100**	●
11.1	+0.025/+0.007	12	h6	40	55	102	**353PU1110**	●
11.2	+0.025/+0.007	12	h6	40	55	102	**353PU1120**	●
11.3	+0.025/+0.007	12	h6	40	55	102	**353PU1130**	●
11.4	+0.025/+0.007	12	h6	40	55	102	**353PU1140**	●
11.5	+0.025/+0.007	12	h6	40	55	102	**353PU1150**	●
11.6	+0.025/+0.007	12	h6	40	55	102	**353PU1160**	●
11.7	+0.025/+0.007	12	h6	40	55	102	**353PU1170**	●
11.8	+0.025/+0.007	12	h6	40	55	102	**353PU1180**	●
11.9	+0.025/+0.007	12	h6	40	55	102	**353PU1190**	●

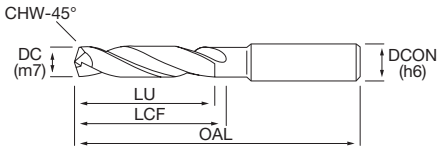
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





3xD | DIN 6537K | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	**353PU1200**	●
12.1	+0.025/+0.007	14	h6	43	60	107	**353PU1210**	●
12.2	+0.025/+0.007	14	h6	43	60	107	**353PU1220**	●
12.3	+0.025/+0.007	14	h6	43	60	107	**353PU1230**	●
12.4	+0.025/+0.007	14	h6	43	60	107	**353PU1240**	●
12.5	+0.025/+0.007	14	h6	43	60	107	**353PU1250**	●
12.6	+0.025/+0.007	14	h6	43	60	107	**353PU1260**	●
12.7	+0.025/+0.007	14	h6	43	60	107	**353PU1270**	●
12.8	+0.025/+0.007	14	h6	43	60	107	**353PU1280**	●
12.9	+0.025/+0.007	14	h6	43	60	107	**353PU1290**	●
13	+0.025/+0.007	14	h6	43	60	107	**353PU1300**	●
13.1	+0.025/+0.007	14	h6	43	60	107	**353PU1310**	●
13.2	+0.025/+0.007	14	h6	43	60	107	**353PU1320**	●
13.3	+0.025/+0.007	14	h6	43	60	107	**353PU1330**	●
13.4	+0.025/+0.007	14	h6	43	60	107	**353PU1340**	●
13.5	+0.025/+0.007	14	h6	43	60	107	**353PU1350**	●
13.6	+0.025/+0.007	14	h6	43	60	107	**353PU1360**	●
13.7	+0.025/+0.007	14	h6	43	60	107	**353PU1370**	●
13.8	+0.025/+0.007	14	h6	43	60	107	**353PU1380**	●
13.9	+0.025/+0.007	14	h6	43	60	107	**353PU1390**	●
14	+0.025/+0.007	14	h6	43	60	107	**353PU1400**	●
14.1	+0.025/+0.007	16	h6	45	65	115	**353PU1410**	●
14.2	+0.025/+0.007	16	h6	45	65	115	**353PU1420**	●
14.3	+0.025/+0.007	16	h6	45	65	115	**353PU1430**	●
14.5	+0.025/+0.007	16	h6	45	65	115	**353PU1450**	●
14.6	+0.025/+0.007	16	h6	45	65	115	**353PU1460**	●
14.7	+0.025/+0.007	16	h6	45	65	115	**353PU1470**	●
14.8	+0.025/+0.007	16	h6	45	65	115	**353PU1480**	●
15	+0.025/+0.007	16	h6	45	65	115	**353PU1500**	●
15.1	+0.025/+0.007	16	h6	45	65	115	**353PU1510**	●
15.2	+0.025/+0.007	16	h6	45	65	115	**353PU1520**	●
15.3	+0.025/+0.007	16	h6	45	65	115	**353PU1530**	●
15.5	+0.025/+0.007	16	h6	45	65	115	**353PU1550**	●
15.6	+0.025/+0.007	16	h6	45	65	115	**353PU1560**	●
15.7	+0.025/+0.007	16	h6	45	65	115	**353PU1570**	●
15.8	+0.025/+0.007	16	h6	45	65	115	**353PU1580**	●
16	+0.025/+0.007	16	h6	45	65	115	**353PU1600**	●
16.5	+0.025/+0.007	18	h6	52	73	123	**353PU1650**	●
17	+0.025/+0.007	18	h6	52	73	123	**353PU1700**	●
17.5	+0.025/+0.007	18	h6	52	73	123	**353PU1750**	●
18	+0.025/+0.007	18	h6	52	73	123	**353PU1800**	●
18.5	+0.029/+0.008	20	h6	55	79	131	**353PU1850**	●
19	+0.029/+0.008	20	h6	55	79	131	**353PU1900**	●
19.5	+0.029/+0.008	20	h6	55	79	131	**353PU1950**	●
20	+0.029/+0.008	20	h6	55	79	131	**353PU2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

353PU



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	**100÷140**	**80÷120**	**60÷85**	**50÷65**	**35÷50**	**20÷30**
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.120	0.108	0.096	0.084	0.074	0.044
4	0.142	0.128	0.114	0.099	0.087	0.052
5	0.164	0.147	0.131	0.115	0.101	0.061
6	0.186	0.167	0.149	0.130	0.120	0.072
7	0.208	0.187	0.166	0.145	0.134	0.081
8	0.229	0.206	0.184	0.161	0.148	0.089
9	0.251	0.226	0.201	0.176	0.162	0.097
10	0.273	0.246	0.219	0.191	0.177	0.106
11	0.284	0.256	0.227	0.199	0.184	0.110
12	0.306	0.275	0.245	0.214	0.198	0.119
13	0.328	0.295	0.262	0.229	0.212	0.127
14	0.350	0.315	0.280	0.245	0.226	0.136
15	0.371	0.334	0.297	0.260	0.240	0.144
16	0.393	0.354	0.315	0.275	0.246	0.147
17	0.404	0.364	0.323	0.283	0.249	0.149
18	0.415	0.374	0.332	0.291	0.256	0.153
19	0.426	0.383	0.341	0.298	0.262	0.157
20	0.437	0.393	0.350	0.306	0.269	0.161

353PU



Material Group ISO 513	M1	M2	M3			
Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
Vc (m/min)	**35÷50**	**30÷45**	**20÷35**			
DC(mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.067	0.053	0.047			
4	0.079	0.063	0.055			
5	0.101	0.081	0.064			
6	0.114	0.091	0.072			
7	0.128	0.102	0.081			
8	0.141	0.113	0.089			
9	0.155	0.124	0.097			
10	0.168	0.135	0.106			
11	0.175	0.140	0.110			
12	0.188	0.151	0.119			
13	0.202	0.161	0.127			
14	0.215	0.172	0.136			
15	0.229	0.183	0.144			
16	0.242	0.194	0.153			
17	0.249	0.199	0.157			
18	0.256	0.205	0.161			
19	0.262	0.210	0.165			
20	0.269	0.215	0.170			

Cutting Parameters

353PU

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**110÷150**	**90÷120**	**60÷80**	**40÷60**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
Ø RUN OUT <0.02 mm	**3**	0.120	0.108	0.096	0.084		
	4	0.142	0.128	0.114	0.099		
	5	0.164	0.147	0.131	0.115		
	6	0.186	0.167	0.149	0.130		
	7	0.208	0.187	0.166	0.145		
	8	0.229	0.206	0.184	0.161		
	9	0.251	0.226	0.201	0.176		
	10	0.273	0.246	0.219	0.191		
	11	0.284	0.256	0.227	0.199		
	12	0.306	0.275	0.245	0.214		
	13	0.328	0.295	0.262	0.229		
	14	0.350	0.315	0.280	0.245		
	15	0.371	0.334	0.297	0.260		
	16	0.393	0.354	0.315	0.275		
	17	0.404	0.364	0.323	0.283		
	18	0.415	0.374	0.332	0.291		
	19	0.426	0.383	0.341	0.298		
	20	0.437	0.393	0.350	0.306		

353PU

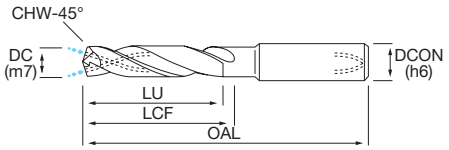
	Material Group ISO 513	N1	N2	N3	N4		
	Hardness/Rm	> 5%Si					
	Vc (m/min)	**220÷260**	**200÷240**	**160÷200**	**160÷200**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
Ø RUN OUT <0.02 mm	**3**	0.144	0.132	0.120	0.120		
	4	0.170	0.156	0.142	0.142		
	5	0.197	0.180	0.164	0.164		
	6	0.223	0.204	0.186	0.186		
	7	0.249	0.228	0.208	0.208		
	8	0.275	0.252	0.229	0.229		
	9	0.302	0.276	0.251	0.251		
	10	0.328	0.300	0.273	0.273		
	11	0.341	0.312	0.284	0.284		
	12	0.367	0.336	0.306	0.306		
	13	0.393	0.361	0.328	0.328		
	14	0.420	0.385	0.350	0.350		
	15	0.446	0.409	0.371	0.371		
	16	0.472	0.433	0.393	0.393		
	17	0.485	0.445	0.404	0.404		
	18	0.498	0.457	0.415	0.415		
	19	0.511	0.469	0.426	0.426		
	20	0.524	0.481	0.437	0.437		

SORMA DIAMOND & CUTTING TOOLS

353HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





3xD | INTERNAL COOLANT | DIN 6537K | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	353HPU0300	●
3.1	+0.016/+0.004	6	h6	14	20	62	353HPU0310	●
3.2	+0.016/+0.004	6	h6	14	20	62	353HPU0320	●
3.3	+0.016/+0.004	6	h6	14	20	62	353HPU0330	●
3.4	+0.016/+0.004	6	h6	14	20	62	353HPU0340	●
3.5	+0.016/+0.004	6	h6	14	20	62	353HPU0350	●
3.6	+0.016/+0.004	6	h6	14	20	62	353HPU0360	●
3.7	+0.016/+0.004	6	h6	14	20	62	353HPU0370	●
3.8	+0.016/+0.004	6	h6	17	24	66	353HPU0380	●
3.9	+0.016/+0.004	6	h6	17	24	66	353HPU0390	●
4	+0.016/+0.004	6	h6	17	24	66	353HPU0400	●
4.1	+0.016/+0.004	6	h6	17	24	66	353HPU0410	●
4.2	+0.016/+0.004	6	h6	17	24	66	353HPU0420	●
4.3	+0.016/+0.004	6	h6	17	24	66	353HPU0430	●
4.4	+0.016/+0.004	6	h6	17	24	66	353HPU0440	●
4.5	+0.016/+0.004	6	h6	17	24	66	353HPU0450	●
4.6	+0.016/+0.004	6	h6	17	24	66	353HPU0460	●
4.7	+0.016/+0.004	6	h6	17	24	66	353HPU0470	●
4.8	+0.016/+0.004	6	h6	20	28	66	353HPU0480	●
4.9	+0.016/+0.004	6	h6	20	28	66	353HPU0490	●
5	+0.016/+0.004	6	h6	20	28	66	353HPU0500	●
5.1	+0.016/+0.004	6	h6	20	28	66	353HPU0510	●
5.2	+0.016/+0.004	6	h6	20	28	66	353HPU0520	●
5.3	+0.016/+0.004	6	h6	20	28	66	353HPU0530	●
5.4	+0.016/+0.004	6	h6	20	28	66	353HPU0540	●
5.5	+0.016/+0.004	6	h6	20	28	66	353HPU0550	●
5.6	+0.016/+0.004	6	h6	20	28	66	353HPU0560	●
5.7	+0.016/+0.004	6	h6	20	28	66	353HPU0570	●
5.8	+0.016/+0.004	6	h6	20	28	66	353HPU0580	●
5.9	+0.016/+0.004	6	h6	20	28	66	353HPU0590	●
6	+0.016/+0.004	6	h6	20	28	66	353HPU0600	●
6.1	+0.021/+0.006	8	h6	24	34	79	353HPU0610	●
6.2	+0.021/+0.006	8	h6	24	34	79	353HPU0620	●
6.3	+0.021/+0.006	8	h6	24	34	79	353HPU0630	●
6.4	+0.021/+0.006	8	h6	24	34	79	353HPU0640	●
6.5	+0.021/+0.006	8	h6	24	34	79	353HPU0650	●
6.6	+0.021/+0.006	8	h6	24	34	79	353HPU0660	●
6.7	+0.021/+0.006	8	h6	24	34	79	353HPU0670	●
6.8	+0.021/+0.006	8	h6	24	34	79	353HPU0680	●
6.9	+0.021/+0.006	8	h6	24	34	79	353HPU0690	●
7	+0.021/+0.006	8	h6	24	34	79	353HPU0700	●
7.1	+0.021/+0.006	8	h6	29	41	79	353HPU0710	●
7.2	+0.021/+0.006	8	h6	29	41	79	353HPU0720	●
7.3	+0.021/+0.006	8	h6	29	41	79	353HPU0730	●
7.4	+0.021/+0.006	8	h6	29	41	79	353HPU0740	●

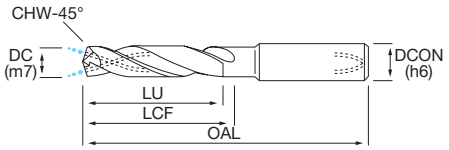
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





3xD | INTERNAL COOLANT | DIN 6537K | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	**353HPU0750**	●
7.6	+0.021/+0.006	8	h6	29	41	79	**353HPU0760**	●
7.7	+0.021/+0.006	8	h6	29	41	79	**353HPU0770**	●
7.8	+0.021/+0.006	8	h6	29	41	79	**353HPU0780**	●
7.9	+0.021/+0.006	8	h6	29	41	79	**353HPU0790**	●
8	+0.021/+0.006	8	h6	29	41	79	**353HPU0800**	●
8.1	+0.021/+0.006	10	h6	35	47	89	**353HPU0810**	●
8.2	+0.021/+0.006	10	h6	35	47	89	**353HPU0820**	●
8.3	+0.021/+0.006	10	h6	35	47	89	**353HPU0830**	●
8.4	+0.021/+0.006	10	h6	35	47	89	**353HPU0840**	●
8.5	+0.021/+0.006	10	h6	35	47	89	**353HPU0850**	●
8.6	+0.021/+0.006	10	h6	35	47	89	**353HPU0860**	●
8.7	+0.021/+0.006	10	h6	35	47	89	**353HPU0870**	●
8.8	+0.021/+0.006	10	h6	35	47	89	**353HPU0880**	●
8.9	+0.021/+0.006	10	h6	35	47	89	**353HPU0890**	●
9	+0.021/+0.006	10	h6	35	47	89	**353HPU0900**	●
9.1	+0.021/+0.006	10	h6	35	47	89	**353HPU0910**	●
9.2	+0.021/+0.006	10	h6	35	47	89	**353HPU0920**	●
9.3	+0.021/+0.006	10	h6	35	47	89	**353HPU0930**	●
9.4	+0.021/+0.006	10	h6	35	47	89	**353HPU0940**	●
9.5	+0.021/+0.006	10	h6	35	47	89	**353HPU0950**	●
9.6	+0.021/+0.006	10	h6	35	47	89	**353HPU0960**	●
9.7	+0.021/+0.006	10	h6	35	47	89	**353HPU0970**	●
9.8	+0.021/+0.006	10	h6	35	47	89	**353HPU0980**	●
9.9	+0.021/+0.006	10	h6	35	47	89	**353HPU0990**	●
10	+0.021/+0.006	10	h6	35	47	89	**353HPU1000**	●
10.1	+0.025/+0.007	12	h6	40	55	102	**353HPU1010**	●
10.2	+0.025/+0.007	12	h6	40	55	102	**353HPU1020**	●
10.3	+0.025/+0.007	12	h6	40	55	102	**353HPU1030**	●
10.4	+0.025/+0.007	12	h6	40	55	102	**353HPU1040**	●
10.5	+0.025/+0.007	12	h6	40	55	102	**353HPU1050**	●
10.6	+0.025/+0.007	12	h6	40	55	102	**353HPU1060**	●
10.7	+0.025/+0.007	12	h6	40	55	102	**353HPU1070**	●
10.8	+0.025/+0.007	12	h6	40	55	102	**353HPU1080**	●
10.9	+0.025/+0.007	12	h6	40	55	102	**353HPU1090**	●
11	+0.025/+0.007	12	h6	40	55	102	**353HPU1100**	●
11.1	+0.025/+0.007	12	h6	40	55	102	**353HPU1110**	●
11.2	+0.025/+0.007	12	h6	40	55	102	**353HPU1120**	●
11.3	+0.025/+0.007	12	h6	40	55	102	**353HPU1130**	●
11.4	+0.025/+0.007	12	h6	40	55	102	**353HPU1140**	●
11.5	+0.025/+0.007	12	h6	40	55	102	**353HPU1150**	●
11.6	+0.025/+0.007	12	h6	40	55	102	**353HPU1160**	●
11.7	+0.025/+0.007	12	h6	40	55	102	**353HPU1170**	●
11.8	+0.025/+0.007	12	h6	40	55	102	**353HPU1180**	●
11.9	+0.025/+0.007	12	h6	40	55	102	**353HPU1190**	●

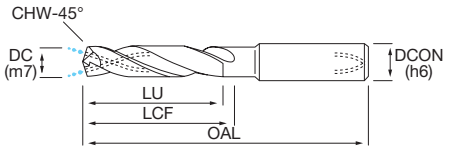
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





3xD | INTERNAL COOLANT | DIN 6537K | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	**353HPU1200**	●
12.1	+0.025/+0.007	14	h6	43	60	107	**353HPU1210**	●
12.2	+0.025/+0.007	14	h6	43	60	107	**353HPU1220**	●
12.3	+0.025/+0.007	14	h6	43	60	107	**353HPU1230**	●
12.4	+0.025/+0.007	14	h6	43	60	107	**353HPU1240**	●
12.5	+0.025/+0.007	14	h6	43	60	107	**353HPU1250**	●
12.6	+0.025/+0.007	14	h6	43	60	107	**353HPU1260**	●
12.7	+0.025/+0.007	14	h6	43	60	107	**353HPU1270**	●
12.8	+0.025/+0.007	14	h6	43	60	107	**353HPU1280**	●
12.9	+0.025/+0.007	14	h6	43	60	107	**353HPU1290**	●
13	+0.025/+0.007	14	h6	43	60	107	**353HPU1300**	●
13.1	+0.025/+0.007	14	h6	43	60	107	**353HPU1310**	●
13.2	+0.025/+0.007	14	h6	43	60	107	**353HPU1320**	●
13.3	+0.025/+0.007	14	h6	43	60	107	**353HPU1330**	●
13.4	+0.025/+0.007	14	h6	43	60	107	**353HPU1340**	●
13.5	+0.025/+0.007	14	h6	43	60	107	**353HPU1350**	●
13.6	+0.025/+0.007	14	h6	43	60	107	**353HPU1360**	●
13.7	+0.025/+0.007	14	h6	43	60	107	**353HPU1370**	●
13.8	+0.025/+0.007	14	h6	43	60	107	**353HPU1380**	●
13.9	+0.025/+0.007	14	h6	43	60	107	**353HPU1390**	●
14	+0.025/+0.007	14	h6	43	60	107	**353HPU1400**	●
14.1	+0.025/+0.007	16	h6	45	65	115	**353HPU1410**	●
14.2	+0.025/+0.007	16	h6	45	65	115	**353HPU1420**	●
14.3	+0.025/+0.007	16	h6	45	65	115	**353HPU1430**	●
14.5	+0.025/+0.007	16	h6	45	65	115	**353HPU1450**	●
14.6	+0.025/+0.007	16	h6	45	65	115	**353HPU1460**	●
14.8	+0.025/+0.007	16	h6	45	65	115	**353HPU1480**	●
15	+0.025/+0.007	16	h6	45	65	115	**353HPU1500**	●
15.1	+0.025/+0.007	16	h6	45	65	115	**353HPU1510**	●
15.2	+0.025/+0.007	16	h6	45	65	115	**353HPU1520**	●
15.3	+0.025/+0.007	16	h6	45	65	115	**353HPU1530**	●
15.5	+0.025/+0.007	16	h6	45	65	115	**353HPU1550**	●
15.6	+0.025/+0.007	16	h6	45	65	115	**353HPU1560**	●
15.7	+0.025/+0.007	16	h6	45	65	115	**353HPU1570**	●
15.8	+0.025/+0.007	16	h6	45	65	115	**353HPU1580**	●
16	+0.025/+0.007	16	h6	45	65	115	**353HPU1600**	●
16.1	+0.025/+0.007	18	h6	52	73	123	**353HPU1610**	●
16.2	+0.025/+0.007	18	h6	52	73	123	**353HPU1620**	●
16.3	+0.025/+0.007	18	h6	52	73	123	**353HPU1630**	●
16.5	+0.025/+0.007	18	h6	52	73	123	**353HPU1650**	●
16.7	+0.025/+0.007	18	h6	52	73	123	**353HPU1670**	●
16.8	+0.025/+0.007	18	h6	52	73	123	**353HPU1680**	●
17	+0.025/+0.007	18	h6	52	73	123	**353HPU1700**	●
17.1	+0.025/+0.007	18	h6	52	73	123	**353HPU1710**	●
17.2	+0.025/+0.007	18	h6	52	73	123	**353HPU1720**	●

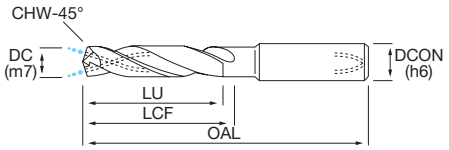
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





3xD | INTERNAL COOLANT | DIN 6537K | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
17.5	+0.025/+0.007	18	h6	52	73	123	**353HPU1750**	●
17.6	+0.025/+0.007	18	h6	52	73	123	**353HPU1760**	●
17.7	+0.025/+0.007	18	h6	52	73	123	**353HPU1770**	●
17.8	+0.025/+0.007	18	h6	52	73	123	**353HPU1780**	●
18	+0.025/+0.007	18	h6	52	73	123	**353HPU1800**	●
18.1	+0.029/+0.008	20	h6	55	79	131	**353HPU1810**	●
18.2	+0.029/+0.008	20	h6	55	79	131	**353HPU1820**	●
18.3	+0.029/+0.008	20	h6	55	79	131	**353HPU1830**	●
18.5	+0.029/+0.008	20	h6	55	79	131	**353HPU1850**	●
18.6	+0.029/+0.008	20	h6	55	79	131	**353HPU1860**	●
18.7	+0.029/+0.008	20	h6	55	79	131	**353HPU1870**	●
18.8	+0.029/+0.008	20	h6	55	79	131	**353HPU1880**	●
19	+0.029/+0.008	20	h6	55	79	131	**353HPU1900**	●
19.2	+0.029/+0.008	20	h6	55	79	131	**353HPU1920**	●
19.3	+0.029/+0.008	20	h6	55	79	131	**353HPU1930**	●
19.5	+0.029/+0.008	20	h6	55	79	131	**353HPU1950**	●
19.6	+0.029/+0.008	20	h6	55	79	131	**353HPU1960**	●
19.8	+0.029/+0.008	20	h6	55	79	131	**353HPU1980**	●
20	+0.029/+0.008	20	h6	55	79	131	**353HPU2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

353HPU

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**120÷160**	**100÷140**	**70÷100**	**60÷80**	**50÷70**	**25÷40**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.127	0.114	0.101	0.089	0.082	0.049
	4	0.150	0.135	0.120	0.105	0.097	0.058
	5	0.173	0.155	0.138	0.121	0.112	0.067
	6	0.196	0.176	0.156	0.137	0.133	0.080
	7	0.219	0.197	0.175	0.153	0.149	0.089
	8	0.242	0.217	0.193	0.169	0.165	0.099
	9	0.265	0.238	0.212	0.185	0.181	0.108
	10	0.288	0.259	0.230	0.201	0.196	0.118
	11	0.299	0.269	0.239	0.209	0.204	0.122
	12	0.322	0.290	0.258	0.225	0.220	0.132
	13	0.345	0.311	0.276	0.242	0.235	0.141
	14	0.368	0.331	0.294	0.258	0.251	0.151
	15	0.391	0.352	0.313	0.274	0.267	0.160
	16	0.414	0.373	0.331	0.290	0.273	0.163
	17	0.426	0.383	0.340	0.298	0.277	0.166
	18	0.437	0.393	0.350	0.306	0.284	0.170
	19	0.449	0.404	0.359	0.314	0.292	0.175
	20	0.460	0.414	0.368	0.322	0.299	0.179

353HPU

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**50÷70**	**40÷60**	**30÷45**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.074	0.059	0.052			
	4	0.087	0.070	0.061			
	5	0.112	0.090	0.071			
	6	0.127	0.102	0.080			
	7	0.142	0.114	0.089			
	8	0.157	0.126	0.099			
	9	0.172	0.138	0.108			
	10	0.187	0.150	0.118			
	11	0.194	0.155	0.122			
	12	0.209	0.167	0.132			
	13	0.224	0.179	0.141			
	14	0.239	0.191	0.151			
	15	0.254	0.203	0.160			
	16	0.269	0.215	0.170			
	17	0.277	0.221	0.174			
	18	0.284	0.227	0.179			
	19	0.292	0.233	0.184			
	20	0.299	0.239	0.188			

Cutting Parameters

353HPU

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**120÷160**	**100÷140**	**80÷100**	**60÷80**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3**	0.127	0.114	0.101	0.089		
	4	0.150	0.135	0.120	0.105		
	5	0.173	0.155	0.138	0.121		
	6	0.196	0.176	0.156	0.137		
	7	0.219	0.197	0.175	0.153		
	8	0.242	0.217	0.193	0.169		
	9	0.265	0.238	0.212	0.185		
	10	0.288	0.259	0.230	0.201		
	11	0.299	0.269	0.239	0.209		
	12	0.322	0.290	0.258	0.225		
	13	0.345	0.311	0.276	0.242		
	14	0.368	0.331	0.294	0.258		
	15	0.391	0.352	0.313	0.274		
	16	0.414	0.373	0.331	0.290		
	17	0.426	0.383	0.340	0.298		
	18	0.437	0.393	0.350	0.306		
	19	0.449	0.404	0.359	0.314		
	20	0.460	0.414	0.368	0.322		

353HPU

	Material Group ISO 513	N1	N2	N3	N4		
	Hardness/Rm	> 5%Si					
	Vc (m/min)	**260÷300**	**220÷260**	**180÷220**	**180÷220**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3**	0.152	0.139	0.127	0.127		
	4	0.179	0.164	0.150	0.150		
	5	0.207	0.190	0.173	0.173		
	6	0.235	0.215	0.196	0.196		
	7	0.262	0.240	0.219	0.219		
	8	0.290	0.266	0.242	0.242		
	9	0.317	0.291	0.265	0.265		
	10	0.345	0.316	0.288	0.288		
	11	0.359	0.329	0.299	0.299		
	12	0.386	0.354	0.322	0.322		
	13	0.414	0.380	0.345	0.345		
	14	0.442	0.405	0.368	0.368		
	15	0.469	0.430	0.391	0.391		
	16	0.497	0.455	0.414	0.414		
	17	0.511	0.468	0.426	0.426		
	18	0.524	0.481	0.437	0.437		
	19	0.538	0.493	0.449	0.449		
	20	0.552	0.506	0.460	0.460		

Cutting Parameters

353HPU



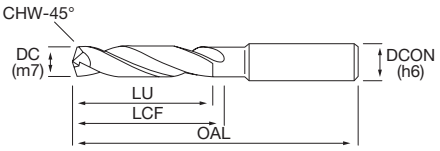
Material Group ISO 513	S1 S2	S3	S4	S5		
Hardness/Rm	<35 HRC	35÷45 HRC				
Vc (m/min)	**30÷40**	**25÷35**	**40÷50**	**30÷40**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.057	0.054	0.046	0.039		
4	0.067	0.064	0.054	0.046		
5	0.078	0.074	0.063	0.053		
6	0.088	0.084	0.071	0.060		
7	0.098	0.093	0.079	0.067		
8	0.109	0.103	0.088	0.074		
9	0.119	0.113	0.096	0.081		
10	0.129	0.123	0.104	0.088		
11	0.135	0.128	0.109	0.091		
12	0.145	0.138	0.117	0.099		
13	0.155	0.147	0.125	0.106		
14	0.166	0.157	0.134	0.113		
15	0.176	0.167	0.142	0.120		
16	0.186	0.177	0.150	0.127		
17	0.191	0.182	0.155	0.130		
18	0.197	0.187	0.159	0.134		
19	0.202	0.192	0.163	0.137		
20	0.207	0.197	0.167	0.141		

SORMA DIAMOND & CUTTING TOOLS

355PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





5xD | DIN 6537L | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	355PU0300	●
3.1	+0.016/+0.004	6	h6	23	28	66	355PU0310	●
3.2	+0.016/+0.004	6	h6	23	28	66	355PU0320	●
3.3	+0.016/+0.004	6	h6	23	28	66	355PU0330	●
3.4	+0.016/+0.004	6	h6	23	28	66	355PU0340	●
3.5	+0.016/+0.004	6	h6	23	28	66	355PU0350	●
3.6	+0.016/+0.004	6	h6	23	28	66	355PU0360	●
3.7	+0.016/+0.004	6	h6	23	28	66	355PU0370	●
3.8	+0.016/+0.004	6	h6	29	36	74	355PU0380	●
3.9	+0.016/+0.004	6	h6	29	36	74	355PU0390	●
4	+0.016/+0.004	6	h6	29	36	74	355PU0400	●
4.1	+0.016/+0.004	6	h6	29	36	74	355PU0410	●
4.2	+0.016/+0.004	6	h6	29	36	74	355PU0420	●
4.3	+0.016/+0.004	6	h6	29	36	74	355PU0430	●
4.4	+0.016/+0.004	6	h6	29	36	74	355PU0440	●
4.5	+0.016/+0.004	6	h6	29	36	74	355PU0450	●
4.6	+0.016/+0.004	6	h6	29	36	74	355PU0460	●
4.7	+0.016/+0.004	6	h6	29	36	74	355PU0470	●
4.8	+0.016/+0.004	6	h6	35	44	82	355PU0480	●
4.9	+0.016/+0.004	6	h6	35	44	82	355PU0490	●
5	+0.016/+0.004	6	h6	35	44	82	355PU0500	●
5.1	+0.016/+0.004	6	h6	35	44	82	355PU0510	●
5.2	+0.016/+0.004	6	h6	35	44	82	355PU0520	●
5.3	+0.016/+0.004	6	h6	35	44	82	355PU0530	●
5.4	+0.016/+0.004	6	h6	35	44	82	355PU0540	●
5.5	+0.016/+0.004	6	h6	35	44	82	355PU0550	●
5.6	+0.016/+0.004	6	h6	35	44	82	355PU0560	●
5.7	+0.016/+0.004	6	h6	35	44	82	355PU0570	●
5.8	+0.016/+0.004	6	h6	35	44	82	355PU0580	●
5.9	+0.016/+0.004	6	h6	35	44	82	355PU0590	●
6	+0.016/+0.004	6	h6	35	44	82	355PU0600	●
6.1	+0.021/+0.006	8	h6	43	53	91	355PU0610	●
6.2	+0.021/+0.006	8	h6	43	53	91	355PU0620	●
6.3	+0.021/+0.006	8	h6	43	53	91	355PU0630	●
6.4	+0.021/+0.006	8	h6	43	53	91	355PU0640	●
6.5	+0.021/+0.006	8	h6	43	53	91	355PU0650	●
6.6	+0.021/+0.006	8	h6	43	53	91	355PU0660	●
6.7	+0.021/+0.006	8	h6	43	53	91	355PU0670	●
6.8	+0.021/+0.006	8	h6	43	53	91	355PU0680	●
6.9	+0.021/+0.006	8	h6	43	53	91	355PU0690	●
7	+0.021/+0.006	8	h6	43	53	91	355PU0700	●
7.1	+0.021/+0.006	8	h6	43	53	91	355PU0710	●
7.2	+0.021/+0.006	8	h6	43	53	91	355PU0720	●
7.3	+0.021/+0.006	8	h6	43	53	91	355PU0730	●
7.4	+0.021/+0.006	8	h6	43	53	91	355PU0740	●

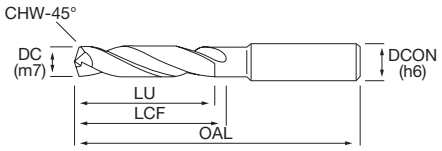
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





5xD | DIN 6537L | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	43	53	91	**355PU0750**	●
7.6	+0.021/+0.006	8	h6	43	53	91	**355PU0760**	●
7.7	+0.021/+0.006	8	h6	43	53	91	**355PU0770**	●
7.8	+0.021/+0.006	8	h6	43	53	91	**355PU0780**	●
7.9	+0.021/+0.006	8	h6	43	53	91	**355PU0790**	●
8	+0.021/+0.006	8	h6	43	53	91	**355PU0800**	●
8.1	+0.021/+0.006	10	h6	49	61	103	**355PU0810**	●
8.2	+0.021/+0.006	10	h6	49	61	103	**355PU0820**	●
8.3	+0.021/+0.006	10	h6	49	61	103	**355PU0830**	●
8.4	+0.021/+0.006	10	h6	49	61	103	**355PU0840**	●
8.5	+0.021/+0.006	10	h6	49	61	103	**355PU0850**	●
8.6	+0.021/+0.006	10	h6	49	61	103	**355PU0860**	●
8.7	+0.021/+0.006	10	h6	49	61	103	**355PU0870**	●
8.8	+0.021/+0.006	10	h6	49	61	103	**355PU0880**	●
8.9	+0.021/+0.006	10	h6	49	61	103	**355PU0890**	●
9	+0.021/+0.006	10	h6	49	61	103	**355PU0900**	●
9.1	+0.021/+0.006	10	h6	49	61	103	**355PU0910**	●
9.2	+0.021/+0.006	10	h6	49	61	103	**355PU0920**	●
9.3	+0.021/+0.006	10	h6	49	61	103	**355PU0930**	●
9.4	+0.021/+0.006	10	h6	49	61	103	**355PU0940**	●
9.5	+0.021/+0.006	10	h6	49	61	103	**355PU0950**	●
9.6	+0.021/+0.006	10	h6	49	61	103	**355PU0960**	●
9.7	+0.021/+0.006	10	h6	49	61	103	**355PU0970**	●
9.8	+0.021/+0.006	10	h6	49	61	103	**355PU0980**	●
9.9	+0.021/+0.006	10	h6	49	61	103	**355PU0990**	●
10	+0.021/+0.006	10	h6	49	61	103	**355PU1000**	●
10.1	+0.025/+0.007	12	h6	57	71	118	**355PU1010**	●
10.2	+0.025/+0.007	12	h6	57	71	118	**355PU1020**	●
10.3	+0.025/+0.007	12	h6	57	71	118	**355PU1030**	●
10.4	+0.025/+0.007	12	h6	57	71	118	**355PU1040**	●
10.5	+0.025/+0.007	12	h6	57	71	118	**355PU1050**	●
10.6	+0.025/+0.007	12	h6	57	71	118	**355PU1060**	●
10.7	+0.025/+0.007	12	h6	57	71	118	**355PU1070**	●
10.8	+0.025/+0.007	12	h6	57	71	118	**355PU1080**	●
10.9	+0.025/+0.007	12	h6	57	71	118	**355PU1090**	●
11	+0.025/+0.007	12	h6	57	71	118	**355PU1100**	●
11.1	+0.025/+0.007	12	h6	57	71	118	**355PU1110**	●
11.2	+0.025/+0.007	12	h6	57	71	118	**355PU1120**	●
11.3	+0.025/+0.007	12	h6	57	71	118	**355PU1130**	●
11.4	+0.025/+0.007	12	h6	57	71	118	**355PU1140**	●
11.5	+0.025/+0.007	12	h6	57	71	118	**355PU1150**	●
11.6	+0.025/+0.007	12	h6	57	71	118	**355PU1160**	●
11.7	+0.025/+0.007	12	h6	57	71	118	**355PU1170**	●
11.8	+0.025/+0.007	12	h6	57	71	118	**355PU1180**	●
11.9	+0.025/+0.007	12	h6	57	71	118	**355PU1190**	●

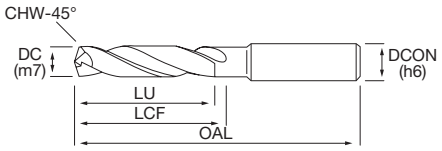
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355PU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆		





5xD | DIN 6537L | PU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	57	71	118	**355PU1200**	●
12.1	+0.025/+0.007	14	h6	63	77	124	**355PU1210**	●
12.2	+0.025/+0.007	14	h6	63	77	124	**355PU1220**	●
12.5	+0.025/+0.007	14	h6	63	77	124	**355PU1250**	●
12.7	+0.025/+0.007	14	h6	63	77	124	**355PU1270**	●
12.8	+0.025/+0.007	14	h6	63	77	124	**355PU1280**	●
13	+0.025/+0.007	14	h6	63	77	124	**355PU1300**	●
13.1	+0.025/+0.007	14	h6	63	77	124	**355PU1310**	●
13.2	+0.025/+0.007	14	h6	63	77	124	**355PU1320**	●
13.3	+0.025/+0.007	14	h6	63	77	124	**355PU1330**	●
13.5	+0.025/+0.007	14	h6	63	77	124	**355PU1350**	●
13.7	+0.025/+0.007	14	h6	63	77	124	**355PU1370**	●
13.8	+0.025/+0.007	14	h6	63	77	124	**355PU1380**	●
14	+0.025/+0.007	14	h6	63	77	124	**355PU1400**	●
14.5	+0.025/+0.007	16	h6	67	83	133	**355PU1450**	●
15	+0.025/+0.007	16	h6	67	83	133	**355PU1500**	●
15.3	+0.025/+0.007	16	h6	67	83	133	**355PU1530**	●
15.5	+0.025/+0.007	16	h6	67	83	133	**355PU1550**	●
15.8	+0.025/+0.007	16	h6	67	83	133	**355PU1580**	●
16	+0.025/+0.007	16	h6	67	83	133	**355PU1600**	●
16.5	+0.025/+0.007	18	h6	75	93	143	**355PU1650**	●
17	+0.025/+0.007	18	h6	75	93	143	**355PU1700**	●
17.5	+0.025/+0.007	18	h6	75	93	143	**355PU1750**	●
18	+0.025/+0.007	18	h6	75	93	143	**355PU1800**	●
18.5	+0.029/+0.008	20	h6	81	101	153	**355PU1850**	●
19	+0.029/+0.008	20	h6	81	101	153	**355PU1900**	●
19.5	+0.029/+0.008	20	h6	81	101	153	**355PU1950**	●
20	+0.029/+0.008	20	h6	81	101	153	**355PU2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

355PU



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	**100÷140**	**80÷120**	**60÷85**	**50÷65**	**35÷50**	**20÷30**
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.114	0.103	0.091	0.080	0.070	0.042
4	0.135	0.121	0.108	0.094	0.083	0.050
5	0.156	0.140	0.125	0.109	0.096	0.058
6	0.176	0.159	0.141	0.124	0.114	0.068
7	0.197	0.177	0.158	0.138	0.128	0.077
8	0.218	0.196	0.174	0.153	0.141	0.085
9	0.239	0.215	0.191	0.167	0.154	0.093
10	0.259	0.234	0.208	0.182	0.168	0.101
11	0.270	0.243	0.216	0.189	0.174	0.105
12	0.291	0.262	0.232	0.203	0.188	0.113
13	0.311	0.280	0.249	0.218	0.201	0.121
14	0.332	0.299	0.266	0.232	0.215	0.129
15	0.353	0.318	0.282	0.247	0.228	0.137
16	0.374	0.338	0.299	0.262	0.233	0.139
17	0.384	0.346	0.307	0.269	0.236	0.142
18	0.394	0.355	0.316	0.276	0.243	0.146
19	0.405	0.364	0.324	0.283	0.249	0.150
20	0.415	0.374	0.332	0.291	0.256	0.153

355PU



Material Group ISO 513	M1	M2	M3			
Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
Vc (m/min)	**35÷50**	**30÷45**	**20÷35**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.063	0.051	0.044			
4	0.075	0.060	0.052			
5	0.096	0.077	0.060			
6	0.109	0.087	0.068			
7	0.121	0.097	0.077			
8	0.134	0.107	0.085			
9	0.147	0.118	0.093			
10	0.160	0.128	0.101			
11	0.166	0.133	0.105			
12	0.179	0.143	0.113			
13	0.192	0.153	0.121			
14	0.205	0.164	0.129			
15	0.217	0.174	0.137			
16	0.230	0.184	0.145			
17	0.236	0.189	0.149			
18	0.243	0.194	0.153			
19	0.249	0.199	0.157			
20	0.256	0.205	0.161			

Cutting Parameters

355PU

Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**110÷150**	**90÷120**	**60÷80**	**40÷60**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3	0.114	0.103	0.091	0.080		
4	0.135	0.121	0.108	0.094		
5	0.156	0.140	0.125	0.109		
6	0.176	0.159	0.141	0.124		
7	0.197	0.177	0.158	0.138		
8	0.218	0.196	0.174	0.153		
9	0.239	0.215	0.191	0.167		
10	0.259	0.234	0.208	0.182		
11	0.270	0.243	0.216	0.189		
12	0.291	0.262	0.232	0.203		
13	0.311	0.280	0.249	0.218		
14	0.332	0.299	0.266	0.232		
15	0.353	0.318	0.282	0.247		
16	0.374	0.338	0.299	0.262		
17	0.384	0.346	0.307	0.269		
18	0.394	0.355	0.316	0.276		
19	0.405	0.364	0.324	0.283		
20	0.415	0.374	0.332	0.291		



355PU

Material Group ISO 513	N1	N2	N3	N4		
Hardness/Rm	> 5%Si					
Vc (m/min)	**220÷260**	**200÷240**	**160÷200**	**160÷200**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3	0.137	0.126	0.114	0.114		
4	0.162	0.148	0.135	0.135		
5	0.187	0.171	0.156	0.156		
6	0.212	0.194	0.176	0.176		
7	0.237	0.217	0.197	0.197		
8	0.262	0.240	0.218	0.218		
9	0.286	0.263	0.239	0.239		
10	0.311	0.285	0.259	0.259		
11	0.324	0.297	0.270	0.270		
12	0.349	0.320	0.291	0.291		
13	0.374	0.342	0.311	0.311		
14	0.399	0.365	0.332	0.332		
15	0.423	0.388	0.353	0.353		
16	0.448	0.411	0.374	0.374		
17	0.461	0.422	0.384	0.384		
18	0.473	0.434	0.394	0.394		
19	0.486	0.445	0.405	0.405		
20	0.498	0.457	0.415	0.415		

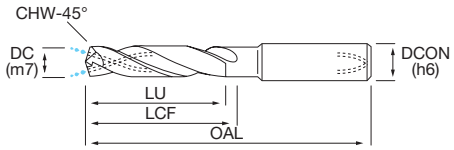


SORMA DIAMOND & CUTTING TOOLS

355HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





5xD | INTERNAL COOLANT | DIN 6537L | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	355HPU0300	●
3.1	+0.016/+0.004	6	h6	23	28	66	355HPU0310	●
3.2	+0.016/+0.004	6	h6	23	28	66	355HPU0320	●
3.25	+0.016/+0.004	6	h6	23	28	66	355HPU0325	●
3.3	+0.016/+0.004	6	h6	23	28	66	355HPU0330	●
3.4	+0.016/+0.004	6	h6	23	28	66	355HPU0340	●
3.5	+0.016/+0.004	6	h6	23	28	66	355HPU0350	●
3.6	+0.016/+0.004	6	h6	23	28	66	355HPU0360	●
3.7	+0.016/+0.004	6	h6	23	28	66	355HPU0370	●
3.8	+0.016/+0.004	6	h6	29	36	74	355HPU0380	●
3.9	+0.016/+0.004	6	h6	29	36	74	355HPU0390	●
4	+0.016/+0.004	6	h6	29	36	74	355HPU0400	●
4.1	+0.016/+0.004	6	h6	29	36	74	355HPU0410	●
4.2	+0.016/+0.004	6	h6	29	36	74	355HPU0420	●
4.3	+0.016/+0.004	6	h6	29	36	74	355HPU0430	●
4.4	+0.016/+0.004	6	h6	29	36	74	355HPU0440	●
4.5	+0.016/+0.004	6	h6	29	36	74	355HPU0450	●
4.6	+0.016/+0.004	6	h6	29	36	74	355HPU0460	●
4.65	+0.016/+0.004	6	h6	29	36	74	355HPU0465	●
4.7	+0.016/+0.004	6	h6	29	36	74	355HPU0470	●
4.8	+0.016/+0.004	6	h6	35	44	82	355HPU0480	●
4.9	+0.016/+0.004	6	h6	35	44	82	355HPU0490	●
5	+0.016/+0.004	6	h6	35	44	82	355HPU0500	●
5.1	+0.016/+0.004	6	h6	35	44	82	355HPU0510	●
5.2	+0.016/+0.004	6	h6	35	44	82	355HPU0520	●
5.3	+0.016/+0.004	6	h6	35	44	82	355HPU0530	●
5.4	+0.016/+0.004	6	h6	35	44	82	355HPU0540	●
5.5	+0.016/+0.004	6	h6	35	44	82	355HPU0550	●
5.55	+0.016/+0.004	6	h6	35	44	82	355HPU0555	●
5.6	+0.016/+0.004	6	h6	35	44	82	355HPU0560	●
5.7	+0.016/+0.004	6	h6	35	44	82	355HPU0570	●
5.8	+0.016/+0.004	6	h6	35	44	82	355HPU0580	●
5.9	+0.016/+0.004	6	h6	35	44	82	355HPU0590	●
6	+0.016/+0.004	6	h6	35	44	82	355HPU0600	●
6.1	+0.021/+0.006	8	h6	43	53	91	355HPU0610	●
6.2	+0.021/+0.006	8	h6	43	53	91	355HPU0620	●
6.3	+0.021/+0.006	8	h6	43	53	91	355HPU0630	●
6.4	+0.021/+0.006	8	h6	43	53	91	355HPU0640	●
6.5	+0.021/+0.006	8	h6	43	53	91	355HPU0650	●
6.6	+0.021/+0.006	8	h6	43	53	91	355HPU0660	●
6.7	+0.021/+0.006	8	h6	43	53	91	355HPU0670	●
6.8	+0.021/+0.006	8	h6	43	53	91	355HPU0680	●
6.9	+0.021/+0.006	8	h6	43	53	91	355HPU0690	●
7	+0.021/+0.006	8	h6	43	53	91	355HPU0700	●
7.1	+0.021/+0.006	8	h6	43	53	91	355HPU0710	●

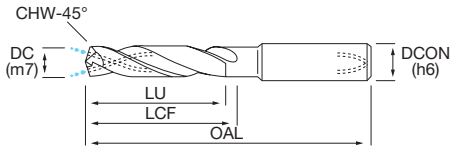
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





5xD | INTERNAL COOLANT | DIN 6537L | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.2	+0.021/+0.006	8	h6	43	53	91	355HPU0720	●
7.3	+0.021/+0.006	8	h6	43	53	91	355HPU0730	●
7.4	+0.021/+0.006	8	h6	43	53	91	355HPU0740	●
7.45	+0.021/+0.006	8	h6	43	53	91	355HPU0745	●
7.5	+0.021/+0.006	8	h6	43	53	91	355HPU0750	●
7.6	+0.021/+0.006	8	h6	43	53	91	355HPU0760	●
7.7	+0.021/+0.006	8	h6	43	53	91	355HPU0770	●
7.8	+0.021/+0.006	8	h6	43	53	91	355HPU0780	●
7.9	+0.021/+0.006	8	h6	43	53	91	355HPU0790	●
8	+0.021/+0.006	8	h6	43	53	91	355HPU0800	●
8.1	+0.021/+0.006	10	h6	49	61	103	355HPU0810	●
8.2	+0.021/+0.006	10	h6	49	61	103	355HPU0820	●
8.3	+0.021/+0.006	10	h6	49	61	103	355HPU0830	●
8.4	+0.021/+0.006	10	h6	49	61	103	355HPU0840	●
8.5	+0.021/+0.006	10	h6	49	61	103	355HPU0850	●
8.6	+0.021/+0.006	10	h6	49	61	103	355HPU0860	●
8.7	+0.021/+0.006	10	h6	49	61	103	355HPU0870	●
8.8	+0.021/+0.006	10	h6	49	61	103	355HPU0880	●
8.9	+0.021/+0.006	10	h6	49	61	103	355HPU0890	●
9	+0.021/+0.006	10	h6	49	61	103	355HPU0900	●
9.1	+0.021/+0.006	10	h6	49	61	103	355HPU0910	●
9.2	+0.021/+0.006	10	h6	49	61	103	355HPU0920	●
9.25	+0.021/+0.006	10	h6	49	61	103	355HPU0925	●
9.3	+0.021/+0.006	10	h6	49	61	103	355HPU0930	●
9.35	+0.021/+0.006	10	h6	49	61	103	355HPU0935	●
9.4	+0.021/+0.006	10	h6	49	61	103	355HPU0940	●
9.45	+0.021/+0.006	10	h6	49	61	103	355HPU0945	●
9.5	+0.021/+0.006	10	h6	49	61	103	355HPU0950	●
9.6	+0.021/+0.006	10	h6	49	61	103	355HPU0960	●
9.7	+0.021/+0.006	10	h6	49	61	103	355HPU0970	●
9.8	+0.021/+0.006	10	h6	49	61	103	355HPU0980	●
9.9	+0.021/+0.006	10	h6	49	61	103	355HPU0990	●
10	+0.021/+0.006	10	h6	49	61	103	355HPU1000	●
10.1	+0.025/+0.007	12	h6	57	71	118	355HPU1010	●
10.2	+0.025/+0.007	12	h6	57	71	118	355HPU1020	●
10.3	+0.025/+0.007	12	h6	57	71	118	355HPU1030	●
10.4	+0.025/+0.007	12	h6	57	71	118	355HPU1040	●
10.5	+0.025/+0.007	12	h6	57	71	118	355HPU1050	●
10.6	+0.025/+0.007	12	h6	57	71	118	355HPU1060	●
10.7	+0.025/+0.007	12	h6	57	71	118	355HPU1070	●
10.8	+0.025/+0.007	12	h6	57	71	118	355HPU1080	●
10.9	+0.025/+0.007	12	h6	57	71	118	355HPU1090	●
11	+0.025/+0.007	12	h6	57	71	118	355HPU1100	●
11.1	+0.025/+0.007	12	h6	57	71	118	355HPU1110	●
11.2	+0.025/+0.007	12	h6	57	71	118	355HPU1120	●

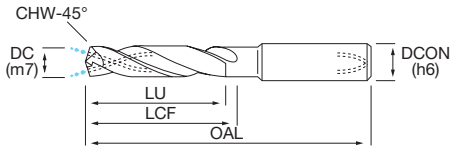
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355HPU

- Universal application
- High productivity
- Wide 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★	☆	★	





5xD | INTERNAL COOLANT | DIN 6537L | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
11.25	+0.025/+0.007	12	h6	57	71	118	355HPU1125	●
11.3	+0.025/+0.007	12	h6	57	71	118	355HPU1130	●
11.4	+0.025/+0.007	12	h6	57	71	118	355HPU1140	●
11.5	+0.025/+0.007	12	h6	57	71	118	355HPU1150	●
11.6	+0.025/+0.007	12	h6	57	71	118	355HPU1160	●
11.7	+0.025/+0.007	12	h6	57	71	118	355HPU1170	●
11.8	+0.025/+0.007	12	h6	57	71	118	355HPU1180	●
11.9	+0.025/+0.007	12	h6	57	71	118	355HPU1190	●
12	+0.025/+0.007	12	h6	57	71	118	355HPU1200	●
12.1	+0.025/+0.007	14	h6	63	77	124	355HPU1210	●
12.2	+0.025/+0.007	14	h6	63	77	124	355HPU1220	●
12.3	+0.025/+0.007	14	h6	63	77	124	355HPU1230	●
12.4	+0.025/+0.007	14	h6	63	77	124	355HPU1240	●
12.5	+0.025/+0.007	14	h6	63	77	124	355HPU1250	●
12.6	+0.025/+0.007	14	h6	63	77	124	355HPU1260	●
12.7	+0.025/+0.007	14	h6	63	77	124	355HPU1270	●
12.8	+0.025/+0.007	14	h6	63	77	124	355HPU1280	●
12.9	+0.025/+0.007	14	h6	63	77	124	355HPU1290	●
13	+0.025/+0.007	14	h6	63	77	124	355HPU1300	●
13.1	+0.025/+0.007	14	h6	63	77	124	355HPU1310	●
13.2	+0.025/+0.007	14	h6	63	77	124	355HPU1320	●
13.3	+0.025/+0.007	14	h6	63	77	124	355HPU1330	●
13.4	+0.025/+0.007	14	h6	63	77	124	355HPU1340	●
13.5	+0.025/+0.007	14	h6	63	77	124	355HPU1350	●
13.6	+0.025/+0.007	14	h6	63	77	124	355HPU1360	●
13.7	+0.025/+0.007	14	h6	63	77	124	355HPU1370	●
13.8	+0.025/+0.007	14	h6	63	77	124	355HPU1380	●
13.9	+0.025/+0.007	14	h6	63	77	124	355HPU1390	●
14	+0.025/+0.007	14	h6	63	77	124	355HPU1400	●
14.1	+0.025/+0.007	16	h6	67	83	133	355HPU1410	●
14.2	+0.025/+0.007	16	h6	67	83	133	355HPU1420	●
14.3	+0.025/+0.007	16	h6	67	83	133	355HPU1430	●
14.4	+0.025/+0.007	16	h6	67	83	133	355HPU1440	●
14.5	+0.025/+0.007	16	h6	67	83	133	355HPU1450	●
14.6	+0.025/+0.007	16	h6	67	83	133	355HPU1460	●
14.7	+0.025/+0.007	16	h6	67	83	133	355HPU1470	●
14.8	+0.025/+0.007	16	h6	67	83	133	355HPU1480	●
14.9	+0.025/+0.007	16	h6	67	83	133	355HPU1490	●
15	+0.025/+0.007	16	h6	67	83	133	355HPU1500	●
15.1	+0.025/+0.007	16	h6	67	83	133	355HPU1510	●
15.2	+0.025/+0.007	16	h6	67	83	133	355HPU1520	●
15.3	+0.025/+0.007	16	h6	67	83	133	355HPU1530	●
15.4	+0.025/+0.007	16	h6	67	83	133	355HPU1540	●
15.5	+0.025/+0.007	16	h6	67	83	133	355HPU1550	●
15.6	+0.025/+0.007	16	h6	67	83	133	355HPU1560	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355HPU

- Universal application
- High productivity
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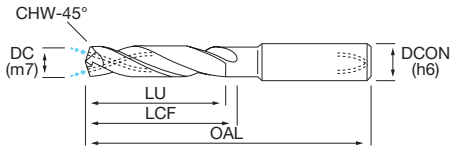
P	M	K	N	S	H
★	★	★	☆	★	





5xD | INTERNAL COOLANT | DIN 6537L | HPU | MG PV250 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
15.7	+0.025/+0.007	16	h6	67	83	133	355HPU1570	●
15.8	+0.025/+0.007	16	h6	67	83	133	355HPU1580	●
15.9	+0.025/+0.007	16	h6	67	83	133	355HPU1590	●
16	+0.025/+0.007	16	h6	67	83	133	355HPU1600	●
16.1	+0.025/+0.007	18	h6	75	93	143	355HPU1610	●
16.2	+0.025/+0.007	18	h6	75	93	143	355HPU1620	●
16.3	+0.025/+0.007	18	h6	75	93	143	355HPU1630	●
16.4	+0.025/+0.007	18	h6	75	93	143	355HPU1640	●
16.5	+0.025/+0.007	18	h6	75	93	143	355HPU1650	●
16.6	+0.025/+0.007	18	h6	75	93	143	355HPU1660	●
16.7	+0.025/+0.007	18	h6	75	93	143	355HPU1670	●
16.8	+0.025/+0.007	18	h6	75	93	143	355HPU1680	●
16.9	+0.025/+0.007	18	h6	75	93	143	355HPU1690	●
17	+0.025/+0.007	18	h6	75	93	143	355HPU1700	●
17.1	+0.025/+0.007	18	h6	75	93	143	355HPU1710	●
17.2	+0.025/+0.007	18	h6	75	93	143	355HPU1720	●
17.3	+0.025/+0.007	18	h6	75	93	143	355HPU1730	●
17.4	+0.025/+0.007	18	h6	75	93	143	355HPU1740	●
17.5	+0.025/+0.007	18	h6	75	93	143	355HPU1750	●
17.6	+0.025/+0.007	18	h6	75	93	143	355HPU1760	●
17.7	+0.025/+0.007	18	h6	75	93	143	355HPU1770	●
17.8	+0.025/+0.007	18	h6	75	93	143	355HPU1780	●
17.9	+0.025/+0.007	18	h6	75	93	143	355HPU1790	●
18	+0.025/+0.007	18	h6	75	93	143	355HPU1800	●
18.1	+0.029/+0.008	20	h6	81	101	153	355HPU1810	●
18.2	+0.029/+0.008	20	h6	81	101	153	355HPU1820	●
18.3	+0.029/+0.008	20	h6	81	101	153	355HPU1830	●
18.4	+0.029/+0.008	20	h6	81	101	153	355HPU1840	●
18.5	+0.029/+0.008	20	h6	81	101	153	355HPU1850	●
18.6	+0.029/+0.008	20	h6	81	101	153	355HPU1860	●
18.7	+0.029/+0.008	20	h6	81	101	153	355HPU1870	●
18.8	+0.029/+0.008	20	h6	81	101	153	355HPU1880	●
18.9	+0.029/+0.008	20	h6	81	101	153	355HPU1890	●
19	+0.029/+0.008	20	h6	81	101	153	355HPU1900	●
19.1	+0.029/+0.008	20	h6	81	101	153	355HPU1910	●
19.2	+0.029/+0.008	20	h6	81	101	153	355HPU1920	●
19.3	+0.029/+0.008	20	h6	81	101	153	355HPU1930	●
19.4	+0.029/+0.008	20	h6	81	101	153	355HPU1940	●
19.5	+0.029/+0.008	20	h6	81	101	153	355HPU1950	●
19.6	+0.029/+0.008	20	h6	81	101	153	355HPU1960	●
19.7	+0.029/+0.008	20	h6	81	101	153	355HPU1970	●
19.8	+0.029/+0.008	20	h6	81	101	153	355HPU1980	●
19.9	+0.029/+0.008	20	h6	81	101	153	355HPU1990	●
20	+0.029/+0.008	20	h6	81	101	153	355HPU2000	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

355HPU

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**120÷160**	**100÷140**	**70÷100**	**60÷80**	**50÷70**	**25÷40**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
Ø RUN OUT <0.02 mm	**3**	0.120	0.108	0.096	0.084	0.078	0.047
	4	0.142	0.128	0.114	0.099	0.092	0.055
	5	0.164	0.147	0.131	0.115	0.107	0.064
	6	0.186	0.167	0.149	0.130	0.127	0.076
	7	0.208	0.187	0.166	0.145	0.142	0.085
	8	0.229	0.206	0.184	0.161	0.157	0.094
	9	0.251	0.226	0.201	0.176	0.171	0.103
	10	0.273	0.246	0.219	0.191	0.186	0.112
	11	0.284	0.256	0.227	0.199	0.194	0.116
	12	0.306	0.275	0.245	0.214	0.209	0.125
	13	0.328	0.295	0.262	0.229	0.224	0.134
	14	0.350	0.315	0.280	0.245	0.239	0.143
	15	0.371	0.334	0.297	0.260	0.254	0.152
	16	0.393	0.356	0.315	0.275	0.259	0.155
	17	0.404	0.364	0.323	0.283	0.263	0.158
	18	0.415	0.374	0.332	0.291	0.270	0.162
	19	0.426	0.383	0.341	0.298	0.277	0.166
	20	0.437	0.393	0.350	0.306	0.284	0.170

355HPU

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**50÷70**	**40÷60**	**30÷45**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
Ø RUN OUT <0.02 mm	**3**	0.070	0.056	0.049			
	4	0.083	0.066	0.058			
	5	0.107	0.085	0.067			
	6	0.121	0.097	0.076			
	7	0.135	0.108	0.085			
	8	0.149	0.119	0.094			
	9	0.163	0.131	0.103			
	10	0.178	0.142	0.112			
	11	0.185	0.148	0.116			
	12	0.199	0.159	0.125			
	13	0.213	0.170	0.134			
	14	0.227	0.182	0.143			
	15	0.241	0.193	0.152			
	16	0.256	0.205	0.161			
	17	0.263	0.210	0.166			
	18	0.270	0.216	0.170			
	19	0.277	0.222	0.174			
	20	0.284	0.227	0.179			

Cutting Parameters

355HPU



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**120÷160**	**100÷140**	**80÷100**	**60÷80**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3	0.120	0.108	0.096	0.084		
4	0.142	0.128	0.114	0.099		
5	0.164	0.147	0.131	0.115		
6	0.186	0.167	0.149	0.130		
7	0.208	0.187	0.166	0.145		
8	0.229	0.206	0.184	0.161		
9	0.251	0.226	0.201	0.176		
10	0.273	0.246	0.219	0.191		
11	0.284	0.256	0.227	0.199		
12	0.306	0.275	0.245	0.214		
13	0.328	0.295	0.262	0.229		
14	0.350	0.315	0.280	0.245		
15	0.371	0.334	0.297	0.260		
16	0.393	0.356	0.315	0.275		
17	0.404	0.364	0.323	0.283		
18	0.415	0.374	0.332	0.291		
19	0.426	0.383	0.341	0.298		
20	0.437	0.393	0.350	0.306		

355HPU



Material Group ISO 513	N1	N2	N3	N4		
Hardness/Rm	> 5%Si					
Vc (m/min)	**260÷300**	**220÷260**	**180÷220**	**180÷220**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.144	0.132	0.120	0.120		
4	0.170	0.156	0.142	0.142		
5	0.197	0.180	0.164	0.164		
6	0.223	0.204	0.186	0.186		
7	0.249	0.228	0.208	0.208		
8	0.275	0.252	0.229	0.229		
9	0.302	0.276	0.251	0.251		
10	0.328	0.300	0.273	0.273		
11	0.341	0.312	0.284	0.284		
12	0.367	0.336	0.306	0.306		
13	0.393	0.361	0.328	0.328		
14	0.420	0.385	0.350	0.350		
15	0.446	0.409	0.371	0.371		
16	0.472	0.433	0.393	0.393		
17	0.485	0.445	0.404	0.404		
18	0.498	0.457	0.415	0.415		
19	0.511	0.469	0.426	0.426		
20	0.524	0.481	0.437	0.437		

Cutting Parameters

355HPU



Material Group ISO 513	S1 S2	S3	S4	S5		
Hardness/Rm	<35 HRC	35÷45 HRC				
Vc (m/min)	**30÷40**	**25÷35**	**40÷50**	**30÷40**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.054	0.049	0.044	0.037		
4	0.064	0.058	0.052	0.043		
5	0.074	0.067	0.060	0.050		
6	0.084	0.075	0.067	0.057		
7	0.093	0.084	0.075	0.064		
8	0.103	0.093	0.083	0.070		
9	0.113	0.102	0.091	0.077		
10	0.123	0.111	0.099	0.084		
11	0.128	0.115	0.103	0.087		
12	0.138	0.124	0.111	0.094		
13	0.147	0.133	0.119	0.100		
14	0.157	0.142	0.127	0.107		
15	0.167	0.151	0.135	0.114		
16	0.177	0.160	0.143	0.120		
17	0.182	0.164	0.147	0.124		
18	0.187	0.169	0.151	0.127		
19	0.192	0.173	0.155	0.130		
20	0.197	0.177	0.159	0.134		



TYPHOON 4HTA

HIGH PERFORMANCE - GENERAL PURPOSE

The tool of choice for 8xD multi-purpose drilling on ISO P, M, K, N, S below 1100 N/mm².

La soluzione ideale per la foratura 8xD di materiali ISO P, M, K, N, S sino a 1100 N/mm².

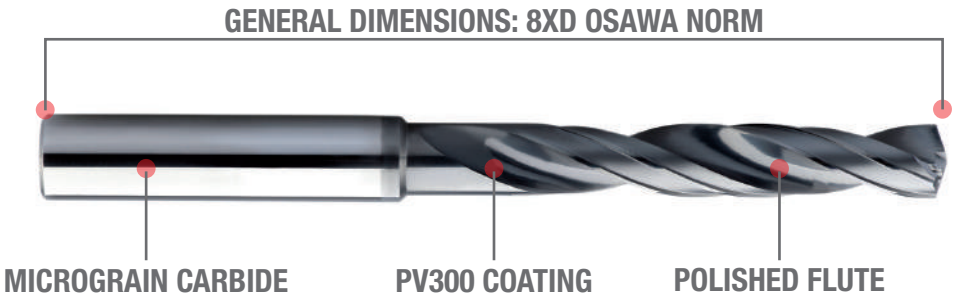
Die optimale Lösung für das Bohren 8xD der Materialien ISO P, M, K, N, S bis zu 1100 N/mm².

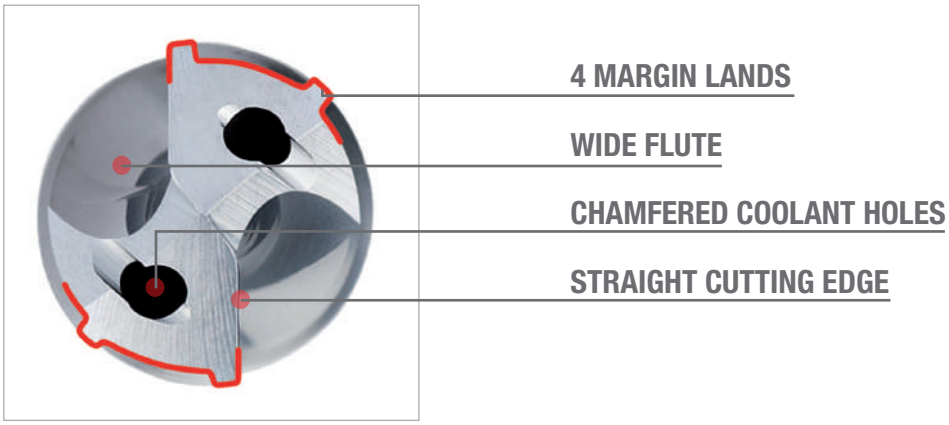
La solution idéale pour le perçage 8xD de matériaux ISO P, M, K, N, S jusqu'à 1100 N/mm².

4HTA

High performance - 4 margin lands

Features of 4HTA drills





SORMA DIAMOND & CUTTING TOOLS

4HTA

High performance - 4 margin lands

Features and Benefits

- Self-centering geometry for accurate holes
- 4 margin lands: reliable machining for highly accurate and straight holes even in deep drilling
- Straight cutting edge: short chips for easy evacuation and high reliability
- Special edge design: high performance and edge protection
- Back taper geometry: improved cutting performance
- Chip pocket finishing: highly polished to reduce welding and improve chip ejection
- Large oil holes: improved coolant feed
- Substrate and coating: specifically selected for high wear resistance, long and stable tool life

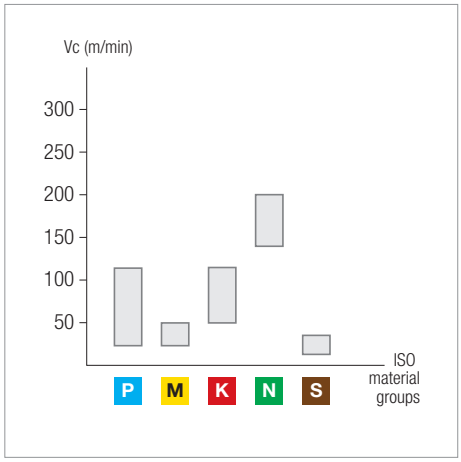
- Selbstzentrierender Schliff für präzise Bohrungen
- Geometrie mit „4 Führungsfasen“: gerade und präzise Bohrungen, auch bei großen Tiefen.
- Gerades und verstärktes Schneidkantenprofil: zur Erzeugung kurzer Späne und zur Gewährleistung hoher Zuverlässigkeit
- Geometrie der Schneidkante mit speziellem Schliff zum Schutz von Schneidkante und Kanten
- Geometrie des Körpers mit konischem hinteren Bereich zur Erleichterung des Schnittvorgangs
- Polierte Nuten: um das Verkleben zu reduzieren und um die Späneabführung zu erleichtern
- Kühlöffnungen mit abgeänderter Geometrie für einen verbesserten Kühlmittelzufluss
- Spezieller Hartmetallsubstrat und Beschichtung zur Gewährleistung von optimalen Standzeiten und Zuverlässighkeit

- Affilatura autocentrante per fori precisi
- Geometria con “4 Margini": fori rettilinei e precisi, anche nel caso di profondità elevate.
- Profilo del tagliente diritto e rinforzato: genera trucioli corti e garantisce grande affidabilità
- Geometria con affilatura specifica a protezione del tagliente e degli spigoli
- Conicità posteriore per agevolare l’azione di taglio
- Finitura gole lappate per ridurre l’incollaggio e facilitare l’evacuazione dei trucioli
- Fori di refrigerazione con geometria modificata per un maggior apporto di refrigerante
- Substrato e rivestimento specifici per garantire durata e affidabilità

- Affûtage autocentré pour un perçage plus précis.
- Géométrie avec « 4 listels » : trous droits et précis, même en présence de trous profonds.
- Profil de l’arête droit et renforcé : il génère des copeaux courts et garantit une grande fiabilité
- Géométrie de l’arête avec affûtage spécifique pour protéger l’arête et les angles
- Géométrie du corps avec conicité arrière pour faciliter l’action de coupe
- Finition des goujoures : polie pour réduire le problème du collage et faciliter l’évacuation des copeaux
- Trous de lubrification avec géométrie modifiée pour un apport de lubrifiant plus important
- Substrat et revêtement spécifiques pour garantir durée et fiabilité

Application range - ISO 513

P M K N S



Use case

Tool Type	358 4HTA
Workpiece	W.-Nr 1.0503 C45
Parameters	Vc 120 m/min, fn 0,13 mm/rev
Diameter	6 mm
Coolant	internal
Hole depth	45 mm
Machining time:	

OSAWA +55%

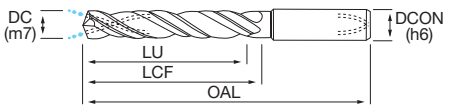
Competitor

SORMA DIAMOND & CUTTING TOOLS

3584HTA

- 4 margin lands
- Long (8xD)

P	M	K	N	S	H
★	★	★	☆	☆	





8xD | INTERNAL COOLANT | OSAWA NORM | 4HTA | MG PV300 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	32	40	85	358HTA0300	●
3.1	+0.016/+0.004	6	h6	32	40	85	358HTA0310	●
3.2	+0.016/+0.004	6	h6	32	40	85	358HTA0320	●
3.3	+0.016/+0.004	6	h6	32	40	85	358HTA0330	●
3.4	+0.016/+0.004	6	h6	32	40	85	358HTA0340	●
3.5	+0.016/+0.004	6	h6	32	40	85	358HTA0350	●
3.6	+0.016/+0.004	6	h6	36	40	85	358HTA0360	●
3.7	+0.016/+0.004	6	h6	36	40	85	358HTA0370	●
3.8	+0.016/+0.004	6	h6	36	40	85	358HTA0380	●
3.9	+0.016/+0.004	6	h6	36	40	85	358HTA0390	◉
4	+0.016/+0.004	6	h6	38	46	85	358HTA0400	●
4.1	+0.016/+0.004	6	h6	38	46	85	358HTA0410	●
4.2	+0.016/+0.004	6	h6	38	46	85	358HTA0420	●
4.3	+0.016/+0.004	6	h6	40	46	97	358HTA0430	●
4.4	+0.016/+0.004	6	h6	40	46	97	358HTA0440	◉
4.5	+0.016/+0.004	6	h6	44	46	97	358HTA0450	●
4.6	+0.016/+0.004	6	h6	44	46	97	358HTA0460	●
4.7	+0.016/+0.004	6	h6	44	46	97	358HTA0470	●
4.8	+0.016/+0.004	6	h6	44	46	97	358HTA0480	●
4.9	+0.016/+0.004	6	h6	44	46	97	358HTA0490	◉
5	+0.016/+0.004	6	h6	48	57	97	358HTA0500	●
5.1	+0.016/+0.004	6	h6	48	57	97	358HTA0510	●
5.2	+0.016/+0.004	6	h6	48	57	97	358HTA0520	●
5.3	+0.016/+0.004	6	h6	48	57	97	358HTA0530	●
5.4	+0.016/+0.004	6	h6	48	57	97	358HTA0540	◉
5.5	+0.016/+0.004	6	h6	48	57	97	358HTA0550	●
5.6	+0.016/+0.004	6	h6	48	57	97	358HTA0560	●
5.7	+0.016/+0.004	6	h6	48	57	97	358HTA0570	◉
5.8	+0.016/+0.004	6	h6	48	57	97	358HTA0580	●
5.9	+0.016/+0.004	6	h6	48	57	97	358HTA0590	●
6	+0.016/+0.004	6	h6	48	57	97	358HTA0600	●
6.1	+0.021/+0.006	8	h6	64	76	116	358HTA0610	●
6.2	+0.021/+0.006	8	h6	64	76	116	358HTA0620	●
6.3	+0.021/+0.006	8	h6	64	76	116	358HTA0630	●
6.4	+0.021/+0.006	8	h6	64	76	116	358HTA0640	◉
6.5	+0.021/+0.006	8	h6	64	76	116	358HTA0650	●
6.6	+0.021/+0.006	8	h6	64	76	116	358HTA0660	◉
6.7	+0.021/+0.006	8	h6	64	76	116	358HTA0670	●
6.8	+0.021/+0.006	8	h6	64	76	116	358HTA0680	●
6.9	+0.021/+0.006	8	h6	64	76	116	358HTA0690	●
7	+0.021/+0.006	8	h6	64	76	116	358HTA0700	●
7.1	+0.021/+0.006	8	h6	64	76	116	358HTA0710	●
7.2	+0.021/+0.006	8	h6	64	76	116	358HTA0720	●
7.3	+0.021/+0.006	8	h6	64	76	116	358HTA0730	●
7.4	+0.021/+0.006	8	h6	64	76	116	358HTA0740	●

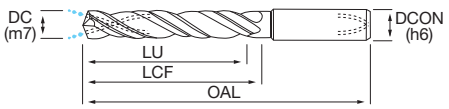
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

3584HTA

- 4 margin lands
- Long (8xD)

P	M	K	N	S	H
★	★	★	☆	☆	





8xD | INTERNAL COOLANT | OSAWA NORM | 4HTA | MG PV300 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	64	76	116	358HTA0750	●
7.6	+0.021/+0.006	8	h6	64	76	116	358HTA0760	●
7.7	+0.021/+0.006	8	h6	64	76	116	358HTA0770	◉
7.8	+0.021/+0.006	8	h6	64	76	116	358HTA0780	●
7.9	+0.021/+0.006	8	h6	64	76	116	358HTA0790	◉
8	+0.021/+0.006	8	h6	64	76	116	358HTA0800	●
8.1	+0.021/+0.006	10	h6	80	95	142	358HTA0810	●
8.2	+0.021/+0.006	10	h6	80	95	142	358HTA0820	●
8.3	+0.021/+0.006	10	h6	80	95	142	358HTA0830	●
8.4	+0.021/+0.006	10	h6	80	95	142	358HTA0840	◉
8.5	+0.021/+0.006	10	h6	80	95	142	358HTA0850	●
8.6	+0.021/+0.006	10	h6	80	95	142	358HTA0860	●
8.7	+0.021/+0.006	10	h6	80	95	142	358HTA0870	●
8.8	+0.021/+0.006	10	h6	80	95	142	358HTA0880	●
8.9	+0.021/+0.006	10	h6	80	95	142	358HTA0890	◉
9	+0.021/+0.006	10	h6	80	95	142	358HTA0900	●
9.1	+0.021/+0.006	10	h6	80	95	142	358HTA0910	●
9.2	+0.021/+0.006	10	h6	80	95	142	358HTA0920	●
9.3	+0.021/+0.006	10	h6	80	95	142	358HTA0930	●
9.4	+0.021/+0.006	10	h6	80	95	142	358HTA0940	◉
9.5	+0.021/+0.006	10	h6	80	95	142	358HTA0950	●
9.6	+0.021/+0.006	10	h6	80	95	142	358HTA0960	◉
9.7	+0.021/+0.006	10	h6	80	95	142	358HTA0970	◉
9.8	+0.021/+0.006	10	h6	80	95	142	358HTA0980	●
9.9	+0.021/+0.006	10	h6	80	95	142	358HTA0990	◉
10	+0.021/+0.006	10	h6	80	95	142	358HTA1000	●
10.2	+0.025/+0.007	12	h6	96	114	163	358HTA1020	●
10.5	+0.025/+0.007	12	h6	96	114	163	358HTA1050	●
10.8	+0.025/+0.007	12	h6	96	114	163	358HTA1080	●
11	+0.025/+0.007	12	h6	96	114	163	358HTA1100	●
11.2	+0.025/+0.007	12	h6	96	114	163	358HTA1120	●
11.3	+0.025/+0.007	12	h6	96	114	163	358HTA1130	◉
11.5	+0.025/+0.007	12	h6	96	114	163	358HTA1150	●
11.8	+0.025/+0.007	12	h6	96	114	163	358HTA1180	●
12	+0.025/+0.007	12	h6	96	114	163	358HTA1200	●
12.2	+0.025/+0.007	14	h6	112	133	182	358HTA1220	●
12.5	+0.025/+0.007	14	h6	112	133	182	358HTA1250	●
12.8	+0.025/+0.007	14	h6	112	133	182	358HTA1280	●
13	+0.025/+0.007	14	h6	112	133	182	358HTA1300	●
13.5	+0.025/+0.007	14	h6	112	133	182	358HTA1350	●
14	+0.025/+0.007	14	h6	112	133	182	358HTA1400	●
14.5	+0.025/+0.007	16	h6	128	152	204	358HTA1450	●
15	+0.025/+0.007	16	h6	128	152	204	358HTA1500	●
15.5	+0.025/+0.007	16	h6	128	152	204	358HTA1550	●
16	+0.025/+0.007	16	h6	128	152	204	358HTA1600	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3584HTA

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**100÷120**	**80÷100**	**50÷70**	**40÷60**	**40÷50**	**15÷25**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.072	0.065	0.058	0.050	0.070	0.042
	4	0.089	0.080	0.071	0.062	0.090	0.054
	5	0.106	0.095	0.085	0.074	0.100	0.060
	6	0.122	0.110	0.098	0.085	0.110	0.066
	7	0.139	0.125	0.111	0.097	0.130	0.078
	8	0.155	0.140	0.124	0.109	0.150	0.090
	9	0.172	0.155	0.138	0.120	0.160	0.096
	10	0.188	0.169	0.150	0.132	0.175	0.105
	11	0.205	0.185	0.164	0.144	0.180	0.108
	12	0.221	0.199	0.177	0.155	0.200	0.120
	13	0.238	0.214	0.190	0.167	0.215	0.129
	14	0.254	0.229	0.203	0.178	0.230	0.138
	15	0.270	0.243	0.216	0.189	0.245	0.147
	16	0.286	0.257	0.229	0.200	0.260	0.156

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm						
	Vc (m/min)	**40÷50**	**30÷40**	**20÷30**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.070	0.056	0.049			
	4	0.090	0.072	0.063			
	5	0.100	0.080	0.070			
	6	0.110	0.088	0.077			
	7	0.130	0.104	0.091			
	8	0.150	0.120	0.105			
	9	0.160	0.128	0.112			
	10	0.175	0.140	0.123			
	11	0.180	0.144	0.126			
	12	0.200	0.160	0.140			
	13	0.215	0.172	0.151			
	14	0.230	0.184	0.161			
	15	0.245	0.196	0.172			
	16	0.260	0.208	0.182			

Cutting Parameters

3584HTA

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**100÷120**	**80÷100**	**50÷70**	**40÷60**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	3	0.072	0.065	0.058	0.050		
	4	0.089	0.080	0.071	0.062		
	5	0.106	0.095	0.085	0.074		
	6	0.122	0.110	0.098	0.085		
	7	0.139	0.125	0.111	0.097		
	8	0.155	0.140	0.124	0.109		
	9	0.172	0.155	0.138	0.120		
	10	0.188	0.169	0.150	0.132		
	11	0.205	0.185	0.164	0.144		
	12	0.221	0.199	0.177	0.155		
	13	0.238	0.214	0.190	0.167		
	14	0.254	0.229	0.203	0.178		
	15	0.270	0.243	0.216	0.189		
	16	0.286	0.257	0.229	0.200		

	Material Group ISO 513	N1 N2	N3	N4			
	Hardness/Rm	>5% Si					
	Vc (m/min)	**160÷200**	**140÷180**	**130÷170**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.086	0.078	0.078			
	4	0.107	0.096	0.096			
	5	0.127	0.114	0.114			
	6	0.146	0.132	0.132			
	7	0.167	0.150	0.150			
	8	0.186	0.167	0.167			
	9	0.206	0.186	0.186			
	10	0.226	0.203	0.203			
	11	0.246	0.221	0.221			
	12	0.265	0.239	0.239			
	13	0.286	0.257	0.257			
	14	0.305	0.274	0.274			
	15	0.324	0.292	0.292			
	16	0.343	0.309	0.309			

Cutting Parameters

3584HTA

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**25÷35**	**15÷25**	**35÷45**	**25÷35**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	3	0.046	0.032	0.044	0.037		
	4	0.055	0.039	0.052	0.044		
	5	0.063	0.044	0.060	0.050		
	6	0.073	0.051	0.069	0.058		
	7	0.080	0.056	0.076	0.064		
	8	0.090	0.063	0.086	0.072		
	9	0.100	0.070	0.095	0.080		
	10	0.110	0.077	0.105	0.088		
	11	0.120	0.084	0.114	0.096		
	12	0.130	0.091	0.124	0.104		
	13	0.137	0.096	0.130	0.110		
	14	0.145	0.102	0.138	0.116		
	15	0.153	0.107	0.145	0.122		
	16	0.160	0.112	0.152	0.128		



TYPHOON GA-HGA

HIGH PERFORMANCE - GENERAL APPLICATION

3xD, 5xD and 8xD with Weldon shank for general application on ISO P, M, K.

3xD, 5xD e 8xD con gambo weldon per applicazioni generali su ISO P, M, K.

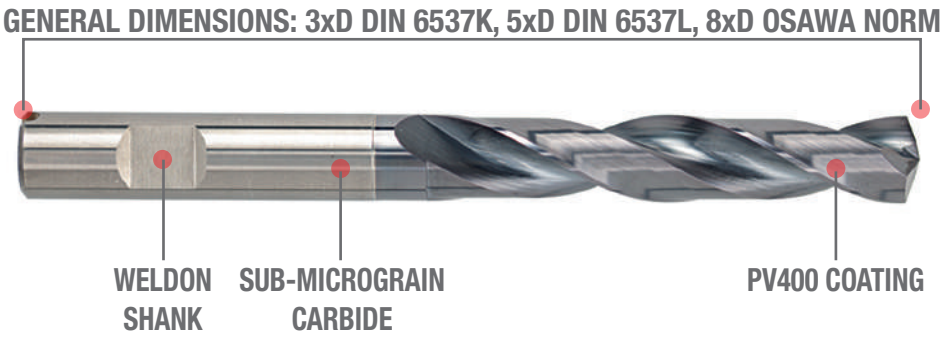
3xD, 5xD und 8xD mit Weldon Schaft für allgemeine Anwendung auf ISO P, M, K.

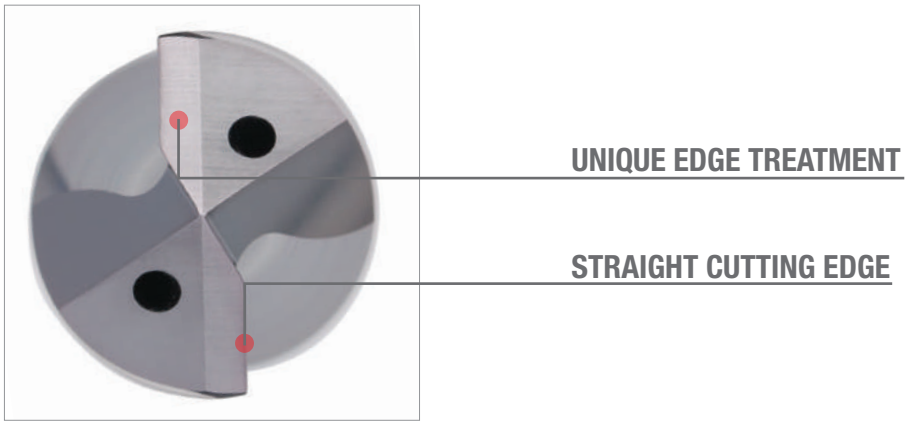
3xD, 5xD et 8xD avec tige Weldon pour application générale sur ISO P, M, K.

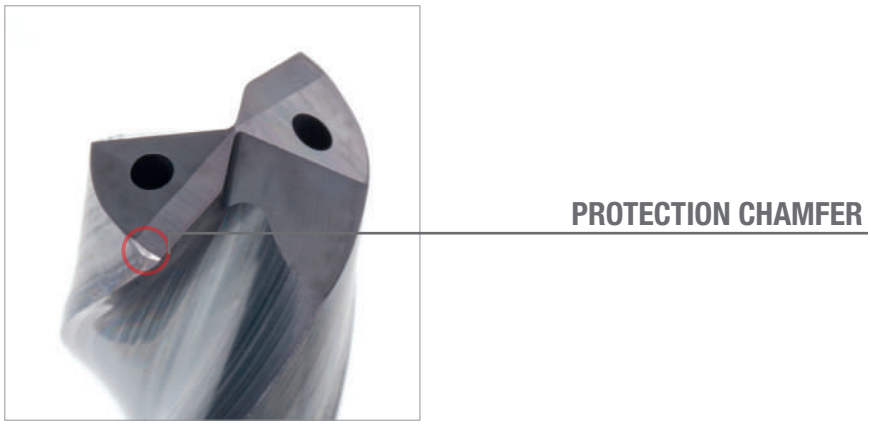
GA-HGA

High performance - general application

Features of GA-HGA drills







SORMA DIAMOND & CUTTING TOOLS

GA-HGA

High performance - general application

Features and Benefits

- Self-centering geometry for accurate holes
- Made of sub-micrograin carbide and new PV400 coating for better wear resistance (lower cost per hole).
- Straight cutting edge design and unique edge treatment technology allow higher reliability.
- Wide flutes design for smooth chip ejection
- Optimized core diameter guarantees the straightness of the hole

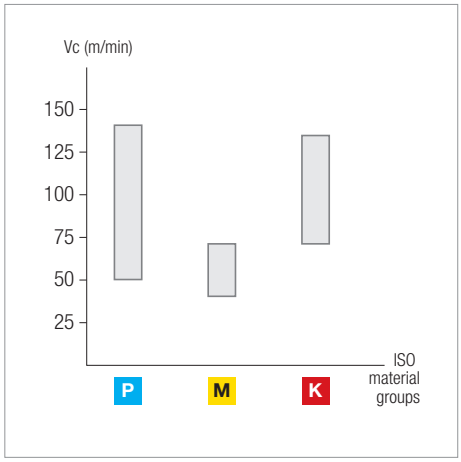
- Selbstzentrierender Schliff für präzise Bohrungen
- Aus VHM Mikrokörnung und neue PV400 Beschichtung um bessere Verschleissbeständigkeit zu ermöglichen.
- Gerades Schnittkantendesign und optimaler Schliff für eine hohe Zuverlässigkeit des Werkzeugs.
- Breite Spannuten zur Verbesserung der Spanabfuhr.
- Optimierter Kerndurchmesser für gerade Bohrungen

- Affilatura autocentrante per fori precisi
- Metallo duro sub-micro grana e nuovo rivestimento PV400 per migliore resistenza all'usura (inferiore costo per foro)
- Tagliente diritto e esclusivo processo di onatura del bordo per elevata affidabilità
- Scanalature ampie per migliore evacuazione dei trucioli
- Il diametro del nocciolo ottimizzato assicura la realizzazione di fori diritti

- Géométrie auto-centrée pour trous précis
- Fabriqué en carbure à grains submicroniques et nouveau revêtement PV400 pour une meilleure résistance à l'usure (coût inférieur par trou).
- La conception du bord droit et la technologie unique de traitement des bords permettent une plus grande fiabilité.
- La conception de cannelures larges permet une éjection en douceur des copeaux.
- Le diamètre optimisé du noyau garantit la rectitude du trou

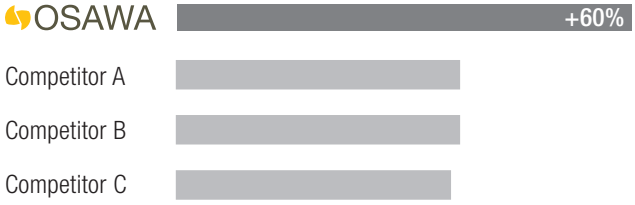
Application range - ISO 513

P M K



Use case

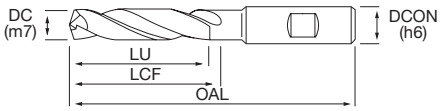
Tool Type	373HGA
Workpiece	W.-Nr 1.0401 C15
Parameters	Vc 85 m/min, fn 0,18 mm/rev
Diameter	6,6 mm
Coolant	internal
Hole depth	12 mm
Machining time:	



373GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





3xD | DIN 6537K | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	373GA0300N	●
3.1	+0.016/+0.004	6	h6	14	20	62	373GA0310N	●
3.2	+0.016/+0.004	6	h6	14	20	62	373GA0320N	●
3.3	+0.016/+0.004	6	h6	14	20	62	373GA0330N	●
3.4	+0.016/+0.004	6	h6	14	20	62	373GA0340N	●
3.5	+0.016/+0.004	6	h6	14	20	62	373GA0350N	●
3.6	+0.016/+0.004	6	h6	14	20	62	373GA0360N	●
3.7	+0.016/+0.004	6	h6	14	20	62	373GA0370N	●
3.8	+0.016/+0.004	6	h6	17	24	66	373GA0380N	●
3.9	+0.016/+0.004	6	h6	17	24	66	373GA0390N	●
4	+0.016/+0.004	6	h6	17	24	66	373GA0400N	●
4.1	+0.016/+0.004	6	h6	17	24	66	373GA0410N	●
4.2	+0.016/+0.004	6	h6	17	24	66	373GA0420N	●
4.3	+0.016/+0.004	6	h6	17	24	66	373GA0430N	●
4.4	+0.016/+0.004	6	h6	17	24	66	373GA0440N	●
4.5	+0.016/+0.004	6	h6	17	24	66	373GA0450N	●
4.6	+0.016/+0.004	6	h6	17	24	66	373GA0460N	●
4.7	+0.016/+0.004	6	h6	17	24	66	373GA0470N	●
4.8	+0.016/+0.004	6	h6	20	28	66	373GA0480N	●
4.9	+0.016/+0.004	6	h6	20	28	66	373GA0490N	●
5	+0.016/+0.004	6	h6	20	28	66	373GA0500N	●
5.1	+0.016/+0.004	6	h6	20	28	66	373GA0510N	●
5.2	+0.016/+0.004	6	h6	20	28	66	373GA0520N	●
5.3	+0.016/+0.004	6	h6	20	28	66	373GA0530N	●
5.4	+0.016/+0.004	6	h6	20	28	66	373GA0540N	●
5.5	+0.016/+0.004	6	h6	20	28	66	373GA0550N	●
5.6	+0.016/+0.004	6	h6	20	28	66	373GA0560N	●
5.7	+0.016/+0.004	6	h6	20	28	66	373GA0570N	●
5.8	+0.016/+0.004	6	h6	20	28	66	373GA0580N	●
5.9	+0.016/+0.004	6	h6	20	28	66	373GA0590N	●
6	+0.016/+0.004	6	h6	20	28	66	373GA0600N	●
6.1	+0.021/+0.006	8	h6	24	34	79	373GA0610N	●
6.2	+0.021/+0.006	8	h6	24	34	79	373GA0620N	●
6.3	+0.021/+0.006	8	h6	24	34	79	373GA0630N	●
6.4	+0.021/+0.006	8	h6	24	34	79	373GA0640N	●
6.5	+0.021/+0.006	8	h6	24	34	79	373GA0650N	●
6.6	+0.021/+0.006	8	h6	24	34	79	373GA0660N	●
6.7	+0.021/+0.006	8	h6	24	34	79	373GA0670N	●
6.8	+0.021/+0.006	8	h6	24	34	79	373GA0680N	●
6.9	+0.021/+0.006	8	h6	24	34	79	373GA0690N	●
7	+0.021/+0.006	8	h6	24	34	79	373GA0700N	●
7.1	+0.021/+0.006	8	h6	29	41	79	373GA0710N	●
7.2	+0.021/+0.006	8	h6	29	41	79	373GA0720N	●
7.3	+0.021/+0.006	8	h6	29	41	79	373GA0730N	●
7.4	+0.021/+0.006	8	h6	29	41	79	373GA0740N	●

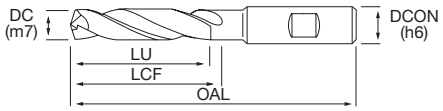
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

373GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





3xD | DIN 6537K | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	**373GA0750N**	●
7.6	+0.021/+0.006	8	h6	29	41	79	**373GA0760N**	●
7.7	+0.021/+0.006	8	h6	29	41	79	**373GA0770N**	●
7.8	+0.021/+0.006	8	h6	29	41	79	**373GA0780N**	●
7.9	+0.021/+0.006	8	h6	29	41	79	**373GA0790N**	●
8	+0.021/+0.006	8	h6	29	41	79	**373GA0800N**	●
8.1	+0.021/+0.006	10	h6	35	47	89	**373GA0810N**	●
8.2	+0.021/+0.006	10	h6	35	47	89	**373GA0820N**	●
8.3	+0.021/+0.006	10	h6	35	47	89	**373GA0830N**	●
8.4	+0.021/+0.006	10	h6	35	47	89	**373GA0840N**	●
8.5	+0.021/+0.006	10	h6	35	47	89	**373GA0850N**	●
8.6	+0.021/+0.006	10	h6	35	47	89	**373GA0860N**	●
8.7	+0.021/+0.006	10	h6	35	47	89	**373GA0870N**	●
8.8	+0.021/+0.006	10	h6	35	47	89	**373GA0880N**	●
8.9	+0.021/+0.006	10	h6	35	47	89	**373GA0890N**	●
9	+0.021/+0.006	10	h6	35	47	89	**373GA0900N**	●
9.1	+0.021/+0.006	10	h6	35	47	89	**373GA0910N**	●
9.2	+0.021/+0.006	10	h6	35	47	89	**373GA0920N**	●
9.3	+0.021/+0.006	10	h6	35	47	89	**373GA0930N**	●
9.4	+0.021/+0.006	10	h6	35	47	89	**373GA0940N**	●
9.5	+0.021/+0.006	10	h6	35	47	89	**373GA0950N**	●
9.6	+0.021/+0.006	10	h6	35	47	89	**373GA0960N**	●
9.7	+0.021/+0.006	10	h6	35	47	89	**373GA0970N**	●
9.8	+0.021/+0.006	10	h6	35	47	89	**373GA0980N**	●
9.9	+0.021/+0.006	10	h6	35	47	89	**373GA0990N**	●
10	+0.021/+0.006	10	h6	35	47	89	**373GA1000N**	●
10.1	+0.025/+0.007	12	h6	40	55	102	**373GA1010N**	●
10.2	+0.025/+0.007	12	h6	40	55	102	**373GA1020N**	●
10.3	+0.025/+0.007	12	h6	40	55	102	**373GA1030N**	●
10.4	+0.025/+0.007	12	h6	40	55	102	**373GA1040N**	●
10.5	+0.025/+0.007	12	h6	40	55	102	**373GA1050N**	●
10.6	+0.025/+0.007	12	h6	40	55	102	**373GA1060N**	●
10.7	+0.025/+0.007	12	h6	40	55	102	**373GA1070N**	●
10.8	+0.025/+0.007	12	h6	40	55	102	**373GA1080N**	●
10.9	+0.025/+0.007	12	h6	40	55	102	**373GA1090N**	●
11	+0.025/+0.007	12	h6	40	55	102	**373GA1100N**	●
11.1	+0.025/+0.007	12	h6	40	55	102	**373GA1110N**	●
11.2	+0.025/+0.007	12	h6	40	55	102	**373GA1120N**	●
11.3	+0.025/+0.007	12	h6	40	55	102	**373GA1130N**	●
11.4	+0.025/+0.007	12	h6	40	55	102	**373GA1140N**	●
11.5	+0.025/+0.007	12	h6	40	55	102	**373GA1150N**	●
11.6	+0.025/+0.007	12	h6	40	55	102	**373GA1160N**	●
11.7	+0.025/+0.007	12	h6	40	55	102	**373GA1170N**	●
11.8	+0.025/+0.007	12	h6	40	55	102	**373GA1180N**	●
11.9	+0.025/+0.007	12	h6	40	55	102	**373GA1190N**	●

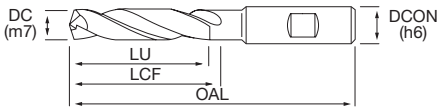
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

373GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





3xD | DIN 6537K | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	**373GA1200N**	●
12.1	+0.025/+0.007	14	h6	40	55	102	**373GA1210N**	◉
12.2	+0.025/+0.007	14	h6	43	60	107	**373GA1220N**	●
12.3	+0.025/+0.007	14	h6	43	60	107	**373GA1230N**	◉
12.4	+0.025/+0.007	14	h6	43	60	107	**373GA1240N**	◉
12.5	+0.025/+0.007	14	h6	43	60	107	**373GA1250N**	●
12.6	+0.025/+0.007	14	h6	43	60	107	**373GA1260N**	◉
12.7	+0.025/+0.007	14	h6	43	60	107	**373GA1270N**	●
12.8	+0.025/+0.007	14	h6	43	60	107	**373GA1280N**	●
12.9	+0.025/+0.007	14	h6	43	60	107	**373GA1290N**	◉
13	+0.025/+0.007	14	h6	43	60	107	**373GA1300N**	●
13.5	+0.025/+0.007	14	h6	43	60	107	**373GA1350N**	●
13.7	+0.025/+0.007	14	h6	43	60	107	**373GA1370N**	●
13.8	+0.025/+0.007	14	h6	43	60	107	**373GA1380N**	●
14	+0.025/+0.007	14	h6	43	60	107	**373GA1400N**	●
14.2	+0.025/+0.007	16	h6	45	65	115	**373GA1420N**	●
14.5	+0.025/+0.007	16	h6	45	65	115	**373GA1450N**	●
14.7	+0.025/+0.007	16	h6	45	65	115	**373GA1470N**	●
14.8	+0.025/+0.007	16	h6	45	65	115	**373GA1480N**	●
15	+0.025/+0.007	16	h6	45	65	115	**373GA1500N**	●
15.2	+0.025/+0.007	16	h6	49	65	115	**373GA1520N**	●
15.3	+0.025/+0.007	16	h6	49	65	115	**373GA1530N**	●
15.5	+0.025/+0.007	16	h6	49	65	115	**373GA1550N**	●
15.7	+0.025/+0.007	16	h6	49	65	115	**373GA1570N**	●
15.8	+0.025/+0.007	16	h6	49	65	115	**373GA1580N**	●
16	+0.025/+0.007	16	h6	49	65	115	**373GA1600N**	●
16.5	+0.025/+0.007	18	h6	52	73	123	**373GA1650N**	●
16.8	+0.025/+0.007	18	h6	52	73	123	**373GA1680N**	◉
17	+0.025/+0.007	18	h6	52	73	123	**373GA1700N**	●
17.5	+0.025/+0.007	18	h6	52	73	123	**373GA1750N**	●
17.7	+0.025/+0.007	18	h6	52	73	123	**373GA1770N**	◉
17.8	+0.025/+0.007	18	h6	52	73	123	**373GA1780N**	◉
18	+0.025/+0.007	18	h6	52	73	123	**373GA1800N**	●
18.5	+0.029/+0.008	20	h6	55	79	131	**373GA1850N**	●
18.8	+0.029/+0.008	20	h6	55	79	131	**373GA1880N**	◉
19	+0.029/+0.008	20	h6	55	79	131	**373GA1900N**	●
19.5	+0.029/+0.008	20	h6	55	79	131	**373GA1950N**	●
19.8	+0.029/+0.008	20	h6	55	79	131	**373GA1980N**	◉
20	+0.029/+0.008	20	h6	55	79	131	**373GA2000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373GA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm²	500÷700 N/mm²	600÷1000 N/mm²	900÷1480 N/mm²	<750 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**80÷120**	**70÷110**	**60÷100**	**55÷80**	**40÷60**	**35÷55**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.143	0.143	0.124	0.105	0.076	0.057
	4	0.143	0.143	0.124	0.105	0.076	0.057
	6	0.181	0.181	0.162	0.133	0.114	0.095
	8	0.209	0.209	0.190	0.152	0.133	0.124
	10	0.209	0.209	0.190	0.152	0.133	0.124
	12	0.266	0.266	0.219	0.181	0.171	0.171
	14	0.304	0.304	0.238	0.209	0.190	0.190
	16	0.304	0.304	0.238	0.209	0.190	0.190
	18	0.361	0.361	0.285	0.228	0.228	0.228
	20	0.361	0.361	0.285	0.228	0.228	0.228

373GA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**40÷60**	**35÷55**	**25÷45**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.072	0.054	0.054			
	4	0.090	0.072	0.072			
	6	0.108	0.072	0.072			
	8	0.117	0.090	0.090			
	10	0.135	0.099	0.099			
	12	0.153	0.117	0.117			
	14	0.162	0.117	0.117			
	16	0.180	0.126	0.126			
	18	0.198	0.126	0.126			
	20	0.216	0.144	0.144			

373GA

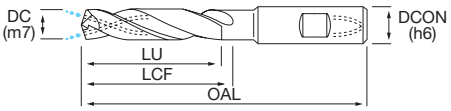
	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	**90÷110**	**70÷90**	**60÷80**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
	14	0.342	0.314	0.228			
	16	0.380	0.333	0.247			
	18	0.399	0.361	0.266			
	20	0.428	0.380	0.266			

SORMA DIAMOND & CUTTING TOOLS

373HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





3xD | INTERNAL COOLANT | DIN 6537K | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	**373HGA0300N**	●
3.1	+0.016/+0.004	6	h6	14	20	62	**373HGA0310N**	●
3.2	+0.016/+0.004	6	h6	14	20	62	**373HGA0320N**	●
3.3	+0.016/+0.004	6	h6	14	20	62	**373HGA0330N**	●
3.4	+0.016/+0.004	6	h6	14	20	62	**373HGA0340N**	●
3.5	+0.016/+0.004	6	h6	14	20	62	**373HGA0350N**	●
3.6	+0.016/+0.004	6	h6	14	20	62	**373HGA0360N**	●
3.7	+0.016/+0.004	6	h6	14	20	62	**373HGA0370N**	●
3.8	+0.016/+0.004	6	h6	17	24	66	**373HGA0380N**	●
3.9	+0.016/+0.004	6	h6	17	24	66	**373HGA0390N**	●
4	+0.016/+0.004	6	h6	17	24	66	**373HGA0400N**	●
4.1	+0.016/+0.004	6	h6	17	24	66	**373HGA0410N**	●
4.2	+0.016/+0.004	6	h6	17	24	66	**373HGA0420N**	●
4.3	+0.016/+0.004	6	h6	17	24	66	**373HGA0430N**	●
4.4	+0.016/+0.004	6	h6	17	24	66	**373HGA0440N**	●
4.5	+0.016/+0.004	6	h6	17	24	66	**373HGA0450N**	●
4.6	+0.016/+0.004	6	h6	17	24	66	**373HGA0460N**	●
4.7	+0.016/+0.004	6	h6	17	24	66	**373HGA0470N**	●
4.8	+0.016/+0.004	6	h6	20	28	66	**373HGA0480N**	●
4.9	+0.016/+0.004	6	h6	20	28	66	**373HGA0490N**	●
5	+0.016/+0.004	6	h6	20	28	66	**373HGA0500N**	●
5.1	+0.016/+0.004	6	h6	20	28	66	**373HGA0510N**	●
5.2	+0.016/+0.004	6	h6	20	28	66	**373HGA0520N**	●
5.3	+0.016/+0.004	6	h6	20	28	66	**373HGA0530N**	●
5.4	+0.016/+0.004	6	h6	20	28	66	**373HGA0540N**	●
5.5	+0.016/+0.004	6	h6	20	28	66	**373HGA0550N**	●
5.6	+0.016/+0.004	6	h6	20	28	66	**373HGA0560N**	●
5.7	+0.016/+0.004	6	h6	20	28	66	**373HGA0570N**	●
5.8	+0.016/+0.004	6	h6	20	28	66	**373HGA0580N**	●
5.9	+0.016/+0.004	6	h6	20	28	66	**373HGA0590N**	●
6	+0.016/+0.004	6	h6	20	28	66	**373HGA0600N**	●
6.1	+0.021/+0.006	8	h6	24	34	79	**373HGA0610N**	●
6.2	+0.021/+0.006	8	h6	24	34	79	**373HGA0620N**	●
6.3	+0.021/+0.006	8	h6	24	34	79	**373HGA0630N**	●
6.4	+0.021/+0.006	8	h6	24	34	79	**373HGA0640N**	●
6.5	+0.021/+0.006	8	h6	24	34	79	**373HGA0650N**	●
6.6	+0.021/+0.006	8	h6	24	34	79	**373HGA0660N**	●
6.7	+0.021/+0.006	8	h6	24	34	79	**373HGA0670N**	●
6.8	+0.021/+0.006	8	h6	24	34	79	**373HGA0680N**	●
6.9	+0.021/+0.006	8	h6	24	34	79	**373HGA0690N**	●
7	+0.021/+0.006	8	h6	24	34	79	**373HGA0700N**	●
7.1	+0.021/+0.006	8	h6	29	41	79	**373HGA0710N**	●
7.2	+0.021/+0.006	8	h6	29	41	79	**373HGA0720N**	●
7.3	+0.021/+0.006	8	h6	29	41	79	**373HGA0730N**	●
7.4	+0.021/+0.006	8	h6	29	41	79	**373HGA0740N**	●

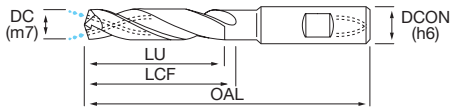
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

373HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





3xD | INTERNAL COOLANT | DIN 6537K | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	**373HGA0750N**	●
7.6	+0.021/+0.006	8	h6	29	41	79	**373HGA0760N**	●
7.7	+0.021/+0.006	8	h6	29	41	79	**373HGA0770N**	●
7.8	+0.021/+0.006	8	h6	29	41	79	**373HGA0780N**	●
7.9	+0.021/+0.006	8	h6	29	41	79	**373HGA0790N**	●
8	+0.021/+0.006	8	h6	29	41	79	**373HGA0800N**	●
8.1	+0.021/+0.006	10	h6	35	47	89	**373HGA0810N**	●
8.2	+0.021/+0.006	10	h6	35	47	89	**373HGA0820N**	●
8.3	+0.021/+0.006	10	h6	35	47	89	**373HGA0830N**	●
8.4	+0.021/+0.006	10	h6	35	47	89	**373HGA0840N**	●
8.5	+0.021/+0.006	10	h6	35	47	89	**373HGA0850N**	●
8.6	+0.021/+0.006	10	h6	35	47	89	**373HGA0860N**	●
8.7	+0.021/+0.006	10	h6	35	47	89	**373HGA0870N**	●
8.8	+0.021/+0.006	10	h6	35	47	89	**373HGA0880N**	●
8.9	+0.021/+0.006	10	h6	35	47	89	**373HGA0890N**	●
9	+0.021/+0.006	10	h6	35	47	89	**373HGA0900N**	●
9.1	+0.021/+0.006	10	h6	35	47	89	**373HGA0910N**	●
9.2	+0.021/+0.006	10	h6	35	47	89	**373HGA0920N**	●
9.3	+0.021/+0.006	10	h6	35	47	89	**373HGA0930N**	●
9.4	+0.021/+0.006	10	h6	35	47	89	**373HGA0940N**	●
9.5	+0.021/+0.006	10	h6	35	47	89	**373HGA0950N**	●
9.6	+0.021/+0.006	10	h6	35	47	89	**373HGA0960N**	●
9.7	+0.021/+0.006	10	h6	35	47	89	**373HGA0970N**	●
9.8	+0.021/+0.006	10	h6	35	47	89	**373HGA0980N**	●
9.9	+0.021/+0.006	10	h6	35	47	89	**373HGA0990N**	●
10	+0.021/+0.006	10	h6	35	47	89	**373HGA1000N**	●
10.1	+0.025/+0.007	12	h6	40	55	102	**373HGA1010N**	●
10.2	+0.025/+0.007	12	h6	40	55	102	**373HGA1020N**	●
10.3	+0.025/+0.007	12	h6	40	55	102	**373HGA1030N**	●
10.4	+0.025/+0.007	12	h6	40	55	102	**373HGA1040N**	●
10.5	+0.025/+0.007	12	h6	40	55	102	**373HGA1050N**	●
10.6	+0.025/+0.007	12	h6	40	55	102	**373HGA1060N**	●
10.7	+0.025/+0.007	12	h6	40	55	102	**373HGA1070N**	●
10.8	+0.025/+0.007	12	h6	40	55	102	**373HGA1080N**	●
10.9	+0.025/+0.007	12	h6	40	55	102	**373HGA1090N**	●
11	+0.025/+0.007	12	h6	40	55	102	**373HGA1100N**	●
11.1	+0.025/+0.007	12	h6	40	55	102	**373HGA1110N**	●
11.2	+0.025/+0.007	12	h6	40	55	102	**373HGA1120N**	●
11.3	+0.025/+0.007	12	h6	40	55	102	**373HGA1130N**	●
11.4	+0.025/+0.007	12	h6	40	55	102	**373HGA1140N**	●
11.5	+0.025/+0.007	12	h6	40	55	102	**373HGA1150N**	●
11.6	+0.025/+0.007	12	h6	40	55	102	**373HGA1160N**	●
11.7	+0.025/+0.007	12	h6	40	55	102	**373HGA1170N**	●
11.8	+0.025/+0.007	12	h6	40	55	102	**373HGA1180N**	●
11.9	+0.025/+0.007	12	h6	40	55	102	**373HGA1190N**	●

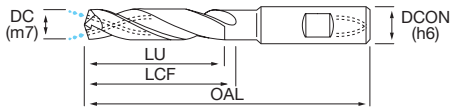
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

373HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





3xD | INTERNAL COOLANT | DIN 6537K | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	**373HGA1200N**	●
12.1	+0.025/+0.007	14	h6	43	60	107	**373HGA1210N**	●
12.2	+0.025/+0.007	14	h6	43	60	107	**373HGA1220N**	●
12.5	+0.025/+0.007	14	h6	43	60	107	**373HGA1250N**	●
12.7	+0.025/+0.007	14	h6	43	60	107	**373HGA1270N**	●
12.8	+0.025/+0.007	14	h6	43	60	107	**373HGA1280N**	●
13	+0.025/+0.007	14	h6	43	60	107	**373HGA1300N**	●
13.5	+0.025/+0.007	14	h6	43	60	107	**373HGA1350N**	●
13.7	+0.025/+0.007	14	h6	43	60	107	**373HGA1370N**	◉
13.8	+0.025/+0.007	14	h6	43	60	107	**373HGA1380N**	●
14	+0.025/+0.007	14	h6	43	60	107	**373HGA1400N**	●
14.2	+0.025/+0.007	16	h6	45	65	115	**373HGA1420N**	●
14.5	+0.025/+0.007	16	h6	45	65	115	**373HGA1450N**	●
14.7	+0.025/+0.007	16	h6	45	65	115	**373HGA1470N**	◉
14.8	+0.025/+0.007	16	h6	45	65	115	**373HGA1480N**	●
15	+0.025/+0.007	16	h6	49	65	115	**373HGA1500N**	●
15.2	+0.025/+0.007	16	h6	49	65	115	**373HGA1520N**	●
15.3	+0.025/+0.007	16	h6	49	65	115	**373HGA1530N**	●
15.5	+0.025/+0.007	16	h6	49	65	115	**373HGA1550N**	●
15.7	+0.025/+0.007	16	h6	49	65	115	**373HGA1570N**	◉
15.8	+0.025/+0.007	16	h6	49	65	115	**373HGA1580N**	●
16	+0.025/+0.007	16	h6	49	65	115	**373HGA1600N**	●
16.5	+0.025/+0.007	18	h6	52	73	123	**373HGA1650N**	●
16.8	+0.025/+0.007	18	h6	52	73	123	**373HGA1680N**	◉
17	+0.025/+0.007	18	h6	52	73	123	**373HGA1700N**	●
17.5	+0.025/+0.007	18	h6	52	73	123	**373HGA1750N**	●
17.7	+0.025/+0.007	18	h6	52	73	123	**373HGA1770N**	◉
17.8	+0.025/+0.007	18	h6	52	73	123	**373HGA1780N**	◉
18	+0.025/+0.007	18	h6	52	73	123	**373HGA1800N**	●
18.5	+0.029/+0.008	20	h6	55	79	131	**373HGA1850N**	●
18.8	+0.029/+0.008	20	h6	55	79	131	**373HGA1880N**	◉
19	+0.029/+0.008	20	h6	55	79	131	**373HGA1900N**	●
19.5	+0.029/+0.008	20	h6	55	79	131	**373HGA1950N**	●
19.8	+0.029/+0.008	20	h6	55	79	131	**373HGA1980N**	◉
20	+0.029/+0.008	20	h6	55	79	131	**373HGA2000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm²	500÷700 N/mm²	600÷1000 N/mm²	900÷1480 N/mm²	<700 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**100÷140**	**90÷130**	**80÷120**	**65÷95**	**55÷80**	**40÷65**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.110	0.080	0.060
	4	0.150	0.150	0.130	0.110	0.080	0.060
	6	0.190	0.190	0.170	0.140	0.120	0.100
	8	0.220	0.220	0.200	0.160	0.140	0.130
	10	0.220	0.220	0.200	0.160	0.140	0.130
	12	0.280	0.280	0.230	0.190	0.180	0.180
	14	0.320	0.320	0.250	0.220	0.200	0.200
	16	0.320	0.320	0.250	0.220	0.200	0.200
	18	0.380	0.380	0.300	0.240	0.240	0.240
	20	0.380	0.380	0.300	0.240	0.240	0.240

373HGA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**50÷70**	**45÷65**	**35÷55**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.080	0.060	0.060			
	4	0.100	0.080	0.080			
	6	0.120	0.080	0.080			
	8	0.130	0.100	0.100			
	10	0.150	0.110	0.110			
	12	0.170	0.130	0.130			
	14	0.180	0.130	0.130			
	16	0.200	0.140	0.140			
	18	0.220	0.140	0.140			
	20	0.240	0.160	0.160			

373HGA

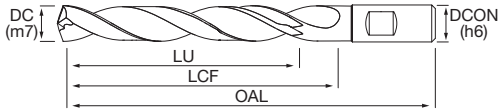
	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	**110÷140**	**90÷120**	**70÷100**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.170	0.150	0.090			
	4	0.200	0.170	0.100			
	6	0.250	0.200	0.130			
	8	0.270	0.250	0.160			
	10	0.300	0.280	0.200			
	12	0.330	0.300	0.220			
	14	0.360	0.330	0.240			
	16	0.400	0.350	0.260			
	18	0.420	0.380	0.280			
	20	0.450	0.400	0.280			

SORMA DIAMOND & CUTTING TOOLS

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





5xD | DIN 6537L | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	375GA0300N	●
3.1	+0.016/+0.004	6	h6	23	28	66	375GA0310N	●
3.2	+0.016/+0.004	6	h6	23	28	66	375GA0320N	●
3.3	+0.016/+0.004	6	h6	23	28	66	375GA0330N	●
3.4	+0.016/+0.004	6	h6	23	28	66	375GA0340N	●
3.5	+0.016/+0.004	6	h6	23	28	66	375GA0350N	●
3.6	+0.016/+0.004	6	h6	23	28	66	375GA0360N	●
3.7	+0.016/+0.004	6	h6	23	28	66	375GA0370N	●
3.8	+0.016/+0.004	6	h6	29	36	74	375GA0380N	●
3.9	+0.016/+0.004	6	h6	29	36	74	375GA0390N	●
4	+0.016/+0.004	6	h6	29	36	74	375GA0400N	●
4.1	+0.016/+0.004	6	h6	29	36	74	375GA0410N	●
4.2	+0.016/+0.004	6	h6	29	36	74	375GA0420N	●
4.3	+0.016/+0.004	6	h6	29	36	74	375GA0430N	●
4.4	+0.016/+0.004	6	h6	29	36	74	375GA0440N	●
4.5	+0.016/+0.004	6	h6	29	36	74	375GA0450N	●
4.6	+0.016/+0.004	6	h6	29	36	74	375GA0460N	●
4.7	+0.016/+0.004	6	h6	29	36	74	375GA0470N	●
4.8	+0.016/+0.004	6	h6	35	44	82	375GA0480N	●
4.9	+0.016/+0.004	6	h6	35	44	82	375GA0490N	●
5	+0.016/+0.004	6	h6	35	44	82	375GA0500N	●
5.1	+0.016/+0.004	6	h6	35	44	82	375GA0510N	●
5.2	+0.016/+0.004	6	h6	35	44	82	375GA0520N	●
5.3	+0.016/+0.004	6	h6	35	44	82	375GA0530N	●
5.4	+0.016/+0.004	6	h6	35	44	82	375GA0540N	●
5.5	+0.016/+0.004	6	h6	35	44	82	375GA0550N	●
5.6	+0.016/+0.004	6	h6	35	44	82	375GA0560N	●
5.7	+0.016/+0.004	6	h6	35	44	82	375GA0570N	●
5.8	+0.016/+0.004	6	h6	35	44	82	375GA0580N	●
5.9	+0.016/+0.004	6	h6	35	44	82	375GA0590N	●
6	+0.016/+0.004	6	h6	35	44	82	375GA0600N	●
6.1	+0.021/+0.006	8	h6	43	53	91	375GA0610N	●
6.2	+0.021/+0.006	8	h6	43	53	91	375GA0620N	●
6.3	+0.021/+0.006	8	h6	43	53	91	375GA0630N	●
6.4	+0.021/+0.006	8	h6	43	53	91	375GA0640N	●
6.5	+0.021/+0.006	8	h6	43	53	91	375GA0650N	●
6.6	+0.021/+0.006	8	h6	43	53	91	375GA0660N	●
6.7	+0.021/+0.006	8	h6	43	53	91	375GA0670N	●
6.8	+0.021/+0.006	8	h6	43	53	91	375GA0680N	●
6.9	+0.021/+0.006	8	h6	43	53	91	375GA0690N	●
7	+0.021/+0.006	8	h6	43	53	91	375GA0700N	●
7.1	+0.021/+0.006	8	h6	43	53	91	375GA0710N	●
7.2	+0.021/+0.006	8	h6	43	53	91	375GA0720N	●
7.3	+0.021/+0.006	8	h6	43	53	91	375GA0730N	●
7.4	+0.021/+0.006	8	h6	43	53	91	375GA0740N	●

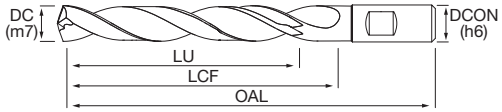
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





5xD | DIN 6537L | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	43	53	91	**375GA0750N**	●
7.6	+0.021/+0.006	8	h6	43	53	91	**375GA0760N**	●
7.7	+0.021/+0.006	8	h6	43	53	91	**375GA0770N**	●
7.8	+0.021/+0.006	8	h6	43	53	91	**375GA0780N**	●
7.9	+0.021/+0.006	8	h6	43	53	91	**375GA0790N**	●
8	+0.021/+0.006	8	h6	43	53	91	**375GA0800N**	●
8.1	+0.021/+0.006	10	h6	49	61	103	**375GA0810N**	●
8.2	+0.021/+0.006	10	h6	49	61	103	**375GA0820N**	●
8.3	+0.021/+0.006	10	h6	49	61	103	**375GA0830N**	●
8.4	+0.021/+0.006	10	h6	49	61	103	**375GA0840N**	●
8.5	+0.021/+0.006	10	h6	49	61	103	**375GA0850N**	●
8.6	+0.021/+0.006	10	h6	49	61	103	**375GA0860N**	●
8.7	+0.021/+0.006	10	h6	49	61	103	**375GA0870N**	●
8.8	+0.021/+0.006	10	h6	49	61	103	**375GA0880N**	●
8.9	+0.021/+0.006	10	h6	49	61	103	**375GA0890N**	●
9	+0.021/+0.006	10	h6	49	61	103	**375GA0900N**	●
9.1	+0.021/+0.006	10	h6	49	61	103	**375GA0910N**	●
9.2	+0.021/+0.006	10	h6	49	61	103	**375GA0920N**	●
9.3	+0.021/+0.006	10	h6	49	61	103	**375GA0930N**	●
9.4	+0.021/+0.006	10	h6	49	61	103	**375GA0940N**	●
9.5	+0.021/+0.006	10	h6	49	61	103	**375GA0950N**	●
9.6	+0.021/+0.006	10	h6	49	61	103	**375GA0960N**	●
9.7	+0.021/+0.006	10	h6	49	61	103	**375GA0970N**	●
9.8	+0.021/+0.006	10	h6	49	61	103	**375GA0980N**	●
9.9	+0.021/+0.006	10	h6	49	61	103	**375GA0990N**	●
10	+0.021/+0.006	10	h6	49	61	103	**375GA1000N**	●
10.1	+0.025/+0.007	12	h6	57	71	118	**375GA1010N**	●
10.2	+0.025/+0.007	12	h6	57	71	118	**375GA1020N**	●
10.3	+0.025/+0.007	12	h6	57	71	118	**375GA1030N**	●
10.4	+0.025/+0.007	12	h6	57	71	118	**375GA1040N**	●
10.5	+0.025/+0.007	12	h6	57	71	118	**375GA1050N**	●
10.6	+0.025/+0.007	12	h6	57	71	118	**375GA1060N**	●
10.7	+0.025/+0.007	12	h6	57	71	118	**375GA1070N**	●
10.8	+0.025/+0.007	12	h6	57	71	118	**375GA1080N**	●
10.9	+0.025/+0.007	12	h6	57	71	118	**375GA1090N**	●
11	+0.025/+0.007	12	h6	57	71	118	**375GA1100N**	●
11.1	+0.025/+0.007	12	h6	57	71	118	**375GA1110N**	●
11.2	+0.025/+0.007	12	h6	57	71	118	**375GA1120N**	●
11.3	+0.025/+0.007	12	h6	57	71	118	**375GA1130N**	●
11.4	+0.025/+0.007	12	h6	57	71	118	**375GA1140N**	●
11.5	+0.025/+0.007	12	h6	57	71	118	**375GA1150N**	●
11.6	+0.025/+0.007	12	h6	57	71	118	**375GA1160N**	●
11.7	+0.025/+0.007	12	h6	57	71	118	**375GA1170N**	●
11.8	+0.025/+0.007	12	h6	57	71	118	**375GA1180N**	●
11.9	+0.025/+0.007	12	h6	57	71	118	**375GA1190N**	●

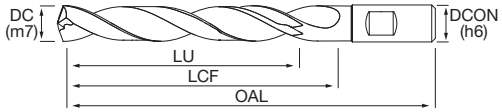
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	☆	★			





5xD | DIN 6537L | GA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	57	71	118	**375GA1200N**	●
12.5	+0.025/+0.007	14	h6	63	77	124	**375GA1250N**	●
13	+0.025/+0.007	14	h6	63	77	124	**375GA1300N**	●
13.5	+0.025/+0.007	14	h6	63	77	124	**375GA1350N**	●
14	+0.025/+0.007	14	h6	63	77	124	**375GA1400N**	●
14.5	+0.025/+0.007	16	h6	67	83	133	**375GA1450N**	●
15	+0.025/+0.007	16	h6	67	83	133	**375GA1500N**	●
15.5	+0.025/+0.007	16	h6	67	83	133	**375GA1550N**	●
16	+0.025/+0.007	16	h6	67	83	133	**375GA1600N**	●
16.5	+0.025/+0.007	18	h6	75	93	143	**375GA1650N**	●
17	+0.025/+0.007	18	h6	75	93	143	**375GA1700N**	●
17.5	+0.025/+0.007	18	h6	75	93	143	**375GA1750N**	●
18	+0.025/+0.007	18	h6	75	93	143	**375GA1800N**	●
18.5	+0.029/+0.008	20	h6	81	101	153	**375GA1850N**	●
19	+0.029/+0.008	20	h6	81	101	153	**375GA1900N**	●
19.5	+0.029/+0.008	20	h6	81	101	153	**375GA1950N**	●
20	+0.029/+0.008	20	h6	81	101	153	**375GA2000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375GA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm²	500÷700 N/mm²	600÷1000 N/mm²	900÷1480 N/mm²	<750 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**80÷120**	**70÷110**	**60÷100**	**55÷80**	**40÷60**	**35÷55**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.143	0.143	0.124	0.105	0.076	0.057
	4	0.143	0.143	0.124	0.105	0.076	0.057
	6	0.181	0.181	0.162	0.133	0.114	0.095
	8	0.209	0.209	0.190	0.152	0.133	0.124
	10	0.209	0.209	0.190	0.152	0.133	0.124
	12	0.266	0.266	0.219	0.181	0.171	0.171
	14	0.304	0.304	0.238	0.209	0.190	0.190
	16	0.304	0.304	0.238	0.209	0.190	0.190
	18	0.361	0.361	0.285	0.228	0.228	0.228
	20	0.361	0.361	0.285	0.228	0.228	0.228

375GA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**40÷60**	**35÷55**	**25÷45**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.072	0.054	0.054			
	4	0.090	0.072	0.072			
	6	0.108	0.072	0.072			
	8	0.117	0.090	0.090			
	10	0.135	0.099	0.099			
	12	0.153	0.117	0.117			
	14	0.162	0.117	0.117			
	16	0.180	0.126	0.126			
	18	0.198	0.126	0.126			
	20	0.216	0.144	0.144			

375GA

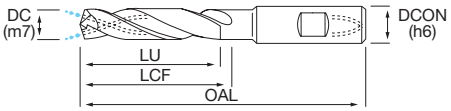
	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	**90÷110**	**70÷90**	**60÷80**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
	14	0.342	0.314	0.228			
	16	0.380	0.333	0.247			
	18	0.399	0.361	0.266			
	20	0.428	0.380	0.266			

SORMA DIAMOND & CUTTING TOOLS

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





5xD | INTERNAL COOLANT | DIN 6537L | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	375HGA0300N	●
3.1	+0.016/+0.004	6	h6	23	28	66	375HGA0310N	●
3.2	+0.016/+0.004	6	h6	23	28	66	375HGA0320N	●
3.3	+0.016/+0.004	6	h6	23	28	66	375HGA0330N	●
3.4	+0.016/+0.004	6	h6	23	28	66	375HGA0340N	●
3.5	+0.016/+0.004	6	h6	23	28	66	375HGA0350N	●
3.6	+0.016/+0.004	6	h6	23	28	66	375HGA0360N	●
3.7	+0.016/+0.004	6	h6	23	28	66	375HGA0370N	●
3.8	+0.016/+0.004	6	h6	29	36	74	375HGA0380N	●
3.9	+0.016/+0.004	6	h6	29	36	74	375HGA0390N	●
4	+0.016/+0.004	6	h6	29	36	74	375HGA0400N	●
4.1	+0.016/+0.004	6	h6	29	36	74	375HGA0410N	●
4.2	+0.016/+0.004	6	h6	29	36	74	375HGA0420N	●
4.3	+0.016/+0.004	6	h6	29	36	74	375HGA0430N	●
4.4	+0.016/+0.004	6	h6	29	36	74	375HGA0440N	●
4.5	+0.016/+0.004	6	h6	29	36	74	375HGA0450N	●
4.6	+0.016/+0.004	6	h6	29	36	74	375HGA0460N	●
4.65	+0.016/+0.004	6	h6	29	36	74	375HGA0465N	●
4.7	+0.016/+0.004	6	h6	29	36	74	375HGA0470N	●
4.8	+0.016/+0.004	6	h6	35	44	82	375HGA0480N	●
4.9	+0.016/+0.004	6	h6	35	44	82	375HGA0490N	●
5	+0.016/+0.004	6	h6	35	44	82	375HGA0500N	●
5.1	+0.016/+0.004	6	h6	35	44	82	375HGA0510N	●
5.2	+0.016/+0.004	6	h6	35	44	82	375HGA0520N	●
5.3	+0.016/+0.004	6	h6	35	44	82	375HGA0530N	●
5.4	+0.016/+0.004	6	h6	35	44	82	375HGA0540N	●
5.5	+0.016/+0.004	6	h6	35	44	82	375HGA0550N	●
5.55	+0.016/+0.004	6	h6	35	44	82	375HGA0555N	●
5.6	+0.016/+0.004	6	h6	35	44	82	375HGA0560N	●
5.7	+0.016/+0.004	6	h6	35	44	82	375HGA0570N	●
5.8	+0.016/+0.004	6	h6	35	44	82	375HGA0580N	●
5.9	+0.016/+0.004	6	h6	35	44	82	375HGA0590N	●
6	+0.016/+0.004	6	h6	35	44	82	375HGA0600N	●
6.1	+0.021/+0.006	8	h6	43	53	91	375HGA0610N	●
6.2	+0.021/+0.006	8	h6	43	53	91	375HGA0620N	●
6.3	+0.021/+0.006	8	h6	43	53	91	375HGA0630N	●
6.4	+0.021/+0.006	8	h6	43	53	91	375HGA0640N	●
6.5	+0.021/+0.006	8	h6	43	53	91	375HGA0650N	●
6.6	+0.021/+0.006	8	h6	43	53	91	375HGA0660N	●
6.7	+0.021/+0.006	8	h6	43	53	91	375HGA0670N	●
6.8	+0.021/+0.006	8	h6	43	53	91	375HGA0680N	●
6.9	+0.021/+0.006	8	h6	43	53	91	375HGA0690N	●
7	+0.021/+0.006	8	h6	43	53	91	375HGA0700N	●
7.1	+0.021/+0.006	8	h6	43	53	91	375HGA0710N	●
7.2	+0.021/+0.006	8	h6	43	53	91	375HGA0720N	●

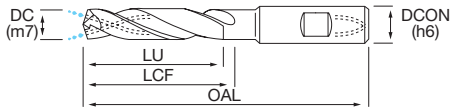
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





5xD | INTERNAL COOLANT | DIN 6537L | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.3	+0.021/+0.006	8	h6	43	53	91	**375HGA0730N**	●
7.4	+0.021/+0.006	8	h6	43	53	91	**375HGA0740N**	●
7.45	+0.021/+0.006	8	h6	43	53	91	**375HGA0745N**	●
7.5	+0.021/+0.006	8	h6	43	53	91	**375HGA0750N**	●
7.6	+0.021/+0.006	8	h6	43	53	91	**375HGA0760N**	●
7.7	+0.021/+0.006	8	h6	43	53	91	**375HGA0770N**	●
7.8	+0.021/+0.006	8	h6	43	53	91	**375HGA0780N**	●
7.9	+0.021/+0.006	8	h6	43	53	91	**375HGA0790N**	●
8	+0.021/+0.006	8	h6	43	53	91	**375HGA0800N**	●
8.1	+0.021/+0.006	10	h6	49	61	103	**375HGA0810N**	●
8.2	+0.021/+0.006	10	h6	49	61	103	**375HGA0820N**	●
8.3	+0.021/+0.006	10	h6	49	61	103	**375HGA0830N**	●
8.4	+0.021/+0.006	10	h6	49	61	103	**375HGA0840N**	●
8.5	+0.021/+0.006	10	h6	49	61	103	**375HGA0850N**	●
8.6	+0.021/+0.006	10	h6	49	61	103	**375HGA0860N**	●
8.7	+0.021/+0.006	10	h6	49	61	103	**375HGA0870N**	●
8.8	+0.021/+0.006	10	h6	49	61	103	**375HGA0880N**	●
8.9	+0.021/+0.006	10	h6	49	61	103	**375HGA0890N**	●
9	+0.021/+0.006	10	h6	49	61	103	**375HGA0900N**	●
9.1	+0.021/+0.006	10	h6	49	61	103	**375HGA0910N**	●
9.2	+0.021/+0.006	10	h6	49	61	103	**375HGA0920N**	●
9.3	+0.021/+0.006	10	h6	49	61	103	**375HGA0930N**	●
9.35	+0.021/+0.006	10	h6	49	61	103	**375HGA0935N**	●
9.4	+0.021/+0.006	10	h6	49	61	103	**375HGA0940N**	●
9.5	+0.021/+0.006	10	h6	49	61	103	**375HGA0950N**	●
9.6	+0.021/+0.006	10	h6	49	61	103	**375HGA0960N**	●
9.7	+0.021/+0.006	10	h6	49	61	103	**375HGA0970N**	●
9.8	+0.021/+0.006	10	h6	49	61	103	**375HGA0980N**	●
9.9	+0.021/+0.006	10	h6	49	61	103	**375HGA0990N**	●
10	+0.021/+0.006	10	h6	49	61	103	**375HGA1000N**	●
10.1	+0.025/+0.007	12	h6	57	71	118	**375HGA1010N**	●
10.2	+0.025/+0.007	12	h6	57	71	118	**375HGA1020N**	●
10.3	+0.025/+0.007	12	h6	57	71	118	**375HGA1030N**	●
10.4	+0.025/+0.007	12	h6	57	71	118	**375HGA1040N**	●
10.5	+0.025/+0.007	12	h6	57	71	118	**375HGA1050N**	●
10.6	+0.025/+0.007	12	h6	57	71	118	**375HGA1060N**	●
10.7	+0.025/+0.007	12	h6	57	71	118	**375HGA1070N**	●
10.8	+0.025/+0.007	12	h6	57	71	118	**375HGA1080N**	●
10.9	+0.025/+0.007	12	h6	57	71	118	**375HGA1090N**	●
11	+0.025/+0.007	12	h6	57	71	118	**375HGA1100N**	●
11.1	+0.025/+0.007	12	h6	57	71	118	**375HGA1110N**	●
11.2	+0.025/+0.007	12	h6	57	71	118	**375HGA1120N**	●
11.3	+0.025/+0.007	12	h6	57	71	118	**375HGA1130N**	●
11.4	+0.025/+0.007	12	h6	57	71	118	**375HGA1140N**	●
11.5	+0.025/+0.007	12	h6	57	71	118	**375HGA1150N**	●

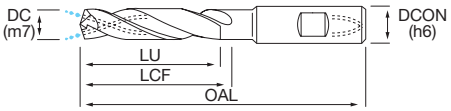
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





5xD | INTERNAL COOLANT | DIN 6537L | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
11.6	+0.025/+0.007	12	h6	57	71	118	**375HGA1160N**	●
11.7	+0.025/+0.007	12	h6	57	71	118	**375HGA1170N**	●
11.8	+0.025/+0.007	12	h6	57	71	118	**375HGA1180N**	●
11.9	+0.025/+0.007	12	h6	57	71	118	**375HGA1190N**	●
12	+0.025/+0.007	12	h6	57	71	118	**375HGA1200N**	●
12.1	+0.025/+0.007	14	h6	63	77	124	**375HGA1210N**	●
12.2	+0.025/+0.007	14	h6	63	77	124	**375HGA1220N**	●
12.3	+0.025/+0.007	14	h6	63	77	124	**375HGA1230N**	●
12.4	+0.025/+0.007	14	h6	63	77	124	**375HGA1240N**	●
12.5	+0.025/+0.007	14	h6	63	77	124	**375HGA1250N**	●
12.6	+0.025/+0.007	14	h6	63	77	124	**375HGA1260N**	●
12.7	+0.025/+0.007	14	h6	63	77	124	**375HGA1270N**	●
12.8	+0.025/+0.007	14	h6	63	77	124	**375HGA1280N**	●
13	+0.025/+0.007	14	h6	63	77	124	**375HGA1300N**	●
13.5	+0.025/+0.007	14	h6	63	77	124	**375HGA1350N**	●
13.7	+0.025/+0.007	14	h6	63	77	124	**375HGA1370N**	●
13.8	+0.025/+0.007	14	h6	63	77	124	**375HGA1380N**	●
13.9	+0.025/+0.007	14	h6	63	77	124	**375HGA1390N**	●
14	+0.025/+0.007	14	h6	63	77	124	**375HGA1400N**	●
14.1	+0.025/+0.007	16	h6	67	83	133	**375HGA1410N**	●
14.2	+0.025/+0.007	16	h6	67	83	133	**375HGA1420N**	●
14.5	+0.025/+0.007	16	h6	67	83	133	**375HGA1450N**	●
14.7	+0.025/+0.007	16	h6	67	83	133	**375HGA1470N**	●
14.8	+0.025/+0.007	16	h6	67	83	133	**375HGA1480N**	●
15	+0.025/+0.007	16	h6	67	83	133	**375HGA1500N**	●
15.1	+0.025/+0.007	16	h6	67	83	133	**375HGA1510N**	●
15.2	+0.025/+0.007	16	h6	67	83	133	**375HGA1520N**	●
15.3	+0.025/+0.007	16	h6	67	83	133	**375HGA1530N**	●
15.5	+0.025/+0.007	16	h6	67	83	133	**375HGA1550N**	●
15.7	+0.025/+0.007	16	h6	67	83	133	**375HGA1570N**	●
15.8	+0.025/+0.007	16	h6	67	83	133	**375HGA1580N**	●
16	+0.025/+0.007	16	h6	67	83	133	**375HGA1600N**	●
16.5	+0.025/+0.007	18	h6	75	93	143	**375HGA1650N**	●
16.8	+0.025/+0.007	18	h6	75	93	143	**375HGA1680N**	◉
17	+0.025/+0.007	18	h6	75	93	143	**375HGA1700N**	●
17.5	+0.025/+0.007	18	h6	75	93	143	**375HGA1750N**	●
17.7	+0.025/+0.007	18	h6	75	93	143	**375HGA1770N**	◉
17.8	+0.025/+0.007	18	h6	75	93	143	**375HGA1780N**	◉
18	+0.025/+0.007	18	h6	75	93	143	**375HGA1800N**	●
18.5	+0.029/+0.008	20	h6	81	101	153	**375HGA1850N**	●
18.8	+0.029/+0.008	20	h6	81	101	153	**375HGA1880N**	◉
19	+0.029/+0.008	20	h6	81	101	153	**375HGA1900N**	●
19.5	+0.029/+0.008	20	h6	81	101	153	**375HGA1950N**	●
19.8	+0.029/+0.008	20	h6	81	101	153	**375HGA1980N**	◉
20	+0.029/+0.008	20	h6	81	101	153	**375HGA2000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm²	500÷700 N/mm²	600÷1000 N/mm²	900÷1480 N/mm²	<700 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**100÷140**	**90÷130**	**80÷120**	**65÷95**	**55÷80**	**40÷65**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.110	0.080	0.060
	4	0.150	0.150	0.130	0.110	0.080	0.060
	6	0.190	0.190	0.170	0.140	0.120	0.100
	8	0.220	0.220	0.200	0.160	0.140	0.130
	10	0.220	0.220	0.200	0.160	0.140	0.130
	12	0.280	0.280	0.230	0.190	0.180	0.180
	14	0.320	0.320	0.250	0.220	0.200	0.200
	16	0.320	0.320	0.250	0.220	0.200	0.200
	18	0.380	0.380	0.300	0.240	0.240	0.240
	20	0.380	0.380	0.300	0.240	0.240	0.240

375HGA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**50÷70**	**45÷65**	**35÷55**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.080	0.060	0.060			
	4	0.100	0.080	0.080			
	6	0.120	0.080	0.080			
	8	0.130	0.100	0.100			
	10	0.150	0.110	0.110			
	12	0.170	0.130	0.130			
	14	0.180	0.130	0.130			
	16	0.200	0.140	0.140			
	18	0.220	0.140	0.140			
	20	0.240	0.160	0.160			

375HGA

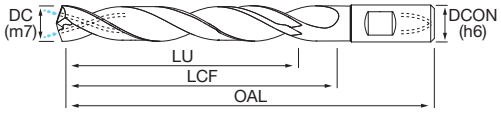
	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	**110÷140**	**90÷120**	**70÷100**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.170	0.150	0.090			
	4	0.200	0.170	0.100			
	6	0.250	0.200	0.130			
	8	0.270	0.250	0.160			
	10	0.300	0.280	0.200			
	12	0.330	0.300	0.220			
	14	0.360	0.330	0.240			
	16	0.400	0.350	0.260			
	18	0.420	0.380	0.280			
	20	0.450	0.400	0.280			

SORMA DIAMOND & CUTTING TOOLS

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





8xD | INTERNAL COOLANT | OSAWA NORM | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	29	34	72	358HGA0300N	●
3.1	+0.016/+0.004	6	h6	29	34	72	358HGA0310N	●
3.2	+0.016/+0.004	6	h6	29	34	72	358HGA0320N	●
3.3	+0.016/+0.004	6	h6	29	34	72	358HGA0330N	●
3.4	+0.016/+0.004	6	h6	29	34	72	358HGA0340N	●
3.5	+0.016/+0.004	6	h6	29	34	72	358HGA0350N	●
3.6	+0.016/+0.004	6	h6	29	34	72	358HGA0360N	●
3.7	+0.016/+0.004	6	h6	29	34	72	358HGA0370N	●
3.8	+0.016/+0.004	6	h6	36	43	81	358HGA0380N	●
3.9	+0.016/+0.004	6	h6	36	43	81	358HGA0390N	●
4	+0.016/+0.004	6	h6	36	43	81	358HGA0400N	●
4.1	+0.016/+0.004	6	h6	36	43	81	358HGA0410N	●
4.2	+0.016/+0.004	6	h6	36	43	81	358HGA0420N	●
4.3	+0.016/+0.004	6	h6	36	43	81	358HGA0430N	●
4.4	+0.016/+0.004	6	h6	36	43	81	358HGA0440N	◉
4.5	+0.016/+0.004	6	h6	36	43	81	358HGA0450N	●
4.6	+0.016/+0.004	6	h6	36	43	81	358HGA0460N	●
4.7	+0.016/+0.004	6	h6	36	43	81	358HGA0470N	●
4.8	+0.016/+0.004	6	h6	48	57	95	358HGA0480N	●
4.9	+0.016/+0.004	6	h6	48	57	95	358HGA0490N	●
5	+0.016/+0.004	6	h6	48	57	95	358HGA0500N	●
5.1	+0.016/+0.004	6	h6	48	57	95	358HGA0510N	●
5.2	+0.016/+0.004	6	h6	48	57	95	358HGA0520N	●
5.3	+0.016/+0.004	6	h6	48	57	95	358HGA0530N	●
5.4	+0.016/+0.004	6	h6	48	57	95	358HGA0540N	◉
5.5	+0.016/+0.004	6	h6	48	57	95	358HGA0550N	●
5.6	+0.016/+0.004	6	h6	48	57	95	358HGA0560N	●
5.7	+0.016/+0.004	6	h6	48	57	95	358HGA0570N	●
5.8	+0.016/+0.004	6	h6	48	57	95	358HGA0580N	●
5.9	+0.016/+0.004	6	h6	48	57	95	358HGA0590N	●
6	+0.016/+0.004	6	h6	48	57	95	358HGA0600N	●
6.1	+0.021/+0.006	8	h6	64	76	114	358HGA0610N	●
6.2	+0.021/+0.006	8	h6	64	76	114	358HGA0620N	●
6.3	+0.021/+0.006	8	h6	64	76	114	358HGA0630N	●
6.4	+0.021/+0.006	8	h6	64	76	114	358HGA0640N	●
6.5	+0.021/+0.006	8	h6	64	76	114	358HGA0650N	●
6.6	+0.021/+0.006	8	h6	64	76	114	358HGA0660N	●
6.7	+0.021/+0.006	8	h6	64	76	114	358HGA0670N	●
6.8	+0.021/+0.006	8	h6	64	76	114	358HGA0680N	●
6.9	+0.021/+0.006	8	h6	64	76	114	358HGA0690N	●
7	+0.021/+0.006	8	h6	64	76	114	358HGA0700N	●
7.1	+0.021/+0.006	8	h6	64	76	114	358HGA0710N	●
7.2	+0.021/+0.006	8	h6	64	76	114	358HGA0720N	●
7.3	+0.021/+0.006	8	h6	64	76	114	358HGA0730N	●
7.4	+0.021/+0.006	8	h6	64	76	114	358HGA0740N	●

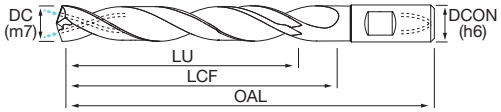
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





8xD | INTERNAL COOLANT | OSAWA NORM | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	64	76	114	358HGA0750N	●
7.6	+0.021/+0.006	8	h6	64	76	114	358HGA0760N	●
7.7	+0.021/+0.006	8	h6	64	76	114	358HGA0770N	◉
7.8	+0.021/+0.006	8	h6	64	76	114	358HGA0780N	●
7.9	+0.021/+0.006	8	h6	64	76	114	358HGA0790N	◉
8	+0.021/+0.006	8	h6	64	76	114	358HGA0800N	●
8.1	+0.021/+0.006	10	h6	80	95	142	358HGA0810N	●
8.2	+0.021/+0.006	10	h6	80	95	142	358HGA0820N	●
8.3	+0.021/+0.006	10	h6	80	95	142	358HGA0830N	●
8.4	+0.021/+0.006	10	h6	80	95	142	358HGA0840N	●
8.5	+0.021/+0.006	10	h6	80	95	142	358HGA0850N	●
8.6	+0.021/+0.006	10	h6	80	95	142	358HGA0860N	●
8.7	+0.021/+0.006	10	h6	80	95	142	358HGA0870N	●
8.8	+0.021/+0.006	10	h6	80	95	142	358HGA0880N	●
8.9	+0.021/+0.006	10	h6	80	95	142	358HGA0890N	◉
9	+0.021/+0.006	10	h6	80	95	142	358HGA0900N	●
9.1	+0.021/+0.006	10	h6	80	95	142	358HGA0910N	●
9.2	+0.021/+0.006	10	h6	80	95	142	358HGA0920N	●
9.3	+0.021/+0.006	10	h6	80	95	142	358HGA0930N	●
9.4	+0.021/+0.006	10	h6	80	95	142	358HGA0940N	◉
9.5	+0.021/+0.006	10	h6	80	95	142	358HGA0950N	●
9.6	+0.021/+0.006	10	h6	80	95	142	358HGA0960N	◉
9.7	+0.021/+0.006	10	h6	80	95	142	358HGA0970N	◉
9.8	+0.021/+0.006	10	h6	80	95	142	358HGA0980N	●
9.9	+0.021/+0.006	10	h6	80	95	142	358HGA0990N	◉
10	+0.021/+0.006	10	h6	80	95	142	358HGA1000N	●
10.1	+0.025/+0.007	12	h6	96	114	162	358HGA1010N	●
10.2	+0.025/+0.007	12	h6	96	114	162	358HGA1020N	●
10.3	+0.025/+0.007	12	h6	96	114	162	358HGA1030N	●
10.4	+0.025/+0.007	12	h6	96	114	162	358HGA1040N	◉
10.5	+0.025/+0.007	12	h6	96	114	162	358HGA1050N	●
10.6	+0.025/+0.007	12	h6	96	114	162	358HGA1060N	◉
10.7	+0.025/+0.007	12	h6	96	114	162	358HGA1070N	●
10.8	+0.025/+0.007	12	h6	96	114	162	358HGA1080N	●
10.9	+0.025/+0.007	12	h6	96	114	162	358HGA1090N	◉
11	+0.025/+0.007	12	h6	96	114	162	358HGA1100N	●
11.1	+0.025/+0.007	12	h6	96	114	162	358HGA1110N	◉
11.2	+0.025/+0.007	12	h6	96	114	162	358HGA1120N	●
11.3	+0.025/+0.007	12	h6	96	114	162	358HGA1130N	◉
11.4	+0.025/+0.007	12	h6	96	114	162	358HGA1140N	◉
11.5	+0.025/+0.007	12	h6	96	114	162	358HGA1150N	●
11.6	+0.025/+0.007	12	h6	96	114	162	358HGA1160N	◉
11.7	+0.025/+0.007	12	h6	96	114	162	358HGA1170N	◉
11.8	+0.025/+0.007	12	h6	96	114	162	358HGA1180N	●
11.9	+0.025/+0.007	12	h6	96	114	162	358HGA1190N	◉

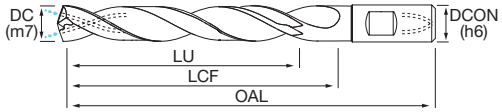
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

P	M	K	N	S	H
★	★	★			





8xD | INTERNAL COOLANT | OSAWA NORM | HGA | MG PV400 | SIG 140° | FHA 30° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	96	114	162	**358HGA1200N**	●
12.2	+0.025/+0.007	14	h6	112	133	182	**358HGA1220N**	●
12.5	+0.025/+0.007	14	h6	112	133	182	**358HGA1250N**	●
12.8	+0.025/+0.007	14	h6	112	133	182	**358HGA1280N**	●
13	+0.025/+0.007	14	h6	112	133	182	**358HGA1300N**	●
13.2	+0.025/+0.007	14	h6	112	133	182	**358HGA1320N**	●
13.5	+0.025/+0.007	14	h6	112	133	182	**358HGA1350N**	●
13.8	+0.025/+0.007	14	h6	112	133	182	**358HGA1380N**	◉
14	+0.025/+0.007	14	h6	112	133	182	**358HGA1400N**	●
14.2	+0.025/+0.007	16	h6	128	152	203	**358HGA1420N**	●
14.5	+0.025/+0.007	16	h6	128	152	203	**358HGA1450N**	●
14.8	+0.025/+0.007	16	h6	128	152	203	**358HGA1480N**	◉
15	+0.025/+0.007	16	h6	128	152	203	**358HGA1500N**	●
15.5	+0.025/+0.007	16	h6	128	152	203	**358HGA1550N**	●
15.8	+0.025/+0.007	16	h6	128	152	203	**358HGA1580N**	◉
16	+0.025/+0.007	16	h6	128	152	203	**358HGA1600N**	●
16.5	+0.025/+0.007	18	h6	144	171	222	**358HGA1650N**	●
16.8	+0.025/+0.007	18	h6	144	171	222	**358HGA1680N**	◉
17	+0.025/+0.007	18	h6	144	171	222	**358HGA1700N**	●
17.5	+0.025/+0.007	18	h6	144	171	222	**358HGA1750N**	●
17.8	+0.025/+0.007	18	h6	144	171	222	**358HGA1780N**	◉
18	+0.025/+0.007	18	h6	144	171	222	**358HGA1800N**	●
18.5	+0.029/+0.008	20	h6	160	190	243	**358HGA1850N**	●
18.8	+0.029/+0.008	20	h6	160	190	243	**358HGA1880N**	◉
19	+0.029/+0.008	20	h6	160	190	243	**358HGA1900N**	●
19.5	+0.029/+0.008	20	h6	160	190	243	**358HGA1950N**	●
19.8	+0.029/+0.008	20	h6	160	190	243	**358HGA1980N**	◉
20	+0.029/+0.008	20	h6	160	190	243	**358HGA2000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

358HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm²	500÷700 N/mm²	600÷1000 N/mm²	900÷1480 N/mm²	<700 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**90÷120**	**80÷120**	**70÷110**	**55÷85**	**45÷70**	**35÷60**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.105	0.076	0.057
	4	0.150	0.150	0.130	0.105	0.076	0.057
	6	0.190	0.190	0.170	0.133	0.114	0.095
	8	0.220	0.220	0.200	0.152	0.133	0.124
	10	0.220	0.220	0.200	0.152	0.133	0.124
	12	0.280	0.280	0.230	0.181	0.171	0.171
	14	0.320	0.320	0.250	0.209	0.190	0.190
	16	0.320	0.320	0.250	0.209	0.190	0.190
	18	0.380	0.380	0.300	0.228	0.228	0.228
	20	0.380	0.380	0.300	0.228	0.228	0.228

358HGA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**40÷60**	**40÷60**	**30÷50**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.800	0.060	0.060			
	4	0.800	0.060	0.060			
	6	0.100	0.080	0.080			
	8	0.100	0.080	0.080			
	10	0.120	0.100	0.100			
	12	0.120	0.100	0.100			
	14	0.140	0.120	0.120			
	16	0.140	0.120	0.120			
	18	0.160	0.140	0.140			
	20	0.160	0.140	0.140			

358HGA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	**100÷120**	**80÷110**	**65÷95**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
	14	0.342	0.314	0.228			
	16	0.380	0.333	0.247			
	18	0.399	0.361	0.266			
	20	0.428	0.380	0.266			



TYPHOON CV

HIGH PERFORMANCE - GENERAL PURPOSE

Effective cost per hole solution for multi-purpose drilling on ISO P, M, K, N below 1100 N/mm².

Soluzione dal costo/foro vantaggioso, ideale per la foratura di materiali ISO P, M, K, N sino a 1100 N/mm².

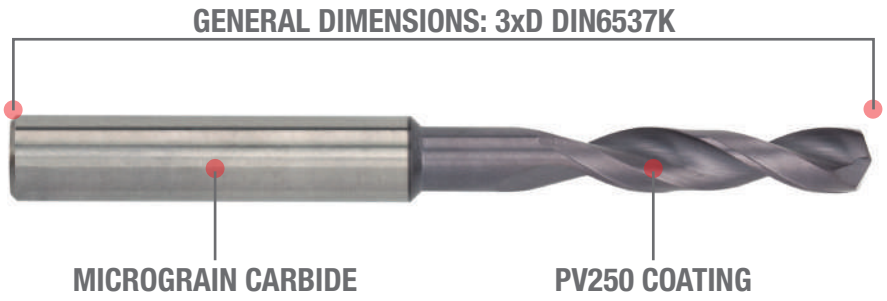
Lösung mit vorteilhaften Kosten/Loch für das Bohren der Materialien ISO P, M, K, N bis zu 1100 N/mm².

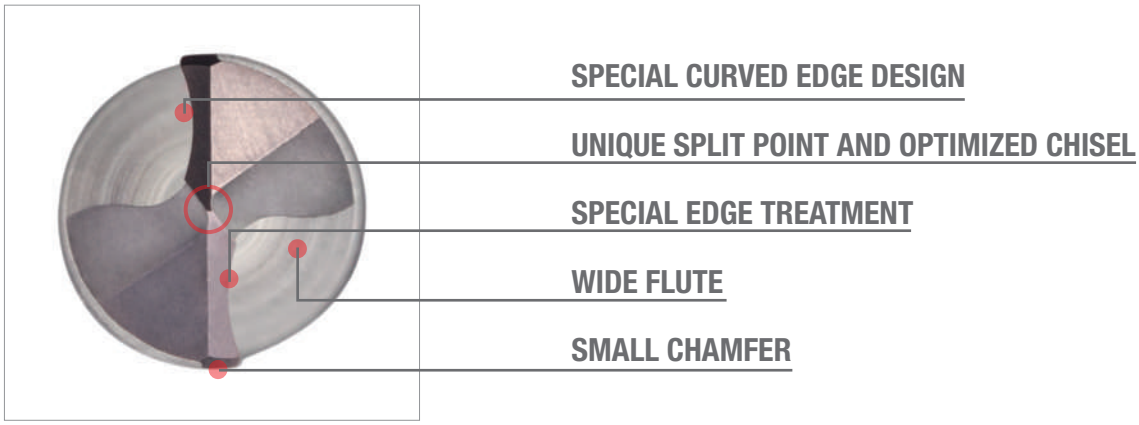
Solution à coût/trou avantageux pour le perçage de matériaux ISO P, M, K, N jusqu'à 1100 N/mm².

CV

High performance - general purpose

Features of CV drills





CV

High performance - general purpose

Features and Benefits

- Unique split point: reduces thrust, provides better self centering
- Split gash design: low cutting force and short chips for easier ejection
- Optimized Chisel: long and stable tool life
- Wide flutes by new grinding technology: smooth chips ejection
- Special curved edge design: reduces cutting force
- Small chamfer: reduces corner chipping problem
- Special edge treatment: extends tool life

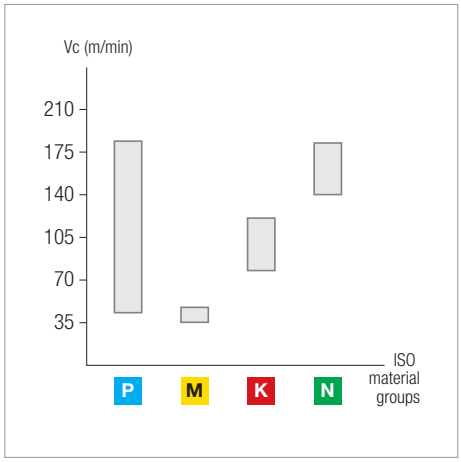
- Kreuzanschliff: reduziert die Schnittkraft und verbessert die Zentrierung
- Grosse Freifläche auf der Spitze: Geringer Bohrwiederstand und kurze Späne für eine effizientere Spanabfuhr
- Optimierte Querkante: Verbesserte Standzeit und Leistung
- Grössere Nuten, dank einer neuen Schleiftechnologie: optimale Spanabfuhr
- Gekurvte Schneide: Reduzierter Schneideaufwand
- Kantenschutz: vermindert Absplitterungen
- Spezieller Kantenschnitt: Verlängerte Standzeit

- Affilatura a croce: riduce lo sforzo di taglio e migliora la capacità di centraggio
- Ampio scarico frontale: basso sforzo di taglio e trucioli corti per evacuazione più efficiente
- Tagliente trasversale ottimizzato: incremento durata e affidabilità
- Gole più ampie grazie alla nuova tecnologia di affilatura: ottima evacuazione dei trucioli
- Tagliente curvilineo: Riduce lo sforzo di taglio
- Smusso per protezione degli spigoli: riduzione dei problemi di scheggiatura
- Onatura precisa: maggiore durata dell'utensile

- Point de séparation unique: réduit la poussée, permet un meilleur auto-centrage.
- Grande goujure centrale: faible résistance au perçage et copeaux courts pour une éjection plus facile
- Arête de coupe transversale optimisée : durée de vie de l'outil longue et stable
- Des goujures larges grâce à une nouvelle technologie de meulage : éjection des copeaux optimale
- Conception spéciale de l'arête avec bord incurvé : réduit la force de coupe
- Petit chanfrein : réduit les problèmes d'écaillage dans les coins
- Traitement spécial des arêtes : prolonge la durée de vie de l'outil

Application range - ISO 513

P M K N



Use case

Tool Type	353CV
Workpiece	W.-Nr 1.0715 9 SMn 28 (AVP)
Parameters	Vc 90 m/min, fn 0,08 mm/rev
Diameter	2 mm
Coolant	internal
Hole depth	9 mm
Cost per hole:	

OSAWA -45%

Competitor A

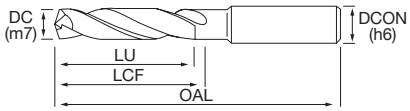
Competitor B

SORMA DIAMOND & CUTTING TOOLS

353CV

- General purpose

P	M	K	N	S	H
★	☆	☆	☆		





3xD | DIN 6537K | CV | MG PV250 | SIG 140° | FHA 30°

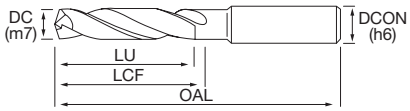
DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	+0.012/+0.002	3	h6	5	7	45	**353CV0100**	●
1.1	+0.012/+0.002	3	h6	5	7	45	**353CV0110**	●
1.2	+0.012/+0.002	3	h6	5	7	45	**353CV0120**	●
1.3	+0.012/+0.002	3	h6	5	7	45	**353CV0130**	●
1.4	+0.012/+0.002	3	h6	5	7	45	**353CV0140**	●
1.5	+0.012/+0.002	3	h6	10	13	50	**353CV0150**	●
1.6	+0.012/+0.002	3	h6	10	13	50	**353CV0160**	●
1.7	+0.012/+0.002	3	h6	10	13	50	**353CV0170**	●
1.8	+0.012/+0.002	3	h6	10	13	50	**353CV0180**	●
1.9	+0.012/+0.002	3	h6	10	13	50	**353CV0190**	●
2	+0.012/+0.002	4	h6	12	17	55	**353CV0200**	●
2.1	+0.012/+0.002	4	h6	12	17	55	**353CV0210**	●
2.2	+0.012/+0.002	4	h6	12	17	55	**353CV0220**	●
2.3	+0.012/+0.002	4	h6	12	17	55	**353CV0230**	●
2.4	+0.012/+0.002	4	h6	12	17	55	**353CV0240**	●
2.5	+0.012/+0.002	4	h6	12	17	55	**353CV0250**	●
2.6	+0.012/+0.002	4	h6	12	17	55	**353CV0260**	●
2.7	+0.012/+0.002	4	h6	12	17	55	**353CV0270**	●
2.8	+0.012/+0.002	4	h6	12	17	55	**353CV0280**	●
2.9	+0.012/+0.002	4	h6	12	17	55	**353CV0290**	●
3	+0.012/+0.002	6	h6	14	20	62	**353CV0300**	●
3.1	+0.016/+0.004	6	h6	14	20	62	**353CV0310**	●
3.2	+0.016/+0.004	6	h6	14	20	62	**353CV0320**	●
3.3	+0.016/+0.004	6	h6	14	20	62	**353CV0330**	●
3.4	+0.016/+0.004	6	h6	14	20	62	**353CV0340**	●
3.5	+0.016/+0.004	6	h6	14	20	62	**353CV0350**	●
3.6	+0.016/+0.004	6	h6	14	20	62	**353CV0360**	●
3.7	+0.016/+0.004	6	h6	14	20	62	**353CV0370**	●
3.8	+0.016/+0.004	6	h6	17	24	66	**353CV0380**	●
3.9	+0.016/+0.004	6	h6	17	24	66	**353CV0390**	●
4	+0.016/+0.004	6	h6	17	24	66	**353CV0400**	●
4.1	+0.016/+0.004	6	h6	17	24	66	**353CV0410**	●
4.2	+0.016/+0.004	6	h6	17	24	66	**353CV0420**	●
4.3	+0.016/+0.004	6	h6	17	24	66	**353CV0430**	●
4.4	+0.016/+0.004	6	h6	17	24	66	**353CV0440**	●
4.5	+0.016/+0.004	6	h6	17	24	66	**353CV0450**	●
4.6	+0.016/+0.004	6	h6	17	24	66	**353CV0460**	●
4.7	+0.016/+0.004	6	h6	17	24	66	**353CV0470**	●
4.8	+0.016/+0.004	6	h6	20	28	66	**353CV0480**	●
4.9	+0.016/+0.004	6	h6	20	28	66	**353CV0490**	●
5	+0.016/+0.004	6	h6	20	28	66	**353CV0500**	●
5.1	+0.016/+0.004	6	h6	20	28	66	**353CV0510**	●
5.2	+0.016/+0.004	6	h6	20	28	66	**353CV0520**	●
5.3	+0.016/+0.004	6	h6	20	28	66	**353CV0530**	●
5.4	+0.016/+0.004	6	h6	20	28	66	**353CV0540**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

353CV

- General purpose

P	M	K	N	S	H
★	☆	☆	☆		





3xD | DIN 6537K | CV | MG PV250 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
5.5	+0.016/+0.004	6	h6	20	28	66	**353CV0550**	●
5.6	+0.016/+0.004	6	h6	20	28	66	**353CV0560**	●
5.7	+0.016/+0.004	6	h6	20	28	66	**353CV0570**	●
5.8	+0.016/+0.004	6	h6	20	28	66	**353CV0580**	●
5.9	+0.016/+0.004	6	h6	20	28	66	**353CV0590**	●
6	+0.016/+0.004	6	h6	20	28	66	**353CV0600**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

353CV



Material Group ISO 513	P1 P2 P3	P7	M1	K1	N1 N2	
Hardness/Rm	<800 N/mm²	<700 N/mm²	<750 N/mm²	150÷200 HB		
Vc (m/min)	**80÷100**	**35÷45**	**35÷45**	**80÷100**	**140÷180**	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.050	0.035	0.035	0.050	0.065	
2	0.070	0.049	0.049	0.070	0.091	
3	0.086	0.060	0.060	0.086	0.112	
4	0.126	0.088	0.088	0.126	0.164	
5	0.131	0.092	0.092	0.131	0.170	
6	0.145	0.102	0.102	0.145	0.189	
7	0.165	0.116	0.116	0.165	0.215	
8	0.185	0.130	0.130	0.185	0.241	
9	0.205	0.144	0.144	0.205	0.267	
10	0.224	0.157	0.157	0.224	0.291	
11	0.244	0.171	0.171	0.244	0.317	
12	0.263	0.184	0.184	0.263	0.342	
13	0.282	0.197	0.197	0.282	0.367	
14	0.302	0.211	0.211	0.302	0.393	
15	0.315	0.221	0.221	0.315	0.410	
16	0.336	0.235	0.235	0.336	0.437	



TYPHOON HVA

HIGH PERFORMANCE - STAINLESS STEEL

High performance tools for stainless steel (ISO M), steel (ISO P), and HRSA super alloys (ISO S) below 45 HRC.

Punte ad alto rendimento per la foratura di acciaio inossidabile (ISO M), acciaio (ISO P) e super leghe (ISO S) sino a 45 HRC.

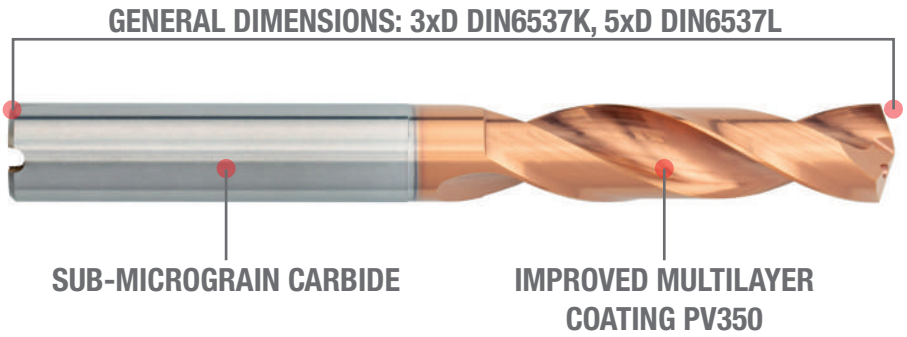
Hochleistungsbohrer für das Bohren von rostfreiem Stahl (ISO M), Stahl (ISO P) und Superlegierungen (ISO S) bis 45 HRC.

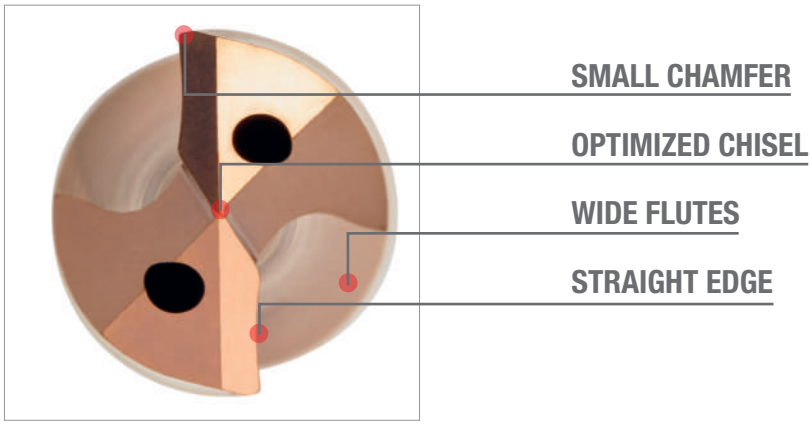
Forets haute performance pour le perçage de l'acier inoxydable (ISO M), de l'acier (ISO P) et des super alliages (ISO S) jusqu'à 45 HRC.

HVA

High performance - stainless steel

Features of HVA drills





SORMA DIAMOND & CUTTING TOOLS

HVA

High performance - stainless steel

Features and Benefits

• Self-centering geometry: large chisel edge for highly accurate holes
• Straight cutting edge: short chips for easy evacuation and high reliability
• Large back taper geometry: reduces the torque and improves the cutting efficiency
• Chip pocket design: smooth surface to reduce welding and wide space to improve chip ejection
• Substrate: specifically selected sub-micrograin for high wear resistance, long and reliable tool life
• Coating: improved new coating technology for high wear resistance

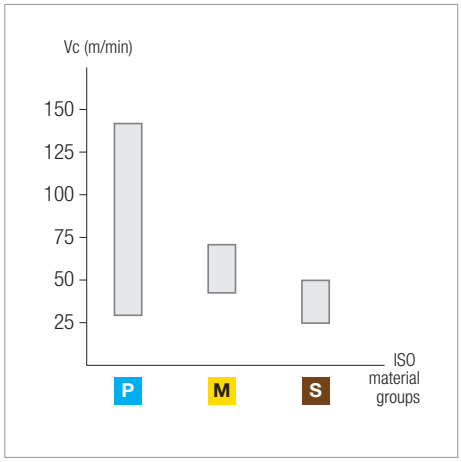
• Selbstzentrierender Schliff: das besondere Design der Querschneide ermöglicht ein sehr präzises Bohren
• Gerades und verstärktes Schneidkantenprofil: zur Erzeugung kurzer Späne und Gewährleistung hoher Zuverlässigkeit
• Geometrie der Schneidkante mit speziellem Schliff zum Schutz von Schneidkante und Kanten
• Nutengeoemtrie: Glattere Oberflächen zur Vermeidung von Aufkleben und zur Verbesserung der Spanabfuhr
• Substrat: Spezielle Sub-Mikrökornung für eine hohe Verschleissbeständigkeit und Standzeit.
• Beschichtung: Verbesserte Beschichtung für eine höhere Verschleissbeständigkeit.

• Affilatura autocentrante: il particolare design del tagliente trasversale permette forature molto precise
• Profilo del tagliente diritto e rinforzato: genera trucioli corti e garantisce grande affidabilità
• Geometria del corpo con ampia conicità posteriore per agevolare l'azione di taglio
• Geometria delle gole: elevata finitura per ridurre il fenomeno dell'incollaggio e facilitare l'espulsione dei trucioli
• Substrato: sub micrograno selezionato per elevata resistenza all'usura, lunga durata e affidabilità
• Rivestimento: nuova tecnologia per elevata resistenza all'usura

• Affûtage autocentré large arête transversale pour des trous très précis
• Profil de l'arête droit et renforcé : il génère des copeaux courts et garantit une grande fiabilité
• Géométrie du corps avec conicité arrière pour faciliter l'action de coupe
• Géométrie des goujures: surface lisse pour réduire les problèmes de collage et faciliter l'évacuation des copeaux
• Substrat submicrograin spécifiquement sélectionné pour une haute résistance à l'usure, une durée de vie longue et fiable
• Revêtement: nouvelle technologie de revêtement améliorée pour une haute résistance à l'usure

Application range - ISO 513

P M S



Use case

Tool Type	353HVA
Workpiece	W.-Nr 1.0715 AISI 304
Parameters	Vc 70 m/min, fn 0.145 mm/rev
Diameter	8 mm
Coolant	internal
Hole depth	18 mm
Machining time:	

OSAWA +45%

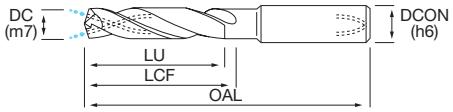
Competitor A

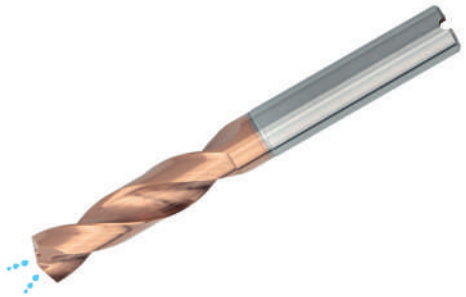
Competitor B

353HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





3xD | INTERNAL COOLANT | DIN 6537K | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	353HVA0300	●
3.1	+0.016/+0.004	6	h6	14	20	62	353HVA0310	●
3.2	+0.016/+0.004	6	h6	14	20	62	353HVA0320	●
3.3	+0.016/+0.004	6	h6	14	20	62	353HVA0330	●
3.4	+0.016/+0.004	6	h6	14	20	62	353HVA0340	●
3.5	+0.016/+0.004	6	h6	14	20	62	353HVA0350	●
3.6	+0.016/+0.004	6	h6	14	20	62	353HVA0360	●
3.7	+0.016/+0.004	6	h6	14	20	62	353HVA0370	●
3.8	+0.016/+0.004	6	h6	17	24	66	353HVA0380	●
3.9	+0.016/+0.004	6	h6	17	24	66	353HVA0390	●
4	+0.016/+0.004	6	h6	17	24	66	353HVA0400	●
4.1	+0.016/+0.004	6	h6	17	24	66	353HVA0410	●
4.2	+0.016/+0.004	6	h6	17	24	66	353HVA0420	●
4.3	+0.016/+0.004	6	h6	17	24	66	353HVA0430	●
4.4	+0.016/+0.004	6	h6	17	24	66	353HVA0440	●
4.5	+0.016/+0.004	6	h6	17	24	66	353HVA0450	●
4.6	+0.016/+0.004	6	h6	17	24	66	353HVA0460	●
4.7	+0.016/+0.004	6	h6	17	24	66	353HVA0470	●
4.8	+0.016/+0.004	6	h6	20	28	66	353HVA0480	●
4.9	+0.016/+0.004	6	h6	20	28	66	353HVA0490	●
5	+0.016/+0.004	6	h6	20	28	66	353HVA0500	●
5.1	+0.016/+0.004	6	h6	20	28	66	353HVA0510	●
5.2	+0.016/+0.004	6	h6	20	28	66	353HVA0520	●
5.3	+0.016/+0.004	6	h6	20	28	66	353HVA0530	●
5.4	+0.016/+0.004	6	h6	20	28	66	353HVA0540	●
5.5	+0.016/+0.004	6	h6	20	28	66	353HVA0550	●
5.6	+0.016/+0.004	6	h6	20	28	66	353HVA0560	●
5.7	+0.016/+0.004	6	h6	20	28	66	353HVA0570	●
5.8	+0.016/+0.004	6	h6	20	28	66	353HVA0580	●
5.9	+0.016/+0.004	6	h6	20	28	66	353HVA0590	●
6	+0.016/+0.004	6	h6	20	28	66	353HVA0600	●
6.1	+0.021/+0.006	8	h6	24	34	79	353HVA0610	●
6.2	+0.021/+0.006	8	h6	24	34	79	353HVA0620	●
6.3	+0.021/+0.006	8	h6	24	34	79	353HVA0630	●
6.4	+0.021/+0.006	8	h6	24	34	79	353HVA0640	●
6.5	+0.021/+0.006	8	h6	24	34	79	353HVA0650	●
6.6	+0.021/+0.006	8	h6	24	34	79	353HVA0660	●
6.7	+0.021/+0.006	8	h6	24	34	79	353HVA0670	●
6.8	+0.021/+0.006	8	h6	24	34	79	353HVA0680	●
6.9	+0.021/+0.006	8	h6	24	34	79	353HVA0690	●
7	+0.021/+0.006	8	h6	24	34	79	353HVA0700	●
7.1	+0.021/+0.006	8	h6	29	41	79	353HVA0710	●
7.2	+0.021/+0.006	8	h6	29	41	79	353HVA0720	●
7.3	+0.021/+0.006	8	h6	29	41	79	353HVA0730	●
7.4	+0.021/+0.006	8	h6	29	41	79	353HVA0740	●

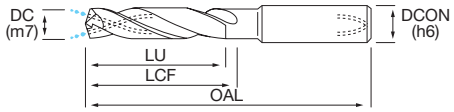
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

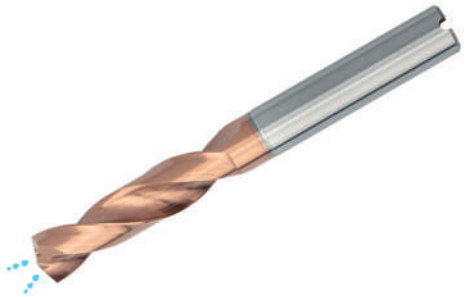
SORMA DIAMOND & CUTTING TOOLS

353HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





3xD | INTERNAL COOLANT | DIN 6537K | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	**353HVA0750**	●
7.6	+0.021/+0.006	8	h6	29	41	79	**353HVA0760**	●
7.7	+0.021/+0.006	8	h6	29	41	79	**353HVA0770**	●
7.8	+0.021/+0.006	8	h6	29	41	79	**353HVA0780**	●
7.9	+0.021/+0.006	8	h6	29	41	79	**353HVA0790**	●
8	+0.021/+0.006	8	h6	29	41	79	**353HVA0800**	●
8.1	+0.021/+0.006	10	h6	35	47	89	**353HVA0810**	●
8.2	+0.021/+0.006	10	h6	35	47	89	**353HVA0820**	●
8.3	+0.021/+0.006	10	h6	35	47	89	**353HVA0830**	●
8.4	+0.021/+0.006	10	h6	35	47	89	**353HVA0840**	●
8.5	+0.021/+0.006	10	h6	35	47	89	**353HVA0850**	●
8.6	+0.021/+0.006	10	h6	35	47	89	**353HVA0860**	●
8.7	+0.021/+0.006	10	h6	35	47	89	**353HVA0870**	●
8.8	+0.021/+0.006	10	h6	35	47	89	**353HVA0880**	●
8.9	+0.021/+0.006	10	h6	35	47	89	**353HVA0890**	●
9	+0.021/+0.006	10	h6	35	47	89	**353HVA0900**	●
9.1	+0.021/+0.006	10	h6	35	47	89	**353HVA0910**	●
9.2	+0.021/+0.006	10	h6	35	47	89	**353HVA0920**	●
9.3	+0.021/+0.006	10	h6	35	47	89	**353HVA0930**	●
9.4	+0.021/+0.006	10	h6	35	47	89	**353HVA0940**	●
9.5	+0.021/+0.006	10	h6	35	47	89	**353HVA0950**	●
9.6	+0.021/+0.006	10	h6	35	47	89	**353HVA0960**	●
9.7	+0.021/+0.006	10	h6	35	47	89	**353HVA0970**	●
9.8	+0.021/+0.006	10	h6	35	47	89	**353HVA0980**	●
9.9	+0.021/+0.006	10	h6	35	47	89	**353HVA0990**	●
10	+0.021/+0.006	10	h6	35	47	89	**353HVA1000**	●
10.1	+0.025/+0.007	12	h6	40	55	102	**353HVA1010**	●
10.2	+0.025/+0.007	12	h6	40	55	102	**353HVA1020**	●
10.3	+0.025/+0.007	12	h6	40	55	102	**353HVA1030**	●
10.4	+0.025/+0.007	12	h6	40	55	102	**353HVA1040**	●
10.5	+0.025/+0.007	12	h6	40	55	102	**353HVA1050**	●
10.6	+0.025/+0.007	12	h6	40	55	102	**353HVA1060**	●
10.7	+0.025/+0.007	12	h6	40	55	102	**353HVA1070**	●
10.8	+0.025/+0.007	12	h6	40	55	102	**353HVA1080**	●
10.9	+0.025/+0.007	12	h6	40	55	102	**353HVA1090**	●
11	+0.025/+0.007	12	h6	40	55	102	**353HVA1100**	●
11.1	+0.025/+0.007	12	h6	40	55	102	**353HVA1110**	●
11.2	+0.025/+0.007	12	h6	40	55	102	**353HVA1120**	●
11.3	+0.025/+0.007	12	h6	40	55	102	**353HVA1130**	●
11.4	+0.025/+0.007	12	h6	40	55	102	**353HVA1140**	●
11.5	+0.025/+0.007	12	h6	40	55	102	**353HVA1150**	●
11.6	+0.025/+0.007	12	h6	40	55	102	**353HVA1160**	●
11.7	+0.025/+0.007	12	h6	40	55	102	**353HVA1170**	●
11.8	+0.025/+0.007	12	h6	40	55	102	**353HVA1180**	●
11.9	+0.025/+0.007	12	h6	40	55	102	**353HVA1190**	●

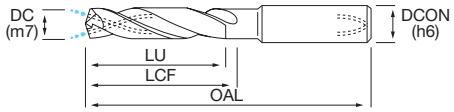
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

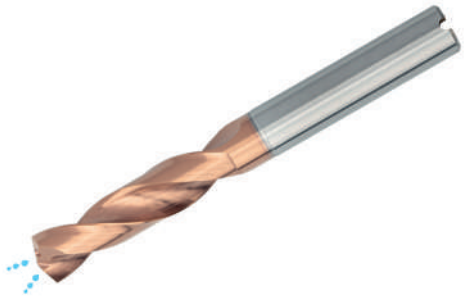
SORMA DIAMOND & CUTTING TOOLS

353HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





3xD | INTERNAL COOLANT | DIN 6537K | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	**353HVA1200**	●
12.1	+0.025/+0.007	14	h6	43	60	107	**353HVA1210**	●
12.2	+0.025/+0.007	14	h6	43	60	107	**353HVA1220**	●
12.5	+0.025/+0.007	14	h6	43	60	107	**353HVA1250**	●
12.8	+0.025/+0.007	14	h6	43	60	107	**353HVA1280**	●
13	+0.025/+0.007	14	h6	43	60	107	**353HVA1300**	●
13.3	+0.025/+0.007	14	h6	43	60	107	**353HVA1330**	●
13.5	+0.025/+0.007	14	h6	43	60	107	**353HVA1350**	●
13.8	+0.025/+0.007	14	h6	43	60	107	**353HVA1380**	●
14	+0.025/+0.007	14	h6	43	60	107	**353HVA1400**	●
14.1	+0.025/+0.007	16	h6	45	65	115	**353HVA1410**	●
14.2	+0.025/+0.007	16	h6	45	65	115	**353HVA1420**	●
14.5	+0.025/+0.007	16	h6	45	65	115	**353HVA1450**	●
15	+0.025/+0.007	16	h6	49	65	115	**353HVA1500**	●
15.3	+0.025/+0.007	16	h6	49	65	115	**353HVA1530**	●
15.5	+0.025/+0.007	16	h6	49	65	115	**353HVA1550**	●
15.8	+0.025/+0.007	16	h6	49	65	115	**353HVA1580**	●
16	+0.025/+0.007	16	h6	49	65	115	**353HVA1600**	●
16.5	+0.025/+0.007	18	h6	52	73	123	**353HVA1650**	●
17	+0.025/+0.007	18	h6	52	73	123	**353HVA1700**	●
17.5	+0.025/+0.007	18	h6	52	73	123	**353HVA1750**	●
18	+0.025/+0.007	18	h6	52	73	123	**353HVA1800**	●
18.5	+0.029/+0.008	20	h6	55	79	131	**353HVA1850**	●
19	+0.029/+0.008	20	h6	55	79	131	**353HVA1900**	●
19.5	+0.029/+0.008	20	h6	55	79	131	**353HVA1950**	●
20	+0.029/+0.008	20	h6	55	79	131	**353HVA2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

353HVA



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²	<700 N/mm²	850÷1200 N/mm²
Vc (m/min)	**100÷140**	**80÷120**	**70÷90**	**50÷70**	**50÷70**	**20÷30**
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
3	0.118	0.106	0.095	0.083	0.077	0.046
4	0.140	0.126	0.112	0.098	0.091	0.055
5	0.161	0.145	0.129	0.113	0.105	0.063
6	0.183	0.164	0.146	0.128	0.119	0.071
7	0.204	0.184	0.163	0.143	0.133	0.080
8	0.226	0.203	0.181	0.158	0.147	0.088
9	0.247	0.223	0.198	0.173	0.161	0.096
10	0.269	0.242	0.215	0.188	0.175	0.105
11	0.280	0.252	0.224	0.196	0.182	0.109
12	0.301	0.271	0.241	0.211	0.196	0.117
13	0.323	0.290	0.258	0.226	0.210	0.126
14	0.344	0.310	0.275	0.241	0.224	0.134
15	0.366	0.329	0.292	0.256	0.238	0.143
16	0.387	0.348	0.310	0.271	0.252	0.151
17	0.398	0.358	0.318	0.278	0.259	0.155
18	0.409	0.368	0.327	0.286	0.266	0.159
19	0.419	0.377	0.335	0.293	0.273	0.164
20	0.430	0.387	0.344	0.301	0.280	0.168



Material Group ISO 513	M1	M2	M3			
Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
Vc (m/min)	**50÷70**	**45÷65**	**35÷50**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.077	0.061	0.054			
4	0.091	0.073	0.064			
5	0.105	0.084	0.073			
6	0.119	0.095	0.083			
7	0.133	0.106	0.093			
8	0.147	0.117	0.103			
9	0.161	0.129	0.112			
10	0.175	0.140	0.122			
11	0.182	0.145	0.127			
12	0.196	0.157	0.137			
13	0.210	0.168	0.147			
14	0.224	0.179	0.157			
15	0.238	0.190	0.166			
16	0.252	0.201	0.176			
17	0.259	0.207	0.181			
18	0.266	0.212	0.186			
19	0.273	0.218	0.191			
20	0.280	0.224	0.196			

Cutting Parameters

353HVA



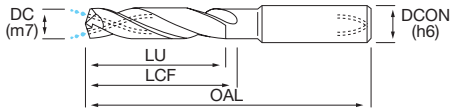
Material Group ISO 513	S1 S2	S3	S4	S5		
Hardness/Rm	<35 N/mm²	35÷45 N/mm²				
Vc (m/min)	**30÷50**	**25÷45**	**30÷45**	**25÷35**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3	0.053	0.037	0.051	0.043		
4	0.063	0.044	0.060	0.050		
5	0.073	0.051	0.069	0.058		
6	0.082	0.058	0.078	0.066		
7	0.092	0.064	0.087	0.074		
8	0.102	0.071	0.097	0.081		
9	0.111	0.078	0.106	0.089		
10	0.121	0.085	0.115	0.097		
11	0.126	0.088	0.119	0.101		
12	0.135	0.095	0.129	0.108		
13	0.145	0.102	0.138	0.116		
14	0.155	0.108	0.147	0.124		
15	0.164	0.115	0.156	0.132		
16	0.174	0.122	0.165	0.139		
17	0.179	0.125	0.170	0.143		
18	0.184	0.129	0.175	0.147		
19	0.189	0.132	0.179	0.151		
20	0.194	0.135	0.185	0.155		

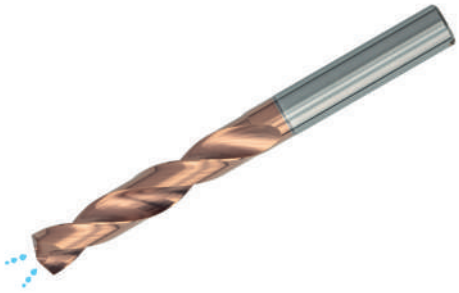
SORMA DIAMOND & CUTTING TOOLS

355HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





5xD | INTERNAL COOLANT | DIN 6537L | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	355HVA0300	●
3.1	+0.016/+0.004	6	h6	23	28	66	355HVA0310	●
3.2	+0.016/+0.004	6	h6	23	28	66	355HVA0320	●
3.3	+0.016/+0.004	6	h6	23	28	66	355HVA0330	●
3.4	+0.016/+0.004	6	h6	23	28	66	355HVA0340	●
3.5	+0.016/+0.004	6	h6	23	28	66	355HVA0350	●
3.6	+0.016/+0.004	6	h6	23	28	66	355HVA0360	●
3.7	+0.016/+0.004	6	h6	23	28	66	355HVA0370	●
3.8	+0.016/+0.004	6	h6	29	36	74	355HVA0380	●
3.9	+0.016/+0.004	6	h6	29	36	74	355HVA0390	●
4	+0.016/+0.004	6	h6	29	36	74	355HVA0400	●
4.1	+0.016/+0.004	6	h6	29	36	74	355HVA0410	●
4.2	+0.016/+0.004	6	h6	29	36	74	355HVA0420	●
4.3	+0.016/+0.004	6	h6	29	36	74	355HVA0430	●
4.4	+0.016/+0.004	6	h6	29	36	74	355HVA0440	●
4.5	+0.016/+0.004	6	h6	29	36	74	355HVA0450	●
4.6	+0.016/+0.004	6	h6	29	36	74	355HVA0460	●
4.7	+0.016/+0.004	6	h6	29	36	74	355HVA0470	●
4.8	+0.016/+0.004	6	h6	35	44	82	355HVA0480	●
4.9	+0.016/+0.004	6	h6	35	44	82	355HVA0490	●
5	+0.016/+0.004	6	h6	35	44	82	355HVA0500	●
5.1	+0.016/+0.004	6	h6	35	44	82	355HVA0510	●
5.2	+0.016/+0.004	6	h6	35	44	82	355HVA0520	●
5.3	+0.016/+0.004	6	h6	35	44	82	355HVA0530	●
5.4	+0.016/+0.004	6	h6	35	44	82	355HVA0540	●
5.5	+0.016/+0.004	6	h6	35	44	82	355HVA0550	●
5.6	+0.016/+0.004	6	h6	35	44	82	355HVA0560	●
5.7	+0.016/+0.004	6	h6	35	44	82	355HVA0570	●
5.8	+0.016/+0.004	6	h6	35	44	82	355HVA0580	●
5.9	+0.016/+0.004	6	h6	35	44	82	355HVA0590	●
6	+0.016/+0.004	6	h6	35	44	82	355HVA0600	●
6.1	+0.021/+0.006	8	h6	43	53	91	355HVA0610	●
6.2	+0.021/+0.006	8	h6	43	53	91	355HVA0620	●
6.3	+0.021/+0.006	8	h6	43	53	91	355HVA0630	●
6.4	+0.021/+0.006	8	h6	43	53	91	355HVA0640	●
6.5	+0.021/+0.006	8	h6	43	53	91	355HVA0650	●
6.6	+0.021/+0.006	8	h6	43	53	91	355HVA0660	●
6.7	+0.021/+0.006	8	h6	43	53	91	355HVA0670	●
6.8	+0.021/+0.006	8	h6	43	53	91	355HVA0680	●
6.9	+0.021/+0.006	8	h6	43	53	91	355HVA0690	●
7	+0.021/+0.006	8	h6	43	53	91	355HVA0700	●
7.1	+0.021/+0.006	8	h6	43	53	91	355HVA0710	●
7.2	+0.021/+0.006	8	h6	43	53	91	355HVA0720	●
7.3	+0.021/+0.006	8	h6	43	53	91	355HVA0730	●
7.4	+0.021/+0.006	8	h6	43	53	91	355HVA0740	●

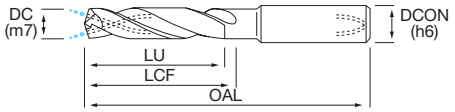
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

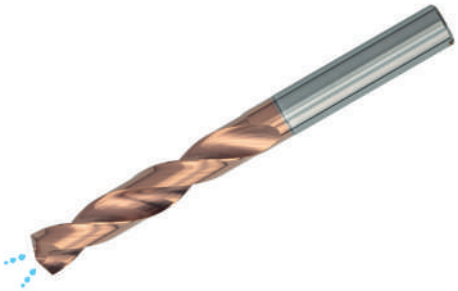
SORMA DIAMOND & CUTTING TOOLS

355HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





5xD | INTERNAL COOLANT | DIN 6537L | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	43	53	91	355HVA0750	●
7.6	+0.021/+0.006	8	h6	43	53	91	355HVA0760	●
7.7	+0.021/+0.006	8	h6	43	53	91	355HVA0770	●
7.8	+0.021/+0.006	8	h6	43	53	91	355HVA0780	●
7.9	+0.021/+0.006	8	h6	43	53	91	355HVA0790	●
8	+0.021/+0.006	8	h6	43	53	91	355HVA0800	●
8.1	+0.021/+0.006	10	h6	49	61	103	355HVA0810	●
8.2	+0.021/+0.006	10	h6	49	61	103	355HVA0820	●
8.3	+0.021/+0.006	10	h6	49	61	103	355HVA0830	●
8.4	+0.021/+0.006	10	h6	49	61	103	355HVA0840	●
8.5	+0.021/+0.006	10	h6	49	61	103	355HVA0850	●
8.6	+0.021/+0.006	10	h6	49	61	103	355HVA0860	●
8.7	+0.021/+0.006	10	h6	49	61	103	355HVA0870	●
8.8	+0.021/+0.006	10	h6	49	61	103	355HVA0880	●
8.9	+0.021/+0.006	10	h6	49	61	103	355HVA0890	●
9	+0.021/+0.006	10	h6	49	61	103	355HVA0900	●
9.1	+0.021/+0.006	10	h6	49	61	103	355HVA0910	●
9.2	+0.021/+0.006	10	h6	49	61	103	355HVA0920	●
9.3	+0.021/+0.006	10	h6	49	61	103	355HVA0930	●
9.4	+0.021/+0.006	10	h6	49	61	103	355HVA0940	●
9.5	+0.021/+0.006	10	h6	49	61	103	355HVA0950	●
9.6	+0.021/+0.006	10	h6	49	61	103	355HVA0960	●
9.7	+0.021/+0.006	10	h6	49	61	103	355HVA0970	●
9.8	+0.021/+0.006	10	h6	49	61	103	355HVA0980	●
9.9	+0.021/+0.006	10	h6	49	61	103	355HVA0990	●
10	+0.021/+0.006	10	h6	49	61	103	355HVA1000	●
10.1	+0.025/+0.007	12	h6	57	71	118	355HVA1010	●
10.2	+0.025/+0.007	12	h6	57	71	118	355HVA1020	●
10.3	+0.025/+0.007	12	h6	57	71	118	355HVA1030	●
10.4	+0.025/+0.007	12	h6	57	71	118	355HVA1040	●
10.5	+0.025/+0.007	12	h6	57	71	118	355HVA1050	●
10.6	+0.025/+0.007	12	h6	57	71	118	355HVA1060	●
10.7	+0.025/+0.007	12	h6	57	71	118	355HVA1070	●
10.8	+0.025/+0.007	12	h6	57	71	118	355HVA1080	●
10.9	+0.025/+0.007	12	h6	57	71	118	355HVA1090	●
11	+0.025/+0.007	12	h6	57	71	118	355HVA1100	●
11.1	+0.025/+0.007	12	h6	57	71	118	355HVA1110	●
11.2	+0.025/+0.007	12	h6	57	71	118	355HVA1120	●
11.3	+0.025/+0.007	12	h6	57	71	118	355HVA1130	●
11.4	+0.025/+0.007	12	h6	57	71	118	355HVA1140	●
11.5	+0.025/+0.007	12	h6	57	71	118	355HVA1150	●
11.6	+0.025/+0.007	12	h6	57	71	118	355HVA1160	●
11.7	+0.025/+0.007	12	h6	57	71	118	355HVA1170	◉
11.8	+0.025/+0.007	12	h6	57	71	118	355HVA1180	●
11.9	+0.025/+0.007	12	h6	57	71	118	355HVA1190	●

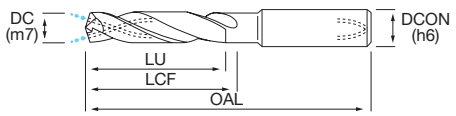
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

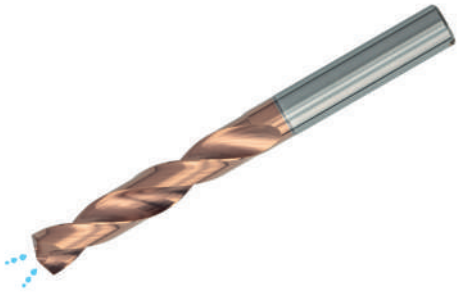
SORMA DIAMOND & CUTTING TOOLS

355HVA

- Stainless steel

P	M	K	N	S	H
☆	★			☆	





5xD | INTERNAL COOLANT | DIN 6537L | HVA | MG PV350 | SIG 140° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	57	71	118	**355HVA1200**	●
12.1	+0.025/+0.007	14	h6	63	77	124	**355HVA1210**	●
12.2	+0.025/+0.007	14	h6	63	77	124	**355HVA1220**	●
12.5	+0.025/+0.007	14	h6	63	77	124	**355HVA1250**	●
12.8	+0.025/+0.007	14	h6	63	77	124	**355HVA1280**	●
13	+0.025/+0.007	14	h6	63	77	124	**355HVA1300**	●
13.3	+0.025/+0.007	14	h6	63	77	124	**355HVA1330**	●
13.5	+0.025/+0.007	14	h6	63	77	124	**355HVA1350**	●
13.8	+0.025/+0.007	14	h6	63	77	124	**355HVA1380**	●
14	+0.025/+0.007	14	h6	63	77	124	**355HVA1400**	●
14.1	+0.025/+0.007	16	h6	67	83	133	**355HVA1410**	●
14.2	+0.025/+0.007	16	h6	67	83	133	**355HVA1420**	●
14.5	+0.025/+0.007	16	h6	67	83	133	**355HVA1450**	●
15	+0.025/+0.007	16	h6	67	83	133	**355HVA1500**	●
15.3	+0.025/+0.007	16	h6	67	83	133	**355HVA1530**	●
15.5	+0.025/+0.007	16	h6	67	83	133	**355HVA1550**	●
15.8	+0.025/+0.007	16	h6	67	83	133	**355HVA1580**	●
16	+0.025/+0.007	16	h6	67	83	133	**355HVA1600**	●
16.5	+0.025/+0.007	18	h6	75	93	143	**355HVA1650**	●
17	+0.025/+0.007	18	h6	75	93	143	**355HVA1700**	●
17.5	+0.025/+0.007	18	h6	75	93	143	**355HVA1750**	●
18	+0.025/+0.007	18	h6	75	93	143	**355HVA1800**	●
18.5	+0.029/+0.008	20	h6	81	101	153	**355HVA1850**	●
19	+0.029/+0.008	20	h6	81	101	153	**355HVA1900**	●
19.5	+0.029/+0.008	20	h6	81	101	153	**355HVA1950**	●
20	+0.029/+0.008	20	h6	81	101	153	**355HVA2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

355HVA

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²	<700 N/mm²	850÷1200 N/mm²
	Vc (m/min)	**100÷140**	**80÷120**	**70÷90**	**50÷70**	**50÷70**	**20÷30**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	**3**	0.101	0.075	0.060	0.050	0.065	0.039
	4	0.119	0.089	0.071	0.059	0.077	0.046
	5	0.137	0.103	0.082	0.069	0.089	0.053
	6	0.155	0.117	0.093	0.078	0.101	0.061
	7	0.174	0.130	0.104	0.087	0.113	0.068
	8	0.192	0.144	0.115	0.096	0.125	0.075
	9	0.210	0.158	0.126	0.105	0.137	0.082
	10	0.228	0.171	0.137	0.114	0.148	0.089
	11	0.238	0.178	0.143	0.119	0.154	0.093
	12	0.256	0.192	0.154	0.128	0.166	0.100
	13	0.274	0.206	0.164	0.137	0.178	0.107
	14	0.292	0.219	0.175	0.146	0.190	0.114
	15	0.311	0.233	0.186	0.155	0.202	0.121
	16	0.329	0.247	0.197	0.164	0.214	0.128
	17	0.338	0.254	0.203	0.169	0.220	0.132
	18	0.347	0.260	0.208	0.174	0.226	0.135
	19	0.356	0.267	0.214	0.178	0.232	0.139
	20	0.366	0.274	0.219	0.183	0.238	0.143

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
	Vc (m/min)	**50÷70**	**45÷65**	**35÷50**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3**	0.065	0.052	0.046			
	4	0.077	0.062	0.054			
	5	0.089	0.071	0.062			
	6	0.101	0.081	0.071			
	7	0.113	0.090	0.079			
	8	0.125	0.100	0.087			
	9	0.137	0.109	0.096			
	10	0.148	0.119	0.104			
	11	0.154	0.124	0.108			
	12	0.166	0.133	0.116			
	13	0.178	0.143	0.125			
	14	0.190	0.152	0.133			
	15	0.202	0.162	0.141			
	16	0.214	0.171	0.150			
	17	0.220	0.176	0.154			
	18	0.226	0.181	0.158			
	19	0.232	0.185	0.162			
	20	0.238	0.190	0.166			

Cutting Parameters

355HVA

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 N/mm²	35÷45 N/mm²				
	Vc (m/min)	**30÷50**	**25÷45**	**30÷45**	**25÷35**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3**	0.045	0.032	0.043	0.036		
	4	0.053	0.037	0.051	0.043		
	5	0.062	0.043	0.059	0.049		
	6	0.070	0.049	0.066	0.056		
	7	0.078	0.055	0.074	0.063		
	8	0.086	0.060	0.082	0.069		
	9	0.095	0.066	0.090	0.076		
	10	0.103	0.072	0.098	0.082		
	11	0.107	0.075	0.102	0.086		
	12	0.115	0.081	0.109	0.092		
	13	0.123	0.086	0.117	0.099		
	14	0.132	0.092	0.125	0.105		
	15	0.140	0.098	0.133	0.112		
	16	0.148	0.104	0.141	0.118		
	17	0.152	0.106	0.145	0.122		
	18	0.156	0.109	0.148	0.125		
	19	0.160	0.112	0.152	0.128		
	20	0.164	0.115	0.156	0.132		



TYPHOON ALH

HIGH PERFORMANCE - NON-FERROUS MATERIALS

Drills specifically designed for non-ferrous materials (ISO N).

Punte progettate appositamente per la foratura di materiali non ferrosi (ISO N).

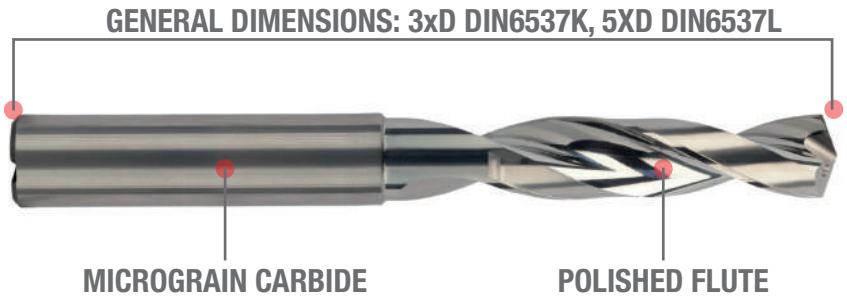
Eigens für das Bohren von nicht eisenhaltigen Materialien (ISO N) entwickelte Bohrer.

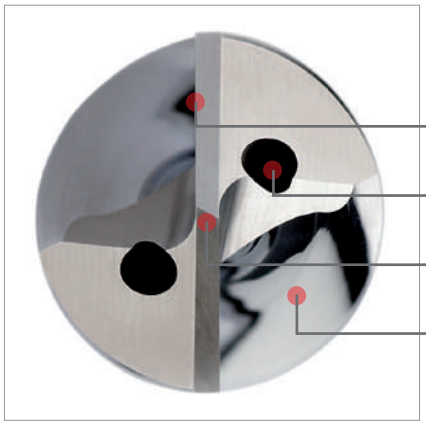
Forets conçus spécialement pour le perçage de matériaux non ferreux (ISO N).

ALH

High performance - non-ferrous materials

Features of ALU drills





STRAIGHT CUTTING EDGE AND HIGHLY POSITIVE GEOMETRY

LARGE COOLANT HOLE

SELF-CENTERING GEOMETRY

WIDE AND CURVED FLUTE

ALH

High performance - non-ferrous materials

Features and Benefits

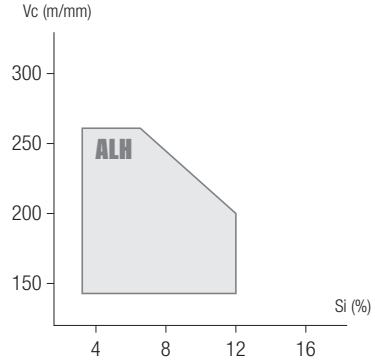
- Self-centering geometry: highly accurate holes
- Straight cutting edge and highly positive geometry: low cutting forces to prevent welding
- Chip pocket: wide and curved to improve the chip ejection
- Back taper geometry: improves the cutting efficiency
- Chip pocket finishing: polished to reduce welding and improve chip ejection
- Modified oil holes: improves coolant feed
- Substrate and coating: specifically selected for high wear resistance, long and stable tool life

- Selbstzentrierender Schliff für die Herstellung von präzisen Bohrungen
- Gerades Schneidkantenprofil mit Spezialschliff zur Reduzierung des Schneiddrucks
- Geometrie der Nuten: gebogen und breit zur Vereinfachung der Späneabführung
- Geometrie des Körpers mit konischem hinteren Bereich zur Erleichterung des Schnittvorgangs
- Polierte Nuten: um Aufklebeprobleme zu reduzieren und um die Späneabführung zu erleichtern
- Kühlöffnungen mit abgeänderter Geometrie für einen verbesserten Kühlmittelzufluss
- Spezielles Hartmetallsubstrat zur Gewährleistung von Lebensdauer und Zuverlässigkeit

- Affilatura autocentrante per l'esecuzione di fori precisi
- Profilo del tagliente diritto con affilatura specifica per ridurre lo sforzo di taglio
- Geometria delle gole: arcuate e ampie per agevolare l'evacuazione dei trucioli
- Geometria del corpo con conicità posteriore per agevolare l'azione di taglio
- Finitura gole: lappate per ridurre il problema dell'incollaggio e facilitare l'evacuazione dei trucioli
- Fori di refrigerazione con geometria modificata per un maggior apporto di refrigerante
- Substrato specifico per garantire durata e affidabilità

- Affûtage autocentré pour l'exécution de trous précis
- Profil de l'arête droit avec affûtage spécifique pour réduire l'effort de coupe
- Géométrie des goujoures : arquées et larges pour faciliter l'évacuation des copeaux
- Géométrie du corps avec conicité arrière pour faciliter l'action de coupe
- Finition des goujoures : polie pour réduire le problème du collage et faciliter l'évacuation des copeaux
- Trous de lubrification avec géométrie modifiée pour un apport de lubrifiant plus important
- Substrat spécifique pour garantir durée et fiabilité

Cutting speed Vc range



Use case

Tool Type	355ALH
Workpiece	W.-Nr 3.3547 AlMg4.5Mn0.7(4140)
Parameters	Vc 260 m/min, fn 0,32 mm/rev
Diameter	10 mm
Coolant	internal
Hole depth	45 mm
Machining time:	

OSAWA +40%

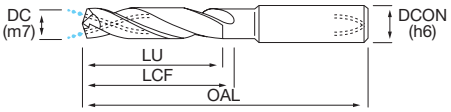
Competitor A

SORMA DIAMOND & CUTTING TOOLS

353ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





3xD | INTERNAL COOLANT | DIN 6537K | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	353ALH0300	●
3.1	+0.016/+0.004	6	h6	14	20	62	353ALH0310	●
3.2	+0.016/+0.004	6	h6	14	20	62	353ALH0320	●
3.3	+0.016/+0.004	6	h6	14	20	62	353ALH0330	●
3.4	+0.016/+0.004	6	h6	14	20	62	353ALH0340	●
3.5	+0.016/+0.004	6	h6	14	20	62	353ALH0350	●
3.6	+0.016/+0.004	6	h6	14	20	62	353ALH0360	◉
3.7	+0.016/+0.004	6	h6	14	20	62	353ALH0370	●
3.8	+0.016/+0.004	6	h6	17	24	66	353ALH0380	●
3.9	+0.016/+0.004	6	h6	17	24	66	353ALH0390	●
4	+0.016/+0.004	6	h6	17	24	66	353ALH0400	●
4.1	+0.016/+0.004	6	h6	17	24	66	353ALH0410	●
4.2	+0.016/+0.004	6	h6	17	24	66	353ALH0420	●
4.3	+0.016/+0.004	6	h6	17	24	66	353ALH0430	●
4.4	+0.016/+0.004	6	h6	17	24	66	353ALH0440	◉
4.5	+0.016/+0.004	6	h6	17	24	66	353ALH0450	●
4.6	+0.016/+0.004	6	h6	17	24	66	353ALH0460	●
4.7	+0.016/+0.004	6	h6	17	24	66	353ALH0470	●
4.8	+0.016/+0.004	6	h6	20	28	66	353ALH0480	●
4.9	+0.016/+0.004	6	h6	20	28	66	353ALH0490	◉
5	+0.016/+0.004	6	h6	20	28	66	353ALH0500	●
5.1	+0.016/+0.004	6	h6	20	28	66	353ALH0510	●
5.2	+0.016/+0.004	6	h6	20	28	66	353ALH0520	●
5.3	+0.016/+0.004	6	h6	20	28	66	353ALH0530	●
5.4	+0.016/+0.004	6	h6	20	28	66	353ALH0540	◉
5.5	+0.016/+0.004	6	h6	20	28	66	353ALH0550	●
5.6	+0.016/+0.004	6	h6	20	28	66	353ALH0560	●
5.7	+0.016/+0.004	6	h6	20	28	66	353ALH0570	●
5.8	+0.016/+0.004	6	h6	20	28	66	353ALH0580	●
5.9	+0.016/+0.004	6	h6	20	28	66	353ALH0590	◉
6	+0.016/+0.004	6	h6	20	28	66	353ALH0600	●
6.1	+0.021/+0.006	8	h6	24	34	79	353ALH0610	●
6.2	+0.021/+0.006	8	h6	24	34	79	353ALH0620	●
6.3	+0.021/+0.006	8	h6	24	34	79	353ALH0630	●
6.4	+0.021/+0.006	8	h6	24	34	79	353ALH0640	◉
6.5	+0.021/+0.006	8	h6	24	34	79	353ALH0650	●
6.6	+0.021/+0.006	8	h6	24	34	79	353ALH0660	◉
6.7	+0.021/+0.006	8	h6	24	34	79	353ALH0670	●
6.8	+0.021/+0.006	8	h6	24	34	79	353ALH0680	●
6.9	+0.021/+0.006	8	h6	24	34	79	353ALH0690	◉
7	+0.021/+0.006	8	h6	24	34	79	353ALH0700	●
7.1	+0.021/+0.006	8	h6	29	41	79	353ALH0710	◉
7.2	+0.021/+0.006	8	h6	29	41	79	353ALH0720	●
7.3	+0.021/+0.006	8	h6	29	41	79	353ALH0730	◉
7.4	+0.021/+0.006	8	h6	29	41	79	353ALH0740	◉

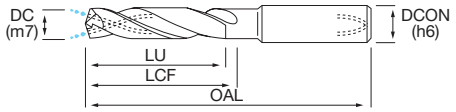
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





3xD | INTERNAL COOLANT | DIN 6537K | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	353ALH0750	●
7.6	+0.021/+0.006	8	h6	29	41	79	353ALH0760	◉
7.7	+0.021/+0.006	8	h6	29	41	79	353ALH0770	◉
7.8	+0.021/+0.006	8	h6	29	41	79	353ALH0780	●
7.9	+0.021/+0.006	8	h6	29	41	79	353ALH0790	◉
8	+0.021/+0.006	8	h6	29	41	79	353ALH0800	●
8.1	+0.021/+0.006	10	h6	35	47	89	353ALH0810	◉
8.2	+0.021/+0.006	10	h6	35	47	89	353ALH0820	●
8.3	+0.021/+0.006	10	h6	35	47	89	353ALH0830	●
8.4	+0.021/+0.006	10	h6	35	47	89	353ALH0840	◉
8.5	+0.021/+0.006	10	h6	35	47	89	353ALH0850	●
8.6	+0.021/+0.006	10	h6	35	47	89	353ALH0860	●
8.7	+0.021/+0.006	10	h6	35	47	89	353ALH0870	◉
8.8	+0.021/+0.006	10	h6	35	47	89	353ALH0880	●
8.9	+0.021/+0.006	10	h6	35	47	89	353ALH0890	◉
9	+0.021/+0.006	10	h6	35	47	89	353ALH0900	●
9.1	+0.021/+0.006	10	h6	35	47	89	353ALH0910	◉
9.2	+0.021/+0.006	10	h6	35	47	89	353ALH0920	◉
9.3	+0.021/+0.006	10	h6	35	47	89	353ALH0930	◉
9.4	+0.021/+0.006	10	h6	35	47	89	353ALH0940	◉
9.5	+0.021/+0.006	10	h6	35	47	89	353ALH0950	●
9.6	+0.021/+0.006	10	h6	35	47	89	353ALH0960	◉
9.7	+0.021/+0.006	10	h6	35	47	89	353ALH0970	◉
9.8	+0.021/+0.006	10	h6	35	47	89	353ALH0980	◉
9.9	+0.021/+0.006	10	h6	35	47	89	353ALH0990	◉
10	+0.021/+0.006	10	h6	35	47	89	353ALH1000	●
10.2	+0.025/+0.007	12	h6	40	55	102	353ALH1020	●
10.3	+0.025/+0.007	12	h6	40	55	102	353ALH1030	●
10.5	+0.025/+0.007	12	h6	40	55	102	353ALH1050	●
10.8	+0.025/+0.007	12	h6	40	55	102	353ALH1080	◉
11	+0.025/+0.007	12	h6	40	55	102	353ALH1100	●
11.2	+0.025/+0.007	12	h6	40	55	102	353ALH1120	◉
11.3	+0.025/+0.007	12	h6	40	55	102	353ALH1130	◉
11.5	+0.025/+0.007	12	h6	40	55	102	353ALH1150	●
11.8	+0.025/+0.007	12	h6	40	55	102	353ALH1180	◉
12	+0.025/+0.007	12	h6	40	55	102	353ALH1200	●
12.2	+0.025/+0.007	14	h6	43	60	107	353ALH1220	◉
12.5	+0.025/+0.007	14	h6	43	60	107	353ALH1250	◉
12.8	+0.025/+0.007	14	h6	43	60	107	353ALH1280	◉
13	+0.025/+0.007	14	h6	43	60	107	353ALH1300	◉
13.5	+0.025/+0.007	14	h6	43	60	107	353ALH1350	◉
14	+0.025/+0.007	14	h6	43	60	107	353ALH1400	◉
14.5	+0.025/+0.007	16	h6	45	65	115	353ALH1450	◉
15	+0.025/+0.007	16	h6	45	65	115	353ALH1500	◉
15.5	+0.025/+0.007	16	h6	45	65	115	353ALH1550	◉

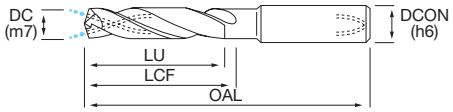
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

353ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





3xD | INTERNAL COOLANT | DIN 6537K | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
16	+0.025/+0.007	16	h6	45	65	115	**353ALH1600**	◉
16.5	+0.025/+0.007	18	h6	52	73	123	**353ALH1650**	◉
17	+0.025/+0.007	18	h6	52	73	123	**353ALH1700**	◉
17.5	+0.025/+0.007	18	h6	52	73	123	**353ALH1750**	◉
18	+0.025/+0.007	18	h6	52	73	123	**353ALH1800**	◉
18.5	+0.029/+0.008	20	h6	55	79	131	**353ALH1850**	◉
19	+0.029/+0.008	20	h6	55	79	131	**353ALH1900**	◉
19.5	+0.029/+0.008	20	h6	55	79	131	**353ALH1950**	◉
20	+0.029/+0.008	20	h6	55	79	131	**353ALH2000**	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

353ALH

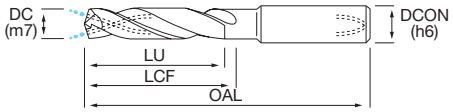
	Material Group ISO 513	N1	N2	N3 N4	N5		
	Hardness/Rm						
	Vc (m/min)	260÷300	230÷270	200÷240	280÷320		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	3	0.160	0.152	0.136	0.176		
	4	0.190	0.181	0.162	0.209		
	5	0.220	0.209	0.187	0.242		
	6	0.250	0.238	0.213	0.275		
	7	0.280	0.266	0.238	0.308		
	8	0.310	0.295	0.264	0.341		
	9	0.340	0.323	0.289	0.374		
	10	0.370	0.352	0.315	0.407		
	11	0.400	0.380	0.340	0.440		
	12	0.430	0.409	0.366	0.473		
	13	0.460	0.437	0.391	0.506		
	14	0.490	0.466	0.417	0.539		
	15	0.520	0.494	0.442	0.572		
	16	0.550	0.523	0.468	0.605		
	17	0.580	0.551	0.493	0.638		
	18	0.610	0.580	0.519	0.671		
	19	0.640	0.608	0.544	0.704		
	20	0.670	0.637	0.570	0.737		

SORMA DIAMOND & CUTTING TOOLS

355ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





5xD | INTERNAL COOLANT | DIN 6537L | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	355ALH0300	●
3.1	+0.016/+0.004	6	h6	23	28	66	355ALH0310	◉
3.2	+0.016/+0.004	6	h6	23	28	66	355ALH0320	●
3.3	+0.016/+0.004	6	h6	23	28	66	355ALH0330	●
3.4	+0.016/+0.004	6	h6	23	28	66	355ALH0340	●
3.5	+0.016/+0.004	6	h6	23	28	66	355ALH0350	●
3.6	+0.016/+0.004	6	h6	23	28	66	355ALH0360	◉
3.7	+0.016/+0.004	6	h6	23	28	66	355ALH0370	●
3.8	+0.016/+0.004	6	h6	29	36	74	355ALH0380	●
3.9	+0.016/+0.004	6	h6	29	36	74	355ALH0390	◉
4	+0.016/+0.004	6	h6	29	36	74	355ALH0400	●
4.1	+0.016/+0.004	6	h6	29	36	74	355ALH0410	◉
4.2	+0.016/+0.004	6	h6	29	36	74	355ALH0420	●
4.3	+0.016/+0.004	6	h6	29	36	74	355ALH0430	●
4.4	+0.016/+0.004	6	h6	29	36	74	355ALH0440	◉
4.5	+0.016/+0.004	6	h6	29	36	74	355ALH0450	●
4.6	+0.016/+0.004	6	h6	29	36	74	355ALH0460	◉
4.7	+0.016/+0.004	6	h6	29	36	74	355ALH0470	◉
4.8	+0.016/+0.004	6	h6	35	44	82	355ALH0480	●
4.9	+0.016/+0.004	6	h6	35	44	82	355ALH0490	◉
5	+0.016/+0.004	6	h6	35	44	82	355ALH0500	●
5.1	+0.016/+0.004	6	h6	35	44	82	355ALH0510	●
5.2	+0.016/+0.004	6	h6	35	44	82	355ALH0520	●
5.3	+0.016/+0.004	6	h6	35	44	82	355ALH0530	◉
5.4	+0.016/+0.004	6	h6	35	44	82	355ALH0540	◉
5.5	+0.016/+0.004	6	h6	35	44	82	355ALH0550	●
5.6	+0.016/+0.004	6	h6	35	44	82	355ALH0560	●
5.7	+0.016/+0.004	6	h6	35	44	82	355ALH0570	◉
5.8	+0.016/+0.004	6	h6	35	44	82	355ALH0580	●
5.9	+0.016/+0.004	6	h6	35	44	82	355ALH0590	◉
6	+0.016/+0.004	6	h6	35	44	82	355ALH0600	●
6.1	+0.021/+0.006	8	h6	43	53	91	355ALH0610	◉
6.2	+0.021/+0.006	8	h6	43	53	91	355ALH0620	●
6.3	+0.021/+0.006	8	h6	43	53	91	355ALH0630	◉
6.4	+0.021/+0.006	8	h6	43	53	91	355ALH0640	◉
6.5	+0.021/+0.006	8	h6	43	53	91	355ALH0650	●
6.6	+0.021/+0.006	8	h6	43	53	91	355ALH0660	◉
6.7	+0.021/+0.006	8	h6	43	53	91	355ALH0670	●
6.8	+0.021/+0.006	8	h6	43	53	91	355ALH0680	●
6.9	+0.021/+0.006	8	h6	43	53	91	355ALH0690	●
7	+0.021/+0.006	8	h6	43	53	91	355ALH0700	●
7.1	+0.021/+0.006	8	h6	43	53	91	355ALH0710	◉
7.2	+0.021/+0.006	8	h6	43	53	91	355ALH0720	●
7.3	+0.021/+0.006	8	h6	43	53	91	355ALH0730	◉
7.4	+0.021/+0.006	8	h6	43	53	91	355ALH0740	◉

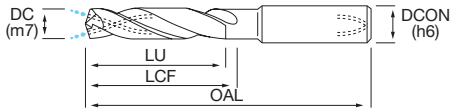
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





5xD | INTERNAL COOLANT | DIN 6537L | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	43	53	91	355ALH0750	●
7.6	+0.021/+0.006	8	h6	43	53	91	355ALH0760	◉
7.7	+0.021/+0.006	8	h6	43	53	91	355ALH0770	◉
7.8	+0.021/+0.006	8	h6	43	53	91	355ALH0780	●
7.9	+0.021/+0.006	8	h6	43	53	91	355ALH0790	◉
8	+0.021/+0.006	8	h6	43	53	91	355ALH0800	●
8.1	+0.021/+0.006	10	h6	49	61	103	355ALH0810	◉
8.2	+0.021/+0.006	10	h6	49	61	103	355ALH0820	●
8.3	+0.021/+0.006	10	h6	49	61	103	355ALH0830	◉
8.4	+0.021/+0.006	10	h6	49	61	103	355ALH0840	◉
8.5	+0.021/+0.006	10	h6	49	61	103	355ALH0850	●
8.6	+0.021/+0.006	10	h6	49	61	103	355ALH0860	◉
8.7	+0.021/+0.006	10	h6	49	61	103	355ALH0870	◉
8.8	+0.021/+0.006	10	h6	49	61	103	355ALH0880	●
8.9	+0.021/+0.006	10	h6	49	61	103	355ALH0890	◉
9	+0.021/+0.006	10	h6	49	61	103	355ALH0900	●
9.1	+0.021/+0.006	10	h6	49	61	103	355ALH0910	◉
9.2	+0.021/+0.006	10	h6	49	61	103	355ALH0920	◉
9.3	+0.021/+0.006	10	h6	49	61	103	355ALH0930	◉
9.4	+0.021/+0.006	10	h6	49	61	103	355ALH0940	◉
9.5	+0.021/+0.006	10	h6	49	61	103	355ALH0950	●
9.6	+0.021/+0.006	10	h6	49	61	103	355ALH0960	◉
9.7	+0.021/+0.006	10	h6	49	61	103	355ALH0970	◉
9.8	+0.021/+0.006	10	h6	49	61	103	355ALH0980	◉
9.9	+0.021/+0.006	10	h6	49	61	103	355ALH0990	◉
10	+0.021/+0.006	10	h6	49	61	103	355ALH1000	●
10.2	+0.025/+0.007	12	h6	57	71	118	355ALH1020	●
10.5	+0.025/+0.007	12	h6	57	71	118	355ALH1050	●
10.8	+0.025/+0.007	12	h6	57	71	118	355ALH1080	◉
11	+0.025/+0.007	12	h6	57	71	118	355ALH1100	●
11.2	+0.025/+0.007	12	h6	57	71	118	355ALH1120	◉
11.3	+0.025/+0.007	12	h6	57	71	118	355ALH1130	◉
11.5	+0.025/+0.007	12	h6	57	71	118	355ALH1150	●
11.8	+0.025/+0.007	12	h6	57	71	118	355ALH1180	◉
12	+0.025/+0.007	12	h6	57	71	118	355ALH1200	●
12.5	+0.025/+0.007	14	h6	63	77	124	355ALH1250	◉
13	+0.025/+0.007	14	h6	63	77	124	355ALH1300	◉
13.5	+0.025/+0.007	14	h6	63	77	124	355ALH1350	◉
14	+0.025/+0.007	14	h6	63	77	124	355ALH1400	◉
14.5	+0.025/+0.007	16	h6	67	83	133	355ALH1450	◉
15	+0.025/+0.007	16	h6	67	83	133	355ALH1500	◉
15.5	+0.025/+0.007	16	h6	67	83	133	355ALH1550	◉
16	+0.025/+0.007	16	h6	67	83	133	355ALH1600	◉
16.5	+0.025/+0.007	18	h6	75	93	143	355ALH1650	◉
17	+0.025/+0.007	18	h6	75	93	143	355ALH1700	◉

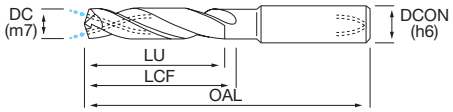
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

355ALH

- Aluminium
- Polished flutes

P	M	K	N	S	H
			★		





5xD | INTERNAL COOLANT | DIN 6537L | ALH | MG POLISHED | SIG 130° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
17.5	+0.025/+0.007	18	h6	75	93	143	**355ALH1750**	◉
18	+0.025/+0.007	18	h6	75	93	143	**355ALH1800**	◉
18.5	+0.029/+0.008	20	h6	81	101	153	**355ALH1850**	◉
19	+0.029/+0.008	20	h6	81	101	153	**355ALH1900**	◉
19.5	+0.029/+0.008	20	h6	81	101	153	**355ALH1950**	◉
20	+0.029/+0.008	20	h6	81	101	153	**355ALH2000**	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

355ALH

	Material Group ISO 513	N1	N2	N3 N4	N5		
	Hardness/Rm						
	Vc (m/min)	240÷280	200÷240	180÷200	260÷300		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	3	0.136	0.129	0.116	0.150		
	4	0.162	0.153	0.137	0.178		
	5	0.187	0.178	0.159	0.206		
	6	0.213	0.202	0.181	0.234		
	7	0.238	0.226	0.202	0.262		
	8	0.264	0.250	0.224	0.290		
	9	0.289	0.275	0.246	0.318		
	10	0.315	0.299	0.267	0.346		
	11	0.340	0.323	0.289	0.374		
	12	0.366	0.347	0.311	0.402		
	13	0.391	0.371	0.332	0.430		
	14	0.417	0.396	0.354	0.458		
	15	0.442	0.420	0.376	0.486		
	16	0.468	0.444	0.397	0.514		
	17	0.493	0.468	0.419	0.542		
	18	0.519	0.493	0.441	0.570		
	19	0.544	0.517	0.462	0.598		
	20	0.570	0.541	0.484	0.626		



TYPHOON HRC

HIGH PERFORMANCE - HARDENED STEEL 45÷62 HRC

Reliable high precision drills for hardened steel 45÷62 HRC.

Punte ad alta precisione per la foratura di acciai temprati 45÷62 HRC.

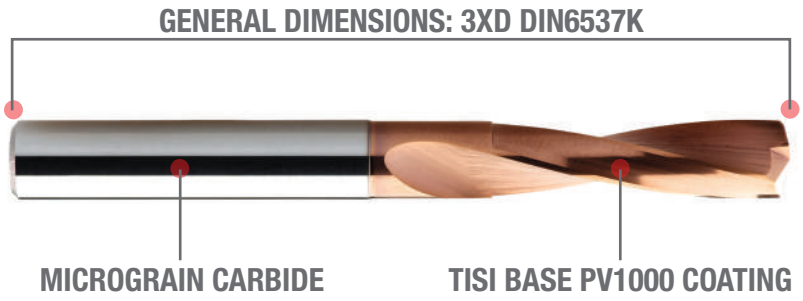
Hohe Präzision und zuverlässige Bohrungen für gehärteten Stahl 45÷62 HRC.

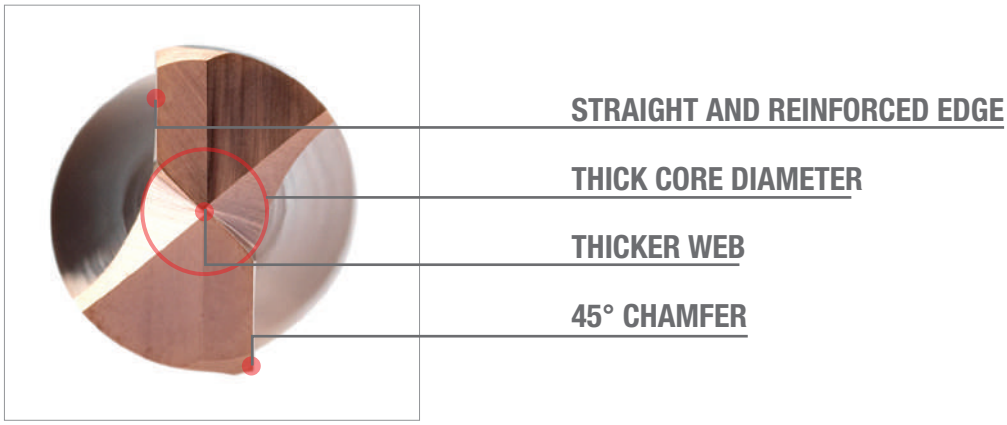
Forets haute précision et fiables pour acier trempé 45÷62 HRC.

HRC

High performance - hardened steel 45÷62 HRC

Features of HRC drills





Features and Benefits

- Drills for hardened steel 45÷62 HRC
- Self-centering geometry: high accurate holes
- Straight and reinforced edge: high stability and chipping resistance
- 45° chamfer: edge corners protection
- Thicker web: high rigidity and stability
- 15° helix angle: low helix for higher rigidity
- Substrate and coating: specifically selected for high wear resistance, long and stable tool life

- Punte per acciai temprati 45÷62 HRC
- Affilatura autocentrante per l'esecuzione di fori precisi
- Profilo del tagliente diritto e rinforzato
- Geometria degli spigoli: protezione con smusso a 45°
- Nocciolo molto spesso per garantire rigidità e stabilità
- Angolo dell'elica a 15°: angolo poco accentuato per massima robustezza
- Substrato e rivestimento specifici per garantire durata e affidabilità

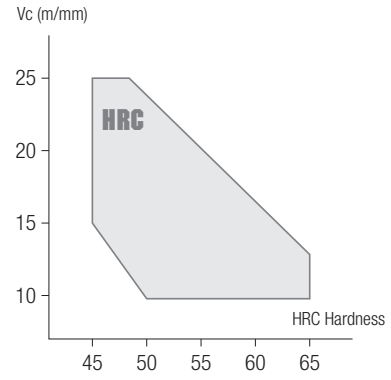
- Bohrer für gehärteten Stahl 45-62 HRC
- Selbstzentrierender Schliff für die Erstellung von präzisen Bohrungen
- Gerades und verstärktes Schneidkantenprofil
- Geometrie der Kanten: Schutzfase mit 45°
- Sehr starker Kern zur Gewährleistung von Steifigkeit und Stabilität
- Helix 15°: geringer Winkel für maximale Robustheit
- Spezielles Hartmetallsubstrat und Beschichtung zur Gewährleistung von Standzeit und Zuverlässigkeit

- Forets pour aciers trempés 45÷62 HRC
- Affûtage autocentré pour l'exécution de trous précis
- Profil de l'arête droit et renforcé
- Géométrie des angles : protection avec biseau à 45°
- Cœur très épais pour garantir rigidité et stabilité
- Angle de l'hélice à 15° : angle peu accentué pour une solidité maximale
- Substrat et revêtement spécifiques pour garantir durée et fiabilité

HRC

High performance - hardened steel 45÷62 HRC

Cutting speed Vc range



Use case

Tool Type	353HRC
Workpiece	W.-Nr 1.2379 X155CrVMo12 1(K110) 52HRC
Parameters	Vc 20 m/min, fn 0,06 mm/rev
Diameter	6,8 mm
Coolant	air
Hole depth	25 mm
Machining time:	

OSAWA +42%

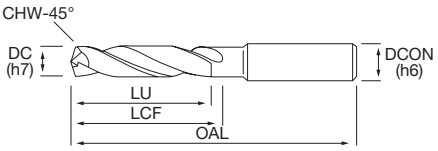
Competitor A

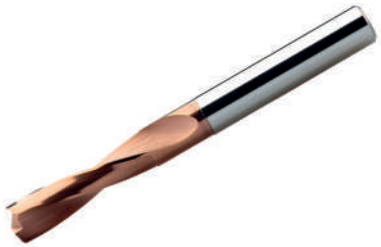
Competitor B

353HRC

- Hardened steel 45÷62 HRC

P	M	K	N	S	H
					★





3xD | DIN 6537K | HRC | MG PV1000 | SIG 150° | FHA 15° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
2.6	0/-0.010	6	h6	14	20	62	**353HRC0260**	●
3	0/-0.010	6	h6	14	20	62	**353HRC0300**	●
3.3	0/-0.012	6	h6	14	20	62	**353HRC0330**	●
3.4	0/-0.012	6	h6	14	20	62	**353HRC0340**	●
3.5	0/-0.012	6	h6	14	20	62	**353HRC0350**	●
3.7	0/-0.012	6	h6	14	20	62	**353HRC0370**	▽
3.8	0/-0.012	6	h6	17	24	66	**353HRC0380**	●
4	0/-0.012	6	h6	17	24	66	**353HRC0400**	●
4.1	0/-0.012	6	h6	17	24	66	**353HRC0410**	●
4.2	0/-0.012	6	h6	17	24	66	**353HRC0420**	●
4.3	0/-0.012	6	h6	17	24	66	**353HRC0430**	●
4.5	0/-0.012	6	h6	17	24	66	**353HRC0450**	●
4.6	0/-0.012	6	h6	17	24	66	**353HRC0460**	●
4.8	0/-0.012	6	h6	20	28	66	**353HRC0480**	●
5	0/-0.012	6	h6	20	28	66	**353HRC0500**	●
5.1	0/-0.012	6	h6	20	28	66	**353HRC0510**	●
5.2	0/-0.012	6	h6	20	28	66	**353HRC0520**	●
5.3	0/-0.012	6	h6	20	28	66	**353HRC0530**	●
5.5	0/-0.012	6	h6	20	28	66	**353HRC0550**	●
5.6	0/-0.012	6	h6	20	28	66	**353HRC0560**	▽
5.8	0/-0.012	6	h6	20	28	66	**353HRC0580**	●
6	0/-0.012	6	h6	20	28	66	**353HRC0600**	●
6.1	0/-0.015	8	h6	29	41	79	**353HRC0610**	●
6.2	0/-0.015	8	h6	29	41	79	**353HRC0620**	●
6.5	0/-0.015	8	h6	29	41	79	**353HRC0650**	●
6.8	0/-0.015	8	h6	29	41	79	**353HRC0680**	●
6.9	0/-0.015	8	h6	29	41	79	**353HRC0690**	●
7	0/-0.015	8	h6	29	41	79	**353HRC0700**	●
7.4	0/-0.015	8	h6	29	41	79	**353HRC0740**	●
7.5	0/-0.015	8	h6	29	41	79	**353HRC0750**	●
7.8	0/-0.015	8	h6	29	41	79	**353HRC0780**	●
8	0/-0.015	8	h6	29	41	79	**353HRC0800**	●
8.1	0/-0.015	10	h6	35	47	89	**353HRC0810**	●
8.2	0/-0.015	10	h6	35	47	89	**353HRC0820**	●
8.5	0/-0.015	10	h6	35	47	89	**353HRC0850**	●
8.7	0/-0.015	10	h6	35	47	89	**353HRC0870**	●
8.8	0/-0.015	10	h6	35	47	89	**353HRC0880**	●
9	0/-0.015	10	h6	35	47	89	**353HRC0900**	●
9.3	0/-0.015	10	h6	35	47	89	**353HRC0930**	●
9.5	0/-0.015	10	h6	35	47	89	**353HRC0950**	●
9.8	0/-0.015	10	h6	35	47	89	**353HRC0980**	●
10	0/-0.015	10	h6	35	47	89	**353HRC1000**	●
10.2	0/-0.018	12	h6	40	55	102	**353HRC1020**	●
10.3	0/-0.018	12	h6	40	55	102	**353HRC1030**	●
10.4	0/-0.018	12	h6	40	55	102	**353HRC1040**	○

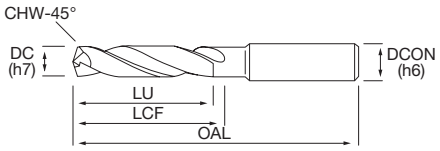
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

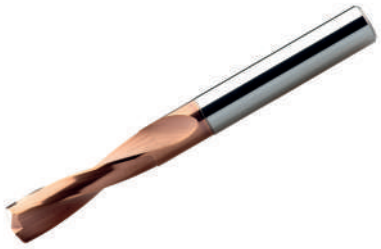
SORMA DIAMOND & CUTTING TOOLS

353HRC

- Hardened steel 45÷62 HRC

P	M	K	N	S	H
					★





3xD | DIN 6537K | HRC | MG PV1000 | SIG 150° | FHA 15° | CH-45°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
10.5	0/-0.018	12	h6	40	55	102	**353HRC1050**	●
10.8	0/-0.018	12	h6	40	55	102	**353HRC1080**	●
11	0/-0.018	12	h6	40	55	102	**353HRC1100**	●
11.2	0/-0.018	12	h6	40	55	102	**353HRC1120**	●
11.5	0/-0.018	12	h6	40	55	102	**353HRC1150**	●
11.8	0/-0.018	12	h6	40	55	102	**353HRC1180**	●
12	0/-0.018	12	h6	40	55	102	**353HRC1200**	●
12.2	0/-0.018	14	h6	43	60	107	**353HRC1220**	▽
12.5	0/-0.018	14	h6	43	60	107	**353HRC1250**	●
12.8	0/-0.018	14	h6	43	60	107	**353HRC1280**	▽
13	0/-0.018	14	h6	43	60	107	**353HRC1300**	●
14.2	0/-0.018	16	h6	45	65	115	**353HRC1420**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

353HRC

	Material Group ISO 513	H1 H4	H2	H3	H5		
	Hardness/Rm	50÷65 HRC	54÷62 HRC	60÷65 HRC	48÷65 HRC		
	Vc (m/min)	**15÷25**	**12÷18**	**8÷12**	**20÷30**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3**	0.020	0.017	0.013	0.020		
	4	0.030	0.026	0.020	0.030		
	5	0.040	0.034	0.026	0.040		
	6	0.050	0.043	0.033	0.050		
	7	0.060	0.051	0.039	0.060		
	8	0.070	0.060	0.046	0.070		
	9	0.080	0.068	0.052	0.080		
	10	0.090	0.077	0.059	0.090		
	11	0.100	0.085	0.065	0.100		
	12	0.110	0.094	0.072	0.110		
	13	0.120	0.102	0.078	0.120		
	14	0.130	0.111	0.085	0.130		
	15	0.140	0.119	0.091	0.140		
	16	0.150	0.128	0.098	0.150		



TYPHOON SUH MINI

HIGH PERFORMANCE - MINIATURE SHORT, LONG AND EXTRA LONG

Miniature drills, from short (5xD) to extra-long (30xD) type, suitable for ISO P, M, K, N, S materials.

Mini punte corte (5xD), lunghe ed extra-lunghe (30xD), adatte alla foratura di materiali ISO P, M, K, N, S.

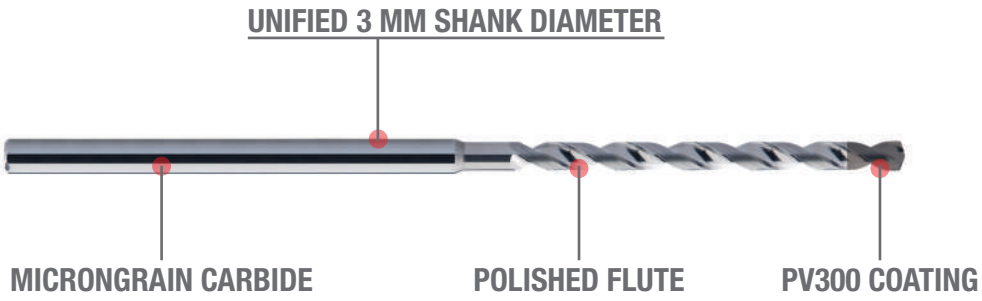
Kurze (5xD), lange und extra-lange (30xD) Kleinstbohrer für das Bohren der Materialien ISO P, M, K, N, S.

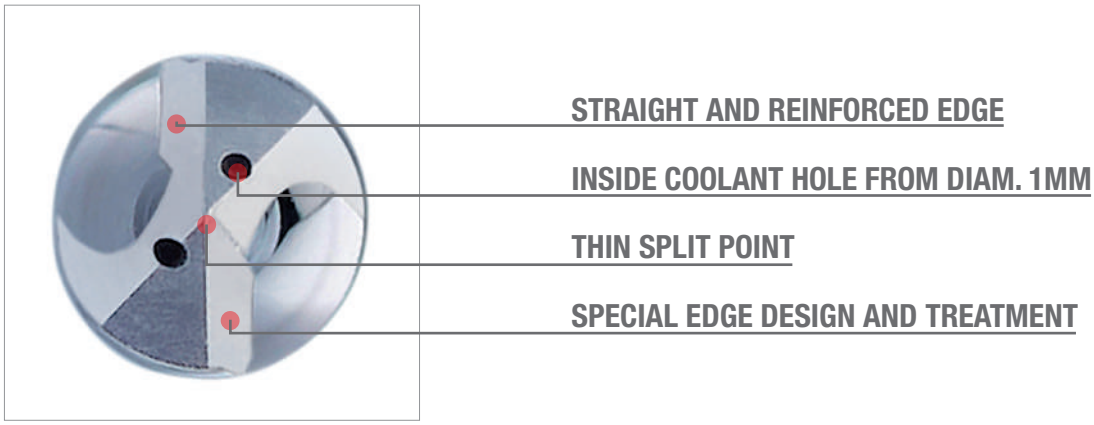
Mini forets courts (5xD), longs et extra-longs (30xD), appropriés au perçage de matériaux ISO P, M, K, N, S.

SUH MINI

High performance - miniature short and long

Features of SUH MINI drills





SUH MINI

High performance - miniature short and long

Features and Benefits

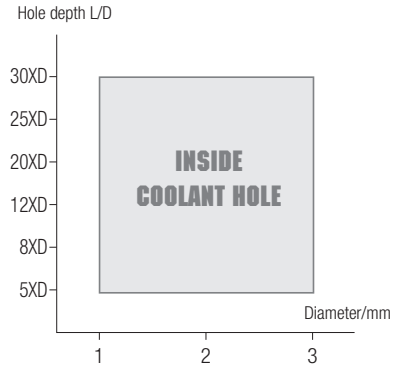
- Miniature drills manufactured with unified 3 mm shank
- Oil holes for internal coolant feed
- Self-centering geometry: highly accurate holes
- Straight and reinforced edge: high stability and chipping resistance
- Edge geometry: special design for edge and corners protection
- Chip pocket: highly polished to prevent welding and to improve the chip ejection
- Substrate and coating: specifically selected for high wear resistance, long and stable tool life
- Available from Ø1 mm to Ø3 mm
- Different cutting length types from short (5xD) to extra-long (30xD)

- Mikrobohrer mit genormtem Schaftdurchmesser 3 mm
- Kühlöffnungen
- Selbstzentrierender Schliff für präzise Bohrungen und geringen Schneiddruck
- Gerades und verstärktes Schneidkantenprofil: zur Erzeugung kurzer Späne und zur Gewährleistung hoher Zuverlässigkeit
- Geometrie der Schneidkante mit speziellem Schliff zum Schutz von Schneidkante und Kanten
- Polierte Nuten: um Probleme durch Verkleben zu reduzieren und um die Späneabführung zu erleichtern
- Hartmetallsubstrat und Beschichtung: speziell zur Gewährleistung von Standzeit und Zuverlässigkeit
- Erhältlich von Ø1 mm bis Ø3 mm
- Verschiedene Längen, von kurz (5XD) bis extra-lang (30XD)

- Mini-punte costruite con gambo unificato Ø3 mm
- Fori di refrigerazione
- Affilatura autocentrante per l'esecuzione di fori precisi e bassi sforzi di taglio
- Profilo del tagliente diritto e rinforzato: genera trucioli corti e garantisce grande affidabilità
- Geometria del tagliente con affilatura specifica a protezione del tagliente e degli spigoli
- Finitura gole: lappate per ridurre il problema dell'incollaggio e facilitare l'evacuazione dei trucioli
- Substrato e rivestimento: specifici per garantire durata e affidabilità
- Disponibili da Ø1 mm a Ø3 mm
- Differenti tipi di lunghezza, dalle corte (5XD) alle extra-lunghe (30XD)

- Mini forets fabriqués avec une tige unifiée ayant un diamètre de 3 mm
- Trous de lubrification
- Affûtage autocentré pour l'exécution de trous précis et peu d'efforts de coupe
- Profil de l'arête droit et renforcé : il génère des copeaux courts et garantit une grande fiabilité
- Géométrie de l'arête avec affûtage spécifique pour protéger l'arête et les angles
- Finition des goujoures : polie pour réduire le problème du collage et faciliter l'évacuation des copeaux
- Substrat et revêtement : spécifiques pour garantir durée et fiabilité
- Disponibles du Ø1 mm au Ø3 mm
- Différents types de longueur, de la plus courte (5xD) aux extra-longues (30xD)

Diameter and length range



Use case

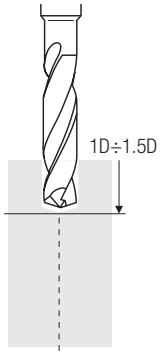
Tool Type	3530SUH
Workpiece	W.-Nr 1.0503 C45
Parameters	Vc 140 m/min, fn 0,012 mm/rev
Diameter	1,5 mm
Coolant	internal
Hole depth	42 mm
Machining time:	



SUH MINI

High performance - miniature short and long

Machining of deep holes perpendicular to the surface



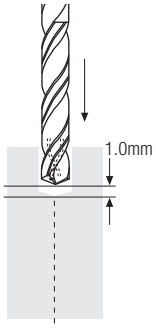
Step 1

As pilot drill (1xD,1.5xD), please use 353CV with head angle 140° (SUH MINI=135°) and m7 tolerance (SUH MINI=h7)

Einen Bohrer 353CV mit einem Spitzenwinkel von 140° (SUH MINI=135°) und Toleranz m7 (SUH MINI=h7) für die Herstellung einer äußerst präzisen Pilotbohrung (1xD - 1.5xD) verwenden.

Utilizzare una punta 353CV con angolo in testa di 140° (SUH MINI=135°) e tolleranza m7 (SUH MINI=h7), per eseguire un foro pilota (1xD -1.5xD) molto preciso

Utiliser un foret 353CV avec un angle en bout de 140° (SUH MINI=135°) et une tolérance m7 (SUH MINI=h7), pour effectuer un trou pilote (1xD -1.5xD) très précis.



Step 2

With coolant feed OFF, enter the pilot hole with SUH MINI drill at Vc=20 m/min and fn=0.3 mm/rev. Position the SUH MINI drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.

Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie SUH MINI in die Bohrung einführen. Vc=20 m/min, fn=0,3 mm/U. Den Bohrer SUH MINI bis 1 mm vom Ende der Pilotbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.

Senza azionare il refrigerante interno, entrare con la punta lunga serie SUH MINI all'interno del foro. Vc=20 m/min, fn=0.3 mm/rev. Posizionare la punta SUH MINI sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.

Sans actionner la lubrification interne, entrer avec le foret long série SUH MINI à l'intérieur du trou. Vc=20 m/min, fn=0.3 mm/rév. Placer le foret SUH MINI jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage.



Step 3

Make continue drilling operation without steps for chip ejection. In case of through holes, reduce the feed by 30% before the hole exit (approx. 1 mm). Stop the coolant feed. Use the step drilling process whenever the chip ejection becomes poor.

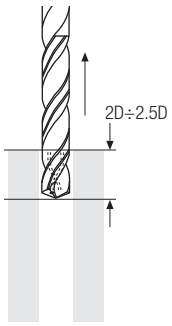
Für die Späneabführung Stufenlos bohren. Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren. Die Kühlung deaktivieren. Man soll bei schlechter Spanabfuhr einen Step-Bohrvorgang machen.

Forare senza step per scarico trucioli. Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%. Fermare il refrigerante. Utilizzare il processo di foratura a step nel caso di evacuazione trucioli problematica.

Percer sans step pour l'évacuation des copeaux. En présence de trous débouchants, 1 mm avant d'avoir terminé le trou, réduire l'avance de 30 %. Arrêter la lubrification. Man soll bei schlechter Spanabfuhr einen Step-Bohrvorgang machen.

SUH MINI

High performance - miniature short and long



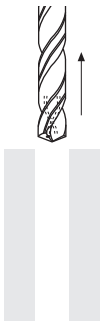
Step 4

Withdraw the drill using max rpm and double fn, until 2xD from the hole entrance.

Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe 2xD einsetzen.

Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità 2xD.

Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur 2xD.



Step 5

Completing the exit from the hole by using slow and constant speed (200-300 rpm).

Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen (200-300 rpm).

Completare l'ultimo tratto di arretramento con velocità ridotta e costante (200-300 rpm).

Terminer la dernière partie du perçage avec une vitesse réduite et constante (200-300 rpm).

SUH MINI

High performance - miniature short and long

Machining of deep holes on slanted or irregular surfaces



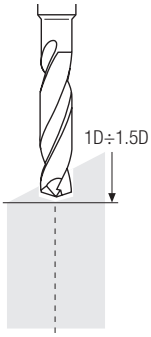
Step 1

Prepare a flat surface of the same size as the drilling diameter.

Eine ebene Oberfläche, durch einen Fräser mit stirnseitiger Schneidkante, herstellen. Die hergestellte Oberfläche muss dieselben Abmessungen des Durchmessers der tiefen Bohrung aufweisen.

Realizzare una superficie piana utilizzando una fresa con tagliente frontale. Il piano realizzato deve avere le stesse dimensioni del diametro di foratura profonda.

Réaliser une surface plane en utilisant une fraise avec une arête frontale. Le plan réalisé doit avoir les mêmes dimensions que le diamètre de perçage profond.



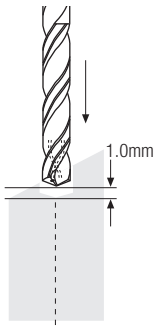
Step 2

As pilot drill (1xD,1.5xD), please use 353CV with head angle 140° (SUH MINI=135°) and m7 tolerance (SUH MINI=h7).

Einen Bohrer 353CV mit einem Spitzenwinkel von 140° (SUH MINI=135°) und Toleranz m7 (SUH MINI=h7) für die Herstellung einer äußerst präzisen Pilotbohrung (1xD - 1.5xD) verwenden.

Utilizzare una punta 353CV con angolo in testa di 140° (SUH MINI=135°) e tolleranza m7 (SUH MINI=h7), per eseguire un foro pilota (1xD -1.5xD) molto preciso.

Utiliser un foret 353CV avec un angle en bout de 140° (SUH MINI=135°) et une tolérance m7 (SUH MINI=h7), pour effectuer un trou pilote (1xD -1.5xD) très précis.



Step 3

With coolant feed OFF, enter the pilot hole with SUH MINI drill at Vc=20 m/min and fn=0.3 mm/rev. Position the SUH MINI drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.

Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie SUH MINI in die Bohrung einführen. Vc=20 m/min, fn=0,3 mm/U. Den Bohrer SUH MINI bis 1 mm vom Ende der Pilotbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.

Senza azionare il refrigerante interno, entrare con la punta lunga serie SUH MINI all'interno del foro. Vc=20 m/min, fn=0.3 mm/rev. Posizionare la punta SUH MINI sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.

Sans actionner la lubrification interne, entrer avec le foret long série SUH MINI à l'intérieur du trou. Vc=20 m/min, fn=0.3 mm/rév. Placer le foret SUH MINI jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage.

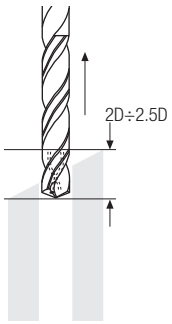
SUH MINI

High performance - miniature short and long



Step 4

- Make continue drilling operation without steps for chip ejection.
  In case of through holes, reduce the feed by 30% before the hole exit (approx. 1 mm).
  Stop the coolant feed.
- Für die Späneabführung Stufenlos bohren.
  Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren.
  Die Kühlung deaktivieren.
- Forare senza step per scarico trucioli.
  Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%.
  Fermare il refrigerante.
- Percer sans step pour l'évacuation des copeaux.
  En présence de trous débouc hants, 1 mm avant d'avoir terminé le trou, réduire l'avance de 30 %.
  Arrêter la lubrification.



Step 5

- Withdraw the drill using max rpm and double fn, until 2xD÷2.5xD from the hole entrance.
- Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe 2xD÷2.5xD einsetzen.
- Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità 2xD÷2.5xD.
- Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur 2xD÷2.5xD.



Step 6

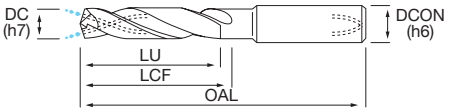
- Completing the exit from the hole by using slow and constant speed (200-300 rpm).
- Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen (200-300 rpm).
- Completare l'ultimo tratto di arretramento con velocità ridotta e costante (200-300 rpm).
- Terminer la dernière partie du perçage avec une vitesse réduite et constante (200-300 rpm).

SORMA DIAMOND & CUTTING TOOLS

355SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





5xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	5	6.5	50	**355SUH0100N**	●
1.1	0/-0.010	3	h6	5.5	7.2	50	**355SUH0110N**	●
1.2	0/-0.010	3	h6	6	7.8	50	**355SUH0120N**	●
1.3	0/-0.010	3	h6	6.5	8.5	50	**355SUH0130N**	●
1.4	0/-0.010	3	h6	7	9.1	50	**355SUH0140N**	●
1.5	0/-0.010	3	h6	7.5	9.8	50	**355SUH0150N**	●
1.6	0/-0.010	3	h6	8	10.4	50	**355SUH0160N**	●
1.7	0/-0.010	3	h6	8.5	11.1	55	**355SUH0170N**	●
1.8	0/-0.010	3	h6	9	11.7	55	**355SUH0180N**	●
1.9	0/-0.010	3	h6	9.5	12.4	55	**355SUH0190N**	●
2	0/-0.010	3	h6	10	13	55	**355SUH0200N**	●
2.1	0/-0.010	3	h6	10.5	13.7	55	**355SUH0210N**	●
2.2	0/-0.010	3	h6	11	14.3	55	**355SUH0220N**	●
2.3	0/-0.010	3	h6	11.5	15	55	**355SUH0230N**	●
2.4	0/-0.010	3	h6	12	15.6	55	**355SUH0240N**	●
2.5	0/-0.010	3	h6	12.5	16.3	55	**355SUH0250N**	●
2.6	0/-0.010	3	h6	13	16.9	55	**355SUH0260N**	●
2.7	0/-0.010	3	h6	13.5	17.6	55	**355SUH0270N**	●
2.8	0/-0.010	3	h6	14	18.2	55	**355SUH0280N**	●
2.9	0/-0.010	3	h6	14.5	18.9	55	**355SUH0290N**	●
3	0/-0.010	3	h6	15	19.5	55	**355SUH030003N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

355SUH MINI

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**85÷95***	**75÷85***	**65÷75***	**60÷70***	**55÷65***	**38÷42***
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	**1.0**	0.025	0.025	0.026	0.026	0.012	0.012
	1.1	0.027	0.028	0.029	0.029	0.014	0.013
	1.2	0.030	0.030	0.032	0.031	0.015	0.014
	1.3	0.032	0.033	0.034	0.034	0.016	0.015
	1.4	0.035	0.035	0.037	0.037	0.017	0.017
	1.5	0.037	0.038	0.040	0.039	0.018	0.018
	1.6	0.041	0.041	0.044	0.043	0.021	0.020
	1.7	0.044	0.044	0.047	0.046	0.022	0.021
	1.8	0.047	0.047	0.049	0.049	0.024	0.023
	1.9	0.049	0.049	0.052	0.051	0.025	0.024
	2.0	0.052	0.052	0.055	0.054	0.026	0.025
	2.1	0.056	0.056	0.059	0.059	0.029	0.028
	2.2	0.059	0.059	0.062	0.062	0.031	0.029
	2.3	0.062	0.061	0.065	0.064	0.032	0.031
	2.4	0.064	0.064	0.068	0.067	0.033	0.032
	2.5	0.067	0.067	0.071	0.070	0.035	0.033
	2.6	0.073	0.071	0.076	0.075	0.038	0.037
	2.7	0.075	0.074	0.079	0.078	0.040	0.038
	2.8	0.078	0.077	0.082	0.081	0.041	0.040
	2.9	0.081	0.080	0.085	0.084	0.043	0.041
	3.0	0.084	0.082	0.088	0.087	0.044	0.042

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm						
	Vc (m/min)	**55÷65***	**50÷60***	**40÷50***			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**1.0**	0.012	0.013	0.013			
	1.1	0.014	0.014	0.014			
	1.2	0.015	0.015	0.015			
	1.3	0.016	0.016	0.016			
	1.4	0.017	0.018	0.018			
	1.5	0.018	0.019	0.019			
	1.6	0.021	0.021	0.021			
	1.7	0.022	0.022	0.023			
	1.8	0.024	0.024	0.024			
	1.9	0.025	0.025	0.025			
	2.0	0.026	0.026	0.027			
	2.1	0.029	0.029	0.029			
	2.2	0.031	0.030	0.031			
	2.3	0.032	0.032	0.032			
	2.4	0.033	0.033	0.034			
	2.5	0.035	0.034	0.035			
	2.6	0.038	0.037	0.038			
	2.7	0.040	0.039	0.040			
	2.8	0.041	0.040	0.041			
	2.9	0.043	0.041	0.043			
	3.0	0.044	0.043	0.044			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Cutting Parameters

355SUH MINI



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**80÷90***	**70÷80***	**60÷70***	**55÷65***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.015	0.014	0.012		
1.1	0.018	0.017	0.015	0.014		
1.2	0.019	0.018	0.017	0.015		
1.3	0.021	0.020	0.018	0.016		
1.4	0.023	0.021	0.019	0.017		
1.5	0.024	0.023	0.021	0.018		
1.6	0.027	0.025	0.023	0.021		
1.7	0.028	0.027	0.025	0.022		
1.8	0.030	0.028	0.026	0.024		
1.9	0.032	0.030	0.028	0.025		
2.0	0.033	0.031	0.029	0.026		
2.1	0.036	0.034	0.032	0.029		
2.2	0.038	0.036	0.034	0.031		
2.3	0.040	0.038	0.035	0.032		
2.4	0.041	0.039	0.037	0.033		
2.5	0.043	0.041	0.038	0.035		
2.6	0.046	0.044	0.041	0.038		
2.7	0.048	0.046	0.043	0.040		
2.8	0.050	0.047	0.045	0.041		
2.9	0.051	0.049	0.046	0.043		
3.0	0.053	0.051	0.048	0.044		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**140÷150***	**120÷130***	**110÷120***	**155÷165***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.016	0.015	0.016		
1.1	0.018	0.018	0.016	0.017		
1.2	0.019	0.019	0.018	0.019		
1.3	0.021	0.021	0.019	0.020		
1.4	0.022	0.023	0.021	0.022		
1.5	0.024	0.024	0.022	0.023		
1.6	0.026	0.027	0.024	0.026		
1.7	0.028	0.028	0.026	0.027		
1.8	0.030	0.030	0.028	0.029		
1.9	0.031	0.032	0.029	0.031		
2.0	0.033	0.033	0.031	0.032		
2.1	0.035	0.036	0.033	0.035		
2.2	0.037	0.038	0.035	0.037		
2.3	0.039	0.039	0.036	0.038		
2.4	0.041	0.041	0.038	0.040		
2.5	0.042	0.043	0.040	0.042		
2.6	0.045	0.046	0.043	0.045		
2.7	0.047	0.048	0.044	0.047		
2.8	0.049	0.049	0.046	0.048		
2.9	0.050	0.051	0.048	0.050		
3.0	0.052	0.053	0.049	0.052		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

355SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.009	0.011	0.011	0.009		
	1.1	0.010	0.012	0.012	0.010		
	1.2	0.011	0.013	0.013	0.011		
	1.3	0.012	0.014	0.014	0.012		
	1.4	0.013	0.015	0.015	0.013		
	1.5	0.013	0.016	0.016	0.014		
	1.6	0.016	0.018	0.019	0.017		
	1.7	0.017	0.019	0.020	0.018		
	1.8	0.018	0.020	0.021	0.019		
	1.9	0.019	0.021	0.022	0.020		
	2.0	0.020	0.023	0.023	0.021		
	2.1	0.024	0.025	0.026	0.024		
	2.2	0.025	0.026	0.028	0.025		
	2.3	0.026	0.027	0.029	0.027		
	2.4	0.027	0.029	0.030	0.028		
	2.5	0.028	0.030	0.031	0.029		
	2.6	0.032	0.033	0.035	0.033		
	2.7	0.033	0.034	0.036	0.034		
	2.8	0.035	0.035	0.038	0.035		
	2.9	0.036	0.036	0.039	0.036		
	3.0	0.037	0.038	0.040	0.038		

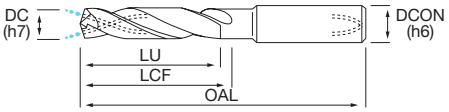
*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

SORMA DIAMOND & CUTTING TOOLS

358SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





8xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	8	9.5	50	**358SUH0100N**	●
1.1	0/-0.010	3	h6	8.8	10.5	50	**358SUH0110N**	●
1.2	0/-0.010	3	h6	9.6	11.4	50	**358SUH0120N**	●
1.3	0/-0.010	3	h6	10.4	12.4	50	**358SUH0130N**	●
1.4	0/-0.010	3	h6	11.2	13.3	50	**358SUH0140N**	●
1.5	0/-0.010	3	h6	12	14.3	50	**358SUH0150N**	●
1.6	0/-0.010	3	h6	12.8	15.2	50	**358SUH0160N**	●
1.7	0/-0.010	3	h6	13.6	17.7	60	**358SUH0170N**	●
1.8	0/-0.010	3	h6	14.4	17.1	60	**358SUH0180N**	●
1.9	0/-0.010	3	h6	15.2	18.1	60	**358SUH0190N**	●
2	0/-0.010	3	h6	16	19	60	**358SUH0200N**	●
2.1	0/-0.010	3	h6	16.8	20	60	**358SUH0210N**	●
2.2	0/-0.010	3	h6	17.6	20.9	60	**358SUH0220N**	●
2.3	0/-0.010	3	h6	18.4	21.9	60	**358SUH0230N**	●
2.4	0/-0.010	3	h6	19.2	22.8	60	**358SUH0240N**	●
2.5	0/-0.010	3	h6	20	23.8	60	**358SUH0250N**	●
2.6	0/-0.010	3	h6	20.8	24.7	60	**358SUH0260N**	●
2.7	0/-0.010	3	h6	21.6	25.7	60	**358SUH0270N**	●
2.8	0/-0.010	3	h6	22.4	26.6	60	**358SUH0280N**	●
2.9	0/-0.010	3	h6	23.2	27.6	60	**358SUH0290N**	●
3	0/-0.010	3	h6	24	28.5	60	**358SUH0300N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

358SUH MINI



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	**85÷95***	**75÷85***	**65÷75***	**60÷70***	**55÷65***	**38÷42***
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.025	0.025	0.026	0.026	0.012	0.012
1.1	0.027	0.028	0.029	0.029	0.014	0.013
1.2	0.030	0.030	0.032	0.031	0.015	0.014
1.3	0.032	0.033	0.034	0.034	0.016	0.015
1.4	0.035	0.035	0.037	0.037	0.017	0.017
1.5	0.037	0.038	0.040	0.039	0.018	0.018
1.6	0.041	0.041	0.044	0.043	0.021	0.020
1.7	0.044	0.044	0.047	0.046	0.022	0.021
1.8	0.047	0.047	0.049	0.049	0.024	0.023
1.9	0.049	0.049	0.052	0.051	0.025	0.024
2.0	0.052	0.052	0.055	0.054	0.026	0.025
2.1	0.056	0.056	0.059	0.059	0.029	0.028
2.2	0.059	0.059	0.062	0.062	0.031	0.029
2.3	0.062	0.061	0.065	0.064	0.032	0.031
2.4	0.064	0.064	0.068	0.067	0.033	0.032
2.5	0.067	0.067	0.071	0.070	0.035	0.033
2.6	0.073	0.071	0.076	0.075	0.038	0.037
2.7	0.075	0.074	0.079	0.078	0.040	0.038
2.8	0.078	0.077	0.082	0.081	0.041	0.040
2.9	0.081	0.080	0.085	0.084	0.043	0.041
3.0	0.084	0.082	0.088	0.087	0.044	0.042



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	**55÷65***	**50÷60***	**40÷50***			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.012	0.013	0.013			
1.1	0.014	0.014	0.014			
1.2	0.015	0.015	0.015			
1.3	0.016	0.016	0.016			
1.4	0.017	0.018	0.018			
1.5	0.018	0.019	0.019			
1.6	0.021	0.021	0.021			
1.7	0.022	0.022	0.023			
1.8	0.024	0.024	0.024			
1.9	0.025	0.025	0.025			
2.0	0.026	0.026	0.027			
2.1	0.029	0.029	0.029			
2.2	0.031	0.030	0.031			
2.3	0.032	0.032	0.032			
2.4	0.033	0.033	0.034			
2.5	0.035	0.034	0.035			
2.6	0.038	0.037	0.038			
2.7	0.040	0.039	0.040			
2.8	0.041	0.040	0.041			
2.9	0.043	0.041	0.043			
3.0	0.044	0.043	0.044			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Cutting Parameters

358SUH MINI



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**80÷90***	**70÷80***	**60÷70***	**55÷65***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.015	0.014	0.012		
1.1	0.018	0.017	0.015	0.014		
1.2	0.019	0.018	0.017	0.015		
1.3	0.021	0.020	0.018	0.016		
1.4	0.023	0.021	0.019	0.017		
1.5	0.024	0.023	0.021	0.018		
1.6	0.027	0.025	0.023	0.021		
1.7	0.028	0.027	0.025	0.022		
1.8	0.030	0.028	0.026	0.024		
1.9	0.032	0.030	0.028	0.025		
2.0	0.033	0.031	0.029	0.026		
2.1	0.036	0.034	0.032	0.029		
2.2	0.038	0.036	0.034	0.031		
2.3	0.040	0.038	0.035	0.032		
2.4	0.041	0.039	0.037	0.033		
2.5	0.043	0.041	0.038	0.035		
2.6	0.046	0.044	0.041	0.038		
2.7	0.048	0.046	0.043	0.040		
2.8	0.050	0.047	0.045	0.041		
2.9	0.051	0.049	0.046	0.043		
3.0	0.053	0.051	0.048	0.044		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**140÷150***	**120÷130***	**110÷120***	**155÷165***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.016	0.015	0.016		
1.1	0.018	0.018	0.016	0.017		
1.2	0.019	0.019	0.018	0.019		
1.3	0.021	0.021	0.019	0.020		
1.4	0.022	0.023	0.021	0.022		
1.5	0.024	0.024	0.022	0.023		
1.6	0.026	0.027	0.024	0.026		
1.7	0.028	0.028	0.026	0.027		
1.8	0.030	0.030	0.028	0.029		
1.9	0.031	0.032	0.029	0.031		
2.0	0.033	0.033	0.031	0.032		
2.1	0.035	0.036	0.033	0.035		
2.2	0.037	0.038	0.035	0.037		
2.3	0.039	0.039	0.036	0.038		
2.4	0.041	0.041	0.038	0.040		
2.5	0.042	0.043	0.040	0.042		
2.6	0.045	0.046	0.043	0.045		
2.7	0.047	0.048	0.044	0.047		
2.8	0.049	0.049	0.046	0.048		
2.9	0.050	0.051	0.048	0.050		
3.0	0.052	0.053	0.049	0.052		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

358SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.009	0.011	0.011	0.009		
	1.1	0.010	0.012	0.012	0.010		
	1.2	0.011	0.013	0.013	0.011		
	1.3	0.012	0.014	0.014	0.012		
	1.4	0.013	0.015	0.015	0.013		
	1.5	0.013	0.016	0.016	0.014		
	1.6	0.016	0.018	0.019	0.017		
	1.7	0.017	0.019	0.020	0.018		
	1.8	0.018	0.020	0.021	0.019		
	1.9	0.019	0.021	0.022	0.020		
	2.0	0.020	0.023	0.023	0.021		
	2.1	0.024	0.025	0.026	0.024		
	2.2	0.025	0.026	0.028	0.025		
	2.3	0.026	0.027	0.029	0.027		
	2.4	0.027	0.029	0.030	0.028		
	2.5	0.028	0.030	0.031	0.029		
	2.6	0.032	0.033	0.035	0.033		
	2.7	0.033	0.034	0.036	0.034		
	2.8	0.035	0.035	0.038	0.035		
	2.9	0.036	0.036	0.039	0.036		
	3.0	0.037	0.038	0.040	0.038		

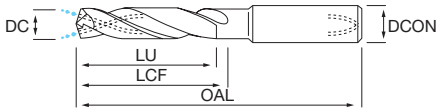
*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

SORMA DIAMOND & CUTTING TOOLS

3512SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





12xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	12	13.5	55	**3512SUH0100N**	●
1.1	0/-0.010	3	h6	13.2	14.9	55	**3512SUH0110N**	●
1.2	0/-0.010	3	h6	14.4	16.2	55	**3512SUH0120N**	●
1.3	0/-0.010	3	h6	15.6	17.6	55	**3512SUH0130N**	●
1.4	0/-0.010	3	h6	16.8	18.9	55	**3512SUH0140N**	●
1.5	0/-0.010	3	h6	18	20.3	55	**3512SUH0150N**	●
1.6	0/-0.010	3	h6	19.2	21.6	65	**3512SUH0160N**	●
1.7	0/-0.010	3	h6	20.4	23	65	**3512SUH0170N**	●
1.8	0/-0.010	3	h6	21.6	24.3	65	**3512SUH0180N**	●
1.9	0/-0.010	3	h6	22.8	25.7	65	**3512SUH0190N**	●
2	0/-0.010	3	h6	24	27	65	**3512SUH0200N**	●
2.1	0/-0.010	3	h6	25.2	28.4	65	**3512SUH0210N**	●
2.2	0/-0.010	3	h6	26.4	29.7	65	**3512SUH0220N**	●
2.3	0/-0.010	3	h6	27.7	31.1	65	**3512SUH0230N**	●
2.4	0/-0.010	3	h6	29.8	32.4	75	**3512SUH0240N**	●
2.5	0/-0.010	3	h6	30	33.8	75	**3512SUH0250N**	●
2.6	0/-0.010	3	h6	31.2	35.1	75	**3512SUH0260N**	●
2.7	0/-0.010	3	h6	32.4	36.5	75	**3512SUH0270N**	●
2.8	0/-0.010	3	h6	33.6	37.8	75	**3512SUH0280N**	●
2.9	0/-0.010	3	h6	34.8	39.2	75	**3512SUH0290N**	●
3	0/-0.010	3	h6	36	40.5	75	**3512SUH0300N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3512SUH MINI



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	80÷90*	60÷70*	55÷65*	50÷60*	45÷55*	38÷42*
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.012	0.010	0.010	0.007	0.008	0.007
1.1	0.013	0.011	0.012	0.008	0.009	0.008
1.2	0.014	0.012	0.013	0.008	0.010	0.008
1.3	0.015	0.014	0.014	0.009	0.011	0.009
1.4	0.016	0.015	0.015	0.010	0.011	0.010
1.5	0.017	0.016	0.016	0.010	0.012	0.011
1.6	0.020	0.019	0.018	0.013	0.014	0.013
1.7	0.021	0.020	0.019	0.014	0.015	0.013
1.8	0.023	0.021	0.020	0.014	0.016	0.014
1.9	0.024	0.022	0.021	0.015	0.017	0.015
2.0	0.025	0.023	0.022	0.016	0.018	0.016
2.1	0.028	0.027	0.024	0.019	0.020	0.018
2.2	0.030	0.028	0.025	0.020	0.021	0.019
2.3	0.031	0.029	0.027	0.021	0.022	0.020
2.4	0.032	0.031	0.028	0.022	0.023	0.021
2.5	0.034	0.032	0.029	0.023	0.024	0.022
2.6	0.037	0.035	0.031	0.027	0.026	0.024
2.7	0.038	0.037	0.033	0.028	0.027	0.025
2.8	0.039	0.038	0.034	0.029	0.028	0.026
2.9	0.041	0.039	0.035	0.030	0.029	0.027
3.0	0.042	0.041	0.036	0.031	0.030	0.028



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	45÷55*	45÷50*	40÷45*			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.008	0.008	0.007			
1.1	0.009	0.008	0.008			
1.2	0.010	0.009	0.009			
1.3	0.011	0.010	0.009			
1.4	0.011	0.011	0.010			
1.5	0.012	0.012	0.011			
1.6	0.014	0.013	0.013			
1.7	0.015	0.014	0.014			
1.8	0.016	0.015	0.014			
1.9	0.017	0.016	0.015			
2.0	0.018	0.017	0.016			
2.1	0.020	0.019	0.018			
2.2	0.021	0.020	0.019			
2.3	0.022	0.021	0.020			
2.4	0.023	0.022	0.021			
2.5	0.024	0.023	0.022			
2.6	0.026	0.025	0.025			
2.7	0.027	0.026	0.026			
2.8	0.028	0.027	0.027			
2.9	0.029	0.028	0.028			
3.0	0.030	0.029	0.029			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Cutting Parameters

3512SUH MINI



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**75÷85***	**60÷70***	**50÷60***	**48÷52***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.013	0.013	0.008		
1.1	0.014	0.014	0.014	0.009		
1.2	0.015	0.015	0.015	0.010		
1.3	0.016	0.016	0.016	0.011		
1.4	0.017	0.018	0.018	0.011		
1.5	0.019	0.019	0.019	0.012		
1.6	0.021	0.021	0.021	0.014		
1.7	0.022	0.023	0.022	0.015		
1.8	0.023	0.024	0.024	0.016		
1.9	0.025	0.025	0.025	0.017		
2.0	0.026	0.027	0.026	0.018		
2.1	0.028	0.029	0.029	0.020		
2.2	0.030	0.031	0.030	0.021		
2.3	0.031	0.032	0.032	0.022		
2.4	0.033	0.034	0.033	0.023		
2.5	0.034	0.035	0.034	0.024		
2.6	0.037	0.038	0.037	0.026		
2.7	0.038	0.040	0.039	0.027		
2.8	0.040	0.041	0.040	0.028		
2.9	0.041	0.043	0.041	0.029		
3.0	0.042	0.044	0.043	0.030		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**125÷135***	**110÷120***	**100÷110***	**140÷150***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.015	0.014	0.013	0.014		
1.1	0.016	0.016	0.014	0.016		
1.2	0.018	0.017	0.016	0.017		
1.3	0.019	0.018	0.017	0.019		
1.4	0.021	0.020	0.018	0.020		
1.5	0.022	0.021	0.020	0.021		
1.6	0.025	0.024	0.022	0.024		
1.7	0.026	0.025	0.023	0.025		
1.8	0.028	0.027	0.024	0.027		
1.9	0.029	0.028	0.026	0.028		
2.0	0.031	0.030	0.027	0.030		
2.1	0.034	0.032	0.029	0.033		
2.2	0.035	0.034	0.031	0.034		
2.3	0.037	0.035	0.032	0.036		
2.4	0.038	0.037	0.033	0.037		
2.5	0.040	0.038	0.035	0.039		
2.6	0.043	0.041	0.037	0.042		
2.7	0.044	0.043	0.039	0.044		
2.8	0.046	0.044	0.040	0.046		
2.9	0.048	0.046	0.042	0.047		
3.0	0.049	0.048	0.043	0.049		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

3512SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.008	0.007	0.008	0.009		
	1.1	0.009	0.008	0.009	0.010		
	1.2	0.009	0.008	0.010	0.011		
	1.3	0.010	0.009	0.011	0.012		
	1.4	0.011	0.010	0.011	0.012		
	1.5	0.012	0.010	0.012	0.013		
	1.6	0.013	0.012	0.014	0.015		
	1.7	0.014	0.013	0.015	0.016		
	1.8	0.015	0.014	0.016	0.017		
	1.9	0.016	0.014	0.017	0.018		
	2.0	0.017	0.015	0.018	0.019		
	2.1	0.019	0.017	0.021	0.021		
	2.2	0.020	0.018	0.022	0.022		
	2.3	0.021	0.019	0.023	0.023		
	2.4	0.022	0.020	0.024	0.024		
	2.5	0.022	0.020	0.025	0.025		
	2.6	0.025	0.023	0.028	0.027		
	2.7	0.026	0.024	0.029	0.028		
	2.8	0.027	0.025	0.030	0.029		
	2.9	0.028	0.026	0.031	0.030		
	3.0	0.029	0.026	0.032	0.031		

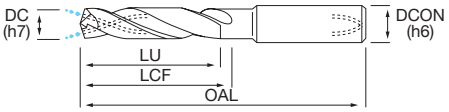
*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

SORMA DIAMOND & CUTTING TOOLS

3520SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





20xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	20	21.5	65	**3520SUH0100N**	●
1.1	0/-0.010	3	h6	22	23.7	65	**3520SUH0110N**	◉
1.2	0/-0.010	3	h6	24	25.8	65	**3520SUH0120N**	●
1.3	0/-0.010	3	h6	26	28	65	**3520SUH0130N**	●
1.4	0/-0.010	3	h6	28	30.1	65	**3520SUH0140N**	◉
1.5	0/-0.010	3	h6	30	32.3	75	**3520SUH0150N**	●
1.6	0/-0.010	3	h6	32	34.4	75	**3520SUH0160N**	●
1.7	0/-0.010	3	h6	34	36.6	75	**3520SUH0170N**	●
1.8	0/-0.010	3	h6	36	38.7	75	**3520SUH0180N**	●
1.9	0/-0.010	3	h6	38	40.9	75	**3520SUH0190N**	◉
2	0/-0.010	3	h6	40	43	82	**3520SUH0200N**	●
2.1	0/-0.010	3	h6	42	45.2	82	**3520SUH0210N**	◉
2.2	0/-0.010	3	h6	44	47.3	82	**3520SUH0220N**	●
2.3	0/-0.010	3	h6	46	49.5	100	**3520SUH0230N**	●
2.4	0/-0.010	3	h6	48	51.6	100	**3520SUH0240N**	◉
2.5	0/-0.010	3	h6	50	53.8	100	**3520SUH0250N**	●
2.6	0/-0.010	3	h6	52	55.9	100	**3520SUH0260N**	◉
2.7	0/-0.010	3	h6	54	58.1	100	**3520SUH0270N**	◉
2.8	0/-0.010	3	h6	56	60.2	100	**3520SUH0280N**	●
2.9	0/-0.010	3	h6	57	61.4	100	**3520SUH0290N**	◉
3	0/-0.010	3	h6	60	64.5	100	**3520SUH0300N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3520SUH MINI



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	80÷90*	60÷70*	55÷65*	50÷60*	45÷55*	38÷42*
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.012	0.010	0.010	0.007	0.008	0.007
1.1	0.013	0.011	0.012	0.008	0.009	0.008
1.2	0.014	0.012	0.013	0.008	0.010	0.008
1.3	0.015	0.014	0.014	0.009	0.011	0.009
1.4	0.016	0.015	0.015	0.010	0.011	0.010
1.5	0.017	0.016	0.016	0.010	0.012	0.011
1.6	0.020	0.019	0.018	0.013	0.014	0.013
1.7	0.021	0.020	0.019	0.014	0.015	0.013
1.8	0.023	0.021	0.020	0.014	0.016	0.014
1.9	0.024	0.022	0.021	0.015	0.017	0.015
2.0	0.025	0.023	0.022	0.016	0.018	0.016
2.1	0.028	0.027	0.024	0.019	0.020	0.018
2.2	0.030	0.028	0.025	0.020	0.021	0.019
2.3	0.031	0.029	0.027	0.021	0.022	0.020
2.4	0.032	0.031	0.028	0.022	0.023	0.021
2.5	0.034	0.032	0.029	0.023	0.024	0.022
2.6	0.037	0.035	0.031	0.027	0.026	0.024
2.7	0.038	0.037	0.033	0.028	0.027	0.025
2.8	0.039	0.038	0.034	0.029	0.028	0.026
2.9	0.041	0.039	0.035	0.030	0.029	0.027
3.0	0.042	0.041	0.036	0.031	0.030	0.028



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	45÷55*	45÷50*	40÷45*			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.008	0.008	0.007			
1.1	0.009	0.008	0.008			
1.2	0.010	0.009	0.009			
1.3	0.011	0.010	0.009			
1.4	0.011	0.011	0.010			
1.5	0.012	0.012	0.011			
1.6	0.014	0.013	0.013			
1.7	0.015	0.014	0.014			
1.8	0.016	0.015	0.014			
1.9	0.017	0.016	0.015			
2.0	0.018	0.017	0.016			
2.1	0.020	0.019	0.018			
2.2	0.021	0.020	0.019			
2.3	0.022	0.021	0.020			
2.4	0.023	0.022	0.021			
2.5	0.024	0.023	0.022			
2.6	0.026	0.025	0.025			
2.7	0.027	0.026	0.026			
2.8	0.028	0.027	0.027			
2.9	0.029	0.028	0.028			
3.0	0.030	0.029	0.029			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

3520SUH MINI



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**75÷85***	**60÷70***	**50÷60***	**48÷52***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.013	0.013	0.008		
1.1	0.014	0.014	0.014	0.009		
1.2	0.015	0.015	0.015	0.010		
1.3	0.016	0.016	0.016	0.011		
1.4	0.017	0.018	0.018	0.011		
1.5	0.019	0.019	0.019	0.012		
1.6	0.021	0.021	0.021	0.014		
1.7	0.022	0.023	0.022	0.015		
1.8	0.023	0.024	0.024	0.016		
1.9	0.025	0.025	0.025	0.017		
2.0	0.026	0.027	0.026	0.018		
2.1	0.028	0.029	0.029	0.020		
2.2	0.030	0.031	0.030	0.021		
2.3	0.031	0.032	0.032	0.022		
2.4	0.033	0.034	0.033	0.023		
2.5	0.034	0.035	0.034	0.024		
2.6	0.037	0.038	0.037	0.026		
2.7	0.038	0.040	0.039	0.027		
2.8	0.040	0.041	0.040	0.028		
2.9	0.041	0.043	0.041	0.029		
3.0	0.042	0.044	0.043	0.030		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**125÷135***	**110÷120***	**100÷110***	**140÷150***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.015	0.014	0.013	0.014		
1.1	0.016	0.016	0.014	0.016		
1.2	0.018	0.017	0.016	0.017		
1.3	0.019	0.018	0.017	0.019		
1.4	0.021	0.020	0.018	0.020		
1.5	0.022	0.021	0.020	0.021		
1.6	0.025	0.024	0.022	0.024		
1.7	0.026	0.025	0.023	0.025		
1.8	0.028	0.027	0.024	0.027		
1.9	0.029	0.028	0.026	0.028		
2.0	0.031	0.030	0.027	0.030		
2.1	0.034	0.032	0.029	0.033		
2.2	0.035	0.034	0.031	0.034		
2.3	0.037	0.035	0.032	0.036		
2.4	0.038	0.037	0.033	0.037		
2.5	0.040	0.038	0.035	0.039		
2.6	0.043	0.041	0.037	0.042		
2.7	0.044	0.043	0.039	0.044		
2.8	0.046	0.044	0.040	0.046		
2.9	0.048	0.046	0.042	0.047		
3.0	0.049	0.048	0.043	0.049		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Cutting Parameters

3520SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.008	0.007	0.008	0.009		
	1.1	0.009	0.008	0.009	0.010		
	1.2	0.009	0.008	0.010	0.011		
	1.3	0.010	0.009	0.011	0.012		
	1.4	0.011	0.010	0.011	0.012		
	1.5	0.012	0.010	0.012	0.013		
	1.6	0.013	0.012	0.014	0.015		
	1.7	0.014	0.013	0.015	0.016		
	1.8	0.015	0.014	0.016	0.017		
	1.9	0.016	0.014	0.017	0.018		
	2.0	0.017	0.015	0.018	0.019		
	2.1	0.019	0.017	0.021	0.021		
	2.2	0.020	0.018	0.022	0.022		
	2.3	0.021	0.019	0.023	0.023		
	2.4	0.022	0.020	0.024	0.024		
	2.5	0.022	0.020	0.025	0.025		
	2.6	0.025	0.023	0.028	0.027		
	2.7	0.026	0.024	0.029	0.028		
	2.8	0.027	0.025	0.030	0.029		
	2.9	0.028	0.026	0.031	0.030		
	3.0	0.029	0.026	0.032	0.031		

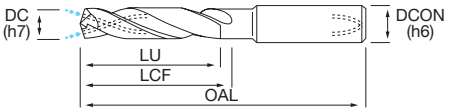
*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

SORMA DIAMOND & CUTTING TOOLS

3525SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





25xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	25	26.5	70	**3525SUH0100N**	●
1.1	0/-0.010	3	h6	27.5	29.2	70	**3525SUH0110N**	◉
1.2	0/-0.010	3	h6	30	31.8	75	**3525SUH0120N**	◉
1.3	0/-0.010	3	h6	32.5	34.5	75	**3525SUH0130N**	●
1.4	0/-0.010	3	h6	35	37	75	**3525SUH0140N**	◉
1.5	0/-0.010	3	h6	37.5	39.8	80	**3525SUH0150N**	●
1.6	0/-0.010	3	h6	40	42.4	80	**3525SUH0160N**	◉
1.7	0/-0.010	3	h6	42.5	45.1	80	**3525SUH0170N**	◉
1.8	0/-0.010	3	h6	45	47.7	90	**3525SUH0180N**	◉
1.9	0/-0.010	3	h6	47.5	50.4	90	**3525SUH0190N**	●
2	0/-0.010	3	h6	50	53	90	**3525SUH0200N**	●
2.1	0/-0.010	3	h6	52.5	55.7	100	**3525SUH0210N**	◉
2.2	0/-0.010	3	h6	55	58.3	100	**3525SUH0220N**	●
2.3	0/-0.010	3	h6	57.5	61	100	**3525SUH0230N**	◉
2.4	0/-0.010	3	h6	60	63.6	100	**3525SUH0240N**	●
2.5	0/-0.010	3	h6	62.5	66.3	110	**3525SUH0250N**	●
2.6	0/-0.010	3	h6	65	68.9	110	**3525SUH0260N**	◉
2.7	0/-0.010	3	h6	67.5	71.6	110	**3525SUH0270N**	◉
2.8	0/-0.010	3	h6	70	74.2	110	**3525SUH0280N**	◉
2.9	0/-0.010	3	h6	72.5	76.9	120	**3525SUH0290N**	●
3	0/-0.010	3	h6	75	79.5	120	**3525SUH0300N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3525SUH MINI



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	80÷90*	60÷70*	55÷65*	50÷60*	45÷55*	38÷42*
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.008	0.008	0.007	0.005	0.005	0.005
1.1	0.009	0.009	0.008	0.006	0.006	0.006
1.2	0.010	0.010	0.008	0.006	0.006	0.006
1.3	0.010	0.010	0.009	0.007	0.007	0.007
1.4	0.011	0.011	0.010	0.007	0.007	0.007
1.5	0.012	0.012	0.011	0.008	0.008	0.008
1.6	0.014	0.014	0.012	0.009	0.009	0.009
1.7	0.014	0.015	0.013	0.010	0.010	0.009
1.8	0.015	0.016	0.014	0.010	0.010	0.010
1.9	0.016	0.017	0.014	0.011	0.011	0.010
2.0	0.017	0.017	0.015	0.011	0.011	0.011
2.1	0.019	0.020	0.017	0.013	0.013	0.012
2.2	0.020	0.021	0.018	0.014	0.013	0.013
2.3	0.021	0.022	0.019	0.014	0.014	0.014
2.4	0.022	0.023	0.019	0.015	0.014	0.014
2.5	0.023	0.024	0.020	0.016	0.015	0.015
2.6	0.025	0.026	0.022	0.018	0.016	0.016
2.7	0.026	0.027	0.023	0.019	0.017	0.017
2.8	0.027	0.028	0.024	0.019	0.018	0.018
2.9	0.028	0.029	0.025	0.020	0.018	0.018
3.0	0.029	0.030	0.026	0.021	0.019	0.019



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	45÷55*	45÷50*	40÷45*			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.005	0.005	0.005			
1.1	0.006	0.006	0.006			
1.2	0.006	0.006	0.007			
1.3	0.007	0.007	0.007			
1.4	0.007	0.007	0.008			
1.5	0.008	0.008	0.008			
1.6	0.009	0.009	0.009			
1.7	0.010	0.010	0.010			
1.8	0.010	0.010	0.011			
1.9	0.011	0.011	0.011			
2.0	0.011	0.011	0.012			
2.1	0.013	0.013	0.013			
2.2	0.013	0.013	0.014			
2.3	0.014	0.014	0.014			
2.4	0.014	0.014	0.015			
2.5	0.015	0.015	0.016			
2.6	0.016	0.017	0.017			
2.7	0.017	0.017	0.018			
2.8	0.018	0.018	0.018			
2.9	0.018	0.018	0.019			
3.0	0.019	0.019	0.020			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Cutting Parameters

3525SUH MINI

Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**75÷85***	**60÷70***	**50÷60***	**45÷55***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.008	0.009	0.010	0.005		
1.1	0.009	0.010	0.011	0.006		
1.2	0.010	0.011	0.012	0.006		
1.3	0.011	0.012	0.013	0.007		
1.4	0.012	0.013	0.014	0.007		
1.5	0.012	0.014	0.015	0.008		
1.6	0.014	0.015	0.016	0.009		
1.7	0.015	0.016	0.017	0.010		
1.8	0.016	0.017	0.019	0.010		
1.9	0.016	0.018	0.020	0.011		
2.0	0.017	0.019	0.021	0.011		
2.1	0.019	0.021	0.023	0.013		
2.2	0.020	0.022	0.024	0.013		
2.3	0.021	0.023	0.025	0.014		
2.4	0.022	0.024	0.026	0.014		
2.5	0.023	0.025	0.027	0.015		
2.6	0.025	0.028	0.030	0.016		
2.7	0.025	0.029	0.031	0.017		
2.8	0.026	0.030	0.032	0.018		
2.9	0.027	0.031	0.033	0.018		
3.0	0.028	0.032	0.034	0.019		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**125÷135***	**105÷115***	**96÷104***	**135÷140***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.012	0.010	0.012		
1.1	0.013	0.013	0.011	0.013		
1.2	0.015	0.014	0.012	0.015		
1.3	0.016	0.015	0.013	0.016		
1.4	0.017	0.017	0.014	0.017		
1.5	0.018	0.018	0.015	0.018		
1.6	0.020	0.020	0.017	0.020		
1.7	0.021	0.021	0.018	0.021		
1.8	0.023	0.022	0.019	0.023		
1.9	0.024	0.023	0.020	0.024		
2.0	0.025	0.025	0.021	0.025		
2.1	0.027	0.027	0.023	0.027		
2.2	0.029	0.028	0.024	0.029		
2.3	0.030	0.029	0.025	0.030		
2.4	0.031	0.031	0.026	0.031		
2.5	0.033	0.032	0.027	0.033		
2.6	0.035	0.034	0.029	0.035		
2.7	0.037	0.035	0.031	0.036		
2.8	0.038	0.037	0.032	0.038		
2.9	0.039	0.038	0.033	0.039		
3.0	0.041	0.039	0.034	0.040		



*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

3525SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.005	0.005	0.004	0.005		
	1.1	0.006	0.006	0.005	0.005		
	1.2	0.006	0.007	0.005	0.006		
	1.3	0.007	0.007	0.006	0.006		
	1.4	0.007	0.008	0.006	0.007		
	1.5	0.008	0.008	0.007	0.007		
	1.6	0.009	0.010	0.008	0.008		
	1.7	0.010	0.011	0.008	0.009		
	1.8	0.010	0.011	0.009	0.009		
	1.9	0.011	0.012	0.009	0.010		
	2.0	0.011	0.013	0.010	0.010		
	2.1	0.013	0.015	0.011	0.012		
	2.2	0.014	0.016	0.012	0.013		
	2.3	0.014	0.016	0.012	0.013		
	2.4	0.015	0.017	0.013	0.014		
	2.5	0.016	0.018	0.013	0.014		
	2.6	0.018	0.020	0.015	0.016		
	2.7	0.019	0.021	0.016	0.017		
	2.8	0.019	0.022	0.016	0.018		
	2.9	0.020	0.023	0.017	0.018		
	3.0	0.021	0.024	0.018	0.019		

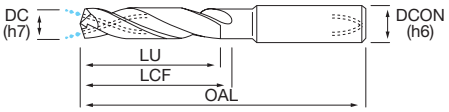
*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

SORMA DIAMOND & CUTTING TOOLS

3530SUH

- Shank 3mm
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





30xD | INTERNAL COOLANT | OSAWA NORM | SUH MINI | MG PV300 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
1	0/-0.010	3	h6	30	31.5	75	**3530SUH0100N**	●
1.1	0/-0.010	3	h6	33.1	34.7	75	**3530SUH0110N**	◉
1.2	0/-0.010	3	h6	36	37.8	75	**3530SUH0120N**	◉
1.3	0/-0.010	3	h6	39	41	85	**3530SUH0130N**	●
1.4	0/-0.010	3	h6	42	44.1	85	**3530SUH0140N**	◉
1.5	0/-0.010	3	h6	45	47.3	85	**3530SUH0150N**	●
1.6	0/-0.010	3	h6	48	50.4	90	**3530SUH0160N**	◉
1.7	0/-0.010	3	h6	51	53.6	90	**3530SUH0170N**	◉
1.8	0/-0.010	3	h6	54	56.7	100	**3530SUH0180N**	◉
1.9	0/-0.010	3	h6	57	59.9	100	**3530SUH0190N**	●
2	0/-0.010	3	h6	60	63	100	**3530SUH0200N**	●
2.1	0/-0.010	3	h6	63	66.2	110	**3530SUH0210N**	●
2.2	0/-0.010	3	h6	66	69.3	110	**3530SUH0220N**	●
2.3	0/-0.010	3	h6	69	72.5	110	**3530SUH0230N**	◉
2.4	0/-0.010	3	h6	72	75.6	120	**3530SUH0240N**	◉
2.5	0/-0.010	3	h6	75	78.8	120	**3530SUH0250N**	●
2.6	0/-0.010	3	h6	78	81.9	120	**3530SUH0260N**	●
2.7	0/-0.010	3	h6	81	85.1	130	**3530SUH0270N**	◉
2.8	0/-0.010	3	h6	84	88.2	130	**3530SUH0280N**	◉
2.9	0/-0.010	3	h6	87	91.4	130	**3530SUH0290N**	◉
3	0/-0.010	3	h6	90	94.5	130	**3530SUH0300N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3530SUH MINI



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	80÷90*	60÷70*	55÷65*	50÷60*	45÷55*	38÷42*
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.008	0.008	0.007	0.005	0.005	0.005
1.1	0.009	0.009	0.008	0.006	0.006	0.006
1.2	0.010	0.010	0.008	0.006	0.006	0.006
1.3	0.010	0.010	0.009	0.007	0.007	0.007
1.4	0.011	0.011	0.010	0.007	0.007	0.007
1.5	0.012	0.012	0.011	0.008	0.008	0.008
1.6	0.014	0.014	0.012	0.009	0.009	0.009
1.7	0.014	0.015	0.013	0.010	0.010	0.009
1.8	0.015	0.016	0.014	0.010	0.010	0.010
1.9	0.016	0.017	0.014	0.011	0.011	0.010
2.0	0.017	0.017	0.015	0.011	0.011	0.011
2.1	0.019	0.020	0.017	0.013	0.013	0.012
2.2	0.020	0.021	0.018	0.014	0.013	0.013
2.3	0.021	0.022	0.019	0.014	0.014	0.014
2.4	0.022	0.023	0.019	0.015	0.014	0.014
2.5	0.023	0.024	0.020	0.016	0.015	0.015
2.6	0.025	0.026	0.022	0.018	0.016	0.016
2.7	0.026	0.027	0.023	0.019	0.017	0.017
2.8	0.027	0.028	0.024	0.019	0.018	0.018
2.9	0.028	0.029	0.025	0.020	0.018	0.018
3.0	0.029	0.030	0.026	0.021	0.019	0.019



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	45÷55*	45÷50*	40÷45*			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.005	0.005	0.005			
1.1	0.006	0.006	0.006			
1.2	0.006	0.006	0.007			
1.3	0.007	0.007	0.007			
1.4	0.007	0.007	0.008			
1.5	0.008	0.008	0.008			
1.6	0.009	0.009	0.009			
1.7	0.010	0.010	0.010			
1.8	0.010	0.010	0.011			
1.9	0.011	0.011	0.011			
2.0	0.011	0.011	0.012			
2.1	0.013	0.013	0.013			
2.2	0.013	0.013	0.014			
2.3	0.014	0.014	0.014			
2.4	0.014	0.014	0.015			
2.5	0.015	0.015	0.016			
2.6	0.016	0.017	0.017			
2.7	0.017	0.017	0.018			
2.8	0.018	0.018	0.018			
2.9	0.018	0.018	0.019			
3.0	0.019	0.019	0.020			

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

3530SUH MINI



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**75÷85***	**60÷70***	**50÷60***	**45÷55***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.008	0.009	0.010	0.005		
1.1	0.009	0.010	0.011	0.006		
1.2	0.010	0.011	0.012	0.006		
1.3	0.011	0.012	0.013	0.007		
1.4	0.012	0.013	0.014	0.007		
1.5	0.012	0.014	0.015	0.008		
1.6	0.014	0.015	0.016	0.009		
1.7	0.015	0.016	0.017	0.010		
1.8	0.016	0.017	0.019	0.010		
1.9	0.016	0.018	0.020	0.011		
2.0	0.017	0.019	0.021	0.011		
2.1	0.019	0.021	0.023	0.013		
2.2	0.020	0.022	0.024	0.013		
2.3	0.021	0.023	0.025	0.014		
2.4	0.022	0.024	0.026	0.014		
2.5	0.023	0.025	0.027	0.015		
2.6	0.025	0.028	0.030	0.016		
2.7	0.025	0.029	0.031	0.017		
2.8	0.026	0.030	0.032	0.018		
2.9	0.027	0.031	0.033	0.018		
3.0	0.028	0.032	0.034	0.019		



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	**125÷135***	**105÷115***	**96÷104***	**135÷140***		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.012	0.010	0.012		
1.1	0.013	0.013	0.011	0.013		
1.2	0.015	0.014	0.012	0.015		
1.3	0.016	0.015	0.013	0.016		
1.4	0.017	0.017	0.014	0.017		
1.5	0.018	0.018	0.015	0.018		
1.6	0.020	0.020	0.017	0.020		
1.7	0.021	0.021	0.018	0.021		
1.8	0.023	0.022	0.019	0.023		
1.9	0.024	0.023	0.020	0.024		
2.0	0.025	0.025	0.021	0.025		
2.1	0.027	0.027	0.023	0.027		
2.2	0.029	0.028	0.024	0.029		
2.3	0.030	0.029	0.025	0.030		
2.4	0.031	0.031	0.026	0.031		
2.5	0.033	0.032	0.027	0.033		
2.6	0.035	0.034	0.029	0.035		
2.7	0.037	0.035	0.031	0.036		
2.8	0.038	0.037	0.032	0.038		
2.9	0.039	0.038	0.033	0.039		
3.0	0.041	0.039	0.034	0.040		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

3530SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**26÷30***	**24÷26***	**34÷36***	**28÷32***		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**1.0**	0.005	0.005	0.004	0.005		
	1.1	0.006	0.006	0.005	0.005		
	1.2	0.006	0.007	0.005	0.006		
	1.3	0.007	0.007	0.006	0.006		
	1.4	0.007	0.008	0.006	0.007		
	1.5	0.008	0.008	0.007	0.007		
	1.6	0.009	0.010	0.008	0.008		
	1.7	0.010	0.011	0.008	0.009		
	1.8	0.010	0.011	0.009	0.009		
	1.9	0.011	0.012	0.009	0.010		
	2.0	0.011	0.013	0.010	0.010		
	2.1	0.013	0.015	0.011	0.012		
	2.2	0.014	0.016	0.012	0.013		
	2.3	0.014	0.016	0.012	0.013		
	2.4	0.015	0.017	0.013	0.014		
	2.5	0.016	0.018	0.013	0.014		
	2.6	0.018	0.020	0.015	0.016		
	2.7	0.019	0.021	0.016	0.017		
	2.8	0.019	0.022	0.016	0.018		
	2.9	0.020	0.023	0.017	0.018		
	3.0	0.021	0.024	0.018	0.019		

*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)



TYPHOON HL

HIGH PERFORMANCE - LONG AND EXTRA-LONG

The Typhoon HL long and extra-long drills are the tool of choice for deep holes on ISO P, M, K, N, S.

La gamma Typhoon HL di punte lunghe ed extra-lunghe è progettata per la foratura di materiali ISO P, M, K, N, S.

Die Produktlinie Typhoon HL mit langen und extra-langen Bohrern wurde für das Bohren der Materialien ISO P, M, K, N, S entwickelt.

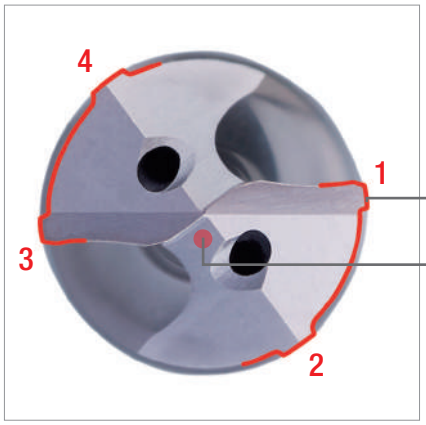
La gamme Typhoon HL de forets longs et extra longs est conçue pour le perçage de matériaux ISO P, M, K, N, S.

HL

High performance - long and extra long

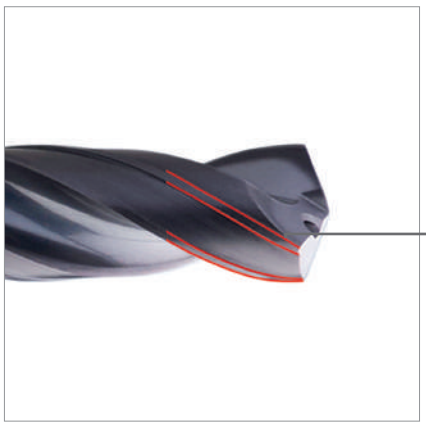
Features of HL drills





4 MARGIN LANDS DESIGN

WIDE GASH



4 MARGIN LANDS DESIGN

HL

High performance - long and extra long

Features and Benefits

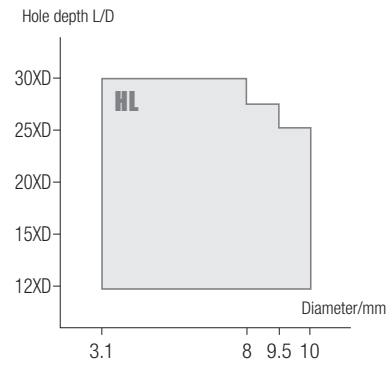
• Suitable for deep and extra-deep drilling on ISO P, M, K, N, S materials
• Drill geometry: 4 margin lands for accurate and straight deep holes. Very stable and reliable even in case of work-pieces with slant exit holes and cross holes
• Chip pocket: highly polished to prevent welding and to improve the chip ejection
• Wide gash to protect the drill edge thanks to faster and smoother chip ejection
• Substrate and coating: specifically selected for high wear resistance, long and reliable life
• Drilling process: no steps for reliable and faster process
• Addressable industries: automotive, hydraulic component, mould and die, energy, general engineering
• Long and extra long types (12xD÷30xD)

• Für das tiefe Bohren der Materialien ISO P, M, K, N, S entwickelte Bohrer
• Schneidkantengeometrie: 4 Führungsfasen für die Herstellung von präzisen Tiefbohrungen. Zur Gewährleistung von Stabilität und Zuverlässigkeit, auch bei Bohrungen mit geneigtem Ausgang oder sich kreuzenden Bohrungen
• Schlichtbearbeitung der Nuten: geläppt, um Probleme durch Verkleben zu reduzieren und um die Späneabführung zu erleichtern
• Großer Raum auf der Stirnseite um die Schneide zu schützen, weil dadurch eine gute Spanabfuhr ermöglicht wird
• Hartmetallsubstrat und Beschichtung: speziell zur Gewährleistung von Standzeit und Zuverlässigkeit
• Bohrverfahren: das stufenlose Bohren gewährleistet ein zuverlässiges und rasches Verfahren
• Industriesektoren: Automobilindustrie, Ölhydraulik, Formpressen, Energie, allgemeine Mechanik
• Von länge (12XD) bis extra-lang (30XD)

• Punte progettate per la foratura profonda di materiali ISO P, M, K, N, S
• Geometria del tagliente: 4 Margini per esecuzione di fori profondi precisi e rettilinei. Garantisce stabilità e affidabilità anche nel caso di fori con uscita inclinata o fori intersecanti
• Finitura gole: lappate per ridurre il problema dell'incollaggio e facilitare l'evacuazione dei trucioli
• Ampio scarico frontale per proteggere il tagliente grazie ad una rapida ed efficace evacuazione dei trucioli
• Substrato e rivestimento: specifici per garantire durata e affidabilità
• Processo di foratura: la foratura senza step garantisce un processo affidabile e veloce
• Settori industriali: automotive, oleodinamica, stampi, energia, meccanica generale
• Tipo lungo ed extra lungo (12xD÷30xD)

• Forets conçus pour le perçage profond de matériaux ISO P, M, K, N, S
• Géométrie de l'arête: « 4 listels » pour l'exécution de trous profonds précis et droits. Elle garantit stabilité et fiabilité même en présence de trous avec sortie inclinée ou de trous croisés
• Finition des goujoures: polie pour réduire le problème du collage et faciliter l'évacuation des copeaux
• Large entaille pour protéger l'arête de coupe du foret grâce à une meilleure évacuation des copeaux plus rapide et plus fluide
• Substrat et revêtement : spécifiques pour garantir durée et fiabilité
• Processus de perçage: le perçage sans step garantit un processus fiable et rapide
• Secteurs industriels : automotive, oléohydraulique, moules, énergie, mécanique générale
• Longues (12xD) et extra-longues (30xD)

Diameter and length range



Use case

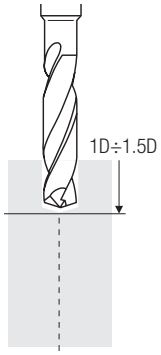
Tool Type	3525HL
Workpiece	W.-Nr 1.7225 42 CrMo 4
Parameters	Vc 60 m/min, fn 0.105 mm/rev
Diameter	6 mm
Coolant	internal
Hole depth	135 mm
Machining time:	



HL

High performance - long and extra long

Machining of deep holes perpendicular to the surface



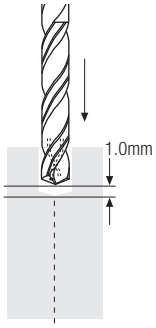
Step 1

As pilot drill (1xD,1.5xD), please use 373HGA or 353HPU with head angle 140° (HL=135°) and m7 tolerance (HL=h7).

Utilizzare una punta 373HGA o 353HPU con angolo in testa di 140° (HL=135°) e tolleranza m7 (HL=h7), per eseguire un foro pilota (1xD÷1.5xD) molto preciso

Einen Bohrer 373HGA oder 353HPU mit einem Spitzenwinkel von 140° (HL=135°) und Toleranz m7 (HL=h7) für die Herstellung einer äußerst präzisen Pilotbohrung (1xD÷1.5xD) verwenden

Utiliser un foret 373HGA ou 353HPU avec un angle en bout de 140° (HL=135°) et une tolérance m7 (HL=h7), pour effectuer un trou pilote (1xD÷1.5xD) très précis.



Step 2

With coolant feed OFF, enter the pilot hole with HL drill at Vc=20 m/min and fn=0.3 mm/rev. Position the HL drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.

Senza azionare il refrigerante interno, entrare con la punta lunga serie HL all'interno del foro. Vc=20 m/min, fn=0.3 mm/rev. Posizionare la punta HL sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.

Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie HL in die Bohrung einführen. Vc=20 m/min, fn=0.3 mm/U den Bohrer HL bis 1 mm vom Ende der Pilotbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.

Sans actionner la lubrification interne, entrer avec le foret long série HL à l'intérieur du trou. Vc=20 m/min, fn=0.3 mm/rév. Placer le foret HL jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage.



Step 3

Make continue drilling operation without steps for chip ejection.
In case of through holes, reduce the feed by 30% before the hole exit (approx. 1 mm).
Stop the coolant feed.

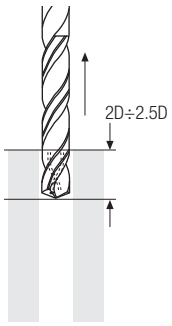
Forare senza step per scarico trucioli.
Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%.
Fermare il refrigerante.

Für die Späneabführung Stufenlos bohren.
Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren. Die Kühlung deaktivieren.

Percer sans step pour l'évacuation des copeaux.
En présence de trous débouchants, 1 mm avant d'avoir terminé le trou, réduire l'avancement du 30 %. Arrêter la lubrification.

HL

High performance - long and extra long



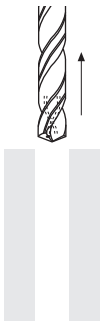
Step 4

Withdraw the drill using max rpm and double fn, until 2xD from the hole entrance.

Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe 2xD einsetzen.

Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità 2xD.

Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur 2xD.



Step 5

Completing the exit from the hole by using slow and constant speed.

Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen.

Completare l'ultimo tratto di arretramento con velocità ridotta e costante.

Terminer la dernière partie du perçage avec une vitesse réduite et constante.

HL

High performance - long and extra long

Machining of deep holes on slanted or irregular surfaces



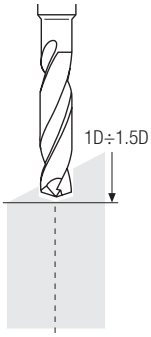
Step 1

Prepare a flat surface of the same size as the drilling diameter.

Eine ebene Oberfläche, durch einen Fräser mit stirnseitiger Schneidkante, herstellen. Die hergestellte Oberfläche muss dieselben Abmessungen des Durchmessers der tiefen Bohrung aufweisen.

Realizzare una superficie piana utilizzando una fresa con tagliente frontale. Il piano realizzato deve avere le stesse dimensioni del diametro di foratura profonda.

Réaliser une surface plane en utilisant une fraise avec une arête frontale. Le plan réalisé doit avoir les mêmes dimensions que le diamètre de perçage profond.



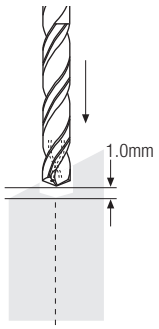
Step 2

As pilot drill (1xD,1.5xD), please use 373HGA or 353HPU with head angle 140° (HL=135°) and m7 tolerance (HL=h7).

Einen Bohrer 373HGA oder 353HPU mit einem Spitzenwinkel von 140° (HL=135°) und Toleranz m7 (HL=h7) für die Herstellung einer äußerst präzisen Pilotbohrung (1xD÷1.5xD) verwenden.

Utilizzare una punta 373HGA o 353HPU con angolo in testa di 140° (HL=135°) e tolleranza m7 (HL=h7), per eseguire un foro pilota (1xD÷1.5xD) molto preciso.

Utiliser un foret 373HGA ou 353HPU avec un angle en bout de 140° (HL=135°) et une tolérance m7 (HL=h7), pour effectuer un trou pilote (1xD÷1.5xD) très précis.



Step 3

With coolant feed OFF, enter the pilot hole with HL drill at Vc=20 m/min and fn=0.3 mm/rev. Position the HL drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.

Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie HL in die Bohrung einführen. Vc=20 m/min, fn=0.3 mm/Umdr. Den Bohrer HL bis 1 mm vom Ende der Pilotbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.

Senza azionare il refrigerante interno, entrare con la punta lunga serie HL all'interno del foro. Vc=20 m/min, fn=0.3 mm/rev. Posizionare la punta HL sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.

Sans actionner la lubrification interne, entrer avec le foret long série HL à l'intérieur du trou. Vc=20 m/min, fn=0.3 mm/rév. Placer le foret HL jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage

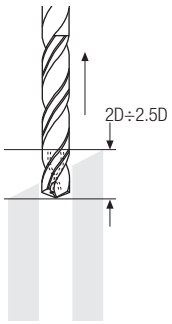
HL

High performance - long and extra long



Step 4

- Make continue drilling operation without steps for chip ejection.
  In case of through holes, reduce the feed by 30% before the hole exit (approx 1 mm).
  Stop the coolant feed.
- Für die Späneabführung Stufenlos bohren.
  Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren.
  Die Kühlung deaktivieren
- Forare senza step per scarico trucioli.
  Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%.
  Fermare il refrigerante.
- Percer sans step pour l'évacuation des copeaux.
  En présence de trous débouc hants, 1 mm avant d'avoir terminé le trou, réduire l'avance de 30 %.
  Arrêter la lubrification.



Step 5

- Withdraw the drill using max rpm and double fn, until 2xD÷2.5xD from the hole entrance.
- Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe 2xD÷2.5xD einsetzen.
- Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità 2xD÷2.5xD.
- Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur 2xD÷2.5xD.



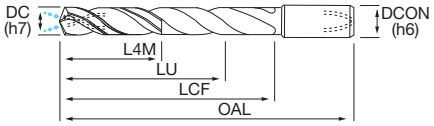
Step 6

- Completing the exit from the hole by using slow and constant speed.
- Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen.
- Completare l'ultimo tratto di arretramento con velocità ridotta e costante.
- Terminer la dernière partie du perçage avec une vitesse réduite et constante.

SORMA DIAMOND & CUTTING TOOLS

3512HL

- 4 margin lands
- Polished flutes





P	M	K	N	S	H
★	★	★	☆	☆	

12xD | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
3.1	0/-0.012	4	h6	45	50	85	15.5	**3512HL0310N**	●
3.2	0/-0.012	4	h6	45	50	85	16	**3512HL0320N**	●
3.3	0/-0.012	4	h6	45	50	85	16.5	**3512HL0330N**	●
3.4	0/-0.012	4	h6	48	54	90	17	**3512HL0340N**	●
3.5	0/-0.012	4	h6	48	54	90	17.5	**3512HL0350N**	●
3.6	0/-0.012	4	h6	48	54	90	18	**3512HL0360N**	●
3.7	0/-0.012	4	h6	48	54	90	18.5	**3512HL0370N**	●
3.8	0/-0.012	4	h6	57	64	100	19	**3512HL0380N**	●
3.9	0/-0.012	4	h6	57	64	100	19.5	**3512HL0390N**	●
4	0/-0.012	4	h6	57	64	100	20	**3512HL0400N**	●
4.1	0/-0.012	5	h6	57	64	100	20.5	**3512HL0410N**	●
4.2	0/-0.012	5	h6	57	64	100	21	**3512HL0420N**	●
4.3	0/-0.012	5	h6	57	64	100	21.5	**3512HL0430N**	●
4.4	0/-0.012	5	h6	57	64	100	22	**3512HL0440N**	●
4.5	0/-0.012	5	h6	57	64	100	22.5	**3512HL0450N**	●
4.6	0/-0.012	5	h6	57	64	100	23	**3512HL0460N**	●
4.7	0/-0.012	5	h6	57	64	100	23.5	**3512HL0470N**	●
4.8	0/-0.012	5	h6	67	74	110	24	**3512HL0480N**	●
4.9	0/-0.012	5	h6	72	81	120	24.5	**3512HL0490N**	●
5	0/-0.012	5	h6	72	81	120	25	**3512HL0500N**	●
5.1	0/-0.012	6	h6	72	81	120	25.5	**3512HL0510N**	●
5.2	0/-0.012	6	h6	72	81	120	26	**3512HL0520N**	●
5.3	0/-0.012	6	h6	72	81	120	26.5	**3512HL0530N**	●
5.4	0/-0.012	6	h6	72	81	120	27	**3512HL0540N**	●
5.5	0/-0.012	6	h6	72	81	120	27.5	**3512HL0550N**	●
5.6	0/-0.012	6	h6	72	81	120	28	**3512HL0560N**	●
5.7	0/-0.012	6	h6	72	81	120	28.5	**3512HL0570N**	●
5.8	0/-0.012	6	h6	72	81	120	29	**3512HL0580N**	●
5.9	0/-0.012	6	h6	72	81	120	29.5	**3512HL0590N**	●
6	0/-0.012	6	h6	72	81	120	30	**3512HL0600N**	●
6.1	0/-0.015	8	h6	88	97	135	30.5	**3512HL0610N**	●
6.2	0/-0.015	8	h6	88	97	135	31	**3512HL0620N**	●
6.3	0/-0.015	8	h6	88	97	135	31.5	**3512HL0630N**	●
6.4	0/-0.015	8	h6	96	108	145	32	**3512HL0640N**	●
6.5	0/-0.015	8	h6	96	108	145	32.5	**3512HL0650N**	●
6.6	0/-0.015	8	h6	96	108	145	33	**3512HL0660N**	●
6.7	0/-0.015	8	h6	96	108	145	33.5	**3512HL0670N**	●
6.8	0/-0.015	8	h6	96	108	145	34	**3512HL0680N**	●
6.9	0/-0.015	8	h6	96	108	145	34.5	**3512HL0690N**	●
7	0/-0.015	8	h6	96	108	145	35	**3512HL0700N**	●
7.1	0/-0.015	8	h6	96	108	145	35.5	**3512HL0710N**	◉
7.2	0/-0.015	8	h6	96	108	145	36	**3512HL0720N**	●
7.3	0/-0.015	8	h6	96	108	145	36.5	**3512HL0730N**	◉
7.4	0/-0.015	8	h6	96	108	145	37	**3512HL0740N**	●
7.5	0/-0.015	8	h6	96	108	145	37.5	**3512HL0750N**	●

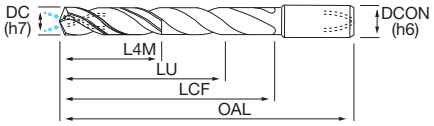
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

3512HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





12xD | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
7.6	0/-0.015	8	h6	96	108	145	38	**3512HL0760N**	◉
7.7	0/-0.015	8	h6	96	108	145	38.5	**3512HL0770N**	◉
7.8	0/-0.015	8	h6	96	108	145	39	**3512HL0780N**	●
7.9	0/-0.015	8	h6	96	108	145	39.5	**3512HL0790N**	◉
8	0/-0.015	8	h6	96	108	145	40	**3512HL0800N**	●
8.1	0/-0.015	10	h6	115	127	170	40.5	**3512HL0810N**	●
8.2	0/-0.015	10	h6	120	135	180	41	**3512HL0820N**	●
8.3	0/-0.015	10	h6	120	135	180	41.5	**3512HL0830N**	●
8.4	0/-0.015	10	h6	120	135	180	42	**3512HL0840N**	◉
8.5	0/-0.015	10	h6	120	135	180	42.5	**3512HL0850N**	●
8.6	0/-0.015	10	h6	120	135	180	43	**3512HL0860N**	●
8.7	0/-0.015	10	h6	120	135	180	43.5	**3512HL0870N**	●
8.8	0/-0.015	10	h6	120	135	180	44	**3512HL0880N**	●
8.9	0/-0.015	10	h6	120	135	180	44.5	**3512HL0890N**	◉
9	0/-0.015	10	h6	120	135	180	45	**3512HL0900N**	●
9.1	0/-0.015	10	h6	120	135	180	45.5	**3512HL0910N**	●
9.2	0/-0.015	10	h6	120	135	180	46	**3512HL0920N**	●
9.3	0/-0.015	10	h6	120	135	180	46.5	**3512HL0930N**	●
9.4	0/-0.015	10	h6	120	135	180	47	**3512HL0940N**	◉
9.5	0/-0.015	10	h6	120	135	180	47.5	**3512HL0950N**	●
9.6	0/-0.015	10	h6	120	135	180	48	**3512HL0960N**	◉
9.7	0/-0.015	10	h6	120	135	180	48.5	**3512HL0970N**	◉
9.8	0/-0.015	10	h6	120	135	180	49	**3512HL0980N**	●
9.9	0/-0.015	10	h6	120	135	180	49.5	**3512HL0990N**	◉
10	0/-0.015	10	h6	120	135	180	50	**3512HL1000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3512HL



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	**70÷90**	**60÷80**	**50÷70**	**45÷65**	**40÷60**	**35÷40**
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
3.0	0.047	0.046	0.046	0.045	0.047	0.044
3.5	0.057	0.055	0.054	0.053	0.056	0.053
4.0	0.068	0.066	0.064	0.063	0.067	0.063
4.5	0.079	0.076	0.076	0.075	0.077	0.071
5.0	0.090	0.088	0.087	0.086	0.087	0.081
5.5	0.102	0.098	0.099	0.097	0.100	0.092
6.0	0.117	0.109	0.110	0.109	0.113	0.105
6.5	0.128	0.121	0.125	0.123	0.123	0.118
7.0	0.144	0.135	0.138	0.137	0.136	0.126
7.5	0.156	0.151	0.152	0.150	0.150	0.144
8.0	0.175	0.166	0.167	0.165	0.167	0.156
8.5	0.184	0.173	0.170	0.168	0.172	0.163
9.0	0.194	0.176	0.180	0.178	0.177	0.160
9.5	0.198	0.185	0.186	0.184	0.181	0.168
10.0	0.210	0.188	0.192	0.190	0.185	0.177



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	**40÷60**	**40÷60**	**35÷55**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3.0	0.047	0.042	0.041			
3.5	0.056	0.051	0.048			
4.0	0.067	0.060	0.058			
4.5	0.077	0.070	0.067			
5.0	0.087	0.079	0.075			
5.5	0.100	0.091	0.086			
6.0	0.113	0.103	0.096			
6.5	0.123	0.113	0.108			
7.0	0.136	0.125	0.122			
7.5	0.150	0.135	0.127			
8.0	0.167	0.150	0.145			
8.5	0.172	0.157	0.147			
9.0	0.177	0.159	0.156			
9.5	0.181	0.162	0.159			
10.0	0.185	0.170	0.169			

3512HL

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**65÷85**	**60÷80**	**45÷65**	**45÷65**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.048	0.045	0.048	0.047		
	3.5	0.058	0.055	0.057	0.056		
	4.0	0.069	0.064	0.067	0.066		
	4.5	0.080	0.075	0.079	0.078		
	5.0	0.093	0.087	0.090	0.089		
	5.5	0.105	0.097	0.103	0.101		
	6.0	0.117	0.109	0.114	0.113		
	6.5	0.133	0.122	0.130	0.128		
	7.0	0.149	0.136	0.143	0.142		
	7.5	0.161	0.152	0.157	0.155		
	8.0	0.179	0.166	0.173	0.171		
	8.5	0.186	0.173	0.176	0.174		
	9.0	0.187	0.174	0.187	0.185		
	9.5	0.197	0.183	0.191	0.189		
	10.0	0.200	0.187	0.195	0.194		

	Material Group ISO 513	N1	N2	N3 N4			
	Hardness/Rm						
	Vc (m/min)	**125÷145**	**110÷130**	**100÷120**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3.0**	0.060	0.059	0.058			
	3.5	0.073	0.071	0.070			
	4.0	0.086	0.085	0.083			
	4.5	0.100	0.099	0.096			
	5.0	0.115	0.114	0.111			
	5.5	0.132	0.129	0.126			
	6.0	0.149	0.145	0.140			
	6.5	0.167	0.161	0.158			
	7.0	0.185	0.181	0.175			
	7.5	0.202	0.196	0.195			
	8.0	0.222	0.218	0.213			
	8.5	0.229	0.227	0.218			
	9.0	0.237	0.231	0.229			
	9.5	0.246	0.243	0.236			
	10.0	0.251	0.250	0.243			

Cutting Parameters

3512HL

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**24÷28**	**20÷25**	**28÷32**	**25÷30**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.040	0.037	0.047	0.044		
	3.5	0.048	0.046	0.055	0.052		
	4.0	0.057	0.055	0.065	0.063		
	4.5	0.067	0.061	0.077	0.070		
	5.0	0.075	0.069	0.088	0.080		
	5.5	0.084	0.077	0.104	0.094		
	6.0	0.100	0.086	0.124	0.113		
	6.5	0.109	0.092	0.136	0.123		
	7.0	0.119	0.100	0.150	0.136		
	7.5	0.133	0.114	0.164	0.150		
	8.0	0.138	0.130	0.181	0.167		
	8.5	0.148	0.130	0.189	0.163		
	9.0	0.160	0.144	0.183	0.173		
	9.5	0.155	0.139	0.195	0.168		
	10.0	0.167	0.150	0.191	0.180		

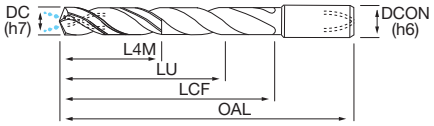
*during the exit phase the use of external coolant supply is recommended to keep the tool and the workpiece cooled and lubricated to avoid failures due to overheating.

SORMA DIAMOND & CUTTING TOOLS

3515HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





15xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
3.1	0/-0.012	4	h6	50	55	90	15.5	3515HL0310N	◉
3.2	0/-0.012	4	h6	50	55	90	16	3515HL0320N	◉
3.3	0/-0.012	4	h6	52	56	90	16.5	3515HL0330N	◉
3.4	0/-0.012	4	h6	53	58	95	17	3515HL0340N	◉
3.5	0/-0.012	4	h6	55	60	95	17.5	3515HL0350N	●
3.6	0/-0.012	4	h6	56	61	95	18	3515HL0360N	◉
3.7	0/-0.012	4	h6	58	63	100	18.5	3515HL0370N	◉
3.8	0/-0.012	4	h6	60	65	100	19	3515HL0380N	◉
3.9	0/-0.012	4	h6	60	66	100	19.5	3515HL0390N	◉
4	0/-0.012	4	h6	62	68	105	20	3515HL0400N	●
4.1	0/-0.012	5	h6	64	70	105	20.5	3515HL0410N	◉
4.2	0/-0.012	5	h6	65	71	110	21	3515HL0420N	◉
4.3	0/-0.012	5	h6	67	73	110	21.5	3515HL0430N	●
4.4	0/-0.012	5	h6	68	75	110	22	3515HL0440N	◉
4.5	0/-0.012	5	h6	70	76	115	22.5	3515HL0450N	●
4.6	0/-0.012	5	h6	71	78	115	23	3515HL0460N	◉
4.7	0/-0.012	5	h6	73	80	115	23.5	3515HL0470N	◉
4.8	0/-0.012	5	h6	75	82	115	24	3515HL0480N	◉
4.9	0/-0.012	5	h6	76	83	120	24.5	3515HL0490N	◉
5	0/-0.012	5	h6	77	85	120	25	3515HL0500N	●
5.1	0/-0.012	6	h6	79	86	125	25.5	3515HL0510N	◉
5.2	0/-0.012	6	h6	80	88	125	26	3515HL0520N	◉
5.3	0/-0.012	6	h6	82	89	130	26.5	3515HL0530N	◉
5.4	0/-0.012	6	h6	83	91	130	27	3515HL0540N	◉
5.5	0/-0.012	6	h6	85	93	130	27.5	3515HL0550N	●
5.6	0/-0.012	6	h6	86	94	135	28	3515HL0560N	◉
5.7	0/-0.012	6	h6	88	96	135	28.5	3515HL0570N	◉
5.8	0/-0.012	6	h6	89	98	135	29	3515HL0580N	◉
5.9	0/-0.012	6	h6	91	99	140	29.5	3515HL0590N	◉
6	0/-0.012	6	h6	92	101	140	30	3515HL0600N	●
6.1	0/-0.015	8	h6	94	103	140	30.5	3515HL0610N	◉
6.2	0/-0.015	8	h6	95	104	140	31	3515HL0620N	◉
6.3	0/-0.015	8	h6	98	108	145	31.5	3515HL0630N	◉
6.4	0/-0.015	8	h6	100	110	145	32	3515HL0640N	◉
6.5	0/-0.015	8	h6	100	110	150	32.5	3515HL0650N	●
6.6	0/-0.015	8	h6	101	111	150	33	3515HL0660N	◉
6.7	0/-0.015	8	h6	103	113	150	33.5	3515HL0670N	◉
6.8	0/-0.015	8	h6	104	114	155	34	3515HL0680N	◉
6.9	0/-0.015	8	h6	106	116	155	34.5	3515HL0690N	◉
7	0/-0.015	8	h6	107	118	160	35	3515HL0700N	●
7.1	0/-0.015	8	h6	109	119	160	35.5	3515HL0710N	◉
7.2	0/-0.015	8	h6	110	121	160	36	3515HL0720N	◉
7.3	0/-0.015	8	h6	112	122	165	36.5	3515HL0730N	◉
7.4	0/-0.015	8	h6	113	124	165	37	3515HL0740N	◉
7.5	0/-0.015	8	h6	115	126	165	37.5	3515HL0750N	●

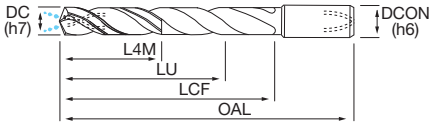
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

3515HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





15xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
7.6	0/-0.015	8	h6	116	127	170	38	**3515HL0760N**	◉
7.7	0/-0.015	8	h6	118	129	170	38.5	**3515HL0770N**	◉
7.8	0/-0.015	8	h6	119	131	170	39	**3515HL0780N**	◉
7.9	0/-0.015	8	h6	121	132	175	39.5	**3515HL0790N**	◉
8	0/-0.015	8	h6	122	134	175	40	**3515HL0800N**	●
8.1	0/-0.015	10	h6	125	137	180	40.5	**3515HL0810N**	◉
8.2	0/-0.015	10	h6	125	137	180	41	**3515HL0820N**	◉
8.3	0/-0.015	10	h6	127	139	180	41.5	**3515HL0830N**	◉
8.4	0/-0.015	10	h6	128	141	185	42	**3515HL0840N**	◉
8.5	0/-0.015	10	h6	130	142	185	42.5	**3515HL0850N**	●
8.6	0/-0.015	10	h6	131	144	185	43	**3515HL0860N**	◉
8.7	0/-0.015	10	h6	133	146	190	43.5	**3515HL0870N**	◉
8.8	0/-0.015	10	h6	134	147	190	44	**3515HL0880N**	◉
8.9	0/-0.015	10	h6	136	149	190	44.5	**3515HL0890N**	◉
9	0/-0.015	10	h6	137	151	195	45	**3515HL0900N**	●
9.1	0/-0.015	10	h6	139	152	195	45.5	**3515HL0910N**	◉
9.2	0/-0.015	10	h6	140	154	195	46	**3515HL0920N**	◉
9.3	0/-0.015	10	h6	142	155	200	46.5	**3515HL0930N**	◉
9.4	0/-0.015	10	h6	143	157	200	47	**3515HL0940N**	◉
9.5	0/-0.015	10	h6	145	159	200	47.5	**3515HL0950N**	●
9.6	0/-0.015	10	h6	146	160	205	48	**3515HL0960N**	◉
9.7	0/-0.015	10	h6	148	162	205	48.5	**3515HL0970N**	◉
9.8	0/-0.015	10	h6	149	164	205	49	**3515HL0980N**	◉
9.9	0/-0.015	10	h6	151	165	210	49.5	**3515HL0990N**	◉
10	0/-0.015	10	h6	152	167	210	50	**3515HL1000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3515HL

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**65÷85**	**50÷70**	**40÷60**	**35÷55**	**40÷50**	**30÷40**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3.0	0.044	0.043	0.045	0.044	0.043	0.035
	3.5	0.054	0.053	0.054	0.053	0.052	0.042
	4.0	0.065	0.063	0.065	0.064	0.063	0.050
	4.5	0.075	0.075	0.077	0.076	0.072	0.057
	5.0	0.085	0.086	0.088	0.086	0.084	0.065
	5.5	0.098	0.097	0.102	0.100	0.097	0.075
	6.0	0.111	0.109	0.112	0.110	0.107	0.086
	6.5	0.125	0.123	0.130	0.128	0.120	0.098
	7.0	0.138	0.137	0.140	0.138	0.135	0.105
	7.5	0.151	0.152	0.156	0.154	0.145	0.121
	8.0	0.171	0.169	0.175	0.173	0.165	0.131
	8.5	0.177	0.172	0.179	0.176	0.171	0.137
	9.0	0.177	0.183	0.183	0.180	0.178	0.133
	9.5	0.186	0.186	0.189	0.187	0.182	0.139
	10.0	0.189	0.190	0.196	0.194	0.188	0.146

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm						
	Vc (m/min)	**40÷50**	**40÷50**	**35÷45**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3.0	0.043	0.039	0.031			
	3.5	0.052	0.048	0.038			
	4.0	0.063	0.057	0.046			
	4.5	0.072	0.066	0.053			
	5.0	0.084	0.077	0.061			
	5.5	0.097	0.088	0.071			
	6.0	0.107	0.098	0.080			
	6.5	0.120	0.110	0.088			
	7.0	0.135	0.123	0.099			
	7.5	0.145	0.132	0.106			
	8.0	0.165	0.150	0.120			
	8.5	0.171	0.155	0.124			
	9.0	0.178	0.161	0.128			
	9.5	0.182	0.165	0.132			
	10.0	0.188	0.171	0.136			

Cutting Parameters

3515HL



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**60÷80**	**55÷75**	**40÷60**	**40÷60**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3.0	0.047	0.045	0.047	0.047		
3.5	0.057	0.055	0.057	0.056		
4.0	0.067	0.065	0.068	0.067		
4.5	0.079	0.077	0.081	0.079		
5.0	0.092	0.089	0.092	0.090		
5.5	0.103	0.101	0.106	0.105		
6.0	0.116	0.112	0.117	0.115		
6.5	0.130	0.127	0.135	0.133		
7.0	0.146	0.144	0.146	0.144		
7.5	0.163	0.158	0.163	0.160		
8.0	0.178	0.173	0.182	0.180		
8.5	0.185	0.175	0.186	0.183		
9.0	0.186	0.184	0.190	0.188		
9.5	0.196	0.188	0.195	0.193		
10.0	0.200	0.191	0.200	0.199		



Material Group ISO 513	N1	N2	N3 N4			
Hardness/Rm						
Vc (m/min)	**115÷135**	**95÷115**	**85÷105**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3.0	0.058	0.057	0.056			
3.5	0.071	0.070	0.068			
4.0	0.084	0.083	0.081			
4.5	0.098	0.096	0.095			
5.0	0.114	0.111	0.110			
5.5	0.129	0.127	0.125			
6.0	0.147	0.142	0.141			
6.5	0.163	0.160	0.158			
7.0	0.182	0.177	0.177			
7.5	0.201	0.198	0.194			
8.0	0.222	0.217	0.214			
8.5	0.229	0.222	0.220			
9.0	0.238	0.232	0.226			
9.5	0.242	0.238	0.233			
10.0	0.253	0.246	0.241			

Cutting Parameters

3515HL

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**24÷28**	**20÷25**	**28÷32**	**25÷30**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.037	0.030	0.050	0.044		
	3.5	0.044	0.037	0.058	0.052		
	4.0	0.052	0.045	0.069	0.063		
	4.5	0.062	0.050	0.081	0.070		
	5.0	0.069	0.056	0.093	0.080		
	5.5	0.078	0.063	0.109	0.094		
	6.0	0.093	0.071	0.129	0.113		
	6.5	0.102	0.077	0.142	0.123		
	7.0	0.112	0.083	0.157	0.136		
	7.5	0.125	0.095	0.171	0.150		
	8.0	0.129	0.110	0.188	0.167		
	8.5	0.139	0.110	0.198	0.163		
	9.0	0.150	0.122	0.192	0.173		
	9.5	0.145	0.117	0.205	0.168		
	10.0	0.156	0.125	0.200	0.180		

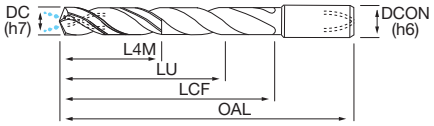
*during the exit phase the use of external coolant supply is recommended to keep the tool and the workpiece cooled and lubricated to avoid failures due to overheating.

SORMA DIAMOND & CUTTING TOOLS

3520HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





20xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
3.1	0/-0.012	4	h6	64	69	105	15.5	3520HL0310N	◉
3.2	0/-0.012	4	h6	66	71	105	16	3520HL0320N	●
3.3	0/-0.012	4	h6	68	73	110	16.5	3520HL0330N	●
3.4	0/-0.012	4	h6	70	75	110	17	3520HL0340N	◉
3.5	0/-0.012	4	h6	72	77	110	17.5	3520HL0350N	●
3.6	0/-0.012	4	h6	74	79	115	18	3520HL0360N	◉
3.7	0/-0.012	4	h6	76	82	115	18.5	3520HL0370N	◉
3.8	0/-0.012	4	h6	78	84	120	19	3520HL0380N	◉
3.9	0/-0.012	4	h6	80	86	120	19.5	3520HL0390N	◉
4	0/-0.012	4	h6	82	88	125	20	3520HL0400N	●
4.1	0/-0.012	5	h6	84	90	125	20.5	3520HL0410N	◉
4.2	0/-0.012	5	h6	86	92	130	21	3520HL0420N	◉
4.3	0/-0.012	5	h6	88	94	130	21.5	3520HL0430N	◉
4.4	0/-0.012	5	h6	90	97	135	22	3520HL0440N	◉
4.5	0/-0.012	5	h6	92	99	135	22.5	3520HL0450N	●
4.6	0/-0.012	5	h6	94	101	140	23	3520HL0460N	◉
4.7	0/-0.012	5	h6	96	103	140	23.5	3520HL0470N	◉
4.8	0/-0.012	5	h6	98	105	140	24	3520HL0480N	◉
4.9	0/-0.012	5	h6	100	107	145	24.5	3520HL0490N	◉
5	0/-0.012	5	h6	102	110	145	25	3520HL0500N	●
5.1	0/-0.012	6	h6	104	112	150	25.5	3520HL0510N	◉
5.2	0/-0.012	6	h6	106	114	155	26	3520HL0520N	◉
5.3	0/-0.012	6	h6	108	116	155	26.5	3520HL0530N	◉
5.4	0/-0.012	6	h6	110	118	155	27	3520HL0540N	◉
5.5	0/-0.012	6	h6	112	120	160	27.5	3520HL0550N	●
5.6	0/-0.012	6	h6	114	122	160	28	3520HL0560N	◉
5.7	0/-0.012	6	h6	116	125	165	28.5	3520HL0570N	◉
5.8	0/-0.012	6	h6	118	127	165	29	3520HL0580N	◉
5.9	0/-0.012	6	h6	120	129	170	29.5	3520HL0590N	◉
6	0/-0.012	6	h6	122	131	170	30	3520HL0600N	●
6.1	0/-0.015	8	h6	124	133	170	30.5	3520HL0610N	◉
6.2	0/-0.015	8	h6	126	135	175	31	3520HL0620N	◉
6.3	0/-0.015	8	h6	128	137	175	31.5	3520HL0630N	◉
6.4	0/-0.015	8	h6	130	140	180	32	3520HL0640N	◉
6.5	0/-0.015	8	h6	132	142	180	32.5	3520HL0650N	●
6.6	0/-0.015	8	h6	134	144	185	33	3520HL0660N	◉
6.7	0/-0.015	8	h6	136	146	185	33.5	3520HL0670N	◉
6.8	0/-0.015	8	h6	138	148	185	34	3520HL0680N	◉
6.9	0/-0.015	8	h6	140	150	190	34.5	3520HL0690N	◉
7	0/-0.015	8	h6	142	153	195	35	3520HL0700N	●
7.1	0/-0.015	8	h6	144	155	195	35.5	3520HL0710N	◉
7.2	0/-0.015	8	h6	146	157	200	36	3520HL0720N	◉
7.3	0/-0.015	8	h6	148	159	200	36.5	3520HL0730N	◉
7.4	0/-0.015	8	h6	150	161	200	37	3520HL0740N	◉
7.5	0/-0.015	8	h6	152	163	205	37.5	3520HL0750N	●

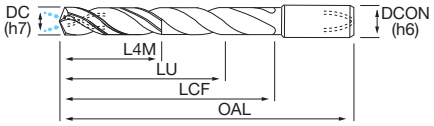
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

3520HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





20xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
7.6	0/-0.015	8	h6	154	165	205	38	**3520HL0760N**	◉
7.7	0/-0.015	8	h6	156	168	210	38.5	**3520HL0770N**	◉
7.8	0/-0.015	8	h6	158	170	210	39	**3520HL0780N**	◉
7.9	0/-0.015	8	h6	160	172	215	39.5	**3520HL0790N**	◉
8	0/-0.015	8	h6	162	174	215	40	**3520HL0800N**	●
8.1	0/-0.015	10	h6	164	176	220	40.5	**3520HL0810N**	◉
8.2	0/-0.015	10	h6	166	178	220	41	**3520HL0820N**	◉
8.3	0/-0.015	10	h6	168	180	225	41.5	**3520HL0830N**	◉
8.4	0/-0.015	10	h6	170	183	225	42	**3520HL0840N**	◉
8.5	0/-0.015	10	h6	172	185	230	42.5	**3520HL0850N**	●
8.6	0/-0.015	10	h6	174	187	230	43	**3520HL0860N**	◉
8.7	0/-0.015	10	h6	176	189	230	43.5	**3520HL0870N**	◉
8.8	0/-0.015	10	h6	178	191	235	44	**3520HL0880N**	◉
8.9	0/-0.015	10	h6	180	193	235	44.5	**3520HL0890N**	◉
9	0/-0.015	10	h6	182	196	240	45	**3520HL0900N**	●
9.1	0/-0.015	10	h6	184	198	240	45.5	**3520HL0910N**	◉
9.2	0/-0.015	10	h6	186	200	245	46	**3520HL0920N**	◉
9.3	0/-0.015	10	h6	188	202	245	46.5	**3520HL0930N**	◉
9.4	0/-0.015	10	h6	190	204	245	47	**3520HL0940N**	◉
9.5	0/-0.015	10	h6	192	206	250	47.5	**3520HL0950N**	●
9.6	0/-0.015	10	h6	194	208	250	48	**3520HL0960N**	◉
9.7	0/-0.015	10	h6	196	211	255	48.5	**3520HL0970N**	◉
9.8	0/-0.015	10	h6	198	213	255	49	**3520HL0980N**	◉
9.9	0/-0.015	10	h6	200	215	260	49.5	**3520HL0990N**	◉
10	0/-0.015	10	h6	202	217	260	50	**3520HL1000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3520HL



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	65÷85	50÷70	40÷60	35÷55	40÷50	30÷40
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
3.0	0.044	0.043	0.045	0.044	0.043	0.035
3.5	0.054	0.053	0.054	0.053	0.052	0.042
4.0	0.065	0.063	0.065	0.064	0.063	0.050
4.5	0.075	0.075	0.077	0.076	0.072	0.057
5.0	0.085	0.086	0.088	0.086	0.084	0.065
5.5	0.098	0.097	0.102	0.100	0.097	0.075
6.0	0.111	0.109	0.112	0.110	0.107	0.086
6.5	0.125	0.123	0.130	0.128	0.120	0.098
7.0	0.138	0.137	0.140	0.138	0.135	0.105
7.5	0.151	0.152	0.156	0.154	0.145	0.121
8.0	0.171	0.169	0.175	0.173	0.165	0.131
8.5	0.177	0.172	0.179	0.176	0.171	0.137
9.0	0.177	0.183	0.183	0.180	0.178	0.133
9.5	0.186	0.186	0.189	0.187	0.182	0.139
10.0	0.189	0.190	0.196	0.194	0.188	0.146



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	40÷50	40÷50	35÷45			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3.0	0.043	0.039	0.031			
3.5	0.052	0.048	0.038			
4.0	0.063	0.057	0.046			
4.5	0.072	0.066	0.053			
5.0	0.084	0.077	0.061			
5.5	0.097	0.088	0.071			
6.0	0.107	0.098	0.080			
6.5	0.120	0.110	0.088			
7.0	0.135	0.123	0.099			
7.5	0.145	0.132	0.106			
8.0	0.165	0.150	0.120			
8.5	0.171	0.155	0.124			
9.0	0.178	0.161	0.128			
9.5	0.182	0.165	0.132			
10.0	0.188	0.171	0.136			

3520HL

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**60÷80**	**55÷75**	**40÷60**	**40÷60**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.047	0.045	0.047	0.047		
	3.5	0.057	0.055	0.057	0.056		
	4.0	0.067	0.065	0.068	0.067		
	4.5	0.079	0.077	0.081	0.079		
	5.0	0.092	0.089	0.092	0.090		
	5.5	0.103	0.101	0.106	0.105		
	6.0	0.116	0.112	0.117	0.115		
	6.5	0.130	0.127	0.135	0.133		
	7.0	0.146	0.144	0.146	0.144		
	7.5	0.163	0.158	0.163	0.160		
	8.0	0.178	0.173	0.182	0.180		
	8.5	0.185	0.175	0.186	0.183		
	9.0	0.186	0.184	0.190	0.188		
	9.5	0.196	0.188	0.195	0.193		
	10.0	0.200	0.191	0.200	0.199		

	Material Group ISO 513	N1	N2	N3 N4			
	Hardness/Rm						
	Vc (m/min)	**115÷135**	**95÷115**	**85÷105**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3.0**	0.058	0.057	0.056			
	3.5	0.071	0.070	0.068			
	4.0	0.084	0.083	0.081			
	4.5	0.098	0.096	0.095			
	5.0	0.114	0.111	0.110			
	5.5	0.129	0.127	0.125			
	6.0	0.147	0.142	0.141			
	6.5	0.163	0.160	0.158			
	7.0	0.182	0.177	0.177			
	7.5	0.201	0.198	0.194			
	8.0	0.222	0.217	0.214			
	8.5	0.229	0.222	0.220			
	9.0	0.238	0.232	0.226			
	9.5	0.242	0.238	0.233			
	10.0	0.253	0.246	0.241			

Cutting Parameters

3520HL



Material Group ISO 513	S1 S2	S3	S4	S5		
Hardness/Rm	<35 HRC	35÷45 HRC				
Vc (m/min)	**24÷28**	**20÷25**	**28÷32**	**25÷30**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3.0	0.037	0.030	0.050	0.044		
3.5	0.044	0.037	0.058	0.052		
4.0	0.052	0.045	0.069	0.063		
4.5	0.062	0.050	0.081	0.070		
5.0	0.069	0.056	0.093	0.080		
5.5	0.078	0.063	0.109	0.094		
6.0	0.093	0.071	0.129	0.113		
6.5	0.102	0.077	0.142	0.123		
7.0	0.112	0.083	0.157	0.136		
7.5	0.125	0.095	0.171	0.150		
8.0	0.129	0.110	0.188	0.167		
8.5	0.139	0.110	0.198	0.163		
9.0	0.150	0.122	0.192	0.173		
9.5	0.145	0.117	0.205	0.168		
10.0	0.156	0.125	0.200	0.180		

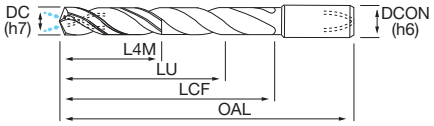
*during the exit phase the use of external coolant supply is recommended to keep the tool and the workpiece cooled and lubricated to avoid failures due to overheating.

SORMA DIAMOND & CUTTING TOOLS

3525HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





25xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
3.1	0/-0.012	4	h6	79	83	120	15.5	3525HL0310N	◉
3.2	0/-0.012	4	h6	81	86	120	16	3525HL0320N	◉
3.3	0/-0.012	4	h6	84	88	125	16.5	3525HL0330N	◉
3.4	0/-0.012	4	h6	86	91	125	17	3525HL0340N	◉
3.5	0/-0.012	4	h6	89	94	130	17.5	3525HL0350N	●
3.6	0/-0.012	4	h6	91	96	130	18	3525HL0360N	◉
3.7	0/-0.012	4	h6	94	99	135	18.5	3525HL0370N	◉
3.8	0/-0.012	4	h6	96	102	135	19	3525HL0380N	◉
3.9	0/-0.012	4	h6	99	104	140	19.5	3525HL0390N	◉
4	0/-0.012	4	h6	101	107	140	20	3525HL0400N	●
4.1	0/-0.012	5	h6	104	110	145	20.5	3525HL0410N	◉
4.2	0/-0.012	5	h6	106	112	150	21	3525HL0420N	◉
4.3	0/-0.012	5	h6	109	115	150	21.5	3525HL0430N	◉
4.4	0/-0.012	5	h6	111	118	155	22	3525HL0440N	◉
4.5	0/-0.012	5	h6	114	120	155	22.5	3525HL0450N	●
4.6	0/-0.012	5	h6	116	123	160	23	3525HL0460N	◉
4.7	0/-0.012	5	h6	119	126	165	23.5	3525HL0470N	◉
4.8	0/-0.012	5	h6	121	128	165	24	3525HL0480N	◉
4.9	0/-0.012	5	h6	124	131	170	24.5	3525HL0490N	◉
5	0/-0.012	5	h6	126	134	170	25	3525HL0500N	●
5.1	0/-0.012	6	h6	129	136	175	25.5	3525HL0510N	◉
5.2	0/-0.012	6	h6	131	139	180	26	3525HL0520N	◉
5.3	0/-0.012	6	h6	134	141	180	26.5	3525HL0530N	◉
5.4	0/-0.012	6	h6	136	144	185	27	3525HL0540N	◉
5.5	0/-0.012	6	h6	139	147	185	27.5	3525HL0550N	●
5.6	0/-0.012	6	h6	141	149	190	28	3525HL0560N	◉
5.7	0/-0.012	6	h6	144	152	190	28.5	3525HL0570N	◉
5.8	0/-0.012	6	h6	146	155	195	29	3525HL0580N	◉
5.9	0/-0.012	6	h6	149	157	195	29.5	3525HL0590N	◉
6	0/-0.012	6	h6	151	160	200	30	3525HL0600N	●
6.1	0/-0.015	8	h6	154	163	200	30.5	3525HL0610N	◉
6.2	0/-0.015	8	h6	156	165	205	31	3525HL0620N	◉
6.3	0/-0.015	8	h6	159	168	205	31.5	3525HL0630N	◉
6.4	0/-0.015	8	h6	161	171	210	32	3525HL0640N	◉
6.5	0/-0.015	8	h6	164	173	210	32.5	3525HL0650N	●
6.6	0/-0.015	8	h6	166	176	215	33	3525HL0660N	◉
6.7	0/-0.015	8	h6	169	179	220	33.5	3525HL0670N	◉
6.8	0/-0.015	8	h6	171	181	220	34	3525HL0680N	◉
6.9	0/-0.015	8	h6	174	184	225	34.5	3525HL0690N	◉
7	0/-0.015	8	h6	176	187	230	35	3525HL0700N	●
7.1	0/-0.015	8	h6	179	189	230	35.5	3525HL0710N	◉
7.2	0/-0.015	8	h6	181	192	235	36	3525HL0720N	◉
7.3	0/-0.015	8	h6	184	194	235	36.5	3525HL0730N	◉
7.4	0/-0.015	8	h6	186	197	240	37	3525HL0740N	◉
7.5	0/-0.015	8	h6	189	200	240	37.5	3525HL0750N	●

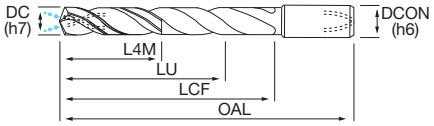
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

3525HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





25xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
7.6	0/-0.015	8	h6	191	202	245	38	**3525HL0760N**	◉
7.7	0/-0.015	8	h6	194	205	245	38.5	**3525HL0770N**	◉
7.8	0/-0.015	8	h6	196	208	250	39	**3525HL0780N**	◉
7.9	0/-0.015	8	h6	199	210	250	39.5	**3525HL0790N**	◉
8	0/-0.015	8	h6	201	213	255	40	**3525HL0800N**	●
8.1	0/-0.015	10	h6	204	216	260	40.5	**3525HL0810N**	◉
8.2	0/-0.015	10	h6	206	218	260	41	**3525HL0820N**	◉
8.3	0/-0.015	10	h6	209	221	265	41.5	**3525HL0830N**	◉
8.4	0/-0.015	10	h6	211	224	265	42	**3525HL0840N**	◉
8.5	0/-0.015	10	h6	214	226	270	42.5	**3525HL0850N**	●
8.6	0/-0.015	10	h6	216	229	270	43	**3525HL0860N**	●
8.7	0/-0.015	10	h6	219	232	275	43.5	**3525HL0870N**	◉
8.8	0/-0.015	10	h6	221	234	275	44	**3525HL0880N**	◉
8.9	0/-0.015	10	h6	224	237	280	44.5	**3525HL0890N**	◉
9	0/-0.015	10	h6	226	240	285	45	**3525HL0900N**	●
9.1	0/-0.015	10	h6	229	242	285	45.5	**3525HL0910N**	◉
9.2	0/-0.015	10	h6	231	245	290	46	**3525HL0920N**	◉
9.3	0/-0.015	10	h6	234	247	290	46.5	**3525HL0930N**	◉
9.4	0/-0.015	10	h6	236	250	295	47	**3525HL0940N**	◉
9.5	0/-0.015	10	h6	239	253	295	47.5	**3525HL0950N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3525HL

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**60÷80**	**45÷65**	**40÷55**	**35÷50**	**35÷45**	**25÷35**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	**3.0**	0.040	0.041	0.042	0.041	0.035	0.037
	3.5	0.049	0.050	0.051	0.050	0.044	0.045
	4.0	0.059	0.060	0.061	0.060	0.053	0.054
	4.5	0.070	0.071	0.072	0.071	0.063	0.062
	5.0	0.082	0.082	0.086	0.084	0.072	0.070
	5.5	0.094	0.094	0.098	0.097	0.081	0.081
	6.0	0.107	0.106	0.109	0.107	0.096	0.095
	6.5	0.120	0.118	0.124	0.122	0.104	0.103
	7.0	0.135	0.132	0.141	0.139	0.119	0.119
	7.5	0.153	0.148	0.152	0.150	0.130	0.130
	8.0	0.169	0.167	0.173	0.170	0.150	0.143
	8.5	0.177	0.167	0.174	0.171	0.153	0.139
	9.0	0.179	0.168	0.175	0.172	0.156	0.146
	9.5	0.187	0.167	0.176	0.174	0.147	0.150

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm						
	Vc (m/min)	**35÷45**	**35÷45**	**25÷35**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3.0**	0.035	0.035	0.036			
	3.5	0.044	0.043	0.044			
	4.0	0.053	0.051	0.052			
	4.5	0.063	0.061	0.061			
	5.0	0.072	0.071	0.069			
	5.5	0.081	0.083	0.083			
	6.0	0.096	0.095	0.092			
	6.5	0.104	0.103	0.105			
	7.0	0.119	0.118	0.114			
	7.5	0.130	0.128	0.124			
	8.0	0.150	0.141	0.136			
	8.5	0.153	0.144	0.141			
	9.0	0.156	0.147	0.146			
	9.5	0.147	0.147	0.149			

Cutting Parameters

3525HL



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	**55÷75**	**45÷65**	**35÷55**	**35÷55**		
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
3.0	0.044	0.046	0.044	0.044		
3.5	0.053	0.056	0.054	0.053		
4.0	0.063	0.067	0.065	0.064		
4.5	0.074	0.079	0.076	0.075		
5.0	0.088	0.091	0.091	0.089		
5.5	0.099	0.105	0.103	0.102		
6.0	0.113	0.119	0.115	0.113		
6.5	0.127	0.133	0.130	0.128		
7.0	0.140	0.148	0.148	0.146		
7.5	0.158	0.165	0.159	0.157		
8.0	0.173	0.183	0.180	0.178		
8.5	0.172	0.184	0.182	0.179		
9.0	0.178	0.184	0.183	0.181		
9.5	0.177	0.185	0.185	0.182		



Material Group ISO 513	N1	N2	N3 N4			
Hardness/Rm						
Vc (m/min)	**105÷125**	**85÷105**	**75÷95**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3.0	0.057	0.055	0.054			
3.5	0.070	0.068	0.066			
4.0	0.083	0.081	0.079			
4.5	0.097	0.095	0.093			
5.0	0.113	0.110	0.108			
5.5	0.129	0.126	0.125			
6.0	0.146	0.143	0.139			
6.5	0.164	0.160	0.157			
7.0	0.184	0.179	0.175			
7.5	0.201	0.198	0.194			
8.0	0.224	0.219	0.216			
8.5	0.229	0.221	0.218			
9.0	0.229	0.224	0.221			
9.5	0.235	0.225	0.225			

Cutting Parameters

3525HL

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**24÷28**	**20÷25**	**28÷32**	**25÷30**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.033	0.026	0.047	0.041		
	3.5	0.040	0.033	0.055	0.048		
	4.0	0.048	0.040	0.065	0.058		
	4.5	0.057	0.044	0.077	0.066		
	5.0	0.064	0.050	0.088	0.075		
	5.5	0.072	0.057	0.104	0.089		
	6.0	0.087	0.064	0.124	0.106		
	6.5	0.095	0.069	0.136	0.117		
	7.0	0.104	0.075	0.150	0.129		
	7.5	0.117	0.086	0.164	0.142		
	8.0	0.121	0.100	0.181	0.158		
	8.5	0.127	0.095	0.192	0.154		
	9.0	0.135	0.100	0.188	0.164		
	9.5	0.130	0.100	0.191	0.155		

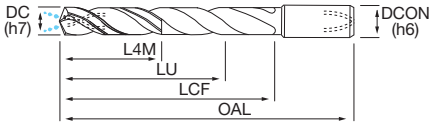
*during the exit phase the use of external coolant supply is recommended to keep the tool and the workpiece cooled and lubricated to avoid failures due to overheating.

SORMA DIAMOND & CUTTING TOOLS

3530HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





30xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

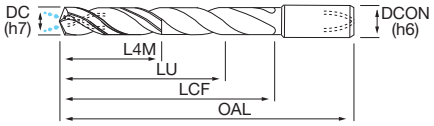
DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
3.1	0/-0.012	4	h6	94	99	135	15.5	3530HL0310N	◉
3.2	0/-0.012	4	h6	97	102	135	16	3530HL0320N	◉
3.3	0/-0.012	4	h6	100	105	140	16.5	3530HL0330N	◉
3.4	0/-0.012	4	h6	103	108	145	17	3530HL0340N	◉
3.5	0/-0.012	4	h6	106	111	145	17.5	3530HL0350N	●
3.6	0/-0.012	4	h6	109	114	150	18	3530HL0360N	◉
3.7	0/-0.012	4	h6	112	118	155	18.5	3530HL0370N	◉
3.8	0/-0.012	4	h6	115	121	155	19	3530HL0380N	◉
3.9	0/-0.012	4	h6	118	124	160	19.5	3530HL0390N	◉
4	0/-0.012	4	h6	121	127	160	20	3530HL0400N	●
4.1	0/-0.012	5	h6	124	130	165	20.5	3530HL0410N	◉
4.2	0/-0.012	5	h6	127	133	170	21	3530HL0420N	◉
4.3	0/-0.012	5	h6	130	136	175	21.5	3530HL0430N	◉
4.4	0/-0.012	5	h6	133	140	175	22	3530HL0440N	◉
4.5	0/-0.012	5	h6	136	143	180	22.5	3530HL0450N	●
4.6	0/-0.012	5	h6	139	146	185	23	3530HL0460N	◉
4.7	0/-0.012	5	h6	142	149	185	23.5	3530HL0470N	◉
4.8	0/-0.012	5	h6	145	152	190	24	3530HL0480N	◉
4.9	0/-0.012	5	h6	148	155	190	24.5	3530HL0490N	◉
5	0/-0.012	5	h6	151	159	195	25	3530HL0500N	●
5.1	0/-0.012	6	h6	154	162	200	25.5	3530HL0510N	◉
5.2	0/-0.012	6	h6	157	165	205	26	3530HL0520N	◉
5.3	0/-0.012	6	h6	160	168	205	26.5	3530HL0530N	◉
5.4	0/-0.012	6	h6	163	171	210	27	3530HL0540N	◉
5.5	0/-0.012	6	h6	166	174	215	27.5	3530HL0550N	●
5.6	0/-0.012	6	h6	169	177	215	28	3530HL0560N	◉
5.7	0/-0.012	6	h6	172	181	220	28.5	3530HL0570N	◉
5.8	0/-0.012	6	h6	175	184	225	29	3530HL0580N	◉
5.9	0/-0.012	6	h6	178	187	225	29.5	3530HL0590N	◉
6	0/-0.012	6	h6	181	190	230	30	3530HL0600N	●
6.1	0/-0.015	8	h6	184	193	230	30.5	3530HL0610N	◉
6.2	0/-0.015	8	h6	187	196	135	31	3530HL0620N	◉
6.3	0/-0.015	8	h6	190	199	240	31.5	3530HL0630N	◉
6.4	0/-0.015	8	h6	193	203	240	32	3530HL0640N	◉
6.5	0/-0.015	8	h6	196	206	245	32.5	3530HL0650N	●
6.6	0/-0.015	8	h6	199	209	250	33	3530HL0660N	◉
6.7	0/-0.015	8	h6	202	212	250	33.5	3530HL0670N	◉
6.8	0/-0.015	8	h6	205	215	255	34	3530HL0680N	◉
6.9	0/-0.015	8	h6	208	218	255	34.5	3530HL0690N	◉
7	0/-0.015	8	h6	211	222	265	35	3530HL0700N	●
7.1	0/-0.015	8	h6	214	225	265	35.5	3530HL0710N	◉
7.2	0/-0.015	8	h6	217	228	270	36	3530HL0720N	◉
7.3	0/-0.015	8	h6	220	231	270	36.5	3530HL0730N	◉
7.4	0/-0.015	8	h6	223	234	275	37	3530HL0740N	◉
7.5	0/-0.015	8	h6	226	237	280	37.5	3530HL0750N	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

3530HL

- 4 margin lands
- Polished flutes

P	M	K	N	S	H
★	★	★	☆	☆	





30xD | INTERNAL COOLANT | OSAWA NORM | HL | MG PV250 | SIG 135° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	L4M	EDP no.	Stock
7.6	0/-0.015	8	h6	229	240	280	38	**3530HL0760N**	◉
7.7	0/-0.015	8	h6	232	244	285	38.5	**3530HL0770N**	◉
7.8	0/-0.015	8	h6	235	247	290	39	**3530HL0780N**	◉
7.9	0/-0.015	8	h6	238	250	290	39.5	**3530HL0790N**	◉
8	0/-0.015	8	h6	241	253	295	40	**3530HL0800N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

3530HL



Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
Vc (m/min)	**60÷80**	**45÷65**	**40÷55**	**35÷50**	**35÷45**	**25÷35**
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
3.0	0.040	0.041	0.042	0.041	0.035	0.037
3.5	0.049	0.050	0.051	0.050	0.044	0.045
4.0	0.059	0.060	0.061	0.060	0.053	0.054
4.5	0.070	0.071	0.072	0.071	0.063	0.062
5.0	0.082	0.082	0.086	0.084	0.072	0.070
5.5	0.094	0.094	0.098	0.097	0.081	0.081
6.0	0.107	0.106	0.109	0.107	0.096	0.095
6.5	0.120	0.118	0.124	0.122	0.104	0.103
7.0	0.135	0.132	0.141	0.139	0.119	0.119
7.5	0.153	0.148	0.152	0.150	0.130	0.130
8.0	0.169	0.167	0.173	0.170	0.150	0.143



Material Group ISO 513	M1	M2	M3			
Hardness/Rm						
Vc (m/min)	**35÷45**	**35÷45**	**25÷35**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3.0	0.035	0.035	0.036			
3.5	0.044	0.043	0.044			
4.0	0.053	0.051	0.052			
4.5	0.063	0.061	0.061			
5.0	0.072	0.071	0.069			
5.5	0.081	0.083	0.083			
6.0	0.096	0.095	0.092			
6.5	0.10 4	0.103	0.105			
7.0	0.119	0.118	0.114			
7.5	0.130	0.128	0.124			
8.0	0.150	0.141	0.136			
8.5	0.153	0.144	0.141			
9.0	0.156	0.147	0.146			
9.5	0.147	0.147	0.149			

3530HL

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**55÷75**	**45÷65**	**35÷55**	**35÷55**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.044	0.046	0.044	0.044		
	3.5	0.053	0.056	0.054	0.053		
	4.0	0.063	0.067	0.065	0.064		
	4.5	0.074	0.079	0.076	0.075		
	5.0	0.088	0.091	0.091	0.089		
	5.5	0.099	0.105	0.103	0.102		
	6.0	0.113	0.119	0.115	0.113		
	6.5	0.127	0.133	0.130	0.128		
	7.0	0.140	0.148	0.148	0.146		
	7.5	0.158	0.165	0.159	0.157		
	8.0	0.173	0.183	0.180	0.178		

	Material Group ISO 513	N1	N2	N3 N4			
	Hardness/Rm						
	Vc (m/min)	**105÷125**	**85÷105**	**75÷95**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	**3.0**	0.057	0.055	0.054			
	3.5	0.070	0.068	0.066			
	4.0	0.083	0.081	0.079			
	4.5	0.097	0.095	0.093			
	5.0	0.113	0.110	0.108			
	5.5	0.129	0.126	0.125			
	6.0	0.146	0.143	0.139			
	6.5	0.164	0.160	0.157			
	7.0	0.184	0.179	0.175			
	7.5	0.201	0.198	0.194			
	8.0	0.224	0.219	0.216			

Cutting Parameters

3530HL

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	**24÷28**	**20÷25**	**28÷32**	**25÷30**		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	**3.0**	0.033	0.026	0.047	0.041		
	3.5	0.040	0.033	0.055	0.048		
	4.0	0.048	0.040	0.065	0.058		
	4.5	0.057	0.044	0.077	0.066		
	5.0	0.064	0.050	0.088	0.075		
	5.5	0.072	0.057	0.104	0.089		
	6.0	0.087	0.064	0.124	0.106		
	6.5	0.095	0.069	0.136	0.117		
	7.0	0.104	0.075	0.150	0.129		
	7.5	0.117	0.086	0.164	0.142		
	8.0	0.121	0.100	0.181	0.158		

*during the exit phase the use of external coolant supply is recommended to keep the tool and the workpiece cooled and lubricated to avoid failures due to overheating.



TYPHOON HSD

STEP DRILL FOR 90° CHAMFERING

Chamfer drill for universal application ISO P, M, S.

Punta svasatore per applicazione universale ISO P, M, S.

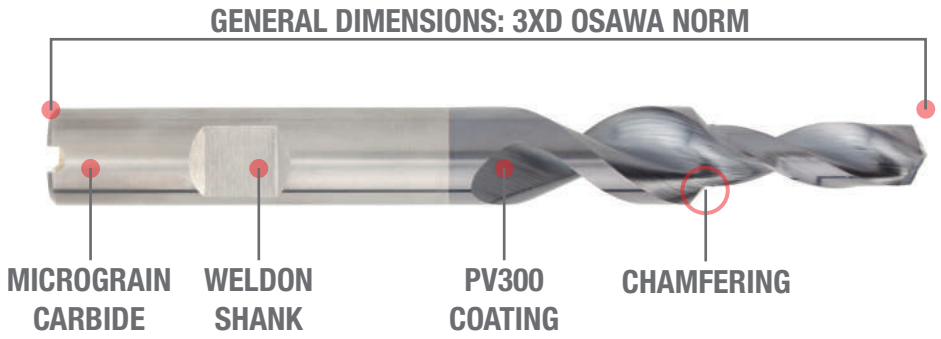
Fasenbohrer für allgemeine Anwendungen auf ISO P, M, S.

Foret à chanfreiner pour application universelle ISO P, M, S.

HSD

Step drill for 90° chamfering

Features of HSD drills





Features and Benefits

- Combined tool: boring and chamfering at the same time
- Straight edge geometry: stable cutting, produces relative small chips
- Flute design: wide flutes for better chip ejection
- Substrate and coating: specifically selected to perform on wide range of workpiece materials

- Kombiwerkzeug: Bohren und Fasen in einem Arbeitsgang
- Gerade Schneidengeometrie: stabiles schneiden, erzeugt kleine Späne
- Nutenform: breite Nuten um die Späne besser abzuführen
- Substrat und Beschichtung: so ausgewählt um sehr flexibel auf unterschiedlichen Materialgruppen eingesetzt zu werden

- Utensile combinato: foratura e svasatura in un'unica operazione
- Tagliente diritto: garantisce stabilità e produce trucioli più corti
- Design delle gole: ampie per agevolare l'evacuazione dei trucioli
- Substrato e rivestimento: specifici per performare al meglio su una vasta gamma di materiali

- Outil combiné: perçage et chanfreinage en même temps
- Géométrie de bord droit: coupe stable, produit des copeaux relativement petits
- Conception de gougures: large gougure pour faciliter l'évacuation des copeaux
- Substrat et revêtement: spécialement sélectionnés pour fonctionner sur une large gamme de matière de pièces

HSD

Step drill for 90° chamfering

Diameter range

Thread size	Diameter/mm avialable	
	Cutting taps	Forming taps
M3	2,5	2,8
M4	3,3	3,7
M5	4,2	4,65
M6	5	5,55
M8	6,8	7,45
M10	8,5	9,35
M12	10,3	11,22

Use case

Tool Type	372HSD
Workpiece	W.-Nr 1.0715 AISI 304
Parameters	Vc 70 m/min, fn 0,12 mm/rev
Diameter	6,8 mm
Coolant	internal
Hole depth	21 mm
Machining time:	

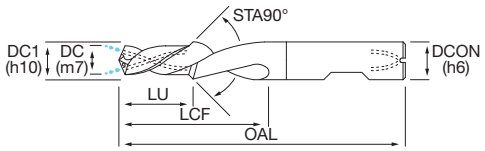


SORMA DIAMOND & CUTTING TOOLS

372HSD

- Through coolant step drill for 90° chamfering
- Weldon shank
- Universal application

P	M	K	N	S	H
★	★			★	





3xD | INTERNAL COOLANT | OSAWA NORM | HSD | MG PV300 | SIG 140° | FHA 30°

DC	Thread Size	DC tol.	DC1	TCDC1	DCON	TCDCON	LU	LCF	OAL	STA	EDP no.	Stock
2.5	M3 /C	+0.012/+0.002	4	h10	4	h6	9	25	62	90	**372HSD0250**	●
2.8	M3/F	+0.012/+0.002	4	h10	4	h6	9	25	62	90	**372HSD0280**	●
3.3	M4/C	+0.016/+0.004	5	h10	6	h6	11	28	66	90	**372HSD0330**	●
3.7	M4/F	+0.016/+0.004	6	h10	6	h6	11	28	66	90	**372HSD0370**	●
4.2	M5/C	+0.016/+0.004	6	h10	6	h6	14	28	66	90	**372HSD0420**	●
4.65	M5/F	+0.016/+0.004	6	h10	6	h6	14	28	66	90	**372HSD0465**	●
5	M6/C	+0.016/+0.004	8	h10	8	h6	17	41	79	90	**372HSD0500**	●
5.55	M6/F	+0.016/+0.004	8	h10	8	h6	17	41	79	90	**372HSD0555**	●
6.8	M8/C	+0.021/+0.006	10	h10	10	h6	21	47	89	90	**372HSD0680**	●
7.45	M8/F	+0.021/+0.006	10	h10	10	h6	21	47	89	90	**372HSD0745**	●
8.5	M10/C	+0.021/+0.006	12	h10	12	h6	26	55	102	90	**372HSD0850**	●
9.35	M10/F	+0.021/+0.006	12	h10	12	h6	26	55	102	90	**372HSD0935**	●
10.3	M12/C	+0.025/+0.007	14	h10	14	h6	30	60	107	90	**372HSD1030**	●
11.22	M12/F	+0.025/+0.007	14	h10	14	h6	30	60	107	90	**372HSD1122**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

372HSD



Material Group ISO 513	P1 P2	P3 P4	P7			
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	<700 N/mm²			
Vc (m/min)	**80÷120**	**70÷110**	**40÷80**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.130	0.130	0.075			
4	0.150	0.150	0.090			
5	0.170	0.170	0.100			
6	0.190	0.190	0.110			
7	0.220	0.220	0.120			
8	0.250	0.250	0.130			
9	0.280	0.280	0.140			
10	0.300	0.300	0.150			
11	0.310	0.310	0.155			
12	0.330	0.330	0.160			
13	0.340	0.340	0.165			
14	0.360	0.360	0.175			
15	0.380	0.380	0.180			
16	0.400	0.400	0.185			
17	0.410	0.410	0.195			
18	0.420	0.420	0.200			
19	0.420	0.420	0.200			
20	0.420	0.420	0.210			



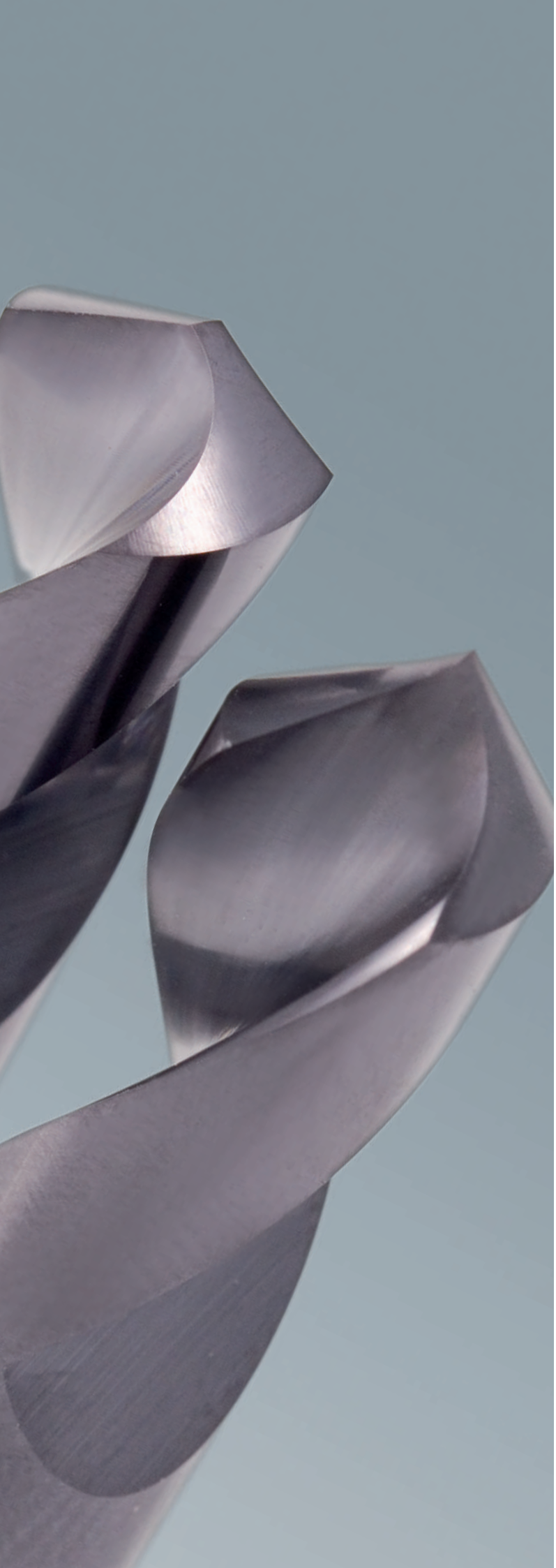
Material Group ISO 513	M1	M2	M3			
Hardness/Rm	<750 N/mm²	550÷850 N/mm²	650÷950 N/mm²			
Vc (m/min)	**40÷80**	**40÷80**	**30÷60**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.075	0.055	0.055			
4	0.090	0.070	0.070			
5	0.100	0.075	0.075			
6	0.110	0.075	0.075			
7	0.120	0.080	0.080			
8	0.130	0.090	0.090			
9	0.140	0.095	0.095			
10	0.150	0.105	0.105			
11	0.155	0.115	0.115			
12	0.160	0.120	0.120			
13	0.165	0.125	0.125			
14	0.175	0.135	0.135			
15	0.180	0.135	0.135			
16	0.185	0.140	0.140			
17	0.195	0.145	0.145			
18	0.200	0.150	0.150			
19	0.200	0.160	0.160			
20	0.210	0.170	0.170			

Cutting Parameters

372HSD



Material Group ISO 513	S1 S2	S3	S5			
Hardness/Rm	<35 HRC	35÷45 HRC				
Vc (m/min)	**30÷50**	**30÷50**	**25÷45**			
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
3	0.030÷0.080	0.030÷0.070	0.030÷0.060			
4	0.040÷0.100	0.040÷0.100	0.040÷0.080			
5	0.050÷0.100	0.050÷0.100	0.040÷0.090			
6	0.050÷0.100	0.050÷0.100	0.050÷0.100			
7	0.050÷0.110	0.050÷0.110	0.050÷0.110			
8	0.060÷0.120	0.060÷0.120	0.060÷0.110			
9	0.060÷0.130	0.060÷0.130	0.060÷0.120			
10	0.070÷0.140	0.070÷0.140	0.070÷0.120			
11	0.080÷0.150	0.080÷0.150	0.080÷0.130			
12	0.080÷0.160	0.080÷0.160	0.080÷0.140			
13	0.080÷0.170	0.080÷0.170	0.080÷0.150			
14	0.090÷0.180	0.090÷0.180	0.090÷0.160			
15	0.090÷0.180	0.090÷0.180	0.090÷0.160			
16	0.100÷0.180	0.100÷0.180	0.100÷0.160			
17	0.100÷0.190	0.100÷0.190	0.100÷0.170			
18	0.100÷0.200	0.100÷0.200	0.100÷0.180			
19	0.110÷0.210	0.110÷0.210	0.110÷0.190			
20	0.120÷0.220	0.120÷0.220	0.120÷0.200			



C-SD-TA

NC SPOTTING

90° - 120° starting drills for NC centering and chamfering on a wide range of materials.

Punte da centri a 90° e 120° per NC. Centratura e svasatura su una vasta gamma di materiali.

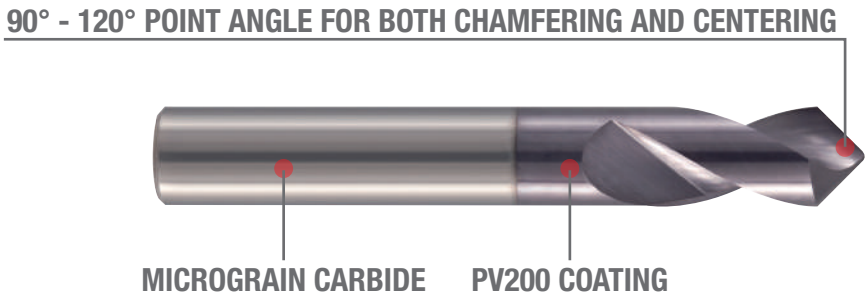
Anbohrer mit Spitzenwinkel 90° und 120° für NC Maschinen. Zentrierung und Ansenkung auf einem sehr breiten Spektrum von Materialien.

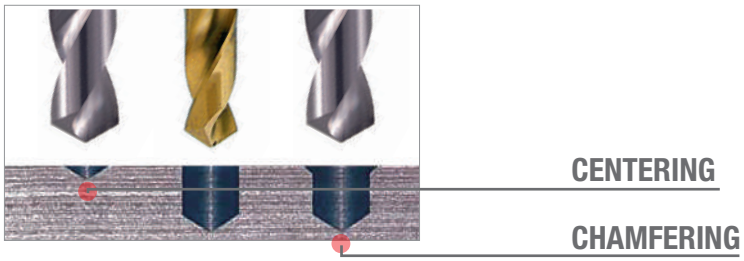
Forets à centrer et chanfreiner 90°-120°, pour une grande variété de matériaux.

C-SD-TA

Multi-purpose centering tool

Features of C-SD-TA drills





Features and Benefits

- Multi purpose tool for 90° and 120° centering and chamfering application
- Optimized edge geometry for accurate machining
- Substrate and coating: specifically selected to perform on wide range of workpiece materials

- Multifunktionswerkzeug zum Zentrieren und Anfasen 90°-120°
- Spezifische Schneidengeometrie für präzise Bearbeitungen
- Substrat und Beschichtung: so ausgewählt um sehr flexibel auf unterschiedlichen Materialgruppen eingesetzt zu werden

- Utensile multi funzione per centratura e smussatura 90°-120°
- Geometria di taglio specifica per lavorazioni precise
- Substrato e rivestimento: specifici per performare al meglio su una vasta gamma di materiali

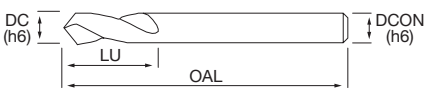
- Outil multifonction de centrage et biseautage 90°-120°
- Géométrie de coupe spécifique pour usinages de précision
- Substrat et revêtement: spécialement sélectionnés pour fonctionner sur une large gamme de matière de pièces

SORMA DIAMOND & CUTTING TOOLS

C-SD-TA 90

• Solid carbide NC starting drils 90°

P	M	K	N	S	H
★	★	★	★	☆	





OSAWA NORM | SD | MG PV200 | SIG 90° | FHA 30°

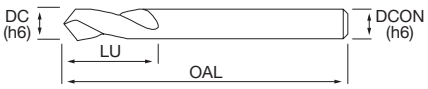
DC	DC tol.	DCON	TCDCON	LU	OAL	EDP no.	Stock
6	0/-0.008	6	h6	16	50	**CSDTA060A**	●
8	0/-0.009	8	h6	20	64	**CSDTA080A**	●
10	0/-0.009	10	h6	25	70	**CSDTA100A**	●
12	0/-0.011	12	h6	25	75	**CSDTA120A**	●
16	0/-0.011	16	h6	26	90	**CSDTA160A**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

C-SD-TA 120

• Solid carbide NC starting drils 120°

P	M	K	N	S	H
★	★	★	★	☆	





OSAWA NORM | SD | MG PV200 | SIG 120° | FHA 30°

DC	DC tol.	DCON	TCDCON	LU	OAL	EDP no.	Stock
6	0/-0.008	6	h6	16	50	**CSDTA060B**	●
8	0/-0.009	8	h6	20	64	**CSDTA080B**	●
10	0/-0.009	10	h6	25	70	**CSDTA100B**	●
12	0/-0.011	12	h6	25	75	**CSDTA120B**	●
16	0/-0.011	16	h6	26	90	**CSDTA160B**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

C-SD-TA

	Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	900÷1200 N/mm²	1200÷1400 N/mm²		
	Vc (m/min)	**90÷110**	**70÷90**	**60÷80**	**50÷70**	**50÷70**	**20÷30**
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	6	0.140	0.126	0.112	0.098	0.091	0.055
	7	0.160	0.144	0.128	0.112	0.104	0.062
	8	0.180	0.162	0.144	0.126	0.117	0.070
	9	0.200	0.180	0.160	0.140	0.130	0.078
	10	0.220	0.198	0.176	0.154	0.143	0.086
	11	0.240	0.216	0.192	0.168	0.156	0.094
	12	0.260	0.234	0.208	0.182	0.169	0.101
	13	0.280	0.252	0.224	0.196	0.182	0.109
	14	0.300	0.270	0.240	0.210	0.195	0.117
	15	0.320	0.288	0.256	0.224	0.208	0.125
	16	0.340	0.306	0.272	0.238	0.221	0.133

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm						
	Vc (m/min)	**50÷70**	**40÷60**	**30÷40**			
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	6	0.091	0.073	0.064			
	7	0.104	0.083	0.073			
	8	0.117	0.094	0.082			
	9	0.130	0.104	0.091			
	10	0.143	0.114	0.100			
	11	0.156	0.125	0.109			
	12	0.169	0.135	0.118			
	13	0.182	0.146	0.127			
	14	0.195	0.156	0.137			
	15	0.208	0.166	0.146			
	16	0.221	0.177	0.155			

	Material Group ISO 513	K1	K2	K3	K4		
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
	Vc (m/min)	**90÷110**	**70÷90**	**60÷80**	**50÷70**		
Ø RUN OUT <0.02 mm	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	6	0.140	0.126	0.112	0.098		
	7	0.160	0.144	0.128	0.112		
	8	0.180	0.162	0.144	0.126		
	9	0.200	0.180	0.160	0.140		
	10	0.220	0.198	0.176	0.154		
	11	0.240	0.216	0.192	0.168		
	12	0.260	0.234	0.208	0.182		
	13	0.280	0.252	0.224	0.196		
	14	0.300	0.270	0.240	0.210		
	15	0.320	0.288	0.256	0.224		
	16	0.340	0.306	0.272	0.238		

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

C-SD-TA

	Material Group ISO 513	N1	N2	N3	N4		
	Hardness/Rm						
	Vc (m/min)	160÷200	140÷180	130÷170	160÷200		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	6	0.175	0.158	0.140	0.158		
	7	0.200	0.180	0.160	0.180		
	8	0.225	0.203	0.180	0.203		
	9	0.250	0.225	0.200	0.225		
	10	0.275	0.248	0.220	0.248		
	11	0.300	0.270	0.240	0.270		
	12	0.325	0.293	0.260	0.293		
	13	0.350	0.315	0.280	0.315		
	14	0.375	0.338	0.300	0.338		
	15	0.400	0.360	0.320	0.360		
	16	0.425	0.383	0.340	0.383		

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	30÷50	20÷40	45÷65	35÷55		
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
	6	0.063	0.044	0.060	0.050		
	7	0.072	0.050	0.068	0.058		
	8	0.081	0.057	0.077	0.065		
	9	0.090	0.063	0.086	0.072		
	10	0.099	0.069	0.094	0.079		
	11	0.108	0.076	0.103	0.086		
	12	0.117	0.082	0.111	0.094		
	13	0.126	0.088	0.120	0.101		
	14	0.135	0.095	0.128	0.108		
	15	0.144	0.101	0.137	0.115		
	16	0.153	0.107	0.145	0.122		



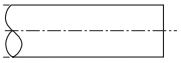
HSS DRILLS

Caption .I2
Selection Guide .I4
PTA .I7
SUTA .I17
DIN1897 .I28
DIN338 .I36
DIN340 .I63
DIN1869 .I72
DIN345 .I80
DIN341 .I86
DIN1870 .I88

CAPTION

STOCK *		
●	stock standard stock standard	Standard Lager stock standard
◉	non-stock standard (no MOQ) non-standard stock (no MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
○	non-stock standard (MOQ) non-standard stock (MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
▲	upcoming product prossima introduzione	kommende Produkt prochaine introduction
▽	stock exhaustion esaurimento stock	Vorraterschöpfung épuisement du stock

APPLICATION GUIDELINES / INDICAZIONI PER L'APPLICAZIONE / LEITFADEN ZUR ANWENDUNG / INDICATIONS POUR L'APPLICATION		
★	1st choice 1a scelta	1. Wahl 1er choix
☆	suitable adatto	geeignet adapté

SHANK / ATTACCO / SCHAFT / QUEUE		
	cylindrical shank attacco cilindrico	zylindrischer Schaft queue cylindrique
	Morse Taper shank attacco Cono Morse	MK Schaft queue conique

GEOMETRY / GEOMETRIA / GEOMETRIE / GÉOMÉTRIE		
	high performance, selfcentering alto rendimento, autocentrante	hochleistung, selbstzentrierende haute performance, auto centreur
	for stainless steel and general application per acciaio inossidabile e applicazioni generiche	für rostfreien Stahl und allgemeine Anwendung pour acier inoxydable et applications génériques
	HSS general purpose HSS uso generico	HSS allgemeine Anwendung HSS applications génériques
	HSS Tin Pointed	
	HSS/Co Tin Pointed	
	for stainless steel and general application per acciaio inossidabile e applicazioni generiche	für rostfreien Stahl und allgemeine Anwendung pour acier inoxydable et applications génériques
	for deep holes per fori profondi	für tiefe Löcher pour trous profonds

* The stock category of items in this catalogue may change without prior notice
La categoria di stock dei prodotti a catalogo può variare senza preavviso
Die Einstufung der Produkte kann sich jederzeit ändern
La catégorie de stock des articles dans ce catalogue peut être modifiée sans préavis.

CAPTION

SORMA DIAMOND & CUTTING TOOLS

GEOMETRY · GEOMETRIA · GEOMETRIE · GÉOMÉTRIE

H, SIG 118°, FHA 15°	for brass per ottone	für Messing pour laiton
W, SIG 130°, FHA 40°	for aluminium per alluminio	für Aluminium pour aluminium

MATERIAL · MATERIALE · MATIÈRE · WERKSTOFF

HSS ...	high speed steel acciaio super rapido	Hochleistungsschnellschnittstahl acier rapide
HSS/Co ...	high speed steel - 5% ÷ 8% Co acciaio super rapido - 5% ÷ 8% Co	Hochleistungsschnellschnittstahl - 5% ÷ 8% Co acier rapide - 5% ÷ 8% Co
HSSE ...	HSS/Co + EV	

SURFACE TREATMENT · TRATTAMENTO SUPERFICIALE · OBERFLÄCHENBEHANDLUNG · TRAITMENT DE SURFACE

... BR	uncoated non rivestito	unbeschichtet non revêtu
... OX	vaporization vaporizzazione	Dämpfung traitment vapeur
... HT	heat treatment trattamento termico	thermische Behandlung traitment thermique

COATINGS · RIVESTIMENTI · BESCHICHTUNGEN · REVÊTEMENTS

					... TiN	... PV10	... PV15
hardness (HV) durezza (HV)	Härte (HV) dureté (HV)				2300	3300	TiAlN + WC/C
friction coefficient coefficiente d'attrito	Reibungskoeffizient coefficent de frottement				0.4	0.35	0.2
thickness (µ) spessore (µ)	dicke (µ) épaisseur (µ)				1÷4	1÷5	2÷5
max working temperature (°C) temperatura max (°C)	hochste Temperatur (°C) température maximale (°C)				600°	900°	1000°

	ITEM NO.	PAGE	
PTA high performance	**218PTA**	I8	
	238PTA	I12	
SUTA high performance	**980SUTA**	I18	
	990SUTA	I22	
HSS-HSS/Co general purpose	**118N**	I28	
	218NVA	I32	
	1386STI	I36	
	138N	I41	
	138HB	I47	
	138WB	I50	
	2386STI	I53	
	238NVA	I58	
	234NVA	I63	
	234LS	I67	
	234LSTH	I70	
	2691LS	I72	
	2691LSTH	I74	
	2692LS	I76	
	2693LS	I78	
	145N	I80	
	245N	I84	
	141N	I86	
	1701N	I88	
	1702N	I90	

SELECTION GUIDE

SORMA DIAMOND & CUTTING TOOLS

RANGE	DRILLING DEPTH	NORM	TYPE	MATERIAL / COATING	HRC	POINT ANGLE	HELIX ANGLE	CHAMFER	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
2-20	extra short	DIN1897	P	HSS/Co PV10		130°	35°-40°		★	☆	★	☆		
2-20	short	DIN338	P	HSS/Co PV10		130°	35°-40°		★	☆	★	☆		
2-13	extra short	OSAWA	SU	HSSE PV10		120°	38°		★	★		★	☆	
2-20	short	OSAWA	SU	HSSE PV10		120°	38°		★	★		★	☆	
1-16	extra short	DIN1897	N	HSS OX		118°	25°-30°		★		☆	☆		
1-20	extra short	DIN1897	NH	HSS/Co HT		130°	30°		★	★	☆	☆	☆	
1-13	short	DIN338	SPLIT POINT	HSS TiN		118°	30°		★	☆	★	☆	☆	
0.2-20	short	DIN338	N	HSS OX		118°	25°-30°		★		☆	☆		
1.5-10	short	DIN338	H	HSS BR		118°	12°-15°					★		
1.5-10	short	DIN338	W	HSS BR		130°	35°-40°					★		
1-13	short	DIN338	SPLIT POINT	HSS/Co TiN		135°	33°		★	★	★	☆	☆	
1-20	short	DIN338	NH	HSS/Co HT		130°	30°		★	★	☆	☆	☆	
0.5-12	long	DIN340	NH	HSS/Co HT		130°	30°		★	★	☆	☆	☆	
2-13	long	DIN340	LS	HSS/Co OX		130°	35°-40°		★	☆	★			
2-13	long	DIN340	LS	HSS/Co PV15		130°	35°-40°		★	☆	★			
2-13	extra long	DIN1869/1	LS	HSS/Co BR		130°	35°-40°		★	☆	★			
2-13	extra long	DIN1869/1	LS	HSS/Co PV15		130°	35°-40°		★	☆	★			
3-12	extra long	DIN1869/2	LS	HSS/Co BR		130°	35°-40°		★		★			
3.5-12	extra long	DIN1869/3	LS	HSS/Co BR		130°	35°-40°		★		★			
5-60	short	DIN345	N	HSS OX		118°	25°-30°		★		☆	☆		
13-30	short	DIN345	NH	HSS/Co BR		118°	30°		★	★	☆	☆	☆	
13-30	long	DIN341	N	HSS OX		130°	35°-40°		★		☆	☆		
13-30	extra long	DIN1870/1	N	HSS OX		130°	35°-40°		★		☆	☆		
13-30	extra long	DIN1870/2	N	HSS OX		130°	35°-40°		★		☆	☆		

★ 1st choice ☆ suitable



PTA

HIGH PERFORMANCE - GENERAL MACHINING

High performance and self-centering geometry. Featuring top quality HSS/Co+PV10 and very versatile cutting geometry, enables outstanding performance on a wide range of materials.

Alto rendimento e affilatura autocentrante. Costruita con HSS/Co+PV10 di alta qualità e caratterizzata da una geometria di taglio molto versatile, garantisce elevate prestazioni su una vasta gamma di materiali.

Hohe Leistungen und selbstzentrierende Schnittgeometrie. Aus hervorragendem HSS/Co mit PV10 Beschichtung. Dank der vielseitigen Geometrie, sind hohe Leistungen auf einem sehr breiten Spektrum von Materialien möglich.

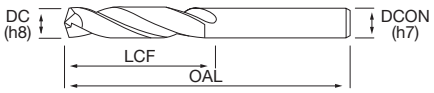
Haute performance et affûtage auto-centré. Fabriquée en HSS/Co+PV10 de la plus haute qualité et caractérisée par une géométrie de coupe très polyvalente, elle garantit des performances excellentes dans une grande variété de matériaux.

SORMA DIAMOND & CUTTING TOOLS

218PTA

- Self-centering
- General purpose
- Extra-short
- For ▲ rank items, you may receive until stock exhaustion former edp 218LFTA instead of 218PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 1897 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	h7	12	38	10	P218PTA0200	●
2.1	0/-0.014	2.1	h7	12	38	10	P218PTA0210	●
2.2	0/-0.014	2.2	h7	13	40	10	P218PTA0220	●
2.3	0/-0.014	2.3	h7	13	40	10	P218PTA0230	▲
2.4	0/-0.014	2.4	h7	14	43	10	P218PTA0240	○
2.5	0/-0.014	2.5	h7	14	43	10	P218PTA0250	●
2.6	0/-0.014	2.6	h7	14	43	10	P218PTA0260	●
2.7	0/-0.014	2.7	h7	16	46	10	P218PTA0270	▲
2.8	0/-0.014	2.8	h7	16	46	10	P218PTA0280	●
2.9	0/-0.014	2.9	h7	16	46	10	P218PTA0290	○
3	0/-0.014	3	h7	16	46	10	P218PTA0300	●
3.1	0/-0.018	3.1	h7	18	49	10	P218PTA0310	●
3.2	0/-0.018	3.2	h7	18	49	10	P218PTA0320	●
3.3	0/-0.018	3.3	h7	18	49	10	P218PTA0330	●
3.4	0/-0.018	3.4	h7	20	52	10	P218PTA0340	●
3.5	0/-0.018	3.5	h7	20	52	10	P218PTA0350	●
3.6	0/-0.018	3.6	h7	20	52	10	P218PTA0360	▲
3.7	0/-0.018	3.7	h7	20	52	10	P218PTA0370	▲
3.8	0/-0.018	3.8	h7	22	55	10	P218PTA0380	●
3.9	0/-0.018	3.9	h7	22	55	10	P218PTA0390	▲
4	0/-0.018	4	h7	22	55	10	P218PTA0400	●
4.1	0/-0.018	4.1	h7	22	55	10	P218PTA0410	●
4.2	0/-0.018	4.2	h7	22	55	10	P218PTA0420	●
4.3	0/-0.018	4.3	h7	24	58	10	P218PTA0430	●
4.4	0/-0.018	4.4	h7	24	58	10	P218PTA0440	▲
4.5	0/-0.018	4.5	h7	24	58	10	P218PTA0450	▲
4.6	0/-0.018	4.6	h7	24	58	10	P218PTA0460	▲
4.7	0/-0.018	4.7	h7	24	58	10	P218PTA0470	▲
4.8	0/-0.018	4.8	h7	26	62	10	P218PTA0480	▲
4.9	0/-0.018	4.9	h7	26	62	10	P218PTA0490	▲
5	0/-0.018	5	h7	26	62	10	P218PTA0500	●
5.1	0/-0.018	5.1	h7	26	62	10	P218PTA0510	●
5.2	0/-0.018	5.2	h7	26	62	10	P218PTA0520	●
5.3	0/-0.018	5.3	h7	26	62	10	P218PTA0530	●
5.4	0/-0.018	5.4	h7	28	66	10	P218PTA0540	▲
5.5	0/-0.018	5.5	h7	28	66	10	P218PTA0550	●
5.6	0/-0.018	5.6	h7	28	66	10	P218PTA0560	▲
5.7	0/-0.018	5.7	h7	28	66	10	P218PTA0570	▲
5.8	0/-0.018	5.8	h7	28	66	10	P218PTA0580	▲
5.9	0/-0.018	5.9	h7	28	66	10	P218PTA0590	●
6	0/-0.018	6	h7	28	66	10	P218PTA0600	●
6.1	0/-0.022	6.1	h7	31	70	10	P218PTA0610	▲
6.2	0/-0.022	6.2	h7	31	70	10	P218PTA0620	▲
6.3	0/-0.022	6.3	h7	31	70	10	P218PTA0630	▲
6.4	0/-0.022	6.4	h7	31	70	10	P218PTA0640	▲

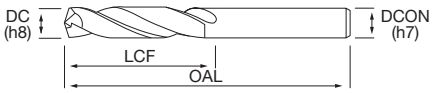
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

218PTA

- Self-centering
- General purpose
- Extra-short
- For ▲ rank items, you may receive until stock exhaustion former edp 218LFTA instead of 218PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 1897 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
6.5	0/-0.022	6.5	h7	31	70	10	P218PTA0650	▲
6.6	0/-0.022	6.6	h7	31	70	5	P218PTA0660	●
6.7	0/-0.022	6.7	h7	31	70	5	P218PTA0670	●
6.8	0/-0.022	6.8	h7	34	74	5	P218PTA0680	●
6.9	0/-0.022	6.9	h7	34	74	5	P218PTA0690	▲
7	0/-0.022	7	h7	34	74	5	P218PTA0700	●
7.1	0/-0.022	7.1	h7	34	74	5	P218PTA0710	●
7.2	0/-0.022	7.2	h7	34	74	5	P218PTA0720	○
7.3	0/-0.022	7.3	h7	34	74	5	P218PTA0730	▲
7.4	0/-0.022	7.4	h7	34	74	5	P218PTA0740	●
7.5	0/-0.022	7.5	h7	34	74	5	P218PTA0750	●
7.6	0/-0.022	7.6	h7	37	79	5	P218PTA0760	●
7.7	0/-0.022	7.7	h7	37	79	5	P218PTA0770	▲
7.8	0/-0.022	7.8	h7	37	79	5	P218PTA0780	●
7.9	0/-0.022	7.9	h7	37	79	5	P218PTA0790	●
8	0/-0.022	8	h7	37	79	5	P218PTA0800	●
8.1	0/-0.022	8.1	h7	37	79	5	P218PTA0810	▲
8.2	0/-0.022	8.2	h7	37	79	5	P218PTA0820	▲
8.3	0/-0.022	8.3	h7	37	79	5	P218PTA0830	▲
8.4	0/-0.022	8.4	h7	37	79	5	P218PTA0840	●
8.5	0/-0.022	8.5	h7	37	79	5	P218PTA0850	●
8.6	0/-0.022	8.6	h7	40	84	1	P218PTA0860	●
8.7	0/-0.022	8.7	h7	40	84	1	P218PTA0870	●
8.8	0/-0.022	8.8	h7	40	84	1	P218PTA0880	●
8.9	0/-0.022	8.9	h7	40	84	1	P218PTA0890	▲
9	0/-0.022	9	h7	40	84	1	P218PTA0900	●
9.1	0/-0.022	9.1	h7	40	84	1	P218PTA0910	▲
9.2	0/-0.022	9.2	h7	40	84	1	P218PTA0920	▲
9.3	0/-0.022	9.3	h7	40	84	1	P218PTA0930	▲
9.4	0/-0.022	9.4	h7	40	84	1	P218PTA0940	▲
9.5	0/-0.022	9.5	h7	40	84	1	P218PTA0950	●
9.6	0/-0.022	9.6	h7	43	89	1	P218PTA0960	○
9.7	0/-0.022	9.7	h7	43	89	1	P218PTA0970	▲
9.8	0/-0.022	9.8	h7	43	89	1	P218PTA0980	▲
9.9	0/-0.022	9.9	h7	43	89	1	P218PTA0990	▲
10	0/-0.022	10	h7	43	89	1	P218PTA1000	▲
10.2	0/-0.027	10.2	h7	43	89	1	P218PTA1020	●
10.3	0/-0.027	10.3	h7	43	89	1	P218PTA1030	○
10.5	0/-0.027	10.5	h7	43	89	1	P218PTA1050	▲
10.8	0/-0.027	10.8	h7	47	95	1	P218PTA1080	○
11	0/-0.027	11	h7	47	95	1	P218PTA1100	●
11.2	0/-0.027	11.2	h7	47	95	1	P218PTA1120	▲
11.3	0/-0.027	11.3	h7	47	95	1	P218PTA1130	▲
11.5	0/-0.027	11.5	h7	47	95	1	P218PTA1150	▲
11.8	0/-0.027	11.8	h7	47	95	1	P218PTA1180	▲

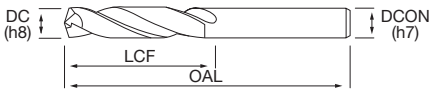
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

218PTA

- Self-centering
- General purpose
- Extra-short
- For ▲ rank items, you may receive until stock exhaustion former edp 218LFTA instead of 218PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 1897 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
12	0/-0.027	12	h7	51	102	1	**P218PTA1200**	●
12.2	0/-0.027	12.2	h7	51	102	1	**P218PTA1220**	●
12.5	0/-0.027	12.5	h7	51	102	1	**P218PTA1250**	●
12.8	0/-0.027	12.8	h7	51	102	1	**P218PTA1280**	▲
13	0/-0.027	13	h7	51	102	1	**P218PTA1300**	●
13.5	0/-0.027	13.5	h7	54	107	1	**P218PTA1350**	●
14	0/-0.027	14	h7	54	107	1	**P218PTA1400**	●
14.5	0/-0.027	14.5	h7	56	111	1	**P218PTA1450**	●
15	0/-0.027	15	h7	56	111	1	**P218PTA1500**	●
15.5	0/-0.027	15.5	h7	58	115	1	**P218PTA1550**	▲
16	0/-0.027	16	h7	58	115	1	**P218PTA1600**	●
16.5	0/-0.027	16.5	h7	60	119	1	**P218PTA1650**	▲
17	0/-0.027	17	h7	60	119	1	**P218PTA1700**	▲
17.5	0/-0.027	17.5	h7	62	123	1	**P218PTA1750**	●
18	0/-0.027	18	h7	62	123	1	**P218PTA1800**	●
18.5	0/-0.033	18.5	h7	64	127	1	**P218PTA1850**	○
19	0/-0.033	19	h7	64	127	1	**P218PTA1900**	●
19.5	0/-0.033	19.5	h7	66	131	1	**P218PTA1950**	○
20	0/-0.033	20	h7	66	131	1	**P218PTA2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

218PTA



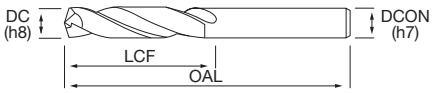
Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	N1 N2	N3 N4	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB			
Vc (m/min)	40÷50	30÷40	18÷22	18÷22	30÷40	65÷75	45÷55	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
2	0.060	0.051	0.042	0.042	0.057	0.066	0.060	
3	0.084	0.071	0.059	0.059	0.080	0.092	0.084	
4	0.108	0.092	0.076	0.076	0.103	0.119	0.108	
5	0.132	0.112	0.092	0.092	0.125	0.145	0.132	
6	0.156	0.133	0.109	0.109	0.148	0.172	0.156	
7	0.180	0.153	0.126	0.126	0.171	0.198	0.180	
8	0.204	0.173	0.143	0.143	0.194	0.224	0.204	
9	0.228	0.194	0.160	0.160	0.217	0.251	0.228	
10	0.252	0.214	0.176	0.176	0.239	0.277	0.252	
11	0.276	0.235	0.179	0.179	0.262	0.304	0.276	
12	0.300	0.255	0.195	0.195	0.285	0.330	0.300	
13	0.324	0.275	0.204	0.204	0.308	0.356	0.324	
14	0.348	0.296	0.219	0.219	0.331	0.383	0.348	
15	0.372	0.316	0.223	0.223	0.353	0.409	0.372	
16	0.396	0.337	0.238	0.238	0.376	0.436	0.396	
17	0.420	0.357	0.252	0.252	0.399	0.462	0.420	
18	0.444	0.377	0.266	0.266	0.422	0.488	0.444	
19	0.468	0.398	0.281	0.281	0.445	0.515	0.468	
20	0.492	0.418	0.295	0.295	0.467	0.541	0.492	

SORMA DIAMOND & CUTTING TOOLS

238PTA

- Self-centering
- General purpose
- Short
- For ▲ rank items, you may receive until stock exhaustion former edp 238LFTA instead of 238PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 338 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	h7	24	49	10	P238PTA0200	▲
2.1	0/-0.014	2.1	h7	24	49	10	P238PTA0210	●
2.2	0/-0.014	2.2	h7	27	53	10	P238PTA0220	●
2.3	0/-0.014	2.3	h7	27	53	10	P238PTA0230	●
2.4	0/-0.014	2.4	h7	30	57	10	P238PTA0240	▲
2.5	0/-0.014	2.5	h7	30	57	10	P238PTA0250	▲
2.6	0/-0.014	2.6	h7	30	57	10	P238PTA0260	▲
2.7	0/-0.014	2.7	h7	33	61	10	P238PTA0270	▲
2.8	0/-0.014	2.8	h7	33	61	10	P238PTA0280	▲
2.9	0/-0.014	2.9	h7	33	61	10	P238PTA0290	▲
3	0/-0.014	3	h7	33	61	10	P238PTA0300	●
3.1	0/-0.018	3.1	h7	36	65	10	P238PTA0310	●
3.2	0/-0.018	3.2	h7	36	65	10	P238PTA0320	▲
3.3	0/-0.018	3.3	h7	36	65	10	P238PTA0330	▲
3.4	0/-0.018	3.4	h7	39	70	10	P238PTA0340	▲
3.5	0/-0.018	3.5	h7	39	70	10	P238PTA0350	●
3.6	0/-0.018	3.6	h7	39	70	10	P238PTA0360	▲
3.7	0/-0.018	3.7	h7	39	70	10	P238PTA0370	▲
3.8	0/-0.018	3.8	h7	43	75	10	P238PTA0380	▲
3.9	0/-0.018	3.9	h7	43	75	10	P238PTA0390	●
4	0/-0.018	4	h7	43	75	10	P238PTA0400	▲
4.1	0/-0.018	4.1	h7	43	75	10	P238PTA0410	▲
4.2	0/-0.018	4.2	h7	43	75	10	P238PTA0420	●
4.3	0/-0.018	4.3	h7	47	80	10	P238PTA0430	▲
4.4	0/-0.018	4.4	h7	47	80	10	P238PTA0440	○
4.5	0/-0.018	4.5	h7	47	80	10	P238PTA0450	▲
4.6	0/-0.018	4.6	h7	47	80	10	P238PTA0460	▲
4.7	0/-0.018	4.7	h7	47	80	10	P238PTA0470	▲
4.8	0/-0.018	4.8	h7	52	86	10	P238PTA0480	▲
4.9	0/-0.018	4.9	h7	52	86	10	P238PTA0490	▲
5	0/-0.018	5	h7	52	86	10	P238PTA0500	●
5.1	0/-0.018	5.1	h7	52	86	5	P238PTA0510	●
5.2	0/-0.018	5.2	h7	52	86	5	P238PTA0520	●
5.3	0/-0.018	5.3	h7	52	86	5	P238PTA0530	▲
5.4	0/-0.018	5.4	h7	57	93	5	P238PTA0540	▲
5.5	0/-0.018	5.5	h7	57	93	5	P238PTA0550	●
5.6	0/-0.018	5.6	h7	57	93	5	P238PTA0560	▲
5.7	0/-0.018	5.7	h7	57	93	5	P238PTA0570	▲
5.8	0/-0.018	5.8	h7	57	93	5	P238PTA0580	▲
5.9	0/-0.018	5.9	h7	57	93	5	P238PTA0590	▲
6	0/-0.018	6	h7	57	93	5	P238PTA0600	●
6.1	0/-0.022	6.1	h7	63	101	5	P238PTA0610	▲
6.2	0/-0.022	6.2	h7	63	101	5	P238PTA0620	●
6.3	0/-0.022	6.3	h7	63	101	5	P238PTA0630	●
6.4	0/-0.022	6.4	h7	63	101	5	P238PTA0640	▲

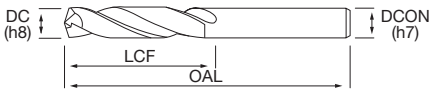
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

238PTA

- Self-centering
- General purpose
- Short
- For ▲ rank items, you may receive until stock exhaustion former edp 238LFTA instead of 238PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 338 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
6.5	0/-0.022	6.5	h7	63	101	5	P238PTA0650	●
6.6	0/-0.022	6.6	h7	63	101	5	P238PTA0660	▲
6.7	0/-0.022	6.7	h7	63	101	5	P238PTA0670	▲
6.8	0/-0.022	6.8	h7	69	109	5	P238PTA0680	●
6.9	0/-0.022	6.9	h7	69	109	5	P238PTA0690	▲
7	0/-0.022	7	h7	69	109	5	P238PTA0700	●
7.1	0/-0.022	7.1	h7	69	109	5	P238PTA0710	▲
7.2	0/-0.022	7.2	h7	69	109	5	P238PTA0720	▲
7.3	0/-0.022	7.3	h7	69	109	5	P238PTA0730	▲
7.4	0/-0.022	7.4	h7	69	109	5	P238PTA0740	●
7.5	0/-0.022	7.5	h7	69	109	5	P238PTA0750	▲
7.6	0/-0.022	7.6	h7	75	117	5	P238PTA0760	▲
7.7	0/-0.022	7.7	h7	75	117	5	P238PTA0770	▲
7.8	0/-0.022	7.8	h7	75	117	5	P238PTA0780	▲
7.9	0/-0.022	7.9	h7	75	117	5	P238PTA0790	▲
8	0/-0.022	8	h7	75	117	5	P238PTA0800	●
8.1	0/-0.022	8.1	h7	75	117	1	P238PTA0810	▲
8.2	0/-0.022	8.2	h7	75	117	1	P238PTA0820	▲
8.3	0/-0.022	8.3	h7	75	117	1	P238PTA0830	▲
8.4	0/-0.022	8.4	h7	75	117	1	P238PTA0840	▲
8.5	0/-0.022	8.5	h7	75	117	1	P238PTA0850	●
8.6	0/-0.022	8.6	h7	81	125	1	P238PTA0860	●
8.7	0/-0.022	8.7	h7	81	125	1	P238PTA0870	▲
8.8	0/-0.022	8.8	h7	81	125	1	P238PTA0880	▲
8.9	0/-0.022	8.9	h7	81	125	1	P238PTA0890	▲
9	0/-0.022	9	h7	81	125	1	P238PTA0900	●
9.1	0/-0.022	9.1	h7	81	125	1	P238PTA0910	▲
9.2	0/-0.022	9.2	h7	81	125	1	P238PTA0920	○
9.3	0/-0.022	9.3	h7	81	125	1	P238PTA0930	○
9.4	0/-0.022	9.4	h7	81	125	1	P238PTA0940	▲
9.5	0/-0.022	9.5	h7	81	125	1	P238PTA0950	●
9.6	0/-0.022	9.6	h7	87	133	1	P238PTA0960	▲
9.7	0/-0.022	9.7	h7	87	133	1	P238PTA0970	▲
9.8	0/-0.022	9.8	h7	87	133	1	P238PTA0980	▲
9.9	0/-0.022	9.9	h7	87	133	1	P238PTA0990	▲
10	0/-0.022	10	h7	87	133	1	P238PTA1000	●
10.2	0/-0.027	10.2	h7	87	133	1	P238PTA1020	●
10.3	0/-0.027	10.3	h7	87	133	1	P238PTA1030	●
10.5	0/-0.027	10.5	h7	87	133	1	P238PTA1050	●
10.8	0/-0.027	10.8	h7	94	142	1	P238PTA1080	▲
11	0/-0.027	11	h7	94	142	1	P238PTA1100	▲
11.2	0/-0.027	11.2	h7	94	142	1	P238PTA1120	○
11.3	0/-0.027	11.3	h7	94	142	1	P238PTA1130	▲
11.5	0/-0.027	11.5	h7	94	142	1	P238PTA1150	▲
11.8	0/-0.027	11.8	h7	94	142	1	P238PTA1180	▲

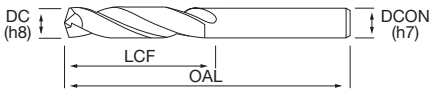
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

238PTA

- Self-centering
- General purpose
- Short
- For ▲ rank items, you may receive until stock exhaustion former edp 238LFTA instead of 238PTA

P	M	K	N	S	H
★	☆	★	☆		





DIN 338 | P | HSS/Co PV10 | SIG 130° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
12	0/-0.027	12	h7	101	151	1	**P238PTA1200**	▲
12.2	0/-0.027	12.2	h7	101	151	1	**P238PTA1220**	○
12.5	0/-0.027	12.5	h7	101	151	1	**P238PTA1250**	●
12.8	0/-0.027	12.8	h7	101	151	1	**P238PTA1280**	▲
13	0/-0.027	13	h7	101	151	1	**P238PTA1300**	●
13.5	0/-0.027	13.5	h7	108	160	1	**P238PTA1350**	●
14	0/-0.027	14	h7	108	160	1	**P238PTA1400**	●
14.5	0/-0.027	14.5	h7	114	169	1	**P238PTA1450**	●
15	0/-0.027	15	h7	114	169	1	**P238PTA1500**	●
15.5	0/-0.027	15.5	h7	120	178	1	**P238PTA1550**	●
16	0/-0.027	16	h7	120	178	1	**P238PTA1600**	●
16.5	0/-0.027	16.5	h7	125	184	1	**P238PTA1650**	○
17	0/-0.027	17	h7	125	184	1	**P238PTA1700**	○
17.5	0/-0.027	17.5	h7	130	191	1	**P238PTA1750**	●
18	0/-0.027	18	h7	130	191	1	**P238PTA1800**	○
18.5	0/-0.033	18.5	h7	135	198	1	**P238PTA1850**	○
19	0/-0.033	19	h7	135	198	1	**P238PTA1900**	○
19.5	0/-0.033	19.5	h7	140	205	1	**P238PTA1950**	▲
20	0/-0.033	20	h7	140	205	1	**P238PTA2000**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

238PTA



Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	N1 N2	N3 N4	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB			
Vc (m/min)	30÷40	20÷30	14÷18	14÷18	25÷35	50÷60	35÷45	
DCw (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
2	0.054	0.046	0.038	0.038	0.051	0.059	0.054	
3	0.076	0.064	0.053	0.053	0.072	0.083	0.076	
4	0.097	0.083	0.068	0.068	0.092	0.107	0.097	
5	0.119	0.101	0.083	0.083	0.113	0.131	0.119	
6	0.140	0.119	0.098	0.098	0.133	0.154	0.140	
7	0.162	0.138	0.113	0.113	0.154	0.178	0.162	
8	0.184	0.156	0.129	0.129	0.174	0.202	0.184	
9	0.205	0.174	0.144	0.144	0.195	0.226	0.205	
10	0.227	0.193	0.159	0.159	0.215	0.249	0.227	
11	0.248	0.211	0.161	0.161	0.236	0.273	0.248	
12	0.270	0.230	0.176	0.176	0.257	0.297	0.270	
13	0.292	0.248	0.184	0.184	0.277	0.321	0.292	
14	0.313	0.266	0.197	0.197	0.298	0.345	0.313	
15	0.335	0.285	0.201	0.201	0.318	0.368	0.335	
16	0.356	0.303	0.214	0.214	0.339	0.392	0.356	
17	0.378	0.321	0.227	0.227	0.359	0.416	0.378	
18	0.400	0.340	0.240	0.240	0.380	0.440	0.400	
19	0.421	0.358	0.253	0.253	0.400	0.463	0.421	
20	0.443	0.376	0.266	0.266	0.421	0.487	0.443	



SUTA

HIGH PERFORMANCE - STAINLESS STEEL

High performance and self-centering geometry. Featuring premium HSSE+PV10 coating and special edge design, enables very low cutting force and outstanding performance on stainless steel, steel and non-ferrous materials.

Alto rendimento e affilatura autocentrante. Costruita con i migliori HSSE+PV10 e speciale geometria del tagliente, garantisce un bassissimo sforzo di taglio e prestazioni eccezionali nella foratura di acciaio inossidabile, acciaio e materiali non ferrosi.

Hohe Leistungen und selbstzentrierende Schnittgeometrie. Aus hervorragendem HSSE mit PV10 Beschichtung. Dank des sehr geringen Schneiddrucks, sind unschlagbare Leistungen auf rostfreien Stählen, Stählen und NE-Metall-Werkstoffe möglich.

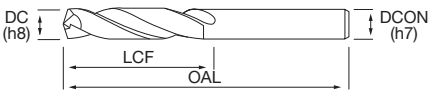
Haute performance et affûtage autocentré. Fabriquée avec les meilleurs HSSE+PV10 et une géométrie spécifique de l'arête, elle permet de minimiser les efforts de coupe en garantissant des performances exceptionnelles dans le perçage des aciers inoxydables, des aciers et des matériaux non ferreux.

SORMA DIAMOND & CUTTING TOOLS

980SUTA

- Self centering
- Stainless steel
- Extra-short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	h7	12	44	1	P980SUTA0200	●
2.1	0/-0.014	2.1	h7	12	44	1	P980SUTA0210	●
2.2	0/-0.014	2.2	h7	13	45	1	P980SUTA0220	●
2.3	0/-0.014	2.3	h7	13	45	1	P980SUTA0230	●
2.4	0/-0.014	2.4	h7	14	46	1	P980SUTA0240	●
2.5	0/-0.014	2.5	h7	14	46	1	P980SUTA0250	●
2.6	0/-0.014	2.6	h7	14	46	1	P980SUTA0260	●
2.7	0/-0.014	2.7	h7	16	48	1	P980SUTA0270	●
2.8	0/-0.014	2.8	h7	16	48	1	P980SUTA0280	●
2.9	0/-0.014	2.9	h7	16	48	1	P980SUTA0290	●
3	0/-0.014	3	h7	16	48	1	P980SUTA0300	●
3.1	0/-0.018	3.1	h7	18	50	1	P980SUTA0310	●
3.2	0/-0.018	3.2	h7	18	50	1	P980SUTA0320	●
3.3	0/-0.018	3.3	h7	18	50	1	P980SUTA0330	●
3.4	0/-0.018	3.4	h7	20	52	1	P980SUTA0340	●
3.5	0/-0.018	3.5	h7	20	52	1	P980SUTA0350	●
3.6	0/-0.018	3.6	h7	20	52	1	P980SUTA0360	●
3.7	0/-0.018	3.7	h7	20	52	1	P980SUTA0370	●
3.8	0/-0.018	3.8	h7	22	54	1	P980SUTA0380	●
3.9	0/-0.018	3.9	h7	22	54	1	P980SUTA0390	●
4	0/-0.018	4	h7	22	54	1	P980SUTA0400	●
4.1	0/-0.018	4.1	h7	22	66	1	P980SUTA0410	●
4.2	0/-0.018	4.2	h7	22	66	1	P980SUTA0420	●
4.3	0/-0.018	4.3	h7	24	68	1	P980SUTA0430	●
4.4	0/-0.018	4.4	h7	24	68	1	P980SUTA0440	●
4.5	0/-0.018	4.5	h7	24	68	1	P980SUTA0450	●
4.6	0/-0.018	4.6	h7	24	68	1	P980SUTA0460	●
4.7	0/-0.018	4.7	h7	24	68	1	P980SUTA0470	●
4.8	0/-0.018	4.8	h7	26	70	1	P980SUTA0480	●
4.9	0/-0.018	4.9	h7	26	70	1	P980SUTA0490	●
5	0/-0.018	5	h7	26	70	1	P980SUTA0500	●
5.1	0/-0.018	5.1	h7	26	70	1	P980SUTA0510	●
5.2	0/-0.018	5.2	h7	26	70	1	P980SUTA0520	●
5.3	0/-0.018	5.3	h7	26	70	1	P980SUTA0530	●
5.4	0/-0.018	5.4	h7	28	72	1	P980SUTA0540	●
5.5	0/-0.018	5.5	h7	28	72	1	P980SUTA0550	●
5.6	0/-0.018	5.6	h7	28	72	1	P980SUTA0560	●
5.7	0/-0.018	5.7	h7	28	72	1	P980SUTA0570	●
5.8	0/-0.018	5.8	h7	28	72	1	P980SUTA0580	●
5.9	0/-0.018	5.9	h7	28	72	1	P980SUTA0590	●
6	0/-0.018	6	h7	28	72	1	P980SUTA0600	●
6.1	0/-0.022	6.1	h7	31	75	1	P980SUTA0610	●
6.2	0/-0.022	6.2	h7	31	75	1	P980SUTA0620	●
6.3	0/-0.022	6.3	h7	31	75	1	P980SUTA0630	●
6.4	0/-0.022	6.4	h7	31	75	1	P980SUTA0640	●

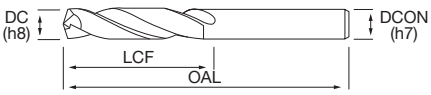
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

980SUTA

- Self centering
- Stainless steel
- Extra-short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
6.5	0/-0.022	6.5	h7	31	75	1	P980SUTA0650	●
6.6	0/-0.022	6.6	h7	31	75	1	P980SUTA0660	●
6.7	0/-0.022	6.7	h7	31	75	1	P980SUTA0670	●
6.8	0/-0.022	6.8	h7	34	78	1	P980SUTA0680	●
6.9	0/-0.022	6.9	h7	34	78	1	P980SUTA0690	●
7	0/-0.022	7	h7	34	78	1	P980SUTA0700	●
7.1	0/-0.022	7.1	h7	34	78	1	P980SUTA0710	●
7.2	0/-0.022	7.2	h7	34	78	1	P980SUTA0720	●
7.3	0/-0.022	7.3	h7	34	78	1	P980SUTA0730	●
7.4	0/-0.022	7.4	h7	34	78	1	P980SUTA0740	●
7.5	0/-0.022	7.5	h7	34	78	1	P980SUTA0750	●
7.6	0/-0.022	7.6	h7	37	81	1	P980SUTA0760	●
7.7	0/-0.022	7.7	h7	37	81	1	P980SUTA0770	●
7.8	0/-0.022	7.8	h7	37	81	1	P980SUTA0780	●
7.9	0/-0.022	7.9	h7	37	81	1	P980SUTA0790	●
8	0/-0.022	8	h7	37	81	1	P980SUTA0800	●
8.1	0/-0.022	8.1	h7	37	87	1	P980SUTA0810	●
8.2	0/-0.022	8.2	h7	37	87	1	P980SUTA0820	●
8.3	0/-0.022	8.3	h7	37	87	1	P980SUTA0830	●
8.4	0/-0.022	8.4	h7	37	87	1	P980SUTA0840	●
8.5	0/-0.022	8.5	h7	37	87	1	P980SUTA0850	●
8.6	0/-0.022	8.6	h7	40	90	1	P980SUTA0860	●
8.7	0/-0.022	8.7	h7	40	90	1	P980SUTA0870	●
8.8	0/-0.022	8.8	h7	40	90	1	P980SUTA0880	●
8.9	0/-0.022	8.9	h7	40	90	1	P980SUTA0890	●
9	0/-0.022	9	h7	40	90	1	P980SUTA0900	●
9.1	0/-0.022	9.1	h7	40	90	1	P980SUTA0910	●
9.2	0/-0.022	9.2	h7	40	90	1	P980SUTA0920	●
9.3	0/-0.022	9.3	h7	40	90	1	P980SUTA0930	●
9.4	0/-0.022	9.4	h7	40	90	1	P980SUTA0940	●
9.5	0/-0.022	9.5	h7	40	90	1	P980SUTA0950	●
9.6	0/-0.022	9.6	h7	43	93	1	P980SUTA0960	○
9.7	0/-0.022	9.7	h7	43	93	1	P980SUTA0970	●
9.8	0/-0.022	9.8	h7	43	93	1	P980SUTA0980	●
9.9	0/-0.022	9.9	h7	43	93	1	P980SUTA0990	●
10	0/-0.022	10	h7	43	93	1	P980SUTA1000	●
10.1	0/-0.022	10.1	h7	43	100	1	P980SUTA1010	●
10.2	0/-0.022	10.2	h7	43	100	1	P980SUTA1020	●
10.3	0/-0.022	10.3	h7	43	100	1	P980SUTA1030	●
10.4	0/-0.022	10.4	h7	43	100	1	P980SUTA1040	●
10.5	0/-0.022	10.5	h7	43	100	1	P980SUTA1050	●
10.6	0/-0.022	10.6	h7	43	100	1	P980SUTA1060	●
10.7	0/-0.022	10.7	h7	47	104	1	P980SUTA1070	●
10.8	0/-0.022	10.8	h7	47	104	1	P980SUTA1080	●
10.9	0/-0.022	10.9	h7	47	104	1	P980SUTA1090	●

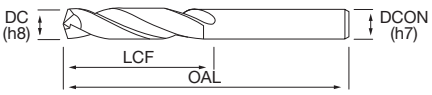
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

980SUTA

- Self centering
- Stainless steel
- Extra-short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
11	0/-0.022	11	h7	47	104	1	**P980SUTA1100**	●
11.1	0/-0.022	11.1	h7	47	104	1	**P980SUTA1110**	●
11.2	0/-0.022	11.2	h7	47	104	1	**P980SUTA1120**	●
11.3	0/-0.022	11.3	h7	47	104	1	**P980SUTA1130**	●
11.4	0/-0.022	11.4	h7	47	104	1	**P980SUTA1140**	●
11.5	0/-0.022	11.5	h7	47	104	1	**P980SUTA1150**	●
11.6	0/-0.022	11.6	h7	47	104	1	**P980SUTA1160**	●
11.7	0/-0.022	11.7	h7	47	104	1	**P980SUTA1170**	●
11.8	0/-0.022	11.8	h7	47	104	1	**P980SUTA1180**	●
11.9	0/-0.022	11.9	h7	51	108	1	**P980SUTA1190**	●
12	0/-0.022	12	h7	51	108	1	**P980SUTA1200**	●
12.1	0/-0.022	12.1	h7	51	108	1	**P980SUTA1210**	●
12.2	0/-0.022	12.2	h7	51	108	1	**P980SUTA1220**	●
12.3	0/-0.022	12.3	h7	51	108	1	**P980SUTA1230**	●
12.4	0/-0.022	12.4	h7	51	108	1	**P980SUTA1240**	●
12.5	0/-0.022	12.5	h7	51	108	1	**P980SUTA1250**	●
12.6	0/-0.022	12.6	h7	51	108	1	**P980SUTA1260**	●
12.7	0/-0.022	12.7	h7	51	108	1	**P980SUTA1270**	●
12.8	0/-0.022	12.8	h7	51	108	1	**P980SUTA1280**	●
12.9	0/-0.022	12.9	h7	51	108	1	**P980SUTA1290**	●
13	0/-0.022	13	h7	51	108	1	**P980SUTA1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

980SUTA

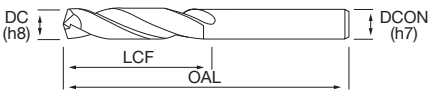
	Material Group ISO 513	P1 P2	P7	M1	M2	N1 N2 N4	N3	S1 S2	S4
	Hardness/Rm	500÷700 N/mm²	400÷700 N/mm²					<30 HRC	
	Vc (m/min)	35÷45	18÷22	18÷22	12÷16	60÷80	30÷40	8÷12	12÷16
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	2	0.060	0.060	0.060	0.042	0.066	0.051	0.024	0.042
	3	0.080	0.080	0.080	0.056	0.088	0.068	0.032	0.056
	4	0.100	0.100	0.100	0.070	0.120	0.085	0.040	0.070
	5	0.120	0.120	0.120	0.084	0.144	0.102	0.060	0.084
	6	0.140	0.140	0.140	0.098	0.182	0.119	0.070	0.098
	7	0.160	0.160	0.160	0.112	0.208	0.136	0.096	0.128
	8	0.180	0.180	0.180	0.126	0.252	0.153	0.108	0.144
	9	0.200	0.200	0.200	0.140	0.280	0.170	0.120	0.160
	10	0.230	0.230	0.230	0.161	0.322	0.196	0.138	0.184
	11	0.260	0.260	0.260	0.169	0.364	0.221	0.156	0.208
	12	0.300	0.300	0.300	0.195	0.420	0.255	0.180	0.240
	13	0.340	0.340	0.340	0.221	0.476	0.289	0.204	0.272
	14	0.360	0.360	0.360	0.234	0.504	0.306	0.216	0.288
	15	0.380	0.380	0.380	0.247	0.532	0.323	0.228	0.304
	16	0.400	0.400	0.400	0.260	0.560	0.340	0.240	0.320
	17	0.425	0.425	0.425	0.276	0.595	0.361	0.255	0.340
	18	0.450	0.450	0.450	0.293	0.630	0.383	0.270	0.360
	19	0.460	0.460	0.460	0.299	0.644	0.391	0.276	0.368
	20	0.470	0.470	0.470	0.306	0.658	0.400	0.282	0.376

SORMA DIAMOND & CUTTING TOOLS

990SUTA

- Self centering
- Stainless steel
- Short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	h7	24	56	1	P990SUTA0200	●
2.1	0/-0.014	2.1	h7	24	56	1	P990SUTA0210	●
2.2	0/-0.014	2.2	h7	27	59	1	P990SUTA0220	●
2.3	0/-0.014	2.3	h7	27	59	1	P990SUTA0230	●
2.4	0/-0.014	2.4	h7	30	62	1	P990SUTA0240	●
2.5	0/-0.014	2.5	h7	30	62	1	P990SUTA0250	●
2.6	0/-0.014	2.6	h7	30	62	1	P990SUTA0260	●
2.7	0/-0.014	2.7	h7	33	65	1	P990SUTA0270	●
2.8	0/-0.014	2.8	h7	33	65	1	P990SUTA0280	●
2.9	0/-0.014	2.9	h7	33	65	1	P990SUTA0290	●
3	0/-0.014	3	h7	33	65	1	P990SUTA0300	●
3.1	0/-0.018	3.1	h7	36	68	1	P990SUTA0310	●
3.2	0/-0.018	3.2	h7	36	68	1	P990SUTA0320	●
3.3	0/-0.018	3.3	h7	36	68	1	P990SUTA0330	●
3.4	0/-0.018	3.4	h7	39	71	1	P990SUTA0340	●
3.5	0/-0.018	3.5	h7	39	71	1	P990SUTA0350	●
3.6	0/-0.018	3.6	h7	39	71	1	P990SUTA0360	●
3.7	0/-0.018	3.7	h7	39	71	1	P990SUTA0370	●
3.8	0/-0.018	3.8	h7	43	75	1	P990SUTA0380	●
3.9	0/-0.018	3.9	h7	43	75	1	P990SUTA0390	●
4	0/-0.018	4	h7	43	75	1	P990SUTA0400	●
4.1	0/-0.018	4.1	h7	43	87	1	P990SUTA0410	●
4.2	0/-0.018	4.2	h7	43	87	1	P990SUTA0420	●
4.3	0/-0.018	4.3	h7	47	91	1	P990SUTA0430	●
4.4	0/-0.018	4.4	h7	47	91	1	P990SUTA0440	●
4.5	0/-0.018	4.5	h7	47	91	1	P990SUTA0450	●
4.6	0/-0.018	4.6	h7	47	91	1	P990SUTA0460	●
4.7	0/-0.018	4.7	h7	47	91	1	P990SUTA0470	●
4.8	0/-0.018	4.8	h7	52	96	1	P990SUTA0480	●
4.9	0/-0.018	4.9	h7	52	96	1	P990SUTA0490	●
5	0/-0.018	5	h7	52	96	1	P990SUTA0500	●
5.1	0/-0.018	5.1	h7	52	96	1	P990SUTA0510	●
5.2	0/-0.018	5.2	h7	52	96	1	P990SUTA0520	●
5.3	0/-0.018	5.3	h7	52	96	1	P990SUTA0530	●
5.4	0/-0.018	5.4	h7	57	101	1	P990SUTA0540	●
5.5	0/-0.018	5.5	h7	57	101	1	P990SUTA0550	●
5.6	0/-0.018	5.6	h7	57	101	1	P990SUTA0560	●
5.7	0/-0.018	5.7	h7	57	101	1	P990SUTA0570	●
5.8	0/-0.018	5.8	h7	57	101	1	P990SUTA0580	●
5.9	0/-0.018	5.9	h7	57	101	1	P990SUTA0590	●
6	0/-0.018	6	h7	57	101	1	P990SUTA0600	●
6.1	0/-0.022	6.1	h7	63	107	1	P990SUTA0610	●
6.2	0/-0.022	6.2	h7	63	107	1	P990SUTA0620	●
6.3	0/-0.022	6.3	h7	63	107	1	P990SUTA0630	●
6.4	0/-0.022	6.4	h7	63	107	1	P990SUTA0640	●

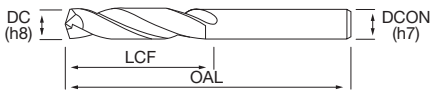
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

990SUTA

- Self centering
- Stainless steel
- Short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
6.5	0/-0.022	6.5	h7	63	107	1	P990SUTA0650	●
6.6	0/-0.022	6.6	h7	63	107	1	P990SUTA0660	●
6.7	0/-0.022	6.7	h7	63	107	1	P990SUTA0670	●
6.8	0/-0.022	6.8	h7	69	113	1	P990SUTA0680	●
6.9	0/-0.022	6.9	h7	69	113	1	P990SUTA0690	●
7	0/-0.022	7	h7	69	113	1	P990SUTA0700	●
7.1	0/-0.022	7.1	h7	69	113	1	P990SUTA0710	●
7.2	0/-0.022	7.2	h7	69	113	1	P990SUTA0720	●
7.3	0/-0.022	7.3	h7	69	113	1	P990SUTA0730	●
7.4	0/-0.022	7.4	h7	69	113	1	P990SUTA0740	●
7.5	0/-0.022	7.5	h7	69	113	1	P990SUTA0750	●
7.6	0/-0.022	7.6	h7	75	119	1	P990SUTA0760	●
7.7	0/-0.022	7.7	h7	75	119	1	P990SUTA0770	●
7.8	0/-0.022	7.8	h7	75	119	1	P990SUTA0780	●
7.9	0/-0.022	7.9	h7	75	119	1	P990SUTA0790	●
8	0/-0.022	8	h7	75	119	1	P990SUTA0800	●
8.1	0/-0.022	8.1	h7	75	125	1	P990SUTA0810	●
8.2	0/-0.022	8.2	h7	75	125	1	P990SUTA0820	●
8.3	0/-0.022	8.3	h7	75	125	1	P990SUTA0830	●
8.4	0/-0.022	8.4	h7	75	125	1	P990SUTA0840	●
8.5	0/-0.022	8.5	h7	75	125	1	P990SUTA0850	●
8.6	0/-0.022	8.6	h7	81	131	1	P990SUTA0860	●
8.7	0/-0.022	8.7	h7	81	131	1	P990SUTA0870	●
8.8	0/-0.022	8.8	h7	81	131	1	P990SUTA0880	●
8.9	0/-0.022	8.9	h7	81	131	1	P990SUTA0890	●
9	0/-0.022	9	h7	81	131	1	P990SUTA0900	●
9.1	0/-0.022	9.1	h7	81	131	1	P990SUTA0910	●
9.2	0/-0.022	9.2	h7	81	131	1	P990SUTA0920	●
9.3	0/-0.022	9.3	h7	81	131	1	P990SUTA0930	●
9.4	0/-0.022	9.4	h7	81	131	1	P990SUTA0940	●
9.5	0/-0.022	9.5	h7	81	131	1	P990SUTA0950	●
9.6	0/-0.022	9.6	h7	87	137	1	P990SUTA0960	●
9.7	0/-0.022	9.7	h7	87	137	1	P990SUTA0970	●
9.8	0/-0.022	9.8	h7	87	137	1	P990SUTA0980	●
9.9	0/-0.022	9.9	h7	87	137	1	P990SUTA0990	●
10	0/-0.022	10	h7	87	137	1	P990SUTA1000	●
10.1	0/-0.027	10.1	h7	87	144	1	P990SUTA1010	●
10.2	0/-0.027	10.2	h7	87	144	1	P990SUTA1020	●
10.3	0/-0.027	10.3	h7	87	144	1	P990SUTA1030	●
10.4	0/-0.027	10.4	h7	87	144	1	P990SUTA1040	○
10.5	0/-0.027	10.5	h7	87	144	1	P990SUTA1050	●
10.6	0/-0.027	10.6	h7	87	144	1	P990SUTA1060	●
10.7	0/-0.027	10.7	h7	94	151	1	P990SUTA1070	●
10.8	0/-0.027	10.8	h7	94	151	1	P990SUTA1080	●
10.9	0/-0.027	10.9	h7	94	151	1	P990SUTA1090	●

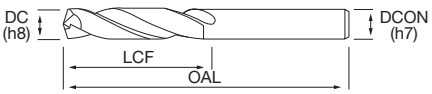
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

990SUTA

- Self centering
- Stainless steel
- Short

P	M	K	N	S	H
★	★		★	☆	





OSAWA NORM | SU | HSSE PV10 | SIG 120° | FHA 38°

DC	DC tol.	DCON	TCDCON	LCF	OAL	Packaging	EDP no.	Stock
11	0/-0.027	11	h7	94	151	1	**P990SUTA1100**	●
11.1	0/-0.027	11.1	h7	94	151	1	**P990SUTA1110**	●
11.2	0/-0.027	11.2	h7	94	151	1	**P990SUTA1120**	●
11.3	0/-0.027	11.3	h7	94	151	1	**P990SUTA1130**	●
11.4	0/-0.027	11.4	h7	94	151	1	**P990SUTA1140**	●
11.5	0/-0.027	11.5	h7	94	151	1	**P990SUTA1150**	●
11.6	0/-0.027	11.6	h7	94	151	1	**P990SUTA1160**	●
11.7	0/-0.027	11.7	h7	94	151	1	**P990SUTA1170**	●
11.8	0/-0.027	11.8	h7	94	151	1	**P990SUTA1180**	●
11.9	0/-0.027	11.9	h7	101	158	1	**P990SUTA1190**	●
12	0/-0.027	12	h7	101	158	1	**P990SUTA1200**	●
12.1	0/-0.027	12.1	h7	101	158	1	**P990SUTA1210**	●
12.2	0/-0.027	12.2	h7	101	158	1	**P990SUTA1220**	●
12.3	0/-0.027	12.3	h7	101	158	1	**P990SUTA1230**	●
12.4	0/-0.027	12.4	h7	101	158	1	**P990SUTA1240**	●
12.5	0/-0.027	12.5	h7	101	158	1	**P990SUTA1250**	●
12.6	0/-0.027	12.6	h7	101	158	1	**P990SUTA1260**	●
12.7	0/-0.027	12.7	h7	101	158	1	**P990SUTA1270**	●
12.8	0/-0.027	12.8	h7	101	158	1	**P990SUTA1280**	●
12.9	0/-0.027	12.9	h7	101	158	1	**P990SUTA1290**	●
13	0/-0.027	13	h7	101	158	1	**P990SUTA1300**	●
13.5	0/-0.027	13.5	h7	106	166	1	**P990SUTA1350**	●
14	0/-0.027	14	h7	106	166	1	**P990SUTA1400**	●
14.1	0/-0.027	14.1	h7	109	169	1	**P990SUTA1410**	●
14.5	0/-0.027	14.5	h7	109	169	1	**P990SUTA1450**	●
15	0/-0.027	15	h7	109	169	1	**P990SUTA1500**	●
15.5	0/-0.027	15.5	h7	112	172	1	**P990SUTA1550**	●
15.6	0/-0.027	15.6	h7	112	172	1	**P990SUTA1560**	●
16	0/-0.027	16	h7	112	172	1	**P990SUTA1600**	●
16.5	0/-0.027	16.5	h7	115	181	1	**P990SUTA1650**	●
17	0/-0.027	17	h7	115	181	1	**P990SUTA1700**	●
17.5	0/-0.027	17.5	h7	118	184	1	**P990SUTA1750**	●
17.6	0/-0.027	17.6	h7	118	184	1	**P990SUTA1760**	●
18	0/-0.027	18	h7	118	184	1	**P990SUTA1800**	●
18.5	0/-0.033	18.5	h7	122	188	1	**P990SUTA1850**	●
19	0/-0.033	19	h7	122	188	1	**P990SUTA1900**	●
19.5	0/-0.033	19.5	h7	125	191	1	**P990SUTA1950**	●
20	0/-0.033	20	h7	125	191	1	**P990SUTA2000**	●

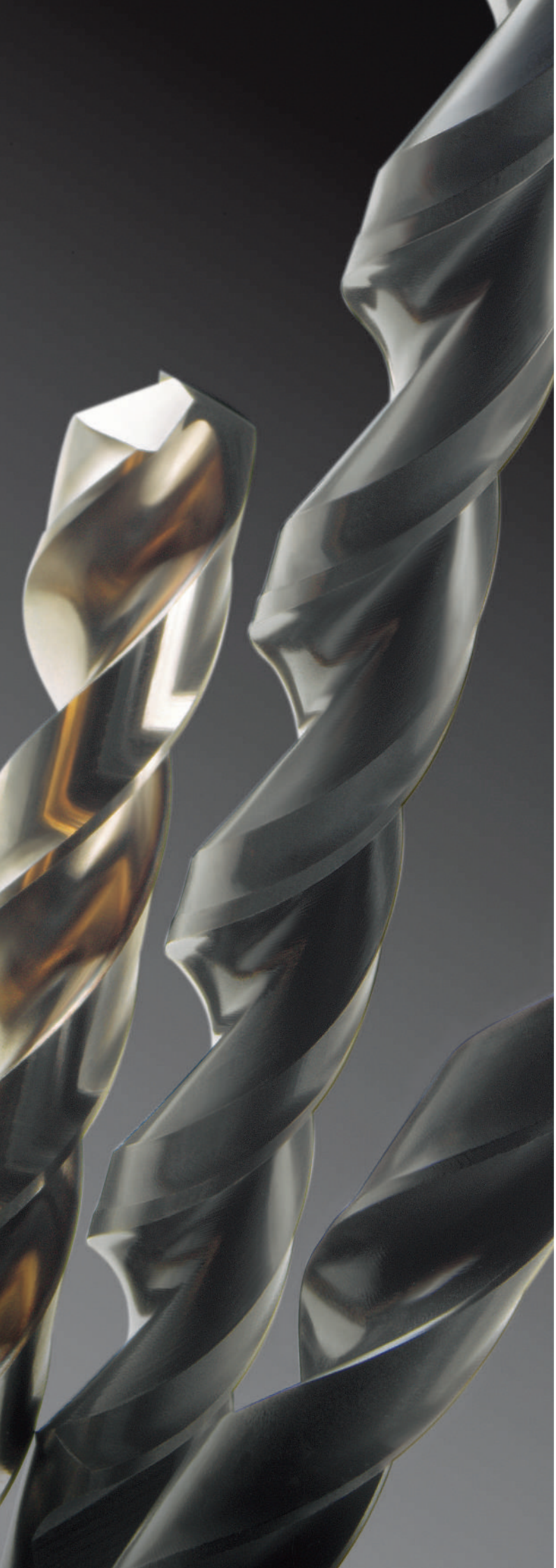
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

990SUTA

	Material Group ISO 513	P1 P2	P7	M1	M2	N1 N2 N4	N3	S1 S2	S4
	Hardness/Rm	500÷700 N/mm²	400÷700 N/mm²					<30 HRC	
	Vc (m/min)	**35÷45**	**18÷22**	**18÷22**	**12÷16**	**60÷80**	**30÷40**	**8÷12**	**12÷16**
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	2	0.057	0.057	0.057	0.040	0.063	0.048	0.023	0.040
	3	0.076	0.076	0.076	0.053	0.084	0.065	0.030	0.053
	4	0.095	0.095	0.095	0.067	0.105	0.081	0.038	0.067
	5	0.114	0.114	0.114	0.080	0.125	0.097	0.057	0.080
	6	0.133	0.133	0.133	0.093	0.146	0.113	0.067	0.093
	7	0.152	0.152	0.152	0.106	0.167	0.129	0.091	0.122
	8	0.171	0.171	0.171	0.120	0.188	0.145	0.103	0.137
	9	0.190	0.190	0.190	0.133	0.209	0.162	0.114	0.152
	10	0.219	0.219	0.219	0.153	0.240	0.186	0.131	0.175
	11	0.247	0.247	0.247	0.161	0.272	0.210	0.148	0.198
	12	0.285	0.285	0.285	0.185	0.314	0.242	0.171	0.228
	13	0.323	0.323	0.323	0.203	0.355	0.275	0.194	0.258
	14	0.342	0.342	0.342	0.215	0.376	0.291	0.205	0.274
	15	0.361	0.361	0.361	0.217	0.397	0.307	0.217	0.289
	16	0.380	0.380	0.380	0.228	0.418	0.323	0.228	0.304
	17	0.404	0.404	0.404	0.242	0.444	0.343	0.242	0.323
	18	0.428	0.428	0.428	0.257	0.470	0.363	0.257	0.342
	19	0.437	0.437	0.437	0.262	0.481	0.371	0.262	0.350
	20	0.447	0.447	0.447	0.268	0.491	0.380	0.268	0.357



HSS-HSS/CO

GENERAL PURPOSE

A wide variety of geometries and standards, with great attention to the cost/performance ratio.

Un’ampia varietà di geometrie e standard costruttivi, con una vantaggiosa combinazione di rendimento e convenienza, sono i punti di forza delle punte in HSS e HSS/Co Osawa.

Die breite Palette an Geometrien und genormten Baumaßen bieten eine außergewöhnlich vorteilhafte Verbindung von Preis und Leistung: unschlagbare Stärken der Osawa Bohrer aus HSS und HSS/Co.

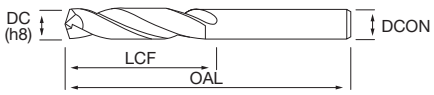
La gamme de forets HSS et HSS/Co Osawa offre une grande variété de géométries standards permettant une combinaison très rentable de performance et de prix.

SORMA DIAMOND & CUTTING TOOLS

118N

- N type for general purpose
- Extra-short

P	M	K	N	S	H
★		☆	☆		





DIN 1897 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1	0/-0.014	1	6	26	10	**P118NB0100**	●
1.1	0/-0.014	1.1	7	28	10	**P118NB0110**	●
1.2	0/-0.014	1.2	8	30	10	**P118NB0120**	●
1.25	0/-0.014	1.25	8	30	10	**P118NB0125**	●
1.3	0/-0.014	1.3	8	30	10	**P118NB0130**	●
1.4	0/-0.014	1.4	9	32	10	**P118NB0140**	●
1.5	0/-0.014	1.5	9	32	10	**P118NB0150**	●
1.6	0/-0.014	1.6	10	34	10	**P118NB0160**	●
1.7	0/-0.014	1.7	10	34	10	**P118NB0170**	●
1.75	0/-0.014	1.75	11	36	10	**P118NB0175**	●
1.8	0/-0.014	1.8	11	36	10	**P118NB0180**	●
1.9	0/-0.014	1.9	11	36	10	**P118NB0190**	●
2	0/-0.014	2	12	38	10	**P118N0200**	●
2.1	0/-0.014	2.1	12	38	10	**P118N0210**	●
2.2	0/-0.014	2.2	13	40	10	**P118N0220**	●
2.25	0/-0.014	2.25	13	40	10	**P118N0225**	●
2.3	0/-0.014	2.3	13	40	10	**P118N0230**	●
2.4	0/-0.014	2.4	14	43	10	**P118N0240**	●
2.5	0/-0.014	2.5	14	43	10	**P118N0250**	●
2.6	0/-0.014	2.6	14	43	10	**P118N0260**	●
2.7	0/-0.014	2.7	16	46	10	**P118N0270**	●
2.75	0/-0.014	2.75	16	46	10	**P118N0275**	●
2.8	0/-0.014	2.8	16	46	10	**P118N0280**	●
2.9	0/-0.014	2.9	16	46	10	**P118N0290**	●
3	0/-0.014	3	16	46	10	**P118N0300**	●
3.1	0/-0.018	3.1	18	49	10	**P118N0310**	●
3.2	0/-0.018	3.2	18	49	10	**P118N0320**	●
3.25	0/-0.018	3.25	18	49	10	**P118N0325**	●
3.3	0/-0.018	3.3	18	49	10	**P118N0330**	●
3.4	0/-0.018	3.4	20	52	10	**P118N0340**	●
3.5	0/-0.018	3.5	20	52	10	**P118N0350**	●
3.6	0/-0.018	3.6	20	52	10	**P118N0360**	●
3.7	0/-0.018	3.7	20	52	10	**P118N0370**	●
3.75	0/-0.018	3.75	20	52	10	**P118N0375**	●
3.8	0/-0.018	3.8	22	55	10	**P118N0380**	●
3.9	0/-0.018	3.9	22	55	10	**P118N0390**	●
4	0/-0.018	4	22	55	10	**P118N0400**	●
4.1	0/-0.018	4.1	22	55	10	**P118N0410**	●
4.2	0/-0.018	4.2	22	55	10	**P118N0420**	●
4.25	0/-0.018	4.25	22	55	10	**P118N0425**	●
4.3	0/-0.018	4.3	24	58	10	**P118N0430**	●
4.4	0/-0.018	4.4	24	58	10	**P118N0440**	○
4.5	0/-0.018	4.5	24	58	10	**P118N0450**	●
4.6	0/-0.018	4.6	24	58	10	**P118N0460**	●
4.7	0/-0.018	4.7	24	58	10	**P118N0470**	●

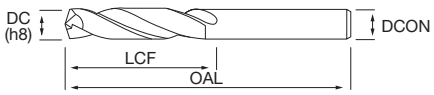
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

118N

- N type for general purpose
- Extra-short

P	M	K	N	S	H
★		☆	☆		





DIN 1897 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
4.75	0/-0.018	4.75	24	58	10	**P118N0475**	●
4.8	0/-0.018	4.8	26	62	10	**P118N0480**	●
4.9	0/-0.018	4.9	26	62	10	**P118N0490**	●
5	0/-0.018	5	26	62	10	**P118N0500**	●
5.1	0/-0.018	5.1	26	62	10	**P118N0510**	●
5.2	0/-0.018	5.2	26	62	10	**P118N0520**	●
5.25	0/-0.018	5.25	26	62	10	**P118N0525**	●
5.3	0/-0.018	5.3	26	62	10	**P118N0530**	●
5.4	0/-0.018	5.4	28	66	10	**P118N0540**	●
5.5	0/-0.018	5.5	28	66	10	**P118N0550**	●
5.6	0/-0.018	5.6	28	66	10	**P118N0560**	●
5.7	0/-0.018	5.7	28	66	10	**P118N0570**	●
5.75	0/-0.018	5.75	28	66	10	**P118N0575**	●
5.8	0/-0.018	5.8	28	66	10	**P118N0580**	●
5.9	0/-0.018	5.9	28	66	10	**P118N0590**	○
6	0/-0.018	6	28	66	10	**P118N0600**	●
6.1	0/-0.022	6.1	31	70	10	**P118N0610**	●
6.2	0/-0.022	6.2	31	70	10	**P118N0620**	●
6.25	0/-0.022	6.25	31	70	10	**P118N0625**	●
6.3	0/-0.022	6.3	31	70	10	**P118N0630**	●
6.4	0/-0.022	6.4	31	70	10	**P118N0640**	○
6.5	0/-0.022	6.5	31	70	10	**P118N0650**	●
6.6	0/-0.022	6.6	31	70	5	**P118N0660**	○
6.7	0/-0.022	6.7	31	70	5	**P118N0670**	●
6.75	0/-0.022	6.75	34	74	5	**P118N0675**	●
6.8	0/-0.022	6.8	34	74	5	**P118N0680**	●
6.9	0/-0.022	6.9	34	74	5	**P118N0690**	●
7	0/-0.022	7	34	74	5	**P118N0700**	●
7.1	0/-0.022	7.1	34	74	5	**P118N0710**	●
7.2	0/-0.022	7.2	34	74	5	**P118N0720**	●
7.25	0/-0.022	7.25	34	74	5	**P118N0725**	●
7.3	0/-0.022	7.3	34	74	5	**P118N0730**	●
7.4	0/-0.022	7.4	34	74	5	**P118N0740**	○
7.5	0/-0.022	7.5	34	74	5	**P118N0750**	●
7.6	0/-0.022	7.6	37	79	5	**P118N0760**	●
7.7	0/-0.022	7.7	37	79	5	**P118N0770**	○
7.75	0/-0.022	7.75	37	79	5	**P118N0775**	●
7.8	0/-0.022	7.8	37	79	5	**P118N0780**	●
7.9	0/-0.022	7.9	37	79	5	**P118N0790**	○
8	0/-0.022	8	37	79	5	**P118N0800**	●
8.1	0/-0.022	8.1	37	79	5	**P118N0810**	●
8.2	0/-0.022	8.2	37	79	5	**P118N0820**	●
8.25	0/-0.022	8.25	37	79	5	**P118N0825**	●
8.3	0/-0.022	8.3	37	79	5	**P118N0830**	○
8.4	0/-0.022	8.4	37	79	5	**P118N0840**	○

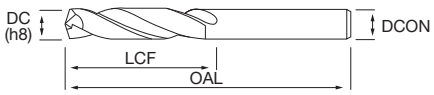
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

118N

- N type for general purpose
- Extra-short

P	M	K	N	S	H
★		☆	☆		





DIN 1897 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
8.5	0/-0.022	8.5	37	79	5	**P118N0850**	●
8.6	0/-0.022	8.6	40	84	5	**P118N0860**	●
8.7	0/-0.022	8.7	40	84	5	**P118N0870**	○
8.75	0/-0.022	8.75	40	84	5	**P118N0875**	●
8.8	0/-0.022	8.8	40	84	5	**P118N0880**	○
8.9	0/-0.022	8.9	40	84	5	**P118N0890**	●
9	0/-0.022	9	40	84	5	**P118N0900**	●
9.1	0/-0.022	9.1	40	84	5	**P118N0910**	●
9.2	0/-0.022	9.2	40	84	5	**P118N0920**	○
9.25	0/-0.022	9.25	40	84	5	**P118N0925**	○
9.3	0/-0.022	9.3	40	84	5	**P118N0930**	○
9.4	0/-0.022	9.4	40	84	5	**P118N0940**	○
9.5	0/-0.022	9.5	40	84	5	**P118N0950**	●
9.6	0/-0.022	9.6	43	89	5	**P118N0960**	○
9.7	0/-0.022	9.7	43	89	5	**P118N0970**	○
9.75	0/-0.022	9.75	43	89	5	**P118N0975**	○
9.8	0/-0.022	9.8	43	89	5	**P118N0980**	○
9.9	0/-0.022	9.9	43	89	5	**P118N0990**	○
10	0/-0.022	10	43	89	5	**P118N1000**	●
10.25	0/-0.027	10.25	43	89	5	**P118N1025**	●
10.5	0/-0.027	10.5	43	89	5	**P118N1050**	●
10.75	0/-0.027	10.75	47	95	5	**P118N1075**	●
11	0/-0.027	11	47	95	5	**P118N1100**	●
11.25	0/-0.027	11.25	47	95	5	**P118N1125**	●
11.5	0/-0.027	11.5	47	95	5	**P118N1150**	●
11.75	0/-0.027	11.75	47	95	5	**P118N1175**	○
12	0/-0.027	12	51	102	5	**P118N1200**	●
12.25	0/-0.027	12.25	51	102	5	**P118N1225**	○
12.5	0/-0.027	12.5	51	102	5	**P118N1250**	●
12.75	0/-0.027	12.75	51	102	5	**P118N1275**	●
13	0/-0.027	13	51	102	5	**P118N1300**	●
13.25	0/-0.027	13.25	54	107	1	**P118N1325**	●
13.5	0/-0.027	13.5	54	107	1	**P118N1350**	●
13.75	0/-0.027	13.75	54	107	1	**P118N1375**	●
14	0/-0.027	14	54	107	1	**P118N1400**	●
14.25	0/-0.027	14.25	56	111	1	**P118N1425**	●
14.5	0/-0.027	14.5	56	111	1	**P118N1450**	●
14.75	0/-0.027	14.75	56	111	1	**P118N1475**	●
15	0/-0.027	15	56	111	1	**P118N1500**	●
15.25	0/-0.027	15.25	58	115	1	**P118N1525**	●
15.5	0/-0.027	15.5	58	115	1	**P118N1550**	●
15.75	0/-0.027	15.75	58	115	1	**P118N1575**	○
16	0/-0.027	16	58	115	1	**P118N1600**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

118N

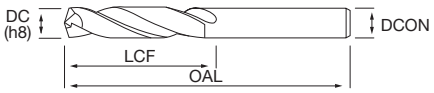
	Material Group ISO 513	P1 P2	P3 P4	K1 K2	N1 N5	N2 N3 N4	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	150÷350 HB			
	Vc (m/min)	**25÷35**	**20÷30**	**25÷35**	**50÷70**	**40÷60**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	1	0.017	0.014	0.019	0.024	0.017	
	1.5	0.035	0.030	0.039	0.049	0.035	
	2	0.050	0.043	0.055	0.070	0.050	
	2.5	0.070	0.060	0.077	0.098	0.070	
	3	0.080	0.068	0.088	0.112	0.080	
	3.5	0.090	0.077	0.099	0.126	0.090	
	4	0.100	0.085	0.110	0.140	0.100	
	5	0.110	0.094	0.121	0.154	0.110	
	6	0.120	0.102	0.132	0.168	0.120	
	7	0.130	0.111	0.143	0.182	0.130	
	8	0.140	0.119	0.154	0.196	0.140	
	9	0.160	0.136	0.176	0.224	0.160	
	10	0.170	0.145	0.187	0.238	0.170	
	11	0.180	0.153	0.198	0.252	0.180	
	12	0.190	0.162	0.209	0.266	0.190	
	13	0.200	0.170	0.220	0.280	0.200	
	14	0.210	0.179	0.231	0.294	0.210	
	15	0.220	0.187	0.242	0.308	0.220	
	16	0.240	0.204	0.264	0.336	0.240	

SORMA DIAMOND & CUTTING TOOLS

218NVA

- NVA type for stainless steel and tough materials
- Extra-short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 1897 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1	0/-0.014	1	6	26	10	P218NVA0100	●
1.1	0/-0.014	1.1	7	28	10	P218NVA0110	●
1.2	0/-0.014	1.2	8	30	10	P218NVA0120	●
1.3	0/-0.014	1.3	8	30	10	P218NVA0130	●
1.4	0/-0.014	1.4	9	32	10	P218NVA0140	●
1.5	0/-0.014	1.5	9	32	10	P218NVA0150	●
1.6	0/-0.014	1.6	10	34	10	P218NVA0160	●
1.7	0/-0.014	1.7	10	34	10	P218NVA0170	●
1.8	0/-0.014	1.8	11	36	10	P218NVA0180	●
1.9	0/-0.014	1.9	11	36	10	P218NVA0190	●
2	0/-0.014	2	12	38	10	P218NVA0200	●
2.1	0/-0.014	2.1	12	38	10	P218NVA0210	●
2.2	0/-0.014	2.2	13	40	10	P218NVA0220	●
2.3	0/-0.014	2.3	13	40	10	P218NVA0230	●
2.4	0/-0.014	2.4	14	43	10	P218NVA0240	●
2.5	0/-0.014	2.5	14	43	10	P218NVA0250	●
2.6	0/-0.014	2.6	14	43	10	P218NVA0260	●
2.7	0/-0.014	2.7	16	46	10	P218NVA0270	●
2.8	0/-0.014	2.8	16	46	10	P218NVA0280	●
2.9	0/-0.014	2.9	16	46	10	P218NVA0290	●
3	0/-0.014	3	16	46	10	P218NVA0300	●
3.1	0/-0.018	3.1	18	49	10	P218NVA0310	●
3.2	0/-0.018	3.2	18	49	10	P218NVA0320	●
3.3	0/-0.018	3.3	18	49	10	P218NVA0330	●
3.4	0/-0.018	3.4	20	52	10	P218NVA0340	●
3.5	0/-0.018	3.5	20	52	10	P218NVA0350	●
3.6	0/-0.018	3.6	20	52	10	P218NVA0360	●
3.7	0/-0.018	3.7	20	52	10	P218NVA0370	●
3.8	0/-0.018	3.8	22	55	10	P218NVA0380	●
3.9	0/-0.018	3.9	22	55	10	P218NVA0390	●
4	0/-0.018	4	22	55	10	P218NVA0400	●
4.1	0/-0.018	4.1	22	55	10	P218NVA0410	●
4.2	0/-0.018	4.2	22	55	10	P218NVA0420	●
4.3	0/-0.018	4.3	24	58	10	P218NVA0430	●
4.4	0/-0.018	4.4	24	58	10	P218NVA0440	●
4.5	0/-0.018	4.5	24	58	10	P218NVA0450	●
4.6	0/-0.018	4.6	24	58	10	P218NVA0460	●
4.7	0/-0.018	4.7	24	58	10	P218NVA0470	●
4.8	0/-0.018	4.8	26	62	10	P218NVA0480	●
4.9	0/-0.018	4.9	26	62	10	P218NVA0490	●
5	0/-0.018	5	26	62	10	P218NVA0500	●
5.1	0/-0.018	5.1	26	62	10	P218NVA0510	●
5.2	0/-0.018	5.2	26	62	10	P218NVA0520	●
5.3	0/-0.018	5.3	26	62	10	P218NVA0530	●
5.4	0/-0.018	5.4	28	66	10	P218NVA0540	●

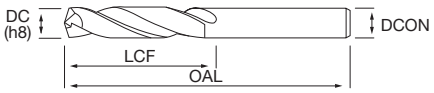
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

218NVA

- NVA type for stainless steel and tough materials
- Extra-short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 1897 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
5.5	0/-0.018	5.5	28	66	10	P218NVA0550	●
5.6	0/-0.018	5.6	28	66	10	P218NVA0560	●
5.7	0/-0.018	5.7	28	66	10	P218NVA0570	●
5.8	0/-0.018	5.8	28	66	10	P218NVA0580	●
5.9	0/-0.018	5.9	28	66	10	P218NVA0590	●
6	0/-0.018	6	28	66	10	P218NVA0600	●
6.1	0/-0.022	6.1	31	70	10	P218NVA0610	●
6.2	0/-0.022	6.2	31	70	10	P218NVA0620	●
6.3	0/-0.022	6.3	31	70	10	P218NVA0630	●
6.4	0/-0.022	6.4	31	70	10	P218NVA0640	●
6.5	0/-0.022	6.5	31	70	10	P218NVA0650	●
6.6	0/-0.022	6.6	31	70	5	P218NVA0660	●
6.7	0/-0.022	6.7	31	70	5	P218NVA0670	●
6.8	0/-0.022	6.8	34	74	5	P218NVA0680	●
6.9	0/-0.022	6.9	34	74	5	P218NVA0690	●
7	0/-0.022	7	34	74	5	P218NVA0700	●
7.1	0/-0.022	7.1	34	74	5	P218NVA0710	●
7.2	0/-0.022	7.2	34	74	5	P218NVA0720	●
7.3	0/-0.022	7.3	34	74	5	P218NVA0730	●
7.4	0/-0.022	7.4	34	74	5	P218NVA0740	●
7.5	0/-0.022	7.5	34	74	5	P218NVA0750	●
7.6	0/-0.022	7.6	37	79	5	P218NVA0760	●
7.7	0/-0.022	7.7	37	79	5	P218NVA0770	●
7.8	0/-0.022	7.8	37	79	5	P218NVA0780	●
7.9	0/-0.022	7.9	37	79	5	P218NVA0790	●
8	0/-0.022	8	37	79	5	P218NVA0800	●
8.1	0/-0.022	8.1	37	79	5	P218NVA0810	●
8.2	0/-0.022	8.2	37	79	5	P218NVA0820	●
8.3	0/-0.022	8.3	37	79	5	P218NVA0830	●
8.4	0/-0.022	8.4	37	79	5	P218NVA0840	●
8.5	0/-0.022	8.5	37	79	5	P218NVA0850	●
8.6	0/-0.022	8.6	40	84	5	P218NVA0860	●
8.7	0/-0.022	8.7	40	84	5	P218NVA0870	●
8.8	0/-0.022	8.8	40	84	5	P218NVA0880	●
8.9	0/-0.022	8.9	40	84	5	P218NVA0890	●
9	0/-0.022	9	40	84	5	P218NVA0900	●
9.1	0/-0.022	9.1	40	84	5	P218NVA0910	●
9.2	0/-0.022	9.2	40	84	5	P218NVA0920	●
9.3	0/-0.022	9.3	40	84	5	P218NVA0930	●
9.4	0/-0.022	9.4	40	84	5	P218NVA0940	●
9.5	0/-0.022	9.5	40	84	5	P218NVA0950	●
9.6	0/-0.022	9.6	43	89	5	P218NVA0960	●
9.7	0/-0.022	9.7	43	89	5	P218NVA0970	●
9.8	0/-0.022	9.8	43	89	5	P218NVA0980	●
9.9	0/-0.022	9.9	43	89	5	P218NVA0990	●

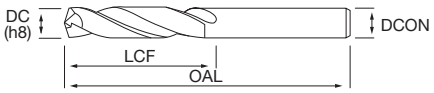
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

218NVA

- NVA type for stainless steel and tough materials
- Extra-short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 1897 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
10	0/-0.022	10	43	89	5	**P218NVA1000**	●
10.2	0/-0.027	10.2	43	89	5	**P218NVA1020**	●
10.25	0/-0.027	10.25	43	89	5	**P218NVA1025**	●
10.5	0/-0.027	10.5	43	89	5	**P218NVA1050**	●
11	0/-0.027	11	47	95	5	**P218NVA1100**	●
11.5	0/-0.027	11.5	47	95	5	**P218NVA1150**	●
12	0/-0.027	12	51	102	5	**P218NVA1200**	●
12.5	0/-0.027	12.5	51	102	5	**P218NVA1250**	●
13	0/-0.027	13	51	102	5	**P218NVA1300**	●
13.5	0/-0.027	13.5	54	107	1	**P218NVA1350**	●
14	0/-0.027	14	54	107	1	**P218NVA1400**	●
14.5	0/-0.027	14.5	56	111	1	**P218NVA1450**	●
15	0/-0.027	15	56	111	1	**P218NVA1500**	●
15.5	0/-0.027	15.5	58	115	1	**P218NVA1550**	●
16	0/-0.027	16	58	115	1	**P218NVA1600**	●
16.5	0/-0.027	16.5	60	119	1	**P218NVA1650**	●
17	0/-0.027	17	60	119	1	**P218NVA1700**	●
17.5	0/-0.027	17.5	62	123	1	**P218NVA1750**	●
18	0/-0.027	18	62	123	1	**P218NVA1800**	●
18.5	0/-0.033	18.5	64	127	1	**P218NVA1850**	●
19	0/-0.033	19	64	127	1	**P218NVA1900**	●
19.5	0/-0.033	19.5	66	131	1	**P218NVA1950**	●
20	0/-0.033	20	66	131	1	**P218NVA2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

218NVA

Material Group ISO 513	P1 P2	P3 P4	P7	M1 M2	M3	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²				
Vc (m/min)	25÷35	20÷30	12÷18	12÷18	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.017	0.014	0.012	0.012	0.009	
1.5	0.035	0.030	0.025	0.025	0.018	
2	0.050	0.043	0.035	0.035	0.025	
2.5	0.070	0.060	0.049	0.049	0.035	
3	0.080	0.068	0.056	0.056	0.040	
3.5	0.090	0.077	0.063	0.063	0.045	
4	0.100	0.085	0.070	0.070	0.050	
5	0.110	0.094	0.077	0.077	0.055	
6	0.120	0.102	0.084	0.084	0.060	
7	0.130	0.111	0.091	0.091	0.065	
8	0.140	0.119	0.098	0.098	0.070	
9	0.160	0.136	0.112	0.112	0.080	
10	0.170	0.145	0.119	0.119	0.085	
11	0.180	0.153	0.126	0.126	0.090	
12	0.190	0.162	0.133	0.133	0.095	
13	0.200	0.170	0.140	0.140	0.100	
14	0.210	0.179	0.147	0.147	0.105	
15	0.220	0.187	0.154	0.154	0.110	
16	0.240	0.204	0.168	0.168	0.120	
17	0.260	0.221	0.182	0.182	0.130	
18	0.280	0.238	0.196	0.196	0.140	
19	0.300	0.255	0.210	0.210	0.150	
20	0.320	0.272	0.224	0.224	0.160	

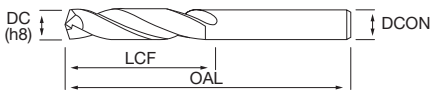
Material Group ISO 513	K1	K3	N1 N5	N2 N3 N4	S1 S2 S4	
Hardness/Rm	150÷350 HB	<350 HB			<35 HRC	
Vc (m/min)	25÷35	20÷30	50÷70	40÷60	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.019	0.013	0.024	0.017	0.007	
1.5	0.039	0.026	0.049	0.035	0.014	
2	0.055	0.038	0.070	0.050	0.020	
2.5	0.077	0.053	0.098	0.070	0.028	
3	0.088	0.060	0.112	0.080	0.032	
3.5	0.099	0.068	0.126	0.090	0.036	
4	0.110	0.075	0.140	0.100	0.040	
5	0.121	0.083	0.154	0.110	0.044	
6	0.132	0.090	0.168	0.120	0.048	
7	0.143	0.098	0.182	0.130	0.052	
8	0.154	0.105	0.196	0.140	0.056	
9	0.176	0.120	0.224	0.160	0.064	
10	0.187	0.128	0.238	0.170	0.068	
11	0.198	0.135	0.252	0.180	0.072	
12	0.209	0.143	0.266	0.190	0.076	
13	0.220	0.150	0.280	0.200	0.080	
14	0.231	0.158	0.294	0.210	0.084	
15	0.242	0.165	0.308	0.220	0.088	
16	0.264	0.180	0.336	0.240	0.096	
17	0.286	0.195	0.364	0.260	0.104	
18	0.308	0.210	0.392	0.280	0.112	
19	0.330	0.225	0.420	0.300	0.120	
20	0.352	0.240	0.448	0.320	0.128	

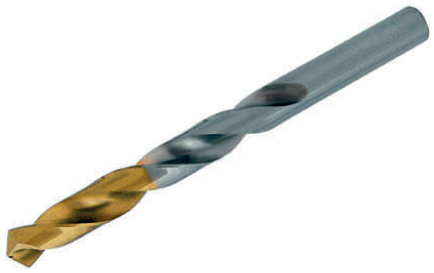
SORMA DIAMOND & CUTTING TOOLS

1386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	☆	★	☆	☆	





DIN 338 | SPLIT POINT | HSS TiN | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1	0/-0.014	1	12	34	10	P1386STI0100	●
1.1	0/-0.014	1.1	14	36	10	P1386STI0110	●
1.2	0/-0.014	1.2	16	38	10	P1386STI0120	●
1.3	0/-0.014	1.3	16	38	10	P1386STI0130	●
1.4	0/-0.014	1.4	18	40	10	P1386STI0140	●
1.5	0/-0.014	1.5	18	40	10	P1386STI0150	●
1.6	0/-0.014	1.6	20	43	10	P1386STI0160	●
1.7	0/-0.014	1.7	20	43	10	P1386STI0170	●
1.8	0/-0.014	1.8	22	46	10	P1386STI0180	●
1.9	0/-0.014	1.9	22	46	10	P1386STI0190	●
2	0/-0.014	2	24	49	10	P1386STI0200	●
2.1	0/-0.014	2.1	24	49	10	P1386STI0210	●
2.2	0/-0.014	2.2	27	53	10	P1386STI0220	●
2.3	0/-0.014	2.3	27	53	10	P1386STI0230	●
2.4	0/-0.014	2.4	30	57	10	P1386STI0240	●
2.5	0/-0.014	2.5	30	57	10	P1386STI0250	●
2.6	0/-0.014	2.6	30	57	10	P1386STI0260	●
2.7	0/-0.014	2.7	33	61	10	P1386STI0270	●
2.8	0/-0.014	2.8	33	61	10	P1386STI0280	●
2.9	0/-0.014	2.9	33	61	10	P1386STI0290	●
3	0/-0.014	3	33	61	10	P1386STI0300	●
3.1	0/-0.018	3.1	36	65	10	P1386STI0310	●
3.2	0/-0.018	3.2	36	65	10	P1386STI0320	●
3.3	0/-0.018	3.3	36	65	10	P1386STI0330	●
3.4	0/-0.018	3.4	39	70	10	P1386STI0340	●
3.5	0/-0.018	3.5	39	70	10	P1386STI0350	●
3.6	0/-0.018	3.6	39	70	10	P1386STI0360	●
3.7	0/-0.018	3.7	39	70	10	P1386STI0370	●
3.8	0/-0.018	3.8	43	75	10	P1386STI0380	●
3.9	0/-0.018	3.9	43	75	10	P1386STI0390	●
4	0/-0.018	4	43	75	10	P1386STI0400	●
4.1	0/-0.018	4.1	43	75	10	P1386STI0410	●
4.2	0/-0.018	4.2	43	75	10	P1386STI0420	●
4.3	0/-0.018	4.3	47	80	10	P1386STI0430	●
4.4	0/-0.018	4.4	47	80	10	P1386STI0440	●
4.5	0/-0.018	4.5	47	80	10	P1386STI0450	●
4.6	0/-0.018	4.6	47	80	10	P1386STI0460	●
4.7	0/-0.018	4.7	47	80	10	P1386STI0470	●
4.8	0/-0.018	4.8	52	86	10	P1386STI0480	●
4.9	0/-0.018	4.9	52	86	10	P1386STI0490	●
5	0/-0.018	5	52	86	10	P1386STI0500	●
5.1	0/-0.018	5.1	52	86	10	P1386STI0510	●
5.2	0/-0.018	5.2	52	86	10	P1386STI0520	●
5.3	0/-0.018	5.3	52	86	10	P1386STI0530	●
5.4	0/-0.018	5.4	57	93	10	P1386STI0540	●

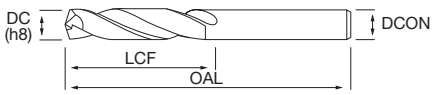
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

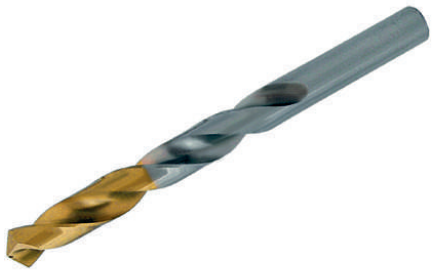
SORMA DIAMOND & CUTTING TOOLS

1386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	☆	★	☆	☆	





DIN 338 | SPLIT POINT | HSS TiN | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
5.5	0/-0.018	5.5	57	93	10	P1386STI0550	●
5.6	0/-0.018	5.6	57	93	10	P1386STI0560	●
5.7	0/-0.018	5.7	57	93	10	P1386STI0570	●
5.8	0/-0.018	5.8	57	93	10	P1386STI0580	●
5.9	0/-0.018	5.9	57	93	10	P1386STI0590	●
6	0/-0.018	6	57	93	10	P1386STI0600	●
6.1	0/-0.022	6.1	63	101	10	P1386STI0610	●
6.2	0/-0.022	6.2	63	101	10	P1386STI0620	●
6.3	0/-0.022	6.3	63	101	10	P1386STI0630	●
6.4	0/-0.022	6.4	63	101	10	P1386STI0640	●
6.5	0/-0.022	6.5	63	101	10	P1386STI0650	●
6.6	0/-0.022	6.6	63	101	5	P1386STI0660	●
6.7	0/-0.022	6.7	63	101	5	P1386STI0670	●
6.8	0/-0.022	6.8	69	109	5	P1386STI0680	●
6.9	0/-0.022	6.9	69	109	5	P1386STI0690	●
7	0/-0.022	7	69	109	5	P1386STI0700	●
7.1	0/-0.022	7.1	69	109	5	P1386STI0710	●
7.2	0/-0.022	7.2	69	109	5	P1386STI0720	●
7.3	0/-0.022	7.3	69	109	5	P1386STI0730	●
7.4	0/-0.022	7.4	69	109	5	P1386STI0740	●
7.5	0/-0.022	7.5	69	109	5	P1386STI0750	●
7.6	0/-0.022	7.6	75	117	5	P1386STI0760	●
7.7	0/-0.022	7.7	75	117	5	P1386STI0770	●
7.8	0/-0.022	7.8	75	117	5	P1386STI0780	●
7.9	0/-0.022	7.9	75	117	5	P1386STI0790	●
8	0/-0.022	8	75	117	5	P1386STI0800	●
8.1	0/-0.022	8.1	75	117	5	P1386STI0810	●
8.2	0/-0.022	8.2	75	117	5	P1386STI0820	●
8.3	0/-0.022	8.3	75	117	5	P1386STI0830	●
8.4	0/-0.022	8.4	75	117	5	P1386STI0840	●
8.5	0/-0.022	8.5	75	117	5	P1386STI0850	●
8.6	0/-0.022	8.6	81	125	5	P1386STI0860	●
8.7	0/-0.022	8.7	81	125	5	P1386STI0870	●
8.8	0/-0.022	8.8	81	125	5	P1386STI0880	●
8.9	0/-0.022	8.9	81	125	5	P1386STI0890	●
9	0/-0.022	9	81	125	5	P1386STI0900	●
9.1	0/-0.022	9.1	81	125	5	P1386STI0910	●
9.2	0/-0.022	9.2	81	125	5	P1386STI0920	●
9.3	0/-0.022	9.3	81	125	5	P1386STI0930	●
9.4	0/-0.022	9.4	81	125	5	P1386STI0940	●
9.5	0/-0.022	9.5	81	125	5	P1386STI0950	●
9.6	0/-0.022	9.6	87	133	5	P1386STI0960	●
9.7	0/-0.022	9.7	87	133	5	P1386STI0970	●
9.8	0/-0.022	9.8	87	133	5	P1386STI0980	●
9.9	0/-0.022	9.9	87	133	5	P1386STI0990	●

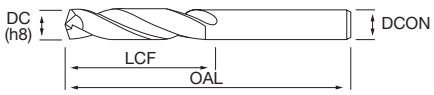
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

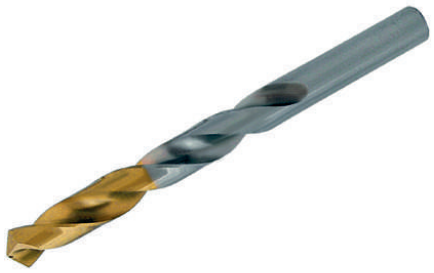
SORMA DIAMOND & CUTTING TOOLS

1386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	☆	★	☆	☆	





DIN 338 | SPLIT POINT | HSS TiN | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
10	0/-0.022	10	87	133	5	**P1386STI1000**	●
10.1	0/-0.027	10.1	87	133	5	**P1386STI1010**	●
10.2	0/-0.027	10.2	87	133	5	**P1386STI1020**	●
10.3	0/-0.027	10.3	87	133	5	**P1386STI1030**	●
10.4	0/-0.027	10.4	87	133	5	**P1386STI1040**	●
10.5	0/-0.027	10.5	87	133	5	**P1386STI1050**	●
10.6	0/-0.027	10.6	87	133	5	**P1386STI1060**	●
10.7	0/-0.027	10.7	94	142	5	**P1386STI1070**	●
10.8	0/-0.027	10.8	94	142	5	**P1386STI1080**	●
10.9	0/-0.027	10.9	94	142	5	**P1386STI1090**	●
11	0/-0.027	11	94	142	5	**P1386STI1100**	●
11.1	0/-0.027	11.1	94	142	5	**P1386STI1110**	●
11.2	0/-0.027	11.2	94	142	5	**P1386STI1120**	●
11.3	0/-0.027	11.3	94	142	5	**P1386STI1130**	●
11.4	0/-0.027	11.4	94	142	5	**P1386STI1140**	●
11.5	0/-0.027	11.5	94	142	5	**P1386STI1150**	●
11.6	0/-0.027	11.6	94	142	5	**P1386STI1160**	●
11.7	0/-0.027	11.7	94	142	5	**P1386STI1170**	●
11.8	0/-0.027	11.8	94	142	5	**P1386STI1180**	●
11.9	0/-0.027	11.9	101	151	5	**P1386STI1190**	●
12	0/-0.027	12	101	151	5	**P1386STI1200**	●
12.1	0/-0.027	12.1	101	151	5	**P1386STI1210**	●
12.2	0/-0.027	12.2	101	151	5	**P1386STI1220**	●
12.3	0/-0.027	12.3	101	151	5	**P1386STI1230**	●
12.4	0/-0.027	12.4	101	151	5	**P1386STI1240**	●
12.5	0/-0.027	12.5	101	151	5	**P1386STI1250**	●
12.6	0/-0.027	12.6	101	151	5	**P1386STI1260**	●
12.7	0/-0.027	12.7	101	151	5	**P1386STI1270**	●
12.8	0/-0.027	12.8	101	151	5	**P1386STI1280**	●
12.9	0/-0.027	12.9	101	151	5	**P1386STI1290**	●
13	0/-0.027	13	101	151	5	**P1386STI1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



1386STIA01A
Set 50 pcs.
1386STI DIN338 HSS TIN POINTED
Ø1 mm÷Ø5.9 mm x 0.1 mm



1386STIA01B
Set 41 pcs.
1386STI DIN338 HSS TIN POINTED
Ø6 mm÷Ø10 mm x 0.1 mm



1386STIA05C
Set 25 pcs.
1386STI DIN338 HSS TIN POINTED
Ø1 mm÷Ø13 mm x 0.5 mm

1386STI

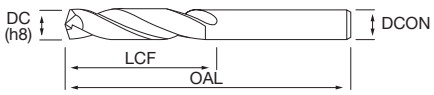
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	N1 N5	N2 N3 N4	S1 S2 S4
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB			<35 HRC
	Vc (m/min)	30÷40	25÷35	15÷25	15÷25	30÷40	60÷80	50÷70	12÷18
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	1	0.017	0.014	0.012	0.012	0.019	0.024	0.017	0.007
	1.5	0.035	0.030	0.025	0.025	0.039	0.049	0.035	0.014
	2	0.050	0.043	0.035	0.035	0.055	0.070	0.050	0.020
	2.5	0.075	0.064	0.053	0.053	0.083	0.105	0.075	0.030
	3	0.090	0.077	0.063	0.063	0.099	0.126	0.090	0.036
	3.5	0.105	0.089	0.074	0.074	0.116	0.147	0.105	0.042
	4	0.110	0.094	0.077	0.077	0.121	0.154	0.110	0.044
	5	0.125	0.106	0.088	0.088	0.138	0.175	0.125	0.050
	6	0.160	0.136	0.112	0.112	0.176	0.224	0.160	0.064
	7	0.175	0.149	0.123	0.123	0.193	0.245	0.175	0.070
	8	0.200	0.170	0.140	0.140	0.220	0.280	0.200	0.080
	9	0.210	0.179	0.147	0.147	0.231	0.294	0.210	0.084
	10	0.220	0.187	0.154	0.154	0.242	0.308	0.220	0.088
	11	0.235	0.200	0.165	0.165	0.259	0.329	0.235	0.094
	12	0.250	0.213	0.175	0.175	0.275	0.350	0.250	0.100
	13	0.265	0.225	0.186	0.186	0.292	0.371	0.265	0.106

SORMA DIAMOND & CUTTING TOOLS

138N

- N type for general purpose
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 338 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
0.2	0/-0.014	0.2	2.5	19	10	**P138NB0020**	●
0.3	0/-0.014	0.3	3	19	10	**P138NB0030**	●
0.4	0/-0.014	0.4	5	20	10	**P138NB0040**	●
0.5	0/-0.014	0.5	6	22	10	**P138NB0050**	●
0.6	0/-0.014	0.6	7	24	10	**P138NB0060**	●
0.7	0/-0.014	0.7	9	28	10	**P138NB0070**	●
0.8	0/-0.014	0.8	10	30	10	**P138NB0080**	●
0.9	0/-0.014	0.9	11	32	10	**P138NB0090**	●
1	0/-0.014	1	12	34	10	**P138NB0100**	●
1.1	0/-0.014	1.1	14	36	10	**P138NB0110**	●
1.2	0/-0.014	1.2	16	38	10	**P138NB0120**	●
1.25	0/-0.014	1.25	16	38	10	**P138NB0125**	●
1.3	0/-0.014	1.3	16	38	10	**P138NB0130**	●
1.4	0/-0.014	1.4	18	40	10	**P138NB0140**	●
1.5	0/-0.014	1.5	18	40	10	**P138NB0150**	●
1.6	0/-0.014	1.6	20	43	10	**P138NB0160**	●
1.7	0/-0.014	1.7	20	43	10	**P138NB0170**	●
1.75	0/-0.014	1.75	22	46	10	**P138NB0175**	●
1.8	0/-0.014	1.8	22	46	10	**P138NB0180**	●
1.9	0/-0.014	1.9	22	46	10	**P138NB0190**	●
2	0/-0.014	2	24	49	10	**P138N0200**	●
2.1	0/-0.014	2.1	24	49	10	**P138N0210**	●
2.2	0/-0.014	2.2	27	53	10	**P138N0220**	●
2.25	0/-0.014	2.25	27	53	10	**P138N0225**	●
2.3	0/-0.014	2.3	27	53	10	**P138N0230**	●
2.4	0/-0.014	2.4	30	57	10	**P138N0240**	●
2.5	0/-0.014	2.5	30	57	10	**P138N0250**	●
2.6	0/-0.014	2.6	30	57	10	**P138N0260**	●
2.7	0/-0.014	2.7	33	61	10	**P138N0270**	●
2.75	0/-0.014	2.75	33	61	10	**P138N0275**	●
2.8	0/-0.014	2.8	33	61	10	**P138N0280**	●
2.9	0/-0.014	2.9	33	61	10	**P138N0290**	●
3	0/-0.014	3	33	61	10	**P138N0300**	●
3.1	0/-0.018	3.1	36	65	10	**P138N0310**	●
3.2	0/-0.018	3.2	36	65	10	**P138N0320**	●
3.25	0/-0.018	3.25	36	65	10	**P138N0325**	●
3.3	0/-0.018	3.3	36	65	10	**P138N0330**	●
3.4	0/-0.018	3.4	39	70	10	**P138N0340**	●
3.5	0/-0.018	3.5	39	70	10	**P138N0350**	●
3.6	0/-0.018	3.6	39	70	10	**P138N0360**	●
3.7	0/-0.018	3.7	39	70	10	**P138N0370**	●
3.75	0/-0.018	3.75	39	70	10	**P138N0375**	●
3.8	0/-0.018	3.8	43	75	10	**P138N0380**	●
3.9	0/-0.018	3.9	43	75	10	**P138N0390**	●
4	0/-0.018	4	43	75	10	**P138N0400**	●

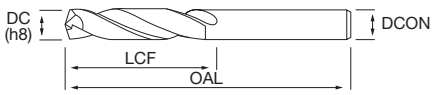
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

138N

- N type for general purpose
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 338 | N | HSS OX | SIG 118° | FHA 30°

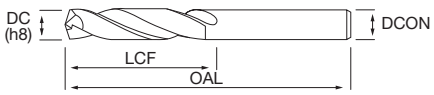
DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
4.1	0/-0.018	4.1	43	75	10	**P138N0410**	●
4.2	0/-0.018	4.2	43	75	10	**P138N0420**	●
4.25	0/-0.018	4.25	43	75	10	**P138N0425**	●
4.3	0/-0.018	4.3	47	80	10	**P138N0430**	●
4.4	0/-0.018	4.4	47	80	10	**P138N0440**	●
4.5	0/-0.018	4.5	47	80	10	**P138N0450**	●
4.6	0/-0.018	4.6	47	80	10	**P138N0460**	●
4.7	0/-0.018	4.7	47	80	10	**P138N0470**	●
4.75	0/-0.018	4.75	47	80	10	**P138N0475**	●
4.8	0/-0.018	4.8	52	86	10	**P138N0480**	●
4.9	0/-0.018	4.9	52	86	10	**P138N0490**	●
5	0/-0.018	5	52	86	10	**P138N0500**	●
5.1	0/-0.018	5.1	52	86	10	**P138N0510**	●
5.2	0/-0.018	5.2	52	86	10	**P138N0520**	●
5.25	0/-0.018	5.25	52	86	10	**P138N0525**	●
5.3	0/-0.018	5.3	52	86	10	**P138N0530**	●
5.4	0/-0.018	5.4	57	93	10	**P138N0540**	●
5.5	0/-0.018	5.5	57	93	10	**P138N0550**	●
5.6	0/-0.018	5.6	57	93	10	**P138N0560**	●
5.7	0/-0.018	5.7	57	93	10	**P138N0570**	●
5.75	0/-0.018	5.75	57	93	10	**P138N0575**	●
5.8	0/-0.018	5.8	57	93	10	**P138N0580**	●
5.9	0/-0.018	5.9	57	93	10	**P138N0590**	●
6	0/-0.018	6	57	93	10	**P138N0600**	●
6.1	0/-0.022	6.1	63	101	10	**P138N0610**	●
6.2	0/-0.022	6.2	63	101	10	**P138N0620**	●
6.25	0/-0.022	6.25	63	101	10	**P138N0625**	●
6.3	0/-0.022	6.3	63	101	10	**P138N0630**	●
6.4	0/-0.022	6.4	63	101	10	**P138N0640**	●
6.5	0/-0.022	6.5	63	101	10	**P138N0650**	●
6.6	0/-0.022	6.6	63	101	5	**P138N0660**	●
6.7	0/-0.022	6.7	63	101	5	**P138N0670**	●
6.75	0/-0.022	6.75	69	109	5	**P138N0675**	●
6.8	0/-0.022	6.8	69	109	5	**P138N0680**	●
6.9	0/-0.022	6.9	69	109	5	**P138N0690**	●
7	0/-0.022	7	69	109	5	**P138N0700**	●
7.1	0/-0.022	7.1	69	109	5	**P138N0710**	●
7.2	0/-0.022	7.2	69	109	5	**P138N0720**	●
7.25	0/-0.022	7.25	69	109	5	**P138N0725**	●
7.3	0/-0.022	7.3	69	109	5	**P138N0730**	●
7.4	0/-0.022	7.4	69	109	5	**P138N0740**	●
7.5	0/-0.022	7.5	69	109	5	**P138N0750**	●
7.6	0/-0.022	7.6	75	117	5	**P138N0760**	●
7.7	0/-0.022	7.7	75	117	5	**P138N0770**	●
7.75	0/-0.022	7.75	75	117	5	**P138N0775**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

138N

- N type for general purpose
- Short





P	M	K	N	S	H
★		☆	☆		

DIN 338 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
7.8	0/-0.022	7.8	75	117	5	**P138N0780**	●
7.9	0/-0.022	7.9	75	117	5	**P138N0790**	●
8	0/-0.022	8	75	117	5	**P138N0800**	●
8.1	0/-0.022	8.1	75	117	5	**P138N0810**	●
8.2	0/-0.022	8.2	75	117	5	**P138N0820**	●
8.25	0/-0.022	8.25	75	117	5	**P138N0825**	●
8.3	0/-0.022	8.3	75	117	5	**P138N0830**	●
8.4	0/-0.022	8.4	75	117	5	**P138N0840**	●
8.5	0/-0.022	8.5	75	117	5	**P138N0850**	●
8.6	0/-0.022	8.6	81	125	5	**P138N0860**	●
8.7	0/-0.022	8.7	81	125	5	**P138N0870**	●
8.75	0/-0.022	8.75	81	125	5	**P138N0875**	●
8.8	0/-0.022	8.8	81	125	5	**P138N0880**	●
8.9	0/-0.022	8.9	81	125	5	**P138N0890**	●
9	0/-0.022	9	81	125	5	**P138N0900**	●
9.1	0/-0.022	9.1	81	125	5	**P138N0910**	●
9.2	0/-0.022	9.2	81	125	5	**P138N0920**	●
9.25	0/-0.022	9.25	81	125	5	**P138N0925**	●
9.3	0/-0.022	9.3	81	125	5	**P138N0930**	●
9.4	0/-0.022	9.4	81	125	5	**P138N0940**	●
9.5	0/-0.022	9.5	81	125	5	**P138N0950**	●
9.6	0/-0.022	9.6	87	133	5	**P138N0960**	●
9.7	0/-0.022	9.7	87	133	5	**P138N0970**	●
9.75	0/-0.022	9.75	87	133	5	**P138N0975**	●
9.8	0/-0.022	9.8	87	133	5	**P138N0980**	●
9.9	0/-0.022	9.9	87	133	5	**P138N0990**	●
10	0/-0.022	10	87	133	5	**P138N1000**	●
10.1	0/-0.027	10.1	87	133	5	**P138N1010**	●
10.2	0/-0.027	10.2	87	133	5	**P138N1020**	●
10.25	0/-0.027	10.25	87	133	5	**P138N1025**	●
10.3	0/-0.027	10.3	87	133	5	**P138N1030**	●
10.4	0/-0.027	10.4	87	133	5	**P138N1040**	●
10.5	0/-0.027	10.5	87	133	5	**P138N1050**	●
10.6	0/-0.027	10.6	87	133	5	**P138N1060**	●
10.7	0/-0.027	10.7	94	142	5	**P138N1070**	●
10.75	0/-0.027	10.75	94	142	5	**P138N1075**	●
10.8	0/-0.027	10.8	94	142	5	**P138N1080**	●
10.9	0/-0.027	10.9	94	142	5	**P138N1090**	●
11	0/-0.027	11	94	142	5	**P138N1100**	●
11.1	0/-0.027	11.1	94	142	5	**P138N1110**	●
11.2	0/-0.027	11.2	94	142	5	**P138N1120**	●
11.25	0/-0.027	11.25	94	142	5	**P138N1125**	●
11.3	0/-0.027	11.3	94	142	5	**P138N1130**	●
11.4	0/-0.027	11.4	94	142	5	**P138N1140**	●
11.5	0/-0.027	11.5	94	142	5	**P138N1150**	●

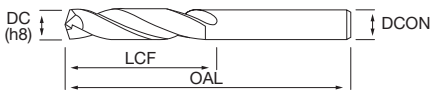
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

138N

- N type for general purpose
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 338 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
11.6	0/-0.027	11.6	94	142	5	**P138N1160**	●
11.7	0/-0.027	11.7	94	142	5	**P138N1170**	●
11.75	0/-0.027	11.75	94	142	5	**P138N1175**	●
11.8	0/-0.027	11.8	94	142	5	**P138N1180**	●
11.9	0/-0.027	11.9	101	151	5	**P138N1190**	●
12	0/-0.027	12	101	151	5	**P138N1200**	●
12.1	0/-0.027	12.1	101	151	5	**P138N1210**	●
12.2	0/-0.027	12.2	101	151	5	**P138N1220**	●
12.25	0/-0.027	12.25	101	151	5	**P138N1225**	●
12.3	0/-0.027	12.3	101	151	5	**P138N1230**	●
12.4	0/-0.027	12.4	101	151	5	**P138N1240**	●
12.5	0/-0.027	12.5	101	151	5	**P138N1250**	●
12.6	0/-0.027	12.6	101	151	5	**P138N1260**	●
12.7	0/-0.027	12.7	101	151	5	**P138N1270**	●
12.75	0/-0.027	12.75	101	151	5	**P138N1275**	●
12.8	0/-0.027	12.8	101	151	5	**P138N1280**	●
12.9	0/-0.027	12.9	101	151	5	**P138N1290**	○
13	0/-0.027	13	101	151	5	**P138N1300**	●
13.25	0/-0.027	13.25	108	160	1	**P138N1325**	●
13.5	0/-0.027	13.5	108	160	1	**P138N1350**	●
13.75	0/-0.027	13.75	108	160	1	**P138N1375**	●
14	0/-0.027	14	108	160	1	**P138N1400**	●
14.25	0/-0.027	14.25	114	169	1	**P138N1425**	●
14.5	0/-0.027	14.5	114	169	1	**P138N1450**	●
14.75	0/-0.027	14.75	114	169	1	**P138N1475**	●
15	0/-0.027	15	114	169	1	**P138N1500**	●
15.25	0/-0.027	15.25	120	178	1	**P138N1525**	●
15.5	0/-0.027	15.5	120	178	1	**P138N1550**	●
15.75	0/-0.027	15.75	120	178	1	**P138N1575**	●
16	0/-0.027	16	120	178	1	**P138N1600**	●
16.25	0/-0.027	16.25	125	184	1	**P138N1625**	●
16.5	0/-0.027	16.5	125	184	1	**P138N1650**	●
16.75	0/-0.027	16.75	125	184	1	**P138N1675**	●
17	0/-0.027	17	125	184	1	**P138N1700**	●
17.5	0/-0.027	17.5	130	191	1	**P138N1750**	●
18	0/-0.027	18	130	191	1	**P138N1800**	●
18.5	0/-0.033	18.5	135	198	1	**P138N1850**	●
19	0/-0.033	19	135	198	1	**P138N1900**	●
19.5	0/-0.033	19.5	140	205	1	**P138N1950**	●
20	0/-0.033	20	140	205	1	**P138N2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



138NA01A
Set 50 pcs.
138N DIN338 HSS
Ø1 mm÷Ø5.9 mm x 0.1 mm



138NA01B
Set 41 pcs.
138N DIN338 HSS
Ø6 mm÷Ø10 mm x 0.1 mm



138NA05C
Set 25 pcs.
138N DIN338 HSS
Ø1 mm÷Ø13 mm x 0.5 mm

Cutting Parameters

138N

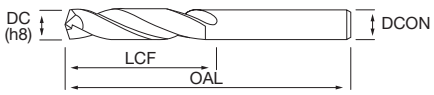
	Material Group ISO 513	P1 P2	P3 P4	K1 K2	N1 N5	N2 N3 N4	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	150÷350 HB			
	Vc (m/min)	**25÷35**	**20÷30**	**25÷35**	**50÷70**	**40÷60**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	0.2	0.007	0.006	0.008	0.010	0.007	
	0.5	0.011	0.009	0.012	0.015	0.011	
	0.8	0.013	0.011	0.014	0.018	0.013	
	1	0.017	0.014	0.019	0.024	0.017	
	1.5	0.035	0.030	0.039	0.049	0.035	
	2	0.050	0.043	0.055	0.070	0.050	
	2.5	0.060	0.051	0.066	0.084	0.060	
	3	0.070	0.060	0.077	0.098	0.070	
	3.5	0.080	0.068	0.088	0.112	0.080	
	4	0.090	0.077	0.099	0.126	0.090	
	5	0.100	0.085	0.110	0.140	0.100	
	6	0.110	0.094	0.121	0.154	0.110	
	7	0.120	0.102	0.132	0.168	0.120	
	8	0.130	0.111	0.143	0.182	0.130	
	9	0.140	0.119	0.154	0.196	0.140	
	10	0.160	0.136	0.176	0.224	0.160	
	11	0.170	0.145	0.187	0.238	0.170	
	12	0.180	0.153	0.198	0.252	0.180	
	13	0.190	0.162	0.209	0.266	0.190	
	14	0.200	0.170	0.220	0.280	0.200	
	15	0.210	0.179	0.231	0.294	0.210	
	16	0.220	0.187	0.242	0.308	0.220	
	17	0.230	0.196	0.253	0.322	0.230	
	18	0.240	0.204	0.264	0.336	0.240	
	19	0.250	0.213	0.275	0.350	0.250	
	20	0.260	0.221	0.286	0.364	0.260	

SORMA DIAMOND & CUTTING TOOLS

138HB

- HB type for brass
- Short

P	M	K	N	S	H
			★		





DIN 338 | H | HSS BR | SIG 118° | FHA 15°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1.5	0/-0.014	1.5	18	40	10	**P138HB0150**	●
1.6	0/-0.014	1.6	20	43	10	**P138HB0160**	●
1.7	0/-0.014	1.7	20	43	10	**P138HB0170**	●
1.8	0/-0.014	1.8	22	46	10	**P138HB0180**	●
1.9	0/-0.014	1.9	22	46	10	**P138HB0190**	●
2	0/-0.014	2	24	49	10	**P138HB0200**	●
2.1	0/-0.014	2.1	24	49	10	**P138HB0210**	●
2.2	0/-0.014	2.2	27	53	10	**P138HB0220**	●
2.3	0/-0.014	2.3	27	53	10	**P138HB0230**	○
2.4	0/-0.014	2.4	30	57	10	**P138HB0240**	●
2.5	0/-0.014	2.5	30	57	10	**P138HB0250**	●
2.6	0/-0.014	2.6	30	57	10	**P138HB0260**	●
2.7	0/-0.014	2.7	33	61	10	**P138HB0270**	●
2.8	0/-0.014	2.8	33	61	10	**P138HB0280**	●
2.9	0/-0.014	2.9	33	61	10	**P138HB0290**	●
3	0/-0.014	3	33	61	10	**P138HB0300**	●
3.1	0/-0.018	3.1	36	65	10	**P138HB0310**	●
3.2	0/-0.018	3.2	36	65	10	**P138HB0320**	●
3.3	0/-0.018	3.3	36	65	10	**P138HB0330**	●
3.4	0/-0.018	3.4	39	70	10	**P138HB0340**	●
3.5	0/-0.018	3.5	39	70	10	**P138HB0350**	●
3.6	0/-0.018	3.6	39	70	10	**P138HB0360**	●
3.7	0/-0.018	3.7	39	70	10	**P138HB0370**	●
3.8	0/-0.018	3.8	43	75	10	**P138HB0380**	●
3.9	0/-0.018	3.9	43	75	10	**P138HB0390**	●
4	0/-0.018	4	43	75	10	**P138HB0400**	●
4.1	0/-0.018	4.1	43	75	10	**P138HB0410**	●
4.2	0/-0.018	4.2	43	75	10	**P138HB0420**	●
4.3	0/-0.018	4.3	47	80	10	**P138HB0430**	●
4.4	0/-0.018	4.4	47	80	10	**P138HB0440**	○
4.5	0/-0.018	4.5	47	80	10	**P138HB0450**	●
4.6	0/-0.018	4.6	47	80	10	**P138HB0460**	●
4.7	0/-0.018	4.7	47	80	10	**P138HB0470**	●
4.8	0/-0.018	4.8	52	86	10	**P138HB0480**	●
4.9	0/-0.018	4.9	52	86	10	**P138HB0490**	○
5	0/-0.018	5	52	86	10	**P138HB0500**	●
5.1	0/-0.018	5.1	52	86	10	**P138HB0510**	○
5.2	0/-0.018	5.2	52	86	10	**P138HB0520**	○
5.3	0/-0.018	5.3	52	86	10	**P138HB0530**	○
5.4	0/-0.018	5.4	57	93	10	**P138HB0540**	○
5.5	0/-0.018	5.5	57	93	10	**P138HB0550**	●
5.6	0/-0.018	5.6	57	93	10	**P138HB0560**	○
5.7	0/-0.018	5.7	57	93	10	**P138HB0570**	○
5.8	0/-0.018	5.8	57	93	10	**P138HB0580**	○
5.9	0/-0.018	5.9	57	93	10	**P138HB0590**	○

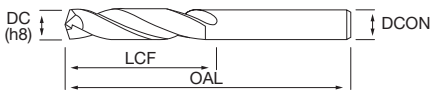
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

138HB

- HB type for brass
- Short

P	M	K	N	S	H
			★		





DIN 338 | H | HSS / BR | SIG 118° | FHA 15°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
6	0/-0.018	6	57	93	10	**P138HB0600**	●
6.1	0/-0.022	6.1	63	101	10	**P138HB0610**	○
6.2	0/-0.022	6.2	63	101	10	**P138HB0620**	○
6.3	0/-0.022	6.3	63	101	10	**P138HB0630**	○
6.4	0/-0.022	6.4	63	101	10	**P138HB0640**	○
6.5	0/-0.022	6.5	63	101	10	**P138HB0650**	●
6.6	0/-0.022	6.6	63	101	10	**P138HB0660**	○
6.7	0/-0.022	6.7	63	101	10	**P138HB0670**	○
6.8	0/-0.022	6.8	69	109	10	**P138HB0680**	○
6.9	0/-0.022	6.9	69	109	10	**P138HB0690**	○
7	0/-0.022	7	69	109	5	**P138HB0700**	●
7.1	0/-0.022	7.1	69	109	5	**P138HB0710**	○
7.2	0/-0.022	7.2	69	109	5	**P138HB0720**	○
7.3	0/-0.022	7.3	69	109	5	**P138HB0730**	○
7.4	0/-0.022	7.4	69	109	5	**P138HB0740**	○
7.5	0/-0.022	7.5	69	109	5	**P138HB0750**	●
7.6	0/-0.022	7.6	75	117	5	**P138HB0760**	○
7.7	0/-0.022	7.7	75	117	5	**P138HB0770**	○
7.8	0/-0.022	7.8	75	117	5	**P138HB0780**	●
7.9	0/-0.022	7.9	75	117	5	**P138HB0790**	○
8	0/-0.022	8	75	117	5	**P138HB0800**	●
8.1	0/-0.022	8.1	75	117	5	**P138HB0810**	○
8.2	0/-0.022	8.2	75	117	5	**P138HB0820**	○
8.3	0/-0.022	8.3	75	117	5	**P138HB0830**	○
8.4	0/-0.022	8.4	75	117	5	**P138HB0840**	○
8.5	0/-0.022	8.5	75	117	5	**P138HB0850**	●
8.6	0/-0.022	8.6	81	125	5	**P138HB0860**	○
8.7	0/-0.022	8.7	81	125	5	**P138HB0870**	○
8.8	0/-0.022	8.8	81	125	5	**P138HB0880**	○
8.9	0/-0.022	8.9	81	125	5	**P138HB0890**	○
9	0/-0.022	9	81	125	5	**P138HB0900**	●
9.1	0/-0.022	9.1	81	125	5	**P138HB0910**	○
9.2	0/-0.022	9.2	81	125	5	**P138HB0920**	○
9.3	0/-0.022	9.3	81	125	5	**P138HB0930**	○
9.4	0/-0.022	9.4	81	125	5	**P138HB0940**	○
9.5	0/-0.022	9.5	81	125	5	**P138HB0950**	●
9.6	0/-0.022	9.6	87	133	5	**P138HB0960**	○
9.7	0/-0.022	9.7	87	133	5	**P138HB0970**	○
9.8	0/-0.022	9.8	87	133	5	**P138HB0980**	○
9.9	0/-0.022	9.9	87	133	5	**P138HB0990**	○
10	0/-0.022	10	87	133	5	**P138HB1000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

138HB

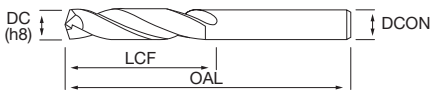
	Material Group ISO 513	N4					
	Hardness/Rm						
	Vc (m/min)	40÷60					
	DC (mm)	fn (mm/rev)					
	1.5	0.065					
	2	0.080					
	2.5	0.090					
	3	0.100					
	3.5	0.110					
	4	0.120					
	4.5	0.130					
	5	0.140					
	6	0.160					
	7	0.180					
	8	0.200					
	9	0.220					
	10	0.250					

SORMA DIAMOND & CUTTING TOOLS

138WB

- WB type for aluminium
- Short

P	M	K	N	S	H
			★		





DIN 338 | W | HSS / BR | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1.5	0/-0.014	1.5	18	40	10	**P138WB0150**	●
1.6	0/-0.014	1.6	20	43	10	**P138WB0160**	○
1.7	0/-0.014	1.7	20	43	10	**P138WB0170**	○
1.8	0/-0.014	1.8	22	46	10	**P138WB0180**	○
1.9	0/-0.014	1.9	22	46	10	**P138WB0190**	○
2	0/-0.014	2	24	49	10	**P138WB0200**	●
2.1	0/-0.014	2.1	24	49	10	**P138WB0210**	○
2.2	0/-0.014	2.2	27	53	10	**P138WB0220**	●
2.3	0/-0.014	2.3	27	53	10	**P138WB0230**	○
2.4	0/-0.014	2.4	30	57	10	**P138WB0240**	●
2.5	0/-0.014	2.5	30	57	10	**P138WB0250**	●
2.6	0/-0.014	2.6	30	57	10	**P138WB0260**	●
2.7	0/-0.014	2.7	33	61	10	**P138WB0270**	○
2.8	0/-0.014	2.8	33	61	10	**P138WB0280**	●
2.9	0/-0.014	2.9	33	61	10	**P138WB0290**	○
3	0/-0.014	3	33	61	10	**P138WB0300**	●
3.1	0/-0.018	3.1	36	65	10	**P138WB0310**	●
3.2	0/-0.018	3.2	36	65	10	**P138WB0320**	●
3.3	0/-0.018	3.3	36	65	10	**P138WB0330**	●
3.4	0/-0.018	3.4	39	70	10	**P138WB0340**	●
3.5	0/-0.018	3.5	39	70	10	**P138WB0350**	●
3.6	0/-0.018	3.6	39	70	10	**P138WB0360**	●
3.7	0/-0.018	3.7	39	70	10	**P138WB0370**	●
3.8	0/-0.018	3.8	43	75	10	**P138WB0380**	●
3.9	0/-0.018	3.9	43	75	10	**P138WB0390**	●
4	0/-0.018	4	43	75	10	**P138WB0400**	●
4.1	0/-0.018	4.1	43	75	10	**P138WB0410**	●
4.2	0/-0.018	4.2	43	75	10	**P138WB0420**	●
4.3	0/-0.018	4.3	47	80	10	**P138WB0430**	○
4.4	0/-0.018	4.4	47	80	10	**P138WB0440**	○
4.5	0/-0.018	4.5	47	80	10	**P138WB0450**	●
4.6	0/-0.018	4.6	47	80	10	**P138WB0460**	●
4.7	0/-0.018	4.7	47	80	10	**P138WB0470**	○
4.8	0/-0.018	4.8	52	86	10	**P138WB0480**	●
4.9	0/-0.018	4.9	52	86	10	**P138WB0490**	●
5	0/-0.018	5	52	86	10	**P138WB0500**	●
5.1	0/-0.018	5.1	52	86	10	**P138WB0510**	○
5.2	0/-0.018	5.2	52	86	10	**P138WB0520**	●
5.3	0/-0.018	5.3	52	86	10	**P138WB0530**	○
5.4	0/-0.018	5.4	57	93	10	**P138WB0540**	○
5.5	0/-0.018	5.5	57	93	10	**P138WB0550**	●
5.6	0/-0.018	5.6	57	93	10	**P138WB0560**	●
5.7	0/-0.018	5.7	57	93	10	**P138WB0570**	○
5.8	0/-0.018	5.8	57	93	10	**P138WB0580**	○
5.9	0/-0.018	5.9	57	93	10	**P138WB0590**	○

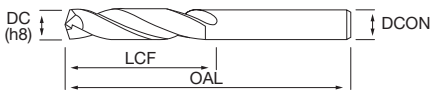
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

138WB

- WB type for aluminium
- Short

P	M	K	N	S	H
			★		





DIN 338 | W | HSS / BR | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
6	0/-0.018	6	57	93	10	**P138WB0600**	●
6.1	0/-0.022	6.1	63	101	10	**P138WB0610**	○
6.2	0/-0.022	6.2	63	101	10	**P138WB0620**	○
6.3	0/-0.022	6.3	63	101	10	**P138WB0630**	○
6.4	0/-0.022	6.4	63	101	10	**P138WB0640**	○
6.5	0/-0.022	6.5	63	101	10	**P138WB0650**	●
6.6	0/-0.022	6.6	63	101	5	**P138WB0660**	○
6.7	0/-0.022	6.7	63	101	5	**P138WB0670**	○
6.8	0/-0.022	6.8	69	109	5	**P138WB0680**	●
6.9	0/-0.022	6.9	69	109	5	**P138WB0690**	○
7	0/-0.022	7	69	109	5	**P138WB0700**	●
7.1	0/-0.022	7.1	69	109	5	**P138WB0710**	○
7.2	0/-0.022	7.2	69	109	5	**P138WB0720**	○
7.3	0/-0.022	7.3	69	109	5	**P138WB0730**	○
7.4	0/-0.022	7.4	69	109	5	**P138WB0740**	○
7.5	0/-0.022	7.5	69	109	5	**P138WB0750**	●
7.6	0/-0.022	7.6	75	117	5	**P138WB0760**	○
7.7	0/-0.022	7.7	75	117	5	**P138WB0770**	○
7.8	0/-0.022	7.8	75	117	5	**P138WB0780**	○
7.9	0/-0.022	7.9	75	117	5	**P138WB0790**	○
8	0/-0.022	8	75	117	5	**P138WB0800**	●
8.1	0/-0.022	8.1	75	117	5	**P138WB0810**	○
8.2	0/-0.022	8.2	75	117	5	**P138WB0820**	○
8.3	0/-0.022	8.3	75	117	5	**P138WB0830**	○
8.4	0/-0.022	8.4	75	117	5	**P138WB0840**	○
8.5	0/-0.022	8.5	75	117	5	**P138WB0850**	●
8.6	0/-0.022	8.6	81	125	5	**P138WB0860**	○
8.7	0/-0.022	8.7	81	125	5	**P138WB0870**	○
8.8	0/-0.022	8.8	81	125	5	**P138WB0880**	○
8.9	0/-0.022	8.9	81	125	5	**P138WB0890**	○
9	0/-0.022	9	81	125	5	**P138WB0900**	●
9.1	0/-0.022	9.1	81	125	5	**P138WB0910**	○
9.2	0/-0.022	9.2	81	125	5	**P138WB0920**	○
9.3	0/-0.022	9.3	81	125	5	**P138WB0930**	○
9.4	0/-0.022	9.4	81	125	5	**P138WB0940**	○
9.5	0/-0.022	9.5	81	125	5	**P138WB0950**	●
9.6	0/-0.022	9.6	87	133	5	**P138WB0960**	○
9.7	0/-0.022	9.7	87	133	5	**P138WB0970**	○
9.8	0/-0.022	9.8	87	133	5	**P138WB0980**	○
9.9	0/-0.022	9.9	87	133	5	**P138WB0990**	○
10	0/-0.022	10	87	133	5	**P138WB1000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

138WB

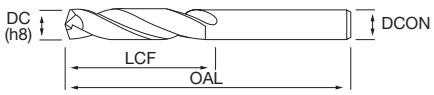
	Material Group ISO 513	N1	N2	N3			
	Hardness/Rm						
	Vc (m/min)	40÷60	30÷50	25÷45			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	1.5	0.070	0.063	0.060			
	2	0.080	0.072	0.068			
	2.5	0.090	0.081	0.077			
	3	0.100	0.090	0.085			
	3.5	0.110	0.099	0.094			
	4	0.120	0.108	0.102			
	4.5	0.130	0.117	0.111			
	5	0.140	0.126	0.119			
	6	0.160	0.144	0.136			
	7	0.180	0.162	0.153			
	8	0.200	0.180	0.170			
	9	0.220	0.198	0.187			
	10	0.250	0.225	0.213			

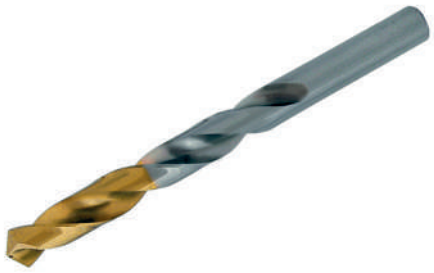
SORMA DIAMOND & CUTTING TOOLS

2386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	★	★	☆	☆	





DIN 338 | SPLIT POINT | HSS/Co TiN | SIG 135° | FHA 33°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1	0/-0.014	1	12	34	10	P2386STI0100	●
1.1	0/-0.014	1.1	14	36	10	P2386STI0110	●
1.2	0/-0.014	1.2	16	38	10	P2386STI0120	●
1.3	0/-0.014	1.3	16	38	10	P2386STI0130	●
1.4	0/-0.014	1.4	18	40	10	P2386STI0140	●
1.5	0/-0.014	1.5	18	40	10	P2386STI0150	●
1.6	0/-0.014	1.6	20	43	10	P2386STI0160	●
1.7	0/-0.014	1.7	20	43	10	P2386STI0170	●
1.8	0/-0.014	1.8	22	46	10	P2386STI0180	●
1.9	0/-0.014	1.9	22	46	10	P2386STI0190	●
2	0/-0.014	2	24	49	10	P2386STI0200	●
2.1	0/-0.014	2.1	24	49	10	P2386STI0210	●
2.2	0/-0.014	2.2	27	53	10	P2386STI0220	●
2.3	0/-0.014	2.3	27	53	10	P2386STI0230	●
2.4	0/-0.014	2.4	30	57	10	P2386STI0240	●
2.5	0/-0.014	2.5	30	57	10	P2386STI0250	●
2.6	0/-0.014	2.6	30	57	10	P2386STI0260	●
2.7	0/-0.014	2.7	33	61	10	P2386STI0270	●
2.8	0/-0.014	2.8	33	61	10	P2386STI0280	●
2.9	0/-0.014	2.9	33	61	10	P2386STI0290	●
3	0/-0.014	3	33	61	10	P2386STI0300	●
3.1	0/-0.018	3.1	36	65	10	P2386STI0310	●
3.2	0/-0.018	3.2	36	65	10	P2386STI0320	●
3.3	0/-0.018	3.3	36	65	10	P2386STI0330	●
3.4	0/-0.018	3.4	39	70	10	P2386STI0340	●
3.5	0/-0.018	3.5	39	70	10	P2386STI0350	●
3.6	0/-0.018	3.6	39	70	10	P2386STI0360	●
3.7	0/-0.018	3.7	39	70	10	P2386STI0370	●
3.8	0/-0.018	3.8	43	75	10	P2386STI0380	●
3.9	0/-0.018	3.9	43	75	10	P2386STI0390	●
4	0/-0.018	4	43	75	10	P2386STI0400	●
4.1	0/-0.018	4.1	43	75	10	P2386STI0410	●
4.2	0/-0.018	4.2	43	75	10	P2386STI0420	●
4.3	0/-0.018	4.3	47	80	10	P2386STI0430	●
4.4	0/-0.018	4.4	47	80	10	P2386STI0440	●
4.5	0/-0.018	4.5	47	80	10	P2386STI0450	●
4.6	0/-0.018	4.6	47	80	10	P2386STI0460	●
4.7	0/-0.018	4.7	47	80	10	P2386STI0470	●
4.8	0/-0.018	4.8	52	86	10	P2386STI0480	●
4.9	0/-0.018	4.9	52	86	10	P2386STI0490	●
5	0/-0.018	5	52	86	10	P2386STI0500	●
5.1	0/-0.018	5.1	52	86	10	P2386STI0510	●
5.2	0/-0.018	5.2	52	86	10	P2386STI0520	●
5.3	0/-0.018	5.3	52	86	10	P2386STI0530	●
5.4	0/-0.018	5.4	57	93	10	P2386STI0540	●

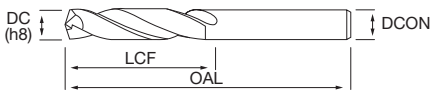
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

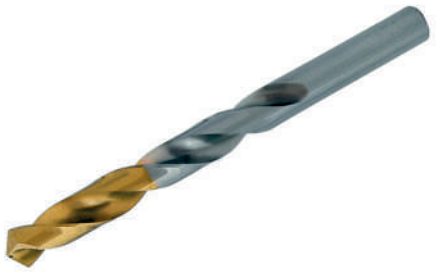
SORMA DIAMOND & CUTTING TOOLS

2386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	★	★	☆	☆	





DIN 338 | SPLIT POINT | HSS/Co TiN | SIG 135° | FHA 33°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
5.5	0/-0.018	5.5	57	93	10	P2386STI0550	●
5.6	0/-0.018	5.6	57	93	10	P2386STI0560	●
5.7	0/-0.018	5.7	57	93	10	P2386STI0570	●
5.8	0/-0.018	5.8	57	93	10	P2386STI0580	●
5.9	0/-0.018	5.9	57	93	10	P2386STI0590	●
6	0/-0.018	6	57	93	10	P2386STI0600	●
6.1	0/-0.022	6.1	63	101	10	P2386STI0610	●
6.2	0/-0.022	6.2	63	101	10	P2386STI0620	●
6.3	0/-0.022	6.3	63	101	10	P2386STI0630	●
6.4	0/-0.022	6.4	63	101	10	P2386STI0640	●
6.5	0/-0.022	6.5	63	101	10	P2386STI0650	●
6.6	0/-0.022	6.6	63	101	5	P2386STI0660	●
6.7	0/-0.022	6.7	63	101	5	P2386STI0670	●
6.8	0/-0.022	6.8	69	109	5	P2386STI0680	●
6.9	0/-0.022	6.9	69	109	5	P2386STI0690	●
7	0/-0.022	7	69	109	5	P2386STI0700	●
7.1	0/-0.022	7.1	69	109	5	P2386STI0710	●
7.2	0/-0.022	7.2	69	109	5	P2386STI0720	●
7.3	0/-0.022	7.3	69	109	5	P2386STI0730	●
7.4	0/-0.022	7.4	69	109	5	P2386STI0740	●
7.5	0/-0.022	7.5	69	109	5	P2386STI0750	●
7.6	0/-0.022	7.6	75	117	5	P2386STI0760	●
7.7	0/-0.022	7.7	75	117	5	P2386STI0770	●
7.8	0/-0.022	7.8	75	117	5	P2386STI0780	●
7.9	0/-0.022	7.9	75	117	5	P2386STI0790	●
8	0/-0.022	8	75	117	5	P2386STI0800	●
8.1	0/-0.022	8.1	75	117	5	P2386STI0810	●
8.2	0/-0.022	8.2	75	117	5	P2386STI0820	●
8.3	0/-0.022	8.3	75	117	5	P2386STI0830	●
8.4	0/-0.022	8.4	75	117	5	P2386STI0840	●
8.5	0/-0.022	8.5	75	117	5	P2386STI0850	●
8.6	0/-0.022	8.6	81	125	5	P2386STI0860	●
8.7	0/-0.022	8.7	81	125	5	P2386STI0870	●
8.8	0/-0.022	8.8	81	125	5	P2386STI0880	●
8.9	0/-0.022	8.9	81	125	5	P2386STI0890	●
9	0/-0.022	9	81	125	5	P2386STI0900	●
9.1	0/-0.022	9.1	81	125	5	P2386STI0910	●
9.2	0/-0.022	9.2	81	125	5	P2386STI0920	●
9.3	0/-0.022	9.3	81	125	5	P2386STI0930	●
9.4	0/-0.022	9.4	81	125	5	P2386STI0940	●
9.5	0/-0.022	9.5	81	125	5	P2386STI0950	●
9.6	0/-0.022	9.6	87	133	5	P2386STI0960	●
9.7	0/-0.022	9.7	87	133	5	P2386STI0970	●
9.8	0/-0.022	9.8	87	133	5	P2386STI0980	●
9.9	0/-0.022	9.9	87	133	5	P2386STI0990	●

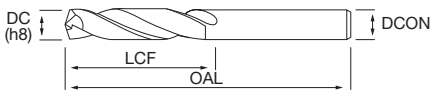
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

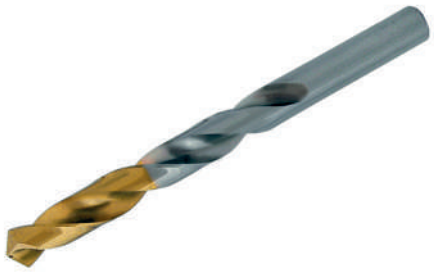
SORMA DIAMOND & CUTTING TOOLS

2386STI

- STI type for general purpose
- TiN pointed
- Short

P	M	K	N	S	H
★	★	★	☆	☆	





DIN 338 | SPLIT POINT | HSS/Co TiN | SIG 135° | FHA 33°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
10	0/-0.022	10	87	133	5	**P2386STI1000**	●
10.1	0/-0.027	10.1	87	133	5	**P2386STI1010**	●
10.2	0/-0.027	10.2	87	133	5	**P2386STI1020**	●
10.3	0/-0.027	10.3	87	133	5	**P2386STI1030**	●
10.4	0/-0.027	10.4	87	133	5	**P2386STI1040**	●
10.5	0/-0.027	10.5	87	133	5	**P2386STI1050**	●
10.6	0/-0.027	10.6	87	133	5	**P2386STI1060**	●
10.7	0/-0.027	10.7	94	142	5	**P2386STI1070**	●
10.8	0/-0.027	10.8	94	142	5	**P2386STI1080**	●
10.9	0/-0.027	10.9	94	142	5	**P2386STI1090**	●
11	0/-0.027	11	94	142	5	**P2386STI1100**	●
11.1	0/-0.027	11.1	94	142	5	**P2386STI1110**	●
11.2	0/-0.027	11.2	94	142	5	**P2386STI1120**	●
11.3	0/-0.027	11.3	94	142	5	**P2386STI1130**	●
11.4	0/-0.027	11.4	94	142	5	**P2386STI1140**	●
11.5	0/-0.027	11.5	94	142	5	**P2386STI1150**	●
11.6	0/-0.027	11.6	94	142	5	**P2386STI1160**	●
11.7	0/-0.027	11.7	94	142	5	**P2386STI1170**	●
11.8	0/-0.027	11.8	94	142	5	**P2386STI1180**	●
11.9	0/-0.027	11.9	101	151	5	**P2386STI1190**	●
12	0/-0.027	12	101	151	5	**P2386STI1200**	●
12.1	0/-0.027	12.1	101	151	5	**P2386STI1210**	●
12.2	0/-0.027	12.2	101	151	5	**P2386STI1220**	●
12.3	0/-0.027	12.3	101	151	5	**P2386STI1230**	●
12.4	0/-0.027	12.4	101	151	5	**P2386STI1240**	●
12.5	0/-0.027	12.5	101	151	5	**P2386STI1250**	●
12.6	0/-0.027	12.6	101	151	5	**P2386STI1260**	●
12.7	0/-0.027	12.7	101	151	5	**P2386STI1270**	●
12.8	0/-0.027	12.8	101	151	5	**P2386STI1280**	●
12.9	0/-0.027	12.9	101	151	5	**P2386STI1290**	●
13	0/-0.027	13	101	151	5	**P2386STI1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



2386STIA01A
Set 50pcs.
2386STI DIN338 HSS/Co TIN POINTED
Ø1 mm÷Ø5.9 mm x 0.1 mm



2386STIA01B
Set 41pcs.
2386STI DIN338 HSS/Co TIN POINTED
Ø6 mm÷Ø10 mm x 0.1 mm



2386STIA05C
Set 25pcs.
2386STI DIN338 HSS/Co TIN POINTED
Ø1 mm÷Ø13 mm x 0.5 mm

2386STI

Material Group ISO 513	P1 P2	P3 P4	P7	M1	M2	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²				
Vc (m/min)	30÷40	25÷35	15÷25	15÷25	12÷18	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.017	0.014	0.012	0.012	0.009	
1.5	0.035	0.030	0.025	0.025	0.018	
2	0.050	0.043	0.035	0.035	0.025	
2.5	0.075	0.064	0.053	0.053	0.038	
3	0.090	0.077	0.063	0.063	0.045	
3.5	0.105	0.089	0.074	0.074	0.053	
4	0.110	0.094	0.077	0.077	0.055	
5	0.125	0.106	0.088	0.088	0.063	
6	0.160	0.136	0.112	0.112	0.080	
7	0.175	0.149	0.123	0.123	0.088	
8	0.200	0.170	0.140	0.140	0.100	
9	0.210	0.179	0.147	0.147	0.105	
10	0.220	0.187	0.154	0.154	0.110	
11	0.235	0.200	0.165	0.165	0.118	
12	0.250	0.213	0.175	0.175	0.125	
13	0.265	0.225	0.186	0.186	0.133	

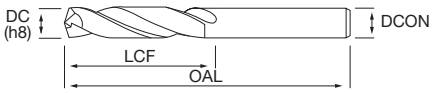
Material Group ISO 513	K1 K2	K3 K4	N1 N5	N2 N3 N4	S1 S2 S4	
Hardness/Rm	150÷350 HB	<350 HB			<35 HRC	
Vc (m/min)	30÷40	25÷35	60÷80	50÷70	12÷18	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.019	0.013	0.024	0.017	0.007	
1.5	0.039	0.026	0.049	0.035	0.014	
2	0.055	0.038	0.070	0.050	0.020	
2.5	0.083	0.056	0.105	0.075	0.030	
3	0.099	0.068	0.126	0.090	0.036	
3.5	0.116	0.079	0.147	0.105	0.042	
4	0.121	0.083	0.154	0.110	0.044	
5	0.138	0.094	0.175	0.125	0.050	
6	0.176	0.120	0.224	0.160	0.064	
7	0.193	0.131	0.245	0.175	0.070	
8	0.220	0.150	0.280	0.200	0.080	
9	0.231	0.158	0.294	0.210	0.084	
10	0.242	0.165	0.308	0.220	0.088	
11	0.259	0.176	0.329	0.235	0.094	
12	0.275	0.188	0.350	0.250	0.100	
13	0.292	0.199	0.371	0.265	0.106	

SORMA DIAMOND & CUTTING TOOLS

238NVA

- NVA type for stainless steel and tough materials
- Short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 338 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
1	0/-0.014	1	12	34	10	P238NVA0100	●
1.1	0/-0.014	1.1	14	36	10	P238NVA0110	●
1.2	0/-0.014	1.2	16	38	10	P238NVA0120	●
1.25	0/-0.014	1.25	16	38	10	P238NVA0125	●
1.3	0/-0.014	1.3	16	38	10	P238NVA0130	●
1.4	0/-0.014	1.4	18	40	10	P238NVA0140	●
1.5	0/-0.014	1.5	18	40	10	P238NVA0150	●
1.6	0/-0.014	1.6	20	43	10	P238NVA0160	●
1.7	0/-0.014	1.7	20	43	10	P238NVA0170	●
1.75	0/-0.014	1.75	22	46	10	P238NVA0175	●
1.8	0/-0.014	1.8	22	46	10	P238NVA0180	●
1.9	0/-0.014	1.9	22	46	10	P238NVA0190	●
2	0/-0.014	2	24	49	10	P238NVA0200	●
2.1	0/-0.014	2.1	24	49	10	P238NVA0210	●
2.2	0/-0.014	2.2	27	53	10	P238NVA0220	●
2.25	0/-0.014	2.25	27	53	10	P238NVA0225	●
2.3	0/-0.014	2.3	27	53	10	P238NVA0230	●
2.4	0/-0.014	2.4	30	57	10	P238NVA0240	●
2.5	0/-0.014	2.5	30	57	10	P238NVA0250	●
2.6	0/-0.014	2.6	30	57	10	P238NVA0260	●
2.7	0/-0.014	2.7	33	61	10	P238NVA0270	●
2.75	0/-0.014	2.75	33	61	10	P238NVA0275	●
2.8	0/-0.014	2.8	33	61	10	P238NVA0280	●
2.9	0/-0.014	2.9	33	61	10	P238NVA0290	●
3	0/-0.014	3	33	61	10	P238NVA0300	●
3.1	0/-0.018	3.1	36	65	10	P238NVA0310	●
3.2	0/-0.018	3.2	36	65	10	P238NVA0320	●
3.25	0/-0.018	3.25	36	65	10	P238NVA0325	●
3.3	0/-0.018	3.3	36	65	10	P238NVA0330	●
3.4	0/-0.018	3.4	39	70	10	P238NVA0340	●
3.5	0/-0.018	3.5	39	70	10	P238NVA0350	●
3.6	0/-0.018	3.6	39	70	10	P238NVA0360	●
3.7	0/-0.018	3.7	39	70	10	P238NVA0370	●
3.75	0/-0.018	3.75	39	70	10	P238NVA0375	●
3.8	0/-0.018	3.8	43	75	10	P238NVA0380	●
3.9	0/-0.018	3.9	43	75	10	P238NVA0390	●
4	0/-0.018	4	43	75	10	P238NVA0400	●
4.1	0/-0.018	4.1	43	75	10	P238NVA0410	●
4.2	0/-0.018	4.2	43	75	10	P238NVA0420	●
4.25	0/-0.018	4.25	43	75	10	P238NVA0425	●
4.3	0/-0.018	4.3	47	80	10	P238NVA0430	●
4.4	0/-0.018	4.4	47	80	10	P238NVA0440	●
4.5	0/-0.018	4.5	47	80	10	P238NVA0450	●
4.6	0/-0.018	4.6	47	80	10	P238NVA0460	●
4.7	0/-0.018	4.7	47	80	10	P238NVA0470	●

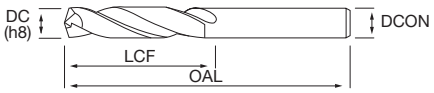
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

238NVA

- NVA type for stainless steel and tough materials
- Short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 338 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
4.75	0/-0.018	4.75	47	80	10	P238NVA0475	●
4.8	0/-0.018	4.8	52	86	10	P238NVA0480	●
4.9	0/-0.018	4.9	52	86	10	P238NVA0490	●
5	0/-0.018	5	52	86	10	P238NVA0500	●
5.1	0/-0.018	5.1	52	86	10	P238NVA0510	●
5.2	0/-0.018	5.2	52	86	10	P238NVA0520	●
5.25	0/-0.018	5.25	52	86	10	P238NVA0525	●
5.3	0/-0.018	5.3	52	86	10	P238NVA0530	●
5.4	0/-0.018	5.4	57	93	10	P238NVA0540	●
5.5	0/-0.018	5.5	57	93	10	P238NVA0550	●
5.6	0/-0.018	5.6	57	93	10	P238NVA0560	●
5.7	0/-0.018	5.7	57	93	10	P238NVA0570	●
5.75	0/-0.018	5.75	57	93	10	P238NVA0575	●
5.8	0/-0.018	5.8	57	93	10	P238NVA0580	●
5.9	0/-0.018	5.9	57	93	10	P238NVA0590	●
6	0/-0.018	6	57	93	10	P238NVA0600	●
6.1	0/-0.022	6.1	63	101	10	P238NVA0610	●
6.2	0/-0.022	6.2	63	101	10	P238NVA0620	●
6.25	0/-0.022	6.25	63	101	10	P238NVA0625	●
6.3	0/-0.022	6.3	63	101	10	P238NVA0630	●
6.4	0/-0.022	6.4	63	101	10	P238NVA0640	●
6.5	0/-0.022	6.5	63	101	10	P238NVA0650	●
6.6	0/-0.022	6.6	63	101	5	P238NVA0660	●
6.7	0/-0.022	6.7	63	101	5	P238NVA0670	●
6.75	0/-0.022	6.75	69	109	5	P238NVA0675	●
6.8	0/-0.022	6.8	69	109	5	P238NVA0680	●
6.9	0/-0.022	6.9	69	109	5	P238NVA0690	●
7	0/-0.022	7	69	109	5	P238NVA0700	●
7.1	0/-0.022	7.1	69	109	5	P238NVA0710	●
7.2	0/-0.022	7.2	69	109	5	P238NVA0720	●
7.25	0/-0.022	7.25	69	109	5	P238NVA0725	●
7.3	0/-0.022	7.3	69	109	5	P238NVA0730	●
7.4	0/-0.022	7.4	69	109	5	P238NVA0740	●
7.5	0/-0.022	7.5	69	109	5	P238NVA0750	●
7.6	0/-0.022	7.6	75	117	5	P238NVA0760	●
7.7	0/-0.022	7.7	75	117	5	P238NVA0770	●
7.75	0/-0.022	7.75	75	117	5	P238NVA0775	●
7.8	0/-0.022	7.8	75	117	5	P238NVA0780	●
7.9	0/-0.022	7.9	75	117	5	P238NVA0790	●
8	0/-0.022	8	75	117	5	P238NVA0800	●
8.1	0/-0.022	8.1	75	117	5	P238NVA0810	●
8.2	0/-0.022	8.2	75	117	5	P238NVA0820	●
8.25	0/-0.022	8.25	75	117	5	P238NVA0825	●
8.3	0/-0.022	8.3	75	117	5	P238NVA0830	●
8.4	0/-0.022	8.4	75	117	5	P238NVA0840	●

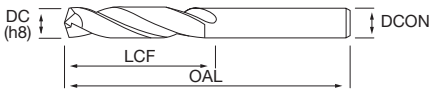
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

238NVA

- NVA type for stainless steel and tough materials
- Short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 338 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
8.5	0/-0.022	8.5	75	117	5	**P238NVA0850**	●
8.6	0/-0.022	8.6	81	125	5	**P238NVA0860**	●
8.7	0/-0.022	8.7	81	125	5	**P238NVA0870**	●
8.75	0/-0.022	8.75	81	125	5	**P238NVA0875**	●
8.8	0/-0.022	8.8	81	125	5	**P238NVA0880**	●
8.9	0/-0.022	8.9	81	125	5	**P238NVA0890**	●
9	0/-0.022	9	81	125	5	**P238NVA0900**	●
9.1	0/-0.022	9.1	81	125	5	**P238NVA0910**	●
9.2	0/-0.022	9.2	81	125	5	**P238NVA0920**	●
9.25	0/-0.022	9.25	81	125	5	**P238NVA0925**	○
9.3	0/-0.022	9.3	81	125	5	**P238NVA0930**	●
9.4	0/-0.022	9.4	81	125	5	**P238NVA0940**	●
9.5	0/-0.022	9.5	81	125	5	**P238NVA0950**	●
9.6	0/-0.022	9.6	87	133	5	**P238NVA0960**	●
9.7	0/-0.022	9.7	87	133	5	**P238NVA0970**	●
9.75	0/-0.022	9.75	87	133	5	**P238NVA0975**	●
9.8	0/-0.022	9.8	87	133	5	**P238NVA0980**	●
9.9	0/-0.022	9.9	87	133	5	**P238NVA0990**	●
10	0/-0.022	10	87	133	5	**P238NVA1000**	●
10.2	0/-0.027	10.2	87	133	5	**P238NVA1020**	●
10.5	0/-0.027	10.5	87	133	5	**P238NVA1050**	●
11	0/-0.027	11	94	142	5	**P238NVA1100**	●
11.5	0/-0.027	11.5	94	142	5	**P238NVA1150**	●
12	0/-0.027	12	101	151	5	**P238NVA1200**	●
12.5	0/-0.027	12.5	101	151	5	**P238NVA1250**	●
13	0/-0.027	13	101	151	5	**P238NVA1300**	●
13.5	0/-0.027	13.5	108	160	1	**P238NVA1350**	●
14	0/-0.027	14	108	160	1	**P238NVA1400**	●
14.5	0/-0.027	14.5	114	169	1	**P238NVA1450**	●
15	0/-0.027	15	114	169	1	**P238NVA1500**	●
15.5	0/-0.027	15.5	120	178	1	**P238NVA1550**	●
16	0/-0.027	16	120	178	1	**P238NVA1600**	●
16.5	0/-0.027	16.5	125	184	1	**P238NVA1650**	●
17	0/-0.027	17	125	184	1	**P238NVA1700**	●
17.5	0/-0.027	17.5	130	191	1	**P238NVA1750**	●
18	0/-0.027	18	130	191	1	**P238NVA1800**	●
18.5	0/-0.033	18.5	135	198	1	**P238NVA1850**	●
19	0/-0.033	19	135	198	1	**P238NVA1900**	●
19.5	0/-0.033	19.5	140	205	1	**P238NVA1950**	○
20	0/-0.033	20	140	205	1	**P238NVA2000**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



238NVAA01A
Set 50pcs.
238NVA DIN338 HSS/Co
Ø1 mm÷Ø5.9 mm x 0.1 mm



238NVAA01B
Set 41pcs.
238NVA DIN338 HSS/Co
Ø6 mm÷Ø10 mm x 0.1 mm



238NVAA05C
Set 25pcs.
238NVA DIN338 HSS/Co
Ø1 mm÷Ø13 mm x 0.5 mm

238NVA

Material Group ISO 513	P1 P2	P3 P4	P7	M1	M2 M3	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²				
Vc (m/min)	25÷35	20÷30	12÷18	12÷18	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.017	0.014	0.012	0.012	0.009	
1.5	0.035	0.030	0.025	0.025	0.018	
2	0.050	0.043	0.035	0.035	0.025	
2.5	0.060	0.051	0.042	0.042	0.030	
3	0.070	0.060	0.049	0.049	0.035	
3.5	0.080	0.068	0.056	0.056	0.040	
4	0.090	0.077	0.063	0.063	0.045	
5	0.100	0.085	0.070	0.070	0.050	
6	0.110	0.094	0.077	0.077	0.055	
7	0.120	0.102	0.084	0.084	0.060	
8	0.130	0.111	0.091	0.091	0.065	
9	0.140	0.119	0.098	0.098	0.070	
10	0.160	0.136	0.112	0.112	0.080	
11	0.170	0.145	0.119	0.119	0.085	
12	0.180	0.153	0.126	0.126	0.090	
13	0.190	0.162	0.133	0.133	0.095	
14	0.200	0.170	0.140	0.140	0.100	
15	0.210	0.179	0.147	0.147	0.105	
16	0.220	0.187	0.154	0.154	0.110	
17	0.230	0.196	0.161	0.161	0.115	
18	0.240	0.204	0.168	0.168	0.120	
19	0.250	0.213	0.175	0.175	0.125	
20	0.260	0.221	0.182	0.182	0.130	

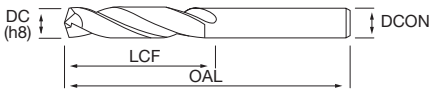
Material Group ISO 513	K1 K2	K3 K4	N1 N5	N2 N3 N4	S1 S2 S4	
Hardness/Rm	150÷350 HB	<350 HB			<35 HRC	
Vc (m/min)	25÷35	20÷30	50÷70	40÷60	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1	0.019	0.013	0.024	0.017	0.007	
1.5	0.039	0.026	0.049	0.035	0.014	
2	0.055	0.038	0.070	0.050	0.020	
2.5	0.066	0.045	0.084	0.060	0.024	
3	0.077	0.053	0.098	0.070	0.028	
3.5	0.088	0.060	0.112	0.080	0.032	
4	0.099	0.068	0.126	0.090	0.036	
5	0.110	0.075	0.140	0.100	0.040	
6	0.121	0.083	0.154	0.110	0.044	
7	0.132	0.090	0.168	0.120	0.048	
8	0.143	0.098	0.182	0.130	0.052	
9	0.154	0.105	0.196	0.140	0.056	
10	0.176	0.120	0.224	0.160	0.064	
11	0.187	0.128	0.238	0.170	0.068	
12	0.198	0.135	0.252	0.180	0.072	
13	0.209	0.143	0.266	0.190	0.076	
14	0.220	0.150	0.280	0.200	0.080	
15	0.231	0.158	0.294	0.210	0.084	
16	0.242	0.165	0.308	0.220	0.088	
17	0.253	0.173	0.322	0.230	0.092	
18	0.264	0.180	0.336	0.240	0.096	
19	0.275	0.188	0.350	0.250	0.100	
20	0.286	0.195	0.364	0.260	0.104	

SORMA DIAMOND & CUTTING TOOLS

234NVA

- NVA type for stainless steel and tough materials
- Long
- For ▲ rank items, you may receive until stock exhaustion former edp 134NB instead of 234NVA

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 340 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
0.5	0/-0.014	0.5	12	32	10	P234NVA0050	▲
0.6	0/-0.014	0.6	15	35	10	P234NVA0060	●
0.7	0/-0.014	0.7	21	42	10	P234NVA0070	▲
0.8	0/-0.014	0.8	25	46	10	P234NVA0080	▲
0.9	0/-0.014	0.9	29	51	10	P234NVA0090	●
1	0/-0.014	1	33	56	10	P234NVA0100	●
1.1	0/-0.014	1.1	37	60	10	P234NVA0110	▲
1.2	0/-0.014	1.2	41	65	10	P234NVA0120	●
1.3	0/-0.014	1.3	41	65	10	P234NVA0130	▲
1.4	0/-0.014	1.4	45	70	10	P234NVA0140	▲
1.5	0/-0.014	1.5	45	70	10	P234NVA0150	▲
1.6	0/-0.014	1.6	50	76	10	P234NVA0160	●
1.7	0/-0.014	1.7	50	76	10	P234NVA0170	▲
1.8	0/-0.014	1.8	53	80	10	P234NVA0180	●
1.9	0/-0.014	1.9	53	80	10	P234NVA0190	▲
2	0/-0.014	2	56	85	10	P234NVA0200	●
2.1	0/-0.014	2.1	56	85	10	P234NVA0210	●
2.2	0/-0.014	2.2	59	90	10	P234NVA0220	●
2.3	0/-0.014	2.3	59	90	10	P234NVA0230	●
2.4	0/-0.014	2.4	62	95	10	P234NVA0240	●
2.5	0/-0.014	2.5	62	95	10	P234NVA0250	●
2.6	0/-0.014	2.6	62	95	10	P234NVA0260	●
2.7	0/-0.014	2.7	66	100	10	P234NVA0270	●
2.8	0/-0.014	2.8	66	100	10	P234NVA0280	●
2.9	0/-0.014	2.9	66	100	10	P234NVA0290	●
3	0/-0.014	3	66	100	10	P234NVA0300	●
3.1	0/-0.018	3.1	69	106	10	P234NVA0310	●
3.2	0/-0.018	3.2	69	106	10	P234NVA0320	●
3.3	0/-0.018	3.3	69	106	10	P234NVA0330	●
3.4	0/-0.018	3.4	73	112	10	P234NVA0340	●
3.5	0/-0.018	3.5	73	112	10	P234NVA0350	●
3.6	0/-0.018	3.6	73	112	10	P234NVA0360	●
3.7	0/-0.018	3.7	73	112	10	P234NVA0370	●
3.8	0/-0.018	3.8	78	119	10	P234NVA0380	●
3.9	0/-0.018	3.9	78	119	10	P234NVA0390	●
4	0/-0.018	4	78	119	10	P234NVA0400	●
4.1	0/-0.018	4.1	78	119	10	P234NVA0410	●
4.2	0/-0.018	4.2	78	119	10	P234NVA0420	●
4.3	0/-0.018	4.3	82	126	10	P234NVA0430	●
4.4	0/-0.018	4.4	82	126	10	P234NVA0440	●
4.5	0/-0.018	4.5	82	126	10	P234NVA0450	●
4.6	0/-0.018	4.6	82	126	10	P234NVA0460	●
4.7	0/-0.018	4.7	82	126	10	P234NVA0470	●
4.8	0/-0.018	4.8	87	132	10	P234NVA0480	●
4.9	0/-0.018	4.9	87	132	10	P234NVA0490	●

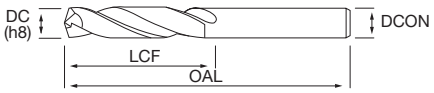
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

234NVA

- NVA type for stainless steel and tough materials
- Long
- For ▲ rank items, you may receive until stock exhaustion former edp 134NB instead of 234NVA

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 340 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
5	0/-0.018	5	87	132	10	P234NVA0500	●
5.1	0/-0.018	5.1	87	132	10	P234NVA0510	●
5.2	0/-0.018	5.2	87	132	10	P234NVA0520	●
5.3	0/-0.018	5.3	87	132	10	P234NVA0530	●
5.4	0/-0.018	5.4	91	139	10	P234NVA0540	●
5.5	0/-0.018	5.5	91	139	10	P234NVA0550	●
5.6	0/-0.018	5.6	91	139	10	P234NVA0560	●
5.7	0/-0.018	5.7	91	139	10	P234NVA0570	○
5.8	0/-0.018	5.8	91	139	10	P234NVA0580	●
5.9	0/-0.018	5.9	91	139	10	P234NVA0590	●
6	0/-0.018	6	91	139	10	P234NVA0600	●
6.1	0/-0.022	6.1	97	148	5	P234NVA0610	●
6.2	0/-0.022	6.2	97	148	5	P234NVA0620	●
6.3	0/-0.022	6.3	97	148	5	P234NVA0630	●
6.4	0/-0.022	6.4	97	148	5	P234NVA0640	○
6.5	0/-0.022	6.5	97	148	5	P234NVA0650	●
6.6	0/-0.022	6.6	97	148	5	P234NVA0660	●
6.7	0/-0.022	6.7	97	148	5	P234NVA0670	●
6.8	0/-0.022	6.8	102	156	5	P234NVA0680	●
6.9	0/-0.022	6.9	102	156	5	P234NVA0690	●
7	0/-0.022	7	102	156	5	P234NVA0700	●
7.1	0/-0.022	7.1	102	156	5	P234NVA0710	●
7.2	0/-0.022	7.2	102	156	5	P234NVA0720	●
7.3	0/-0.022	7.3	102	156	5	P234NVA0730	○
7.4	0/-0.022	7.4	102	156	5	P234NVA0740	●
7.5	0/-0.022	7.5	102	156	5	P234NVA0750	●
7.6	0/-0.022	7.6	109	165	5	P234NVA0760	●
7.7	0/-0.022	7.7	109	165	5	P234NVA0770	●
7.8	0/-0.022	7.8	109	165	5	P234NVA0780	●
7.9	0/-0.022	7.9	109	165	5	P234NVA0790	●
8	0/-0.022	8	109	165	5	P234NVA0800	●
8.1	0/-0.022	8.1	109	165	5	P234NVA0810	●
8.2	0/-0.022	8.2	109	165	5	P234NVA0820	●
8.3	0/-0.022	8.3	109	165	5	P234NVA0830	●
8.4	0/-0.022	8.4	109	165	5	P234NVA0840	●
8.5	0/-0.022	8.5	109	165	5	P234NVA0850	●
8.6	0/-0.022	8.6	115	175	5	P234NVA0860	●
8.7	0/-0.022	8.7	115	175	5	P234NVA0870	●
8.8	0/-0.022	8.8	115	175	5	P234NVA0880	●
8.9	0/-0.022	8.9	115	175	5	P234NVA0890	○
9	0/-0.022	9	115	175	5	P234NVA0900	●
9.1	0/-0.022	9.1	115	175	5	P234NVA0910	●
9.2	0/-0.022	9.2	115	175	5	P234NVA0920	●
9.3	0/-0.022	9.3	115	175	5	P234NVA0930	●
9.4	0/-0.022	9.4	115	175	5	P234NVA0940	●

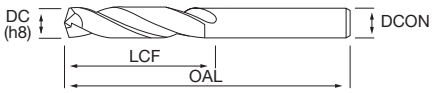
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

234NVA

- NVA type for stainless steel and tough materials
- Long
- For ▲ rank items, you may receive until stock exhaustion former edp 134NB instead of 234NVA

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 340 | NH | HSS/Co HT | SIG 130° | FHA 30°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
9.5	0/-0.022	9.5	115	175	5	**P234NVA0950**	●
9.6	0/-0.022	9.6	121	184	5	**P234NVA0960**	●
9.7	0/-0.022	9.7	121	184	5	**P234NVA0970**	●
9.8	0/-0.022	9.8	121	184	5	**P234NVA0980**	●
9.9	0/-0.022	9.9	121	184	5	**P234NVA0990**	●
10	0/-0.022	10	121	184	5	**P234NVA1000**	●
10.2	0/-0.027	10.2	121	184	5	**P234NVA1020**	●
10.5	0/-0.027	10.5	121	184	5	**P234NVA1050**	●
10.8	0/-0.027	10.8	128	195	5	**P234NVA1080**	●
11	0/-0.027	11	128	195	5	**P234NVA1100**	●
11.2	0/-0.027	11.2	128	195	5	**P234NVA1120**	●
11.5	0/-0.027	11.5	128	195	5	**P234NVA1150**	●
11.8	0/-0.027	11.8	128	195	5	**P234NVA1180**	●
12	0/-0.027	12	134	205	5	**P234NVA1200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

234NVA

Material Group ISO 513	P1 P2	P3 P4	P7	M1	M2 M3	
Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²				
Vc (m/min)	20÷30	15÷25	12÷16	12÷16	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
0.5	0.008	0.007	0.006	0.006	0.004	
0.8	0.015	0.013	0.011	0.011	0.008	
1	0.020	0.017	0.014	0.014	0.010	
1.5	0.030	0.026	0.021	0.021	0.015	
2	0.040	0.034	0.028	0.028	0.020	
2.5	0.050	0.043	0.035	0.035	0.025	
3	0.060	0.051	0.042	0.042	0.030	
3.5	0.070	0.060	0.049	0.049	0.035	
4	0.080	0.068	0.056	0.056	0.040	
5	0.090	0.077	0.063	0.063	0.045	
6	0.100	0.085	0.070	0.070	0.050	
7	0.110	0.094	0.077	0.077	0.055	
8	0.120	0.102	0.084	0.084	0.060	
9	0.130	0.111	0.091	0.091	0.065	
10	0.140	0.119	0.098	0.098	0.070	
11	0.150	0.128	0.105	0.105	0.075	
12	0.160	0.136	0.112	0.112	0.080	

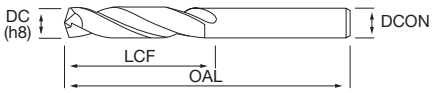
Material Group ISO 513	K1 K2	K3 K4	N1 N5	N2 N3 N4	S1 S2 S4	
Hardness/Rm	150÷350 HB	<350 HB			<35 HRC	
Vc (m/min)	20÷30	20÷30	40÷60	30÷50	8÷12	
DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
0.5	0.009	0.006	0.011	0.008	0.003	
0.8	0.017	0.011	0.021	0.015	0.006	
1	0.022	0.015	0.028	0.020	0.008	
1.5	0.033	0.023	0.042	0.030	0.012	
2	0.044	0.030	0.056	0.040	0.016	
2.5	0.055	0.038	0.070	0.050	0.020	
3	0.066	0.045	0.084	0.060	0.024	
3.5	0.077	0.053	0.098	0.070	0.028	
4	0.088	0.060	0.112	0.080	0.032	
5	0.099	0.068	0.126	0.090	0.036	
6	0.110	0.075	0.140	0.100	0.040	
7	0.121	0.083	0.154	0.110	0.044	
8	0.132	0.090	0.168	0.120	0.048	
9	0.143	0.098	0.182	0.130	0.052	
10	0.154	0.105	0.196	0.140	0.056	
11	0.165	0.113	0.210	0.150	0.060	
12	0.176	0.120	0.224	0.160	0.064	

SORMA DIAMOND & CUTTING TOOLS

234LS

- LS type for deep holes
- Long

P	M	K	N	S	H
★	☆	★			





DIN 340 | LS | HSS/Co OX | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	56	85	10	**P234LS0200**	●
2.1	0/-0.014	2.1	56	85	10	**P234LS0210**	●
2.2	0/-0.014	2.2	59	90	10	**P234LS0220**	●
2.3	0/-0.014	2.3	59	90	10	**P234LS0230**	●
2.4	0/-0.014	2.4	62	95	10	**P234LS0240**	●
2.5	0/-0.014	2.5	62	95	10	**P234LS0250**	●
2.6	0/-0.014	2.6	62	95	10	**P234LS0260**	●
2.7	0/-0.014	2.7	66	100	10	**P234LS0270**	●
2.8	0/-0.014	2.8	66	100	10	**P234LS0280**	●
2.9	0/-0.014	2.9	66	100	10	**P234LS0290**	●
3	0/-0.014	3	66	100	10	**P234LS0300**	●
3.1	0/-0.018	3.1	69	106	10	**P234LS0310**	●
3.2	0/-0.018	3.2	69	106	10	**P234LS0320**	●
3.3	0/-0.018	3.3	69	106	10	**P234LS0330**	●
3.4	0/-0.018	3.4	73	112	10	**P234LS0340**	●
3.5	0/-0.018	3.5	73	112	10	**P234LS0350**	●
3.6	0/-0.018	3.6	73	112	10	**P234LS0360**	○
3.7	0/-0.018	3.7	73	112	10	**P234LS0370**	●
3.8	0/-0.018	3.8	78	119	10	**P234LS0380**	●
3.9	0/-0.018	3.9	78	119	10	**P234LS0390**	●
4	0/-0.018	4	78	119	10	**P234LS0400**	●
4.2	0/-0.018	4.2	78	119	10	**P234LS0420**	●
4.5	0/-0.018	4.5	82	126	10	**P234LS0450**	●
4.8	0/-0.018	4.8	87	132	10	**P234LS0480**	●
5	0/-0.018	5	87	132	10	**P234LS0500**	●
5.2	0/-0.018	5.2	87	132	10	**P234LS0520**	●
5.5	0/-0.018	5.5	91	139	10	**P234LS0550**	●
5.8	0/-0.018	5.8	91	139	10	**P234LS0580**	●
6	0/-0.018	6	91	139	10	**P234LS0600**	●
6.2	0/-0.022	6.2	97	148	5	**P234LS0620**	●
6.5	0/-0.022	6.5	97	148	5	**P234LS0650**	●
6.8	0/-0.022	6.8	102	156	5	**P234LS0680**	●
7	0/-0.022	7	102	156	5	**P234LS0700**	●
7.2	0/-0.022	7.2	102	156	5	**P234LS0720**	●
7.5	0/-0.022	7.5	102	156	5	**P234LS0750**	●
7.8	0/-0.022	7.8	109	165	5	**P234LS0780**	●
8	0/-0.022	8	109	165	5	**P234LS0800**	●
8.2	0/-0.022	8.2	109	165	5	**P234LS0820**	●
8.5	0/-0.022	8.5	109	165	5	**P234LS0850**	●
9	0/-0.022	9	115	175	5	**P234LS0900**	●
9.5	0/-0.022	9.5	115	175	5	**P234LS0950**	●
9.8	0/-0.022	9.8	121	184	5	**P234LS0980**	●
10	0/-0.022	10	121	184	5	**P234LS1000**	●
10.5	0/-0.027	10.5	121	184	5	**P234LS1050**	●
11	0/-0.027	11	128	195	5	**P234LS1100**	●

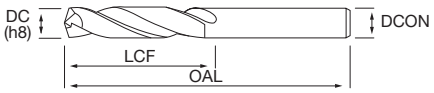
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

234LS

- LS type for deep holes
- Long

P	M	K	N	S	H
★	☆	★			





DIN 340 | LS | HSS/Co OX | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
11.5	0/-0.027	11.5	128	195	5	**P234LS1150**	●
12	0/-0.027	12	134	205	5	**P234LS1200**	●
12.5	0/-0.027	12.5	134	205	5	**P234LS1250**	●
13	0/-0.027	13	134	205	5	**P234LS1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

234LS

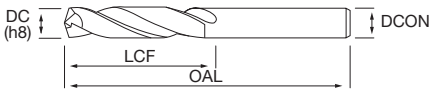
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**20÷30**	**15÷25**	**10÷14**	**10÷14**	**20÷30**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	2	0.040	0.034	0.028	0.028	0.044	
	2.5	0.050	0.043	0.035	0.035	0.055	
	3	0.060	0.051	0.042	0.042	0.066	
	3.5	0.070	0.060	0.049	0.049	0.077	
	4	0.080	0.068	0.056	0.056	0.088	
	5	0.090	0.077	0.063	0.063	0.099	
	6	0.100	0.085	0.070	0.070	0.110	
	7	0.110	0.094	0.077	0.077	0.121	
	8	0.120	0.102	0.084	0.084	0.132	
	9	0.130	0.111	0.091	0.091	0.143	
	10	0.140	0.119	0.098	0.098	0.154	
	11	0.150	0.128	0.105	0.105	0.165	
	12	0.160	0.136	0.112	0.112	0.176	
	13	0.170	0.145	0.119	0.119	0.187	

SORMA DIAMOND & CUTTING TOOLS

234LSTH

- LS type for deep holes
- PV15 coated
- Long

P	M	K	N	S	H
★	☆	★			





DIN 340 | LS | HSS/Co PV15 | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	56	85	10	P234LSTH0200	●
2.1	0/-0.014	2.1	56	85	10	P234LSTH0210	●
2.2	0/-0.014	2.2	59	90	10	P234LSTH0220	●
2.3	0/-0.014	2.3	59	90	10	P234LSTH0230	●
2.4	0/-0.014	2.4	62	95	10	P234LSTH0240	●
2.5	0/-0.014	2.5	62	95	10	P234LSTH0250	●
2.6	0/-0.014	2.6	62	95	10	P234LSTH0260	●
2.7	0/-0.014	2.7	66	100	10	P234LSTH0270	●
2.8	0/-0.014	2.8	66	100	10	P234LSTH0280	●
2.9	0/-0.014	2.9	66	100	10	P234LSTH0290	●
3	0/-0.014	3	66	100	5	P234LSTH0300	●
3.1	0/-0.018	3.1	69	106	5	P234LSTH0310	●
3.2	0/-0.018	3.2	69	106	5	P234LSTH0320	●
3.3	0/-0.018	3.3	69	106	5	P234LSTH0330	●
3.4	0/-0.018	3.4	73	112	5	P234LSTH0340	●
3.5	0/-0.018	3.5	73	112	5	P234LSTH0350	●
3.6	0/-0.018	3.6	73	112	5	P234LSTH0360	○
3.7	0/-0.018	3.7	73	112	5	P234LSTH0370	●
3.8	0/-0.018	3.8	78	119	5	P234LSTH0380	●
3.9	0/-0.018	3.9	78	119	5	P234LSTH0390	●
4	0/-0.018	4	78	119	5	P234LSTH0400	●
4.2	0/-0.018	4.2	78	119	5	P234LSTH0420	●
4.5	0/-0.018	4.5	82	126	5	P234LSTH0450	●
4.8	0/-0.018	4.8	87	132	5	P234LSTH0480	●
5	0/-0.018	5	87	132	5	P234LSTH0500	●
5.2	0/-0.018	5.2	87	132	5	P234LSTH0520	●
5.5	0/-0.018	5.5	91	139	5	P234LSTH0550	●
5.8	0/-0.018	5.8	91	139	5	P234LSTH0580	●
6	0/-0.018	6	91	139	5	P234LSTH0600	●
6.2	0/-0.022	6.2	97	148	1	P234LSTH0620	●
6.5	0/-0.022	6.5	97	148	1	P234LSTH0650	●
6.8	0/-0.022	6.8	102	156	1	P234LSTH0680	●
7	0/-0.022	7	102	156	1	P234LSTH0700	●
7.5	0/-0.022	7.5	102	156	1	P234LSTH0750	●
8	0/-0.022	8	109	165	1	P234LSTH0800	●
8.5	0/-0.022	8.5	109	165	1	P234LSTH0850	●
9	0/-0.022	9	115	175	1	P234LSTH0900	●
9.5	0/-0.022	9.5	115	175	1	P234LSTH0950	●
10	0/-0.022	10	121	184	1	P234LSTH1000	●
10.5	0/-0.027	10.5	121	184	1	P234LSTH1050	●
11	0/-0.027	11	128	195	1	P234LSTH1100	●
11.5	0/-0.027	11.5	128	195	1	P234LSTH1150	●
12	0/-0.027	12	134	205	1	P234LSTH1200	●
12.5	0/-0.027	12.5	134	205	1	P234LSTH1250	●
13	0/-0.027	13	134	205	1	P234LSTH1300	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

234LSTH

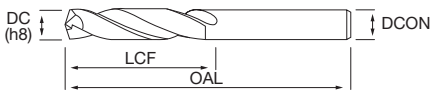
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**25÷35**	**20÷30**	**16÷20**	**16÷20**	**25÷35**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	2	0.040	0.034	0.028	0.028	0.044	
	2.5	0.050	0.043	0.035	0.035	0.055	
	3	0.060	0.051	0.042	0.042	0.066	
	3.5	0.070	0.060	0.049	0.049	0.077	
	4	0.080	0.068	0.056	0.056	0.088	
	5	0.090	0.077	0.063	0.063	0.099	
	6	0.100	0.085	0.070	0.070	0.110	
	7	0.110	0.094	0.077	0.077	0.121	
	8	0.120	0.102	0.084	0.084	0.132	
	9	0.130	0.111	0.091	0.091	0.143	
	10	0.140	0.119	0.098	0.098	0.154	
	11	0.150	0.128	0.105	0.105	0.165	
	12	0.160	0.136	0.112	0.112	0.176	
	13	0.170	0.145	0.119	0.119	0.187	

SORMA DIAMOND & CUTTING TOOLS

2691LS

- LS type for deep holes
- Extra-long/1

P	M	K	N	S	H
★	☆	★			





DIN 1869/1 | LS | HSS/Co BR | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	85	125	5	**P2691LS0200**	●
2.5	0/-0.014	2.5	95	140	5	**P2691LS0250**	●
3	0/-0.014	3	100	150	5	**P2691LS0300**	●
3.5	0/-0.018	3.5	115	165	5	**P2691LS0350**	●
4	0/-0.018	4	120	175	5	**P2691LS0400**	●
4.5	0/-0.018	4.5	125	185	5	**P2691LS0450**	●
5	0/-0.018	5	135	195	5	**P2691LS0500**	●
5.5	0/-0.018	5.5	140	205	5	**P2691LS0550**	●
6	0/-0.018	6	140	205	5	**P2691LS0600**	●
6.5	0/-0.022	6.5	150	215	5	**P2691LS0650**	●
6.75	0/-0.022	6.75	155	225	5	**P2691LS0675**	●
7	0/-0.022	7	155	225	5	**P2691LS0700**	●
7.5	0/-0.022	7.5	155	225	5	**P2691LS0750**	●
8	0/-0.022	8	165	240	5	**P2691LS0800**	●
8.5	0/-0.022	8.5	165	240	1	**P2691LS0850**	●
9	0/-0.022	9	175	250	1	**P2691LS0900**	●
9.5	0/-0.022	9.5	175	250	1	**P2691LS0950**	●
10	0/-0.022	10	185	265	1	**P2691LS1000**	●
10.5	0/-0.027	10.5	185	265	1	**P2691LS1050**	●
11	0/-0.027	11	195	280	1	**P2691LS1100**	●
11.5	0/-0.027	11.5	195	280	1	**P2691LS1150**	●
12	0/-0.027	12	205	295	1	**P2691LS1200**	●
12.5	0/-0.027	12.5	205	295	1	**P2691LS1250**	●
13	0/-0.027	13	205	295	1	**P2691LS1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

2691LS

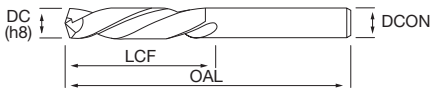
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**20÷24**	**16÷20**	**8÷12**	**8÷12**	**20÷24**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	2	0.032	0.027	0.022	0.022	0.035	
	2.5	0.040	0.034	0.028	0.028	0.044	
	3	0.048	0.041	0.034	0.034	0.053	
	3.5	0.056	0.048	0.039	0.039	0.062	
	4	0.064	0.054	0.045	0.045	0.070	
	5	0.072	0.061	0.050	0.050	0.079	
	6	0.080	0.068	0.056	0.056	0.088	
	7	0.088	0.075	0.062	0.062	0.097	
	8	0.096	0.082	0.067	0.067	0.106	
	9	0.104	0.088	0.073	0.073	0.114	
	10	0.112	0.095	0.078	0.078	0.123	
	11	0.120	0.102	0.084	0.084	0.132	
	12	0.128	0.109	0.090	0.090	0.141	
	13	0.136	0.116	0.095	0.095	0.150	

SORMA DIAMOND & CUTTING TOOLS

2691LSTH

- LS type for deep holes
- PV15 coated
- Extra-long/1

P	M	K	N	S	H
★	☆	★			





DIN 1869/1 | LS | HSS/Co PV15 | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
2	0/-0.014	2	85	125	5	**P2691LSTH0200**	●
2.5	0/-0.014	2.5	95	140	5	**P2691LSTH0250**	●
3	0/-0.014	3	100	150	5	**P2691LSTH0300**	●
3.5	0/-0.018	3.5	115	165	5	**P2691LSTH0350**	●
4	0/-0.018	4	120	175	5	**P2691LSTH0400**	●
4.5	0/-0.018	4.5	125	185	5	**P2691LSTH0450**	●
5	0/-0.018	5	135	195	5	**P2691LSTH0500**	●
5.5	0/-0.018	5.5	140	205	1	**P2691LSTH0550**	●
6	0/-0.018	6	140	205	1	**P2691LSTH0600**	●
6.5	0/-0.022	6.5	150	215	1	**P2691LSTH0650**	●
7	0/-0.022	7	155	225	1	**P2691LSTH0700**	●
7.5	0/-0.022	7.5	155	225	1	**P2691LSTH0750**	●
8	0/-0.022	8	165	240	1	**P2691LSTH0800**	●
8.5	0/-0.022	8.5	165	240	1	**P2691LSTH0850**	●
9	0/-0.022	9	175	250	1	**P2691LSTH0900**	●
9.5	0/-0.022	9.5	175	250	1	**P2691LSTH0950**	●
10	0/-0.022	10	185	265	1	**P2691LSTH1000**	●
10.5	0/-0.027	10.5	185	265	1	**P2691LSTH1050**	●
11	0/-0.027	11	195	280	1	**P2691LSTH1100**	●
11.5	0/-0.027	11.5	195	280	1	**P2691LSTH1150**	●
12	0/-0.027	12	205	295	1	**P2691LSTH1200**	●
12.5	0/-0.027	12.5	205	295	1	**P2691LSTH1250**	●
13	0/-0.027	13	205	295	1	**P2691LSTH1300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

2691LSTH

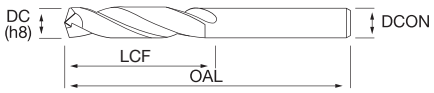
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**24÷28**	**20÷24**	**10÷14**	**10÷14**	**24÷28**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	2	0.032	0.027	0.022	0.022	0.035	
	2.5	0.040	0.034	0.028	0.028	0.044	
	3	0.048	0.041	0.034	0.034	0.053	
	3.5	0.056	0.048	0.039	0.039	0.062	
	4	0.064	0.054	0.045	0.045	0.070	
	5	0.072	0.061	0.050	0.050	0.079	
	6	0.080	0.068	0.056	0.056	0.088	
	7	0.088	0.075	0.062	0.062	0.097	
	8	0.096	0.082	0.067	0.067	0.106	
	9	0.104	0.088	0.073	0.073	0.114	
	10	0.112	0.095	0.078	0.078	0.123	
	11	0.120	0.102	0.084	0.084	0.132	
	12	0.128	0.109	0.090	0.090	0.141	
	13	0.136	0.116	0.095	0.095	0.150	

SORMA DIAMOND & CUTTING TOOLS

2692LS

- LS type for deep holes
- Extra-long/2
- For ▲ rank items, you may receive until stock exhaustion former edp 1692LS instead of 2692LS

P	M	K	N	S	H
★		★			





DIN 1869/2 | LS | HSS/Co BR | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
3	0/-0.018	3	130	190	1	**P2692LS0300**	●
3.5	0/-0.018	3.5	145	210	1	**P2692LS0350**	▲
4	0/-0.018	4	150	220	1	**P2692LS0400**	●
4.5	0/-0.018	4.5	160	235	1	**P2692LS0450**	▲
5	0/-0.018	5	170	245	1	**P2692LS0500**	●
5.5	0/-0.018	5.5	180	260	1	**P2692LS0550**	●
6	0/-0.018	6	180	260	1	**P2692LS0600**	●
6.5	0/-0.022	6.5	190	275	1	**P2692LS0650**	●
7	0/-0.022	7	200	290	1	**P2692LS0700**	▲
7.5	0/-0.022	7.5	200	290	1	**P2692LS0750**	▲
8	0/-0.022	8	210	305	1	**P2692LS0800**	▲
8.5	0/-0.022	8.5	210	305	1	**P2692LS0850**	▲
9	0/-0.022	9	220	320	1	**P2692LS0900**	●
9.5	0/-0.022	9.5	220	320	1	**P2692LS0950**	▲
10	0/-0.022	10	235	340	1	**P2692LS1000**	●
10.5	0/-0.027	10.5	235	340	1	**P2692LS1050**	▲
11	0/-0.027	11	250	365	1	**P2692LS1100**	▲
12	0/-0.027	12	260	375	1	**P2692LS1200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

2692LS

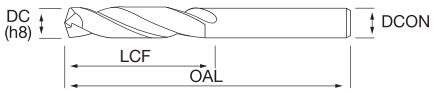
	Material Group ISO 513	P1 P2	P3 P4	K1 K2			
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	150÷350 HB			
	Vc (m/min)	**20÷24**	**16÷20**	**20÷24**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3.5	0.045	0.038	0.050			
	4	0.053	0.045	0.058			
	5	0.060	0.051	0.066			
	6	0.068	0.057	0.074			
	7	0.075	0.064	0.083			
	8	0.083	0.070	0.091			
	9	0.090	0.077	0.099			
	10	0.098	0.083	0.107			
	11	0.105	0.089	0.116			
	12	0.113	0.096	0.124			
	13	0.120	0.102	0.132			

SORMA DIAMOND & CUTTING TOOLS

2693LS

- LS type for deep holes
- Extra-long/3
- For ▲ rank items, you may receive until stock exhaustion former edp 1693LS instead of 2693LS

P	M	K	N	S	H
★		★			





DIN 1869/3 | LS | HSS/Co BR | SIG 130° | FHA 35°

DC	DC tol.	DCON	LCF	OAL	Packaging	EDP no.	Stock
3.5	0/-0.018	3.5	180	265	1	**P2693LS0350**	▲
4	0/-0.018	4	190	280	1	**P2693LS0400**	●
4.5	0/-0.018	4.5	200	295	1	**P2693LS0450**	▲
5	0/-0.018	5	210	315	1	**P2693LS0500**	●
5.5	0/-0.018	5.5	225	330	1	**P2693LS0550**	▲
6	0/-0.018	6	225	330	1	**P2693LS0600**	●
6.5	0/-0.022	6.5	235	350	1	**P2693LS0650**	▲
7	0/-0.022	7	250	370	1	**P2693LS0700**	▲
7.5	0/-0.022	7.5	250	370	1	**P2693LS0750**	▲
8	0/-0.022	8	265	390	1	**P2693LS0800**	▲
8.5	0/-0.022	8.5	265	390	1	**P2693LS0850**	●
9	0/-0.022	9	280	410	1	**P2693LS0900**	●
9.5	0/-0.022	9.5	280	410	1	**P2693LS0950**	▲
10	0/-0.022	10	295	430	1	**P2693LS1000**	▲
10.5	0/-0.027	10.5	295	430	1	**P2693LS1050**	●
11	0/-0.027	11	310	455	1	**P2693LS1100**	▲
12	0/-0.027	12	330	480	1	**P2693LS1200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

2693LS

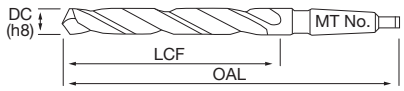
	Material Group ISO 513	P1 P2	P3 P4	K1 K2			
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	150÷350 HB			
	Vc (m/min)	**15÷25**	**10÷20**	**15÷25**			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3.5	0.045	0.038	0.050			
	4	0.053	0.045	0.058			
	5	0.060	0.051	0.066			
	6	0.068	0.057	0.074			
	7	0.075	0.064	0.083			
	8	0.083	0.070	0.091			
	9	0.090	0.077	0.099			
	10	0.098	0.083	0.107			
	11	0.105	0.089	0.116			
	12	0.113	0.096	0.124			
	13	0.120	0.102	0.132			

SORMA DIAMOND & CUTTING TOOLS

145N

- N type for general purpose
- MT shank
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 345 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
5	0/-0.018	1	52	133	1	P145N0500N	●
5.5	0/-0.018	1	57	138	1	P145N0550N	●
6	0/-0.018	1	57	138	1	P145N0600N	●
6.5	0/-0.022	1	63	144	1	P145N0650N	●
6.75	0/-0.022	1	69	150	1	P145N0675N	●
7	0/-0.022	1	69	150	1	P145N0700N	●
7.5	0/-0.022	1	69	150	1	P145N0750N	●
8	0/-0.022	1	75	156	1	P145N0800N	●
8.5	0/-0.022	1	75	156	1	P145N0850N	●
9	0/-0.022	1	81	162	1	P145N0900N	●
9.5	0/-0.022	1	81	162	1	P145N0950N	●
10	0/-0.022	1	87	168	1	P145N1000N	●
10.25	0/-0.027	1	87	168	1	P145N1025N	●
10.5	0/-0.027	1	87	168	1	P145N1050N	●
11	0/-0.027	1	94	175	1	P145N1100N	●
11.5	0/-0.027	1	94	175	1	P145N1150N	●
12	0/-0.027	1	101	182	1	P145N1200N	●
12.5	0/-0.027	1	101	182	1	P145N1250N	●
13	0/-0.027	1	101	182	1	P145N1300	●
13.25	0/-0.027	1	108	189	1	P145N1325N	●
13.5	0/-0.027	1	108	189	1	P145N1350	●
13.75	0/-0.027	1	108	189	1	P145N1375N	●
14	0/-0.027	1	108	189	1	P145N1400	●
14.25	0/-0.027	2	114	212	1	P145N1425N	●
14.5	0/-0.027	2	114	212	1	P145N1450	●
14.75	0/-0.027	2	114	212	1	P145N1475N	●
15	0/-0.027	2	114	212	1	P145N1500	●
15	0/-0.027	2	114	212	1	P145N1525N	●
15.5	0/-0.027	2	120	218	1	P145N1550	●
15.75	0/-0.027	2	120	218	1	P145N1575N	●
16	0/-0.027	2	120	218	1	P145N1600	●
16.25	0/-0.027	2	120	218	1	P145N1625N	●
16.5	0/-0.027	2	125	223	1	P145N1650	●
16.75	0/-0.027	2	125	223	1	P145N1675N	●
17	0/-0.027	2	125	223	1	P145N1700	●
17.25	0/-0.027	2	130	228	1	P145N1725N	●
17.5	0/-0.027	2	130	228	1	P145N1750	●
17.75	0/-0.027	2	130	228	1	P145N1775N	●
18	0/-0.027	2	130	228	1	P145N1800	●
18.25	0/-0.033	2	135	233	1	P145N1825N	●
18.5	0/-0.033	2	135	233	1	P145N1850	●
18.75	0/-0.033	2	135	233	1	P145N1875N	●
19	0/-0.033	2	135	233	1	P145N1900	●
19.25	0/-0.033	2	140	238	1	P145N1925N	●
19.5	0/-0.033	2	140	238	1	P145N1950	●

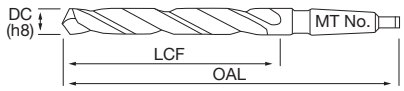
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

145N

- N type for general purpose
- MT shank
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 345 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
19.75	0/-0.033	2	140	238	1	**P145N1975N**	●
20	0/-0.033	2	140	238	1	**P145N2000**	●
20.25	0/-0.033	2	145	243	1	**P145N2025N**	●
20.5	0/-0.033	2	145	243	1	**P145N2050**	●
20.75	0/-0.033	2	145	243	1	**P145N2075N**	●
21	0/-0.033	2	145	243	1	**P145N2100**	●
21.25	0/-0.033	2	150	248	1	**P145N2125N**	●
21.5	0/-0.033	2	150	248	1	**P145N2150**	●
21.75	0/-0.033	2	150	248	1	**P145N2175N**	●
22	0/-0.033	2	150	248	1	**P145N2200**	●
22.25	0/-0.033	2	150	248	1	**P145N2225N**	●
22.5	0/-0.033	2	155	253	1	**P145N2250**	●
22.75	0/-0.033	2	155	253	1	**P145N2275N**	●
23	0/-0.033	2	155	253	1	**P145N2300**	●
23.25	0/-0.033	3	155	276	1	**P145N2325N**	●
23.5	0/-0.033	3	155	276	1	**P145N2350**	●
23.75	0/-0.033	3	160	281	1	**P145N2375N**	●
24	0/-0.033	3	160	281	1	**P145N2400**	●
24.25	0/-0.033	3	160	281	1	**P145N2425N**	●
24.5	0/-0.033	3	160	281	1	**P145N2450**	●
24.75	0/-0.033	3	160	281	1	**P145N2475N**	●
25	0/-0.033	3	160	281	1	**P145N2500**	●
25.5	0/-0.033	3	165	286	1	**P145N2550**	●
26	0/-0.033	3	165	286	1	**P145N2600**	●
26.5	0/-0.033	3	165	286	1	**P145N2650**	●
27	0/-0.033	3	170	291	1	**P145N2700**	●
27.5	0/-0.033	3	170	291	1	**P145N2750**	●
28	0/-0.033	3	170	291	1	**P145N2800**	●
28.5	0/-0.033	3	175	296	1	**P145N2850**	●
29	0/-0.033	3	175	296	1	**P145N2900**	●
29.5	0/-0.033	3	175	296	1	**P145N2950**	●
30	0/-0.033	3	175	296	1	**P145N3000**	●
30.5	0/-0.039	3	180	301	1	**P145N3050**	●
31	0/-0.039	3	180	301	1	**P145N3100**	●
31.5	0/-0.039	3	180	301	1	**P145N3150**	●
32	0/-0.039	4	185	334	1	**P145N3200**	●
32.5	0/-0.039	4	185	334	1	**P145N3250**	●
33	0/-0.039	4	185	334	1	**P145N3300**	●
33.5	0/-0.039	4	185	334	1	**P145N3350**	●
34	0/-0.039	4	190	339	1	**P145N3400**	●
34.5	0/-0.039	4	190	339	1	**P145N3450**	●
35	0/-0.039	4	190	339	1	**P145N3500**	●
35.5	0/-0.039	4	190	339	1	**P145N3550**	●
36	0/-0.039	4	195	344	1	**P145N3600**	●
36.5	0/-0.039	4	195	344	1	**P145N3650**	●

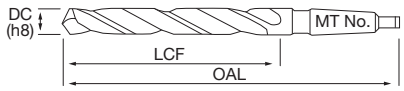
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

145N

- N type for general purpose
- MT shank
- Short

P	M	K	N	S	H
★		☆	☆		





DIN 345 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
37	0/-0.039	4	195	344	1	**P145N3700**	●
37.5	0/-0.039	4	195	344	1	**P145N3750**	●
38	0/-0.039	4	200	349	1	**P145N3800**	●
38.5	0/-0.039	4	200	349	1	**P145N3850**	●
39	0/-0.039	4	200	349	1	**P145N3900**	●
39.5	0/-0.039	4	200	349	1	**P145N3950**	●
40	0/-0.039	4	200	349	1	**P145N4000**	●
40.5	0/-0.039	4	205	354	1	**P145N4050**	●
41	0/-0.039	4	205	354	1	**P145N4100**	●
42	0/-0.039	4	205	354	1	**P145N4200**	●
43	0/-0.039	4	210	359	1	**P145N4300**	●
44	0/-0.039	4	210	359	1	**P145N4400**	○
45	0/-0.039	4	210	359	1	**P145N4500**	●
46	0/-0.039	4	215	364	1	**P145N4600**	●
47	0/-0.039	4	215	364	1	**P145N4700**	●
48	0/-0.039	4	220	369	1	**P145N4800**	●
49	0/-0.039	4	220	369	1	**P145N4900**	●
50	0/-0.039	4	220	369	1	**P145N5000**	●
55	0/-0.046	5	230	417	1	**P145N5500**	●
60	0/-0.046	5	235	422	1	**P145N6000**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

145N

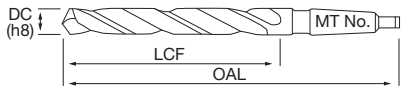
	Material Group ISO 513	P1 P2	P3 P4	K1 K2	N1 N5	N2 N3 N4	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	150÷350 HB			
	Vc (m/min)	**25÷35**	**20÷30**	**25÷35**	**50÷70**	**40÷60**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	5	0.100	0.085	0.110	0.140	0.100	
	6	0.120	0.102	0.132	0.168	0.120	
	7	0.140	0.119	0.154	0.196	0.140	
	8	0.160	0.136	0.176	0.224	0.160	
	9	0.180	0.153	0.198	0.252	0.180	
	10	0.200	0.170	0.220	0.280	0.200	
	11	0.208	0.177	0.229	0.291	0.208	
	12	0.216	0.184	0.238	0.302	0.216	
	13	0.224	0.190	0.246	0.314	0.224	
	14	0.232	0.197	0.255	0.325	0.232	
	15	0.240	0.204	0.264	0.336	0.240	
	16	0.250	0.213	0.275	0.350	0.250	
	17	0.265	0.225	0.292	0.371	0.265	
	18	0.280	0.238	0.308	0.392	0.280	
	19	0.295	0.251	0.325	0.413	0.295	
	20	0.315	0.268	0.347	0.441	0.315	
	22	0.330	0.281	0.363	0.462	0.330	
	25	0.350	0.298	0.385	0.490	0.350	
	27	0.370	0.315	0.407	0.518	0.370	
	30	0.400	0.340	0.440	0.560	0.400	
	35	0.450	0.383	0.495	0.630	0.450	
	40	0.500	0.425	0.550	0.700	0.500	
	45	0.560	0.476	0.616	0.784	0.560	
	50	0.630	0.536	0.693	0.882	0.630	
	55	0.700	0.595	0.770	0.980	0.700	
	60	0.800	0.680	0.880	1.120	0.800	

SORMA DIAMOND & CUTTING TOOLS

245N

- N type for stainless steel and tough materials
- MT shank
- Short

P	M	K	N	S	H
★	★	☆	☆	☆	





DIN 345 | NH | HSS/Co BR | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
13	0/-0.027	1	101	182	1	**P245N1300N**	●
13.5	0/-0.027	1	108	189	1	**P245N1350N**	●
14	0/-0.027	1	108	189	1	**P245N1400N**	●
14.5	0/-0.027	2	114	212	1	**P245N1450N**	●
15	0/-0.027	2	114	212	1	**P245N1500N**	●
15.5	0/-0.027	2	120	218	1	**P245N1550N**	●
16	0/-0.027	2	120	218	1	**P245N1600N**	●
16.5	0/-0.027	2	125	223	1	**P245N1650N**	●
17	0/-0.027	2	125	223	1	**P245N1700N**	●
17.5	0/-0.027	2	130	228	1	**P245N1750N**	●
18	0/-0.027	2	130	228	1	**P245N1800N**	●
18.5	0/-0.033	2	135	233	1	**P245N1850N**	●
19	0/-0.033	2	135	233	1	**P245N1900N**	●
19.5	0/-0.033	2	140	238	1	**P245N1950N**	●
20	0/-0.033	2	140	238	1	**P245N2000N**	●
20.5	0/-0.033	2	145	243	1	**P245N2050N**	●
21	0/-0.033	2	145	243	1	**P245N2100N**	●
21.5	0/-0.033	2	150	248	1	**P245N2150N**	●
22	0/-0.033	2	150	248	1	**P245N2200N**	●
22.5	0/-0.033	2	155	253	1	**P245N2250N**	●
23	0/-0.033	2	155	253	1	**P245N2300N**	●
23.5	0/-0.033	3	155	276	1	**P245N2350N**	●
24	0/-0.033	3	160	281	1	**P245N2400N**	●
24.5	0/-0.033	3	160	281	1	**P245N2450N**	●
25	0/-0.033	3	160	281	1	**P245N2500N**	●
26	0/-0.033	3	165	286	1	**P245N2600N**	●
27	0/-0.033	3	170	291	1	**P245N2700N**	●
28	0/-0.033	3	170	291	1	**P245N2800N**	○
29	0/-0.033	3	175	296	1	**P245N2900N**	●
30	0/-0.033	3	175	296	1	**P245N3000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

245N

	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²				
	Vc (m/min)	**25÷35**	**20÷30**	**12÷18**	**12÷18**	**8÷12**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	13	0.224	0.190	0.157	0.157	0.112	
	14	0.232	0.197	0.162	0.162	0.116	
	15	0.240	0.204	0.168	0.168	0.120	
	16	0.250	0.213	0.175	0.175	0.125	
	17	0.265	0.225	0.186	0.186	0.133	
	18	0.280	0.238	0.196	0.196	0.140	
	19	0.295	0.251	0.207	0.207	0.148	
	20	0.315	0.268	0.221	0.221	0.158	
	22	0.330	0.281	0.231	0.231	0.165	
	25	0.350	0.298	0.245	0.245	0.175	
	27	0.370	0.315	0.259	0.259	0.185	
	30	0.400	0.340	0.280	0.280	0.200	

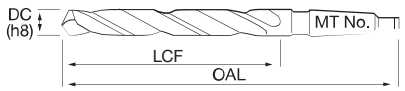
	Material Group ISO 513	K1 K2	K3 K4	N1 N5	N2 N3 N4	S1 S2 S4	
	Hardness/Rm	150÷350 HB	<350 HB			<35 HRC	
	Vc (m/min)	**25÷35**	**20÷30**	**50÷70**	**40÷60**	**8÷12**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	13	0.246	0.168	0.314	0.224	0.090	
	14	0.255	0.174	0.325	0.232	0.093	
	15	0.264	0.180	0.336	0.240	0.096	
	16	0.275	0.188	0.350	0.250	0.100	
	17	0.292	0.199	0.371	0.265	0.106	
	18	0.308	0.210	0.392	0.280	0.112	
	19	0.325	0.221	0.413	0.295	0.118	
	20	0.347	0.236	0.441	0.315	0.126	
	22	0.363	0.248	0.462	0.330	0.132	
	25	0.385	0.263	0.490	0.350	0.140	
	27	0.407	0.278	0.518	0.370	0.148	
	30	0.440	0.300	0.560	0.400	0.160	

SORMA DIAMOND & CUTTING TOOLS

141N

- N type for deep holes
- MT shank
- Long
- For ▲ rank items, you may receive until stock exhaustion former edp 241LS instead of 141N

P	M	K	N	S	H
★	☆	★			





DIN 341 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
14	0/-0.027	1	142	223	1	**P141N1400N**	●
14.5	0/-0.027	2	147	245	1	**P141N1450N**	○
15	0/-0.027	2	147	245	1	**P141N1500N**	●
15.5	0/-0.027	2	153	251	1	**P141N1550N**	○
16	0/-0.027	2	153	251	1	**P141N1600N**	●
16.5	0/-0.027	2	159	257	1	**P141N1650N**	●
17	0/-0.027	2	159	257	1	**P141N1700N**	●
17.5	0/-0.027	2	165	263	1	**P141N1750N**	▲
18	0/-0.027	2	165	263	1	**P141N1800N**	●
18.5	0/-0.033	2	171	269	1	**P141N1850N**	▲
19	0/-0.033	2	171	269	1	**P141N1900N**	●
19.5	0/-0.033	2	177	275	1	**P141N1950N**	▲
20	0/-0.033	2	177	275	1	**P141N2000N**	●
21	0/-0.033	2	184	282	1	**P141N2100N**	●
22	0/-0.033	2	191	289	1	**P141N2200N**	●
23	0/-0.033	2	198	296	1	**P141N2300N**	▲
24	0/-0.033	3	206	327	1	**P141N2400N**	▲
25	0/-0.033	3	206	327	1	**P141N2500N**	▲
26	0/-0.033	3	214	335	1	**P141N2600N**	○
27	0/-0.033	3	222	343	1	**P141N2700N**	○
28	0/-0.033	3	222	343	1	**P141N2800N**	○
29	0/-0.033	3	230	351	1	**P141N2900N**	○
30	0/-0.033	3	230	351	1	**P141N3000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

141N

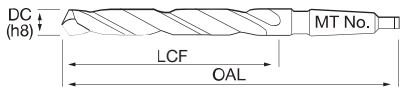
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**15÷25**	**10÷20**	**10÷14**	**10÷14**	**20÷30**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	13	0.160	0.136	0.112	0.112	0.176	
	14	0.170	0.145	0.119	0.119	0.187	
	15	0.180	0.153	0.126	0.126	0.198	
	16	0.200	0.170	0.140	0.140	0.220	
	17	0.190	0.162	0.133	0.133	0.209	
	18	0.205	0.174	0.144	0.144	0.226	
	19	0.220	0.187	0.154	0.154	0.242	
	20	0.235	0.200	0.165	0.165	0.259	
	21	0.250	0.213	0.175	0.175	0.275	
	22	0.265	0.225	0.186	0.186	0.292	
	23	0.280	0.238	0.196	0.196	0.308	
	24	0.295	0.251	0.207	0.207	0.325	
	25	0.310	0.264	0.217	0.217	0.341	
	26	0.325	0.276	0.228	0.228	0.358	
	27	0.340	0.289	0.238	0.238	0.374	
	28	0.355	0.302	0.249	0.249	0.391	
	29	0.370	0.315	0.259	0.259	0.407	
	30	0.385	0.327	0.270	0.270	0.424	

SORMA DIAMOND & CUTTING TOOLS

1701N

- N type for deep holes
- MT shank
- Extra-long/1
- For ▲ rank items, you may receive until stock exhaustion former edp 2701LS instead of 1701N

P	M	K	N	S	H
★	☆	★			





DIN 1870/1 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
13	0/-0.027	1	205	310	1	**P1701N1300N**	▲
13.5	0/-0.027	1	220	325	1	**P1701N1350N**	○
14	0/-0.027	1	220	325	1	**P1701N1400N**	●
14.5	0/-0.027	2	220	340	1	**P1701N1450N**	○
15	0/-0.027	2	220	340	1	**P1701N1500N**	●
15.5	0/-0.027	2	230	355	1	**P1701N1550N**	○
16	0/-0.027	2	230	355	1	**P1701N1600N**	●
16.5	0/-0.027	2	230	355	1	**P1701N1650N**	○
17	0/-0.027	2	230	355	1	**P1701N1700N**	▲
17.5	0/-0.027	2	245	370	1	**P1701N1750N**	○
18	0/-0.027	2	245	370	1	**P1701N1800N**	●
18.5	0/-0.033	2	245	370	1	**P1701N1850N**	▲
19	0/-0.033	2	245	370	1	**P1701N1900N**	●
19.5	0/-0.033	2	260	385	1	**P1701N1950N**	▲
20	0/-0.033	2	260	385	1	**P1701N2000N**	●
21	0/-0.033	2	260	385	1	**P1701N2100N**	○
22	0/-0.033	2	270	405	1	**P1701N2200N**	●
23	0/-0.033	2	270	405	1	**P1701N2300N**	▲
24	0/-0.033	3	290	440	1	**P1701N2400N**	▲
25	0/-0.033	3	290	440	1	**P1701N2500N**	●
26	0/-0.033	3	290	440	1	**P1701N2600N**	●
27	0/-0.033	3	305	460	1	**P1701N2700N**	▲
28	0/-0.033	3	305	460	1	**P1701N2800N**	▲
29	0/-0.033	3	305	460	1	**P1701N2900N**	○
30	0/-0.033	3	305	460	1	**P1701N3000N**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

1701N

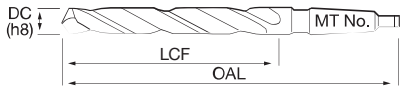
	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²			150÷350 HB	
	Vc (m/min)	**20÷24**	**16÷20**	**8÷12**	**8÷12**	**20÷24**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	13	0.140	0.119	0.098	0.098	0.154	
	14	0.150	0.128	0.105	0.105	0.165	
	15	0.160	0.136	0.112	0.112	0.176	
	16	0.180	0.153	0.126	0.126	0.198	
	17	0.190	0.162	0.133	0.133	0.209	
	18	0.200	0.170	0.140	0.140	0.220	
	19	0.210	0.179	0.147	0.147	0.231	
	20	0.220	0.187	0.154	0.154	0.242	
	21	0.220	0.187	0.154	0.154	0.242	
	22	0.230	0.196	0.161	0.161	0.253	
	23	0.250	0.213	0.175	0.175	0.275	
	24	0.260	0.221	0.182	0.182	0.286	
	25	0.280	0.238	0.196	0.196	0.308	
	26	0.290	0.247	0.203	0.203	0.319	
	27	0.300	0.255	0.210	0.210	0.330	
	28	0.310	0.264	0.217	0.217	0.341	
	29	0.325	0.276	0.228	0.228	0.358	
	30	0.340	0.289	0.238	0.238	0.374	

SORMA DIAMOND & CUTTING TOOLS

1702N

- N type for deep holes
- MT shank
- Extra-long/2
- For ▲ rank items, you may receive until stock exhaustion former edp 2702LS instead of 1702N

P	M	K	N	S	H
★	☆	★			





DIN 1870/2 | N | HSS OX | SIG 118° | FHA 30°

DC	DC tol.	MT No.	LCF	OAL	Packaging	EDP no.	Stock
13	0/-0.027	1	260	395	1	**P1702N1300**	●
14	0/-0.027	1	275	410	1	**P1702N1400**	●
14.5	0/-0.027	2	275	425	1	**P1702N1450**	○
15	0/-0.027	2	275	425	1	**P1702N1500**	●
15.5	0/-0.027	2	295	445	1	**P1702N1550**	▲
16	0/-0.027	2	295	445	1	**P1702N1600**	●
16.5	0/-0.027	2	295	445	1	**P1702N1650**	▲
17	0/-0.027	2	295	445	1	**P1702N1700**	●
17.5	0/-0.027	2	310	465	1	**P1702N1750**	○
18	0/-0.027	2	310	465	1	**P1702N1800**	●
18.5	0/-0.033	2	310	465	1	**P1702N1850**	○
19	0/-0.033	2	310	465	1	**P1702N1900**	▲
19.5	0/-0.033	2	325	490	1	**P1702N1950**	▲
20	0/-0.033	2	325	490	1	**P1702N2000**	▲
21	0/-0.033	2	325	490	1	**P1702N2100**	○
22	0/-0.033	2	345	515	1	**P1702N2200**	●
23	0/-0.033	2	345	515	1	**P1702N2300**	▲
24	0/-0.033	3	365	555	1	**P1702N2400**	▲
25	0/-0.033	3	365	555	1	**P1702N2500**	▲
26	0/-0.033	3	365	555	1	**P1702N2600**	▲
27	0/-0.033	3	385	580	1	**P1702N2700**	▲
28	0/-0.033	3	385	580	1	**P1702N2800**	▲
29	0/-0.033	3	385	580	1	**P1702N2900**	▲
30	0/-0.033	3	385	580	1	**P1702N3000**	▲

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

1702N

	Material Group ISO 513	P1 P2	P3 P4	P7	M1	K1 K2	
	Hardness/Rm	500÷700 N/mm²	600÷1000 N/mm²	<700 N/mm²	<750 N/mm²	150÷350 HB	
	Vc (m/min)	**20÷24**	**16÷20**	**8÷12**	**8÷12**	**20÷24**	
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
	13	0.130	0.111	0.091	0.091	0.143	
	14	0.140	0.119	0.098	0.098	0.154	
	15	0.150	0.128	0.105	0.105	0.165	
	16	0.160	0.136	0.112	0.112	0.176	
	17	0.170	0.145	0.119	0.119	0.187	
	18	0.180	0.153	0.126	0.126	0.198	
	19	0.190	0.162	0.133	0.133	0.209	
	20	0.200	0.170	0.140	0.140	0.220	
	21	0.210	0.179	0.147	0.147	0.231	
	22	0.220	0.187	0.154	0.154	0.242	
	23	0.230	0.196	0.161	0.161	0.253	
	24	0.240	0.204	0.168	0.168	0.264	
	25	0.250	0.213	0.175	0.175	0.275	
	26	0.270	0.230	0.189	0.189	0.297	
	27	0.280	0.238	0.196	0.196	0.308	
	28	0.290	0.247	0.203	0.203	0.319	
	29	0.300	0.255	0.210	0.210	0.330	
	30	0.310	0.264	0.217	0.217	0.341	



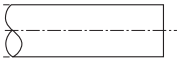
CARBIDE END MILLS

Caption .J2
Selection Guide .J6
G2 .J17
HF VH/UP .J85
MEF .J189
ALU .J203
MEX/MH .J235
UH/MH .J295

CAPTION

STOCK *		
●	stock standard stock standard	Standard Lager stock standard
◉	non-stock standard (no MOQ) non-standard stock (no MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
○	non-stock standard (MOQ) non-standard stock (MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
▲	upcoming product prossima introduzione	kommende Produkt prochaine introduction
▽	stock exhaustion esaurimento stock	Vorraterschöpfung épuisement du stock

APPLICATION GUIDELINES / INDICAZIONI PER L'APPLICAZIONE / LEITFADEN ZUR ANWENDUNG / INDICATIONS POUR L'APPLICATION		
★	1st choice 1a scelta	1. Wahl 1er choix
☆	suitable adatto	geeignet adapté

SHANK / ATTACCO / SCHAF / QUEUET		
	cylindrical shank attacco cilindrico	zylindrischer Schaft queue cylindrique
	Weldon	

MILLING STRATEGY / STRATEGIA DI FRESATURA / FRÄSSTRATEGIE / STRATÉGIES DE FRAISAGE		
	slotting fresatura di cave	Nutfräsen rainurage
 	side milling contornatura	Konturfräsen contournage
	3D machining fresatura 3D	3D-Bearbeitung fraisage 3D
	square rib nervatura piana	Flachrippen rainurage
	copying copiatura	Kopieren copiage
	round rib nervatura raggiata	Rundrippen rainurage rayonné
	helical interpolazione elicoidale	Helixinterpolation interpolation hélicoïdale

* The stock category of items in this catalogue may change without prior notice
La categoria di stock dei prodotti a catalogo può variare senza preavviso
La catégorie de stock des articles dans ce catalogue peut être modifiée sans préavis.
Die Einstufung der Produkte kann sich jederzeit ändern

CAPTION

SORMA DIAMOND & CUTTING TOOLS

MILLING STRATEGY · STRATEGIA DI FRESATURA · FRÄSSTRATEGIE · STRATÉGIES DE FRAISAGE		
	ramping entrata in rampa	Rampen entrée en ramping
	vertical fresatura assiale	Vertikalfräsen fraisage axial
	drilling foratura	Bohren perçage
	trochoidal fresatura trocoidale	trochoidales Fräsen fraisage trochoïdal
	chamfering svasatura	Ansenkung chanfreiner

GEOMETRY · GEOMETRIA · GEOMETRIE · GÉOMÉTRIE		
N	general purpose uso generico	allgemeine Anwendung applications génériques
HF UNI	< 40 HRC variable helix and unequal pitch < 40 HRC elica variabile e passo differenziato	< 40 HRC ungleicher Teilung und Winkel < 40 HRC hélice et pas décalé
HF HARD	30÷55 HRC unequal pitch 30÷55 HRC passo differenziato	30÷55 HRC ungleicher Teilung 30÷55 HRC pas décalé
MEF	for stainless steel per acciaio inossidabile	für rostfreien Stahl pour acier inoxydable
ALU	for aluminium per alluminio	für Aluminium pour aluminium
HF ALU	unequal pitch (UP) for Aluminium passo differenziato (UP) per alluminio	ungleiche Teilung (UP) für Aluminium pas décalé (UP) pour aluminium
MEX	30÷55 HRC general purpose and hardened steel 30÷55 HRC uso generico e acciaio temprato	30÷55 HRC allgemeine Anwendung und gehärtete Stähle 30÷55 HRC utilisation générale et aciers trempés
MH	30÷70 HRC general purpose and hardened steel 30÷70 HRC uso generico e acciaio temprato	30÷70 HRC allgemeine Anwendung und gehärtete Stähle 30÷70 HRC utilisation générale et aciers trempés
UH	< 70 HRC for hardened steel < 70 HRC per acciai temprati	< 70 HRC für Hartstahl < 70 HRC pour acier trempé

TYPE · TIPO · TYP · TYPE		
	sharp corner spigolo vivo	scharfe Kante arête vive
	45° chamfer smusso a 45°	45° abgeschrägt biseau à 45°

CAPTION

SORMA DIAMOND & CUTTING TOOLS

TYPE · TIPO · TYP · TYPE		
 RADIUS	corner radius torica	Eckradius torique
 BALL NOSE	ball nose raggiata	runder Stirn bout hémisphérique
 HIGH FEED	high feed alto avanzamento	hoher Vorschub haute vitesse

NR. OF FLUTES · N. DI TAGLIENTI · ANZAHL DER SCHNEIDEN · NOMBRE DE DENTS		
 ZEFP 1	single flute monotagliente	Einzelschneide monocoupe
 ZEFP 2	2 flutes 2 taglienti	2 Schneiden 2 arêtes de coupe
 ZEFP 3	3 flutes 3 taglienti	3 Schneiden 3 arêtes de coupe
 ZEFP 3 UP	3 flutes unequal pitch 3 taglienti passo differenziato	3 Schneiden ungleiche Teilung 3 arêtes de coupe pas décalé
 ZEFP 4	4 flutes 4 taglienti	4 Schneiden 4 arêtes de coupe
 ZEFP 4 UP	4 flutes unequal pitch 4 taglienti passo differenziato	4 Schneiden ungleiche Teilung 4 arêtes de coupe pas décalé
 ZEFP 5	5 flutes 5 taglienti	5 Schneiden 5 arêtes de coupe
 ZEFP 5 UP	5 flutes unequal pitch 5 taglienti passo differenziato	5 Schneiden ungleiche Teilung 5 arêtes de coupe pas décalé
 ZEFP 6	6 flutes 6 taglienti	6 Schneiden 6 arêtes de coupe
 ZEFP 8	8 flutes 8 taglienti	8 Schneiden 8 arêtes de coupe

CHIPBREAKER STYLE · TIPO DI ROMPITRUCIOLO · SPÄNEBRECHER TYP · TYPE DE BRISE-COPEAUX		
 NR COARSE	roughing coarse pitch sgrossare passo grosso	Schruppfräser Regelprofil ébauche pas gros
 HR FINE	roughing fine pitch sgrossare passo fine	Schruppfräser Feinprofil ébauche pas fin

CAPTION

MATERIAL / MATERIALE / WERKSTOFF / MATIÈRE		
NMG ...	nano micrograin nano micrograna	nano Mikrokörnung nano micrograin
UMG ...	ultra fine micrograin micrograna ultra fine	ultrafeine Mikrokörnung micrograin ultra-fin
MG ...	micrograin micrograna	Mikrokörnung micrograin

SURFACE TREATMENT / TRATTAMENTO SUPERFICIALE / OBERFLÄCHENBEHANDLUNG / TRAITMENT DE SURFACE		
... BR	uncoated non rivestito	unbeschichtet non revêtu
... POLISHED	polished lappato	geläpptù poli

COATINGS / RIVESTIMENTI / BESCHICHTUNGEN / REVÊTEMENTS		... PV200	... PV300	... PV500	... ENDLESS ORANGE	... MH COAT	... UH RED	... DLC
hardness (HV) durezza (HV)	Härte (HV) dureté (HV)	3300	3300	3300	3300	3600	3600	4000
friction coefficient coefficiente d'attrito	Reibungskoeffizient coefficent de frottement	0.3	0.3	0.3	0.35	0.3	0.35	0.1
thickness (µ) spessore (µ)	dicke (µ) epaisseur (µ)	3	2.5÷3.5	2.5÷3.5	2.5÷3.5	2.5÷3.5	2.5÷3.5	0.1÷0.5
max working temperature (°C) temperatura max (°C)	hochste Temperatur (°C) température maximale (°C)	950°	1100°	1100°	1000°	1300°	1200°	500°

	ITEM NO.	PAGE	
G2 general purpose, square	GB205	J19	
	GBL2	J21	
	G2CS2	J23	
	G2WS2	J25	
	G2210	J27	
	G2211	J29	
	G2212	J31	
	GB305	J33	
	G2CSH3	J35	
	G2WSH3	J37	
	G2310	J39	
	G2311	J41	
	G2312	J43	
	GB405	J45	
	GBL4	J47	
	G2CS4	J49	
	G2WS4	J51	
	G2410	J53	
	G2411	J55	
	G2412	J57	
	G2413	J59	
	G2CSHM	J61	
G2 general purpose, HR roughing	G2CSFR	J63	
	G2WSFR	J65	
G2 general purpose, corner radius	G2CS2R	J67	
	G2CS4R	J69	
	G2CL4R	J71	

SORMA DIAMOND & CUTTING TOOLS

RANGE	NORM	TYPE	MATERIAL / COATING	HRC	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
1-12	OSAWA	N	MG BR	<45	30°	SQUARE	2	★	☆	★	☆		
3-12	OSAWA	N	MG BR	<45	30	SQUARE	2	★	☆	★	☆		
1-20	OSAWA	N	MG PV200	<45	30°	SQUARE	2	★	☆	★	☆		
3-20	OSAWA	N	MG PV200	<45	30°	SQUARE	2	★	☆	★	☆		
2-8	OSAWA	N	MG PV200	<45	30°	SQUARE	2	★	☆	★	☆		
5-12	OSAWA	N	MG PV200	<45	30°	SQUARE	2	★	☆	★	☆		
8-16	OSAWA	N	MG PV200	<45	30°	SQUARE	2	★	☆	★	☆		
1-12	OSAWA	N	MG BR	<45	45°	SQUARE	3	★	☆	★	☆		
1-20	OSAWA	N	MG PV200	<45	45°	SQUARE	3	★	☆	★	☆		
3-20	OSAWA	N	MG PV200	<45	45°	SQUARE	3	★	☆	★	☆		
2-6	OSAWA	N	MG PV200	<45	45°	SQUARE	3	★	☆	★	☆		
4-12	OSAWA	N	MG PV200	<45	45°	SQUARE	3	★	☆	★	☆		
8-20	OSAWA	N	MG PV200	<45	45°	SQUARE	3	★	☆	★	☆		
1-12	OSAWA	N	MG BR	<45	30°	SQUARE	4	★	☆	★	☆		
3-12	OSAWA	N	MG BR	<45	30	SQUARE	4	★	☆	★	☆		
1-25	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
3-20	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
2-8	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
3-16	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
6-20	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
16-20	OSAWA	N	MG PV200	<45	30°	SQUARE	4	★	☆	★	☆		
6-20	OSAWA	N	MG PV200	<45	45°	SQUARE	6	★	☆	★	☆		
4-20	OSAWA	HR	MG PV200	<45	30°	SQUARE	3-4	★	☆	★	☆		
6-20	OSAWA	HR	MG PV200	<45	30°	SQUARE	3-4	★	☆	★	☆		
1-12	OSAWA	N	MG PV200	<45	30°	CORNER RADIUS	2	★	☆	★	☆		
1-12	OSAWA	N	MG PV200	<45	30°	CORNER RADIUS	4	★	☆	★	☆		
2-12	OSAWA	N	MG PV200	<45	30°	CORNER RADIUS	4	★	☆	★	☆		

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
G2 general purpose, ball nose	**GB255**	J73	
	G2CSB2	J75	
	G2250	J77	
	G2251	J79	
	G2CSB4	J81	
G2 general purpose, chamfering	**G2WC 90**	J83	
HF UNI < 40 HRC, 45° chamfer	**HF840**	J89	
	HF440	J93	
	HF441	J98	
	HF6441	J104	
HF UNI < 40 HRC, HR roughing	**HF844**	J109	
	HF444	J113	
	HF445	J117	
HF UNI < 40 HRC, corner radius	**HF342**	J122	
	HF842	J125	
	HF442	J129	
	HF443	J134	
	HF542	J139	
	HF942	J142	
	HF943	J146	
	HF642	J150	
	HF643	J153	
	HF742	J156	
	HF743	J159	
	HF535T	J162	
HF SC <40HRC, 45° chamfer	**HF471**	J164	
HF HARD 30÷55 HRC, 45° chamfer	**HF850**	J169	
	HF450	J173	
	HF451	J177	

SORMA DIAMOND & CUTTING TOOLS

RANGE	NORM	TYPE	MATERIAL / COATING	HRC	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
1-12	OSAWA	N	MG BR	<45	30°	BALL NOSE	2	★	☆	★	☆		
1-20	OSAWA	N	MG PV200	<45	30°	BALL NOSE	2	★	☆	★	☆		
1-12	OSAWA	N	MG PV200	<45	30°	BALL NOSE	2	★	☆	★	☆		
6-20	OSAWA	N	MG PV200	<45	30°	BALL NOSE	2	★	☆	★	☆		
1-20	OSAWA	N	MG PV200	<45	30°	BALL NOSE	4	★	☆	★	☆		
1-20	OSAWA	N	MG PV200	<45	-	-	3-4	★	☆	★	☆		
3-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
3-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
3-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
1-20	OSAWA	VH/UP	MG PV500	<40	36°-39°	CHAMFER 45°	4	★	★	★			
6-20	OSAWA	VH/UP – HR	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
6-20	OSAWA	VH/UP – HR	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
6-20	OSAWA	VH/UP – HR	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
3-12	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
4-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
3-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
3-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
6-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
4-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
4-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CORNER RADIUS	4	★	★	★		★	
4-20	OSAWA	VH	MG PV300	<40	36°-37°-38°	CORNER RADIUS	5	★	★	★		★	
4-20	OSAWA	VH	MG PV300	<40	36°-37°-38°	CORNER RADIUS	5	★	★	★		★	
6-20	OSAWA	VH	MG PV300	<40	36°-37°-38°	CORNER RADIUS	5	★	★	★		★	
6-20	OSAWA	VH	MG PV300	<40	36°-37°-38°	CORNER RADIUS	5	★	★	★		★	
10-20	OSAWA	VH/UP TROCH	MG PV300	<45	36°-37°-38°	CORNER RADIUS	5	★	☆	★		☆	
1-20	OSAWA	VH/UP	MG PV300	<40	36°-39°	CHAMFER 45°	4	★	★	★		★	
3-20	OSAWA	UP	MG PV300	35÷55	40°	CHAMFER 45°	4	★	★	★		★	★
3-20	OSAWA	UP	MG PV300	35÷55	40°	CHAMFER 45°	4	★	★	★		★	★
3-20	OSAWA	UP	MG PV300	35÷55	40°	CHAMFER 45°	4	★	★	★		★	★

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
HF HARD 30÷55 HRC, corner radius	**HF852**	J181	
	HF452	J185	
MEF stainless steel and super alloys, square	**MEFCS2**	J192	
	MEFCSH3	J194	
	MEFCS4	J196	
	MEF600	J198	
MEF stainless steel and super alloys, roughing	**MEF901**	J200	
ALU unequal pitch, square	**HFAL4**	J206	
ALU unequal pitch, corner radius	**HFAL3**	J209	
	HFA3D	J212	
	HFA53	J215	
ALU square	**MDCSA1**	J218	
	MDCSA2	J220	
	MDCSA3	J223	
	MDA310	J225	
	MDA311	J227	
	MDA312	J229	
	MDCSAM	J231	
ALU ball nose	**MDCAB2**	J233	
MEX 30÷55 HRC, square	**MEXM2**	J238	
	MEXM2SC	J240	
	MEXLN2	J242	
	MEXCS2	J247	
	MEXCL2	J249	
	MEX400	J251	
	MEXCL4	J253	
	MEXCSHM	J255	
	MEXCLHM	J257	

SORMA DIAMOND & CUTTING TOOLS

RANGE	NORM	TYPE	MATERIAL / COATING	HRC	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
4-20	OSAWA	UP	MG PV300	35÷55	40°	CORNER RADIUS	4	★	★	★		★	★
3-20	OSAWA	UP	MG PV300	35÷55	40°	CORNER RADIUS	4	★	★	★		★	★
1-16	OSAWA	VA	UMG ENDLESS	<45	35°	SQUARE	2	★	★			★	
6-20	OSAWA	VA	UMG ENDLESS	<45	50°	SQUARE	3	★	★			★	
2-20	OSAWA	VA	UMG ENDLESS	<45	35°	SQUARE	4	★	★			★	
6-20	OSAWA	VA	UMG ENDLESS	<45	50°	SQUARE	6-8	★	★			★	
4-20	OSAWA	VA - HR	UMG ENDLESS	<45	45°	SQUARE	3-6	★	★			★	
3-20	OSAWA	UP ALU	MG BR		40°	SQUARE	4				★		
1-20	OSAWA	UP ALU	MG POLISHED		30°	CORNER RADIUS	3				★		
1-20	OSAWA	UP ALU	MG DLC		30°	CORNER RADIUS	3				★		
3-20	OSAWA	UP ALU	MG BR		30°	CORNER RADIUS	3				★		
2-12	OSAWA	ALU	MG POLISHED		25°	SQUARE	1				★		
1-20	OSAWA	ALU	MG POLISHED		45°	SQUARE	2				★		
1-20	OSAWA	ALU	MG POLISHED		55°	SQUARE	3				★		
3-6	OSAWA	ALU	MG POLISHED		55°	SQUARE	3				★		
3-12	OSAWA	ALU	MG POLISHED		55°	SQUARE	3				★		
8-20	OSAWA	ALU	MG POLISHED		55°	SQUARE	3				★		
6-12	OSAWA	ALU	MG POLISHED		50°	SQUARE	6				★		
1-12	OSAWA	ALU	MG POLISHED		40°	BALL NOSE	2				★		
0.3-2	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	SQUARE	2	★		★			★
0.2-0.9	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	SQUARE	2	★		★			★
0.2-4	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	SQUARE	2	★		★			★
1-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	SQUARE	2	★		★			★
1-12	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	SQUARE	2	★		★			★
1-25	OSAWA	MEX UP	UMG ENDLESS ORANGE	<55	40°	SQUARE	4	★		★			★
2-25	OSAWA	MEX	UMG ENDLESS ORANGE	<55	30°-40°	SQUARE	4	★		★			★
3-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	50°	SQUARE	6-8	★		★			★
3-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	50°	SQUARE	6-8	★		★			★

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
MEX 30÷55 HRC, corner radius	**MEXLN2R**	J259	
	MEXLS2R	J264	
	MEXCS4R	J266	
	MEX410R	J269	
	MEXLS4R	J271	
	MEX610R	J273	
	MEX611R	J275	
MEX 30÷55 HRC and MH 30÷70 HRC, ball nose	**MHMB204**	J277	
	MHMB206	J279	
	MHLNB2	J281	
	MHCRB2	J286	
	MEXCSB2	J288	
	MEXCLSB2	J290	
	MEX253	J292	
UH < 70 HRC, square	**UHM204**	J299	
	UHLN2	J301	
	UH600	J306	
	UH612	J308	
UH < 70 HRC, corner radius	**UHM206**	J310	
	UH211	J312	
	UH212	J314	
	UHCS2	J320	
	UHF4LN	J322	
	UHF-RT	J326	
	UHCS4	J328	
	UH410	J330	

SORMA DIAMOND & CUTTING TOOLS

RANGE	NORM	TYPE	MATERIAL / COATING	HRC	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
0.3-4	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	CORNER RADIUS	2	★		★			★
2-16	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	CORNER RADIUS	2	★		★			★
1-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	CORNER RADIUS	4	★		★			★
2-12	OSAWA	MEX	UMG ENDLESS ORANGE	<55	30°	CORNER RADIUS	4	★		★			★
2-16	OSAWA	MEX	UMG ENDLESS ORANGE	<55	40°	CORNER RADIUS	4	★		★			★
6-12	OSAWA	MEX	UMG ENDLESS ORANGE	<55	45°	CORNER RADIUS	6	★		★			★
6-12	OSAWA	MEX	UMG ENDLESS ORANGE	<55	45°	CORNER RADIUS	6	★		★			★
0.2-2	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	★		★			★
0.2-0.8	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	★		★			★
0.2-4	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	★		★			★
0.5-2	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	★		★			★
1-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	30°	BALL NOSE	2	★		★			★
1-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	30°	BALL NOSE	2	★		★			★
1-20	OSAWA	MEX	UMG ENDLESS ORANGE	<55	30°	BALL NOSE	2	★		★			★
0.1-0.9	OSAWA	UH	NMG UH RED	<70	40°	SQUARE	2	☆		☆			★
0.2-4	OSAWA	UH	NMG UH RED	<70	40°	SQUARE	2	☆		☆			★
3-20	OSAWA	UH	NMG UH RED	<70	50°	SQUARE	6-8	☆		☆			★
3-20	OSAWA	UH	NMG UH RED	<70	50°	SQUARE	6-8	☆		☆			★
0.3-2	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	2	☆		☆			★
1-6	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	2	☆		☆			★
0.2-4	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	2	☆		☆			★
1-12	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	2	☆		☆			★
1-4	OSAWA	UP – UH	NMG UH RED	<70	25°	CORNER RADIUS	4	☆		☆			★
2-12	OSAWA	UH	NMG UH RED	<70	25°	CORNER RADIUS	4-6	☆		☆			★
1-12	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	4	☆		☆			★
1-20	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	4	☆		☆			★

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
UH < 70 HRC, corner radius	**UH411**	J332	
	UH412	J334	
	UH413	J336	
	UH610R	J338	
	UH611R	J340	
UH < 70 HRC and MH 30÷70 HRC, ball nose	**MHMB204**	J342	
	MHMB206	J344	
	MHLNB2	J346	
	MHCRB2	J351	
	UHCSB2	J353	
	UH250	J355	
	UH253	J357	

RANGE	NORM	TYPE	MATERIAL / COATING	HRC	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
3-12	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	4	☆		☆			★
2-12	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	4	☆		☆			★
6-16	OSAWA	UH	NMG UH RED	<70	40°	CORNER RADIUS	4	☆		☆			★
6-12	OSAWA	UH	NMG UH RED	<70	50°	CORNER RADIUS	6	☆		☆			★
6-20	OSAWA	UH	NMG UH RED	<70	50°	CORNER RADIUS	6	☆		☆			★
0.2-0.8	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	☆		☆			★
0.4-0.8	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	☆		☆			★
0.2-4	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	☆		☆			★
0.5-2	OSAWA	MH	NMG MH COAT	30÷70	30°	BALL NOSE	2	☆		☆			★
1-20	OSAWA	UH	NMG UH RED	<70	30°	BALL NOSE	2	☆		☆			★
1-20	OSAWA	UH	NMG UH RED	<70	30°	BALL NOSE	2	☆		☆			★
1-20	OSAWA	UH	NMG UH RED	<70	30°	BALL NOSE	2	☆		☆			★

★ 1st choice ☆ suitable



G2

GENERAL PURPOSE

Range of general-purpose endmills, featuring new cutting geometries and innovative coatings for enhanced performance. The answer given by Osawa to the market demand for higher performance tools. Thanks to a fully optimized manufacturing process and to large production batches the G2 range excels in the cost-performance ratio.

Gamma di frese per uso generico, dotate di geometria di taglio e rivestimenti innovativi per garantire prestazioni ancora più elevate. La risposta di Osawa ad un mercato che chiede utensili sempre più performanti e competitivi. L'innovazione nei processi produttivi consente alla gamma G2 di eccellere nel rapporto qualità-prezzo.

Produktpalette von Fräser für allgemeine Anwendungen, ausgestattet mit einer Schnittgeometrie und innovativen Beschichtungen zur Gewährleistung noch höheren Leistungen. Die Antwort von Osawa auf einen Markt, der immer leistungsstärkere und wettbewerbsfähigere Werkzeuge fordert. Dank der Innovation der Produktionsprozesse zeichnet sich die Produktreihe G2 durch ein außergewöhnliches Preis-Leistungsverhältnis aus.

Gamme de fraises pour un usage général, dotées de géométrie de coupe et de revêtements innovants pour garantir des prestations encore plus élevées. C'est la réponse d'Osawa à un marché qui nécessite d'outils de plus en plus performants et compétitifs. L'innovation des processus de production permet à la gamme G2 d'avoir un rapport qualité-prix excellent.

G2

For general machining

Features of G2 end mills



Features and Benefits

- End mills range featuring very competitive cost-performance ratio
- Edge design for long life and stable processing
- Substrate and coating specifically developed for combining toughness and wear resistance on a wide range of workpiece materials

- Gamma caratterizzata da rapporto qualità-prezzo molto vantaggioso
- Geometria di taglio studiata per garantire lunga durata e processo stabile
- Substrato e rivestimento sviluppati per garantire elevata tenacità e resistenza all'usura su una grande varietà di materiali

- Das Angebot zeichnet sich durch ein sehr gutes Preis-Leistungs-Verhältnis aus
- Die Schneidegeometrie wurde für eine lange Standzeit und einen stabilen Prozess konzipiert
- Grundmaterial und Beschichtung wurden für hohe Robustheit und Verschleißfestigkeit bei einer Vielzahl von Materialien entwickelt

- Gamme caractérisée par un rapport qualité/prix très avantageux
- Géométrie de coupe conçue pour garantir longue durée et stabilité du processus
- Substrat et revêtement développés pour garantir grande solidité et haute résistance à l'usure sur une grande variété de matériaux

SORMA DIAMOND & CUTTING TOOLS

GB205

- Cylindrical shank
- 2 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	2	**GB205010**	●
1.5	0/-0.020	4	h6	4.5	50	2	**GB205015**	●
2	0/-0.020	4	h6	6	50	2	**GB205020**	●
3	0/-0.020	4	h6	8	50	2	**GB205030**	●
4	0/-0.020	4	h6	11	50	2	**GB205040**	●
5	0/-0.020	6	h6	13	50	2	**GB205050**	●
6	0/-0.020	6	h6	15	50	2	**GB205060**	●
8	0/-0.025	8	h6	20	60	2	**GB205080**	●
10	0/-0.025	10	h6	30	75	2	**GB205100**	●
12	0/-0.025	12	h6	30	75	2	**GB205120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

GB205

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.5D x D**
	Vc (m/min)	**50÷60**	**30÷50**	**20÷40**	**70÷90**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.014	0.012	0.011	0.018
	5	0.018	0.015	0.014	0.023
	6	0.023	0.020	0.017	0.030
	8	0.030	0.026	0.023	0.039
	10	0.038	0.032	0.029	0.049
	12	0.045	0.038	0.034	0.059

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷60**	**30÷50**	**20÷40**	**70÷90**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.004	0.003	0.006
	2	0.009	0.007	0.007	0.011
	3	0.013	0.011	0.009	0.016
	4	0.018	0.015	0.013	0.023
	5	0.023	0.019	0.017	0.029
	6	0.029	0.024	0.022	0.037
	8	0.038	0.032	0.028	0.049
	10	0.048	0.040	0.036	0.062
	12	0.056	0.048	0.042	0.073

< D3 mm: ae = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**40÷50**	**30÷40**	**20÷30**	**60÷80**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.002	0.002	0.002	0.003
	2	0.004	0.004	0.003	0.006
	3	0.006	0.005	0.005	0.008
	4	0.009	0.007	0.007	0.011
	5	0.011	0.010	0.008	0.015
	6	0.014	0.012	0.011	0.019
	8	0.019	0.016	0.014	0.024
	10	0.024	0.020	0.018	0.031
	12	0.028	0.024	0.021	0.037

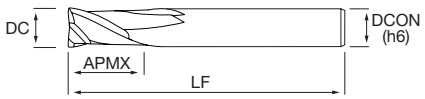
< D3 mm: ap = 0.5D

SORMA DIAMOND & CUTTING TOOLS

GBL2

- Cylindrical shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	3	h6	30	75	2	**GBL2030**	●
4	0/-0.020	4	h6	30	75	2	**GBL2040**	●
5	0/-0.020	5	h6	40	100	2	**GBL2050**	●
6	0/-0.020	6	h6	60	150	2	**GBL2060**	●
8	0/-0.025	8	h6	60	150	2	**GBL2080**	●
10	0/-0.025	10	h6	75	150	2	**GBL2100**	●
12	0/-0.025	12	h6	75	150	2	**GBL2120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

GBL2

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.3D x D**
	Vc (m/min)	**40÷50**	**25÷35**	**20÷30**	**60÷80**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.008	0.007	0.011
	4	0.013	0.011	0.010	0.014
	5	0.016	0.014	0.012	0.018
	6	0.020	0.017	0.015	0.022
	8	0.026	0.022	0.019	0.033
	10	0.030	0.026	0.023	0.040
	12	0.036	0.031	0.027	0.047

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.5D x 0.3D**
	Vc (m/min)	**45÷55**	**30÷40**	**25÷35**	**70÷90**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.012	0.010	0.009	0.013
	4	0.015	0.013	0.012	0.017
	5	0.019	0.016	0.014	0.021
	6	0.024	0.020	0.018	0.027
	8	0.031	0.026	0.023	0.040
	10	0.036	0.031	0.027	0.047
	12	0.043	0.037	0.032	0.056

SORMA DIAMOND & CUTTING TOOLS

G2CS2

- Cylindrical shank
- 2 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	2	**G2CS2010**	●
1.5	0/-0.020	4	h6	4.5	50	2	**G2CS2015**	●
2	0/-0.020	2	h6	8	50	2	**G2CS2020S02**	●
2	0/-0.020	4	h6	6	50	2	**G2CS2020**	●
2.5	0/-0.020	4	h6	7	50	2	**G2CS2025**	●
3	0/-0.020	3	h6	9	50	2	**G2CS2030S03**	●
3	0/-0.020	4	h6	8	50	2	**G2CS2030**	●
3.5	0/-0.020	4	h6	10	50	2	**G2CS2035**	●
4	0/-0.020	4	h6	11	50	2	**G2CS2040**	●
4.5	0/-0.020	6	h6	13	50	2	**G2CS2045**	●
5	0/-0.020	6	h6	13	50	2	**G2CS2050**	●
5.5	0/-0.020	6	h6	13	50	2	**G2CS2055**	●
6	0/-0.020	6	h6	15	50	2	**G2CS2060**	●
6.5	0/-0.025	8	h6	17	60	2	**G2CS2065**	●
7	0/-0.025	8	h6	17	60	2	**G2CS2070**	●
7.5	0/-0.025	8	h6	17	60	2	**G2CS2075**	●
8	0/-0.025	8	h6	20	60	2	**G2CS2080**	●
8.5	0/-0.025	10	h6	23	75	2	**G2CS2085**	●
9	0/-0.025	10	h6	23	75	2	**G2CS2090**	●
10	0/-0.025	10	h6	30	75	2	**G2CS2100**	●
10.5	0/-0.025	12	h6	25	75	2	**G2CS2105**	●
11	0/-0.025	12	h6	28	75	2	**G2CS2110**	●
12	0/-0.025	12	h6	30	75	2	**G2CS2120**	●
13	0/-0.030	16	h6	33	100	2	**G2CS2130**	●
14	0/-0.030	14	h6	26	83	2	**G2CS2140**	●
15	0/-0.030	16	h6	40	100	2	**G2CS2150**	●
16	0/-0.030	16	h6	32	92	2	**G2CS2160**	●
17	0/-0.030	20	h6	40	100	2	**G2CS2170**	●
18	0/-0.030	20	h6	40	100	2	**G2CS2180**	●
20	0/-0.030	20	h6	40	100	2	**G2CS2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CS2

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.004	0.003	0.003	0.005
	2	0.008	0.007	0.006	0.010
	3	0.012	0.010	0.009	0.016
	4	0.016	0.014	0.012	0.021
	5	0.020	0.017	0.015	0.026
	6	0.025	0.021	0.019	0.033
	8	0.032	0.027	0.024	0.042
	10	0.038	0.032	0.029	0.049
	12	0.045	0.038	0.034	0.059
	14	0.052	0.044	0.039	0.068
	16	0.060	0.051	0.045	0.078
	18	0.070	0.060	0.053	0.091
	20	0.080	0.068	0.060	0.104

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.005	0.004	0.004	0.006
	2	0.010	0.008	0.007	0.012
	3	0.014	0.012	0.011	0.019
	4	0.019	0.016	0.014	0.025
	5	0.024	0.020	0.018	0.031
	6	0.030	0.026	0.023	0.039
	8	0.038	0.033	0.029	0.050
	10	0.046	0.039	0.034	0.059
	12	0.054	0.046	0.041	0.070
	14	0.062	0.053	0.047	0.081
	16	0.072	0.061	0.054	0.094
	18	0.084	0.071	0.063	0.109
	20	0.096	0.082	0.072	0.125

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**70÷90**	**40÷60**	**25÷35**	**80÷100**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.002	0.002	0.002	0.003
	2	0.005	0.004	0.004	0.006
	3	0.007	0.006	0.005	0.009
	4	0.010	0.008	0.007	0.012
	5	0.012	0.010	0.009	0.016
	6	0.015	0.013	0.011	0.020
	8	0.019	0.016	0.014	0.025
	10	0.023	0.019	0.017	0.030
	12	0.027	0.023	0.020	0.035
	14	0.031	0.027	0.023	0.041
	16	0.036	0.031	0.027	0.047
	18	0.042	0.036	0.032	0.055
	20	0.048	0.041	0.036	0.062

< D3 mm: ap = 0.5D

SORMA DIAMOND & CUTTING TOOLS

G2WS2

- Weldon shank
- 2 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	6	h6	8	57	2	**G2WS2030**	●
4	0/-0.020	6	h6	11	57	2	**G2WS2040**	●
5	0/-0.020	6	h6	13	57	2	**G2WS2050**	●
6	0/-0.020	6	h6	13	57	2	**G2WS2060**	●
8	0/-0.025	8	h6	19	63	2	**G2WS2080**	●
10	0/-0.025	10	h6	22	72	2	**G2WS2100**	●
12	0/-0.025	12	h6	26	83	2	**G2WS2120**	●
14	0/-0.030	14	h6	26	83	2	**G2WS2140**	●
16	0/-0.030	16	h6	32	92	2	**G2WS2160**	●
20	0/-0.030	20	h6	38	104	2	**G2WS2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2WS2

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.012	0.010	0.009	0.016
	4	0.016	0.014	0.012	0.021
	5	0.020	0.017	0.015	0.026
	6	0.025	0.021	0.019	0.033
	8	0.032	0.027	0.024	0.042
	10	0.038	0.032	0.029	0.049
	12	0.045	0.038	0.034	0.059
	14	0.052	0.044	0.039	0.068
	16	0.060	0.051	0.045	0.078
	18	0.070	0.060	0.053	0.091
	20	0.080	0.068	0.060	0.104

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.012	0.011	0.019
	4	0.019	0.016	0.014	0.025
	5	0.024	0.020	0.018	0.031
	6	0.030	0.026	0.023	0.039
	8	0.038	0.033	0.029	0.050
	10	0.046	0.039	0.034	0.059
	12	0.054	0.046	0.041	0.070
	14	0.062	0.053	0.047	0.081
	16	0.072	0.061	0.054	0.094
	18	0.084	0.071	0.063	0.109
	20	0.096	0.082	0.072	0.125

< D3 mm: ap = 0.2D

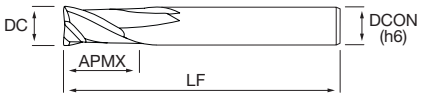
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**70÷90**	**40÷60**	**25÷35**	**80÷100**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	3	0.007	0.006	0.005	0.009
	4	0.010	0.008	0.007	0.012
	5	0.012	0.010	0.009	0.016
	6	0.015	0.013	0.011	0.020
	8	0.019	0.016	0.014	0.025
	10	0.023	0.019	0.017	0.030
	12	0.027	0.023	0.020	0.035
	14	0.031	0.027	0.023	0.041
	16	0.036	0.031	0.027	0.047
	18	0.042	0.036	0.032	0.055
	20	0.048	0.041	0.036	0.062

< D3 mm: ap = 0.2D

G2210

- Cylindrical shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.030	4	h6	9	75	2	**G2210020**	●
3	0/-0.030	3	h6	25	75	2	**G2210030CL25**	●
3	0/-0.030	4	h6	15	75	2	**G2210030**	●
4	0/-0.030	3	h6	30	75	2	**G2210040CL30**	●
4	0/-0.030	4	h6	20	75	2	**G2210040**	●
5	0/-0.030	5	h6	30	75	2	**G2210050S05**	●
5	0/-0.030	6	h6	25	75	2	**G2210050**	●
6	0/-0.030	6	h6	25	75	2	**G2210060**	●
6	0/-0.030	6	h6	35	75	2	**G2210060CL35**	●
8	0/-0.030	8	h6	30	75	2	**G2210080**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2210

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷100**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.014	0.012	0.011	0.018
	5	0.018	0.015	0.014	0.023
	6	0.023	0.019	0.017	0.029
	8	0.030	0.026	0.023	0.039

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	2	0.008	0.007	0.006	0.011
	3	0.012	0.010	0.009	0.016
	4	0.017	0.014	0.013	0.022
	5	0.022	0.018	0.016	0.028
	6	0.027	0.023	0.020	0.035
	8	0.036	0.031	0.027	0.047

< D3 mm: ae = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**60÷80**	**40÷60**	**25÷35**	**70÷100**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	2	0.004	0.004	0.003	0.005
	3	0.006	0.005	0.005	0.008
	4	0.008	0.007	0.006	0.011
	5	0.011	0.009	0.008	0.014
	6	0.014	0.011	0.010	0.018
	8	0.018	0.015	0.014	0.023

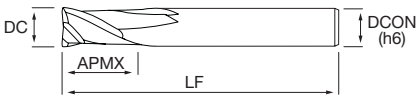
< D3 mm: ap = 0.5D

SORMA DIAMOND & CUTTING TOOLS

G2211

- Cylindrical shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
5	0/-0.030	6	h6	30	100	2	**G2211050**	●
6	0/-0.030	6	h6	30	100	2	**G2211060**	●
8	0/-0.035	8	h6	35	100	2	**G2211080**	●
10	0/-0.035	10	h6	40	100	2	**G2211100**	●
12	0/-0.035	12	h6	45	100	2	**G2211120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2211

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SLOTTING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷100**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	5	0.018	0.015	0.014	0.023
	6	0.023	0.019	0.017	0.029
	8	0.030	0.026	0.023	0.039
	10	0.035	0.030	0.026	0.046
	12	0.041	0.035	0.031	0.053

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	5	0.022	0.018	0.016	0.028
	6	0.027	0.023	0.020	0.035
	8	0.036	0.031	0.027	0.047
	10	0.042	0.036	0.032	0.055
	12	0.049	0.042	0.037	0.064

< D3 mm: ae = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
DRILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**60÷80**	**40÷60**	**25÷35**	**70÷100**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	5	0.011	0.009	0.008	0.014
	6	0.014	0.011	0.010	0.018
	8	0.018	0.015	0.014	0.023
	10	0.021	0.018	0.016	0.027
	12	0.025	0.021	0.018	0.032

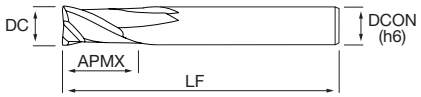
< D3 mm: ap = 0.5D

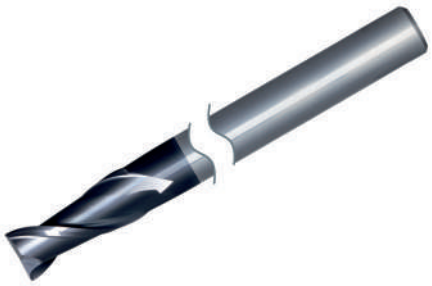
SORMA DIAMOND & CUTTING TOOLS

G2212

- Cylindrical shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
8	0/-0.035	8	h6	40	150	2	**G2212080**	●
10	0/-0.035	10	h6	50	150	2	**G2212100**	●
12	0/-0.035	12	h6	50	150	2	**G2212120**	●
16	0/-0.040	16	h6	70	150	2	**G2212160**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2212

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SLOTTING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.3D x D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.026	0.022	0.020	0.034
	10	0.032	0.027	0.024	0.042
	12	0.036	0.031	0.027	0.047
	14	0.042	0.036	0.032	0.055
	16	0.048	0.041	0.036	0.062

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.031	0.027	0.023	0.041
	10	0.038	0.033	0.029	0.050
	12	0.043	0.037	0.032	0.056
	14	0.050	0.043	0.038	0.066
	16	0.058	0.049	0.043	0.075

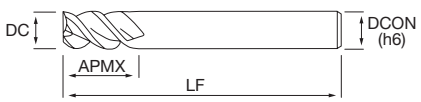
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
DRILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**50÷70**	**35÷55**	**20÷30**	**60÷80**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.016	0.013	0.012	0.020
	10	0.019	0.016	0.014	0.025
	12	0.022	0.018	0.016	0.028
	14	0.025	0.021	0.019	0.033
	16	0.029	0.024	0.022	0.037

SORMA DIAMOND & CUTTING TOOLS

GB305

- Cylindrical shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	3	**GB305010**	●
1.5	0/-0.020	4	h6	4.5	50	3	**GB305015**	●
2	0/-0.020	4	h6	6	50	3	**GB305020**	●
3	0/-0.020	4	h6	8	50	3	**GB305030**	●
4	0/-0.020	4	h6	11	50	3	**GB305040**	●
5	0/-0.020	6	h6	13	50	3	**GB305050**	●
6	0/-0.020	6	h6	15	50	3	**GB305060**	●
8	0/-0.025	8	h6	20	60	3	**GB305080**	●
10	0/-0.025	10	h6	30	75	3	**GB305100**	●
12	0/-0.025	12	h6	30	75	3	**GB305120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

GB305

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**50÷60**	**30÷50**	**20÷40**	**70÷90**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.003	0.002	0.004
	2	0.006	0.005	0.004	0.008
	3	0.009	0.007	0.006	0.011
	4	0.012	0.010	0.009	0.016
	5	0.015	0.013	0.012	0.020
	6	0.020	0.017	0.015	0.026
	8	0.026	0.022	0.019	0.033
	10	0.032	0.028	0.024	0.042
	12	0.038	0.033	0.029	0.050

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷70**	**40÷60**	**20÷40**	**80÷100**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.014	0.012	0.011	0.019
	5	0.018	0.016	0.014	0.024
	6	0.024	0.020	0.018	0.031
	8	0.031	0.026	0.023	0.040
	10	0.039	0.033	0.029	0.051
	12	0.046	0.039	0.035	0.060

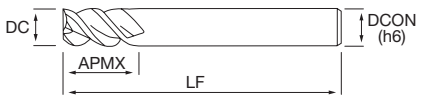
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

G2CSH3

- Cylindrical shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	3	**G2CSH3010**	●
1.5	0/-0.020	4	h6	4.5	50	3	**G2CSH3015**	●
2	0/-0.020	4	h6	6	50	3	**G2CSH3020**	●
2.5	0/-0.020	4	h6	7	50	3	**G2CSH3025**	●
3	0/-0.020	3	h6	9	50	3	**G2CSH3030S03**	●
3	0/-0.020	4	h6	8	50	3	**G2CSH3030**	●
3.5	0/-0.020	4	h6	10	50	3	**G2CSH3035**	●
4	0/-0.020	4	h6	11	50	3	**G2CSH3040**	●
4.5	0/-0.020	6	h6	13	50	3	**G2CSH3045**	●
5	0/-0.020	6	h6	13	50	3	**G2CSH3050**	●
5.5	0/-0.020	6	h6	13	50	3	**G2CSH3055**	●
6	0/-0.020	6	h6	15	50	3	**G2CSH3060**	●
6.5	0/-0.025	8	h6	17	60	3	**G2CSH3065**	●
7	0/-0.025	8	h6	17	60	3	**G2CSH3070**	●
7.5	0/-0.025	8	h6	17	60	3	**G2CSH3075**	●
8	0/-0.025	8	h6	20	60	3	**G2CSH3080**	●
8.5	0/-0.025	10	h6	23	75	3	**G2CSH3085**	●
9	0/-0.025	10	h6	23	75	3	**G2CSH3090**	●
10	0/-0.025	10	h6	30	75	3	**G2CSH3100**	●
11	0/-0.025	12	h6	28	75	3	**G2CSH3110**	●
12	0/-0.025	12	h6	30	75	3	**G2CSH3120**	●
14	0/-0.030	14	h6	26	83	3	**G2CSH3140**	●
16	0/-0.030	16	h6	32	92	3	**G2CSH3160**	●
18	0/-0.030	20	h6	40	100	3	**G2CSH3180**	●
20	0/-0.030	20	h6	40	100	3	**G2CSH3200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2CSH3

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**80÷120**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.003	0.002	0.004
	2	0.006	0.005	0.005	0.008
	3	0.009	0.008	0.007	0.012
	4	0.013	0.011	0.009	0.016
	5	0.016	0.013	0.012	0.020
	6	0.019	0.016	0.014	0.024
	8	0.025	0.021	0.019	0.033
	10	0.031	0.027	0.023	0.041
	12	0.040	0.034	0.030	0.052
	14	0.046	0.039	0.035	0.060
	16	0.056	0.048	0.042	0.073
	18	0.065	0.055	0.049	0.085
	20	0.075	0.064	0.056	0.098

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**110÷130**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.008	0.006	0.006	0.010
	3	0.011	0.010	0.008	0.015
	4	0.015	0.013	0.011	0.020
	5	0.019	0.016	0.014	0.024
	6	0.023	0.019	0.017	0.029
	8	0.030	0.026	0.023	0.039
	10	0.038	0.032	0.028	0.049
	12	0.048	0.041	0.036	0.062
	14	0.056	0.047	0.042	0.072
	16	0.068	0.057	0.051	0.088
	18	0.078	0.066	0.059	0.101
	20	0.090	0.077	0.068	0.117

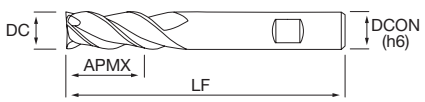
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

G2WSH3

- Weldon shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | SLOTTING | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	6	h6	8	57	3	**G2WSH3030**	●
4	0/-0.020	6	h6	11	57	3	**G2WSH3040**	●
5	0/-0.020	6	h6	13	57	3	**G2WSH3050**	●
6	0/-0.020	6	h6	13	57	3	**G2WSH3060**	●
8	0/-0.025	8	h6	19	63	3	**G2WSH3080**	●
10	0/-0.025	10	h6	22	72	3	**G2WSH3100**	●
12	0/-0.025	12	h6	26	83	3	**G2WSH3120**	●
14	0/-0.030	14	h6	26	83	3	**G2WSH3140**	●
16	0/-0.030	16	h6	32	92	3	**G2WSH3160**	●
20	0/-0.030	20	h6	38	104	3	**G2WSH3200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2WSH3

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**80÷120**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.008	0.007	0.012
	4	0.013	0.011	0.009	0.016
	5	0.016	0.013	0.012	0.020
	6	0.019	0.016	0.014	0.024
	8	0.025	0.021	0.019	0.033
	10	0.031	0.027	0.023	0.041
	12	0.040	0.034	0.030	0.052
	14	0.046	0.039	0.035	0.060
	16	0.056	0.048	0.042	0.073
	18	0.065	0.055	0.049	0.085
	20	0.075	0.064	0.056	0.098

< D3 mm: ap = 0.2D

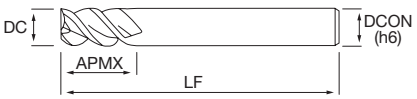
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**110÷130**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.011	0.010	0.008	0.015
	4	0.015	0.013	0.011	0.020
	5	0.019	0.016	0.014	0.024
	6	0.023	0.019	0.017	0.029
	8	0.030	0.026	0.023	0.039
	10	0.038	0.032	0.028	0.049
	12	0.048	0.041	0.036	0.062
	14	0.056	0.047	0.042	0.072
	16	0.068	0.057	0.051	0.088
	18	0.078	0.066	0.059	0.101
	20	0.090	0.077	0.068	0.117

< D3 mm: ae = 0.1D

G2310

- Cylindrical shank
- 3 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.030	4	h6	9	75	3	**G2310020**	●
3	0/-0.030	4	h6	15	75	3	**G2310030**	●
4	0/-0.030	4	h6	20	75	3	**G2310040**	●
5	0/-0.030	6	h6	25	75	3	**G2310050**	●
6	0/-0.030	6	h6	25	75	3	**G2310060**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2310

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SLOTTING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**60÷80**	**35÷55**	**25÷35**	**80÷100**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.006	0.005	0.004	0.007
	3	0.008	0.007	0.006	0.011
	4	0.011	0.010	0.008	0.015
	5	0.014	0.012	0.011	0.018
	6	0.017	0.014	0.013	0.022

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.007	0.006	0.005	0.009
	3	0.011	0.009	0.008	0.014
	4	0.014	0.012	0.011	0.018
	5	0.018	0.015	0.013	0.023
	6	0.021	0.018	0.016	0.027

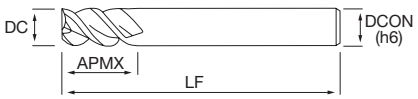
< D3 mm: ae = 0.1D

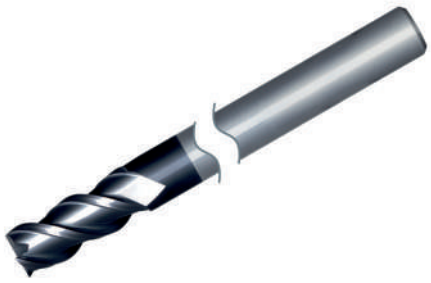
SORMA DIAMOND & CUTTING TOOLS

G2311

- Cylindrical shank
- 3 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.030	6	h6	25	100	3	**G2311040**	●
5	0/-0.030	6	h6	30	100	3	**G2311050**	●
6	0/-0.030	6	h6	30	100	3	**G2311060**	●
7	0/-0.030	8	h6	35	100	3	**G2311070**	●
8	0/-0.035	8	h6	35	100	3	**G2311080**	●
9	0/-0.035	10	h6	40	100	3	**G2311090**	●
10	0/-0.035	10	h6	40	100	3	**G2311100**	●
11	0/-0.035	12	h6	45	100	3	**G2311110**	●
12	0/-0.035	12	h6	45	100	3	**G2311120**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2311

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SLOTTING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**60÷80**	**35÷55**	**25÷35**	**80÷100**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.011	0.010	0.008	0.015
	5	0.014	0.012	0.011	0.018
	6	0.017	0.014	0.013	0.022
	8	0.023	0.019	0.017	0.029
	10	0.028	0.024	0.021	0.037
	12	0.036	0.031	0.027	0.047

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.014	0.012	0.011	0.018
	5	0.018	0.015	0.013	0.023
	6	0.021	0.018	0.016	0.027
	8	0.028	0.024	0.021	0.037
	10	0.035	0.030	0.026	0.046
	12	0.045	0.038	0.034	0.059

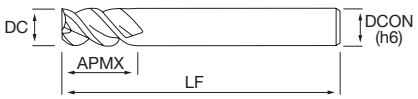
< D3 mm: ae = 0.1D

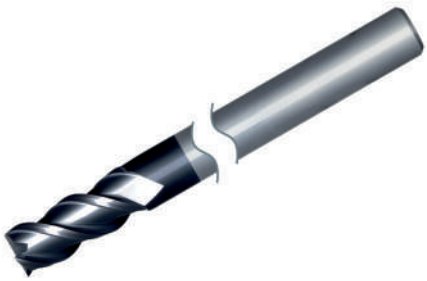
SORMA DIAMOND & CUTTING TOOLS

G2312

- Cylindrical shank
- 3 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 3 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
8	0/-0.035	8	h6	40	150	3	**G2312080**	●
10	0/-0.035	10	h6	50	150	3	**G2312100**	●
12	0/-0.035	12	h6	50	150	3	**G2312120**	●
16	0/-0.040	16	h6	70	150	3	**G2312160**	●
20	0/-0.040	20	h6	80	150	3	**G2312200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2312

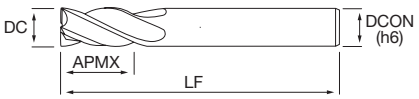
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.020	0.017	0.015	0.026
	10	0.025	0.021	0.019	0.033
	12	0.032	0.027	0.024	0.042
	14	0.037	0.031	0.028	0.048
	16	0.045	0.038	0.034	0.059
	20	0.060	0.051	0.045	0.078

SORMA DIAMOND & CUTTING TOOLS

GB405

- Cylindrical shank
- 4 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	4	**GB405010**	●
1.5	0/-0.020	4	h6	4.5	50	4	**GB405015**	●
2	0/-0.020	4	h6	6	50	4	**GB405020**	●
3	0/-0.020	4	h6	8	50	4	**GB405030**	●
4	0/-0.020	4	h6	11	50	4	**GB405040**	●
5	0/-0.020	6	h6	13	50	4	**GB405050**	●
6	0/-0.020	6	h6	15	50	4	**GB405060**	●
8	0/-0.025	8	h6	20	60	4	**GB405080**	●
10	0/-0.025	10	h6	30	75	4	**GB405100**	●
12	0/-0.025	12	h6	30	75	4	**GB405120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

GB405

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**
	Vc (m/min)	**50÷70**	**40÷50**	**20÷40**	**80÷100**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.003	0.002	0.004
	2	0.006	0.006	0.005	0.008
	3	0.010	0.008	0.007	0.013
	4	0.013	0.011	0.010	0.017
	5	0.016	0.014	0.012	0.021
	6	0.020	0.017	0.015	0.026
	8	0.026	0.022	0.019	0.034
	10	0.031	0.026	0.023	0.040
	12	0.036	0.031	0.027	0.047

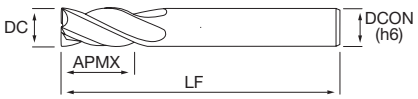
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

GBL4

- Cylindrical shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	3	h6	30	75	4	**GBL4030**	●
4	0/-0.020	4	h6	30	75	4	**GBL4040**	●
5	0/-0.020	5	h6	40	100	4	**GBL4050**	●
6	0/-0.020	6	h6	60	150	4	**GBL4060**	●
8	0/-0.025	8	h6	60	150	4	**GBL4080**	●
10	0/-0.025	10	h6	75	150	4	**GBL4100**	●
12	0/-0.025	12	h6	75	150	4	**GBL4120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

GBL4

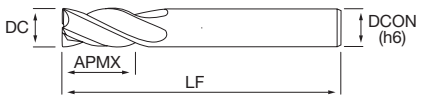
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**45÷55**	**30÷40**	**25÷35**	**70÷90**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.007	0.006	0.009
	4	0.010	0.009	0.008	0.011
	5	0.013	0.011	0.010	0.014
	6	0.015	0.013	0.011	0.017
	8	0.020	0.017	0.015	0.026
	10	0.026	0.022	0.019	0.033
	12	0.032	0.027	0.024	0.042

SORMA DIAMOND & CUTTING TOOLS

G2CS4

- Cylindrical shank
- 4 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	4	**G2CS4010**	●
1.5	0/-0.020	4	h6	4.5	50	4	**G2CS4015**	●
2	0/-0.020	2	h6	8	50	4	**G2CS4020S02**	●
2	0/-0.020	4	h6	6	50	4	**G2CS4020**	●
2.5	0/-0.020	4	h6	7	50	4	**G2CS4025**	●
3	0/-0.020	3	h6	9	50	4	**G2CS4030S03**	●
3	0/-0.020	4	h6	8	50	4	**G2CS4030**	●
3.5	0/-0.020	4	h6	10	50	4	**G2CS4035**	●
4	0/-0.020	4	h6	11	50	4	**G2CS4040**	●
4.5	0/-0.020	6	h6	13	50	4	**G2CS4045**	●
5	0/-0.020	6	h6	13	50	4	**G2CS4050**	●
5.5	0/-0.020	6	h6	13	50	4	**G2CS4055**	●
6	0/-0.020	6	h6	15	50	4	**G2CS4060**	●
6.5	0/-0.025	8	h6	17	60	4	**G2CS4065**	●
7	0/-0.025	8	h6	17	60	4	**G2CS4070**	●
7.5	0/-0.025	8	h6	17	60	4	**G2CS4075**	●
8	0/-0.025	8	h6	20	60	4	**G2CS4080**	●
8.5	0/-0.025	10	h6	23	75	4	**G2CS4085**	●
9	0/-0.025	10	h6	23	75	4	**G2CS4090**	●
9.5	0/-0.025	10	h6	25	75	4	**G2CS4095**	●
10	0/-0.025	10	h6	30	75	4	**G2CS4100**	●
10.5	0/-0.025	12	h6	25	75	4	**G2CS4105**	●
11	0/-0.025	12	h6	30	75	4	**G2CS4110**	●
11.5	0/-0.025	12	h6	28	75	4	**G2CS4115**	●
12	0/-0.025	12	h6	30	75	4	**G2CS4120**	●
12.5	0/-0.030	14	h6	26	83	4	**G2CS4125**	●
13	0/-0.030	14	h6	26	83	4	**G2CS4130**	●
13.5	0/-0.030	14	h6	26	83	4	**G2CS4135**	●
14	0/-0.030	14	h6	26	83	4	**G2CS4140**	●
14.5	0/-0.030	16	h6	32	92	4	**G2CS4145**	●
15	0/-0.030	16	h6	32	92	4	**G2CS4150**	●
15.5	0/-0.030	16	h6	32	92	4	**G2CS4155**	●
16	0/-0.030	16	h6	32	92	4	**G2CS4160**	●
17	0/-0.030	20	h6	40	100	4	**G2CS4170**	●
18	0/-0.030	20	h6	40	100	4	**G2CS4180**	●
19	0/-0.030	20	h6	40	100	4	**G2CS4190**	●
20	0/-0.030	20	h6	40	100	4	**G2CS4200**	●
22	0/-0.030	25	h6	40	100	4	**G2CS4220**	●
25	0/-0.030	25	h6	40	100	4	**G2CS4250**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CS4

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.013	0.011	0.010	0.017
	5	0.016	0.014	0.012	0.021
	6	0.019	0.016	0.014	0.025
	8	0.025	0.021	0.019	0.033
	10	0.032	0.027	0.024	0.042
	12	0.040	0.034	0.030	0.052
	14	0.047	0.040	0.035	0.061
	16	0.054	0.046	0.041	0.070
	18	0.060	0.051	0.045	0.078
	20	0.065	0.055	0.049	0.085
	22	0.073	0.062	0.055	0.095
	25	0.083	0.071	0.062	0.108

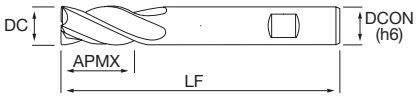
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

G2WS4

- Weldon shank
- 4 flutes

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	6	h6	8	57	4	**G2WS4030**	●
4	0/-0.020	6	h6	11	57	4	**G2WS4040**	●
5	0/-0.020	6	h6	13	57	4	**G2WS4050**	●
6	0/-0.020	6	h6	13	57	4	**G2WS4060**	●
8	0/-0.025	8	h6	19	63	4	**G2WS4080**	●
10	0/-0.025	10	h6	22	72	4	**G2WS4100**	●
12	0/-0.025	12	h6	26	83	4	**G2WS4120**	●
14	0/-0.030	14	h6	26	83	4	**G2WS4140**	●
16	0/-0.030	16	h6	32	92	4	**G2WS4160**	●
20	0/-0.030	20	h6	38	104	4	**G2WS4200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2WS4

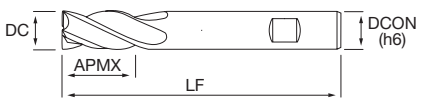
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.009	0.008	0.013
	4	0.013	0.011	0.010	0.017
	5	0.016	0.014	0.012	0.021
	6	0.019	0.016	0.014	0.025
	8	0.025	0.021	0.019	0.033
	10	0.032	0.027	0.024	0.042
	12	0.040	0.034	0.030	0.052
	14	0.047	0.040	0.035	0.061
	16	0.054	0.046	0.041	0.070
	18	0.060	0.051	0.045	0.078
	20	0.065	0.055	0.049	0.085

SORMA DIAMOND & CUTTING TOOLS

G2410

- Cylindrical shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.030	4	h6	9	75	4	**G2410020**	●
2.5	0/-0.030	4	h6	10	75	4	**G2410025**	●
3	0/-0.030	4	h6	15	75	4	**G2410030**	●
3	0/-0.030	3	h6	25	75	4	**G2410030CL25**	●
3.5	0/-0.030	4	h6	15	75	4	**G2410035**	●
4	0/-0.030	4	h6	20	75	4	**G2410040**	●
4	0/-0.030	4	h6	30	75	4	**G2410040CL30**	●
4.5	0/-0.030	6	h6	20	75	4	**G2410045**	●
5	0/-0.030	6	h6	25	75	4	**G2410050**	●
5	0/-0.030	5	h6	30	75	4	**G2410050S05**	●
6	0/-0.030	6	h6	25	75	4	**G2410060**	●
6	0/-0.030	6	h6	35	75	4	**G2410060CL35**	●
8	0/-0.030	8	h6	30	75	4	**G2410080**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2410

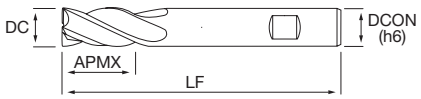
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.006	0.005	0.005	0.008
	3	0.009	0.008	0.007	0.012
	4	0.012	0.010	0.009	0.015
	5	0.014	0.012	0.011	0.019
	6	0.017	0.015	0.013	0.022
	8	0.023	0.019	0.017	0.029

< D3 mm: ae = 0.1D

G2411

- Cylindrical shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.030	6	h6	15	100	4	**G2411030**	●
4	0/-0.030	6	h6	25	100	4	**G2411040**	●
5	0/-0.030	6	h6	30	100	4	**G2411050**	●
6	0/-0.030	6	h6	30	100	4	**G2411060**	●
7	0/-0.030	8	h6	35	100	4	**G2411070**	●
8	0/-0.035	8	h6	35	100	4	**G2411080**	●
9	0/-0.035	10	h6	40	100	4	**G2411090**	●
10	0/-0.035	10	h6	40	100	4	**G2411100**	●
11	0/-0.035	12	h6	45	100	4	**G2411110**	●
12	0/-0.035	12	h6	45	100	4	**G2411120**	●
14	0/-0.035	14	h6	45	100	4	**G2411140**	●
16	0/-0.035	16	h6	45	100	4	**G2411160**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2411

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**70÷90**	**45÷65**	**30÷50**	**80÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.008	0.007	0.012
	4	0.012	0.010	0.009	0.015
	5	0.014	0.012	0.011	0.019
	6	0.017	0.015	0.013	0.022
	8	0.023	0.019	0.017	0.029
	10	0.029	0.024	0.022	0.037
	12	0.036	0.031	0.027	0.047
	16	0.048	0.041	0.036	0.062

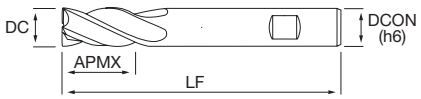
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

G2412

- Cylindrical shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.035	6	h6	40	150	4	**G2412060CL40**	●
6	0/-0.035	6	h6	60	150	4	**G2412060CL60**	●
8	0/-0.035	8	h6	40	150	4	**G2412080**	●
8	0/-0.035	8	h6	60	150	4	**G2412080CL60**	●
10	0/-0.035	10	h6	50	150	4	**G2412100**	●
10	0/-0.035	10	h6	75	150	4	**G2412100CL75**	●
12	0/-0.035	12	h6	50	150	4	**G2412120**	●
12	0/-0.035	12	h6	75	150	4	**G2412120CL75**	●
16	0/-0.040	16	h6	70	150	4	**G2412160**	●
18	0/-0.040	20	h6	80	150	4	**G2412180**	●
20	0/-0.040	20	h6	80	150	4	**G2412200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

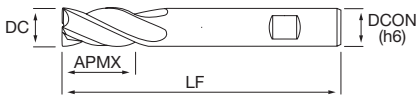
G2412

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.019	0.017	0.025
	8	0.020	0.017	0.015	0.026
	10	0.026	0.022	0.019	0.033
	12	0.032	0.027	0.024	0.042
	14	0.038	0.032	0.028	0.049
	16	0.043	0.037	0.032	0.056
	20	0.065	0.055	0.049	0.085

SORMA DIAMOND & CUTTING TOOLS

G2413

- Cylindrical shank
- 4 flutes
- Long





P	M	K	N	S	H
★	☆	★	☆		

OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
16	0/-0.040	16	h6	40	200	4	**G2413160**	●
20	0/-0.040	20	h6	40	200	4	**G2413200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2413

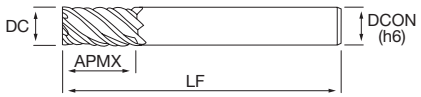
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.020	0.017	0.015	0.026
	10	0.026	0.022	0.019	0.033
	12	0.032	0.027	0.024	0.042
	14	0.038	0.032	0.028	0.049
	16	0.043	0.037	0.032	0.056
	20	0.065	0.055	0.049	0.085

SORMA DIAMOND & CUTTING TOOLS

G2CSHM

- Cylindrical shank
- Multi flute

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 45° | SQUARE | ZEFP 6 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.020	6	h6	15	50	6	**G2CSHM060**	●
8	0/-0.025	8	h6	20	60	6	**G2CSHM080**	●
10	0/-0.025	10	h6	30	75	6	**G2CSHM100**	●
12	0/-0.025	12	h6	30	75	6	**G2CSHM120**	●
14	0/-0.030	14	h6	30	83	6	**G2CSHM140**	●
16	0/-0.030	16	h6	35	92	6	**G2CSHM160**	●
20	0/-0.030	20	h6	40	100	6	**G2CSHM200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2CSHM

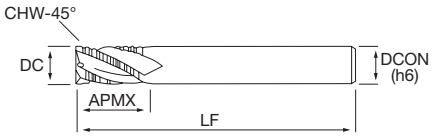
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	
	Vc (m/min)	**100÷120**	**70÷90**	**50÷70**	
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	6	0.016	0.014	0.012	
	8	0.020	0.017	0.015	
	10	0.026	0.022	0.019	
	12	0.032	0.027	0.024	
	14	0.038	0.032	0.028	
	16	0.043	0.037	0.032	
	16	0.043	0.037	0.032	
	20	0.065	0.055	0.049	

SORMA DIAMOND & CUTTING TOOLS

G2CSFR

- Cylindrical shank
- Roughing HR

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | CH-45° | HR FINE | ZEFP 3~4 | SIDE MILLING

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.070	0.28	±0.020	6	h6	11	50	3	**G2CSFR040**	●
5	0/-0.070	0.35	±0.020	6	h6	13	50	3	**G2CSFR050**	●
6	0/-0.070	0.42	±0.020	6	h6	15	50	3	**G2CSFR060**	●
7	0/-0.070	0.49	±0.020	8	h6	20	60	3	**G2CSFR070**	●
8	0/-0.070	0.56	±0.020	8	h6	20	60	3	**G2CSFR080**	●
9	0/-0.070	0.63	±0.020	10	h6	25	75	3	**G2CSFR090**	●
10	0/-0.070	0.7	±0.020	10	h6	30	75	4	**G2CSFR100**	●
11	0/-0.070	0.77	±0.020	12	h6	30	75	4	**G2CSFR110**	●
12	0/-0.070	0.84	±0.020	12	h6	30	75	4	**G2CSFR120**	●
13	0/-0.070	0.91	±0.020	14	h6	30	83	4	**G2CSFR130**	●
14	0/-0.070	0.98	±0.020	14	h6	30	83	4	**G2CSFR140**	●
15	0/-0.070	1.05	±0.020	16	h6	30	92	4	**G2CSFR150**	●
16	0/-0.070	1.12	±0.020	16	h6	35	92	4	**G2CSFR160**	●
20	0/-0.070	1.4	±0.020	20	h6	40	100	4	**G2CSFR200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CSFR

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	6	0.016	0.012	0.010	
	6	0.030	0.026	0.023	
	8	0.045	0.038	0.034	
	10	0.060	0.051	0.045	
	12	0.072	0.061	0.054	
	14	0.085	0.072	0.064	
	16	0.096	0.082	0.072	
	20	0.120	0.102	0.090	

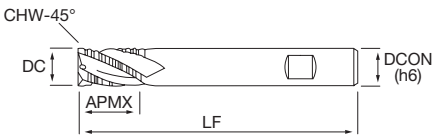
D6-8: Z3 ; D10-20: Z4

SORMA DIAMOND & CUTTING TOOLS

G2WSFR

- Weldon shank
- Roughing HR

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / PV200 | <45 HRC | FHA 30° | CH-45° | HR FINE | ZEFP 3~4 | SIDE MILLING

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.070	0.42	±0.020	6	h6	13	57	3	**G2WSFR060**	●
8	0/-0.070	0.56	±0.020	8	h6	19	63	3	**G2WSFR080**	●
10	0/-0.070	0.7	±0.020	10	h6	22	72	4	**G2WSFR100**	●
12	0/-0.070	0.84	±0.020	12	h6	26	83	4	**G2WSFR120**	●
14	0/-0.070	0.98	±0.020	14	h6	26	83	4	**G2WSFR140**	●
16	0/-0.070	1.12	±0.020	16	h6	32	92	4	**G2WSFR160**	●
20	0/-0.070	1.4	±0.020	20	h6	38	104	4	**G2WSFR200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2WSFR

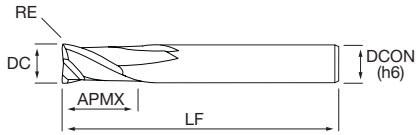
	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	6	0.030	0.026	0.023	
	8	0.045	0.038	0.034	
	10	0.060	0.051	0.045	
	12	0.072	0.061	0.054	
	14	0.085	0.072	0.064	
	16	0.096	0.082	0.072	
	20	0.120	0.102	0.090	

D6-8: Z3; D10-20: Z4

SORMA DIAMOND & CUTTING TOOLS

G2CS2R

- Cylindrical shank
- 2 flutes
- Corner radius





P	M	K	N	S	H
★	☆	★	☆		

OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | RADIUS | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.2	±0.010	4	h6	2	50	2	G2CS2R02010	●
1.5	0/-0.020	0.2	±0.010	4	h6	3	50	2	G2CS2R02015	●
1.5	0/-0.020	0.5	±0.010	4	h6	3	50	2	G2CS2R05015	●
2	0/-0.020	0.2	±0.010	4	h6	4	50	2	G2CS2R02020	●
2	0/-0.020	0.5	±0.010	4	h6	4	50	2	G2CS2R05020	●
2.5	0/-0.020	0.2	±0.010	4	h6	5	50	2	G2CS2R02025	●
2.5	0/-0.020	0.5	±0.010	4	h6	5	50	2	G2CS2R05025	●
3	0/-0.020	0.2	±0.010	4	h6	6	50	2	G2CS2R02030	●
3	0/-0.020	0.5	±0.010	4	h6	6	50	2	G2CS2R05030	●
3	0/-0.020	1	±0.010	4	h6	6	50	2	G2CS2R10030	●
4	0/-0.020	0.2	±0.010	4	h6	8	50	2	G2CS2R02040	●
4	0/-0.020	0.5	±0.010	4	h6	8	50	2	G2CS2R05040	●
4	0/-0.020	1	±0.010	4	h6	8	50	2	G2CS2R10040	●
5	0/-0.020	0.5	±0.010	6	h6	10	50	2	G2CS2R05050	●
5	0/-0.020	1	±0.010	6	h6	10	50	2	G2CS2R10050	●
6	0/-0.020	0.2	±0.010	6	h6	12	50	2	G2CS2R02060	●
6	0/-0.020	0.5	±0.010	6	h6	12	50	2	G2CS2R05060	●
6	0/-0.020	1	±0.010	6	h6	12	50	2	G2CS2R10060	●
6	0/-0.020	1.5	±0.010	6	h6	12	50	2	G2CS2R15060	●
6	0/-0.020	2	±0.010	6	h6	12	50	2	G2CS2R20060	●
8	0/-0.025	0.5	±0.010	8	h6	16	60	2	G2CS2R05080	●
8	0/-0.025	1	±0.010	8	h6	16	60	2	G2CS2R10080	●
8	0/-0.025	1.5	±0.010	8	h6	16	60	2	G2CS2R15080	●
8	0/-0.025	2	±0.010	8	h6	16	60	2	G2CS2R20080	●
10	0/-0.025	0.5	±0.010	10	h6	20	75	2	G2CS2R05100	●
10	0/-0.025	1	±0.010	10	h6	20	75	2	G2CS2R10100	●
10	0/-0.025	1.5	±0.010	10	h6	20	75	2	G2CS2R15100	●
10	0/-0.025	2	±0.010	10	h6	20	75	2	G2CS2R20100	●
12	0/-0.025	0.5	±0.010	12	h6	24	75	2	G2CS2R05120	●
12	0/-0.025	1	±0.010	12	h6	24	75	2	G2CS2R10120	●
12	0/-0.025	1.5	±0.010	12	h6	24	75	2	G2CS2R15120	●
12	0/-0.025	2	±0.010	12	h6	24	75	2	G2CS2R20120	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CS2R

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.008	0.007	0.006	0.010
	3	0.012	0.010	0.009	0.016
	4	0.016	0.014	0.012	0.021
	5	0.020	0.017	0.015	0.026
	6	0.025	0.021	0.019	0.033
	8	0.032	0.027	0.024	0.042
	10	0.038	0.032	0.029	0.049
	12	0.045	0.038	0.034	0.059

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.5D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.005	0.004	0.004	0.006
	2	0.010	0.008	0.007	0.012
	3	0.014	0.012	0.011	0.019
	4	0.019	0.016	0.014	0.025
	5	0.024	0.020	0.018	0.031
	6	0.030	0.026	0.023	0.039
	8	0.038	0.033	0.029	0.050
	10	0.046	0.039	0.034	0.059
	12	0.054	0.046	0.041	0.070

< D3 mm: ae = 0.2D

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**70÷90**	**40÷60**	**25÷35**	**70÷100**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.002	0.002	0.002	0.003
	2	0.005	0.004	0.004	0.006
	3	0.007	0.006	0.005	0.009
	4	0.010	0.008	0.007	0.012
	5	0.012	0.010	0.009	0.016
	6	0.015	0.013	0.011	0.020
	8	0.019	0.016	0.014	0.025
	10	0.023	0.019	0.017	0.030
	12	0.027	0.023	0.020	0.035

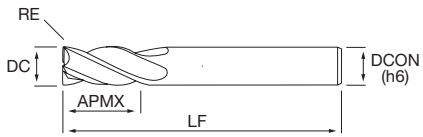
< D3 mm: ap = 0.5D

SORMA DIAMOND & CUTTING TOOLS

G2CS4R

- Cylindrical shank
- 4 flutes
- Corner radius

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.2	±0.010	4	h6	2	50	4	G2CS4R02010	●
1.5	0/-0.020	0.2	±0.010	4	h6	3	50	4	G2CS4R02015	●
1.5	0/-0.020	0.5	±0.010	4	h6	3	50	4	G2CS4R05015	●
2	0/-0.020	0.2	±0.010	4	h6	4	50	4	G2CS4R02020	●
2	0/-0.020	0.5	±0.010	4	h6	4	50	4	G2CS4R05020	●
2.5	0/-0.020	0.2	±0.010	4	h6	5	50	4	G2CS4R02025	●
2.5	0/-0.020	0.5	±0.010	4	h6	5	50	4	G2CS4R05025	●
3	0/-0.020	0.2	±0.010	4	h6	6	50	4	G2CS4R02030	●
3	0/-0.020	0.5	±0.010	4	h6	6	50	4	G2CS4R05030	●
3	0/-0.020	1	±0.010	4	h6	6	50	4	G2CS4R10030	●
4	0/-0.020	0.2	±0.010	4	h6	8	50	4	G2CS4R02040	●
4	0/-0.020	0.5	±0.010	4	h6	8	50	4	G2CS4R05040	●
4	0/-0.020	1	±0.010	4	h6	8	50	4	G2CS4R10040	●
5	0/-0.020	0.5	±0.010	6	h6	10	50	4	G2CS4R05050	●
5	0/-0.020	1	±0.010	6	h6	10	50	4	G2CS4R10050	●
6	0/-0.020	0.2	±0.010	6	h6	12	50	4	G2CS4R02060	●
6	0/-0.020	0.5	±0.010	6	h6	12	50	4	G2CS4R05060	●
6	0/-0.020	1	±0.010	6	h6	12	50	4	G2CS4R10060	●
6	0/-0.020	1.5	±0.010	6	h6	12	50	4	G2CS4R15060	●
6	0/-0.020	2	±0.010	6	h6	12	50	4	G2CS4R20060	●
8	0/-0.025	0.5	±0.010	8	h6	16	60	4	G2CS4R05080	●
8	0/-0.025	1	±0.010	8	h6	16	60	4	G2CS4R10080	●
8	0/-0.025	1.5	±0.010	8	h6	16	60	4	G2CS4R15080	●
8	0/-0.025	2	±0.010	8	h6	16	60	4	G2CS4R20080	●
10	0/-0.025	0.5	±0.010	10	h6	20	75	4	G2CS4R05100	●
10	0/-0.025	1	±0.010	10	h6	20	75	4	G2CS4R10100	●
10	0/-0.025	1.5	±0.010	10	h6	20	75	4	G2CS4R15100	●
10	0/-0.025	2	±0.010	10	h6	20	75	4	G2CS4R20100	●
10	0/-0.025	2.5	±0.010	10	h6	20	75	4	G2CS4R25100	●
10	0/-0.025	3	±0.010	10	h6	20	75	4	G2CS4R30100	●
12	0/-0.025	0.5	±0.010	12	h6	24	75	4	G2CS4R05120	●
12	0/-0.025	1	±0.010	12	h6	24	75	4	G2CS4R10120	●
12	0/-0.025	1.5	±0.010	12	h6	24	75	4	G2CS4R15120	●
12	0/-0.025	2	±0.010	12	h6	24	75	4	G2CS4R20120	●
12	0/-0.025	2.5	±0.010	12	h6	24	75	4	G2CS4R25120	●
12	0/-0.025	3	±0.010	12	h6	24	75	4	G2CS4R30120	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CS4R

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.013	0.011	0.010	0.017
	5	0.016	0.014	0.012	0.021
	6	0.019	0.016	0.014	0.025
	8	0.025	0.021	0.019	0.033
	10	0.032	0.027	0.024	0.042
	12	0.040	0.034	0.030	0.052

< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

G2CL4R

- Cylindrical shank
- 4 flutes
- Long
- Corner radius

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.030	0.2	±0.010	4	h6	4	75	4	**G2CL4R02020**	●
2	0/-0.030	0.5	±0.010	4	h6	4	75	4	**G2CL4R05020**	●
3	0/-0.030	0.2	±0.010	4	h6	6	75	4	**G2CL4R02030**	●
3	0/-0.030	0.5	±0.010	4	h6	6	75	4	**G2CL4R05030**	●
3	0/-0.030	1	±0.010	4	h6	6	75	4	**G2CL4R10030**	●
4	0/-0.030	0.2	±0.010	4	h6	8	75	4	**G2CL4R02040**	●
4	0/-0.030	0.5	±0.010	4	h6	8	75	4	**G2CL4R05040**	●
4	0/-0.030	1	±0.010	4	h6	8	75	4	**G2CL4R10040**	●
5	0/-0.030	0.5	±0.010	6	h6	10	75	4	**G2CL4R05050**	●
5	0/-0.030	1	±0.010	6	h6	10	75	4	**G2CL4R10050**	●
6	0/-0.030	0.5	±0.010	6	h6	12	75	4	**G2CL4R05060**	●
6	0/-0.030	1	±0.010	6	h6	12	75	4	**G2CL4R10060**	●
8	0/-0.035	0.5	±0.010	8	h6	16	100	4	**G2CL4R05080**	●
8	0/-0.035	1	±0.010	8	h6	16	100	4	**G2CL4R10080**	●
8	0/-0.035	2	±0.010	8	h6	16	100	4	**G2CL4R20080**	●
10	0/-0.035	0.5	±0.010	10	h6	20	100	4	**G2CL4R05100**	●
10	0/-0.035	1	±0.010	10	h6	20	100	4	**G2CL4R10100**	●
10	0/-0.035	2	±0.010	10	h6	20	100	4	**G2CL4R20100**	●
12	0/-0.035	0.5	±0.010	12	h6	24	100	4	**G2CL4R05120**	●
12	0/-0.035	1	±0.010	12	h6	24	100	4	**G2CL4R10120**	●
12	0/-0.035	2	±0.010	12	h6	24	100	4	**G2CL4R20120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CL4R

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**	**1.5D x 0.2D**
	Vc (m/min)	**55÷75**	**40÷60**	**20÷40**	**70÷90**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.006	0.005	0.005	0.007
	3	0.009	0.008	0.007	0.010
	4	0.012	0.010	0.009	0.013
	5	0.015	0.013	0.011	0.017
	6	0.017	0.014	0.013	0.019
	8	0.023	0.020	0.017	0.030
	10	0.029	0.025	0.022	0.038
	12	0.036	0.031	0.027	0.047

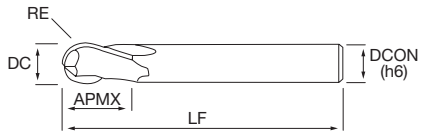
< D3 mm: ae = 0.1D

SORMA DIAMOND & CUTTING TOOLS

GB255

- Cylindrical shank
- 2 flutes ball nose

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / BR | <45 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	±0.015	4	h6	2	50	2	**GB255010**	●
1.5	0/-0.020	0.75	±0.015	4	h6	3	50	2	**GB255015**	●
2	0/-0.020	1	±0.015	4	h6	4	50	2	**GB255020**	●
3	0/-0.020	1.5	±0.015	4	h6	6	50	2	**GB255030**	●
4	0/-0.020	2	±0.015	4	h6	8	50	2	**GB255040**	●
5	0/-0.020	2.5	±0.015	6	h6	10	50	2	**GB255050**	●
6	0/-0.020	3	±0.015	6	h6	12	50	2	**GB255060**	●
8	0/-0.025	4	±0.015	8	h6	16	60	2	**GB255080**	●
10	0/-0.025	5	±0.015	10	h6	20	75	2	**GB255100**	●
12	0/-0.025	6	±0.015	12	h6	24	75	2	**GB255120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

GB255

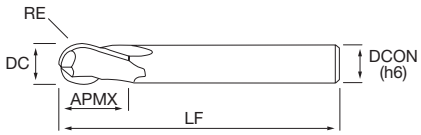
	Material Group ISO 513		P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm		≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae		**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**
	Vc (m/min)		**50÷70**	**35÷55**	**20÷40**	**80÷120**
COPYING	DC (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	**0.60**	0.030	0.023	0.021	0.036
	2	**1.20**	0.040	0.030	0.028	0.048
	3	**1.80**	0.050	0.038	0.035	0.060
	4	**2.40**	0.060	0.045	0.042	0.072
	5	**3.00**	0.070	0.053	0.049	0.084
	6	**3.60**	0.080	0.060	0.056	0.096
	8	**4.80**	0.090	0.068	0.063	0.108
	10	**6.00**	0.105	0.079	0.074	0.126
	12	**7.20**	0.120	0.090	0.084	0.144

SORMA DIAMOND & CUTTING TOOLS

G2CSB2

- Cylindrical shank
- 2 flutes ball nose

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	±0.015	3	h6	3	50	2	**G2CSB2010S03**	●
1	0/-0.020	0.5	±0.015	4	h6	2	50	2	**G2CSB2010**	●
1.5	0/-0.020	0.75	±0.015	3	h6	5	50	2	**G2CSB2015S03**	●
1.5	0/-0.020	0.75	±0.015	4	h6	3	50	2	**G2CSB2015**	●
2	0/-0.020	1	±0.015	3	h6	7	50	2	**G2CSB2020S03**	●
2	0/-0.020	1	±0.015	4	h6	4	50	2	**G2CSB2020**	●
2.5	0/-0.020	1.25	±0.015	3	h6	8	50	2	**G2CSB2025S03**	●
2.5	0/-0.020	1.25	±0.015	4	h6	5	50	2	**G2CSB2025**	●
3	0/-0.020	1.5	±0.015	3	h6	9	50	2	**G2CSB2030S03**	●
3	0/-0.020	1.5	±0.015	4	h6	6	50	2	**G2CSB2030**	●
3.5	0/-0.020	1.75	±0.015	4	h6	7	50	2	**G2CSB2035**	●
4	0/-0.020	2	±0.015	4	h6	8	50	2	**G2CSB2040**	●
4.5	0/-0.020	2.25	±0.015	6	h6	9	50	2	**G2CSB2045**	●
5	0/-0.020	2.5	±0.015	5	h6	10	50	2	**G2CSB2050S05**	●
5	0/-0.020	2.5	±0.015	6	h6	10	50	2	**G2CSB2050**	●
5.5	0/-0.020	2.75	±0.015	6	h6	11	50	2	**G2CSB2055**	●
6	0/-0.020	3	±0.015	6	h6	12	50	2	**G2CSB2060**	●
6.5	0/-0.025	3.25	±0.015	8	h6	13	60	2	**G2CSB2065**	●
7	0/-0.025	3.5	±0.015	8	h6	14	60	2	**G2CSB2070**	●
8	0/-0.025	4	±0.015	8	h6	16	60	2	**G2CSB2080**	●
9	0/-0.025	4.5	±0.015	10	h6	18	75	2	**G2CSB2090**	●
10	0/-0.025	5	±0.015	10	h6	20	75	2	**G2CSB2100**	●
12	0/-0.025	6	±0.015	12	h6	24	75	2	**G2CSB2120**	●
16	0/-0.030	8	±0.015	16	h6	30	92	2	**G2CSB2160**	●
20	0/-0.030	10	±0.015	20	h6	30	100	2	**G2CSB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CSB2

COPYING

Material Group ISO 513		P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
Hardness/Rm		≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
ap x ae		**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**
Vc (m/min)		**80÷100**	**60÷80**	**40÷60**	**110÷130**
DC (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	**0.60**	0.030	0.023	0.021	0.036
2	**1.20**	0.040	0.030	0.028	0.048
3	**1.80**	0.050	0.038	0.035	0.060
4	**2.40**	0.060	0.045	0.042	0.072
5	**3.00**	0.070	0.053	0.049	0.084
6	**3.60**	0.080	0.060	0.056	0.096
8	**4.80**	0.090	0.068	0.063	0.108
10	**6.00**	0.105	0.079	0.074	0.126
12	**7.20**	0.120	0.090	0.084	0.144
16	**9.60**	0.150	0.113	0.105	0.180
20	**12.00**	0.180	0.135	0.126	0.216

SORMA DIAMOND & CUTTING TOOLS

G2250

- Cylindrical shank
- 2 flutes ball nose
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.025	0.5	±0.015	4	h6	2	75	2	**G2250010**	●
1.5	0/-0.025	0.75	±0.015	4	h6	3	75	2	**G2250015**	●
2	0/-0.025	1	±0.015	4	h6	4	75	2	**G2250020**	●
3	0/-0.025	1.5	±0.015	3	h6	6	75	2	**G2250030S03**	●
3	0/-0.025	1.5	±0.015	4	h6	6	75	2	**G2250030**	●
4	0/-0.025	2	±0.015	4	h6	8	75	2	**G2250040**	●
5	0/-0.025	2.5	±0.015	5	h6	8	75	2	**G2250050S05**	●
5	0/-0.025	2.5	±0.015	6	h6	10	75	2	**G2250050**	●
6	0/-0.025	3	±0.015	6	h6	12	100	2	**G2250060**	●
8	0/-0.030	4	±0.015	8	h6	16	100	2	**G2250080**	●
10	0/-0.030	5	±0.015	10	h6	20	100	2	**G2250100**	●
12	0/-0.030	6	±0.015	12	h6	24	100	2	**G2250120**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2250

	Material Group ISO 513		P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm		≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae		**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**
	Vc (m/min)		**70÷90**	**50÷70**	**40÷50**	**100÷120**
COPYING	DC (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	**0.60**	0.027	0.020	0.019	0.032
	2	**1.20**	0.036	0.027	0.025	0.043
	3	**1.80**	0.045	0.034	0.032	0.054
	4	**2.40**	0.054	0.041	0.038	0.065
	5	**3.00**	0.063	0.047	0.044	0.076
	6	**3.60**	0.072	0.054	0.050	0.086
	8	**4.80**	0.081	0.061	0.057	0.097
	10	**6.00**	0.095	0.071	0.066	0.113
	12	**7.20**	0.108	0.081	0.076	0.130

SORMA DIAMOND & CUTTING TOOLS

G2251

- Cylindrical shank
- 2 flutes ball nose
- Long

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.025	3	±0.015	6	h6	12	150	2	**G2251060**	●
8	0/-0.030	4	±0.015	8	h6	16	150	2	**G2251080**	●
10	0/-0.030	5	±0.015	10	h6	20	150	2	**G2251100**	●
12	0/-0.030	6	±0.015	12	h6	24	150	2	**G2251120**	●
16	0/-0.035	8	±0.015	16	h6	30	150	2	**G2251160**	●
20	0/-0.035	10	±0.015	20	h6	30	150	2	**G2251200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

G2 General purpose - Ball nose

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

G2251

COPYING

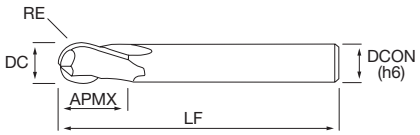
Material Group ISO 513		P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
Hardness/Rm		≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
ap x ae		**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**	**0.1D x 0.1D**
Vc (m/min)		**60÷80**	**40÷60**	**35÷45**	**90÷110**
DC (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	**3.60**	0.058	0.044	0.041	0.070
8	**4.80**	0.066	0.049	0.046	0.079
10	**6.00**	0.077	0.057	0.054	0.092
12	**7.20**	0.087	0.066	0.061	0.105
16	**9.60**	0.122	0.092	0.085	0.146
20	**12.00**	0.146	0.110	0.102	0.175

SORMA DIAMOND & CUTTING TOOLS

G2CSB4

- Cylindrical shank
- 4 flutes ball nose

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG PV200 | <45 HRC | FHA 30° | BALL NOSE | ZEFP 4 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	±0.015	4	h6	2	50	4	**G2CSB4010**	●
1.5	0/-0.020	0.75	±0.015	4	h6	3	50	4	**G2CSB4015**	●
2	0/-0.020	1	±0.015	4	h6	4	50	4	**G2CSB4020**	●
3	0/-0.020	1.5	±0.015	4	h6	6	50	4	**G2CSB4030**	●
4	0/-0.020	2	±0.015	4	h6	8	50	4	**G2CSB4040**	●
5	0/-0.020	2.5	±0.015	6	h6	10	50	4	**G2CSB4050**	●
6	0/-0.020	3	±0.015	6	h6	12	50	4	**G2CSB4060**	●
8	0/-0.025	4	±0.015	8	h6	16	60	4	**G2CSB4080**	●
10	0/-0.025	5	±0.015	10	h6	20	75	4	**G2CSB4100**	●
12	0/-0.025	6	±0.015	12	h6	24	75	4	**G2CSB4120**	●
16	0/-0.030	8	±0.015	16	h6	30	92	4	**G2CSB4160**	●
20	0/-0.030	10	±0.015	20	h6	30	100	4	**G2CSB4200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2CSB4

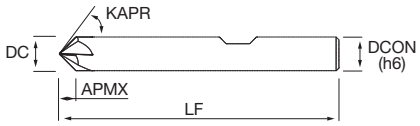
COPYING

Material Group ISO 513		P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
Hardness/Rm		≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
ap x ae		**0.1D x 03D**	**0.1D x 0.3D**	**0.1D x 0.3D**	**0.1D x 0.3D**
Vc (m/min)		**80÷100**	**60÷80**	**40÷60**	**110÷130**
DC (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	**0.60**	0.030	0.023	0.021	0.036
2	**1.20**	0.040	0.030	0.028	0.048
3	**1.80**	0.050	0.038	0.035	0.060
4	**2.40**	0.060	0.045	0.042	0.072
5	**3.00**	0.070	0.053	0.049	0.084
6	**3.60**	0.080	0.060	0.056	0.096
8	**4.80**	0.090	0.068	0.063	0.108
10	**6.00**	0.105	0.079	0.074	0.126
12	**7.20**	0.120	0.090	0.084	0.144
16	**9.60**	0.150	0.113	0.105	0.180
20	**12.00**	0.180	0.135	0.126	0.216

G2WC 90

- Chamfering and deburring
- Sharp point
- Weldon shank

P	M	K	N	S	H
★	☆	★	☆		





OSAWA NORM | N | MG / PV200 | <45 HRC | SIG 90° | ZEFP 3 | ZEFP 4 | 90°

DC	DC tol.	KAPR	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	-	45	3	h6	0.5	50	3	**G2WC01090**	●
2	-	45	3	h6	1	50	3	**G2WC02090**	●
3	-	45	3	h6	1.5	50	4	**G2WC03090**	●
4	-	45	4	h6	2	50	4	**G2WC04090**	●
6	-	45	6	h6	3	50	4	**G2WC06090**	●
8	-	45	8	h6	4	60	4	**G2WC08090**	●
10	-	45	10	h6	5	75	4	**G2WC10090**	●
12	-	45	12	h6	6	75	4	**G2WC12090**	●
16	-	45	16	h6	8	100	4	**G2WC16090**	●
20	-	45	20	h6	10	100	4	**G2WC20090**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

G2WC 90

	Material Group ISO 513	P1 P2 K1	P3 P4 P7 M1 K2	P5 M2 K3	N1 N2 N3 N4
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	-	-	-	-
	Vc (m/min)	**80÷100**	**50÷70**	**30÷50**	**100÷120**
CHAMFERING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.005
	2	0.007	0.006	0.005	0.009
	3	0.010	0.009	0.008	0.013
	4	0.013	0.011	0.010	0.017
	5	0.016	0.014	0.012	0.021
	6	0.019	0.016	0.014	0.025
	8	0.025	0.021	0.019	0.033
	10	0.032	0.027	0.024	0.042
	12	0.040	0.034	0.030	0.052
	16	0.054	0.046	0.041	0.070
	20	0.065	0.055	0.049	0.085



HF

VARIABLE HELIX AND UNEQUAL PITCH - UNIVERSAL APPLICATION

HF EVOlution is the Osawa family of micrograin carbide endmills for universal application with coatings and cutting edges specifically designed for high performance machining of all ISO materials. The HF EVOlution endmills are available in a broad range of types, lengths and radii. They are the ideal tools for both mass production and small batch manufacturing, thanks to the outstanding performance delivered and the universal applicability.

HF EVOlution è la linea Osawa di frese universali in metallo duro micrograna con spoglie e rivestimenti specifici per la lavorazione ad alto rendimento di tutti i materiali della scala ISO. Le frese HF EVOlution sono disponibili in un'ampia gamma di tipologie, lunghezze e raggi torici. Sono gli utensili ideali sia per le produzioni di serie che per la produzione di piccoli lotti, grazie all'eccellenza del rendimento e all'universalità d'impiego.

HF EVOlution heißt die Linie der Universalfräser aus mikrokörnigem Hartmetall von Osawa, mit Schneidekanten und spezifischen Beschichtungen zur Hochleistungsbearbeitung von allen Materialien der ISO-Skala. Die Fräser HF EVOlution sind in einer reichen Auswahl an Typologien, Längen und Torusradien erhältlich. Mit ihren ausgezeichneten Leistungen und dem universellen Einsatz sind sie die idealen Werkzeuge, sowohl für die Serienproduktion großer Mengen als auch für die Herstellung kleiner Lose.

HF EVOlution est la ligne Osawa de fraises universelles en carbure micrograin avec dépouilles et revêtements spécifiques pour l'usinage de haute performance de tous les matériaux de l'échelle ISO. Les fraises HF EVOlution sont disponibles dans une large gamme, longueurs et rayons. Ce sont des outils aussi bien pour les grandes séries que pour la production de prototypes, grâce à leur excellence de rendement et leur polyvalence.

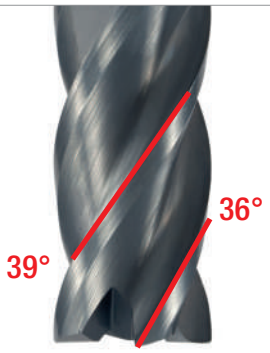
SORMA DIAMOND & CUTTING TOOLS

HF

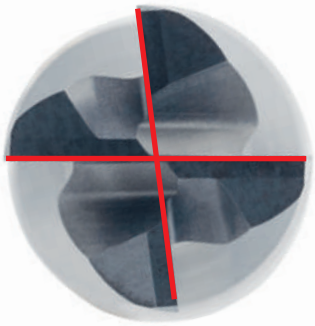
Variable Helix (VH) and Unequal Pitch (UP) - universal application

Features of HF VH/UP end mills

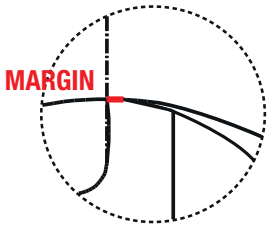




VARIABLE HELIX (VH)



UNEQUAL PITCH (UP)



SPECIAL EDGE DESIGN



CHIPBREAKER FOR ROUGHING PROCESS



CHIPBREAKER FOR TROCHOIDAL MILLING



SORMA DIAMOND & CUTTING TOOLS

HF

Variable Helix (VH) and Unequal Pitch (UP) - universal application

Features and Benefits

• Variable helix VH and unequal pitch UP design reduces vibrations, allows higher productivity and longer life
• Highly sophisticated cutting edge preparation for an excellent surface finishing
• Microngrain carbide and PV300 coating provide high wear resistance allowing long and stable tool life.
• Chipbreakers for roughing process significantly improve the metal removal rate, reduce cutting force and deliver faster heat dissipation
• Chipbreakers for trochoidal milling generate small chips for quick ejection under deep pocket milling.

• Die Geometrie mit variablem Helix (VH) und differenzierter Steigung (UP) sorgt für weniger Vibrationen und damit für hohe Produktivität und lange Standzeit
• Ausgereifte Schneidkantenpräparation für eine hervorragende Oberflächenqualität
• Das mikrokörnige Hartmetall und die PV300-Beschichtung bieten eine hohe Verschleißfestigkeit und ermöglichen eine lange und stabile Standzeit.
• Die Spanteiler für den Schruppprozess erhöhen das Volumen der abgetragenen Späne, reduzieren die Schneidkraft und sorgen für eine schnelle Wärmeableitung
• Die Spanteiler für das Schaftfräsen erzeugen kleine Späne für eine schnelle Abfuhr beim Fräsen tiefer Taschen.

• La geometria con elica variabile (VH) e passo differenziato (UP) riduce le vibrazioni garantendo elevata produttività e lunga durata
• Preparazione del tagliente altamente sofisticata per un'eccellente finitura superficiale
• Il metallo duro micrograna e il rivestimento PV300 offrono un'elevata resistenza all'usura consentendo una durata lunga e stabile.
• I rompitrucioli per il processo di sgrossatura consentono l'aumento del volume di truciolo asportato, riducono la forza di taglio e garantiscono una rapida dissipazione del calore
• I rompitrucioli per la fresatura trocoidale generano piccoli trucioli per una rapida espulsione durante la fresatura di tasche profonde.

• La géométrie à hélice variable (VH) et pas décalé (UP) réduit les vibrations, assurant ainsi une productivité élevée et une longue durée
• Préparation du tranchant hautement sophistiquée gage d'excellente finition superficielle
• Le carbure à micro-grains et le revêtement PV300 offrent une haute résistance à l'usure qui garantit longue durée de vie et stabilité.
• Les brise-copeaux pour le processus de dégrossissage augmentent le volume de copeau éliminé, réduisent la force de coupe et assurent une dissipation rapide de la chaleur.
• Les brise-copeaux de fraisage trochoïdal génèrent de petits copeaux gage d'expulsion rapide lors du fraisage de poches profondes.

Use case

Tool Type	HF840
Workpiece	W.-Nr 1.6510 39NiCrMo3
Parameters	Vc 130 m/min, fz 0,04 mm/t, ap 25 mm, ae 3 mm
Diameter	12 mm

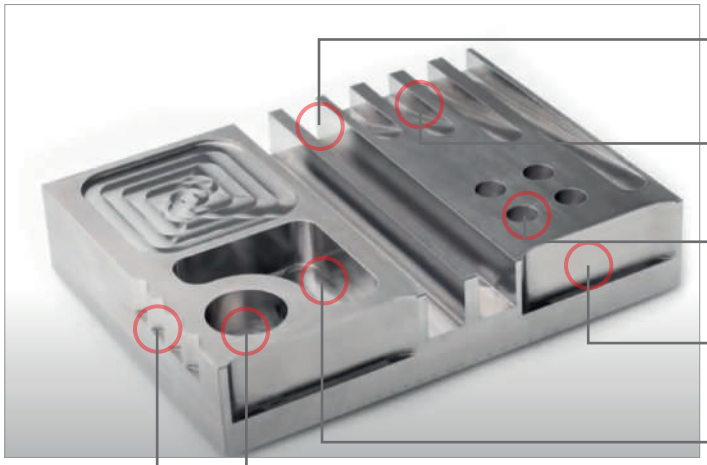
Machining time:



HF

Variable Helix (VH) and Unequal Pitch (UP) - universal application

Multi purpose for all milling strategies



WATCH THE VIDEO

- SLOTTING — HIGH EFFICIENCY SLOTTING UP TO 2XD
- RAMPING — UP TO 45°
- DRILLING — HIGH VERSATILITY
- SIDE MILLING — SUPERIOR FINISHING
- TROCHOIDAL — REDUCE CYCLE TIME SIGNIFICANTLY
- HELICAL — EFFICIENT POCKET MILLING
- VERTICAL — STABLE Z-AXIS OPERATION

Universal application

HF UNI

HF HARD 30÷55HRC

• 2 families of tools with application-specific geometries.
• HF UNI (VH+UP), designed for milling of materials with hardness up to 40 HRC: steel (ISO P), stainless steel (ISO M), cast iron (ISO K) and super alloys (ISO S), such as Inconel or Titanium. The HF UNI range is now extended with the new HF535T for trochoidal milling which allows small chips and high feed thanks to the optimized chipbreaker, becoming the optimal choice for high metal removal rate application.
• HF HARD (UP) for steel (ISO P), stainless steel (ISO M), cast iron (ISO K), super alloys (ISO S), hardened steel (ISO H) milling, with hardness up to 55 HRC.

• 2 famiglie di utensili con geometrie specifiche.
• HF UNI (VH+UP), per fresatura di materiali con durezza sino a 40 HRC: acciaio (ISO P), acciaio inossidabile (ISO M), ghisa (ISO K) e super leghe (ISO S), quali Inconel o titanio. La gamma HF UNI si arricchisce della nuova HF535T per fresatura trocoidale che favorisce la formazione di trucioli piccoli e consente elevati avanzamenti grazie al rompitruciolo ottimizzato, diventando così la migliore scelta per elevate asportazioni.
• HF HARD (UP) per fresatura di acciaio (ISO P), acciaio inossidabile (ISO M), ghisa (ISO K), super leghe (ISO S), acciaio temprato (ISO H), con durezza sino a 55 HRC.

• 2 Werkzeugfamilien mit spezifischen Geometrien
• HF UNI (VH+UP), zum Fräsen von Materialien mit einer Härte bis zu 40HRC: Stahl (ISO P), korrosionsbeständiger Stahl (ISO M), Gusseisen (ISO K) und Superlegierungen (ISO S) wie Inconel oder Titan. Die HF UNI-Produktpalette wird mit dem neuen HF535T Fräser für Trochoidalfräsen bereichert, der sehr kleine Späne erzeugt und dank des optimierten Spanbrechers hohe Vorschübe ermöglicht, wodurch er zur besten Wahl für hohe Abtragsraten wird.
• HF HARD (UP) für das Fräsen von Stahl (ISO P), korrosionsbeständigem Stahl (ISO M), Gusseisen (ISO K), Superlegierungen (ISO S), gehärtetem Stahl (ISO H) mit einer Härten bis zu 55HRC.

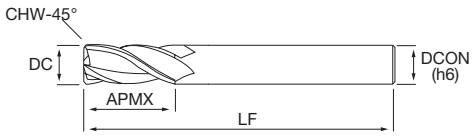
• 2 familles d'outils avec des géométries spécifiques
• HF UNI (VH+UP), pour fraisage de matériaux dont la dureté peut atteindre 40HRC : acier (ISO P), acier inoxydable (ISO M), fonte (ISO K) et super alliages (ISO S), tels que l' inconel ou titane. La gamme HF UNI s'étend désormais avec le nouveau HF535T pour le fraisage trochoïdal qui permet de petits copeaux et une avance élevée grâce au brise-copeaux optimisé, devenant ainsi le choix optimal pour les applications à taux d'enlèvement de copeaux élevé.
• HF HARD (UP), pour fraisage d'acier (ISO P), acier inoxydable (ISO M), fonte (ISO K) et super alliages (ISO S), acier trempé (ISO H), dont la dureté peut atteindre 55HRC.

SORMA DIAMOND & CUTTING TOOLS

HF840

- Cylindrical shank
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	0.1	±0.020	6	h6	9	57	4	**HF840030**	●
4	0/-0.020	0.1	±0.020	6	h6	11	57	4	**HF840040**	●
5	0/-0.020	0.1	±0.020	6	h6	13	57	4	**HF840050**	●
6	0/-0.020	0.1	±0.020	6	h6	13	57	4	**HF840060**	●
8	0/-0.020	0.2	±0.020	8	h6	20	64	4	**HF840080**	●
10	0/-0.020	0.2	±0.020	10	h6	22	72	4	**HF840100**	●
12	0/-0.020	0.2	±0.020	12	h6	26	83	4	**HF840120**	●
14	0/-0.020	0.3	±0.020	14	h6	26	83	4	**HF840140**	●
16	0/-0.020	0.3	±0.020	16	h6	32	92	4	**HF840160**	●
18	0/-0.020	0.3	±0.020	18	h6	32	92	4	**HF840180**	●
20	0/-0.020	0.4	±0.020	20	h6	38	104	4	**HF840200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF840

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**D x D**	**D x D**
	Vc (m/min)	**130÷150**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.013	0.011	0.010
	4	0.019	0.017	0.014	0.013
	5	0.023	0.021	0.017	0.016
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
	14	0.054	0.049	0.041	0.038
	16	0.060	0.054	0.045	0.042
	18	0.066	0.059	0.050	0.046
	20	0.073	0.066	0.055	0.051
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.017	0.015	0.013	0.018
	4	0.022	0.020	0.018	0.024
	5	0.028	0.025	0.022	0.030
	6	0.032	0.029	0.026	0.036
	8	0.042	0.038	0.034	0.046
	10	0.050	0.045	0.040	0.055
	12	0.058	0.052	0.046	0.063
	14	0.065	0.058	0.052	0.071
	16	0.072	0.065	0.058	0.079
	18	0.079	0.071	0.063	0.087
	20	0.088	0.079	0.070	0.096
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.010	0.008	0.008
	4	0.013	0.013	0.011	0.010
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	8	0.025	0.024	0.021	0.020
	10	0.031	0.029	0.025	0.024
	12	0.035	0.033	0.029	0.027
	14	0.039	0.037	0.032	0.030
	16	0.044	0.041	0.036	0.034
	18	0.048	0.045	0.040	0.037
	20	0.053	0.050	0.044	0.041
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF840

RAMPING	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.020	0.019	0.026
	8	0.028	0.026	0.024	0.034
	10	0.034	0.031	0.029	0.040
	12	0.038	0.035	0.034	0.046
	14	0.043	0.040	0.038	0.052
	16	0.048	0.044	0.042	0.058
	18	0.053	0.048	0.046	0.063
	20	0.058	0.054	0.051	0.070

VERTICAL	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
	14	0.054	0.049	0.041	0.038
	16	0.060	0.054	0.045	0.042
	18	0.066	0.059	0.050	0.046
	20	0.073	0.066	0.055	0.051

DRILLING	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**20÷40**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.007	0.006	0.006	0.008
	4	0.009	0.008	0.007	0.010
	5	0.012	0.010	0.009	0.013
	6	0.014	0.012	0.011	0.015
	8	0.018	0.016	0.014	0.019
	10	0.021	0.019	0.017	0.023
	12	0.024	0.022	0.019	0.026
	14	0.027	0.024	0.022	0.030
	16	0.030	0.027	0.024	0.033
	18	0.033	0.030	0.026	0.036
	20	0.037	0.033	0.029	0.040
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - 45° chamfer

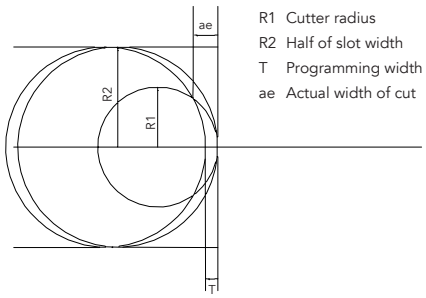
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

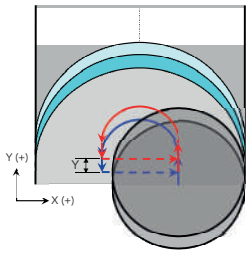
HF840

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**190÷230**	**130÷150**	**100÷120**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.035	0.032	0.028	0.039
	4	0.046	0.042	0.037	0.051
	5	0.058	0.052	0.046	0.063
	6	0.068	0.061	0.054	0.074
	8	0.088	0.079	0.070	0.096
	10	0.105	0.095	0.084	0.116
	12	0.120	0.108	0.096	0.132
	14	0.135	0.122	0.108	0.149
	16	0.150	0.135	0.120	0.165
	18	0.165	0.149	0.132	0.182
	20	0.183	0.164	0.146	0.201
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed. use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



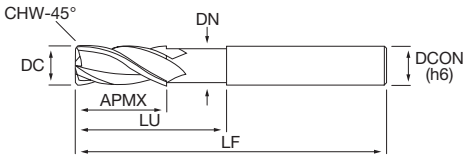
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF440

- Cylindrical shank and reduced neck
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.1	±0.020	6	h6	9	15	2.8	57	4	**HF440030**	●
4	0/-0.030	0.1	±0.020	6	h6	11	18	3.8	57	4	**HF440040**	●
5	0/-0.030	0.1	±0.020	6	h6	13	19	4.8	57	4	**HF440050**	●
6	0/-0.030	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF440060**	●
8	0/-0.030	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF440080**	●
10	0/-0.030	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF440100**	●
12	0/-0.030	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF440120**	●
14	0/-0.030	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF440140**	●
16	0/-0.030	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF440160**	●
20	0/-0.030	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF440200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF440

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.011	0.009	0.009
	4	0.017	0.015	0.012	0.012
	5	0.021	0.019	0.016	0.014
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	20	0.066	0.059	0.049	0.046
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.025	0.023		
	10	0.030	0.027		
	12	0.035	0.031		
	14	0.039	0.035		
	16	0.043	0.039		
	20	0.053	0.047		

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.015	0.014	0.012	0.017
	4	0.020	0.018	0.016	0.022
	5	0.025	0.022	0.020	0.027
	6	0.029	0.026	0.023	0.032
	8	0.038	0.034	0.030	0.042
	10	0.045	0.041	0.036	0.050
	12	0.052	0.047	0.041	0.057
	14	0.058	0.052	0.047	0.064
	16	0.065	0.058	0.052	0.071
	20	0.079	0.071	0.063	0.087
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF440

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**5° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.009	0.008	0.007
	4	0.012	0.011	0.010	0.009
	5	0.015	0.014	0.012	0.012
	6	0.018	0.016	0.015	0.014
	8	0.023	0.021	0.019	0.018
	10	0.028	0.026	0.023	0.021
	12	0.031	0.029	0.026	0.024
	14	0.035	0.033	0.029	0.027
	16	0.039	0.037	0.032	0.030
	20	0.048	0.045	0.039	0.037
a° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.018	0.017	0.023
	8	0.025	0.023	0.022	0.030
	10	0.030	0.028	0.026	0.036
	12	0.034	0.032	0.030	0.042
	14	0.039	0.036	0.034	0.047
	16	0.043	0.040	0.038	0.052
	20	0.052	0.048	0.046	0.063

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**50÷70**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.025	0.023		
	12	0.028	0.026		
	14	0.032	0.029		
	16	0.035	0.032		
	20	0.043	0.039		

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF440

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	20	0.066	0.059	0.049	0.046

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**85÷105**	**55÷75**	**40÷60**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.007
	4	0.008	0.007	0.007	0.009
	5	0.010	0.009	0.008	0.011
	6	0.012	0.011	0.010	0.013
	8	0.016	0.014	0.013	0.017
	10	0.019	0.017	0.015	0.021
	12	0.022	0.019	0.017	0.024
	14	0.024	0.022	0.019	0.027
	16	0.027	0.024	0.022	0.030
	20	0.033	0.030	0.026	0.036
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

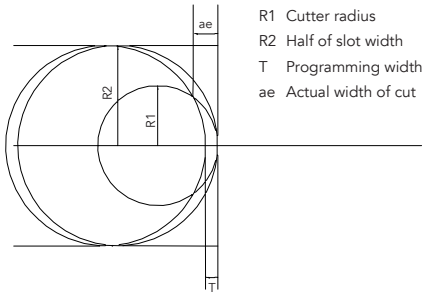
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

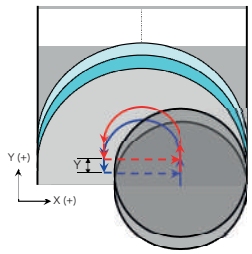
HF440

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.2D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.032	0.028	0.025	0.035
	4	0.042	0.037	0.033	0.046
	5	0.052	0.047	0.041	0.057
	6	0.061	0.055	0.049	0.067
	8	0.079	0.071	0.063	0.087
	10	0.095	0.085	0.076	0.104
	12	0.108	0.097	0.086	0.119
	14	0.122	0.109	0.097	0.134
	16	0.135	0.122	0.108	0.149
	20	0.164	0.148	0.131	0.181
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



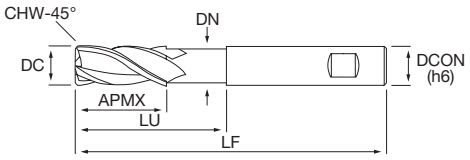
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF441

- Weldon shank and reduced neck
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.1	±0.020	6	h6	9	15	2.8	57	4	**HF441030**	●
4	0/-0.030	0.1	±0.020	6	h6	11	18	3.8	57	4	**HF441040**	●
5	0/-0.030	0.1	±0.020	6	h6	13	19	4.8	57	4	**HF441050**	●
6	0/-0.030	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF441060**	●
8	0/-0.030	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF441080**	●
10	0/-0.030	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF441100**	●
12	0/-0.030	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF441120**	●
14	0/-0.030	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF441140**	●
16	0/-0.030	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF441160**	●
18	0/-0.030	0.3	±0.020	18	h6	32	42	17.7	92	4	**HF441180**	●
20	0/-0.030	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF441200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.011	0.009	0.009
	4	0.017	0.015	0.012	0.012
	5	0.021	0.019	0.016	0.014
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	18	0.059	0.053	0.045	0.042
	20	0.066	0.059	0.049	0.046
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.025	0.023		
	10	0.030	0.027		
	12	0.035	0.031		
	14	0.039	0.035		
	16	0.043	0.039		
	18	0.048	0.043		
	20	0.053	0.047		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	ap x ae	**2D x D**			
	Vc (m/min)	**60÷80**			
SLOTTING	DC (mm)	fz (mm/z)			
	10	0.023			
	12	0.026			
	14	0.029			
	16	0.032			
	18	0.036			
	20	0.039			

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.015	0.014	0.012	0.017
	4	0.020	0.018	0.016	0.022
	5	0.025	0.022	0.020	0.027
	6	0.029	0.026	0.023	0.032
	8	0.038	0.034	0.030	0.042
	10	0.045	0.041	0.036	0.050
	12	0.052	0.047	0.041	0.057
	14	0.058	0.052	0.047	0.064
	16	0.065	0.058	0.052	0.071
	18	0.071	0.064	0.057	0.078
	20	0.079	0.071	0.063	0.087
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.009	0.008	0.007
	4	0.012	0.011	0.010	0.009
	5	0.015	0.014	0.012	0.012
	6	0.018	0.016	0.015	0.014
	8	0.023	0.021	0.019	0.018
	10	0.028	0.026	0.023	0.021
	12	0.031	0.029	0.026	0.024
	14	0.035	0.033	0.029	0.027
	16	0.039	0.037	0.032	0.030
	18	0.043	0.040	0.036	0.033
	20	0.048	0.045	0.039	0.037
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.018	0.017	0.023
	8	0.025	0.023	0.022	0.030
	10	0.030	0.028	0.026	0.036
	12	0.034	0.032	0.030	0.042
	14	0.039	0.036	0.034	0.047
	16	0.043	0.040	0.038	0.052
	18	0.047	0.044	0.042	0.057
	20	0.052	0.048	0.046	0.063

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**50÷70**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.025	0.023		
	12	0.028	0.026		
	14	0.032	0.029		
	16	0.035	0.032		
	18	0.039	0.036		
	20	0.043	0.039		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	α° x ae	**45° x D**			
	Vc (m/min)	**60÷80**			
RAMPING	DC (mm)	fz (mm/z)			
	10	0.024			
	12	0.028			
	14	0.031			
	16	0.035			
	18	0.038			
	20	0.042			

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	18	0.059	0.053	0.045	0.042
	20	0.066	0.059	0.049	0.046

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**85÷105**	**55÷75**	**40÷60**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.007
	4	0.008	0.007	0.007	0.009
	5	0.010	0.009	0.008	0.011
	6	0.012	0.011	0.010	0.013
	8	0.016	0.014	0.013	0.017
	10	0.019	0.017	0.015	0.021
	12	0.022	0.019	0.017	0.024
	14	0.024	0.022	0.019	0.027
	16	0.027	0.024	0.022	0.030
	18	0.030	0.027	0.024	0.033
	20	0.033	0.030	0.026	0.036

ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

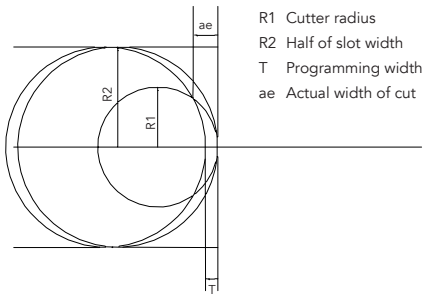
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

Cutting Parameters

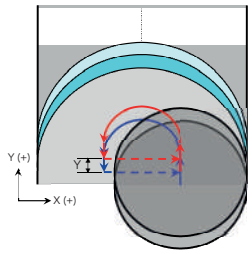
HF441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.032	0.028	0.025	0.035
	4	0.042	0.037	0.033	0.046
	5	0.052	0.047	0.041	0.057
	6	0.061	0.055	0.049	0.067
	8	0.079	0.071	0.063	0.087
	10	0.095	0.085	0.076	0.104
	12	0.108	0.097	0.086	0.119
	14	0.122	0.109	0.097	0.134
	16	0.135	0.122	0.108	0.149
	18	0.149	0.134	0.119	0.163
	20	0.164	0.148	0.131	0.181
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

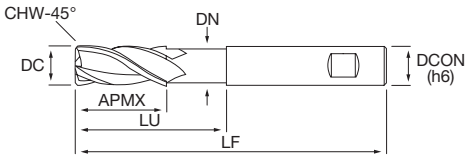
HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

HF6441

- Weldon shank and reduced neck
- 45° chamfer

P	M	K	N	S	H
★	★	★			





OSAWA NORM | MG PV500 | <40 HRC | FHA VH 36°/39° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.02	0.1	±0.020	4	h6	3	-	-	50	4	**HF6441010N**	●
1.5	0/-0.02	0.1	±0.020	4	h6	4.5	-	-	50	4	**HF6441015N**	●
2	0/-0.02	0.1	±0.020	4	h6	6.5	-	-	50	4	**HF6441020N**	●
2.5	0/-0.02	0.1	±0.020	4	h6	6.5	-	-	50	4	**HF6441025N**	●
3	0/-0.02	0.1	±0.020	6	h6	9	15	2.8	57	4	**HF6441030N**	●
3.5	0/-0.02	0.15	±0.020	6	h6	11	18	3.3	57	4	**HF6441035N**	●
4	0/-0.02	0.15	±0.020	6	h6	11	18	3.8	57	4	**HF6441040N**	●
4.5	0/-0.02	0.15	±0.020	6	h6	13	19	4.3	57	4	**HF6441045N**	●
5	0/-0.02	0.15	±0.020	6	h6	13	19	4.8	57	4	**HF6441050N**	●
5.5	0/-0.02	0.15	±0.020	6	h6	13	21	5.3	57	4	**HF6441055N**	●
6	0/-0.02	0.2	±0.020	6	h6	13	21	5.8	57	4	**HF6441060N**	●
6.5	0/-0.02	0.2	±0.020	8	h6	20	27	6.3	63	4	**HF6441065N**	●
7	0/-0.02	0.2	±0.020	8	h6	20	27	6.8	63	4	**HF6441070N**	●
7.5	0/-0.02	0.2	±0.020	8	h6	20	27	7.3	63	4	**HF6441075N**	●
8	0/-0.02	0.2	±0.020	8	h6	20	27	7.8	63	4	**HF6441080N**	●
8.5	0/-0.02	0.2	±0.020	10	h6	22	32	8.3	72	4	**HF6441085N**	●
9	0/-0.02	0.2	±0.020	10	h6	22	32	8.8	72	4	**HF6441090N**	●
9.5	0/-0.03	0.3	±0.020	10	h6	22	32	9.3	72	4	**HF6441095N**	●
10	0/-0.03	0.3	±0.020	10	h6	22	32	9.8	72	4	**HF6441100N**	●
10.5	0/-0.03	0.3	±0.020	12	h6	26	38	10.2	83	4	**HF6441105N**	●
11	0/-0.03	0.3	±0.020	12	h6	26	38	10.7	83	4	**HF6441110N**	●
11.5	0/-0.03	0.35	±0.020	12	h6	26	38	11.2	83	4	**HF6441115N**	●
12	0/-0.03	0.35	±0.020	12	h6	26	38	11.7	83	4	**HF6441120N**	●
13	0/-0.03	0.35	±0.020	14	h6	26	38	12.7	83	4	**HF6441130N**	●
14	0/-0.03	0.4	±0.020	14	h6	26	38	13.7	83	4	**HF6441140N**	●
15	0/-0.03	0.4	±0.020	16	h6	32	44	14.7	92	4	**HF6441150N**	●
16	0/-0.03	0.4	±0.020	16	h6	32	44	15.7	92	4	**HF6441160N**	●
17	0/-0.03	0.5	±0.020	18	h6	32	44	16.7	92	4	**HF6441170N**	●
18	0/-0.03	0.5	±0.020	18	h6	32	44	17.7	92	4	**HF6441180N**	●
19	0/-0.03	0.5	±0.020	20	h6	38	54	18.7	104	4	**HF6441190N**	●
20	0/-0.03	0.5	±0.020	20	h6	38	54	19.7	104	4	**HF6441200N**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF6441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**D x D**	
	Vc (m/min)	**180÷220**	**120÷140**	**90÷110**	
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.004	0.004	0.004	
	2	0.008	0.008	0.008	
	3	0.013	0.012	0.012	
	4	0.017	0.016	0.016	
	5	0.021	0.020	0.020	
	6	0.025	0.024	0.023	
	8	0.036	0.033	0.033	
	10	0.047	0.044	0.044	
	12	0.060	0.056	0.056	
	14	0.068	0.063	0.063	
	16	0.076	0.071	0.069	
	20	0.089	0.083	0.080	
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	
	Vc (m/min)	**240÷280**	**160÷200**	**100÷140**	
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.005	0.004	0.005	
	2	0.010	0.008	0.010	
	3	0.014	0.013	0.015	
	4	0.019	0.018	0.021	
	5	0.025	0.023	0.026	
	6	0.030	0.028	0.032	
	8	0.043	0.040	0.044	
	10	0.056	0.052	0.057	
	12	0.071	0.065	0.070	
	14	0.081	0.075	0.079	
	16	0.091	0.084	0.088	
	20	0.110	0.100	0.103	
ap x ae	**≤ D5**	1.5D x 0.12D	1.5D x 0.12D	1.5D x 0.1D	

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck. please refer to HF440 parameters.

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF6441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**4° x 0.4D**	
	Vc (m/min)	**180÷220**	**120÷140**	**90÷110**	
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.004	0.003	0.003	
	2	0.007	0.006	0.006	
	3	0.009	0.009	0.009	
	4	0.012	0.012	0.012	
	5	0.015	0.015	0.015	
	6	0.018	0.018	0.017	
	8	0.026	0.025	0.025	
	10	0.034	0.033	0.033	
	12	0.044	0.042	0.042	
	14	0.050	0.047	0.047	
	16	0.055	0.053	0.052	
	20	0.065	0.062	0.060	
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	α° x ae	**15° x D**	**10° x D**	**10° x D**	
	Vc (m/min)	**160÷200**	**100÷120**	**80÷100**	
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	6	0.010	0.010	0.010	
	8	0.014	0.013	0.013	
	10	0.017	0.016	0.016	
	12	0.020	0.019	0.018	
	14	0.029	0.026	0.026	
	16	0.038	0.035	0.035	
	20	0.048	0.045	0.045	

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	α° x ae	**30° x D**	**15° x D**	**10° x D**	
	Vc (m/min)	**140÷180**	**90÷110**	**70÷90**	
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	10	0.014	0.013	0.013	
	12	0.016	0.016	0.015	
	14	0.024	0.022	0.022	
	16	0.031	0.029	0.029	
	20	0.039	0.037	0.037	

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck. please refer to HF440 parameters.

Cutting Parameters

HF6441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.4D**	
	Vc (m/min)	**160÷200**	**100÷120**	**80÷100**	
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	6	0.025	0.024	0.023	
	8	0.036	0.033	0.033	
	10	0.047	0.044	0.044	
	12	0.060	0.056	0.056	
	14	0.068	0.063	0.063	
	16	0.076	0.071	0.069	
	20	0.089	0.083	0.080	

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**D x D**	**D x D**	**0.5D x D**	
	Vc (m/min)	**85÷105**	**55÷75**	**40÷60**	
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.002	0.002	0.002	
	2	0.004	0.004	0.004	
	3	0.007	0.006	0.006	
	4	0.009	0.008	0.008	
	5	0.011	0.010	0.010	
	6	0.013	0.012	0.012	
	8	0.018	0.017	0.017	
	10	0.024	0.022	0.022	
	12	0.030	0.028	0.028	
	14	0.034	0.032	0.032	
	16	0.038	0.036	0.035	
	20	0.045	0.042	0.040	
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.5D x D	

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

HF UNI Variable helix and unequal pitch - 45° chamfer

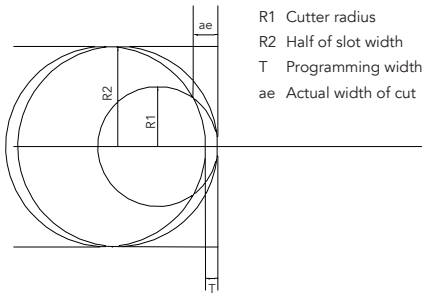
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

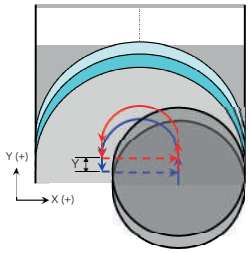
HF6441

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4	
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	
	Vc (m/min)	**260÷300**	**170÷210**	**100÷150**	
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	1	0.011	0.01	0.01	
	2	0.022	0.02	0.02	
	3	0.033	0.030	0.030	
	4	0.043	0.040	0.040	
	5	0.053	0.050	0.050	
	6	0.063	0.060	0.058	
	8	0.090	0.083	0.083	
	10	0.118	0.110	0.110	
	12	0.150	0.140	0.140	
	14	0.170	0.158	0.158	
	16	0.190	0.178	0.173	
	20	0.223	0.208	0.200	
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D	

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



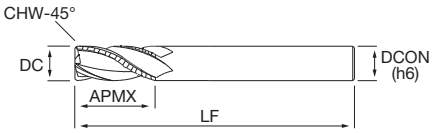
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF844

- Cylindrical shank
- 45° chamfer
- Roughing HR

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | HR FINE | ZEFP 4 UP | 1.5D SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.020	0.1	±0.020	6	h6	16	57	4	**HF844060**	●
8	0/-0.020	0.2	±0.020	8	h6	20	64	4	**HF844080**	●
10	0/-0.020	0.2	±0.020	10	h6	22	72	4	**HF844100**	●
12	0/-0.020	0.2	±0.020	12	h6	26	83	4	**HF844120**	●
14	0/-0.020	0.2	±0.020	14	h6	26	83	4	**HF844140**	●
16	0/-0.020	0.3	±0.020	16	h6	32	92	4	**HF844160**	●
18	0/-0.020	0.3	±0.020	18	h6	32	92	4	**HF844180**	●
20	0/-0.020	0.4	±0.020	20	h6	38	104	4	**HF844200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF844

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.029	0.026	0.022	0.020
	8	0.038	0.034	0.028	0.026
	10	0.045	0.041	0.034	0.032
	12	0.052	0.047	0.039	0.036
	14	0.058	0.052	0.044	0.041
	16	0.065	0.058	0.049	0.045
	20	0.079	0.071	0.059	0.055

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.030	0.027		
	10	0.036	0.033		
	12	0.041	0.037		
	14	0.047	0.042		
	16	0.052	0.047		
	20	0.063	0.057		

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.035	0.031	0.028	0.038
	8	0.045	0.041	0.036	0.050
	10	0.054	0.049	0.044	0.060
	12	0.062	0.056	0.050	0.068
	14	0.070	0.063	0.056	0.077
	16	0.078	0.070	0.062	0.086
	20	0.095	0.085	0.076	0.104

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF844

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**8° x 0.4D**	**6° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.020	0.019	0.016	0.016
	8	0.026	0.024	0.021	0.021
	10	0.031	0.029	0.026	0.025
	12	0.036	0.033	0.029	0.029
	14	0.040	0.037	0.033	0.033
	16	0.045	0.041	0.037	0.036
	20	0.055	0.050	0.045	0.044

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.030	0.028	0.026	0.036
	10	0.036	0.033	0.032	0.044
	12	0.041	0.038	0.036	0.050
	14	0.047	0.043	0.041	0.056
	16	0.052	0.048	0.045	0.062
	20	0.063	0.058	0.055	0.076

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**85÷105**	**45÷65**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.030	0.027		
	12	0.034	0.031		
	14	0.038	0.035		
	16	0.042	0.039		
	20	0.051	0.047		

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

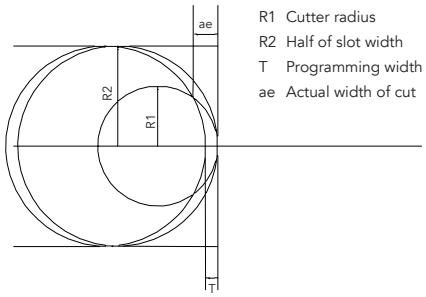
Cutting Parameters

HF844

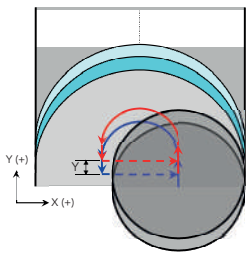
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
VERTICAL	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.029	0.026	0.022	0.020
	8	0.038	0.034	0.028	0.026
	10	0.045	0.041	0.034	0.032
	12	0.052	0.047	0.039	0.036
	14	0.058	0.052	0.044	0.041
	16	0.065	0.058	0.049	0.045
	20	0.079	0.071	0.059	0.055

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
TROCHOIDAL	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.073	0.066	0.058	0.080
	8	0.095	0.085	0.076	0.104
	10	0.113	0.102	0.091	0.125
	12	0.130	0.117	0.104	0.143
	14	0.146	0.131	0.117	0.160
	16	0.162	0.146	0.130	0.178
	20	0.197	0.177	0.158	0.217

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



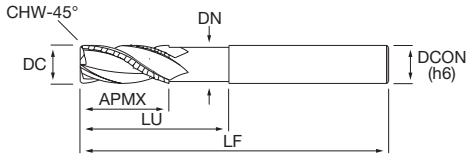
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF444

- Cylindrical shank and reduced neck
- 45° chamfer
- Roughing HR

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | HR FINE | ZEFP 4 UP | 1.5D SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.050	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF444060**	●
8	0/-0.050	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF444080**	●
10	0/-0.050	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF444100**	●
12	0/-0.050	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF444120**	●
14	0/-0.050	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF444140**	●
16	0/-0.050	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF444160**	●
20	0/-0.050	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF444200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF444

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.024	0.020	0.018
	8	0.034	0.031	0.026	0.024
	10	0.041	0.037	0.031	0.029
	12	0.047	0.042	0.035	0.033
	14	0.052	0.047	0.039	0.037
	16	0.058	0.052	0.044	0.041
	20	0.071	0.064	0.053	0.050

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.027	0.024		
	10	0.033	0.029		
	12	0.037	0.034		
	14	0.042	0.038		
	16	0.047	0.042		
	20	0.057	0.051		

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.031	0.028	0.025	0.035
	8	0.041	0.037	0.033	0.045
	10	0.049	0.044	0.039	0.054
	12	0.056	0.050	0.045	0.062
	14	0.063	0.057	0.050	0.069
	16	0.070	0.063	0.056	0.077
	20	0.085	0.077	0.068	0.094

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF444

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**7° x 0.4D**	**5° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.015
	8	0.024	0.022	0.020	0.019
	10	0.029	0.027	0.025	0.023
	12	0.033	0.031	0.028	0.026
	14	0.037	0.034	0.032	0.029
	16	0.041	0.038	0.035	0.033
	20	0.050	0.046	0.043	0.040

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.027	0.025	0.024	0.033
	10	0.033	0.030	0.029	0.039
	12	0.037	0.034	0.033	0.045
	14	0.042	0.039	0.037	0.050
	16	0.047	0.043	0.041	0.056
	20	0.057	0.052	0.050	0.068

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**50÷70**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.027	0.024		
	12	0.030	0.028		
	14	0.034	0.031		
	16	0.038	0.035		
	20	0.046	0.042		

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

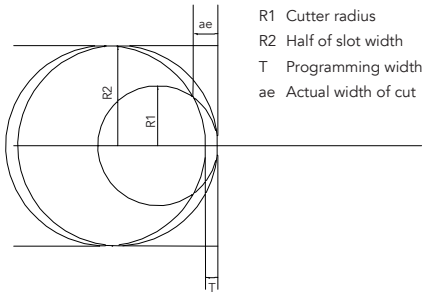
Cutting Parameters

HF444

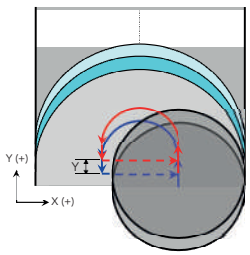
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
VERTICAL	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.024	0.020	0.018
	8	0.034	0.031	0.026	0.024
	10	0.041	0.037	0.031	0.029
	12	0.047	0.042	0.035	0.033
	14	0.052	0.047	0.039	0.037
	16	0.058	0.052	0.044	0.041
	20	0.071	0.064	0.053	0.050

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
TROCHOIDAL	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.066	0.059	0.052	0.072
	8	0.085	0.077	0.068	0.094
	10	0.102	0.092	0.082	0.112
	12	0.117	0.105	0.093	0.128
	14	0.131	0.118	0.105	0.144
	16	0.146	0.131	0.117	0.160
	20	0.177	0.160	0.142	0.195

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



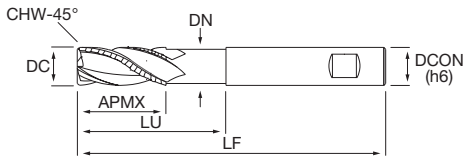
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF445

- Weldon shank and reduced neck
- 45° chamfer
- Roughing HR

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | HR FINE | ZEFP 4 UP | 1.5D SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.050	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF445060**	●
8	0/-0.050	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF445080**	●
10	0/-0.050	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF445100**	●
12	0/-0.050	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF445120**	●
14	0/-0.050	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF445140**	●
16	0/-0.050	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF445160**	●
20	0/-0.050	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF445200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF445

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.024	0.020	0.018
	8	0.034	0.031	0.026	0.024
	10	0.041	0.037	0.031	0.029
	12	0.047	0.042	0.035	0.033
	14	0.052	0.047	0.039	0.037
	16	0.058	0.052	0.044	0.041
	20	0.071	0.064	0.053	0.050

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.027	0.024		
	10	0.033	0.029		
	12	0.037	0.034		
	14	0.042	0.038		
	16	0.047	0.042		
	20	0.057	0.051		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	ap x ae	**2D x D**			
	Vc (m/min)	**60÷80**			
SLOTTING	DC (mm)	fz (mm/z)			
	10	0.024			
	12	0.028			
	14	0.031			
	16	0.035			
	20	0.043			

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

Cutting Parameters

HF445

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.031	0.028	0.025	0.035
	8	0.041	0.037	0.033	0.045
	10	0.049	0.044	0.039	0.054
	12	0.056	0.050	0.045	0.062
	14	0.063	0.057	0.050	0.069
	16	0.070	0.063	0.056	0.077
	20	0.085	0.077	0.068	0.094

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**7° x 0.4D**	**5° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.015
	8	0.024	0.022	0.020	0.019
	10	0.029	0.027	0.025	0.023
	12	0.033	0.031	0.028	0.026
	14	0.037	0.034	0.032	0.029
	16	0.041	0.038	0.035	0.033
	20	0.050	0.046	0.043	0.040

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.027	0.025	0.024	0.033
	10	0.033	0.030	0.029	0.039
	12	0.037	0.034	0.033	0.045
	14	0.042	0.039	0.037	0.050
	16	0.047	0.043	0.041	0.056
	20	0.057	0.052	0.050	0.068

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

HF UNI Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF445

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
RAMPING	Vc (m/min)	**80÷100**	**50÷70**		
	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.027	0.024		
	12	0.030	0.028		
	14	0.034	0.031		
	16	0.038	0.035		
	20	0.046	0.042		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	α° x ae	**45° x D**			
RAMPING	Vc (m/min)	**60÷80**			
	DC (mm)	fz (mm/z)			
	10	0.026			
	12	0.030			
	14	0.034			
	16	0.038			
	20	0.046			

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
VERTICAL	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.024	0.020	0.018
	8	0.034	0.031	0.026	0.024
	10	0.041	0.037	0.031	0.029
	12	0.047	0.042	0.035	0.033
	14	0.052	0.047	0.039	0.037
	16	0.058	0.052	0.044	0.041
	20	0.071	0.064	0.053	0.050

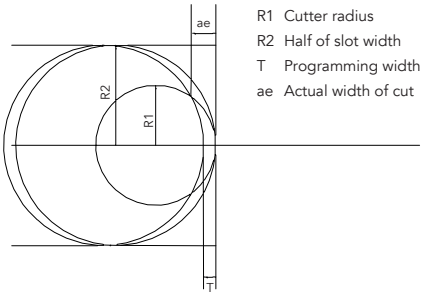
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

Cutting Parameters

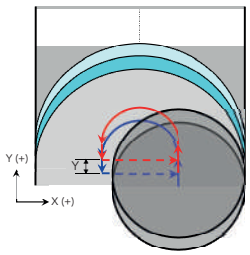
HF445

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.066	0.059	0.052	0.072
	8	0.085	0.077	0.068	0.094
	10	0.102	0.092	0.082	0.112
	12	0.117	0.105	0.093	0.128
	14	0.131	0.118	0.105	0.144
	16	0.146	0.131	0.117	0.160
	20	0.177	0.160	0.142	0.195

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



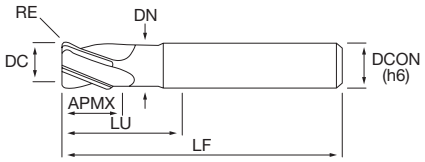
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF440 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF342

- Cylindrical shank and reduced neck
- Extra short
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.2	±0.010	6	h6	5	9	2.8	50	4	**HF34202030**	●
4	0/-0.030	0.2	±0.010	6	h6	6	12	3.8	50	4	**HF34202040**	●
5	0/-0.030	0.2	±0.010	6	h6	8	14	4.8	50	4	**HF34202050**	●
6	0/-0.030	0.3	±0.010	6	h6	9	18	5.8	55	4	**HF34203060**	●
8	0/-0.030	0.5	±0.010	8	h6	12	24	7.8	60	4	**HF34205080**	●
10	0/-0.030	1	±0.010	10	h6	15	30	9.8	70	4	**HF34210100**	●
12	0/-0.030	1	±0.010	12	h6	18	35	11.8	80	4	**HF34210120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF342

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.013	0.011	0.010
	4	0.019	0.017	0.014	0.013
	5	0.023	0.021	0.017	0.016
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.017	0.015	0.013	0.018
	4	0.022	0.020	0.018	0.024
	5	0.028	0.025	0.022	0.030
	6	0.032	0.029	0.026	0.036
	8	0.042	0.038	0.034	0.046
	10	0.050	0.045	0.040	0.055
	12	0.058	0.052	0.046	0.063
ap x ae	**≤ D5**	1.2D x 0.3D	1.2D x 0.3D	D x 0.2D	D x 0.2D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.010	0.008	0.008
	4	0.013	0.013	0.011	0.010
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	8	0.025	0.024	0.021	0.020
	10	0.031	0.029	0.025	0.024
	12	0.035	0.033	0.029	0.027
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF342

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
RAMPING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**120÷140**	**70÷90**	**55÷75**	**25÷45**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.020	0.019	0.026
	8	0.028	0.026	0.024	0.034
	10	0.034	0.031	0.029	0.040
	12	0.038	0.035	0.034	0.046

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
VERTICAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**120÷140**	**70÷90**	**55÷75**	**25÷45**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
DRILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**20÷40**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.007	0.006	0.006	0.008
	4	0.009	0.008	0.007	0.010
	5	0.012	0.010	0.009	0.013
	6	0.014	0.012	0.011	0.015
	8	0.018	0.016	0.014	0.019
	10	0.021	0.019	0.017	0.023
	12	0.024	0.022	0.019	0.026
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

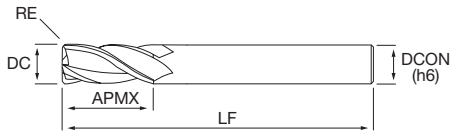
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF842

- Cylindrical shank
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.025	0.3	±0.015	6	h6	11	57	4	**HF84203040**	●
4	0/-0.025	0.5	±0.015	6	h6	11	57	4	**HF84205040**	●
5	0/-0.025	0.3	±0.015	6	h6	13	57	4	**HF84203050**	●
5	0/-0.025	0.5	±0.015	6	h6	13	57	4	**HF84205050**	●
6	0/-0.025	0.3	±0.015	6	h6	13	57	4	**HF84203060**	●
6	0/-0.025	0.5	±0.015	6	h6	13	57	4	**HF84205060**	●
6	0/-0.025	1	±0.015	6	h6	13	57	4	**HF84210060**	●
8	0/-0.030	0.5	±0.015	8	h6	20	64	4	**HF84205080**	●
8	0/-0.030	1	±0.015	8	h6	20	64	4	**HF84210080**	●
10	0/-0.030	0.5	±0.020	10	h6	22	72	4	**HF84205100**	●
10	0/-0.030	1	±0.020	10	h6	22	72	4	**HF84210100**	●
12	0/-0.030	0.5	±0.020	12	h6	26	83	4	**HF84205120**	●
12	0/-0.030	1	±0.020	12	h6	26	83	4	**HF84210120**	●
12	0/-0.030	2	±0.020	12	h6	26	83	4	**HF84220120**	●
12	0/-0.030	3	±0.020	12	h6	26	83	4	**HF84230120**	●
14	0/-0.030	1	±0.020	14	h6	26	83	4	**HF84210140**	●
16	0/-0.030	1	±0.020	16	h6	32	92	4	**HF84210160**	●
16	0/-0.030	2	±0.020	16	h6	32	92	4	**HF84220160**	●
16	0/-0.030	3	±0.020	16	h6	32	92	4	**HF84230160**	●
18	0/-0.030	1	±0.020	18	h6	32	92	4	**HF84210180**	●
20	0/-0.030	1	±0.020	20	h6	38	104	4	**HF84210200**	●
20	0/-0.030	2	±0.020	20	h6	38	104	4	**HF84220200**	●
20	0/-0.030	3	±0.020	20	h6	38	104	4	**HF84230200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF842

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**130÷150**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.013	0.011	0.010
	4	0.019	0.017	0.014	0.013
	5	0.023	0.021	0.017	0.016
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
	14	0.054	0.049	0.041	0.038
	16	0.060	0.054	0.045	0.042
	18	0.066	0.059	0.050	0.046
	20	0.073	0.066	0.055	0.051
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.017	0.015	0.013	0.018
	4	0.022	0.020	0.018	0.024
	5	0.028	0.025	0.022	0.030
	6	0.032	0.029	0.026	0.036
	8	0.042	0.038	0.034	0.046
	10	0.050	0.045	0.040	0.055
	12	0.058	0.052	0.046	0.063
	14	0.065	0.058	0.052	0.071
	16	0.072	0.065	0.058	0.079
	18	0.079	0.071	0.063	0.087
	20	0.088	0.079	0.070	0.096
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.010	0.008	0.008
	4	0.013	0.013	0.011	0.010
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	8	0.025	0.024	0.021	0.020
	10	0.031	0.029	0.025	0.024
	12	0.035	0.033	0.029	0.027
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

HF842

RAMPING

Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	0.022	0.020	0.019	0.026
8	0.028	0.026	0.024	0.034
10	0.034	0.031	0.029	0.040
12	0.038	0.035	0.034	0.046
14	0.043	0.040	0.038	0.052
16	0.048	0.044	0.042	0.058
18	0.053	0.048	0.046	0.063
20	0.058	0.054	0.051	0.070

VERTICAL

Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	0.027	0.024	0.020	0.019
8	0.035	0.032	0.026	0.025
10	0.042	0.038	0.032	0.029
12	0.048	0.043	0.036	0.034
14	0.054	0.049	0.041	0.038
16	0.060	0.054	0.045	0.042
18	0.066	0.059	0.050	0.046
20	0.073	0.066	0.055	0.051

DRILLING

Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**20÷40**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
3	0.007	0.006	0.006	0.008
4	0.009	0.008	0.007	0.010
5	0.012	0.010	0.009	0.013
6	0.014	0.012	0.011	0.015
8	0.018	0.016	0.014	0.019
10	0.021	0.019	0.017	0.023
12	0.024	0.022	0.019	0.026
14	0.027	0.024	0.022	0.030
16	0.030	0.027	0.024	0.033
18	0.033	0.030	0.026	0.036
20	0.037	0.033	0.029	0.040

ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

Parameters suggested with high power milling chuck and stable machining condition

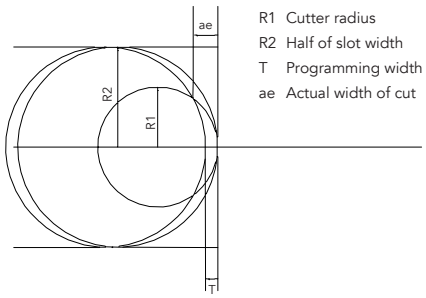
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

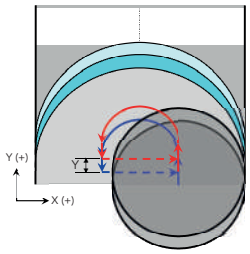
HF842

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**190÷230**	**130÷150**	**100÷120**	**50÷70**
TROCHOIDAL	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.035	0.032	0.028	0.039
	4	0.046	0.042	0.037	0.051
	5	0.058	0.052	0.046	0.063
	6	0.068	0.061	0.054	0.074
	8	0.088	0.079	0.070	0.096
	10	0.105	0.095	0.084	0.116
	12	0.120	0.108	0.096	0.132
	14	0.135	0.122	0.108	0.149
	16	0.150	0.135	0.120	0.165
	18	0.165	0.149	0.132	0.182
	20	0.183	0.164	0.146	0.201
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut

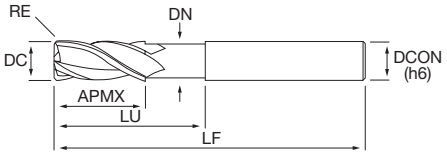


Parameters suggested with high power milling chuck and stable machining condition

HF442

- Cylindrical shank and reduced neck
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | 1.5D SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.3	±0.020	6	h6	9	15	2.8	57	4	**HF44203030**	●
3	0/-0.030	0.5	±0.020	6	h6	9	15	2.8	57	4	**HF44205030**	●
4	0/-0.030	0.3	±0.020	6	h6	11	18	3.8	57	4	**HF44203040**	●
4	0/-0.030	0.5	±0.020	6	h6	11	18	3.8	57	4	**HF44205040**	●
5	0/-0.030	0.3	±0.020	6	h6	13	19	4.8	57	4	**HF44203050**	●
5	0/-0.030	0.5	±0.020	6	h6	13	19	4.8	57	4	**HF44205050**	●
6	0/-0.030	0.3	±0.020	6	h6	13	20	5.8	57	4	**HF44203060**	●
6	0/-0.030	0.5	±0.020	6	h6	13	20	5.8	57	4	**HF44205060**	●
6	0/-0.030	1	±0.020	6	h6	13	20	5.8	57	4	**HF44210060**	●
8	0/-0.030	0.5	±0.020	8	h6	20	26	7.8	64	4	**HF44205080**	●
8	0/-0.030	1	±0.020	8	h6	20	26	7.8	64	4	**HF44210080**	●
10	0/-0.030	0.5	±0.020	10	h6	22	30	9.8	72	4	**HF44205100**	●
10	0/-0.030	1	±0.020	10	h6	22	30	9.8	72	4	**HF44210100**	●
12	0/-0.030	0.5	±0.020	12	h6	26	36	11.8	83	4	**HF44205120**	●
12	0/-0.030	1	±0.020	12	h6	26	36	11.8	83	4	**HF44210120**	●
14	0/-0.030	1	±0.020	14	h6	26	36	13.7	83	4	**HF44210140**	●
16	0/-0.030	1	±0.020	16	h6	32	42	15.7	92	4	**HF44210160**	●
16	0/-0.030	2	±0.020	16	h6	32	42	15.7	92	4	**HF44220160**	●
20	0/-0.030	1	±0.020	20	h6	38	50	19.7	104	4	**HF44210200**	●
20	0/-0.030	2	±0.020	20	h6	38	50	19.7	104	4	**HF44220200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF442

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.011	0.009	0.009
	4	0.017	0.015	0.012	0.012
	5	0.021	0.019	0.016	0.014
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	20	0.066	0.059	0.049	0.046
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.025	0.023		
	10	0.030	0.027		
	12	0.035	0.031		
	14	0.039	0.035		
	16	0.043	0.039		
	20	0.053	0.047		

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**130÷150**	**90÷140**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.015	0.014	0.012	0.017
	4	0.020	0.018	0.016	0.022
	5	0.025	0.022	0.020	0.027
	6	0.029	0.026	0.023	0.032
	8	0.038	0.034	0.030	0.042
	10	0.045	0.041	0.036	0.050
	12	0.052	0.047	0.041	0.057
	14	0.058	0.052	0.047	0.064
	16	0.065	0.058	0.052	0.071
	20	0.079	0.071	0.063	0.087
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF442

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.009	0.008	0.007
	4	0.012	0.011	0.010	0.009
	5	0.015	0.014	0.012	0.012
	6	0.018	0.016	0.015	0.014
	8	0.023	0.021	0.019	0.018
	10	0.028	0.026	0.023	0.021
	12	0.031	0.029	0.026	0.024
	14	0.035	0.033	0.029	0.027
	16	0.039	0.037	0.032	0.030
	20	0.048	0.045	0.039	0.037
a° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.018	0.017	0.023
	8	0.025	0.023	0.022	0.030
	10	0.030	0.028	0.026	0.036
	12	0.034	0.032	0.030	0.042
	14	0.039	0.036	0.034	0.047
	16	0.043	0.040	0.038	0.052
	20	0.052	0.048	0.046	0.063

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**50÷70**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.025	0.023		
	12	0.028	0.026		
	14	0.032	0.029		
	16	0.035	0.032		
	20	0.043	0.039		

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF442

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	20	0.066	0.059	0.049	0.046

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**85÷105**	**55÷75**	**40÷60**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.007
	4	0.008	0.007	0.007	0.009
	5	0.010	0.009	0.008	0.011
	6	0.012	0.011	0.010	0.013
	8	0.016	0.014	0.013	0.017
	10	0.019	0.017	0.015	0.021
	12	0.022	0.019	0.017	0.024
	14	0.024	0.022	0.019	0.027
	16	0.027	0.024	0.022	0.030
	20	0.033	0.030	0.026	0.036
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

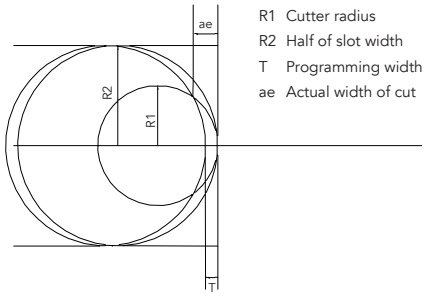
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

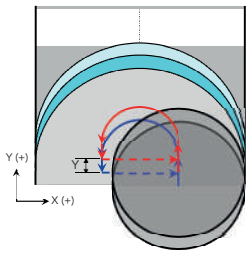
HF442

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.032	0.028	0.025	0.035
	4	0.042	0.037	0.033	0.046
	5	0.052	0.047	0.041	0.057
	6	0.061	0.055	0.049	0.067
	8	0.079	0.071	0.063	0.087
	10	0.095	0.085	0.076	0.104
	12	0.108	0.097	0.086	0.119
	14	0.122	0.109	0.097	0.134
	16	0.135	0.122	0.108	0.149
	20	0.164	0.148	0.131	0.181
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



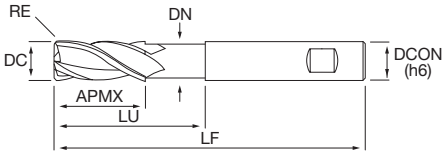
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF443

- Weldon shank and reduced neck
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | 2D SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.3	±0.020	6	h6	9	15	2.8	57	4	**HF44303030**	●
3	0/-0.030	0.5	±0.020	6	h6	9	15	2.8	57	4	**HF44305030**	●
4	0/-0.030	0.3	±0.020	6	h6	11	18	3.8	57	4	**HF44303040**	●
4	0/-0.030	0.5	±0.020	6	h6	11	18	3.8	57	4	**HF44305040**	●
5	0/-0.030	0.5	±0.020	6	h6	13	19	4.8	57	4	**HF44305050**	●
6	0/-0.030	0.5	±0.020	6	h6	13	20	5.8	57	4	**HF44305060**	●
6	0/-0.030	1	±0.020	6	h6	13	20	5.8	57	4	**HF44310060**	●
8	0/-0.030	0.5	±0.020	8	h6	20	26	7.8	64	4	**HF44305080**	●
8	0/-0.030	1	±0.020	8	h6	20	26	7.8	64	4	**HF44310080**	●
10	0/-0.030	0.5	±0.020	10	h6	22	30	9.8	72	4	**HF44305100**	●
10	0/-0.030	1	±0.020	10	h6	22	30	9.8	72	4	**HF44310100**	●
12	0/-0.030	0.5	±0.020	12	h6	26	36	11.8	83	4	**HF44305120**	●
12	0/-0.030	1	±0.020	12	h6	26	36	11.8	83	4	**HF44310120**	●
14	0/-0.030	1	±0.020	14	h6	26	36	13.7	83	4	**HF44310140**	●
16	0/-0.030	1	±0.020	16	h6	32	42	15.7	92	4	**HF44310160**	●
20	0/-0.030	1	±0.020	20	h6	38	50	19.7	104	4	**HF44310200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF443

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.011	0.009	0.009
	4	0.017	0.015	0.012	0.012
	5	0.021	0.019	0.016	0.014
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	18	0.059	0.053	0.045	0.042
	20	0.066	0.059	0.049	0.046
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**85÷105**	**55÷75**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.025	0.023		
	10	0.030	0.027		
	12	0.035	0.031		
	14	0.039	0.035		
	16	0.043	0.039		
	18	0.048	0.043		
	20	0.053	0.047		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	ap x ae	**1.5D x D**			
	Vc (m/min)	**85÷105**			
SLOTTING	DC (mm)	fz (mm/z)			
	10	0.023			
	12	0.026			
	14	0.029			
	16	0.032			
	18	0.036			
	20	0.039			

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF442 parameters.

Cutting Parameters

HF443

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**130÷150**	**90÷110**	**60÷80**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.015	0.014	0.012	0.017
	4	0.020	0.018	0.016	0.022
	5	0.025	0.022	0.020	0.027
	6	0.029	0.026	0.023	0.032
	8	0.038	0.034	0.030	0.042
	10	0.045	0.041	0.036	0.050
	12	0.052	0.047	0.041	0.057
	14	0.058	0.052	0.047	0.064
	16	0.065	0.058	0.052	0.071
	18	0.071	0.064	0.057	0.078
	20	0.079	0.071	0.063	0.087
ap x ae	**≤ D5**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.009	0.008	0.007
	4	0.012	0.011	0.010	0.009
	5	0.015	0.014	0.012	0.012
	6	0.018	0.016	0.015	0.014
	8	0.023	0.021	0.019	0.018
	10	0.028	0.026	0.023	0.021
	12	0.031	0.029	0.026	0.024
	14	0.035	0.033	0.029	0.027
	16	0.039	0.037	0.032	0.030
	18	0.043	0.040	0.036	0.033
	20	0.048	0.045	0.039	0.037
a° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.018	0.017	0.023
	8	0.025	0.023	0.022	0.030
	10	0.030	0.028	0.026	0.036
	12	0.034	0.032	0.030	0.042
	14	0.039	0.036	0.034	0.047
	16	0.043	0.040	0.038	0.052
	18	0.047	0.044	0.042	0.057
	20	0.052	0.048	0.046	0.063

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF442 parameters.

Cutting Parameters

HF443

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**50÷70**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.025	0.023		
	12	0.028	0.026		
	14	0.032	0.029		
	16	0.035	0.032		
	18	0.039	0.036		
	20	0.043	0.039		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	α° x ae	**45° x D**			
	Vc (m/min)	**60÷80**			
RAMPING	DC (mm)	fz (mm/z)			
	10	0.024			
	12	0.028			
	14	0.031			
	16	0.035			
	18	0.038			
	20	0.042			

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**30÷40**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.024	0.022	0.018	0.017
	8	0.032	0.028	0.024	0.022
	10	0.038	0.034	0.028	0.026
	12	0.043	0.039	0.032	0.030
	14	0.049	0.044	0.036	0.034
	16	0.054	0.049	0.041	0.038
	18	0.059	0.053	0.045	0.042
	20	0.066	0.059	0.049	0.046

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF442 parameters.

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

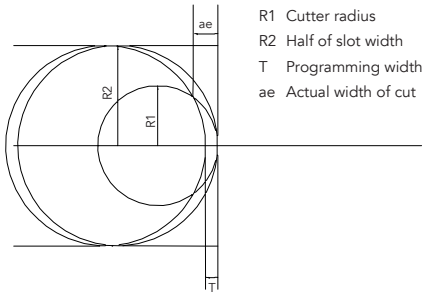
Cutting Parameters

HF443

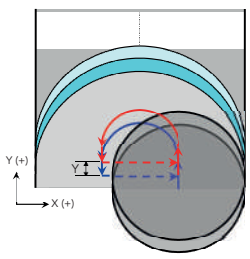
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**85÷105**	**55÷75**	**40÷60**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.007
	4	0.008	0.007	0.007	0.009
	5	0.010	0.009	0.008	0.011
	6	0.012	0.011	0.010	0.013
	8	0.016	0.014	0.013	0.017
	10	0.019	0.017	0.015	0.021
	12	0.022	0.019	0.017	0.024
	14	0.024	0.022	0.019	0.027
	16	0.027	0.024	0.022	0.030
	18	0.030	0.027	0.024	0.033
	20	0.033	0.030	0.026	0.036
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**160÷200**	**110÷130**	**80÷100**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	5	0.052	0.047	0.041	0.057
	6	0.061	0.055	0.049	0.067
	8	0.079	0.071	0.063	0.087
	10	0.095	0.085	0.076	0.104
	12	0.108	0.097	0.086	0.119
	14	0.122	0.109	0.097	0.134
	16	0.135	0.122	0.108	0.149
	18	0.149	0.134	0.119	0.163
	20	0.164	0.148	0.131	0.181
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D		

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



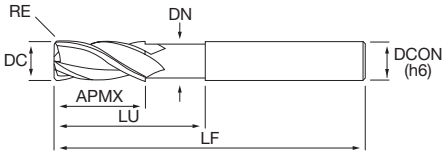
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF442 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF542

- Cylindrical shank and reduced neck
- Long reach
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.3	±0.020	6	h6	12	30	5.8	75	4	**HF5420306075**	●
6	0/-0.030	0.3	±0.020	6	h6	12	30	5.8	100	4	**HF54203060100**	●
6	0/-0.030	0.5	±0.020	6	h6	12	30	5.8	75	4	**HF5420506075**	●
6	0/-0.030	0.5	±0.020	6	h6	12	30	5.8	100	4	**HF54205060100**	●
6	0/-0.030	1	±0.020	6	h6	12	30	5.8	75	4	**HF5421006075**	●
6	0/-0.030	1	±0.020	6	h6	12	30	5.8	100	4	**HF54210060100**	●
8	0/-0.030	0.5	±0.020	8	h6	16	40	7.8	100	4	**HF54205080100**	●
8	0/-0.030	1	±0.020	8	h6	16	40	7.8	100	4	**HF54210080100**	●
8	0/-0.030	2	±0.020	8	h6	16	40	7.8	100	4	**HF54220080100**	●
10	0/-0.030	0.5	±0.020	10	h6	20	50	9.8	125	4	**HF54205100125**	●
10	0/-0.030	1	±0.020	10	h6	20	50	9.8	125	4	**HF54210100125**	●
10	0/-0.030	2	±0.020	10	h6	20	50	9.8	125	4	**HF54220100125**	●
12	0/-0.030	0.5	±0.020	12	h6	24	60	11.8	125	4	**HF54205120125**	●
12	0/-0.030	0.5	±0.020	12	h6	24	60	11.8	150	4	**HF54205120150**	●
12	0/-0.030	1	±0.020	12	h6	24	60	11.8	125	4	**HF54210120125**	●
12	0/-0.030	1	±0.020	12	h6	24	60	11.8	150	4	**HF54210120150**	●
12	0/-0.030	2	±0.020	12	h6	24	60	11.8	125	4	**HF54220120125**	●
12	0/-0.030	2	±0.020	12	h6	24	60	11.8	150	4	**HF54220120150**	●
12	0/-0.030	3	±0.020	12	h6	24	60	11.8	125	4	**HF54230120125**	●
12	0/-0.030	3	±0.020	12	h6	24	60	11.8	150	4	**HF54230120150**	●
16	0/-0.030	0.5	±0.020	16	h6	32	80	15.7	150	4	**HF54205160150**	●
16	0/-0.030	1	±0.020	16	h6	32	80	15.7	150	4	**HF54210160150**	●
16	0/-0.030	2	±0.020	16	h6	32	80	15.7	150	4	**HF54220160150**	●
16	0/-0.030	3	±0.020	16	h6	32	80	15.7	150	4	**HF54230160150**	●
16	0/-0.030	4	±0.020	16	h6	32	80	15.7	150	4	**HF54240160150**	○
20	0/-0.030	0.5	±0.020	20	h6	40	100	19.7	150	4	**HF54205200150**	●
20	0/-0.030	1	±0.020	20	h6	40	100	19.7	150	4	**HF54210200150**	●
20	0/-0.030	2	±0.020	20	h6	40	100	19.7	150	4	**HF54220200150**	●
20	0/-0.030	3	±0.020	20	h6	40	100	19.7	150	4	**HF54230200150**	●
20	0/-0.030	4	±0.020	20	h6	40	100	19.7	150	4	**HF54240200150**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF542

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**0.5D x D**	**0.3D x D**	**0.2D x D**	**0.2D x D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.017	0.015	0.014
	8	0.025	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.035	0.031	0.026	0.024
	14	0.039	0.035	0.029	0.027
	16	0.043	0.039	0.032	0.030
	20	0.053	0.047	0.039	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.2D x 0.2D**	**1.2D x 0.2D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.019	0.026
	8	0.030	0.027	0.024	0.033
	10	0.036	0.033	0.029	0.040
	12	0.041	0.037	0.033	0.046
	14	0.047	0.042	0.037	0.051
	16	0.052	0.047	0.041	0.057
	20	0.063	0.057	0.050	0.069

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**20÷40**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.015	0.014	0.012	0.012
	8	0.019	0.018	0.015	0.016
	10	0.023	0.022	0.018	0.019
	12	0.026	0.025	0.021	0.022
	14	0.029	0.028	0.023	0.025
	16	0.033	0.031	0.026	0.027
	20	0.040	0.038	0.032	0.033

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**7° x D**	**5° x D**	**3° x D**	**3° x D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.016	0.015	0.015	0.021
	8	0.021	0.020	0.019	0.027
	10	0.025	0.024	0.023	0.032
	12	0.029	0.027	0.027	0.037
	14	0.033	0.031	0.030	0.041
	16	0.036	0.034	0.033	0.046
	20	0.044	0.041	0.040	0.056

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF542

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**50÷70**	**45÷55**	**20÷30**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.019	0.017	0.015	0.014
	8	0.025	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.035	0.031	0.026	0.024
	14	0.039	0.035	0.029	0.027
	16	0.043	0.039	0.032	0.030
	20	0.053	0.047	0.039	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**70÷90**	**50÷60**	**35÷45**	**20÷30**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.010	0.009	0.008	0.011
	8	0.013	0.011	0.010	0.014
	10	0.015	0.014	0.012	0.017
	12	0.017	0.016	0.014	0.019
	14	0.019	0.017	0.016	0.021
	16	0.022	0.019	0.017	0.024
	20	0.026	0.024	0.021	0.029

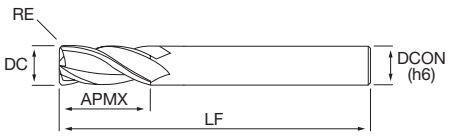
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF942

- Cylindrical shank
- Long cutting edge ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.030	0.1	0/-0.015	6	h6	19	75	4	**HF9420104075**	●
5	0/-0.030	0.1	0/-0.015	6	h6	19	75	4	**HF9420105075**	●
6	0/-0.030	0.1	0/-0.015	6	h6	25	75	4	**HF9420106075**	●
8	0/-0.030	0.2	0/-0.015	8	h6	30	75	4	**HF9420208075**	●
10	0/-0.035	0.2	0/-0.020	10	h6	40	100	4	**HF94202100100**	●
12	0/-0.035	0.3	0/-0.020	12	h6	45	100	4	**HF94203120100**	●
16	0/-0.035	0.3	0/-0.020	16	h6	65	125	4	**HF94203160125**	●
20	0/-0.035	0.3	0/-0.020	20	h6	65	125	4	**HF94203200125**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF942

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.2D x 0.2D**	**1.2D x 0.2D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.016	0.015	0.013	0.018
	5	0.021	0.019	0.017	0.023
	6	0.026	0.023	0.021	0.029
	8	0.031	0.028	0.025	0.034
	10	0.036	0.033	0.029	0.040
	12	0.041	0.037	0.033	0.045
	16	0.047	0.042	0.038	0.052
	20	0.063	0.057	0.051	0.070
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**20÷40**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.010	0.010	0.008	0.009
	5	0.013	0.013	0.011	0.011
	6	0.016	0.016	0.013	0.014
	8	0.019	0.018	0.015	0.016
	10	0.023	0.022	0.018	0.019
	12	0.026	0.025	0.021	0.022
	16	0.030	0.028	0.024	0.025
	20	0.040	0.038	0.032	0.033
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF942

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x D**	**5° x D**	**3° x D**	**3° x D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.012	0.011	0.010	0.014
	5	0.015	0.014	0.014	0.019
	6	0.019	0.017	0.017	0.023
	8	0.022	0.020	0.020	0.027
	10	0.027	0.024	0.023	0.032
	12	0.030	0.027	0.026	0.036
	16	0.034	0.031	0.030	0.041
	20	0.046	0.042	0.041	0.056

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.014	0.012	0.010	0.010
	5	0.018	0.016	0.013	0.012
	6	0.022	0.019	0.016	0.015
	8	0.026	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.034	0.031	0.026	0.024
	16	0.039	0.035	0.029	0.027
	20	0.053	0.048	0.040	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**D x 0.5D**	**D x 0.5D**
	Vc (m/min)	**70÷90**	**50÷60**	**35÷45**	**20÷30**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.007	0.006	0.005	0.007
	5	0.009	0.008	0.007	0.010
	6	0.011	0.010	0.009	0.012
	8	0.013	0.012	0.010	0.014
	10	0.015	0.014	0.012	0.017
	12	0.017	0.015	0.014	0.019
	16	0.020	0.018	0.016	0.022
	20	0.026	0.024	0.021	0.029
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

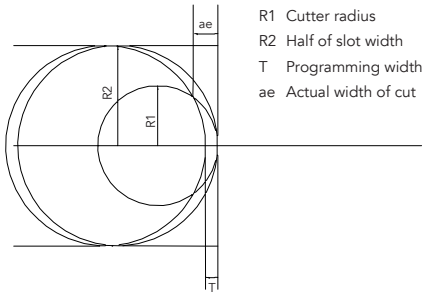
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

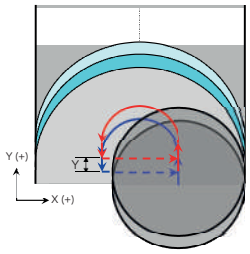
HF942

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.1D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**140÷160**	**100÷120**	**70÷90**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.034	0.031	0.027	0.037
	5	0.044	0.040	0.035	0.048
	6	0.054	0.049	0.043	0.059
	8	0.064	0.058	0.051	0.070
	10	0.076	0.068	0.061	0.084
	12	0.086	0.077	0.069	0.095
	16	0.098	0.088	0.078	0.108
	20	0.132	0.119	0.106	0.145
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	1.2D x 0.05D	1.2D x 0.05D

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



Parameters suggested with high power milling chuck and stable machining condition

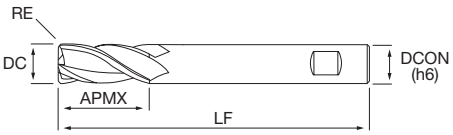
HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

HF943

- Weldon shank
- Long cutting edge ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | RADIUS | ZEFP 4 UP | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.030	0.1	0/-0.015	6	h6	19	75	4	**HF9430104075**	●
5	0/-0.030	0.1	0/-0.015	6	h6	19	75	4	**HF9430105075**	●
6	0/-0.030	0.1	0/-0.015	6	h6	25	75	4	**HF9430106075**	●
8	0/-0.030	0.2	0/-0.015	8	h6	30	75	4	**HF9430208075**	●
10	0/-0.035	0.2	0/-0.020	10	h6	40	100	4	**HF94302100100**	●
12	0/-0.035	0.3	0/-0.020	12	h6	45	100	4	**HF94303120100**	●
16	0/-0.035	0.3	0/-0.020	16	h6	65	125	4	**HF94303160125**	●
20	0/-0.035	0.3	0/-0.020	20	h6	65	125	4	**HF94303200125**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF943

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.2D x 0.2D**	**1.2D x 0.2D**
	Vc (m/min)	**110÷130**	**70÷90**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.016	0.015	0.013	0.018
	5	0.021	0.019	0.017	0.023
	6	0.026	0.023	0.021	0.029
	8	0.031	0.028	0.025	0.034
	10	0.036	0.033	0.029	0.040
	12	0.041	0.037	0.033	0.045
	16	0.047	0.042	0.038	0.052
	20	0.063	0.057	0.051	0.070
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**20÷40**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.010	0.010	0.008	0.009
	5	0.013	0.013	0.011	0.011
	6	0.016	0.016	0.013	0.014
	8	0.019	0.018	0.015	0.016
	10	0.023	0.022	0.018	0.019
	12	0.026	0.025	0.021	0.022
	16	0.030	0.028	0.024	0.025
	20	0.040	0.038	0.032	0.033
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix and unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF943

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	a° x ae	**5° x D**	**5° x D**	**3° x D**	**3° x D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.012	0.011	0.010	0.014
	5	0.015	0.014	0.014	0.019
	6	0.019	0.017	0.017	0.023
	8	0.022	0.020	0.020	0.027
	10	0.027	0.024	0.023	0.032
	12	0.030	0.027	0.026	0.036
	16	0.034	0.031	0.030	0.041
	20	0.046	0.042	0.041	0.056

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.014	0.012	0.010	0.010
	5	0.018	0.016	0.013	0.012
	6	0.022	0.019	0.016	0.015
	8	0.026	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.034	0.031	0.026	0.024
	16	0.039	0.035	0.029	0.027
	20	0.053	0.048	0.040	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**D x 0.5D**	**D x 0.5D**
	Vc (m/min)	**70÷90**	**50÷60**	**35÷45**	**20÷30**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.007	0.006	0.005	0.007
	5	0.009	0.008	0.007	0.010
	6	0.011	0.010	0.009	0.012
	8	0.013	0.012	0.010	0.014
	10	0.015	0.014	0.012	0.017
	12	0.017	0.015	0.014	0.019
	16	0.020	0.018	0.016	0.022
	20	0.026	0.024	0.021	0.029
ap x ae	**≤ D5**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

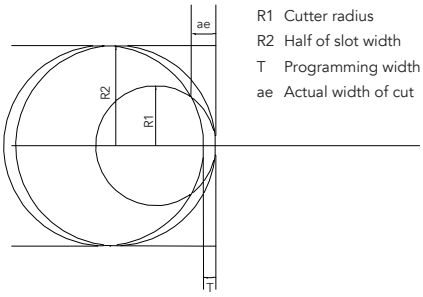
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

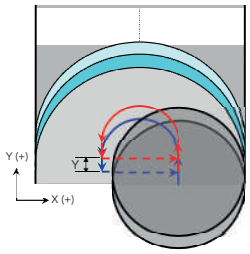
HF943

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.1D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**140÷160**	**100÷120**	**70÷90**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.034	0.031	0.027	0.037
	5	0.044	0.040	0.035	0.048
	6	0.054	0.049	0.043	0.059
	8	0.064	0.058	0.051	0.070
	10	0.076	0.068	0.061	0.084
	12	0.086	0.077	0.069	0.095
	16	0.098	0.088	0.078	0.108
	20	0.132	0.119	0.106	0.145
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	1.2D x 0.05D	1.2D x 0.05D

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



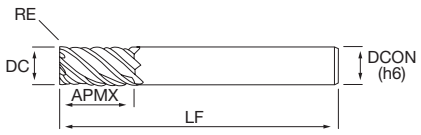
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF642

- Cylindrical shank
- 5F ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | VH 36°/37°/38° | RADIUS | ZEFP 5 | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.020	0.1	0/-0.015	6	h6	12	57	5	**HF64201040**	●
5	0/-0.020	0.1	0/-0.015	6	h6	13	57	5	**HF64201050**	●
6	0/-0.020	0.1	0/-0.015	6	h6	13	57	5	**HF64201060**	●
8	0/-0.020	0.2	0/-0.015	8	h6	20	64	5	**HF64202080**	●
10	0/-0.020	0.2	0/-0.020	10	h6	22	72	5	**HF64202100**	●
12	0/-0.020	0.3	0/-0.020	12	h6	26	83	5	**HF64203120**	●
16	0/-0.020	0.3	0/-0.020	16	h6	32	92	5	**HF64203160**	●
20	0/-0.020	0.3	0/-0.020	20	h6	38	104	5	**HF64203200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF642

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.019	0.017	0.015	0.021
	5	0.023	0.021	0.019	0.026
	6	0.028	0.025	0.022	0.030
	8	0.036	0.032	0.029	0.039
	10	0.043	0.039	0.034	0.047
	12	0.049	0.044	0.039	0.054
	14	0.055	0.050	0.044	0.061
	16	0.061	0.055	0.049	0.067
	20	0.074	0.067	0.060	0.082
ap x ae	**≤ D5**	1.5D x 0.3D	1.5D x 0.3D	1.2D x 0.2D	1.2D x 0.2D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.011	0.011	0.009	0.009
	5	0.014	0.013	0.012	0.011
	6	0.017	0.016	0.014	0.013
	8	0.022	0.020	0.018	0.017
	10	0.026	0.024	0.021	0.020
	12	0.030	0.028	0.024	0.023
	14	0.033	0.031	0.028	0.026
	16	0.037	0.035	0.031	0.029
	20	0.045	0.042	0.037	0.035
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.022
	8	0.024	0.022	0.021	0.029
	10	0.028	0.026	0.025	0.034
	12	0.033	0.030	0.029	0.039
	14	0.037	0.034	0.032	0.044
	16	0.041	0.037	0.036	0.049
	20	0.050	0.046	0.043	0.060
	20	0.046	0.042	0.041	0.056

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix - Corner radius

SORMA DIAMOND & CUTTING TOOLS

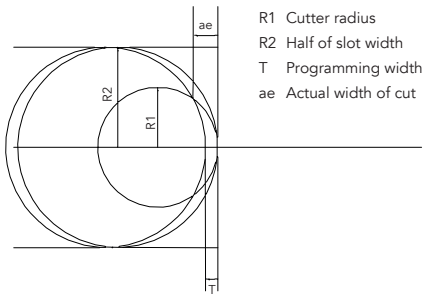
Cutting Parameters

HF642

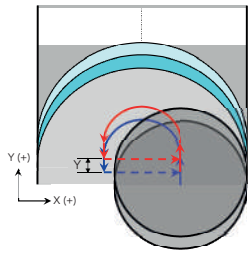
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**190÷230**	**130÷150**	**100÷120**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.039	0.035	0.031	0.043
	5	0.049	0.044	0.039	0.054
	6	0.057	0.052	0.046	0.063
	8	0.074	0.067	0.060	0.082
	10	0.089	0.080	0.071	0.098
	12	0.102	0.092	0.082	0.112
	14	0.115	0.103	0.092	0.126
	16	0.128	0.115	0.102	0.140
	20	0.155	0.140	0.124	0.171
ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	D x 0.1D	D x 0.1D

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut

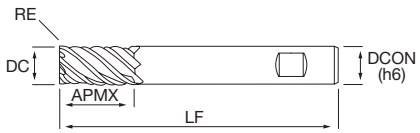


Parameters suggested with high power milling chuck and stable machining condition

HF643

- Weldon shank
- 5 flutes ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | VH 36°/37°/38° | RADIUS | ZEFP 5 | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.020	0.1	0/-0.015	6	h6	12	57	5	**HF64301040**	●
5	0/-0.020	0.1	0/-0.015	6	h6	13	57	5	**HF64301050**	●
6	0/-0.020	0.1	0/-0.015	6	h6	13	57	5	**HF64301060**	●
8	0/-0.020	0.2	0/-0.015	8	h6	20	64	5	**HF64302080**	●
10	0/-0.020	0.2	0/-0.020	10	h6	22	72	5	**HF64302100**	●
12	0/-0.020	0.3	0/-0.020	12	h6	26	83	5	**HF64303120**	●
16	0/-0.020	0.3	0/-0.020	16	h6	32	92	5	**HF64303160**	●
20	0/-0.020	0.3	0/-0.020	20	h6	38	104	5	**HF64303200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF643

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.019	0.017	0.015	0.021
	5	0.023	0.021	0.019	0.026
	6	0.028	0.025	0.022	0.030
	8	0.036	0.032	0.029	0.039
	10	0.043	0.039	0.034	0.047
	12	0.049	0.044	0.039	0.054
	14	0.055	0.050	0.044	0.061
	16	0.061	0.055	0.049	0.067
	20	0.074	0.067	0.060	0.082
ap x ae	**≤ D5**	1.5D x 0.3D	1.5D x 0.3D	1.2D x 0.2D	1.2D x 0.2D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.011	0.011	0.009	0.009
	5	0.014	0.013	0.012	0.011
	6	0.017	0.016	0.014	0.013
	8	0.022	0.020	0.018	0.017
	10	0.026	0.024	0.021	0.020
	12	0.030	0.028	0.024	0.023
	14	0.033	0.031	0.028	0.026
	16	0.037	0.035	0.031	0.029
	20	0.045	0.042	0.037	0.035
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.022
	8	0.024	0.022	0.021	0.029
	10	0.028	0.026	0.025	0.034
	12	0.033	0.030	0.029	0.039
	14	0.037	0.034	0.032	0.044
	16	0.041	0.037	0.036	0.049
	20	0.050	0.046	0.043	0.060
	20	0.046	0.042	0.041	0.056

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF642 parameters.

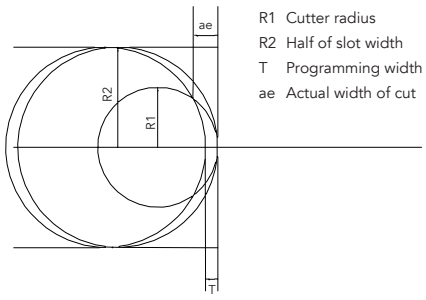
HF643

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043

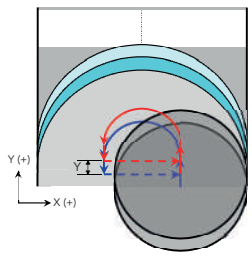
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**190÷230**	**130÷150**	**100÷120**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.039	0.035	0.031	0.043
	5	0.049	0.044	0.039	0.054
	6	0.057	0.052	0.046	0.063
	8	0.074	0.067	0.060	0.082
	10	0.089	0.080	0.071	0.098
	12	0.102	0.092	0.082	0.112
	14	0.115	0.103	0.092	0.126
	16	0.128	0.115	0.102	0.140
	20	0.155	0.140	0.124	0.171

ap x ae	**≤ D5**	1.5D x 0.1D	1.5D x 0.1D	D x 0.1D	D x 0.1D

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



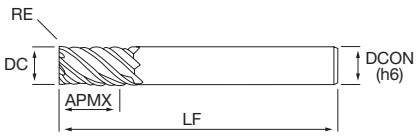
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF642 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF742

- Cylindrical shank
- Long 5 flutes ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | VH 36°/37°/38° | RADIUS | ZEFP 5 | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.1	0/-0.015	6	h6	25	75	5	**HF7420106075**	●
8	0/-0.030	0.2	0/-0.015	8	h6	25	75	5	**HF7420208075**	●
10	0/-0.035	0.2	0/-0.020	10	h6	38	100	5	**HF74202100100**	●
-	-	-	-	-	-	-	-	-	**HF7420306075**	○
12	0/-0.035	0.3	0/-0.020	12	h6	45	100	5	**HF74203120100**	●
16	0/-0.035	0.3	0/-0.020	16	h6	55	125	5	**HF74203160125**	●
20	0/-0.035	0.3	0/-0.020	20	h6	65	125	5	**HF74203200125**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF742

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	1.5D x 0.3D	1.5D x 0.3D	1.2D x 0.2D	1.2D x 0.2D
	Vc (m/min)	110÷130	70÷90	50÷70	30÷50
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.019	0.026
	8	0.028	0.025	0.022	0.030
	10	0.033	0.030	0.026	0.036
	12	0.037	0.033	0.030	0.041
	16	0.042	0.038	0.034	0.047
	20	0.057	0.051	0.046	0.063

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
HELICAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	4° x 0.4D	3° x 0.4D	3° x 0.4D	2° x 0.4D
	Vc (m/min)	90÷110	60÷80	40÷60	20÷40
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.016	0.016	0.013	0.014
	8	0.019	0.018	0.015	0.016
	10	0.023	0.022	0.018	0.019
	12	0.026	0.025	0.021	0.022
	16	0.030	0.028	0.024	0.025
	20	0.040	0.038	0.032	0.033

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
RAMPING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	5° x D	4° x D	3° x D	3° x D
	Vc (m/min)	80÷100	50÷70	35÷55	20÷30
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.017	0.016	0.015	0.021
	8	0.020	0.019	0.018	0.024
	10	0.024	0.022	0.021	0.029
	12	0.027	0.025	0.024	0.033
	16	0.031	0.029	0.027	0.037
	20	0.042	0.039	0.037	0.050

Parameters suggested with high power milling chuck and stable machining condition

HF UNI Variable helix - Corner radius

SORMA DIAMOND & CUTTING TOOLS

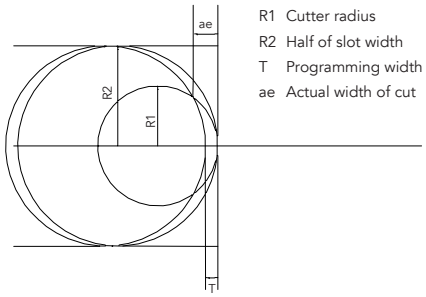
Cutting Parameters

HF742

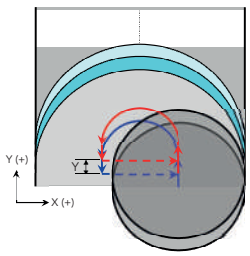
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
VERTICAL	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.019	0.016	0.015
	8	0.026	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.034	0.031	0.026	0.024
	16	0.039	0.035	0.029	0.027
	20	0.053	0.048	0.040	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**3D x 0.1D**	**3D x 0.1D**	**2D x 0.1D**	**2D x 0.1D**
TROCHOIDAL	Vc (m/min)	**130÷170**	**100÷120**	**70÷90**	**40÷60**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.054	0.049	0.043	0.059
	8	0.064	0.058	0.051	0.070
	10	0.076	0.068	0.061	0.084
	12	0.086	0.077	0.069	0.095
	16	0.098	0.088	0.078	0.108
	20	0.132	0.119	0.106	0.145

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



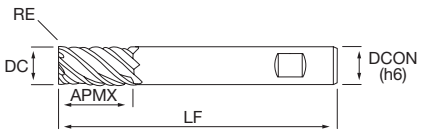
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF743

- Weldon shank
- Long 5 flutes ideal for trochoidal milling
- Corner radius

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | VH 36°/37°/38° | RADIUS | ZEFP 5 | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.1	0/-0.015	6	h6	25	75	5	**HF7430106075**	●
8	0/-0.030	0.2	0/-0.015	8	h6	25	75	5	**HF7430208075**	●
10	0/-0.035	0.2	0/-0.020	10	h6	38	100	5	**HF74302100100**	●
12	0/-0.035	0.3	0/-0.020	12	h6	45	100	5	**HF74303120100**	●
16	0/-0.035	0.3	0/-0.020	16	h6	55	125	5	**HF74303160125**	●
20	0/-0.035	0.3	0/-0.020	20	h6	65	125	5	**HF74303200125**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF743

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	1.5D x 0.3D	1.5D x 0.3D	1.2D x 0.2D	1.2D x 0.2D
	Vc (m/min)	110÷130	70÷90	50÷70	30÷50
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.019	0.026
	8	0.028	0.025	0.022	0.030
	10	0.033	0.030	0.026	0.036
	12	0.037	0.033	0.030	0.041
	16	0.042	0.038	0.034	0.047
	20	0.057	0.051	0.046	0.063

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
HELICAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	4° x 0.4D	3° x 0.4D	3° x 0.4D	2° x 0.4D
	Vc (m/min)	90÷110	60÷80	40÷60	20÷40
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.016	0.016	0.013	0.014
	8	0.019	0.018	0.015	0.016
	10	0.023	0.022	0.018	0.019
	12	0.026	0.025	0.021	0.022
	16	0.030	0.028	0.024	0.025
	20	0.040	0.038	0.032	0.033

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
RAMPING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	5° x D	4° x D	3° x D	3° x D
	Vc (m/min)	80÷100	50÷70	35÷55	20÷30
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.017	0.016	0.015	0.021
	8	0.020	0.019	0.018	0.024
	10	0.024	0.022	0.021	0.029
	12	0.027	0.025	0.024	0.033
	16	0.031	0.029	0.027	0.037
	20	0.042	0.039	0.037	0.050

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF742 parameters.

SORMA DIAMOND & CUTTING TOOLS

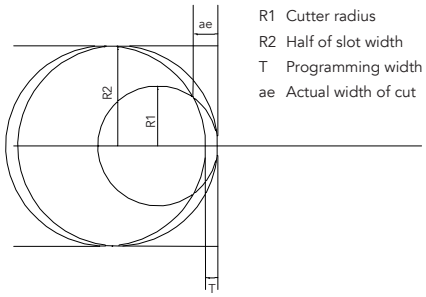
Cutting Parameters

HF743

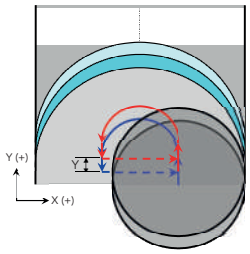
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
VERTICAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**50÷70**	**35÷55**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.019	0.016	0.015
	8	0.026	0.023	0.019	0.018
	10	0.030	0.027	0.023	0.021
	12	0.034	0.031	0.026	0.024
	16	0.039	0.035	0.029	0.027
	20	0.053	0.048	0.040	0.037

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
TROCHOIDAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**3D x 0.1D**	**3D x 0.1D**	**2D x 0.1D**	**2D x 0.1D**
	Vc (m/min)	**130÷170**	**100÷120**	**70÷90**	**40÷60**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.054	0.049	0.043	0.059
	8	0.064	0.058	0.051	0.070
	10	0.076	0.068	0.061	0.084
	12	0.086	0.077	0.069	0.095
	16	0.098	0.088	0.078	0.108
	20	0.132	0.119	0.106	0.145

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



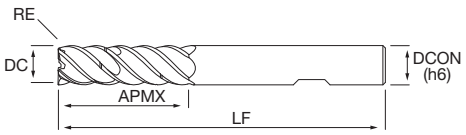
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF742 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF535T

- Weldon shank
- 5 flutes
- Chipbreaker
- Corner radius
- Different core diameter
- Trochoidal milling

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <45 HRC | VH 36°/37°/38° | RADIUS | ZEFP 5 UP | CB | CD | SIDE MILLING | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
10	0/-0.040	0.1	0/-0.020	10	h6	35	90	5	**HF535T010100**	●
12	0/-0.050	0.12	0/-0.020	12	h6	45	100	5	**HF535T012120**	●
16	0/-0.050	0.15	0/-0.020	16	h6	55	115	5	**HF535T015160**	●
20	0/-0.050	0.2	0/-0.020	20	h6	70	131	5	**HF535T020200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF535T

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 P6 M2 M3 K4 S1 S4	S2 S3 S5
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D
	Vc (m/min)	170÷190	100÷120	80÷100	60÷80
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	10	0.100	0.100	0.080	0.072
	12	0.120	0.120	0.100	0.090
	16	0.150	0.150	0.130	0.117
	20	0.150	0.150	0.150	0.135

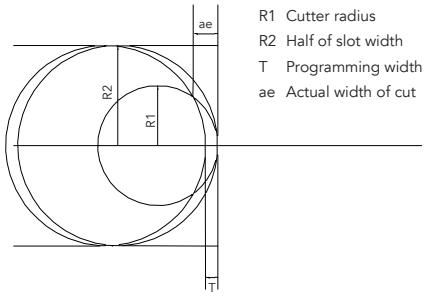
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 P6 M2 M3 K4 S1 S4	S2 S3 S5
TROCHOIDAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D
	Vc (m/min)	170÷190	100÷120	80÷100	60÷80
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	10	0.100	0.100	0.080	0.072
	12	0.120	0.120	0.100	0.090
	16	0.150	0.150	0.130	0.117
	20	0.150	0.150	0.150	0.135

High speed cutting conditions (A highly rigidity CNC machine is required)

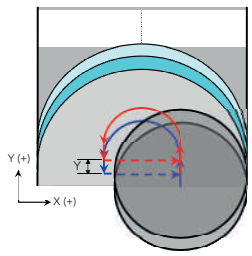
	Material Group ISO 513	P1 P2 P7	P3 P4	P5 P6	
TROCHOIDAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	
	Vc (m/min)	220÷260	120÷160	100÷140	
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	10	0.100	0.100	0.080	
	12	0.120	0.120	0.100	
	16	0.150	0.150	0.130	
	20	0.150	0.150	0.150	

High speed cutting conditions is only suggested for material groups ISO P.

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut

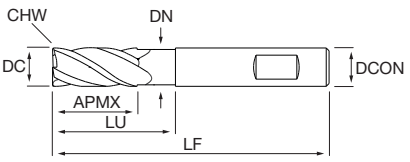


SORMA DIAMOND & CUTTING TOOLS

HF471

- Weldon shank
- SC smooth cut for low cutting force
- 45° chamfer
- ▽ rank items will be available until stock is exhausted and will be replaced by HF6441 page J104

P	M	K	N	S	H
★	★	★		★	





OSAWA NORM | MG PV300 | <40 HRC | FHA VH 36°/39° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.1	0/-0.02	4	h6	3	-	-	50	4	**HF471010**	▽
1.5	0/-0.020	0.1	0/-0.03	4	h6	4.5	-	-	50	4	**HF471015**	▽
2	0/-0.020	0.1	0/-0.04	4	h6	6.5	-	-	50	4	**HF471020**	▽
2.5	0/-0.020	0.1	0/-0.05	4	h6	6.5	-	-	50	4	**HF471025**	▽
3	0/-0.020	0.1	0/-0.06	6	h6	9	15	2.8	57	4	**HF471030**	●
3.5	0/-0.020	0.1	0/-0.07	6	h6	11	20	3.3	57	4	**HF471035**	▽
4	0/-0.020	0.1	0/-0.08	6	h6	11	20	3.7	57	4	**HF471040**	●
4.5	0/-0.020	0.1	0/-0.09	6	h6	13	20	4.2	57	4	**HF471045**	▽
5	0/-0.020	0.1	0/-0.10	6	h6	13	20	4.6	57	4	**HF471050**	●
5.5	0/-0.020	0.1	0/-0.11	6	h6	13	20	5.1	57	4	**HF471055**	▽
6	0/-0.020	0.1	0/-0.12	6	h6	13	20	5.5	57	4	**HF471060**	●
7	0/-0.020	0.2	0/-0.13	8	h6	20	26	6.5	64	4	**HF471070**	▽
8	0/-0.020	0.2	0/-0.14	8	h6	20	26	7.4	64	4	**HF471080**	●
9	0/-0.020	0.2	0/-0.15	10	h6	22	32	8.4	72	4	**HF471090**	▽
10	0/-0.020	0.2	0/-0.16	10	h6	22	32	9.2	72	4	**HF471100**	●
11	0/-0.020	0.2	0/-0.17	12	h6	26	37	10.2	83	4	**HF471110**	▽
12	0/-0.020	0.2	0/-0.18	12	h6	26	37	11	83	4	**HF471120**	●
13	0/-0.020	0.2	0/-0.19	14	h6	26	37	12	83	4	**HF471130**	▽
14	0/-0.020	0.2	0/-0.20	14	h6	26	37	13	83	4	**HF471140**	●
16	0/-0.020	0.2	0/-0.22	16	h6	32	42	15	92	4	**HF471160**	●
18	0/-0.020	0.2	0/-0.23	18	h6	32	42	17	92	4	**HF471180**	▽
20	0/-0.020	0.2	0/-0.24	20	h6	38	50	19	104	4	**HF471200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF471

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.005	0.005	0.004	0.004
	2	0.010	0.009	0.008	0.007
	3	0.014	0.013	0.011	0.010
	4	0.019	0.017	0.014	0.013
	5	0.023	0.021	0.017	0.016
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
	14	0.054	0.049	0.041	0.038
	16	0.060	0.054	0.045	0.042
	18	0.066	0.059	0.050	0.046
	20	0.073	0.066	0.055	0.051
ap x ae	**D1**	0.25D x D	0.25D x D	0.2D x D	0.2D x D
ap x ae	**≤ D3**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	ap x ae	**1.5D x D**	**1.5D x D**		
	Vc (m/min)	**100÷120**	**60÷80**		
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)		
	8	0.028	0.025		
	10	0.034	0.030		
	12	0.038	0.035		
	14	0.043	0.039		
	16	0.048	0.043		
	18	0.053	0.048		
	20	0.058	0.053		

	Material Group ISO 513	P1 P2 P7 K1			
	Hardness/Rm	≤700 N/mm²			
	ap x ae	**1.5D x D**			
	Vc (m/min)	**100÷120**			
SLOTTING	DC (mm)	fz (mm/z)			
	8	0.028			
	10	0.034			
	12	0.038			
	14	0.043			
	16	0.048			
	18	0.053			
	20	0.058			

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF840 parameters

HF UNI SC Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF471

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.2D x 0.3D**	**1.2D x 0.3D**
	Vc (m/min)	**160÷180**	**100÷120**	**70÷90**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.006	0.005	0.005	0.007
	2	0.012	0.011	0.010	0.013
	3	0.017	0.015	0.013	0.018
	4	0.022	0.020	0.018	0.024
	5	0.028	0.025	0.022	0.030
	6	0.032	0.029	0.026	0.036
	8	0.042	0.038	0.034	0.046
	10	0.050	0.045	0.040	0.055
	12	0.058	0.052	0.046	0.063
	14	0.065	0.058	0.052	0.071
	16	0.072	0.065	0.058	0.079
	18	0.079	0.071	0.063	0.087
	20	0.088	0.079	0.070	0.096
ap x ae	**≤ D3**	1.5D x 0.1D	1.5D x 0.1D	1.2D x 0.1D	1.2D x 0.1D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**3° x 0.4D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.004	0.003	0.003	0.003
	2	0.007	0.007	0.006	0.006
	3	0.010	0.010	0.008	0.008
	4	0.013	0.013	0.011	0.010
	5	0.017	0.016	0.014	0.013
	6	0.020	0.018	0.016	0.015
	8	0.025	0.024	0.021	0.020
	10	0.031	0.029	0.025	0.024
	12	0.035	0.033	0.029	0.027
	14	0.039	0.037	0.032	0.030
	16	0.044	0.041	0.036	0.034
	18	0.048	0.045	0.040	0.037
	20	0.053	0.050	0.044	0.041
α° x ae	**≤ D3**	1° x 0.4D	1° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF840 parameters

HF471

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	α° x ae	**15° x D**	**10° x D**	**5° x D**	**5° x D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.020	0.019	0.026
	8	0.028	0.026	0.024	0.034
	10	0.034	0.031	0.029	0.040
	12	0.038	0.035	0.034	0.046
	14	0.043	0.040	0.038	0.052
	16	0.048	0.044	0.042	0.058
	18	0.053	0.048	0.046	0.063
	20	0.058	0.054	0.051	0.070

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3		
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²		
	α° x ae	**30° x D**	**15° x D**		
	Vc (m/min)	**80÷100**	**60÷80**		
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)		
	10	0.025	0.023		
	12	0.028	0.026		
	14	0.032	0.029		
	16	0.035	0.032		
	18	0.039	0.036		
	20	0.043	0.039		

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**130÷150**	**80÷100**	**60÷80**	**30÷50**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.027	0.024	0.020	0.019
	8	0.035	0.032	0.026	0.025
	10	0.042	0.038	0.032	0.029
	12	0.048	0.043	0.036	0.034
	14	0.054	0.049	0.041	0.038
	16	0.060	0.054	0.045	0.042
	18	0.066	0.059	0.050	0.046
	20	0.073	0.066	0.055	0.051

PParameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF840 parameters

HF UNI SC Variable helix and unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

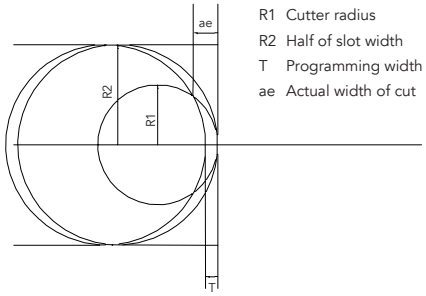
Cutting Parameters

HF471

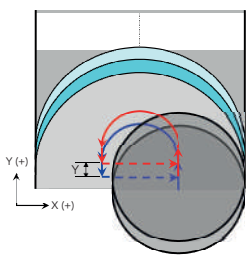
	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.5D x D**
	Vc (m/min)	**100÷120**	**60÷80**	**45÷65**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.002	0.002	0.003
	2	0.005	0.005	0.004	0.006
	3	0.007	0.006	0.006	0.008
	4	0.009	0.008	0.007	0.010
	5	0.012	0.010	0.009	0.013
	6	0.014	0.012	0.011	0.015
	8	0.018	0.016	0.014	0.019
	10	0.021	0.019	0.017	0.023
	12	0.024	0.022	0.019	0.026
	14	0.027	0.024	0.022	0.030
	16	0.030	0.027	0.024	0.033
	18	0.033	0.030	0.026	0.036
	20	0.037	0.033	0.029	0.040
ap x ae	**≤ D3**	0.5D x D	0.5D x D	0.25D x D	0.25D x D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	≤40 HRC
	ap x ae	**2D x 0.2D**	**2D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**130÷170**	**100÷120**	**70÷90**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.013	0.011	0.010	0.014
	2	0.025	0.023	0.020	0.028
	3	0.035	0.032	0.028	0.039
	4	0.046	0.042	0.037	0.051
	5	0.058	0.052	0.046	0.063
	6	0.068	0.061	0.054	0.074
	8	0.088	0.079	0.070	0.096
	10	0.105	0.095	0.084	0.116
	12	0.120	0.108	0.096	0.132
	14	0.135	0.122	0.108	0.149
	16	0.150	0.135	0.120	0.165
	18	0.165	0.149	0.132	0.182
	20	0.183	0.164	0.146	0.201
ap x ae	**D1**	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D
ap x ae	**≤ D3**	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



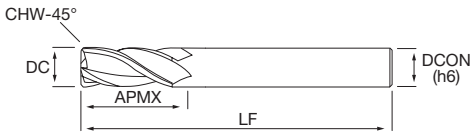
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF840 parameters

SORMA DIAMOND & CUTTING TOOLS

HF850

- Cylindrical shank
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	★





OSAWA NORM | HF HARD | MG PV300 | 30÷55 HRC | FHA 40° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.1	±0.020	6	h6	9	57	4	**HF850030**	●
4	0/-0.030	0.1	±0.020	6	h6	11	57	4	**HF850040**	●
5	0/-0.030	0.1	±0.020	6	h6	13	57	4	**HF850050**	●
6	0/-0.030	0.1	±0.020	6	h6	13	57	4	**HF850060**	●
8	0/-0.030	0.2	±0.020	8	h6	20	64	4	**HF850080**	●
10	0/-0.030	0.2	±0.020	10	h6	22	72	4	**HF850100**	●
12	0/-0.030	0.2	±0.020	12	h6	26	83	4	**HF850120**	●
14	0/-0.030	0.3	±0.020	14	h6	26	90	4	**HF850140**	●
16	0/-0.030	0.3	±0.020	16	h6	32	92	4	**HF850160**	●
20	0/-0.030	0.4	±0.020	20	h6	38	104	4	**HF850200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF HARD Unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF850

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.012	0.011	0.009	0.008
	4	0.016	0.014	0.012	0.011
	5	0.020	0.018	0.015	0.014
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043
ap x ae	**≤ D5**	0.3D x D	0.3D x D	0.2D x D	0.1D x D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.2D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**100÷120**	**70÷90**	**50÷70**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.013	0.011	0.016
	4	0.019	0.017	0.015	0.021
	5	0.023	0.021	0.019	0.026
	6	0.028	0.025	0.022	0.030
	8	0.036	0.032	0.029	0.039
	10	0.043	0.039	0.034	0.047
	12	0.049	0.044	0.039	0.054
	14	0.055	0.050	0.044	0.061
	16	0.061	0.055	0.049	0.067
	20	0.074	0.067	0.060	0.082
ap x ae	**≤ D5**	1.2D x 0.2D	1.2D x 0.1D	D x 0.1D	D x 0.05D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.008	0.007	0.008
	4	0.011	0.011	0.009	0.010
	5	0.014	0.013	0.012	0.012
	6	0.017	0.016	0.014	0.015
	8	0.022	0.020	0.018	0.019
	10	0.026	0.024	0.021	0.023
	12	0.030	0.028	0.024	0.026
	14	0.033	0.031	0.028	0.029
	16	0.037	0.035	0.031	0.032
	20	0.045	0.042	0.037	0.039
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF850

RAMPING	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x D**	**4° x D**	**3° x D**	**2° x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.020	0.019	0.018	0.027
	8	0.026	0.024	0.023	0.035
	10	0.031	0.029	0.027	0.043
	12	0.036	0.033	0.031	0.049
	14	0.040	0.037	0.035	0.055
	16	0.045	0.042	0.039	0.061
	20	0.054	0.051	0.048	0.074

VERTICAL	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043

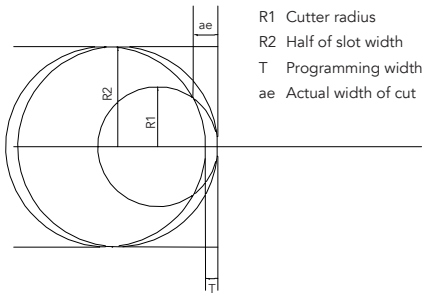
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

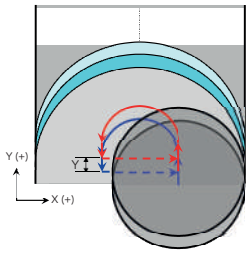
HF850

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1-5D x 0.1D**	**1-5D x 0.1D**	**D x 0.1D**	**D x 0.1D**
	Vc (m/min)	**130÷150**	**100÷120**	**60÷80**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.046	0.041	0.057
	8	0.067	0.060	0.054	0.074
	10	0.080	0.072	0.064	0.088
	12	0.092	0.083	0.073	0.101
	14	0.103	0.093	0.083	0.114
	16	0.115	0.103	0.092	0.126
	20	0.140	0.126	0.112	0.154

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



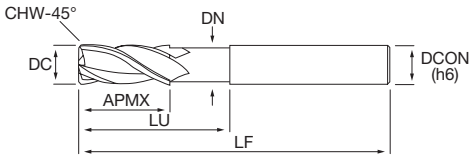
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF450

- Cylindrical shank and reduced neck
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	★





OSAWA NORM | HF HARD | MG PV300 | 30÷55 HRC | FHA 40° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.1	±0.020	6	h6	9	15	2.8	57	4	**HF450030**	●
4	0/-0.030	0.1	±0.020	6	h6	11	18	3.8	57	4	**HF450040**	●
5	0/-0.030	0.1	±0.020	6	h6	13	19	4.8	57	4	**HF450050**	●
6	0/-0.030	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF450060**	●
8	0/-0.030	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF450080**	●
10	0/-0.030	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF450100**	●
12	0/-0.030	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF450120**	●
14	0/-0.030	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF450140**	●
16	0/-0.030	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF450160**	●
20	0/-0.030	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF450200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF HARD Unequal pitch - 45° chamfer

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF450

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.011	0.010	0.008	0.007
	4	0.014	0.013	0.011	0.010
	5	0.018	0.016	0.013	0.012
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.03
ap x ae	**≤ D5**	0.3D x D	0.3D x D	0.2D x D	0.1D x D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.2D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.012	0.010	0.014
	4	0.017	0.015	0.014	0.019
	5	0.021	0.019	0.017	0.023
	6	0.025	0.022	0.020	0.027
	8	0.032	0.029	0.026	0.035
	10	0.039	0.035	0.031	0.042
	12	0.044	0.040	0.035	0.048
	14	0.050	0.045	0.040	0.055
	16	0.055	0.050	0.044	0.061
	20	0.067	0.060	0.054	0.074
ap x ae	**≤ D5**	1.2D x 0.2D	1.2D x 0.2D	D x 0.1D	D x 0.05D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	**20÷40**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.007	0.006	0.007
	4	0.010	0.010	0.008	0.009
	5	0.013	0.012	0.011	0.011
	6	0.015	0.014	0.012	0.013
	8	0.019	0.018	0.016	0.017
	10	0.023	0.022	0.019	0.020
	12	0.027	0.025	0.022	0.023
	14	0.030	0.028	0.025	0.026
	16	0.033	0.031	0.028	0.029
	20	0.041	0.038	0.034	0.035
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF450

RAMPING	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x D**	**4° x D**	**3° x D**	**2° x D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.020	0.019	0.018	0.027
	8	0.026	0.024	0.023	0.035
	10	0.031	0.029	0.027	0.043
	12	0.036	0.033	0.031	0.049
	14	0.040	0.037	0.035	0.055
	16	0.045	0.042	0.039	0.061
	20	0.054	0.051	0.048	0.074

VERTICAL	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.039

Parameters suggested with high power milling chuck and stable machining condition

HF HARD Unequal pitch - 45° chamfer

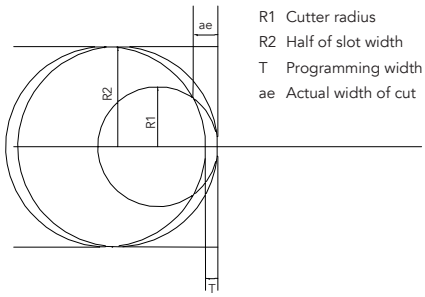
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

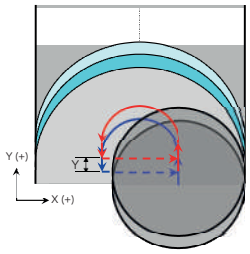
HF450

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**D x 0.1D**	**D x 0.1D**
	Vc (m/min)	**110÷130**	**80÷100**	**50÷70**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.046	0.041	0.057
	8	0.067	0.060	0.054	0.074
	10	0.080	0.072	0.064	0.088
	12	0.092	0.083	0.073	0.101
	14	0.103	0.093	0.083	0.114
	16	0.115	0.103	0.092	0.126
	20	0.140	0.126	0.112	0.154

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut

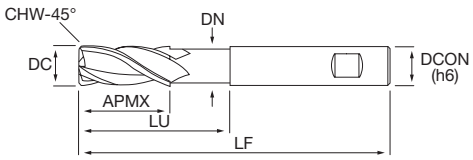


Parameters suggested with high power milling chuck and stable machining condition

HF451

- Weldon shank and reduced neck
- 45° chamfer

P	M	K	N	S	H
★	★	★		★	★





OSAWA NORM | HF HARD | MG PV300 | 30÷55 HRC | FHA 40° | CH-45° | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.1	±0.020	6	h6	9	15	2.8	57	4	**HF451030**	●
4	0/-0.030	0.1	±0.020	6	h6	11	18	3.8	57	4	**HF451040**	●
5	0/-0.030	0.1	±0.020	6	h6	13	19	4.8	57	4	**HF451050**	●
6	0/-0.030	0.1	±0.020	6	h6	13	20	5.8	57	4	**HF451060**	●
8	0/-0.030	0.2	±0.020	8	h6	20	26	7.8	64	4	**HF451080**	●
10	0/-0.030	0.2	±0.020	10	h6	22	30	9.8	72	4	**HF451100**	●
12	0/-0.030	0.2	±0.020	12	h6	26	36	11.8	83	4	**HF451120**	●
14	0/-0.030	0.2	±0.020	14	h6	26	36	13.7	83	4	**HF451140**	●
16	0/-0.030	0.3	±0.020	16	h6	32	42	15.7	92	4	**HF451160**	●
20	0/-0.030	0.4	±0.020	20	h6	38	50	19.7	104	4	**HF451200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF451

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.011	0.010	0.008	0.007
	4	0.014	0.013	0.011	0.010
	5	0.018	0.016	0.013	0.012
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.039
ap x ae	**≤ D5**	0.3D x D	0.3D x D	0.2D x D	0.1D x D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.2D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.012	0.010	0.014
	4	0.017	0.015	0.014	0.019
	5	0.021	0.019	0.017	0.023
	6	0.025	0.022	0.020	0.027
	8	0.032	0.029	0.026	0.035
	10	0.039	0.035	0.031	0.042
	12	0.044	0.040	0.035	0.048
	14	0.050	0.045	0.040	0.055
	16	0.055	0.050	0.044	0.061
	20	0.067	0.060	0.054	0.074
ap x ae	**≤ D5**	1.2D x 0.2D	1.2D x 0.1D	D x 0.1D	D x 0.05D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	**20÷40**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.007	0.006	0.007
	4	0.010	0.010	0.008	0.009
	5	0.013	0.012	0.011	0.011
	6	0.015	0.014	0.012	0.013
	8	0.019	0.018	0.016	0.017
	10	0.023	0.022	0.019	0.020
	12	0.027	0.025	0.022	0.023
	14	0.030	0.028	0.025	0.026
	16	0.033	0.031	0.028	0.029
	20	0.041	0.038	0.034	0.035
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF450 parameters.

Cutting Parameters

HF451

RAMPING	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x D**	**4° x D**	**3° x D**	**2° x D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.025
	8	0.023	0.022	0.021	0.032
	10	0.028	0.026	0.025	0.038
	12	0.032	0.030	0.028	0.044
	14	0.036	0.034	0.032	0.049
	16	0.040	0.037	0.035	0.055
	20	0.049	0.045	0.043	0.067

VERTICAL	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.039

Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF450 parameters.

HF HARD Unequal pitch - 45° chamfer

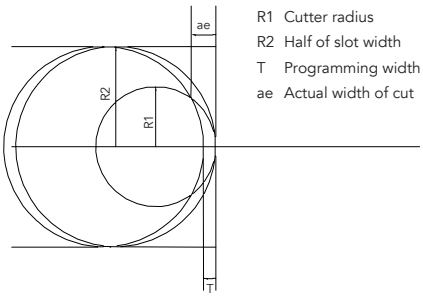
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

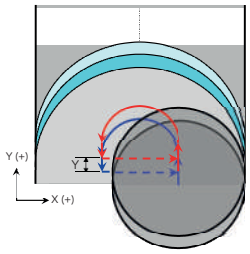
HF451

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**D x 0.1D**	**D x 0.1D**
	Vc (m/min)	**110÷130**	**80÷100**	**50÷70**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.046	0.041	0.057
	8	0.067	0.060	0.054	0.074
	10	0.080	0.072	0.064	0.088
	12	0.092	0.083	0.073	0.101
	14	0.103	0.093	0.083	0.114
	16	0.115	0.103	0.092	0.126
	20	0.140	0.126	0.112	0.154

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



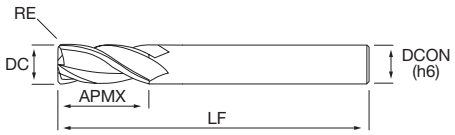
Parameters suggested with high precision weldon chuck and stable machining condition.
For application on high power milling chuck, please refer to HF450 parameters.

SORMA DIAMOND & CUTTING TOOLS

HF852

- Cylindrical shank
- Corner radius

P	M	K	N	S	H
★	★	★		★	★





OSAWA NORM | HF HARD | MG PV300 | 30÷55 HRC | FHA 40° | RADIUS | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.020	0.3	±0.015	6	h6	12	57	4	**HF85203040**	●
4	0/-0.020	0.5	±0.015	6	h6	12	57	4	**HF85205040**	●
5	0/-0.020	0.3	±0.015	6	h6	15	57	4	**HF85203050**	●
5	0/-0.020	0.5	±0.015	6	h6	15	57	4	**HF85205050**	●
6	0/-0.020	0.3	±0.015	6	h6	16	57	4	**HF85203060**	●
6	0/-0.020	0.5	±0.015	6	h6	16	57	4	**HF85205060**	●
6	0/-0.020	1	±0.015	6	h6	16	57	4	**HF85210060**	●
8	0/-0.020	0.5	±0.015	8	h6	20	64	4	**HF85205080**	●
8	0/-0.020	1	±0.015	8	h6	20	64	4	**HF85210080**	●
10	0/-0.020	0.5	±0.020	10	h6	22	72	4	**HF85205100**	●
10	0/-0.020	1	±0.020	10	h6	22	72	4	**HF85210100**	●
12	0/-0.020	0.5	±0.020	12	h6	26	83	4	**HF85205120**	●
12	0/-0.020	1	±0.020	12	h6	26	83	4	**HF85210120**	●
12	0/-0.020	2	±0.020	12	h6	26	83	4	**HF85220120**	●
12	0/-0.020	3	±0.020	12	h6	26	83	4	**HF85230120**	●
14	0/-0.020	1	±0.020	14	h6	32	83	4	**HF85210140**	●
16	0/-0.020	1	±0.020	16	h6	32	92	4	**HF85210160**	●
16	0/-0.020	2	±0.020	16	h6	32	92	4	**HF85220160**	●
20	0/-0.020	1	±0.020	20	h6	38	104	4	**HF85210200**	◉
20	0/-0.020	2	±0.020	20	h6	38	104	4	**HF85220200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF HARD Unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HF852

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.012	0.011	0.009	0.008
	4	0.016	0.014	0.012	0.011
	5	0.020	0.018	0.015	0.014
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043
ap x ae	**≤ D5**	0.3D x D	0.3D x D	0.2D x D	0.1D x D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.2D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**100÷120**	**70÷90**	**50÷70**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.014	0.013	0.011	0.016
	4	0.019	0.017	0.015	0.021
	5	0.023	0.021	0.019	0.026
	6	0.028	0.025	0.022	0.030
	8	0.036	0.032	0.029	0.039
	10	0.043	0.039	0.034	0.047
	12	0.049	0.044	0.039	0.054
	14	0.055	0.050	0.044	0.061
	16	0.061	0.055	0.049	0.067
	20	0.074	0.067	0.060	0.082
ap x ae	**≤ D5**	1.2D x 0.2D	1.2D x 0.2D	D x 0.1D	D x 0.05D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.009	0.008	0.007	0.008
	4	0.011	0.011	0.009	0.010
	5	0.014	0.013	0.012	0.012
	6	0.017	0.016	0.014	0.015
	8	0.022	0.020	0.018	0.019
	10	0.026	0.024	0.021	0.023
	12	0.030	0.028	0.024	0.026
	14	0.033	0.031	0.028	0.029
	16	0.037	0.035	0.031	0.032
	20	0.045	0.042	0.037	0.039
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HF852

RAMPING	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x D**	**4° x D**	**3° x D**	**2° x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.020	0.019	0.018	0.027
	8	0.026	0.024	0.023	0.035
	10	0.031	0.029	0.027	0.043
	12	0.036	0.033	0.031	0.049
	14	0.040	0.037	0.035	0.055
	16	0.045	0.042	0.039	0.061
	20	0.054	0.051	0.048	0.074

VERTICAL	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.023	0.021	0.017	0.016
	8	0.030	0.027	0.022	0.021
	10	0.036	0.032	0.027	0.025
	12	0.041	0.037	0.031	0.029
	14	0.046	0.041	0.034	0.032
	16	0.051	0.046	0.038	0.036
	20	0.062	0.056	0.047	0.043

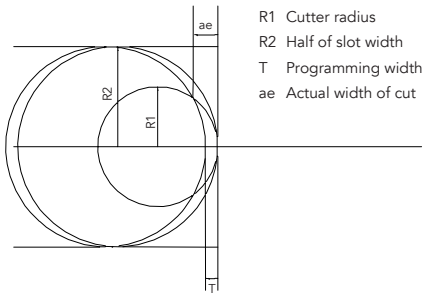
Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

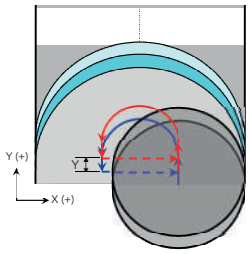
HF852

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**D x 0.1D**	**D x 0.1D**
	Vc (m/min)	**130÷150**	**100÷120**	**60÷80**	**50÷70**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.046	0.041	0.057
	8	0.067	0.060	0.054	0.074
	10	0.080	0.072	0.064	0.088
	12	0.092	0.083	0.073	0.101
	14	0.103	0.093	0.083	0.114
	16	0.115	0.103	0.092	0.126
	20	0.140	0.126	0.112	0.154

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



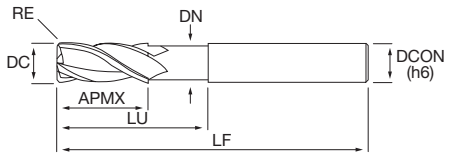
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HF452

- Cylindrical shank and reduced neck
- Corner radius

P	M	K	N	S	H
★	★	★		★	★





OSAWA NORM | HF HARD | MG PV300 | 30÷55 HRC | FHA 40° | RADIUS | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.3	±0.020	6	h6	9	15	2.8	57	4	**HF45203030**	●
3	0/-0.030	0.5	±0.020	6	h6	9	15	2.8	57	4	**HF45205030**	●
4	0/-0.030	0.3	±0.020	6	h6	11	18	3.8	57	4	**HF45203040**	●
4	0/-0.030	0.5	±0.020	6	h6	11	18	3.8	57	4	**HF45205040**	●
5	0/-0.030	0.5	±0.020	6	h6	13	19	4.8	57	4	**HF45205050**	●
6	0/-0.030	0.5	±0.020	6	h6	13	20	5.8	57	4	**HF45205060**	●
6	0/-0.030	1	±0.020	6	h6	13	20	5.8	57	4	**HF45210060**	●
8	0/-0.030	0.5	±0.020	8	h6	20	26	7.8	64	4	**HF45205080**	●
8	0/-0.030	1	±0.020	8	h6	20	26	7.8	64	4	**HF45210080**	●
10	0/-0.030	0.5	±0.020	10	h6	22	30	9.8	72	4	**HF45205100**	●
10	0/-0.030	1	±0.020	10	h6	22	30	9.8	72	4	**HF45210100**	●
12	0/-0.030	0.5	±0.020	12	h6	26	36	11.8	83	4	**HF45205120**	●
12	0/-0.030	1	±0.020	12	h6	26	36	11.8	83	4	**HF45210120**	●
16	0/-0.030	1	±0.020	16	h6	32	42	15.7	92	4	**HF45210160**	●
16	0/-0.030	2	±0.020	16	h6	32	42	15.7	92	4	**HF45220160**	●
20	0/-0.030	1	±0.020	20	h6	38	50	19.7	104	4	**HF45210200**	●
20	0/-0.030	2	±0.020	20	h6	38	50	19.7	104	4	**HF45220200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HF452

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**70÷90**	**50÷70**	**30÷50**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.011	0.010	0.008	0.007
	4	0.014	0.013	0.011	0.010
	5	0.018	0.016	0.013	0.012
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.039
ap x ae	**≤ D5**	0.3D x D	0.3D x D	0.2D x D	0.1D x D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.2D**	**1.2D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.012	0.010	0.014
	4	0.017	0.015	0.014	0.019
	5	0.021	0.019	0.017	0.023
	6	0.025	0.022	0.020	0.027
	8	0.032	0.029	0.026	0.035
	10	0.039	0.035	0.031	0.042
	12	0.044	0.040	0.035	0.048
	14	0.050	0.045	0.040	0.055
	16	0.055	0.050	0.044	0.061
	20	0.067	0.060	0.054	0.074
ap x ae	**≤ D5**	1.2D x 0.2D	1.2D x 0.1D	D x 0.1D	D x 0.05D

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x 0.4D**	**4° x 0.4D**	**3° x 0.4D**	**2° x 0.4D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.007	0.006	0.007
	4	0.010	0.010	0.008	0.009
	5	0.013	0.012	0.011	0.011
	6	0.015	0.014	0.012	0.013
	8	0.019	0.018	0.016	0.017
	10	0.023	0.022	0.019	0.020
	12	0.027	0.025	0.022	0.023
	14	0.030	0.028	0.025	0.026
	16	0.033	0.031	0.028	0.029
	20	0.041	0.038	0.034	0.035
α° x ae	**≤ D5**	2° x 0.4D	2° x 0.4D	1° x 0.4D	1° x 0.4D

Parameters suggested with high power milling chuck and stable machining condition

HF452

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	α° x ae	**5° x D**	**4° x D**	**3° x D**	**2° x D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.016	0.025
	8	0.023	0.022	0.021	0.032
	10	0.028	0.026	0.025	0.038
	12	0.032	0.030	0.028	0.044
	14	0.036	0.034	0.032	0.049
	16	0.040	0.037	0.035	0.055
	20	0.049	0.045	0.043	0.067

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**D x 0.4D**	**D x 0.4D**	**D x 0.25D**	**D x 0.25D**
	Vc (m/min)	**60÷80**	**50÷60**	**30÷40**	**20÷30**
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.021	0.019	0.015	0.014
	8	0.027	0.024	0.020	0.019
	10	0.032	0.029	0.024	0.022
	12	0.037	0.033	0.028	0.026
	14	0.041	0.037	0.031	0.029
	16	0.046	0.041	0.034	0.032
	20	0.056	0.050	0.042	0.039

Parameters suggested with high power milling chuck and stable machining condition

HF HARD Unequal pitch - Corner radius

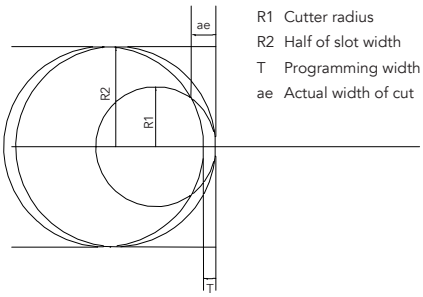
SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

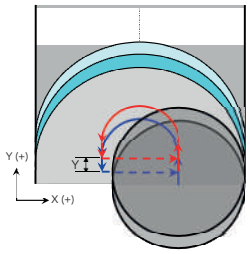
HF452

	Material Group ISO 513	P4 M3 K4	P4 P5 P8 M3 K4 S1	P5 P8 P8 K4 S2 S3	H1 H4 H5
	Hardness/Rm	800÷1000 N/mm²	900÷1200 N/mm²	35÷45 HRC	≤55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**D x 0.1D**	**D x 0.1D**
	Vc (m/min)	**110÷130**	**80÷100**	**50÷70**	**40÷60**
TROCHOIDAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.046	0.041	0.057
	8	0.067	0.060	0.054	0.074
	10	0.080	0.072	0.064	0.088
	12	0.092	0.083	0.073	0.101
	14	0.103	0.093	0.083	0.114
	16	0.115	0.103	0.092	0.126
	20	0.140	0.126	0.112	0.154

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



Parameters suggested with high power milling chuck and stable machining condition



MEF

STAINLESS STEEL AND SUPER ALLOYS

Ultra-fine micrograin and Endless Black coating for high performance machining on stainless steel, HRSA and titanium alloy, carbon and low alloy steel. The unique design of the cutting geometry and the Endless Black coating are specifically developed to control the cutting friction delivering longer tool life through the reduction of the heat generation.

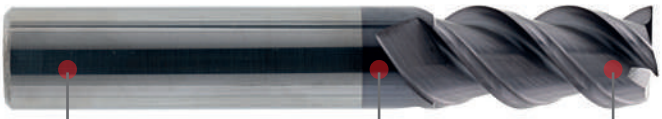
Micrograna ultrafine e rivestimento Endless Black per la lavorazione ad alto rendimento di acciai al carbonio, acciai inossidabili, HRSA e leghe di titanio. La geometria e il rivestimento specifici consentono di generare bassi sforzi di taglio e l'abbassamento del coefficiente di attrito, garantendo una riduzione dello sviluppo del calore con conseguente rallentamento del processo di usura del tagliente.

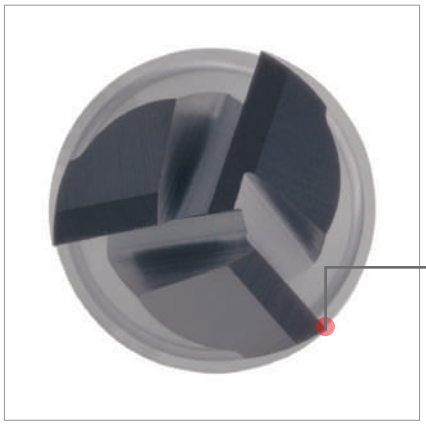
Besonders feine Mikrokörnung und Beschichtung Endless Black für Hochleistungsbearbeitungen von Kohlenstoffstahl, Edelstahl, HRSA und Titanlegierungen. Dank der speziellen Geometrie und der spezifischen Beschichtung wird ein niedriger Schneiddruck erzeugt und der Reibungsfaktor gesenkt, wodurch die Hitzeentwicklung reduziert und in Folge die Abnutzung der Schneidkante verzögert werden.

Ultra Micrograin et revêtement Endless Black pour l'usinage à haute performance pour les aciers au carbone, aciers inoxydables, HRSA et alliages de titane. La géométrie et le revêtement spécifiques permettent de générer peu d'efforts de coupe et de réduire le coefficient de frottement, en garantissant une diminution du développement de la chaleur et le ralentissement consécutif du processus d'usure de l'arête.

MEF

Features of MEF end mills







MEF

Features and Benefits

- Optimized flutes design for fast chip ejection.
- Reinforced cutting egde design for chipping protection.
- Ultra-fine micrograin delivers high wear resistance and reliable long tool life.
- Endless Black coating provides lower cutting friction
- Chipbreaker design reduces cutting force and allows quick heat dissipation

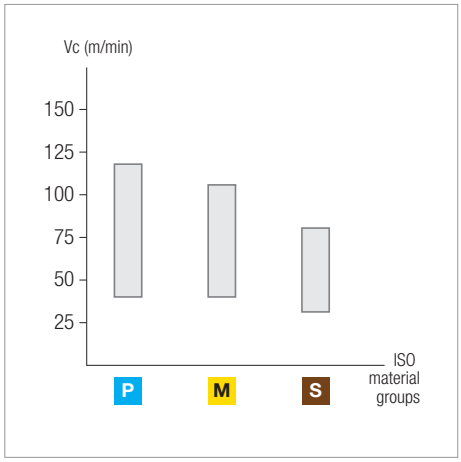
- Optimiertes Nutendesign für eine schnelle Spanabfuhr
- Verstärkte Schneidkantengeometrie zum Schutz vor Ausbrüchen.
- Ultrafeine Mikrostruktur sorgt für hohe Verschleißfestigkeit und eine lange, zuverlässige Werkzeuglebensdauer
- Endless Black-Beschichtung reduziert die Schnittreibung
- Spanbrecherdesign verringert die Schnittkräfte und ermöglicht eine schnelle Wärmeableitung.

- Particolare design delle gole per migliorare l'evacuazione dei trucioli
- Taglienti rinforzati per ridurre i problemi di scheggiatura
- Micrograna ultra-fine per maggiore resistenza all'usura, lunga durata e affidabilità
- Rivestimento Endless Black per riduzione del coefficiente di attrito
- Tipologie con rompitruciolo per minor sforzo di taglio e maggiore dissipazione del calore

- Conception optimisée des goujures pour une évacuation rapide des copeaux.
- Conception renforcée des arêtes de coupe pour une protection contre l'écaillage.
- Micrograins ultra-fins offrant une résistance élevée à l'usure et une durée de vie prolongée de l'outil.
- Revêtement Endless Black réduisant les frottements lors de la coupe.
- Conception avec brise-copeaux réduisant la force de coupe et permettant une dissipation rapide de la chaleur.

Application range - ISO 513

P **M** **S**



Use case

Tool Type	MEF901
Workpiece	W.-Nr 1.4435 AISI 316L
Parameters	Vc 60 m/min, fz 0,036 mm/t, ap 15 mm, ae 2 mm
Diameter	12 mm
Machining time:	

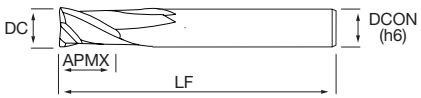


SORMA DIAMOND & CUTTING TOOLS

MEFCS2

- Cylindrical shank
- 2 flutes

P	M	K	N	S	H
★	★			★	





OSAWA NORM | VA | UMG ENDLESS | <45 HRC | FHA 35° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.030	4	h6	2.5	40	2	**MEFCS2010**	●
1.5	0/-0.030	4	h6	4	40	2	**MEFCS2015**	●
2	0/-0.030	4	h6	6	40	2	**MEFCS2020**	●
2.5	0/-0.030	4	h6	8	40	2	**MEFCS2025**	●
3	0/-0.030	6	h6	8	45	2	**MEFCS2030**	●
4	0/-0.030	6	h6	11	45	2	**MEFCS2040**	●
5	0/-0.030	6	h6	13	50	2	**MEFCS2050**	●
6	0/-0.030	6	h6	13	50	2	**MEFCS2060**	●
8	0/-0.030	8	h6	19	60	2	**MEFCS2080**	●
10	0/-0.030	10	h6	22	70	2	**MEFCS2100**	●
12	0/-0.030	12	h6	26	75	2	**MEFCS2120**	●
14	0/-0.030	16	h6	26	85	2	**MEFCS2140**	●
16	0/-0.030	16	h6	32	100	2	**MEFCS2160**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MEFCS2

	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**90÷110**	**50÷70**	**30÷50**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.005	0.004	0.004	0.004
	2	0.009	0.008	0.007	0.007
	3	0.012	0.010	0.009	0.009
	4	0.017	0.015	0.014	0.014
	5	0.023	0.020	0.018	0.018
	6	0.029	0.024	0.023	0.023
	8	0.035	0.029	0.028	0.028
	10	0.040	0.034	0.032	0.032
	12	0.046	0.039	0.037	0.037
	14	0.052	0.044	0.041	0.041
	16	0.058	0.049	0.046	0.046

< D3 mm: ap = 0.1D ÷ 0.2D

	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**D x 0.3D**	**D x 0.1D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.006	0.005	0.004	0.004
	2	0.011	0.009	0.009	0.009
	3	0.014	0.012	0.011	0.011
	4	0.021	0.018	0.017	0.017
	5	0.028	0.023	0.022	0.022
	6	0.035	0.029	0.028	0.028
	8	0.041	0.035	0.033	0.033
	10	0.048	0.041	0.039	0.039
	12	0.055	0.047	0.044	0.044
	14	0.062	0.053	0.050	0.050
	16	0.069	0.059	0.055	0.055

< D3 mm: ap = 0.1D ÷ 0.2D

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**D x D**	**D x D**	**0.5D x D**	**0.2D x D**
	Vc (m/min)	**90÷110**	**50÷70**	**30÷50**	**20÷40**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.002	0.002	0.002
	2	0.006	0.005	0.004	0.004
	3	0.007	0.006	0.006	0.006
	4	0.010	0.009	0.008	0.008
	5	0.014	0.012	0.011	0.011
	6	0.017	0.015	0.014	0.014
	8	0.021	0.018	0.017	0.017
	10	0.024	0.021	0.019	0.019
	12	0.028	0.023	0.022	0.022
	14	0.031	0.026	0.025	0.025
	16	0.035	0.029	0.028	0.028

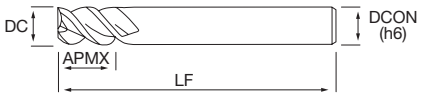
< D3 mm: ap = 0.1D ÷ 0.2D

SORMA DIAMOND & CUTTING TOOLS

MEFCSH3

- Cylindrical shank
- 3 flutes

P	M	K	N	S	H
★	★			★	





OSAWA NORM | VA | UMG ENDLESS | <45 HRC | FHA 50° | SQUARE | ZEFP 3 | ZEFP 4 | SLOTTING | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	6	h6	13	50	3	**MEFCSH3060**	●
8	0/-0.030	8	h6	19	60	3	**MEFCSH3080**	●
10	0/-0.030	10	h6	22	70	3	**MEFCSH3100**	●
12	0/-0.030	12	h6	26	75	3	**MEFCSH3120**	●
16	0/-0.030	16	h6	32	100	3	**MEFCSH3160**	●
18	0/-0.030	18	h6	32	90	3	**MEFCSH3180**	▽

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MEFCSH3

	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.013	0.012	0.012
	8	0.029	0.017	0.015	0.016
	10	0.036	0.021	0.019	0.020
	12	0.046	0.027	0.024	0.026
	14	0.053	0.031	0.028	0.030
	16	0.065	0.038	0.034	0.036
	18	0.075	0.044	0.039	0.042

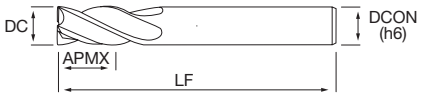
	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**80÷100**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.015	0.014	0.014
	8	0.035	0.020	0.019	0.019
	10	0.043	0.026	0.024	0.024
	12	0.055	0.033	0.031	0.031
	14	0.064	0.038	0.036	0.036
	16	0.078	0.046	0.043	0.043
	18	0.090	0.053	0.050	0.050

SORMA DIAMOND & CUTTING TOOLS

MEFCS4

- Cylindrical shank
- 4 flutes

P	M	K	N	S	H
★	★			★	





OSAWA NORM | VA | UMG ENDLESS | <45 HRC | FHA 35° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.030	4	h6	6	40	4	**MEFCS4020**	●
2.5	0/-0.030	4	h6	8	40	4	**MEFCS4025**	●
3	0/-0.030	6	h6	8	45	4	**MEFCS4030**	●
4	0/-0.030	6	h6	11	45	4	**MEFCS4040**	●
5	0/-0.030	6	h6	13	50	4	**MEFCS4050**	●
6	0/-0.030	6	h6	13	50	4	**MEFCS4060**	●
8	0/-0.030	8	h6	19	60	4	**MEFCS4080**	●
10	0/-0.030	10	h6	22	70	4	**MEFCS4100**	●
12	0/-0.030	12	h6	26	75	4	**MEFCS4120**	●
14	0/-0.030	16	h6	26	85	4	**MEFCS4140**	●
16	0/-0.030	16	h6	32	100	4	**MEFCS4160**	●
20	0/-0.030	20	h6	38	105	4	**MEFCS4200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MEFCS4

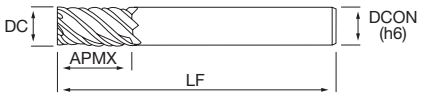
	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.1D**
	Vc (m/min)	**90÷110**	**60÷80**	**40÷60**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.012	0.010	0.010	0.010
	4	0.015	0.013	0.012	0.012
	5	0.018	0.015	0.014	0.014
	6	0.023	0.020	0.018	0.018
	8	0.030	0.026	0.024	0.024
	10	0.038	0.032	0.030	0.030
	12	0.045	0.038	0.036	0.036
	14	0.052	0.044	0.042	0.042
	16	0.058	0.049	0.046	0.046
	18	0.066	0.056	0.053	0.053
	20	0.075	0.064	0.060	0.060

SORMA DIAMOND & CUTTING TOOLS

MEF600

- Cylindrical shank
- Multi flute

P	M	K	N	S	H
★	★			★	





OSAWA NORM | VA | UMG ENDLESS | <45 HRC | FHA 50° | SQUARE | ZEFP 6~8 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	6	h6	13	57	6	**MEF600060**	●
8	0/-0.030	8	h6	19	63	6	**MEF600080**	●
10	0/-0.030	10	h6	22	72	6	**MEF600100**	●
12	0/-0.030	12	h6	26	83	6	**MEF600120**	●
16	0/-0.030	16	h6	32	92	6	**MEF600160**	●
20	0/-0.030	20	h6	38	104	8	**MEF600200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MEF600

SIDE MILLING

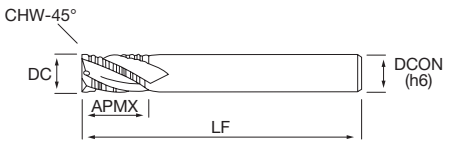
Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**D x 0.1D**	**D x 0.05D**
Vc (m/min)	**100÷140**	**70÷110**	**50÷80**	**40÷60**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	0.015	0.013	0.012	0.012
8	0.020	0.017	0.016	0.016
10	0.025	0.021	0.020	0.020
12	0.030	0.026	0.024	0.024
14	0.035	0.030	0.028	0.028
16	0.040	0.034	0.032	0.032
20	0.050	0.043	0.040	0.040

SORMA DIAMOND & CUTTING TOOLS

MEF901

- Cylindrical shank
- Roughing

P	M	K	N	S	H
★	★			★	





OSAWA NORM | VA | UMG ENDLESS | <45 HRC | FHA 45° | CH-45° | HR FINE | ZEFP 3~6 | SIDE MILLING

DC	DC tol.	CHW	CHW tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
4	0/-0.048	0.1	±0.020	6	h6	11	57	3	**MEF901040**	●
5	0/-0.048	0.1	±0.020	6	h6	13	57	4	**MEF901050**	●
6	0/-0.048	0.15	±0.020	6	h6	16	57	4	**MEF901060**	●
8	0/-0.058	0.2	±0.020	8	h6	16	63	4	**MEF901080**	●
10	0/-0.058	0.2	±0.020	10	h6	22	72	4	**MEF901100**	●
12	0/-0.070	0.2	±0.020	12	h6	26	83	4	**MEF901120**	●
14	0/-0.070	0.2	±0.020	14	h6	26	83	5	**MEF901140**	●
16	0/-0.070	0.2	±0.020	16	h6	32	92	5	**MEF901160**	●
20	0/-0.084	0.2	±0.020	20	h6	38	104	6	**MEF901200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEF901

	Material Group ISO 513	P1 P2 P3	P4 P7 M1	P5 M2 M3 S1 S2 S4	P8 S3 S5
	Hardness/Rm	≤700 N/mm²	700÷1000 N/mm²	≤35 HRC	≤45 HRC
	ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.2D**	**D x 0.1D**
	Vc (m/min)	**100÷140**	**70÷90**	**50÷70**	**40÷60**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	0.018	0.015	0.014	0.014
	5	0.022	0.019	0.018	0.018
	6	0.028	0.024	0.022	0.022
	8	0.035	0.030	0.028	0.028
	10	0.040	0.034	0.032	0.032
	12	0.045	0.038	0.036	0.036
	14	0.050	0.043	0.040	0.040
	16	0.057	0.048	0.046	0.046
	20	0.073	0.062	0.058	0.058



ALU

NON-FERROUS MATERIALS

Uncoated micrograin carbide and cutting geometry specifically developed for non-ferrous machining. Polished and unique flutes design for low cutting forces, smooth chip ejection and outstanding finishing quality. Also available in the HF ALU version with unequal pitch (UP) with a specific design allowing mirror finishing and DxD machining, even in the 4-flutes version.

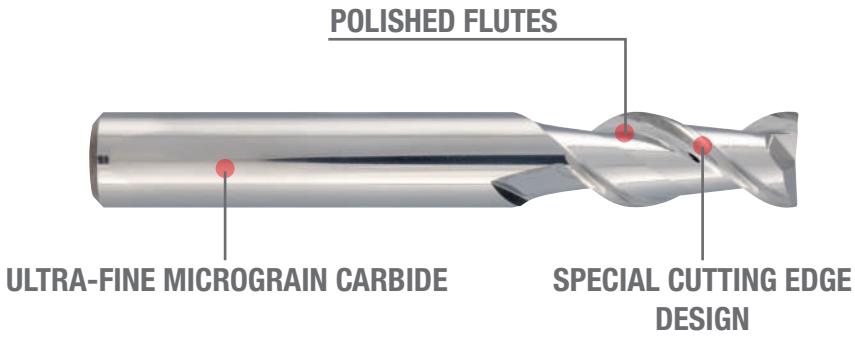
Micrograna non rivestita e geometria di taglio sviluppata specificamente per la lavorazione di materiali non-ferrosi. Taglienti lappati e particolare profilo del vano truciolo per bassi sforzi di taglio e un'eccellente finitura superficiale. Disponibile anche la versione HF Alu con passo differenziato (UP) con un particolare design che permette finiture a specchio e lavorazioni DxD, anche nella versione a 4 taglienti.

Unbeschichtete Mikrokörnung und eigens für die Bearbeitung von NE-Metallen entwickelte Schnittgeometrie. Dank der geläppten Schneiden und der besonderen Form der Nuten ist die aufzubringende Schnittkraft gering, bei gleichzeitig ausgezeichnetem Oberflächenfinish. Auch in der Version HF Alu mit ungleicher Teilung (UP) und besonderer Form erhältlich, die auch in der Version mit 4 Schneiden ein spiegelblankes Oberflächenfinish und DxD-Bearbeitungen ermöglicht.

Micrograin non revêtu et géométrie de coupe développée spécifiquement pour l'usinage de matériaux non ferreux. Arêtes de coupe polies et profil particulier de la goujure pour de faibles efforts de coupe et une excellente finition superficielle. Également disponible la version HF Alu à pas décalé(UP), avec un design particulier qui permet des finitions glacées et des usinages DxD,aussi dans la version à 4 arêtes de coupe.

ALU

Features of ALU end mills



3FL - unequal pitch design





A ≠B ≠C

4FL - unequal pitch design

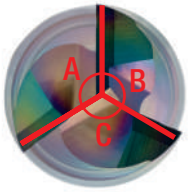




A,C ≠ B,D

3FL - unequal pitch design with innovative DLC coating





A ≠B ≠C

ALU

Features and Benefits

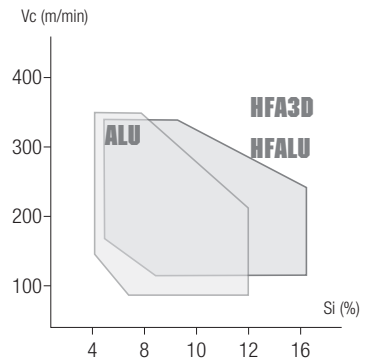
- Mirror finishing surface thanks to the special cutting edge design
- Polished flutes for smoother chip ejection
- High wear resistance and longer durability thanks to the ultra micrograin carbide composition
- HF ALU 3-flutes and 4-flutes with Unequal Pitch(UP) design allow large Ae x Ap while minimizing vibrations
- New DLC coating allows higher cutting speed and lower cutting force

- Hochglanzoberfläche dank spezieller Schneidkantenkonstruktion
- Polierte Nuten für bessere Spanabfuhr
- Mikrokörniges Hartmetall für hohe Verschleißfestigkeit
- HF ALU mit 3 und 4 Schneiden ermöglichen dank dem ungleichen Winkel (UP) eine drastische Reduzierung der Vibrationen und hohe Ae x Ap
- Die neue DLC-Beschichtung ermöglicht eine geringere Schneidkraft und höhere Geschwindigkeit

- Finitura a specchio grazie allo speciale design del tagliente
- Scanalature lappate per una migliore espulsione del truciolo
- Metallo duro micrograna per garantire elevata resistenza all'usura
- Le HF ALU a 3 e 4 taglienti grazie al passo differenziato (UP) che riduce drasticamente le vibrazioni, consentono elevati Ae x Ap
- Il nuovo rivestimento DLC permette la riduzione dello sforzo di taglio e l'aumento della velocità

- Finition miroir grâce à un design spécial du tranchant
- Goujures rodées gage de meilleure expulsion du copeau
- Carbure micro-grain pour assurer une haute résistance à l'usure
- Les HF ALU à 3 et 4 tranchants, grâce au pas décalé (UP) qui réduit considérablement les vibrations, assurent de hautes valeurs de Ae x Ap
- Le nouveau revêtement DLC permet de réduire l'effort de coupe et d'augmenter la vitesse

Cutting speed Vc range



Use case

Tool Type	HFAL4
Workpiece	W.-Nr 3.3523 AlMg2.5(ASTM 5052)
Parameters	Vc 375 m/min, fz 0,1 mm/t, ap 6 mm, ae 12 mm
Diameter	12 mm
Machining time:	



SORMA DIAMOND & CUTTING TOOLS

HFAL4

- Cylindrical shank
- 4 flutes

P	M	K	N	S	H
			★		





OSAWA NORM | HF ALU | MG / BR | FHA 40° | SQUARE | ZEFP 4 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.025	6	h6	9	57	4	**HFAL4030**	●
4	0/-0.025	6	h6	12	57	4	**HFAL4040**	●
5	0/-0.025	6	h6	13	57	4	**HFAL4050**	●
6	0/-0.025	6	h6	13	57	4	**HFAL4060**	●
8	0/-0.030	8	h6	20	64	4	**HFAL4080**	●
10	0/-0.030	10	h6	22	72	4	**HFAL4100**	●
12	0/-0.030	12	h6	26	83	4	**HFAL4120**	●
14	0/-0.030	14	h6	32	90	4	**HFAL4140**	●
16	0/-0.030	16	h6	32	92	4	**HFAL4160**	●
20	0/-0.030	20	h6	38	104	4	**HFAL4200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HFAL4

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x D	D x D	D x D	D x D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷1000
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.030	0.025	0.021	0.033
	4	0.040	0.034	0.028	0.044
	5	0.050	0.042	0.035	0.054
	6	0.059	0.050	0.041	0.064
	8	0.077	0.066	0.054	0.085
	10	0.095	0.080	0.066	0.104
	12	0.108	0.092	0.076	0.119
	14	0.126	0.107	0.088	0.139
	16	0.144	0.122	0.101	0.158
	18	0.158	0.135	0.111	0.174
	20	0.176	0.149	0.123	0.19

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D
	Vc (m/min)	300÷600	200÷500	200÷400	600÷1000
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.036	0.032	0.029	0.039
	4	0.048	0.043	0.038	0.052
	5	0.059	0.053	0.048	0.065
	6	0.070	0.063	0.056	0.077
	8	0.093	0.084	0.074	0.102
	10	0.113	0.102	0.091	0.125
	12	0.130	0.117	0.104	0.143
	14	0.151	0.136	0.121	0.166
	16	0.173	0.156	0.138	0.190
	18	0.190	0.171	0.152	0.209
	20	0.211	0.190	0.168	0.232

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	8° x 0.5D	5° x 0.5D	5° x 0.5D	8° x 0.5D
	Vc (m/min)	300÷600	200÷500	200÷400	600÷1000
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.021	0.018	0.015	0.023
	4	0.027	0.025	0.020	0.030
	5	0.034	0.031	0.025	0.038
	6	0.040	0.036	0.030	0.044
	8	0.054	0.048	0.039	0.059
	10	0.065	0.058	0.048	0.072
	12	0.075	0.067	0.055	0.082
	14	0.087	0.078	0.064	0.096
	16	0.100	0.089	0.073	0.110
	18	0.110	0.098	0.081	0.120
	20	0.121	0.109	0.089	0.133

Parameters suggested with high power milling chuck and stable machining condition

Cutting Parameters

HFAL4

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	15° x D	10° x D	7° x D	15° x D
	Vc (m/min)	300÷500	200÷400	200÷300	600÷10
RAMPING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.020	0.017	0.015	0.022
	4	0.026	0.023	0.019	0.029
	5	0.033	0.029	0.024	0.036
	6	0.039	0.034	0.029	0.043
	8	0.051	0.045	0.038	0.057
	10	0.063	0.055	0.046	0.069
	12	0.072	0.062	0.053	0.079
	14	0.084	0.073	0.062	0.092
	16	0.096	0.083	0.071	0.105
	18	0.105	0.092	0.078	0.116
	20	0.117	0.101	0.086	0.128

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x 0.4D	D x 0.4D	D x 0.4D	D x 0.4D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷1000
VERTICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.030	0.027	0.024	0.033
	4	0.040	0.036	0.032	0.044
	5	0.050	0.045	0.040	0.054
	6	0.059	0.053	0.047	0.064
	8	0.077	0.070	0.062	0.085
	10	0.095	0.085	0.076	0.104
	12	0.108	0.097	0.086	0.119
	14	0.126	0.113	0.101	0.139
	16	0.144	0.130	0.115	0.158
	18	0.158	0.143	0.127	0.174
	20	0.176	0.158	0.140	0.193

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x D	D x D	0.5D x D	0.5D x D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷1000
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.015	0.013	0.012	0.016
	4	0.020	0.018	0.016	0.022
	5	0.025	0.022	0.020	0.027
	6	0.029	0.026	0.023	0.032
	8	0.039	0.035	0.031	0.043
	10	0.047	0.043	0.038	0.052
	12	0.054	0.049	0.043	0.059
	14	0.063	0.057	0.050	0.069
	16	0.072	0.065	0.058	0.079
	18	0.079	0.071	0.063	0.087
	20	0.088	0.079	0.070	0.097

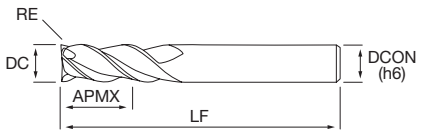
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HFAL3

- Cylindrical shank
- 3 flutes
- Corner radius
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | HF ALU | MG POLISHED | FHA 30° | RADIUS | ZEFP 3 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.015	0.1	0/-0.010	6	h6	3	50	3	**HFAL301010030**	●
1	0/-0.015	0.1	0/-0.010	6	h6	5	50	3	**HFAL301010050**	●
1.5	0/-0.015	0.1	0/-0.010	6	h6	4.5	50	3	**HFAL301015045**	●
1.5	0/-0.015	0.1	0/-0.010	6	h6	6	50	3	**HFAL301015060**	●
1.5	0/-0.015	0.1	0/-0.010	6	h6	8	50	3	**HFAL301015080**	●
2	0/-0.020	0.1	±0.020	6	h6	3	50	3	**HFAL301020030**	●
2	0/-0.020	0.1	±0.020	6	h6	5	50	3	**HFAL301020050**	●
2	0/-0.020	0.1	±0.020	6	h6	6.5	50	3	**HFAL301020**	●
2	0/-0.020	0.1	±0.020	6	h6	8	50	3	**HFAL301020080**	●
2	0/-0.020	0.1	±0.020	6	h6	10	50	3	**HFAL301020100**	●
3	0/-0.020	0.1	±0.020	6	h6	6	50	3	**HFAL301030060**	●
3	0/-0.020	0.1	±0.020	6	h6	9	50	3	**HFAL301030**	●
3	0/-0.020	0.1	±0.020	6	h6	12	50	3	**HFAL301030120**	●
4	0/-0.020	0.1	±0.020	6	h6	12	50	3	**HFAL301040**	●
5	0/-0.020	0.1	±0.020	6	h6	15	50	3	**HFAL301050**	●
6	0/-0.020	0.1	±0.020	6	h6	20	60	3	**HFAL301060**	●
8	0/-0.020	0.1	±0.020	8	h6	20	64	3	**HFAL301080**	●
10	0/-0.020	0.1	±0.020	10	h6	22	75	3	**HFAL301100**	●
12	0/-0.020	0.1	±0.020	12	h6	25	75	3	**HFAL301120**	●
14	0/-0.020	0.1	±0.020	14	h6	32	90	3	**HFAL301140**	●
16	0/-0.020	0.1	±0.020	16	h6	32	90	3	**HFAL301160**	●
20	0/-0.020	0.1	±0.020	20	h6	38	100	3	**HFAL301200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HFAL3

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x D	D x D	D x D	D x D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷900
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.011	0.009	0.008	0.012
	2	0.022	0.019	0.015	0.024
	3	0.033	0.028	0.023	0.036
	4	0.044	0.037	0.031	0.048
	5	0.055	0.047	0.039	0.061
	6	0.065	0.055	0.046	0.072
	8	0.086	0.073	0.060	0.095
	10	0.105	0.089	0.074	0.116
	12	0.120	0.102	0.084	0.132
	14	0.140	0.119	0.098	0.154
	16	0.160	0.136	0.112	0.176
	18	0.176	0.150	0.123	0.194
	20	0.195	0.166	0.137	0.215

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D
	Vc (m/min)	300÷600	200÷500	200÷400	600÷1000
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.013	0.012	0.011	0.015
	2	0.026	0.024	0.021	0.029
	3	0.040	0.036	0.032	0.044
	4	0.053	0.048	0.042	0.058
	5	0.066	0.059	0.053	0.073
	6	0.078	0.070	0.062	0.086
	8	0.103	0.093	0.083	0.114
	10	0.126	0.113	0.101	0.139
	12	0.144	0.130	0.115	0.158
	14	0.168	0.151	0.134	0.185
	16	0.192	0.173	0.154	0.211
	18	0.211	0.190	0.169	0.232
	20	0.234	0.211	0.187	0.257

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	8° x 0.5D	5° x 0.5D	5° x 0.5D	8° x 0.5D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷900
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.008	0.007	0.006	0.008
	2	0.015	0.014	0.011	0.017
	3	0.023	0.020	0.017	0.025
	4	0.030	0.027	0.022	0.033
	5	0.038	0.034	0.028	0.042
	6	0.045	0.040	0.033	0.049
	8	0.059	0.053	0.044	0.065
	10	0.073	0.065	0.054	0.080
	12	0.083	0.074	0.061	0.091
	14	0.097	0.087	0.071	0.106
	16	0.111	0.099	0.082	0.122
	18	0.122	0.109	0.090	0.134
	20	0.135	0.121	0.099	0.148

Parameters suggested with high power milling chuck and stable machining condition

HFAL3

RAMPING

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
α° x ae	15° x D	10° x D	7° x D	15° x D
Vc (m/min)	300÷500	200÷400	150÷350	600÷900
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.007	0.006	0.005	0.008
2	0.015	0.013	0.011	0.016
3	0.022	0.019	0.016	0.024
4	0.029	0.025	0.022	0.032
5	0.037	0.032	0.027	0.040
6	0.043	0.038	0.032	0.048
8	0.057	0.050	0.042	0.063
10	0.070	0.061	0.051	0.077
12	0.080	0.069	0.059	0.088
14	0.093	0.081	0.069	0.102
16	0.106	0.092	0.078	0.117
18	0.117	0.102	0.086	0.129
20	0.130	0.113	0.096	0.143

VERTICAL

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
ap x ae	D x 0.4D	D x 0.4D	D x 0.4D	D x 0.4D
Vc (m/min)	300÷500	200÷400	150÷350	600÷900
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
2	0.011	0.010	0.009	0.012
4	0.022	0.020	0.018	0.024
3	0.033	0.030	0.026	0.036
4	0.044	0.040	0.035	0.048
5	0.055	0.050	0.044	0.061
6	0.065	0.059	0.052	0.072
8	0.086	0.077	0.069	0.095
10	0.105	0.095	0.084	0.116
12	0.120	0.108	0.096	0.132
14	0.140	0.126	0.112	0.154
16	0.160	0.144	0.128	0.176
18	0.176	0.158	0.141	0.194
20	0.195	0.176	0.156	0.215

DRILLING

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
ap x ae	D x D	D x D	0.5D x D	0.5D x D
Vc (m/min)	270÷370	190÷290	150÷250	500÷700
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
2	0.011	0.010	0.009	0.012
4	0.022	0.020	0.018	0.024
3	0.017	0.015	0.013	0.018
4	0.022	0.020	0.018	0.024
5	0.028	0.025	0.022	0.030
6	0.033	0.029	0.026	0.036
8	0.043	0.039	0.034	0.047
10	0.053	0.047	0.042	0.058
12	0.060	0.054	0.048	0.066
14	0.070	0.063	0.056	0.077
16	0.080	0.072	0.064	0.088
18	0.088	0.079	0.070	0.097
20	0.098	0.088	0.078	0.107

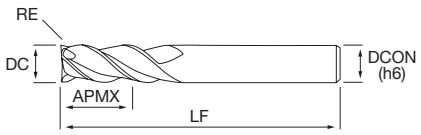
Parameters suggested with high power milling chuck and stable machining condition

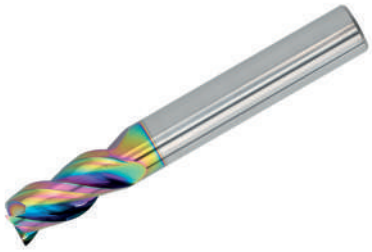
SORMA DIAMOND & CUTTING TOOLS

HFA3D

- Cylindrical shank
- 3 flutes
- Corner radius

P	M	K	N	S	H
			★		





OSAWA NORM | HF ALU | MG DLC | FHA 30° | RADIUS | ZEFP 3 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.1	±0.020	6	h6	3	50	3	**HFA3D01010030**	●
1	0/-0.020	0.1	±0.020	6	h6	5	50	3	**HFA3D01010050**	●
1.5	0/-0.020	0.1	±0.020	6	h6	4.5	50	3	**HFA3D01015045**	●
1.5	0/-0.020	0.1	±0.020	6	h6	8	50	3	**HFA3D01015080**	●
1.5	0/-0.020	0.1	±0.020	6	h6	6	50	3	**HFA3D01015060**	●
2	0/-0.020	0.1	±0.020	6	h6	5	50	3	**HFA3D01020050**	●
2	0/-0.020	0.1	±0.020	6	h6	6.5	50	3	**HFA3D01020065**	●
2	0/-0.020	0.1	±0.020	6	h6	8	50	3	**HFA3D01020080**	●
3	0/-0.020	0.1	±0.020	6	h6	6	50	3	**HFA3D01030060**	●
3	0/-0.020	0.1	±0.020	6	h6	9	50	3	**HFA3D01030090**	●
3	0/-0.020	0.1	±0.020	6	h6	12	50	3	**HFA3D01030120**	●
4	0/-0.020	0.1	±0.020	6	h6	12	50	3	**HFA3D01040120**	●
5	0/-0.020	0.1	±0.020	6	h6	15	60	3	**HFA3D01050150**	●
6	0/-0.020	0.1	±0.020	6	h6	20	60	3	**HFA3D01060**	●
8	0/-0.020	0.1	±0.020	8	h6	20	64	3	**HFA3D01080**	●
10	0/-0.020	0.1	±0.020	10	h6	22	75	3	**HFA3D01100**	●
12	0/-0.020	0.1	±0.020	12	h6	25	75	3	**HFA3D01120**	●
16	0/-0.020	0.1	±0.020	16	h6	32	90	3	**HFA3D01160**	●
20	0/-0.020	0.1	±0.020	20	h6	38	100	3	**HFA3D01200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HFA3D

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x D	D x D	D x D	D x D
	Vc (m/min)	350÷600	250÷480	180÷400	700÷1000
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.011	0.009	0.008	0.012
	2	0.022	0.019	0.015	0.024
	3	0.033	0.028	0.023	0.036
	4	0.044	0.037	0.031	0.048
	5	0.055	0.047	0.039	0.061
	6	0.065	0.055	0.046	0.072
	8	0.086	0.073	0.060	0.095
	10	0.105	0.089	0.074	0.116
	12	0.120	0.102	0.084	0.132
	16	0.160	0.136	0.112	0.176
	20	0.195	0.166	0.137	0.215

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D
	Vc (m/min)	300÷600	200÷500	200÷400	600÷1000
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.013	0.012	0.011	0.015
	2	0.026	0.024	0.021	0.029
	3	0.040	0.036	0.032	0.044
	4	0.053	0.048	0.042	0.058
	5	0.066	0.059	0.053	0.073
	6	0.078	0.070	0.062	0.086
	8	0.103	0.093	0.083	0.114
	10	0.126	0.113	0.101	0.139
	12	0.144	0.130	0.115	0.158
	16	0.192	0.173	0.154	0.211
	20	0.234	0.211	0.187	0.257

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	8° x 0.5D	5° x 0.5D	5° x 0.5D	8° x 0.5D
	Vc (m/min)	350÷600	250÷480	180÷400	700÷1000
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.007	0.006	0.005	0.008
	2	0.015	0.013	0.011	0.016
	3	0.022	0.019	0.016	0.024
	4	0.029	0.025	0.022	0.032
	5	0.037	0.032	0.027	0.040
	6	0.043	0.038	0.032	0.048
	8	0.057	0.050	0.042	0.063
	10	0.070	0.061	0.051	0.077
	12	0.083	0.074	0.061	0.091
	16	0.111	0.099	0.082	0.122
	20	0.135	0.121	0.099	0.148

Parameters suggested with high power milling chuck and stable machining condition

ALU Unequal pitch - Corner radius

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

HFA3D

RAMPING

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
α° x ae	15° x D	10° x D	7° x D	15° x D
Vc (m/min)	350÷600	250÷480	180÷400	700÷1000
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.011	0.010	0.009	0.012
2	0.022	0.020	0.018	0.024
3	0.033	0.030	0.026	0.036
4	0.044	0.040	0.035	0.048
5	0.055	0.050	0.044	0.061
6	0.065	0.059	0.052	0.072
8	0.086	0.077	0.069	0.095
10	0.105	0.095	0.084	0.116
12	0.080	0.069	0.059	0.088
16	0.106	0.092	0.078	0.117
20	0.130	0.113	0.096	0.143

VERTICAL

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
ap x ae	D x 0.4D	D x 0.4D	D x 0.4D	D x 0.4D
Vc (m/min)	350÷600	250÷480	180÷400	700÷1000
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.011	0.010	0.009	0.012
2	0.022	0.020	0.018	0.024
3	0.033	0.030	0.026	0.036
4	0.044	0.040	0.035	0.048
5	0.055	0.050	0.044	0.061
6	0.065	0.059	0.052	0.072
8	0.086	0.077	0.069	0.095
10	0.105	0.095	0.084	0.116
12	0.120	0.108	0.096	0.132
16	0.160	0.144	0.128	0.176
20	0.195	0.176	0.156	0.215

DRILLING

Material Group ISO 513	N1	N2 N3	N4	N5
Hardness/Rm				
ap x ae	D x D	D x D	0.5D x D	0.5D x D
Vc (m/min)	300÷400	220÷350	180÷300	600÷800
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.006	0.005	0.004	0.006
2	0.011	0.010	0.009	0.012
3	0.017	0.015	0.013	0.018
4	0.022	0.020	0.018	0.024
5	0.028	0.025	0.022	0.030
6	0.033	0.029	0.026	0.036
8	0.043	0.039	0.034	0.047
10	0.053	0.047	0.042	0.058
12	0.060	0.054	0.048	0.066
16	0.080	0.072	0.064	0.088
20	0.098	0.088	0.078	0.107

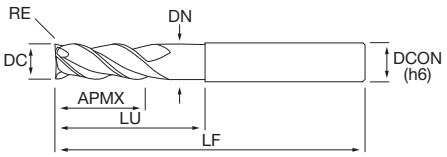
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

HFA53

- Cylindrical shank
- Reduced neck
- 3 edges
- Long reach
- Corner radius

P	M	K	N	S	H
			★		





OSAWA NORM | HF ALU | MG / BR | FHA 30° | RADIUS | ZEFP 3 UP | SLOTTING | SIDE MILLING | HELICAL | RAMPING | VERTICAL | DRILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.030	0.2	±0.010	6	h6	5	18	2.8	60	3	**HFA5302030**	●
3	0/-0.030	0.5	±0.010	6	h6	5	18	2.8	60	3	**HFA5305030**	●
4	0/-0.030	0.5	±0.010	6	h6	6	22	3.8	60	3	**HFA5305040**	●
4	0/-0.030	1	±0.010	6	h6	6	22	3.8	60	3	**HFA5310040**	●
5	0/-0.030	0.5	±0.010	6	h6	8	24	4.8	60	3	**HFA5305050**	●
5	0/-0.030	1	±0.010	6	h6	8	24	4.8	60	3	**HFA5310050**	●
6	0/-0.030	0.5	±0.010	6	h6	9	29	5.8	65	3	**HFA5305060**	●
6	0/-0.030	1	±0.010	6	h6	9	29	5.8	65	3	**HFA5310060**	●
6	0/-0.030	2	±0.010	6	h6	9	29	5.8	65	3	**HFA5320060**	●
8	0/-0.030	0.5	±0.010	8	h6	12	39	7.8	75	3	**HFA5305080**	●
8	0/-0.030	1	±0.010	8	h6	12	39	7.8	75	3	**HFA5310080**	●
8	0/-0.030	2	±0.010	8	h6	12	39	7.8	75	3	**HFA5320080**	●
8	0/-0.030	3	±0.010	8	h6	12	39	7.8	75	3	**HFA5330080**	●
10	0/-0.030	0.5	±0.010	10	h6	15	52	9.8	100	3	**HFA5305100**	●
10	0/-0.030	1	±0.010	10	h6	15	52	9.8	100	3	**HFA5310100**	●
10	0/-0.030	2	±0.010	10	h6	15	52	9.8	100	3	**HFA5320100**	●
10	0/-0.030	3	±0.010	10	h6	15	52	9.8	100	3	**HFA5330100**	●
10	0/-0.030	4	±0.010	10	h6	15	52	9.8	100	3	**HFA5340100**	●
12	0/-0.030	0.5	±0.010	12	h6	18	62	11.8	120	3	**HFA5305120**	●
12	0/-0.030	1	±0.010	12	h6	18	62	11.8	120	3	**HFA5310120**	●
12	0/-0.030	2	±0.010	12	h6	18	62	11.8	120	3	**HFA5320120**	●
12	0/-0.030	3	±0.010	12	h6	18	62	11.8	120	3	**HFA5330120**	●
12	0/-0.030	4	±0.010	12	h6	18	62	11.8	120	3	**HFA5340120**	●
16	0/-0.030	0.5	±0.010	16	h6	24	82	15.7	130	3	**HFA5305160**	●
16	0/-0.030	1	±0.010	16	h6	24	82	15.7	130	3	**HFA5310160**	●
16	0/-0.030	2	±0.010	16	h6	24	82	15.7	130	3	**HFA5320160**	●
16	0/-0.030	3	±0.010	16	h6	24	82	15.7	130	3	**HFA5330160**	●
16	0/-0.030	4	±0.010	16	h6	24	82	15.7	130	3	**HFA5340160**	●
20	0/-0.030	0.5	±0.010	20	h6	30	100	19.7	150	3	**HFA5305200**	●
20	0/-0.030	1	±0.010	20	h6	30	100	19.7	150	3	**HFA5310200**	●
20	0/-0.030	2	±0.010	20	h6	30	100	19.7	150	3	**HFA5320200**	●
20	0/-0.030	3	±0.010	20	h6	30	100	19.7	150	3	**HFA5330200**	●
20	0/-0.030	4	±0.010	20	h6	30	100	19.7	150	3	**HFA5340200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

HFA53

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	200÷500	150÷350	150÷250	500÷900
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.026	0.022	0.018	0.029
	4	0.035	0.030	0.025	0.039
	5	0.044	0.037	0.031	0.048
	6	0.052	0.044	0.036	0.057
	8	0.069	0.058	0.048	0.076
	10	0.084	0.071	0.059	0.092
	12	0.096	0.082	0.067	0.106
	14	0.112	0.095	0.078	0.123
	16	0.128	0.109	0.090	0.141
	18	0.141	0.120	0.099	0.155
	20	0.156	0.133	0.109	0.172

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷900
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.032	0.029	0.025	0.035
	4	0.042	0.038	0.034	0.046
	5	0.053	0.048	0.042	0.058
	6	0.062	0.056	0.050	0.069
	8	0.083	0.074	0.066	0.091
	10	0.101	0.091	0.081	0.111
	12	0.115	0.104	0.092	0.127
	14	0.134	0.121	0.108	0.148
	16	0.154	0.138	0.123	0.169
	18	0.169	0.152	0.135	0.186
	20	0.187	0.168	0.150	0.206

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	8° x 0.5D	5° x 0.5D	5° x 0.5D	8° x 0.5D
	Vc (m/min)	200÷500	150÷350	200÷400	500÷900
HELICAL	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.018	0.016	0.013	0.020
	4	0.024	0.022	0.018	0.027
	5	0.030	0.027	0.022	0.033
	6	0.036	0.032	0.027	0.040
	8	0.048	0.043	0.035	0.052
	10	0.058	0.052	0.043	0.064
	12	0.066	0.059	0.049	0.073
	14	0.077	0.069	0.057	0.085
	16	0.088	0.079	0.065	0.097
	18	0.097	0.087	0.072	0.107
	20	0.108	0.097	0.080	0.119

Parameters suggested with high power milling chuck and stable machining condition

HFA53

RAMPING	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	α° x ae	15° x D	10° x D	7° x D	15° x D
	Vc (m/min)	200÷500	150÷350	200÷400	500÷900
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.018	0.014	0.013	0.019
	4	0.023	0.018	0.017	0.026
	5	0.029	0.023	0.022	0.032
	6	0.035	0.027	0.025	0.038
	8	0.046	0.036	0.034	0.050
	10	0.056	0.044	0.041	0.061
	12	0.064	0.050	0.047	0.070
	14	0.074	0.058	0.055	0.082
	16	0.085	0.067	0.063	0.094
	18	0.094	0.073	0.069	0.103
	20	0.104	0.081	0.076	0.114

VERTICAL	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x 0.4D	D x 0.4D	D x 0.4D	D x 0.4D
	Vc (m/min)	200÷500	150÷350	150÷250	500÷900
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.026	0.024	0.021	0.029
	4	0.035	0.032	0.028	0.039
	5	0.044	0.040	0.035	0.048
	6	0.052	0.047	0.042	0.057
	8	0.069	0.062	0.055	0.076
	10	0.084	0.076	0.067	0.092
	12	0.096	0.086	0.077	0.106
	14	0.112	0.101	0.090	0.123
	16	0.128	0.115	0.102	0.141
	18	0.141	0.127	0.113	0.155
	20	0.156	0.140	0.125	0.172

DRILLING	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	230÷330	150÷250	110÷210	510÷610
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.013	0.012	0.011	0.015
	4	0.018	0.016	0.014	0.019
	5	0.022	0.020	0.018	0.024
	6	0.026	0.023	0.021	0.029
	8	0.034	0.031	0.028	0.038
	10	0.042	0.038	0.034	0.046
	12	0.048	0.043	0.038	0.053
	14	0.056	0.050	0.045	0.062
	16	0.064	0.058	0.051	0.070
	18	0.070	0.063	0.056	0.077
	20	0.078	0.070	0.062	0.086

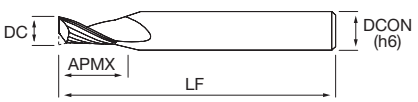
Parameters suggested with high power milling chuck and stable machining condition

SORMA DIAMOND & CUTTING TOOLS

MDCSA1

- Cylindrical shank
- 1 flute
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 25° | SQUARE | ZEFP 1 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.015	2	h6	10	40	1	**MDCSA1020**	●
3	0/-0.020	3	h6	12	40	1	**MDCSA1030**	●
4	0/-0.020	4	h6	15	50	1	**MDCSA1040**	●
5	0/-0.020	5	h6	16	50	1	**MDCSA1050**	●
6	0/-0.020	6	h6	20	60	1	**MDCSA1060**	●
8	0/-0.020	8	h6	22	63	1	**MDCSA1080**	●
10	0/-0.020	10	h6	25	72	1	**MDCSA1100**	●
12	0/-0.020	12	h6	30	83	1	**MDCSA1120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MDCSA1

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	300÷500	200÷400	150÷350	400÷600
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.023	0.019	0.016	0.023
	3	0.030	0.026	0.021	0.030
	4	0.039	0.033	0.027	0.039
	5	0.049	0.041	0.034	0.049
	6	0.058	0.049	0.040	0.058
	8	0.079	0.067	0.055	0.079
	10	0.098	0.083	0.068	0.098
	12	0.116	0.099	0.081	0.116

< D3 ap x ae D x 0.25D

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x 0.5D	D x 0.5D	D x 0.5D	D x 0.5D
	Vc (m/min)	300÷600	200÷500	200÷400	400÷800
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.030	0.026	0.021	0.030
	3	0.040	0.034	0.028	0.040
	4	0.052	0.044	0.036	0.052
	5	0.065	0.055	0.046	0.065
	6	0.077	0.065	0.054	0.077
	8	0.105	0.089	0.074	0.105
	10	0.130	0.111	0.091	0.130
	12	0.155	0.132	0.109	0.155

< D3 ap x ae D x 0.25D

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x D	D x D	D x D	0.5D x D
	Vc (m/min)	300÷400	150÷350	100÷300	300÷500
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.011	0.010	0.008	0.011
	3	0.015	0.013	0.011	0.015
	4	0.020	0.017	0.014	0.020
	5	0.024	0.021	0.017	0.024
	6	0.029	0.025	0.020	0.029
	8	0.039	0.033	0.028	0.039
	10	0.049	0.041	0.034	0.049
	12	0.058	0.049	0.041	0.058

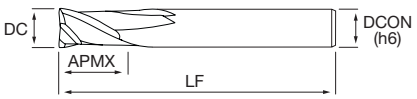
< D3 ap x ae 0.5D x D

SORMA DIAMOND & CUTTING TOOLS

MDCSA2

- Cylindrical shank
- 2 flutes
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 45° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.015	4	h6	3	40	2	**MDCSA2010**	●
1.5	0/-0.015	4	h6	4.5	40	2	**MDCSA2015**	●
2	0/-0.015	4	h6	6.5	40	2	**MDCSA2020**	●
2.5	0/-0.020	4	h6	6.5	40	2	**MDCSA2025**	●
3	0/-0.030	6	h6	8	57	2	**MDCSA2030**	●
4	0/-0.030	6	h6	11	57	2	**MDCSA2040**	●
5	0/-0.030	6	h6	13	57	2	**MDCSA2050**	●
6	0/-0.030	6	h6	13	57	2	**MDCSA2060**	●
8	0/-0.030	8	h6	19	63	2	**MDCSA2080**	●
10	0/-0.030	10	h6	22	72	2	**MDCSA2100**	●
12	0/-0.030	12	h6	26	83	2	**MDCSA2120**	●
14	0/-0.030	14	h6	26	83	2	**MDCSA2140**	●
16	0/-0.030	16	h6	32	92	2	**MDCSA2160**	●
18	0/-0.030	18	h6	32	92	2	**MDCSA2180**	●
20	0/-0.030	20	h6	38	104	2	**MDCSA2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MDCSA2

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	300÷600	150÷350	150÷250	500÷900
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.011	0.010	0.008	0.011
	1.5	0.017	0.014	0.012	0.017
	2	0.022	0.019	0.016	0.022
	3	0.028	0.024	0.020	0.028
	4	0.038	0.032	0.026	0.038
	5	0.047	0.040	0.033	0.047
	6	0.056	0.048	0.039	0.056
	8	0.075	0.064	0.052	0.075
	10	0.094	0.080	0.066	0.094
	12	0.112	0.095	0.078	0.112
	14	0.130	0.111	0.091	0.130
	16	0.148	0.126	0.103	0.148
	18	0.166	0.141	0.116	0.166
	20	0.185	0.157	0.129	0.185

< D3 ap x ae 0.25D x D

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	D x 0.5D	D x 0.5D	D x 0.5D	D x 0.5D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷1000
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.013	0.011	0.009	0.013
	1.5	0.020	0.017	0.014	0.020
	2	0.027	0.023	0.019	0.027
	3	0.034	0.029	0.024	0.034
	4	0.045	0.038	0.032	0.045
	5	0.056	0.048	0.040	0.056
	6	0.068	0.057	0.047	0.068
	8	0.090	0.076	0.063	0.090
	10	0.112	0.096	0.079	0.112
	12	0.134	0.114	0.094	0.134
	14	0.157	0.133	0.110	0.157
	16	0.177	0.151	0.124	0.177
	18	0.200	0.170	0.140	0.200
	20	0.222	0.188	0.155	0.222

< D3 ap x ae D x 0.25D

Cutting Parameters

MDCSA2

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	200÷400	150÷350	150÷350	500÷900
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.006	0.005	0.004	0.006
	1.5	0.008	0.007	0.006	0.008
	2	0.011	0.010	0.008	0.011
	3	0.014	0.012	0.010	0.014
	4	0.019	0.016	0.013	0.019
	5	0.024	0.020	0.016	0.024
	6	0.028	0.024	0.020	0.028
	8	0.037	0.032	0.026	0.037
	10	0.047	0.040	0.033	0.047
	12	0.056	0.048	0.039	0.056
	14	0.065	0.055	0.046	0.065
	16	0.074	0.063	0.052	0.074
	18	0.083	0.071	0.058	0.083
	20	0.092	0.079	0.065	0.092

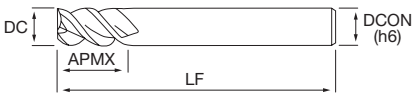
< D3 ap x ae 0.25D x D

SORMA DIAMOND & CUTTING TOOLS

MDCSA3

- Cylindrical shank
- 3 flutes
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 55° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	4	h6	3	50	3	**MDCSA3010**	●
1.5	0/-0.020	4	h6	4.5	50	3	**MDCSA3015**	●
2	0/-0.020	4	h6	6	50	3	**MDCSA3020**	●
3	0/-0.020	4	h6	8	50	3	**MDCSA3030**	●
4	0/-0.020	4	h6	11	50	3	**MDCSA3040**	●
5	0/-0.020	6	h6	13	50	3	**MDCSA3050**	●
6	0/-0.020	6	h6	15	50	3	**MDCSA3060**	●
8	0/-0.025	8	h6	20	60	3	**MDCSA3080**	●
10	0/-0.025	10	h6	25	75	3	**MDCSA3100**	●
12	0/-0.025	12	h6	30	75	3	**MDCSA3120**	●
16	0/-0.030	16	h6	40	100	3	**MDCSA3160**	●
20	0/-0.030	20	h6	40	100	3	**MDCSA3200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MDCSA3

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	Vc (m/min)	200÷600	150÷350	150÷250	500÷900
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.010	0.009	0.007	0.010
	1.5	0.015	0.013	0.011	0.015
	2	0.020	0.017	0.014	0.020
	3	0.025	0.022	0.018	0.025
	4	0.034	0.029	0.024	0.034
	5	0.042	0.036	0.030	0.042
	6	0.051	0.043	0.035	0.051
	8	0.067	0.057	0.047	0.067
	10	0.084	0.072	0.059	0.084
	12	0.101	0.086	0.071	0.101
	14	0.117	0.100	0.082	0.117
	16	0.133	0.113	0.093	0.133
	18	0.150	0.127	0.105	0.150
	20	0.166	0.141	0.116	0.166

< D3 ap x ae 0.25D x D

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.3D	1.5D x 0.3D	1.5D x 0.3D	1.5D x 0.3D
	Vc (m/min)	300÷500	200÷400	150÷350	600÷1000
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.012	0.010	0.008	0.012
	1.5	0.018	0.015	0.013	0.018
	2	0.024	0.021	0.017	0.024
	3	0.030	0.026	0.021	0.030
	4	0.041	0.034	0.028	0.041
	5	0.051	0.043	0.036	0.051
	6	0.061	0.052	0.043	0.061
	8	0.081	0.069	0.057	0.081
	10	0.101	0.086	0.071	0.101
	12	0.121	0.103	0.085	0.121
	14	0.141	0.120	0.099	0.141
	16	0.160	0.136	0.112	0.160
	18	0.180	0.153	0.126	0.180
	20	0.200	0.170	0.140	0.200

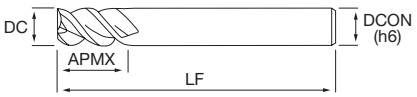
< D3 ap x ae D x 0.1D

SORMA DIAMOND & CUTTING TOOLS

MDA310

- Cylindrical shank
- 3 flutes polished
- Long

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 55° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.030	6	h6	12	75	3	**MDA310030**	●
4	0/-0.030	6	h6	16	75	3	**MDA310040**	●
5	0/-0.030	6	h6	20	75	3	**MDA310050**	●
6	0/-0.030	6	h6	25	75	3	**MDA310060**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MDA310

SLOTTING	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.3D x D	0.3D x D	0.3D x D	0.3D x D
	Vc (m/min)	220÷340	150÷250	100÷200	400÷700
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.023	0.019	0.016	0.023
	4	0.030	0.026	0.021	0.030
	5	0.038	0.032	0.027	0.038
	6	0.046	0.039	0.032	0.046

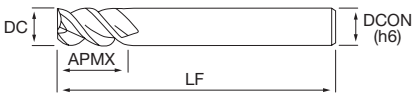
SIDE MILLING	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D	1.5D x 0.1D
	Vc (m/min)	270÷370	200÷300	150÷250	500÷800
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.023	0.019	0.027
	4	0.036	0.031	0.026	0.036
	5	0.046	0.039	0.032	0.046
	6	0.055	0.047	0.038	0.055

SORMA DIAMOND & CUTTING TOOLS

MDA311

- Cylindrical shank
- 3 flutes polished
- Long

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 55° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.030	6	h6	15	100	3	**MDA311030**	●
4	0/-0.030	6	h6	20	100	3	**MDA311040**	●
5	0/-0.030	6	h6	25	100	3	**MDA311050**	●
6	0/-0.030	6	h6	30	100	3	**MDA311060**	●
8	0/-0.035	8	h6	35	100	3	**MDA311080**	●
10	0/-0.035	10	h6	40	100	3	**MDA311100**	●
12	0/-0.035	12	h6	45	100	3	**MDA311120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MDA311

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	0.3D x D	0.3D x D	0.3D x D	0.3D x D
	Vc (m/min)	180÷280	110÷210	100÷160	350÷550
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.019	0.016	0.013	0.019
	4	0.025	0.022	0.018	0.025
	5	0.032	0.027	0.022	0.032
	6	0.038	0.032	0.027	0.038
	8	0.051	0.043	0.035	0.051
	10	0.063	0.054	0.044	0.063
	12	0.076	0.064	0.053	0.076

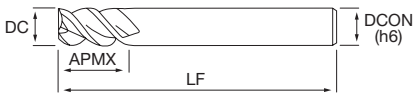
	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
	ap x ae	2D x0.05D	2D x0.05D	2D x0.05D	2D x0.05D
	Vc (m/min)	210÷310	150÷250	110÷210	420÷620
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.023	0.019	0.016	0.023
	4	0.030	0.026	0.021	0.030
	5	0.038	0.032	0.027	0.038
	6	0.046	0.039	0.032	0.046
	8	0.061	0.052	0.042	0.061
	10	0.076	0.064	0.053	0.076
	12	0.091	0.077	0.064	0.091

SORMA DIAMOND & CUTTING TOOLS

MDA312

- Cylindrical shank
- 3 flutes polished
- Long

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 55° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
8	0/-0.035	8	h6	40	150	3	**MDA312080**	●
10	0/-0.035	10	h6	50	150	3	**MDA312100**	●
12	0/-0.035	12	h6	50	150	3	**MDA312120**	●
16	0/-0.040	16	h6	70	150	3	**MDA312160**	●
20	0/-0.040	20	h6	80	150	3	**MDA312200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MDA312

	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
SLOTTING	ap x ae	0.1D x D	0.1D x D	0.1D x D	0.1D x D
	Vc (m/min)	130÷230	100÷160	80÷120	250÷450
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.040	0.034	0.028	0.040
	10	0.051	0.043	0.035	0.051
	12	0.060	0.051	0.042	0.060
	16	0.080	0.068	0.056	0.080
	20	0.100	0.085	0.070	0.100

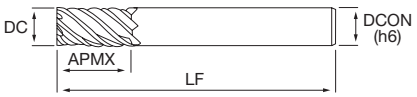
	Material Group ISO 513	N1	N2 N3	N4	N5
	Hardness/Rm				
SIDE MILLING	ap x ae	2.5D x 0.05D	2.5D x 0.05D	2.5D x 0.05D	2.5D x 0.05D
	Vc (m/min)	150÷250	100÷200	100÷160	300÷500
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	8	0.048	0.041	0.034	0.048
	10	0.061	0.052	0.042	0.061
	12	0.073	0.062	0.051	0.073
	16	0.096	0.081	0.067	0.096
	20	0.120	0.102	0.084	0.120

SORMA DIAMOND & CUTTING TOOLS

MDCSAM

- Cylindrical shank
- 6F
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 50° | SQUARE | ZEFP 6 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.020	6	h6	15	57	6	**MDCSAM060**	●
8	0/-0.020	8	h6	20	64	6	**MDCSAM080**	●
10	0/-0.020	10	h6	22	75	6	**MDCSAM100**	●
12	0/-0.020	12	h6	25	75	6	**MDCSAM120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MDCSAM

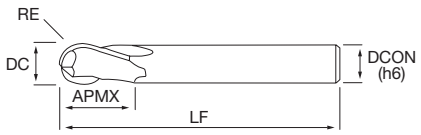
	Material Group ISO 513	N1	N2 N3	N4	N5
SIDE MILLING	Hardness/Rm				
	ap x ae	1.5D x 0.05D	1.5D x 0.05D	1.5D x 0.05D	1.5D x 0.05D
	Vc (m/min)	600÷1000	400÷800	300÷700	900÷1300
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.050	0.043	0.035	0.050
	8	0.067	0.057	0.047	0.067
	10	0.084	0.071	0.059	0.084
	12	0.100	0.085	0.070	0.100

SORMA DIAMOND & CUTTING TOOLS

MDCAB2

- Cylindrical shank
- 2 flutes ball nose
- Polished

P	M	K	N	S	H
			★		





OSAWA NORM | ALU | MG POLISHED | FHA 40° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	±0.010	4	h6	2	50	2	**MDCAB2010**	●
1.5	0/-0.020	0.75	±0.010	4	h6	3	50	2	**MDCAB2015**	●
2	0/-0.020	1	±0.010	4	h6	4	50	2	**MDCAB2020**	●
3	0/-0.020	1.5	±0.010	4	h6	6	50	2	**MDCAB2030**	●
4	0/-0.020	2	±0.010	4	h6	8	50	2	**MDCAB2040**	●
5	0/-0.020	2.5	±0.010	6	h6	10	50	2	**MDCAB2050**	●
6	0/-0.020	3	±0.010	6	h6	12	50	2	**MDCAB2060**	●
8	0/-0.025	4	±0.010	8	h6	16	60	2	**MDCAB2080**	●
10	0/-0.025	5	±0.010	10	h6	20	75	2	**MDCAB2100**	●
12	0/-0.025	6	±0.010	12	h6	24	75	2	**MDCAB2120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MDCAB2

	Material Group ISO 513		N1	N2 N3	N4	N5
	Hardness/Rm					
	ap x ae		0.2D x 0.4D	0.2D x 0.4D	0.2D x 0.4D	0.2D x 0.4D
	Vc (m/min)		200÷600	250÷450	200÷400	600÷1000
	DC (mm)	DC (eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ap ae COPYING	1	0.80	0.013	0.011	0.010	0.013
	1.5	1.20	0.017	0.015	0.013	0.017
	2	1.60	0.017	0.015	0.013	0.017
	2.5	2.00	0.021	0.019	0.017	0.021
	3	2.40	0.025	0.023	0.020	0.025
	4	3.20	0.035	0.032	0.028	0.035
	5	4.00	0.045	0.040	0.036	0.045
	6	4.80	0.053	0.048	0.043	0.053
	8	6.40	0.067	0.060	0.054	0.067
	10	8.00	0.080	0.072	0.064	0.080
	12	9.60	0.094	0.084	0.075	0.094



MEX AND MH

STEEL AND HARDENED STEEL
30÷55 HRC (MEX) AND 30÷70 HRC (MH)

MEX: Ultra-fine micrograin and Endless Orange coating for high perfromance machining on 30÷55 HRC materials.
MH: Wide range of tools available for general milling, copying and super finishing (30÷70 HRC).

MEX: Micrograna ultrafine e rivestimento Endless Orange per lavorazione ad alto rendimento di materiali con durezza compresa tra 30÷55 HRC.
MH: Ampia gamma per soddisfare applicazioni di copiatura e super finitura (30÷70 HRC).

MEX: Besonders feine Mikrokörnung und Beschichtung Endless Orange für Hochleistungsbearbeitungen von Materialien mit einer Härte zwischen 30 und 55 HRC.
MH: Große Produktpalette für Anwendungen zum Fräsen im Allgemeinen, Kopierfräsen und Schlichtbearbeitung (30÷70 HRC).

MEX: Ultra Micrograin et revêtement Endless Orange pour un usinage à rendement élevé de matériaux ayant une dureté comprise entre 30÷55 HRC.
MH: Une large gamme pour satisfaire les applications de fraisage général, copiage et super finition (30÷70 HRC).

MEX&MH

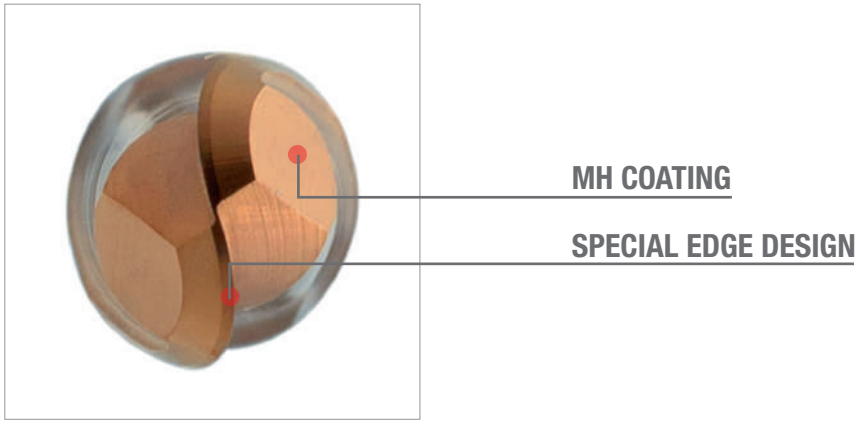
Features of MEX end mills





Features of MH end mills





MEX&MH

Features and Benefits of MEX series

- Special edge design allows high reliability and better surface finishing for Iso P, ISO H <55HRC
- High rigidity due to large core diameter
- High temperature stability during the machining process thanks to the Endless Orange coating
- Ultra-fine micrograin carbide improves wear resistance and increase the tool life

- Die spezielle Schneidkantenkonstruktion ermöglicht hohe
- Zuverlässigkeit und verbesserte Oberflächenqualität für ISO P, ISO H <55HRC
- Hohe Robustheit durch verstärkten inneren Kerndurchmesser
- Hohe Temperaturstabilität bei der Bearbeitung dank der Endless Orange-Beschichtung
- Ultrafeines mikrokörniges Hartmetall verbessert die Verschleißfestigkeit und erhöht die Standzeit des Werkzeugs

- Lo speciale design del tagliente consente un'elevata affidabilità e una migliore finitura superficiale per ISO P, ISO H <55HRC
- Elevata rigidità grazie al diametro del nocciolo interno rinforzato
- Stabilità alle alte temperature durante il processo di lavorazione grazie al rivestimento Endless Orange
- Il metallo duro micrograna ultra-fine migliora la resistenza all'usura e aumenta la durata dell'utensile

- La conception spéciale du tranchant assure une haute fiabilité et une meilleure finition superficielle pour ISO P, ISO H <55HRC
- Haute rigidité grâce au diamètre du noyau interne renforcé
- Stabilité aux hautes températures pendant le processus d'usinage grâce au revêtement Endless Orange
- Le carbure à micro-grain ultrafin améliore la résistance à l'usure et augmente la durée de vie de l'outil

Features and Benefits of MH series

- Special edge design enables high versatility of general milling, copying and super finishing on materials from 30 to 70 HRC
- High temperature stability during the machining process thanks to the MH coating
- Nano-micrograin carbide garanties excellent wear resistance and long life

- Die spezielle Schneidkantenkonstruktion ermöglicht hohe Vielseitigkeit beim allgemeinen Fräsen, Nacharbeiten und Feinstbearbeiten von Materialien von 30 bis 70 HRC
- Hohe Temperaturstabilität bei der Bearbeitung dank der MH-Beschichtung
- Das Nanokorn-Hartmetall sorgt für hervorragende Verschleißfestigkeit und lange Standzeit

- Lo speciale design del tagliente consente un'elevata versatilità in fresatura generale, copiatura e superfinitura di materiali da 30 a 70 HRC
- Stabilità alle alte temperature durante il processo di lavorazione grazie al rivestimento MH
- Il metallo duro nano-micrograna garantisce ottima resistenza all'usura e lunga durata

- La conception spéciale du tranchant permet une grande polyvalence général de fraisage, la copie et la superfinition de matériaux de 30 à 70 HRC.
- Stabilité aux hautes températures pendant le processus d'usinage grâce au revêtement MH
- Le carbure nano-micrograin garantit une excellente résistance à l'usure et une longue durée de vie

Use case

Tool Type	MHLNB2
Workpiece	W.-Nr 1.2379 X155CrVMo12 1(K110) 50HRC
Parameters	Vc 120 m/min, fz 0,025 mm/t, ap 0,07 mm, ae 0,6 mm
Coolant	air
Diameter	3 mm
Machining time:	

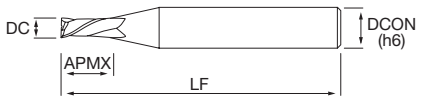


SORMA DIAMOND & CUTTING TOOLS

MEXM2

- Cylindrical shank
- 2 flutes
- Miniature

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SLOTTING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.3	0/-0.010	4	h6	0.6	40	2	**MEXM20030**	●
0.4	0/-0.010	4	h6	0.8	40	2	**MEXM20040**	●
0.5	0/-0.010	4	h6	1	40	2	**MEXM20050**	●
0.6	0/-0.010	4	h6	1.2	40	2	**MEXM20060**	●
0.7	0/-0.010	4	h6	1.4	40	2	**MEXM20070**	●
0.8	0/-0.010	4	h6	1.6	40	2	**MEXM20080**	●
0.9	0/-0.010	4	h6	1.8	40	2	**MEXM20090**	◉
1	0/-0.015	3	h6	2	40	2	**MEXM20100**	●
1.1	0/-0.015	3	h6	2.2	40	2	**MEXM20110**	●
1.2	0/-0.015	3	h6	2.4	40	2	**MEXM20120**	●
1.3	0/-0.015	3	h6	2.6	40	2	**MEXM20130**	●
1.4	0/-0.015	3	h6	2.8	40	2	**MEXM20140**	●
1.5	0/-0.015	3	h6	3	40	2	**MEXM20150**	●
1.6	0/-0.015	3	h6	3.2	40	2	**MEXM20160**	◉
1.7	0/-0.015	3	h6	3.4	40	2	**MEXM20170**	●
1.8	0/-0.015	3	h6	3.6	40	2	**MEXM20180**	●
1.9	0/-0.015	3	h6	3.8	40	2	**MEXM20190**	●
2	0/-0.015	3	h6	4	40	2	**MEXM20200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXM2

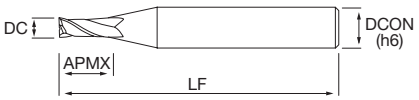
	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**70÷90**	**50÷70**	**30÷50**	**20÷40**
SLOTTING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	1	0.05	0.012	0.011	0.010	0.008
	1.2	0.06	0.022	0.020	0.018	0.015
	1.4	0.07	0.024	0.022	0.019	0.017
	1.5	0.08	0.025	0.023	0.020	0.018
	1.6	0.08	0.026	0.023	0.021	0.018
	1.8	0.09	0.028	0.025	0.022	0.020
	2	0.10	0.030	0.027	0.024	0.021

SORMA DIAMOND & CUTTING TOOLS

MEXM2SC

- Cylindrical shank
- 2 flutes
- Short cutting length
- Miniature

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SLOTTING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.2	0/-0.010	4	h6	0.3	50	2	**MEXM2SC0020**	◉
0.3	0/-0.010	4	h6	0.4	50	2	**MEXM2SC0030**	●
0.4	0/-0.010	4	h6	0.6	50	2	**MEXM2SC0040**	●
0.5	0/-0.010	4	h6	0.7	50	2	**MEXM2SC0050**	●
0.6	0/-0.010	4	h6	0.9	50	2	**MEXM2SC0060**	●
0.7	0/-0.010	4	h6	1	50	2	**MEXM2SC0070**	●
0.8	0/-0.010	4	h6	1.2	50	2	**MEXM2SC0080**	●
0.9	0/-0.010	4	h6	1.4	50	2	**MEXM2SC0090**	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEXM2SC

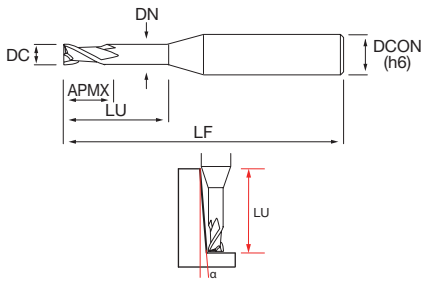
	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**70÷110**	**50÷90**	**40÷60**	**20÷40**
SLOTTING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.2	0.01	0.003	0.003	0.002	0.002
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	0.9	0.05	0.012	0.011	0.010	0.008

SORMA DIAMOND & CUTTING TOOLS

MEXLN2

- Cylindrical shank
- 2 flutes
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.2	0/-0.010	4	0.3	0.5	0.16	50	2	0.57	0.59	0.61	0.63	0.68	MEXLN2002005	◉
0.2	0/-0.010	4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.21	1.3	MEXLN200201	◉
0.2	0/-0.010	4	0.3	1.5	0.16	50	2	1.6	1.66	1.72	1.78	1.91	MEXLN2002015	◉
0.3	0/-0.010	4	0.4	1	0.26	50	2	1.09	1.12	1.16	1.21	1.3	MEXLN200301	●
0.3	0/-0.010	4	0.4	2	0.26	50	2	2.12	2.19	2.27	2.35	2.53	MEXLN200302	◉
0.3	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.26	3.38	3.5	3.76	MEXLN200303	●
0.4	0/-0.010	4	0.6	2	0.37	50	2	2.12	2.19	2.27	2.35	2.53	MEXLN200402	●
0.4	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.26	3.38	3.5	3.76	MEXLN200403	●
0.4	0/-0.010	4	0.6	4	0.37	50	2	4.19	4.33	4.49	4.65	5	MEXLN200404	●
0.4	0/-0.010	4	0.6	5	0.37	50	2	5.22	5.4	5.59	5.79	6.23	MEXLN200405	●
0.5	0/-0.010	4	0.7	2	0.45	50	2	2.16	2.23	2.31	2.4	2.57	MEXLN200502	●
0.5	0/-0.010	4	0.7	4	0.45	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200504	●
0.5	0/-0.010	4	0.7	6	0.45	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200506	●
0.5	0/-0.010	4	0.7	8	0.45	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200508	●
0.6	0/-0.010	4	0.9	2	0.55	50	2	2.16	2.23	2.31	2.4	2.57	MEXLN200602	●
0.6	0/-0.010	4	0.9	4	0.55	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200604	●
0.6	0/-0.010	4	0.9	6	0.55	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200606	◉
0.6	0/-0.010	4	0.9	8	0.55	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200608	●
0.6	0/-0.010	4	0.9	10	0.55	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200610	●
0.7	0/-0.010	4	1	2	0.65	50	2	2.16	2.23	2.31	2.4	2.57	MEXLN200702	●
0.7	0/-0.010	4	1	4	0.65	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200704	●
0.7	0/-0.010	4	1	6	0.65	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200706	●
0.7	0/-0.010	4	1	8	0.65	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200708	●
0.7	0/-0.010	4	1	10	0.65	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200710	◉
0.8	0/-0.010	4	1.2	4	0.75	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200804	●
0.8	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200806	●
0.8	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200808	●
0.8	0/-0.010	4	1.2	10	0.75	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200810	●
0.8	0/-0.010	4	1.2	12	0.75	50	2	12.49	12.93	13.38	13.87	14.91	MEXLN200812	◉
0.9	0/-0.010	4	1.4	6	0.85	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200906	◉
0.9	0/-0.010	4	1.4	8	0.85	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200908	●
0.9	0/-0.010	4	1.4	10	0.85	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200910	◉
0.9	0/-0.010	4	1.4	15	0.85	50	2	15.6	16.14	16.71	17.31	18.61	MEXLN200915	◉
1	0/-0.015	4	1.5	6	0.95	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201006	●
1	0/-0.015	4	1.5	8	0.95	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201008	●
1	0/-0.015	4	1.5	10	0.95	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201010	●
1	0/-0.015	4	1.5	12	0.95	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201012	●
1	0/-0.015	4	1.5	14	0.95	50	2	14.66	15.17	15.7	16.27	17.49	MEXLN201014	●
1	0/-0.015	4	1.5	16	0.95	50	2	16.73	17.3	17.92	18.56	19.96	MEXLN201016	●
1.2	0/-0.015	4	1.8	6	1.15	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201206	●
1.2	0/-0.015	4	1.8	8	1.15	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201208	●
1.2	0/-0.015	4	1.8	10	1.15	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201210	●
1.2	0/-0.015	4	1.8	12	1.15	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201212	●
1.4	0/-0.015	4	2.1	6	1.35	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201406	●
1.4	0/-0.015	4	2.1	8	1.35	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201408	◉

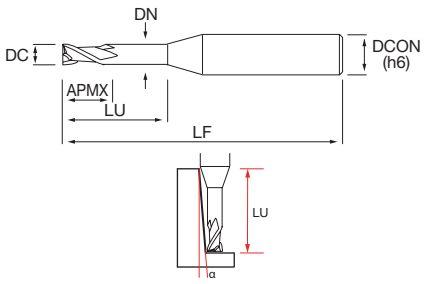
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MEXLN2

- Cylindrical shank
- 2 flutes
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1.4	0/-0.015	4	2.1	10	1.35	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN201410**	●
1.4	0/-0.015	4	2.1	12	1.35	50	2	12.59	13.03	13.49	13.97	15.02	**MEXLN201412**	●
1.4	0/-0.015	4	2.1	16	1.35	50	2	16.73	17.3	17.92	18.56	19.96	**MEXLN201416**	●
1.5	0/-0.015	4	2.3	6	1.45	50	2	6.39	6.61	6.84	7.09	7.62	**MEXLN201506**	●
1.5	0/-0.015	4	2.3	8	1.45	50	2	8.46	8.75	9.06	9.38	10.09	**MEXLN201508**	●
1.5	0/-0.015	4	2.3	10	1.45	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN201510**	●
1.5	0/-0.015	4	2.3	12	1.45	50	2	12.59	13.03	13.49	13.97	15.02	**MEXLN201512**	●
1.5	0/-0.015	4	2.3	14	1.45	50	2	14.66	15.17	15.7	16.27	17.49	**MEXLN201514**	●
1.5	0/-0.015	4	2.3	16	1.45	50	2	16.73	17.3	17.92	18.56	19.96	**MEXLN201516**	●
1.5	0/-0.015	4	2.3	18	1.45	60	2	18.79	19.44	20.13	20.86	22.43	**MEXLN201518**	●
1.5	0/-0.015	4	2.3	20	1.45	60	2	20.86	21.58	22.35	23.15	-	**MEXLN201520**	●
1.6	0/-0.015	4	2.4	6	1.55	50	2	6.39	6.61	6.84	7.09	7.62	**MEXLN201606**	●
1.6	0/-0.015	4	2.4	8	1.55	50	2	8.46	8.75	9.06	9.38	10.09	**MEXLN201608**	●
1.6	0/-0.015	4	2.4	10	1.55	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN201610**	●
1.6	0/-0.015	4	2.4	12	1.55	50	2	12.59	13.03	13.49	13.97	15.02	**MEXLN201612**	●
1.6	0/-0.015	4	2.4	14	1.55	50	2	14.66	15.17	15.7	16.27	17.49	**MEXLN201614**	●
1.6	0/-0.015	4	2.4	16	1.55	50	2	16.73	17.3	17.92	18.56	19.96	**MEXLN201616**	◉
1.6	0/-0.015	4	2.4	18	1.55	60	2	18.79	19.44	20.13	20.86	22.43	**MEXLN201618**	●
1.6	0/-0.015	4	2.4	20	1.55	60	2	20.86	21.58	22.35	23.15	-	**MEXLN201620**	●
1.8	0/-0.015	4	2.7	6	1.75	50	2	6.39	6.61	6.84	7.09	7.62	**MEXLN201806**	●
1.8	0/-0.015	4	2.7	8	1.75	50	2	8.46	8.75	9.06	9.38	10.09	**MEXLN201808**	◉
1.8	0/-0.015	4	2.7	10	1.75	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN201810**	●
1.8	0/-0.015	4	2.7	12	1.75	50	2	12.59	13.03	13.49	13.97	15.02	**MEXLN201812**	◉
1.8	0/-0.015	4	2.7	16	1.75	50	2	16.73	17.3	17.92	18.56	19.96	**MEXLN201816**	●
1.8	0/-0.015	4	2.7	20	1.75	60	2	20.86	21.58	22.35	23.15	-	**MEXLN201820**	●
2	0/-0.015	4	3	6	1.95	50	2	6.39	6.61	6.84	7.09	7.62	**MEXLN202006**	●
2	0/-0.015	4	3	8	1.95	50	2	8.46	8.75	9.06	9.38	10.09	**MEXLN202008**	●
2	0/-0.015	4	3	10	1.95	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN202010**	●
2	0/-0.015	4	3	12	1.95	50	2	12.59	13.03	13.49	13.97	15.02	**MEXLN202012**	●
2	0/-0.015	4	3	14	1.95	50	2	14.66	15.17	15.7	16.27	17.49	**MEXLN202014**	●
2	0/-0.015	4	3	16	1.95	50	2	16.73	17.3	17.92	18.56	-	**MEXLN202016**	●
2	0/-0.015	4	3	18	1.95	60	2	18.79	19.44	20.13	20.86	-	**MEXLN202018**	●
2	0/-0.015	4	3	20	1.95	60	2	20.86	21.58	22.35	23.15	-	**MEXLN202020**	●
2	0/-0.015	4	3	25	1.95	75	2	26.03	26.93	27.88	-	-	**MEXLN202025**	●
2	0/-0.015	4	3	30	1.95	75	2	31.2	32.28	33.42	-	-	**MEXLN202030**	●
2.5	0/-0.020	4	3.7	8	2.4	50	2	8.46	8.75	9.06	9.38	10.09	**MEXLN202508**	●
2.5	0/-0.020	4	3.7	10	2.4	50	2	10.52	10.89	11.27	11.68	12.56	**MEXLN202510**	●
2.5	0/-0.020	4	3.7	12	2.4	50	2	12.59	13.03	13.49	13.97	-	**MEXLN202512**	●
2.5	0/-0.020	4	3.7	16	2.4	50	2	16.73	17.3	17.92	18.56	-	**MEXLN202516**	●
2.5	0/-0.020	4	3.7	20	2.4	60	2	20.86	21.58	22.35	-	-	**MEXLN202520**	●
2.5	0/-0.020	4	3.7	25	2.4	60	2	26.03	26.93	27.88	-	-	**MEXLN202525**	●
2.5	0/-0.020	4	3.7	30	2.4	75	2	31.2	32.28	-	-	-	**MEXLN202530**	●
3	0/-0.025	6	4.5	8	2.85	50	2	8.65	8.95	9.26	9.6	10.31	**MEXLN203008**	●
3	0/-0.025	6	4.5	10	2.85	50	2	10.72	11.09	11.48	11.89	12.78	**MEXLN203010**	●
3	0/-0.025	6	4.5	12	2.85	50	2	12.78	13.23	13.69	14.18	15.25	**MEXLN203012**	●

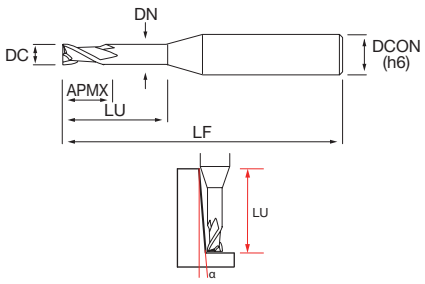
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MEXLN2

- Cylindrical shank
- 2 flutes
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
3	0/-0.025	6	4.5	14	2.85	50	2	14.85	15.36	15.91	16.48	17.72	**MEXLN203014**	●
3	0/-0.025	6	4.5	16	2.85	60	2	16.92	17.5	18.12	18.77	20.18	**MEXLN203016**	●
3	0/-0.025	6	4.5	18	2.85	60	2	18.99	19.64	20.34	21.07	22.65	**MEXLN203018**	●
3	0/-0.025	6	4.5	20	2.85	60	2	21.05	21.78	22.55	23.36	25.12	**MEXLN203020**	●
3	0/-0.025	6	4.5	25	2.85	75	2	26.22	27.13	28.09	29.1	-	**MEXLN203025**	●
4	0/-0.025	6	4.5	10	3.85	60	2	10.91	11.29	11.68	12.1	13	**MEXLN204010**	●
4	0/-0.025	6	4.5	15	3.85	60	2	16.08	16.63	17.22	17.84	19.17	**MEXLN204015**	◉
4	0/-0.025	6	4.5	20	3.85	60	2	21.25	21.98	22.76	23.57	-	**MEXLN204020**	●
4	0/-0.025	6	4.5	25	3.85	75	2	26.41	27.33	28.29	-	-	**MEXLN204025**	●
4	0/-0.025	6	4.5	30	3.85	75	2	31.58	32.67	33.83	-	-	**MEXLN204030**	●
4	0/-0.025	6	4.5	40	3.85	75	2	41.92	43.37	-	-	-	**MEXLN204040**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MEXLN2

SQUARE RIB

Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.2	≤ 6D	0.01	0.003	0.003	0.002	0.002
	≤ 8D	0.01	0.003	0.002	0.002	0.002
	≤ 10D	0.01	0.002	0.002	0.002	0.001
	≤ 12D	0.01	0.002	0.001	0.001	0.001
0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
	≤ 8D	0.01	0.004	0.003	0.003	0.003
	≤ 10D	0.01	0.003	0.003	0.003	0.002
	≤ 12D	0.01	0.003	0.003	0.002	0.002
0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
	≤ 8D	0.02	0.005	0.005	0.004	0.004
	≤ 10D	0.01	0.005	0.004	0.004	0.003
	≤ 12D	0.01	0.004	0.004	0.003	0.003
0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
	≤ 8D	0.02	0.006	0.006	0.005	0.004
	≤ 10D	0.02	0.006	0.005	0.004	0.004
	≤ 12D	0.01	0.005	0.004	0.004	0.003
0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
	≤ 8D	0.03	0.007	0.006	0.006	0.005
	≤ 10D	0.02	0.006	0.006	0.005	0.004
	≤ 12D	0.02	0.006	0.005	0.004	0.004
0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
	≤ 8D	0.03	0.009	0.008	0.007	0.006
	≤ 10D	0.03	0.008	0.007	0.006	0.006
	≤ 12D	0.02	0.007	0.006	0.006	0.005
1	≤ 6D	0.05	0.012	0.011	0.010	0.008
	≤ 8D	0.04	0.011	0.010	0.009	0.008
	≤ 10D	0.04	0.010	0.009	0.008	0.007
	≤ 12D	0.03	0.008	0.008	0.007	0.006
1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
	≤ 8D	0.05	0.020	0.018	0.016	0.014
	≤ 10D	0.04	0.018	0.016	0.014	0.012
	≤ 12D	0.03	0.015	0.014	0.012	0.011
1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
	≤ 8D	0.06	0.022	0.019	0.017	0.015
	≤ 10D	0.05	0.019	0.017	0.015	0.013
	≤ 12D	0.04	0.017	0.015	0.013	0.012
	≤ 15D	0.03	0.014	0.013	0.012	0.010
	≥ 15D	0.02	0.012	0.011	0.010	0.008
1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
	≤ 8D	0.06	0.023	0.020	0.018	0.016
	≤ 10D	0.05	0.020	0.018	0.016	0.014
	≤ 12D	0.04	0.018	0.016	0.014	0.012
	≤ 15D	0.03	0.015	0.014	0.012	0.011
	≥ 15D	0.02	0.013	0.011	0.010	0.009
1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
	≤ 8D	0.07	0.023	0.021	0.019	0.016
	≤ 10D	0.06	0.021	0.019	0.017	0.015
	≤ 12D	0.04	0.018	0.016	0.015	0.013
	≤ 15D	0.04	0.016	0.014	0.012	0.011
	≥ 15D	0.02	0.013	0.012	0.010	0.009

Cutting Parameters

MEXLN2



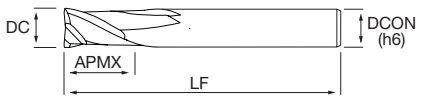
Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.025	0.023	0.020	0.018
	≤ 10D	0.06	0.022	0.020	0.018	0.016
	≤ 12D	0.05	0.020	0.018	0.016	0.014
	≤ 15D	0.04	0.017	0.015	0.013	0.012
	≥ 15D	0.03	0.014	0.013	0.011	0.010
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.027	0.024	0.022	0.019
	≤ 10D	0.07	0.024	0.022	0.019	0.017
	≤ 12D	0.06	0.021	0.019	0.017	0.015
	≤ 15D	0.05	0.018	0.016	0.014	0.013
	≥ 15D	0.03	0.018	0.016	0.014	0.013
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.032	0.028	0.025	0.022
	≤ 10D	0.09	0.028	0.025	0.022	0.020
	≤ 12D	0.07	0.025	0.022	0.020	0.017
	≤ 15D	0.06	0.021	0.019	0.017	0.015
	≥ 15D	0.04	0.021	0.019	0.017	0.015
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.036	0.032	0.029	0.025
	≤ 10D	0.11	0.032	0.029	0.026	0.022
	≤ 12D	0.08	0.028	0.025	0.022	0.020
	≤ 15D	0.07	0.024	0.022	0.019	0.017
	≥ 15D	0.05	0.024	0.022	0.019	0.017
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.045	0.041	0.036	0.032
	≤ 10D	0.14	0.040	0.036	0.032	0.028
	≤ 12D	0.11	0.035	0.032	0.028	0.025
	≤ 15D	0.09	0.030	0.027	0.024	0.021
	≥ 15D	0.06	0.030	0.027	0.024	0.021

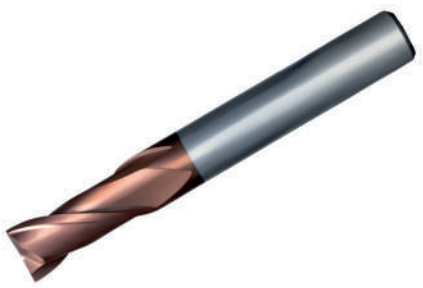
SORMA DIAMOND & CUTTING TOOLS

MEXCS2

- Cylindrical shank
- 2 flutes

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SLOTTING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.012	4	h6	2.5	40	2	**MEXCS2010**	●
1.5	0/-0.012	4	h6	4	40	2	**MEXCS2015**	●
2	0/-0.012	4	h6	6	40	2	**MEXCS2020**	●
2.5	0/-0.012	4	h6	8	40	2	**MEXCS2025**	●
3	0/-0.012	6	h6	8	55	2	**MEXCS2030**	●
3.5	0/-0.012	6	h6	10	55	2	**MEXCS2035**	●
4	0/-0.012	6	h6	10	55	2	**MEXCS2040**	●
4.5	0/-0.012	6	h6	12	55	2	**MEXCS2045**	●
5	0/-0.012	6	h6	13	55	2	**MEXCS2050**	●
5.5	0/-0.012	6	h6	14	55	2	**MEXCS2055**	●
6	0/-0.015	6	h6	15	60	2	**MEXCS2060**	●
6.5	0/-0.015	8	h6	17	65	2	**MEXCS2065**	●
7	0/-0.015	8	h6	18	65	2	**MEXCS2070**	●
8	0/-0.015	8	h6	20	70	2	**MEXCS2080**	●
8.5	0/-0.015	10	h6	21	70	2	**MEXCS2085**	●
9	0/-0.015	10	h6	23	70	2	**MEXCS2090**	●
10	0/-0.015	10	h6	22	75	2	**MEXCS2100**	●
11	0/-0.015	12	h6	28	75	2	**MEXCS2110**	●
12	0/-0.015	12	h6	26	80	2	**MEXCS2120**	●
14	0/-0.020	14	h6	32	90	2	**MEXCS2140**	●
16	0/-0.020	16	h6	32	90	2	**MEXCS2160**	●
18	0/-0.020	18	h6	38	100	2	**MEXCS2180**	●
20	0/-0.020	20	h6	38	100	2	**MEXCS2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCS2

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**0.5D x D**	**0.3D x D**	**0.2D x D**	**0.1D x D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.006	0.005	0.005	0.004
	2	0.010	0.009	0.008	0.007
	3	0.014	0.013	0.012	0.010
	4	0.020	0.018	0.016	0.014
	5	0.026	0.023	0.020	0.018
	6	0.032	0.029	0.026	0.023
	8	0.038	0.034	0.031	0.027
	10	0.046	0.041	0.037	0.032
	12	0.055	0.050	0.044	0.039
	14	0.064	0.057	0.051	0.045
	16	0.072	0.065	0.058	0.051
	18	0.082	0.074	0.066	0.058
	20	0.094	0.084	0.075	0.065

< D3 mm: ap = 0.1D ÷ 0.2D

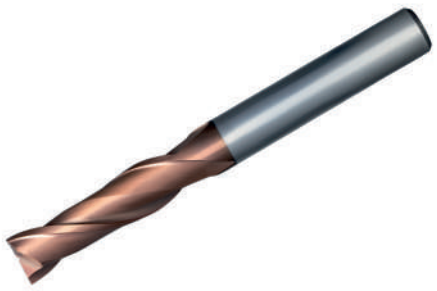
SORMA DIAMOND & CUTTING TOOLS

MEXCL2

- Cylindrical shank
- 2 flutes
- Long

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 2 | SLOTTING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.030	6	h6	8	60	2	**MEXCL2010**	●
1.5	0/-0.030	6	h6	12	60	2	**MEXCL2015**	●
2	0/-0.030	6	h6	12	60	2	**MEXCL2020**	●
3	0/-0.030	6	h6	15	60	2	**MEXCL2030**	●
4	0/-0.030	6	h6	20	60	2	**MEXCL2040**	●
5	0/-0.030	6	h6	25	70	2	**MEXCL2050**	●
6	0/-0.030	6	h6	25	70	2	**MEXCL2060**	●
8	0/-0.030	8	h6	30	80	2	**MEXCL2080**	●
10	0/-0.030	10	h6	35	90	2	**MEXCL2100**	●
12	0/-0.030	12	h6	40	90	2	**MEXCL2120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCL2

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**0.5D x D**	**0.3D x D**	**0.2D x D**	**0.1D x D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.005	0.005	0.004	0.004
	1.5	0.006	0.005	0.005	0.004
	2	0.009	0.008	0.007	0.006
	3	0.012	0.011	0.010	0.008
	4	0.018	0.016	0.014	0.013
	5	0.024	0.022	0.019	0.017
	6	0.029	0.026	0.023	0.020
	8	0.035	0.032	0.028	0.025
	10	0.041	0.037	0.033	0.029
	12	0.050	0.045	0.040	0.035

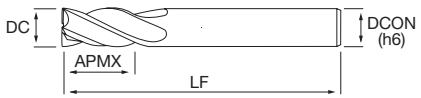
≤ D3 mm: ap = 0.4 mm

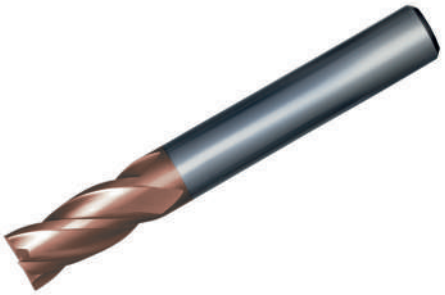
SORMA DIAMOND & CUTTING TOOLS

MEX400

- Cylindrical shank
- 4 flutes unequal pitch

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 4 UP | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.010	4	h6	3	50	4	**MEX400010**	●
1.5	0/-0.010	4	h6	4.5	50	4	**MEX400015**	●
2	0/-0.015	4	h6	6	40	4	**MEX400020**	●
2.5	0/-0.015	4	h6	8	40	4	**MEX400025**	●
3	0/-0.015	6	h6	8	55	4	**MEX400030**	●
3.5	0/-0.020	6	h6	10	55	4	**MEX400035**	●
4	0/-0.020	6	h6	11	55	4	**MEX400040**	●
4.5	0/-0.020	6	h6	11	45	4	**MEX400045**	●
5	0/-0.020	6	h6	13	55	4	**MEX400050**	●
5.5	0/-0.020	6	h6	13	55	4	**MEX400055**	●
6	0/-0.020	6	h6	15	60	4	**MEX400060**	●
6.5	0/-0.020	8	h6	17	65	4	**MEX400065**	●
7	0/-0.020	8	h6	18	65	4	**MEX400070**	●
8	0/-0.020	8	h6	20	70	4	**MEX400080**	●
9	0/-0.020	10	h6	23	70	4	**MEX400090**	●
10	0/-0.020	10	h6	22	75	4	**MEX400100**	●
11	0/-0.020	12	h6	28	75	4	**MEX400110**	●
12	-0.005/-0.025	12	h6	26	80	4	**MEX400120**	●
14	-0.010/-0.025	14	h6	35	90	4	**MEX400140**	●
16	-0.010/-0.025	16	h6	32	100	4	**MEX400160**	●
20	-0.010/-0.025	20	h6	40	100	4	**MEX400200**	●
25	-0.010/-0.025	25	h6	40	100	4	**MEX400250**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEX400

SIDE MILLING

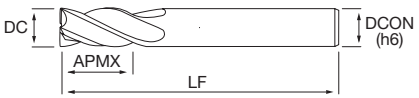
Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
Vc (m/min)	**120÷160**	**100÷140**	**90÷120**	**80÷100**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.007	0.006		0.006
2	0.010	0.010	0.010	0.010
3	0.016	0.016	0.016	0.016
4	0.027	0.027	0.027	0.027
5	0.036	0.036	0.036	0.036
6	0.043	0.043	0.043	0.043
8	0.060	0.060	0.060	0.060
10	0.085	0.085	0.085	0.085
12	0.100	0.100	0.100	0.100
14	0.120	0.120	0.120	0.120
16	0.150	0.150	0.150	0.150
18	0.175	0.175	0.175	0.175
20	0.200	0.200	0.200	0.200
22	0.215	0.215	0.215	0.215
25	0.225	0.225	0.225	0.225

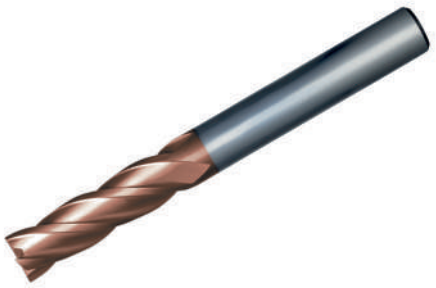
SORMA DIAMOND & CUTTING TOOLS

MEXCL4

- Cylindrical shank
- 4 flutes
- Long

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | SQUARE | ZEFP 4 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.020	6	h6	8	60	4	**MEXCL4020**	●
3	0/-0.020	6	h6	15	60	4	**MEXCL4030**	●
3	0/-0.030	6	h6	25	100	4	**MEXCL4030100**	●
4	0/-0.020	6	h6	20	60	4	**MEXCL4040**	●
4	0/-0.030	6	h6	31	100	4	**MEXCL4040100**	●
5	0/-0.020	6	h6	25	70	4	**MEXCL4050**	●
5	0/-0.030	6	h6	31	100	4	**MEXCL4050100**	●
6	0/-0.020	6	h6	25	70	4	**MEXCL4060**	●
6	0/-0.030	6	h6	38	100	4	**MEXCL4060100**	●
8	0/-0.020	8	h6	30	80	4	**MEXCL4080**	●
8	0/-0.030	8	h6	41	100	4	**MEXCL4080100**	●
10	0/-0.020	10	h6	35	90	4	**MEXCL4100**	●
10	0/-0.035	10	h6	57	125	4	**MEXCL4100125**	●
12	0/-0.020	12	h6	40	90	4	**MEXCL4120**	●
12	0/-0.035	12	h6	75	150	4	**MEXCL4120150**	●
14	0/-0.020	16	h6	50	110	4	**MEXCL4140**	●
14	0/-0.035	14	h6	75	150	4	**MEXCL4140150**	●
16	0/-0.020	16	h6	50	110	4	**MEXCL4160**	●
16	0/-0.035	16	h6	75	150	4	**MEXCL4160150**	●
20	0/-0.020	20	h6	50	110	4	**MEXCL4200**	●
20	0/-0.035	20	h6	75	150	4	**MEXCL4200150**	●
25	0/-0.050	25	h6	70	130	4	**MEXCL4250**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCL4

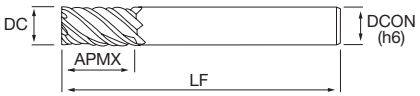
	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**60÷100**	**50÷70**	**30÷50**	**20÷40**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.014	0.013	0.012	0.010
	3	0.022	0.020	0.017	0.015
	4	0.029	0.026	0.023	0.020
	5	0.033	0.029	0.026	0.023
	6	0.036	0.033	0.029	0.025
	8	0.047	0.042	0.038	0.033
	10	0.060	0.054	0.048	0.042
	12	0.072	0.065	0.058	0.051
	14	0.083	0.075	0.066	0.058
	16	0.094	0.084	0.075	0.065
	20	0.119	0.107	0.095	0.083
	25	0.150	0.135	0.120	0.105

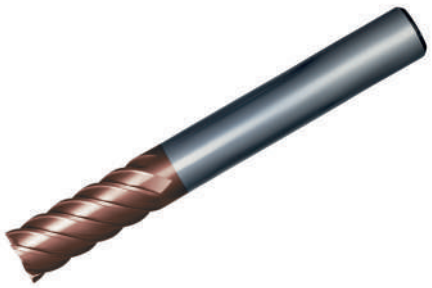
SORMA DIAMOND & CUTTING TOOLS

MEXCSHM

- Cylindrical shank
- Multi flute

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 50° | SQUARE | ZEFP 6~8 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	6	h6	8	50	6	**MEXCSHM030**	●
4	0/-0.020	6	h6	11	50	6	**MEXCSHM040**	●
5	0/-0.020	6	h6	13	50	6	**MEXCSHM050**	●
6	0/-0.020	6	h6	15	60	6	**MEXCSHM060**	●
8	0/-0.020	8	h6	20	70	6	**MEXCSHM080**	●
10	0/-0.020	10	h6	25	80	6	**MEXCSHM100**	●
12	0/-0.020	12	h6	30	80	6	**MEXCSHM120**	●
14	0/-0.020	14	h6	30	90	6	**MEXCSHM140**	●
16	0/-0.020	16	h6	40	100	6	**MEXCSHM160**	●
18	0/-0.020	18	h6	35	100	8	**MEXCSHM180**	●
20	0/-0.020	20	h6	50	100	8	**MEXCSHM200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCSHM

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**120÷160**	**90÷130**	**60÷100**	**50÷70**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.008	0.007	0.006
	4	0.012	0.011	0.010	0.008
	5	0.014	0.013	0.012	0.010
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029
	14	0.048	0.043	0.038	0.034
	16	0.056	0.051	0.045	0.039
	18	0.065	0.059	0.052	0.046
	20	0.073	0.066	0.058	0.051

SORMA DIAMOND & CUTTING TOOLS

MEXCLHM

- Cylindrical shank
- Multi flute
- Long

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 50° | SQUARE | ZEFP 6~8 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.030	6	h6	19	75	6	**MEXCLHM030**	●
4	0/-0.030	6	h6	19	75	6	**MEXCLHM040**	◉
5	0/-0.030	6	h6	19	75	6	**MEXCLHM050**	●
6	0/-0.030	6	h6	25	80	6	**MEXCLHM060**	●
8	0/-0.030	8	h6	40	100	6	**MEXCLHM080**	●
10	0/-0.030	10	h6	45	120	6	**MEXCLHM100**	●
12	0/-0.030	12	h6	60	120	6	**MEXCLHM120**	●
16	0/-0.030	16	h6	80	150	6	**MEXCLHM160**	●
20	0/-0.030	20	h6	80	150	8	**MEXCLHM200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCLHM

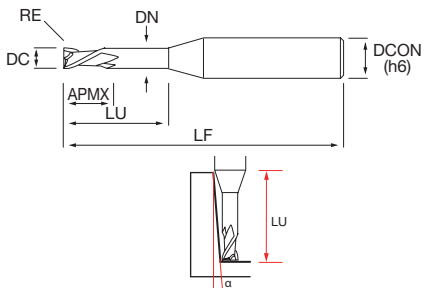
	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.007	0.006	0.006	0.005
	4	0.010	0.009	0.008	0.007
	5	0.012	0.011	0.010	0.009
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024
	14	0.041	0.037	0.033	0.029
	16	0.048	0.043	0.038	0.034
	18	0.055	0.050	0.044	0.039
	20	0.063	0.057	0.050	0.044

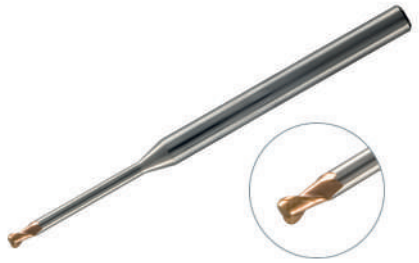
SORMA DIAMOND & CUTTING TOOLS

MEXLN2R

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.3	0/-0.010	0.05	0/-0.010	4	0.4	1	0.26	50	2	1.08	1.12	1.15	1.19	1.25	MEXLN20030001	◉
0.3	0/-0.010	0.05	0/-0.010	4	0.4	1.5	0.26	50	2	1.6	1.65	1.7	1.75	1.85	MEXLN20030065	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	2	0.26	50	2	2.12	2.19	2.25	2.32	2.46	MEXLN20030002	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.25	3.35	3.46	3.66	MEXLN20030003	●
0.3	0/-0.010	0.1	0/-0.010	4	0.4	1	0.26	50	2	1.08	1.12	1.15	1.18	1.24	MEXLN20030101	●
0.3	0/-0.010	0.1	0/-0.010	4	0.4	1.5	0.26	50	2	1.6	1.65	1.7	1.75	1.84	MEXLN20030165	●
0.3	0/-0.010	0.1	0/-0.010	4	0.4	2	0.26	50	2	2.12	2.18	2.25	2.31	2.45	MEXLN20030102	●
0.3	0/-0.010	0.1	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.25	3.35	3.45	3.65	MEXLN20030103	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	1	0.37	50	2	1.08	1.12	1.15	1.19	1.25	MEXLN20040001	◉
0.4	0/-0.010	0.05	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.25	3.35	3.46	3.66	MEXLN20040003	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	4	0.37	50	2	4.19	4.32	4.46	4.59	4.86	MEXLN20040004	●
0.4	0/-0.010	0.1	0/-0.010	4	0.6	1	0.37	50	2	1.08	1.12	1.15	1.18	1.24	MEXLN20040101	●
0.4	0/-0.010	0.1	0/-0.010	4	0.6	2	0.37	50	2	2.12	2.18	2.25	2.31	2.45	MEXLN20040102	●
0.4	0/-0.010	0.1	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.25	3.35	3.45	3.65	MEXLN20040103	●
0.4	0/-0.010	0.1	0/-0.010	4	0.6	4	0.37	50	2	4.18	4.32	4.45	4.58	4.85	MEXLN20040104	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	2	0.45	50	2	2.16	2.23	2.29	2.36	2.5	MEXLN20050002	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	4	0.45	50	2	4.22	4.36	4.5	4.63	4.9	MEXLN20050004	◉
0.5	0/-0.010	0.05	0/-0.010	4	0.7	6	0.45	50	2	6.29	6.49	6.7	6.9	7.31	MEXLN20050006	◉
0.5	0/-0.010	0.1	0/-0.010	4	0.7	2	0.45	50	2	2.16	2.22	2.29	2.36	2.49	MEXLN20050102	●
0.5	0/-0.010	0.1	0/-0.010	4	0.7	4	0.45	50	2	4.22	4.36	4.49	4.63	4.89	MEXLN20050104	●
0.5	0/-0.010	0.1	0/-0.010	4	0.7	6	0.45	50	2	6.29	6.49	6.69	6.89	7.3	MEXLN20050106	◉
0.6	0/-0.010	0.1	0/-0.010	4	0.9	2	0.55	50	2	2.16	2.22	2.29	2.36	2.49	MEXLN20060102	◉
0.6	0/-0.010	0.1	0/-0.010	4	0.9	4	0.55	50	2	4.22	4.36	4.49	4.63	4.89	MEXLN20060104	●
0.6	0/-0.010	0.1	0/-0.010	4	0.9	6	0.55	50	2	6.29	6.49	6.69	6.89	7.3	MEXLN20060106	●
0.7	0/-0.010	0.1	0/-0.010	4	1	4	0.65	50	2	4.22	4.36	4.49	4.63	4.89	MEXLN20070104	●
0.7	0/-0.010	0.1	0/-0.010	4	1	6	0.65	50	2	6.29	6.49	6.69	6.89	7.3	MEXLN20070106	●
0.8	0/-0.010	0.05	0/-0.010	4	1.2	4	0.75	50	2	4.22	4.36	4.5	4.63	4.9	MEXLN20080004	◉
0.8	0/-0.010	0.05	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.49	6.7	6.9	7.31	MEXLN20080006	●
0.8	0/-0.010	0.05	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.63	8.9	9.17	9.71	MEXLN20080008	◉
0.8	0/-0.010	0.1	0/-0.010	4	1.2	4	0.75	50	2	4.22	4.36	4.49	4.63	4.89	MEXLN20080104	◉
0.8	0/-0.010	0.1	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.49	6.69	6.89	7.3	MEXLN20080106	●
0.8	0/-0.010	0.1	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.63	8.89	9.16	9.7	MEXLN20080108	◉
0.9	0/-0.010	0.1	0/-0.010	4	1.4	8	0.85	50	2	8.36	8.63	8.89	9.16	9.7	MEXLN20090108	●
0.9	0/-0.010	0.1	0/-0.010	4	1.4	15	0.85	50	2	15.59	16.1	16.6	17.11	18.12	MEXLN20090115	◉
1	0/-0.015	0.1	0/-0.010	4	1.5	4	0.95	50	2	4.32	4.46	4.59	4.73	5.01	MEXLN20100104	●
1	0/-0.015	0.1	0/-0.010	4	1.5	6	0.95	50	2	6.39	6.59	6.8	7	7.41	MEXLN20100106	●
1	0/-0.015	0.1	0/-0.010	4	1.5	8	0.95	50	2	8.45	8.73	9	9.27	9.81	MEXLN20100108	●
1	0/-0.015	0.1	0/-0.010	4	1.5	10	0.95	50	2	10.52	10.86	11.2	11.54	12.22	MEXLN20100110	●
1	0/-0.015	0.1	0/-0.010	4	1.5	12	0.95	50	2	12.59	12.99	13.4	13.81	14.62	MEXLN20100112	●
1	0/-0.015	0.1	0/-0.010	4	1.5	16	0.95	50	2	16.72	17.26	17.8	18.35	19.43	MEXLN20100116	◉
1	0/-0.015	0.1	0/-0.010	4	1.5	20	0.95	50	2	20.86	21.53	22.21	22.88	24.24	MEXLN20100120	●
1	0/-0.015	0.2	0/-0.010	4	1.5	4	0.95	50	2	4.32	4.45	4.58	4.72	4.99	MEXLN20100204	●
1	0/-0.015	0.2	0/-0.010	4	1.5	6	0.95	50	2	6.38	6.58	6.79	6.99	7.39	MEXLN20100206	●
1	0/-0.015	0.2	0/-0.010	4	1.5	8	0.95	50	2	8.45	8.72	8.99	9.26	9.79	MEXLN20100208	●
1	0/-0.015	0.2	0/-0.010	4	1.5	10	0.95	50	2	10.52	10.85	11.19	11.52	12.2	MEXLN20100210	●

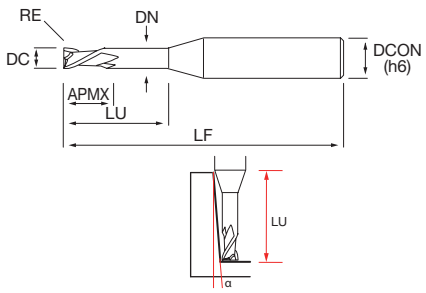
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

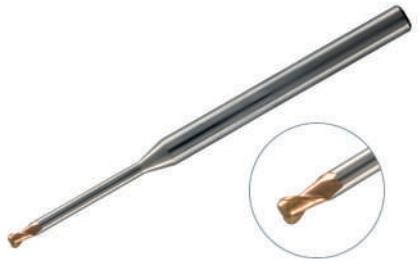
SORMA DIAMOND & CUTTING TOOLS

MEXLN2R

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1	0/-0.015	0.2	0/-0.010	4	1.5	12	0.95	50	2	12.58	12.99	13.39	13.79	14.6	MEXLN20100212	◉
1	0/-0.015	0.2	0/-0.010	4	1.5	16	0.95	50	2	16.72	17.26	17.79	18.33	19.41	MEXLN20100216	●
1	0/-0.015	0.2	0/-0.010	4	1.5	20	0.95	50	2	20.85	21.53	22.2	22.87	24.22	MEXLN20100220	●
1	0/-0.015	0.3	0/-0.010	4	1.5	6	0.95	50	2	6.38	6.58	6.78	6.97	7.37	MEXLN20100306	◉
1	0/-0.015	0.3	0/-0.010	4	1.5	10	0.95	50	2	10.51	10.85	11.18	11.51	12.18	MEXLN20100310	●
1	0/-0.015	0.3	0/-0.010	4	1.5	16	0.95	50	2	16.72	17.25	17.78	18.32	19.39	MEXLN20100316	●
1	0/-0.015	0.3	0/-0.010	4	1.5	20	0.95	50	2	20.85	21.52	22.19	22.86	24.2	MEXLN20100320	●
1.2	0/-0.015	0.1	0/-0.010	4	1.8	6	1.15	50	2	6.39	6.59	6.8	7	7.41	MEXLN20120106	●
1.2	0/-0.015	0.1	0/-0.010	4	1.8	8	1.15	50	2	8.45	8.73	9	9.27	9.81	MEXLN20120108	◉
1.2	0/-0.015	0.1	0/-0.010	4	1.8	10	1.15	50	2	10.52	10.86	11.2	11.54	12.22	MEXLN20120110	◉
1.2	0/-0.015	0.1	0/-0.010	4	1.8	12	1.15	50	2	12.59	12.99	13.4	13.81	14.62	MEXLN20120112	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	6	1.35	50	2	6.39	6.59	6.8	7	7.41	MEXLN20140106	◉
1.4	0/-0.015	0.1	0/-0.010	4	2.1	8	1.35	50	2	8.45	8.73	9	9.27	9.81	MEXLN20140108	◉
1.4	0/-0.015	0.1	0/-0.010	4	2.1	10	1.35	50	2	10.52	10.86	11.2	11.54	12.22	MEXLN20140110	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	12	1.35	50	2	12.59	12.99	13.4	13.81	14.62	MEXLN20140112	◉
1.4	0/-0.015	0.1	0/-0.010	4	2.1	16	1.35	50	2	16.72	17.26	17.8	18.35	19.43	MEXLN20140116	●
1.5	0/-0.015	0.1	0/-0.010	4	2.3	4	1.45	50	2	4.32	4.46	4.59	4.73	5.01	MEXLN20150104	●
1.5	0/-0.015	0.1	0/-0.010	4	2.3	8	1.45	50	2	8.45	8.73	9	9.27	9.81	MEXLN20150108	◉
1.5	0/-0.015	0.1	0/-0.010	4	2.3	12	1.45	50	2	12.59	12.99	13.4	13.81	14.62	MEXLN20150112	●
1.5	0/-0.015	0.1	0/-0.010	4	2.3	16	1.45	50	2	16.72	17.26	17.8	18.35	19.43	MEXLN20150116	●
1.5	0/-0.015	0.1	0/-0.010	4	2.3	20	1.45	60	2	20.86	21.53	22.21	22.88	24.24	MEXLN20150120	◉
1.5	0/-0.015	0.2	0/-0.010	4	2.3	8	1.45	50	2	8.45	8.72	8.99	9.26	9.79	MEXLN20150208	●
1.5	0/-0.015	0.2	0/-0.010	4	2.3	10	1.45	50	2	10.52	10.85	11.19	11.52	12.2	MEXLN20150210	●
1.5	0/-0.015	0.2	0/-0.010	4	2.3	12	1.45	50	2	12.58	12.99	13.39	13.79	14.6	MEXLN20150212	●
1.5	0/-0.015	0.2	0/-0.010	4	2.3	16	1.45	50	2	16.72	17.26	17.79	18.33	19.41	MEXLN20150216	●
1.5	0/-0.015	0.2	0/-0.010	4	2.3	20	1.45	60	2	20.85	21.53	22.2	22.87	24.22	MEXLN20150220	●
1.5	0/-0.015	0.3	0/-0.010	4	2.3	8	1.45	50	2	8.45	8.71	8.98	9.24	9.77	MEXLN20150308	●
1.5	0/-0.015	0.3	0/-0.010	4	2.3	16	1.45	50	2	16.72	17.25	17.78	18.32	19.39	MEXLN20150316	●
1.5	0/-0.015	0.3	0/-0.010	4	2.3	20	1.45	60	2	20.85	21.52	22.19	22.86	24.2	MEXLN20150320	●
1.6	0/-0.015	0.1	0/-0.010	4	2.4	8	1.55	50	2	8.45	8.73	9	9.27	9.81	MEXLN20160108	●
1.6	0/-0.015	0.1	0/-0.010	4	2.4	12	1.55	50	2	12.59	12.99	13.4	13.81	14.62	MEXLN20160112	●
1.6	0/-0.015	0.1	0/-0.010	4	2.4	16	1.55	50	2	16.72	17.26	17.8	18.35	19.43	MEXLN20160116	◉
1.8	0/-0.015	0.2	0/-0.010	4	2.7	8	1.75	50	2	8.45	8.72	8.99	9.26	9.79	MEXLN20180208	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	12	1.75	50	2	12.58	12.99	13.39	13.79	14.6	MEXLN20180212	◉
1.8	0/-0.015	0.2	0/-0.010	4	2.7	16	1.75	50	2	16.72	17.26	17.79	18.33	19.41	MEXLN20180216	●
2	0/-0.015	0.2	0/-0.010	4	3	6	1.95	50	2	6.38	6.58	6.79	6.99	7.39	MEXLN20200206	●
2	0/-0.015	0.2	0/-0.010	4	3	8	1.95	50	2	8.45	8.72	8.99	9.26	9.79	MEXLN20200208	●
2	0/-0.015	0.2	0/-0.010	4	3	10	1.95	50	2	10.52	10.85	11.19	11.52	12.2	MEXLN20200210	●
2	0/-0.015	0.2	0/-0.010	4	3	12	1.95	50	2	12.58	12.99	13.39	13.79	14.6	MEXLN20200212	●
2	0/-0.015	0.2	0/-0.010	4	3	14	1.95	50	2	14.65	15.12	15.59	16.06	17.01	MEXLN20200214	◉
2	0/-0.015	0.2	0/-0.010	4	3	16	1.95	50	2	16.72	17.26	17.79	18.33	19.41	MEXLN20200216	●
2	0/-0.015	0.2	0/-0.010	4	3	20	1.95	60	2	20.85	21.53	22.2	22.87	-	MEXLN20200220	●
2	0/-0.015	0.2	0/-0.010	4	3	25	1.95	75	2	26.02	26.86	27.7	28.54	-	MEXLN20200225	●
2	0/-0.015	0.2	0/-0.010	4	3	30	1.95	75	2	31.19	32.2	33.21	-	-	MEXLN20200230	●
2	0/-0.015	0.5	0/-0.010	4	3	6	1.95	50	2	6.37	6.56	6.75	6.95	7.33	MEXLN20200506	●

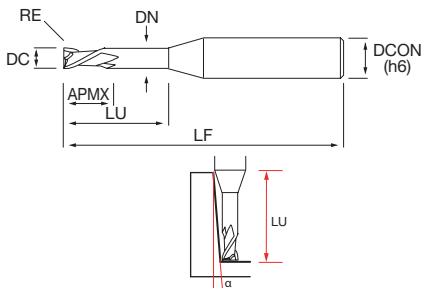
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

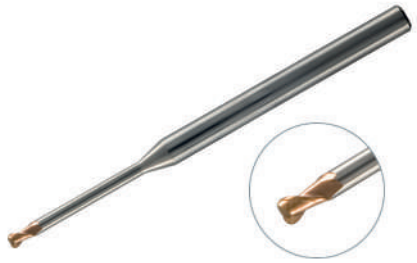
SORMA DIAMOND & CUTTING TOOLS

MEXLN2R

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
2	0/-0.015	0.5	0/-0.010	4	3	8	1.95	50	2	8.44	8.7	8.96	9.22	9.73	MEXLN20200508	●
2	0/-0.015	0.5	0/-0.010	4	3	12	1.95	50	2	12.57	12.97	13.36	13.75	14.54	MEXLN20200512	●
2	0/-0.015	0.5	0/-0.010	4	3	16	1.95	50	2	16.71	17.24	17.76	18.29	19.35	MEXLN20200516	●
2	0/-0.015	0.5	0/-0.010	4	3	20	1.95	60	2	20.84	21.51	22.17	22.83	-	MEXLN20200520	●
2	0/-0.015	0.5	0/-0.010	4	3	25	1.95	75	2	26.01	26.84	27.67	28.5	-	MEXLN20200525	●
2	0/-0.015	0.5	0/-0.010	4	3	30	1.95	75	2	31.18	32.18	33.18	-	-	MEXLN20200530	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	8	2.4	50	2	8.45	8.71	8.98	9.24	9.77	MEXLN20250308	◉
2.5	0/-0.020	0.3	0/-0.015	4	3.7	12	2.4	50	2	12.58	12.98	13.38	13.78	14.58	MEXLN20250312	◉
2.5	0/-0.020	0.3	0/-0.015	4	3.7	16	2.4	50	2	16.72	17.25	17.78	18.32	-	MEXLN20250316	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	20	2.4	60	2	20.85	21.52	22.19	-	-	MEXLN20250320	◉
2.5	0/-0.020	0.3	0/-0.015	4	3.7	25	2.4	60	2	26.02	26.86	27.69	-	-	MEXLN20250325	◉
2.5	0/-0.020	0.3	0/-0.015	4	3.7	30	2.4	75	2	31.19	32.19	-	-	-	MEXLN20250330	◉
2.5	0/-0.020	0.5	0/-0.015	4	3.7	8	2.4	50	2	8.44	8.7	8.96	9.22	9.73	MEXLN20250508	●
2.5	0/-0.020	0.5	0/-0.015	4	3.7	12	2.4	50	2	12.57	12.97	13.36	13.75	14.54	MEXLN20250512	●
2.5	0/-0.020	0.5	0/-0.015	4	3.7	16	2.4	50	2	16.71	17.24	17.76	18.29	-	MEXLN20250516	●
2.5	0/-0.020	0.5	0/-0.015	4	3.7	20	2.4	60	2	20.84	21.51	22.17	-	-	MEXLN20250520	●
2.5	0/-0.020	0.5	0/-0.015	4	3.7	25	2.4	60	2	26.01	26.84	27.67	-	-	MEXLN20250525	◉
2.5	0/-0.020	0.5	0/-0.015	4	3.7	30	2.4	75	2	31.18	32.18	-	-	-	MEXLN20250530	◉
3	0/-0.025	0.2	0/-0.015	6	4.5	10	2.85	50	2	10.71	11.05	11.39	11.74	12.42	MEXLN20300210	◉
3	0/-0.025	0.2	0/-0.015	6	4.5	12	2.85	50	2	12.78	13.19	13.6	14	14.82	MEXLN20300212	◉
3	0/-0.025	0.2	0/-0.015	6	4.5	16	2.85	60	2	16.91	17.46	18	18.54	19.63	MEXLN20300216	●
3	0/-0.025	0.2	0/-0.015	6	4.5	20	2.85	60	2	21.05	21.72	22.4	23.08	24.44	MEXLN20300220	◉
3	0/-0.025	0.2	0/-0.015	6	4.5	25	2.85	75	2	26.21	27.06	27.91	28.75	30.45	MEXLN20300225	●
3	0/-0.025	0.3	0/-0.015	6	4.5	10	2.85	50	2	10.71	11.04	11.38	11.72	12.4	MEXLN20300310	●
3	0/-0.025	0.3	0/-0.015	6	4.5	12	2.85	50	2	12.77	13.18	13.59	13.99	14.8	MEXLN20300312	●
3	0/-0.025	0.3	0/-0.015	6	4.5	16	2.85	60	2	16.91	17.45	17.99	18.53	19.61	MEXLN20300316	●
3	0/-0.025	0.3	0/-0.015	6	4.5	20	2.85	60	2	21.04	21.72	22.39	23.07	24.42	MEXLN20300320	●
3	0/-0.025	0.3	0/-0.015	6	4.5	25	2.85	75	2	26.21	27.05	27.9	28.74	30.43	MEXLN20300325	●
3	0/-0.025	0.5	0/-0.015	6	4.5	10	2.85	50	2	10.7	11.03	11.36	11.7	12.36	MEXLN20300510	●
3	0/-0.025	0.5	0/-0.015	6	4.5	12	2.85	50	2	12.77	13.17	13.57	13.96	14.76	MEXLN20300512	●
3	0/-0.025	0.5	0/-0.015	6	4.5	16	2.85	60	2	16.9	17.44	17.97	18.5	19.57	MEXLN20300516	●
3	0/-0.025	0.5	0/-0.015	6	4.5	20	2.85	60	2	21.04	21.7	22.37	23.04	24.38	MEXLN20300520	●
3	0/-0.025	0.5	0/-0.015	6	4.5	25	2.85	75	2	26.2	27.04	27.88	28.71	30.39	MEXLN20300525	●
4	0/-0.025	0.3	0/-0.015	6	4.5	10	3.85	60	2	10.9	11.24	11.59	11.93	12.62	MEXLN20400310	◉
4	0/-0.025	0.3	0/-0.015	6	4.5	15	3.85	60	2	16.07	16.58	17.09	17.61	18.63	MEXLN20400315	◉
4	0/-0.025	0.3	0/-0.015	6	4.5	20	3.85	60	2	21.24	21.92	22.6	23.28	-	MEXLN20400320	●
4	0/-0.025	0.3	0/-0.015	6	4.5	25	3.85	75	2	26.4	27.25	28.1	28.95	-	MEXLN20400325	●
4	0/-0.025	0.3	0/-0.015	6	4.5	30	3.85	75	2	31.57	32.59	33.61	-	-	MEXLN20400330	●
4	0/-0.025	0.3	0/-0.015	6	4.5	40	3.85	75	2	41.91	43.26	-	-	-	MEXLN20400340	●
4	0/-0.025	0.5	0/-0.015	6	4.5	10	3.85	60	2	10.89	11.23	11.57	11.91	12.58	MEXLN20400510	◉
4	0/-0.025	0.5	0/-0.015	6	4.5	15	3.85	60	2	16.06	16.57	17.07	17.58	18.59	MEXLN20400515	●
4	0/-0.025	0.5	0/-0.015	6	4.5	20	3.85	60	2	21.23	21.9	22.58	23.25	-	MEXLN20400520	●
4	0/-0.025	0.5	0/-0.015	6	4.5	25	3.85	75	2	26.4	27.24	28.08	28.92	-	MEXLN20400525	●
4	0/-0.025	0.5	0/-0.015	6	4.5	30	3.85	75	2	31.57	32.58	33.59	-	-	MEXLN20400530	●
4	0/-0.025	0.5	0/-0.015	6	4.5	40	3.85	75	2	41.9	43.25	-	-	-	MEXLN20400540	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXLN2R

SQUARE RIB

Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
	≤ 8D	0.01	0.004	0.003	0.003	0.003
	≤ 10D	0.01	0.003	0.003	0.003	0.002
	≤ 12D	0.01	0.003	0.003	0.002	0.002
0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
	≤ 8D	0.02	0.005	0.005	0.004	0.004
	≤ 10D	0.01	0.005	0.004	0.004	0.003
	≤ 12D	0.01	0.004	0.004	0.003	0.003
0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
	≤ 8D	0.02	0.006	0.006	0.005	0.004
	≤ 10D	0.02	0.006	0.005	0.004	0.004
	≤ 12D	0.01	0.005	0.004	0.004	0.003
0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
	≤ 8D	0.03	0.007	0.006	0.006	0.005
	≤ 10D	0.02	0.006	0.006	0.005	0.004
	≤ 12D	0.02	0.006	0.005	0.004	0.004
0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
	≤ 8D	0.03	0.009	0.008	0.007	0.006
	≤ 10D	0.03	0.008	0.007	0.006	0.006
	≤ 12D	0.02	0.007	0.006	0.006	0.005
1	≤ 6D	0.05	0.012	0.011	0.010	0.008
	≤ 8D	0.04	0.011	0.010	0.009	0.008
	≤ 10D	0.04	0.010	0.009	0.008	0.007
	≤ 12D	0.03	0.008	0.008	0.007	0.006
1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
	≤ 8D	0.05	0.020	0.018	0.016	0.014
	≤ 10D	0.04	0.018	0.016	0.014	0.012
	≤ 12D	0.03	0.015	0.014	0.012	0.011
1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
	≤ 8D	0.06	0.022	0.019	0.017	0.015
	≤ 10D	0.05	0.019	0.017	0.015	0.013
	≤ 12D	0.04	0.017	0.015	0.013	0.012
	≤ 15D	0.03	0.014	0.013	0.012	0.010
	≥ 15D	0.02	0.012	0.011	0.010	0.008
1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
	≤ 8D	0.06	0.023	0.020	0.018	0.016
	≤ 10D	0.05	0.020	0.018	0.016	0.014
	≤ 12D	0.04	0.018	0.016	0.014	0.012
	≤ 15D	0.03	0.015	0.014	0.012	0.011
	≥ 15D	0.02	0.013	0.011	0.010	0.009
1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
	≤ 8D	0.07	0.023	0.021	0.019	0.016
	≤ 10D	0.06	0.021	0.019	0.017	0.015
	≤ 12D	0.04	0.018	0.016	0.015	0.013
	≤ 15D	0.04	0.016	0.014	0.012	0.011
	≥ 15D	0.02	0.013	0.012	0.010	0.009

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEXLN2R

SQUARE RIB

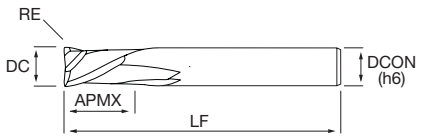
Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.025	0.023	0.020	0.018
	≤ 10D	0.06	0.022	0.020	0.018	0.016
	≤ 12D	0.05	0.020	0.018	0.016	0.014
	≤ 15D	0.04	0.017	0.015	0.013	0.012
	≥ 15D	0.03	0.014	0.013	0.011	0.010
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.027	0.024	0.022	0.019
	≤ 10D	0.07	0.024	0.022	0.019	0.017
	≤ 12D	0.06	0.021	0.019	0.017	0.015
	≤ 15D	0.05	0.018	0.016	0.014	0.013
	≥ 15D	0.03	0.018	0.016	0.014	0.013
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.032	0.028	0.025	0.022
	≤ 10D	0.09	0.028	0.025	0.022	0.020
	≤ 12D	0.07	0.025	0.022	0.020	0.017
	≤ 15D	0.06	0.021	0.019	0.017	0.015
	≥ 15D	0.04	0.021	0.019	0.017	0.015
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.036	0.032	0.029	0.025
	≤ 10D	0.11	0.032	0.029	0.026	0.022
	≤ 12D	0.08	0.028	0.025	0.022	0.020
	≤ 15D	0.07	0.024	0.022	0.019	0.017
	≥ 15D	0.05	0.024	0.022	0.019	0.017
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.045	0.041	0.036	0.032
	≤ 10D	0.14	0.040	0.036	0.032	0.028
	≤ 12D	0.11	0.035	0.032	0.028	0.025
	≤ 15D	0.09	0.030	0.027	0.024	0.021
	≥ 15D	0.06	0.030	0.027	0.024	0.021

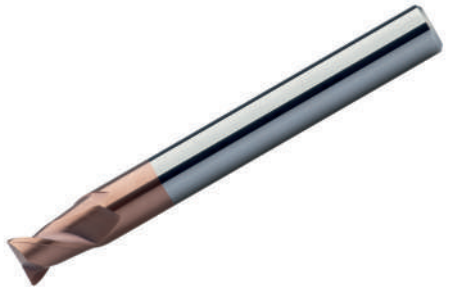
SORMA DIAMOND & CUTTING TOOLS

MEXLS2R

- Cylindrical shank
- 2 flutes
- Long
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 2 | SLOTTING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.015	0.3	0/-0.010	6	h6	4	75	2	**MEXLS2R03020**	◉
3	0/-0.020	0.3	0/-0.015	6	h6	5	75	2	**MEXLS2R03030**	◉
3	0/-0.020	0.5	0/-0.015	6	h6	5	75	2	**MEXLS2R05030**	●
4	0/-0.020	0.3	0/-0.015	6	h6	8	75	2	**MEXLS2R03040**	●
4	0/-0.020	0.5	0/-0.015	6	h6	8	75	2	**MEXLS2R05040**	◉
5	0/-0.020	0.3	0/-0.015	6	h6	9	75	2	**MEXLS2R03050**	●
5	0/-0.020	0.5	0/-0.015	6	h6	9	75	2	**MEXLS2R05050**	◉
6	0/-0.020	0.3	0/-0.015	6	h6	10	75	2	**MEXLS2R03060**	◉
6	0/-0.020	0.5	0/-0.015	6	h6	10	75	2	**MEXLS2R05060**	●
6	0/-0.020	1	0/-0.015	6	h6	10	75	2	**MEXLS2R10060**	◉
8	0/-0.020	0.3	0/-0.015	8	h6	12	75	2	**MEXLS2R03080**	●
8	0/-0.020	0.5	0/-0.015	8	h6	12	75	2	**MEXLS2R05080**	●
8	0/-0.020	1	0/-0.015	8	h6	12	75	2	**MEXLS2R10080**	◉
10	0/-0.020	0.5	0/-0.020	10	h6	14	100	2	**MEXLS2R05100**	●
10	0/-0.020	1	0/-0.020	10	h6	14	100	2	**MEXLS2R10100**	◉
12	0/-0.020	0.5	0/-0.020	12	h6	16	100	2	**MEXLS2R05120**	●
12	0/-0.020	1	0/-0.020	12	h6	16	100	2	**MEXLS2R10120**	●
16	0/-0.020	0.5	0/-0.020	16	h6	22	125	2	**MEXLS2R05160**	●
16	0/-0.020	1	0/-0.020	16	h6	22	125	2	**MEXLS2R10160**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEXLS2R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**0.3D x D**	**0.3D x D**	**0.2D x D**	**0.05D x D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.005	0.005	0.004	0.004
	3	0.006	0.005	0.005	0.004
	4	0.009	0.008	0.007	0.006
	5	0.012	0.011	0.010	0.008
	6	0.018	0.016	0.014	0.013
	8	0.024	0.022	0.019	0.017
	10	0.029	0.026	0.023	0.020
	12	0.035	0.032	0.028	0.025

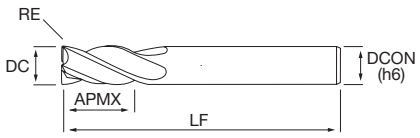
≤ D3 mm: ap = 0.4 mm

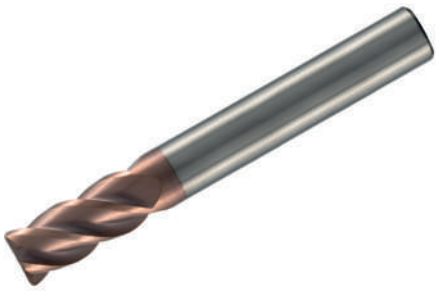
SORMA DIAMOND & CUTTING TOOLS

MEXCS4R

- Cylindrical shank
- 4 flutes
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 4 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.015	0.2	0/-0.010	4	h6	3	50	4	MEXCS4R01002	●
1.5	0/-0.015	0.2	0/-0.010	4	h6	4.5	50	4	MEXCS4R01502	●
2	0/-0.015	0.2	0/-0.010	4	h6	6.5	50	4	MEXCS4R02002	●
2	0/-0.015	0.3	0/-0.010	4	h6	6.5	50	4	MEXCS4R02003	●
2.5	0/-0.020	0.2	0/-0.015	4	h6	6.5	50	4	MEXCS4R02502	●
2.5	0/-0.020	0.5	0/-0.015	4	h6	6.5	50	4	MEXCS4R02505	●
3	0/-0.020	0.2	0/-0.015	4	h6	9	50	4	MEXCS4R03002	●
3	0/-0.020	0.3	0/-0.015	4	h6	9	50	4	MEXCS4R03003	●
3	0/-0.020	0.5	0/-0.015	4	h6	9	50	4	MEXCS4R03005	●
4	0/-0.020	0.3	0/-0.015	4	h6	12	50	4	MEXCS4R04003	●
4	0/-0.020	0.5	0/-0.015	4	h6	12	50	4	MEXCS4R04005	●
4	0/-0.020	1	0/-0.015	4	h6	12	50	4	MEXCS4R04010	●
5	0/-0.020	0.3	0/-0.015	5	h6	15	50	4	MEXCS4R05003	●
5	0/-0.020	0.5	0/-0.015	5	h6	15	50	4	MEXCS4R05005	●
5	0/-0.020	1	0/-0.015	5	h6	15	50	4	MEXCS4R05010	●
6	0/-0.020	0.3	0/-0.015	6	h6	16	50	4	MEXCS4R06003	●
6	0/-0.020	0.5	0/-0.015	6	h6	16	50	4	MEXCS4R06005	●
6	0/-0.020	1	0/-0.015	6	h6	16	50	4	MEXCS4R06010	●
8	0/-0.020	0.3	0/-0.015	8	h6	20	64	4	MEXCS4R08003	●
8	0/-0.020	0.5	0/-0.015	8	h6	20	64	4	MEXCS4R08005	●
8	0/-0.020	1	0/-0.015	8	h6	20	64	4	MEXCS4R08010	●
8	0/-0.020	1.5	0/-0.015	8	h6	20	64	4	MEXCS4R08015	◉
8	0/-0.020	2	0/-0.015	8	h6	20	64	4	MEXCS4R08020	●
10	0/-0.020	0.3	0/-0.020	10	h6	22	75	4	MEXCS4R10003	●
10	0/-0.020	0.5	0/-0.020	10	h6	22	75	4	MEXCS4R10005	●
10	0/-0.020	1	0/-0.020	10	h6	22	75	4	MEXCS4R10010	●
10	0/-0.020	1.5	0/-0.020	10	h6	22	75	4	MEXCS4R10015	●
10	0/-0.020	2	0/-0.020	10	h6	22	75	4	MEXCS4R10020	●
12	0/-0.020	0.3	0/-0.020	12	h6	25	75	4	MEXCS4R12003	●
12	0/-0.020	0.5	0/-0.020	12	h6	25	75	4	MEXCS4R12005	●
12	0/-0.020	1	0/-0.020	12	h6	25	75	4	MEXCS4R12010	●
12	0/-0.020	1.5	0/-0.020	12	h6	25	75	4	MEXCS4R12015	●
12	0/-0.020	2	0/-0.020	12	h6	25	75	4	MEXCS4R12020	●
12	0/-0.020	3	0/-0.020	12	h6	25	75	4	MEXCS4R12030	●
14	0/-0.020	0.5	0/-0.020	14	h6	32	90	4	MEXCS4R14005	◉
14	0/-0.020	1	0/-0.020	14	h6	32	90	4	MEXCS4R14010	●
14	0/-0.020	2	0/-0.020	14	h6	32	90	4	MEXCS4R14020	◉
16	0/-0.020	0.5	0/-0.020	16	h6	32	90	4	MEXCS4R16005	●
16	0/-0.020	1	0/-0.020	16	h6	32	90	4	MEXCS4R16010	●
16	0/-0.020	2	0/-0.020	16	h6	32	90	4	MEXCS4R16020	●
16	0/-0.020	3	0/-0.020	16	h6	32	90	4	MEXCS4R16030	◉
18	0/-0.020	0.5	0/-0.020	18	h6	38	100	4	MEXCS4R18005	●
18	0/-0.020	1	0/-0.020	18	h6	38	100	4	MEXCS4R18010	●
20	0/-0.020	0.5	0/-0.020	20	h6	38	100	4	MEXCS4R20005	●
20	0/-0.020	1	0/-0.020	20	h6	38	100	4	MEXCS4R20010	●

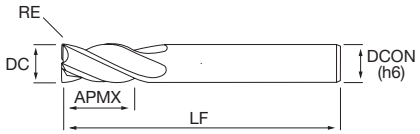
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

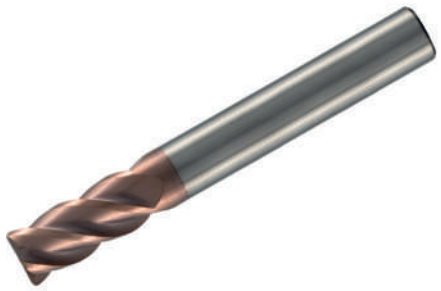
SORMA DIAMOND & CUTTING TOOLS

MEXCS4R

- Cylindrical shank
- 4 flutes
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
20	0/-0.020	2	0/-0.020	20	h6	38	100	4	**MEXCS4R20020**	●
20	0/-0.020	3	0/-0.020	20	h6	38	100	4	**MEXCS4R20030**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEXCS4R

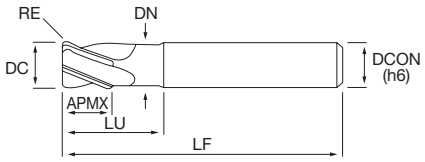
	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.009	0.008	0.007	0.006
	2	0.017	0.015	0.014	0.012
	3	0.026	0.023	0.020	0.018
	4	0.034	0.031	0.027	0.024
	5	0.038	0.034	0.031	0.027
	6	0.043	0.038	0.034	0.030
	8	0.055	0.050	0.044	0.039
	10	0.071	0.064	0.057	0.050
	12	0.085	0.077	0.068	0.060
	14	0.098	0.088	0.078	0.068
	16	0.110	0.099	0.088	0.077
	18	0.125	0.113	0.100	0.088
	20	0.140	0.126	0.112	0.098

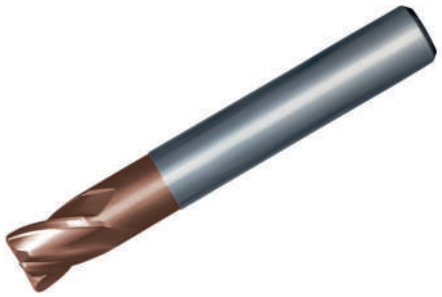
SORMA DIAMOND & CUTTING TOOLS

MEX410R

- Cylindrical shank
- 4 flutes
- Short
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
2	0/-0.012	0.2	±0.020	6	h6	2.5	5	1.9	50	4	**MEX410R02020**	●
2.5	0/-0.012	0.25	±0.020	6	h6	3	6	2.4	50	4	**MEX410R025025**	●
3	0/-0.012	0.3	±0.020	6	h6	4	7	2.85	50	4	**MEX410R03030**	●
4	0/-0.012	0.5	±0.020	6	h6	5	9	3.85	50	4	**MEX410R05040**	●
5	0/-0.015	0.5	±0.020	6	h6	6	12	4.85	50	4	**MEX410R05050**	●
6	0/-0.015	0.5	±0.020	6	h6	7	14	5.8	60	4	**MEX410R05060**	●
8	0/-0.015	1	±0.020	8	h6	10	18	7.8	70	4	**MEX410R10080**	●
10	0/-0.015	1	±0.020	10	h6	12	25	9.8	75	4	**MEX410R10100**	●
12	0/-0.015	1	±0.020	12	h6	15	30	11.8	80	4	**MEX410R10120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MEX410R

SIDE MILLING

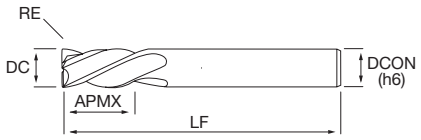
Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
Vc (m/min)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
2	0.015	0.014	0.012	0.011
3	0.023	0.021	0.018	0.016
4	0.031	0.028	0.024	0.021
5	0.034	0.031	0.028	0.024
6	0.038	0.034	0.031	0.027
8	0.050	0.045	0.040	0.035
10	0.065	0.059	0.052	0.046
12	0.077	0.069	0.061	0.054

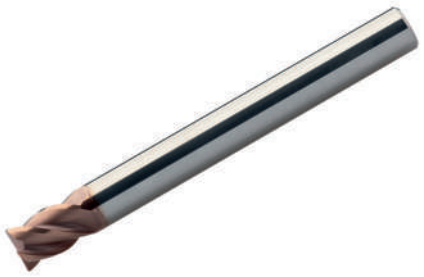
SORMA DIAMOND & CUTTING TOOLS

MEXLS4R

- Cylindrical shank
- 4 flutes
- Long
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 40° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	0/-0.015	0.3	0/-0.010	6	h6	4	75	4	**MEXLS4R03020**	◉
3	0/-0.020	0.3	0/-0.015	6	h6	5	75	4	**MEXLS4R03030**	●
3	0/-0.020	0.5	0/-0.015	6	h6	5	75	4	**MEXLS4R05030**	●
4	0/-0.020	0.3	0/-0.015	6	h6	8	75	4	**MEXLS4R03040**	●
4	0/-0.020	0.5	0/-0.015	6	h6	8	75	4	**MEXLS4R05040**	●
5	0/-0.020	0.3	0/-0.015	6	h6	9	75	4	**MEXLS4R03050**	●
5	0/-0.020	0.5	0/-0.015	6	h6	9	75	4	**MEXLS4R05050**	●
6	0/-0.020	0.3	0/-0.015	6	h6	10	75	4	**MEXLS4R03060**	●
6	0/-0.020	0.5	0/-0.015	6	h6	10	75	4	**MEXLS4R05060**	●
6	0/-0.020	1	0/-0.015	6	h6	10	75	4	**MEXLS4R10060**	●
8	0/-0.020	0.3	0/-0.015	8	h6	12	75	4	**MEXLS4R03080**	●
8	0/-0.020	0.5	0/-0.015	8	h6	12	75	4	**MEXLS4R05080**	●
8	0/-0.020	1	0/-0.015	8	h6	12	75	4	**MEXLS4R10080**	●
10	0/-0.020	0.5	0/-0.020	10	h6	14	100	4	**MEXLS4R05100**	◉
10	0/-0.020	1	0/-0.020	10	h6	14	100	4	**MEXLS4R10100**	●
12	0/-0.020	0.5	0/-0.020	12	h6	16	100	4	**MEXLS4R05120**	●
12	0/-0.020	1	0/-0.020	12	h6	16	100	4	**MEXLS4R10120**	●
16	0/-0.020	0.5	0/-0.020	16	h6	22	125	4	**MEXLS4R05160**	●
16	0/-0.020	1	0/-0.020	16	h6	22	125	4	**MEXLS4R10160**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

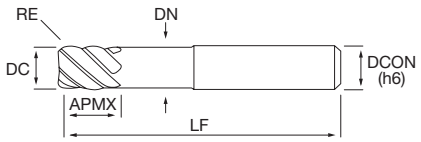
MEXLS4R

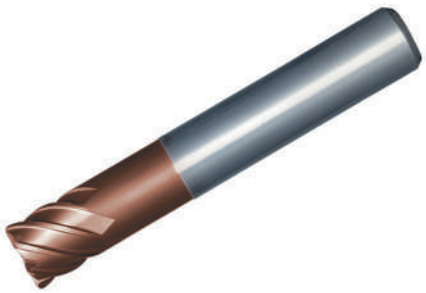
	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.014	0.013	0.012	0.010
	3	0.022	0.020	0.017	0.015
	4	0.029	0.026	0.023	0.020
	5	0.033	0.029	0.026	0.023
	6	0.036	0.033	0.029	0.025
	8	0.047	0.042	0.038	0.033
	10	0.060	0.054	0.048	0.042
	12	0.072	0.065	0.058	0.051
	16	0.094	0.084	0.075	0.065

MEX610R

- Cylindrical shank
- Multi flute
- Short
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 45° | RADIUS | ZEFP 6 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.5	±0.020	6	h6	6	14	5.8	50	6	**MEX610R05060**	●
8	0/-0.030	0.5	±0.020	8	h6	8	24	7.8	60	6	**MEX610R05080**	●
10	0/-0.030	1	±0.020	10	h6	10	30	9.8	70	6	**MEX610R10100**	●
12	0/-0.030	1	±0.020	12	h6	12	30	11.8	75	6	**MEX610R10120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

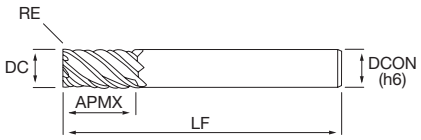
MEX610R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
SIDE MILLING	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**120÷160**	**90÷130**	**60÷100**	**50÷70**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029

MEX611R

- Cylindrical shank
- Multi flute
- Long
- Corner radius

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 45° | RADIUS | ZEFP 6 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.5	±0.020	6	h6	15	90	6	**MEX611R05060**	●
8	0/-0.030	0.5	±0.020	8	h6	20	100	6	**MEX611R05080**	●
10	0/-0.030	0.5	±0.020	10	h6	25	100	6	**MEX611R05100**	○
10	0/-0.030	1	±0.020	10	h6	25	100	6	**MEX611R10100**	●
12	0/-0.030	0.5	±0.020	12	h6	30	100	6	**MEX611R05120**	●
12	0/-0.030	1	±0.020	12	h6	30	100	6	**MEX611R10120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEX611R

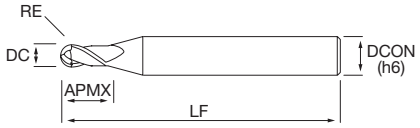
	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
SIDE MILLING	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**100÷140**	**80÷120**	**50÷70**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024

SORMA DIAMOND & CUTTING TOOLS

MHMB204

- Cylindrical shank
- 2 flutes ball nose
- Miniature

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.2	0/-0.010	0.1	0/-0.010	4	h6	0.2	50	2	**MHMB200204**	●
0.3	0/-0.010	0.15	0/-0.010	4	h6	0.3	50	2	**MHMB200304**	●
0.4	0/-0.010	0.2	0/-0.010	4	h6	0.4	50	2	**MHMB200404**	●
0.5	0/-0.010	0.25	0/-0.010	4	h6	0.4	50	2	**MHMB200504**	●
0.6	0/-0.010	0.3	0/-0.010	4	h6	0.5	50	2	**MHMB200604**	●
0.7	0/-0.010	0.35	0/-0.010	4	h6	0.6	50	2	**MHMB200704**	●
0.8	0/-0.010	0.4	0/-0.010	4	h6	0.6	50	2	**MHMB200804**	●
0.9	0/-0.010	0.45	0/-0.010	4	h6	0.8	50	2	**MHMB200904**	●
1	0/-0.015	0.5	0/-0.015	4	h6	0.8	50	2	**MHMB201004**	●
1.5	0/-0.015	0.75	0/-0.015	4	h6	1.35	50	2	**MHMB201504**	●
2	0/-0.015	1	0/-0.015	4	h6	1.7	50	2	**MHMB202004**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHMB204

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**
	Vc (m/min)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
ap=ae COPYING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.1	0.04	0.004	0.004	0.003	0.003
	0.2	0.09	0.006	0.005	0.005	0.004
	0.3	0.13	0.008	0.007	0.006	0.006
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.7	0.31	0.018	0.016	0.014	0.013
	0.8	0.35	0.020	0.018	0.016	0.014
	0.9	0.39	0.023	0.021	0.018	0.016
	1	0.44	0.026	0.023	0.020	0.017
	1.5	0.79	0.040	0.036	0.030	0.026
	2	1.20	0.055	0.050	0.041	0.036

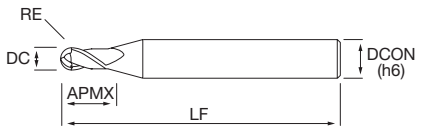
α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

MHMB206

- Cylindrical shank
- 2 flutes ball nose
- Miniature
- 6 mm. shank

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.4	0/-0.010	0.2	0/-0.010	6	h6	0.4	50	2	**MHMB200406**	●
0.5	0/-0.010	0.25	0/-0.010	6	h6	0.5	50	2	**MHMB200506**	●
0.6	0/-0.010	0.3	0/-0.010	6	h6	0.6	50	2	**MHMB200606**	●
0.8	0/-0.010	0.4	0/-0.010	6	h6	0.8	50	2	**MHMB200806**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHMB206

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
ap ae COPYING	Vc (m/min)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.8	0.35	0.020	0.018	0.016	0.014

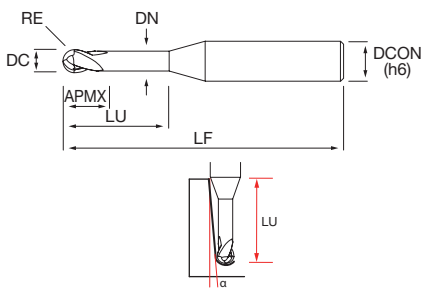
	α	n (rpm)	Vf (mm/min)
α	15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.2	0/-0.010	0.1	0/-0.010	4	0.2	0.5	0.17	50	2	0.57	0.58	0.6	0.62	0.66	MHLNB2002005	●
0.2	0/-0.010	0.1	0/-0.010	4	0.2	1	0.17	50	2	1.08	1.12	1.15	1.19	1.27	MHLNB200201	●
0.2	0/-0.010	0.1	0/-0.010	4	0.2	1.5	0.17	50	2	1.6	1.65	1.71	1.76	1.89	MHLNB2002015	◉
0.3	0/-0.010	0.15	0/-0.010	4	0.3	1	0.27	50	2	1.08	1.11	1.15	1.18	1.26	MHLNB200301	●
0.3	0/-0.010	0.15	0/-0.010	4	0.3	2	0.27	50	2	2.12	2.18	2.25	2.33	2.49	MHLNB200302	●
0.3	0/-0.010	0.15	0/-0.010	4	0.3	3	0.27	50	2	3.15	3.25	3.36	3.48	3.73	MHLNB200303	◉
0.4	0/-0.010	0.2	0/-0.010	4	0.4	1	0.37	50	2	1.08	1.11	1.14	1.18	1.25	MHLNB200401	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	2	0.37	50	2	2.11	2.18	2.25	2.32	2.48	MHLNB200402	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	3	0.37	50	2	3.15	3.25	3.36	3.47	3.72	MHLNB200403	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	4	0.37	50	2	4.18	4.32	4.46	4.62	4.95	MHLNB200404	◉
0.4	0/-0.010	0.2	0/-0.010	4	0.4	5	0.37	50	2	5.21	5.39	5.57	5.77	6.18	MHLNB200405	◉
0.5	0/-0.010	0.25	0/-0.010	4	0.4	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	MHLNB200502	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	3	0.45	50	2	3.18	3.29	3.39	3.51	3.75	MHLNB200503	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	4	0.45	50	2	4.22	4.35	4.5	4.65	4.98	MHLNB200504	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	5	0.45	50	2	5.25	5.42	5.61	5.8	6.22	MHLNB200505	◉
0.5	0/-0.010	0.25	0/-0.010	4	0.4	6	0.45	50	2	6.28	6.49	6.71	6.95	7.45	MHLNB200506	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	8	0.45	50	2	8.35	8.63	8.93	9.24	9.92	MHLNB200508	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.5	MHLNB200602	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	3	0.55	50	2	3.18	3.28	3.39	3.5	3.74	MHLNB200603	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	MHLNB200604	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	5	0.55	50	2	5.25	5.42	5.6	5.79	6.21	MHLNB200605	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	MHLNB200606	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	8	0.55	50	2	8.35	8.63	8.92	9.23	9.91	MHLNB200608	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	MHLNB200802	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	MHLNB200804	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	5	0.75	50	2	5.25	5.41	5.59	5.78	6.18	MHLNB200805	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	6	0.75	50	2	6.28	6.48	6.7	6.93	7.42	MHLNB200806	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	7	0.75	50	2	7.31	7.55	7.81	8.07	8.65	MHLNB200807	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	8	0.75	50	2	8.35	8.62	8.91	9.22	9.88	MHLNB200808	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	10	0.75	50	2	10.41	10.76	11.13	11.51	12.35	MHLNB200810	●
1	0/-0.015	0.5	0/-0.015	4	0.8	3	0.9	50	2	3.27	3.37	3.47	3.57	3.8	MHLNB201003	●
1	0/-0.015	0.5	0/-0.015	4	0.8	4	0.9	50	2	4.31	4.44	4.58	4.72	5.04	MHLNB201004	●
1	0/-0.015	0.5	0/-0.015	4	0.8	5	0.9	50	2	5.34	5.51	5.68	5.87	6.27	MHLNB201005	●
1	0/-0.015	0.5	0/-0.015	4	0.8	6	0.9	50	2	6.37	6.58	6.79	7.02	7.5	MHLNB201006	●
1	0/-0.015	0.5	0/-0.015	4	0.8	7	0.9	50	2	7.41	7.64	7.9	8.16	8.74	MHLNB201007	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	8	0.9	50	2	8.44	8.71	9	9.31	9.97	MHLNB201008	●
1	0/-0.015	0.5	0/-0.015	4	0.8	9	0.9	50	2	9.47	9.78	10.11	10.46	11.21	MHLNB201009	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	10	0.9	50	2	10.51	10.85	11.22	11.61	12.44	MHLNB201010	●
1	0/-0.015	0.5	0/-0.015	4	0.8	12	0.9	50	2	12.57	12.99	13.43	13.9	14.91	MHLNB201012	●
1	0/-0.015	0.5	0/-0.015	4	0.8	14	0.9	50	2	14.64	15.13	15.65	16.19	17.37	MHLNB201014	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	16	0.9	50	2	16.71	17.27	17.86	18.49	19.84	MHLNB201016	●
1	0/-0.015	0.5	0/-0.015	4	0.8	20	0.9	60	2	20.84	21.55	22.29	23.08	24.78	MHLNB201020	●
1.2	0/-0.015	0.6	0/-0.015	4	1	6	1.1	50	2	6.37	6.57	6.78	7	7.48	MHLNB201206	●
1.2	0/-0.015	0.6	0/-0.015	4	1	8	1.1	50	2	8.44	8.71	8.99	9.3	9.95	MHLNB201208	◉
1.2	0/-0.015	0.6	0/-0.015	4	1	10	1.1	50	2	10.5	10.85	11.21	11.59	12.42	MHLNB201210	●

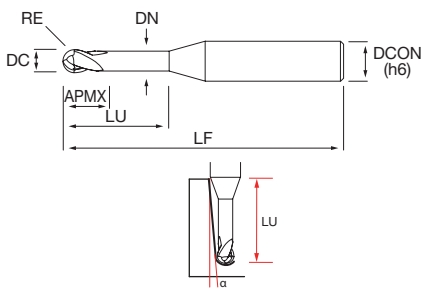
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1.2	0/-0.015	0.6	0/-0.015	4	1	12	1.1	50	2	12.57	12.98	13.42	13.89	14.88	MHLNB201212	◉
1.4	0/-0.015	0.7	0/-0.015	4	1.1	8	1.3	50	2	8.43	8.7	8.98	9.28	9.93	MHLNB201408	●
1.4	0/-0.015	0.7	0/-0.015	4	1.1	12	1.3	50	2	12.57	12.98	13.41	13.87	14.86	MHLNB201412	◉
1.4	0/-0.015	0.7	0/-0.015	4	1.1	16	1.3	50	2	16.7	17.26	17.84	18.46	19.8	MHLNB201416	◉
1.5	0/-0.015	0.75	0/-0.015	4	1.2	8	1.4	50	2	8.43	8.7	8.98	9.27	9.91	MHLNB201508	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	12	1.4	50	2	12.57	12.97	13.41	13.86	14.85	MHLNB201512	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	16	1.4	50	2	16.7	17.25	17.84	18.45	19.78	MHLNB201516	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	18	1.4	60	2	18.77	19.39	20.05	20.75	22.25	MHLNB201518	●
1.5	0/-0.015	0.75	0/-0.015	6	2.4	20	1.4	50	2	20.84	21.53	22.26	23.04	24.72	MHLNB201520	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	8	1.5	50	2	8.43	8.69	8.97	9.27	9.9	MHLNB201608	◉
1.6	0/-0.015	0.8	0/-0.015	4	1.3	12	1.5	50	2	12.56	12.97	13.4	13.86	14.84	MHLNB201612	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	16	1.5	50	2	16.7	17.25	17.83	18.45	19.77	MHLNB201616	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	20	1.5	60	2	20.83	21.53	22.26	23.03	-	MHLNB201620	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	8	1.7	50	2	8.43	8.69	8.96	9.25	9.88	MHLNB201808	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	12	1.7	50	2	12.56	12.96	13.39	13.84	14.81	MHLNB201812	◉
1.8	0/-0.015	0.9	0/-0.015	4	1.4	16	1.7	50	2	16.7	17.24	17.82	18.43	19.75	MHLNB201816	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	20	1.7	60	2	20.83	21.52	22.25	23.02	-	MHLNB201820	●
2	0/-0.015	1	0/-0.015	4	1.6	4	1.9	50	2	4.29	4.4	4.52	4.65	4.92	MHLNB202004	●
2	0/-0.015	1	0/-0.015	4	1.6	6	1.9	50	2	6.36	6.54	6.74	6.94	7.39	MHLNB202006	●
2	0/-0.015	1	0/-0.015	4	1.6	8	1.9	50	2	8.42	8.68	8.95	9.24	9.86	MHLNB202008	●
2	0/-0.015	1	0/-0.015	4	1.6	10	1.9	50	2	10.49	10.82	11.17	11.53	12.32	MHLNB202010	●
2	0/-0.015	1	0/-0.015	4	1.6	12	1.9	50	2	12.56	12.96	13.38	13.83	14.79	MHLNB202012	●
2	0/-0.015	1	0/-0.015	4	1.6	14	1.9	50	2	14.62	15.1	15.59	16.12	17.26	MHLNB202014	●
2	0/-0.015	1	0/-0.015	4	1.6	16	1.9	50	2	16.69	17.23	17.81	18.42	19.73	MHLNB202016	●
2	0/-0.015	1	0/-0.015	4	1.6	18	1.9	60	2	18.76	19.37	20.02	20.71	-	MHLNB202018	●
2	0/-0.015	1	0/-0.015	4	1.6	20	1.9	60	2	20.83	21.51	22.24	23	-	MHLNB202020	●
2	0/-0.015	1	0/-0.015	4	1.6	22	1.9	60	2	22.89	23.65	24.45	25.3	-	MHLNB202022	●
2	0/-0.015	1	0/-0.015	4	1.6	25	1.9	75	2	25.99	26.86	27.77	28.74	-	MHLNB202025	●
2	0/-0.015	1	0/-0.015	4	1.6	30	1.9	75	2	31.16	32.21	33.31	-	-	MHLNB202030	●
3	0/-0.020	1.5	0/-0.015	6	2.4	8	2.8	50	2	8.6	8.84	9.1	9.37	9.96	MHLNB203008	●
3	0/-0.020	1.5	0/-0.015	6	2.4	10	2.8	50	2	10.67	10.98	11.32	11.67	12.43	MHLNB203010	●
3	0/-0.020	1.5	0/-0.015	6	2.4	12	2.8	50	2	12.73	13.12	13.53	13.96	14.9	MHLNB203012	●
3	0/-0.020	1.5	0/-0.015	6	2.4	16	2.8	60	2	16.87	17.4	17.96	18.55	19.83	MHLNB203016	●
3	0/-0.020	1.5	0/-0.015	6	2.4	20	2.8	60	2	21	21.68	22.39	23.14	24.77	MHLNB203020	●
3	0/-0.020	1.5	0/-0.015	6	2.4	25	2.8	75	2	26.17	27.02	27.93	28.88	-	MHLNB203025	●
3	0/-0.020	1.5	0/-0.015	6	2.4	30	2.8	75	2	31.34	32.37	33.46	34.62	-	MHLNB203030	●
3	0/-0.020	1.5	0/-0.015	6	2.4	35	2.8	75	2	36.51	37.72	39	40.35	-	MHLNB203035	◉
4	0/-0.020	2	0/-0.015	6	3.2	10	3.7	50	2	10.84	11.15	11.47	11.81	12.54	MHLNB204010	●
4	0/-0.020	2	0/-0.015	6	3.2	16	3.7	60	2	17.04	17.56	18.11	18.69	19.94	MHLNB204016	●
4	0/-0.020	2	0/-0.015	6	3.2	20	3.7	60	2	21.18	21.84	22.54	23.28	-	MHLNB204020	●
4	0/-0.020	2	0/-0.015	6	3.2	25	3.7	75	2	26.35	27.19	28.08	29.02	-	MHLNB204025	●
4	0/-0.020	2	0/-0.015	6	3.2	30	3.7	75	2	31.51	32.53	33.61	-	-	MHLNB204030	●
4	0/-0.020	2	0/-0.015	6	3.2	35	3.7	75	2	36.68	37.88	39.15	-	-	MHLNB204035	●
4	0/-0.020	2	0/-0.015	6	3.2	40	3.7	100	2	41.85	43.23	-	-	-	MHLNB204040	●
4	0/-0.020	2	0/-0.015	6	3.2	45	3.7	100	2	47.02	48.57	-	-	-	MHLNB204045	◉

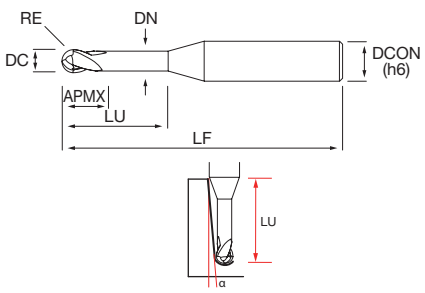
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
4	0/-0.020	2	0/-0.015	6	3.2	50	3.7	100	2	52.19	53.92	-	-	-	**MHLNB204050**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

MHLNB2

ROUND RIB

Material Group ISO 513				P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm				≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae				**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**
Vc (m/min)				**140÷160**	**110÷130**	**80÷100**	**50÷70**
DC (mm)	LU (mm)	ap (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.2	≤ 6D	0.01	0.09	0.008	0.007	0.006	0.006
	≤ 8D	0.01	0.08	0.007	0.006	0.005	0.005
	≤ 10D	0.01	0.07	0.006	0.005	0.004	0.004
0.3	≤ 6D	0.02	0.13	0.010	0.009	0.008	0.007
	≤ 8D	0.01	0.12	0.009	0.007	0.006	0.006
	≤ 10D	0.01	0.11	0.008	0.006	0.005	0.004
0.4	≤ 6D	0.02	0.17	0.013	0.012	0.010	0.009
	≤ 8D	0.02	0.16	0.012	0.009	0.008	0.007
	≤ 10D	0.01	0.15	0.010	0.007	0.007	0.006
0.5	≤ 6D	0.03	0.22	0.017	0.015	0.014	0.012
	≤ 8D	0.02	0.20	0.015	0.012	0.011	0.010
	≤ 10D	0.02	0.18	0.014	0.010	0.009	0.008
0.6	≤ 6D	0.03	0.26	0.021	0.019	0.017	0.015
	≤ 8D	0.03	0.24	0.019	0.015	0.014	0.012
	≤ 10D	0.02	0.22	0.017	0.012	0.011	0.009
0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
	≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
	≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
	≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
	≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
	≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
	>12D	0.02	0.30	0.018	0.010	0.009	0.008
1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
	≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
	≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
	≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
	>12D	0.03	0.36	0.021	0.011	0.010	0.009
1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
	≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
	≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
	≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
	>12D	0.03	0.44	0.027	0.015	0.013	0.011
2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
	≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
	≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
	≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
	>12D	0.05	0.59	0.036	0.019	0.017	0.015
2.5	≤ 6D	0.13	1.09	0.060	0.054	0.048	0.042
	≤ 8D	0.11	1.01	0.054	0.044	0.039	0.034
	≤ 10D	0.09	0.92	0.048	0.035	0.031	0.027
	≤ 12D	0.07	0.82	0.042	0.026	0.024	0.021
	>12D	0.06	0.74	0.036	0.019	0.017	0.015
3	≤ 6D	0.15	1.31	0.075	0.068	0.060	0.053
	≤ 8D	0.13	1.21	0.068	0.055	0.049	0.043
	≤ 10D	0.11	1.10	0.060	0.043	0.038	0.034
	≤ 12D	0.08	0.98	0.053	0.033	0.029	0.026
	>12D	0.07	0.89	0.045	0.024	0.022	0.019

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHLNB2

ROUND RIB

Material Group ISO 513					P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm					≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae					**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**
Vc (m/min)					**140÷160**	**110÷130**	**80÷100**	**50÷70**
DC (mm)	LU (mm)	ap (mm)	DC(eff.) (mm)		fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
4	≤ 6D	0.20	1.74		0.095	0.086	0.076	0.067
	≤ 8D	0.17	1.61		0.086	0.069	0.062	0.054
	≤ 10D	0.14	1.47		0.076	0.055	0.049	0.043
	≤ 12D	0.11	1.31		0.067	0.042	0.037	0.033
	>12D	0.09	1.19		0.057	0.031	0.027	0.024

α

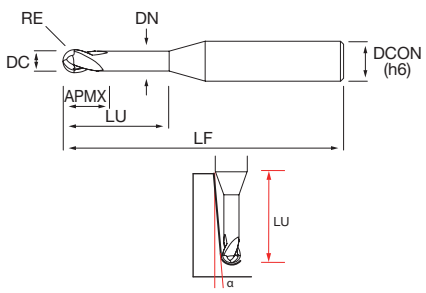
α	n (rpm)	Vf (mm/min)
45°	x 1.65	x 1.65
30°	x 1.30	x 1.30
15°	x 1.15	x 1.15

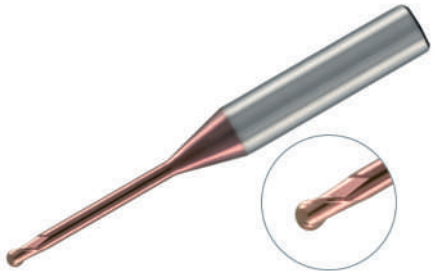
SORMA DIAMOND & CUTTING TOOLS

MHCRB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck
- 6 mm. shank

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.5	0/-0.012	0.25	±0.005	6	0.5	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	**MHCRB20050206**	○
0.5	0/-0.012	0.25	±0.005	6	0.5	4	0.45	50	2	4.22	4.35	4.5	4.65	4.98	**MHCRB20050406**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.5	**MHCRB20060206**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	**MHCRB20060406**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	**MHCRB20060606**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	**MHCRB20080206**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	**MHCRB20080406**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	6	0.75	50	2	6.28	6.48	6.7	6.93	7.42	**MHCRB20080606**	●
1	0/-0.012	0.5	±0.005	6	1	3	0.9	50	2	3.27	3.37	3.47	3.57	3.8	**MHCRB20100306**	●
1	0/-0.012	0.5	±0.005	6	1	6	0.9	50	2	6.37	6.58	6.79	7.02	7.5	**MHCRB20100606**	●
1	0/-0.012	0.5	±0.005	6	1	8	0.9	50	2	8.44	8.71	9	9.31	9.97	**MHCRB20100806**	●
1	0/-0.012	0.5	±0.005	6	1	10	0.9	50	2	10.51	10.85	11.22	11.61	12.44	**MHCRB20101006**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	6	1.1	50	2	6.37	6.57	6.78	7	7.48	**MHCRB20120606**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	8	1.1	50	2	8.44	8.71	8.99	9.3	9.95	**MHCRB20120806**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	10	1.1	50	2	10.5	10.85	11.21	11.59	12.42	**MHCRB20121006**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	4	1.4	50	2	4.3	4.42	4.55	4.68	4.98	**MHCRB20150406**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	8	1.4	50	2	8.43	8.7	8.98	9.27	9.91	**MHCRB20150806**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	10	1.4	50	2	10.5	10.84	11.19	11.57	12.38	**MHCRB20151006**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	12	1.4	50	2	12.57	12.97	13.41	13.86	14.85	**MHCRB20151206**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	16	1.4	50	2	16.7	17.25	17.84	18.45	19.78	**MHCRB20151606**	●
2	0/-0.012	1	±0.005	6	3	6	1.9	50	2	6.36	6.54	6.74	6.94	7.39	**MHCRB20200606**	●
2	0/-0.012	1	±0.005	6	3	8	1.9	50	2	8.42	8.68	8.95	9.24	9.86	**MHCRB20200806**	●
2	0/-0.012	1	±0.005	6	3	10	1.9	50	2	10.49	10.82	11.17	11.53	12.32	**MHCRB20201006**	●
2	0/-0.012	1	±0.005	6	3	12	1.9	50	2	12.56	12.96	13.38	13.83	14.79	**MHCRB20201206**	●
2	0/-0.012	1	±0.005	6	3	16	1.9	50	2	16.69	17.23	17.81	18.42	19.73	**MHCRB20201606**	●
2	0/-0.012	1	±0.005	6	3	20	1.9	50	2	20.83	21.51	22.24	23	24.66	**MHCRB20202006**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MHCRB2



Material Group ISO 513				P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm				≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae				**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**
Vc (m/min)				**140÷160**	**110÷130**	**80÷100**	**50÷70**
DC (mm)	l1 (mm)	ap (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.5	≤ 6D	0.03	0.22	0.020	0.018	0.016	0.014
	≤ 8D	0.02	0.20	0.018	0.015	0.013	0.011
	≤ 10D	0.02	0.18	0.016	0.012	0.010	0.009
0.6	≤ 6D	0.03	0.26	0.022	0.020	0.018	0.015
	≤ 8D	0.03	0.24	0.020	0.016	0.014	0.012
	≤ 10D	0.02	0.22	0.018	0.013	0.011	0.010
0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
	≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
	≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
	≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
	≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
	≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
	>12D	0.02	0.30	0.018	0.010	0.009	0.008
1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
	≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
	≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
	≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
	>12D	0.03	0.36	0.021	0.011	0.010	0.009
1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
	≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
	≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
	≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
	>12D	0.03	0.44	0.027	0.015	0.013	0.011
2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
	≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
	≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
	≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
	>12D	0.05	0.59	0.036	0.019	0.017	0.015
	≥ 15D	0.06	0.06	0.030	0.027	0.024	0.021



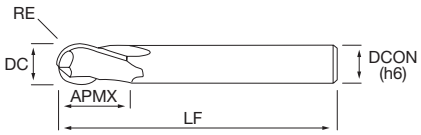
α	n (rpm)	Vf (mm/min)
45°	x 1.65	x 1.65
30°	x 1.30	x 1.30
15°	x 1.15	x 1.15

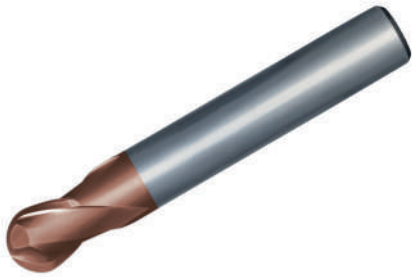
SORMA DIAMOND & CUTTING TOOLS

MEXCSB2

- Cylindrical shank
- 2 flutes ball nose

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	0/-0.010	3	h6	3	38	2	**MEXCSB2010**	●
1.5	0/-0.020	0.75	0/-0.010	3	h6	3	38	2	**MEXCSB2015**	●
2	0/-0.020	1	0/-0.010	6	h6	3	50	2	**MEXCSB2020**	●
2.5	0/-0.020	1.25	0/-0.015	4	h6	4	50	2	**MEXCSB202550**	●
3	0/-0.020	1.5	0/-0.010	6	h6	4	50	2	**MEXCSB2030**	●
4	0/-0.020	2	0/-0.010	6	h6	5	54	2	**MEXCSB2040**	●
5	0/-0.020	2.5	0/-0.010	6	h6	6	54	2	**MEXCSB2050**	●
6	0/-0.020	3	0/-0.010	6	h6	12	60	2	**MEXCSB2060**	●
8	0/-0.020	4	0/-0.010	8	h6	14	60	2	**MEXCSB2080**	●
10	0/-0.020	5	0/-0.010	10	h6	18	70	2	**MEXCSB2100**	●
12	0/-0.020	6	0/-0.010	12	h6	22	80	2	**MEXCSB2120**	●
14	0/-0.020	7	0/-0.020	14	h6	32	90	2	**MEXCSB2140**	●
16	0/-0.020	8	0/-0.020	16	h6	32	90	2	**MEXCSB2160**	●
18	0/-0.020	9	0/-0.020	18	h6	38	100	2	**MEXCSB2180**	◉
20	0/-0.020	10	0/-0.020	20	h6	38	100	2	**MEXCSB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEXCSB2

	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**120÷160**	**80÷120**	**60÷100**	**50÷70**
ap ae COPYING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.44	0.009	0.008	0.007	0.006
	1.5	0.79	0.012	0.011	0.010	0.008
	2	1.20	0.012	0.011	0.010	0.008
	2.5	1.65	0.015	0.014	0.012	0.011
	3	2.14	0.018	0.016	0.014	0.013
	4	3.20	0.025	0.023	0.020	0.018
	5	4.33	0.032	0.029	0.026	0.022
	6	5.50	0.038	0.034	0.030	0.027
	8	7.84	0.048	0.043	0.038	0.034
	10	10.00	0.057	0.051	0.046	0.040
	12	11.76	0.067	0.060	0.054	0.047
	14	12.83	0.080	0.072	0.064	0.056
	16	12.80	0.095	0.086	0.076	0.067
	18	10.80	0.108	0.097	0.086	0.076
	20	12.00	0.108	0.097	0.086	0.076

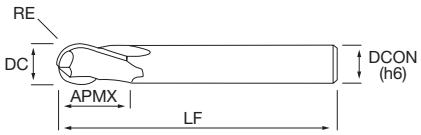
α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

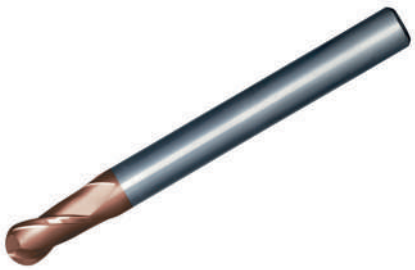
SORMA DIAMOND & CUTTING TOOLS

MEXCLSB2

- Cylindrical shank
- 2 flutes ball nose
- Long reach

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.012	0.5	0/-0.010	4	h6	2.5	50	2	**MEXCLSB2010**	●
1.2	0/-0.012	0.6	0/-0.010	4	h6	3	50	2	**MEXCLSB2012**	●
1.5	0/-0.012	0.75	0/-0.010	4	h6	4	50	2	**MEXCLSB2015**	●
2	0/-0.012	1	0/-0.010	6	h6	5	50	2	**MEXCLSB2020**	●
2.5	0/-0.012	1.25	0/-0.010	6	h6	6	60	2	**MEXCLSB2025**	●
3	0/-0.012	1.5	0/-0.010	6	h6	8	60	2	**MEXCLSB2030**	●
4	0/-0.012	2	0/-0.010	6	h6	8	70	2	**MEXCLSB2040**	●
5	0/-0.012	2.5	0/-0.010	6	h6	10	80	2	**MEXCLSB2050**	●
6	0/-0.015	3	0/-0.010	6	h6	12	90	2	**MEXCLSB2060**	●
8	0/-0.015	4	0/-0.010	8	h6	14	100	2	**MEXCLSB2080**	●
10	0/-0.015	5	0/-0.010	10	h6	18	100	2	**MEXCLSB2100**	●
12	0/-0.015	6	0/-0.010	12	h6	22	110	2	**MEXCLSB2120**	●
14	0/-0.035	7	0/-0.020	14	h6	32	125	2	**MEXCLSB2140**	●
16	0/-0.035	8	0/-0.020	16	h6	32	150	2	**MEXCLSB2160**	●
20	0/-0.035	10	0/-0.020	20	h6	38	150	2	**MEXCLSB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEXCLSB2



Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
Vc (m/min)		**100÷140**	**80÷120**	**60÷80**	**40÷60**
DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.44	0.015	0.014	0.012	0.011
2	0.87	0.021	0.019	0.017	0.015
3	1.31	0.027	0.024	0.022	0.019
4	1.74	0.037	0.033	0.029	0.026
5	2.18	0.045	0.041	0.036	0.032
6	2.62	0.051	0.046	0.041	0.036
8	3.49	0.060	0.054	0.048	0.042
10	4.36	0.068	0.061	0.054	0.048
12	5.23	0.077	0.069	0.061	0.054
14	6.10	0.089	0.080	0.071	0.062
16	6.97	0.102	0.092	0.082	0.071
18	7.85	0.115	0.103	0.092	0.080
20	8.72	0.132	0.119	0.106	0.092



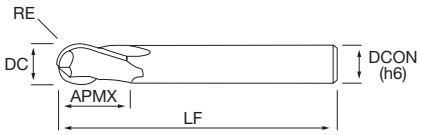
α	n (rpm)	Vf (mm/min)
30°	x 0.8	x 0.8
15°	x 0.7	x 0.7
0°	x 0.6	x 0.6

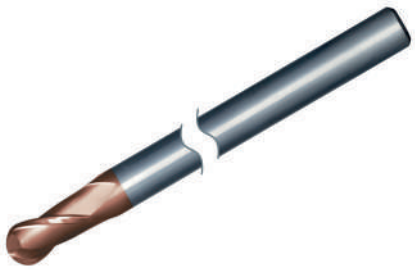
SORMA DIAMOND & CUTTING TOOLS

MEX253

- Cylindrical shank
- 2 flutes ball nose
- Extra long reach

P	M	K	N	S	H
★		★			★





OSAWA NORM | MEX | NMG ENDLESS ORANGE | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	0/-0.010	4	h6	3	75	2	**MEX25301075**	●
1	0/-0.020	0.5	0/-0.010	4	h6	3	100	2	**MEX253010100**	●
1.5	0/-0.020	0.75	0/-0.010	4	h6	3	75	2	**MEX25301575**	●
1.5	0/-0.020	0.75	0/-0.010	4	h6	3	100	2	**MEX253015100**	●
2	0/-0.020	1	0/-0.010	4	h6	4	75	2	**MEX25302075**	●
2	0/-0.020	1	0/-0.010	4	h6	4	100	2	**MEX253020100**	▽
3	0/-0.030	1.5	0/-0.015	6	h6	5	75	2	**MEX25303075**	●
3	0/-0.030	1.5	0/-0.015	6	h6	5	100	2	**MEX253030**	●
4	0/-0.030	2	0/-0.015	6	h6	8	100	2	**MEX253040**	●
5	0/-0.030	2.5	0/-0.015	6	h6	9	100	2	**MEX253050100**	●
6	0/-0.030	3	0/-0.015	6	h6	10	150	2	**MEX253060150**	●
8	0/-0.030	4	0/-0.015	8	h6	12	150	2	**MEX253080**	●
10	0/-0.035	5	0/-0.020	10	h6	14	150	2	**MEX25310150**	●
12	0/-0.035	6	0/-0.020	12	h6	16	150	2	**MEX25312150**	●
16	0/-0.035	8	0/-0.020	16	h6	32	200	2	**MEX253160**	●
20	0/-0.035	10	0/-0.020	20	h6	38	200	2	**MEX253200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MEX253

	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**90÷130**	**60÷100**	**50÷70**	**30÷50**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ap ae COPYING	**1**	0.44	0.015	0.014	0.012	0.011
	2	0.87	0.021	0.019	0.017	0.015
	3	1.31	0.027	0.024	0.022	0.019
	4	1.74	0.037	0.033	0.029	0.026
	5	2.18	0.045	0.041	0.036	0.032
	6	2.62	0.051	0.046	0.041	0.036
	8	3.49	0.060	0.054	0.048	0.042
	10	4.36	0.068	0.061	0.054	0.048
	12	5.23	0.077	0.069	0.061	0.054
	14	6.10	0.089	0.080	0.071	0.062
	16	6.97	0.102	0.092	0.082	0.071
	18	7.85	0.115	0.103	0.092	0.080
	20	8.72	0.132	0.119	0.106	0.092

	α	n (rpm)	Vf (mm/min)
α45°	30°	x 0.8	x 0.8
	15°	x 0.7	x 0.7
	0°	x 0.6	x 0.6



UH AND MH

STEEL AND HARDENED STEEL
< 70 HRC (UH) AND 30÷ 70 HRC (MH)

Nano micrograin and UH RED and MH, TiSi base coating for high performance milling on hardened steel up to 70 HRC. High reliability and long life in dry milling operation adopting high speed or high feed strategy. The cutting geometry has been specifically designed to obtain high precision and high quality surface finishing.

Nano micrograna e rivestimento UH RED e MH, a base TiSi per la fresatura di materiali temprati sino a 70 HRC. Grande affidabilità e durata nell'utilizzo di strategie di lavorazione ad alta velocità o alto avanzamento e con la possibilità di evitare l'utilizzo del refrigerante. Le geometrie di taglio specifiche garantiscono elevata precisione ed eccellente finitura della superficie lavorata.

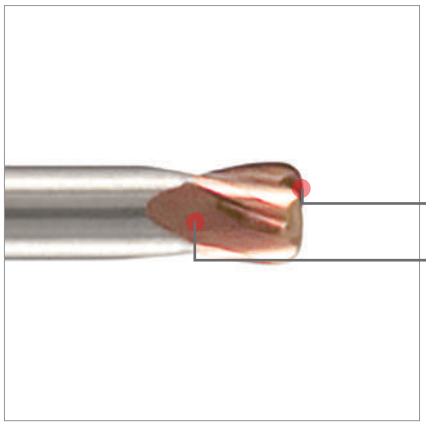
Nano-Mikrokörnung und Beschichtung UH RED und MH auf TiSi-Basis für das Fräsen von gehärteten Materialien bis zu 70 HRC. Hohe Zuverlässigkeit und lange Standzeit auch bei Bearbeitungsverfahren mit hoher Geschwindigkeit und großem Vorschub und mit der Möglichkeit, ohne Kühlmittel zu arbeiten. Die spezifischen Schnittgeometrien gewährleisten eine hohe Präzision und eine hervorragende Endbearbeitung der bearbeiteten Fläche.

Nano micrograin et revêtement UH RED et MH à base TiSi pour le fraisage de matériaux trempés jusqu'à 70 HRC. Grande fiabilité et durée dans l'utilisation stratégique d'usinage à haute vitesse ou avancement élevé et avec la possibilité d'éviter l'utilisation de lubrifiant. Les géométries de coupe spécifiques garantissent une précision élevée et une excellente finition de la surface usinée.

UH&MH

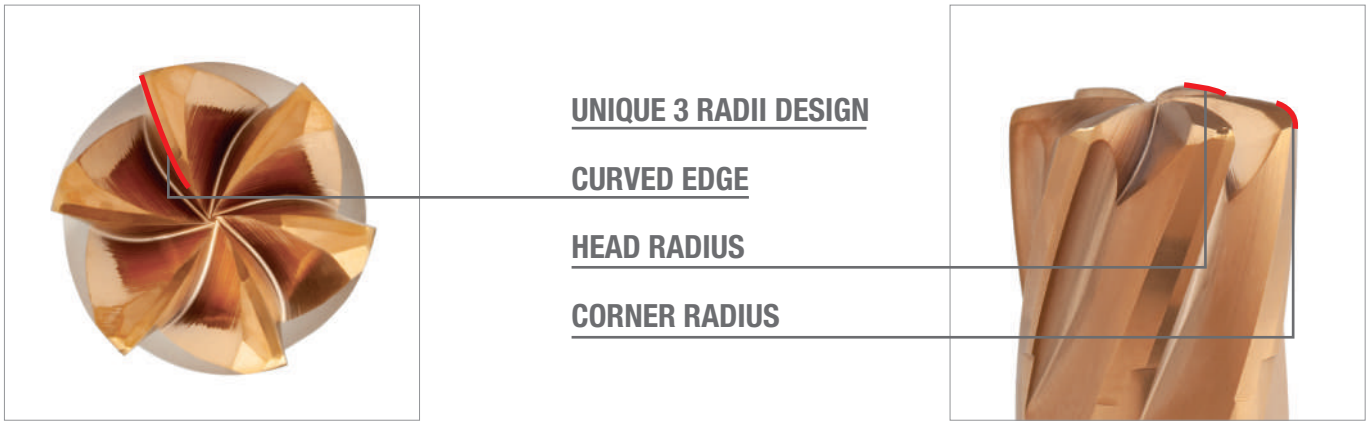
Features of UH end mills





High feed strategy UHF RT



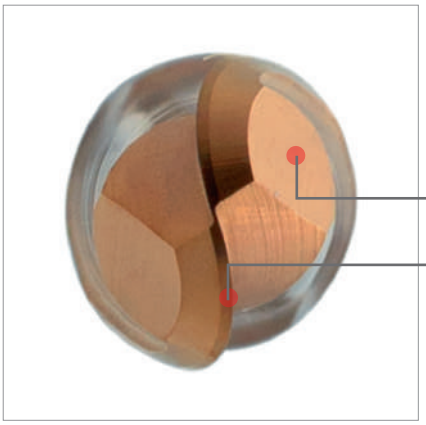


UH&MH

Features of MH end mills



NANO MICROGRAIN CARBIDE



MH COATING

SPECIAL EDGE DESIGN

Features and Benefits of UH series

• High edge quality for less chipping and reliable tool life due to the innovative grinding technology
• Great wear resistance even at high cutting speed thanks to the nano micrograin carbide
• Optimized connection shape allows greater stability during machining
• High temperature stability improved by the TiSi based nano multilayer coating
• Multi-edged endmill UHF RT with unique 3 radii geometry, specific for high feed milling on hardened steels up to 70HRC.

• Die hohe Schneidkantenqualität gewährleistet weniger Ausbrüche und eine längere Standzeit des Werkzeugs dank der innovativen Schleiftechnologie
• Hohe Verschleißfestigkeit auch bei hohen Schneidgeschwindigkeiten dank Nanomikrokorn-Hartmetall
• Die optimierte Form der Verbindung ermöglicht eine höhere Stabilität bei der Bearbeitung
• Verbesserte Stabilität bei hohen Temperaturen durch mehrschichtige Nanobeschichtung mit TiSi-Basis
• Mehrzahnfräser UHF RT mit einzigartiger 3-Radius-Geometrie, speziell für das Fräsen von gehärteten Stählen bis zu 70HRC mit hohem Vorschub.

• Elevata qualità del tagliente garantisce minori scheggiature e miglior durata dell'utensile grazie all'innovativa tecnologia di rettifica
• Grande resistenza all'usura anche a velocità di taglio elevate grazie al metallo duro nanomicrograna
• La forma ottimizzata di connessione consente una maggiore stabilità durante la lavorazione
• Stabilità alle alte temperature migliorata dal rivestimento nano multistrato con base TiSi
• Fresa multitagliente UHF RT con geometria unica a 3 raggi, specifica per fresatura ad avanzamenti elevati su acciai temprati fino a 70HRC.

• La haute qualité du tranchant garantit de moindres ébréchures et une plus longue durée de vie de l'outil grâce à la technologie innovante de rectification
• Grande résistance à l'usure y compris à haute vitesse de coupe grâce au carbure nano-micrograin
• La forme de connexion optimisée permet une stabilité accrue pendant l'usinage.
• Stabilité aux hautes températures améliorée par le revêtement nano multicouche avec base TiSi
• Fraise multi-tranchant UHF RT avec géométrie unique à 3 rayons, spéciale fraisage à grande avance sur les aciers trempés jusqu'à 70HRC.

UH&MH

Features and Benefits of MH series

• Special edge design enables high versatility for general milling, copying and super finishing on materials from 30 to 70 HRC
• High temperature stability during the machining process thanks to the MH coating
• Nano-micrograin carbide garanties excellent wear resistance and long life

• Die spezielle Schneidkantenkonstruktion ermöglicht hohe Vielseitigkeit beim allgemeinen Fräsen, Nacharbeiten und Feinstbearbeiten von Materialien von 30 bis 70 HRC
• Hohe Temperaturstabilität bei der Bearbeitung dank der MH-Beschichtung
• Das Nanokorn-Hartmetall sorgt für hervorragende Verschleißfestigkeit und lange Standzeit

• Lo speciale design del tagliente consente un'elevata versatilità in fresatura generale, copiatura e superfinitura di materiali da 30 a 70 HRC
• Stabilità alle alte temperature durante il processo di lavorazione grazie al rivestimento MH
• Il metallo duro nano-micrograna garantisce ottima resistenza all'usura e lunga durata

• La conception spéciale du tranchant permet une grande polyvalence général de fraisage, la copie et la superfinition de matériaux de 30 à 70 HRC.
• Stabilité aux hautes températures pendant le processus d'usinage grâce au revêtement MH
• Le carbure nano-micrograin garantit une excellente résistance à l'usure et une longue durée de vie

Use case

Tool Type	UHF4LN
Workpiece	W.-Nr 1.2379 X155CrVMo12 1(K110) 60HRC
Parameters	Vc 60 m/min, fz 0,01 mm/t, ap 0,04 mm, ae 1,5 mm
Coolant	air
Diameter	1,5 mm
Machining time	

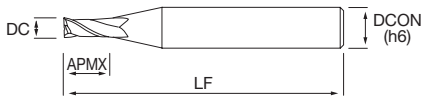


SORMA DIAMOND & CUTTING TOOLS

UHM204

- Cylindrical shank
- 2F
- Miniature

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | SQUARE | ZEFP 2 | SLOTTING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.1	0/-0.010	4	h6	0.2	40	2	**UHM200104**	◉
0.2	0/-0.010	4	h6	0.3	50	2	**UHM200204**	◉
0.3	0/-0.010	4	h6	0.4	50	2	**UHM200304**	●
0.4	0/-0.010	4	h6	0.6	50	2	**UHM200404**	◉
0.5	0/-0.010	4	h6	0.7	50	2	**UHM200504**	●
0.6	0/-0.010	4	h6	0.9	50	2	**UHM200604**	◉
0.7	0/-0.010	4	h6	1	50	2	**UHM200704**	●
0.8	0/-0.010	4	h6	1.2	50	2	**UHM200804**	◉
0.9	0/-0.010	4	h6	1.4	50	2	**UHM200904**	◉

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UHM204

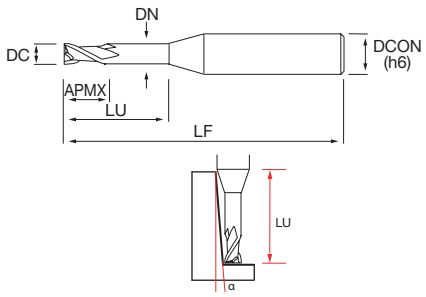
	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**80÷120**	**60÷100**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.1	0.01	0.002	0.002	0.002	0.001
	0.2	0.01	0.003	0.003	0.002	0.002
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	0.9	0.05	0.012	0.011	0.010	0.008

SORMA DIAMOND & CUTTING TOOLS

UHLN2

- Cylindrical shank
- 2F
- Extended and reduced neck

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.2	0/-0.010	4	0.3	0.5	0.16	50	2	0.57	0.59	0.61	0.63	0.68	**UHLN2002005**	●
0.2	0/-0.010	4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.21	1.3	**UHLN200201**	●
0.2	0/-0.010	4	0.3	1.5	0.16	50	2	1.6	1.66	1.72	1.78	1.91	**UHLN2002015**	◉
0.3	0/-0.010	4	0.4	1	0.26	50	2	1.09	1.12	1.16	1.21	1.3	**UHLN200301**	●
0.3	0/-0.010	4	0.4	2	0.26	50	2	2.12	2.19	2.27	2.35	2.53	**UHLN200302**	●
0.3	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.26	3.38	3.5	3.76	**UHLN200303**	●
0.4	0/-0.010	4	0.6	2	0.37	50	2	2.12	2.19	2.27	2.35	2.53	**UHLN200402**	◉
0.4	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.26	3.38	3.5	3.76	**UHLN200403**	●
0.4	0/-0.010	4	0.6	4	0.37	50	2	4.19	4.33	4.49	4.65	5	**UHLN200404**	●
0.4	0/-0.010	4	0.6	5	0.37	50	2	5.22	5.4	5.59	5.79	6.23	**UHLN200405**	●
0.5	0/-0.010	4	0.7	2	0.45	50	2	2.16	2.23	2.31	2.4	2.57	**UHLN200502**	●
0.5	0/-0.010	4	0.7	4	0.45	50	2	4.23	4.37	4.53	4.69	5.04	**UHLN200504**	●
0.5	0/-0.010	4	0.7	6	0.45	50	2	6.29	6.51	6.74	6.98	7.51	**UHLN200506**	●
0.5	0/-0.010	4	0.7	8	0.45	50	2	8.36	8.65	8.96	9.28	9.98	**UHLN200508**	●
0.6	0/-0.010	4	0.9	2	0.55	50	2	2.16	2.23	2.31	2.4	2.57	**UHLN200602**	●
0.6	0/-0.010	4	0.9	4	0.55	50	2	4.23	4.37	4.53	4.69	5.04	**UHLN200604**	●
0.6	0/-0.010	4	0.9	6	0.55	50	2	6.29	6.51	6.74	6.98	7.51	**UHLN200606**	●
0.6	0/-0.010	4	0.9	8	0.55	50	2	8.36	8.65	8.96	9.28	9.98	**UHLN200608**	●
0.6	0/-0.010	4	0.9	10	0.55	50	2	10.43	10.79	11.17	11.57	12.44	**UHLN200610**	●
0.7	0/-0.010	4	1	2	0.65	50	2	2.16	2.23	2.31	2.4	2.57	**UHLN200702**	●
0.7	0/-0.010	4	1	4	0.65	50	2	4.23	4.37	4.53	4.69	5.04	**UHLN200704**	●
0.7	0/-0.010	4	1	6	0.65	50	2	6.29	6.51	6.74	6.98	7.51	**UHLN200706**	◉
0.7	0/-0.010	4	1	8	0.65	50	2	8.36	8.65	8.96	9.28	9.98	**UHLN200708**	●
0.7	0/-0.010	4	1	10	0.65	50	2	10.43	10.79	11.17	11.57	12.44	**UHLN200710**	◉
0.8	0/-0.010	4	1.2	4	0.75	50	2	4.23	4.37	4.53	4.69	5.04	**UHLN200804**	●
0.8	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.51	6.74	6.98	7.51	**UHLN200806**	◉
0.8	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.65	8.96	9.28	9.98	**UHLN200808**	●
0.8	0/-0.010	4	1.2	10	0.75	50	2	10.43	10.79	11.17	11.57	12.44	**UHLN200810**	●
0.8	0/-0.010	4	1.2	12	0.75	50	2	12.49	12.93	13.38	13.87	14.91	**UHLN200812**	◉
0.9	0/-0.010	4	1.4	6	0.85	50	2	6.29	6.51	6.74	6.98	7.51	**UHLN200906**	●
0.9	0/-0.010	4	1.4	8	0.85	50	2	8.36	8.65	8.96	9.28	9.98	**UHLN200908**	●
0.9	0/-0.010	4	1.4	10	0.85	50	2	10.43	10.79	11.17	11.57	12.44	**UHLN200910**	●
0.9	0/-0.010	4	1.4	15	0.85	50	2	15.6	16.14	16.71	17.31	18.61	**UHLN200915**	●
1	0/-0.015	4	1.5	6	0.95	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201006**	●
1	0/-0.015	4	1.5	8	0.95	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201008**	●
1	0/-0.015	4	1.5	10	0.95	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201010**	●
1	0/-0.015	4	1.5	12	0.95	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201012**	●
1	0/-0.015	4	1.5	14	0.95	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN201014**	●
1	0/-0.015	4	1.5	16	0.95	50	2	16.73	17.3	17.92	18.56	19.96	**UHLN201016**	●
1.2	0/-0.015	4	1.8	6	1.15	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201206**	◉
1.2	0/-0.015	4	1.8	8	1.15	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201208**	●
1.2	0/-0.015	4	1.8	10	1.15	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201210**	●
1.2	0/-0.015	4	1.8	12	1.15	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201212**	●
1.4	0/-0.015	4	2.1	6	1.35	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201406**	◉
1.4	0/-0.015	4	2.1	8	1.35	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201408**	◉

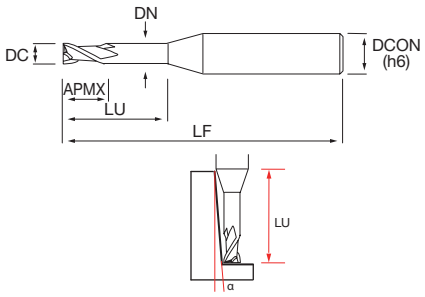
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

UHLN2

- Cylindrical shank
- 2F
- Extended and reduced neck

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1.4	0/-0.015	4	2.1	10	1.35	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201410**	●
1.4	0/-0.015	4	2.1	12	1.35	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201412**	●
1.4	0/-0.015	4	2.1	14	1.35	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN201414**	●
1.4	0/-0.015	4	2.1	16	1.35	50	2	16.73	17.3	17.92	18.56	19.96	**UHLN201416**	●
1.5	0/-0.015	4	2.3	6	1.45	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201506**	●
1.5	0/-0.015	4	2.3	8	1.45	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201508**	●
1.5	0/-0.015	4	2.3	10	1.45	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201510**	◉
1.5	0/-0.015	4	2.3	12	1.45	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201512**	●
1.5	0/-0.015	4	2.3	14	1.45	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN201514**	◉
1.5	0/-0.015	4	2.3	16	1.45	50	2	16.73	17.3	17.92	18.56	19.96	**UHLN201516**	●
1.5	0/-0.015	4	2.3	18	1.45	60	2	18.79	19.44	20.13	20.86	22.43	**UHLN201518**	●
1.5	0/-0.015	4	2.3	20	1.45	60	2	20.86	21.58	22.35	23.15	-	**UHLN201520**	●
1.6	0/-0.015	4	2.4	6	1.55	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201606**	●
1.6	0/-0.015	4	2.4	8	1.55	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201608**	●
1.6	0/-0.015	4	2.4	10	1.55	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201610**	●
1.6	0/-0.015	4	2.4	12	1.55	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201612**	●
1.6	0/-0.015	4	2.4	14	1.55	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN201614**	●
1.6	0/-0.015	4	2.4	16	1.55	50	2	16.73	17.3	17.92	18.56	19.96	**UHLN201616**	●
1.6	0/-0.015	4	2.4	18	1.55	60	2	18.79	19.44	20.13	20.86	22.43	**UHLN201618**	●
1.6	0/-0.015	4	2.4	20	1.55	60	2	20.86	21.58	22.35	23.15	-	**UHLN201620**	●
1.8	0/-0.015	4	2.7	6	1.75	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN201806**	◉
1.8	0/-0.015	4	2.7	8	1.75	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN201808**	●
1.8	0/-0.015	4	2.7	10	1.75	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN201810**	◉
1.8	0/-0.015	4	2.7	12	1.75	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN201812**	●
1.8	0/-0.015	4	2.7	14	1.75	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN201814**	●
1.8	0/-0.015	4	2.7	16	1.75	50	2	16.73	17.3	17.92	18.56	19.96	**UHLN201816**	●
1.8	0/-0.015	4	2.7	18	1.75	60	2	18.79	19.44	20.13	20.86	-	**UHLN201818**	●
1.8	0/-0.015	4	2.7	20	1.75	60	2	20.86	21.58	22.35	23.15	-	**UHLN201820**	●
2	0/-0.015	4	3	6	1.95	50	2	6.39	6.61	6.84	7.09	7.62	**UHLN202006**	●
2	0/-0.015	4	3	8	1.95	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN202008**	●
2	0/-0.015	4	3	10	1.95	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN202010**	●
2	0/-0.015	4	3	12	1.95	50	2	12.59	13.03	13.49	13.97	15.02	**UHLN202012**	●
2	0/-0.015	4	3	14	1.95	50	2	14.66	15.17	15.7	16.27	17.49	**UHLN202014**	◉
2	0/-0.015	4	3	16	1.95	50	2	16.73	17.3	17.92	18.56	-	**UHLN202016**	●
2	0/-0.015	4	3	18	1.95	60	2	18.79	19.44	20.13	20.86	-	**UHLN202018**	●
2	0/-0.015	4	3	20	1.95	60	2	20.86	21.58	22.35	23.15	-	**UHLN202020**	●
2	0/-0.015	4	3	25	1.95	75	2	26.03	26.93	27.88	-	-	**UHLN202025**	●
2	0/-0.015	4	3	30	1.95	75	2	31.2	32.28	33.42	-	-	**UHLN202030**	●
2.5	0/-0.020	4	3.7	8	2.4	50	2	8.46	8.75	9.06	9.38	10.09	**UHLN202508**	●
2.5	0/-0.020	4	3.7	10	2.4	50	2	10.52	10.89	11.27	11.68	12.56	**UHLN202510**	●
2.5	0/-0.020	4	3.7	12	2.4	50	2	12.59	13.03	13.49	13.97	-	**UHLN202512**	●
2.5	0/-0.020	4	3.7	14	2.4	50	2	14.66	15.17	15.7	16.27	-	**UHLN202514**	●
2.5	0/-0.020	4	3.7	16	2.4	50	2	16.73	17.3	17.92	18.56	-	**UHLN202516**	●
2.5	0/-0.020	4	3.7	18	2.4	60	2	18.79	19.44	20.13	20.86	-	**UHLN202518**	●
2.5	0/-0.020	4	3.7	20	2.4	60	2	20.86	21.58	22.35	-	-	**UHLN202520**	◉

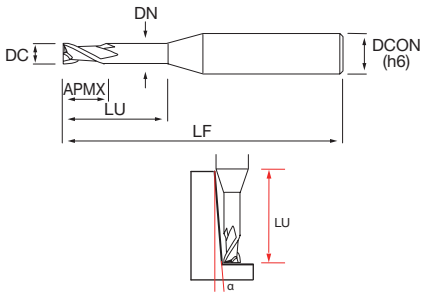
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

UHLN2

- Cylindrical shank
- 2F
- Extended and reduced neck

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | SQUARE | ZEFP 2 | SQUARE RIB

DC	DC tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
2.5	0/-0.020	4	3.7	25	2.4	75	2	24.1	24.94	25.83	-	-	**UHLN202525**	●
2.5	0/-0.020	4	3.7	30	2.4	75	2	31.2	32.28	-	-	-	**UHLN202530**	◉
3	0/-0.020	6	4.5	8	2.85	50	2	8.65	8.95	9.26	9.6	10.31	**UHLN203008**	●
3	0/-0.020	6	4.5	10	2.85	50	2	10.72	11.09	11.48	11.89	12.78	**UHLN203010**	●
3	0/-0.020	6	4.5	12	2.85	50	2	12.78	13.23	13.69	14.18	15.25	**UHLN203012**	●
3	0/-0.020	6	4.5	14	2.85	50	2	14.85	15.36	15.91	16.48	17.72	**UHLN203014**	●
3	0/-0.020	6	4.5	16	2.85	60	2	16.92	17.5	18.12	18.77	20.18	**UHLN203016**	●
3	0/-0.020	6	4.5	18	2.85	60	2	18.99	19.64	20.34	21.07	22.65	**UHLN203018**	◉
3	0/-0.020	6	4.5	20	2.85	60	2	21.05	21.78	22.55	23.36	25.12	**UHLN203020**	●
3	0/-0.020	6	4.5	25	2.85	75	2	26.22	27.13	28.09	29.1	-	**UHLN203025**	●
4	0/-0.020	6	4.5	10	3.85	60	2	10.91	11.29	11.68	12.1	13	**UHLN204010**	●
4	0/-0.020	6	4.5	15	3.85	60	2	16.08	16.63	17.22	17.84	19.17	**UHLN204015**	◉
4	0/-0.020	6	4.5	20	3.85	60	2	21.25	21.98	22.76	23.57	-	**UHLN204020**	●
4	0/-0.020	6	4.5	25	3.85	75	2	26.41	27.33	28.29	-	-	**UHLN204025**	◉
4	0/-0.020	6	4.5	30	3.85	75	2	31.58	32.67	33.83	-	-	**UHLN204030**	●
4	0/-0.020	6	4.5	40	3.85	75	2	41.92	43.37	-	-	-	**UHLN204040**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

UHLN2

SQUARE RIB

Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.2	≤ 6D	0.01	0.003	0.003	0.002	0.002
	≤ 8D	0.01	0.003	0.002	0.002	0.002
	≤ 10D	0.01	0.002	0.002	0.002	0.001
	≤ 12D	0.01	0.002	0.001	0.001	0.001
0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
	≤ 8D	0.01	0.003	0.003	0.003	0.002
	≤ 10D	0.01	0.003	0.003	0.002	0.002
	≤ 12D	0.01	0.002	0.002	0.002	0.002
0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
	≤ 8D	0.02	0.005	0.005	0.004	0.004
	≤ 10D	0.01	0.004	0.004	0.003	0.003
	≤ 12D	0.01	0.003	0.003	0.003	0.002
0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
	≤ 8D	0.02	0.006	0.005	0.005	0.004
	≤ 10D	0.02	0.005	0.004	0.004	0.003
	≤ 12D	0.01	0.004	0.003	0.003	0.003
0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
	≤ 8D	0.03	0.007	0.006	0.005	0.005
	≤ 10D	0.02	0.006	0.005	0.004	0.004
	≤ 12D	0.02	0.004	0.004	0.004	0.003
0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
	≤ 8D	0.03	0.009	0.008	0.007	0.006
	≤ 10D	0.03	0.007	0.006	0.006	0.005
	≤ 12D	0.02	0.006	0.005	0.004	0.004
1	≤ 6D	0.05	0.012	0.011	0.010	0.008
	≤ 8D	0.04	0.010	0.009	0.008	0.007
	≤ 10D	0.04	0.008	0.008	0.007	0.006
	≤ 12D	0.03	0.007	0.006	0.005	0.005
1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
	≤ 8D	0.05	0.019	0.017	0.015	0.013
	≤ 10D	0.04	0.015	0.014	0.012	0.011
	≤ 12D	0.03	0.012	0.011	0.010	0.008
1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
	≤ 8D	0.06	0.020	0.018	0.016	0.014
	≤ 10D	0.05	0.017	0.015	0.013	0.012
	≤ 12D	0.04	0.013	0.012	0.011	0.009
	≤ 15D	0.03	0.011	0.010	0.009	0.008
	> 15D	0.02	0.007	0.006	0.006	0.005
1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
	≤ 8D	0.06	0.021	0.019	0.017	0.015
	≤ 10D	0.05	0.018	0.016	0.014	0.012
	≤ 12D	0.04	0.014	0.012	0.011	0.010
	≤ 15D	0.03	0.011	0.010	0.009	0.008
	> 15D	0.02	0.008	0.007	0.006	0.005
1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
	≤ 8D	0.07	0.022	0.020	0.018	0.015
	≤ 10D	0.06	0.018	0.016	0.015	0.013
	≤ 12D	0.04	0.014	0.013	0.011	0.010
	≤ 15D	0.04	0.012	0.011	0.009	0.008
	> 15D	0.02	0.008	0.007	0.006	0.005

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UHLN2

SQUARE RIB

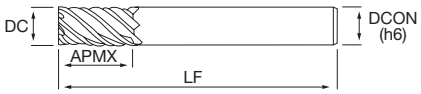
Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.024	0.021	0.019	0.017
	≤ 10D	0.06	0.020	0.018	0.016	0.014
	≤ 12D	0.05	0.015	0.014	0.012	0.011
	≤ 15D	0.04	0.013	0.011	0.010	0.009
	> 15D	0.03	0.008	0.008	0.007	0.006
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.026	0.023	0.020	0.018
	≤ 10D	0.07	0.021	0.019	0.017	0.015
	≤ 12D	0.06	0.017	0.015	0.013	0.012
	≤ 15D	0.05	0.014	0.012	0.011	0.009
	> 15D	0.03	0.009	0.008	0.007	0.006
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.030	0.027	0.024	0.021
	≤ 10D	0.09	0.025	0.022	0.020	0.017
	≤ 12D	0.07	0.019	0.017	0.015	0.013
	≤ 15D	0.06	0.016	0.014	0.013	0.011
	> 15D	0.04	0.011	0.009	0.008	0.007
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.034	0.031	0.027	0.024
	≤ 10D	0.11	0.028	0.025	0.022	0.020
	≤ 12D	0.08	0.022	0.020	0.018	0.015
	≤ 15D	0.07	0.018	0.016	0.014	0.013
	> 15D	0.05	0.012	0.011	0.010	0.008
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.043	0.038	0.034	0.030
	≤ 10D	0.14	0.035	0.032	0.028	0.025
	≤ 12D	0.11	0.028	0.025	0.022	0.019
	≤ 15D	0.09	0.023	0.020	0.018	0.016
	> 15D	0.06	0.015	0.014	0.012	0.011

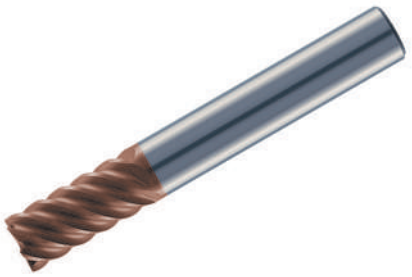
SORMA DIAMOND & CUTTING TOOLS

UH600

- Cylindrical shank
- Multi flute

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 50° | SQUARE | ZEFP 6~8 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	0/-0.020	6	h6	8	50	6	**UH600030**	●
4	0/-0.020	6	h6	11	50	6	**UH600040**	●
5	0/-0.020	6	h6	13	50	6	**UH600050**	●
6	0/-0.020	6	h6	20	60	6	**UH600060**	●
8	0/-0.020	8	h6	20	64	6	**UH600080**	●
10	0/-0.020	10	h6	22	70	6	**UH600100**	●
12	0/-0.020	12	h6	25	75	6	**UH600120**	●
14	0/-0.020	14	h6	30	90	6	**UH600140**	●
16	0/-0.020	16	h6	30	90	8	**UH600160**	●
20	0/-0.020	20	h6	38	100	8	**UH600200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH600

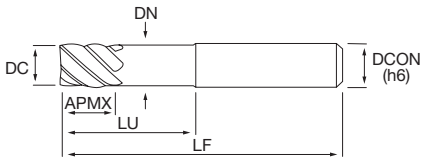
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**140÷180**	**100÷140**	**80÷100**	**60÷80**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.008	0.007	0.006
	4	0.012	0.011	0.010	0.008
	5	0.014	0.013	0.012	0.010
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029
	14	0.048	0.043	0.038	0.034
	16	0.056	0.051	0.045	0.039
	18	0.066	0.059	0.053	0.046
	20	0.078	0.070	0.062	0.055

SORMA DIAMOND & CUTTING TOOLS

UH612

- Cylindrical shank
- Multi flute
- Long

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 50° | SQUARE | ZEFP 6~8 | L SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.025	6	h6	19	30	2.8	75	6	**UH612030**	●
4	0/-0.025	6	h6	19	32	3.7	75	6	**UH612040**	●
5	0/-0.025	6	h6	19	32	4.6	75	6	**UH612050**	●
6	0/-0.025	6	h6	38	60	5.5	100	6	**UH612060**	●
8	0/-0.025	8	h6	41	60	7.4	100	6	**UH612080**	●
10	0/-0.025	10	h6	57	85	9.2	125	6	**UH612100**	●
12	0/-0.025	12	h6	75	110	11	150	6	**UH612120**	●
16	0/-0.025	16	h6	75	110	15	150	8	**UH612160**	●
20	0/-0.025	20	h6	75	110	19	150	8	**UH612200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

UH612

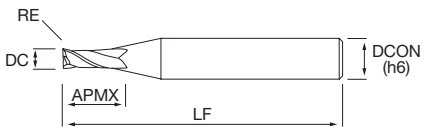
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**90÷130**	**70÷110**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.007	0.006	0.006	0.005
	4	0.010	0.009	0.008	0.007
	5	0.012	0.011	0.010	0.009
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024
	14	0.041	0.037	0.033	0.029
	16	0.048	0.043	0.038	0.034
	20	0.066	0.060	0.053	0.046

SORMA DIAMOND & CUTTING TOOLS

UHM206

- Cylindrical shank
- 2F
- Miniature
- Corner radius
- 6 mm. shank

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 40° | SQUARE | RADIUS | ZEFP 2 | SLOTTING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.3	0/-0.012	-	-	6	h6	0.45	50	2	**UHM200306**	●
0.4	0/-0.012	-	-	6	h6	0.6	50	2	**UHM200406**	●
0.5	0/-0.012	0.05	±0.010	6	h6	0.7	50	2	**UHM200506**	●
0.6	0/-0.012	0.05	±0.010	6	h6	0.9	50	2	**UHM200606**	●
0.8	0/-0.012	0.05	±0.010	6	h6	1.2	50	2	**UHM200806**	●
1	0/-0.012	0.1	±0.010	6	h6	1.5	50	2	**UHM201006**	●
1.5	0/-0.012	0.15	±0.010	6	h6	2.2	50	2	**UHM201506**	●
2	0/-0.012	0.15	±0.010	6	h6	2.2	50	2	**UHM202006**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

UHM206

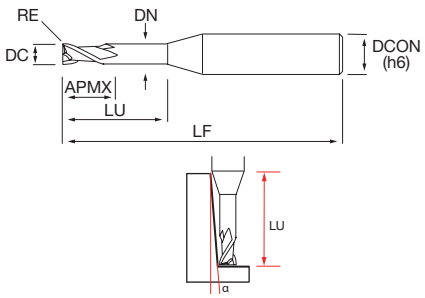
	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**80÷120**	**60÷100**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	1	0.05	0.012	0.011	0.010	0.008
	1.5	0.08	0.025	0.023	0.020	0.018
	2	0.10	0.030	0.027	0.024	0.021

SORMA DIAMOND & CUTTING TOOLS

UH211

- Cylindrical shank
- 2F
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1	0/-0.012	0.1	0/-0.010	4	2	4	0.95	50	2	4.36	4.6	4.86	5.16	5.89	**UH2110100104**	●
1	0/-0.012	0.1	0/-0.010	4	2	6	0.95	50	2	6.46	6.82	7.21	7.66	8.74	**UH2110100106**	●
1	0/-0.012	0.1	0/-0.010	4	2	8	0.9	50	2	8.45	8.73	9	9.27	9.81	**UH2110100108**	●
1	0/-0.012	0.2	0/-0.010	4	2	4	0.95	50	2	4.36	4.6	4.86	5.16	5.89	**UH2110100204**	●
1	0/-0.012	0.2	0/-0.010	4	2	8	0.95	50	2	8.57	9.04	9.56	10.15	11.18	**UH2110100208**	●
1	0/-0.012	0.3	0/-0.010	4	2	4	0.9	50	2	4.31	4.44	4.57	4.7	4.97	**UH2110100304**	●
1	0/-0.012	0.3	0/-0.010	4	2	8	0.95	50	2	8.57	9.04	9.56	10.15	11.18	**UH2110100308**	●
1.5	0/-0.012	0.1	0/-0.010	4	2.5	6	1.45	50	2	6.3	6.52	6.75	7.01	7.57	**UH2110150106**	●
1.5	0/-0.012	0.1	0/-0.010	4	2.5	10	1.45	50	2	10.43	10.8	11.19	11.61	12.55	**UH2110150110**	●
1.5	0/-0.012	0.2	0/-0.010	4	2.5	8	1.45	50	2	8.37	8.66	8.97	9.31	10.06	**UH2110150208**	●
1.5	0/-0.012	0.2	0/-0.010	4	2.5	12	1.45	50	2	12.5	12.94	13.4	13.91	15.03	**UH2110150212**	●
2	0/-0.012	0.1	0/-0.010	4	3	6	1.95	50	2	6.3	6.52	6.75	7.01	7.57	**UH2110200106**	●
2	0/-0.012	0.1	0/-0.010	4	3	12	1.95	50	2	12.5	12.94	13.4	13.91	15.03	**UH2110200112**	●
2	0/-0.012	0.2	0/-0.010	4	3	6	1.95	50	2	6.3	6.52	6.75	7.01	7.57	**UH2110200206**	●
2	0/-0.012	0.2	0/-0.010	4	3	12	1.95	50	2	12.5	12.94	13.4	13.91	15.03	**UH2110200212**	●
2	0/-0.012	0.3	0/-0.010	4	3	8	1.95	50	2	8.37	8.66	8.97	9.31	10.06	**UH2110200308**	●
2	0/-0.012	0.3	0/-0.010	4	3	12	1.95	50	2	12.5	12.94	13.4	13.91	15.03	**UH2110200312**	●
2	0/-0.012	0.3	0/-0.010	4	3	16	1.95	50	2	16.64	17.21	17.84	18.5	-	**UH2110200316**	●
2	0/-0.012	0.5	0/-0.010	4	3	6	1.95	50	2	6.3	6.52	6.75	7.01	7.57	**UH2110200506**	●
2	0/-0.012	0.5	0/-0.010	4	3	12	1.95	50	2	12.5	12.94	13.4	13.91	15.03	**UH2110200512**	●
3	0/-0.012	0.3	0/-0.010	6	4.5	10	2.8	55	2	10.71	11.04	11.38	11.72	12.4	**UH2110300310**	●
3	0/-0.012	0.3	0/-0.010	6	4.5	16	2.85	55	2	16.83	17.41	18.04	18.72	20.24	**UH2110300316**	●
3	0/-0.012	0.5	0/-0.010	6	4.5	10	2.85	55	2	10.63	11	11.39	11.82	12.78	**UH2110300510**	●
3	0/-0.012	0.5	0/-0.010	6	4.5	16	2.85	55	2	16.83	17.41	18.04	18.72	20.24	**UH2110300516**	●
4	0/-0.012	0.2	0/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	**UH2110400220**	●
4	0/-0.012	0.3	0/-0.010	6	6	12	3.85	55	2	12.69	13.14	13.61	14.12	15.27	**UH2110400312**	●
4	0/-0.012	0.3	0/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	**UH2110400320**	●
4	0/-0.012	0.5	0/-0.010	6	6	12	3.85	55	2	12.69	13.14	13.61	14.12	15.27	**UH2110400512**	●
4	0/-0.012	0.5	0/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	**UH2110400520**	●
4	0/-0.012	1	0/-0.010	6	6	16	3.85	55	2	16.83	17.41	18.04	18.72	-	**UH2110401016**	●
6	0/-0.015	0.5	0/-0.010	6	9	15	5.85	60	2	-	-	-	-	-	**UH2110600520**	●
6	0/-0.015	1	0/-0.010	6	9	15	5.85	60	2	-	-	-	-	-	**UH2110601020**	●
6	0/-0.015	2	0/-0.010	6	9	15	5.85	60	2	-	-	-	-	-	**UH2110602020**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

UH211



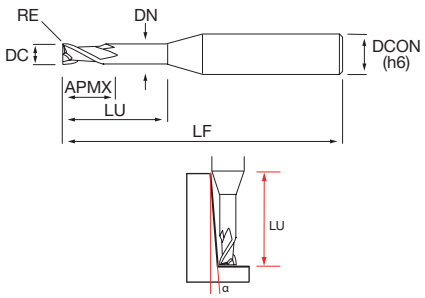
Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	≤ 6D	0.05	0.012	0.011	0.010	0.008
	≤ 8D	0.04	0.010	0.009	0.008	0.007
	≤ 10D	0.04	0.008	0.008	0.007	0.006
	≤ 12D	0.03	0.007	0.006	0.005	0.005
1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
	≤ 8D	0.06	0.021	0.019	0.017	0.015
	≤ 10D	0.05	0.018	0.016	0.014	0.012
	≤ 12D	0.04	0.014	0.012	0.011	0.010
	≤ 15D	0.03	0.011	0.010	0.009	0.008
	> 15D	0.02	0.008	0.007	0.006	0.005
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.026	0.023	0.020	0.018
	≤ 10D	0.07	0.021	0.019	0.017	0.015
	≤ 12D	0.06	0.017	0.015	0.013	0.012
	≤ 15D	0.05	0.014	0.012	0.011	0.009
	> 15D	0.03	0.009	0.008	0.007	0.006
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.030	0.027	0.024	0.021
	≤ 10D	0.09	0.025	0.022	0.020	0.017
	≤ 12D	0.07	0.019	0.017	0.015	0.013
	≤ 15D	0.06	0.016	0.014	0.013	0.011
	> 15D	0.04	0.011	0.009	0.008	0.007
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.034	0.031	0.027	0.024
	≤ 10D	0.11	0.028	0.025	0.022	0.020
	≤ 12D	0.08	0.022	0.020	0.018	0.015
	≤ 15D	0.07	0.018	0.016	0.014	0.013
	> 15D	0.05	0.012	0.011	0.010	0.008
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.043	0.038	0.034	0.030
	≤ 10D	0.14	0.035	0.032	0.028	0.025
	≤ 12D	0.11	0.028	0.025	0.022	0.019
	≤ 15D	0.09	0.023	0.020	0.018	0.016
	> 15D	0.06	0.015	0.014	0.012	0.011
6	≤ 6D	0.30	0.070	0.063	0.056	0.049
	≤ 8D	0.26	0.060	0.054	0.048	0.042
	≤ 10D	0.21	0.049	0.044	0.039	0.034
	≤ 12D	0.17	0.039	0.035	0.031	0.027
	> 15D	0.14	0.032	0.028	0.025	0.022

SORMA DIAMOND & CUTTING TOOLS

UH212

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.2	0/-0.010	0.02	0/-0.010	4	0.3	0.5	0.16	50	2	0.57	0.59	0.6	0.62	0.66	UH21200202005	◉
0.2	0/-0.010	0.02	0/-0.010	4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.19	1.26	UH2120020201	◉
0.2	0/-0.010	0.02	0/-0.010	4	0.3	1.5	0.16	50	2	1.6	1.65	1.71	1.76	1.86	UH21200202015	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	1	0.26	50	2	1.09	1.12	1.15	1.19	1.26	UH21200300501	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	2	0.26	50	2	2.12	2.19	2.26	2.32	2.46	UH21200300502	●
0.3	0/-0.010	0.03	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.25	3.36	3.46	3.66	UH21200300303	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	3	0.26	50	2	3.15	3.25	3.36	3.46	3.66	UH21200300503	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	2	0.37	50	2	2.12	2.19	2.26	2.32	2.46	UH21200400502	◉
0.4	0/-0.010	0.03	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.25	3.36	3.46	3.66	UH21200400303	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	3	0.37	50	2	3.15	3.25	3.36	3.46	3.66	UH21200400503	●
0.4	0/-0.010	0.03	0/-0.010	4	0.6	4	0.37	50	2	4.19	4.32	4.46	4.59	4.86	UH21200400304	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	4	0.37	50	2	4.19	4.32	4.46	4.59	4.86	UH21200400504	●
0.4	0/-0.010	0.03	0/-0.010	4	0.6	5	0.37	50	2	5.22	5.39	5.56	5.73	6.07	UH21200400305	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	5	0.37	50	2	5.22	5.39	5.56	5.73	6.07	UH21200400505	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	2	0.45	50	2	2.16	2.23	2.29	2.36	2.5	UH21200500502	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	4	0.45	50	2	4.22	4.36	4.5	4.63	4.9	UH21200500504	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	6	0.45	50	2	6.29	6.49	6.7	6.9	7.31	UH21200500506	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	8	0.45	50	2	8.36	8.63	8.9	9.17	9.71	UH21200500508	●
0.6	0/-0.010	0.05	0/-0.010	4	0.9	2	0.55	50	2	2.16	2.23	2.29	2.36	2.5	UH21200600502	◉
0.6	0/-0.010	0.05	0/-0.010	4	0.9	4	0.55	50	2	4.22	4.36	4.5	4.63	4.9	UH21200600504	◉
0.6	0/-0.010	0.05	0/-0.010	4	0.9	6	0.55	50	2	6.29	6.49	6.7	6.9	7.31	UH21200600506	●
0.6	0/-0.010	0.05	0/-0.010	4	0.9	8	0.55	50	2	8.36	8.63	8.9	9.17	9.71	UH21200600508	●
0.6	0/-0.010	0.05	0/-0.010	4	0.9	10	0.55	50	2	10.43	10.76	11.1	11.44	12.12	UH21200600510	◉
0.7	0/-0.010	0.1	0/-0.010	4	1	2	0.65	50	2	2.16	2.22	2.29	2.36	2.49	UH21200701002	◉
0.7	0/-0.010	0.08	0/-0.010	4	1	4	0.65	50	2	4.22	4.36	4.49	4.63	4.9	UH21200700804	●
0.7	0/-0.010	0.1	0/-0.010	4	1	4	0.65	50	2	4.22	4.36	4.49	4.63	4.9	UH21200701004	●
0.7	0/-0.010	0.1	0/-0.010	4	1	6	0.65	50	2	6.29	6.49	6.69	6.9	7.3	UH21200701006	◉
0.7	0/-0.010	0.1	0/-0.010	4	1	8	0.65	50	2	8.36	8.63	8.9	9.17	9.71	UH21200701008	◉
0.7	0/-0.010	0.1	0/-0.010	4	1	10	0.65	50	2	10.42	10.76	11.1	11.44	12.11	UH21200701010	◉
0.8	0/-0.010	0.1	0/-0.010	4	1.2	4	0.75	50	2	4.22	4.36	4.49	4.63	4.9	UH21200801004	◉
0.8	0/-0.010	0.08	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.49	6.69	6.9	7.3	UH21200800806	●
0.8	0/-0.010	0.1	0/-0.010	4	1.2	6	0.75	50	2	6.29	6.49	6.69	6.9	7.3	UH21200801006	●
0.8	0/-0.010	0.08	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.63	8.9	9.17	9.71	UH21200800808	●
0.8	0/-0.010	0.1	0/-0.010	4	1.2	8	0.75	50	2	8.36	8.63	8.9	9.17	9.71	UH21200801008	●
0.8	0/-0.010	0.08	0/-0.010	4	1.2	10	0.75	50	2	10.42	10.76	11.1	11.44	12.11	UH21200800810	●
0.8	0/-0.010	0.1	0/-0.010	4	1.2	10	0.75	50	2	10.42	10.76	11.1	11.44	12.11	UH21200801010	●
0.8	0/-0.010	0.1	0/-0.010	4	1.2	12	0.75	50	2	12.49	12.9	13.3	13.7	14.51	UH21200801012	◉
0.9	0/-0.010	0.08	0/-0.010	4	1.4	6	0.85	50	2	6.29	6.49	6.69	6.9	7.3	UH21200900806	●
0.9	0/-0.010	0.1	0/-0.010	4	1.4	6	0.85	50	2	6.29	6.49	6.69	6.9	7.3	UH21200901006	●
0.9	0/-0.010	0.08	0/-0.010	4	1.4	8	0.85	50	2	8.36	8.63	8.9	9.17	9.71	UH21200900808	●
0.9	0/-0.010	0.1	0/-0.010	4	1.4	8	0.85	50	2	8.36	8.63	8.9	9.17	9.71	UH21200901008	●
0.9	0/-0.010	0.08	0/-0.010	4	1.4	10	0.85	50	2	10.42	10.76	11.1	11.44	12.11	UH21200900810	●
0.9	0/-0.010	0.1	0/-0.010	4	1.4	10	0.85	50	2	10.42	10.76	11.1	11.44	12.11	UH21200901010	●
0.9	0/-0.010	0.08	0/-0.010	4	1.4	15	0.85	50	2	15.59	16.1	16.6	17.11	18.12	UH21200900815	●
0.9	0/-0.010	0.1	0/-0.010	4	1.4	15	0.85	50	2	15.59	16.1	16.6	17.11	18.12	UH21200901015	●

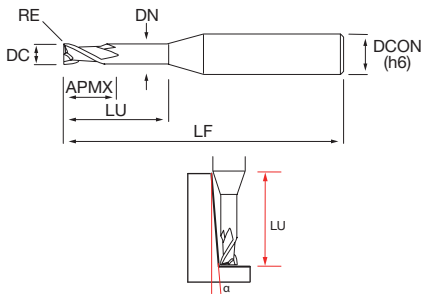
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

UH212

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1	0/-0.015	0.1	0/-0.010	4	1.5	6	0.95	50	2	6.39	6.59	6.8	7	7.41	UH2120100106	●
1	0/-0.015	0.1	0/-0.010	4	1.5	8	0.95	50	2	8.45	8.73	9	9.27	9.81	UH2120100108	●
1	0/-0.015	0.1	0/-0.010	4	1.5	10	0.95	50	2	10.52	10.86	11.2	11.54	12.22	UH2120100110	●
1	0/-0.015	0.1	0/-0.010	4	1.5	12	0.95	50	2	12.59	12.99	13.4	13.81	14.62	UH2120100112	●
1	0/-0.015	0.1	0/-0.010	4	1.5	14	0.95	50	2	14.66	15.13	15.6	16.08	17.03	UH2120100114	●
1	0/-0.015	0.1	0/-0.010	4	1.5	16	0.95	50	2	16.72	17.26	17.8	18.35	19.43	UH2120100116	◉
1.2	0/-0.015	0.1	0/-0.010	4	1.8	6	1.15	50	2	6.39	6.59	6.8	7	7.41	UH2120120106	●
1.2	0/-0.015	0.1	0/-0.010	4	1.8	8	1.15	50	2	8.45	8.73	9	9.27	9.81	UH2120120108	◉
1.2	0/-0.015	0.1	0/-0.010	4	1.8	10	1.15	50	2	10.52	10.86	11.2	11.54	12.22	UH2120120110	◉
1.2	0/-0.015	0.1	0/-0.010	4	1.8	12	1.15	50	2	12.59	12.99	13.4	13.81	14.62	UH2120120112	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	6	1.35	50	2	6.38	6.59	6.79	6.99	7.4	UH21201401006	●
1.4	0/-0.015	0.15	0/-0.010	4	2.1	8	1.35	50	2	8.45	8.72	8.99	9.26	9.8	UH21201401508	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	8	1.35	50	2	8.45	8.72	8.99	9.26	9.8	UH21201401008	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	10	1.35	50	2	10.52	10.86	11.19	11.53	12.21	UH21201401010	◉
1.4	0/-0.015	0.15	0/-0.010	4	2.1	12	1.35	50	2	12.59	12.99	13.4	13.8	14.61	UH21201401512	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	12	1.35	50	2	12.59	12.99	13.4	13.8	14.61	UH21201401012	●
1.4	0/-0.015	0.15	0/-0.010	4	2.1	14	1.35	50	2	14.65	15.13	15.6	16.07	17.02	UH21201401514	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	14	1.35	50	2	14.65	15.13	15.6	16.07	17.02	UH21201401014	●
1.4	0/-0.015	0.15	0/-0.010	4	2.1	16	1.35	50	2	16.72	17.26	17.8	18.34	19.42	UH21201401516	●
1.4	0/-0.015	0.1	0/-0.010	4	2.1	16	1.35	50	2	16.72	17.26	17.8	18.34	19.42	UH21201401016	●
1.5	0/-0.015	0.15	0/-0.010	4	2.3	6	1.45	50	2	6.38	6.59	6.79	6.99	7.4	UH21201501506	◉
1.5	0/-0.015	0.15	0/-0.010	4	2.3	8	1.45	50	2	8.45	8.72	8.99	9.26	9.8	UH21201501508	●
1.5	0/-0.015	0.15	0/-0.010	4	2.3	10	1.45	50	2	10.52	10.86	11.19	11.53	12.21	UH21201501510	◉
1.5	0/-0.015	0.15	0/-0.010	4	2.3	12	1.45	50	2	12.59	12.99	13.4	13.8	14.61	UH21201501512	●
1.5	0/-0.015	0.15	0/-0.010	4	2.3	14	1.45	50	2	14.65	15.13	15.6	16.07	17.02	UH21201501514	●
1.5	0/-0.015	0.15	0/-0.010	4	2.3	16	1.45	50	2	16.72	17.26	17.8	18.34	19.42	UH21201501516	◉
1.5	0/-0.015	0.15	0/-0.010	4	2.3	18	1.45	60	2	18.79	19.39	20	20.61	21.82	UH21201501518	●
1.5	0/-0.015	0.15	0/-0.010	4	2.3	20	1.45	50	2	20.86	21.53	22.2	22.88	24.23	UH21201501520	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	6	1.55	50	2	6.38	6.59	6.79	6.99	7.4	UH21201602006	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	8	1.55	50	2	8.45	8.72	8.99	9.26	9.8	UH21201601508	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	8	1.55	50	2	8.45	8.72	8.99	9.26	9.8	UH21201602008	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	10	1.55	50	2	10.52	10.86	11.19	11.53	12.21	UH21201601510	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	10	1.55	50	2	10.52	10.86	11.19	11.53	12.21	UH21201602010	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	12	1.55	50	2	12.59	12.99	13.4	13.8	14.61	UH21201601512	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	12	1.55	50	2	12.59	12.99	13.4	13.8	14.61	UH21201602012	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	14	1.55	50	2	14.65	15.13	15.6	16.07	17.02	UH21201601514	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	14	1.55	50	2	14.65	15.13	15.6	16.07	17.02	UH21201602014	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	16	1.55	50	2	16.72	17.26	17.8	18.34	19.42	UH21201601516	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	16	1.55	50	2	16.72	17.26	17.8	18.34	19.42	UH21201602016	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	18	1.55	60	2	18.79	19.39	20	20.61	21.82	UH21201601518	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	18	1.55	50	2	18.79	19.39	20	20.61	21.82	UH21201602018	●
1.6	0/-0.015	0.15	0/-0.010	4	2.4	20	1.55	60	2	20.86	21.53	22.2	22.88	24.23	UH21201601520	●
1.6	0/-0.015	0.2	0/-0.010	4	2.4	20	1.55	50	2	20.86	21.53	22.2	22.88	24.23	UH21201602020	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	6	1.75	50	2	6.38	6.58	6.79	6.99	7.39	UH2120180206	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	8	1.75	50	2	8.45	8.72	8.99	9.26	9.79	UH2120180208	◉

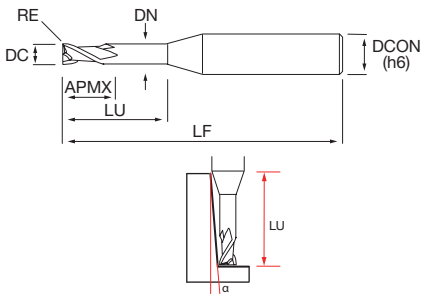
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

UH212

- Cylindrical shank
- 2 flutes
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 2 | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1.8	0/-0.015	0.2	0/-0.010	4	2.7	10	1.75	50	2	10.52	10.85	11.19	11.52	12.2	UH2120180210	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	12	1.75	50	2	12.58	12.99	13.39	13.79	14.6	UH2120180212	◉
1.8	0/-0.015	0.2	0/-0.010	4	2.7	14	1.75	50	2	14.65	15.12	15.59	16.06	17.01	UH2120180214	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	16	1.75	50	2	16.72	17.26	17.79	18.33	19.41	UH2120180216	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	18	1.75	60	2	18.79	19.39	20	20.6	21.81	UH2120180218	●
1.8	0/-0.015	0.2	0/-0.010	4	2.7	20	1.75	60	2	20.85	21.53	22.2	22.87	24.22	UH2120180220	●
2	0/-0.015	0.2	0/-0.010	4	3	6	1.95	50	2	6.38	6.58	6.79	6.99	7.39	UH2120200206	●
2	0/-0.015	0.2	0/-0.010	4	3	8	1.95	50	2	8.45	8.72	8.99	9.26	9.79	UH2120200208	●
2	0/-0.015	0.2	0/-0.010	4	3	10	1.95	50	2	10.52	10.85	11.19	11.52	12.2	UH2120200210	●
2	0/-0.015	0.2	0/-0.010	4	3	12	1.95	50	2	12.58	12.99	13.39	13.79	14.6	UH2120200212	●
2	0/-0.015	0.2	0/-0.010	4	3	14	1.95	50	2	14.65	15.12	15.59	16.06	17.01	UH2120200214	●
2	0/-0.015	0.2	0/-0.010	4	3	16	1.95	50	2	16.72	17.26	17.79	18.33	19.41	UH2120200216	●
2	0/-0.015	0.2	0/-0.010	4	3	18	1.95	60	2	18.79	19.39	20	20.6	21.81	UH2120200218	●
2	0/-0.015	0.2	0/-0.010	4	3	20	1.95	60	2	20.85	21.53	22.2	22.87	-	UH2120200220	●
2	0/-0.015	0.2	0/-0.010	4	3	25	1.95	75	2	26.02	26.86	27.7	28.54	-	UH2120200225	●
2	0/-0.015	0.2	0/-0.010	4	3	30	1.95	75	2	31.19	32.2	33.21	-	-	UH2120200230	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	8	2.4	50	2	8.45	8.71	8.98	9.24	9.77	UH2120250308	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	10	2.4	50	2	10.51	10.85	11.18	11.51	12.18	UH2120250310	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	12	2.4	50	2	12.58	12.98	13.38	13.78	14.58	UH2120250312	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	14	2.4	50	2	14.65	15.12	15.58	16.05	-	UH2120250314	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	16	2.4	50	2	16.72	17.25	17.78	18.32	-	UH2120250316	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	18	2.4	60	2	18.78	19.38	19.99	20.59	-	UH2120250318	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	20	2.4	60	2	20.85	21.52	22.19	22.86	-	UH2120250320	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	25	2.4	60	2	26.02	26.86	27.69	-	-	UH2120250325	●
2.5	0/-0.020	0.3	0/-0.015	4	3.7	30	2.4	75	2	31.19	32.19	-	-	-	UH2120250330	●
3	0/-0.025	0.3	0/-0.015	6	4.5	8	2.85	50	2	8.64	8.91	9.18	9.45	10	UH2120300308	●
3	0/-0.025	0.3	0/-0.015	6	4.5	10	2.85	50	2	10.71	11.04	11.38	11.72	12.4	UH2120300310	●
3	0/-0.025	0.3	0/-0.015	6	4.5	12	2.85	50	2	12.77	13.18	13.59	13.99	14.8	UH2120300312	◉
3	0/-0.025	0.3	0/-0.015	6	4.5	14	2.85	50	2	14.84	15.31	15.79	16.26	17.21	UH2120300314	●
3	0/-0.025	0.3	0/-0.015	6	4.5	16	2.85	60	2	16.91	17.45	17.99	18.53	19.61	UH2120300316	◉
3	0/-0.025	0.3	0/-0.015	6	4.5	18	2.85	60	2	18.98	19.58	20.19	20.8	22.02	UH2120300318	●
3	0/-0.025	0.3	0/-0.015	6	4.5	20	2.85	60	2	21.04	21.72	22.39	23.07	24.42	UH2120300320	●
3	0/-0.025	0.3	0/-0.015	6	4.5	25	2.85	75	2	26.21	27.05	27.9	28.74	30.43	UH2120300325	●
4	0/-0.025	0.4	0/-0.015	6	4.5	10	3.85	60	2	10.9	11.24	11.58	11.92	12.6	UH2120400410	●
4	0/-0.025	0.4	0/-0.015	6	4.5	15	3.85	60	2	16.06	16.57	17.08	17.59	18.61	UH2120400415	●
4	0/-0.025	0.4	0/-0.015	6	4.5	20	3.85	60	2	21.23	21.91	22.59	23.27	-	UH2120400420	●
4	0/-0.025	0.4	0/-0.015	6	4.5	25	3.85	75	2	26.4	27.25	28.09	28.94	-	UH2120400425	●
4	0/-0.025	0.4	0/-0.015	6	4.5	30	3.85	75	2	31.57	32.58	33.6	-	-	UH2120400430	●
4	0/-0.025	0.4	0/-0.015	6	4.5	40	3.85	75	2	41.9	43.25	-	-	-	UH2120400440	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

UH212

	Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
	DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SQUARE RIB	0.2	≤ 6D	0.01	0.003	0.003	0.002	0.002
		≤ 8D	0.01	0.003	0.002	0.002	0.002
		≤ 10D	0.01	0.002	0.002	0.002	0.001
		≤ 12D	0.01	0.002	0.001	0.001	0.001
	0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
		≤ 8D	0.01	0.003	0.003	0.003	0.002
		≤ 10D	0.01	0.003	0.003	0.002	0.002
		≤ 12D	0.01	0.002	0.002	0.002	0.002
	0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
		≤ 8D	0.02	0.005	0.005	0.004	0.004
		≤ 10D	0.01	0.004	0.004	0.003	0.003
		≤ 12D	0.01	0.003	0.003	0.003	0.002
	0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
		≤ 8D	0.02	0.006	0.005	0.005	0.004
		≤ 10D	0.02	0.005	0.004	0.004	0.003
		≤ 12D	0.01	0.004	0.003	0.003	0.003
	0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
		≤ 8D	0.03	0.007	0.006	0.005	0.005
		≤ 10D	0.02	0.006	0.005	0.004	0.004
		≤ 12D	0.02	0.004	0.004	0.004	0.003
	0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
		≤ 8D	0.03	0.009	0.008	0.007	0.006
		≤ 10D	0.03	0.007	0.006	0.006	0.005
		≤ 12D	0.02	0.006	0.005	0.004	0.004
	1	≤ 6D	0.05	0.012	0.011	0.010	0.008
		≤ 8D	0.04	0.010	0.009	0.008	0.007
		≤ 10D	0.04	0.008	0.008	0.007	0.006
		≤ 12D	0.03	0.007	0.006	0.005	0.005
	1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
		≤ 8D	0.05	0.019	0.017	0.015	0.013
		≤ 10D	0.04	0.015	0.014	0.012	0.011
		≤ 12D	0.03	0.012	0.011	0.010	0.008
	1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
		≤ 8D	0.06	0.020	0.018	0.016	0.014
		≤ 10D	0.05	0.017	0.015	0.013	0.012
		≤ 12D	0.04	0.013	0.012	0.011	0.009
		≤ 15D	0.03	0.011	0.010	0.009	0.008
		> 15D	0.02	0.007	0.006	0.006	0.005
	1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
		≤ 8D	0.06	0.021	0.019	0.017	0.015
		≤ 10D	0.05	0.018	0.016	0.014	0.012
		≤ 12D	0.04	0.014	0.012	0.011	0.010
		≤ 15D	0.03	0.011	0.010	0.009	0.008
		≥ 15D	0.02	0.008	0.007	0.006	0.005
	1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
		≤ 8D	0.07	0.022	0.020	0.018	0.015
		≤ 10D	0.06	0.018	0.016	0.015	0.013
		≤ 12D	0.04	0.014	0.013	0.011	0.010
		≤ 15D	0.04	0.012	0.011	0.009	0.008
		> 15D	0.02	0.008	0.007	0.006	0.005

Cutting Parameters

UH212

SQUARE RIB

Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.2	≤ 6D	0.01	0.003	0.003	0.002	0.002
	≤ 8D	0.01	0.003	0.002	0.002	0.002
	≤ 10D	0.01	0.002	0.002	0.002	0.001
	≤ 12D	0.01	0.002	0.001	0.001	0.001
0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
	≤ 8D	0.01	0.003	0.003	0.003	0.002
	≤ 10D	0.01	0.003	0.003	0.002	0.002
	≤ 12D	0.01	0.002	0.002	0.002	0.002
0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
	≤ 8D	0.02	0.005	0.005	0.004	0.004
	≤ 10D	0.01	0.004	0.004	0.003	0.003
	≤ 12D	0.01	0.003	0.003	0.003	0.002
0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
	≤ 8D	0.02	0.006	0.005	0.005	0.004
	≤ 10D	0.02	0.005	0.004	0.004	0.003
	≤ 12D	0.01	0.004	0.003	0.003	0.003
0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
	≤ 8D	0.03	0.007	0.006	0.005	0.005
	≤ 10D	0.02	0.006	0.005	0.004	0.004
	≤ 12D	0.02	0.004	0.004	0.004	0.003
0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
	≤ 8D	0.03	0.009	0.008	0.007	0.006
	≤ 10D	0.03	0.007	0.006	0.006	0.005
	≤ 12D	0.02	0.006	0.005	0.004	0.004
1	≤ 6D	0.05	0.012	0.011	0.010	0.008
	≤ 8D	0.04	0.010	0.009	0.008	0.007
	≤ 10D	0.04	0.008	0.008	0.007	0.006
	≤ 12D	0.03	0.007	0.006	0.005	0.005
1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
	≤ 8D	0.05	0.019	0.017	0.015	0.013
	≤ 10D	0.04	0.015	0.014	0.012	0.011
	≤ 12D	0.03	0.012	0.011	0.010	0.008
1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
	≤ 8D	0.06	0.020	0.018	0.016	0.014
	≤ 10D	0.05	0.017	0.015	0.013	0.012
	≤ 12D	0.04	0.013	0.012	0.011	0.009
	≤ 15D	0.03	0.011	0.010	0.009	0.008
	> 15D	0.02	0.007	0.006	0.006	0.005
1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
	≤ 8D	0.06	0.021	0.019	0.017	0.015
	≤ 10D	0.05	0.018	0.016	0.014	0.012
	≤ 12D	0.04	0.014	0.012	0.011	0.010
	≤ 15D	0.03	0.011	0.010	0.009	0.008
	≥ 15D	0.02	0.008	0.007	0.006	0.005
1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
	≤ 8D	0.07	0.022	0.020	0.018	0.015
	≤ 10D	0.06	0.018	0.016	0.015	0.013
	≤ 12D	0.04	0.014	0.013	0.011	0.010
	≤ 15D	0.04	0.012	0.011	0.009	0.008
	> 15D	0.02	0.008	0.007	0.006	0.005

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH212

SQUARE RIB

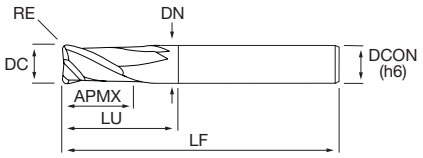
Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.024	0.021	0.019	0.017
	≤ 10D	0.06	0.020	0.018	0.016	0.014
	≤ 12D	0.05	0.015	0.014	0.012	0.011
	≤ 15D	0.04	0.013	0.011	0.010	0.009
	> 15D	0.03	0.008	0.008	0.007	0.006
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.026	0.023	0.020	0.018
	≤ 10D	0.07	0.021	0.019	0.017	0.015
	≤ 12D	0.06	0.017	0.015	0.013	0.012
	≤ 15D	0.05	0.014	0.012	0.011	0.009
	> 15D	0.03	0.009	0.008	0.007	0.006
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.030	0.027	0.024	0.021
	≤ 10D	0.09	0.025	0.022	0.020	0.017
	≤ 12D	0.07	0.019	0.017	0.015	0.013
	≤ 15D	0.06	0.016	0.014	0.013	0.011
	> 15D	0.04	0.011	0.009	0.008	0.007
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.034	0.031	0.027	0.024
	≤ 10D	0.11	0.028	0.025	0.022	0.020
	≤ 12D	0.08	0.022	0.020	0.018	0.015
	≤ 15D	0.07	0.018	0.016	0.014	0.013
	> 15D	0.05	0.012	0.011	0.010	0.008
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.043	0.038	0.034	0.030
	≤ 10D	0.14	0.035	0.032	0.028	0.025
	≤ 12D	0.11	0.028	0.025	0.022	0.019
	≤ 15D	0.09	0.023	0.020	0.018	0.016
	> 15D	0.06	0.015	0.014	0.012	0.011

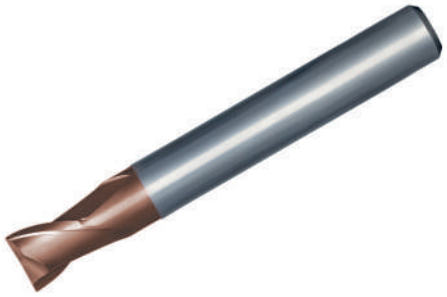
SORMA DIAMOND & CUTTING TOOLS

UHCS2

- Cylindrical shank
- 2F
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 2 | SLOTTING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.012	0.1	±0.010	4	h6	2	3	0.95	50	2	**UHCS2010**	●
1.5	0/-0.012	0.1	±0.010	4	h6	2.5	4	1.45	50	2	**UHCS2015**	●
2	0/-0.012	0.1	±0.010	4	h6	3	6	1.95	50	2	**UHCS2020**	●
3	0/-0.012	0.1	±0.010	6	h6	4.5	8	2.85	55	2	**UHCS2030**	●
4	0/-0.012	0.1	±0.010	6	h6	6	10	3.85	55	2	**UHCS2040**	●
5	0/-0.012	0.2	±0.010	6	h6	6	11	4.85	50	2	**UHCS2050**	●
6	0/-0.015	0.2	±0.010	6	h6	9	15	5.85	60	2	**UHCS2060**	●
8	0/-0.015	0.2	±0.015	8	h6	12	20	7.7	70	2	**UHCS2080**	●
10	0/-0.015	0.2	±0.015	10	h6	15	25	9.7	70	2	**UHCS2100**	●
12	0/-0.015	0.3	±0.015	12	h6	18	30	11.7	80	2	**UHCS2120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

UHCS2

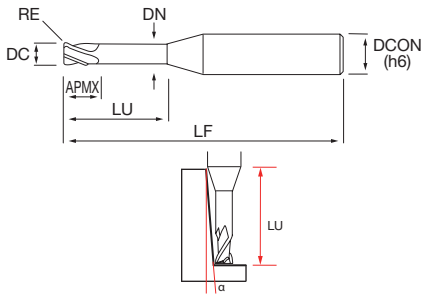
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**0.3D x D**	**0.2D x D**	**0.2D x D**	**0.1D x D**
	Vc (m/min)	**80÷120**	**60÷100**	**50÷70**	**30÷50**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.007	0.006	0.006	0.005
	2	0.012	0.011	0.010	0.008
	3	0.017	0.015	0.014	0.012
	4	0.023	0.021	0.018	0.016
	5	0.030	0.027	0.024	0.021
	6	0.038	0.034	0.030	0.027
	8	0.050	0.045	0.040	0.035
	10	0.065	0.059	0.052	0.046
	12	0.080	0.072	0.064	0.056

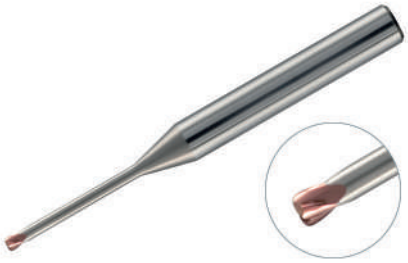
SORMA DIAMOND & CUTTING TOOLS

UHF4LN

- Cylindrical shank
- 4F Unequal Pitch
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 25° | RADIUS | ZEFP 4 UP | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1	0/-0.010	0.1	±0.005	4	1	4	0.9	50	4	4.32	4.46	4.62	4.78	5.13	UHF4LN0100104	●
1	0/-0.010	0.1	±0.005	4	1	6	0.9	50	4	6.39	6.6	6.83	7.08	7.6	UHF4LN0100106	●
1	0/-0.010	0.1	±0.005	4	1	8	0.9	50	4	8.45	8.74	9.05	9.37	10.07	UHF4LN0100108	●
1	0/-0.010	0.1	±0.005	4	1	10	0.9	50	4	10.52	10.88	11.26	11.66	12.53	UHF4LN0100110	◉
1	0/-0.010	0.1	±0.005	4	1	12	0.9	50	4	12.59	13.02	13.48	13.96	15	UHF4LN0100112	●
1	0/-0.010	0.1	±0.005	4	1	14	0.9	50	4	14.66	15.16	15.69	16.25	17.47	UHF4LN0100114	●
1	0/-0.010	0.1	±0.005	4	1	16	0.9	50	4	16.72	17.3	17.91	18.55	19.94	UHF4LN0100116	◉
1	0/-0.010	0.1	±0.005	4	1	20	0.9	75	4	20.86	21.57	22.33	23.14	24.87	UHF4LN0100120	●
1	0/-0.010	0.2	±0.005	4	1	4	0.9	50	4	4.32	4.46	4.61	4.77	5.11	UHF4LN0100204	●
1	0/-0.010	0.2	±0.005	4	1	6	0.9	50	4	6.38	6.6	6.82	7.06	7.57	UHF4LN0100206	●
1	0/-0.010	0.2	±0.005	4	1	8	0.9	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0100208	●
1	0/-0.010	0.2	±0.005	4	1	10	0.9	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0100210	●
1	0/-0.010	0.2	±0.005	4	1	12	0.9	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0100212	◉
1	0/-0.010	0.2	±0.005	4	1	14	0.9	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0100214	●
1	0/-0.010	0.2	±0.005	4	1	16	0.9	50	4	16.72	17.29	17.89	18.53	19.91	UHF4LN0100216	●
1	0/-0.010	0.2	±0.005	4	1	20	0.9	60	4	20.85	21.57	22.32	23.12	24.85	UHF4LN0100220	◉
1	0/-0.010	0.3	±0.005	4	1	6	0.9	50	4	6.38	6.59	6.81	7.05	7.55	UHF4LN0100306	●
1	0/-0.010	0.3	±0.005	4	1	10	0.9	50	4	10.51	10.87	11.24	11.63	12.49	UHF4LN0100310	●
1	0/-0.010	0.3	±0.005	4	1	16	0.9	50	4	16.72	17.28	17.88	18.52	19.89	UHF4LN0100316	●
1	0/-0.010	0.3	±0.005	4	1	20	0.9	60	4	20.85	21.56	22.31	23.11	24.82	UHF4LN0100320	◉
1.5	0/-0.010	0.1	±0.005	4	1.5	6	1.4	50	4	6.39	6.6	6.83	7.08	7.6	UHF4LN0150106	●
1.5	0/-0.010	0.1	±0.005	4	1.5	8	1.4	50	4	8.45	8.74	9.05	9.37	10.07	UHF4LN0150108	●
1.5	0/-0.010	0.1	±0.005	4	1.5	12	1.4	50	4	12.59	13.02	13.48	13.96	15	UHF4LN0150112	●
1.5	0/-0.010	0.1	±0.005	4	1.5	16	1.4	50	4	16.72	17.3	17.91	18.55	19.94	UHF4LN0150116	◉
1.5	0/-0.010	0.1	±0.005	4	1.5	20	1.4	60	4	20.86	21.57	22.33	23.14	-	UHF4LN0150120	●
1.5	0/-0.010	0.2	±0.005	4	1.5	6	1.4	50	4	6.38	6.6	6.82	7.06	7.57	UHF4LN0150206	●
1.5	0/-0.010	0.2	±0.005	4	1.5	8	1.4	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0150208	●
1.5	0/-0.010	0.2	±0.005	4	1.5	10	1.4	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0150210	●
1.5	0/-0.010	0.2	±0.005	4	1.5	12	1.4	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0150212	●
1.5	0/-0.010	0.2	±0.005	4	1.5	14	1.4	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0150214	●
1.5	0/-0.010	0.2	±0.005	4	1.5	16	1.4	50	4	16.72	17.29	17.89	18.53	19.91	UHF4LN0150216	●
1.5	0/-0.010	0.2	±0.005	4	1.5	18	1.4	60	4	18.79	19.43	20.11	20.83	22.38	UHF4LN0150218	●
1.5	0/-0.010	0.2	±0.005	4	1.5	20	1.4	60	4	20.85	21.57	22.32	23.12	-	UHF4LN0150220	●
1.5	0/-0.010	0.3	±0.005	4	1.5	8	1.4	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0150308	◉
1.5	0/-0.010	0.3	±0.005	4	1.5	16	1.4	50	4	16.72	17.28	17.88	18.52	19.89	UHF4LN0150316	●
1.5	0/-0.010	0.3	±0.005	4	1.5	20	1.4	60	4	20.85	21.56	22.31	23.11	-	UHF4LN0150320	●
2	0/-0.010	0.2	±0.005	4	2	6	1.9	50	4	6.38	6.6	6.82	7.06	7.57	UHF4LN0200206	●
2	0/-0.010	0.2	±0.005	4	2	8	1.9	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0200208	●
2	0/-0.010	0.2	±0.005	4	2	10	1.9	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0200210	●
2	0/-0.010	0.2	±0.005	4	2	12	1.9	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0200212	●
2	0/-0.010	0.2	±0.005	4	2	14	1.9	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0200214	●
2	0/-0.010	0.2	±0.005	4	2	16	1.9	50	4	16.72	17.29	17.89	18.53	-	UHF4LN0200216	●
2	0/-0.010	0.2	±0.005	4	2	18	1.9	60	4	18.79	19.43	20.11	20.83	-	UHF4LN0200218	●
2	0/-0.010	0.2	±0.005	4	2	20	1.9	60	4	20.85	21.57	22.32	23.12	-	UHF4LN0200220	●
2	0/-0.010	0.2	±0.005	4	2	25	1.9	75	4	26.02	26.91	27.86	-	-	UHF4LN0200225	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

UHF4LN

- Cylindrical shank
- 4F Unequal Pitch
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
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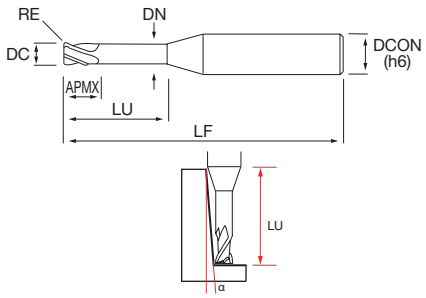
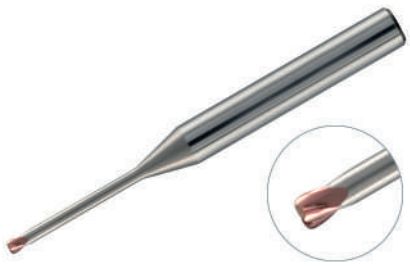




OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 25° | RADIUS | ZEFP 4 UP | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
2	0/-0.010	0.2	±0.005	4	2	30	1.9	75	4	31.19	32.26	33.4	-	-	UHF4LN0200230	●
2	0/-0.010	0.3	±0.005	4	2	8	1.9	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0200308	●
2	0/-0.010	0.3	±0.005	4	2	16	1.9	50	4	16.72	17.28	17.88	18.52	-	UHF4LN0200316	●
2	0/-0.010	0.3	±0.005	4	2	20	1.9	60	4	20.85	21.56	22.31	23.11	-	UHF4LN0200320	◉
2	0/-0.010	0.5	±0.005	4	2	6	1.9	50	4	6.37	6.58	6.79	7.02	7.5	UHF4LN0200506	●
2	0/-0.010	0.5	±0.005	4	2	8	1.9	50	4	8.44	8.71	9	9.31	9.97	UHF4LN0200508	●
2	0/-0.010	0.5	±0.005	4	2	12	1.9	50	4	12.57	12.99	13.43	13.9	14.91	UHF4LN0200512	●
2	0/-0.010	0.5	±0.005	4	2	16	1.9	50	4	16.71	17.27	17.86	18.49	-	UHF4LN0200516	●
2	0/-0.010	0.5	±0.005	4	2	20	1.9	60	4	20.84	21.55	22.29	23.08	-	UHF4LN0200520	●
2	0/-0.010	0.5	±0.005	4	2	25	1.9	75	4	26.01	26.89	27.83	28.82	-	UHF4LN0200525	◉
2	0/-0.010	0.5	±0.005	4	2	30	1.9	75	4	31.18	32.24	33.36	-	-	UHF4LN0200530	●
2.5	0/-0.015	0.3	±0.005	4	2.5	8	2.4	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0250308	●
2.5	0/-0.015	0.3	±0.005	4	2.5	10	2.4	50	4	10.51	10.87	11.24	11.63	12.49	UHF4LN0250310	●
2.5	0/-0.015	0.3	±0.005	4	2.5	12	2.4	50	4	12.58	13.01	13.45	13.93	-	UHF4LN0250312	●
2.5	0/-0.015	0.3	±0.005	4	2.5	14	2.4	50	4	14.65	15.14	15.67	16.22	-	UHF4LN0250314	●
2.5	0/-0.015	0.3	±0.005	4	2.5	16	2.4	50	4	16.72	17.28	17.88	18.52	-	UHF4LN0250316	●
2.5	0/-0.015	0.3	±0.005	4	2.5	18	2.4	60	4	18.78	19.42	20.1	20.81	-	UHF4LN0250318	◉
2.5	0/-0.015	0.3	±0.005	4	2.5	20	2.4	60	4	20.85	21.56	22.31	-	-	UHF4LN0250320	◉
2.5	0/-0.015	0.3	±0.005	4	2.5	25	2.4	60	4	26.02	26.91	27.85	-	-	UHF4LN0250325	●
2.5	0/-0.015	0.3	±0.005	4	2.5	30	2.4	75	4	31.19	32.25	-	-	-	UHF4LN0250330	●
2.5	0/-0.015	0.5	±0.005	4	2.5	8	2.4	50	4	8.44	8.71	9	9.31	9.97	UHF4LN0250508	●
2.5	0/-0.015	0.5	±0.005	4	2.5	12	2.4	50	4	12.57	12.99	13.43	13.9	-	UHF4LN0250512	●
2.5	0/-0.015	0.5	±0.005	4	2.5	16	2.4	50	4	16.71	17.27	17.86	18.49	-	UHF4LN0250516	◉
2.5	0/-0.015	0.5	±0.005	4	2.5	20	2.4	60	4	20.84	21.55	22.29	-	-	UHF4LN0250520	●
2.5	0/-0.015	0.5	±0.005	4	2.5	25	2.4	60	4	26.01	26.89	27.83	-	-	UHF4LN0250525	◉
2.5	0/-0.015	0.5	±0.005	4	2.5	30	2.4	75	4	31.18	32.24	-	-	-	UHF4LN0250530	◉
3	0/-0.015	0.2	±0.010	6	3	8	2.8	50	4	8.64	8.93	9.24	9.57	10.27	UHF4LN0300208	●
3	0/-0.015	0.2	±0.010	6	3	10	2.8	50	4	10.71	11.07	11.46	11.86	12.73	UHF4LN0300210	●
3	0/-0.015	0.2	±0.010	6	3	12	2.8	50	4	12.78	13.21	13.67	14.16	15.2	UHF4LN0300212	●
3	0/-0.015	0.2	±0.010	6	3	14	2.8	50	4	14.84	15.35	15.89	16.45	17.67	UHF4LN0300214	●
3	0/-0.015	0.2	±0.010	6	3	16	2.8	60	4	16.91	17.49	18.1	18.74	20.14	UHF4LN0300216	●
3	0/-0.015	0.2	±0.010	6	3	18	2.8	60	4	18.98	19.63	20.31	21.04	22.6	UHF4LN0300218	●
3	0/-0.015	0.2	±0.010	6	3	20	2.8	60	4	21.05	21.77	22.53	23.33	25.07	UHF4LN0300220	●
3	0/-0.015	0.2	±0.010	6	3	25	2.8	75	4	26.21	27.11	28.07	29.07	-	UHF4LN0300225	●
3	0/-0.015	0.3	±0.010	6	3	8	2.8	50	4	8.64	8.93	9.23	9.55	10.24	UHF4LN0300308	●
3	0/-0.015	0.3	±0.010	6	3	10	2.8	50	4	10.71	11.07	11.45	11.85	12.71	UHF4LN0300310	◉
3	0/-0.015	0.3	±0.010	6	3	12	2.8	50	4	12.77	13.2	13.66	14.14	15.18	UHF4LN0300312	◉
3	0/-0.015	0.3	±0.010	6	3	14	2.8	50	4	14.84	15.34	15.87	16.44	17.64	UHF4LN0300314	●
3	0/-0.015	0.3	±0.010	6	3	16	2.8	60	4	16.91	17.48	18.09	18.73	20.11	UHF4LN0300316	●
3	0/-0.015	0.3	±0.010	6	3	18	2.8	60	4	18.98	19.62	20.3	21.02	22.58	UHF4LN0300318	●
3	0/-0.015	0.3	±0.010	6	3	20	2.8	60	4	21.04	21.76	22.52	23.32	25.05	UHF4LN0300320	●
3	0/-0.015	0.3	±0.010	6	3	30	2.8	75	4	31.38	32.45	33.59	34.79	-	UHF4LN0300330	●
3	0/-0.015	0.5	±0.010	6	3	8	2.8	50	4	8.63	8.91	9.21	9.52	10.2	UHF4LN0300508	●
3	0/-0.015	0.5	±0.010	6	3	10	2.8	50	4	10.7	11.05	11.42	11.82	12.66	UHF4LN0300510	●
3	0/-0.015	0.5	±0.010	6	3	12	2.8	50	4	12.77	13.19	13.64	14.11	15.13	UHF4LN0300512	●

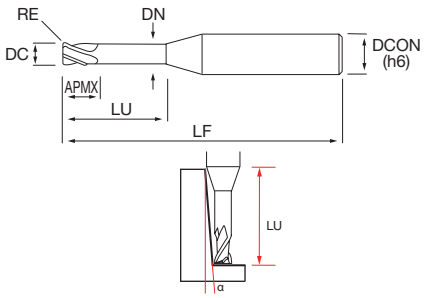
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

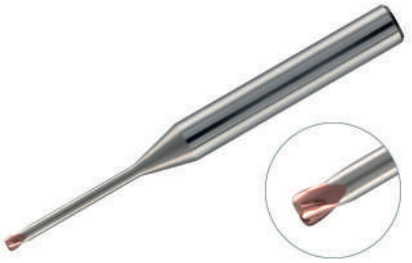
SORMA DIAMOND & CUTTING TOOLS

UHF4LN

- Cylindrical shank
- 4F Unequal Pitch
- Extended and reduced neck
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 25° | RADIUS | ZEFP 4 UP | SQUARE RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
3	0/-0.015	0.5	±0.010	6	3	14	2.8	50	4	14.83	15.33	15.85	16.41	17.6	**UHF4LN0300514**	●
3	0/-0.015	0.5	±0.010	6	3	16	2.8	60	4	16.9	17.47	18.07	18.7	20.07	**UHF4LN0300516**	●
3	0/-0.015	0.5	±0.010	6	3	18	2.8	60	4	18.97	19.61	20.28	20.99	22.53	**UHF4LN0300518**	●
3	0/-0.015	0.5	±0.010	6	3	20	2.8	60	4	21.04	21.75	22.5	23.29	25	**UHF4LN0300520**	●
3	0/-0.015	0.5	±0.010	6	3	30	2.8	75	4	31.37	32.44	33.57	34.76	-	**UHF4LN0300530**	●
4	0/-0.015	0.3	±0.010	6	4	10	3.7	60	4	10.9	11.26	11.65	12.06	12.93	**UHF4LN0400310**	●
4	0/-0.015	0.3	±0.010	6	4	15	3.7	60	4	16.07	16.61	17.19	17.79	19.1	**UHF4LN0400315**	●
4	0/-0.015	0.3	±0.010	6	4	20	3.7	60	4	21.24	21.96	22.72	23.53	-	**UHF4LN0400320**	●
4	0/-0.015	0.3	±0.010	6	4	25	3.7	75	4	26.4	27.31	28.26	-	-	**UHF4LN0400325**	●
4	0/-0.015	0.3	±0.010	6	4	32	3.7	75	4	33.64	34.79	36.01	-	-	**UHF4LN0400332**	◉
4	0/-0.015	0.3	±0.010	6	4	40	3.7	75	4	41.91	43.35	-	-	-	**UHF4LN0400340**	◉
4	0/-0.015	0.5	±0.010	6	4	10	3.7	60	4	10.89	11.25	11.63	12.03	12.89	**UHF4LN0400510**	●
4	0/-0.015	0.5	±0.010	6	4	15	3.7	60	4	16.06	16.6	17.17	17.76	19.06	**UHF4LN0400515**	●
4	0/-0.015	0.5	±0.010	6	4	20	3.7	60	4	21.23	21.94	22.7	23.5	-	**UHF4LN0400520**	●
4	0/-0.015	0.5	±0.010	6	4	25	3.7	75	4	26.4	27.29	28.24	-	-	**UHF4LN0400525**	●
4	0/-0.015	0.5	±0.010	6	4	32	3.7	75	4	33.63	34.78	35.99	-	-	**UHF4LN0400532**	●
4	0/-0.015	0.5	±0.010	6	4	40	3.7	75	4	41.9	43.33	-	-	-	**UHF4LN0400540**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

UHF4LN

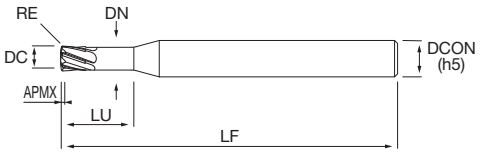
	Material Group ISO 513			P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm			≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)			**80÷120**	**60÷100**	**50÷70**	**30÷50**
	DC (mm)	LU (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SQUARE RIB	1	≤ 6D	0.05	0.010	0.009	0.008	0.007
		≤ 8D	0.04	0.009	0.008	0.007	0.006
		≤ 10D	0.04	0.007	0.006	0.006	0.005
		≤ 12D	0.03	0.006	0.005	0.004	0.004
	1.5	≤ 6D	0.08	0.021	0.019	0.017	0.015
		≤ 8D	0.06	0.018	0.016	0.014	0.013
		≤ 10D	0.05	0.015	0.013	0.012	0.010
		≤ 12D	0.04	0.012	0.011	0.009	0.008
		≤ 15D	0.03	0.010	0.009	0.008	0.007
		> 15D	0.02	0.006	0.006	0.005	0.004
	2	≤ 6D	0.10	0.026	0.023	0.020	0.018
		≤ 8D	0.09	0.022	0.020	0.017	0.015
		≤ 10D	0.07	0.018	0.016	0.014	0.012
		≤ 12D	0.06	0.014	0.013	0.011	0.010
		≤ 15D	0.05	0.011	0.010	0.009	0.008
		> 15D	0.03	0.008	0.007	0.006	0.005
	2.5	≤ 6D	0.13	0.030	0.027	0.024	0.021
		≤ 8D	0.11	0.025	0.023	0.020	0.018
		≤ 10D	0.09	0.021	0.019	0.017	0.015
		≤ 12D	0.07	0.016	0.015	0.013	0.011
		≤ 15D	0.06	0.013	0.012	0.011	0.009
		> 15D	0.04	0.009	0.008	0.007	0.006
	3	≤ 6D	0.15	0.034	0.031	0.027	0.024
		≤ 8D	0.13	0.029	0.026	0.023	0.020
		≤ 10D	0.11	0.024	0.021	0.019	0.017
		≤ 12D	0.08	0.019	0.017	0.015	0.013
		≤ 15D	0.07	0.015	0.014	0.012	0.011
		> 15D	0.05	0.010	0.009	0.008	0.007
	4	≤ 6D	0.20	0.043	0.038	0.034	0.030
		≤ 8D	0.17	0.036	0.033	0.029	0.025
		≤ 10D	0.14	0.030	0.027	0.024	0.021
		≤ 12D	0.11	0.023	0.021	0.019	0.016
		≤ 15D	0.09	0.019	0.017	0.015	0.013
		> 15D	0.06	0.013	0.011	0.010	0.009

SORMA DIAMOND & CUTTING TOOLS

UHF-RT

- Cylindrical shank
- Multi flute
- Unique corner radius design for high feed machining

P	M	K	N	S	H
☆					★

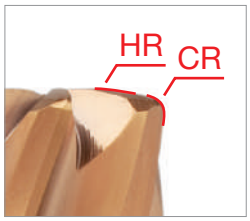




OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 20° | HIGH FEED | ZEFP 4~6 | 3D MACHINING

DC	DC tol.	RP	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
2	-0.014/-0.038	0.13	6	h5	0.07	6	1.9	50	4	**UHF470RT020N**	●
3	-0.014/-0.038	0.19	6	h5	0.1	9	2.9	60	4	**UHF470RT030N**	●
4	-0.014/-0.038	0.25	6	h5	0.13	12	3.9	60	6	**UHF670RT040N**	●
5	-0.014/-0.038	0.31	6	h5	0.17	15	4.7	60	6	**UHF670RT050N**	●
6	-0.014/-0.038	0.38	6	h5	0.2	18	5.5	60	6	**UHF670RT060N**	●
8	-0.014/-0.038	0.5	8	h5	0.27	24	7.5	75	6	**UHF670RT080N**	●
10	-0.014/-0.038	0.63	10	h5	0.33	30	9.5	90	6	**UHF670RT100N**	●
12	-0.014/-0.038	0.75	12	h5	0.4	36	11.5	100	6	**UHF670RT120N**	●

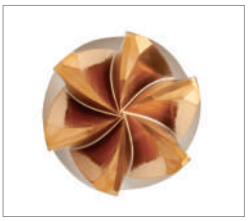
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



The geometry with combined radius (corner radius + head radius) create thinner chips in comparison with conventional full radius, allowing a great reduction of cutting forces.



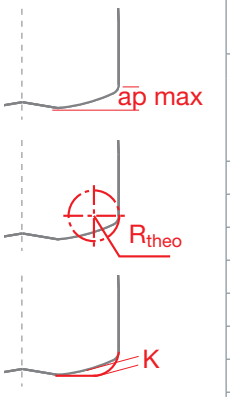
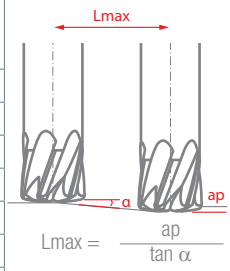
Special "no-contact" area in the end mill center, together with low helix geometry, reduce drastically the vibration, even when machining at corners.



Curved cutting edges reduce chattering and improve the chips flow.

UHF-RT

	Material Group ISO 513	P6 H1 H4 H5	H2	H3	
	Hardness/Rm	45÷55 HRC	55÷60 HRC	60÷65 HRC	
	ap x ae	**0.03D x 0.55D**	**0.03D x 0.55D**	**0.03D x 0.55D**	
3D MACHINING	Vc (m/min)	**100÷120**	**80÷100**	**50÷70**	
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	2	0.070	0.050	0.040	
	3	0.100	0.080	0.060	
	4	0.150	0.100	0.080	
	5	0.200	0.120	0.100	
	6	0.250	0.200	0.150	
	8	0.350	0.250	0.200	
	10	0.400	0.300	0.250	
	12	0.450	0.350	0.300	

DC	ap max	CAM input			Circular interpolation			Cutting length for linear ramping Lmax (αmax=5°)		
		RP	max unmachined part K		Ø min	Ø max		EXAMPLE α=0.5°	EXAMPLE α=5°	
2	**0.07**	0.189	0.051		2.9	3.8		8.02	0.80	
3	**0.10**	0.283	0.076		4.3	5.8		11.46	1.14	
4	**0.13**	0.378	0.102		5.7	7.8		14.90	1.49	
5	**0.17**	0.472	0.127		7.1	9.8		19.48	1.94	
6	**0.20**	0.567	0.152		8.6	11.8		22.92	2.29	
8	**0.27**	0.756	0.203		11.4	15.8		30.94	3.09	
10	**0.33**	0.945	0.254		14.2	19.8		37.81	3.77	
12	**0.40**	1.134	0.305		17.1	23.8		45.84	4.57	

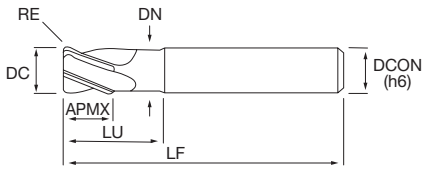
(mm)

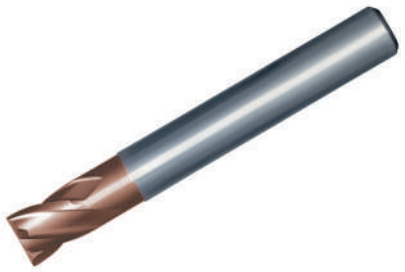
SORMA DIAMOND & CUTTING TOOLS

UHCS4

- Cylindrical shank
- 4F
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.012	0.1	±0.010	4	h6	2	3	0.95	50	4	**UHCS4010**	●
1.5	0/-0.012	0.1	±0.010	4	h6	2.5	4	1.45	50	4	**UHCS4015**	●
2	0/-0.012	0.1	±0.010	4	h6	3	6	1.95	50	4	**UHCS4020**	●
3	0/-0.012	0.1	±0.010	6	h6	4	8	2.85	55	4	**UHCS4030**	●
4	0/-0.012	0.1	±0.010	6	h6	6	10	3.85	55	4	**UHCS4040**	●
5	0/-0.012	0.2	±0.010	6	h6	6	11	4.85	50	4	**UHCS4050**	●
6	0/-0.015	0.2	±0.010	6	h6	9	15	5.85	60	4	**UHCS4060**	●
8	0/-0.015	0.2	±0.015	8	h6	12	20	7.7	70	4	**UHCS4080**	●
10	0/-0.015	0.2	±0.015	10	h6	15	25	9.7	70	4	**UHCS4100**	●
12	0/-0.015	0.3	±0.015	12	h6	18	30	11.7	80	4	**UHCS4120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UHCS4

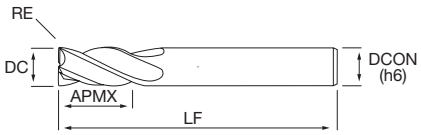
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**90÷130**	**60÷100**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.010	0.009	0.008	0.007
	2	0.020	0.018	0.016	0.014
	3	0.030	0.027	0.024	0.021
	4	0.040	0.036	0.032	0.028
	5	0.045	0.041	0.036	0.032
	6	0.050	0.045	0.040	0.035
	8	0.065	0.059	0.052	0.046
	10	0.085	0.077	0.068	0.060
	12	0.100	0.090	0.080	0.070

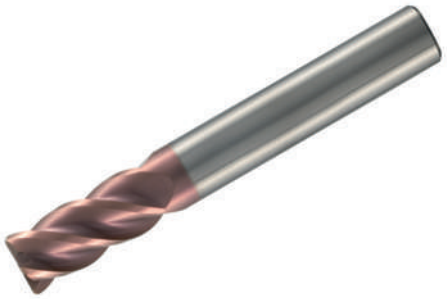
SORMA DIAMOND & CUTTING TOOLS

UH410

- Cylindrical shank
- 4F
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 4 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.015	0.2	0/-0.010	6	h6	3	50	4	**UH41001002**	●
1.5	0/-0.015	0.2	0/-0.010	6	h6	4.5	50	4	**UH41001502**	●
2	0/-0.015	0.3	0/-0.010	6	h6	6.5	50	4	**UH41002003**	●
2.5	0/-0.020	0.3	0/-0.015	6	h6	6.5	50	4	**UH41002503**	●
2.5	0/-0.020	0.5	0/-0.015	6	h6	6.5	50	4	**UH41002505**	●
3	0/-0.020	0.2	0/-0.015	6	h6	9	50	4	**UH41003002**	●
3	0/-0.020	0.3	0/-0.015	6	h6	9	50	4	**UH41003003**	●
3	0/-0.020	0.5	0/-0.015	6	h6	9	50	4	**UH41003005**	●
4	0/-0.020	0.3	0/-0.015	6	h6	12	50	4	**UH41004003**	●
4	0/-0.020	0.5	0/-0.015	6	h6	12	50	4	**UH41004005**	●
4	0/-0.020	1	0/-0.015	6	h6	12	50	4	**UH41004010**	◉
5	0/-0.020	0.3	0/-0.015	6	h6	15	50	4	**UH41005003**	●
5	0/-0.020	0.5	0/-0.015	6	h6	15	50	4	**UH41005005**	●
5	0/-0.020	1	0/-0.015	6	h6	15	50	4	**UH41005010**	◉
6	0/-0.020	0.3	0/-0.015	6	h6	16	50	4	**UH41006003**	●
6	0/-0.020	0.5	0/-0.015	6	h6	16	50	4	**UH41006005**	●
6	0/-0.020	1	0/-0.015	6	h6	16	50	4	**UH41006010**	●
8	0/-0.020	0.3	0/-0.015	8	h6	20	64	4	**UH41008003**	●
8	0/-0.020	0.5	0/-0.015	8	h6	20	64	4	**UH41008005**	●
8	0/-0.020	1	0/-0.015	8	h6	20	64	4	**UH41008010**	●
8	0/-0.020	1.5	0/-0.015	8	h6	20	64	4	**UH41008015**	●
8	0/-0.020	2	0/-0.015	8	h6	20	64	4	**UH41008020**	◉
10	0/-0.020	0.3	0/-0.020	10	h6	22	70	4	**UH41010003**	●
10	0/-0.020	0.5	0/-0.020	10	h6	22	70	4	**UH41010005**	●
10	0/-0.020	1	0/-0.020	10	h6	22	70	4	**UH41010010**	●
10	0/-0.020	1.5	0/-0.020	10	h6	22	70	4	**UH41010015**	●
10	0/-0.020	2	0/-0.020	10	h6	22	70	4	**UH41010020**	◉
12	0/-0.020	0.3	0/-0.020	12	h6	25	75	4	**UH41012003**	●
12	0/-0.020	0.5	0/-0.020	12	h6	25	75	4	**UH41012005**	●
12	0/-0.020	1	0/-0.020	12	h6	25	75	4	**UH41012010**	●
12	0/-0.020	1.5	0/-0.020	12	h6	25	75	4	**UH41012015**	●
12	0/-0.020	2	0/-0.020	12	h6	25	75	4	**UH41012020**	●
12	0/-0.020	3	0/-0.020	12	h6	25	75	4	**UH41012030**	●
14	0/-0.020	0.5	0/-0.020	14	h6	32	90	4	**UH41014005**	●
14	0/-0.020	1	0/-0.020	14	h6	32	90	4	**UH41014010**	●
16	0/-0.020	0.5	0/-0.020	16	h6	32	90	4	**UH41016005**	●
16	0/-0.020	1	0/-0.020	16	h6	32	90	4	**UH41016010**	●
16	0/-0.020	2	0/-0.020	16	h6	32	90	4	**UH41016020**	●
18	0/-0.020	1	0/-0.020	18	h6	38	100	4	**UH41018010**	◉
20	0/-0.020	0.5	0/-0.020	20	h6	38	100	4	**UH41020005**	●
20	0/-0.020	1	0/-0.020	20	h6	38	100	4	**UH41020010**	◉
20	0/-0.020	2	0/-0.020	20	h6	38	100	4	**UH41020020**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

UH410

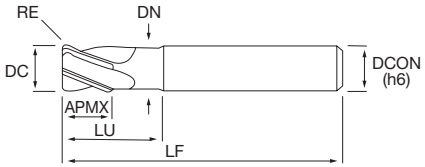
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**90÷130**	**60÷100**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.010	0.009	0.008	0.007
	2	0.018	0.016	0.014	0.013
	3	0.027	0.024	0.022	0.019
	4	0.036	0.032	0.029	0.025
	5	0.041	0.036	0.032	0.028
	6	0.045	0.041	0.036	0.032
	8	0.059	0.053	0.047	0.041
	10	0.077	0.069	0.061	0.054
	12	0.090	0.081	0.072	0.063
	14	0.102	0.092	0.082	0.071
	16	0.114	0.103	0.091	0.080
	18	0.126	0.113	0.101	0.088
	20	0.138	0.124	0.110	0.097

SORMA DIAMOND & CUTTING TOOLS

UH411

- Cylindrical shank
- 4F
- Corner radius
- Long

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 4 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
3	0/-0.012	0.3	0/-0.010	6	h6	4	12	2.85	55	4	**UH4110300312**	●
3	0/-0.012	0.3	0/-0.010	6	h6	4	20	2.85	60	4	**UH4110300320**	●
3	0/-0.012	0.5	0/-0.010	6	h6	4	10	2.85	55	4	**UH4110300510**	●
3	0/-0.012	0.5	0/-0.010	6	h6	4	20	2.85	60	4	**UH4110300520**	●
4	0/-0.012	0.3	0/-0.010	6	h6	6	12	3.85	55	4	**UH4110400312**	●
4	0/-0.012	0.3	0/-0.010	6	h6	6	20	3.85	60	4	**UH4110400320**	●
4	0/-0.012	0.5	0/-0.010	6	h6	6	12	3.85	55	4	**UH4110400512**	●
4	0/-0.012	0.5	0/-0.010	6	h6	6	20	3.85	60	4	**UH4110400520**	●
4	0/-0.012	1	0/-0.010	6	h6	6	12	3.85	55	4	**UH4110401012**	●
6	0/-0.015	0.5	0/-0.010	6	h6	9	15	5.85	60	4	**UH4110600520**	●
6	0/-0.015	1	0/-0.010	6	h6	9	15	5.85	60	4	**UH4110601020**	●
8	0/-0.015	0.5	0/-0.015	8	h6	12	20	7.7	70	4	**UH4110800525**	●
8	0/-0.015	1	0/-0.015	8	h6	12	20	7.7	70	4	**UH4110801025**	●
8	0/-0.015	2	0/-0.015	8	h6	12	20	7.7	70	4	**UH4110802025**	●
10	0/-0.015	0.5	0/-0.015	10	h6	15	25	9.7	70	4	**UH4111000532**	●
10	0/-0.015	1	0/-0.015	10	h6	15	25	9.7	70	4	**UH4111001032**	●
10	0/-0.015	2	0/-0.015	10	h6	15	25	9.7	70	4	**UH4111002032**	●
12	0/-0.015	0.5	0/-0.015	12	h6	18	30	11.7	80	4	**UH4111200538**	●
12	0/-0.015	1	0/-0.015	12	h6	18	30	11.7	80	4	**UH4111201038**	●
12	0/-0.015	2	0/-0.015	12	h6	18	30	11.7	80	4	**UH4111202038**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH411

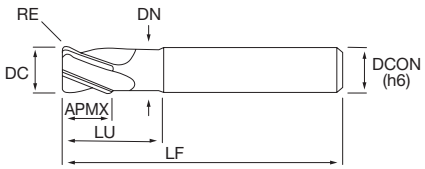
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**90÷130**	**60÷100**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.027	0.024	0.022	0.019
	4	0.036	0.032	0.029	0.025
	5	0.041	0.036	0.032	0.028
	6	0.045	0.041	0.036	0.032
	8	0.059	0.053	0.047	0.041
	10	0.077	0.069	0.061	0.054
	12	0.090	0.081	0.072	0.063

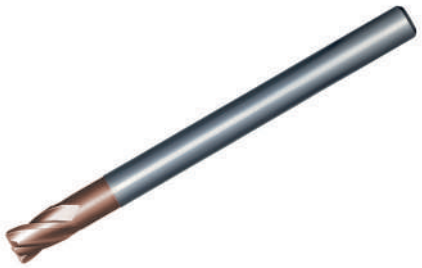
SORMA DIAMOND & CUTTING TOOLS

UH412

- Cylindrical shank
- 4F
- Corner radius
- Long

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 4 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
2	0/-0.020	0.3	0/-0.010	6	h6	4	30	1.9	75	4	**UH4120200330**	◉
2	0/-0.020	0.3	0/-0.010	6	h6	4	60	1.9	100	4	**UH4120200360**	●
3	0/-0.020	0.3	0/-0.010	6	h6	5	30	2.8	75	4	**UH4120300330**	●
3	0/-0.020	0.3	0/-0.010	6	h6	5	60	2.8	100	4	**UH4120300360**	◉
3	0/-0.020	0.5	0/-0.010	6	h6	5	30	2.8	75	4	**UH4120300530**	●
3	0/-0.020	0.5	0/-0.010	6	h6	5	60	2.8	100	4	**UH4120300560**	◉
4	0/-0.020	0.3	0/-0.010	6	h6	8	32	3.7	75	4	**UH4120400332**	●
4	0/-0.020	0.3	0/-0.010	6	h6	8	60	3.7	100	4	**UH4120400360**	●
4	0/-0.020	0.5	0/-0.010	6	h6	8	32	3.7	75	4	**UH4120400532**	●
4	0/-0.020	0.5	0/-0.010	6	h6	8	60	3.7	100	4	**UH4120400560**	●
6	0/-0.020	0.5	0/-0.010	6	h6	9	40	5.85	90	4	**UH4120600520**	●
6	0/-0.020	1	0/-0.010	6	h6	9	40	5.85	90	4	**UH4120601020**	●
8	0/-0.020	0.5	0/-0.015	8	h6	12	45	7.7	100	4	**UH4120800525**	●
8	0/-0.020	1	0/-0.015	8	h6	12	45	7.7	100	4	**UH4120801025**	●
10	0/-0.020	0.5	0/-0.015	10	h6	15	50	9.7	100	4	**UH4121000532**	●
10	0/-0.020	1	0/-0.015	10	h6	15	50	9.7	100	4	**UH4121001032**	●
10	0/-0.020	2	0/-0.015	10	h6	15	50	9.7	100	4	**UH4121002032**	●
12	0/-0.020	0.5	0/-0.015	12	h6	18	60	11.7	110	4	**UH4121200538**	●
12	0/-0.020	1	0/-0.015	12	h6	18	60	11.7	110	4	**UH4121201038**	●
12	0/-0.020	2	0/-0.015	12	h6	18	60	11.7	110	4	**UH4121202038**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH412

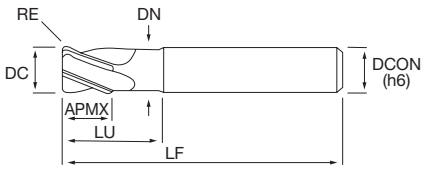
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**80÷120**	**60÷100**	**50÷70**	**30÷50**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.016	0.015	0.013	0.011
	3	0.024	0.022	0.019	0.017
	4	0.032	0.029	0.026	0.023
	5	0.036	0.033	0.029	0.026
	6	0.041	0.036	0.032	0.028
	8	0.053	0.047	0.042	0.037
	10	0.069	0.062	0.055	0.048
	12	0.081	0.073	0.065	0.057

SORMA DIAMOND & CUTTING TOOLS

UH413

- Cylindrical shank
- 4F
- Corner radius
- Long

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 40° | RADIUS | ZEFP 4 | L SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.020	0.3	0/-0.015	6	h6	10	60	5.5	125	4	**UH4130600360**	●
6	0/-0.020	0.5	0/-0.015	6	h6	10	60	5.5	125	4	**UH4130600560**	●
6	0/-0.020	1	0/-0.015	6	h6	10	60	5.5	125	4	**UH4130601060**	◉
8	0/-0.020	0.3	0/-0.015	8	h6	12	60	7.4	125	4	**UH4130800360**	●
8	0/-0.020	0.5	0/-0.015	8	h6	12	60	7.4	125	4	**UH4130800560**	●
8	0/-0.020	1	0/-0.015	8	h6	12	60	7.4	125	4	**UH4130801060**	●
8	0/-0.020	2	0/-0.015	8	h6	12	60	7.4	125	4	**UH4130802060**	●
10	0/-0.020	0.3	0/-0.020	10	h6	14	85	9.2	125	4	**UH4131000385**	●
10	0/-0.020	0.5	0/-0.020	10	h6	14	85	9.2	125	4	**UH4131000585**	●
10	0/-0.020	1	0/-0.020	10	h6	14	85	9.2	125	4	**UH4131001085**	●
10	0/-0.020	2	0/-0.020	10	h6	14	85	9.2	125	4	**UH4131002085**	●
12	0/-0.020	0.5	0/-0.020	12	h6	16	110	11	150	4	**UH41312005110**	●
12	0/-0.020	1	0/-0.020	12	h6	16	110	11	150	4	**UH41312010110**	●
12	0/-0.020	2	0/-0.020	12	h6	16	110	11	150	4	**UH41312020110**	●
16	0/-0.020	0.5	0/-0.020	16	h6	22	110	15	150	4	**UH41316005110**	●
16	0/-0.020	1	0/-0.020	16	h6	22	110	15	150	4	**UH41316010110**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH413

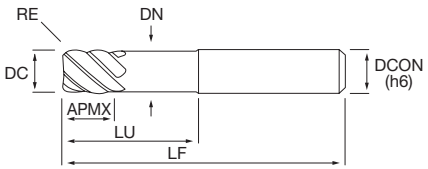
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
SIDE MILLING	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**70÷110**	**60÷80**	**40÷60**	**30÷50**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.041	0.036	0.032	0.028
	8	0.053	0.047	0.042	0.037
	10	0.069	0.062	0.055	0.048
	12	0.081	0.073	0.065	0.057
	16	0.095	0.086	0.076	0.067

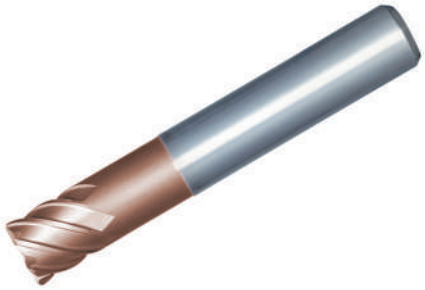
SORMA DIAMOND & CUTTING TOOLS

UH610R

- Cylindrical shank
- Multi flute
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 50° | RADIUS | ZEFP 6 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.5	±0.015	6	h6	6	15	5.8	50	6	**UH610R05060**	●
8	0/-0.030	0.5	±0.015	8	h6	8	25	7.8	60	6	**UH610R05080**	●
10	0/-0.030	1	±0.015	10	h6	10	30	9.8	70	6	**UH610R10100**	●
12	0/-0.030	1	±0.015	12	h6	12	30	11.8	75	6	**UH610R10120**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH610R

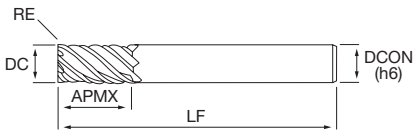
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
SIDE MILLING	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**140÷180**	**100÷140**	**70÷110**	**60÷80**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029

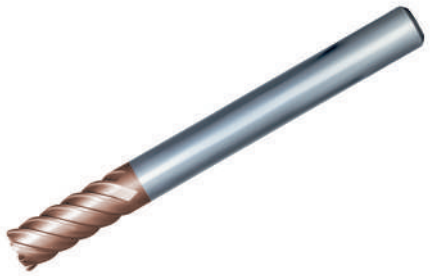
SORMA DIAMOND & CUTTING TOOLS

UH611R

- Cylindrical shank
- Multi flute
- Long
- Corner radius

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 50° | RADIUS | ZEFP 6 | SIDE MILLING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	0/-0.030	0.5	±0.015	6	h6	15	90	6	**UH611R05060**	●
8	0/-0.030	0.5	±0.015	8	h6	20	100	6	**UH611R05080**	●
10	0/-0.030	0.5	±0.015	10	h6	25	100	6	**UH611R05100**	●
10	0/-0.030	1	±0.015	10	h6	25	100	6	**UH611R10100**	●
12	0/-0.030	0.5	±0.015	12	h6	30	110	6	**UH611R05120**	●
12	0/-0.030	1	±0.015	12	h6	30	110	6	**UH611R10120**	●
16	0/-0.030	1	±0.015	16	h6	32	130	6	**UH611R10160**	●
20	0/-0.030	1	±0.015	20	h6	38	140	6	**UH611R10200**	●
20	0/-0.030	2	±0.015	20	h6	38	140	6	**UH611R20200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH611R

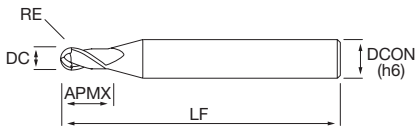
	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
SIDE MILLING	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**110÷150**	**90÷130**	**60÷80**	**40÷60**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024
	16	0.048	0.043	0.038	0.034
	20	0.066	0.060	0.053	0.046

SORMA DIAMOND & CUTTING TOOLS

MHMB204

- Cylindrical shank
- 2 flutes ball nose
- Miniature

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.2	0/-0.010	0.1	0/-0.010	4	h6	0.2	50	2	**MHMB200204**	●
0.3	0/-0.010	0.15	0/-0.010	4	h6	0.3	50	2	**MHMB200304**	●
0.4	0/-0.010	0.2	0/-0.010	4	h6	0.4	50	2	**MHMB200404**	●
0.5	0/-0.010	0.25	0/-0.010	4	h6	0.4	50	2	**MHMB200504**	●
0.6	0/-0.010	0.3	0/-0.010	4	h6	0.5	50	2	**MHMB200604**	●
0.7	0/-0.010	0.35	0/-0.010	4	h6	0.6	50	2	**MHMB200704**	●
0.8	0/-0.010	0.4	0/-0.010	4	h6	0.6	50	2	**MHMB200804**	●
0.9	0/-0.010	0.45	0/-0.010	4	h6	0.8	50	2	**MHMB200904**	●
1	0/-0.015	0.5	0/-0.015	4	h6	0.8	50	2	**MHMB201004**	●
1.5	0/-0.015	0.75	0/-0.015	4	h6	1.35	50	2	**MHMB201504**	●
2	0/-0.015	1	0/-0.015	4	h6	1.7	50	2	**MHMB202004**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHMB204

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**
	Vc (m/min)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ap ae COPYING	**0.1**	0.04	0.004	0.004	0.003	0.003
	0.2	0.09	0.006	0.005	0.005	0.004
	0.3	0.13	0.008	0.007	0.006	0.006
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.7	0.31	0.018	0.016	0.014	0.013
	0.8	0.35	0.020	0.018	0.016	0.014
	0.9	0.39	0.023	0.021	0.018	0.016
	1	0.44	0.026	0.023	0.020	0.017
	1.5	0.79	0.040	0.036	0.030	0.026
	2	1.20	0.055	0.050	0.041	0.036

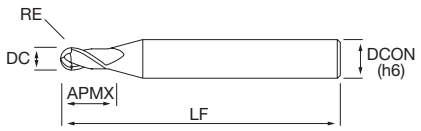
α	α	n (rpm)	Vf (mm/min)
	15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

MHMB206

- Cylindrical shank
- 2 flutes ball nose
- Miniature
- 6 mm. shank

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
0.4	0/-0.010	0.2	0/-0.010	6	h6	0.4	50	2	**MHMB200406**	●
0.5	0/-0.010	0.25	0/-0.010	6	h6	0.5	50	2	**MHMB200506**	●
0.6	0/-0.010	0.3	0/-0.010	6	h6	0.6	50	2	**MHMB200606**	●
0.8	0/-0.010	0.4	0/-0.010	6	h6	0.8	50	2	**MHMB200806**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHMB206

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap ae COPYING	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.8	0.35	0.020	0.018	0.016	0.014

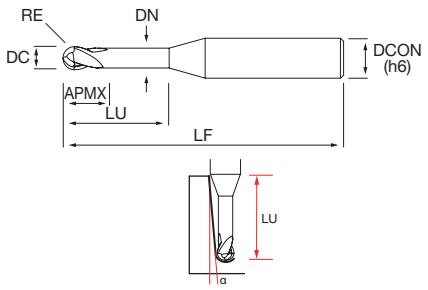
	α	n (rpm)	Vf (mm/min)
α	15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.2	0/-0.010	0.1	0/-0.010	4	0.2	0.5	0.17	50	2	0.57	0.58	0.6	0.62	0.66	MHLNB2002005	●
0.2	0/-0.010	0.1	0/-0.010	4	0.2	1	0.17	50	2	1.08	1.12	1.15	1.19	1.27	MHLNB200201	●
0.2	0/-0.010	0.1	0/-0.010	4	0.2	1.5	0.17	50	2	1.6	1.65	1.71	1.76	1.89	MHLNB2002015	◉
0.3	0/-0.010	0.15	0/-0.010	4	0.3	1	0.27	50	2	1.08	1.11	1.15	1.18	1.26	MHLNB200301	●
0.3	0/-0.010	0.15	0/-0.010	4	0.3	2	0.27	50	2	2.12	2.18	2.25	2.33	2.49	MHLNB200302	●
0.3	0/-0.010	0.15	0/-0.010	4	0.3	3	0.27	50	2	3.15	3.25	3.36	3.48	3.73	MHLNB200303	◉
0.4	0/-0.010	0.2	0/-0.010	4	0.4	1	0.37	50	2	1.08	1.11	1.14	1.18	1.25	MHLNB200401	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	2	0.37	50	2	2.11	2.18	2.25	2.32	2.48	MHLNB200402	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	3	0.37	50	2	3.15	3.25	3.36	3.47	3.72	MHLNB200403	●
0.4	0/-0.010	0.2	0/-0.010	4	0.4	4	0.37	50	2	4.18	4.32	4.46	4.62	4.95	MHLNB200404	◉
0.4	0/-0.010	0.2	0/-0.010	4	0.4	5	0.37	50	2	5.21	5.39	5.57	5.77	6.18	MHLNB200405	◉
0.5	0/-0.010	0.25	0/-0.010	4	0.4	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	MHLNB200502	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	3	0.45	50	2	3.18	3.29	3.39	3.51	3.75	MHLNB200503	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	4	0.45	50	2	4.22	4.35	4.5	4.65	4.98	MHLNB200504	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	5	0.45	50	2	5.25	5.42	5.61	5.8	6.22	MHLNB200505	◉
0.5	0/-0.010	0.25	0/-0.010	4	0.4	6	0.45	50	2	6.28	6.49	6.71	6.95	7.45	MHLNB200506	●
0.5	0/-0.010	0.25	0/-0.010	4	0.4	8	0.45	50	2	8.35	8.63	8.93	9.24	9.92	MHLNB200508	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.5	MHLNB200602	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	3	0.55	50	2	3.18	3.28	3.39	3.5	3.74	MHLNB200603	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	MHLNB200604	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	5	0.55	50	2	5.25	5.42	5.6	5.79	6.21	MHLNB200605	◉
0.6	0/-0.010	0.3	0/-0.010	4	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	MHLNB200606	●
0.6	0/-0.010	0.3	0/-0.010	4	0.5	8	0.55	50	2	8.35	8.63	8.92	9.23	9.91	MHLNB200608	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	MHLNB200802	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	MHLNB200804	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	5	0.75	50	2	5.25	5.41	5.59	5.78	6.18	MHLNB200805	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	6	0.75	50	2	6.28	6.48	6.7	6.93	7.42	MHLNB200806	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	7	0.75	50	2	7.31	7.55	7.81	8.07	8.65	MHLNB200807	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	8	0.75	50	2	8.35	8.62	8.91	9.22	9.88	MHLNB200808	●
0.8	0/-0.010	0.4	0/-0.010	4	0.6	10	0.75	50	2	10.41	10.76	11.13	11.51	12.35	MHLNB200810	●
1	0/-0.015	0.5	0/-0.015	4	0.8	3	0.9	50	2	3.27	3.37	3.47	3.57	3.8	MHLNB201003	●
1	0/-0.015	0.5	0/-0.015	4	0.8	4	0.9	50	2	4.31	4.44	4.58	4.72	5.04	MHLNB201004	●
1	0/-0.015	0.5	0/-0.015	4	0.8	5	0.9	50	2	5.34	5.51	5.68	5.87	6.27	MHLNB201005	●
1	0/-0.015	0.5	0/-0.015	4	0.8	6	0.9	50	2	6.37	6.58	6.79	7.02	7.5	MHLNB201006	●
1	0/-0.015	0.5	0/-0.015	4	0.8	7	0.9	50	2	7.41	7.64	7.9	8.16	8.74	MHLNB201007	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	8	0.9	50	2	8.44	8.71	9	9.31	9.97	MHLNB201008	●
1	0/-0.015	0.5	0/-0.015	4	0.8	9	0.9	50	2	9.47	9.78	10.11	10.46	11.21	MHLNB201009	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	10	0.9	50	2	10.51	10.85	11.22	11.61	12.44	MHLNB201010	●
1	0/-0.015	0.5	0/-0.015	4	0.8	12	0.9	50	2	12.57	12.99	13.43	13.9	14.91	MHLNB201012	●
1	0/-0.015	0.5	0/-0.015	4	0.8	14	0.9	50	2	14.64	15.13	15.65	16.19	17.37	MHLNB201014	◉
1	0/-0.015	0.5	0/-0.015	4	0.8	16	0.9	50	2	16.71	17.27	17.86	18.49	19.84	MHLNB201016	●
1	0/-0.015	0.5	0/-0.015	4	0.8	20	0.9	60	2	20.84	21.55	22.29	23.08	24.78	MHLNB201020	●
1.2	0/-0.015	0.6	0/-0.015	4	1	6	1.1	50	2	6.37	6.57	6.78	7	7.48	MHLNB201206	●
1.2	0/-0.015	0.6	0/-0.015	4	1	8	1.1	50	2	8.44	8.71	8.99	9.3	9.95	MHLNB201208	◉
1.2	0/-0.015	0.6	0/-0.015	4	1	10	1.1	50	2	10.5	10.85	11.21	11.59	12.42	MHLNB201210	●

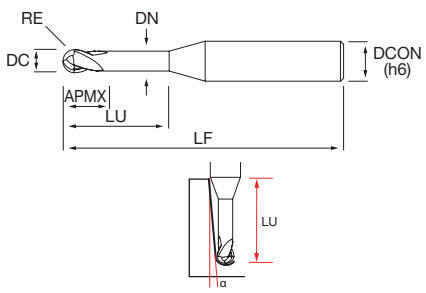
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
1.2	0/-0.015	0.6	0/-0.015	4	1	12	1.1	50	2	12.57	12.98	13.42	13.89	14.88	MHLNB201212	◉
1.4	0/-0.015	0.7	0/-0.015	4	1.1	8	1.3	50	2	8.43	8.7	8.98	9.28	9.93	MHLNB201408	●
1.4	0/-0.015	0.7	0/-0.015	4	1.1	12	1.3	50	2	12.57	12.98	13.41	13.87	14.86	MHLNB201412	◉
1.4	0/-0.015	0.7	0/-0.015	4	1.1	16	1.3	50	2	16.7	17.26	17.84	18.46	19.8	MHLNB201416	◉
1.5	0/-0.015	0.75	0/-0.015	4	1.2	8	1.4	50	2	8.43	8.7	8.98	9.27	9.91	MHLNB201508	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	12	1.4	50	2	12.57	12.97	13.41	13.86	14.85	MHLNB201512	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	16	1.4	50	2	16.7	17.25	17.84	18.45	19.78	MHLNB201516	●
1.5	0/-0.015	0.75	0/-0.015	4	1.2	18	1.4	60	2	18.77	19.39	20.05	20.75	22.25	MHLNB201518	●
1.5	0/-0.015	0.75	0/-0.015	6	2.4	20	1.4	50	2	20.84	21.53	22.26	23.04	24.72	MHLNB201520	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	8	1.5	50	2	8.43	8.69	8.97	9.27	9.9	MHLNB201608	◉
1.6	0/-0.015	0.8	0/-0.015	4	1.3	12	1.5	50	2	12.56	12.97	13.4	13.86	14.84	MHLNB201612	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	16	1.5	50	2	16.7	17.25	17.83	18.45	19.77	MHLNB201616	●
1.6	0/-0.015	0.8	0/-0.015	4	1.3	20	1.5	60	2	20.83	21.53	22.26	23.03	-	MHLNB201620	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	8	1.7	50	2	8.43	8.69	8.96	9.25	9.88	MHLNB201808	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	12	1.7	50	2	12.56	12.96	13.39	13.84	14.81	MHLNB201812	◉
1.8	0/-0.015	0.9	0/-0.015	4	1.4	16	1.7	50	2	16.7	17.24	17.82	18.43	19.75	MHLNB201816	●
1.8	0/-0.015	0.9	0/-0.015	4	1.4	20	1.7	60	2	20.83	21.52	22.25	23.02	-	MHLNB201820	●
2	0/-0.015	1	0/-0.015	4	1.6	4	1.9	50	2	4.29	4.4	4.52	4.65	4.92	MHLNB202004	●
2	0/-0.015	1	0/-0.015	4	1.6	6	1.9	50	2	6.36	6.54	6.74	6.94	7.39	MHLNB202006	●
2	0/-0.015	1	0/-0.015	4	1.6	8	1.9	50	2	8.42	8.68	8.95	9.24	9.86	MHLNB202008	●
2	0/-0.015	1	0/-0.015	4	1.6	10	1.9	50	2	10.49	10.82	11.17	11.53	12.32	MHLNB202010	●
2	0/-0.015	1	0/-0.015	4	1.6	12	1.9	50	2	12.56	12.96	13.38	13.83	14.79	MHLNB202012	●
2	0/-0.015	1	0/-0.015	4	1.6	14	1.9	50	2	14.62	15.1	15.59	16.12	17.26	MHLNB202014	●
2	0/-0.015	1	0/-0.015	4	1.6	16	1.9	50	2	16.69	17.23	17.81	18.42	19.73	MHLNB202016	●
2	0/-0.015	1	0/-0.015	4	1.6	18	1.9	60	2	18.76	19.37	20.02	20.71	-	MHLNB202018	●
2	0/-0.015	1	0/-0.015	4	1.6	20	1.9	60	2	20.83	21.51	22.24	23	-	MHLNB202020	●
2	0/-0.015	1	0/-0.015	4	1.6	22	1.9	60	2	22.89	23.65	24.45	25.3	-	MHLNB202022	●
2	0/-0.015	1	0/-0.015	4	1.6	25	1.9	75	2	25.99	26.86	27.77	28.74	-	MHLNB202025	●
2	0/-0.015	1	0/-0.015	4	1.6	30	1.9	75	2	31.16	32.21	33.31	-	-	MHLNB202030	●
3	0/-0.020	1.5	0/-0.015	6	2.4	8	2.8	50	2	8.6	8.84	9.1	9.37	9.96	MHLNB203008	●
3	0/-0.020	1.5	0/-0.015	6	2.4	10	2.8	50	2	10.67	10.98	11.32	11.67	12.43	MHLNB203010	●
3	0/-0.020	1.5	0/-0.015	6	2.4	12	2.8	50	2	12.73	13.12	13.53	13.96	14.9	MHLNB203012	●
3	0/-0.020	1.5	0/-0.015	6	2.4	16	2.8	60	2	16.87	17.4	17.96	18.55	19.83	MHLNB203016	●
3	0/-0.020	1.5	0/-0.015	6	2.4	20	2.8	60	2	21	21.68	22.39	23.14	24.77	MHLNB203020	●
3	0/-0.020	1.5	0/-0.015	6	2.4	25	2.8	75	2	26.17	27.02	27.93	28.88	-	MHLNB203025	●
3	0/-0.020	1.5	0/-0.015	6	2.4	30	2.8	75	2	31.34	32.37	33.46	34.62	-	MHLNB203030	●
3	0/-0.020	1.5	0/-0.015	6	2.4	35	2.8	75	2	36.51	37.72	39	40.35	-	MHLNB203035	◉
4	0/-0.020	2	0/-0.015	6	3.2	10	3.7	50	2	10.84	11.15	11.47	11.81	12.54	MHLNB204010	●
4	0/-0.020	2	0/-0.015	6	3.2	16	3.7	60	2	17.04	17.56	18.11	18.69	19.94	MHLNB204016	●
4	0/-0.020	2	0/-0.015	6	3.2	20	3.7	60	2	21.18	21.84	22.54	23.28	-	MHLNB204020	●
4	0/-0.020	2	0/-0.015	6	3.2	25	3.7	75	2	26.35	27.19	28.08	29.02	-	MHLNB204025	●
4	0/-0.020	2	0/-0.015	6	3.2	30	3.7	75	2	31.51	32.53	33.61	-	-	MHLNB204030	●
4	0/-0.020	2	0/-0.015	6	3.2	35	3.7	75	2	36.68	37.88	39.15	-	-	MHLNB204035	●
4	0/-0.020	2	0/-0.015	6	3.2	40	3.7	100	2	41.85	43.23	-	-	-	MHLNB204040	●
4	0/-0.020	2	0/-0.015	6	3.2	45	3.7	100	2	47.02	48.57	-	-	-	MHLNB204045	◉

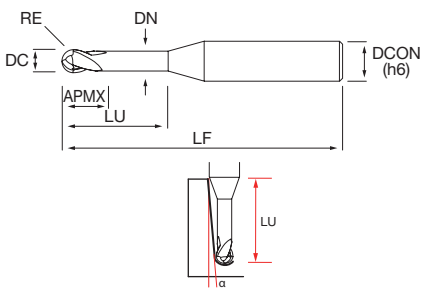
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

MHLNB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
4	0/-0.020	2	0/-0.015	6	3.2	50	3.7	100	2	52.19	53.92	-	-	-	**MHLNB204050**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

MHLNB2

	Material Group ISO 513				P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm				≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae				**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)				**80÷120**	**60÷100**	**50÷70**	**30÷50**
	DC (mm)	LU (mm)	ap (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ROUND RIB	**0.2**	≤ 6D	0.01	0.09	0.008	0.007	0.006	0.006
		≤ 8D	0.01	0.08	0.007	0.006	0.005	0.005
		≤ 10D	0.01	0.07	0.006	0.005	0.004	0.004
	0.3	≤ 6D	0.02	0.13	0.010	0.009	0.008	0.007
		≤ 8D	0.01	0.12	0.009	0.007	0.006	0.006
		≤ 10D	0.01	0.11	0.008	0.006	0.005	0.004
	0.4	≤ 6D	0.02	0.17	0.013	0.012	0.010	0.009
		≤ 8D	0.02	0.16	0.012	0.009	0.008	0.007
		≤ 10D	0.01	0.15	0.010	0.007	0.007	0.006
	0.5	≤ 6D	0.03	0.22	0.017	0.015	0.014	0.012
		≤ 8D	0.02	0.20	0.015	0.012	0.011	0.010
		≤ 10D	0.02	0.18	0.014	0.010	0.009	0.008
	0.6	≤ 6D	0.03	0.26	0.021	0.019	0.017	0.015
		≤ 8D	0.03	0.24	0.019	0.015	0.014	0.012
		≤ 10D	0.02	0.22	0.017	0.012	0.011	0.009
	0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
		≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
		≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
	1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
		≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
		≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
		≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
		>12D	0.02	0.30	0.018	0.010	0.009	0.008
	1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
		≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
		≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
		≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
		>12D	0.03	0.36	0.021	0.011	0.010	0.009
	1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
		≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
		≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
		≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
		>12D	0.03	0.44	0.027	0.015	0.013	0.011
	2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
		≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
		≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
		≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
		>12D	0.05	0.59	0.036	0.019	0.017	0.015
	2.5	≤ 6D	0.13	1.09	0.060	0.054	0.048	0.042
		≤ 8D	0.11	1.01	0.054	0.044	0.039	0.034
		≤ 10D	0.09	0.92	0.048	0.035	0.031	0.027
		≤ 12D	0.07	0.82	0.042	0.026	0.024	0.021
		>12D	0.06	0.74	0.036	0.019	0.017	0.015
	3	≤ 6D	0.15	1.31	0.075	0.068	0.060	0.053
		≤ 8D	0.13	1.21	0.068	0.055	0.049	0.043
		≤ 10D	0.11	1.10	0.060	0.043	0.038	0.034
		≤ 12D	0.08	0.98	0.053	0.033	0.029	0.026
		>12D	0.07	0.89	0.045	0.024	0.022	0.019

α	n (rpm)	Vf (mm/min)
45°	x 1.65	x 1.65
30°	x 1.30	x 1.30
15°	x 1.15	x 1.15

Cutting Parameters

MHLNB2

ROUND RIB

Material Group ISO 513					P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm					≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae					**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)					**80÷120**	**60÷100**	**50÷70**	**30÷50**
DC (mm)	LU (mm)	ap (mm)	DC(eff.) (mm)		fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
4	≤ 6D	0.20	1.74		0.095	0.086	0.076	0.067
	≤ 8D	0.17	1.61		0.086	0.069	0.062	0.054
	≤ 10D	0.14	1.47		0.076	0.055	0.049	0.043
	≤ 12D	0.11	1.31		0.067	0.042	0.037	0.033
	>12D	0.09	1.19		0.057	0.031	0.027	0.024

α

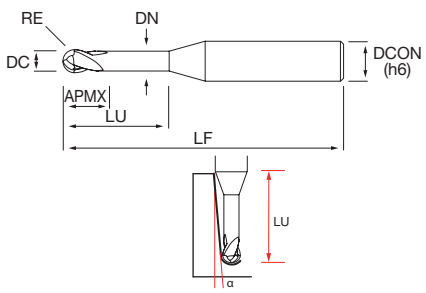
α	n (rpm)	Vf (mm/min)
45°	x 1.65	x 1.65
30°	x 1.30	x 1.30
15°	x 1.15	x 1.15

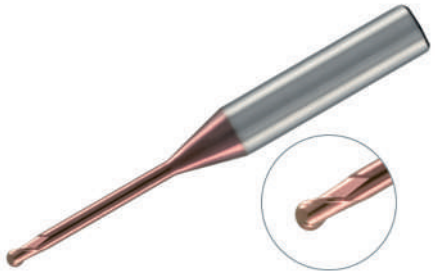
SORMA DIAMOND & CUTTING TOOLS

MHCRB2

- Cylindrical shank
- 2 flutes ball nose
- Extended and reduced neck
- 6 mm. shank

P	M	K	N	S	H
★		★			★





OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | ROUND RIB

DC	DC tol.	RE	RE tol.	DCON	APMX	LU	DN	LF	ZEFP	LU α=30'	LU α=1°	LU α=1°30'	LU α=2°	LU α=3°	EDP no.	Stock
0.5	0/-0.012	0.25	±0.005	6	0.5	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	**MHCRB20050206**	○
0.5	0/-0.012	0.25	±0.005	6	0.5	4	0.45	50	2	4.22	4.35	4.5	4.65	4.98	**MHCRB20050406**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.5	**MHCRB20060206**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	**MHCRB20060406**	●
0.6	0/-0.012	0.3	±0.005	6	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	**MHCRB20060606**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	**MHCRB20080206**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	**MHCRB20080406**	●
0.8	0/-0.012	0.4	±0.005	6	0.8	6	0.75	50	2	6.28	6.48	6.7	6.93	7.42	**MHCRB20080606**	●
1	0/-0.012	0.5	±0.005	6	1	3	0.9	50	2	3.27	3.37	3.47	3.57	3.8	**MHCRB20100306**	●
1	0/-0.012	0.5	±0.005	6	1	6	0.9	50	2	6.37	6.58	6.79	7.02	7.5	**MHCRB20100606**	●
1	0/-0.012	0.5	±0.005	6	1	8	0.9	50	2	8.44	8.71	9	9.31	9.97	**MHCRB20100806**	●
1	0/-0.012	0.5	±0.005	6	1	10	0.9	50	2	10.51	10.85	11.22	11.61	12.44	**MHCRB20101006**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	6	1.1	50	2	6.37	6.57	6.78	7	7.48	**MHCRB20120606**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	8	1.1	50	2	8.44	8.71	8.99	9.3	9.95	**MHCRB20120806**	●
1.2	0/-0.012	0.6	±0.005	6	1.2	10	1.1	50	2	10.5	10.85	11.21	11.59	12.42	**MHCRB20121006**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	4	1.4	50	2	4.3	4.42	4.55	4.68	4.98	**MHCRB20150406**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	8	1.4	50	2	8.43	8.7	8.98	9.27	9.91	**MHCRB20150806**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	10	1.4	50	2	10.5	10.84	11.19	11.57	12.38	**MHCRB20151006**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	12	1.4	50	2	12.57	12.97	13.41	13.86	14.85	**MHCRB20151206**	●
1.5	0/-0.012	0.75	±0.005	6	1.5	16	1.4	50	2	16.7	17.25	17.84	18.45	19.78	**MHCRB20151606**	●
2	0/-0.012	1	±0.005	6	3	6	1.9	50	2	6.36	6.54	6.74	6.94	7.39	**MHCRB20200606**	●
2	0/-0.012	1	±0.005	6	3	8	1.9	50	2	8.42	8.68	8.95	9.24	9.86	**MHCRB20200806**	●
2	0/-0.012	1	±0.005	6	3	10	1.9	50	2	10.49	10.82	11.17	11.53	12.32	**MHCRB20201006**	●
2	0/-0.012	1	±0.005	6	3	12	1.9	50	2	12.56	12.96	13.38	13.83	14.79	**MHCRB20201206**	●
2	0/-0.012	1	±0.005	6	3	16	1.9	50	2	16.69	17.23	17.81	18.42	19.73	**MHCRB20201606**	●
2	0/-0.012	1	±0.005	6	3	20	1.9	50	2	20.83	21.51	22.24	23	24.66	**MHCRB20202006**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

MHCRB2



Material Group ISO 513				P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
Hardness/Rm				≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
ap x ae				**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**
Vc (m/min)				**140÷160**	**110÷130**	**80÷100**	**50÷70**
DC (mm)	LU (mm)	ap (mm)	DC(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
0.5	≤ 6D	0.03	0.22	0.020	0.018	0.016	0.014
	≤ 8D	0.02	0.20	0.018	0.015	0.013	0.011
	≤ 10D	0.02	0.18	0.016	0.012	0.010	0.009
0.6	≤ 6D	0.03	0.26	0.022	0.020	0.018	0.015
	≤ 8D	0.03	0.24	0.020	0.016	0.014	0.012
	≤ 10D	0.02	0.22	0.018	0.013	0.011	0.010
0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
	≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
	≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
	≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
	≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
	≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
	>12D	0.02	0.30	0.018	0.010	0.009	0.008
1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
	≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
	≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
	≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
	>12D	0.03	0.36	0.021	0.011	0.010	0.009
1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
	≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
	≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
	≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
	>12D	0.03	0.44	0.027	0.015	0.013	0.011
2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
	≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
	≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
	≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
	>12D	0.05	0.59	0.036	0.019	0.017	0.015



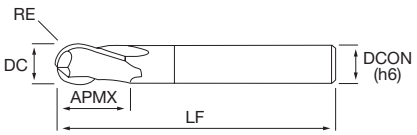
α	n (rpm)	Vf (mm/min)
45°	x 1.65	x 1.65
30°	x 1.30	x 1.30
15°	x 1.15	x 1.15

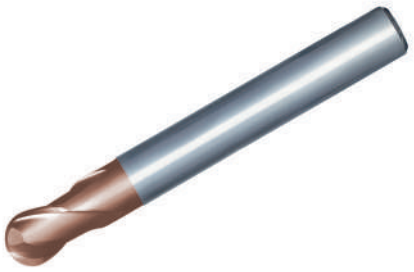
SORMA DIAMOND & CUTTING TOOLS

UHCSB2

- Cylindrical shank
- 2 flutes ball nose

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG / UH RED | <70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	0/-0.012	0.5	0/-0.010	6	h6	1.5	40	2	**UHCSB2010**	●
1.5	0/-0.012	0.75	0/-0.010	6	h6	2.5	40	2	**UHCSB2015**	●
2	0/-0.012	1	0/-0.010	6	h6	3	40	2	**UHCSB2020**	●
2.5	0/-0.012	1.25	0/-0.010	6	h6	3	50	2	**UHCSB2025**	●
3	0/-0.012	1.5	0/-0.010	6	h6	4.5	50	2	**UHCSB2030**	●
4	0/-0.012	2	0/-0.010	6	h6	6	50	2	**UHCSB2040**	●
5	0/-0.012	2.5	0/-0.010	6	h6	7.5	50	2	**UHCSB2050**	●
6	0/-0.015	3	0/-0.010	6	h6	9	50	2	**UHCSB2060**	●
8	0/-0.015	4	0/-0.010	8	h6	12	50	2	**UHCSB2080**	●
10	0/-0.015	5	0/-0.010	10	h6	15	60	2	**UHCSB2100**	●
12	0/-0.015	6	0/-0.010	12	h6	18	60	2	**UHCSB2120**	●
14	0/-0.020	7	0/-0.020	14	h6	32	90	2	**UHCSB2140**	●
16	0/-0.020	8	0/-0.020	16	h6	32	90	2	**UHCSB2160**	●
18	0/-0.020	9	0/-0.020	18	h6	38	100	2	**UHCSB2180**	●
20	0/-0.020	10	0/-0.020	20	h6	38	100	2	**UHCSB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UHCSB2

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**140÷180**	**100÷140**	**80÷100**	**60÷80**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ap ae COPYING	**1**	0.44	0.009	0.008	0.007	0.006
	1.5	0.79	0.012	0.011	0.010	0.008
	2	1.20	0.012	0.011	0.010	0.008
	2.5	1.65	0.015	0.014	0.012	0.011
	3	2.14	0.018	0.016	0.014	0.013
	4	3.20	0.025	0.023	0.020	0.018
	5	4.33	0.032	0.029	0.026	0.022
	6	5.50	0.038	0.034	0.030	0.027
	8	7.84	0.048	0.043	0.038	0.034
	10	10.00	0.057	0.051	0.046	0.040
	12	11.76	0.067	0.060	0.054	0.047
	14	12.83	0.080	0.072	0.064	0.056
	16	12.80	0.095	0.086	0.076	0.067
	18	10.80	0.108	0.097	0.086	0.076
	20	12.00	0.108	0.097	0.086	0.076

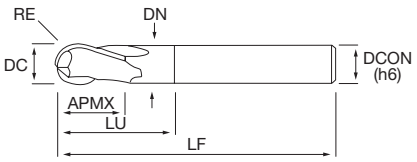
	α	n (rpm)	Vf (mm/min)
α	15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

UH250

- Cylindrical shank
- 2 flutes ball nose
- Long reach

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.012	0.5	0/-0.010	4	h6	1	2.2	0.95	50	2	**UH250010**	●
1.5	0/-0.012	0.75	0/-0.010	4	h6	1.5	3	1.45	50	2	**UH250015**	●
2	0/-0.012	1	0/-0.010	6	h6	2	4	1.95	50	2	**UH250020**	●
2.5	0/-0.020	1.25	0/-0.015	6	h6	4	10	2.4	50	2	**UH250025**	●
3	0/-0.012	1.5	0/-0.010	6	h6	3	6	2.85	60	2	**UH250030**	●
4	0/-0.012	2	0/-0.010	6	h6	4	8	3.85	70	2	**UH250040**	●
5	0/-0.012	2.5	0/-0.010	6	h6	5	10	4.85	80	2	**UH250050**	●
6	0/-0.015	3	0/-0.010	6	h6	6	12	5.85	90	2	**UH250060**	●
8	0/-0.015	4	0/-0.010	8	h6	8	16	7.7	100	2	**UH250080**	●
10	0/-0.015	5	0/-0.010	10	h6	10	20	9.7	100	2	**UH250100**	●
12	0/-0.015	6	0/-0.010	12	h6	12	24	11.7	110	2	**UH250120**	●
14	0/-0.020	7	0/-0.020	14	h6	32	80	13	125	2	**UH250140**	⦿
16	0/-0.020	8	0/-0.020	16	h6	32	80	15	125	2	**UH250160**	●
18	0/-0.020	9	0/-0.020	18	h6	38	80	17	125	2	**UH250180**	●
20	0/-0.020	10	0/-0.020	20	h6	38	80	19	125	2	**UH250200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH250

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**120÷160**	**100÷130**	**70÷90**	**50÷70**
ap ae COPYING	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.44	0.015	0.014	0.012	0.011
	2	0.87	0.021	0.019	0.017	0.015
	3	1.31	0.027	0.024	0.022	0.019
	4	1.74	0.037	0.033	0.029	0.026
	5	2.18	0.045	0.041	0.036	0.032
	6	2.62	0.051	0.046	0.041	0.036
	8	3.49	0.060	0.054	0.048	0.042
	10	4.36	0.068	0.061	0.054	0.048
	12	5.23	0.077	0.069	0.061	0.054
	14	6.10	0.089	0.080	0.071	0.062
	16	6.97	0.102	0.092	0.082	0.071
	18	7.85	0.115	0.103	0.092	0.080
	20	8.72	0.132	0.119	0.106	0.092

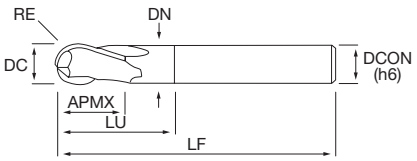
α	n (rpm)	Vf (mm/min)
30°	x 0.8	x 0.8
15°	x 0.7	x 0.7
0°	x 0.6	x 0.6

SORMA DIAMOND & CUTTING TOOLS

UH253

- Cylindrical shank
- 2 flutes ball nose
- Extra-long reach

P	M	K	N	S	H
☆		☆			★





OSAWA NORM | UH | NMG UH RED | <70 HRC | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LU	DN	LF	ZEFP	EDP no.	Stock
1	0/-0.020	0.5	0/-0.010	6	h6	3	7	0.9	75	2	**UH25301075**	●
1	0/-0.020	0.5	0/-0.010	6	h6	3	10	0.9	100	2	**UH253010100**	●
1.5	0/-0.020	0.75	0/-0.010	6	h6	3	10	1.4	75	2	**UH25301575**	●
1.5	0/-0.020	0.75	0/-0.010	6	h6	3	15	1.4	100	2	**UH253015100**	●
2	0/-0.020	1	0/-0.010	6	h6	4	14	1.9	75	2	**UH25302075**	●
2	0/-0.020	1	0/-0.010	6	h6	4	20	1.9	100	2	**UH253020100**	●
2.5	0/-0.020	1.25	0/-0.015	6	h6	4	18	2.4	75	2	**UH25302575**	●
3	0/-0.025	1.5	0/-0.015	6	h6	5	21	2.8	75	2	**UH25303075**	●
3	0/-0.025	1.5	0/-0.015	6	h6	5	30	2.8	100	2	**UH253030100**	●
4	0/-0.025	2	0/-0.015	6	h6	8	28	3.7	75	2	**UH25304075**	●
4	0/-0.025	2	0/-0.015	6	h6	8	40	3.7	100	2	**UH253040100**	◉
5	0/-0.025	2.5	0/-0.015	6	h6	9	50	4.6	100	2	**UH253050100**	●
6	0/-0.025	3	0/-0.015	6	h6	10	60	5.5	100	2	**UH253060100**	●
6	0/-0.025	3	0/-0.015	6	h6	10	60	5.5	150	2	**UH253060150**	●
8	0/-0.030	4	0/-0.015	8	h6	12	60	7.4	100	2	**UH253080100**	●
8	0/-0.030	4	0/-0.015	8	h6	12	80	7.4	150	2	**UH253080150**	●
10	0/-0.035	5	0/-0.020	10	h6	14	85	9.2	125	2	**UH253100125**	●
10	0/-0.035	5	0/-0.020	10	h6	14	100	9.2	150	2	**UH253100150**	●
12	0/-0.035	6	0/-0.020	12	h6	16	85	11	125	2	**UH253120125**	●
12	0/-0.035	6	0/-0.020	12	h6	16	110	11	150	2	**UH253120150**	●
14	0/-0.035	7	0/-0.020	14	h6	32	110	13	150	2	**UH253140150**	▽
14	0/-0.035	7	0/-0.020	14	h6	32	150	13	200	2	**UH253140200**	▽
16	0/-0.035	8	0/-0.020	16	h6	32	110	15	150	2	**UH253160150**	▽
16	0/-0.035	8	0/-0.020	16	h6	32	150	15	200	2	**UH253160200**	▽
20	0/-0.035	10	0/-0.020	20	h6	38	110	19	150	2	**UH253200150**	▽
20	0/-0.035	10	0/-0.020	20	h6	38	150	19	200	2	**UH253200200**	▽

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

UH253

	Material Group ISO 513		P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm		≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae		**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**	**0.05D x 0.2D**
	Vc (m/min)		**110÷150**	**80÷120**	**50÷90**	**40÷60**
	DC (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ap ae COPYING	**1**	0.44	0.015	0.014	0.012	0.011
	2	0.87	0.021	0.019	0.017	0.015
	3	1.31	0.027	0.024	0.022	0.019
	4	1.74	0.037	0.033	0.029	0.026
	5	2.18	0.045	0.041	0.036	0.032
	6	2.62	0.051	0.046	0.041	0.036
	8	3.49	0.060	0.054	0.048	0.042
	10	4.36	0.068	0.061	0.054	0.048
	12	5.23	0.077	0.069	0.061	0.054
	14	6.10	0.089	0.080	0.071	0.062
	16	6.97	0.102	0.092	0.082	0.071
	18	7.85	0.115	0.103	0.092	0.080
	20	8.72	0.132	0.119	0.106	0.092

	α	n (rpm)	Vf (mm/min)
α45°	30°	x 0.8	x 0.8
	15°	x 0.7	x 0.7
	0°	x 0.6	x 0.6



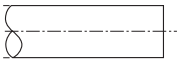
HSS END MILLS

Caption .K2
Selection Guide .K6
2 Flutes .K12
2 Flutes Alu .K19
3 Flutes .K21
3 Flutes 50° Helix .K27
4-6 Flutes .K29
Roughing NR - HR .K38
2 Flutes Ball Nose .K43
Shell Mills .K48
Corner Rounding .K52
Dovetail Cutters .K54
T-Slot .K58
Woodruff .K60

SORMA DIAMOND & CUTTING TOOLS

STOCK *		
●	stock standard stock standard	Standard Lager stock standard
◉	non-stock standard (no MOQ) non-standard stock (no MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
○	non-stock standard (MOQ) non-standard stock (MOQ)	Nicht-Lager-Standard (keine MOQ / Mindestbestellmenge) non-standard stock (aucun MOQ/commande minimale)
▲	upcoming product prossima introduzione	kommende Produkt prochaine introduction
▽	stock exhaustion esaurimento stock	Vorraterschöpfung épuisement du stock

APPLICATION GUIDELINES · INDICAZIONI PER L'APPLICAZIONE · LEITFADEN ZUR ANWENDUNG · INDICATIONS POUR L'APPLICATION		
★	1st choice 1a scelta	1. Wahl 1er choix
☆	suitable adatto	geeignet adapté

SHANK · ATTACCO · SCHAF · QUEUET		
	cylindrical shank attacco cilindrico	zylindrischer Schaft queue cylindrique
	Weldon	

MILLING STRATEGY · STRATEGIA DI FRESATURA · FRÄSSTRATEGIE · STRATÉGIES DE FRAISAGE		
	slotting fresatura di cave	Nutfräsen rainurage
	side milling contornatura	Konturfräsen contournage
	copying copiatura	Kopieren copiage
	drilling foratura	Bohren perçage
	rounding raggiatura concava	Konkavradius rayon concave
	dovetail A	

* The stock category of items in this catalogue may change without prior notice
La categoria di stock dei prodotti a catalogo può variare senza preavviso
La catégorie de stock des articles dans ce catalogue peut être modifiée sans préavis.
Die Einstufung der Produkte kann sich jederzeit ändern

CAPTION

SORMA DIAMOND & CUTTING TOOLS

MILLING STRATEGY · STRATEGIA DI FRESATURA · FRÄSSTRATEGIE · STRATÉGIES DE FRAISAGE		
DOVETAIL B 45°-60°	dovetail B	
T SLOT	T slot cave a T	T Nut rainure en T
WOODRUFF	Woodruff	

GEOMETRY · GEOMETRIA · GEOMETRIE · GÉOMÉTRIE		
N	general purpose uso generico	allgemeine Anwendung applications génériques
ALU	for aluminium per alluminio	für Aluminium pour aluminium

TYPE · TIPO · TYP · TYPE		
SQUARE	sharp corner spigolo vivo	scharfe Kante arête vive
BALL NOSE	ball nose raggiata	runder Stirn bout hémisphérique

NR. OF FLUTES · N. DI TAGLIENTI · ANZAHL DER SCHNEIDEN · NOMBRE DE DENTS		
ZEFP 2	2 flutes 2 taglienti	2 Schneiden 2 arêtes de coupe
ZEFP 3	3 flutes 3 taglienti	3 Schneiden 3 arêtes de coupe
ZEFP 4	4 flutes 4 taglienti	4 Schneiden 4 arêtes de coupe
ZEFP 6	6 flutes 6 taglienti	6 Schneiden 6 arêtes de coupe
ZEFP 6	>6 flutes >6 taglienti	>6 Schneiden >6 arêtes de coupe

CHIPBREAKER STYLE · TIPO DI ROMPITRUCIOLO · TYPE DE BRISE-COPEAUX · SPÄNEBRECHER TYP		
NR COARSE	roughing coarse pitch sgrossare passo grosso	Schruppfräser Regelgewinde ébauche pas gros

CAPTION

SORMA DIAMOND & CUTTING TOOLS

CHIPBREAKER STYLE · TIPO DI ROMPITRUCIOLO · TYPE DE BRISE-COPEAUX · SPÄNEBRECHER TYP

HR FINE	roughing fine pitch sgrossare passo fine	Schruppfräser Feingewinde ébauche pas fin

MATERIAL · MATERIALE · WERKSTOFF · MATIÈRE

HSS/Co ...	high speed steel 5%÷8% Co acciaio super rapido 5%÷8% Co	Hochleistungsschnellschnittstahl 5%÷8% Co acier rapide 5%÷8% Co

SURFACE TREATMENT · TRATTAMENTO SUPERFICIALE · OBERFLÄCHENBEHANDLUNG · TRAITMENT DE SURFACE

... BR	uncoated non rivestito	unbeschichtet non revêtu

COATINGS · RIVESTIMENTI · BESCHICHTUNGEN · REVÊTEMENTS

							... PV200
hardness (HV) durezza (HV)	Härte (HV) dureté (HV)						3300
friction coefficient coefficiente d'attrito	Reibungskoeffizient coefficent de frottement						0.3
thickness (µ) spessore (µ)	dicke (µ) epaisseur (µ)						3
max working temperature (°C) temperatura max (°C)	hochste Temperatur (°C) température maximale (°C)						950

	ITEM NO.	PAGE	
HSS/Co - general purpose, square	**WS2**	K12	
	TAWS2	K13	
	WL2	K16	
	TAWL2	K17	
	WSA2	K19	
	WS3	K21	
	TAWS3	K22	
	WL3	K24	
	TAWL3	K25	
	TAWSH3	K27	
	WS4(6)	K29	
	TAWS4(6)	K30	
	WL4(6)	K32	
	TAWL4(6)	K33	
HSS/Co - general purpose, roughing	**TAWSR**	K35	
	WSFR	K37	
	TAWSFR	K38	
	WLFR	K40	
	TAWLFR	K41	
HSS/Co general purpose, ball nose	**WSB2**	K43	
	TAWSB2	K44	
	WLB2	K46	
HSS/Co general purpose, shell	**FM**	K48	
	FFR	K50	

SORMA DIAMOND & CUTTING TOOLS

RANGE	NORM	TYPE	MATERIAL / COATING	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
1-30	DIN 327	N	HSS/Co BR	30°	SQUARE	2	★	☆	★	☆		
1-25	DIN 327	N	HSS/Co PV200	30°	SQUARE	2	★	☆	★	☆		
3-30	DIN 844	N	HSS/Co BR	30°	SQUARE	2	★	☆	★	☆		
3-20	DIN 844	N	HSS/Co PV200	30°	SQUARE	2	★	☆	★	☆		
2-20	DIN 844	ALU	HSS/Co BR	42°	SQUARE	2				★		
1-32	DIN 844	N	HSS/Co BR	30°	SQUARE	3	★	☆	★	☆		
2-25	DIN 844	N	HSS/Co PV200	30°	SQUARE	3	★	☆	★	☆		
3-25	DIN 844	N	HSS/Co BR	30°	SQUARE	3	★	☆	★	☆		
3-20	DIN 844	N	HSS/Co PV200	30°	SQUARE	3	★	☆	★	☆		
6-20	DIN 844	N	HSS/Co PV200	45°	SQUARE	3	★	☆	★	☆		
2-30	DIN 844	N	HSS/Co BR	30°	SQUARE	4-6	★	☆	★	☆		
2-40	DIN 844	N	HSS/Co PV200	30°	SQUARE	4-6	★	☆	★	☆		
3-25	DIN 844	N	HSS/Co BR	30°	SQUARE	4-6	★	☆	★	☆		
3-40	DIN 844	N	HSS/Co PV200	30°	SQUARE	4-6	★	☆	★	☆		
6-20	DIN 844	N - NR	HSS/Co PV200	30°	SQUARE	3-4	★	☆	★	☆		
6-20	DIN 844	N - HR	HSS/Co BR	30°	SQUARE	3-4	★	☆	★	☆		
6-40	DIN 844	N - HR	HSS/Co PV200	30°	SQUARE	3-6	★	☆	★	☆		
6-20	DIN 844	N - HR	HSS/Co BR	30°	SQUARE	3-4	★	☆	★	☆		
6-40	DIN 844	N - HR	HSS/Co PV200	30°	SQUARE	3-6	★	☆	★	☆		
2-25	DIN 327	N	HSS/Co BR	30°	BALL NOSE	2	★	☆	★	☆		
3-20	DIN 327	N	HSS/Co PV200	30°	BALL NOSE	2	★	☆	★	☆		
3-20	DIN 1889	N	HSS/Co BR	30°	BALL NOSE	2	★	☆	★	☆		
40-63	DIN 1880	N	HSS/Co BR	30°	SQUARE	8-10	★	☆	★	☆		
40-63	DIN 1880	N - HR	HSS/Co BR	30°	SQUARE	6-10	★	☆	★	☆		

★ 1st choice ☆ suitable

	ITEM NO.	PAGE	
HSS/Co general purpose, corner rounding	**WCR**	K54	
HSS/Co general purpose, dovetail	**WDC**	K56	
	WDD	K58	
HSS/Co general purpose, T-slot	**WTM**	K60	
HSS/Co general purpose, woodruff	**WWK**	K62	

RANGE	NORM	TYPE	MATERIAL / COATING	HELIX ANGLE	GEOMETRY	Z	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
R1-R11	DIN 6518	N	HSS/Co BR	0°	RADIUS	4	★	☆	★	☆		
16-38	DIN 1833	N	HSS/Co BR	45°-60°	SQUARE	6-12	★	☆	★	☆		
16-38	DIN 1833	N	HSS/Co BR	45°-60°	SQUARE	6-12	★	☆	★	☆		
12.5-36	DIN 851	N	HSS/Co BR	15°	SQUARE	6-8	★	☆	★	☆		
10.5-32.5	DIN850	N	HSS/Co BR	10°	SQUARE	8-12	★	☆	★	☆		

★ 1st choice ☆ suitable



HSS/Co

GENERAL PURPOSE

The Osawa catalogue includes a wide range of HSS/Co end mills both coated and uncoated.

Il catalogo Osawa include un'ampia scelta di frese in HSS/Co nudo e rivestito.

Der Osawa Katalog umfasst eine große Auswahl an beschichteten und unbeschichteten Fräsern aus HSS/Co.

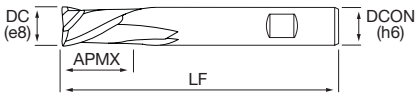
Le catalogue Osawa inclut une large gamme de fraises en HSS/Co soit revêtues soit non revêtues.

SORMA DIAMOND & CUTTING TOOLS

WS2

- Weldon shank
- 2 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 327 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	-0.014/-0.028	6	h6	2.5	47	2	**WS2010**	●
1.5	-0.014/-0.028	6	h6	3	47	2	**WS2015**	●
2	-0.014/-0.028	6	h6	4	48	2	**WS2020**	●
2.5	-0.014/-0.028	6	h6	5	49	2	**WS2025**	●
3	-0.014/-0.028	6	h6	5	49	2	**WS2030**	●
3.5	-0.020/-0.038	6	h6	6	50	2	**WS2035**	●
4	-0.020/-0.038	6	h6	7	51	2	**WS2040**	●
4.5	-0.020/-0.038	6	h6	7	51	2	**WS2045**	●
5	-0.020/-0.038	6	h6	8	52	2	**WS2050**	●
5.5	-0.020/-0.038	6	h6	8	52	2	**WS2055**	●
6	-0.020/-0.038	6	h6	8	52	2	**WS2060**	●
6.5	-0.025/-0.047	10	h6	10	60	2	**WS2065**	●
7	-0.025/-0.047	10	h6	10	60	2	**WS2070**	●
7.5	-0.025/-0.047	10	h6	10	60	2	**WS2075**	●
8	-0.025/-0.047	10	h6	11	61	2	**WS2080**	●
8.5	-0.025/-0.047	10	h6	11	61	2	**WS2085**	●
9	-0.025/-0.047	10	h6	11	61	2	**WS2090**	●
9.5	-0.025/-0.047	10	h6	11	61	2	**WS2095**	●
10	-0.025/-0.047	10	h6	13	63	2	**WS2100**	●
10.5	-0.032/-0.059	12	h6	13	70	2	**WS2105**	●
11	-0.032/-0.059	12	h6	13	70	2	**WS2110**	●
11.5	-0.032/-0.059	12	h6	13	70	2	**WS2115**	●
12	-0.032/-0.059	12	h6	16	73	2	**WS2120**	●
12.5	-0.032/-0.059	12	h6	16	73	2	**WS2125**	●
13	-0.032/-0.059	12	h6	16	73	2	**WS2130**	●
13.5	-0.032/-0.059	12	h6	16	73	2	**WS2135**	●
14	-0.032/-0.059	12	h6	16	73	2	**WS2140**	●
15	-0.032/-0.059	12	h6	16	73	2	**WS2150**	●
16	-0.032/-0.059	16	h6	19	79	2	**WS2160**	●
17	-0.032/-0.059	16	h6	19	79	2	**WS2170**	●
18	-0.032/-0.059	16	h6	19	79	2	**WS2180**	●
19	-0.040/-0.073	16	h6	19	79	2	**WS2190**	●
20	-0.040/-0.073	20	h6	22	88	2	**WS2200**	●
22	-0.040/-0.073	20	h6	22	88	2	**WS2220**	●
24	-0.040/-0.073	25	h6	26	102	2	**WS2240**	●
25	-0.040/-0.073	25	h6	26	102	2	**WS2250**	●
26	-0.040/-0.073	25	h6	26	102	2	**WS2260**	●
28	-0.040/-0.073	25	h6	26	102	2	**WS2280**	●
30	-0.040/-0.073	25	h6	26	102	2	**WS2300**	●

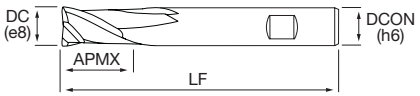
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWS2

- Weldon shank
- 2 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 327 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	-0.014/-0.028	6	h6	2.5	47	2	**TAWS2010**	●
1.5	-0.014/-0.028	6	h6	3	47	2	**TAWS2015**	●
2	-0.014/-0.028	6	h6	4	48	2	**TAWS2020**	●
2.5	-0.014/-0.028	6	h6	5	49	2	**TAWS2025**	●
3	-0.014/-0.028	6	h6	5	49	2	**TAWS2030**	●
3.5	-0.020/-0.038	6	h6	6	50	2	**TAWS2035**	●
4	-0.020/-0.038	6	h6	7	51	2	**TAWS2040**	●
4.5	-0.020/-0.038	6	h6	7	51	2	**TAWS2045**	●
5	-0.020/-0.038	6	h6	8	52	2	**TAWS2050**	●
5.5	-0.020/-0.038	6	h6	8	52	2	**TAWS2055**	●
6	-0.020/-0.038	6	h6	8	52	2	**TAWS2060**	●
6.5	-0.025/-0.047	10	h6	10	60	2	**TAWS2065**	●
7	-0.025/-0.047	10	h6	10	60	2	**TAWS2070**	●
7.5	-0.025/-0.047	10	h6	10	60	2	**TAWS2075**	●
8	-0.025/-0.047	10	h6	11	61	2	**TAWS2080**	●
8.5	-0.025/-0.047	10	h6	11	61	2	**TAWS2085**	●
9	-0.025/-0.047	10	h6	11	61	2	**TAWS2090**	●
9.5	-0.025/-0.047	10	h6	11	61	2	**TAWS2095**	●
10	-0.025/-0.047	10	h6	13	63	2	**TAWS2100**	●
10.5	-0.032/-0.059	12	h6	13	70	2	**TAWS2105**	●
11	-0.032/-0.059	12	h6	13	70	2	**TAWS2110**	●
11.5	-0.032/-0.059	12	h6	13	70	2	**TAWS2115**	●
12	-0.032/-0.059	12	h6	16	73	2	**TAWS2120**	●
12.5	-0.032/-0.059	12	h6	16	73	2	**TAWS2125**	●
13	-0.032/-0.059	12	h6	16	73	2	**TAWS2130**	●
13.5	-0.032/-0.059	12	h6	16	73	2	**TAWS2135**	●
14	-0.032/-0.059	12	h6	16	73	2	**TAWS2140**	●
15	-0.032/-0.059	12	h6	16	73	2	**TAWS2150**	●
16	-0.032/-0.059	16	h6	19	79	2	**TAWS2160**	●
17	-0.032/-0.059	16	h6	19	79	2	**TAWS2170**	●
18	-0.032/-0.059	16	h6	19	79	2	**TAWS2180**	●
19	-0.040/-0.073	16	h6	19	79	2	**TAWS2190**	●
20	-0.040/-0.073	20	h6	22	88	2	**TAWS2200**	●
22	-0.040/-0.073	20	h6	22	88	2	**TAWS2220**	●
25	-0.040/-0.073	25	h6	26	102	2	**TAWS2250**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWS2 WS2 (VC = -20% ÷ -30%)

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae	**0.03D x 0.3D**	**0.03D x 0.3D**	**0.02D x 0.3D**	**0.02D x 0.3D**
	Vc (m/min)	**110÷150**	**90÷130**	**60÷100**	**50÷70**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SLOTTING	**2**	0.033	0.029	0.026	0.023
	3	0.050	0.045	0.040	0.035
	4	0.068	0.061	0.054	0.047
	5	0.086	0.077	0.068	0.060
	6	0.104	0.093	0.083	0.072
	8	0.122	0.109	0.097	0.085
	3	0.050	0.045	0.040	0.035
	4	0.068	0.061	0.054	0.047
	5	0.086	0.077	0.068	0.060
	6	0.104	0.093	0.083	0.072
	8	0.122	0.109	0.097	0.085
	3	0.050	0.045	0.040	0.035
	4	0.068	0.061	0.054	0.047
	5	0.086	0.077	0.068	0.060
	6	0.104	0.093	0.083	0.072
	8	0.122	0.109	0.097	0.085
	5	0.086	0.077	0.068	0.060
	10	0.140	0.126	0.112	0.098
	12	0.158	0.142	0.126	0.110
ap x ae	**≤ D3**	0.25D x D			

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷70**	**40÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SIDE MILLING	**1**	0.003	0.003	0.003	0.003
	2	0.007	0.006	0.006	0.004
	3	0.007	0.006	0.006	0.005
	4	0.011	0.010	0.009	0.008
	5	0.016	0.014	0.012	0.011
	6	0.020	0.018	0.016	0.014
	8	0.026	0.024	0.021	0.018
	10	0.038	0.035	0.031	0.027
	12	0.048	0.043	0.038	0.034
	14	0.058	0.052	0.046	0.040
	16	0.068	0.062	0.055	0.048
	18	0.080	0.072	0.064	0.056
	20	0.092	0.083	0.074	0.065
	22	0.106	0.095	0.084	0.074
	24	0.118	0.106	0.094	0.082
	25	0.126	0.113	0.101	0.088
	26	0.132	0.119	0.106	0.092
	28	0.139	0.125	0.111	0.097
	30	0.146	0.132	0.117	0.102
ap x ae	**≤ D3**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

TAWS2 WS2 (VC = -20% ÷ -30%)

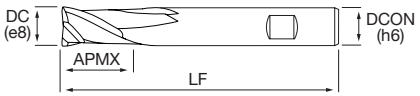
	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	0.5D x D	0.5D x D	0.5D x D	0.5D x D
	ap x ae	**30÷50**	**25÷35**	**20÷30**	**12÷18**
	Vc (m/min)	**110÷150**	**90÷130**	**60÷100**	**50÷70**
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.005	0.003	0.002	0.002
	4	0.007	0.004	0.003	0.003
	5	0.009	0.006	0.005	0.005
	6	0.011	0.008	0.006	0.006
	8	0.016	0.010	0.008	0.008
	10	0.020	0.014	0.012	0.011
	12	0.024	0.018	0.015	0.014
	14	0.029	0.022	0.018	0.017
	16	0.034	0.026	0.021	0.020
	18	0.039	0.030	0.025	0.023
	20	0.044	0.035	0.029	0.027
	22	0.049	0.040	0.033	0.031
	24	0.053	0.044	0.037	0.034
	25	0.055	0.047	0.039	0.037
	26	0.058	0.050	0.041	0.039
	28	0.061	0.052	0.044	0.041
	30	0.064	0.055	0.046	0.043

SORMA DIAMOND & CUTTING TOOLS

WL2

- Weldon shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	6	h6	8	56	2	**WL2030**	●
4	-0.020/-0.038	6	h6	11	63	2	**WL2040**	●
5	-0.020/-0.038	6	h6	13	68	2	**WL2050**	●
6	-0.020/-0.038	6	h6	13	68	2	**WL2060**	●
7	-0.025/-0.047	10	h6	16	80	2	**WL2070**	●
8	-0.025/-0.047	10	h6	19	88	2	**WL2080**	●
9	-0.025/-0.047	10	h6	19	88	2	**WL2090**	●
10	-0.025/-0.047	10	h6	22	95	2	**WL2100**	●
11	-0.032/-0.059	12	h6	22	102	2	**WL2110**	●
12	-0.032/-0.059	12	h6	26	110	2	**WL2120**	●
13	-0.032/-0.059	12	h6	26	110	2	**WL2130**	●
14	-0.032/-0.059	12	h6	26	110	2	**WL2140**	●
15	-0.032/-0.059	12	h6	26	110	2	**WL2150**	●
16	-0.032/-0.059	16	h6	32	123	2	**WL2160**	●
18	-0.032/-0.059	16	h6	32	123	2	**WL2180**	●
20	-0.040/-0.073	20	h6	38	141	2	**WL2200**	●
22	-0.040/-0.073	20	h6	38	141	2	**WL2220**	●
24	-0.040/-0.073	25	h6	45	166	2	**WL2240**	○
25	-0.040/-0.073	25	h6	45	166	2	**WL2250**	●
28	-0.040/-0.073	25	h6	45	166	2	**WL2280**	●
30	-0.040/-0.073	25	h6	45	166	2	**WL2300**	●

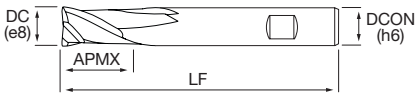
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWL2

- Weldon shank
- 2 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	6	h6	8	56	2	**TAWL2030**	●
4	-0.020/-0.038	6	h6	11	63	2	**TAWL2040**	●
5	-0.020/-0.038	6	h6	13	68	2	**TAWL2050**	●
6	-0.020/-0.038	6	h6	13	68	2	**TAWL2060**	●
8	-0.025/-0.047	10	h6	19	88	2	**TAWL2080**	●
10	-0.025/-0.047	10	h6	22	95	2	**TAWL2100**	●
12	-0.032/-0.059	12	h6	26	110	2	**TAWL2120**	●
14	-0.032/-0.059	12	h6	26	110	2	**TAWL2140**	●
16	-0.032/-0.059	16	h6	32	123	2	**TAWL2160**	●
18	-0.032/-0.059	16	h6	32	123	2	**TAWL2180**	●
20	-0.040/-0.073	20	h6	38	141	2	**TAWL2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWL2 WL2 (VC = -20% ÷ -30%)

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.3D x D**
	Vc (m/min)	**30÷50**	**25÷35**	**20÷30**	**12÷18**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.005	0.005	0.004
	4	0.008	0.007	0.007	0.006
	5	0.011	0.010	0.009	0.008
	6	0.014	0.012	0.011	0.010
	8	0.020	0.018	0.016	0.015
	10	0.025	0.023	0.020	0.019
	12	0.030	0.027	0.024	0.023
	14	0.036	0.032	0.029	0.027
	16	0.042	0.038	0.034	0.032
	18	0.048	0.043	0.038	0.036
	20	0.053	0.048	0.043	0.040
	22	0.060	0.054	0.048	0.045
	25	0.070	0.063	0.056	0.053
	28	0.077	0.069	0.062	0.058
	30	0.084	0.076	0.067	0.063
ap x ae	**≤ D5**	0.25D x D			

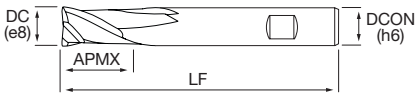
	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**0.2D x 0.1D**	**0.2D x 0.1D**	**0.2D x 0.1D**	**0.2D x 0.1D**
	Vc (m/min)	**35÷55**	**30÷40**	**25÷35**	**12÷20**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.005
	4	0.009	0.008	0.007	0.007
	5	0.012	0.011	0.009	0.009
	6	0.015	0.014	0.012	0.011
	8	0.022	0.020	0.018	0.017
	10	0.028	0.025	0.022	0.021
	12	0.033	0.030	0.027	0.025
	14	0.040	0.036	0.032	0.030
	16	0.046	0.042	0.037	0.035
	18	0.052	0.047	0.042	0.039
	20	0.059	0.053	0.047	0.044
	22	0.065	0.059	0.052	0.049
	25	0.077	0.069	0.062	0.058
	28	0.085	0.076	0.068	0.064
	30	0.092	0.083	0.074	0.069
ap x ae	**≤ D5**	1.5D x 0.05D			

SORMA DIAMOND & CUTTING TOOLS

WSA2

- Weldon shank
- 2 flutes for aluminium

P	M	K	N	S	H
			★		





DIN 844 | ALU | HSS/Co BR | FHA 42° | SQUARE | ZEFP 2 | SLOTTING | SIDE MILLING | DRILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	-0.014/-0.028	6	h6	7	51	2	**WSA2020**	●
2.5	-0.014/-0.028	6	h6	8	52	2	**WSA2025**	●
3	-0.014/-0.028	6	h6	8	52	2	**WSA2030**	●
4	-0.020/-0.038	6	h6	11	55	2	**WSA2040**	●
5	-0.020/-0.038	6	h6	13	57	2	**WSA2050**	●
6	-0.020/-0.038	6	h6	13	57	2	**WSA2060**	●
8	-0.025/-0.047	10	h6	19	69	2	**WSA2080**	●
10	-0.025/-0.047	10	h6	22	72	2	**WSA2100**	●
12	-0.032/-0.059	12	h6	26	83	2	**WSA2120**	●
14	-0.032/-0.059	12	h6	26	83	2	**WSA2140**	●
16	-0.032/-0.059	16	h6	32	92	2	**WSA2160**	●
18	-0.032/-0.059	16	h6	32	92	2	**WSA2180**	●
20	-0.040/-0.073	20	h6	38	104	2	**WSA2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

WSA2

	Material Group ISO 513	N1	N2	N3 N4	N5
	Hardness/Rm				
	ap x ae	90÷110	70÷90	60÷80	100÷140
	Vc (m/min)	30÷50	25÷35	20÷30	12÷18
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.015	0.014	0.012	0.018
	3	0.020	0.018	0.016	0.024
	4	0.030	0.027	0.024	0.036
	5	0.035	0.032	0.028	0.042
	6	0.042	0.038	0.034	0.050
	8	0.056	0.050	0.045	0.067
	10	0.073	0.066	0.058	0.088
	12	0.090	0.081	0.072	0.108
	14	0.106	0.095	0.085	0.127
	16	0.120	0.108	0.096	0.144
	18	0.135	0.122	0.108	0.162
	20	0.150	0.135	0.120	0.180
ap x ae	≤ D3	0.2D x D			

	Material Group ISO 513	N1	N2	N3 N4	N5
	Hardness/Rm				
	ap x ae	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.5D
	Vc (m/min)	100÷140	90÷110	70÷90	130÷150
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.018	0.016	0.014	0.020
	3	0.018	0.016	0.014	0.020
	4	0.024	0.022	0.019	0.027
	5	0.036	0.032	0.029	0.040
	6	0.042	0.038	0.034	0.047
	8	0.050	0.045	0.040	0.056
	10	0.067	0.060	0.054	0.075
	12	0.088	0.079	0.070	0.098
	14	0.108	0.097	0.086	0.121
	16	0.127	0.114	0.102	0.142
	18	0.144	0.130	0.115	0.161
	20	0.162	0.146	0.130	0.181
ap x ae	≤ D3	1.2D x 0.1D			

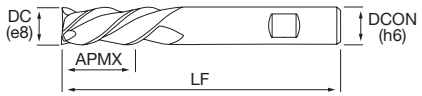
	Material Group ISO 513	N1	N2	N3 N4	N5
	Hardness/Rm				
	ap x ae	0.5D x 0.5D	0.5D x 0.5D	0.5D x 0.5D	0.5D x 0.5D
	Vc (m/min)	70÷90	55÷75	50÷60	90÷110
DRILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.010	0.007	0.006	0.009
	4	0.015	0.009	0.008	0.012
	5	0.018	0.014	0.012	0.018
	6	0.021	0.016	0.014	0.021
	8	0.028	0.019	0.017	0.025
	10	0.037	0.025	0.022	0.034
	12	0.045	0.033	0.029	0.044
	14	0.053	0.041	0.036	0.054
	16	0.060	0.048	0.042	0.064
	18	0.068	0.054	0.048	0.072
	20	0.075	0.061	0.054	0.081

SORMA DIAMOND & CUTTING TOOLS

WS3

- Weldon shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
1	-0.014/-0.028	6	h6	3	47	3	**WS3010**	●
1.5	-0.014/-0.028	6	h6	7	51	3	**WS3015**	●
2	-0.014/-0.028	6	h6	7	51	3	**WS3020**	●
2.5	-0.014/-0.028	6	h6	8	52	3	**WS3025**	●
3	-0.014/-0.028	6	h6	8	52	3	**WS3030**	●
3.5	-0.020/-0.038	6	h6	10	54	3	**WS3035**	●
4	-0.020/-0.038	6	h6	11	55	3	**WS3040**	●
4.5	-0.020/-0.038	6	h6	11	55	3	**WS3045**	●
5	-0.020/-0.038	6	h6	13	57	3	**WS3050**	●
5.5	-0.020/-0.038	6	h6	13	57	3	**WS3055**	●
6	-0.020/-0.038	6	h6	13	57	3	**WS3060**	●
6.5	-0.025/-0.047	10	h6	16	66	3	**WS3065**	●
7	-0.025/-0.047	10	h6	16	66	3	**WS3070**	●
8	-0.025/-0.047	10	h6	19	69	3	**WS3080**	●
8.5	-0.025/-0.047	10	h6	19	69	3	**WS3085**	●
9	-0.025/-0.047	10	h6	19	69	3	**WS3090**	●
10	-0.025/-0.047	10	h6	22	72	3	**WS3100**	●
11	-0.032/-0.059	12	h6	22	79	3	**WS3110**	●
12	-0.032/-0.059	12	h6	26	83	3	**WS3120**	●
13	-0.032/-0.059	12	h6	26	83	3	**WS3130**	●
14	-0.032/-0.059	12	h6	26	83	3	**WS3140**	●
15	-0.032/-0.059	12	h6	26	83	3	**WS3150**	●
16	-0.032/-0.059	16	h6	32	92	3	**WS3160**	●
18	-0.032/-0.059	16	h6	32	92	3	**WS3180**	●
20	-0.040/-0.073	20	h6	38	104	3	**WS3200**	●
22	-0.040/-0.073	20	h6	38	104	3	**WS3220**	●
25	-0.040/-0.073	25	h6	45	121	3	**WS3250**	●
30	-0.040/-0.073	25	h6	45	121	3	**WS3300**	●
32	-0.050/-0.089	32	h6	53	133	3	**WS3320**	●

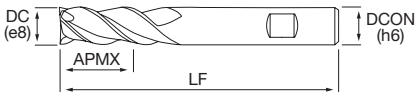
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWS3

- Weldon shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	-0.014/-0.028	6	h6	7	51	3	**TAWS3020**	●
2.5	-0.014/-0.028	6	h6	8	52	3	**TAWS3025**	●
3	-0.014/-0.028	6	h6	8	52	3	**TAWS3030**	●
3.5	-0.020/-0.038	6	h6	10	54	3	**TAWS3035**	●
4	-0.020/-0.038	6	h6	11	55	3	**TAWS3040**	●
4.5	-0.020/-0.038	6	h6	11	55	3	**TAWS3045**	●
5	-0.020/-0.038	6	h6	13	57	3	**TAWS3050**	●
5.5	-0.020/-0.038	6	h6	13	57	3	**TAWS3055**	●
6	-0.020/-0.038	6	h6	13	57	3	**TAWS3060**	●
6.5	-0.025/-0.047	10	h6	16	66	3	**TAWS3065**	●
7	-0.025/-0.047	10	h6	16	66	3	**TAWS3070**	●
8	-0.025/-0.047	10	h6	19	69	3	**TAWS3080**	●
8.5	-0.025/-0.047	10	h6	19	69	3	**TAWS3085**	●
9	-0.025/-0.047	10	h6	19	69	3	**TAWS3090**	●
10	-0.025/-0.047	10	h6	22	72	3	**TAWS3100**	●
11	-0.032/-0.059	12	h6	22	79	3	**TAWS3110**	●
12	-0.032/-0.059	12	h6	26	83	3	**TAWS3120**	●
13	-0.032/-0.059	12	h6	26	83	3	**TAWS3130**	●
14	-0.032/-0.059	12	h6	26	83	3	**TAWS3140**	●
15	-0.032/-0.059	12	h6	26	83	3	**TAWS3150**	●
16	-0.032/-0.059	16	h6	32	92	3	**TAWS3160**	●
18	-0.032/-0.059	16	h6	32	92	3	**TAWS3180**	●
20	-0.040/-0.073	20	h6	38	104	3	**TAWS3200**	●
22	-0.040/-0.073	20	h6	38	104	3	**TAWS3220**	●
25	-0.040/-0.073	25	h6	45	121	3	**TAWS3250**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

TAWS3 WS3 (VC = -20% ÷ -30%)

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.3D x D**
	Vc (m/min)	**40÷60**	**30÷50**	**25÷35**	**15÷25**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.002	0.002	0.002
	2	0.005	0.005	0.004	0.004
	3	0.008	0.007	0.006	0.006
	4	0.012	0.011	0.009	0.008
	5	0.015	0.014	0.011	0.011
	6	0.020	0.018	0.015	0.014
	8	0.029	0.026	0.022	0.020
	10	0.036	0.032	0.027	0.025
	12	0.043	0.039	0.032	0.030
	14	0.051	0.046	0.038	0.036
	16	0.060	0.054	0.045	0.042
	18	0.069	0.062	0.052	0.049
	20	0.079	0.071	0.059	0.055
	22	0.088	0.079	0.066	0.062
	25	0.099	0.089	0.074	0.069
	28	0.122	0.110	0.090	0.085
	30	0.128	0.115	0.093	0.090
	32	0.136	0.116	0.095	0.093
ap x ae	**≤ D3**	0.25D x D			

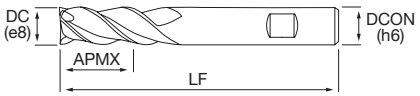
	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷70**	**40÷60**	**30÷40**	**20÷30**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.003	0.003	0.002	0.002
	2	0.006	0.006	0.005	0.005
	3	0.006	0.006	0.005	0.005
	4	0.010	0.009	0.008	0.007
	5	0.014	0.013	0.011	0.010
	6	0.018	0.017	0.015	0.013
	8	0.024	0.021	0.019	0.017
	10	0.035	0.031	0.028	0.024
	12	0.043	0.039	0.035	0.030
	14	0.052	0.047	0.041	0.036
	16	0.062	0.055	0.049	0.043
	18	0.072	0.065	0.058	0.051
	20	0.083	0.075	0.067	0.058
	22	0.095	0.086	0.076	0.067
	25	0.113	0.102	0.091	0.079
	28	0.139	0.125	0.111	0.097
	30	0.143	0.130	0.115	0.100
	32	0.146	0.132	0.117	0.102
	30	0.146	0.132	0.117	0.102
ap x ae	**≤ D3**	1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

SORMA DIAMOND & CUTTING TOOLS

WL3

- Weldon shank
- 3 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	6	h6	12	56	3	**WL3030**	●
4	-0.020/-0.038	6	h6	19	63	3	**WL3040**	●
5	-0.020/-0.038	6	h6	24	68	3	**WL3050**	●
6	-0.020/-0.038	6	h6	24	68	3	**WL3060**	●
8	-0.025/-0.047	10	h6	38	88	3	**WL3080**	●
10	-0.025/-0.047	10	h6	45	95	3	**WL3100**	●
12	-0.032/-0.059	12	h6	53	110	3	**WL3120**	●
14	-0.032/-0.059	12	h6	53	110	3	**WL3140**	●
16	-0.032/-0.059	16	h6	63	123	3	**WL3160**	●
18	-0.032/-0.059	16	h6	63	123	3	**WL3180**	●
20	-0.040/-0.073	20	h6	75	141	3	**WL3200**	●
22	-0.040/-0.073	20	h6	75	141	3	**WL3220**	●
25	-0.040/-0.073	25	h6	90	166	3	**WL3250**	○

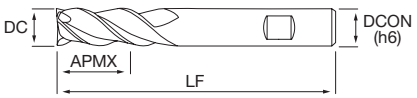
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWL3

- Weldon shank
- 3 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	6	h6	12	56	3	**TAWL3030**	●
4	-0.020/-0.038	6	h6	19	63	3	**TAWL3040**	●
5	-0.020/-0.038	6	h6	24	68	3	**TAWL3050**	●
6	-0.020/-0.038	6	h6	24	68	3	**TAWL3060**	●
8	-0.025/-0.047	10	h6	38	88	3	**TAWL3080**	●
10	-0.025/-0.047	10	h6	45	95	3	**TAWL3100**	●
12	-0.032/-0.059	12	h6	53	110	3	**TAWL3120**	●
14	-0.032/-0.059	12	h6	53	110	3	**TAWL3140**	●
16	-0.032/-0.059	16	h6	63	123	3	**TAWL3160**	●
18	-0.032/-0.059	16	h6	63	123	3	**TAWL3180**	●
20	-0.040/-0.073	20	h6	75	141	3	**TAWL3200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWL3 WL3 (VC = -20% ÷ -30%)

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.2D x D**
	Vc (m/min)	**30÷50**	**25÷35**	**20÷30**	**12÷18**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.005	0.005	0.004
	4	0.008	0.007	0.007	0.006
	5	0.011	0.010	0.009	0.008
	6	0.014	0.012	0.011	0.010
	8	0.020	0.018	0.016	0.015
	10	0.025	0.023	0.020	0.019
	12	0.030	0.027	0.024	0.023
	14	0.036	0.032	0.029	0.027
	16	0.042	0.038	0.034	0.032
	18	0.048	0.043	0.038	0.036
	20	0.053	0.048	0.043	0.040
	22	0.060	0.054	0.048	0.045
	25	0.070	0.063	0.056	0.053
ap x ae	**≤ D5**	0.25D x D			

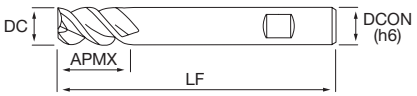
	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**2D x 0.1D**	**2D x 0.1D**	**2D x 0.1D**	**2D x 0.1D**
	Vc (m/min)	**40÷50**	**30÷40**	**25÷35**	**10÷20**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.006	0.006	0.005	0.005
	4	0.009	0.008	0.007	0.007
	5	0.012	0.011	0.009	0.009
	6	0.015	0.014	0.012	0.011
	8	0.022	0.020	0.018	0.017
	10	0.028	0.025	0.022	0.021
	12	0.033	0.030	0.027	0.025
	14	0.040	0.036	0.032	0.030
	16	0.046	0.042	0.037	0.035
	18	0.052	0.047	0.042	0.039
	20	0.059	0.053	0.047	0.044
	22	0.065	0.059	0.052	0.049
	25	0.077	0.069	0.062	0.058
ap x ae	**≤ D5**	1.5D x 0.05D	1.5D x 0.05D	1.5D x 0.05D	1.5D x 0.05D

SORMA DIAMOND & CUTTING TOOLS

TAWSH3

- Weldon shank
- 3 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 50° | SQUARE | ZEFP 3 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	+0.048/0	6	h6	13	57	3	**TAWSH3060**	●
8	+0.058/0	10	h6	19	69	3	**TAWSH3080**	●
10	+0.058/0	10	h6	22	72	3	**TAWSH3100**	●
12	+0.070/0	12	h6	26	83	3	**TAWSH3120**	○
14	+0.070/0	12	h6	26	83	3	**TAWSH3140**	●
16	+0.070/0	16	h6	32	92	3	**TAWSH3160**	●
18	+0.070/0	16	h6	32	92	3	**TAWSH3180**	●
20	+0.084/0	20	h6	38	104	3	**TAWSH3200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

TAWSH3

SLOTTING	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**0.3D x D**	**0.3D x D**	**0.3D x D**	**0.3D x D**
	Vc (m/min)	**40÷60**	**30÷50**	**25÷35**	**15÷25**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.020	0.018	0.015	0.014
	8	0.029	0.026	0.022	0.020
	10	0.036	0.032	0.027	0.025
	12	0.043	0.039	0.032	0.030
	14	0.051	0.046	0.038	0.036
	16	0.060	0.054	0.045	0.042
	18	0.069	0.062	0.052	0.049
	20	0.079	0.071	0.059	0.055

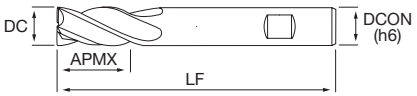
SIDE MILLING	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷70**	**40÷60**	**30÷40**	**20÷30**
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.017	0.015	0.013
	8	0.024	0.021	0.019	0.017
	10	0.035	0.031	0.028	0.024
	12	0.043	0.039	0.035	0.030
	14	0.052	0.047	0.041	0.036
	16	0.062	0.055	0.049	0.043
	18	0.072	0.065	0.058	0.051
	20	0.083	0.075	0.067	0.058

SORMA DIAMOND & CUTTING TOOLS

WS4(6)

- Weldon shank
- 4 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 4 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	+0.040/0	6	h6	7	51	4	**WS4020**	●
3	+0.040/0	6	h6	8	52	4	**WS4030**	●
4	+0.040/0	6	h6	11	55	4	**WS4040**	●
5	+0.040/0	6	h6	13	57	4	**WS4050**	●
6	+0.040/0	6	h6	13	57	4	**WS4060**	●
7	+0.040/0	10	h6	16	66	4	**WS4070**	●
8	+0.040/0	10	h6	19	69	4	**WS4080**	●
9	+0.040/0	10	h6	19	69	4	**WS4090**	●
10	+0.040/0	10	h6	22	72	4	**WS4100**	●
11	+0.040/0	12	h6	22	79	4	**WS4110**	●
12	+0.040/0	12	h6	26	83	4	**WS4120**	●
13	+0.040/0	12	h6	26	83	4	**WS4130**	●
14	+0.040/0	12	h6	26	83	4	**WS4140**	●
15	+0.040/0	12	h6	26	83	4	**WS4150**	●
16	+0.040/0	16	h6	32	92	4	**WS4160**	●
18	+0.040/0	16	h6	32	92	4	**WS4180**	●
20	+0.040/0	20	h6	38	104	4	**WS4200**	●
22	+0.040/0	20	h6	38	104	4	**WS4220**	●
25	+0.040/0	25	h6	45	121	4	**WS4250**	●
24	+0.040/0	25	h6	45	121	6	**WS6240**	●
28	+0.040/0	25	h6	45	121	6	**WS6280**	●
30	+0.040/0	25	h6	45	121	6	**WS6300**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWS4(6)

- Weldon shank
- 4 flutes

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 4 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	+0.040/0	6	h6	7	51	4	**TAWS4020**	●
3	+0.040/0	6	h6	8	52	4	**TAWS4030**	●
4	+0.040/0	6	h6	11	55	4	**TAWS4040**	●
5	+0.040/0	6	h6	13	57	4	**TAWS4050**	●
6	+0.040/0	6	h6	13	57	4	**TAWS4060**	●
7	+0.040/0	10	h6	16	66	4	**TAWS4070**	●
8	+0.040/0	10	h6	19	69	4	**TAWS4080**	●
9	+0.040/0	10	h6	19	69	4	**TAWS4090**	●
10	+0.040/0	10	h6	22	72	4	**TAWS4100**	●
11	+0.040/0	12	h6	22	79	4	**TAWS4110**	●
12	+0.040/0	12	h6	26	83	4	**TAWS4120**	●
13	+0.040/0	12	h6	26	83	4	**TAWS4130**	●
14	+0.040/0	12	h6	26	83	4	**TAWS4140**	●
15	+0.040/0	12	h6	26	83	4	**TAWS4150**	●
16	+0.040/0	16	h6	32	92	4	**TAWS4160**	●
17	+0.040/0	16	h6	32	92	4	**TAWS4170**	●
18	+0.040/0	16	h6	32	92	4	**TAWS4180**	●
19	+0.040/0	16	h6	32	92	4	**TAWS4190**	●
20	+0.040/0	20	h6	38	104	4	**TAWS4200**	●
22	+0.040/0	20	h6	38	104	4	**TAWS4220**	●
25	+0.040/0	25	h6	45	121	4	**TAWS4250**	●
28	+0.040/0	25	h6	45	121	6	**TAWS6280**	●
30	+0.040/0	25	h6	45	121	6	**TAWS6300**	●
32	+0.040/0	32	h6	53	133	6	**TAWS6320**	●
36	+0.040/0	32	h6	53	133	6	**TAWS6360**	●
40	+0.040/0	40	h6	63	155	6	**TAWS6400**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWS4/6 WS4/6 (VC = -20% ÷ -30%)

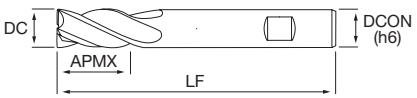
	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)		**50÷70**	**40÷60**	**30÷40**	**20÷30**
	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SIDE MILLING	**2**	4	0.006	0.005	0.005	0.004
	3	4	0.006	0.005	0.005	0.004
	4	4	0.009	0.008	0.007	0.006
	5	4	0.012	0.011	0.010	0.009
	6	4	0.016	0.015	0.013	0.012
	8	4	0.021	0.019	0.017	0.016
	10	4	0.031	0.028	0.025	0.023
	12	4	0.038	0.035	0.031	0.029
	14	4	0.046	0.041	0.037	0.035
	16	4	0.055	0.049	0.044	0.041
	18	4	0.064	0.058	0.051	0.048
	20	4	0.074	0.067	0.059	0.055
	22	4	0.084	0.076	0.068	0.063
	24	6	0.088	0.079	0.071	0.066
	25	4	0.106	0.095	0.084	0.079
	28	6	0.102	0.092	0.082	0.077
	30	6	0.108	0.097	0.086	0.081
	32	6	0.113	0.102	0.091	0.085
	36	6	0.127	0.114	0.101	0.095
	40	6	0.139	0.125	0.111	0.104
ap x ae	**≤ D3**		1.5D x 0.25D	1.5D x 0.25D	1.2D x 0.1D	1.2D x 0.1D

SORMA DIAMOND & CUTTING TOOLS

WL4(6)

- Weldon shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 4 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	+0.040/0	6	h6	12	56	4	**WL4030**	●
4	+0.040/0	6	h6	19	63	4	**WL4040**	●
5	+0.040/0	6	h6	24	68	4	**WL4050**	●
6	+0.040/0	6	h6	24	68	4	**WL4060**	●
7	+0.050/0	10	h6	30	80	4	**WL4070**	●
8	+0.050/0	10	h6	38	88	4	**WL4080**	●
9	+0.050/0	10	h6	38	88	4	**WL4090**	●
10	+0.050/0	10	h6	45	95	4	**WL4100**	●
11	+0.050/0	12	h6	45	102	4	**WL4110**	●
12	+0.050/0	12	h6	53	110	4	**WL4120**	●
13	+0.050/0	12	h6	53	110	4	**WL4130**	●
14	+0.050/0	12	h6	53	110	4	**WL4140**	●
15	+0.050/0	12	h6	53	110	4	**WL4150**	●
16	+0.050/0	16	h6	63	123	4	**WL4160**	●
17	+0.050/0	16	h6	63	123	4	**WL4170**	●
18	+0.050/0	16	h6	63	123	4	**WL4180**	●
19	+0.050/0	16	h6	63	123	4	**WL4190**	●
20	+0.050/0	20	h6	75	141	4	**WL4200**	●
22	+0,050/0	20	h6	75	141	6	**WL6220**	▽
25	+0.050/0	25	h6	90	166	6	**WL6250**	●

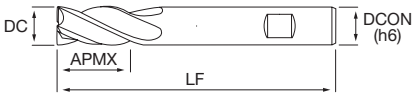
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWL4(6)

- Weldon shank
- 4 flutes
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | ZEFP 4 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	+0.040/0	6	h6	12	56	4	**TAWL4030**	●
4	+0.040/0	6	h6	19	63	4	**TAWL4040**	●
5	+0.040/0	6	h6	24	68	4	**TAWL4050**	●
6	+0.040/0	6	h6	24	68	4	**TAWL4060**	●
7	+0.050/0	10	h6	30	80	4	**TAWL4070**	●
8	+0.050/0	10	h6	38	88	4	**TAWL4080**	●
9	+0.050/0	10	h6	38	88	4	**TAWL4090**	●
10	+0.050/0	10	h6	45	95	4	**TAWL4100**	●
11	+0.050/0	12	h6	45	102	4	**TAWL4110**	●
12	+0.050/0	12	h6	53	110	4	**TAWL4120**	●
13	+0.050/0	12	h6	53	110	4	**TAWL4130**	●
14	+0.050/0	12	h6	53	110	4	**TAWL4140**	●
15	+0.050/0	12	h6	53	110	4	**TAWL4150**	●
16	+0.050/0	16	h6	63	123	4	**TAWL4160**	●
17	+0.050/0	16	h6	63	123	4	**TAWL4170**	▽
18	+0.050/0	16	h6	63	123	4	**TAWL4180**	●
20	+0.050/0	20	h6	75	141	4	**TAWL4200**	●
22	+0.050/0	20	h6	75	141	6	**TAWL6220**	▽
25	+0.050/0	25	h6	90	166	6	**TAWL6250**	●
30	+0.050/0	25	h6	90	166	6	**TAWL6300**	●
32	+0.050/0	32	h6	106	186	6	**TAWL6320**	●
36	+0.050/0	32	h6	106	186	6	**TAWL6360**	●
40	+0.050/0	40	h6	125	217	6	**TAWL6400**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWL4/6 WL4/6 (VC = -20% ÷ -30%)

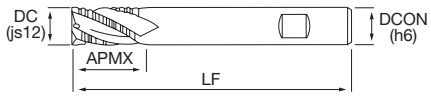
	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		2D x 0.1D	2D x 0.1D	2D x 0.1D	2D x 0.1D
	Vc (m/min)		40÷50	30÷40	25÷35	10÷20
SIDE MILLING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	4	0.004	0.004	0.003	0.003
	4	4	0.006	0.005	0.005	0.004
	5	4	0.009	0.008	0.007	0.006
	6	4	0.012	0.011	0.010	0.009
	8	4	0.015	0.013	0.012	0.011
	10	4	0.021	0.019	0.017	0.016
	12	4	0.027	0.024	0.021	0.020
	14	4	0.032	0.029	0.026	0.024
	16	4	0.038	0.034	0.030	0.028
	18	4	0.045	0.040	0.036	0.033
	20	4	0.050	0.045	0.040	0.038
	22	6	0.056	0.051	0.045	0.042
	25	6	0.068	0.061	0.054	0.051
	30	6	0.074	0.066	0.059	0.053
	32	6	0.077	0.069	0.062	0.054
	36	6	0.085	0.077	0.068	0.060
	40	6	0.095	0.086	0.076	0.067
ap x ae	≤ D5		1.5D x 0.05D	1.5D x 0.05D	1.2D x 0.05D	1.2D x 0.05D

SORMA DIAMOND & CUTTING TOOLS

TAWSR

- Weldon shank
- Roughing NR

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | NR COARSE | ZEFP 3-4 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	±0.060	6	h6	13	57	3	**TAWSR060**	●
7	±0.075	10	h6	16	66	3	**TAWSR070**	●
8	±0.075	10	h6	19	69	3	**TAWSR080**	●
9	±0.075	10	h6	19	69	3	**TAWSR090**	●
10	±0.075	10	h6	22	72	4	**TAWSR100**	●
11	±0.090	12	h6	22	79	4	**TAWSR110**	●
12	±0.090	12	h6	26	83	4	**TAWSR120**	●
13	±0.090	12	h6	26	83	4	**TAWSR130**	●
14	±0.090	12	h6	26	83	4	**TAWSR140**	●
15	±0.090	12	h6	26	83	4	**TAWSR150**	●
16	±0.090	16	h6	32	92	4	**TAWSR160**	●
17	±0.090	16	h6	32	92	4	**TAWSR170**	●
18	±0.090	16	h6	32	92	4	**TAWSR180**	●
20	±0.105	20	h6	38	104	4	**TAWSR200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWSR

	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**D x D**	**D x D**	**D x D**	**0.5D x D**
	Vc (m/min)	**40÷60**	**30÷50**	**25÷35**	**15÷25**
SLOTTING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.022	0.020	0.018	0.017
	8	0.028	0.025	0.022	0.019
	10	0.035	0.032	0.028	0.025
	12	0.045	0.041	0.036	0.032
	14	0.055	0.050	0.044	0.039
	16	0.065	0.059	0.052	0.046
	18	0.075	0.068	0.060	0.053
	20	0.085	0.077	0.068	0.060

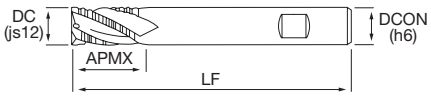
	Material Group ISO 513	P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm	≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae	**1.5D x 0.5D**	**1.5D x 0.5D**	**1.5D x 0.3D**	**1.5D x 0.3D**
	Vc (m/min)	**50÷70**	**40÷60**	**30÷40**	**20÷30**
SIDE MILLING	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.026	0.024	0.021	0.018
	8	0.033	0.030	0.026	0.023
	10	0.042	0.038	0.034	0.029
	12	0.054	0.049	0.043	0.038
	14	0.066	0.059	0.053	0.046
	16	0.078	0.070	0.062	0.055
	18	0.090	0.081	0.072	0.063
	20	0.102	0.092	0.082	0.071

SORMA DIAMOND & CUTTING TOOLS

WSFR

- Weldon shank
- Roughing NR

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | HR FINE | ZEFP 3-6 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	±0.060	6	h6	13	57	3	**WSFR060**	●
8	±0.075	10	h6	19	69	3	**WSFR080**	●
10	±0.075	10	h6	22	72	4	**WSFR100**	●
12	±0.090	12	h6	26	83	4	**WSFR120**	●
14	±0.090	12	h6	26	83	4	**WSFR140**	●
16	±0.090	16	h6	32	92	4	**WSFR160**	●
18	±0.090	16	h6	32	92	4	**WSFR180**	●
20	±0.105	20	h6	38	104	4	**WSFR200**	●

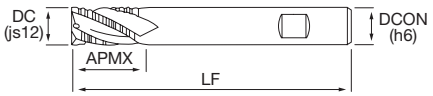
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWSFR

- Weldon shank
- Roughing NR

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | HR FINE | ZEFP 3-6 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	±0.060	6	h6	13	57	3	**TAWSFR060**	●
7	±0.075	10	h6	16	66	3	**TAWSFR070**	●
8	±0.075	10	h6	19	69	3	**TAWSFR080**	●
9	±0.075	10	h6	19	69	3	**TAWSFR090**	●
10	±0.075	10	h6	22	72	4	**TAWSFR100**	●
11	±0.090	12	h6	22	79	4	**TAWSFR110**	●
12	±0.090	12	h6	26	83	4	**TAWSFR120**	●
13	±0.090	12	h6	26	83	4	**TAWSFR130**	●
14	±0.090	12	h6	26	83	4	**TAWSFR140**	●
15	±0.090	12	h6	26	83	4	**TAWSFR150**	●
16	±0.090	16	h6	32	92	4	**TAWSFR160**	●
17	±0.090	16	h6	32	92	4	**TAWSFR170**	●
18	±0.090	16	h6	32	92	4	**TAWSFR180**	●
20	±0.105	20	h6	38	104	4	**TAWSFR200**	●
22	±0.105	20	h6	38	104	5	**TAWSFR220**	●
25	±0.105	25	h6	45	121	5	**TAWSFR250**	●
28	±0.105	25	h6	45	121	6	**TAWSFR280**	●
30	±0.105	25	h6	45	121	6	**TAWSFR300**	●
32	±0.125	32	h6	53	133	6	**TAWSFR320**	●
36	±0.125	32	h6	53	133	6	**TAWSFR360**	●
40	±0.125	32	h6	63	155	6	**TAWSFR400**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWSFR WSFR (VC = -20% ÷ -30%)

	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		D x D	D x D	D x D	0.5D x D
	Vc (m/min)		40÷60	30÷50	25÷35	15÷25
SLOTTING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	3	0.022	0.020	0.018	0.017
	8	3	0.028	0.025	0.022	0.019
	10	4	0.035	0.032	0.028	0.025
	12	4	0.045	0.041	0.036	0.032
	14	4	0.055	0.050	0.044	0.039
	16	4	0.065	0.059	0.052	0.046
	18	4	0.075	0.068	0.060	0.053
	20	4	0.085	0.077	0.068	0.060
	22	5	0.086	0.077	0.068	0.060
	25	5	0.099	0.089	0.079	0.069
	28	6	0.100	0.090	0.080	0.070
	30	6	0.108	0.097	0.086	0.076
	32	6	0.116	0.104	0.093	0.081
	36	6	0.130	0.111	0.104	0.091
	40	6	0.145	0.123	0.116	0.102

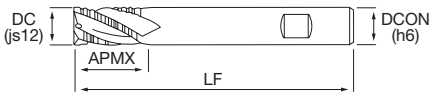
	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		1.5D x 0.5D	1.5D x 0.5D	1.5D x 0.3D	1.5D x 0.3D
	Vc (m/min)		50÷70	40÷60	30÷40	20÷30
SIDE MILLING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	3	0.026	0.024	0.021	0.018
	8	3	0.033	0.030	0.026	0.023
	10	4	0.042	0.038	0.034	0.029
	12	4	0.054	0.049	0.043	0.038
	14	4	0.066	0.059	0.053	0.046
	16	4	0.078	0.070	0.062	0.055
	18	4	0.090	0.081	0.072	0.063
	20	4	0.102	0.092	0.082	0.071
	22	5	0.103	0.092	0.082	0.072
	25	5	0.119	0.107	0.095	0.083
	28	6	0.120	0.108	0.096	0.084
	30	6	0.130	0.117	0.104	0.091
	32	6	0.139	0.125	0.111	0.097
	36	6	0.156	0.140	0.125	0.109
	40	6	0.174	0.157	0.139	0.122

SORMA DIAMOND & CUTTING TOOLS

WLFR

- Weldon shank
- Roughing NR
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co BR | FHA 30° | SQUARE | HR FINE | ZEFP 3-6 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	±0.060	6	h6	24	68	3	**WLFR060**	●
8	±0.075	10	h6	38	88	3	**WLFR080**	●
10	±0.075	10	h6	45	95	4	**WLFR100**	●
12	±0.090	12	h6	53	110	4	**WLFR120**	●
14	±0.090	12	h6	53	110	4	**WLFR140**	●
16	±0.090	16	h6	63	123	4	**WLFR160**	○
18	±0.090	16	h6	63	123	4	**WLFR180**	●
20	±0.105	20	h6	75	141	4	**WLFR200**	●

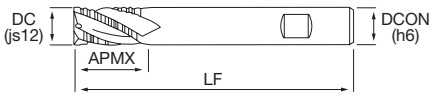
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWLFR

- Weldon shank
- Roughing NR
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 844 | N | HSS/Co PV200 | FHA 30° | SQUARE | HR FINE | ZEFP 3-6 | SLOTTING | SIDE MILLING

DC	DC tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
6	±0.060	6	h6	24	68	3	**TAWLFR060**	●
8	±0.075	10	h6	38	88	3	**TAWLFR080**	●
10	±0.075	10	h6	45	95	4	**TAWLFR100**	●
12	±0.090	12	h6	53	110	4	**TAWLFR120**	●
14	±0.090	12	h6	53	110	4	**TAWLFR140**	●
16	±0.090	16	h6	63	123	4	**TAWLFR160**	●
18	±0.090	16	h6	63	123	4	**TAWLFR180**	●
20	±0.105	20	h6	75	141	4	**TAWLFR200**	●
22	±0.105	20	h6	75	141	5	**TAWLFR220**	●
25	±0.105	25	h6	90	166	5	**TAWLFR250**	●
30	±0.105	25	h6	90	166	6	**TAWLFR300**	●
32	±0.105	32	h6	106	186	6	**TAWLFR320**	●
36	±0.125	32	h6	106	186	6	**TAWLFR360**	●
40	±0.125	32	h6	125	217	6	**TAWLFR400**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

TAWLFR WLFR (VC = -20% ÷ -30%)

SLOTTING

Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
ap x ae		**0.5D x D**	**0.5D x D**	**0.5D x D**	**0.3D x D**
Vc (m/min)		**35÷45**	**25÷35**	**20÷30**	**10÷20**
DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	3	0.014	0.013	0.011	0.011
8	3	0.020	0.018	0.016	0.014
10	4	0.025	0.022	0.020	0.017
12	4	0.032	0.028	0.025	0.022
14	4	0.039	0.035	0.031	0.027
16	4	0.046	0.041	0.036	0.032
18	4	0.053	0.047	0.042	0.037
20	4	0.060	0.054	0.048	0.042
22	5	0.060	0.054	0.048	0.042
25	5	0.069	0.062	0.055	0.049
28	6	0.070	0.063	0.056	0.049
30	6	0.076	0.068	0.060	0.053
32	6	0.081	0.073	0.065	0.057
36	6	0.091	0.077	0.073	0.064
40	6	0.102	0.086	0.081	0.071

SIDE MILLING

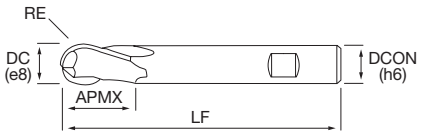
Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
ap x ae		**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.3D**	**1.5D x 0.2D**
Vc (m/min)		**35÷45**	**25÷35**	**20÷30**	**10÷20**
DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	3	0.017	0.015	0.013	0.012
8	3	0.024	0.022	0.019	0.017
10	4	0.029	0.026	0.024	0.021
12	4	0.038	0.034	0.030	0.026
14	4	0.046	0.042	0.037	0.032
16	4	0.055	0.049	0.044	0.038
18	4	0.063	0.057	0.050	0.044
20	4	0.071	0.064	0.057	0.050
22	5	0.072	0.065	0.057	0.050
25	5	0.083	0.075	0.067	0.058
28	6	0.084	0.076	0.067	0.059
30	6	0.091	0.082	0.073	0.064
32	6	0.097	0.088	0.078	0.068
36	6	0.109	0.098	0.087	0.076
40	6	0.122	0.110	0.097	0.085

SORMA DIAMOND & CUTTING TOOLS

WSB2

- Weldon shank
- 2 flutes ball nose

P	M	K	N	S	H
★	☆	★	☆		





DIN 327 | N | HSS/Co BR | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
2	-0.014/-0.028	1	±0.020	6	h6	4	48	2	**WSB2020**	●
3	-0.014/-0.028	1.5	±0.020	6	h6	5	49	2	**WSB2030**	●
4	-0.020/-0.038	2	±0.020	6	h6	7	51	2	**WSB2040**	●
5	-0.020/-0.038	2.5	±0.020	6	h6	8	52	2	**WSB2050**	●
6	-0.020/-0.038	3	±0.020	6	h6	8	52	2	**WSB2060**	●
8	-0.025/-0.047	4	±0.020	10	h6	11	61	2	**WSB2080**	●
10	-0.025/-0.047	5	±0.020	10	h6	13	63	2	**WSB2100**	●
12	-0.032/-0.059	6	±0.020	12	h6	16	73	2	**WSB2120**	●
14	-0.032/-0.059	7	±0.020	12	h6	16	73	2	**WSB2140**	●
16	-0.032/-0.059	8	±0.020	16	h6	19	79	2	**WSB2160**	●
18	-0.032/-0.059	9	±0.020	16	h6	19	79	2	**WSB2180**	●
20	-0.040/-0.073	10	±0.020	20	h6	22	88	2	**WSB2200**	●
25	-0.040/-0.073	12.5	±0.020	25	h6	26	102	2	**WSB2250**	●

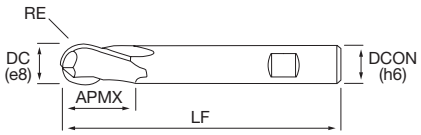
★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

TAWSB2

- Weldon shank
- 2 flutes ball nose

P	M	K	N	S	H
★	☆	★	☆		





DIN 327 | N | HSS/Co PV200 | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	1.5	±0.020	6	h6	5	49	2	**TAWSB2030**	◉
4	-0.020/-0.038	2	±0.020	6	h6	7	51	2	**TAWSB2040**	●
5	-0.020/-0.038	2.5	±0.020	6	h6	8	52	2	**TAWSB2050**	●
6	-0.020/-0.038	3	±0.020	6	h6	8	52	2	**TAWSB2060**	●
8	-0.025/-0.047	4	±0.020	10	h6	11	61	2	**TAWSB2080**	●
10	-0.025/-0.047	5	±0.020	10	h6	13	63	2	**TAWSB2100**	●
12	-0.032/-0.059	6	±0.020	12	h6	16	73	2	**TAWSB2120**	●
14	-0.032/-0.059	7	±0.020	12	h6	16	73	2	**TAWSB2140**	◉
16	-0.032/-0.059	8	±0.020	16	h6	19	79	2	**TAWSB2160**	●
20	-0.040/-0.073	10	±0.020	20	h6	22	88	2	**TAWSB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

TAWSB2 WSB2 (VC = -20% ÷ -30%)

	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		**0.1D x 0.2D**	**0.1D x 0.2D**	**0.1D x 0.2D**	**0.1D x 0.2D**
	Vc (m/min)		**40÷60**	**30÷50**	**25÷35**	**15÷25**
ap= ae COPYING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	1.20	0.020	0.018	0.016	0.015
	3	1.80	0.040	0.036	0.032	0.030
	4	2.40	0.060	0.054	0.048	0.045
	5	3.00	0.070	0.063	0.056	0.053
	6	3.60	0.082	0.074	0.066	0.062
	8	4.80	0.094	0.085	0.075	0.071
	10	6.00	0.110	0.099	0.088	0.083
	12	7.20	0.130	0.117	0.104	0.098
	14	8.40	0.150	0.135	0.120	0.113
	16	9.60	0.170	0.153	0.136	0.128
	18	10.80	0.190	0.171	0.152	0.143
	20	12.00	0.210	0.189	0.168	0.158
	22	13.20	0.232	0.209	0.186	0.174
	25	15.00	0.262	0.236	0.210	0.197

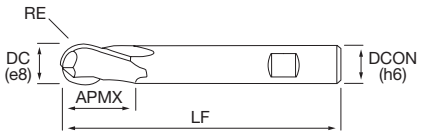
α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

WLB2

- Weldon shank
- 2 flutes ball nose
- Long

P	M	K	N	S	H
★	☆	★	☆		





DIN 327 | N | HSS/Co BR | FHA 30° | BALL NOSE | ZEFP 2 BALL | COPYING

DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
3	-0.014/-0.028	1.5	±0.020	6	h6	8	56	2	**WLB2030**	●
4	-0.020/-0.038	2	±0.020	6	h6	11	63	2	**WLB2040**	●
5	-0.020/-0.038	2.5	±0.020	6	h6	13	68	2	**WLB2050**	●
6	-0.020/-0.038	3	±0.020	6	h6	13	68	2	**WLB2060**	●
8	-0.025/-0.047	4	±0.020	10	h6	19	88	2	**WLB2080**	●
10	-0.025/-0.047	5	±0.020	10	h6	22	95	2	**WLB2100**	●
12	-0.032/-0.059	6	±0.020	12	h6	26	110	2	**WLB2120**	●
14	-0.032/-0.059	7	±0.020	12	h6	26	110	2	**WLB2140**	●
16	-0.032/-0.059	8	±0.020	16	h6	32	123	2	**WLB2160**	●
18	-0.032/-0.059	9	±0.020	16	h6	32	123	2	**WLB2180**	●
20	-0.040/-0.073	10	±0.020	20	h6	38	141	2	**WLB2200**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

WLB2

	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		**0.1D x 0.2D**	**0.1D x 0.2D**	**0.1D x 0.2D**	**0.1D x 0.2D**
	Vc (m/min)		**25÷35**	**20÷30**	**15÷25**	**10÷15**
ap ae COPYING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	1.80	0.026	0.023	0.020	0.019
	4	2.40	0.038	0.034	0.031	0.029
	5	3.00	0.045	0.040	0.036	0.033
	6	3.60	0.052	0.047	0.042	0.039
	8	4.80	0.060	0.054	0.048	0.045
	10	6.00	0.070	0.063	0.056	0.053
	12	7.20	0.083	0.075	0.066	0.062
	14	8.40	0.096	0.086	0.077	0.072
	16	9.60	0.108	0.098	0.087	0.081
	18	10.80	0.121	0.109	0.097	0.091
	20	12.00	0.134	0.120	0.107	0.100

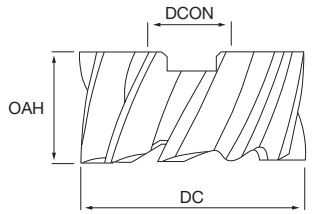
α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

SORMA DIAMOND & CUTTING TOOLS

FM

- Shell mill
- Multi flute

P	M	K	N	S	H
★	☆	★	☆		





DIN 1880 | N | HSS/Co BR | FHA 30° | SQUARE | ZEFP 8 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	OAH	OAH tol.	ZEFP	EDP no.	Stock
40	+0.250/-0.150	16	+0.02/0	32	+0.50/-0	8	**FM40**	●
50	+0.250/-0.150	22	+0.02/0	36	+0.50/-0	8	**FM50**	●
63	+0.250/-0.150	27	+0.02/0	40	+0.50/-0	8	**FM63**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

FM

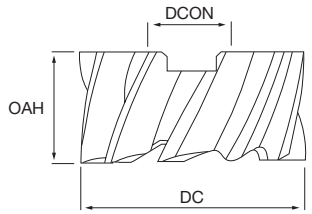
	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		**0.25D x 0.75D**	**0.25D x 0.75D**	**0.25D x 0.75D**	**0.25D x 0.75D**
SIDE MILLING	Vc (m/min)		**30÷45**	**20÷35**	**18÷26**	**11÷19**
	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	40	8	0.060	0.054	0.048	0.045
	50	8	0.070	0.063	0.056	0.053
	63	8	0.080	0.072	0.064	0.060
	80	10	0.100	0.090	0.080	0.075
	100	10	0.120	0.108	0.096	0.090

SORMA DIAMOND & CUTTING TOOLS

FFR

- Shell mill
- Multi flute
- Roughing HR

P	M	K	N	S	H
★	☆	★	☆		





DIN 1880 | N | HSS/Co BR | FHA 30° | SQUARE | HR FINE | ZEFP 6-8 | SIDE MILLING

DC	DC tol.	DCON	TCDCON	OAH	OAH tol.	ZEFP	EDP no.	Stock
40	+0.250/-0.150	16	+0.02/0	32	+0.5/0	6	**FFR40**	●
50	+0.250/-0.150	22	+0.02/0	36	+0.5/0	8	**FFR50**	●
63	+0.250/-0.150	27	+0.02/0	40	+0.5/0	8	**FFR63**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

FFR

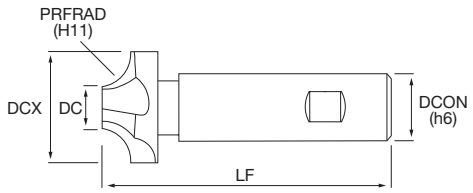
	Material Group ISO 513		P1 P2	P3 P7 K1	P4 M1 K2	P5 M2
	Hardness/Rm		≤700 N/mm²	600÷800 N/mm²	800÷1000 N/mm²	900÷1200 N/mm²
	ap x ae		**0.25D x 0.75D**	**0.25D x 0.75D**	**0.25D x 0.75D**	**0.25D x 0.75D**
	Vc (m/min)		**30÷45**	**20÷35**	**18÷26**	**11÷19**
SIDE MILLING	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	40	8	0.080	0.072	0.064	0.060
	50	8	0.100	0.090	0.080	0.075
	63	8	0.120	0.108	0.096	0.090
	80	10	0.120	0.108	0.096	0.090
	100	10	0.140	0.126	0.112	0.105

SORMA DIAMOND & CUTTING TOOLS

WCR

• Corner rounding

P	M	K	N	S	H
★	☆	★	☆		





DIN 6518 | N | HSS/Co BR | FHA 0° | ZEFP 4 | ROUNDING

DC	DCX	PRFRAD	PRFRAD tol.	DCON	TCDCON	LF	ZEFP	EDP no.	Stock
6	8	1	+0.060/0	10	h6	60	4	**WCR080**	●
6	9	1.5	+0.060/0	10	h6	60	4	**WCR090**	●
6	10	2	+0.060/0	10	h6	60	4	**WCR100**	●
6	11	2.5	+0.060/0	10	h6	60	4	**WCR110**	●
6	12	3	+0.060/0	12	h6	60	4	**WCR120**	●
6	13	3.5	+0.075/0	12	h6	60	4	**WCR130**	●
6	14	4	+0.075/0	12	h6	60	4	**WCR140**	●
6	15	4.5	+0.075/0	12	h6	60	4	**WCR150**	●
6	16	5	+0.075/0	12	h6	60	4	**WCR160**	●
8	19	5.5	+0.075/0	16	h6	67	4	**WCR190**	●
8	20	6	+0.075/0	16	h6	67	4	**WCR200**	●
8	21	6.5	+0.090/0	16	h6	71	4	**WCR210**	●
8	22	7	+0.090/0	16	h6	71	4	**WCR220**	●
8	23	7.5	+0.090/0	16	h6	71	4	**WCR230**	●
8	24	8	+0.090/0	16	h6	71	4	**WCR240**	●
8	25	8.5	+0.090/0	25	h6	85	4	**WCR250**	●
8	26	9	+0.090/0	25	h6	85	4	**WCR260**	●
8	27	9.5	+0.090/0	25	h6	85	4	**WCR270**	●
8	28	10	+0.090/0	25	h6	85	4	**WCR280**	●
10	32	11	+0.110/0	25	h6	90	4	**WCR320**	●

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

WCR



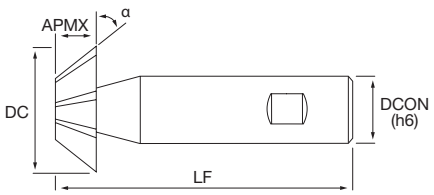
Material Group ISO 513	P1 P2 P3 P4	P7 M1	K1 K2	N1 N2 N3 N4
Hardness/Rm	≤800 N/mm²	≤750 N/mm²	≤350 HB	
ap x ae	0.2D x 0.2D	0.2D x 0.2D	0.2D x 0.2D	0.2D x 0.2D
Vc (m/min)	30÷50	15÷25	30÷40	60÷80
DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
8	0.006	0.004	0.005	0.007
9	0.008	0.006	0.007	0.009
10	0.010	0.007	0.009	0.011
11	0.012	0.008	0.010	0.013
12	0.015	0.010	0.012	0.016
13	0.017	0.012	0.014	0.019
14	0.020	0.014	0.017	0.021
15	0.023	0.016	0.019	0.025
16	0.025	0.018	0.021	0.028
17	0.026	0.018	0.022	0.029
18	0.027	0.019	0.023	0.030
19	0.029	0.020	0.024	0.031
20	0.030	0.021	0.026	0.033
21	0.033	0.023	0.028	0.036
22	0.035	0.025	0.030	0.039
23	0.038	0.026	0.032	0.041
24	0.040	0.028	0.034	0.044
25	0.042	0.029	0.035	0.046
26	0.043	0.030	0.037	0.047
27	0.045	0.031	0.038	0.049
28	0.046	0.032	0.039	0.051
32	0.050	0.035	0.043	0.055

SORMA DIAMOND & CUTTING TOOLS

WDC

• Dovetail cutter

P	M	K	N	S	H
★	☆	★	☆		





DIN 1833 | N | HSS/Co BR | α 45° | α 60° | ZEFP 6~12 | DOVETAIL B 45°-60°

DC	DC tol.	DCON	TCDCON	APMX	TCAPMX	LF	α	ZEFP	EDP no.	Stock
16	±0.055	12	h6	4	js14	60	45	6	**WDC45160**	●
20	±0.065	12	h6	5	js14	63	45	6	**WDC45200**	●
22	±0.065	12	h6	6	js14	67	45	6	**WDC45220**	●
25	±0.065	16	h6	6.3	js14	67	45	8	**WDC45250**	●
28	±0.065	16	h6	7.5	js14	67	45	8	**WDC45280**	●
32	±0.080	16	h6	8	js14	71	45	10	**WDC45320**	●
38	±0.080	16	h6	10	js14	80	45	12	**WDC45380**	○
16	±0.055	12	h6	6.3	js14	60	60	6	**WDC60160**	●
20	±0.065	12	h6	8	js14	63	60	6	**WDC60200**	●
22	±0.065	12	h6	9	js14	67	60	6	**WDC60220**	●
25	±0.065	16	h6	10	js14	67	60	8	**WDC60250**	●
28	±0.065	16	h6	11	js14	67	60	8	**WDC60280**	●
32	±0.080	16	h6	12.5	js14	71	60	10	**WDC60320**	●
38	±0.080	16	h6	16	js14	80	60	12	**WDC60380**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

WDC 45° - 60°

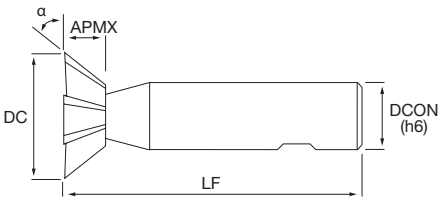
	Material Group ISO 513		P1 P2 P3 P4	P7 M1	K1 K2	N1 N2 N3 N4
	Hardness/Rm		≤800 N/mm²	≤750 N/mm²	≤350 HB	
	ap x ae		0.2D x 0.15D	0.2D x 0.15D	0.2D x 0.15D	0.2D x 0.15D
	Vc (m/min)		30÷50	15÷25	30÷40	50÷70
DOVETAIL B 45°-60°	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	16	6	0.015	0.011	0.013	0.017
	20	6	0.017	0.012	0.014	0.018
	22	6	0.018	0.013	0.015	0.020
	25	8	0.020	0.014	0.017	0.022
	28	8	0.023	0.016	0.019	0.025
	32	10	0.025	0.018	0.021	0.028
	38	12	0.028	0.020	0.024	0.031

SORMA DIAMOND & CUTTING TOOLS

WDD

• Dovetail cutter

P	M	K	N	S	H
★	☆	★	☆		





DIN 1833 | N | HSS/Co BR | α 45° | α 60° | ZEFP 6~12 | DOVETAIL A 45°-60°

DC	DC tol.	DCON	TCDCON	APMX	TCAPMX	LF	α	ZEFP	EDP no.	Stock
16	±0.055	12	h6	4	js14	60	45	6	**WDD45160**	●
20	±0.065	12	h6	5	js14	63	45	6	**WDD45200**	●
22	±0.065	12	h6	6	js14	67	45	6	**WDD45220**	●
25	±0.065	16	h6	6.3	js14	67	45	8	**WDD45250**	●
28	±0.065	16	h6	7.5	js14	67	45	8	**WDD45280**	●
32	±0.080	16	h6	8	js14	71	45	10	**WDD45320**	●
38	±0.080	16	h6	10	js14	80	45	12	**WDD45380**	○
16	±0.055	12	h6	6.3	js14	60	60	6	**WDD60160**	●
20	±0.065	12	h6	8	js14	63	60	6	**WDD60200**	●
22	±0.065	12	h6	9	js14	67	60	6	**WDD60220**	●
25	±0.065	16	h6	10	js14	67	60	8	**WDD60250**	●
28	±0.065	16	h6	11	js14	67	60	8	**WDD60280**	●
32	±0.080	16	h6	12.5	js14	71	60	10	**WDD60320**	●
38	±0.080	16	h6	16	js14	80	60	12	**WDD60380**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

WDD 45° - 60°

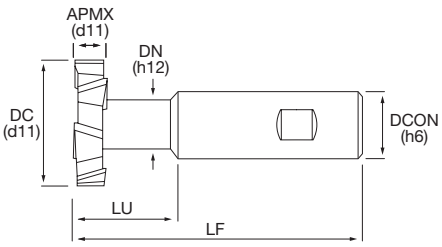
	Material Group ISO 513		P1 P2 P3 P4	P7 M1	K1 K2	N1 N2 N3 N4
	Hardness/Rm		≤800 N/mm²	≤750 N/mm²	≤350 HB	
	ap x ae		0.2D x 0.15D	0.2D x 0.15D	0.2D x 0.15D	0.2D x 0.15D
	Vc (m/min)		30÷50	15÷25	30÷40	50÷70
DOVETAIL A 45°-60°	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	16	6	0.015	0.011	0.013	0.017
	20	6	0.017	0.012	0.014	0.018
	22	6	0.018	0.013	0.015	0.020
	25	8	0.020	0.014	0.017	0.022
	28	8	0.023	0.016	0.019	0.025
	32	10	0.025	0.018	0.021	0.028
	38	12	0.028	0.020	0.024	0.031

SORMA DIAMOND & CUTTING TOOLS

WTM

• T-slot

P	M	K	N	S	H
★	☆	★	☆		





DIN 851 | N | HSS/Co BR | ZEFP 6~8 | T SLOT

DC	DC tol.	DCON	TCDCON	DN	DN tol.	LU	APMX	TCAPMX	LF	ZEFP	EDP no.	Stock
12.5	-0.050/-0.160	10	h6	5	0/-0.012	13	6	d11	57	6	**WTM125**	●
16	-0.050/-0.160	10	h6	6.5	0/-0.015	19	8	d11	62	6	**WTM160**	●
18	-0.050/-0.160	12	h6	8	0/-0.015	22	8	d11	70	6	**WTM180**	●
19	-0.065/-0.195	12	h6	8	0/-0.015	23	9	d11	71	6	**WTM190**	●
21	-0.065/-0.195	12	h6	10	0/-0.015	26	9	d11	74	6	**WTM210**	●
22	-0.065/-0.195	12	h6	10	0/-0.015	27	10	d11	75	6	**WTM220**	●
25	-0.065/-0.195	16	h6	12	0/-0.018	31	11	d11	82	6	**WTM250**	●
28	-0.065/-0.195	16	h6	13	0/-0.018	32	12	d11	83	6	**WTM280**	●
32	-0.080/-0.240	16	h6	15	0/-0.018	41	14	d11	90	8	**WTM320**	●
36	-0.080/-0.240	25	h6	17	0/-0.018	42	16	d11	103	8	**WTM360**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

Cutting Parameters

WTM

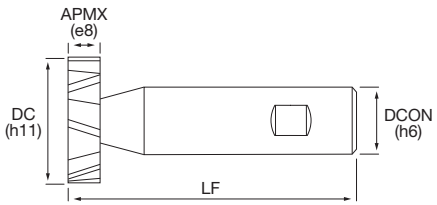
	Material Group ISO 513		P1 P2 P3 P4	P7 M1	K1 K2	N1 N2 N3 N4
	Hardness/Rm		≤800 N/mm²	≤750 N/mm²	≤350 HB	
	ap x ae		DIN Norm 650	DIN Norm 650	DIN Norm 650	DIN Norm 650
	Vc (m/min)		25÷35	12÷18	20÷30	40÷60
T SLOT	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	12.5	6	0.010	0.007	0.009	0.011
	16	6	0.025	0.018	0.021	0.028
	18	6	0.030	0.021	0.026	0.033
	19	6	0.035	0.025	0.030	0.039
	21	6	0.040	0.028	0.034	0.044
	22	6	0.043	0.030	0.036	0.047
	25	6	0.045	0.032	0.038	0.050
	28	6	0.050	0.035	0.043	0.055
	32	8	0.057	0.040	0.048	0.063
	36	8	0.065	0.046	0.055	0.072

SORMA DIAMOND & CUTTING TOOLS

WWK

• Woodruff

P	M	K	N	S	H
★	☆	★	☆		





DIN 850 | N | HSS/Co BR | FHA 10° | SQUARE | ZEFP 8~14 | WOODRUFF

DC	DC tol.	DCON	TCDCON	APMX	APMX tol.	LF	ZEFP	EDP no.	Stock
10.5	0/-0.110	6	h6	2	-0.032/-0.059	50	8	**WWK105A**	●
10.5	0/-0.110	6	h6	2.5	-0.032/-0.059	50	8	**WWK105B**	●
10.5	0/-0.110	6	h6	3	-0.032/-0.059	50	8	**WWK105C**	●
13.5	0/-0.110	10	h6	2	-0.032/-0.059	56	8	**WWK135A**	●
13.5	0/-0.110	10	h6	2.5	-0.032/-0.059	56	8	**WWK135B**	●
13.5	0/-0.110	10	h6	3	-0.032/-0.059	56	8	**WWK135C**	●
13.5	0/-0.110	10	h6	4	-0.032/-0.059	56	8	**WWK135D**	●
16.5	0/-0.110	10	h6	2.5	-0.032/-0.059	56	8	**WWK165B**	●
16.5	0/-0.110	10	h6	3	-0.032/-0.059	56	8	**WWK165C**	●
16.5	0/-0.110	10	h6	4	-0.032/-0.059	56	8	**WWK165D**	●
16.5	0/-0.110	10	h6	5	-0.032/-0.059	56	8	**WWK165E**	●
19.5	0/-0.130	10	h6	3	-0.040/-0.073	63	8	**WWK195C**	●
19.5	0/-0.130	10	h6	4	-0.040/-0.073	63	8	**WWK195D**	●
19.5	0/-0.130	10	h6	5	-0.040/-0.073	63	8	**WWK195E**	●
19.5	0/-0.130	10	h6	6	-0.040/-0.073	63	8	**WWK195F**	●
22.5	0/-0.130	10	h6	4	-0.040/-0.073	63	10	**WWK225D**	●
22.5	0/-0.130	10	h6	5	-0.040/-0.073	63	10	**WWK225E**	●
22.5	0/-0.130	10	h6	6	-0.040/-0.073	63	10	**WWK225F**	●
22.5	0/-0.130	10	h6	8	-0.040/-0.073	63	10	**WWK225H**	●
25.5	0/-0.130	10	h6	5	-0.040/-0.073	63	10	**WWK255E**	●
25.5	0/-0.130	10	h6	6	-0.040/-0.073	63	10	**WWK255F**	●
25.5	0/-0.130	10	h6	7	-0.040/-0.073	63	10	**WWK255G**	●
25.5	0/-0.130	10	h6	8	-0.040/-0.073	63	10	**WWK255H**	●
28.5	0/-0.130	10	h6	5	-0.040/-0.073	63	10	**WWK285E**	●
28.5	0/-0.130	10	h6	6	-0.040/-0.073	63	10	**WWK285F**	●
28.5	0/-0.130	10	h6	7	-0.040/-0.073	63	10	**WWK285G**	●
28.5	0/-0.130	10	h6	8	-0.040/-0.073	63	10	**WWK285H**	●
32.5	0/-0.160	12	h6	10	-0.050/-0.089	71	12	**WWK325L**	●
32.5	0/-0.160	12	h6	5	-0.050/-0.089	71	12	**WWK325E**	●
32.5	0/-0.160	12	h6	6	-0.050/-0.089	71	12	**WWK325F**	●
32.5	0/-0.160	12	h6	7	-0.050/-0.089	71	12	**WWK325G**	●
32.5	0/-0.160	12	h6	8	-0.050/-0.089	71	12	**WWK325H**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

WWK

	Material Group ISO 513		P1 P2 P3 P4	P7 M1	K1 K2	N1 N2 N3 N4
	Hardness/Rm		≤800 N/mm²	≤750 N/mm²	≤350 HB	
	ap x ae		DIN Norm 6888	DIN Norm 6888	DIN Norm 6888	DIN Norm 6888
	Vc (m/min)		25÷35	12÷18	20÷30	40÷60
WOODRUFF	DC (mm)	z	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	10.5	8	0.010	0.007	0.009	0.011
	13.5	8	0.018	0.012	0.015	0.019
	16.5	8	0.025	0.018	0.021	0.028
	19.5	8	0.033	0.023	0.028	0.036
	22.5	10	0.040	0.028	0.034	0.044
	25.5	10	0.045	0.032	0.038	0.050
	28.5	10	0.050	0.035	0.043	0.055
	32.5	12	0.055	0.039	0.047	0.061



CARBIDE BURRS

Selection Guide, L2

SELECTION GUIDE

ITEM NO.	PAGE	SHANK Ø3 MM	SHANK Ø6 MM
SA	L5		
SB	L7		
SC	L9		
SD	L11		
SE	L13		
SF	L15		
SG	L17		
SH	L19		
SJ	L21		
SK	L23		
SL	L25		
SM	L27		
SN	L29		



CARBIDE BURRS

Don’t miss the Osawa quality on carbide rotary burrs, available in a wide variety of shapes and geometries.

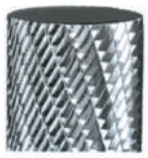
Ritrovate tutta la qualità Osawa anche nella gamma di lime rotative in metallo duro, disponibili in un’ampia scelta di forme e geometrie.

Die Osawa- Qualität steht auch für Hartmetall-Rotierfräser. Diese sind in einer breiten Auswahl an Formen und Geometrien erhältlich.

Retrouvez toute la qualité Osawa dans la gamme de limes rotatives carbure, disponibles dans une grande variété de formes et géométries.

CARBIDE BURRS

Universal application



M

- Double cut
- 2 Schneiden
- Doppio taglio
- Coupe double



MPC

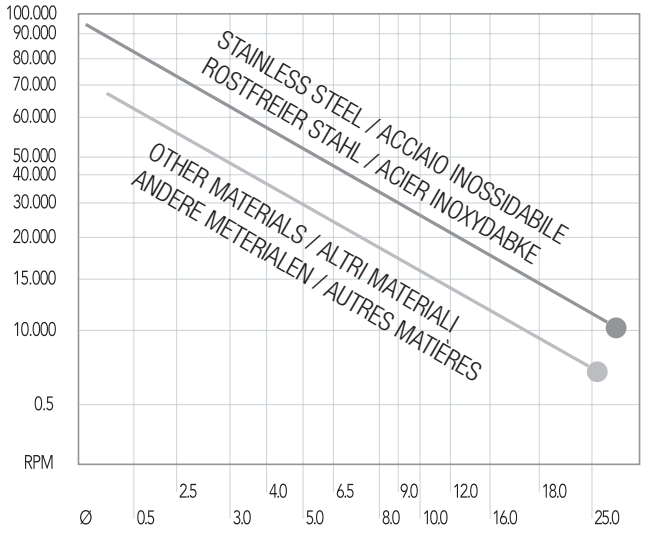
- Plain cut
- Flachschneide
- Taglio piano
- Coupe plane



MFN

Alucut

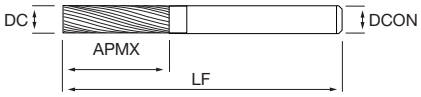
Speed table



SA - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
1.5	3	6	38	**SA41M**	●
1.5	3	6	38	**SA41MPC**	●
2.5	3	11	38	**SA42M**	●
2.5	3	11	38	**SA42MPC**	●
3	3	14	38	**SA43M**	●
3	3	14	38	**SA43MPC**	●
4	3	12	38	**SA52M**	●
4	3	12	38	**SA52MPC**	●
5	3	12.7	38	**SA53M**	●
5	3	12.7	38	**SA53MPC**	●
6.3	3	12.7	45	**SA51M**	●
6.3	3	12.7	45	**SA51MPC**	●

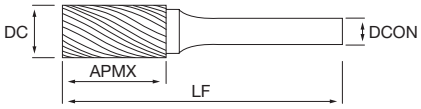
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SA - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	







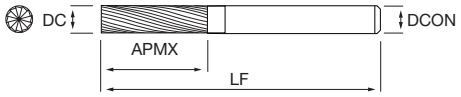
DC	DCON	APMX	LF	EDP no.	Stock
3	6	12	50	**SA11M**	●
3	6	12	50	**SA11MPC**	○
4	6	13	50	**SA13M**	●
4	6	13	50	**SA13MPC**	○
5	6	16	50	**SA14M**	●
5	6	16	50	**SA14MPC**	○
6	6	18	50	**SA1M**	●
6	6	18	50	**SA1MNF**	○
6	6	18	50	**SA1MPC**	○
8	6	19	64	**SA2M**	●
8	6	19	64	**SA2MPC**	○
9.5	6	19	64	**SA3M**	●
9.5	6	19	64	**SA3MNF**	○
9.5	6	19	64	**SA3MPC**	○
11	6	25	70	**SA4M**	●
11	6	25	70	**SA4MPC**	○
12.7	6	25	70	**SA5M**	●
12.7	6	25	70	**SA5MNF**	○
12.7	6	25	70	**SA5MPC**	○
16	6	25	70	**SA6M**	●
16	6	25	70	**SA6MNF**	○
16	6	25	70	**SA6MPC**	○
19	6	25	70	**SA7M**	●
19	6	25	70	**SA7MNF**	○
19	6	25	70	**SA7MPC**	○
25	6	25	70	**SA9M**	●
25	6	25	70	**SA9MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SB - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
1.5	3	6	38	**SB41M**	●
1.5	3	6	38	**SB41MPC**	●
2.5	3	11	38	**SB42M**	●
2.5	3	11	38	**SB42MPC**	●
3	3	14	38	**SB43M**	●
3	3	14	38	**SB43MPC**	●
6.3	3	4.7	37	**SB51M**	●
6.3	3	4.7	37	**SB51MPC**	●

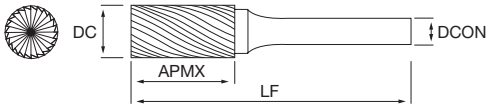
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SB - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC MFN

DC	DCON	APMX	LF	EDP no.	Stock
3	6	12	50	**SB11M**	●
3	6	12	50	**SB11MPC**	○
4	6	13	50	**SB13M**	●
4	6	13	50	**SB13MPC**	○
5	6	16	50	**SB14M**	●
5	6	16	50	**SB14MPC**	○
6	6	18	50	**SB1M**	●
6	6	18	50	**SB1MNF**	○
6	6	18	50	**SB1MPC**	○
8	6	19	64	**SB2M**	●
8	6	19	64	**SB2MPC**	○
9.5	6	19	64	**SB3M**	●
9.5	6	19	64	**SB3MNF**	○
9.5	6	19	64	**SB3MPC**	○
11	6	25	70	**SB4M**	●
11	6	25	70	**SB4MPC**	○
12.7	6	25	70	**SB5M**	●
12.7	6	25	70	**SB5MNF**	○
12.7	6	25	70	**SB5MPC**	○
16	6	25	70	**SB6M**	●
16	6	25	70	**SB6MNF**	○
16	6	25	70	**SB6MPC**	○
19	6	25	70	**SB7M**	○
19	6	25	70	**SB7MNF**	○
19	6	25	70	**SB7MPC**	○
25	6	25	70	**SB9M**	○
25	6	25	70	**SB9MPC**	○

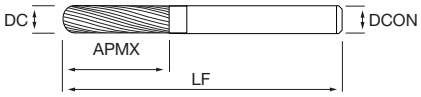
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SC - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
2.5	3	11	38	**SC41M**	●
2.5	3	11	38	**SC41MPC**	●
3	3	14	38	**SC42M**	●
3	3	14	38	**SC42MPC**	●
5	3	12.7	38	**SC53M**	●
5	3	12.7	38	**SC53MPC**	●
6.3	3	12.7	45	**SC51M**	●
6.3	3	12.7	45	**SC51MPC**	●

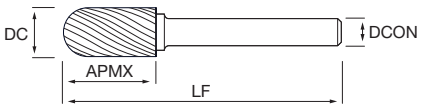
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SC - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	







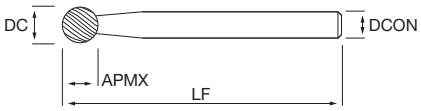
DC	DCON	APMX	LF	EDP no.	Stock
3	6	12	50	**SC11M**	●
3	6	12	50	**SC11MPC**	○
4	6	13	50	**SC13M**	●
4	6	13	50	**SC13MPC**	○
5	6	16	50	**SC14M**	●
5	6	16	50	**SC14MPC**	○
6	6	18	50	**SC1M**	●
6	6	18	50	**SC1MPC**	○
6	6	18	50	**SC1MNF**	○
8	6	19	63	**SC2M**	●
8	6	19	63	**SC2MPC**	○
9.5	6	19	63	**SC3M**	●
9.5	6	19	63	**SC3MPC**	○
9.5	6	19	63	**SC3MNF**	○
11	6	25	70	**SC4M**	●
11	6	25	70	**SC4MPC**	○
12.7	6	25	70	**SC5M**	●
12.7	6	25	70	**SC5MPC**	○
12.7	6	25	70	**SC5MNF**	○
16	6	25	70	**SC6M**	●
16	6	25	70	**SC6MPC**	○
16	6	25	70	**SC6MNF**	○
19	6	25	70	**SC7M**	○
19	6	25	70	**SC7MPC**	○
19	6	25	70	**SC7MNF**	○
25	6	25	70	**SC9M**	○
25	6	25	70	**SC9MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SD - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
2.5	3	2.3	38	**SD41M**	●
2.5	3	2.3	38	**SD41MPC**	●
3	3	2.5	38	**SD42M**	●
3	3	2.5	38	**SD42MPC**	●
5	3	4.7	38	**SD53M**	●
5	3	4.7	38	**SD53MPC**	●
6.3	3	5	38	**SD51M**	●
6.3	3	5	38	**SD51MPC**	●

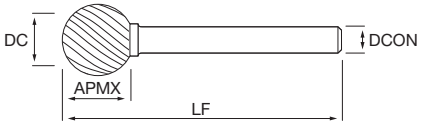
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SD - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	







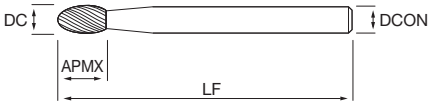
DC	DCON	APMX	LF	EDP no.	Stock
3	6	2.5	50	**SD11M**	●
3	6	2.5	50	**SD11MPC**	○
5	6	4	50	**SD14M**	●
5	6	4	50	**SD14MPC**	○
6	6	4.7	50	**SD1M**	●
6	6	4.7	50	**SD1MPC**	○
6	6	4.7	50	**SD1MNF**	○
8	6	6	52	**SD2M**	●
8	6	6	52	**SD2MPC**	○
9.5	6	8	54	**SD3M**	●
9.5	6	8	54	**SD3MPC**	○
9.5	6	8	54	**SD3MNF**	○
11	6	9.5	55	**SD4M**	●
11	6	9.5	55	**SD4MPC**	○
12.7	6	11	56	**SD5M**	●
12.7	6	11	56	**SD5MPC**	○
12.7	6	11	56	**SD5MNF**	○
16	6	14	60	**SD6M**	●
16	6	14	60	**SD6MPC**	○
16	6	14	60	**SD6MNF**	○
19	6	16.5	62	**SD7M**	●
19	6	16.5	62	**SD7MPC**	○
19	6	16.5	62	**SD7MNF**	○
25	6	22	68	**SD9M**	●
25	6	22	68	**SD9MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SE - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
3	3	5.5	38	**SE41M**	●
3	3	5.5	38	**SE41MPC**	●
5	3	7.1	38	**SE53M**	●
5	3	7.1	38	**SE53MPC**	●
6.3	3	9.5	42	**SE51M**	●
6.3	3	9.5	42	**SE51MPC**	●

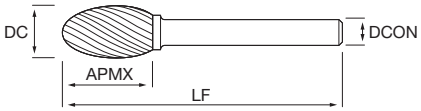
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SE - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	







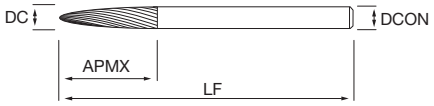
DC	DCON	APMX	LF	EDP no.	Stock
6	6	10	50	**SE1M**	●
6	6	10	50	**SE1MPC**	○
9.5	6	16	60	**SE3M**	●
9.5	6	16	60	**SE3MPC**	○
9.5	6	16	60	**SE3MNF**	○
12.7	6	22	67	**SE5M**	●
12.7	6	22	67	**SE5MPC**	○
12.7	6	22	67	**SE5MNF**	○
16	6	25	70	**SE6M**	●
16	6	25	70	**SE6MPC**	○
16	6	25	70	**SE6MNF**	○
19	6	25	70	**SE7M**	○
19	6	25	70	**SE7MPC**	○
19	6	25	70	**SE7MNF**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SF - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
3	3	6	38	**SF41M**	●
3	3	6	38	**SF41MPC**	●
3	3	14	38	**SF42M**	●
3	3	14	38	**SF42MPC**	●
5	3	12.7	38	**SF53M**	●
5	3	12.7	38	**SF53MPC**	●
6.3	3	12.7	45	**SF51M**	●
6.3	3	12.7	45	**SF51MPC**	●

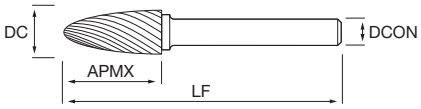
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SF - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	











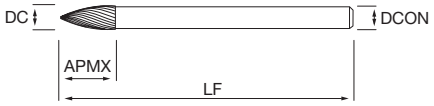
DC	DCON	APMX	LF	EDP no.	Stock
3	6	12	50	**SF11M**	●
3	6	12	50	**SF11MPC**	○
6	6	18	50	**SF1M**	●
6	6	18	50	**SF1MPC**	○
6	6	18	50	**SF1MNF**	○
9.6	6	19	64	**SF3M**	●
9.6	6	19	64	**SF3MPC**	○
9.6	6	19	64	**SF3MNF**	○
11	6	25	70	**SF4M**	●
11	6	25	70	**SF4MPC**	○
12.7	6	19	65	**SF13M**	○
12.7	6	19	65	**SF13MPC**	○
12.7	6	25	70	**SF5M**	●
12.7	6	25	70	**SF5MPC**	○
12.7	6	25	70	**SF5MNF**	○
16	6	25	70	**SF6M**	●
16	6	25	70	**SF6MPC**	○
16	6	25	70	**SF6MNF**	○
19	6	25	70	**SF7M**	○
19	6	25	70	**SF7MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SG - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
3	3	6	38	**SG41M**	●
3	3	6	38	**SG41MPC**	●
3	3	10	38	**SG43M**	●
3	3	10	38	**SG43MPC**	●
3	3	14	38	**SG44M**	●
3	3	14	38	**SG44MPC**	●
5	3	12.7	38	**SG53M**	●
5	3	12.7	38	**SG53MPC**	●
6.3	3	12.7	45	**SG51M**	●
6.3	3	12.7	45	**SG51MPC**	●

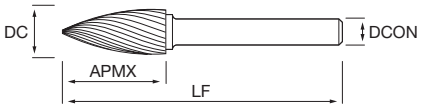
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SG - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

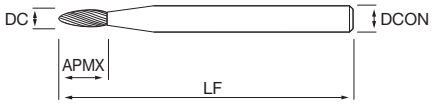
DC	DCON	APMX	LF	EDP no.	Stock
6	6	18	50	**SG1M**	●
6	6	18	50	**SG1MPC**	○
8	6	19	64	**SG2M**	●
8	6	19	64	**SG2MPC**	○
9.5	6	19	64	**SG3M**	●
9.5	6	19	64	**SG3MPC**	○
12.7	6	19	64	**SG13M**	○
12.7	6	19	64	**SG13MPC**	○
12.7	6	25	70	**SG5M**	●
12.7	6	25	70	**SG5MPC**	○
16	6	25	70	**SG6M**	●
16	6	25	70	**SG6MPC**	○
19	6	25	70	**SG7M**	○
19	6	25	70	**SG7MPC**	○
19	6	38	83	**SG15M**	○
19	6	38	83	**SG15MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SH - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	EDP no.	Stock
3	3	6	38	**SH41M**	●
3	3	6	38	**SH41MPC**	●
5	3	9.5	38	**SH53M**	●
5	3	9.5	38	**SH53MPC**	●

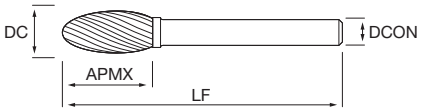
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SH - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

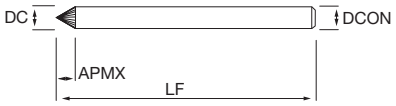
DC	DCON	APMX	LF	EDP no.	Stock
8	6	19	64	**SH2M**	●
8	6	19	64	**SH2MPC**	○
12.7	6	32	77	**SH5M**	●
12.7	6	32	77	**SH5MPC**	○
16	6	36	80	**SH6M**	○
16	6	36	80	**SH6MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SJ - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	PRFA	EDP no.	Stock
3	3	2.5	38	60	**SJ42M**	●
3	3	2.5	38	60	**SJ42MPC**	●

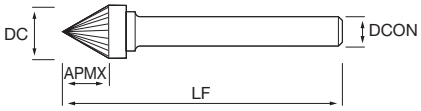
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SJ - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

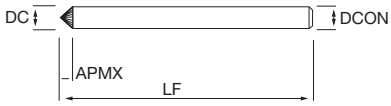
DC	DCON	APMX	LF	PRFA	EDP no.	Stock
6	6	4	50	60	**SJ1M**	○
6	6	4	50	60	**SJ1MPC**	○
9.5	6	8	56	60	**SJ3M**	●
9.5	6	8	56	60	**SJ3MPC**	○
12.7	6	11	59	60	**SJ5M**	●
12.7	6	11	59	60	**SJ5MPC**	○
16	6	14.5	63	60	**SJ6M**	○
16	6	14.5	63	60	**SJ6MPC**	○
19	6	17.5	65	60	**SJ7M**	○
19	6	17.5	65	60	**SJ7MPC**	○
25	6	24.5	70	60	**SJ9M**	○
25	6	24.5	70	60	**SJ9MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SK - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm





P	M	K	N	S	H
★	★	★	★	☆	

M MPC

DC	DCON	APMX	LF	PRFA	EDP no.	Stock
3	3	1.5	38	90	**SK42M**	●
3	3	1.5	38	90	**SK42MPC**	●

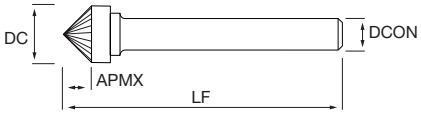
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SK - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

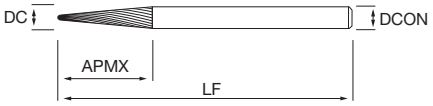
DC	DCON	APMX	LF	PRFA	EDP no.	Stock
6	6	3	50	90	**SK1M**	●
6	6	3	50	90	**SK1MPC**	○
9.5	6	4.7	53	90	**SK3M**	●
9.5	6	4.7	53	90	**SK3MPC**	○
12.7	6	6.3	55	90	**SK5M**	●
12.7	6	6.3	55	90	**SK5MPC**	○
16	6	8	57	90	**SK6M**	●
16	6	8	57	90	**SK6MPC**	○
19	6	9.5	59	90	**SK7M**	○
19	6	9.5	59	90	**SK7MPC**	○
25	6	12.7	60	90	**SK9M**	○
25	6	12.7	60	90	**SK9MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ◉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SL - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

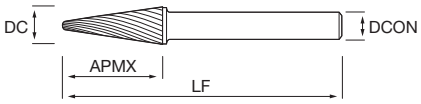
DC	DCON	APMX	LF	PRFA	EDP no.	Stock
3	3	10	38	10	**SL41M**	●
3	3	10	38	10	**SL41MPC**	○
3	3	14	38	8	**SL42M**	●
3	3	14	38	8	**SL42MPC**	●
5	3	12.7	38	14	**SL53M**	●
5	3	12.7	38	14	**SL53MPC**	●

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SL - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC MFN

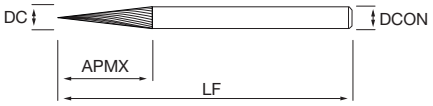
DC	DCON	APMX	LF	PRFA	EDP no.	Stock
6	6	18	50	14	**SL1M**	●
6	6	18	50	14	**SL1MPC**	○
8	6	25.4	70	14	**SL2M**	●
8	6	25.4	70	14	**SL2MPC**	○
9.6	6	30.2	76	14	**SL3M**	●
9.6	6	30.2	76	14	**SL3MPC**	○
9.6	6	30.2	76	14	**SL3MNF**	○
12.7	6	32	77	14	**SL4M**	●
12.7	6	32	77	14	**SL4MPC**	○
12.7	6	32	77	14	**SL4MNF**	○
16	6	33.3	78	14	**SL5M**	●
16	6	33.3	78	14	**SL5MPC**	○
16	6	33.3	78	14	**SL5MNF**	○
19	6	41.3	86	14	**SL7M**	○
19	6	41.3	86	14	**SL7MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SM - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	PRFA	EDP no.	Stock
3	3	8	38	18	**SM41M**	●
3	3	8	38	18	**SM41MPC**	●
3	3	11	38	14	**SM42M**	●
3	3	11	38	14	**SM42MPC**	●
3	3	15	38	10	**SM43M**	●
3	3	15	38	10	**SM43MPC**	●
6.3	3	12.7	51	22	**SM51M**	●
6.3	3	12.7	51	22	**SM51MPC**	●

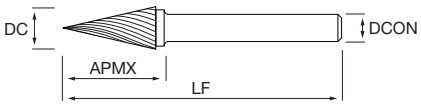
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SM - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	









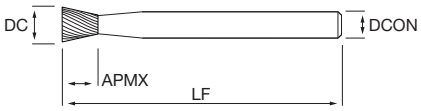
DC	DCON	APMX	LF	PRFA	EDP no.	Stock
6	6	12.7	50	22	**SM1M**	●
6	6	12.7	50	22	**SM1MPC**	○
6	6	20	50	14	**SM2M**	●
6	6	20	50	14	**SM2MPC**	○
6	6	25	50	10	**SM3M**	●
6	6	25	50	10	**SM3MPC**	○
9.5	6	16	64	28	**SM4M**	●
9.5	6	16	64	28	**SM4MPC**	○
12.7	6	22	71	28	**SM5M**	●
12.7	6	22	71	28	**SM5MPC**	○
16	6	25	74	31	**SM6M**	●
16	6	25	74	31	**SM6MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SN - 3 mm

- 3 mmshank
- Solid carbide DC ≤ 3 mm

P	M	K	N	S	H
★	★	★	★	☆	





M MPC

DC	DCON	APMX	LF	PRFA	EDP no.	Stock
3	3	4	38	10	**SN42M**	●
3	3	4	38	10	**SN42MPC**	●
6.3	3	6	39	12	**SN51M**	○
6.3	3	6	39	12	**SN51MPC**	○

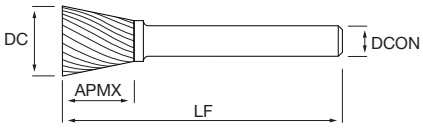
★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

SORMA DIAMOND & CUTTING TOOLS

SN - 6 mm

- 6 mmshank
- Solid carbide DC ≤ 6 mm

P	M	K	N	S	H
★	★	★	★	☆	

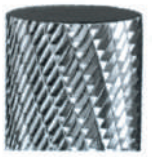




M MPC

DC	DCON	APMX	LF	PRFA	EDP no.	Stock
6	6	8	50	10	**SN1M**	●
6	6	8	50	10	**SN1MPC**	○
9.5	6	9.5	55	13	**SN2M**	●
9.5	6	9.5	55	13	**SN2MPC**	○
12.7	6	12.7	58	28	**SN4M**	●
12.7	6	12.7	58	28	**SN4MPC**	○
16	6	19	64	18	**SN6M**	○
16	6	19	64	18	**SN6MPC**	○
19	6	16	61	30	**SN7M**	○
19	6	16	61	30	**SN7MPC**	○

★ 1st choice, ☆ suitable, ● stock standard, ⦿ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



M



BUR10 M TYPE
Set 10pcs. - shank Ø6 mm
SA1 - SB1 - SC1 - SD1 - SE1 - SF1 - SG1 - SL1 - SM1 - SN1



MPC



A15FW MPC TYPE
Set 15pcs. - shank Ø3 mm
SA41 - SA42 - SA43 - SA52 - SB43 - SC42 - SD41 - SD42 - SD53 - SE41 - SG43 - SL42 - SM42 - SM43 - SN42



M

A16FW M TYPE
Set 15pcs. - shank Ø3 mm
SA41 - SA42 - SA43 - SA52 - SB43 - SC42 - SD41 SD42 - SD53 - SE41 - SG43 - SL42 - SM42 - SM43 - SN42

WORKPIECE MATERIAL

WORKPIECE MATERIAL

	MaterialS		HARDNESS/Rm
P1	Free cutting steel and structural steel Acciai automatici e acciai strutturali	Automatenstähle und Baustähle Aciers pour décolletage et aciers structurels	< 500 N/mm²
P2	Carbon steel and low alloy steel Acciai al carbonio e acciai basso legati	Aciers au carbone et aciers faiblement alliés Kohlenstoff-Stähle und niedriglegierte Stähle	500 ÷ 700 N/mm²
P3	Medium alloy steel and heat treated steel Acciai medio legati e acciai di bonifica	Aciers moyennement alliés et aciers trempés et recuits Mittellegierte Stähle und Vergütungsstähle	600 ÷ 800 N/mm²
P4	High alloy steel Acciai alto legati	Aciers fortement alliés Hochlegierte Stähle	800 ÷ 1000 N/mm²
P5	Tool steel Acciai per utensili	Aciers pour outils Werkzeugstähle	900 ÷ 1200 N/mm²
P6	High tensile strength steel Acciai ad alta resistenza	Aciers haute résistance HSLA-Stähle	1200 ÷ 1480 N/mm² 38 ÷ 45 HRC
P7	Ferritic - Martensitic stainless steel Acciai inossidabili ferritici e martensitici	Aciers inoxydables ferritiques-martensitiques Ferritische-Martensitische Stähle	
P8	PH stainless steel Acciai inossidabili PH - indurenti per precipitazione	Aciers inoxydables à durcissement par précipitation Ausscheidungshartbare Edelstahle	
M1	Austenitic stainless steel (good machinability) Acciai inossidabili austenitici (buona lavorabilità)	Aciers inoxydables austénitiques (faiblement allié) Austenitische Edelstähle (niedriglegiert)	
M2	Austenitic stainless steel (medium machinability) and Duplex Acciai inossidabili austenitici (buona lavorabilità)	Aciers inoxydables austénitiques (faiblement allié) Austenitische Edelstähle (niedriglegiert)	
M3	Super austenitic stainless steel and super Duplex Acciai inossidabili austenitici (media lavorabilità) e Duplex	Aciers inoxydables austénitiques (moyennement allié) et Duplex Austenitische Edelstähle (mittel-legiert) und Duplex	

WORKPIECE MATERIAL

	MaterialS		HARDNESS/Rm
K1	Grey cast iron Ghise grigie	Fonte grise Grauguss	150 ÷ 250 HB
K2	Nodular cast iron Ghise sferoidali	Fonte nodulaire Sphäroguss	150 ÷ 350 HB
K3	Austenitic cast iron Ghise austenitiche	Fonte austénitique Austenitischer Guss	120 ÷ 260 HB
K4	ADI cast iron Ghise ADI	Fonte ADI ADI Guss	250 ÷ 500 HB
N1	Aluminium alloys ≤ 12% Si Leghe di alluminio ≤ 12% Si	Alliages d'aluminium ≤ 12 % Si Aluminiumlegierungen ≤ 12% Si	
N2	Aluminium alloy > 12% Si and Aluminium-Magnesium Leghe di alluminio > 12% Si e alluminio-magnesio	Alliages d'aluminium > 12 % Si et Aluminium-Magnesium Aluminiumlegierungen > 12% Si und Aluminium-Magnesium	
N3	Copper alloy Leghe di rame	Alliages de cuivre Kupferlegierungen	
N4	Brass alloy and Bronze alloy Leghe di ottone e leghe di bronzo	Alliages de bronze et de laiton Bronze- und Messinglegierungen	
N5	Plastic material Polimeri	Polymères Polymere	
N6	Carbon fiber and composite Fibra di carbonio e compositi	Fibres et composites Faserwerkstoffe und Verbundwerkstoffe	

	MaterialS		HARDNESS/Rm
S1	Heat resistant super alloys (HRSA) Ni base (good machinability) Leghe a base di nichel resistenti al calore (buona lavorabilità)	Base Ni de superalliages résistants à la chaleur (HRSA) (bonne usinabilité) Warmfeste Superlegierungen (HRSA) Nickel-Legierungen (einfach zu bearbeiten)	< 25 HRC
S2	Heat resistant super alloys (HRSA) Ni base (medium machinability) Leghe a base di nichel resistenti al calore (media lavorabilità)	Superalliages résistants à la chaleur (HRSA) Ni base (usinabilité moyenne) Warmfeste Superlegierungen (HRSA) Nickel-Legierungen (mittlere Bearbeitbarkeit)	25 ÷ 35 HRC
S3	Heat resistant super alloys (HRSA) Ni base (low machinability) Leghe a base di nichel resistenti al calore (difficile lavorabilità)	Superalliages résistants à la chaleur (HRSA) Ni base (faible usinabilité) Warmfeste Superlegierungen (HRSA) Nickel-Legierungen (schwierig zu bearbeiten)	35 ÷ 45 HRC
S4	Low Titanium base alloy (good machinability) Leghe di titanio basso legate (buona lavorabilità)	Alliages de base à faible teneur en titane (bonne usinabilité) Titanlegierung (gut Bearbeitbarkeit)	
S5	High Titanium base alloy (medium machinability) Leghe di titanio alto legate (media lavorabilità)	Alliages à base de titane élevé (usinabilité moyenne) Hochfeste Titanlegierung (mittlere Bearbeitbarkeit)	
H1	Hardened steel Acciai temprati generali	Aciers trempés Allgemeine gehärtete Stähle	50 ÷ 56 HRC
H2	Hardened bearing steel Acciai temprati per cuscinetti	Aciers trempés pour roulements Gehärtete Kugellagerstähle	54 ÷ 62 HRC
H3	Hardened tool steel Acciai temprati per utensili	Aciers trempés pour outils Gehärtete Werkzeugstähle	60 ÷ 65 HRC
H4	Hardened martensitic stainless steel Acciai inossidabili martensitici temprati	Aciers inoxydables martensitiques trempés Gehärtete martensitische Edelstähle	50 ÷ 56 HRC
H5	Hardened white cast iron Ghise bianche temprate	Fonte blanche trempée Gehärteter Weißguss	48 ÷ 55 HRC

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
P1	Free cutting steel and structural steel Rm < 500 N/mm²	1.0037	St 37-2	1.0037	S235JR	Fe 360 B		STKM 12 C	E 24-2
		1.0116	St 37-3	1.0038	S235JRG2	Fe 360 D FF	4360-40 C		E 24-3, E 24-4
		1.0144	St 44-3 N	1.0144	S275J2G3	Fe 430 D FF	4360-43 C	SM 41 C	E 28-3, E 28-4
		1.0301	C 10	1.0301	C 10	C 10	045 M 10	S 10 C	34 C 10, XC 10
		1.0401	C 15			C 15, C 16	080 M 15		37 C 12, XC 18
		1.0402	C 22	1.0402	C 22	C 20, C 21	050 A 20		C 20
		1.0570	St 52-3	1.0570	S355JR	Fe 510 B	4360-50 C	SM 50 YA	E 36-3, E 36-4
		1.0715	9 SMn 28	1.0715	11 SMn 30	CF 9 SMn 28	230 M 07	SUM 22	S 250
		1.0718	9 SMnPb 28	1.0718	11 SMnPb 30	CF 9 SMnPb 28		SUM 22 L	S 250 Pb
		1.0721	10 S 20	1.0721	10 S 20	CF 10 S 20	210 M 15		10 F 1
		1.0722	10 SPb 20			CF 10 SPb 20			10 PbF 2
		1.0723	15 S 20	1.0725	15 SMn 13		210 A 15	SUM 32	
		1.0726	35 S 20	1.0726	35 S20		212 M 36		35 MF 4
		1.0727	46 S 20	1.0727	46 S20		212 M 44		45 MF 4
		1.0736	9 SMn 36	1.0736	11 SMn 37	CF 9 SMn 36	240 M 07		S 300
		1.0765	36 SMnPb 14		36 SMnPb 14	CF 35 SMnPb 10	216 M 36		35 MF 6 Pb
		1.1141	Ck 15	1.1141	C 15R	C 15, C 16	080 M 15	S 15 C, S 15 CK	XC 15, XC 18
			Ck 25			C 25	060 A 25	S 25 C	XC 25
P2	Carbon steel and low alloy steel Rm 500÷700 N/mm²	1.0501	C 35		C 35	C 35	060 A 35		55 C 35
		1.0503	C 45	1.0503	E 335	C 45	80 M 46	S 45 C	65 C 45
		1.0511	C 40		C 40	C 40	080 M 40	S 40 C	60 C 40
		1.0535	St 70-2	1.0070	E 360	Fe 690			A 70-2
		1.0601	C 60	1.0601	C60	C 60	080 A 62		CC 55
		1.1157	40 Mn 4				150 M 36		35 M 5
		1.1165	30 Mn 5	1.1165	G 28 Mn6		120 M 36	SMn 1 H, SCMn 2	
		1.1181	Ck 35	1.1181	C 35E	C 35	080 M 36	S 35 C	XC 38 H1
		1.1191	Ck 45	1.1191	C 45E	C 45	080 M 46	S 45 C	XC 42
		1.1221	Ck 60	1.1221	C 60E	C 60	080 A 62	S 58 C	XC 60
		1.1740	C 60 W					SK 7	Y3 55
		1.2162	21 MnCr 5					SCR 420 H	20 NC 5
		1.5415	15 Mo 3	1.5415	16 Mo 3	16 Mo 3	1501-240		15 D 3
		1.5423	16 Mo 5			16 Mo 5	1503-245-420	SB 450 M	
		1.5752	14 NiCr 14	1.5752	14 NiCr 14		655 M 13	SNC 815 (H)	12 NC 15
		1.5919	15 CrNi 6			16 CrNi 4	S 107		16 NC 6
		1.6587	18 CrNiMo 7 6	1.6587	18 NiCrMo 7 6	18 NiCrMo 7	820 A 16		18 NCD 6
		1.7131	16 MnCr 5	1.7131	16 MnCr 5	16 MnCr 5	527 M 17	SCR 415	16 MC 5
		1.7139	16 MnCrS 5	1.7139	16 MnCrS 5				
		1.7147	20 MnCr 5	1.7147	20 MnCr 5	20 MnCr 5		SMnC 420 (H)	20 MC 5
		1.7149	20 MnCrS 5	1.7149	20 MnCrS 5			SMnC 21 H	20 MnCrS 5
		1.7335	13 CrMo 4 4	1.7335	13 CrMo 4 5	14 CrMo 4 5	1501-620 Gr. 27		15 CD 3.5
		1.7337	16 CrMo 4 4			14 CrMo 4 5	1501-620 Gr. 27		15 CD 4.5
		1.7380	10 CrMo 9 10	1.7380	10 CrMo 9 10	12 CrMo 9 10	1501-622 Gr. 31		10 CD 9.10
P3	Medium alloy steel Rm 600÷800 N/mm²	1.0904	55 Si 7	1.7100	55 SiCr7	55 Si 8	250 A 53		55 S 7
		1.2330	35 CrMo 4			35 CrMo 4	708 A 37		34 CD 4
		1.2542	45 WCrV 7			45 WCrV 8 KU	BS 1		
		1.2714	56 NiCrMoV 7	1.2714		56 NiCrMoV7-KU	BH 224-5	SKT 4	
		1.5121	46 MnSi 4						
		1.5710	36 NiCr 6				640 A 35	SNC 236	35 NC 6
		1.5736	36 NiCr 10			35 NiCr 9		SNC 631 (H)	35 NC 11
		1.6511	36 CrNiMo 4		36 CrNiMo 4	38 NiCrMo 4 (KB)	816 M 40		40 NCD 3
		1.6582	34 CrNiMo 6	1.6582	34 CrNiMo 6	35 NiCrMo 6 (KW)	817 M 40	SNCM 447	35 NCD 6
		1.7033	34 Cr 4	1.7033	34 Cr 4	34 Cr 4 (KB)	530 A 32	SCR 430 (H)	32 C 4
		1.7035	41 Cr 4	1.7035	41 Cr 4	41 Cr 4	530 M 40	SCR 440 (H)	42 C 4
		1.7218	25 CrMo 4	1.7218	25 CrMo 4	25 CrMo 4 (KB)	708 M 25	SCM 425	25 CD 4 S
		1.7225	42 CrMo 4	1.7225	42 CrMo 4	42 CrMo 4	708 M 40	SCM 440 (H)	42 CD 4
		1.7361	32 CrMo 12			32 CrMo 12	722 M 24		30 CD 12
		1.8159	50 CrV 4	1.8159	50 CrV 4	51 CrV 4	735 A 50	SUP 10	50 CV 4
		1.8509	41 CrAlMo 7	1.8509	41 CrAlMo 7 10	41 CrAlMo 7	905 M 39	SACM 645	40 CAD 6.12

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
1311				16D			
1312, 1313			A573 Grade 58	18kp	11 378		
1412, 1414			A573 Grade 70	St14kP	11 448		
	G10100		1010	10			
1350	G10170	F.1110	1015	15			
1450	G10200		1020, 1023	20	12 024		
2172, 2132				17G1S	11 523		
1912	G12130		1213			AVP	
1914	G12134		12 L 13				
			1108				
			11 L 08				
1922							
1957	G11400		1140	40			
1973	G11460		1146				
	G12150		12 L14			AVZ	
			11 L 37	AS35G2		PR80	
1370	G10170	F.1511	1015	15			
	G10250	F.1120	1025	25			
1550	G10350	F.1130	1035	35	12 040		
1650	G10430	F.5110	1045	45	12 050		
			1040	40	12 041		
1655		F.1150	1055	55			
	G10600		1060	60	12 061		
	G10390		1039	40G			
	G13300		1330	30G2			
1572	G10340	F.1135	1035	35			
1672	G10420	F.1140	1045	45	12 050		
1665, 1678	G10640	F.1150	1064	60			
			1060	60			
2912			A204 Grade A		15 020		
	G45200		4520				
	G33106		3310, 9314	20X2H4A	16 420		
			4320		16 220		
2511	G51170	F.1516	5115	12KHN2	14 220		
				18HG			
	G51200		5120	20KH	14 221		
			5120 H	20KH			
2216			A182-F11, A182-F12	12KHM	15 121		
2216			A387 Grade 12 Cl. 2				
2218	J21890	F.155	A182-F22	12KH8	15 313		
2085, 2090		F.144	9255	55S2			
2234	T51620	F.1250	4135	35KHM			
2710	T41901	F.5241	S1	5KHV2S			
	T61206		L6	5KHNV			
			5045				
			3135				
			3435				
	G98400		9840				
2541	G43400	F.1280	4340	38H2N2MA	16 343		
	G51320		5132	35KH			
	G51400		5140	40H	14 140		
2225	G41300	F.1251	4130	20KHM	15 130		
2244	G41400	F.1252	4142, 4140	38HM	15 142		
2240							
2230	H61500	F.143	6150	50KHFA	15 260		
2940	K24065	F.1740	A355 Cl. A				

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
P4	High alloy steel Rm 800÷1000 N/mm²	1.1231	Ck 67	1.1231	C 67S	C 70	060 A 67		XC 68
		1.1274	Ck 101	1.1274	C 100S		060 A 96	SUP 4	
		1.1545	C 105 W1	1.1545	C 105U	C 100 KU			Y1 105
		1.1645	C 105 W2			C 100 KU		SK 3	Y1 105
		1.1663	C 125 W			C 120 KU		SK 2	Y2 120
		1.2210	115 CrV 3	1.2210	107 CrV 3	107 CrV 3 KU			100 C 3
		1.2510	100 MnCrW 4			95 MnWCr 5 KU	BO 1	SKS 3	90 MWCV 5
		1.2842	90 MnCrV 8	1.2842	90 MnCrV 8	90 MnVCr 8 KU	BO 2		90 MV 8
		1.3505	100 Cr 6	1.3505	100 Cr 6	100 Cr 6	534 A 99	SUJ 2	100 C 6
P5	Tool steel Rm 900÷1200 N/mm²	1.2080	X 210 Cr 12	1.2080	X 210 Cr 12	X 210 Cr 13 KU	BD 3	SKD 1	Z 200 C 12
		1.2311	40 CrMnMo 7						
		1.2312	40 CrMnMoS 86						
		1.2343	X 38 CrMoV 5 1			X 37 CrMoV 5 1 KU	BH 11	SKD 6	Z 38 CDV 5
		1.2344	X 40 CrMoV 5 1	1.2344	X 40 CrMoV 5 1	X 40 CrMo 5 1 1 KU	BH 13	SKD 61	Z 40 CDV 5
		1.2363	X 100 CrMoV 5	1.2363	X 100 CrMoV 5 1	X 100 CrMoV 5 1 KU	BA 2	SKD 12	Z 100 CDV 5
		1.2365	X 32 CrMoV 3 3			30 CrMoV 12 27 KU	BH 10	SKD 7	32 DCV 28
		1.2379	X 155 CrVMo 12 1			X 155 CrMo 12 KU			
		1.2436	X 210 CrW 12			X 215 CrW 12 1 KU		SKD 2	
		1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU			
		1.2713	55 NiCrMoV 6					SKT 4	55 NCDV 7
		1.2714	56 NiCrMoV 7			56 NiCrMoV 7 KU			
		1.3243	S 6-5-2-5	1.3243	HS 6-5-2-5	HS 6-5-2-5		SKH 55	Z 85 WDKCV 06-05-05-04-02
		1.3247	S 2-10-1-8	1.3247	HS 2-10-1-8	HS 2-9-1-8	BM 42	SKH 51	Z 110 DKCWV 09-08-04
		1.3255	S 18-1-2-5	1.3255	HS 18-1-2-5	HS 18-1-1-5	BT 4	SKH 3	Z 80 WKCV 18-05-04-01
		1.3343	S 6-5-2	1.3343	HS 6-5-2	HS 6-5-2	BM 2	SKH 9, SKH 51	Z 85 WDCV 06-05-04-02
		1.3348	S 2-9-2	1.3348	HS 2-9-2	HS 2-9-2		SKH 58	Z 100 DCWV 09-04-02-02
		1.3355	S 18-0-1	1.3355	HS 18-0-1	HS 18-0-1	BT 1	SKH 2	Z 80 WCV 18-04-01
P6	High tensile strength steel Rm 1200÷1480 N/mm² HRC 38÷45	1.6546	40 NiCrMo 2 2	1.6546	40 NiCrMo 2 KD	40NiCrMo2	311 - Type 7	SNCM 240	40 NCD 2
		1.7045	42 Cr 4	1.7045		41Cr4	530 A 40	SCR 440	42 C 4 TS
P7	Ferritic - Martensitic stainless steel	1.4000	X 6 Cr 13	1.4000	X 6 Cr 13	X 6 Cr 13	403 S 17	SUS 403	Z 6 C 12
		1.4006	X 10 Cr 13	1.4006	X 12 Cr 13	X 12 Cr 13	410 S 21	SUS 410	Z 10 C 13
		1.4016	X 6 Cr 17	1.4016	X 6 Cr 17	X 8 Cr 17	430 S 15	SUS 430	Z 8 C 17
		1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	X 20 Cr 13	420 S 37	SUS 420 J 1	Z 20 C 13
		1.4031	X 40 Cr 13	1.4031	X 39 Cr 13	X 40 Cr 14	420 S 45	SUS 420	Z 40 C 14
		1.4109	X 65 CrMo 14	1.4109	X 70 CrMo 15			SUS 440 A	Z 70 D 14
		1.4112	X 90 CrMoV 18	1.4112	X 90 CrMoV 18	X CrTi 12	409 S 19	SUS 440 B	Z 2 CND 18 05
		1.4125	X 105 CrMo 17	1.4125	X 105 CrMo 17	X 105 CrMo 17		SUS 440 C	Z 100 CD 17
		1.4313	X 5 CrNi 13 4	1.4313	X 5 CrNiMo 13 3	X 6 CrNi 13 04	425 C 11	SCS 5	Z 5 CN 13.4
		1.4749	X 18 CrN 28	1.4749	X 18 CrN 28				Z 18 C 25
P8	PH stainless steel	1.4534	X 3 CrNiMoAl 13 8 2	1.4534	X 6 NiCrTiMoV 25 15				
		1.4540	X 4 CrNiCuNb 16 4	1.4540	X 4 CrNiCuNb 16 4	Z 4 CNUNb 16.4 M			Z 4 CNUNb 16.4 M
		1.4548	X 5 CrNiCuNb 17 4	1.4548	X 5 CrNiCuNb 17 4	Z 6 CNU 17.4		SCS 24, SUS 630	
		1.4568	X 7 CrNiAl 17 7	1.4564	X 3 CrNiMoAl 13 8 2	X 7 CrNiAl 17 7	301 S 81	SUS 631	Z 9 CAN 17.7
		1.6356	X 2 NiCoMoTi 18 12 4	1.6356	X 2 NiCoMoTi 18 12 4				

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
1770	G10700	F.5103	1070	70			
1870	G10950	F.5117	1095				
1880		F.5118	W1	U10A			
				U10			
			W1	U13			
	T61202	F.520L	L2	11KHF			
2140	T31501	F.5220	O1	9KHVG			
	T31502		O2	9G2F		K720	
2258	G51986	F.5230	52100	SHKH15	14 109		
						TOOLOX 33	
	T30403	F.5212	D3	KH12		K100	
						M201	
						M200 - HOLDAX	
	T20811		H11	4KH5MFS		VIDAR - W300	
2242	T20813	F.5318	H13	4KH5MF1S		ORVAR - W302	
2260	T30102	F.5227	A2	9KH5VF			
	T20810		H10	3KH3M3F		W320	
						K110	
2312		F.5213		KH12			
2310				KH12MF			
	T61206	F.520.S	L6	5KHNM			
			L6			W500	
2723		F.5613	M35	R6M5K5			
	T11342		M42	R2AM9K5			
	T12004		T4	R18K5F2			
2722	T11302	F.5603	M2	R6M5		S600	
2782	T11307		M7				
	T12001		T1	R18			
	G86400		8640			Monix	
2245			5140				
						HARDOX 400®	
						HARDOX 450®	
						TOOLOX 40®	
						TOOLOX 44®	
2301	S41008		403	08KH13			Ferritic
2302	S41000	F.3401	410, CA-15	12KH13			Martensitic
2320	S43000	F.3113	430	12KH17			Ferritic
2303	S42000	F.5261	420	20KH13	17 022		Martensitic
2304	S40280	F.3404	420 C	40KH13			Martensitic
	S44002		440 A				Martensitic
2327	S44003		440 B	95KH18			Martensitic
	S44004		440 C	95KH18			Martensitic
2385	S41500		A182 F6NM				Martensitic
2322	S44600		446	15KH28			Ferritic
	S13800		XM-13			PH13-8 Mo	Austenitic
	S15500		XM-12			15-5-PH	Martensitic
	S17400		630			17-4-PH	Martensitic
2388	S17700		631	09KH17N7YU1		17-7-PH	Austenitic/Ferritic
	K93160		AMS 6515				Martensitic

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
M1	Austenitic stainless steel (good machinability)	1.4300	X 12 CrNi 18 8	1.4300	X 12 CrNi 18 8		302 S 25	SUS 302	Z 12 CN 18
		1.4301	X 5 CrNi 18 10	1.4301	X 5 CrNi 18 10	X 5 CrNi 18 11	304 S 31	SUS 304	Z 6 CN 18.09
		1.4305	X 10 CrNiS 18 9	1.4305	X 10 CrNiS 18 9	X 10 CrNi 18 09	303 S 31	SUS 303	Z 10 CNF 18.09
		1.4306	X 2 CrNi 19 11	1.4306	X 2 CrNi 19 11	X 3 Cr Ni 18 11	304 S 12	SUS 304 L	Z 2 CN 18.10
		1.4310	X 12 CrNi 17 7	1.4310	X 9 CrNi 18 8	X 12 CrNi 17 07	301 S 21	SUS 301	Z 12 CN 17.07
		1.4550	X 6 CrNiNb 18 10	1.4550	X 6 CrNiNb 18 10	X 6 CrNiNb 18 11	347 S 31	SUS 347	Z 6 CNNb 18.10
M2	Austenitic stainless steel (medium machinability) and Duplex	1.4311	X 2 CrNiN 19 11	1.4311	X 2 CrNiN 18 10	X 2 CrNiN 18 11	304 S 62	SUS 304 LN	Z 2 CN 18 .10 Az
		1.4335	X 12 CrNi 25 21	1.4335	X 12 CrNi 25 21	X 6 CrNi 26 20	310 S 24	SUH 310, SUS 310 S	Z 12 CN 25.20
		1.4401	X 5 CrNiMo 17 12 2	1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12	316 S 31	SUS 316	Z 3 CND 17.11.1
		1.4417	X 2 CrNiMoSi 19 5	1.4424	X 2 CrNiMoSi 19 5				Z 2 CND 18.05.03
		1.4429	X 2 CrNiMoN 17 13 3	1.4429	X 2 CrNiMoN 17 13 3	X 2 CrNiMoN 17 13 3	316 S 62	SUS 316 LN	Z 2 CND 17.13 Az
		1.4435	X 2 CrNiMo 18 14 3	1.4435	X 2 CrNiMo 18 14 3	X 2 CrNiMo 17 13 2	316 S 12	SCS 16, SUS 316 L	Z 2 CND 17.13
		1.4438	X2 CrNiMo 18 16			X2CrNiMo18 16	317 S 12	SUS 317 L	Z 2 CND 19.15
		1.4460	X 4 CrNiMo 27 5 2	1.4460	X 3 CrNiMo 27 5 2	X 3 CrNiMo 27 5 2		SUS 329 J 1	Z 3 CND 25.7 Az
		1.4462	X 2 CrNiMoN 22 5	1.4462	X 2 CrNiMoN 22 5 3	X 2 CrNiMoN 22 5	332 S 15		Z 2 CND 22.05 Az
		1.4466	X 5 CrNi 18 15	1.4466	X 3 CrNiMo 18 12 3	X 5 CrNi 18 15	317 S 16	SUS 317	
		1.4541	X10 CrNiTi 18 9	1.4541		X6CrNiTi18 11	321 S 12	SUS 321	Z 6 CND 18.10
		1.4550	X 6 CrNiNb 18 10	1.4550	X 6 CrNiNb 18 10	X 6 CrNiNb 18 11	347 S 31	SUS 347	Z 6 CNNb 18.10
		1.4571	X10 CrNiMoTi 18 10			X6CrNiMoTi 17 12	320 S 17	-	Z 6 CNDT 17.12
		1.4893	X 9 CrNiSiNCe 21 11 2	1.4835	X 9 CrNiSiNCe 21 11 2		310 S 31		
M3	Super austenitic stainless steel and super Duplex	1.4410	X 2 CrNiMoN 25 7 4	1.4410	X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4			Z 3 CND 25.07 Az
		1.4501	X 2 CrNiMoCuWN 15 7 4			X 2 CrNiMoCuWN 15 7 4			
		1.4529	X 1 CrNiMoN 20 18 7	1.4547	X 1 CrNiMoN 20 18 7	X 1 CrNiMoN 20 18 7			Z 1 CNDU 20.18.05 Az
		1.4539	X 2 NiCrMoCu 25 20 5	1.4539	X 2 NiCrMoCu 25 20 5		904 S 13		Z 2 NCDU 25 20
		1.4652	X 2 CrNiMoN 25 22 7	1.4652	X 1 CrNiMoN 25 22 8				
		1.4876	X 10 NiCrAlTi 32 20	1.4876	X 10 NiCrAlTi 32 20			NCF 800	Z 10 NC 32.21
		1.4943	X 4 NiCrTi 25 15	1.4980	X 5 CrNiCuNb 16 4		HR 51	SUH 660	Z 6 NCTDV 25.15
K1	Grey cast iron 150 ÷ 250 HB	0.6015	GG-15	5.1200	EN-GJL-150	G15	Grade 150	FC 150	Ft 15 D
		0.6020	GG-20	5.1300	EN-GJL-200	G20	Grade 220	FC 200	Ft 20 D
		0.6025	GG-25	5.1301	EN-GJL-250	G25	Grade 260	FC 250	Ft 25 D
		0.6027	GG-220 HB		EN-GJL-215				
		0.6035	GG-35	5.1303	EN-GJL-350	G35	Grade 350	FC 350	Ft 35 D
K2	Nodular cast iron 150 ÷ 350 HB	0.7033	GGG 35.3	5.3100	EN-GJS-350-22		Grade 350/22	FCD 350-22L	FGS 370-17
		0.7040	GGG 40	5.3106	EN-GJS-400-15	GS400-12	Grade 420/12		FGS 400-12
		0.7043	GGG 40.3	5.3105	EN-GJS-400-18	GSO 42/17	Grade 370/17	FCD 400-18L	FGS 370-17
		0.7050	GGG 50	5.3200	EN-GJS-500-7	GS500-7	Grade 500/7	FCD 500-7	FGS 500-7
		0.7060	GGG 60	5.3201	EN-GJS-600-3	GS600-3	Grade 600/3	FCD 600-3	FGS 600-3
		0.7070	GGG 70	5.3300	EN-GJS-700-2	GS700-2	Grade 700/2	FCD 700-2	FGS 700-2
		0.8155	GTS-55-04		EN-GJMB-550-4	P 55-04	P 540/5	PCMP55-04	P 540/5
		0.9990	GGV-40	5.2201	EN-GJV-400				
			GGV-45	5.2300	EN-GJV-450				
			GGV-50	5.2301	EN-GJV-500				
K3	ADI cast iron 250 ÷ 500 HB		GJS-800-8	5.3301	EN-GJS-800-8				
			GJS-1000-5		EN-GJS-1000-5				
			GJS-1200-2		EN-GJS-1200-2				
			GJS-1400-1	5.3405	EN-GJS-1400-1				
K4	Austenitic cast iron 120 ÷ 260 HB	0.6655	GGL-NiCuCr 15 6 2		EN-GJLA-XNiCuCr 15-6-2		Grade F1		FGL Ni15 Cu6 Cr2
		0.6660	GGL-NiCr 20 2		EN-GJLA-XNiCr 20-2		Grade F2		FGL Ni20 Cr2
		0.6676	GGL-NiCr 30 3		EN-GJLA-XNiCr 30-3		Grade F3		FGL Ni30 Cr3
		0.7652	GGG-NiMn 13 7		EN-GJSA-XNiMn 13-7		Grade S6		FGS Ni13 Mn7
		0.7660	GGG-NiCr 20 2	5.3500	EN-GJSA-XNiCr 20-2		Grade S2		FGS Ni20 Cr2
		0.7673	GGG-NiMn 23 4		EN-GJSA-XNiMn 23-4		Grade S2M		FGS Ni23 Mn4
		0.7676	GGG-NiCr 30 3	5.3507	EN-GJSA-XNiCr 30-3		Grade S3		FGS Ni30 Cr3
		0.7683	GGG-Ni 35	5.3504	EN-GJSA-XNi 35				FGS Ni35

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
2331	S30200		302	12KH18N9			Austenitic
2333	S30400	F.3504	304	08KH18N10	17 240		Austenitic
2346	S30300	F.3508	303	12KH19N9			Austenitic
2352	S30403	F.3504	304 L	03KH18N11			Austenitic
	S30100	F.3517	301	07KH16N6			Austenitic
2338	S34700		347	08KH18N12B			Austenitic
2371	S30453	F.3541	304 LN	03KH18N11			Austenitic
2361	S31008		310 S	12KH25N20			Austenitic
2347	S31600	F.3534	316	08KH17H13M2T	17 346		Austenitic
2376	S31500						Duplex
2375	S31653		316 LN	03KH16N15M3			Austenitic
2353	S31603	F.3533	316 L	03KH17N14M3	17 349		Austenitic
2367			317 L				Austenitic
2324	S32900		329				Duplex
2377	S31803		329 LN				Duplex
2366	S31700		317	08KH17H15M3T			Austenitic
2337			321				Austenitic
2338	S34700	F.3524	347	08KH18N12B			Austenitic
2350			316 Ti				Austenitic
2368	S30815						Austenitic
2328	S32750		F 53				Super duplex
	S32760		F 55-329 S				Super duplex
2778	S31254						Super Austenitic
2562	N08904		904L				Super Austenitic
	S32654						Super Austenitic
	N08800					Alloy 800	Austenitic
2570	S66286		660			A286	Austenitic
01 15-00	F11601		A48 25 B	Sc 15	422 415		Lamellar
01 20-00	F12101		A48 30 B	Sc 20	422 420		Lamellar
01 25-00	F12401		A48 35 B	Sc 25	422 425		Lamellar
02 19							Lamellar
01 35-00	F13502		A48 50 B	Sc 35			Lamellar
07 17-15					422 303		Nodular
07 17-02		FGE 38-17		Vc 42-12	422 304		Nodular
07 17-12	F32800		60-40-18	Vc 42-12	422 314		Nodular
07 27-02	F33800	FGE 50-7	A536, 80-55-06	Vc 50-2	422 305		Nodular
07 32-03	F34100	FGE 60-2	A476, 80-60-03	Vc 60-2	422 306		Nodular
07 37-01	F34800	FGE 70-2	A536, 100-70-03	Vc 70-2	422 307		Nodular
08 54-00	F24130		A220 60004				Malleable
			Grade 400-15				Vermicular
			Grade 450				Vermicular
			Grade 500				Vermicular
	ADI grade 1		850/550/10			ADI 800	Ductile austempered
	ADI grade 2		1050/700/7			ADI 1000	Ductile austempered
	ADI grade 3		1200/850/4			ADI 1200	Ductile austempered
	ADI grade 4		1400/1100/1			ADI 1400	Ductile austempered
	F41000		A436 Type 1			Ni-Resist 1	Lamellar
05 23-00	F41002		A436 Type 2			Ni-Resist 2	Lamellar
	F41004		A436 Type 3			Ni-Resist 3	Lamellar
07 72-00						Nodumag	Nodular
	F43000		A436 Type D-2			Ni-Resist D-2	Nodular
	F43010		A439 Type D-2M			Ni-Resist D-2M	Nodular
	F43003		A436 Type D-3			Ni-Resist D-3	Nodular
	F43006		A439 Type D-5			Ni-Resist D-5	Nodular

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
N1	Aluminium alloy < 12% Si	3.0205	Al 99			9001/1	1C	A1x3	A4
		3.0255	Al99.5	Al99.5	AW-1050A	9001/2	1B	(A1050)	A-5/1050A
		3.0505	AlMn0,5Mg0,5				N31		
		3.0517	AlMn1Cu	AlMn1Cu	AW-3003			A3003	A-M1/3003
		3.0615	AlMgSiPb						ASGPB
		3.1255	AlCuSiMn	AlCuSiMn	AW-2014		H15		A-U4SG
		3.1305	AlCuMg0,5			9002/1	L86		AU2G
		3.1325	AlCuMg 1			9002/2	(H14)	A3x2	AU4G
		3.1355	AlCuMg 2			9002/4	DTD5090	A3x4	AU4G1
		3.1645	AlCuMgPb			9002/8	-	-	AU4Pb
		3.1655	AlCuBiPb	AlCuBiPb	AW-2011		FC1	A2011	A-U5PbBi
		3.2161	G-AlSi8Cu3	AlSi8Cu3(Si)	AC-46200				
		3.2315	AlSi1MgMn	AlMgSi1	AW-6082	90006/4	H30		A-SGM0.7
		3.2341	G-AlSi5Mg		AC-42000	3599	LM25	AC 4C	A-S7G
		3.2381	G-AlSi10Mg	AlSi10Mg(Fe)	AC-43400		LM9		A-S10G
		3.2383	G-AlSi10Mg (Cu)		43200		(LM9)		A-S10UG
		33.206	AlMgSi0.5	AlMgSi0.5	AW-6060		(H9)		A-GS/6060
		3.3210	AlMgSi0.7	AlMgSi0.7	AW-6063		(H10)	(A6063)	A-GSUC/6061
		3.3211	AlMg1SiCu			9006/2	H20	A2x4	AGSUC
		3.3315	AlMg1	AlMg1	AW-5005		N41		A-G0.6
		3.3316	AlMg1,5			9005/7			
		3.3523	AlMg2,5			9005/2		A2x1	AG2,5C
		3.3535	AlMg3			9005/8	N5/N56		AG3
		3.3547	AlMg4.5Mn0.7			9005/5	N8	A2x7	AG4,5MC
		3.3555	AlMg5				N6		A-G5
		3.4335	AlZn4.5Mg1	AlZn4.5Mg1	AW-7020		H17		A-Z5G
		34.365	AlZn5.5MgCu		AW-7075	9007/2	2L95	A7075	A-Z5GU
		3.5612	G-MgAl6Zn	MgAl6Zn	MG-P-63		MAG-E-121		G-A6-Z1
		3.5812	G-MgAl8Zn	MgAl8Zn	MG-P-61				(G-A7-Z1)
N2	Aluminium alloy > 12% Si and Aluminium-Magnesium	32.382	G-AlSi12	AlSi12	AC-44200	4514	LM6	AC3A	AS 13
		3.2583	G-AlSi12 (Cu)	AlSi12 (Cu)	AC-47000		LM20	Al-Si12Cu	
		3.5101	G-MgZn4SE1Zr1				MAG5		G-Z4TR
		3.5102	G-MgZn5Th2Zr1						
		35.103	G-MgSe3Zn2Zr1	MgSe3Zn2Zr1	MN65120		MAG6-TE		ZRE1
		3.5106	G-MgAg3SE2Zr1				MAG 12		G-Ag22,5
		3.5312	G-MgAl3Zn				MAG-E-111		
		3.5912	G-MgAl9Zn1				MAG7		G-A9Z1
N3	Copper alloy	2.0040	OF Cu		CW008A		C103	C1020	Cu/c1
		2.0060	E-Cu57		CW004A	E-Cu57	C101	C1100	Cu/a1
		2.0070	SE Cu		CW021A				
		2.0090	SF Cu		CW024A		C106	C1220	Cu/b
		2.0240	CuZn15	CuZn15	CW502L		CZ102	C2300	CuZn15
		2.0321	CuZn37		CW508L		CZ108		CuZn37
		2.0401	CuZn39Pb3	CuZn39Pb3	CW614N		CZ121		CuZn39Pb3
		2.0402	CuZn40Pb2	CuZn40Pb2	CW612N		CZ120		CuZn39Pb2
		20.530	CuZn38Sn1	CuZn38Sn1	CW717R				
		2.0790	CuNi18Zn19Pb	CW408J					CuNi18Zn19Pb1
		2.0872	CuNi10Fe1Mn	CuNi10Fe1Mn			CN102		CuNi10Fe1Mn
		2.0940	CuAl10Fe		CC331G		AB1		CuAl10Fe
		2.0975	CuAl10Ni		CC333G		AB2		CuAl10Ni5Fe5
		2.1050	CuSn10		CC480K		CT1		CuSn10
		2.1087	CuSn10Zn						
		2.1176	CuPb10Sn		CW352H		LB2		CuSn10Pb10
		2.1202	SB Cu				C107		

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
4010			A1200				
4007	AA1050A		A1050/1050A				
			3105				
	AA3003					Aluman 100	
			6012				
4338	AA2014		2014			Avional 660	
			2117			Avional 050	
			2017			Avional 100	
			2024			Avional 150	
4335			2030				
4355	AA2011		2011			Recidal 11	
4251	A13800		A380				
4212	A96082		6082			Anticorodal 100	
4244			B26				
4253	A13600		B85				
4103	AA6060					Anticorodal 063	
4104, 4107	AA6005						
			6061			Anticorodal 061	
4106	AA5005					Peraluman 080	
			5050			Peraluman 150	
4120			5052			Peraluman 250	
			5154			Peraluman 350	
4140	A95083		5083			Peraluman 440	
			5056			Peraluman 500	
4425	AA7020		7020				
	A97075		7075	B95		Ergal	
	M11600		AZ61A				
			AZ80A				
			A413.2				
	M12330		AMS 4442				
			AZ31B				
	C10200						
	C11000						
	C10300						
	C12200						
5112	C23000			L90			
5150	C27200						
5170	C38500						
5168	C37800						
	C46400			LO60-1			
	C76300						
5667	C70600						
5710	C95200		CA952	BrA9ZH3L			
5716	C95500		CA955	BrA10ZH4N4L			
5443	C90700						
5458	C90500						
5640	C93700		CA937				
	C14200						

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
N4	Brass alloy and Bronze alloy	2.0220	CuZn5		CW500L		CZ125	C2100	
		2.0230	CuZn10		CW501L		CZ101	C2200	
		2.0250	CuZn20		CW503L		CZ103	C2400	
		2.0265	CuZn30		CW505L		CZ106	C2600	
		2.0331	CuZn36Pb1.5		CW600N		CZ119	C3501	
		2.0360	CuZn40		CW509L		CZ109	C2800	
		2.0372	CuZn39Pb0.5		CW610N		CZ123		
		2.0375	CuZn36Pb3		CW603N		CZ124	C3601	
		2.0380	CuZn39Pb2		CW612N		CZ 131	C3771	
		2.0401	CuZn39Pb3	12164	CW614N	5705	CZ121	C3603	
		2.0402	CuZn40Pb2		CW617N		CZ122		
		2.0410	CuZn44Pb2	CuZn44Pb2	CW622N		CZ104		
		2.0460	CuZn20Al2				CZ110		
		2.0470	CuZn28Sn1	CuZn28Sn1	CW706R				CuZn29Sn1
		2.0932	CuAl8Fe3		CW303G				
		2.0966	CuAl10Ni5Fe4		CW307G		CA104		
		2.1010	CuSn2				-	-	
		2.1016	CuSn4				PB101	C5111	
		21.020	CuSn6	CuSn6	CW452K		PB103	C5191	CuSn6
		2.1030	CUSn8				PB104	C5212	
N5	Plastic material								
N6	Carbon fiber and composite								
S1	Heat resistant super alloy (HRSA) Ni base (good machinability) < 25 HRC	1.4980							Z3NCT25
		2.4617							NiMo28
			NiCr17Mo17Few						NC17DWY
		2.4816	NiCr15Fe						NC15Fe
		2.4851	NiCr23Fe						NC15FeA
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
S2	Heat resistant super alloy (HRSA) Ni base (medium machinability) 25 ÷ 35 HRC								
		1.4876	X10NiCrAlTi32-21				3075		
		2.4858	NiCr21Mo						NC21FeDU
		2.4665	NiCr22FeMo				HR6,204		NC22FeD
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4668	NiCr19Fe19NbMo				HR8		Nc19FeNb
		2.4668	NiCr19Fe19NbMo				HR8		Nc19FeNb
		2.4630	NiCr20Ti				HR5,203-4		NC20T
		2.4631	NiCr20TiAl				HR401,601		NC20TA
		2.4654	NiCr20Co14MoTi						NC20K14
S3	Heat resistant super alloy (HRSA) Ni base (low machinability) 35 ÷ 45 HRC								
		2.4654	NiCr20Co14MoTi						NC20K14
		2.4668	NiCr19Fe19NbMo				HR8		Nc19FeNb
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
			NiW13Co10Cr9AlTi						
			NiCo10W10Cr9AlTi						
			NiCr18cCoMoAlTi						NCK19DAT
			NiCo15Cr15MoAlTi						NCKD20AT

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
	C21000						
	C22000						
	C24000						
	C26000						
	C34000						
	C28000						
	C36500						
	C36000						
	C37700						
	C38500					OT-58	
	C38000						
5272	C68700			LAMsh77-2-0.05			
	C68700						
5220	C44300			LOMsh70-1-0.05			
	C61400						
	C63000						
	C50700						
	C51100						
5428	C51900			BrOF6.5-0.15			
	C52100						
							Polycarbonate
							E-glass
							Epoxy
							HTA
							HX
							Kevlar
							PEEK
							PPS
							T300
							T700
							T800
			5725			Discalloy	HRSA Iron-based
	N10665					Hastelloy B-2	HRSA Nickel-based
	N10002					Hastelloy C (casting)	HRSA Nickel-based
	N06600					Inconel 600	HRSA Nickel-based
	N06601					Inconel 601	HRSA Nickel-based
	N06625					Inconel 625 (casting)	HRSA Nickel-based
						Inconel 706	HRSA Nickel-based
	N07750					Inconel X750 (solubilized)	HRSA Nickel-based
						Stellite	HRSA Cobalt-based
	N08800					Incoloy 800	HRSA Iron-based
	N08825					Incoloy 825	HRSA Iron-based
	N06002					Hastelloy X	HRSA Nickel-based
	N06625					Inconel 625 (forged)	HRSA Nickel-based
	N06625					Inconel 625 (pipe)	HRSA Nickel-based
	N07718					Inconel 718 (casting)	HRSA Nickel-based
	N07718					Inconel 718 (pipe)	HRSA Nickel-based
	N06075					Nimonic 80	HRSA Nickel-based
	N07080					Nimonic 81	HRSA Nickel-based
	N07001					Waspalloy (casting)	HRSA Nickel-based
						Haynes	HRSA Cobalt-based
	N07001					Waspalloy (forged)	HRSA Nickel-based
	N07718					Inconel 718 (forged)	HRSA Nickel-based
	N07750					Inconel X750 (precipitation)	HRSA Nickel-based
						Mar-M 200	HRSA Nickel-based
						Mar-M 247	HRSA Nickel-based
						Rene 95	HRSA Nickel-based
						Udimet 500	HRSA Nickel-based
						Udimet 700	HRSA Nickel-based

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
S4	Titanium alloy good machinability		TiAl2Sn4Zr2MoSi						
			TiAl2Sn4Zr6Mo						
		3.7055	Ti 99,6						
		3.7195	Ti3Al2.5V						
		3.7115	TiAl5Sn2.5				TA14/17		
		3.7124	TiCu2,5						
		3.7155	TiAl6Zr5Mo0,5						
		3.7165	TiAl6V4 ELI				TA11		
		3.7175	TiAl6V6Sn2						
		3.7185	TiAl4Mo4Sn2						
		3.7025	Ti 99,8				TA 1		
		3.7035	Ti 99,7a				TA 2-5		
S5	Titanium alloy medium machinability								
		3.7164	TiAl6V4						
			Ti5Al2.5SN						
			TiAl2Sn4Zr2MoSi						
			TiAl2Sn4Zr6Mo						
H1	Hardened steel 50 ÷ 56 HRC	1.1231	Ck 67	1.1231	C 67S	C 70	060 A 67		XC 68
		1.1248	Ck 75	1.1248	C 75S	C 75	060 A 78		XC 75
		1.1274	Ck 101	1.1274	C 100S		060 A 96	SUP 4	
		1.1545	C 105 W1	1.1545	C 105U	C 100 KU			Y1 105
		1.2550	60 WCrV 7			55 WCrV 8 KU			55 WC 20
		1.7131	16 MnCr 5	1.7131	16 MnCr 5	16 MnCr 5	527 M 17	SCR 415	16 MC 5
		1.7176	55 Cr 3	1.7176	55 Cr 3	55 Cr 3	527 A 60	SUP 9 (A)	55 C 3
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
H2	Hardened bearing steel 54 ÷ 62 HRC	1.2210	115 CrV 3	1.2210	107 CrV 3	107 CrV 3 KU			100 C 3
		1.2510	100 MnCrW 4			95 MnWCr 5 KU	BO 1	SKS 3	90 MWCV 5
		1.2842	90 MnCrV 8	1.2842	90 MnCrV 8	90 MnVCr 8 KU	BO 2		90 MV 8
		1.3505	100 Cr 6	1.3505	100 Cr 6	100 Cr 6	534 A 99	SUJ 2	100 C 6
H3	Hardened tool steel 60 ÷ 65 HRC	1.2344	X 40 CrMoV 5 1	1.2344	X 40 CrMoV 5 1	X 40 CrMo 5 1 1 KU	BH 13	SKD 61	Z 40 CDV 5
		1.2363	X 100 CrMoV 5 1	1.2363	X 100 CrMoV 5	X 100 CrMoV 5 1 KU	BA 2	SKD 12	Z 100 CDV 5
		1.2379	X 155 CrVMo 12 1		X 155 CrVMo 12 1	X 155 CrVMo 12 1 KU	BD 2	SKD 11	Z 160 CDV 12
		1.2436	X 210 CrW 12			X 215 CrW 12 1 KU		SKD 2	
		1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU			
		1.2713	55 NiCrMoV 6					SKT 4	55 NCDV 7
		1.3243	S 6-5-2-5	1.3243	HS 6-5-2-5	HS 6-5-2-5		SKH 55	Z 85 WDKCV 06-05-05-04-02
		1.3247	S 2-10-1-8	1.3247	HS 2-10-1-8	HS 2-9-1-8	BM 42	SKH 51	Z 110 DKCWV 09-08-
		1.3355	S 18-0-1	1.3355	HS 18-0-1	HS 18-0-1	BT 1	SKH 2	Z 80 WCV 18-04-01
H4	Hardened martensitic stainless steel 50 ÷ 56 HRC	1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	X 20 Cr 13	420 S 37	SUS 420 J 1	Z 20 C 13
		1.4109	X 65 CrMo 14	1.4109	X 70 CrMo 15			SUS 440 A	Z 70 D 14
		1.4112	X 90 CrMoV 18	1.4112	X 90 CrMoV 18	X CrTi 12	409 S 19	SUS 440 B	Z 2 CND 18 05
		1.4125	X 105 CrMo 17	1.4125	X 105 CrMo 17	X 105 CrMo 17		SUS 440 C	Z 100 CD 17
		1.4542	X 5 CrNiCuNb 16 4	1.4542	X 5 CrNiCuNb 16 4			SUS 630	
		1.4568	X 7 CrNiAl 17 7	1.4568	X 7 CrNiAl 17 7	X 7 CrNiAl 17 7	301 S 81	SUS 631	Z 9 CAN 17.7
		1.4943	X 4 NiCrTi 25 15	1.4980	X 6 NiCrTiMoV 25 15		HR 51	SUH 660	Z 6 NCTDV 25.15
H5	Hardened white cast iron 48 ÷ 55 HRC	0.9620	G-X330 NiCr 4 2	0.9620	EN-GJN-HV520		Grade 2 A		FB Ni4 Cr2 BC
		0.9625	G-X260 NiCr 4 2	0.9625	EN-GJN-HV550		Grade 2 B		FB Ni4 Cr2 HC
		0.9630	G-X300 CrNiSi 9 5 2	0.9630	EN-GJN-HV600		Grade 2 C, D, E		FB Cr9 Ni5

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
	R50250		265-G1			Grade 1	
	R50400		265-G2			Grade 2	
	R50550		265-G3			Grade 3	
	R56320					Grade 9	
	R50700		265-G4			Grade 4	
	R56400					Grade 5	
						Grade 6	
			4975			6242	
	R56260					6246	
1770	G10700	F.5103	1070	70			
1774, 1778	G10780	F.5107	1078, 1080	75			
1870	G10950	F.5117	1095				
1880		F.5118	W1	U10A			
			S1	5KHV2SF			
2511	G51170	F.1516	5115	12KHN2	14 220		
2253	G51550		5155				
	N07750					Inconel X750 (solubilized)	HRSA Nickel-based
	T61202	F.520L	L2	11KHF			
2140	T31501	F.5220	O1	9KHVG			
	T31502		O2	9G2F			
2258	G51986	F.5230	52100	SHKH15	14 109		
2242	T20813	F.5318	H13	4KH5MF1S			
2260	T30102	F.5227	A2	9KH5VF			
	T30402	F.5211	D2	KH12MF			
2312		F.5213		KH12			
2310				KH12MF			
	T61206	F.520.S	L6	5KHNM			
2723		F.5613	M35	R6M5K5			
	T11342		M42	R2AM9K5			
	T12001		T1	R18			
2303	S42000	F.5261	420	20KH13	17 022		
	S44002		440 A				
2327	S44003		440 B	95KH18			
	S44004		440 C	95KH18			
	S17400		SAE 630			17-4 PH	H900
2388	S17700		AMS 5528	09KH17N7YU1		17-7 PH	TH1050
2570	S66286		660			A286	
05 12-00	F45001		A532 IB			Ni-Hard 2	
05 13-00	F45000		A532 IA			Ni-Hard 1	
04 57-00	F45003		A532 ID			Ni-Hard 4	

GENERAL INDEX

DESIGNATION			
07IR...	Threading	Indexable - INTERNAL	B16
11IL...	Threading	Indexable - INTERNAL	B20
11IR...	Threading	Indexable - INTERNAL	B18
16EL...	Threading	Indexable - EXTERNAL	B7
16ER...	Threading	Indexable - EXTERNAL	B7
16IL...	Threading	Indexable - INTERNAL	B20
16IR...	Threading	Indexable - INTERNAL	B20
22ER...	Threading	Indexable - EXTERNAL	B6
22IR...	Threading	Indexable - INTERNAL	B18
A DCLN...	Turning	HOLDERS	A293
A DDUN...	Turning	HOLDERS	A313
A DTFN...	Turning	HOLDERS	A345
A DWLN...	Turning	HOLDERS	A373
A PCLN...	Turning	HOLDERS	A294
A PWLN...	Turning	HOLDERS	A374
A SCLC...	Turning	HOLDERS	A281
A SDUC...	Turning	HOLDERS	A302
A STFC...	Turning	HOLDERS	A338
A16K SCLC...	Turning	HOLDERS	A282
APKT...	Milling	ISO Shouldering	D50
BGF-HLD...	Grooving and Parting	BGF	C19
BGFL...	Grooving and Parting	BGF	C18
BGFR...	Grooving and Parting	BGF	C18
CCET...	Turning	CARBIDE	A69
CCGT...	Turning	CARBIDE	A69
CCGT...	Turning	DIAMOND	A194
CCGW...	Turning	CERAMIC	A234
CCGW...	Turning	DIAMOND	A194
CCGW...	Turning	PCBN	A144
CCGX...	Turning	CARBIDE	A70
CCGX...	Turning	DIAMOND	A195
CCLN...	Turning	HOLDERS	A287
CCMT...	Turning	CARBIDE	A70
CNGA...	Turning	CERAMIC	A235
CNGA...	Turning	DIAMOND	A196
CNGA...	Turning	PCBN	A146
CNGG...	Turning	CARBIDE	A73
CNGM...	Turning	DIAMOND	A196
CNGN...	Turning	CERAMIC	A236
CNGN...	Turning	PCBN	A150
CNGX...	Turning	CERAMIC	A236
CNGX...	Turning	PCBN	A150
CNMA...	Turning	CARBIDE	A75
CNMA...	Turning	CERAMIC	A235
CNMG...	Turning	CARBIDE	A71
CNMM...	Turning	CARBIDE	A75
CNMN...	Turning	CERAMIC	A236
CNMX...	Turning	CERAMIC	A236
CRDNN...	Turning	HOLDERS	A321
CRSN...	Turning	HOLDERS	A322
CSKN...	Turning	HOLDERS	A325
CSRN...	Turning	HOLDERS	A326
CSSN...	Turning	HOLDERS	A327
DCET...	Turning	CARBIDE	A76
DCGT...	Turning	CARBIDE	A76
DCGT...	Turning	DIAMOND	A197
DCGW...	Turning	DIAMOND	A197
DCGW...	Turning	PCBN	A151
DCGX...	Turning	CARBIDE	A77
DCGX...	Turning	DIAMOND	A198
DCLN...	Turning	HOLDERS	A288

DESIGNATION			
DCMT...	Turning	CARBIDE	A76
DDJN...	Turning	HOLDERS	A310
DEX...	Drilling	DEX drills	E37
DNGA...	Turning	CERAMIC	A237
DNGA...	Turning	DIAMOND	A199
DNGA...	Turning	PCBN	A153
DNGG...	Turning	CARBIDE	A79
DNGM...	Turning	DIAMOND	A199
DNGN...	Turning	CERAMIC	A238
DNMA...	Turning	CARBIDE	A81
DNMA...	Turning	CERAMIC	A237
DNMG...	Turning	CARBIDE	A78
DNMX...	Turning	CARBIDE	A80
DRSP...	Drilling	DRS pilot	E29
DTGN...	Turning	HOLDERS	A342
DTJN...	Turning	HOLDERS	A343
DVJN...	Turning	HOLDERS	A362
DVVNN...	Turning	HOLDERS	A363
DWLN...	Turning	HOLDERS	A370
DXP...	Drilling	DXP drills	E72
E MCC...	Turning	HOLDERS	A315
E SCLC...	Turning	HOLDERS	A283
E SDUC...	Turning	HOLDERS	A303
E STFC...	Turning	HOLDERS	A339
EX MCN...	Turning	HOLDERS	A317
EX MDN...	Turning	HOLDERS	A319
HNEN...	Milling	DoubleHex	D83
HNEX...	Milling	DoubleHex	D83
HNMX...	Milling	DoubleHex	D83
KNUX...	Turning	CARBIDE	A82
MCC...	Turning	CARBIDE	A83
MCC...	Turning	DIAMOND	A200
MCKN...	Turning	HOLDERS	A289
MCLN...	Turning	HOLDERS	A290
MCN...	Turning	CARBIDE	A84
MCN...	Turning	DIAMOND	A201
MCN...	Turning	PCBN	A155
MCRN...	Turning	HOLDERS	A291
MDJN...	Turning	HOLDERS	A311
MDN...	Turning	CARBIDE	A85
MDN...	Turning	DIAMOND	A202
MDN...	Turning	PCBN	A156
MSBN...	Turning	HOLDERS	A328
MSDNN...	Turning	HOLDERS	A329
MSKN...	Turning	HOLDERS	A330
MSSN...	Turning	HOLDERS	A331
MTJN...	Turning	HOLDERS	A344
MVJN...	Turning	HOLDERS	A364
MVVNN...	Turning	HOLDERS	A365
MWLN...	Turning	HOLDERS	A371
NCG...	Grooving and Parting	NCG	C16
NDB E...	Grooving and Parting	NDB	C10
NDB I...	Grooving and Parting	NDB	C12
NDBD...	Grooving and Parting	NDB	C8
NT-ALU9019...	Milling	AluRek	D46
NT-ARB HM...	Accessories	Threaded extensions	F6
NT-ARB...	Accessories	Threaded extensions	F5
NT-CHS45...	Milling	ChamferSquare	D123
NT-DEX-3...	Drilling	DEX drills	E34
NT-DEX-5...	Drilling	DEX drills	E35
NT-DEX-8...	Drilling	DEX drills	E36

DESIGNATION			
NT-DRK...	Milling	DoubleRek	D30
NT-DRS-2D...	Drilling	DRS drills	E10
NT-DRS-3D...	Drilling	DRS drills	E12
NT-DRS-4D...	Drilling	DRS drills	E14
NT-DRS-5D...	Drilling	DRS drills	E16
NT-DRS-6D...	Drilling	DRS pilot	E26
NT-DRS-9D...	Drilling	DRS pilot	E27
NT-DXP-03...	Drilling	DXP drills	E64
NT-DXP-06...	Drilling	DXP drills	E66
NT-DXP-08...	Drilling	DXP drills	E68
NT-DXP-10...	Drilling	DXP drills	E70
NT-HN09...	Milling	DoubleHex	D82
NT-OD...	Milling	OktoPlus	D68
NT-OF...	Milling	OktoPlus	D70
NT-RC...	Milling	RoundPlus	D108
NT-RD...	Milling	RoundPlus	D110
NT-RKP...	Milling	RekPlus	D20
NT-RN...	Milling	Advanced	D130
NT-RP...	Milling	RoundPlus	D117
NT-RPX...	Milling	RoundPlus	D115
NT-SD...	Milling	HF4Plus	D94
NT-SE...	Milling	4FacePlus	D58
NT-SLB...	Accessories	Sleeves	F2
NT-SLV...	Accessories	Sleeves	F4
NT-SN1275...	Milling	Advanced	D136
NT-SN1288...	Milling	Advanced	D136
NT-SP TAN...	Milling	Advanced	D132
NT-SP...	Milling	HF4Plus	D97
NT-SPOT...	Drilling	SPOT drill	E80
NT-SX...	Milling	Double4Face	D76
NT-WX...	Milling	Double3Gon	D38
NT-XP...	Milling	Advanced	D134
ODKT...	Milling	OktoPlus	D69
ODKW...	Milling	OktoPlus	D69
ODMT...	Milling	OktoPlus	D69
OFKT...	Milling	OktoPlus	D71
PCLN...	Turning	HOLDERS	A292
PDJN...	Turning	HOLDERS	A312
PWLN...	Turning	HOLDERS	A372
RCEX...	Milling	RoundPlus	D109
RCGX...	Turning	CERAMIC	A239
RCGX...	Turning	PCBN	A157
RDET...	Milling	RoundPlus	D113
RDEW...	Milling	RoundPlus	D113
RDMT...	Milling	RoundPlus	D113
RDMW...	Milling	RoundPlus	D113
RNGN...	Milling	Advanced	D131
RNGN...	Turning	CERAMIC	A240
RNGN...	Turning	PCBN	A158
RPET...	Milling	RoundPlus	D116
RPEW...	Milling	RoundPlus	D118
RPMT...	Milling	RoundPlus	D116
RPMW...	Milling	RoundPlus	D118
S CTUP...	Turning	HOLDERS	A347
S MCLN...	Turning	HOLDERS	A295
S MDUN...	Turning	HOLDERS	A314
S MSKN...	Turning	HOLDERS	A332
S MTUN...	Turning	HOLDERS	A346
S MVQN...	Turning	HOLDERS	A366
S MVUN...	Turning	HOLDERS	A367
S MWLN...	Turning	HOLDERS	A375
S SCLC...	Turning	HOLDERS	A284

DESIGNATION			
S SCZC...	Turning	HOLDERS	A285
S SDQC...	Turning	HOLDERS	A304
S SDUC...	Turning	HOLDERS	A305
S SDZC...	Turning	HOLDERS	A306
S SSKC...	Turning	HOLDERS	A324
S STFC...	Turning	HOLDERS	A340
S STUB...	Turning	HOLDERS	A333
S STUP...	Turning	HOLDERS	A348
S SVJC...	Turning	HOLDERS	A358
S SVQC...	Turning	HOLDERS	A359
S SVUC...	Turning	HOLDERS	A360
S SVZC...	Turning	HOLDERS	A361
SCAC...	Turning	HOLDERS	A277
SCGW...	Turning	CERAMIC	A241
SCGX...	Turning	CARBIDE	A86
SCLC N...	Turning	HOLDERS	A278
SCLC...	Turning	HOLDERS	A279
SCMCN...	Turning	HOLDERS	A280
SCMT...	Turning	CARBIDE	A86
SDAC...	Turning	HOLDERS	A296
SDJC N...	Turning	HOLDERS	A298
SDJC S...	Turning	HOLDERS	A299
SDJC...	Turning	HOLDERS	A297
SDMT...	Milling	HF4Plus	D96
SEET...	Milling	4FacePlus	D59
SEEW...	Milling	4FacePlus	D60
SEHX...	Milling	ISO Facing	D86
SEMT...	Milling	4FacePlus	D59
SE...	Threading	Indexable - EXTERNAL	B10
SI...	Threading	Indexable - INTERNAL	B23
SNDN S...	Turning	HOLDERS	A301
SNDN...	Turning	HOLDERS	A300
SNEX...	Milling	Double4Face	D77
SNGA...	Turning	CERAMIC	A242
SNGA...	Turning	PCBN	A159
SNGG...	Turning	CARBIDE	A88
SNGN...	Turning	CERAMIC	A243
SNGN...	Turning	PCBN	A160
SNGX...	Turning	CERAMIC	A243
SNGX...	Turning	PCBN	A160
SNMA...	Turning	CARBIDE	A89
SNMA...	Turning	CERAMIC	A242
SNMG...	Turning	CARBIDE	A87
SNMM...	Turning	CARBIDE	A89
SNMN...	Turning	CERAMIC	A243
SNMX...	Milling	Double4Face	D77
SNMX...	Turning	CERAMIC	A243
SNXN...	Milling	Advanced	D137
SPGX...	Drilling	DRS drills	E18
SPGX...	Drilling	DRS pilot	E28
SPGX...	Milling	ChamferSquare	D124
SPHX...	Milling	Advanced	D133
SPMT...	Milling	HF4Plus	D99
SPMX...	Drilling	DRS drills	E18
SPMX...	Drilling	DRS pilot	E28
SPMX...	Milling	ChamferSquare	D124
SPOT...	Drilling	SPOT drill	E81
SSDCN...	Turning	HOLDERS	A323
STAC...	Turning	HOLDERS	A335
STFC...	Turning	HOLDERS	A336
STGC...	Turning	HOLDERS	A337
SVHB...	Turning	HOLDERS	A349

DESIGNATION			
SVJB N...	Turning	HOLDERS	A351
SVJB...	Turning	HOLDERS	A350
SVJC N...	Turning	HOLDERS	A355
SVJC...	Turning	HOLDERS	A354
SVPC...	Turning	HOLDERS	A356
SVVBN...	Turning	HOLDERS	A352
SVVCN...	Turning	HOLDERS	A357
TBET...	Turning	CARBIDE	A90
TCET...	Turning	CARBIDE	A91
TCGT...	Turning	DIAMOND	A203
TCGW...	Turning	DIAMOND	A203
TCGW...	Turning	PCBN	A161
TCGX...	Turning	CARBIDE	A91
TCGX...	Turning	DIAMOND	A204
TCMT...	Turning	CARBIDE	A91
TNGA...	Turning	CERAMIC	A244
TNGA...	Turning	DIAMOND	A205
TNGA...	Turning	PCBN	A163
TNGG...	Turning	CARBIDE	A95
TNGM...	Turning	DIAMOND	A205
TNGN...	Turning	CERAMIC	A245
TNGN...	Turning	PCBN	A165
TNMA...	Turning	CARBIDE	A96
TNMG...	Turning	CARBIDE	A93
TNMX...	Turning	CARBIDE	A95
TPEH...	Turning	CARBIDE	A97
TPGN...	Turning	CERAMIC	A246
TPGT...	Turning	DIAMOND	A206
TPGW...	Turning	DIAMOND	A206
TPGW...	Turning	PCBN	A166
TPGX...	Turning	DIAMOND	A206
V MCC...	Turning	HOLDERS	A316
V MCN...	Turning	HOLDERS	A318
V MDN...	Turning	HOLDERS	A320
V SCLC...	Turning	HOLDERS	A286
V SDQC...	Turning	HOLDERS	A307
V SDUC...	Turning	HOLDERS	A308
V SDZC...	Turning	HOLDERS	A309
V SI...	Threading	Indexable - INTERNAL	B17
V STLB...	Turning	HOLDERS	A334
V STLC...	Turning	HOLDERS	A341
V SVJB...	Turning	HOLDERS	A353
V SWUB...	Turning	HOLDERS	A368
V SWUC...	Turning	HOLDERS	A369
VBET...	Turning	CARBIDE	A98
VBGT...	Turning	DIAMOND	A207
VBGW...	Turning	DIAMOND	A207
VBGW...	Turning	PCBN	A167
VBGX...	Turning	DIAMOND	A207
VBMT...	Turning	CARBIDE	A98
VCGT...	Turning	CARBIDE	A100
VCGT...	Turning	DIAMOND	A209
VCGW...	Turning	DIAMOND	A209
VCGW...	Turning	PCBN	A169
VCGX...	Turning	CARBIDE	A100
VCGX...	Turning	DIAMOND	A210
VCMT...	Turning	CARBIDE	A100
VNGA...	Turning	CERAMIC	A247
VNGA...	Turning	PCBN	A170
VNGG...	Turning	CARBIDE	A102
VNMG...	Turning	CARBIDE	A101
WBET...	Turning	CARBIDE	A103
WCMT...	Turning	CARBIDE	A104
WCMX...	Drilling	ISO drilling	E83
WNEX...	Milling	Double3Gon	D40
WNGA...	Turning	CERAMIC	A248
WNGA...	Turning	DIAMOND	A211
WNGA...	Turning	PCBN	A171
WNGG...	Turning	CARBIDE	A106
WNGM...	Turning	DIAMOND	A211
WNMA...	Turning	CARBIDE	A108
WNMG...	Turning	CARBIDE	A105
XPGT...	Milling	Advanced	D135
XPGW...	Milling	Advanced	D135

DESIGNATION	
118N	I28
1386STI	I36
1386STI (SET)	I39
138HB	I47
138N	I41
138N (SET)	I45
138WB	I50
141N	I86
145N	I80
1701N	I88
1702N	I90
218NVA	I32
218PTA	I8
234LS	I67
234LSTH	I70
234NVA	I63
2386STI	I53
2386STI (SET)	I56
238NVA	I58
SET 238NVA	I61
238PTA	I12
245N	I84
2691LS	I72
2691LSTH	I74
2692LS	I76
2693LS	I78
3512HL	H146
3512SUH	H122
3515HL	H151
3520HL	H156
3520SUH	H126
3525HL	H161
3525SUH	H130
3530HL	H166
3530SUH	H134
353ALH	H92
353CV	H72
353HPU	H17
353HRC	H104
353HVA	H78
353PU	H12
355ALH	H96
355HPU	H29
355HVA	H83
355PU	H24
355SUH	H114
3584HTA	H40
358HGA	H64
358SUH	H118
372HSD	H174
373GA	H48
373HGA	H52
375GA	H56
375HGA	H60
980SUTA	I18
990SUTA	I22
C-SD-TA 120	H180
C-SD-TA 90	H179
FFR	K50
FM	K48
G2210	J27

DESIGNATION	
G2211	J29
G2212	J31
G2250	J77
G2251	J79
G2310	J39
G2311	J41
G2312	J43
G2410	J53
G2411	J55
G2412	J57
G2413	J59
G2CL4R	J71
G2CS2	J23
G2CS2R	J67
G2CS4	J49
G2CS4R	J69
G2CSB2	J75
G2CSB4	J81
G2CSFR	J63
G2CSH3	J35
G2CSHM	J61
G2WC 90	J83
G2WS2	J25
G2WS4	J51
G2WSFR	J65
G2WSH3	J37
GB205	J19
GB255	J73
GB305	J33
GB405	J45
GBL2	J21
GBL4	J47
HF342	J122
HF440	J93
HF441	J98
HF442	J129
HF443	J134
HF444	J113
HF445	J117
HF450	J173
HF451	J177
HF452	J185
HF471	J164
HF535T	J162
HF542	J139
HF642	J150
HF643	J153
HF6441	J104
HF742	J156
HF743	J159
HF840	J89
HF842	J125
HF844	J109
HF850	J169
HF852	J181
HF942	J142
HF943	J146
HFA3D	J212
HFA53	J215
HFAL3	J209
HFAL4	J206

DESIGNATION	
MDA310	J225
MDA311	J227
MDA312	J229
MDCAB2	J233
MDCSA1	J218
MDCSA2	J220
MDCSA3	J223
MDCSAM	J231
MEF600	J198
MEF901	J200
MEFCS2	J192
MEFCS4	J196
MEFCSH3	J194
MEX253	J292
MEX400	J251
MEX410R	J269
MEX610R	J273
MEX611R	J275
MEXCL2	J249
MEXCL4	J253
MEXCLHM	J257
MEXCLSB2	J290
MEXCS2	J247
MEXCS4R	J266
MEXCSB2	J288
MEXCSHM	J255
MEXLN2	J242
MEXLN2R	J259
MEXLS2R	J264
MEXLS4R	J271
MEXM2	J238
MEXM2SC	J240
MHCRB2	J286
MHLNB2	J281
MHMB204	J277
MHMB206	J279
SA - 3 mm	L5
SA - 6 mm	L6
SB - 3 mm	L7
SB - 6 mm	L8
SC - 3 mm	L9
SC - 6 mm	L10
SD - 3 mm	L11
SD - 6 mm	L12
SE - 3 mm	L13
SE - 6 mm	L14
SF - 3 mm	L15
SF - 6 mm	L16
SG - 3 mm	L17
SG - 6 mm	L18
SH - 3 mm	L19
SH - 6 mm	L20
SJ - 3 mm	L21
SJ - 6 mm	L22
SK - 3 mm	L23
SK - 6 mm	L24
SL - 3 mm	L25
SL - 6 mm	L26
SM - 3 mm	L27
SM - 6 mm	L28
SN - 3 mm	L29

DESIGNATION	
SN - 6 mm	L30
TAWL2	K17
TAWL3	K25
TAWL4(6)	K33
TAWLFR	K41
TAWS2	K13
TAWS3	K22
TAWS4(6)	K30
TAWSB2	K44
TAWSFR	K38
TAWSH3	K27
TAWSR	K35
UH211	J312
UH212	J314
UH250	J355
UH253	J357
UH410	J330
UH411	J332
UH412	J334
UH413	J336
UH600	J306
UH610R	J338
UH611R	J340
UH612	J308
UHCS2	J320
UHCS4	J328
UHCSB2	J353
UHF-RT	J326
UHF4LN	J322
UHLN2	J301
UHM204	J299
UHM206	J310
WCR	K52
WDC	K54
WDD	K56
WL2	K16
WL3	K24
WL4(6)	K32
WLB2	K46
WLFR	K40
WS2	K12
WS3	K21
WS4(6)	K29
WSA2	K19
WSB2	K43
WSFR	K37
WTM	K58
WWK	K60

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