OSAWA

SORMA CUTTING SOLUTIONS



SMART PRICELIST

06 2024

OSAWA

Smart Pricelist 06/2024

Smart Price List Osawa presents in one single document more than 90% of the product range included in the catalogue, together with the list price of each item and the main information required for an easy and fast selection of the tools. All the items listed in this document are ranked as Stock Standard.

Smart Price List Osawa raccoglie in un unico documento oltre il 90% della gamma presente a catalogo, includendo i prezzi di listino e le principali informazioni necessarie per una selezione degli utensili semplice e immediata. Tutti gli articoli inseriti in questo documento sono Stock Standard.

Smart Pricelist Osawa sammelt in einem einzigen Dokument mehr als 90% des Katalogs einschließlich der Preisliste und der wichtigsten Informationen, die für eine einfache und unkomplizierte Werkzeugauswahl erforderlich sind. Alle in diesem Dokument enthaltenen Artikel sind ab Lager verfügbar.

Smart Price List Osawa regroupe dans un unique document plus du 90% de la gamme présente dans le catalogue, il inclut le prix tarif et les principales informations nécessaires pour une sélection simple et rapide des outils. Tous les articles inclus dans cette brochure sont stock standard.

Smart Price List de Osawa agrupa en un único documento más del 90% de la gama presente en el catálogo, incluyendo los precios de lista y las principales informaciones necesarias para una elección de las herramientas simple e inmediata. Todos los artículos en este documento son Stock Standard.

Smart Price List Osawa это 90% всей гаммы продукции представленной каталоге, включая цены и простое описание инструмента, для его быстрого и лёгкого выбора. Все артикулы включенные в этот документ являются стандартными складскими позициями.

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35. CARBIDE END MILLS 

35 ..... G2 general purpose
45 ..... HF VH/UP universal and multi-purpose
53 ..... MEF stainless steel and super alloys
55 ..... ALU non ferrous materials
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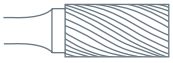
95. CARBIDE BURRS 

	MATERIALS	HARDNESS/Rm
P1	Free cutting steel and structural steel	< 500 N/mm²
P2	Carbon steel and low alloy steel	500 ÷ 700 N/mm²
P3	Medium alloy steel and heat treated steel	600 ÷ 800 N/mm²
P4	High alloy steel	800 ÷ 1000 N/mm²
P5	Tool steel	900 ÷ 1200 N/mm²
P6	High tensile strength steel	1200 ÷ 1480 N/mm² 38 ÷ 45 HRC
P7	Ferritic-Martensitic stainless steel	
P8	PH stainless steel	
M1	Austenitic stainless steel (good machinability)	
M2	Austenitic stainless steel (medium machinability) and Duplex	
M3	Super austenitic stainless steel and super Duplex	
K1	Grey cast iron	150 ÷ 250 HB
K2	Nodular cast iron	150 ÷ 350 HB
K3	Austenitic cast iron	120 ÷ 260 HB
K4	ADI cast iron	250 ÷ 500 HB
N1	Aluminium alloys ≤ 12% Si	
N2	Aluminium alloy > 12% Si and Aluminium-Magnesium	
N3	Copper alloy	
N4	Brass alloy and Bronze alloy	
N5	Plastic material	
N6	Carbon fiber and composite	
S1	Heat resistant super alloys (HRSA) Ni base (good machinability)	< 25 HRC
S2	Heat resistant super alloys (HRSA) Ni base (medium machinability)	25 ÷ 35 HRC
S3	Heat resistant super alloys (HRSA) Ni base (low machinability)	35 ÷ 45 HRC
S4	Low Titanium base alloy (good machinability)	
S5	High Titanium base alloy (medium machinability)	
H1	Hardened steel	50 ÷ 56 HRC
H2	Hardened bearing steel	54 ÷ 62 HRC
H3	Hardened tool steel	60 ÷ 65 HRC
H4	Hardened martensitic stainless steel	50 ÷ 56 HRC
H5	Hardened white cast iron	48 ÷ 55 HRC

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TYPHOON

HIGH PERFORMANCE CARBIDE DRILLS

Osawa Typhoon series consist of a high-quality carbide substrate and a cutting-edge coating technology combined with specific geometries for different machining applications and materials:
– CV: for general purpose
– PU and HPU: for universal applications ISO P, M, K, N, S
– GA and HGA: for general purpose, Weldon shank
– HVA: for stainless steel
– ALH: for aluminium
– 4HTA 8xD and HL 12xD-15xD-20xD-25xD-30xD: 4-margin lands for deep holes
– HRC: for 45÷62 HRC
– SUH MINI: Ø 1÷3 mm, for deep holes 5xD÷30xD

Le punte Typhoon sono composte da un substrato di metallo duro di alta qualità e una tecnologia di rivestimento all'avanguardia combinati con geometrie specifiche:
– CV: per uso generico
– PU e HPU: per applicazione universale ISO P, M, K, N, S
– GA e HGA: per uso generico, attacco Weldon
– HVA: per acciaio inossidabile
– ALH: per alluminio
– 4HTA 8xD e HL 12xD-15xD-20xD-25xD-30xD: geometria a 4 margini per fori profondi
– HRC: per 45÷62 HRC
– SUH MINI: Ø 1÷3 mm, per fori profondi 5xD÷30xD

Die Osawa Typhoon Bohrer bestehen aus einem hochwertigen Hartmetallsubstrat, und haben eine neue Beschichtung. Spezielle gewidmete Geometrien, je nach Bearbeitung und Materialien, kommen dann auch noch hinzu:
– CV: für allgemeine Anwendung
– PU und HPU: universell einsetzbar auf ISO P, M, K, N, S
– GA und HGA: für allgemeine Anwendung, Weldon schaft
– HVA: für Edelstahl
– ALH: für Aluminium
– 4HTA 8xD und HL 12xD-15xD-20xD-25xD-30xD: Geometrie mit 4 Führungsphasen für tiefe Bohrungen
– HRC: für 45÷62 HRC
– SUH MINI: Ø 1÷3 mm, für tiefe Löcher 5xD÷30xD

Les forets Typhoon sont constitués d'un substrat de carbure de haute qualité et d'une technologie de revêtement de pointe associée à des géométries spécifiques:
– CV : pour une utilisation générique
– PU et HPU : pour application universelle ISO P, M, K, N, S
– GA et HGA : pour une utilisation générique, Weldon queue
– HVA : pour l'acier inoxydable
– ALH : pour l'aluminium
– 4HTA 8xD e HL 12xD-15xD-20xD-25xD-30xD : Géométrie à 4 aretes pour les trous profonds
– HRC : pour 45÷62 HRC
– SUH MINI : Ø 1 ÷ 3 mm, pour trous profonds 5xD÷30xD

Las brocas de la serie Osawa Typhoon están formadas por un sustrato de metal duro de alta calidad y por una tecnología de revestimiento a la vanguardia que se combinan con geometrías específicas para diferentes mecanizados y materiales:
– CV: para uso general
– PU y HPU: para aplicaciones universales ISO P, M, K, N, S
– GA y HGA: para uso general, mango Weldon
– HVA: para acero inoxidable
– ALH: para aluminio
– 4HTA 8xD y HL 12xD-15xD-20xD-25xD-30xD: geometría de cuatro labios para agujeros profundos
– HRC: para 45÷62 HRC
– SUH MINI: Ø 1-3 mm, para agujeros profundos 5xD-30xD

Свёрла Typhoon изготавливаются из твёрдого сплава наивысшего качества в сочетании с передовыми технологиями покрытия и специальной геометрией:
– CV: общего назначения
– PU и HPU: для универсального применения ISO P, M, K, N, S
– GA и HGA: общего назначения, с хвостовиком Weldon
– HVA: для нержавеющих сталей
– ALH: для цветных металлов
– 4HTA 8xD и HL 12xD-15xD-20xD-25xD-30xD: геометрия с 4-мя направляющими для глубоких отверстий
– HRC: для 45÷62 HRC
– SUH MINI: Ø 1÷3 мм, для глубоких отверстий 5xD÷30xD

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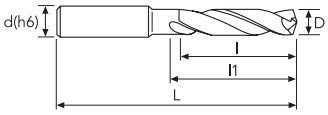
3XD | DIN 6537 | CV | MG PV200 | 140° | 30°



353CV

P							★
M							☆
K							☆
N							☆
S							
H							
D(h7)	d(h6)	l	l1	L	EDP No,		€
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2.50	4	12	17	55	353CV0250		19,67
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2.80	4	12	17	55	353CV0280		21,89
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5.70	6	20	28	66	353CV0570		37,76
5.80	6	20	28	66	353CV0580		37,76
5.90	6	20	28	66	353CV0590		37,76
6.00	6	20	28	66	353CV0600		37,76

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3XD | DIN 6537K | PU | MG PV250 | 140°+C45° | 30°

353HPU - catalogue page 45



3XD | DIN 6537K | HPU | MG PV250 | 140°+C45° | 30°

373GA - catalogue page 75



3XD | DIN 6537K | GA | MG PV400 | 140° | 30°

373HGA - catalogue page 75



3XD | DIN 6537K | HGA | MG PV400 | 140° | 30°

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3XD | DIN 6537K | HVA | MG PV350 | 140° | 30°

353ALH - catalogue page 111

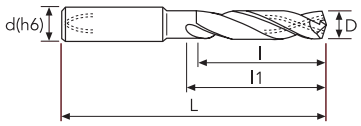


3XD | DIN 6537K | ALH | MG POLISHED | 130° | 30°

353HRC - catalogue page 121



3XD | DIN 6537K | HRC | MG PV1000 | 45÷62 HRC | 150°+C45° | 15°



	353PU	353HPU	373GA	373HGA	353HVA	353ALH	353HRC
P	★	★	★	★	☆		
M	★	★	☆	★	★		
K	★	★	★	★			
N	☆	☆				★	
S		★			☆		
H							★

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€	€
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3.90	6	17	24	66	0390	47,09	66,95	47,35	57,67	73,22	72,63	
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4.30	6	17	24	66	0430	47,09	66,95	47,35	57,67	73,22	72,63	55,14
4.40	6	17	24	66	0440	47,09	66,95	47,35	57,67	73,22		
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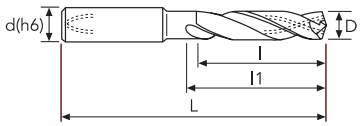
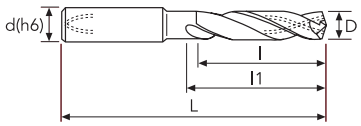


	353PU	353HPU	373GA	373HGA	353HVA	353ALH	353HRC
P	★	★	★	★	☆		
M	★	★	☆	★	★		
K	★	★	★	★			
N	☆	☆				★	
S		★			☆		
H							★

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€	€
6.20	8	24	34	79	0620	57,12	90,94	50,86	80,40	99,42	98,56	77,19
6.30	8	24	34	79	0630	57,12	90,94	50,86	80,40	99,42	98,56	
6.40	8	24	34	79	0640	57,12	90,94	50,86	80,40	99,42		
6.50	8	24	34	79	0650	57,12	90,94	50,86	80,40	99,42	98,56	77,19
6.60	8	24	34	79	0660	57,12	90,94	50,86	80,40	99,42		
6.70	8	24	34	79	0670	57,12	90,94	50,86	80,40	99,42	98,56	
6.80	8	24	34	79	0680	57,12	90,94	50,86	80,40	99,42	98,56	77,19
6.90	8	24	34	79	0690	57,12	90,94	50,86	80,40	99,42		77,19
7.00	8	24	34	79	0700	57,12	90,94	50,86	80,40	99,42	98,56	77,19
7.10	8	29	41	79	0710	57,12	90,94	51,39	80,40	99,42		
7.20	8	29	41	79	0720	57,12	90,94	51,39	80,40	99,42	98,56	
7.30	8	29	41	79	0730	57,12	90,94	51,39	80,40	99,42		
7.40	8	29	41	79	0740	57,12	90,94	51,39	80,40	99,42		77,19
7.50	8	29	41	79	0750	57,12	90,94	51,39	80,40	99,42	98,56	77,19
7.60	8	29	41	79	0760	57,12	90,94	51,39	80,40	99,42		
7.70	8	29	41	79	0770	57,12	90,94	51,39	80,40	99,42		
7.80	8	29	41	79	0780	57,12	90,94	51,39	80,40	99,42	98,56	77,19
7.90	8	29	41	79	0790	57,12	90,94	51,39	80,40	99,42		
8.00	8	29	41	79	0800	57,12	90,94	51,39	80,40	99,42	98,56	77,19
8.10	10	35	47	89	0810	71,75	101,99	57,36	96,22	111,45		102,38
8.20	10	35	47	89	0820	71,75	101,99	57,36	96,22	111,45	110,53	102,38
8.30	10	35	47	89	0830	71,75	101,99	57,36	96,22	111,45	110,53	
8.40	10	35	47	89	0840	71,75	101,99	57,36	96,22	111,45		
8.50	10	35	47	89	0850	71,75	101,99	57,36	96,22	111,45	110,53	102,38
8.60	10	35	47	89	0860	71,75	101,99	57,36	96,22	111,45	110,53	102,38
8.70	10	35	47	89	0870	71,75	101,99	57,36	96,22	111,45		102,38
8.80	10	35	47	89	0880	71,75	101,99	57,36	96,22	111,45	110,53	102,38
8.90	10	35	47	89	0890	71,75	101,99	57,36	96,22	111,45		
9.00	10	35	47	89	0900	71,75	101,99	57,36	96,22	111,45	110,53	102,38
9.10	10	35	47	89	0910	71,75	101,99	57,36	96,22	111,45		
9.20	10	35	47	89	0920	71,75	101,99	57,36	96,22	111,45		
9.30	10	35	47	89	0930	71,75	101,99	57,36	96,22	111,45		102,38
9.40	10	35	47	89	0940	71,75	101,99	57,36	96,22	111,45		
9.50	10	35	47	89	0950	71,75	101,99	57,36	96,22	111,45	110,53	102,38
9.60	10	35	47	89	0960	71,75	101,99	57,36	96,22	111,45		
9.70	10	35	47	89	0970	71,75	101,99	57,36	96,22	111,45		
9.80	10	35	47	89	0980	71,75	101,99	57,36	96,22	111,45		102,38
9.90	10	35	47	89	0990	71,75	101,99	57,36	96,22	111,45		
10.00	10	35	47	89	1000	71,75	101,99	57,36	96,22	111,45	110,53	102,38
10.10	12	40	55	102	1010	94,70	149,14	77,89	131,95	159,51		
10.20	12	40	55	102	1020	94,70	144,59	77,89	131,95	159,51	158,19	152,58
10.30	12	40	55	102	1030	94,70	144,59	77,89	131,95	159,51	158,20	152,58
10.40	12	40	55	102	1040	98,05	144,59	77,89	131,95	159,51		152,58
10.50	12	40	55	102	1050	94,70	144,59	77,89	131,95	159,51	158,19	152,58
10.60	12	40	55	102	1060	92,17	149,14	77,89	131,95	159,51		
10.70	12	40	55	102	1070	98,05	149,14	77,89	131,95	159,51		
10.80	12	40	55	102	1080	94,70	144,59	77,89	131,95	159,51		152,58
10.90	12	40	55	102	1090	95,97	149,14	77,89	131,95	159,51		
11.00	12	40	55	102	1100	94,70	144,59	77,89	131,95	159,51	158,19	152,58
11.10	12	40	55	102	1110	95,97	149,14	77,89	131,95	159,51		
11.20	12	40	55	102	1120	94,70	144,59	77,89	131,95	159,51		152,58
11.30	12	40	55	102	1130	92,17	144,59	77,89	131,95	159,51		
11.40	12	40	55	102	1140	95,97	149,14	77,89	131,95	159,51		
11.50	12	40	55	102	1150	94,70	144,59	77,89	131,95	159,51	158,19	152,58
11.60	12	40	55	102	1160	95,97	149,14	77,89	131,95	159,51		
11.70	12	40	55	102	1170	95,97	149,14	77,89	131,95	159,51		
11.80	12	40	55	102	1180	94,70	144,59	77,89	131,95	159,51		152,58
11.90	12	40	55	102	1190	95,97	149,14	77,89	131,95	159,51		
12.00	12	40	55	102	1200	94,70	144,59	77,89	131,95	159,51	158,19	152,58
12.10	14	43	60	107	1210	148,19	208,43	112,78	187,42	222,89		
12.20	14	43	60	107	1220	134,73	201,99	112,78	187,42	222,89		186,75
12.30	14	43	60	107	1230	148,19	208,43	112,78				

EDP N° = item code + ø (example: 353PU mm 3.5 = 353PU0350)



	353PU	353HPU	373GA	373HGA	353HVA	353ALH	353HRC
P	★	★	★	★	☆		
M	★	★	☆	★	★		
K	★	★	★	★			
N	☆	☆				★	
S		★			☆		
H							★

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€	€
12.40	14	43	60	107	1240	148,19	208,43	112,78				
12.50	14	43	60	107	1250	134,74	201,99	112,78	187,42	222,89		186,75
12.60	14	43	60	107	1260	148,19	208,43	112,78				
12.70	14	43	60	107	1270	148,19	198,42	112,78	187,42			
12.80	14	43	60	107	1280	148,19	201,99	112,78	187,42	222,89		186,75
12.90	14	43	60	107	1290	148,19	208,43	112,78				
13.00	14	43	60	107	1300	134,74	201,99	112,78	187,42	222,89		186,75
13.10	14	43	60	107	1310	148,19	208,43					
13.20	14	43	60	107	1320	148,19	208,43					
13.30	14	43	60	107	1330	148,19	201,99			222,89		
13.40	14	43	60	107	1340	148,19	208,43					
13.50	14	43	60	107	1350	134,74	201,99	112,78	187,42	222,89		
13.60	14	43	60	107	1360	148,19	208,43					
13.70	14	43	60	107	1370	148,19	198,42	112,78	187,42			
13.80	14	43	60	107	1380	148,19	201,99	112,78	187,42	222,89		
13.90	14	43	60	107	1390	148,19	208,43					
14.00	14	43	60	107	1400	134,74	201,99	112,78	187,42	256,83		
14.10	16	45	65	115	1410	186,99	240,24			256,83		
14.20	16	45	65	115	1420	186,99	240,24	152,59	241,84	256,83		310,75
14.30	16	45	65	115	1430	186,99	240,24					
14.50	16	45	65	115	1450	169,98	232,73	152,59	241,84	256,83		
14.60	16	45	65	115	1460	186,99	240,24					
14.70	16	45	65	115	1470	186,99		152,59				
14.80	16	45	65	115	1480	186,99	240,24	152,59	241,84			
15.00	16	49	65	115	1500	169,98	232,73	152,59	241,84	256,83		
15.10	16	49	65	115	1510	186,99	240,24					
15.20	16	49	65	115	1520	186,99	240,24	152,59	241,84			
15.30	16	49	65	115	1530	186,99	232,73	152,59	241,84	256,83		
15.50	16	49	65	115	1550	169,98	232,73	152,59	241,84	256,83		
15.60	16	49	65	115	1560	186,99	240,24					
15.70	16	49	65	115	1570	186,99	240,24	152,59				
15.80	16	49	65	115	1580	186,99	232,73	152,59	241,84	256,83		
16.00	16	49	65	115	1600	169,98	232,73	152,59	241,84	256,83		
16.10	18	52	73	123	1610		409,61					
16.20	18	52	73	123	1620		409,61					
16.30	18	52	73	123	1630		409,61					
16.50	18	52	73	123	1650	234,82	396,87	273,59	329,90	437,98		
16.70	18	52	73	123	1670		409,61					
16.80	18	52	73	123	1680		409,61					
17.00	18	52	73	123	1700	234,82	396,87	273,59	329,90	437,98		
17.10	18	52	73	123	1710		409,61					
17.20	18	52	73	123	1720		409,61					
17.50	18	52	73	123	1750	234,82	396,87	273,59	329,90	437,98		
17.60	18	52	73	123	1760		409,61					
17.70	18	52	73	123	1770		409,61					
17.80	18	52	73	123	1780		409,61					
18.00	18	52	73	123	1800	234,82	396,87	273,59	329,90	437,98		
18.10	20	55	79	131	1810		448,22					
18.20	20	55	79	131	1820		448,22					
18.30	20	55	79	131	1830		448,22					
18.50	20	55	79	131	1850	297,21	434,32	282,12	411,35	479,30		
18.60	20	55	79	131	1860		448,22					
18.70	20	55	79	131	1870		448,22					
18.80	20	55	79	131	1880		448,22					
19.00	20	55	79	131	1900	297,21	434,32	282,12	411,35	479,30		
19.20	20	55	79	131	1920		448,22					
19.30	20	55	79	131	1930		448,22					
19.50	20	55	79	131	1950	297,21	434,32	282,12	411,35	479,30		
19.60	20	55	79	131	1960		448,22					
19.80	20	55	79	131	1980		448,22					
20.00	20	55	79	131	2000	297,21	434,32	282,12	411,35	479,30		

EDP N° = item code + ø (example: 353PU mm 3.5 = 353PU0350)

355PU - catalogue page 54



5XD | DIN 6537L | PU | MG PV250 | 140°+C45° | 30°

355HPU - catalogue page 54



5XD | DIN 6537L | HPU | MG PV250 | 140°+C45° | 30°

375GA - catalogue page 81



5XD | DIN 6537L | GA | MG PV400 | 140° | 30°

375HGA - catalogue page 81



5XD | DIN 6537L | HGA | MG PV400 | 140° | 30°

355HVA - catalogue page 104

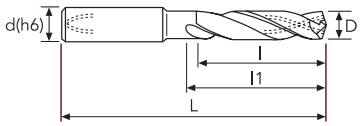


5XD | DIN 6537L | HVA | MG PV350 | 140° | 30°

355ALH - catalogue page 115



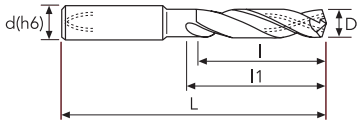
5XD | DIN 6537L | ALH | MG POLISHED | 130° | 30°



	355PU	355HPU	375GA	375HGA	355HVA	355ALH
P	★	★	★	★	☆	
M	★	★	☆	★	★	
K	★	★	★	★		
N	☆	☆				★
S		★			☆	
H						

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€
3.00	6	23	28	66	0300	52,66	84,73	53,06	72,08	93,95	93,12
3.10	6	23	28	66	0310	52,66	84,73	53,06	72,08	93,95	
3.20	6	23	28	66	0320	52,66	84,73	53,06	72,08	93,95	93,12
3.25	6	23	28	66	0325		87,56				
3.30	6	23	28	66	0330	52,66	84,73	53,06	72,08	93,95	93,12
3.40	6	23	28	66	0340	52,66	84,73	53,06	72,08	93,95	93,12
3.50	6	23	28	66	0350	52,66	84,73	53,06	72,08	93,95	93,12
3.60	6	23	28	66	0360	52,66	84,73	53,06	72,08	93,95	93,12
3.70	6	23	28	66	0370	52,66	84,73	53,06	72,08	93,95	93,12
3.80	6	29	36	74	0380	52,66	84,73	53,06	72,08	93,95	93,12
3.90	6	29	36	74	0390	52,66	84,73	53,06	72,08	93,95	
4.00	6	29	36	74	0400	52,66	84,73	53,06	72,08	93,95	93,12
4.10	6	29	36	74	0410	52,66	84,73	53,06	72,08	93,95	
4.20	6	29	36	74	0420	52,66	84,73	53,06	72,08	93,95	93,12
4.30	6	29	36	74	0430	52,66	84,73	53,06	72,08	93,95	93,12
4.40	6	29	36	74	0440	52,66	84,73	53,06	72,08	93,95	
4.50	6	29	36	74	0450	52,66	84,73	53,06	72,08	93,95	93,12
4.60	6	29	36	74	0460	52,66	84,73	53,06	72,08	93,95	
4.65	6	29	36	74	0465		87,56		72,08		
4.70	6	29	36	74	0470	52,66	84,73	53,06	72,08	93,95	
4.80	6	35	44	82	0480	52,66	84,73	54,95	74,75	93,95	93,12
4.90	6	35	44	82	0490	52,66	84,73	54,95	74,75	93,95	
5.00	6	35	44	82	0500	52,66	84,73	54,95	74,75	93,95	93,12
5.10	6	35	44	82	0510	52,66	84,73	54,95	74,75	93,95	93,12
5.20	6	35	44	82	0520	52,66	84,73	54,95	74,75	93,95	93,12
5.30	6	35	44	82	0530	52,66	84,73	54,95	74,75	93,95	
5.40	6	35	44	82	0540	52,66	84,73	54,95	74,75	93,95	
5.50	6	35	44	82	0550	52,66	84,73	54,95	74,75	93,95	93,12
5.55	6	35	44	82	0555		87,56		74,75		
5.60	6	35	44	82	0560	52,66	84,73	54,95	74,75	93,95	93,12
5.70	6	35	44	82	0570	52,66	84,73	54,95	74,75	93,95	
5.80	6	35	44	82	0580	52,66	84,73	54,95	74,75	93,95	93,12
5.90	6	35	44	82	0590	52,66	84,73	54,95	74,75	93,95	
6.00	6	35	44	82	0600	52,66	84,73	54,95	74,75	93,95	93,12
6.10	8	43	53	91	0610	63,19	93,56	58,51	88,47	103,72	
6.20	8	43	53	91	0620	63,19	93,56	58,51	88,47	103,72	102,83

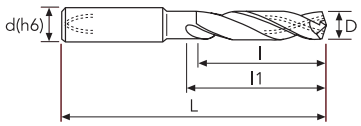
EDP N° = item code + ø (example: 355PU mm 3.5 = 355PU0350)



	355PU	355HPU	375GA	375HGA	355HVA	355ALH
P	★	★	★	★	☆	
M	★	★	☆	★	★	
K	★	★	★	★		
N	☆	☆				★
S		★			☆	
H						

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€
6.30	8	43	53	91	0630	63,19	93,56	58,51	88,47	103,72	
6.40	8	43	53	91	0640	63,19	93,56	58,51	88,47	103,72	
6.50	8	43	53	91	0650	63,19	93,56	58,51	88,47	103,72	102,83
6.60	8	43	53	91	0660	63,19	93,56	58,51	88,47	103,72	
6.70	8	43	53	91	0670	63,19	93,56	58,51	88,47	103,72	102,83
6.80	8	43	53	91	0680	63,19	93,56	58,51	88,47	103,72	102,83
6.90	8	43	53	91	0690	63,19	93,56	58,51	88,47	103,72	102,83
7.00	8	43	53	91	0700	63,19	93,56	58,51	88,47	103,72	102,83
7.10	8	43	53	91	0710	63,19	93,56	59,09	88,47	103,72	
7.20	8	43	53	91	0720	63,19	93,56	59,09	88,47	103,72	102,83
7.30	8	43	53	91	0730	63,19	93,56	59,09	88,47	103,72	
7.40	8	43	53	91	0740	63,19	93,56	59,09	88,47	103,72	
7.45	8	43	53	91	0745		96,69		88,47		
7.50	8	43	53	91	0750	63,19	93,56	59,09	88,47	103,72	102,83
7.60	8	43	53	91	0760	63,19	93,56	59,09	88,47	103,72	
7.70	8	43	53	91	0770	63,19	93,56	59,09	88,47	103,72	
7.80	8	43	53	91	0780	63,19	93,56	59,09	88,47	103,72	102,83
7.90	8	43	53	91	0790	63,19	93,56	59,09	88,47	103,72	
8.00	8	43	53	91	0800	63,19	93,56	59,09	88,47	103,72	102,83
8.10	10	49	61	103	0810	79,88	112,75	65,95	103,92	126,27	
8.20	10	49	61	103	0820	79,88	112,75	65,95	103,92	126,27	125,23
8.30	10	49	61	103	0830	79,88	112,75	65,95	103,92	126,27	
8.40	10	49	61	103	0840	79,88	112,75	65,95	103,92	126,27	
8.50	10	49	61	103	0850	79,88	112,75	65,95	103,92	126,27	125,23
8.60	10	49	61	103	0860	79,88	112,75	65,95	103,92	126,27	
8.70	10	49	61	103	0870	79,88	112,75	65,95	103,92	126,27	
8.80	10	49	61	103	0880	79,88	112,75	65,95	103,92	126,27	125,23
8.90	10	49	61	103	0890	79,88	112,75	65,95	103,92	126,27	
9.00	10	49	61	103	0900	79,88	112,75	65,95	103,92	126,27	125,23
9.10	10	49	61	103	0910	79,88	112,75	65,95	103,92	126,27	
9.20	10	49	61	103	0920	79,88	112,75	65,95	103,92	126,27	
9.25	10	49	61	103	0925		116,58				
9.30	10	49	61	103	0930	79,88	112,75	65,95	103,92	126,27	
9.35	10	49	61	103	0935		116,58		103,92		
9.40	10	49	61	103	0940	79,88	112,75	65,95	103,92	126,27	
9.45	10	49	61	103	0945		116,58				
9.50	10	61	61	103	0950	79,88	112,75	65,95	103,92	126,27	125,23
9.60	10	61	61	103	0960	79,88	112,75	65,95	103,92	126,27	
9.70	10	61	61	103	0970	79,88	112,75	65,95	103,92	126,27	
9.80	10	61	61	103	0980	79,88	112,75	65,95	103,92	126,27	
9.90	10	61	61	103	0990	79,88	112,75	65,95	103,92	126,27	
10.00	10	61	61	103	1000	79,88	112,75	65,95	103,92	126,27	125,23
10.10	12	71	71	118	1010	130,70	168,93	88,84	142,48	182,42	
10.20	12	71	71	118	1020	122,03	162,95	88,84	142,48	182,42	180,90
10.30	12	71	71	118	1030	122,03	168,93	88,84	142,48	182,42	
10.40	12	71	71	118	1040	130,70	170,03	88,84	142,48	182,42	
10.50	12	71	71	118	1050	122,03	162,95	88,84	142,48	182,42	180,90
10.60	12	71	71	118	1060	130,70	170,03	88,84	142,48	182,42	
10.70	12	71	71	118	1070	130,70	170,03	88,84	142,48	182,42	
10.80	12	71	71	118	1080	122,03	162,95	88,84	142,48	182,42	
10.90	12	71	71	118	1090	130,70	170,03	88,84	142,48	182,42	
11.00	12	71	71	118	1100	122,03	162,95	88,84	142,48	182,42	180,90
11.10	12	71	71	118	1110	130,70	170,03	88,84	142,48	182,42	
11.20	12	71	71	118	1120	122,03	162,95	88,84	142,48	182,42	
11.25	12	71	71	118	1125		170,04				
11.30	12	71	71	118	1130	122,03	162,95	88,84	142,48	182,42	
11.40	12	71	71	118	1140	130,70	170,03	88,84	142,48	182,42	
11.50	12	71	71	118	1150	122,03	162,95	88,84	142,48	182,42	180,90
11.60	12	71	71	118	1160	130,70	170,03	88,84	142,48	182,42	
11.70	12	71	71	118	1170	130,70	170,03	88,84	142,48	182,42	
11.80	12	71	71	118	1180	122,03	162,95	88,84	142,48	182,42	
11.90	12	71	71	118	1190	130,70	170,03	88,84	142,48	182,42	

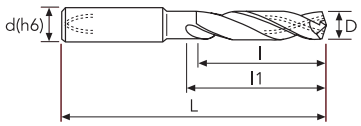
EDP N° = item code + ø (example: 355PU mm 3.5 = 355PU0350)



	355PU	355HPU	375GA	375HGA	355HVA	355ALH
P	★	★	★	★	☆	
M	★	★	☆	★	★	
K	★	★	★	★		
N	☆	☆				★
S		★			☆	
H						

D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€
12.00	12	71	71	118	1200	**122,03**	**162,95**	**88,84**	**142,48**	**182,42**	**180,90**
12.10	14	77	77	124	1210	**168,27**	**224,89**		**200,51**	**241,31**	
12.20	14	77	77	124	1220	**161,27**	**215,60**		**200,51**	**241,31**	
12.30	14	77	77	124	1230		**224,89**		**200,51**		
12.40	14	77	77	124	1240		**224,89**		**200,51**		
12.50	14	77	77	124	1250	**161,27**	**215,60**	**128,54**	**200,51**	**241,31**	
12.60	14	77	77	124	1260		**224,89**		**200,51**		
12.70	14	77	77	124	1270	**161,27**	**215,59**		**200,51**		
12.80	14	77	77	124	1280	**161,27**	**215,60**		**200,51**	**241,31**	
12.90	14	77	77	124	1290		**224,89**				
13.00	14	77	77	124	1300	**161,27**	**215,60**	**128,54**	**200,51**	**241,31**	
13.10	14	77	77	124	1310	**168,27**	**224,89**				
13.20	14	77	77	124	1320	**168,27**	**224,89**				
13.30	14	77	77	124	1330	**161,27**	**215,60**			**241,31**	
13.40	14	77	77	124	1340		**224,89**				
13.50	14	77	77	124	1350	**161,27**	**215,60**	**128,54**	**200,51**	**241,31**	
13.60	14	77	77	124	1360		**224,89**				
13.70	14	77	77	124	1370	**161,27**	**215,59**		**200,51**		
13.80	14	77	77	124	1380	**161,27**	**215,60**		**200,51**	**241,31**	
13.90	14	77	77	124	1390		**224,89**		**200,51**		
14.00	14	77	77	124	1400	**161,27**	**215,60**	**128,54**	**200,51**	**241,31**	
14.10	16	83	83	133	1410		**287,90**		**258,76**	**308,97**	
14.20	16	83	83	133	1420		**271,72**		**258,76**	**308,97**	
14.30	16	83	83	133	1430		**287,90**				
14.40	16	83	83	133	1440		**287,90**				
14.50	16	83	83	133	1450	**193,78**	**276,00**	**173,90**	**258,76**	**308,97**	
14.60	16	83	83	133	1460		**287,90**				
14.70	16	83	83	133	1470		**287,90**		**258,76**		
14.80	16	83	83	133	1480		**287,90**		**258,76**		
14.90	16	83	83	133	1490		**287,90**				
15.00	16	83	83	133	1500	**193,78**	**276,00**	**173,90**	**258,76**	**308,97**	
15.10	16	83	83	133	1510		**287,90**		**258,76**		
15.20	16	83	83	133	1520		**287,90**		**258,76**		
15.30	16	83	83	133	1530	**200,42**	**276,00**		**258,76**	**308,99**	
15.40	16	83	83	133	1540		**287,90**				
15.50	16	83	83	133	1550	**193,78**	**276,00**	**173,90**	**258,76**	**308,97**	
15.60	16	83	83	133	1560		**287,90**				
15.70	16	83	83	133	1570		**287,90**		**258,76**		
15.80	16	83	83	133	1580	**200,42**	**276,00**		**258,76**	**308,97**	
15.90	16	83	83	133	1590		**287,90**				
16.00	16	83	83	133	1600	**193,78**	**276,00**	**173,90**	**258,76**	**308,97**	
16.10	18	93	93	143	1610		**444,20**				
16.20	18	93	93	143	1620		**444,20**				
16.30	18	93	93	143	1630		**444,20**				
16.40	18	93	93	143	1640		**444,20**				
16.50	18	93	93	143	1650	**281,42**	**425,76**	**289,98**	**376,10**	**476,63**	
16.60	18	93	93	143	1660		**444,20**				
16.70	18	93	93	143	1670		**444,20**				
16.80	18	93	93	143	1680		**444,20**				
16.90	18	93	93	143	1690		**444,20**				
17.00	18	93	93	143	1700	**281,42**	**425,76**	**289,98**	**376,10**	**476,63**	
17.10	18	93	93	143	1710		**444,20**				
17.20	18	93	93	143	1720		**444,20**				
17.30	18	93	93	143	1730		**444,20**				
17.40	18	93	93	143	1740		**444,20**				
17.50	18	93	93	143	1750	**281,42**	**425,76**	**289,98**	**376,10**	**476,63**	
17.60	18	93	93	143	1760		**444,20**				
17.70	18	93	93	143	1770		**444,20**				
17.80	18	93	93	143	1780		**444,20**				
17.90	18	93	93	143	1790		**444,20**				
18.00	18	93	93	143	1800	**281,42**	**425,76**	**289,98**	**376,10**	**476,63**	
18.10	20	101	101	153	1810		**517,52**				

EDP N° = item code + ø (example: 355PU mm 3.5 = 355PU0350)



	355PU	355HPU	375GA	375HGA	355HVA	355ALH
P	★	★	★	★	☆	
M	★	★	☆	★	★	
K	★	★	★	★		
N	☆	☆				★
S		★			☆	
H						

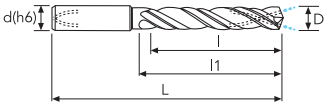
D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€
18.20	20	101	101	153	1820		**517,52**				
18.30	20	101	101	153	1830		**517,52**				
18.40	20	101	101	153	1840		**517,52**				
18.50	20	101	101	153	1850	**364,22**	**496,12**	**299,10**	**468,91**	**555,33**	
18.60	20	101	101	153	1860		**517,52**				
18.70	20	101	101	153	1870		**517,52**				
18.80	20	101	101	153	1880		**517,52**				
18.90	20	101	101	153	1890		**517,52**				
19.00	20	101	101	153	1900	**364,22**	**496,12**	**299,10**	**468,91**	**555,33**	
19.10	20	101	101	153	1910		**517,52**				
19.20	20	101	101	153	1920		**517,52**				
19.30	20	101	101	153	1930		**517,52**				
19.40	20	101	101	153	1940		**517,52**				
19.50	20	101	101	153	1950	**364,22**	**496,12**	**299,10**	**468,91**	**555,33**	
19.60	20	101	101	153	1960		**517,52**				
19.70	20	101	101	153	1970		**517,52**				
19.80	20	101	101	153	1980		**517,52**				
19.90	20	101	101	153	1990		**517,52**				
20.00	20	101	101	153	2000	**364,22**	**496,12**	**299,10**	**468,91**	**555,33**	

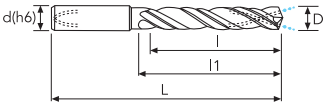
EDP N° = item code + ø (example: 355PU mm 3.5 = 355PU0350)

3584HTA - catalogue page 67



8XD | OSAWA NORM | 4HTA | MG PV300 | 140° | 30°





	3584HTA		3584HTA
P	★	P	★
M	★	M	★
K	★	K	★
N	☆	N	☆
S	☆	S	☆
H		H	

D(m7)	d(h6)	l	l1	L	EDP No.	€	D(m7)	d(h6)	l	l1	L	EDP No.	€
3.00	6	32	40	85	358HTA0300	**163,92**	7.40	8	64	76	116	358HTA0740	**200,51**
3.10	6	32	40	85	358HTA0310	**163,92**	7.50	8	64	76	116	358HTA0750	**200,51**
3.20	6	32	40	85	358HTA0320	**163,92**	7.60	8	64	76	116	358HTA0760	**200,51**
3.30	6	32	40	85	358HTA0330	**163,92**	7.80	8	64	76	116	358HTA0780	**200,51**
3.40	6	32	40	85	358HTA0340	**163,92**	8.00	8	64	76	116	358HTA0800	**200,51**
3.50	6	32	40	85	358HTA0350	**163,92**	8.10	10	80	95	142	358HTA0810	**275,13**
3.60	6	36	40	85	358HTA0360	**163,92**	8.20	10	80	95	142	358HTA0820	**275,13**
3.70	6	36	40	85	358HTA0370	**163,92**	8.30	10	80	95	142	358HTA0830	**275,13**
3.80	6	36	40	85	358HTA0380	**163,92**	8.50	10	80	95	142	358HTA0850	**275,13**
4.00	6	38	46	85	358HTA0400	**163,92**	8.60	10	80	95	142	358HTA0860	**275,13**
4.10	6	38	46	85	358HTA0410	**163,92**	8.70	10	80	95	142	358HTA0870	**275,13**
4.20	6	38	46	85	358HTA0420	**163,92**	8.80	10	80	95	142	358HTA0880	**275,13**
4.30	6	40	46	97	358HTA0430	**163,92**	9.00	10	80	95	142	358HTA0900	**275,13**
4.50	6	44	46	97	358HTA0450	**163,92**	9.10	10	80	95	142	358HTA0910	**275,13**
4.60	6	44	46	97	358HTA0460	**163,92**	9.20	10	80	95	142	358HTA0920	**275,13**
4.70	6	44	46	97	358HTA0470	**163,92**	9.30	10	80	95	142	358HTA0930	**275,13**
4.80	6	44	46	97	358HTA0480	**163,92**	9.50	10	80	95	142	358HTA0950	**275,13**
5.00	6	48	57	97	358HTA0500	**163,92**	9.80	10	80	95	142	358HTA0980	**275,13**
5.10	6	48	57	97	358HTA0510	**163,92**	10.00	10	80	95	142	358HTA1000	**275,13**
5.20	6	48	57	97	358HTA0520	**163,92**	10.20	12	96	114	163	358HTA1020	**399,24**
5.30	6	48	57	97	358HTA0530	**163,92**	10.50	12	96	114	163	358HTA1050	**399,24**
5.50	6	48	57	97	358HTA0550	**163,92**	10.80	12	96	114	163	358HTA1080	**399,24**
5.60	6	48	57	97	358HTA0560	**163,92**	11.00	12	96	114	163	358HTA1100	**399,24**
5.80	6	48	57	97	358HTA0580	**163,92**	11.20	12	96	114	163	358HTA1120	**399,24**
5.90	6	48	57	97	358HTA0590	**163,92**	11.50	12	96	114	163	358HTA1150	**399,24**
6.00	6	48	57	97	358HTA0600	**163,92**	11.80	12	96	114	163	358HTA1180	**399,24**
6.10	8	64	76	116	358HTA0610	**200,51**	12.00	12	96	114	163	358HTA1200	**399,24**
6.20	8	64	76	116	358HTA0620	**200,51**	12.20	14	112	133	182	358HTA1220	**559,51**
6.30	8	64	76	116	358HTA0630	**200,51**	12.50	14	112	133	182	358HTA1250	**559,51**
6.50	8	64	76	116	358HTA0650	**200,51**	12.80	14	112	133	182	358HTA1280	**559,51**
6.70	8	64	76	116	358HTA0670	**200,51**	13.00	14	112	133	182	358HTA1300	**559,51**
6.80	8	64	76	116	358HTA0680	**200,51**	13.50	14	112	133	182	358HTA1350	**559,51**
6.90	8	64	76	116	358HTA0690	**200,51**	14.00	14	112	133	182	358HTA1400	**559,51**
7.00	8	64	76	116	358HTA0700	**200,51**	14.50	16	128	152	204	358HTA1450	**705,63**
7.10	8	64	76	116	358HTA0710	**200,51**	15.00	16	128	152	204	358HTA1500	**705,63**
7.20	8	64	76	116	358HTA0720	**200,51**	15.50	16	128	152	204	358HTA1550	**705,63**
7.30	8	64	76	116	358HTA0730	**200,51**	16.00	16	128	152	204	358HTA1600	**705,63**

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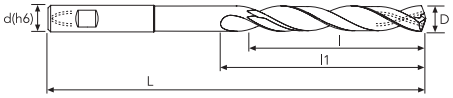
8XD | OSAWA NORM | HGA | MG PV400 | 140° | 30°



	358HGA
P	★
M	★
K	★
N	
S	
H	

D(m7)	d(h6)	l	l1	L	EDP No.	€
3.00	6	29	34	72	358HGA0300	**145,72**
3.10	6	29	34	72	358HGA0310	**145,72**
3.20	6	29	34	72	358HGA0320	**145,72**
3.30	6	29	34	72	358HGA0330	**145,72**
3.40	6	29	34	72	358HGA0340	**145,72**
3.50	6	29	34	72	358HGA0350	**145,72**
3.60	6	29	34	72	358HGA0360	**145,72**
3.70	6	29	34	72	358HGA0370	**145,72**
3.80	6	36	43	81	358HGA0380	**150,28**
3.90	6	36	43	81	358HGA0390	**150,28**
4.00	6	36	43	81	358HGA0400	**150,28**
4.10	6	36	43	81	358HGA0410	**150,28**
4.20	6	36	43	81	358HGA0420	**150,28**
4.30	6	36	43	81	358HGA0430	**150,28**
4.50	6	36	43	81	358HGA0450	**150,28**
4.60	6	36	43	81	358HGA0460	**150,28**
4.70	6	36	43	81	358HGA0470	**150,28**
4.80	6	48	57	95	358HGA0480	**154,21**
4.90	6	48	57	95	358HGA0490	**154,21**
5.00	6	48	57	95	358HGA0500	**154,21**
5.10	6	48	57	95	358HGA0510	**154,21**
5.20	6	48	57	95	358HGA0520	**154,21**
5.30	6	48	57	95	358HGA0530	**154,21**
5.50	6	48	57	95	358HGA0550	**154,21**
5.60	6	48	57	95	358HGA0560	**154,21**
5.70	6	48	57	95	358HGA0570	**154,21**
5.80	6	48	57	95	358HGA0580	**154,21**
5.90	6	48	57	95	358HGA0590	**154,21**
6.00	6	48	57	95	358HGA0600	**154,21**
6.10	8	64	76	114	358HGA0610	**186,69**
6.20	8	64	76	114	358HGA0620	**186,69**
6.30	8	64	76	114	358HGA0630	**186,69**
6.40	8	64	76	114	358HGA0640	**186,69**
6.50	8	64	76	114	358HGA0650	**186,69**
6.60	8	64	76	114	358HGA0660	**186,69**
6.70	8	64	76	114	358HGA0670	**186,69**
6.80	8	64	76	114	358HGA0680	**186,69**
6.90	8	64	76	114	358HGA0690	**186,69**
7.00	8	64	76	114	358HGA0700	**186,69**
7.10	8	64	76	114	358HGA0710	**186,69**
7.20	8	64	76	114	358HGA0720	**186,69**
7.30	8	64	76	114	358HGA0730	**186,69**
7.40	8	64	76	114	358HGA0740	**186,69**
7.50	8	64	76	114	358HGA0750	**186,69**
7.60	8	64	76	114	358HGA0760	**186,69**
7.80	8	64	76	114	358HGA0780	**186,69**
8.00	8	64	76	114	358HGA0800	**186,69**
8.10	10	80	95	142	358HGA0810	**240,69**
8.20	10	80	95	142	358HGA0820	**240,69**
8.30	10	80	95	142	358HGA0830	**240,69**
8.50	10	80	95	142	358HGA0850	**240,69**
8.60	10	80	95	142	358HGA0860	**240,69**
8.70	10	80	95	142	358HGA0870	**240,69**
8.80	10	80	95	142	358HGA0880	**240,69**
9.00	10	80	95	142	358HGA0900	**240,69**
9.10	10	80	95	142	358HGA0910	**240,69**
9.20	10	80	95	142	358HGA0920	**240,69**
9.30	10	80	95	142	358HGA0930	**240,69**

	358HGA
P	★
M	★
K	★
N	
S	
H	

D(m7)	d(h6)	l	l1	L	EDP No.	€
9.50	10	80	95	142	358HGA0950	**240,69**
9.80	10	80	95	142	358HGA0980	**240,69**
10.00	10	80	95	142	358HGA1000	**240,69**
10.20	12	96	114	162	358HGA1020	**300,88**
10.50	12	96	114	162	358HGA1050	**300,88**
10.80	12	96	114	162	358HGA1080	**300,88**
11.00	12	96	114	162	358HGA1100	**300,88**
11.20	12	96	114	162	358HGA1120	**300,88**
11.50	12	96	114	162	358HGA1150	**300,88**
11.80	12	96	114	162	358HGA1180	**300,88**
12.00	12	96	114	162	358HGA1200	**300,88**
12.20	14	112	133	182	358HGA1220	**410,40**
12.50	14	112	133	182	358HGA1250	**410,40**
12.80	14	112	133	182	358HGA1280	**410,40**
13.00	14	112	133	182	358HGA1300	**410,40**
13.20	14	112	133	182	358HGA1320	**410,40**
13.50	14	112	133	182	358HGA1350	**410,40**
14.00	14	112	133	182	358HGA1400	**410,40**
14.20	16	128	152	203	358HGA1420	**577,55**
14.50	16	128	152	203	358HGA1450	**577,55**
15.00	16	128	152	203	358HGA1500	**577,55**
15.50	16	128	152	203	358HGA1550	**577,55**
16.00	16	128	152	203	358HGA1600	**577,55**
16.50	18	144	171	222	358HGA1650	**664,98**
17.00	18	144	171	222	358HGA1700	**664,98**
17.50	18	144	171	222	358HGA1750	**664,98**
18.00	18	144	171	222	358HGA1800	**664,98**
18.50	20	160	190	243	358HGA1850	**819,45**
19.00	20	160	190	243	358HGA1900	**819,45**
19.50	20	160	190	243	358HGA1950	**819,45**
20.00	20	160	190	243	358HGA2000	**819,45**

3512HL - catalogue page 165

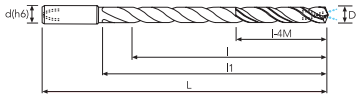


12XD | OSAWA NORM | HL | MG PV250 | 135° | 30°

3515HL - catalogue page 170



15XD | OSAWA NORM | HL | MG PV250 | 135° | 30°



	3512HL	3515HL
P	★	★
M	★	★
K	★	★
N	☆	☆
S	☆	☆
H		

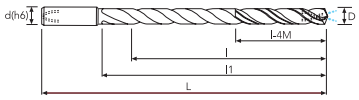
D(h7)	d(h6)	l	l1	L	l-4M	EDP No.	€	d(h6)	l	l1	L	l-4M	EDP No.	€
3.10	4	45	50	85	15.5	3512HL0310N	**242,18**							
3.20	4	45	50	85	16	3512HL0320N	**242,18**							
3.30	4	45	50	85	16.5	3512HL0330N	**242,18**							
3.50	4	48	54	90	17.5	3512HL0350N	**242,18**	4	55	60	95	17.5	3515HL0350N	**256,79**
3.70	4	48	54	90	18.5	3512HL0370N	**242,18**							
3.80	4	57	64	100	19	3512HL0380N	**242,18**							
4.00	4	57	64	100	20	3512HL0400N	**242,18**	4	62	68	105	20	3515HL0400N	**256,79**
4.10	5	57	64	100	20.5	3512HL0410N	**272,71**							
4.20	5	57	64	100	21	3512HL0420N	**272,71**							
4.30	5	57	64	100	21.5	3512HL0430N	**272,71**	5	67	73	110	21.5	3515HL0430N	**275,37**
4.50	5	57	64	100	22.5	3512HL0450N	**272,71**	5	70	76	115	22.5	3515HL0450N	**275,37**
4.80	5	67	74	110	24	3512HL0480N	**272,71**							
5.00	5	72	81	120	25	3512HL0500N	**272,71**	5	77	85	120	25	3515HL0500N	**275,37**
5.10	6	72	81	120	25.5	3512HL0510N	**272,71**							
5.20	6	72	81	120	26	3512HL0520N	**272,71**							
5.30	6	72	81	120	26.5	3512HL0530N	**272,71**							
5.50	6	72	81	120	27.5	3512HL0550N	**272,71**	6	85	93	130	27.5	3515HL0550N	**287,61**
5.60	6	72	81	120	28	3512HL0560N	**272,71**							
5.80	6	72	81	120	29	3512HL0580N	**272,71**							
6.00	6	72	81	120	30	3512HL0600N	**272,71**	6	92	101	140	30	3515HL0600N	**287,61**
6.10	8	88	97	135	30.5	3512HL0610N	**321,19**							
6.20	8	88	97	135	31	3512HL0620N	**321,19**							
6.30	8	88	97	135	31.5	3512HL0630N	**321,19**							
6.50	8	96	108	145	32.5	3512HL0650N	**321,19**	8	100	110	150	32.5	3515HL0650N	**342,68**
6.80	8	96	108	145	34	3512HL0680N	**321,19**							
7.00	8	96	108	145	35	3512HL0700N	**321,19**	8	107	118	160	35	3515HL0700N	**342,68**
7.50	8	96	108	145	37.5	3512HL0750N	**321,19**	8	115	126	165	37.5	3515HL0750N	**342,68**
7.80	8	96	108	145	39	3512HL0780N	**321,19**							
8.00	8	96	108	145	40	3512HL0800N	**321,19**	10	125	137	180	40.5	3515HL0800N	**342,68**
8.50	10	120	135	180	42.5	3512HL0850N	**369,67**	10	130	142	185	42.5	3515HL0850N	**434,47**
8.60	10	120	135	180	43	3512HL0860N	**369,67**							
8.70	10	120	135	180	43.5	3512HL0870N	**369,67**							
8.80	10	120	135	180	44	3512HL0880N	**369,67**							
9.00	10	120	135	180	45	3512HL0900N	**369,67**	10	137	151	195	45	3515HL0900N	**434,47**
9.50	10	120	135	180	47.5	3512HL0950N	**369,67**	10	145	159	200	47.5	3515HL0950N	**434,47**
9.80	10	120	135	180	49	3512HL0980N	**369,67**							
10.00	10	120	135	180	50	3512HL1000N	**369,67**	10	152	167	210	50	3515HL1000N	**434,47**

Check SUH MINI range for long drills below Ø3.1

3520HL - catalogue page 175



20XD | OSAWA NORM | HL | MG PV250 | 135° | 30°



3520HL

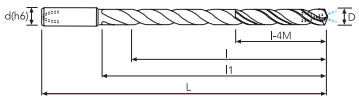
P	★
M	★
K	★
N	☆
S	☆
H	

D(h7)	d(h6)	l	l1	L	l-4M	EDP No.	€
3.20	4	66	71	105	16	3520HL0320N	278,75
3.30	4	68	73	110	16.5	3520HL0330N	278,75
3.50	4	72	77	110	17.5	3520HL0350N	278,75
4.00	4	82	88	125	20	3520HL0400N	278,75
4.50	5	92	99	135	22.5	3520HL0450N	342,34
5.00	5	102	110	145	25	3520HL0500N	342,34
5.50	6	112	120	160	27.5	3520HL0550N	354,92
6.00	6	122	131	170	30	3520HL0600N	354,92
6.50	8	132	142	180	32.5	3520HL0650N	422,23
7.00	8	142	153	195	35	3520HL0700N	422,23
7.50	8	152	163	205	37.5	3520HL0750N	422,23
8.00	8	162	174	215	40	3520HL0800N	422,23
8.50	10	172	185	230	42.5	3520HL0850N	585,78
9.00	10	182	196	240	45	3520HL0900N	585,78
9.50	10	192	206	250	47.5	3520HL0950N	585,78
10.00	10	202	217	260	50	3520HL1000N	585,78

3525HL - catalogue page 180



25XD | OSAWA NORM | HL | MG PV250 | 135° | 30°



3525HL

P	★
M	★
K	★
N	☆
S	☆
H	

D(h7)	d(h6)	l	l1	L	l-4M	EDP No.	€
3.50	4	89	94	130	17.5	3525HL0350N	373,28
4.00	4	101	107	140	20	3525HL0400N	373,28
4.50	5	114	120	155	22.5	3525HL0450N	397,75
5.00	5	126	134	170	25	3525HL0500N	397,75
5.50	6	139	147	185	27.5	3525HL0550N	422,23
6.00	6	151	160	200	30	3525HL0600N	422,23
6.50	8	164	173	210	32.5	3525HL0650N	483,42
7.00	8	176	187	230	35	3525HL0700N	483,42
7.50	8	189	200	240	37.5	3525HL0750N	483,42
8.00	8	201	213	255	40	3525HL0800N	596,39
8.50	10	214	226	270	42.5	3525HL0850N	695,63
9.00	10	226	240	285	45	3525HL0900N	695,63

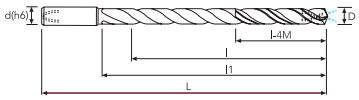
Check SUH MINI range for long drills below Ø3.1

OSAWA

3530HL - catalogue page 185



30XD | OSAWA NORM | HL | MG PV250 | 135° | 30°



	3530HL
P	★
M	★
K	★
N	☆
S	☆
H	

D(h7)	d(h6)	l	l1	L	l-4M	EDP No.	€
3.50	4	106	111	145	17.5	3530HL0350N	**434,47**
4.00	4	121	127	160	20	3530HL0400N	**434,47**
4.50	5	136	143	180	22.5	3530HL0450N	**446,71**
5.00	5	151	159	195	25	3530HL0500N	**446,71**
5.50	6	166	174	215	27.5	3530HL0550N	**477,30**
6.00	6	181	190	230	30	3530HL0600N	**477,30**
6.50	8	196	206	245	32.5	3530HL0650N	**550,73**
7.00	8	211	222	265	35	3530HL0700N	**550,73**
7.50	8	226	237	280	37.5	3530HL0750N	**550,73**
8.00	8	241	253	295	40	3530HL0800N	**706,24**

Check SUH MINI range for long drills below Ø3.1

TYPHOON - MINI 5xD, 8xD and 12xD

355SUH MINI - catalogue page 132



5XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°

358SUH MINI - catalogue page 136

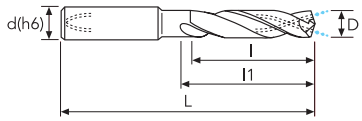


8XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°

3512SUH MINI - catalogue page 140



12XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°



	355SUH	358SUH	3512SUH
P	★	★	★
M	★	★	★
K	★	★	★
N	☆	☆	☆
S	☆	☆	☆
H			

D(h7)	d(h6)	EDP No.	l	l1	L	€	l	l1	L	€	l	l1	L	€
1.00	3	.....0100N	6.5	8	50	**79,08**	9.5	11	50	**94,15**	13.5	15	55	**109,69**
1.10	3	.....0110N	7.2	8.7	50	**79,08**	10.5	12	50	**94,15**	14.9	16.4	55	**109,69**
1.20	3	.....0120N	7.8	9.3	50	**79,08**	11.4	12.9	50	**94,15**	16.2	17.7	55	**109,69**
1.30	3	.....0130N	8.5	10	50	**79,08**	12.4	13.9	50	**94,15**	17.6	19.1	55	**109,69**
1.40	3	.....0140N	9.1	10.6	50	**79,08**	13.3	14.8	50	**94,15**	18.9	20.4	55	**109,69**
1.50	3	.....0150N	9.8	11.3	50	**79,08**	14.3	15.8	50	**94,15**	20.3	21.8	55	**109,69**
1.60	3	.....0160N	10.4	11.9	50	**79,08**	15.2	16.7	50	**94,15**	21.6	23.1	65	**118,42**
1.70	3	.....0170N	11.1	12.6	55	**79,08**	16.2	17.7	60	**94,15**	23	24.5	65	**118,42**
1.80	3	.....0180N	11.7	13.2	55	**79,08**	17.1	18.6	60	**94,15**	24.3	25.8	65	**118,42**
1.90	3	.....0190N	12.4	13.9	55	**79,08**	18.1	19.6	60	**94,15**	25.7	27.2	65	**118,42**
2.00	3	.....0200N	13	16	55	**79,08**	19	22	60	**94,15**	27	30	65	**118,42**
2.10	3	.....0210N	13.7	16.9	55	**79,08**	20	23.2	60	**94,15**	28.4	31.6	65	**118,42**
2.20	3	.....0220N	14.3	17.6	55	**79,08**	20.9	24.2	60	**94,15**	29.7	33	65	**118,42**
2.30	3	.....0230N	15	18.5	55	**79,08**	21.9	25.4	60	**94,15**	31.1	34.6	65	**118,42**
2.40	3	.....0240N	15.6	19.2	55	**79,08**	22.8	26.4	60	**94,15**	32.4	36	75	**127,76**
2.50	3	.....0250N	16.3	20.1	55	**79,08**	23.8	27.6	60	**94,15**	33.8	37.6	75	**127,76**
2.60	3	.....0260N	16.9	20.8	55	**79,08**	24.7	28.6	60	**94,15**	35.1	39	75	**127,76**
2.70	3	.....0270N	17.6	21.7	55	**79,08**	25.7	29.8	60	**94,15**	36.5	40.6	75	**127,76**
2.80	3	.....0280N	18.2	22.4	55	**79,08**	26.6	30.8	60	**94,15**	37.8	42	75	**127,76**
2.90	3	.....0290N	18.9	23.3	55	**79,08**	27.6	32	60	**94,15**	39.2	43.6	75	**127,76**
3.00	3	.....030003N	19.5	24	55	**79,08**	28.5	33	60	**94,15**	40.5	45	75	**127,76**

EDP No. = ART. BEZ. + Ø + N (Beispiel: 355SUH mm 1.5 = 355SUH0150N)

3520SUH MINI - catalogue page 144



20XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°

3525SUH MINI - catalogue page 148

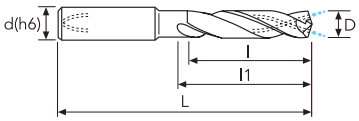


25XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°

3530SUH MINI - catalogue page 152



30XD | OSAWA NORM | SUH MINI | MG PV300 | 135° | 30°



		3520SUH				3525SUH				3530SUH			
P		★				★				★			
M		★				★				★			
K		★				★				★			
N		☆				☆				☆			
S		☆				☆				☆			
H													
D(h7)	d(h6)	EDP No.	l	l1	L	€	l	l1	L	€	l	l1	L	€
1,00	3	.....0100N	21.5	23	65	**126,12**	26.5	28	70	**205,04**	31.5	33	75	**219,04**
1,20	3	.....0120N	25.8	27.3	65	**126,12**								
1,30	3	.....0130N	28	29.5	65	**126,12**								
1,50	3	.....0150N	32.3	33.8	75	**141,26**	39.8	41.3	80	**205,04**	47.3	48.8	85	**231,32**
1,60	3	.....0160N	34.4	35.9	75	**141,26**								
1,70	3	.....0170N	36.6	38.1	75	**141,26**								
1,80	3	.....0180N	38.7	40.2	75	**141,26**								
2,00	3	.....0200N	43	46	82	**141,26**	53	56	90	**212,59**	63	66	100	**228,07**
2,20	3	.....0220N	47.3	50.6	82	**141,26**								
2,30	3	.....0230N	49.5	53	100	**162,46**								
2,50	3	.....0250N	53.8	57.6	100	**162,46**	66.3	70	110	**212,59**	78.8	82.5	120	**232,99**
2,80	3	.....0280N	60.2	64.4	100	**162,46**								
3,00	3	.....0300N	64.5	69	100	**162,46**	79.5	84	120	**220,16**	94.5	99	130	**240,70**

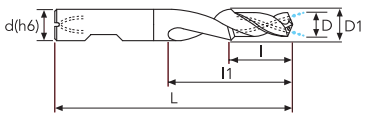
EDP N° = item code + ø (example: 3520SUH mm 1.5 = 3520SUH0150N)

TYPHOON - 90° Phase step drill

372HSD - catalogue page 193

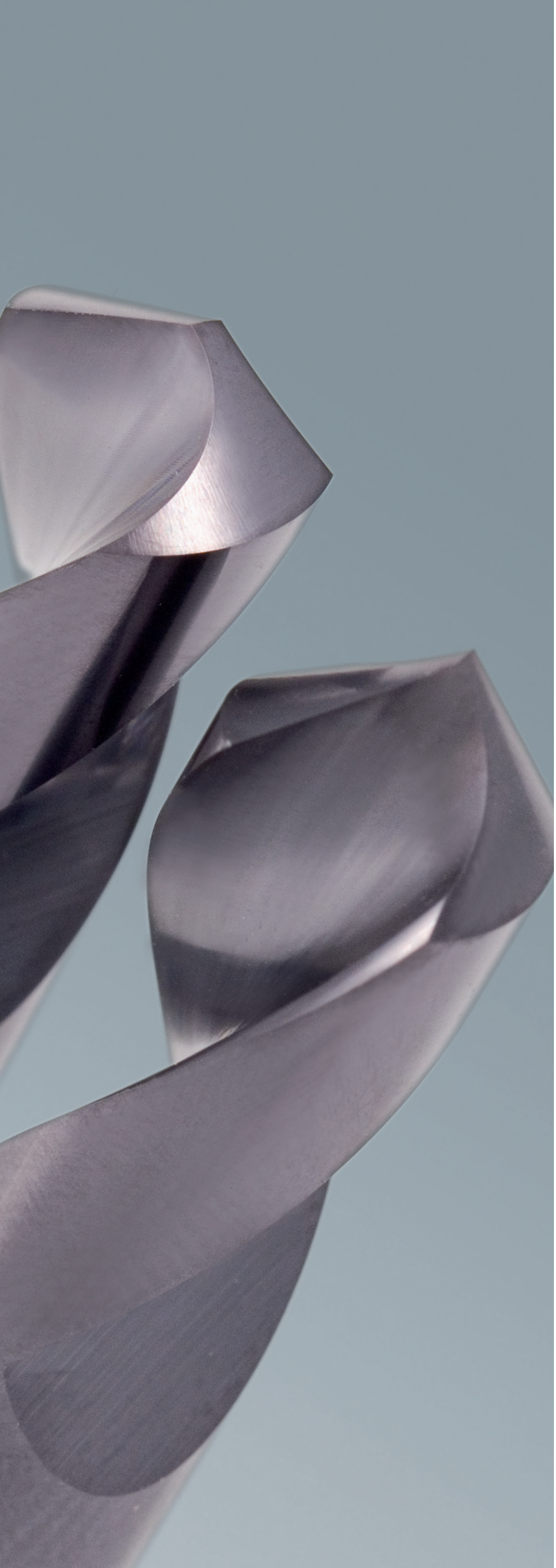


3XD | OSAWA NORM | HSD | MG PV300 | 140° | 30°



		372HSD						
P		★						
M		★						
K								
N								
S		★						
H								
D(m7)	Type	D1(h10)	d(h6)	l	l1	L	EDP No.	€
2.50	M3 /C	4.00	4	9	25	62	372HSD0250	**127,56**
2.80	M3 /F	4.00	4	9	25	62	372HSD0280	**127,56**
3.30	M4 /C	5.00	6	11	28	66	372HSD0330	**121,35**
3.70	M4 /F	6.00	6	11	28	66	372HSD0370	**121,35**
4.20	M5 /C	6.00	6	14	28	66	372HSD0420	**121,35**
4.65	M5 /F	6.00	6	14	28	66	372HSD0465	**121,35**
5.00	M6 /C	8.00	8	17	41	79	372HSD0500	**145,84**
5.55	M6 /F	8.00	8	17	41	79	372HSD0555	**145,84**
6.80	M8 /C	10.00	10	21	47	89	372HSD0680	**169,22**
7.45	M8 /F	10.00	10	21	47	89	372HSD0745	**169,22**
8.50	M10 /C	12.00	12	26	55	102	372HSD0850	**229,85**
9.35	M10 /F	12.00	12	26	55	102	372HSD0935	**229,85**
10.30	M12 /C	14.00	14	30	60	107	372HSD1030	**314,95**
11.22	M12 /F	14.00	14	30	60	107	372HSD1122	**314,95**

Type: C=CUTTING TAP; F=FORMING TAP



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.

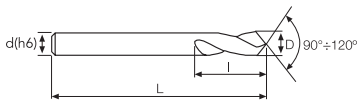
Brocas para puntear y escariar 90°-120° sobre una gran variedad de materiales.

Центровочные свёрла с углами при вершине 90°-120° для сверления центровых отверстий и зенкования в широкой гамме материалов на станках с ЧПУ.

CSDTA90 - catalogue page 198



OSAWA NORM | SD | MG PV200 | 90° | 30°



CSDTA90

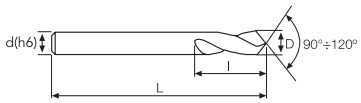
P	★
M	★
K	★
N	★
S	☆
H	

D(h6)	d(h6)	l	L	EDP No.	€
6.00	6	16	50	CSDTA060A	**36,42**
8.00	8	20	64	CSDTA080A	**50,00**
10.00	10	25	70	CSDTA100A	**79,02**
12.00	12	25	75	CSDTA120A	**97,00**
16.00	16	26	90	CSDTA160A	**183,31**

CSDTA120 - catalogue page 198



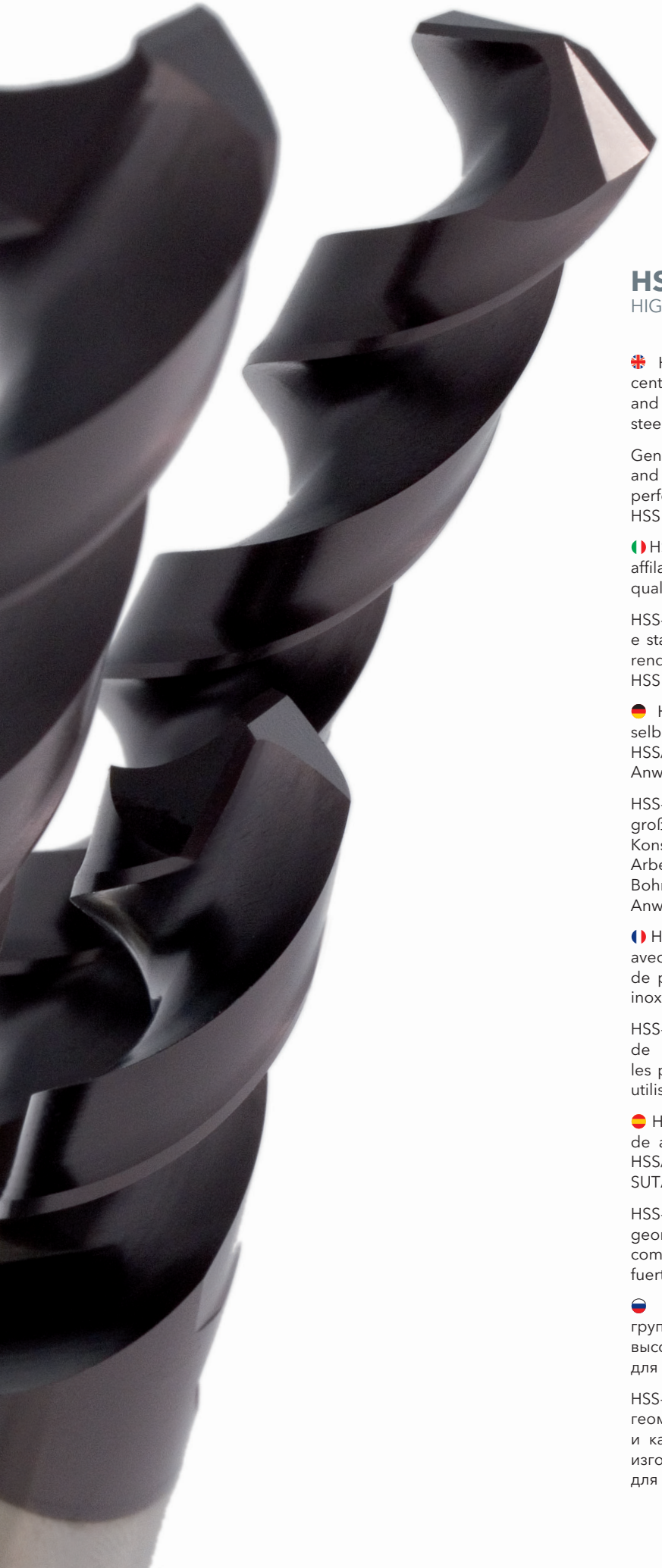
OSAWA NORM | SD | MG PV200 | 120° | 30°



CSDTA120

P	★
M	★
K	★
N	★
S	☆
H	

D(h6)	d(h6)	l	L	EDP No.	€
6.00	6	16	50	CSDTA060B	**36,42**
8.00	8	20	64	CSDTA080B	**50,02**
10.00	10	25	70	CSDTA100B	**79,02**
12.00	12	25	75	CSDTA120B	**97,00**
16.00	16	26	90	CSDTA160B	**183,31**



HSS DRILLS

HIGH PERFOMANCE AND GENERAL PURPOSE DRILLS

High-performance HSS/Co-HSSE: two families of self-centering high-performance drills, made of top-quality HSSE and HSS/Co: LFTA for general purpose and SUTA for stainless steel.

General purpose HSS-HSS/Co: a wide variety of geometries and manufacturing standards, and an excellent combination of performance and convenience, are the strengths of the Osawa HSS and HSS/Co general purpose drills.

HSS/Co-HSSE ad alto rendimento: due famiglie di punte con affilatura autocentrante, prodotte con HSS/Co e HSSE di prima qualità: LFTA per uso generico e SUTA per acciaio inossidabile

HSS-HSS/Co per uso generico: 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 per uso generico.

HSS/Co-HSSE Hochleistung: zwei Produktgruppen von selbstzentrierenden Hochleistungsbohrern bestehend aus HSS/Co und HSSE von höchster Qualität: LFTA für allgemeine Anwendung; SUTA für Edelstahl.

HSS-HSS/Co für die allgemeine Anwendung: eine große Auswahl an verschiedenen Geometrien und Konstruktionsstandards mit einer günstigen Kombination aus Arbeitsleistung und Wirtschaftlichkeit sind die Stärken der Bohrer aus HSS und HSS/Co von Osawa für die allgemeine Anwendung.

HSS / Co-HSSE Haute performance: deux familles de forets avec un affûtage autocentré, fabriquées avec HSS / Co et HSSE de première qualité : LFTA générique et SUTA pour l'acier inoxydable.

HSS-HSS / Co pour une utilisation générique: grande variété de géometrie associant rendement, qualité et prix, sont les points forts des forets HSS et HSS / Co Osawa pour une utilisation générique.

HSS/Co-HSSE de alto rendimiento: dos familias de brocas de alto rendimiento, con afilado autocentrante, hechas de HSS/Co y HSSE de calidad superior: LFTA para uso general y SUTA para acero inoxidable.

HSS-HSS/Co para uso general: una amplia variedad de geometrías y estándares de fabricación, con una provechosa combinación de rendimiento y economía: estos son los puntos fuertes de las brocas Osawa de HSS y HSS/Co para uso general.

Высокопроизводительный HSS/Co-HSSE: Две группы самоцентрующихся свёрл изготовленных из высококачественного HSS/Co и HSSE: LFTA предназначены для общего назначения и SUTA для нержавеющих сталей.

HSS-HSS/Co для общего применения: Широкая гамма геометрий и типов свёрл, с отличным соотношением цены и качества, являющейся сильной стороной гаммы свёрл изготовленных из HSS и HSS/Co Osawa предназначенных для общего применения.

218LFTA - catalogue page 212



218LFTA will be exhausted and gradually replaced by new 218PTA

DIN 1897 | LF | HSS/CO PV10 | 130° | 35-40°

238LFTA - catalogue page 216



238LFTA will be exhausted and gradually replaced by new 238PTA

DIN 338 | LF | HSS/CO PV10 | 130° | 35-40°

980SUTA - catalogue page 222

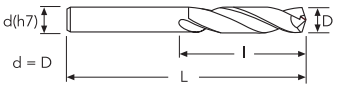


OSAWA NORM | SU | HSSE PV10 | 120° | 38°

990SUTA - catalogue page 226



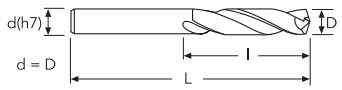
OSAWA NORM | SU | HSSE PV10 | 120° | 38°



	218LFTA	238LFTA	980SUTA	990SUTA
P	★	★	★	★
M	☆	☆	★	★
K	★	★		
N	☆	☆	★	★
S			☆	☆
H				

D(h8)	d(h7)	EDP No.	l	L	€	l	L	€	l	L	€	l	L	€
2.00	2	P.....0200	12	38	**15,72**	24	49	**18,84**	12	44	**20,40**	24	56	**21,95**
2.10	2.1	P.....0210	12	38	**16,42**	24	49	**19,51**	12	44	**22,93**	24	56	**24,83**
2.20	2.2	P.....0220	13	40	**16,42**	27	53	**19,51**	13	45	**22,93**	27	59	**24,83**
2.30	2.3	P.....0230	13	40	**16,42**	27	53	**19,51**	13	45	**22,93**	27	59	**24,83**
2.40	2.4	P.....0240	14	43	**17,12**	30	57	**19,83**	14	46	**22,93**	30	62	**24,83**
2.50	2.5	P.....0250	14	43	**15,72**	30	57	**18,49**	14	46	**20,40**	30	62	**21,95**
2.60	2.6	P.....0260	14	43	**16,42**	30	57	**19,00**	14	46	**22,09**	30	62	**24,13**
2.70	2.7	P.....0270	16	46	**17,12**	33	61	**19,83**	16	48	**22,09**	33	65	**24,13**
2.80	2.8	P.....0280	16	46	**17,12**	33	61	**19,83**	16	48	**22,09**	33	65	**24,13**
2.90	2.9	P.....0290	16	46	**17,12**	33	61	**19,83**	16	48	**22,09**	33	65	**24,13**
3.00	3	P.....0300	16	46	**16,42**	33	61	**19,00**	16	48	**19,41**	33	65	**20,75**
3.10	3.1	P.....0310	18	49	**17,60**	36	65	**20,72**	18	50	**22,93**	36	68	**24,83**
3.20	3.2	P.....0320	18	49	**17,60**	36	65	**20,72**	18	50	**22,93**	36	68	**24,83**
3.30	3.3	P.....0330	18	49	**17,60**	36	65	**20,72**	18	50	**22,93**	36	68	**24,83**
3.40	3.4	P.....0340	20	52	**17,44**	39	70	**21,10**	20	52	**22,93**	39	71	**24,83**
3.50	3.5	P.....0350	20	52	**17,79**	39	70	**21,23**	20	52	**22,93**	39	71	**24,83**
3.60	3.6	P.....0360	20	52	**18,62**	39	70	**22,28**	20	52	**26,52**	39	71	**28,77**
3.70	3.7	P.....0370	20	52	**18,62**	39	70	**22,28**	20	52	**26,52**	39	71	**28,77**
3.80	3.8	P.....0380	22	55	**18,62**	43	75	**22,28**	22	54	**24,41**	43	75	**26,52**
3.90	3.9	P.....0390	22	55	**18,62**	43	75	**22,28**	22	54	**26,52**	43	75	**28,77**
4.00	4	P.....0400	22	55	**18,11**	43	75	**21,77**	22	54	**24,41**	43	75	**26,52**
4.10	4.1	P.....0410	22	55	**19,19**	43	75	**24,67**	22	66	**30,17**	43	87	**35,31**
4.20	4.2	P.....0420	22	55	**19,19**	43	75	**24,67**	22	66	**27,86**	43	87	**32,71**
4.30	4.3	P.....0430	24	58	**21,77**	47	80	**25,53**	24	68	**30,17**	47	91	**35,10**
4.40	4.4	P.....0440	24	58	**21,77**	47	80	**25,53**	24	68	**30,17**	47	91	**35,10**
4.50	4.5	P.....0450	24	58	**20,53**	47	80	**23,28**	24	68	**34,96**	47	91	**32,42**
4.60	4.6	P.....0460	24	58	**21,77**	47	80	**25,53**	24	68	**34,68**	47	91	**40,02**
4.70	4.7	P.....0470	24	58	**21,77**	47	80	**25,53**	24	68	**34,68**	47	91	**40,02**
4.80	4.8	P.....0480	26	62	**21,77**	52	86	**25,53**	26	70	**34,68**	52	96	**41,78**
4.90	4.9	P.....0490	26	62	**21,77**	52	86	**25,53**	26	70	**34,68**	52	96	**41,78**
5.00	5	P.....0500	26	62	**20,72**	52	86	**24,00**	26	70	**31,59**	52	96	**38,55**
5.10	5.1	P.....0510	26	62	**21,90**	52	86	**27,65**	26	70	**31,59**	52	96	**38,55**
5.20	5.2	P.....0520	26	62	**21,90**	52	86	**27,65**	26	70	**36,01**	52	96	**42,91**
5.30	5.3	P.....0530	26	62	**22,09**	52	86	**27,51**	26	70	**39,46**	52	96	**47,20**
5.40	5.4	P.....0540	28	66	**25,72**	57	93	**33,46**	28	72	**39,46**	57	101	**46,77**
5.50	5.5	P.....0550	28	66	**24,35**	57	93	**30,39**	28	72	**36,01**	57	101	**42,62**
5.60	5.6	P.....0560	28	66	**25,72**	57	93	**33,46**	28	72	**44,60**	57	101	**52,41**
5.70	5.7	P.....0570	28	66	**26,05**	57	93	**33,79**	28	72	**44,60**	57	101	**52,41**
5.80	5.8	P.....0580	28	66	**26,05**	57	93	**33,79**	28	72	**44,60**	57	101	**52,41**
5.90	5.9	P.....0590	28	66	**25,72**	57	93	**33,26**	28	72	**44,60**	57	101	**52,41**
6.00	6	P.....0600	28	66	**24,86**	57	93	**34,33**	28	72	**40,23**	57	101	**47,83**
6.10	6.1	P.....0610	31	70	**28,89**	63	101	**33,91**	31	75	**44,74**	63	107	**55,01**
6.20	6.2	P.....0620	31	70	**29,21**	63	101	**38,33**	31	75	**44,74**	63	107	**55,01**
6.30	6.3	P.....0630	31	70	**28,89**	63	101	**37,37**	31	75	**44,74**	63	107	**55,01**
6.40	6.4	P.....0640	31	70	**30,54**	63	101	**40,21**	31	75	**44,74**	63	107	**55,01**

EDP N° = P + item code + ø (example: 218LFTA mm 3.5 = P218LFTA0350)

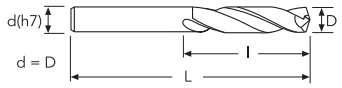


	218LFTA			238LFTA			980SUTA			990SUTA		
P	★			★			★			★		
M	☆			☆			★			★		
K	★			★								
N	☆			☆			★			★		
S							☆			☆		
H												

D(h8)	d(h7)	EDP No.	l	L	€	l	L	€	l	L	€	l	L	€
6.50	6.5	P.....0650	31	70	**30,19**	63	101	**35,46**	31	75	**47,69**	63	107	**50,72**
6.60	6.6	P.....0660	31	70	**30,54**	63	101	**40,21**	31	75	**52,13**	63	107	**59,09**
6.70	6.7	P.....0670	31	70	**30,54**	63	101	**40,21**	31	75	**52,13**	63	107	**59,09**
6.80	6.8	P.....0680	34	74	**31,52**	69	109	**41,38**	34	78	**52,13**	69	113	**58,81**
6.90	6.9	P.....0690	34	74	**31,52**	69	109	**41,38**	34	78	**52,13**	69	113	**58,81**
7.00	7	P.....0700	34	74	**30,54**	69	109	**40,21**	34	78	**48,54**	69	113	**55,78**
7.10	7.1	P.....0710	34	74	**42,14**	69	109	**48,69**	34	78	**51,77**	69	113	**59,79**
7.20	7.2	P.....0720	34	74	**42,14**	69	109	**48,69**	34	78	**51,77**	69	113	**59,79**
7.30	7.3	P.....0730	34	74	**42,14**	69	109	**48,69**	34	78	**51,77**	69	113	**59,79**
7.40	7.4	P.....0740	34	74	**42,14**	69	109	**48,69**	34	78	**51,77**	69	113	**59,79**
7.50	7.5	P.....0750	34	74	**31,52**	69	109	**42,54**	34	78	**51,77**	69	113	**59,79**
7.60	7.6	P.....0760	37	79	**46,70**	75	117	**54,01**	37	81	**56,62**	75	119	**68,23**
7.70	7.7	P.....0770	37	79	**46,70**	75	117	**54,01**	37	81	**56,62**	75	119	**68,23**
7.80	7.8	P.....0780	37	79	**45,19**	75	117	**52,10**	37	81	**56,62**	75	119	**68,23**
7.90	7.9	P.....0790	37	79	**45,19**	75	117	**52,10**	37	81	**56,62**	75	119	**68,23**
8.00	8	P.....0800	37	79	**36,46**	75	117	**50,40**	37	81	**52,41**	75	119	**64,08**
8.10	8.1	P.....0810	37	79	**50,22**	75	117	**61,17**	37	87	**57,54**	75	125	**67,74**
8.20	8.2	P.....0820	37	79	**50,22**	75	117	**61,17**	37	87	**57,54**	75	125	**67,74**
8.30	8.3	P.....0830	37	79	**50,22**	75	117	**61,17**	37	87	**57,54**	75	125	**67,74**
8.40	8.4	P.....0840	37	79	**50,22**	75	117	**61,17**	37	87	**57,54**	75	125	**67,74**
8.50	8.5	P.....0850	37	79	**38,98**	75	117	**55,23**	37	87	**52,96**	75	125	**63,59**
8.60	8.6	P.....0860	40	84	**58,56**	81	125	**72,88**	40	90	**53,11**	81	131	**66,61**
8.70	8.7	P.....0870	40	84	**58,56**	81	125	**73,06**	40	90	**63,59**	81	131	**78,01**
8.80	8.8	P.....0880	40	84	**58,56**	81	125	**73,06**	40	90	**63,59**	81	131	**78,01**
8.90	8.9	P.....0890	40	84	**58,56**	81	125	**73,06**	40	90	**63,59**	81	131	**78,01**
9.00	9	P.....0900	40	84	**44,80**	81	125	**65,56**	40	90	**54,16**	81	131	**67,24**
9.10	9.1	P.....0910	40	84	**64,90**	81	125	**82,05**	40	90	**68,72**	81	131	**84,06**
9.20	9.2	P.....0920	40	84	**64,90**	81	125	**82,05**	40	90	**68,72**	81	131	**84,06**
9.30	9.3	P.....0930	40	84	**67,13**	81	125	**82,05**	40	90	**68,72**	81	131	**84,06**
9.40	9.4	P.....0940	40	84	**67,13**	81	125	**82,05**	40	90	**68,72**	81	131	**84,06**
9.50	9.5	P.....0950	40	84	**45,52**	81	125	**64,25**	40	90	**64,01**	81	131	**78,57**
9.60	9.6	P.....0960	43	89	**69,92**	87	133	**87,21**	43	93	**76,04**	87	137	**96,44**
9.70	9.7	P.....0970	43	89	**69,92**	87	133	**87,21**	43	93	**76,04**	87	137	**96,44**
9.80	9.8	P.....0980	43	89	**69,92**	87	133	**87,21**	43	93	**76,04**	87	137	**96,44**
9.90	9.9	P.....0990	43	89	**69,92**	87	133	**87,21**	43	93	**76,04**	87	137	**96,44**
10.00	10	P.....1000	43	89	**46,86**	87	133	**72,28**	43	93	**65,42**	87	137	**83,85**
10.10	10.1	P.....1010							43	100	**79,42**	87	144	**97,00**
10.20	10.2	P.....1020	43	89	**84,82**	87	133	**103,49**	43	100	**79,42**	87	144	**97,00**
10.30	10.3	P.....1030	43	89	**69,94**	87	133	**88,17**	43	100	**79,42**	87	144	**97,00**
10.40	10.4	P.....1040							43	100	**79,42**	87	144	**97,00**
10.50	10.5	P.....1050	43	89	**69,94**	87	133	**88,17**	43	100	**73,93**	87	144	**90,88**
10.60	10.6	P.....1060							43	100	**86,17**	87	144	**104,95**
10.70	10.7	P.....1070							47	104	**85,68**	94	151	**108,96**
10.80	10.8	P.....1080	47	95	**77,58**	94	142	**98,47**	47	104	**85,68**	94	151	**108,96**
10.90	10.9	P.....1090							47	104	**85,68**	94	151	**108,96**
11.00	11	P.....1100	47	95	**77,58**	94	142	**98,47**	47	104	**74,56**	94	151	**96,09**
11.10	11.1	P.....1110							47	104	**93,69**	94	151	**118,03**
11.20	11.2	P.....1120	47	95	**77,58**	94	142	**105,47**	47	104	**93,69**	94	151	**118,03**
11.30	11.3	P.....1130	47	95	**77,58**	94	142	**105,47**	47	104	**93,69**	94	151	**118,03**
11.40	11.4	P.....1140							47	104	**93,69**	94	151	**118,03**
11.50	11.5	P.....1150	47	95	**77,58**	94	142	**105,47**	47	104	**86,73**	94	151	**109,87**
11.60	11.6	P.....1160							47	104	**100,94**	94	151	**125,70**
11.70	11.7	P.....1170							47	104	**100,94**	94	151	**125,70**
11.80	11.8	P.....1180	47	95	**77,35**	94	142	**125,82**	47	104	**100,94**	94	151	**125,70**
11.90	11.9	P.....1190							51	108	**102,49**	101	158	**130,97**
12.00	12	P.....1200	51	102	**77,35**	101	151	**125,82**	51	108	**88,42**	101	158	**115,78**
12.10	12.1	P.....1210							51	108	**109,59**	101	158	**139,77**
12.20	12.2	P.....1220	51	102	**83,94**	101	151	**140,53**	51	108	**109,59**	101	158	**139,77**
12.30	12.3	P.....1230							51	108	**109,59**	101	158	**139,77**
12.40	12.4	P.....1240							51	108	**109,59**	101	158	**139,77**
12.50	12.5	P.....1250	51	102	**83,94**	101	151	**143,19**	51	108	**101,85**	101	158	**130,90**
12.60	12.6	P.....1260							51	108	**115,71**	101	158	**146,45**
12.70	12.7	P.....1270							51	108	**115,71**	101	158	**146,45**

EDP N° = P + item code + ø (example: 218LFTA mm 3.5 = P218LFTA0350)

OSAWA



		218LFTA			238LFTA			980SUTA			990SUTA		
P		★			★			★			★		
M		☆			☆			★			★		
K		★			★								
N		☆			☆			★			★		
S								☆			☆		
H													

D(h8)	d(h7)	EDP No.	l	L	€	l	L	€	l	L	€	l	L	€
12.80	12.8	P.....1280	51	102	**111,25**	101	151	**179,51**	51	108	**115,71**	101	158	**146,45**
12.90	12.9	P.....1290							51	108	**115,71**	101	158	**146,45**
13.00	13	P.....1300	51	102	**111,25**	101	151	**179,51**	51	108	**103,48**	101	158	**132,38**
13.30	13.3	P.....1330	54	107	**117,86**	108	160	**189,48**						
13.50	13.5	P.....1350	54	107	**117,86**	108	160	**189,48**				106	166	**153,84**
13.80	13.8	P.....1380	54	107	**115,06**	108	160	**184,82**						
14.00	14	P.....1400	54	107	**115,06**	108	160	**184,82**				106	166	**153,27**
14.10	14.1	P.....1410										109	169	**194,00**
14.50	14.5	P.....1450	56	111	**122,85**	114	169	**196,91**				109	169	**179,01**
14.80	14.8	P.....1480	56	111	**122,85**	114	169	**196,91**						
15.00	15	P.....1500	56	111	**122,85**	114	169	**196,91**				109	169	**179,23**
15.30	15.3	P.....1530	56	111	**143,70**	120	178	**231,85**						
15.50	15.5	P.....1550	58	115	**143,70**	120	178	**231,85**				112	172	**208,42**
15.60	15.6	P.....1560										112	172	**226,71**
15.80	15.8	P.....1580	58	115	**131,72**	120	178	**239,64**						
16.00	16	P.....1600	58	115	**131,72**	120	178	**239,64**				112	172	**209,12**
16.50	16.5	P.....1650	60	119	**146,98**	125	184	**240,08**				115	181	**242,54**
17.00	17	P.....1700	60	119	**148,51**	125	184	**242,68**				115	181	**247,25**
17.50	17.5	P.....1750	62	123	**151,57**	130	191	**248,03**				118	184	**295,29**
17.60	17.6	P.....1760										118	184	**320,83**
18.00	18	P.....1800	62	123	**153,25**	130	191	**250,93**				118	184	**300,99**
18.50	18.5	P.....1850	64	127	**154,86**	135	198	**260,09**				122	188	**316,82**
19.00	19	P.....1900	64	127	**157,99**	135	198	**264,97**				122	188	**323,57**
19.50	19.5	P.....1950	66	131	**161,28**	140	205	**270,07**				125	191	**352,76**
20.00	20	P.....2000	66	131	**165,79**	140	205	**277,22**				125	191	**397,78**

EDP N° = P + item code + ø (example: 218LFTA mm 3.5 = P218LFTA0350)

138N - catalogue page 246



1386STI (≤1.5mm = 1385NTI) - catalogue page 241



238NVA - catalogue page 265



2386STI (≤1.5mm = 2385NTI) - catalogue page 260



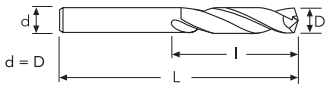


* < Ø2 mm = 138NB HSS BR



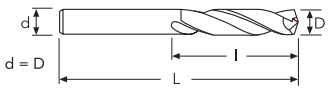






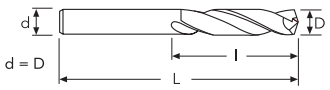
		138N		1386STI		238NVA		2386STI
P		★		★		★		★
M				☆		★		★
K		☆		★		☆		★
N		☆		☆		☆		☆
S				☆		☆		☆
H								

D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€	EDP No.	€
0.20	0.2	2.5	19	10	P138NB0020	5,95						
0.30	0.3	3	19	10	P138NB0030	4,29						
0.40	0.4	5	20	10	P138NB0040	3,51						
0.50	0.5	6	22	10	P138NB0050	2,82						
0.60	0.6	7	24	10	P138NB0060	2,82						
0.70	0.7	9	28	10	P138NB0070	2,63						
0.80	0.8	10	30	10	P138NB0080	2,63						
0.90	0.9	11	32	10	P138NB0090	2,27						
1.00	1	12	34	10	P138NB0100	1,78	P1385NTI0100	1,99	P238NVA0100	4,29	P2385NTI0100	2,88
1.10	1.1	14	36	10	P138NB0110	1,89	P1385NTI0110	2,17	P238NVA0110	4,29	P2385NTI0110	2,88
1.20	1.2	16	38	10	P138NB0120	1,89	P1385NTI0120	2,17	P238NVA0120	4,29	P2385NTI0120	2,88
1.25	1.25	16	38	10	P138NB0125	2,06			P238NVA0125	4,29		
1.30	1.3	16	38	10	P138NB0130	1,89	P1385NTI0130	2,17	P238NVA0130	4,29	P2385NTI0130	2,88
1.40	1.4	18	40	10	P138NB0140	1,89	P1385NTI0140	2,17	P238NVA0140	4,29	P2385NTI0140	2,88
1.50	1.5	18	40	10	P138NB0150	1,89	P1385NTI0150	2,17	P238NVA0150	4,29	P2385NTI0150	2,88
1.60	1.6	20	43	10	P138NB0160	1,89	P1386STI0160	2,41	P238NVA0160	4,05	P2386STI0160	3,05
1.70	1.7	20	43	10	P138NB0170	1,89	P1386STI0170	2,41	P238NVA0170	4,05	P2386STI0170	3,05
1.75	1.75	22	46	10	P138NB0175	2,06			P238NVA0175	4,45		
1.80	1.8	22	46	10	P138NB0180	1,89	P1386STI0180	2,41	P238NVA0180	4,05	P2386STI0180	3,05
1.90	1.9	22	46	10	P138NB0190	1,89	P1386STI0190	2,41	P238NVA0190	4,05	P2386STI0190	3,05
2.00	2	24	49	10	P138N0200	1,63	P1386STI0200	2,41	P238NVA0200	4,05	P2386STI0200	3,05
2.10	2.1	24	49	10	P138N0210	1,63	P1386STI0210	2,41	P238NVA0210	4,05	P2386STI0210	3,14
2.20	2.2	27	53	10	P138N0220	1,55	P1386STI0220	2,17	P238NVA0220	3,97	P2386STI0220	3,14
2.25	2.25	27	53	10	P138N0225	1,55			P238NVA0225	4,29		
2.30	2.3	27	53	10	P138N0230	1,55	P1386STI0230	2,17	P238NVA0230	3,97	P2386STI0230	3,14
2.40	2.4	30	57	10	P138N0240	1,55	P1386STI0240	2,17	P238NVA0240	3,97	P2386STI0240	3,14
2.50	2.5	30	57	10	P138N0250	1,55	P1386STI0250	2,17	P238NVA0250	3,97	P2386STI0250	3,14
2.60	2.6	30	57	10	P138N0260	1,70	P1386STI0260	2,41	P238NVA0260	4,21	P2386STI0260	3,48
2.70	2.7	33	61	10	P138N0270	1,70	P1386STI0270	2,41	P238NVA0270	4,21	P2386STI0270	3,48
2.75	2.75	33	61	10	P138N0275	1,78			P238NVA0275	4,61		
2.80	2.8	33	61	10	P138N0280	1,70	P1386STI0280	2,41	P238NVA0280	4,21	P2386STI0280	3,48
2.90	2.9	33	61	10	P138N0290	1,70	P1386STI0290	2,41	P238NVA0290	4,21	P2386STI0290	3,48
3.00	3	33	61	10	P138N0300	1,70	P1386STI0300	2,41	P238NVA0300	4,21	P2386STI0300	3,48
3.10	3.1	36	65	10	P138N0310	1,97	P1386STI0310	2,60	P238NVA0310	4,45	P2386STI0310	3,91
3.20	3.2	36	65	10	P138N0320	1,97	P1386STI0320	2,60	P238NVA0320	4,45	P2386STI0320	3,91
3.25	3.25	36	65	10	P138N0325	2,19			P238NVA0325	5,01		
3.30	3.3	36	65	10	P138N0330	1,97	P1386STI0330	2,60	P238NVA0330	4,45	P2386STI0330	3,91
3.40	3.4	39	70	10	P138N0340	1,97	P1386STI0340	2,60	P238NVA0340	4,45	P2386STI0340	3,91
3.50	3.5	39	70	10	P138N0350	1,97	P1386STI0350	2,60	P238NVA0350	4,45	P2386STI0350	3,91
3.60	3.6	39	70	10	P138N0360	2,12	P1386STI0360	2,75	P238NVA0360	5,16	P2386STI0360	4,76
3.70	3.7	39	70	10	P138N0370	2,12	P1386STI0370	2,75	P238NVA0370	5,16	P2386STI0370	4,76
3.75	3.75	39	70	10	P138N0375	2,33			P238NVA0375	5,64		
3.80	3.8	43	75	10	P138N0380	2,12	P1386STI0380	2,75	P238NVA0380	5,16	P2386STI0380	4,76
3.90	3.9	43	75	10	P138N0390	2,12	P1386STI0390	2,75	P238NVA0390	5,16	P2386STI0390	4,76
4.00	4	43	75	10	P138N0400	2,12	P1386STI0400	2,90	P238NVA0400	5,16	P2386STI0400	4,76
4.10	4.1	43	75	10	P138N0410	2,48	P1386STI0410	3,36	P238NVA0410	5,87	P2386STI0410	5,44



						138N		1386STI		238NVA		2386STI
P						★		★		★		★
M								☆		★		★
K						☆		★		☆		★
N						☆		☆		☆		☆
S								☆		☆		☆
H												

D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€	EDP No.	€
4.20	4.2	43	75	10	P138N0420	2,48	P1386STI0420	3,36	P238NVA0420	5,87	P2386STI0420	5,44
4.25	4.25	43	75	10	P138N0425	2,85			P238NVA0425	6,43		
4.30	4.3	47	80	10	P138N0430	2,48	P1386STI0430	3,36	P238NVA0430	5,87	P2386STI0430	5,44
4.40	4.4	47	80	10	P138N0440	2,48	P1386STI0440	3,36	P238NVA0440	5,87	P2386STI0440	5,44
4.50	4.5	47	80	10	P138N0450	2,48	P1386STI0450	3,36	P238NVA0450	5,87	P2386STI0450	5,44
4.60	4.6	47	80	10	P138N0460	2,85	P1386STI0460	3,77	P238NVA0460	6,11	P2386STI0460	5,44
4.70	4.7	47	80	10	P138N0470	2,85	P1386STI0470	3,77	P238NVA0470	6,11	P2386STI0470	5,44
4.75	4.75	47	80	10	P138N0475	3,07			P238NVA0475	6,83		
4.80	4.8	52	86	10	P138N0480	2,85	P1386STI0480	3,77	P238NVA0480	6,11	P2386STI0480	5,44
4.90	4.9	52	86	10	P138N0490	2,85	P1386STI0490	3,77	P238NVA0490	6,11	P2386STI0490	5,44
5.00	5	52	86	10	P138N0500	2,85	P1386STI0500	4,10	P238NVA0500	6,11	P2386STI0500	5,44
5.10	5.1	52	86	10	P138N0510	2,85	P1386STI0510	4,10	P238NVA0510	7,38	P2386STI0510	6,88
5.20	5.2	52	86	10	P138N0520	2,85	P1386STI0520	4,10	P238NVA0520	7,38	P2386STI0520	6,88
5.25	5.25	52	86	10	P138N0525	2,85			P238NVA0525	8,02		
5.30	5.3	52	86	10	P138N0530	3,54	P1386STI0530	4,76	P238NVA0530	7,38	P2386STI0530	6,88
5.40	5.4	57	93	10	P138N0540	3,54	P1386STI0540	4,76	P238NVA0540	7,38	P2386STI0540	6,88
5.50	5.5	57	93	10	P138N0550	3,54	P1386STI0550	4,76	P238NVA0550	7,38	P2386STI0550	6,88
5.60	5.6	57	93	10	P138N0560	3,54	P1386STI0560	4,76	P238NVA0560	8,10	P2386STI0560	7,56
5.70	5.7	57	93	10	P138N0570	3,54	P1386STI0570	4,76	P238NVA0570	8,10	P2386STI0570	7,56
5.75	5.75	57	93	10	P138N0575	3,54			P238NVA0575	8,89		
5.80	5.8	57	93	10	P138N0580	3,54	P1386STI0580	4,76	P238NVA0580	8,10	P2386STI0580	7,56
5.90	5.9	57	93	10	P138N0590	3,54	P1386STI0590	4,76	P238NVA0590	8,10	P2386STI0590	7,56
6.00	6	57	93	10	P138N0600	3,88	P1386STI0600	5,46	P238NVA0600	8,10	P2386STI0600	7,56
6.10	6.1	63	101	10	P138N0610	4,21	P1386STI0610	5,46	P238NVA0610	8,82	P2386STI0610	8,41
6.20	6.2	63	101	10	P138N0620	4,21	P1386STI0620	5,46	P238NVA0620	8,82	P2386STI0620	8,41
6.25	6.25	63	101	10	P138N0625	4,36			P238NVA0625	9,68		
6.30	6.3	63	101	10	P138N0630	4,36	P1386STI0630	5,61	P238NVA0630	8,82	P2386STI0630	8,41
6.40	6.4	63	101	10	P138N0640	4,36	P1386STI0640	5,61	P238NVA0640	8,82	P2386STI0640	8,41
6.50	6.5	63	101	10	P138N0650	4,44	P1386STI0650	5,68	P238NVA0650	8,82	P2386STI0650	8,41
6.60	6.6	63	101	5	P138N0660	4,44	P1386STI0660	5,68	P238NVA0660	9,13	P2386STI0660	9,09
6.70	6.7	63	101	5	P138N0670	4,69	P1386STI0670	5,75	P238NVA0670	9,13	P2386STI0670	9,09
6.75	6.75	69	109	5	P138N0675	4,69			P238NVA0675	10,08		
6.80	6.8	69	109	5	P138N0680	5,10	P1386STI0680	6,12	P238NVA0680	9,13	P2386STI0680	9,09
6.90	6.9	69	109	5	P138N0690	5,10	P1386STI0690	6,12	P238NVA0690	9,13	P2386STI0690	9,09
7.00	7	69	109	5	P138N0700	4,76	P1386STI0700	6,95	P238NVA0700	9,13	P2386STI0700	9,09
7.10	7.1	69	109	5	P138N0710	5,58	P1386STI0710	7,17	P238NVA0710	11,03	P2386STI0710	11,13
7.20	7.2	69	109	5	P138N0720	5,58	P1386STI0720	7,17	P238NVA0720	11,03	P2386STI0720	11,13
7.25	7.25	69	109	5	P138N0725	5,58			P238NVA0725	12,23		
7.30	7.3	69	109	5	P138N0730	5,58	P1386STI0730	7,17	P238NVA0730	11,03	P2386STI0730	11,13
7.40	7.4	69	109	5	P138N0740	5,74	P1386STI0740	7,31	P238NVA0740	11,03	P2386STI0740	11,13
7.50	7.5	69	109	5	P138N0750	5,74	P1386STI0750	7,31	P238NVA0750	11,03	P2386STI0750	11,13
7.60	7.6	75	117	5	P138N0760	5,74	P1386STI0760	7,31	P238NVA0760	11,91	P2386STI0760	12,23
7.70	7.7	75	117	5	P138N0770	6,14	P1386STI0770	7,83	P238NVA0770	11,91	P2386STI0770	12,23
7.75	7.75	75	117	5	P138N0775	6,14			P238NVA0775	13,18		
7.80	7.8	75	117	5	P138N0780	6,14	P1386STI0780	7,83	P238NVA0780	11,91	P2386STI0780	12,23
7.90	7.9	75	117	5	P138N0790	6,14	P1386STI0790	7,83	P238NVA0790	11,91	P2386STI0790	12,23
8.00	8	75	117	5	P138N0800	6,29	P1386STI0800	8,63	P238NVA0800	11,91	P2386STI0800	12,23
8.10	8.1	75	117	5	P138N0810	7,09	P1386STI0810	9,65	P238NVA0810	13,34	P2386STI0810	13,43
8.20	8.2	75	117	5	P138N0820	7,09	P1386STI0820	9,65	P238NVA0820	13,34	P2386STI0820	13,43
8.25	8.25	75	117	5	P138N0825	7,09			P238NVA0825	14,69		
8.30	8.3	75	117	5	P138N0830	7,75	P1386STI0830	10,46	P238NVA0830	13,34	P2386STI0830	13,43
8.40	8.4	75	117	5	P138N0840	7,75	P1386STI0840	10,46	P238NVA0840	13,34	P2386STI0840	13,43
8.50	8.5	75	117	5	P138N0850	7,75	P1386STI0850	10,46	P238NVA0850	13,34	P2386STI0850	13,43
8.60	8.6	81	125	5	P138N0860	8,56	P1386STI0860	11,34	P238NVA0860	15,08	P2386STI0860	15,12
8.70	8.7	81	125	5	P138N0870	8,56	P1386STI0870	11,34	P238NVA0870	15,08	P2386STI0870	15,12
8.75	8.75	81	125	5	P138N0875	8,56			P238NVA0875	15,08		
8.80	8.8	81	125	5	P138N0880	8,56	P1386STI0880	11,34	P238NVA0880	15,08	P2386STI0880	15,12
8.90	8.9	81	125	5	P138N0890	8,56	P1386STI0890	11,34	P238NVA0890	15,08	P2386STI0890	15,12
9.00	9	81	125	5	P138N0900	8,49	P1386STI0900	11,41	P238NVA0900	15,08	P2386STI0900	15,12
9.10	9.1	81	125	5	P138N0910	9,14	P1386STI0910	12,00	P238NVA0910	20,73	P2386STI0910	18,77
9.20	9.2	81	125	5	P138N0920	9,14	P1386STI0920	12,00	P238NVA0920	20,73	P2386STI0920	18,77
9.25	9.25	81	125	5	P138N0925	9,58			P238NVA0925	20,73		
9.30	9.3	81	125	5	P138N0930	9,58	P1386STI0930	12,65	P238NVA0930	20,73	P2386STI0930	18,77
9.40	9.4	81	125	5	P138N0940	9,58	P1386STI0940	12,65	P238NVA0940	20,73	P2386STI0940	18,77



						138N		1386STI		238NVA		2386STI
P						★		★		★		★
M								☆		★		★
K						☆		★		☆		★
N						☆		☆		☆		☆
S								☆		☆		☆
H												
D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€	EDP No.	€
9.50	9.5	81	125	5	P138N0950	9,58	P1386STI0950	12,65	P238NVA0950	20,73	P2386STI0950	18,77
9.60	9.6	87	133	5	P138N0960	10,98	P1386STI0960	13,01	P238NVA0960	19,05	P2386STI0960	18,77
9.70	9.7	87	133	5	P138N0970	10,98	P1386STI0970	13,01	P238NVA0970	19,05	P2386STI0970	18,77
9.75	9.75	87	133	5	P138N0975	10,98			P238NVA0975	19,05		
9.80	9.8	87	133	5	P138N0980	11,07	P1386STI0980	13,23	P238NVA0980	19,05	P2386STI0980	18,77
9.90	9.9	87	133	5	P138N0990	11,07	P1386STI0990	13,23	P238NVA0990	19,05	P2386STI0990	18,77
10.00	10	87	133	5	P138N1000	10,11	P1386STI1000	13,45	P238NVA1000	19,05	P2386STI1000	18,77
10.10	10.1	87	133	5	P138N1010	11,39	P1386STI1010	13,60			P2386STI1010	21,75
10.20	10.2	87	133	5	P138N1020	11,80	P1386STI1020	14,04	P238NVA1020	26,52	P2386STI1020	21,75
10.25	10.25	87	133	5	P138N1025	11,96						
10.30	10.3	87	133	5	P138N1030	11,96	P1386STI1030	14,41			P2386STI1030	21,75
10.40	10.4	87	133	5	P138N1040	11,96	P1386STI1040	14,41			P2386STI1040	21,75
10.50	10.5	87	133	5	P138N1050	11,96	P1386STI1050	14,41	P238NVA1050	26,52	P2386STI1050	21,75
10.60	10.6	87	133	5	P138N1060	12,12	P1386STI1060	14,48			P2386STI1060	22,44
10.70	10.7	94	142	5	P138N1070	12,12	P1386STI1070	14,48			P2386STI1070	22,44
10.75	10.75	94	142	5	P138N1075	12,12						
10.80	10.8	94	142	5	P138N1080	12,12	P1386STI1080	14,48			P2386STI1080	22,44
10.90	10.9	94	142	5	P138N1090	12,12	P1386STI1090	14,48			P2386STI1090	22,44
11.00	11	94	142	5	P138N1100	12,12	P1386STI1100	15,14	P238NVA1100	29,53	P2386STI1100	22,44
11.10	11.1	94	142	5	P138N1110	15,19	P1386STI1110	18,21			P2386STI1110	27,10
11.20	11.2	94	142	5	P138N1120	15,19	P1386STI1120	18,21			P2386STI1120	27,10
11.25	11.25	94	142	5	P138N1125	15,19						
11.30	11.3	94	142	5	P138N1130	15,19	P1386STI1130	18,21			P2386STI1130	27,10
11.40	11.4	94	142	5	P138N1140	15,19	P1386STI1140	18,21			P2386STI1140	27,10
11.50	11.5	94	142	5	P138N1150	15,19	P1386STI1150	18,21	P238NVA1150	32,71	P2386STI1150	27,10
11.60	11.6	94	142	5	P138N1160	15,19	P1386STI1160	18,21			P2386STI1160	27,10
11.70	11.7	94	142	5	P138N1170	15,19	P1386STI1170	18,21			P2386STI1170	27,10
11.75	11.75	94	142	5	P138N1175	15,19						
11.80	11.8	94	142	5	P138N1180	15,19	P1386STI1180	18,21			P2386STI1180	27,10
11.90	11.9	101	151	5	P138N1190	15,19	P1386STI1190	18,21			P2386STI1190	27,10
12.00	12	101	151	5	P138N1200	15,19	P1386STI1200	18,58	P238NVA1200	33,90	P2386STI1200	27,10
12.10	12.1	101	151	5	P138N1210	15,75	P1386STI1210	19,02			P2386STI1210	30,00
12.20	12.2	101	151	5	P138N1220	15,75	P1386STI1220	19,02			P2386STI1220	30,00
12.25	12.25	101	151	5	P138N1225	15,75						
12.30	12.3	101	151	5	P138N1230	15,75	P1386STI1230	19,02			P2386STI1230	30,00
12.40	12.4	101	151	5	P138N1240	17,85	P1386STI1240	21,06			P2386STI1240	30,00
12.50	12.5	101	151	5	P138N1250	17,85	P1386STI1250	21,94	P238NVA1250	40,57	P2386STI1250	31,09
12.60	12.6	101	151	5	P138N1260	17,85	P1386STI1260	21,94			P2386STI1260	31,09
12.70	12.7	101	151	5	P138N1270	17,85	P1386STI1270	21,94			P2386STI1270	31,09
12.75	12.75	101	151	5	P138N1275	17,85						
12.80	12.8	101	151	5	P138N1280	17,85	P1386STI1280	21,94			P2386STI1280	31,09
12.90	12.9	101	151	5	P138N1290	17,85	P1386STI1290	21,94			P2386STI1290	31,09
13.00	13	101	151	5	P138N1300	17,85	P1386STI1300	22,75	P238NVA1300	51,29	P2386STI1300	31,77
13.25	13.25	108	160	1	P138N1325	21,67						
13.50	13.5	108	160	1	P138N1350	19,96			P238NVA1350	52,95		
13.75	13.75	108	160	1	P138N1375	21,67						
14.00	14	108	160	1	P138N1400	19,96			P238NVA1400	55,18		
14.25	14.25	114	169	1	P138N1425	26,33						
14.50	14.5	114	169	1	P138N1450	24,06			P238NVA1450	55,58		
14.75	14.75	114	169	1	P138N1475	26,33						
15.00	15	114	169	1	P138N1500	24,06			P238NVA1500	56,29		
15.25	15.25	120	178	1	P138N1525	31,59						
15.50	15.5	120	178	1	P138N1550	31,59			P238NVA1550	63,83		
15.75	15.75	120	178	1	P138N1575	31,59						
16.00	16	120	178	1	P138N1600	28,87			P238NVA1600	65,58		
16.25	16.25	125	184	1	P138N1625	36,60						
16.50	16.5	125	184	1	P138N1650	36,60			P238NVA1650	72,25		
16.75	16.75	125	184	1	P138N1675	36,60						
17.00	17	125	184	1	P138N1700	33,45			P238NVA1700	72,25		
17.50	17.5	130	191	1	P138N1750	45,08			P238NVA1750	81,46		
18.00	18	130	191	1	P138N1800	41,19			P238NVA1800	81,46		
18.50	18.5	135	198	1	P138N1850	51,14			P238NVA1850	94,80		
19.00	19	135	198	1	P138N1900	45,55			P238NVA1900	94,80		
19.50	19.5	140	205	1	P138N1950	56,87						
20.00	20	140	205	1	P138N2000	57,66			P238NVA2000	112,03		

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134NB (Ø 0.5 mm ÷ 1.9 mm) will be exhausted and gradually replaced by new 234NVA

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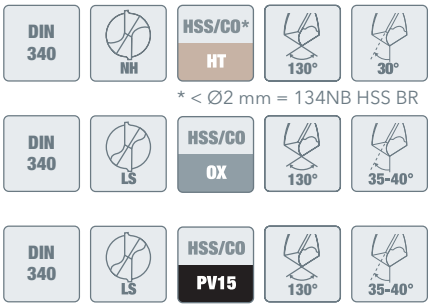
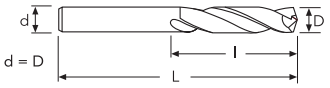
234LSTH - catalogue page 274



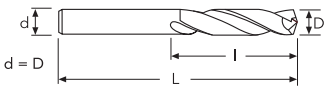


* < Ø2 mm = 134NB HSS BR



	234NVA		234LS		234LSTH
P	★		★		★
M	★		☆		☆
K	☆		★		★
N	☆				
S	☆				
H					

D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€
0.50	0.5	12	32	10	P134NB0050	**23,92**				
0.60	0.6	15	35	10	P134NB0060	**18,58**				
0.70	0.7	21	42	10	P134NB0070	**17,02**				
0.80	0.8	25	46	10	P134NB0080	**17,02**				
0.90	0.9	29	51	10	P134NB0090	**15,31**				
1.00	1	33	56	10	P134NB0100	**11,09**				
1.10	1.1	37	60	10	P134NB0110	**11,41**				
1.20	1.2	41	65	10	P134NB0120	**11,41**				
1.30	1.3	41	65	10	P134NB0130	**11,41**				
1.40	1.4	45	70	10	P134NB0140	**10,46**				
1.50	1.5	45	70	10	P134NB0150	**9,07**				
1.60	1.6	50	76	10	P134NB0160	**9,56**				
1.70	1.7	50	76	10	P134NB0170	**9,56**				
1.80	1.8	53	80	10	P134NB0180	**9,22**				
1.90	1.9	53	80	10	P134NB0190	**9,22**				
2.00	2	56	85	10	P234NVA0200	**5,20**	P234LS0200	**5,52**	P234LSTH0200	**19,95**
2.10	2.1	56	85	10	P234NVA0210	**5,20**	P234LS0210	**6,00**	P234LSTH0210	**20,20**
2.20	2.2	59	90	10	P234NVA0220	**5,05**	P234LS0220	**6,00**	P234LSTH0220	**22,70**
2.30	2.3	59	90	10	P234NVA0230	**5,05**	P234LS0230	**6,00**	P234LSTH0230	**22,70**
2.40	2.4	62	95	10	P234NVA0240	**5,05**	P234LS0240	**6,00**	P234LSTH0240	**22,70**
2.50	2.5	62	95	10	P234NVA0250	**5,05**	P234LS0250	**6,00**	P234LSTH0250	**22,70**
2.60	2.6	62	95	10	P234NVA0260	**5,41**	P234LS0260	**6,37**	P234LSTH0260	**23,43**
2.70	2.7	66	100	10	P234NVA0270	**5,41**	P234LS0270	**6,37**	P234LSTH0270	**26,41**
2.80	2.8	66	100	10	P234NVA0280	**5,41**	P234LS0280	**6,37**	P234LSTH0280	**26,41**
2.90	2.9	66	100	10	P234NVA0290	**5,41**	P234LS0290	**6,37**	P234LSTH0290	**26,41**
3.00	3	66	100	10	P234NVA0300	**5,41**	P234LS0300	**6,37**	P234LSTH0300	**26,41**
3.10	3.1	69	106	10	P234NVA0310	**5,77**	P234LS0310	**7,44**	P234LSTH0310	**31,10**
3.20	3.2	69	106	10	P234NVA0320	**5,77**	P234LS0320	**7,44**	P234LSTH0320	**31,10**
3.30	3.3	69	106	10	P234NVA0330	**5,77**	P234LS0330	**7,44**	P234LSTH0330	**31,10**
3.40	3.4	73	112	10	P234NVA0340	**5,77**	P234LS0340	**7,44**	P234LSTH0340	**31,10**
3.50	3.5	73	112	10	P234NVA0350	**5,77**	P234LS0350	**7,44**	P234LSTH0350	**31,10**
3.60	3.6	73	112	10	P234NVA0360	**6,80**	P234LS0360	**8,79**	P234LSTH0360	**32,24**
3.70	3.7	73	112	10	P234NVA0370	**6,80**	P234LS0370	**8,79**	P234LSTH0370	**32,24**
3.80	3.8	78	119	10	P234NVA0380	**6,80**	P234LS0380	**8,79**	P234LSTH0380	**35,63**
3.90	3.9	78	119	10	P234NVA0390	**6,80**	P234LS0390	**8,79**	P234LSTH0390	**35,63**
4.00	4	78	119	10	P234NVA0400	**6,80**	P234LS0400	**8,79**	P234LSTH0400	**35,63**
4.10	4.1	78	119	10	P234NVA0410	**7,61**				
4.20	4.2	78	119	10	P234NVA0420	**7,61**	P234LS0420	**10,23**	P234LSTH0420	**36,92**
4.30	4.3	82	126	10	P234NVA0430	**7,61**				
4.40	4.4	82	126	10	P234NVA0440	**7,61**				
4.50	4.5	82	126	10	P234NVA0450	**7,61**	P234LS0450	**10,23**	P234LSTH0450	**43,79**
4.60	4.6	82	126	10	P234NVA0460	**7,90**				
4.70	4.7	82	126	10	P234NVA0470	**7,90**				
4.80	4.8	87	132	10	P234NVA0480	**7,90**	P234LS0480	**10,23**	P234LSTH0480	**43,79**
4.90	4.9	87	132	10	P234NVA0490	**7,90**				
5.00	5	87	132	10	P234NVA0500	**7,90**	P234LS0500	**10,23**	P234LSTH0500	**43,79**
5.10	5.1	87	132	10	P234NVA0510	**9,36**				
5.20	5.2	87	132	10	P234NVA0520	**9,36**	P234LS0520	**12,64**	P234LSTH0520	**45,88**
5.30	5.3	87	132	10	P234NVA0530	**9,36**				
5.40	5.4	91	139	10	P234NVA0540	**9,36**				



						234NVA		234LS		234LSTH
P						★		★		★
M						★		☆		☆
K						☆		★		★
N						☆				
S						☆				
H										
D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€
5.50	5.5	91	139	10	P234NVA0550	**9,36**	P234LS0550	**12,64**	P234LSTH0550	**49,36**
5.60	5.6	91	139	10	P234NVA0560	**10,46**				
5.70	5.7	91	139	10	P234NVA0570	**10,46**				
5.80	5.8	91	139	10	P234NVA0580	**10,46**	P234LS0580	**13,46**	P234LSTH0580	**50,25**
5.90	5.9	91	139	10	P234NVA0590	**10,46**				
6.00	6	91	139	10	P234NVA0600	**10,46**	P234LS0600	**13,46**	P234LSTH0600	**50,25**
6.10	6.1	97	148	5	P234NVA0610	**11,34**				
6.20	6.2	97	148	5	P234NVA0620	**11,34**	P234LS0620	**15,60**	P234LSTH0620	**57,76**
6.30	6.3	97	148	5	P234NVA0630	**11,34**				
6.50	6.5	97	148	5	P234NVA0650	**11,34**	P234LS0650	**15,60**	P234LSTH0650	**60,35**
6.60	6.6	97	148	5	P234NVA0660	**11,85**				
6.70	6.7	97	148	5	P234NVA0670	**11,85**				
6.80	6.8	102	156	5	P234NVA0680	**11,85**	P234LS0680	**16,95**	P234LSTH0680	**68,83**
6.90	6.9	102	156	5	P234NVA0690	**11,85**				
7.00	7	102	156	5	P234NVA0700	**11,85**	P234LS0700	**16,95**	P234LSTH0700	**68,83**
7.10	7.1	102	156	5	P234NVA0710	**14,41**				
7.20	7.2	102	156	5	P234NVA0720	**14,41**	P234LS0720	**18,13**		
7.40	7.4	102	156	5	P234NVA0740	**14,41**				
7.50	7.5	102	156	5	P234NVA0750	**14,41**	P234LS0750	**18,13**	P234LSTH0750	**71,90**
7.60	7.6	109	165	5	P234NVA0760	**15,43**				
7.70	7.7	109	165	5	P234NVA0770	**15,43**				
7.80	7.8	109	165	5	P234NVA0780	**15,43**	P234LS0780	**19,55**		
7.90	7.9	109	165	5	P234NVA0790	**15,43**				
8.00	8	109	165	5	P234NVA0800	**15,43**	P234LS0800	**19,55**	P234LSTH0800	**73,60**
8.10	8.1	109	165	5	P234NVA0810	**17,33**				
8.20	8.2	109	165	5	P234NVA0820	**17,33**	P234LS0820	**21,83**		
8.30	8.3	109	165	5	P234NVA0830	**17,33**				
8.40	8.4	109	165	5	P234NVA0840	**17,33**				
8.50	8.5	109	165	5	P234NVA0850	**17,33**	P234LS0850	**21,83**	P234LSTH0850	**80,30**
8.60	8.6	115	175	5	P234NVA0860	**19,67**				
8.70	8.7	115	175	5	P234NVA0870	**19,67**				
8.80	8.8	115	175	5	P234NVA0880	**19,67**				
8.90	8.9	115	175	5	P234NVA0890	**19,67**				
9.00	9	115	175	5	P234NVA0900	**19,67**	P234LS0900	**24,75**	P234LSTH0900	**89,11**
9.10	9.1	115	175	5	P234NVA0910	**26,98**				
9.20	9.2	115	175	5	P234NVA0920	**26,98**				
9.30	9.3	115	175	5	P234NVA0930	**26,98**				
9.40	9.4	115	175	5	P234NVA0940	**26,98**				
9.50	9.5	115	175	5	P234NVA0950	**26,98**	P234LS0950	**31,92**	P234LSTH0950	**96,46**
9.60	9.6	121	184	5	P234NVA0960	**24,57**				
9.70	9.7	121	184	5	P234NVA0970	**24,57**				
9.80	9.8	121	184	5	P234NVA0980	**24,57**	P234LS0980	**31,92**		
9.90	9.9	121	184	5	P234NVA0990	**24,57**				
10.00	10	121	184	5	P234NVA1000	**24,57**	P234LS1000	**31,92**	P234LSTH1000	**102,76**
10.20	10.2	121	184	5	P234NVA1020	**34,00**				
10.50	10.5	121	184	5	P234NVA1050	**34,00**	P234LS1050	**41,61**	P234LSTH1050	**110,84**
10.80	10.8	128	195	5	P234NVA1080	**34,00**				
11.00	11	128	195	5	P234NVA1100	**38,02**	P234LS1100	**42,06**	P234LSTH1100	**118,68**
11.20	11.20	128	195	5	P234NVA1120	**38,02**				
11.50	11.5	128	195	5	P234NVA1150	**42,12**	P234LS1150	**51,75**	P234LSTH1150	**127,40**
11.80	11.80	128	195	5	P234NVA1180	**43,73**				
12.00	12	134	205	5	P234NVA1200	**43,73**	P234LS1200	**51,75**	P234LSTH1200	**135,56**
12.50	12.5	134	205	5			P234LS1250	**60,79**	P234LSTH1250	**140,65**
13.00	13	134	205	5			P234LS1300	**61,45**	P234LSTH1300	**141,22**

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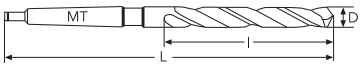
DIN 345 | N | HSS OX | 118° | 25-30°



	145N
P	★
M	
K	☆
N	☆
S	
H	

D(h8)	D Tol.	MT	l	L	EDP No.	€
5.00	0/-0.018	1	52	133	P145N0500	**39,96**
5.50	0/-0.018	1	57	138	P145N0550	**41,42**
6.00	0/-0.018	1	57	138	P145N0600	**42,87**
6.50	0/-0.022	1	63	144	P145N0650	**42,14**
6.75	0/-0.022	1	69	150	P145N0675	**45,78**
7.00	0/-0.022	1	69	150	P145N0700	**42,14**
7.50	0/-0.022	1	69	150	P145N0750	**48,68**
8.00	0/-0.022	1	75	156	P145N0800	**38,51**
8.50	0/-0.022	1	75	156	P145N0850	**42,14**
9.00	0/-0.022	1	81	162	P145N0900	**41,42**
9.50	0/-0.022	1	81	162	P145N0950	**49,41**
10.00	0/-0.022	1	87	168	P145N1000	**42,14**
10.25	0/-0.027	1	87	168	P145N1025	**69,75**
10.50	0/-0.027	1	87	168	P145N1050	**44,32**
11.00	0/-0.027	1	94	175	P145N1100	**45,78**
11.50	0/-0.027	1	94	175	P145N1150	**52,32**
12.00	0/-0.027	1	101	182	P145N1200	**47,23**
12.50	0/-0.027	1	101	182	P145N1250	**50,14**
13.00	0/-0.027	1	101	182	P145N1300	**35,37**
13.25	0/-0.027	1	108	189	P145N1325	**74,11**
13.50	0/-0.027	1	108	189	P145N1350	**36,14**
13.75	0/-0.027	1	108	189	P145N1375	**74,11**
14.00	0/-0.027	1	108	189	P145N1400	**37,80**
14.25	0/-0.027	2	114	212	P145N1425	**88,65**
14.50	0/-0.027	2	114	212	P145N1450	**44,15**
14.75	0/-0.027	2	114	212	P145N1475	**97,37**
15.00	0/-0.027	2	114	212	P145N1500	**45,36**
15.25	0/-0.027	2	120	218	P145N1525	**88,65**
15.50	0/-0.027	2	120	218	P145N1550	**47,48**
15.75	0/-0.027	2	120	218	P145N1575	**85,74**
16.00	0/-0.027	2	120	218	P145N1600	**49,59**
16.25	0/-0.027	2	125	223	P145N1625	**103,18**
16.50	0/-0.027	2	125	223	P145N1650	**53,44**
16.75	0/-0.027	2	125	223	P145N1675	**94,46**
17.00	0/-0.027	2	125	223	P145N1700	**56,19**
17.25	0/-0.027	2	130	228	P145N1725	**101,72**
17.50	0/-0.027	2	130	228	P145N1750	**58,82**
17.75	0/-0.027	2	130	228	P145N1775	**97,37**
18.00	0/-0.027	2	130	228	P145N1800	**62,22**
18.25	0/-0.033	2	135	233	P145N1825	**111,90**
18.50	0/-0.033	2	135	233	P145N1850	**63,88**
18.75	0/-0.033	2	135	233	P145N1875	**107,54**
19.00	0/-0.033	2	135	233	P145N1900	**67,34**
19.25	0/-0.033	2	140	238	P145N1925	**124,98**
19.50	0/-0.033	2	140	238	P145N1950	**70,99**
19.75	0/-0.033	2	140	238	P145N1975	**120,62**
20.00	0/-0.033	2	140	238	P145N2000	**73,62**
20.25	0/-0.033	2	145	243	P145N2025	**140,96**
20.50	0/-0.033	2	145	243	P145N2050	**75,74**
20.75	0/-0.033	2	145	243	P145N2075	**135,15**
21.00	0/-0.033	2	145	243	P145N2100	**76,89**
21.25	0/-0.033	2	150	248	P145N2125	**146,77**
21.50	0/-0.033	2	150	248	P145N2150	**78,43**
21.75	0/-0.033	2	150	248	P145N2175	**139,51**
22.00	0/-0.033	2	150	248	P145N2200	**81,18**
22.25	0/-0.033	2	150	248	P145N2225	**146,77**
22.50	0/-0.033	2	155	253	P145N2250	**84,96**
22.75	0/-0.033	2	155	253	P145N2275	**146,77**

	145N
P	★
M	
K	☆
N	☆
S	
H	

D(h8)	D Tol.	MT	l	L	EDP No.	€
23.00	0/-0.033	2	155	253	P145N2300	**87,65**
23.25	0/-0.033	3	155	276	P145N2325	**183,10**
23.50	0/-0.033	3	155	276	P145N2350	**94,57**
23.75	0/-0.033	3	160	281	P145N2375	**193,28**
24.00	0/-0.033	3	160	281	P145N2400	**96,94**
24.25	0/-0.033	3	160	281	P145N2425	**207,81**
24.50	0/-0.033	3	160	281	P145N2450	**101,43**
24.75	0/-0.033	3	160	281	P145N2475	**210,72**
25.00	0/-0.033	3	160	281	P145N2500	**105,02**
25.50	0/-0.033	3	165	286	P145N2550	**106,81**
26.00	0/-0.033	3	165	286	P145N2600	**107,26**
26.50	0/-0.033	3	165	286	P145N2650	**121,35**
27.00	0/-0.033	3	170	291	P145N2700	**125,65**
27.50	0/-0.033	3	170	291	P145N2750	**129,81**
28.00	0/-0.033	3	170	291	P145N2800	**125,90**
28.50	0/-0.033	3	175	296	P145N2850	**140,96**
29.00	0/-0.033	3	175	296	P145N2900	**148,59**
29.50	0/-0.033	3	175	296	P145N2950	**153,58**
30.00	0/-0.033	3	175	296	P145N3000	**158,78**
30.50	0/-0.039	3	180	301	P145N3050	**166,33**
31.00	0/-0.039	3	180	301	P145N3100	**174,02**
31.50	0/-0.039	3	180	301	P145N3150	**182,09**
32.00	0/-0.039	4	185	334	P145N3200	**190,11**
32.50	0/-0.039	4	185	334	P145N3250	**217,27**
33.00	0/-0.039	4	185	334	P145N3300	**217,27**
33.50	0/-0.039	4	185	334	P145N3350	**223,68**
34.00	0/-0.039	4	190	339	P145N3400	**229,96**
34.50	0/-0.039	4	190	339	P145N3450	**231,17**
35.00	0/-0.039	4	190	339	P145N3500	**232,27**
35.50	0/-0.039	4	190	339	P145N3550	**238,35**
36.00	0/-0.039	4	195	344	P145N3600	**244,44**
36.50	0/-0.039	4	195	344	P145N3650	**250,91**
37.00	0/-0.039	4	195	344	P145N3700	**257,51**
37.50	0/-0.039	4	195	344	P145N3750	**263,98**
38.00	0/-0.039	4	200	349	P145N3800	**270,46**
38.50	0/-0.039	4	200	349	P145N3850	**283,71**
39.00	0/-0.039	4	200	349	P145N3900	**296,85**
39.50	0/-0.039	4	200	349	P145N3950	**306,66**
40.00	0/-0.039	4	200	349	P145N4000	**316,59**
40.50	0/-0.039	4	205	354	P145N4050	**325,94**
41.00	0/-0.039	4	205	354	P145N4100	**335,23**
42.00	0/-0.039	4	205	354	P145N4200	**348,23**
43.00	0/-0.039	4	210	359	P145N4300	**395,20**
44.00	0/-0.039	4	210	359	P145N4400	**410,51**
45.00	0/-0.039	4	210	359	P145N4500	**432,94**
46.00	0/-0.039	4	215	364	P145N4600	**454,34**
47.00	0/-0.039	4	215	364	P145N4700	**478,56**
48.00	0/-0.039	4	220	369	P145N4800	**525,65**
49.00	0/-0.039	4	220	369	P145N4900	**551,93**
50.00	0/-0.039	4	220	369	P145N5000	**577,17**
55.00	0/-0.046	5	230	417	P145N5500	**817,83**
60.00	0/-0.046	5	235	422	P145N6000	**1066,24**

OSAWA

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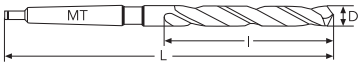
DIN 345 | NH | HSS/CO OX | 118° | 30°



	245N
P	★
M	★
K	☆
N	☆
S	☆
H	

D(h8)	D Tol.	MT	l	L	EDP No.	€
13.00	0/-0.027	1	101	182	P245N1300	**115,09**
13.50	0/-0.027	1	108	189	P245N1350	**150,52**
14.00	0/-0.027	1	108	189	P245N1400	**146,54**
14.50	0/-0.027	2	114	212	P245N1450	**162,98**
15.00	0/-0.027	2	114	212	P245N1500	**149,86**
15.50	0/-0.027	2	120	218	P245N1550	**162,98**
16.00	0/-0.027	2	120	218	P245N1600	**158,72**
16.50	0/-0.027	2	125	223	P245N1650	**168,35**
17.00	0/-0.027	2	125	223	P245N1700	**161,15**
17.50	0/-0.027	2	130	228	P245N1750	**175,94**
18.00	0/-0.027	2	130	228	P245N1800	**172,06**
18.50	0/-0.033	2	135	233	P245N1850	**188,94**
19.00	0/-0.033	2	135	233	P245N1900	**184,79**
19.50	0/-0.033	2	140	238	P245N1950	**211,53**
20.00	0/-0.033	2	140	238	P245N2000	**206,72**
20.50	0/-0.033	2	145	243	P245N2050	**322,09**
21.00	0/-0.033	2	145	243	P245N2100	**240,98**
21.50	0/-0.033	2	150	248	P245N2150	**243,14**
22.00	0/-0.033	2	150	248	P245N2200	**243,31**
22.50	0/-0.033	2	155	253	P245N2250	**285,11**
23.00	0/-0.033	2	155	253	P245N2300	**284,83**
23.50	0/-0.033	3	155	276	P245N2350	**303,87**
24.00	0/-0.033	3	160	281	P245N2400	**302,21**
24.50	0/-0.033	3	160	281	P245N2450	**344,51**
25.00	0/-0.033	3	160	281	P245N2500	**312,45**
26.00	0/-0.033	3	165	286	P245N2600	**377,06**
27.00	0/-0.033	3	170	291	P245N2700	**416,64**
28.00	0/-0.033	3	170	291	P245N2800	**428,49**
29.00	0/-0.033	3	175	296	P245N2900	**455,67**
30.00	0/-0.033	3	175	296	P245N3000	**446,04**



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.

Gama de fresas para uso genérico, provistas de geometría de corte y revestimientos innovadores para garantizar prestaciones aún más elevadas. La respuesta de Osawa a un mercado que pide herramientas cada vez con mayor rendimiento y más competitivas. La innovación en los procesos de producción permite a la gama G2 sobresalir en la relación calidad-precio.

Ассортимент фрез общего назначения, с новой геометрией и покрытиями, гарантирующими высокоэффективную работу. Это ответ компании Osawa на запросы рынка, который требует всё более конкурентоспособные инструменты с высокими эксплуатационными характеристиками. Инновации в производственных процессах и большие изготавливаемые партии позволяют серии G2 иметь превосходное соотношение цена-качество.

GB205 - catalogue page 316

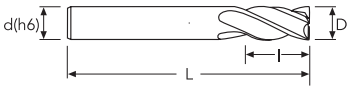


OSAWA NORM | N | MG / BR | <45 HRC | 30° | SQUARE | Z2

G2CS2 - catalogue page 320



OSAWA NORM | N | MG / PV200 | <45 HRC | 30° | SQUARE | Z2



		GB205		G2CS2
P		★		★
M		☆		☆
K		★		★
N		☆		☆
S				
H				

D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€
1	4	3	50	GB205010	**15,52**	G2CS2010	**16,77**
1.5	4	4.5	50	GB205015	**15,52**	G2CS2015	**16,77**
2	2	8	50			G2CS2020S02	**19,29**
2	4	6	50	GB205020	**15,52**	G2CS2020	**16,77**
2.5	4	7	50			G2CS2025	**17,65**
3	3	9	50			G2CS2030S03	**19,29**
3	4	8	50	GB205030	**15,52**	G2CS2030	**16,77**
3.5	4	10	50			G2CS2035	**17,65**
4	4	11	50	GB205040	**15,52**	G2CS2040	**16,77**
4.5	6	13	50			G2CS2045	**22,44**
5	6	13	50	GB205050	**19,89**	G2CS2050	**20,80**
5.5	6	13	50			G2CS2055	**22,44**
6	6	15	50	GB205060	**19,89**	G2CS2060	**20,80**
6.5	8	17	60			G2CS2065	**38,94**
7	8	17	60			G2CS2070	**38,94**
7.5	8	17	60			G2CS2075	**38,94**
8	8	20	60	GB205080	**34,53**	G2CS2080	**34,84**
8.5	10	23	75			G2CS2085	**58,34**
9	10	23	75			G2CS2090	**58,34**
10	10	30	75	GB205100	**50,68**	G2CS2100	**49,81**
10.5	12	25	75			G2CS2105	**80,60**
11	12	30	75			G2CS2110	**80,60**
12	12	30	75	GB205120	**70,33**	G2CS2120	**68,62**
13	14	26	83			G2CS2130	**183,29**
14	14	26	83			G2CS2140	**111,67**
15	16	32	92			G2CS2150	**185,25**
16	16	32	92			G2CS2160	**127,22**
17	20	40	100			G2CS2170	**271,64**
18	20	40	100			G2CS2180	**247,39**
20	20	40	100			G2CS2200	**230,51**

OSAWA

GB305 - catalogue page 327

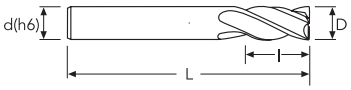


OSAWA NORM | N | MG / BR | <45 HRC | 45° | SQUARE | Z3

G2CSH3 - catalogue page 329



OSAWA NORM | N | MG / PV200 | <45 HRC | 45° | SQUARE | Z3



					GB305		G2CSH3
P					★		★
M					☆		☆
K					★		★
N					☆		☆
S							
H							
D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€
1	4	3	50	GB305010	**15,52**	G2CSH3010	**16,77**
1.5	4	4.5	50	GB305015	**15,52**	G2CSH3015	**16,77**
2	4	6	50	GB305020	**15,52**	G2CSH3020	**16,77**
2.5	4	7	50			G2CSH3025	**17,65**
3	3	9	50			G2CSH3030S03	**19,29**
3	4	8	50	GB305030	**15,52**	G2CSH3030	**16,77**
3.5	4	10	50			G2CSH3035	**17,65**
4	4	11	50	GB305040	**15,52**	G2CSH3040	**16,77**
4.5	6	13	50			G2CSH3045	**22,44**
5	6	13	50	GB305050	**19,89**	G2CSH3050	**20,80**
5.5	6	13	50			G2CSH3055	**22,44**
6	6	15	50	GB305060	**19,89**	G2CSH3060	**20,80**
6.5	8	17	60			G2CSH3065	**38,94**
7	8	17	60			G2CSH3070	**38,94**
7.5	8	17	60			G2CSH3075	**38,94**
8	8	20	60	GB305080	**34,53**	G2CSH3080	**34,84**
8.5	10	23	75			G2CSH3085	**58,34**
9	10	23	75			G2CSH3090	**58,34**
10	10	30	75	GB305100	**50,68**	G2CSH3100	**49,81**
11	12	30	75			G2CSH3110	**80,60**
12	12	30	75	GB305120	**70,33**	G2CSH3120	**68,62**
14	14	26	83			G2CSH3140	**111,67**
16	16	32	92			G2CSH3160	**127,22**
18	20	40	100			G2CSH3180	**247,39**
20	20	40	100			G2CSH3200	**230,51**

PARAMETERS

★ 1st choice ☆ suitable

GB405 - catalogue page 335

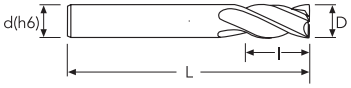


OSAWA NORM | N | MG / BR | <45 HRC | 30° | SQUARE | Z4

G2CS4 - catalogue page 339



OSAWA NORM | N | MG / PV200 | <45 HRC | 30° | SQUARE | Z4



		GB405		G2CS4
P		★		★
M		☆		☆
K		★		★
N		☆		☆
S				
H				

D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€
1	4	3	50	GB405010	**15,52**	G2CS4010	**16,77**
1.5	4	4.5	50	GB405015	**15,52**	G2CS4015	**16,77**
2	2	8	50			G2CS4020S02	**19,29**
2	4	6	50	GB405020	**15,52**	G2CS4020	**16,77**
2.5	4	7	50			G2CS4025	**17,65**
3	3	9	50			G2CS4030S03	**19,29**
3	4	8	50	GB405030	**15,52**	G2CS4030	**16,77**
3.5	4	10	50			G2CS4035	**17,65**
4	4	11	50	GB405040	**15,52**	G2CS4040	**16,77**
4.5	6	13	50			G2CS4045	**22,44**
5	6	13	50	GB405050	**19,89**	G2CS4050	**20,80**
5.5	6	13	50			G2CS4055	**22,44**
6	6	15	50	GB405060	**19,89**	G2CS4060	**20,80**
6.5	8	17	60			G2CS4065	**38,94**
7	8	17	60			G2CS4070	**38,94**
7.5	8	17	60			G2CS4075	**38,94**
8	8	20	60	GB405080	**34,53**	G2CS4080	**34,84**
8.5	10	23	75			G2CS4085	**58,34**
9	10	23	75			G2CS4090	**58,34**
9.5	10	25	75			G2CS4095	**58,34**
10	10	30	75	GB405100	**50,68**	G2CS4100	**49,81**
10.5	12	25	75			G2CS4105	**80,60**
11	12	30	75			G2CS4110	**80,60**
11.5	12	28	75			G2CS4115	**80,66**
12	12	30	75	GB405120	**70,33**	G2CS4120	**68,62**
12.5	14	26	83			G2CS4125	**129,94**
13	14	26	83			G2CS4130	**129,94**
13.5	14	26	83			G2CS4135	**129,94**
14	14	26	83			G2CS4140	**111,67**
14.5	16	32	92			G2CS4145	**153,83**
15	16	32	92			G2CS4150	**157,40**
15.5	16	32	92			G2CS4155	**157,40**
16	16	32	92			G2CS4160	**127,22**
17	20	40	100			G2CS4170	**271,64**
18	20	40	100			G2CS4180	**247,39**
19	20	40	100			G2CS4190	**271,64**
20	20	40	100			G2CS4200	**230,51**
22	25	40	100			G2CS4220	**436,04**
25	25	40	100			G2CS4250	**436,04**

OSAWA

G2WS2 - catalogue page 322



G2WSH3 - catalogue page 331



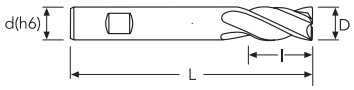
G2WS4 - catalogue page 341



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z2

OSAWA NORM | N | MG PV200 | <45 HRC | 45° | SQUARE | Z3

OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z4



					G2WS2		G2WSH3		G2WS4
P					★		★		★
M					☆		☆		☆
K					★		★		★
N					☆		☆		☆
S									
H									
D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€
3	6	8	57	G2WS2030	**22,59**	G2WSH3030	**22,59**	G2WS4030	**22,59**
4	6	11	57	G2WS2040	**22,59**	G2WSH3040	**22,59**	G2WS4040	**22,59**
5	6	13	57	G2WS2050	**22,59**	G2WSH3050	**22,59**	G2WS4050	**22,59**
6	6	13	57	G2WS2060	**22,59**	G2WSH3060	**22,59**	G2WS4060	**22,59**
8	8	19	63	G2WS2080	**40,26**	G2WSH3080	**40,26**	G2WS4080	**40,26**
10	10	22	72	G2WS2100	**53,54**	G2WSH3100	**53,54**	G2WS4100	**53,54**
12	12	26	83	G2WS2120	**80,52**	G2WSH3120	**80,52**	G2WS4120	**80,52**
14	14	26	83	G2WS2140	**115,54**	G2WSH3140	**115,54**	G2WS4140	**115,54**
16	16	32	92	G2WS2160	**139,91**	G2WSH3160	**139,91**	G2WS4160	**139,91**
20	20	38	104	G2WS2200	**251,53**	G2WSH3200	**251,53**	G2WS4200	**251,53**

GBL2 - catalogue page 318

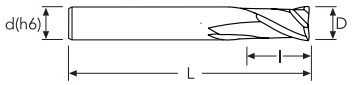


GBL4 - catalogue page 337



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z2

OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z4



					GBL2		GBL4
P					★		★
M					☆		☆
K					★		★
N					☆		☆
S							
H							
D	d(h6)	l	L	EDP No.	€	EDP No.	€
3	3	30	75	GBL2030	**40,69**	GBL4030	**40,69**
4	4	30	75	GBL2040	**43,50**	GBL4040	**43,50**
5	5	40	100	GBL2050	**56,95**	GBL4050	**56,95**
6	6	60	150	GBL2060	**86,79**	GBL4060	**89,63**
8	8	60	150	GBL2080	**114,36**	GBL4080	**114,36**
10	10	75	150	GBL2100	**150,87**	GBL4100	**150,87**
12	12	75	150	GBL2120	**200,66**	GBL4120	**200,67**

G2210 / G2211 / G2212 - catalogue page 324



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z2

G2310 / G2311 / G2312 - catalogue page 333

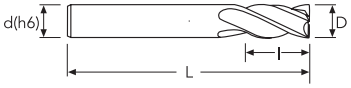


OSAWA NORM | N | MG PV200 | <45 HRC | 45° | SQUARE | Z3

G2410 / G2411 / G2412 / G2413 - catalogue page 343



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | SQUARE | Z4



		G2210		G2310		G2410
P		★		★		★
M		☆		☆		☆
K		★		★		★
N		☆		☆		☆
S						
H						

D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€
2	4	9	75	G2210020	**31,62**	G2310020	**31,62**	G2410020	**31,62**
2.5	4	10	75					G2410025	**31,84**
3	4	15	75	G2210030	**31,62**	G2310030	**31,62**	G2410030	**31,62**
3	3	25	75	G2210030CL25	**36,41**			G2410030CL25	**36,41**
3.5	4	15	75					G2410035	**31,84**
4	4	20	75	G2210040	**31,62**	G2310040	**31,62**	G2410040	**31,62**
4	4	30	75	G2210040CL30	**36,41**			G2410040CL30	**36,41**
4.5	6	20	75					G2410045	**37,20**
5	6	25	75	G2210050	**36,93**	G2310050	**36,93**	G2410050	**36,93**
5	5	30	75	G2210050S05	**42,63**			G2410050S05	**42,63**
6	6	25	75	G2210060	**36,93**	G2310060	**36,93**	G2410060	**36,93**
6	6	35	75	G2210060CL35	**42,63**			G2410060CL35	**42,63**
8	8	30	75	G2210080	**65,48**			G2410080	**65,48**
				G2211		G2311		G2411	
3	6	15	100					G2411030	**42,97**
4	6	25	100			G2311040	**42,97**	G2411040	**42,97**
5	6	30	100	G2211050	**43,43**	G2311050	**43,43**	G2411050	**43,43**
6	6	30	100	G2211060	**43,43**	G2311060	**43,43**	G2411060	**43,43**
7	8	35	100			G2311070	**77,26**	G2411070	**77,26**
8	8	35	100	G2211080	**75,13**	G2311080	**75,13**	G2411080	**75,13**
9	10	40	100			G2311090	**99,21**	G2411090	**100,12**
10	10	40	100	G2211100	**96,48**	G2311100	**96,48**	G2411100	**96,48**
11	12	45	100			G2311110	**131,50**	G2411110	**131,50**
12	12	45	100	G2211120	**126,72**	G2311120	**126,72**	G2411120	**126,72**
14	14	45	100					G2411140	**189,38**
16	16	45	100					G2411160	**202,63**
				G2212		G2312		G2412	
6	6	40	150					G2412060CL40	**96,20**
6	6	60	150					G2412060CL60	**96,20**
8	8	40	150	G2212080	**109,35**	G2312080	**109,35**	G2412080	**109,35**
8	8	60	150					G2412080CL60	**125,75**
10	10	50	150	G2212100	**139,79**	G2312100	**139,79**	G2412100	**139,79**
10	10	75	150					G2412100CL75	**160,62**
12	12	50	150	G2212120	**184,30**	G2312120	**184,30**	G2412120	**184,30**
12	12	75	150					G2412120CL75	**212,24**
16	16	70	150	G2212160	**358,02**	G2312160	**358,02**	G2412160	**358,02**
18	20	80	150					G2412180	**503,87**
20	20	80	150			G2312200	**503,85**	G2412200	**503,85**
								G2413	
16	16	40	200					G2413160	**408,25**
20	20	40	200					G2413200	**570,51**

PARAMETERS

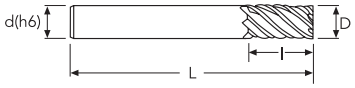
★ 1st choice ☆ suitable

G2 - General purpose - Square

G2CSHM - catalogue page 345



OSAWA NORM | N | MG PV200 | <45 HRC | 45° | SQUARE | Z6



	G2CSHM
P	★
M	☆
K	★
N	☆
S	
H	

D	d(h6)	l	L	EDP No.	€
6	6	15	50	G2CSHM060	**33,02**
8	8	20	60	G2CSHM080	**45,50**
10	10	30	75	G2CSHM100	**63,69**
12	12	30	75	G2CSHM120	**86,96**
14	14	30	83	G2CSHM140	**167,10**
16	16	35	92	G2CSHM160	**188,81**
20	20	40	100	G2CSHM200	**270,45**

G2 - General purpose - 45° chamfer

G2CSFR - catalogue page 347

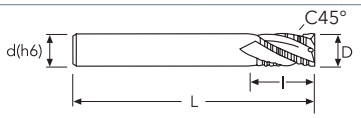


OSAWA NORM | N | MG PV200 | <45 HRC | 30° | C45° | HR FINE | Z3~Z4

G2WSFR - catalogue page 349



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | C45° | HR FINE | Z3~Z4



	G2CSFR	G2WSFR
P	★	★
M	☆	☆
K	★	★
N	☆	☆
S		
H		

D	C45°	d(h6)	l	L	z	EDP No.	€	l	L	z	EDP No.	€
4	0.28	6	11	50	3	G2CSFR040	**42,04**					
5	0.35	6	13	50	3	G2CSFR050	**42,04**					
6	0.42	6	15	50	3	G2CSFR060	**41,29**	13	57	3	G2WSFR060	**46,77**
7	0.49	8	20	60	3	G2CSFR070	**51,42**					
8	0.56	8	20	60	3	G2CSFR080	**45,48**	19	63	3	G2WSFR080	**51,52**
9	0.63	10	25	75	3	G2CSFR090	**82,53**					
10	0.70	10	30	75	4	G2CSFR100	**73,10**	22	72	4	G2WSFR100	**76,10**
11	0.77	12	30	75	4	G2CSFR110	**103,06**					
12	0.84	12	30	75	4	G2CSFR120	**99,31**	26	83	4	G2WSFR120	**108,23**
13	0.91	14	30	83	4	G2CSFR130	**144,17**					
14	0.98	14	30	83	4	G2CSFR140	**136,44**	26	83	4	G2WSFR140	**134,78**
15	1.05	16	30	92	4	G2CSFR150	**167,82**					
16	1.12	16	35	92	4	G2CSFR160	**155,61**	32	92	4	G2WSFR160	**162,65**
20	1.40	20	40	100	4	G2CSFR200	**234,59**	38	104	4	G2WSFR200	**266,07**

OSAWA

G2CS2R - catalogue page 351



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | RADIUS | Z2

G2CS4R - catalogue page 353

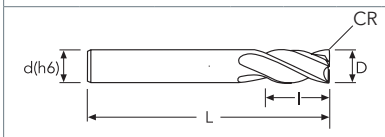


OSAWA NORM | N | MG PV200 | <45 HRC | 30° | RADIUS | Z4

G2CL4R - catalogue page 355



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | RADIUS | Z4



	G2CS2R	G2CS4R	G2CL4R
P	★	★	★
M	☆	☆	☆
K	★	★	★
N	☆	☆	☆
S			
H			

D	CR	d(h6)	l	L	EDP No.	€	EDP No.	€	l	L	EDP No.	€
1	0.20	4	2	50	G2CS2R02010	**24,89**	G2CS4R02010	**24,89**				
1.5	0.20	4	3	50	G2CS2R02015	**24,89**	G2CS4R02015	**24,89**				
1.5	0.50	4	3	50	G2CS2R05015	**24,89**	G2CS4R05015	**24,89**				
2	0.20	4	4	50	G2CS2R02020	**24,89**	G2CS4R02020	**24,89**	4	75	G2CL4R02020	**32,72**
2	0.50	4	4	50	G2CS2R05020	**24,89**	G2CS4R05020	**24,89**	4	75	G2CL4R05020	**32,72**
2.5	0.20	4	5	50	G2CS2R02025	**24,89**	G2CS4R02025	**24,89**				
2.5	0.50	4	5	50	G2CS2R05025	**24,89**	G2CS4R05025	**24,89**				
3	0.20	4	6	50	G2CS2R02030	**24,89**	G2CS4R02030	**24,89**	6	75	G2CL4R02030	**32,72**
3	0.50	4	6	50	G2CS2R05030	**24,89**	G2CS4R05030	**24,89**	6	75	G2CL4R05030	**32,72**
3	1.00	4	6	50	G2CS2R10030	**24,89**	G2CS4R10030	**24,89**	6	75	G2CL4R10030	**32,72**
4	0.20	4	8	50	G2CS2R02040	**24,89**	G2CS4R02040	**24,89**	8	75	G2CL4R02040	**32,72**
4	0.50	4	8	50	G2CS2R05040	**24,89**	G2CS4R05040	**24,89**	8	75	G2CL4R05040	**32,72**
4	1.00	4	8	50	G2CS2R10040	**24,89**	G2CS4R10040	**24,89**	8	75	G2CL4R10040	**32,72**
5	0.50	6	10	50	G2CS2R05050	**30,76**	G2CS4R05050	**30,76**	10	75	G2CL4R05050	**37,95**
5	1.00	6	10	50	G2CS2R10050	**30,76**	G2CS4R10050	**30,76**	10	75	G2CL4R10050	**37,95**
6	0.20	6	12	50	G2CS2R02060	**30,76**	G2CS4R02060	**30,76**				
6	0.50	6	12	50	G2CS2R05060	**30,76**	G2CS4R05060	**30,76**	12	75	G2CL4R05060	**37,95**
6	1.00	6	12	50	G2CS2R10060	**30,76**	G2CS4R10060	**30,76**	12	75	G2CL4R10060	**37,95**
6	1.50	6	12	50	G2CS2R15060	**30,76**	G2CS4R15060	**30,76**				
6	2.00	6	12	50	G2CS2R20060	**30,76**	G2CS4R20060	**30,76**				
8	0.50	8	16	60	G2CS2R05080	**52,72**	G2CS4R05080	**52,72**	16	100	G2CL4R05080	**74,86**
8	1.00	8	16	60	G2CS2R10080	**52,72**	G2CS4R10080	**52,72**	16	100	G2CL4R10080	**74,86**
8	1.50	8	16	60	G2CS2R15080	**52,72**	G2CS4R15080	**52,72**				
8	2.00	8	16	60	G2CS2R20080	**52,72**	G2CS4R20080	**52,72**	16	100	G2CL4R20080	**74,86**
10	0.50	10	20	75	G2CS2R05100	**78,12**	G2CS4R05100	**78,12**	20	100	G2CL4R05100	**102,29**
10	1.00	10	20	75	G2CS2R10100	**78,12**	G2CS4R10100	**78,12**	20	100	G2CL4R10100	**102,29**
10	1.50	10	20	75	G2CS2R15100	**78,12**	G2CS4R15100	**78,12**				
10	2.00	10	20	75	G2CS2R20100	**78,12**	G2CS4R20100	**78,12**	20	100	G2CL4R20100	**102,29**
10	2.50	10	20	75			G2CS4R25100	**78,12**				
10	3.00	10	20	75			G2CS4R30100	**78,12**				
12	0.50	12	24	75	G2CS2R05120	**101,22**	G2CS4R05120	**101,22**	24	100	G2CL4R05120	**129,45**
12	1.00	12	24	75	G2CS2R10120	**101,22**	G2CS4R10120	**101,22**	24	100	G2CL4R10120	**129,45**
12	1.50	12	24	75	G2CS2R15120	**101,22**	G2CS4R15120	**101,22**				
12	2.00	12	24	75	G2CS2R20120	**101,22**	G2CS4R20120	**101,22**	24	100	G2CL4R20120	**126,95**
12	2.50	12	24	75			G2CS4R25120	**101,22**				
12	3.00	12	24	75			G2CS4R30120	**101,22**				

PARAMETERS

★ 1st choice ☆ suitable

GB255 - catalogue page 357



OSAWA NORM | N | MG / BR | <45 HRC | 30° | BALL NOSE | Z2 BALL

G2CSB2 - catalogue page 359

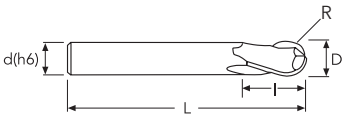


OSAWA NORM | N | MG / PV200 | <45 HRC | 30° | BALL NOSE | Z2 BALL

G2CSB4 - catalogue page 363



OSAWA NORM | N | MG / PV200 | <45 HRC | 30° | BALL NOSE | Z4 BALL



						GB255		G2CSB2		G2CSB4
P						★		★		★
M						☆		☆		☆
K						★		★		★
N						☆		☆		☆
S										
H										
D	R	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€
1	0.50	3	3	50	G2CSB2010S03	**24,95**				
1	0.50	4	2	50	GB255010	**18,97**	G2CSB2010	**20,55**	G2CSB4010	**20,83**
1.5	0.75	3	5	50	G2CSB2015S03	**24,95**				
1.5	0.75	4	3	50	GB255015	**18,97**	G2CSB2015	**20,55**	G2CSB4015	**20,83**
2	1.00	3	7	50	G2CSB2020S03	**24,95**				
2	1.00	4	4	50	GB255020	**18,97**	G2CSB2020	**20,55**	G2CSB4020	**20,83**
2.5	1.25	3	8	50	G2CSB2025S03	**24,95**				
2.5	1.25	4	5	50			G2CSB2025	**21,75**		
3	1.50	3	9	50	G2CSB2030S03	**24,95**				
3	1.50	4	6	50	GB255030	**18,97**	G2CSB2030	**20,55**	G2CSB4030	**20,83**
3.5	1.75	4	7	50			G2CSB2035	**21,75**		
4	2.00	4	8	50	GB255040	**18,97**	G2CSB2040	**20,55**	G2CSB4040	**20,83**
4.5	2.25	6	9	50			G2CSB2045	**26,13**		
5	2.50	5	10	50	G2CSB2050S05	**28,13**				
5	2.50	6	10	50	GB255050	**23,05**	G2CSB2050	**24,38**	G2CSB4050	**24,80**
5.5	2.75	6	11	50			G2CSB2055	**26,13**		
6	3.00	6	12	50	GB255060	**23,05**	G2CSB2060	**24,38**	G2CSB4060	**24,80**
6.5	3.25	8	13	60			G2CSB2065	**47,18**		
7	3.50	8	14	60			G2CSB2070	**46,04**		
8	4.00	8	16	60	GB255080	**39,30**	G2CSB2080	**41,91**	G2CSB4080	**43,36**
9	4.50	10	18	75			G2CSB2090	**58,19**		
10	5.00	10	20	75	GB255100	**57,11**	G2CSB2100	**59,38**	G2CSB4100	**62,07**
12	6.00	12	24	75	GB255120	**77,82**	G2CSB2120	**80,63**	G2CSB4120	**84,56**
16	8.00	16	30	92			G2CSB2160	**203,06**	G2CSB4160	**203,06**
20	10.00	20	30	100			G2CSB2200	**268,17**	G2CSB4200	**268,17**

PARAMETERS

★ 1st choice ☆ suitable

G2250 - catalogue page 361

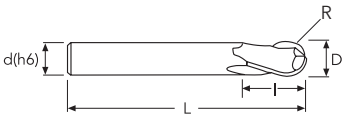


G2251 - catalogue page 361



OSAWA NORM | N | MG PV200 | <45 HRC | 30° | BALL NOSE | Z2 BALL

OSAWA NORM | N | MG PV200 | <45 HRC | 30° | BALL NOSE | Z2 BALL



	G2250	G2251
P	★	★
M	☆	☆
K	★	★
N	☆	☆
S		
H		

D	R	d(h6)	l	L	EDP No.	€	l	L	EDP No.	€
1	0.50	3	3	50	G2250010	**28,68**				
1	0.50	4	2	50	G2250010	**28,68**				
1.5	0.75	4	3	50	G2250015	**28,68**				
2	1.00	4	4	50	G2250020	**28,68**				
3	1.50	3	9	50	G2250030S03	**36,18**				
3	1.50	4	6	50	G2250030	**28,68**				
4	2.00	4	8	50	G2250040	**28,68**				
5	2.50	5	10	50	G2250050S05	**37,08**				
5	2.50	6	10	50	G2250050	**34,49**				
6	3.00	6	12	50	G2250060	**39,38**	12	150	G2251060	**59,91**
8	4.00	8	16	60	G2250080	**71,52**	16	150	G2251080	**104,75**
10	5.00	10	20	75	G2250100	**91,13**	20	150	G2251100	**132,77**
12	6.00	12	24	75	G2250120	**123,11**	24	150	G2251120	**180,18**
16	8.00	16	30	92			30	150	G2251160	**318,41**
20	10.00	20	30	100			30	150	G2251200	**508,42**



HF VH/UP

VARIABLE HELIX AND UNEQUAL PITCH
UNIVERSAL PURPOSE

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 superproduzioni 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.

HF EVOlution es la línea de fresas universales de metal duro microgranulado con inclinación y revestimientos específicos para el mecanizado de alto rendimiento de todos los materiales de la escala ISO. Las fresas HF EVOlution están disponibles en una amplia gama de tipologías, longitudes y radios tóricos. Son las herramientas ideales tanto para las superproducciones en serie como para la producción de pequeños lotes, gracias a la excelencia del rendimiento y la universalidad de empleo.

HF EVOlution - это линейка универсальных фрез Osawa из мелкозернистого твердого сплава со специальным покрытием для высокопроизводительной обработки всех материалов по ISO. Доступна широкая гамма фрез этой серии, имеющих различную длину и радиусы на уголках. Благодаря высокой эффективности и универсальности, это идеальные инструменты как для массового, так и для мелкосерийного производства.

HF UNI - VH/UP - 45° chamfer

HF840 - catalogue page 368



HF440 - catalogue page 372



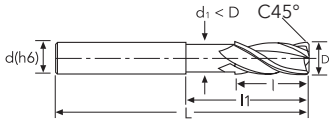
HF441 - catalogue page 377



OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | Z4 UP

OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | Z4 UP

OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | Z4 UP



	HF840	HF440	HF441
P	★	★	★
M	★	★	★
K	★	★	★
N			
S	★	★	★
H			

D	C45°	d(h6)	l	L	EDP No.	€	l	l1	d1	L	EDP No.	€	EDP No.	€
3	0.10	6	9	57	HF840030	**38,91**	9	15	2.80	57	HF440030	**39,11**	HF441030	**39,11**
4	0.10	6	11	57	HF840040	**38,91**	11	18	3.80	57	HF440040	**39,11**	HF441040	**39,11**
5	0.10	6	13	57	HF840050	**38,91**	13	19	4.80	57	HF440050	**39,11**	HF441050	**39,11**
6	0.10	6	13	57	HF840060	**38,91**	13	20	5.80	57	HF440060	**39,11**	HF441060	**39,11**
8	0.20	8	20	64	HF840080	**55,10**	20	26	7.80	64	HF440080	**55,41**	HF441080	**55,41**
10	0.20	10	22	72	HF840100	**81,44**	22	30	9.80	72	HF440100	**81,86**	HF441100	**81,86**
12	0.20	12	26	83	HF840120	**104,99**	26	36	11.80	83	HF440120	**105,46**	HF441120	**105,46**
14	0.30	14	32	90	HF840140	**140,34**	32	36	13.70	90	HF440140	**140,92**	HF441140	**140,92**
16	0.30	16	32	92	HF840160	**183,04**	32	42	15.70	92	HF440160	**183,78**	HF441160	**183,78**
18	0.30	18	32	92	HF840180	**255,64**	32	42	17.70	92			HF441180	**256,86**
20	0.40	20	38	104	HF840200	**296,69**	38	50	19.70	104	HF440200	**298,14**	HF441200	**298,59**

HF UNI - VH/UP - 45° chamfer

HF844 - catalogue page 383



HF444 - catalogue page 387



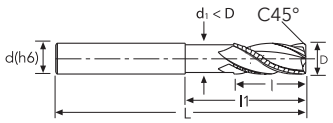
HF445 - catalogue page 391



OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | HR FINE | Z4 UP

OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | HR FINE | Z4 UP

OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | HR FINE | Z4 UP



	HF844	HF444	HF445
P	★	★	★
M	★	★	★
K	★	★	★
N			
S	★	★	★
H			

D	C45°	d(h6)	l	L	EDP No.	€	l	l1	d1	L	EDP No.	€	EDP No.	€
6	0.10	6	16	57	HF844060	**66,67**	13	20	5.80	57	HF444060	**66,65**	HF445060	**66,65**
8	0.20	8	20	64	HF844080	**75,87**	20	26	7.80	64	HF444080	**75,87**	HF445080	**75,87**
10	0.20	10	22	72	HF844100	**108,07**	22	30	9.80	72	HF444100	**108,08**	HF445100	**108,08**
12	0.20	12	26	83	HF844120	**151,74**	26	36	11.80	83	HF444120	**151,75**	HF445120	**151,75**
14	0.20	14	26	83	HF844140	**177,53**	26	36	13.70	83	HF444140	**177,54**	HF445140	**186,41**
16	0.30	16	32	92	HF844160	**217,71**	32	42	15.70	92	HF444160	**217,71**	HF445160	**228,58**
18	0.30	18	32	92	HF844180	**288,78**								
20	0.40	20	38	104	HF844200	**358,77**	38	50	19.70	104	HF444200	**358,81**	HF445200	**366,77**

HF842 - catalogue page 399



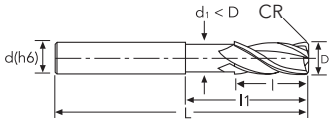
HF442 - catalogue page 403



HF443 - catalogue page 408



OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | RADIUS | Z4 UP



	HF842	HF442	HF443
P	★	★	★
M	★	★	★
K	★	★	★
N			
S	★	★	★
H			

D	CR	d(h6)	l	L	EDP No.	€	l	l1	d1	L	EDP No.	€	EDP No.	€
3	0.30	6					9	15	2.80	57	HF44203030	**42,93**	HF44303030	**42,93**
3	0.50	6					9	15	2.80	57	HF44205030	**42,93**	HF44305030	**42,93**
4	0.30	6	11	57	HF84203040	**42,93**	11	18	3.80	57	HF44203040	**42,93**	HF44303040	**42,93**
4	0.50	6	11	57	HF84205040	**42,93**	11	18	3.80	57	HF44205040	**42,93**	HF44305040	**42,93**
5	0.30	6	13	57	HF84203050	**42,93**	13	19	4.80	57	HF44203050	**42,93**		
5	0.50	6	13	57	HF84205050	**42,93**	13	19	4.80	57	HF44205050	**42,93**	HF44305050	**42,93**
6	0.30	6	13	57	HF84203060	**42,93**	13	20	5.80	57	HF44203060	**42,93**		
6	0.50	6	13	57	HF84205060	**42,93**	13	20	5.80	57	HF44205060	**42,93**	HF44305060	**42,93**
6	1.00	6	13	57	HF84210060	**42,93**	13	20	5.80	57	HF44210060	**42,93**	HF44310060	**42,93**
8	0.50	8	20	64	HF84205080	**60,86**	20	26	7.80	64	HF44205080	**60,86**	HF44305080	**60,86**
8	1.00	8	20	64	HF84210080	**60,86**	20	26	7.80	64	HF44210080	**60,86**	HF44310080	**60,86**
10	0.50	10	22	72	HF84205100	**89,91**	22	30	9.80	72	HF44205100	**89,91**	HF44305100	**89,91**
10	1.00	10	22	72	HF84210100	**89,91**	22	30	9.80	72	HF44210100	**89,91**	HF44310100	**89,91**
12	0.50	12	26	83	HF84205120	**115,94**	26	36	11.80	83	HF44205120	**115,94**	HF44305120	**115,94**
12	1.00	12	26	83	HF84210120	**115,94**	26	36	11.80	83	HF44210120	**115,94**	HF44310120	**115,94**
12	2.00	12	26	83	HF84220120	**115,94**								
12	3.00	12	26	83	HF84230120	**115,94**								
14	1.00	14	26	83	HF84210140	**155,00**	26	36	13.70	83	HF44210140	**155,00**	HF44310140	**155,00**
16	1.00	16	32	92	HF84210160	**202,10**	32	42	15.70	92	HF44210160	**202,10**	HF44310160	**202,10**
16	2.00	16	32	92	HF84220160	**202,10**	32	42	15.70	92	HF44220160	**202,10**		
16	3.00	16	32	92	HF84230160	**202,10**								
18	1.00	18	32	92	HF84210180	**282,31**								
20	1.00	20	38	104	HF84210200	**312,02**	38	50	19.70	104	HF44210200	**312,02**	HF44310200	**315,77**
20	2.00	20	38	104	HF84220200	**312,02**	38	50	19.70	104	HF44220200	**312,02**		
20	3.00	20	38	104	HF84230200	**327,62**								

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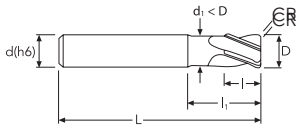
OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | RADIUS | Z4 UP



	HF342
P	★
M	★
K	★
N	
S	★
H	

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
3	0.20	6	5	9	2.80	50	HF34202030	**37,38**
4	0.20	6	6	12	3.80	50	HF34202040	**37,38**
5	0.20	6	8	14	4.80	50	HF34202050	**37,38**
6	0.30	6	9	18	5.80	55	HF34203060	**37,38**
8	0.50	8	12	24	7.80	60	HF34205080	**50,68**
10	1.00	10	15	30	9.80	70	HF34210100	**75,43**
12	1.00	12	18	35	11.80	80	HF34210120	**95,46**

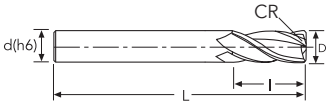
HF942 - catalogue page 416



HF943 - catalogue page 420



OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | RADIUS | Z4 UP



	HF942	HF943
P	★	★
M	★	★
K	★	★
N		
S	★	★
H		

D	CR	d(h6)	l	L	EDP No.	€	EDP No.	€
4	0.10	6	19	75	HF9420104075	**53,98**	HF9430104075	**56,96**
5	0.10	6	19	75	HF9420105075	**53,98**	HF9430105075	**56,96**
6	0.10	6	25	75	HF9420106075	**53,98**	HF9430106075	**56,96**
8	0.20	8	30	75	HF9420208075	**73,50**	HF9430208075	**77,08**
10	0.20	10	40	100	HF94202100100	**119,19**	HF94302100100	**123,96**
12	0.30	12	45	100	HF94203120100	**157,65**	HF94303120100	**162,42**
16	0.30	16	65	125	HF94203160125	**318,47**	HF94303160125	**326,83**
20	0.30	20	65	125	HF94203200125	**457,43**	HF94303200125	**466,39**

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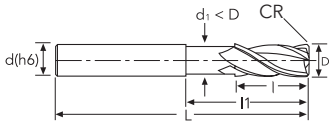
OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | RADIUS | Z4 UP



	HF542
P	★
M	★
K	★
N	
S	★
H	

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
6	0.30	6	12	30	5.80	75	HF5420306075	**50,45**
6	0.50	6	12	30	5.80	75	HF5420506075	**50,45**
6	1.00	6	12	30	5.80	75	HF5421006075	**52,11**
6	0.30	6	12	30	5.80	100	HF54203060100	**57,31**
6	0.50	6	12	30	5.80	100	HF54205060100	**57,31**
6	1.00	6	12	30	5.80	100	HF54210060100	**58,97**
8	0.50	8	16	40	7.80	100	HF54205080100	**79,68**
8	1.00	8	16	40	7.80	100	HF54210080100	**79,68**
8	2.00	8	16	40	7.80	100	HF54220080100	**81,34**
10	0.50	10	20	50	9.80	125	HF54205100125	**124,54**
10	1.00	10	20	50	9.80	125	HF54210100125	**124,54**
10	2.00	10	20	50	9.80	125	HF54220100125	**126,20**
12	0.50	12	24	60	11.80	125	HF54205120125	**165,56**
12	1.00	12	24	60	11.80	125	HF54210120125	**167,22**
12	2.00	12	24	60	11.80	125	HF54220120125	**169,44**
12	3.00	12	24	60	11.80	125	HF54230120125	**173,89**
12	0.50	12	24	60	11.80	150	HF54205120150	**187,50**
12	1.00	12	24	60	11.80	150	HF54210120150	**189,16**
12	2.00	12	24	60	11.80	150	HF54220120150	**191,37**
12	3.00	12	24	60	11.80	150	HF54230120150	**195,82**
16	0.50	16	32	80	15.70	150	HF54205160150	**298,39**
16	1.00	16	32	80	15.70	150	HF54210160150	**300,06**
16	2.00	16	32	80	15.70	150	HF54220160150	**302,27**
16	3.00	16	32	80	15.70	150	HF54230160150	**306,72**
16	4.00	16	32	80	15.70	150	HF54240160150	**307,83**
20	0.50	20	40	100	19.70	150	HF54205200150	**429,00**
20	1.00	20	40	100	19.70	150	HF54210200150	**430,66**
20	2.00	20	40	100	19.70	150	HF54220200150	**432,87**
20	3.00	20	40	100	19.70	150	HF54230200150	**437,32**
20	4.00	20	40	100	19.70	150	HF54240200150	**438,43**

HF642 - catalogue page 424



HF643 - catalogue page 427



HF742 - catalogue page 430



HF743 - catalogue page 433

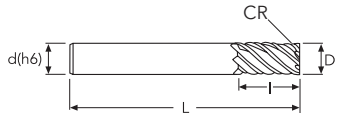


OSAWA NORM | MG PV300 | <40 HRC | 36°/37°/38° | RADIUS | Z5

OSAWA NORM | MG PV300 | <40 HRC | 36°/37°/38° | RADIUS | Z5

OSAWA NORM | MG PV300 | <40 HRC | 36°/37°/38° | RADIUS | Z5

OSAWA NORM | MG PV300 | <40 HRC | 36°/37°/38° | RADIUS | Z5



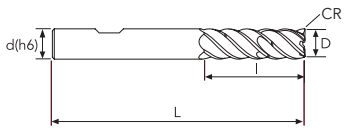
	HF642		HF643		HF742		HF743
P	★		★		★		★
M	★		★		★		★
K	★		★		★		★
N							
S	★		★		★		★
H							

D	CR	d(h6)	l	L	EDP No.	€	EDP No.	€	l	L	EDP No.	€	EDP No.	€
4	0.10	6	12	57	HF64201040	**53,20**	HF64301040	**56,12**						
5	0.10	6	13	57	HF64201050	**53,20**	HF64301050	**56,12**						
6	0.10	6	13	57	HF64201060	**53,20**	HF64301060	**56,12**	25	75	HF7420106075	**63,16**	HF7430106075	**66,08**
8	0.20	8	20	64	HF64202080	**75,93**	HF64302080	**79,44**	25	75	HF7420208075	**82,32**	HF7430208075	**85,83**
10	0.20	10	22	72	HF64202100	**99,27**	HF64302100	**103,95**	38	100	HF74202100100	**122,51**	HF74302100100	**127,18**
12	0.30	12	26	83	HF64203120	**140,18**	HF64303120	**144,85**	45	100	HF74203120100	**159,75**	HF74303120100	**164,43**
16	0.30	16	32	92	HF64203160	**225,43**	HF64303160	**233,62**	55	125	HF74203160125	**325,39**	HF74303160125	**333,58**
20	0.30	20	38	104	HF64203200	**382,92**	HF64303200	**391,70**	65	125	HF74203200125	**456,32**	HF74303200125	**465,11**

HF535T - catalogue page 436



OSAWA NORM | MG PV300 | <45 HRC | 36°/37°/38° | RADIUS | Z5 UP



	HF535T
P	★
M	☆
K	★
N	
S	☆
H	

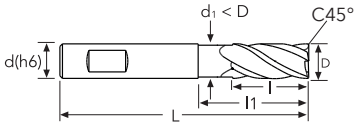
D	CR	d(h6)	l	L	EDP No.	€
10	0.10	10	35	90	HF535T010100	**138,84**
12	0.12	12	45	100	HF535T012120	**185,09**
16	0.15	16	55	115	HF535T015160	**334,34**
20	0.20	20	70	131	HF535T020200	**525,58**

OSAWA

HF471 - catalogue page 438



OSAWA NORM | MG PV300 | <40 HRC | VH 36°/39° | C45° | Z4 UP



	HF471
P	★
M	★
K	★
N	
S	★
H	

D	C45°	d(h6)	l	l1	L	EDP No.	€
1	0.1	4	3		50	HF471010	32,50
1.5	0.1	4	4.5		50	HF471015	32,50
2	0.1	4	6.5		50	HF471020	32,50
2.5	0.1	4	6.5		50	HF471025	32,50
3	0.1	6	9	15	57	HF471030	35,20
3.5	0.1	6	11	20	57	HF471035	40,49
4	0.1	6	11	20	57	HF471040	35,20
4.5	0.1	6	13	20	57	HF471045	40,49
5	0.1	6	13	20	57	HF471050	35,20
5.5	0.1	6	13	20	57	HF471055	40,49
6	0.1	6	13	20	57	HF471060	35,20
7	0.2	8	20	26	64	HF471070	57,71
8	0.2	8	20	26	64	HF471080	50,10
9	0.2	10	22	32	72	HF471090	84,90
10	0.2	10	22	32	72	HF471100	74,28
11	0.2	12	26	37	83	HF471110	107,35
12	0.2	12	26	37	83	HF471120	95,95
13	0.2	14	26	37	83	HF471130	148,30
14	0.2	14	26	37	83	HF471140	132,00
15	0.2	16	32	42	92	HF471150	181,86
16	0.2	16	32	42	92	HF471160	165,62
18	0.2	18	32	42	92	HF471180	236,00
20	0.2	20	38	50	104	HF471200	268,14

HF HARD - UP - 45° chamfer

HF850 - catalogue page 443



OSAWA NORM | MG PV300 | 30÷55 HRC | 40° | C45° | Z4 UP

HF450 - catalogue page 447

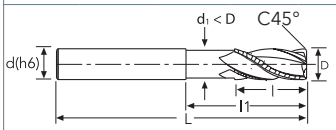


OSAWA NORM | MG PV300 | 30÷55 HRC | 40° | C45° | Z4 UP

HF451 - catalogue page 451



OSAWA NORM | MG PV300 | 30÷55 HRC | 40° | C45° | Z4 UP



	HF850	HF450	HF451
P	★	★	★
M	★	★	★
K	★	★	★
N			
S	★	★	★
H	★	★	★

D	C45°	d(h6)	HF850 l	HF850 L	HF850 EDP No.	HF850 €	HF450 l	HF450 l1	HF450 d1	HF450 L	HF450 EDP No.	HF450 €	HF451 EDP No.	HF451 €
3	0.10	6	9	57	HF850030	48,19	9	15	2.80	57	HF450030	48,17	HF451030	48,17
4	0.10	6	11	57	HF850040	48,19	11	18	3.80	57	HF450040	48,17	HF451040	48,17
5	0.10	6	13	57	HF850050	48,19	13	19	4.80	57	HF450050	48,17	HF451050	48,17
6	0.10	6	13	57	HF850060	48,19	13	20	5.80	57	HF450060	48,17	HF451060	48,17
8	0.20	8	20	64	HF850080	68,27	20	26	7.80	64	HF450080	68,27	HF451080	68,27
10	0.20	10	22	72	HF850100	100,85	22	30	9.80	72	HF450100	100,85	HF451100	100,85
12	0.20	12	26	83	HF850120	130,02	26	36	11.80	83	HF450120	130,03	HF451120	130,03
14	0.30	14	32	90	HF850140	173,85	26	36	13.70	83	HF450140	173,84	HF451140	173,84
16	0.30	16	32	92	HF850160	226,72	32	42	15.70	92	HF450160	226,69	HF451160	226,69
20	0.40	20	38	104	HF850200	350,01	38	50	19.70	104	HF450200	350,00	HF451200	350,00

OSAWA

HF852 - catalogue page 455

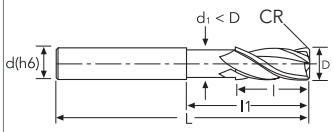


OSAWA NORM | MG PV300 | 30÷55 HRC | 40° | RADIUS | Z4 UP

HF452 - catalogue page 459



OSAWA NORM | MG PV300 | 30÷55 HRC | 40° | RADIUS | Z4 UP



	HF852	HF452
P	★	★
M	★	★
K	★	★
N		
S	★	★
H	★	★

D	C+R	d(h6)	l	L	EDP No.	€	l	l1	d1	L	EDP No.	€
3	0.30	6					9	15	2.80	57	HF45203030	**52,95**
3	0.50	6					9	15	2.80	57	HF45205030	**52,95**
4	0.30	6	11	57	HF85203040	**52,96**	11	18	3.80	57	HF45203040	**52,95**
4	0.50	6	11	57	HF85205040	**52,96**	11	18	3.80	57	HF45205040	**52,95**
5	0.30	6	15	57	HF85203050	**52,96**						
5	0.50	6	15	57	HF85205050	**52,96**	13	19	4.80	57	HF45205050	**52,95**
6	0.30	6	13	57	HF85203060	**52,96**						
6	0.50	6	13	57	HF85205060	**52,96**	13	20	5.80	57	HF45205060	**52,95**
6	1.00	6	13	57	HF85210060	**52,96**	13	20	5.80	57	HF45210060	**52,95**
8	0.50	8	20	64	HF85205080	**75,12**	20	26	7.80	64	HF45205080	**75,12**
8	1.00	8	20	64	HF85210080	**75,12**	20	26	7.80	64	HF45210080	**75,12**
10	0.50	10	22	72	HF85205100	**110,94**	22	30	9.80	72	HF45205100	**110,94**
10	1.00	10	22	72	HF85210100	**110,94**	22	30	9.80	72	HF45210100	**110,94**
12	0.50	12	26	83	HF85205120	**143,08**	26	36	11.80	83	HF45205120	**143,09**
12	1.00	12	26	83	HF85210120	**143,08**	26	36	11.80	83	HF45210120	**143,09**
12	2.00	12	26	83	HF85220120	**143,08**						
12	3.00	12	26	83	HF85230120	**143,08**						
14	1.00	14	26	83	HF85210140	**191,30**						
16	1.00	16	32	92	HF85210160	**249,41**	32	42	15.70	92	HF45210160	**249,36**
16	2.00	16	32	92	HF85220160	**249,41**	32	42	15.70	92	HF45220160	**249,36**
20	1.00	20	38	104	HF85210200	**384,96**	38	50	19.70	104	HF45210200	**384,97**
20	2.00	20	38	104	HF85220200	**384,96**	38	50	19.70	104	HF45220200	**384,97**



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.

Micrograno ultrafino y revestimiento Endless Black para el mecanizado a alto rendimiento de aceros al carbono, aceros inoxidables, HRSA y aleaciones de titanio. La geometría y revestimiento específicos permiten generar bajos esfuerzos de corte y reducción del coeficiente de rozamiento, garantizando una reducción del desarrollo de calor con la consiguiente ralentización del proceso de desgaste del filo.

Микрозернистая супермелкая структура твердого сплава и покрытие Endless Black служат для высокоэффективной обработки нержавеющей стали, жаропрочных и титановых сплавов, низко- и высокоуглеродистых сталей. Специальные геометрия и покрытие позволяют снизить трение и тепловыделение при резании и, тем самым, увеличить стойкость инструмента.

MEF - Stainless steel and super alloys - Square

MEFCS2 - catalogue page 464



OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 35° | SQUARE | Z2

MEFCSH3 - catalogue page 466



OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 50° | SQUARE | Z3 (≤ Ø18) / Z4 (> Ø18)

MEFCS4 - catalogue page 468

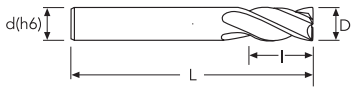


OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 35° | SQUARE | Z4

MEF600 - catalogue page 470



OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 50° | SQUARE | Z6~Z8



	MEFCS2	MEFCSH3	MEFCS4	MEF600
P	★	★	★	★
M	★	★	★	★
K				
N				
S	★	★	★	★
H				

D	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€	l	L	z	EDP No.	€
1	4	2.5	40	MEFCS2010	**51,50**									
1.5	4	4	40	MEFCS2015	**51,50**									
2	4	6	40	MEFCS2020	**46,79**			MEFCS4020	**46,79**					
2.5	4	8	40	MEFCS2025	**46,79**			MEFCS4025	**46,79**					
3	6	8	45	MEFCS2030	**67,62**			MEFCS4030	**67,62**					
4	6	11	45	MEFCS2040	**67,62**			MEFCS4040	**67,62**					
5	6	13	50	MEFCS2050	**67,62**			MEFCS4050	**67,62**					
6	6	13	50	MEFCS2060	**67,62**	MEFCSH3060	**87,88**	MEFCS4060	**67,62**	13	57	6	MEF600060	**79,16**
8	8	19	60	MEFCS2080	**86,55**	MEFCSH3080	**112,65**	MEFCS4080	**86,55**	19	63	6	MEF600080	**100,33**
10	10	22	70	MEFCS2100	**128,20**	MEFCSH3100	**166,61**	MEFCS4100	**128,20**	22	72	6	MEF600100	**150,15**
12	12	26	75	MEFCS2120	**175,76**	MEFCSH3120	**228,53**	MEFCS4120	**175,76**	26	83	6	MEF600120	**204,05**
14	14	26	85	MEFCS2140	**291,58**			MEFCS4140	**291,58**					
16	16	32	100	MEFCS2160	**291,58**	MEFCSH3160	**379,10**	MEFCS4160	**291,58**	32	92	6	MEF600160	**343,08**
18	18					MEFCSH3180	**554,16**							
20	20					MEFCSH4200	**628,61**	MEFCS4200	**483,45**	38	104	8	MEF600200	**504,07**

MEF - Stainless steel and super alloys - Roughing - 45° chamfer

MEF901 - catalogue page 472

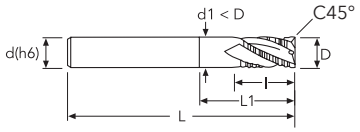


OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 45° | C45° | HR FINE | Z3~Z6

MEF902 - catalogue page 474



OSAWA NORM | VA | UMG ENDLESS | <45 HRC | 45° | C45° | HR FINE | Z4~Z6



	MEF901	MEF902
P	★	★
M	★	★
K		
N		
S	★	★
H		

D	C45°	d(h6)	l	L	z	EDP No.	€	l	l1	d1	L	z	EDP No.	€
4	0.10	6	11	57	3	MEF901040	**89,92**							
5	0.10	6	13	57	4	MEF901050	**89,92**							
6	0.15	6	16	57	4	MEF901060	**89,92**	16	20	5.50	57	4	MEF902060	**108,00**
8	0.20	8	16	63	4	MEF901080	**105,26**	16	26	7.50	63	4	MEF902080	**126,16**
10	0.20	10	22	72	4	MEF901100	**157,19**	22	31	9.50	72	4	MEF902100	**188,77**
12	0.20	12	26	83	4	MEF901120	**201,80**	26	37	11.50	83	4	MEF902120	**242,18**
14	0.20	14	26	83	5	MEF901140	**244,93**							
16	0.20	16	32	92	5	MEF901160	**328,87**	32	51	15.50	92	5	MEF902160	**394,73**
20	0.20	20	38	104	6	MEF901200	**529,40**	38	59	19.20	104	6	MEF902200	**635,29**

PARAMETERS

★ 1st choice ☆ suitable



ALU

NON-FERROUS MATERIALS

Uncoated micrograin carbide and cutting geometry specifically developed for non-ferrous machining. Lapped cutting edges and ad-hoc profile of the chip pocket for low cutting forces 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.

Micrograna no revestida y geometría de corte desarrollada específicamente para la elaboración de materiales no ferrosos. Filos de corte lapeados y perfil especial del compartimento de virutas, para bajos esfuerzos de corte y un excelente acabado de la superfície. También está disponible la versión HF Alu con paso diferenciado (UP) con un diseño especial que permite acabados a espejo y elaboraciones D x D, incluso en la versión de 4 filos.

Мелкозернистый твердый сплав без покрытия со специально разработанной геометрией для обработки цветных металлов. Доведенные режущие кромки и специальный профиль стружечных канавок снижают силы резания и улучшают качество обработанной поверхности. Также доступна версия HF Alu с неравномерным шагом (UP) и специальной геометрией, позволяющяя получать зеркальную поверхность и работать в режиме DxD, в том числе для версии с 4-мя зубьями.

OSAWA

MDCSA1 - catalogue page 490

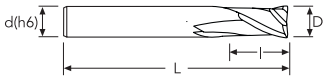


OSAWA NORM | ALU | MG POLISHED | 25° | SQUARE | Z1

MDCSA2 - catalogue page 492



OSAWA NORM | ALU | MG POLISHED | 45° | SQUARE | Z2



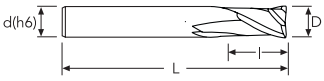
	MDCSA1	MDCSA2
P		
M		
K		
N	★	★
S		
H		

D(e8)	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
1						4	3	40	MDCSA2010	**27,91**
1.5						4	4.5	40	MDCSA2015	**27,91**
2	2	10	40	MDCSA1020	**25,95**	4	6.5	40	MDCSA2020	**27,91**
2.5						4	6.5	40	MDCSA2025	**27,91**
3	3	12	40	MDCSA1030	**25,95**	6	8	57	MDCSA2030	**35,77**
4	4	15	50	MDCSA1040	**33,49**	6	11	57	MDCSA2040	**35,77**
5	5	16	50	MDCSA1050	**38,41**	6	13	57	MDCSA2050	**35,77**
6	6	20	60	MDCSA1060	**48,59**	6	13	57	MDCSA2060	**35,77**
8	8	22	63	MDCSA1080	**74,46**	8	19	63	MDCSA2080	**57,29**
10	10	25	72	MDCSA1100	**110,70**	10	22	72	MDCSA2100	**86,28**
12	12	30	83	MDCSA1120	**157,48**	12	26	83	MDCSA2120	**120,97**
14						14	26	83	MDCSA2140	**164,87**
16						16	32	92	MDCSA2160	**208,04**
18						18	32	92	MDCSA2180	**268,32**
20						20	38	104	MDCSA2200	**347,34**

HFAL4 - catalogue page 478



OSAWA NORM | ALU | MG BR | 40° | SQUARE | Z4 UP



	HFAL4
P	
M	
K	
N	★
S	
H	

D(e8)	d(h6)	l	L	EDP No.	€
3	6	9	57	HFAL4030	**38,93**
4	6	12	57	HFAL4040	**38,93**
5	6	13	57	HFAL4050	**38,93**
6	6	13	57	HFAL4060	**38,93**
8	8	20	64	HFAL4080	**55,12**
10	10	22	72	HFAL4100	**81,46**
12	12	26	83	HFAL4120	**105,01**
14	14	32	90	HFAL4140	**140,36**
16	16	32	92	HFAL4160	**183,02**
20	20	38	104	HFAL4200	**296,68**

MDCSA3 - catalogue page 495

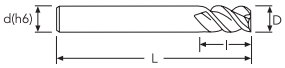


OSAWA NORM | ALU | MG POLISHED | 55° | SQUARE | Z3

MDA310 - catalogue page 497



OSAWA NORM | ALU | MG POLISHED | 55° | SQUARE | Z3



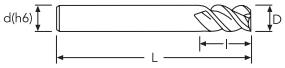
	MDCSA3	MDA310
P		
M		
K		
N	★	★
S		
H		

D	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
1	4	3	50	MDCSA3010	**22,87**					
1.5	4	4.5	50	MDCSA3015	**22,87**					
2	4	6	50	MDCSA3020	**22,87**					
3	4	8	50	MDCSA3030	**22,87**	6	12	75	MDA310030	**39,65**
4	4	11	50	MDCSA3040	**22,87**	6	16	75	MDA310040	**39,65**
5	6	13	50	MDCSA3050	**27,43**	6	20	75	MDA310050	**39,70**
6	6	15	50	MDCSA3060	**27,43**	6	25	75	MDA310060	**39,70**
8	8	20	60	MDCSA3080	**45,40**					
10	10	25	75	MDCSA3100	**68,08**					
12	12	30	75	MDCSA3120	**92,39**					
16	16	40	100	MDCSA3160	**205,95**					
20	20	40	100	MDCSA3200	**284,11**					

MDA311 - MDA312 - catalogue page 497



OSAWA NORM | ALU | MG POLISHED | 55° | SQUARE | Z3



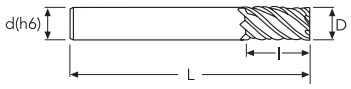
	MDA311	MDA312
P		
M		
K		
N	★	★
S		
H		

D	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
3	6	15	100	MDA311030	**49,44**					
4	6	20	100	MDA311040	**49,44**					
5	6	25	100	MDA311050	**49,55**					
6	6	30	100	MDA311060	**49,55**					
8	8	35	100	MDA311080	**73,68**	8	40	150	MDA312080	**109,40**
10	10	40	100	MDA311100	**95,20**	10	50	150	MDA312100	**129,04**
12	12	45	100	MDA311120	**130,74**	12	50	150	MDA312120	**177,98**
16						16	70	150	MDA312160	**319,94**
20						20	80	150	MDA312200	**422,82**

MDCSAM - catalogue page 500



OSAWA NORM | ALU | MG POLISHED | 50° | SQUARE | Z6



MDCSAM

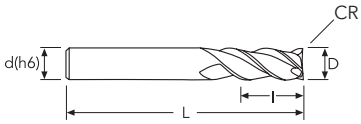
P	
M	
K	
N	★
S	
H	

D	d(h6)	l	L	EDP No.	€
6	6	15	57	MDCSAM060	**67,80**
8	8	20	64	MDCSAM080	**98,26**
10	10	22	75	MDCSAM100	**123,39**
12	12	25	75	MDCSAM120	**161,08**

HFAL3 - catalogue page 481



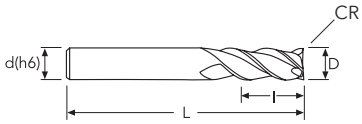
OSAWA NORM | ALU | MG POLISHED | 30° | RADIUS | Z3 UP



HFAL3

P	
M	
K	
N	★
S	
H	

D	CR	d(h6)	l	L	EDP No.	€
1	0.10	6	3	50	HFAL301010030	**42,59**
1	0.10	6	5	50	HFAL301010050	**42,59**
1.5	0.10	6	4.5	50	HFAL301015045	**42,59**
1.5	0.10	6	6	50	HFAL301015060	**42,59**
1.5	0.10	6	8	50	HFAL301015080	**42,59**
2	0.10	6	3	50	HFAL301020030	**42,59**
2	0.10	6	5	50	HFAL301020050	**42,59**
2	0.10	6	6.5	50	HFAL301020	**42,59**
2	0.10	6	8	50	HFAL301020080	**42,59**
2	0.10	6	10	50	HFAL301020100	**42,59**
3	0.10	6	6	50	HFAL301030060	**42,59**



HFAL3

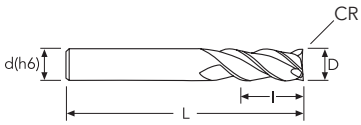
P	
M	
K	
N	★
S	
H	

D	CR	d(h6)	l	L	EDP No.	€
3	0.10	6	9	50	HFAL301030	**42,59**
3	0.10	6	12	50	HFAL301030120	**42,59**
4	0.10	6	12	50	HFAL301040	**42,59**
5	0.10	6	15	50	HFAL301050	**42,59**
6	0.10	6	20	60	HFAL301060	**48,91**
8	0.10	8	20	64	HFAL301080	**69,10**
10	0.10	10	22	75	HFAL301100	**97,90**
12	0.10	12	25	75	HFAL301120	**129,55**
14	0.10	14	32	90	HFAL301140	**191,15**
16	0.10	16	32	90	HFAL301160	**241,67**
20	0.10	20	38	100	HFAL301200	**355,42**

HFA3D - catalogue page 484



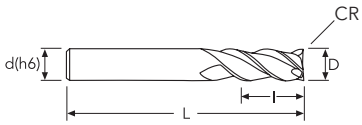
OSAWA NORM | ALU | MG DLC | 30° | RADIUS | Z3 UP



HFA3D

P	
M	
K	
N	★
S	
H	

D	CR	d(h6)	l	L	EDP No.	€
1	0.10	6	3	50	HFA3D01010030	**52,43**
1	0.10	6	5	50	HFA3D01010050	**52,43**
1,5	0.10	6	4.5	50	HFA3D01015045	**52,43**
1,5	0.10	6	6	50	HFA3D01015060	**52,43**
2	0.10	6	5	50	HFA3D01020050	**52,43**
2	0.10	6	6.5	50	HFA3D01020065	**52,43**
2	0.10	6	8	50	HFA3D01020080	**52,43**



HFA3D

P	
M	
K	
N	★
S	
H	

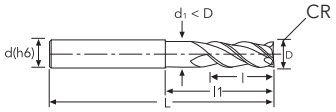
D	CR	d(h6)	l	L	EDP No.	€
3	0.10	6	6	50	HFA3D01030060	**52,43**
3	0.10	6	9	50	HFA3D01030090	**52,43**
3	0.10	6	12	50	HFA3D01030120	**52,43**
4	0.10	6	12	50	HFA3D01040120	**52,43**
6	0.10	6	20	60	HFA3D01060	**60,70**
8	0.10	8	20	64	HFA3D01080	**81,16**
10	0.10	10	22	75	HFA3D01100	**109,85**

OSAWA

HFA53 - catalogue page 487



OSAWA NORM | ALU | MG / BR | 30° | RADIUS | Z3 UP



HFA53

P	
M	
K	
N	★
S	
H	

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
3	0.20	6	5	18	2.80	60	HFA5302030	48,96
3	0.50	6	5	18	2.80	60	HFA5305030	48,96
4	0.50	6	6	22	3.80	60	HFA5305040	44,86
4	1.00	6	6	22	3.80	60	HFA5310040	44,86
5	0.50	6	8	24	4.80	60	HFA5305050	46,77
5	1.00	6	8	24	4.80	60	HFA5310050	46,77
6	0.50	6	9	29	5.80	65	HFA5305060	53,84
6	1.00	6	9	29	5.80	65	HFA5310060	53,84
6	2.00	6	9	29	5.80	65	HFA5320060	53,84
8	0.50	8	12	39	7.80	75	HFA5305080	78,18
8	1.00	8	12	39	7.80	75	HFA5310080	78,18
8	2.00	8	12	39	7.80	75	HFA5320080	78,18
8	3.00	8	12	39	7.80	75	HFA5330080	78,18
10	0.50	10	15	52	9.80	100	HFA5305100	116,63
10	1.00	10	15	52	9.80	100	HFA5310100	118,99
10	2.00	10	15	52	9.80	100	HFA5320100	118,99
10	3.00	10	15	52	9.80	100	HFA5330100	118,99
10	4.00	10	15	52	9.80	100	HFA5340100	118,99
12	0.50	12	18	62	11.80	120	HFA5305120	182,84
12	1.00	12	18	62	11.80	120	HFA5310120	185,56
12	2.00	12	18	62	11.80	120	HFA5320120	185,56
12	3.00	12	18	62	11.80	120	HFA5330120	185,56
12	4.00	12	18	62	11.80	120	HFA5340120	185,56
16	0.50	16	24	82	15.70	130	HFA5305160	327,60
16	1.00	16	24	82	15.70	130	HFA5310160	330,62
16	2.00	16	24	82	15.70	130	HFA5320160	330,62
16	3.00	16	24	82	15.70	130	HFA5330160	330,62
16	4.00	16	24	82	15.70	130	HFA5340160	330,62
20	0.50	20	30	100	19.70	150	HFA5305200	511,91
20	1.00	20	30	100	19.70	150	HFA5310200	514,93
20	2.00	20	30	100	19.70	150	HFA5320200	514,93
20	3.00	20	30	100	19.70	150	HFA5330200	514,93
20	4.00	20	30	100	19.70	150	HFA5340200	514,93

PARAMETERS

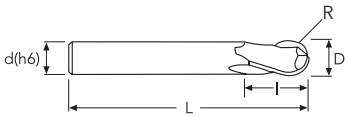
★ 1st choice ☆ suitable

OSAWA

MDCAB2 - catalogue page 504



OSAWA NORM | ALU | MG POLISHED | 40° | BALL NOSE | Z2 BALL



MDCAB2

P	
M	
K	
N	★
S	
H	

D	R	d(h6)	l	L	EDP No.	€
1	0.50	4	2	50	MDCAB2010	**26,67**
1.5	0.75	4	3	50	MDCAB2015	**26,67**
2	1.00	4	4	50	MDCAB2020	**26,67**
3	1.50	4	6	50	MDCAB2030	**26,67**
4	2.00	4	8	50	MDCAB2040	**26,67**
5	2.50	6	10	50	MDCAB2050	**33,39**
6	3.00	6	12	50	MDCAB2060	**33,39**
8	4.00	8	16	60	MDCAB2080	**53,42**
10	5.00	10	20	75	MDCAB2100	**83,37**
12	6.00	12	24	75	MDCAB2120	**112,99**



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: Micrograno ultrafino y revestimiento Endless Orange para el mecanizado a alto rendimiento de materiales con una dureza comprendida entre 30 y 55 HRC. MH: Amplia gama para satisfacer aplicaciones de fresado general, copiado y súper acabado (30÷70 HRC).

MEX: Микрозернистая структура твердого сплава и покрытие Endless Orange служат для высокоэффективной обработки материалов с твёрдостью 30÷55 HRC. MH: Широкий ассортимент для профилированной и суперфинишной обработки (30 ÷ 70 HRC).

OSAWA

MEXM2 - catalogue page 508

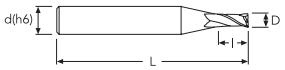


MEXM2SC - catalogue page 510



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



	MEXM2	MEXM2	MEXM2SC
P	★	★	★
M			
K	★	★	★
N			
S			
H	★	★	★

D	d(h6)	l	L	EDP No.	€	D	d(h6)	l	L	EDP No.	€	D	d(h6)	l	L	EDP No.	€
0.3	4	0.6	40	MEXM20030	**63,92**	1.2	3	2.4	40	MEXM20120	**44,71**	0.2	4	0.3	50	MEXM2SC0020	**70,26**
0.4	4	0.8	40	MEXM20040	**55,78**	1.3	3	2.6	40	MEXM20130	**44,71**	0.3	4	0.4	50	MEXM2SC0030	**63,87**
0.5	4	1	40	MEXM20050	**48,77**	1.4	3	2.8	40	MEXM20140	**44,71**	0.4	4	0.6	50	MEXM2SC0040	**55,77**
0.6	4	1.2	40	MEXM20060	**48,77**	1.5	3	3	40	MEXM20150	**44,71**	0.5	4	0.7	50	MEXM2SC0050	**48,80**
0.7	4	1.4	40	MEXM20070	**48,77**	1.6	3	3.2	40	MEXM20160	**38,35**	0.6	4	0.9	50	MEXM2SC0060	**48,80**
0.8	4	1.6	40	MEXM20080	**44,71**	1.7	3	3.4	40	MEXM20170	**38,35**	0.7	4	1	50	MEXM2SC0070	**48,80**
0.9	4	1.8	40	MEXM20090	**44,71**	1.8	3	3.6	40	MEXM20180	**38,35**	0.8	4	1.2	50	MEXM2SC0080	**44,71**
1	3	2	40	MEXM20100	**44,71**	1.9	3	3.8	40	MEXM20190	**38,35**	0.9	4	1.4	50	MEXM2SC0090	**44,71**
1.1	3	2.2	40	MEXM20110	**44,71**	2	3	4	40	MEXM20200	**38,35**						

MEXCS2 - catalogue page 517



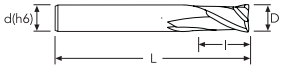
MEXCL2 - catalogue page 519



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

≥ Ø14

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



	MEXCS2	MEXCL2
P	★	★
M		
K	★	★
N		
S		
H	★	★

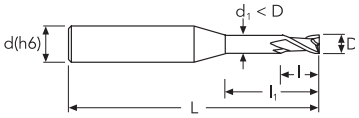
D	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
1	4	2.5	40	MEXCS2010	**50,55**	6	8	60	MEXCL2010	**81,22**
1.5	4	4	40	MEXCS2015	**50,55**	6	12	60	MEXCL2015	**81,22**
2	4	6	40	MEXCS2020	**45,98**	6	12	60	MEXCL2020	**78,11**
2.5	4	8	40	MEXCS2025	**45,98**					
3	6	8	55	MEXCS2030	**66,88**	6	15	60	MEXCL2030	**80,80**
3.5	6	10	55	MEXCS2035	**66,88**					
4	6	10	55	MEXCS2040	**66,88**	6	20	60	MEXCL2040	**80,80**
4.5	6	12	55	MEXCS2045	**65,57**					
5	6	13	55	MEXCS2050	**66,88**	6	25	70	MEXCL2050	**82,05**
5.5	6	14	55	MEXCS2055	**65,57**					
6	6	15	60	MEXCS2060	**66,88**	6	25	70	MEXCL2060	**82,34**
6.5	8	17	65	MEXCS2065	**83,54**					
7	8	18	65	MEXCS2070	**83,48**					
8	8	20	70	MEXCS2080	**85,19**	8	30	80	MEXCL2080	**103,72**
8.5	10	21	70	MEXCS2085	**123,43**					
9	10	23	70	MEXCS2090	**123,43**					
10	10	22	75	MEXCS2100	**125,87**	10	35	90	MEXCL2100	**131,99**
11	12	28	75	MEXCS2110	**169,31**					
12	12	26	80	MEXCS2120	**172,66**	12	40	90	MEXCL2120	**193,41**
14	14	32	90	MEXCS2140	**196,37**					
16	16	32	90	MEXCS2160	**255,34**					
18	18	38	100	MEXCS2180	**346,94**					
20	20	38	100	MEXCS2200	**425,52**					

OSAWA

MEXLN2 - catalogue page 512

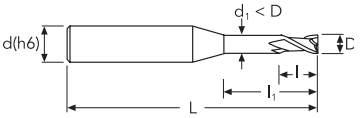


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



	MEXLN2
P	★
M	
K	★
N	
S	
H	★

D	d(h6)	l	l1	d1	L	EDP No.	€
0.2	4	0.3	0.5	0.16	50	MEXLN2002005	**78,28**
0.2	4	0.3	1	0.16	50	MEXLN200201	**78,28**
0.2	4	0.3	1.5	0.16	50	MEXLN2002015	**78,28**
0.3	4	0.4	1	0.26	50	MEXLN200301	**71,19**
0.3	4	0.4	2	0.26	50	MEXLN200302	**71,19**
0.3	4	0.4	3	0.26	50	MEXLN200303	**71,19**
0.4	4	0.6	2	0.37	50	MEXLN200402	**67,61**
0.4	4	0.6	3	0.37	50	MEXLN200403	**67,61**
0.4	4	0.6	4	0.37	50	MEXLN200404	**67,61**
0.4	4	0.6	5	0.37	50	MEXLN200405	**67,61**
0.5	4	0.7	2	0.45	50	MEXLN200502	**64,04**
0.5	4	0.7	4	0.45	50	MEXLN200504	**64,04**
0.5	4	0.7	6	0.45	50	MEXLN200506	**64,04**
0.5	4	0.7	8	0.45	50	MEXLN200508	**64,04**
0.6	4	0.9	2	0.55	50	MEXLN200602	**64,04**
0.6	4	0.9	4	0.55	50	MEXLN200604	**64,04**
0.6	4	0.9	6	0.55	50	MEXLN200606	**64,04**
0.6	4	0.9	8	0.55	50	MEXLN200608	**64,04**
0.6	4	0.9	10	0.55	50	MEXLN200610	**64,04**
0.7	4	1.0	2	0.65	50	MEXLN200702	**56,95**
0.7	4	1.0	4	0.65	50	MEXLN200704	**56,95**
0.7	4	1.0	6	0.65	50	MEXLN200706	**56,95**
0.7	4	1.0	8	0.65	50	MEXLN200708	**56,95**
0.7	4	1.0	10	0.65	50	MEXLN200710	**56,95**
0.8	4	1.2	4	0.75	50	MEXLN200804	**56,95**
0.8	4	1.2	6	0.75	50	MEXLN200806	**56,95**
0.8	4	1.2	8	0.75	50	MEXLN200808	**56,95**
0.8	4	1.2	10	0.75	50	MEXLN200810	**56,95**
0.8	4	1.2	12	0.75	50	MEXLN200812	**56,95**
0.9	4	1.4	6	0.85	50	MEXLN200906	**56,95**
0.9	4	1.4	8	0.85	50	MEXLN200908	**56,95**
0.9	4	1.4	10	0.85	50	MEXLN200910	**56,95**
0.9	4	1.4	15	0.85	50	MEXLN200915	**56,95**
1	4	1.5	6	0.95	50	MEXLN201006	**53,38**
1	4	1.5	8	0.95	50	MEXLN201008	**53,38**
1	4	1.5	10	0.95	50	MEXLN201010	**53,38**
1	4	1.5	12	0.95	50	MEXLN201012	**53,38**
1	4	1.5	14	0.95	50	MEXLN201014	**53,38**
1	4	1.5	16	0.95	50	MEXLN201016	**53,38**
1.2	4	1.8	6	1.15	50	MEXLN201206	**53,38**
1.2	4	1.8	8	1.15	50	MEXLN201208	**53,38**
1.2	4	1.8	10	1.15	50	MEXLN201210	**53,38**
1.2	4	1.8	12	1.15	50	MEXLN201212	**53,38**
1.4	4	2.1	6	1.35	50	MEXLN201406	**53,38**
1.4	4	2.1	8	1.35	50	MEXLN201408	**53,38**
1.4	4	2.1	10	1.35	50	MEXLN201410	**53,38**
1.4	4	2.1	12	1.35	50	MEXLN201412	**53,38**
1.4	4	2.1	16	1.35	50	MEXLN201416	**53,38**
1.5	4	2.3	6	1.45	50	MEXLN201506	**53,38**
1.5	4	2.3	8	1.45	50	MEXLN201508	**53,38**
1.5	4	2.3	10	1.45	50	MEXLN201510	**53,38**
1.5	4	2.3	12	1.45	50	MEXLN201512	**53,38**
1.5	4	2.3	14	1.45	50	MEXLN201514	**53,38**
1.5	4	2.3	16	1.45	50	MEXLN201516	**53,38**
1.5	4	2.3	18	1.45	60	MEXLN201518	**53,38**
1.5	4	2.3	20	1.45	60	MEXLN201520	**53,38**
1.6	4	2.4	6	1.55	50	MEXLN201606	**53,38**
1.6	4	2.4	8	1.55	50	MEXLN201608	**53,38**



	MEXLN2
P	★
M	
K	★
N	
S	
H	★

D	d(h6)	l	l1	d1	L	EDP No.	€
1.6	4	2.4	10	1.55	50	MEXLN201610	**53,38**
1.6	4	2.4	12	1.55	50	MEXLN201612	**53,38**
1.6	4	2.4	14	1.55	50	MEXLN201614	**53,36**
1.6	4	2.4	16	1.55	50	MEXLN201616	**53,38**
1.6	4	2.4	18	1.55	60	MEXLN201618	**53,38**
1.6	4	2.4	20	1.55	60	MEXLN201620	**53,38**
1.8	4	2.7	6	1.75	50	MEXLN201806	**53,38**
1.8	4	2.7	8	1.75	50	MEXLN201808	**53,36**
1.8	4	2.7	10	1.75	50	MEXLN201810	**53,38**
1.8	4	2.7	12	1.75	50	MEXLN201812	**53,38**
1.8	4	2.7	16	1.75	50	MEXLN201816	**53,38**
1.8	4	2.7	20	1.75	60	MEXLN201820	**53,38**
2	4	3.0	6	1.95	50	MEXLN202006	**53,38**
2	4	3.0	8	1.95	50	MEXLN202008	**53,38**
2	4	3.0	10	1.95	50	MEXLN202010	**53,38**
2	4	3.0	12	1.95	50	MEXLN202012	**53,38**
2	4	3.0	14	1.95	50	MEXLN202014	**53,38**
2	4	3.0	16	1.95	50	MEXLN202016	**53,38**
2	4	3.0	18	1.95	60	MEXLN202018	**53,38**
2	4	3.0	20	1.95	60	MEXLN202020	**53,38**
2	4	3.0	25	1.95	75	MEXLN202025	**56,95**
2	4	3.0	30	1.95	75	MEXLN202030	**56,95**
2.5	4	3.7	8	2.40	50	MEXLN202508	**53,38**
2.5	4	3.7	10	2.40	50	MEXLN202510	**53,38**
2.5	4	3.7	12	2.40	50	MEXLN202512	**53,38**
2.5	4	3.7	16	2.40	50	MEXLN202516	**53,38**
2.5	4	3.7	20	2.40	60	MEXLN202520	**53,38**
2.5	4	3.7	25	2.40	60	MEXLN202525	**53,38**
2.5	4	3.7	30	2.40	75	MEXLN202530	**56,95**
3	6	4.5	8	2.85	50	MEXLN203008	**71,19**
3	6	4.5	10	2.85	50	MEXLN203010	**71,19**
3	6	4.5	12	2.85	50	MEXLN203012	**71,19**
3	6	4.5	14	2.85	50	MEXLN203014	**71,19**
3	6	4.5	16	2.85	60	MEXLN203016	**71,19**
3	6	4.5	18	2.85	60	MEXLN203018	**71,19**
3	6	4.5	20	2.85	60	MEXLN203020	**71,19**
3	6	4.5	25	2.85	75	MEXLN203025	**85,43**
4	6	4.5	10	3.85	60	MEXLN204010	**71,19**
4	6	4.5	15	3.85	60	MEXLN204015	**71,19**
4	6	4.5	20	3.85	60	MEXLN204020	**71,19**
4	6	4.5	25	3.85	75	MEXLN204025	**85,43**
4	6	4.5	30	3.85	75	MEXLN204030	**85,43**
4	6	4.5	40	3.85	75	MEXLN204040	**85,43**

PARAMETERS

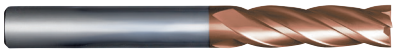
★ 1st choice ☆ suitable

MEX400 - catalogue page 521

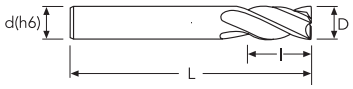


OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z4 UP

MEXCL4 - catalogue page 523



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z4



	MEX400					MEXCL4					MEXCL4				
P	★					★					★				
M															
K	★					★					★				
N															
S															
H	★					★					★				
D	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
1	4	3	50	MEX400010	**38,35**										
1.5	4	4.5	50	MEX400015	**38,35**										
2	4	6	40	MEX400020	**39,07**	6	8	60	MEXCL4020	**88,13**					
2.5	4	8	40	MEX400025	**39,07**										
3	6	8	55	MEX400030	**59,31**	6	15	60	MEXCL4030	**88,13**	6	25	100	MEXCL4030100	**91,27**
3.5	6	10	55	MEX400035	**59,31**										
4	6	11	55	MEX400040	**59,31**	6	20	60	MEXCL4040	**88,13**	6	31	100	MEXCL4040100	**91,27**
4.5	6	11	45	MEX400045	**59,31**										
5	6	13	55	MEX400050	**59,31**	6	25	70	MEXCL4050	**89,83**	6	31	100	MEXCL4050100	**91,27**
5.5	6	13	55	MEX400055	**59,31**										
6	6	15	60	MEX400060	**59,31**	6	25	70	MEXCL4060	**89,83**	6	38	100	MEXCL4060100	**91,27**
6.5	8	17	65	MEX400065	**78,99**										
7	8	18	65	MEX400070	**78,99**										
8	8	20	70	MEX400080	**75,29**	8	30	80	MEXCL4080	**113,14**	8	41	100	MEXCL4080100	**117,35**
9	10	23	70	MEX400090	**104,99**										
10	10	22	75	MEX400100	**104,99**	10	35	90	MEXCL4100	**144,73**	10	57	125	MEXCL4100125	**182,62**
11	12	28	75	MEX400110	**150,80**										
12	12	26	80	MEX400120	**143,66**	12	40	90	MEXCL4120	**210,94**	12	75	150	MEXCL4120150	**271,08**
14	14	35	90	MEX400140	**181,70**	12	50	110	MEXCL4140	**370,76**	12	75	150	MEXCL4140150	**365,03**
16	16	32	100	MEX400160	**237,35**	16	50	110	MEXCL4160	**370,76**	16	75	150	MEXCL4160150	**450,08**
20	20	40	100	MEX400200	**392,88**	20	50	110	MEXCL4200	**614,61**	20	75	150	MEXCL4200150	**686,39**
25	25	40	100	MEX400250	**630,75**	25	70	130	MEXCL4250	**955,75**					

MEXCSHM - catalogue page 525

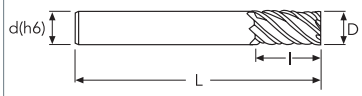


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 50° | SQUARE | Z6~Z8

MEXCLHM - catalogue page 527



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 50° | SQUARE | Z6~Z8



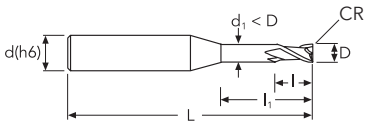
		MEXCSHM		MEXCLHM
P		★		★
M				
K		★		★
N				
S				
H		★		★

D	d(h6)	l	L	z	EDP No.	€	l	L	z	EDP No.	€
3	6	8	50	6	MEXCSHM030	**72,48**	19	75	6	MEXCLHM030	**95,16**
4	6	11	50	6	MEXCSHM040	**72,48**	19	75	6	MEXCLHM040	**95,16**
5	6	13	50	6	MEXCSHM050	**72,48**	19	75	6	MEXCLHM050	**95,16**
6	6	15	60	6	MEXCSHM060	**73,13**	25	80	6	MEXCLHM060	**99,17**
8	8	20	70	6	MEXCSHM080	**96,87**	40	100	6	MEXCLHM080	**134,99**
10	10	25	80	6	MEXCSHM100	**144,72**	45	120	6	MEXCLHM100	**219,38**
12	12	30	80	6	MEXCSHM120	**198,39**	60	120	6	MEXCLHM120	**310,36**
14	14	30	90	6	MEXCSHM140	**225,89**					
16	16	40	100	6	MEXCSHM160	**329,67**	80	150	6	MEXCLHM160	**556,48**
18	18	35	100	8	MEXCSHM180	**360,61**					
20	20	50	100	8	MEXCSHM200	**459,15**	80	150	8	MEXCLHM200	**867,16**

MEXLN2R - catalogue page 529

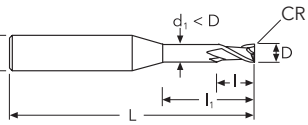


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2



	MEXLN2R
P	★
M	
K	★
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
0.3	0.05	4	0.4	1	0.26	50	MEXLN20030001	79,52
0.3	0.05	4	0.4	1.5	0.26	50	MEXLN20030065	79,52
0.3	0.05	4	0.4	2	0.26	50	MEXLN20030002	79,52
0.3	0.05	4	0.4	3	0.26	50	MEXLN20030003	79,52
0.3	0.10	4	0.4	1	0.26	50	MEXLN20030101	79,52
0.3	0.10	4	0.4	1.5	0.26	50	MEXLN20030165	79,52
0.3	0.10	4	0.4	2	0.26	50	MEXLN20030102	79,52
0.3	0.10	4	0.4	3	0.26	50	MEXLN20030103	79,52
0.4	0.05	4	0.6	1	0.37	50	MEXLN20040001	74,21
0.4	0.05	4	0.6	2	0.37	50	MEXLN20040006	74,21
0.4	0.05	4	0.6	3	0.37	50	MEXLN20040003	74,21
0.4	0.05	4	0.6	4	0.37	50	MEXLN20040004	74,21
0.4	0.10	4	0.6	1	0.37	50	MEXLN20040101	74,21
0.4	0.10	4	0.6	2	0.37	50	MEXLN20040102	74,21
0.4	0.10	4	0.6	3	0.37	50	MEXLN20040103	74,21
0.4	0.10	4	0.6	4	0.37	50	MEXLN20040104	74,21
0.5	0.05	4	0.7	2	0.45	50	MEXLN20050002	70,45
0.5	0.05	4	0.7	4	0.45	50	MEXLN20050004	70,45
0.5	0.05	4	0.7	6	0.45	50	MEXLN20050006	70,45
0.5	0.10	4	0.7	2	0.45	50	MEXLN20050102	70,45
0.5	0.10	4	0.7	4	0.45	50	MEXLN20050104	70,45
0.5	0.10	4	0.7	6	0.45	50	MEXLN20050106	70,45
0.6	0.10	4	0.9	2	0.55	50	MEXLN20060102	67,30
0.6	0.10	4	0.9	4	0.55	50	MEXLN20060104	67,30
0.6	0.10	4	0.9	6	0.55	50	MEXLN20060106	67,30
0.7	0.10	4	1.0	4	0.65	50	MEXLN20070104	70,90
0.7	0.10	4	1.0	6	0.65	50	MEXLN20070106	70,90
0.8	0.05	4	1.2	4	0.75	50	MEXLN20080004	67,30
0.8	0.05	4	1.2	6	0.75	50	MEXLN20080006	67,30
0.8	0.05	4	1.2	8	0.75	50	MEXLN20080008	67,57
0.8	0.10	4	1.2	4	0.75	50	MEXLN20080104	67,57
0.8	0.10	4	1.2	6	0.75	50	MEXLN20080106	67,57
0.8	0.10	4	1.2	8	0.75	50	MEXLN20080108	67,57
0.9	0.10	4	1.4	8	0.85	50	MEXLN20090108	71,33
0.9	0.10	4	1.4	15	0.85	50	MEXLN20090115	72,08
1	0.10	4	1.5	4	0.95	50	MEXLN20100104	55,52
1	0.10	4	1.5	6	0.95	50	MEXLN20100106	55,52
1	0.10	4	1.5	8	0.95	50	MEXLN20100108	55,52
1	0.10	4	1.5	10	0.95	50	MEXLN20100110	56,80
1	0.10	4	1.5	12	0.95	50	MEXLN20100112	57,42
1	0.10	4	1.5	16	0.95	50	MEXLN20100116	58,72
1	0.10	4	1.5	20	0.95	50	MEXLN20100120	58,72
1	0.20	4	1.5	4	0.95	50	MEXLN20100204	55,52
1	0.20	4	1.5	6	0.95	50	MEXLN20100206	55,52
1	0.20	4	1.5	8	0.95	50	MEXLN20100208	55,52
1	0.20	4	1.5	10	0.95	50	MEXLN20100210	56,80
1	0.20	4	1.5	12	0.95	50	MEXLN20100212	57,42
1	0.20	4	1.5	16	0.95	50	MEXLN20100216	58,72
1	0.20	4	1.5	20	0.95	50	MEXLN20100220	58,72
1	0.30	4	1.5	6	0.95	50	MEXLN20100306	55,52
1	0.30	4	1.5	10	0.95	50	MEXLN20100310	56,80
1	0.30	4	1.5	16	0.95	50	MEXLN20100316	58,72
1	0.30	4	1.5	20	0.95	50	MEXLN20100320	58,72
1.2	0.10	4	1.8	6	1.15	50	MEXLN20120106	54,28
1.2	0.10	4	1.8	8	1.15	50	MEXLN20120108	54,28
1.2	0.10	4	1.8	10	1.15	50	MEXLN20120110	54,94
1.2	0.10	4	1.8	12	1.15	50	MEXLN20120112	54,94
1.4	0.10	4	2.1	6	1.35	50	MEXLN20140106	54,28
1.4	0.10	4	2.1	8	1.35	50	MEXLN20140108	54,28
1.4	0.10	4	2.1	10	1.35	50	MEXLN20140110	54,94
1.4	0.10	4	2.1	12	1.35	50	MEXLN20140112	54,94
1.4	0.10	4	2.1	16	1.35	50	MEXLN20140116	56,20
1.5	0.10	4	2.3	4	1.45	50	MEXLN20150104	54,28
1.5	0.10	4	2.3	8	1.45	50	MEXLN20150108	54,28
1.5	0.10	4	2.3	12	1.45	50	MEXLN20150112	54,94
1.5	0.10	4	2.3	16	1.45	50	MEXLN20150116	56,20
1.5	0.10	4	2.3	20	1.45	60	MEXLN20150120	59,36
1.5	0.20	4	2.3	8	1.45	50	MEXLN20150208	54,28



	MEXLN2R
P	★
M	
K	★
N	
S	
H	★

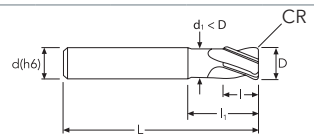
D	CR	d(h6)	l	l1	d1	L	EDP No.	€
1.5	0.20	4	2.3	10	1.45	50	MEXLN20150210	54,94
1.5	0.20	4	2.3	12	1.45	50	MEXLN20150212	54,94
1.5	0.20	4	2.3	16	1.45	50	MEXLN20150216	56,20
1.5	0.20	4	2.3	20	1.45	60	MEXLN20150220	59,36
1.5	0.30	4	2.3	8	1.45	50	MEXLN20150308	54,28
1.5	0.30	4	2.3	16	1.45	50	MEXLN20150316	56,20
1.5	0.30	4	2.3	20	1.45	60	MEXLN20150320	59,36
1.6	0.10	4	2.4	8	1.55	50	MEXLN20160108	54,28
1.6	0.10	4	2.4	12	1.55	50	MEXLN20160112	54,94
1.6	0.10	4	2.4	16	1.55	50	MEXLN20160116	56,20
1.8	0.20	4	2.7	8	1.75	50	MEXLN20180208	54,28
1.8	0.20	4	2.7	12	1.75	50	MEXLN20180212	54,94
1.8	0.20	4	2.7	16	1.75	50	MEXLN20180216	56,20
2	0.20	4	3	6	1.95	50	MEXLN20200206	53,60
2	0.20	4	3	8	1.95	50	MEXLN20200208	53,60
2	0.20	4	3	10	1.95	50	MEXLN20200210	53,60
2	0.20	4	3	12	1.95	50	MEXLN20200212	54,94
2	0.20	4	3	14	1.95	50	MEXLN20200214	54,94
2	0.20	4	3	16	1.95	50	MEXLN20200216	56,20
2	0.20	4	3	20	1.95	60	MEXLN20200220	62,28
2	0.20	4	3	25	1.95	75	MEXLN20200225	65,29
2	0.20	4	3	30	1.95	75	MEXLN20200230	66,74
2	0.50	4	3	6	1.95	50	MEXLN20200506	53,60
2	0.50	4	3	8	1.95	50	MEXLN20200508	53,60
2	0.50	4	3	12	1.95	50	MEXLN20200512	54,94
2	0.50	4	3	16	1.95	50	MEXLN20200516	56,20
2	0.50	4	3	20	1.95	60	MEXLN20200520	62,28
2	0.50	4	3	25	1.95	75	MEXLN20200525	65,29
2	0.50	4	3	30	1.95	75	MEXLN20200530	66,74
2.5	0.30	4	3.7	8	2.40	50	MEXLN20250308	53,60
2.5	0.30	4	3.7	12	2.40	50	MEXLN20250312	53,60
2.5	0.30	4	3.7	16	2.40	50	MEXLN20250316	56,20
2.5	0.30	4	3.7	20	2.40	60	MEXLN20250320	62,28
2.5	0.30	4	3.7	25	2.40	60	MEXLN20250325	65,29
2.5	0.30	4	3.7	30	2.40	75	MEXLN20250330	66,74
2.5	0.50	4	3.7	8	2.40	50	MEXLN20250508	53,60
2.5	0.50	4	3.7	12	2.40	50	MEXLN20250512	54,94
2.5	0.50	4	3.7	16	2.40	50	MEXLN20250516	56,20
2.5	0.50	4	3.7	20	2.40	60	MEXLN20250520	62,28
2.5	0.50	4	3.7	25	2.40	60	MEXLN20250525	65,29
2.5	0.50	4	3.7	30	2.40	75	MEXLN20250530	66,74
3	0.20	6	4.5	10	2.85	50	MEXLN20300210	77,93
3	0.20	6	4.5	12	2.85	50	MEXLN20300212	77,93
3	0.20	6	4.5	16	2.85	60	MEXLN20300216	77,93
3	0.20	6	4.5	20	2.85	60	MEXLN20300220	77,93
3	0.20	6	4.5	25	2.85	75	MEXLN20300225	82,53
3	0.30	6	4.5	10	2.85	50	MEXLN20300310	77,93
3	0.30	6	4.5	12	2.85	50	MEXLN20300312	77,93
3	0.30	6	4.5	16	2.85	60	MEXLN20300316	77,93
3	0.30	6	4.5	20	2.85	60	MEXLN20300320	77,93
3	0.30	6	4.5	25	2.85	75	MEXLN20300325	82,53
3	0.50	6	4.5	10	2.85	50	MEXLN20300510	77,93
3	0.50	6	4.5	12	2.85	50	MEXLN20300512	77,93
3	0.50	6	4.5	16	2.85	60	MEXLN20300516	77,93
3	0.50	6	4.5	20	2.85	60	MEXLN20300520	77,93
3	0.50	6	4.5	25	2.85	75	MEXLN20300525	82,53
4	0.30	6	4.5	10	3.85	60	MEXLN20400310	77,93
4	0.30	6	4.5	15	3.85	60	MEXLN20400315	77,93
4	0.30	6	4.5	20	3.85	60	MEXLN20400320	77,93
4	0.30	6	4.5	25	3.85	75	MEXLN20400325	82,53
4	0.30	6	4.5	30	3.85	75	MEXLN20400330	83,33
4	0.30	6	4.5	40	3.85	75	MEXLN20400340	83,33
4	0.50	6	4.5	10	3.85	60	MEXLN20400510	77,93
4	0.50	6	4.5	15	3.85	60	MEXLN20400515	77,93
4	0.50	6	4.5	20	3.85	60	MEXLN20400520	77,93
4	0.50	6	4.5	25	3.85	75	MEXLN20400525	82,53
4	0.50	6	4.5	30	3.85	75	MEXLN20400530	83,33
4	0.50	6	4.5	40	3.85	75	MEXLN20400540	83,33

OSAWA

MEX410R - catalogue page 540



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4



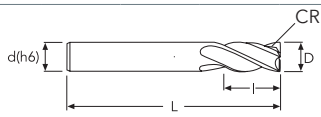
	MEX410R
P	★
M	
K	★
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
2	0.20	6	2.5	5	1.90	50	MEX410R02020	73,97
2.5	0.25	6	3	6	2.40	50	MEX410R025025	73,97
3	0.30	6	4	7	2.85	50	MEX410R03030	73,97
4	0.50	6	5	9	3.85	50	MEX410R05040	73,97
5	0.50	6	6	12	4.85	50	MEX410R05050	73,97
6	0.50	6	7	14	5.80	60	MEX410R05060	73,97
8	1.00	8	10	18	7.80	70	MEX410R10080	96,64
10	1.00	10	12	25	9.80	75	MEX410R10100	140,53
12	1.00	12	15	30	11.80	80	MEX410R10120	192,73

MEXCS4R - catalogue page 537



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4



	MEXCS4R
P	★
M	
K	★
N	
S	
H	★

D	CR	d(h6)	l	L	EDP No.	€
1	0.20	4	3	50	MEXCS4R01002	48,06
1.5	0.20	4	4.5	50	MEXCS4R01502	48,06
2	0.20	4	6.5	50	MEXCS4R02002	48,06
2	0.30	4	6.5	50	MEXCS4R02003	48,06
2.5	0.20	4	6.5	50	MEXCS4R02502	48,61
2.5	0.50	4	6.5	50	MEXCS4R02505	48,06
3	0.20	4	9	50	MEXCS4R03002	48,06
3	0.30	4	9	50	MEXCS4R03003	48,06
3	0.50	4	9	50	MEXCS4R03005	48,06
4	0.30	4	12	50	MEXCS4R04003	50,61
4	0.50	4	12	50	MEXCS4R04005	50,61
4	1.00	4	12	50	MEXCS4R04010	52,76
5	0.30	5	15	50	MEXCS4R05003	56,91
5	0.50	5	15	50	MEXCS4R05005	56,91
5	1.00	5	15	50	MEXCS4R05010	59,06
6	0.30	6	16	50	MEXCS4R06003	63,88
6	0.50	6	16	50	MEXCS4R06005	63,88
6	1.00	6	16	50	MEXCS4R06010	63,88
8	0.30	8	20	64	MEXCS4R08003	90,69
8	0.50	8	20	64	MEXCS4R08005	90,69
8	1.00	8	20	64	MEXCS4R08010	90,69
8	1.50	8	20	64	MEXCS4R08015	90,69
8	2.00	8	20	64	MEXCS4R08020	90,69
10	0.30	10	22	75	MEXCS4R10003	134,14
10	0.50	10	22	75	MEXCS4R10005	134,14
10	1.00	10	22	75	MEXCS4R10010	134,14
10	1.50	10	22	75	MEXCS4R10015	134,14
10	2.00	10	22	75	MEXCS4R10020	134,14
12	0.30	12	25	75	MEXCS4R12003	169,54
12	0.50	12	25	75	MEXCS4R12005	169,54
12	1.00	12	25	75	MEXCS4R12010	169,54

	MEXCS4R
P	★
M	
K	★
N	
S	
H	★

D	CR	d(h6)	l	L	EDP No.	€
12	1.50	12	25	75	MEXCS4R12015	169,54
12	2.00	12	25	75	MEXCS4R12020	169,54
12	3.00	12	25	75	MEXCS4R12030	169,54
14	1.00	14	32	90	MEXCS4R14010	244,99
16	0.50	16	32	90	MEXCS4R16005	298,51
16	1.00	16	32	90	MEXCS4R16010	298,51
16	2.00	16	32	90	MEXCS4R16020	298,51
16	3.00	16	32	90	MEXCS4R16030	298,51
18	0.50	18	38	100	MEXCS4R18005	392,62
18	1.00	18	38	100	MEXCS4R18010	392,62
20	0.50	20	38	100	MEXCS4R20005	468,54
20	1.00	20	38	100	MEXCS4R20010	468,54
20	2.00	20	38	100	MEXCS4R20020	468,54
20	3.00	20	38	100	MEXCS4R20030	468,54

MEXLS2R - catalogue page 535

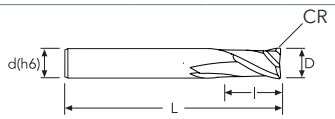


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2

MEXLS4R - catalogue page 542



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4



						MEXLS2R		MEXLS4R
P						★		★
M								
K						★		★
N								
S								
H						★		★
D	CR	d(h6)	l	L	EDP No.	€	EDP No.	€
2	0.30	6	4	75	MEXLS2R03020	**76,67**	MEXLS4R03020	**76,67**
3	0.30	6	5	75	MEXLS2R03030	**76,67**	MEXLS4R03030	**76,67**
3	0.50	6	5	75	MEXLS2R05030	**76,67**	MEXLS4R05030	**76,67**
4	0.30	6	8	75	MEXLS2R03040	**76,67**	MEXLS4R03040	**76,67**
4	0.50	6	8	75	MEXLS2R05040	**76,67**	MEXLS4R05040	**76,67**
5	0.30	6	9	75	MEXLS2R03050	**76,67**	MEXLS4R03050	**76,67**
5	0.50	6	9	75	MEXLS2R05050	**76,67**	MEXLS4R05050	**76,67**
6	0.30	6	10	75	MEXLS2R03060	**76,67**	MEXLS4R03060	**76,67**
6	0.50	6	10	75	MEXLS2R05060	**76,67**	MEXLS4R05060	**76,67**
6	1.00	6	10	75	MEXLS2R10060	**76,67**	MEXLS4R10060	**76,67**
8	0.30	8	12	75	MEXLS2R03080	**97,62**	MEXLS4R03080	**97,62**
8	0.50	8	12	75	MEXLS2R05080	**97,62**	MEXLS4R05080	**97,62**
8	1.00	8	12	75	MEXLS2R10080	**97,62**	MEXLS4R10080	**97,62**
10	0.50	10	14	100	MEXLS2R05100	**153,40**	MEXLS4R05100	**153,40**
10	1.00	10	14	100	MEXLS2R10100	**153,40**	MEXLS4R10100	**153,40**
12	0.50	12	16	100	MEXLS2R05120	**202,17**	MEXLS4R05120	**185,33**
12	1.00	12	16	100	MEXLS2R10120	**202,17**	MEXLS4R10120	**185,33**
16	0.50	16	22	125	MEXLS2R05160	**357,87**	MEXLS4R05160	**357,87**

MEX610R - catalogue page 544

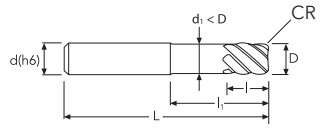


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 45° | RADIUS | Z6

MEX611R - catalogue page 546



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 45° | RADIUS | Z6



												MEX610R						MEX611R
P												★						★
M																		
K												★						★
N																		
S																		
H												★						★
D	CR	d(h6)										l	l1	d1	L	EDP No.	€	l	L	EDP No.	€
6	0.50	6										6	14	5.80	50	MEX610R05060	**64,64**	15	90	MEX611R05060	**83,69**
8	0.50	8										8	24	7.80	60	MEX610R05080	**77,96**	20	100	MEX611R05080	**94,88**
10	0.50	10																25	100	MEX611R05100	**139,04**
10	1.00	10										10	30	9.80	70	MEX610R10100	**120,71**	25	100	MEX611R10100	**139,04**
12	0.50	12																30	100	MEX611R05120	**189,07**
12	1.00	12										12	30	11.80	75	MEX610R10120	**143,89**	30	100	MEX611R10120	**189,07**

MHMB204 - catalogue page 548/612

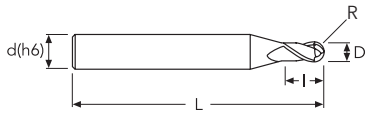


OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL

MHMB206 - catalogue page 550/614



OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL



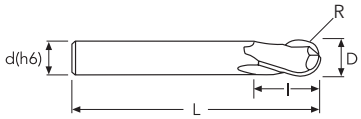
	MHMB204	MHMB206
P	★	★
M		
K	★	★
N		
S		
H	★	★

D	R	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
0.2	0.10	4	0.2	50	MHMB200204	**90,10**					
0.3	0.15	4	0.3	50	MHMB200304	**80,79**					
0.4	0.20	4	0.4	50	MHMB200404	**74,59**	6	0.4	50	MHMB200406	**96,89**
0.5	0.25	4	0.4	50	MHMB200504	**68,38**	6	0.5	50	MHMB200506	**89,58**
0.6	0.30	4	0.5	50	MHMB200604	**66,80**	6	0.6	50	MHMB200606	**87,53**
0.7	0.35	4	0.6	50	MHMB200704	**70,42**					
0.8	0.40	4	0.6	50	MHMB200804	**62,12**	6	0.8	50	MHMB200806	**81,96**
0.9	0.45	4	0.8	50	MHMB200904	**70,42**					
1	0.50	4	0.8	50	MHMB201004	**54,62**					
1.5	0.75	4	1.35	50	MHMB201504	**58,55**					
2	1.00	4	1.7	50	MHMB202004	**62,94**					

MEXCSB2 - catalogue page 559



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 30° | BALL NOSE | Z2 BALL



	MEXCSB2
P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	L	EDP No.	€
1	0.50	3	3	38	MEXCSB2010	**61,76**
1.5	0.75	3	3	38	MEXCSB2015	**61,76**
2	1.00	6	3	50	MEXCSB2020	**61,54**
2.5	1.25	4	4	50	MEXCSB202550	**60,34**
3	1.50	6	4	50	MEXCSB2030	**61,54**
4	2.00	6	5	54	MEXCSB2040	**63,74**
5	2.50	6	6	54	MEXCSB2050	**63,74**
6	3.00	6	12	60	MEXCSB2060	**64,89**
8	4.00	8	14	60	MEXCSB2080	**101,37**
10	5.00	10	18	70	MEXCSB2100	**162,34**
12	6.00	12	22	80	MEXCSB2120	**200,20**
14	7.00	14	32	90	MEXCSB2140	**247,68**
16	8.00	16	32	90	MEXCSB2160	**293,34**
18	9.00	18	38	100	MEXCSB2180	**423,65**
20	10.00	20	38	100	MEXCSB2200	**508,39**

MEXCLSB2 - catalogue page 561

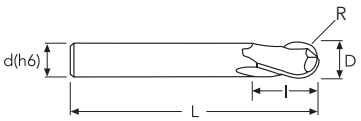


OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 30° | BALL NOSE | Z2 BALL

MEX253 - catalogue page 563



OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 30° | BALL NOSE | Z2 BALL



	MEXCLSB2	MEX253	MEX253
P	★	★	★
M			
K	★	★	★
N			
S			
H	★	★	★

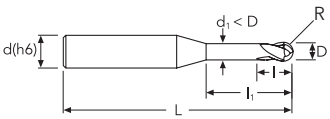
D	R	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
1	0.50	4	2.5	50	MEXCLSB2010	**66,47**	4	3	75	MEX25301075	**53,52**	4	3	100	MEX253010100	**66,90**
1.2	0.60	4	3	50	MEXCLSB2012	**65,35**										
1.5	0.75	4	4	50	MEXCLSB2015	**66,47**	4	3	75	MEX25301575	**53,52**	4	3	100	MEX253015100	**66,90**
2	1.00	6	5	50	MEXCLSB2020	**63,15**	4	4	75	MEX25302075	**53,52**	4	4	100	MEX253020100	**66,90**
2.5	1.25	6	6	60	MEXCLSB2025	**63,15**										
3	1.50	6	8	60	MEXCLSB2030	**63,15**	6	5	75	MEX25303075	**60,17**	6	5	100	MEX253030	**88,35**
4	2.00	6	8	70	MEXCLSB2040	**66,03**	6	8	100	MEX253040	**88,35**					
5	2.50	6	10	80	MEXCLSB2050	**68,32**	6	9	100	MEX253050100	**86,25**					
6	3.00	6	12	90	MEXCLSB2060	**73,91**	6	10	150	MEX253060150	**107,03**					
8	4.00	8	14	100	MEXCLSB2080	**115,48**	8	12	150	MEX253080	**146,39**					
10	5.00	10	18	100	MEXCLSB2100	**176,22**	10	14	150	MEX25310150	**212,98**					
12	6.00	12	22	110	MEXCLSB2120	**224,65**	12	16	150	MEX25312150	**236,48**					
14	7.00	14	32	125	MEXCLSB2140	**266,76**										
16	8.00	16	32	150	MEXCLSB2160	**368,15**	16	32	200	MEX253160	**490,80**					
20	10.00	20	38	150	MEXCLSB2200	**591,41**	20	38	200	MEX253200	**782,68**					

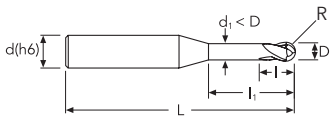
MHCRB2 - catalogue page 557/621



d-6

OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL





	MHCRB2	MHCRB2
P	★	★
M		
K	★	★
N		
S		
H	★	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€	D	R	d(h6)	l	l1	d1	L	EDP No.	€
0.5	0.25	6	0.5	2	0.45	50	MHCRB20050206	**105,12**	1.2	0.60	6	1.2	8	1.1	50	MHCRB20120806	**79,27**
0.5	0.25	6	0.5	4	0.45	50	MHCRB20050406	**105,12**	1.2	0.60	6	1.2	10	1.1	50	MHCRB20121006	**79,27**
0.6	0.30	6	0.5	2	0.55	50	MHCRB20060206	**102,67**	1.5	0.75	6	1.5	4	1.4	50	MHCRB20150406	**90,54**
0.6	0.30	6	0.5	4	0.55	50	MHCRB20060406	**102,67**	1.5	0.75	6	1.5	8	1.4	50	MHCRB20150806	**92,79**
0.6	0.30	6	0.5	6	0.55	50	MHCRB20060606	**102,67**	1.5	0.75	6	1.5	10	1.4	50	MHCRB20151006	**92,79**
0.8	0.40	6	0.8	2	0.75	50	MHCRB20080206	**85,37**	1.5	0.75	6	1.5	12	1.4	50	MHCRB20151206	**92,79**
0.8	0.40	6	0.8	4	0.75	50	MHCRB20080406	**85,37**	1.5	0.75	6	1.5	16	1.4	50	MHCRB20151606	**92,79**
0.8	0.40	6	0.8	6	0.75	50	MHCRB20080606	**85,37**	2	1.00	6	3	6	1.9	50	MHCRB20200606	**76,95**
1	0.50	6	1	3	0.9	50	MHCRB20100306	**87,82**	2	1.00	6	3	8	1.9	50	MHCRB20200806	**76,95**
1	0.50	6	1	6	0.9	50	MHCRB20100606	**87,82**	2	1.00	6	3	10	1.9	50	MHCRB20201006	**78,34**
1	0.50	6	1	8	0.9	50	MHCRB20100806	**87,82**	2	1.00	6	3	12	1.9	50	MHCRB20201206	**78,34**
1	0.50	6	1	10	0.9	50	MHCRB20101006	**87,82**	2	1.00	6	3	16	1.9	50	MHCRB20201606	**83,84**
1.2	0.60	6	1.2	6	1.1	50	MHCRB20120606	**79,27**	2	1.00	6	3	20	1.9	50	MHCRB20202006	**83,84**

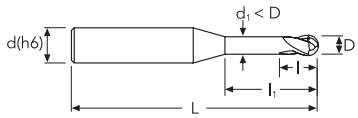
OSAWA

MHLNB2 - catalogue page 552/616



d-4

OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL



	MHLNB2
P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
0.2	0.10	4	0.2	0.5	0.17	50	MHLNB2002005	**109,04**
0.2	0.10	4	0.2	1	0.17	50	MHLNB200201	**109,04**
0.2	0.10	4	0.2	1.5	0.17	50	MHLNB2002015	**109,04**
0.3	0.15	4	0.3	1	0.27	50	MHLNB200301	**98,49**
0.3	0.15	4	0.3	2	0.27	50	MHLNB200302	**98,49**
0.3	0.15	4	0.3	3	0.27	50	MHLNB200303	**98,49**
0.4	0.20	4	0.4	1	0.37	50	MHLNB200401	**91,45**
0.4	0.20	4	0.4	2	0.37	50	MHLNB200402	**91,45**
0.4	0.20	4	0.4	3	0.37	50	MHLNB200403	**91,45**
0.4	0.20	4	0.4	4	0.37	50	MHLNB200404	**91,45**
0.4	0.20	4	0.4	5	0.37	50	MHLNB200405	**91,45**
0.5	0.25	4	0.4	2	0.45	50	MHLNB200502	**84,42**
0.5	0.25	4	0.4	3	0.45	50	MHLNB200503	**84,42**
0.5	0.25	4	0.4	4	0.45	50	MHLNB200504	**84,42**
0.5	0.25	4	0.4	5	0.45	50	MHLNB200505	**84,42**
0.5	0.25	4	0.4	6	0.45	50	MHLNB200506	**84,42**
0.5	0.25	4	0.4	8	0.45	50	MHLNB200508	**84,42**
0.6	0.30	4	0.5	2	0.55	50	MHLNB200602	**80,90**
0.6	0.30	4	0.5	3	0.55	50	MHLNB200603	**80,90**
0.6	0.30	4	0.5	4	0.55	50	MHLNB200604	**80,90**
0.6	0.30	4	0.5	5	0.55	50	MHLNB200605	**80,90**
0.6	0.30	4	0.5	6	0.55	50	MHLNB200606	**80,90**
0.6	0.30	4	0.5	8	0.55	50	MHLNB200608	**80,90**
0.8	0.40	4	0.6	2	0.75	50	MHLNB200802	**77,38**
0.8	0.40	4	0.6	4	0.75	50	MHLNB200804	**77,38**
0.8	0.40	4	0.6	5	0.75	50	MHLNB200805	**77,38**
0.8	0.40	4	0.6	6	0.75	50	MHLNB200806	**77,38**
0.8	0.40	4	0.6	7	0.75	50	MHLNB200807	**77,38**
0.8	0.40	4	0.6	8	0.75	50	MHLNB200808	**77,38**
0.8	0.40	4	0.6	10	0.75	50	MHLNB200810	**77,38**
1	0.50	4	0.8	3	0.9	50	MHLNB201003	**65,07**
1	0.50	4	0.8	4	0.9	50	MHLNB201004	**65,07**
1	0.50	4	0.8	5	0.9	50	MHLNB201005	**65,07**
1	0.50	4	0.8	6	0.9	50	MHLNB201006	**65,07**
1	0.50	4	0.8	7	0.9	50	MHLNB201007	**65,07**
1	0.50	4	0.8	8	0.9	50	MHLNB201008	**65,07**
1	0.50	4	0.8	9	0.9	50	MHLNB201009	**65,07**
1	0.50	4	0.8	10	0.9	50	MHLNB201010	**65,07**
1	0.50	4	0.8	12	0.9	50	MHLNB201012	**65,07**
1	0.50	4	0.8	14	0.9	50	MHLNB201014	**65,07**
1	0.50	4	0.8	16	0.9	50	MHLNB201016	**65,07**
1	0.50	4	0.8	20	0.9	60	MHLNB201020	**65,07**
1.2	0.60	4	1.0	6	1.1	50	MHLNB201206	**65,07**
1.2	0.60	4	1.0	8	1.1	50	MHLNB201208	**65,07**
1.2	0.60	4	1.0	10	1.1	50	MHLNB201210	**65,07**
1.2	0.60	4	1.0	12	1.1	50	MHLNB201212	**65,07**
1.4	0.70	4	1.1	8	1.3	50	MHLNB201408	**65,07**
1.4	0.70	4	1.1	12	1.3	50	MHLNB201412	**65,07**
1.4	0.70	4	1.1	16	1.3	50	MHLNB201416	**65,07**
1.5	0.75	4	1.2	8	1.4	50	MHLNB201508	**65,07**
1.5	0.75	4	1.2	12	1.4	50	MHLNB201512	**67,70**
1.5	0.75	4	1.2	16	1.4	50	MHLNB201516	**65,07**
1.5	0.75	4	1.2	18	1.4	60	MHLNB201518	**65,07**
1.5	0.75	6	2.4	12	1.4	50	MHLNB201520	**66,86**
1.6	0.80	4	1.3	8	1.5	50	MHLNB201608	**65,07**
1.6	0.80	4	1.3	12	1.5	50	MHLNB201612	**65,07**
1.6	0.80	4	1.3	16	1.5	50	MHLNB201616	**65,07**
1.6	0.80	4	1.3	20	1.5	60	MHLNB201620	**65,07**

	MHLNB2
P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
1.8	0.90	4	1.4	8	1.7	50	MHLNB201808	**65,07**
1.8	0.90	4	1.4	12	1.7	50	MHLNB201812	**65,07**
1.8	0.90	4	1.4	16	1.7	50	MHLNB201816	**65,07**
1.8	0.90	4	1.4	20	1.7	60	MHLNB201820	**65,07**
2	1.00	4	1.6	4	1.9	50	MHLNB202004	**63,31**
2	1.00	4	1.6	6	1.9	50	MHLNB202006	**63,31**
2	1.00	4	1.6	8	1.9	50	MHLNB202008	**63,31**
2	1.00	4	1.6	10	1.9	50	MHLNB202010	**63,31**
2	1.00	4	1.6	12	1.9	50	MHLNB202012	**63,31**
2	1.00	4	1.6	14	1.9	50	MHLNB202014	**63,31**
2	1.00	4	1.6	16	1.9	50	MHLNB202016	**63,31**
2	1.00	4	1.6	18	1.9	60	MHLNB202018	**65,07**
2	1.00	4	1.6	20	1.9	60	MHLNB202020	**65,07**
2	1.00	4	1.6	22	1.9	60	MHLNB202022	**65,07**
2	1.00	4	1.6	25	1.9	75	MHLNB202025	**71,22**
2	1.00	4	1.6	30	1.9	75	MHLNB202030	**73,87**
3	1.50	6	2.4	8	2.8	50	MHLNB203008	**84,42**
3	1.50	6	2.4	10	2.8	50	MHLNB203010	**84,42**
3	1.50	6	2.4	12	2.85	50	MHLNB203012	**86,47**
3	1.50	6	2.4	16	2.8	60	MHLNB203016	**89,57**
3	1.50	6	2.4	20	2.8	60	MHLNB203020	**93,06**
3	1.50	6	2.4	25	2.8	75	MHLNB203025	**98,49**
3	1.50	6	2.4	30	2.8	75	MHLNB203030	**98,49**
3	1.50	6	2.4	35	2.8	75	MHLNB203035	**98,49**
4	2.00	6	3.2	10	3.7	50	MHLNB204010	**84,42**
4	2.00	6	3.2	16	3.7	60	MHLNB204016	**84,42**
4	2.00	6	3.2	20	3.7	60	MHLNB204020	**84,42**
4	2.00	6	3.2	25	3.7	75	MHLNB204025	**98,49**
4	2.00	6	3.2	30	3.7	75	MHLNB204030	**98,49**
4	2.00	6	3.2	35	3.7	75	MHLNB204035	**98,49**
4	2.00	6	3.2	40	3.7	100	MHLNB204040	**105,52**
4	2.00	6	3.2	45	3.7	100	MHLNB204045	**105,52**
4	2.00	6	3.2	50	3.7	100	MHLNB204050	**105,52**



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.

Nano micrograno y revestimiento UH RED e MH a base de TiSi para el fresado de materiales templados hasta 70 HRC. Gran fiabilidad y duración en la utilización de estrategias de elaboración a alta velocidad o alto avance con la posibilidad de evitar la utilización del refrigerante. Las geometrías de corte específicas garantizan una elevada precisión y excelente acabado de la superficie trabajada.

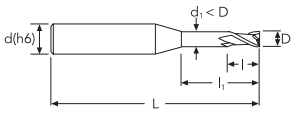
Нано-микрозернистость и покрытие UH RED и MH на основе TiSi для фрезерования материалов с твердостью до 70 HRC. Высокая надежность и долговечность при использовании стратегий обработки с высокой скоростью или высокой подачей и с возможностью без использования СОЖ. Особая геометрия резания гарантирует высокую точность и отличное качество обработанной поверхности.

OSAWA

UHLN2 - catalogue page 568



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | SQUARE | Z2



	UHLN2
P	☆
M	
K	☆
N	
S	
H	★

D	d(h6)	l	l1	d1	L	EDP No.	€
0.2	4	0.3	0.5	0.16	50	UHLN2002005	**91,08**
0.2	4	0.3	1	0.16	50	UHLN200201	**91,08**
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0.3	4	0.4	1	0.26	50	UHLN200301	**84,07**
0.3	4	0.4	2	0.26	50	UHLN200302	**84,07**
0.3	4	0.4	3	0.26	50	UHLN200303	**84,07**
0.4	4	0.6	2	0.37	50	UHLN200402	**77,07**
0.4	4	0.6	3	0.37	50	UHLN200403	**77,07**
0.4	4	0.6	4	0.37	50	UHLN200404	**77,07**
0.4	4	0.6	5	0.37	50	UHLN200405	**77,07**
0.5	4	0.7	2	0.45	50	UHLN200502	**70,06**
0.5	4	0.7	4	0.45	50	UHLN200504	**70,06**
0.5	4	0.7	6	0.45	50	UHLN200506	**70,06**
0.5	4	0.7	8	0.45	50	UHLN200508	**70,06**
0.6	4	0.9	2	0.55	50	UHLN200602	**70,06**
0.6	4	0.9	4	0.55	50	UHLN200604	**70,06**
0.6	4	0.9	6	0.55	50	UHLN200606	**70,06**
0.6	4	0.9	8	0.55	50	UHLN200608	**70,06**
0.6	4	0.9	10	0.55	50	UHLN200610	**70,06**
0.7	4	1.0	2	0.65	50	UHLN200702	**70,06**
0.7	4	1.0	4	0.65	50	UHLN200704	**70,06**
0.7	4	1.0	6	0.65	50	UHLN200706	**70,06**
0.7	4	1.0	8	0.65	50	UHLN200708	**70,06**
0.7	4	1.0	10	0.65	50	UHLN200710	**70,06**
0.8	4	1.2	4	0.75	50	UHLN200804	**70,06**
0.8	4	1.2	6	0.75	50	UHLN200806	**70,06**
0.8	4	1.2	8	0.75	50	UHLN200808	**70,06**
0.8	4	1.2	10	0.75	50	UHLN200810	**70,06**
0.8	4	1.2	12	0.75	50	UHLN200812	**70,06**
0.9	4	1.4	6	0.85	50	UHLN200906	**70,06**
0.9	4	1.4	8	0.85	50	UHLN200908	**70,06**
0.9	4	1.4	10	0.85	50	UHLN200910	**70,06**
0.9	4	1.4	15	0.85	50	UHLN200915	**70,06**
1	4	1.5	6	0.95	50	UHLN201006	**56,05**
1	4	1.5	8	0.95	50	UHLN201008	**56,05**
1	4	1.5	10	0.95	50	UHLN201010	**56,05**
1	4	1.5	12	0.95	50	UHLN201012	**56,05**
1	4	1.5	14	0.95	50	UHLN201014	**56,05**
1	4	1.5	16	0.95	50	UHLN201016	**56,05**
1.2	4	1.8	6	1.15	50	UHLN201206	**56,05**
1.2	4	1.8	8	1.15	50	UHLN201208	**56,05**
1.2	4	1.8	10	1.15	50	UHLN201210	**56,05**
1.2	4	1.8	12	1.15	50	UHLN201212	**56,05**
1.4	4	2.1	6	1.35	50	UHLN201406	**56,05**
1.4	4	2.1	8	1.35	50	UHLN201408	**56,05**
1.4	4	2.1	10	1.35	50	UHLN201410	**56,05**
1.4	4	2.1	12	1.35	50	UHLN201412	**56,05**
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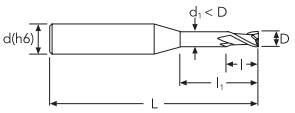
1.4	4	2.1	16	1.35	50	UHLN201416	**56,05**
1.5	4	2.3	6	1.45	50	UHLN201506	**56,05**
1.5	4	2.3	8	1.45	50	UHLN201508	**56,05**
1.5	4	2.3	10	1.45	50	UHLN201510	**56,05**
1.5	4	2.3	12	1.45	50	UHLN201512	**56,05**
1.5	4	2.3	14	1.45	50	UHLN201514	**56,05**
1.5	4	2.3	16	1.45	50	UHLN201516	**56,05**
1.5	4	2.3	18	1.45	60	UHLN201518	**56,05**
1.5	4	2.3	20	1.45	60	UHLN201520	**56,05**
1.6	4	2.4	6	1.55	50	UHLN201606	**56,05**



	UHLN2
P	☆
M	
K	☆
N	
S	
H	★

D	d(h6)	l	l1	d1	L	EDP No.	€
1.6	4	2.4	8	1.55	50	UHLN201608	**56,05**
1.6	4	2.4	10	1.55	50	UHLN201610	**56,05**
1.6	4	2.4	12	1.55	50	UHLN201612	**56,05**
1.6	4	2.4	14	1.55	50	UHLN201614	**56,05**
1.6	4	2.4	16	1.55	50	UHLN201616	**56,05**
1.6	4	2.4	18	1.55	60	UHLN201618	**56,05**
1.6	4	2.4	20	1.55	60	UHLN201620	**56,05**
1.8	4	2.7	6	1.75	50	UHLN201806	**56,05**
1.8	4	2.7	8	1.75	50	UHLN201808	**56,05**
1.8	4	2.7	10	1.75	50	UHLN201810	**56,05**
1.8	4	2.7	12	1.75	50	UHLN201812	**56,05**
1.8	4	2.7	14	1.75	50	UHLN201814	**56,05**
1.8	4	2.7	16	1.75	50	UHLN201816	**56,05**
1.8	4	2.7	18	1.75	60	UHLN201818	**56,05**
1.8	4	2.7	20	1.75	60	UHLN201820	**56,05**
2	4	3	6	1.95	50	UHLN202006	**52,55**
2	4	3	8	1.95	50	UHLN202008	**52,55**
2	4	3	10	1.95	50	UHLN202010	**52,55**
2	4	3	12	1.95	50	UHLN202012	**52,55**
2	4	3	14	1.95	50	UHLN202014	**52,55**
2	4	3	16	1.95	50	UHLN202016	**52,55**
2	4	3	18	1.95	60	UHLN202018	**56,05**
2	4	3	20	1.95	60	UHLN202020	**56,05**
2	4	3	25	1.95	75	UHLN202025	**56,05**
2	4	3	30	1.95	75	UHLN202030	**56,05**
2.5	4	3.7	8	2.4	50	UHLN202508	**56,05**
2.5	4	3.7	10	2.4	50	UHLN202510	**56,05**
2.5	4	3.7	12	2.4	50	UHLN202512	**56,05**
2.5	4	3.7	14	2.4	50	UHLN202514	**56,05**
2.5	4	3.7	16	2.4	50	UHLN202516	**56,05**
2.5	4	3.7	18	2.4	60	UHLN202518	**56,05**
2.5	4	3.7	20	2.4	60	UHLN202520	**56,05**
2.5	4	3.7	25	2.4	75	UHLN202525	**63,06**
2.5	4	3.7	30	2.4	75	UHLN202530	**63,06**
3	6	4.5	8	2.85	50	UHLN203008	**77,07**
3	6	4.5	10	2.85	50	UHLN203010	**77,07**
3	6	4.5	12	2.85	50	UHLN203012	**77,07**
3	6	4.5	14	2.85	50	UHLN203014	**77,07**
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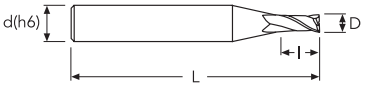
3	6	4.5	18	2.85	60	UHLN203018	**77,07**
3	6	4.5	20	2.85	60	UHLN203020	**77,07**
3	6	4.5	25	2.85	75	UHLN203025	**84,07**
4	6	4.5	10	3.85	60	UHLN204010	**77,07**
4	6	4.5	15	3.85	60	UHLN204015	**77,07**
4	6	4.5	20	3.85	60	UHLN204020	**77,07**
4	6	4.5	25	3.85	75	UHLN204025	**84,07**
4	6	4.5	30	3.85	75	UHLN204030	**84,07**
4	6	4.5	40	3.85	75	UHLN204040	**84,07**

UHM204 - catalogue page 566



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | SQUARE | Z2



	UHM204
P	☆
M	
K	☆
N	
S	
H	★

D	d(h6)	l	L	EDP No.	€
0.1	4	0.2	40	UHM200104	**106,14**
0.2	4	0.3	50	UHM200204	**91,99**
0.3	4	0.4	50	UHM200304	**84,91**
0.4	4	0.6	50	UHM200404	**77,84**
0.5	4	0.7	50	UHM200504	**70,76**
0.6	4	0.9	50	UHM200604	**70,76**
0.7	4	1	50	UHM200704	**70,78**
0.8	4	1.2	50	UHM200804	**70,76**
0.9	4	1.4	50	UHM200904	**70,76**

UH600 - catalogue page 573

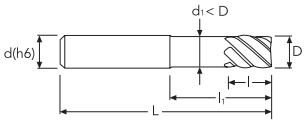


OSAWA NORM | UH | NMG / UH RED | <70 HRC | 50° | SQUARE | Z6~Z8

UH612 - catalogue page 575



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 50° | SQUARE | Z6~Z8



	UH600	UH612
P	☆	☆
M		
K	☆	☆
N		
S		
H	★	★

D	d(h6)	l	L	z	EDP No.	€	l	l1	d1	L	z	EDP No.	€
3	6	8	50	6	UH600030	**71,90**	19	30	2.80	75	6	UH612030	**98,82**
4	6	11	50	6	UH600040	**71,90**	19	32	3.70	75	6	UH612040	**98,82**
5	6	13	50	6	UH600050	**71,90**	19	32	4.60	75	6	UH612050	**98,82**
6	6	20	60	6	UH600060	**71,90**	38	60	5.50	100	6	UH612060	**125,19**
8	8	20	64	6	UH600080	**100,65**	41	60	7.40	100	6	UH612080	**171,29**
10	10	22	70	6	UH600100	**143,79**	57	85	9.20	125	6	UH612100	**250,37**
12	12	25	75	6	UH600120	**201,24**	75	110	11.00	150	6	UH612120	**329,46**
14	14	30	90	6	UH600140	**265,98**							
16	16	30	90	8	UH600160	**329,46**	75	110	15.00	150	8	UH612160	**500,75**
20	20	38	100	8	UH600200	**500,75**	75	110	19.00	150	8	UH612200	**636,65**

OSAWA

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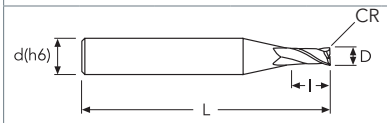
OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z2



	UHM206
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	L	EDP No.	€
0.3		6	0.45	50	UHM200306	95,82
0.4		6	0.6	50	UHM200406	89,93
0.5	0.05	6	0.7	50	UHM200506	78,36
0.6	0.05	6	0.9	50	UHM200606	75,25
0.8	0.05	6	1.2	50	UHM200806	69,43
1	0.10	6	1.5	50	UHM201006	65,17
1.5	0.15	6	2.2	50	UHM201506	65,17
2	0.15	6	2.2	50	UHM202006	65,17

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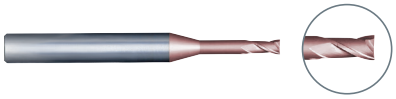
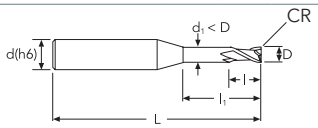
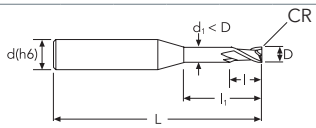


OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z2



	UH211
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
1	0.10	4	2	4	0.95	50	UH2110100104	77,39
1	0.10	4	2	6	0.95	50	UH2110100106	77,39
1	0.10	4	2	8	0.90	50	UH2110100108	78,37
1	0.20	4	2	4	0.95	50	UH2110100204	77,39
1	0.20	4	2	8	0.95	50	UH2110100208	80,62
1	0.30	4	2	4	0.90	50	UH2110100304	75,24
1	0.30	4	2	8	0.95	50	UH2110100308	80,62
1.5	0.10	4	2.5	6	1.45	50	UH2110150106	77,39
1.5	0.10	4	2.5	10	1.45	50	UH2110150110	80,62
1.5	0.20	4	2.5	8	1.45	50	UH2110150208	77,39
1.5	0.20	4	2.5	12	1.45	50	UH2110150212	80,62
2	0.10	4	3	6	1.95	50	UH2110200106	77,39
2	0.10	4	3	12	1.95	50	UH2110200112	77,39
2	0.20	4	3	6	1.95	50	UH2110200206	77,39
2	0.20	4	3	12	1.95	50	UH2110200212	77,39
2	0.30	4	3	8	1.95	50	UH2110200308	77,39
2	0.30	4	3	12	1.95	50	UH2110200312	77,39



	UH211
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
2	0.30	4	3	16	1.95	50	UH2110200316	80,62
2	0.50	4	3	6	1.95	50	UH2110200506	77,39
2	0.50	4	3	12	1.95	50	UH2110200512	77,39
3	0.30	6	4.5	10	2.80	55	UH2110300310	78,58
3	0.30	6	4.5	16	2.85	55	UH2110300316	80,84
3	0.50	6	4.5	10	2.85	55	UH2110300510	80,84
3	0.50	6	4.5	16	2.85	55	UH2110300516	80,84
4	0.20	6	6	20	3.85	60	UH2110400220	80,84
4	0.30	6	6	12	3.85	55	UH2110400312	80,84
4	0.30	6	6	20	3.85	60	UH2110400320	80,84
4	0.50	6	6	12	3.85	55	UH2110400512	80,84
4	0.50	6	6	20	3.85	60	UH2110400520	80,84
4	1.00	6	6	16	3.85	55	UH2110401016	80,84
6	0.50	6	9	15	5.85	60	UH2110600520	80,84
6	1.00	6	9	15	5.85	60	UH2110601020	80,84
6	2.00	6	9	15	5.85	60	UH2110602020	80,84

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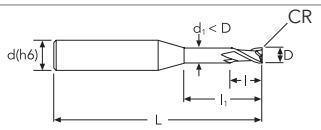
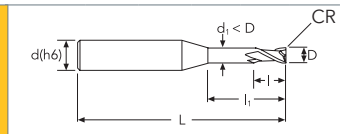
OSAWA NORM | UH | NMG UH RED | <70 HRC | 40° | RADIUS | Z2



	UH212
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
0.2	0.02	4	0.3	0.5	0.16	50	UH21200202005	91,51
0.2	0.02	4	0.3	1	0.16	50	UH2120020201	91,51
0.2	0.02	4	0.3	1.5	0.16	50	UH21200202015	91,51
0.3	0,05	4	0.4	1	0.26	50	UH21200300501●	84,50
0.3	0.03	4	0.4	2	0.26	50	UH21200300302▽	84,50
0.3	0,05	4	0.4	2	0.26	50	UH21200300502●	84,50
0.3	0.03	4	0.4	3	0.26	50	UH21200300303▽	84,50
0.3	0,05	4	0.4	3	0.26	50	UH21200300503●	84,50
0.4	0.03	4	0.6	2	0.37	50	UH21200400302▽	84,50
0.4	0,05	4	0.6	2	0.37	50	UH21200400502●	84,50
0.4	0.03	4	0.6	3	0.37	50	UH21200400303▽	84,50
0.4	0,05	4	0.6	3	0.37	50	UH21200400503●	84,50
0.4	0.03	4	0.6	4	0.37	50	UH21200400304▽	84,50
0.4	0,05	4	0.6	4	0.37	50	UH21200400504●	84,50
0.4	0.03	4	0.6	5	0.37	50	UH21200400305▽	84,50
0.4	0,05	4	0.6	5	0.37	50	UH21200400505●	84,50
0.5	0.05	4	0.7	2	0.45	50	UH21200500502	76,29
0.5	0.05	4	0.7	4	0.45	50	UH21200500504	76,29
0.5	0.05	4	0.7	6	0.45	50	UH21200500506	76,29
0.5	0.05	4	0.7	8	0.45	50	UH21200500508	76,29
0.6	0.05	4	0.9	2	0.55	50	UH21200600502	76,29
0.6	0.05	4	0.9	4	0.55	50	UH21200600504	76,29
0.6	0.05	4	0.9	6	0.55	50	UH21200600506	76,29
0.6	0.05	4	0.9	8	0.55	50	UH21200600508	76,29
0.6	0.05	4	0.9	10	0.55	50	UH21200600510	76,29
0.7	0.08	4	1.0	2	0.65	50	UH21200700802▽	76,29
0.7	0,10	4	1.0	2	0.65	50	UH21200701002●	76,29
0.7	0.08	4	1.0	4	0.65	50	UH21200700804▽	76,29
0.7	0,10	4	1.0	4	0.65	50	UH21200701004●	76,29
0.7	0.08	4	1.0	6	0.65	50	UH21200700806▽	76,29
0.7	0,10	4	1.0	6	0.65	50	UH21200701006●	76,29
0.7	0.08	4	1.0	8	0.65	50	UH21200700808▽	76,29
0.7	0,10	4	1.0	8	0.65	50	UH21200701008●	76,29
0.7	0.08	4	1.0	10	0.65	50	UH21200700810▽	76,29
0.7	0,10	4	1.0	10	0.65	50	UH21200701010●	76,29
0.8	0.08	4	1.2	4	0.75	50	UH21200800804▽	76,29
0.8	0,10	4	1.2	4	0.75	50	UH21200801004●	76,29
0.8	0.08	4	1.2	6	0.75	50	UH21200800806▽	76,29
0.8	0,10	4	1.2	6	0.75	50	UH21200801006●	76,29
0.8	0.08	4	1.2	8	0.75	50	UH21200800808▽	76,29
0.8	0,10	4	1.2	8	0.75	50	UH21200801008●	76,29
0.8	0.08	4	1.2	10	0.75	50	UH21200800810▽	76,29
0.8	0,10	4	1.2	10	0.75	50	UH21200801010●	76,29
0.8	0.08	4	1.2	12	0.75	50	UH21200800812▽	76,29
0.8	0,10	4	1.2	12	0.75	50	UH21200801012●	76,29
0.9	0.08	4	1.4	6	0.85	50	UH21200900806▽	76,29
0.9	0,10	4	1.4	6	0.85	50	UH21200901006●	76,29
0.9	0.08	4	1.4	8	0.85	50	UH21200900808▽	76,29
0.9	0,10	4	1.4	8	0.85	50	UH21200901008●	76,29
0.9	0.08	4	1.4	10	0.85	50	UH21200900810▽	76,29
0.9	0,10	4	1.4	10	0.85	50	UH21200901010●	76,29
0.9	0.08	4	1.4	15	0.85	50	UH21200900815▽	76,29
0.9	0,10	4	1.4	15	0.85	50	UH21200901015●	76,29
1.0	0.10	4	1.5	6	0.95	50	UH2120100106	61,03
1.0	0.10	4	1.5	8	0.95	50	UH2120100108	61,03
1.0	0.10	4	1.5	10	0.95	50	UH2120100110	61,03



	UH212
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
1.0	0.10	4	1.5	12	0.95	50	UH2120100112	61,03
1.0	0.10	4	1.5	14	0.95	50	UH2120100114	61,03
1.0	0.10	4	1.5	16	0.95	50	UH2120100116	61,03
1.2	0.10	4	1.8	6	1.15	50	UH2120120106	61,03
1.2	0.10	4	1.8	8	1.15	50	UH2120120108	61,03
1.2	0.10	4	1.8	10	1.15	50	UH2120120110	61,03
1.2	0.10	4	1.8	12	1.15	50	UH2120120112	61,03
1.4	0.15	4	2.1	6	1.35	50	UH21201401506▽	61,03
1.4	0,10	4	2.1	6	1.35	50	UH21201401006●	61,03
1.4	0.15	4	2.1	8	1.35	50	UH21201401508▽	61,03
1.4	0,10	4	2.1	8	1.35	50	UH21201401008●	61,03
1.4	0.15	4	2.1	10	1.35	50	UH21201401510▽	61,03
1.4	0,10	4	2.1	10	1.35	50	UH21201401010●	61,03
1.4	0.15	4	2.1	12	1.35	50	UH21201401512▽	61,03
1.4	0,10	4	2.1	12	1.35	50	UH21201401012●	61,03
1.4	0.15	4	2.1	14	1.35	50	UH21201401514▽	61,03
1.4	0,10	4	2.1	14	1.35	50	UH21201401014●	61,03
1.4	0.15	4	2.1	16	1.35	50	UH21201401516▽	61,03
1.4	0,10	4	2.1	16	1.35	50	UH21201401016●	61,03
1.5	0.15	4	2.3	6	1.45	50	UH21201501506	61,03
1.5	0.15	4	2.3	8	1.45	50	UH21201501508	61,03
1.5	0.15	4	2.3	10	1.45	50	UH21201501510	61,03
1.5	0.15	4	2.3	12	1.45	50	UH21201501512	61,03
1.5	0.15	4	2.3	14	1.45	50	UH21201501514	61,03
1.5	0.15	4	2.3	16	1.45	50	UH21201501516	61,03
1.5	0.15	4	2.3	18	1.45	60	UH21201501518	61,03
1.5	0.15	4	2.3	20	1.45	60	UH21201501520	61,03
1.6	0.15	4	2.4	6	1.55	50	UH21201601506▽	61,03
1.6	0,20	4	2.4	6	1.55	50	UH21201602006●	61,03
1.6	0.15	4	2.4	8	1.55	50	UH21201601508▽	61,03
1.6	0,20	4	2.4	8	1.55	50	UH21201602008●	61,03
1.6	0.15	4	2.4	10	1.55	50	UH21201601510▽	61,03
1.6	0,20	4	2.4	10	1.55	50	UH21201602010●	61,03
1.6	0.15	4	2.4	12	1.55	50	UH21201601512▽	61,03
1.6	0,20	4	2.4	12	1.55	50	UH21201602012●	61,03
1.6	0.15	4	2.4	14	1.55	50	UH21201601514▽	61,03
1.6	0,20	4	2.4	14	1.55	50	UH21201602014●	61,03
1.6	0.15	4	2.4	16	1.55	50	UH21201601516▽	61,03
1.6	0,20	4	2.4	16	1.55	50	UH21201602016●	61,03
1.6	0.15	4	2.4	18	1.55	60	UH21201601518▽	61,03
1.6	0,20	4	2.4	18	1.55	60	UH21201602018●	61,03
1.6	0.15	4	2.4	20	1.55	60	UH21201601520▽	61,03
1.6	0,20	4	2.4	20	1.55	60	UH21201602020●	61,03
1.8	0.20	4	2.7	6	1.75	50	UH2120180206	61,03
1.8	0.20	4	2.7	8	1.75	50	UH2120180208	61,03
1.8	0.20	4	2.7	10	1.75	50	UH2120180210	61,03
1.8	0.20	4	2.7	12	1.75	50	UH2120180212	61,03
1.8	0.20	4	2.7	14	1.75	50	UH2120180214	61,03
1.8	0.20	4	2.7	16	1.75	50	UH2120180216	61,03
1.8	0.20	4	2.7	18	1.75	60	UH2120180218	61,03
1.8	0.20	4	2.7	20	1.75	60	UH2120180220	61,03
2	0.20	4	3	6	1.95	50	UH2120200206	61,03
2	0.20	4	3	8	1.95	50	UH2120200208	61,03
2	0.20	4	3	10	1.95	50	UH2120200210	61,03
2	0.20	4	3	12	1.95	50	UH2120200212	61,03
2	0.20	4	3	14	1.95	50	UH2120200214	61,03

● stock standard ▽ stock exhaustion

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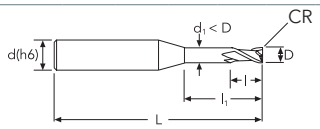
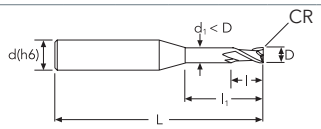
OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z2



	UH212
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
2	0.20	4	3	16	1.95	50	UH2120200216	**61,03**
2	0.20	4	3	18	1.95	60	UH2120200218	**61,03**
2	0.20	4	3	20	1.95	60	UH2120200220	**61,03**
2	0.20	4	3	25	1.95	75	UH2120200225	**68,62**
2	0.20	4	3	30	1.95	75	UH2120200230	**68,62**
2.5	0.30	4	3.7	8	2.40	50	UH2120250308	**61,03**
2.5	0.30	4	3.7	10	2.40	50	UH2120250310	**61,03**
2.5	0.30	4	3.7	12	2.40	50	UH2120250312	**61,03**
2.5	0.30	4	3.7	14	2.40	50	UH2120250314	**61,06**
2.5	0.30	4	3.7	16	2.40	50	UH2120250316	**61,03**
2.5	0.30	4	3.7	18	2.40	60	UH2120250318	**61,03**
2.5	0.30	4	3.7	20	2.40	60	UH2120250320	**61,03**
2.5	0.30	4	3.7	25	2.40	60	UH2120250325	**68,62**
2.5	0.30	4	3.7	30	2.40	75	UH2120250330	**68,62**
3	0.30	6	4.5	8	2.85	50	UH2120300308	**68,62**



	UH212
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
3	0.30	6	4.5	10	2.85	50	UH2120300310	**68,62**
3	0.30	6	4.5	12	2.85	50	UH2120300312	**68,62**
3	0.30	6	4.5	14	2.85	50	UH2120300314	**68,62**
3	0.30	6	4.5	16	2.85	60	UH2120300316	**68,62**
3	0.30	6	4.5	18	2.85	60	UH2120300318	**68,62**
3	0.30	6	4.5	20	2.85	60	UH2120300320	**68,62**
3	0.30	6	4.5	25	2.85	75	UH2120300325	**76,29**
4	0.40	6	4.5	10	3.85	60	UH2120400410	**68,62**
4	0.40	6	4.5	15	3.85	60	UH2120400415	**68,62**
4	0.40	6	4.5	20	3.85	60	UH2120400420	**68,62**
4	0.40	6	4.5	25	3.85	75	UH2120400425	**76,29**
4	0.40	6	4.5	30	3.85	75	UH2120400430	**76,29**
4	0.40	6	4.5	40	3.85	75	UH2120400440	**76,29**
4	0.40	6	4.5	40	3.85	75	UH2120400440	**74,42**

● stock standard ▽ stock exhaustion

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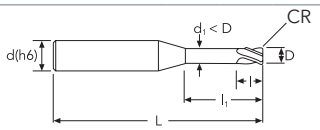
UHF4LN - catalogue page 589

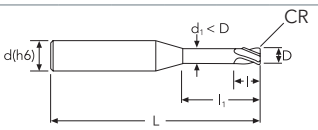


OSAWA NORM | UH | NMG UH RED | <70 HRC | 25° | RADIUS | Z4 UP



	UHF4LN
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
1	0.10	4	1	4	0.90	50	UHF4LN0100104	52,95
1	0.10	4	1	6	0.90	50	UHF4LN0100106	52,95
1	0.10	4	1	8	0.90	50	UHF4LN0100108	52,95
1	0.10	4	1	10	0.90	50	UHF4LN0100110	52,95
1	0.10	4	1	12	0.90	50	UHF4LN0100112	54,81
1	0.10	4	1	14	0.90	50	UHF4LN0100114	54,81
1	0.10	4	1	16	0.90	50	UHF4LN0100116	54,81
1	0.10	4	1	20	0.90	75	UHF4LN0100120	64,29
1	0.20	4	1	4	0.90	50	UHF4LN0100204	54,84
1	0.20	4	1	6	0.90	50	UHF4LN0100206	54,84
1	0.20	4	1	8	0.90	50	UHF4LN0100208	54,84
1	0.20	4	1	10	0.90	50	UHF4LN0100210	54,84
1	0.20	4	1	12	0.90	50	UHF4LN0100212	55,94
1	0.20	4	1	14	0.90	50	UHF4LN0100214	55,94
1	0.20	4	1	16	0.90	50	UHF4LN0100216	55,94
1	0.20	4	1	20	0.90	60	UHF4LN0100220	59,30
1	0.30	4	1	6	0.90	50	UHF4LN0100306	54,84
1	0.30	4	1	10	0.90	50	UHF4LN0100310	54,84
1	0.30	4	1	16	0.90	50	UHF4LN0100316	55,94
1	0.30	4	1	20	0.90	60	UHF4LN0100320	59,30
1.5	0.10	4	1.5	6	1.40	50	UHF4LN0150106	52,93
1.5	0.10	4	1.5	8	1.40	50	UHF4LN0150108	52,93
1.5	0.10	4	1.5	12	1.40	50	UHF4LN0150112	53,71
1.5	0.10	4	1.5	16	1.40	50	UHF4LN0150116	53,71
1.5	0.10	4	1.5	20	1.40	60	UHF4LN0150120	57,07
1.5	0.20	4	1.5	6	1.40	50	UHF4LN0150206	54,53
1.5	0.20	4	1.5	8	1.40	50	UHF4LN0150208	54,53
1.5	0.20	4	1.5	10	1.40	50	UHF4LN0150210	54,53
1.5	0.20	4	1.5	12	1.40	50	UHF4LN0150212	55,24
1.5	0.20	4	1.5	14	1.40	50	UHF4LN0150214	55,24
1.5	0.20	4	1.5	16	1.40	50	UHF4LN0150216	55,24
1.5	0.20	4	1.5	18	1.40	60	UHF4LN0150218	58,60
1.5	0.20	4	1.5	20	1.40	60	UHF4LN0150220	58,60
1.5	0.30	4	1.5	8	1.40	50	UHF4LN0150308	54,53
1.5	0.30	4	1.5	16	1.40	50	UHF4LN0150316	55,24
1.5	0.30	4	1.5	20	1.40	60	UHF4LN0150320	58,60
2	0.20	4	2	6	1.90	50	UHF4LN0200206	56,24
2	0.20	4	2	8	1.90	50	UHF4LN0200208	56,24
2	0.20	4	2	10	1.90	50	UHF4LN0200210	56,24
2	0.20	4	2	12	1.90	50	UHF4LN0200212	56,77
2	0.20	4	2	14	1.90	50	UHF4LN0200214	56,77
2	0.20	4	2	16	1.90	50	UHF4LN0200216	56,77
2	0.20	4	2	18	1.90	60	UHF4LN0200218	60,14
2	0.20	4	2	20	1.90	60	UHF4LN0200220	60,14
2	0.20	4	2	25	1.90	75	UHF4LN0200225	64,15
2	0.20	4	2	30	1.90	75	UHF4LN0200230	64,15
2	0.30	4	2	8	1.90	50	UHF4LN0200308	56,24
2	0.30	4	2	16	1.90	50	UHF4LN0200316	56,77
2	0.30	4	2	20	1.90	60	UHF4LN0200320	60,14
2	0.50	4	2	6	1.90	50	UHF4LN0200506	59,75
2	0.50	4	2	8	1.90	50	UHF4LN0200508	59,75
2	0.50	4	2	12	1.90	50	UHF4LN0200512	60,11
2	0.50	4	2	16	1.90	50	UHF4LN0200516	63,45
2	0.50	4	2	20	1.90	60	UHF4LN0200520	67,21
2	0.50	4	2	25	1.90	75	UHF4LN0200525	68,16
2	0.50	4	2	30	1.90	75	UHF4LN0200530	68,16
2.5	0.30	4	2.5	8	2.40	50	UHF4LN0250308	56,24
2.5	0.30	4	2.5	10	2.40	50	UHF4LN0250310	56,24



	UHF4LN
P	☆
M	
K	☆
N	
S	
H	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€
2.5	0.30	4	2.5	12	2.40	50	UHF4LN0250312	56,77
2.5	0.30	4	2.5	14	2.40	50	UHF4LN0250314	56,77
2.5	0.30	4	2.5	16	2.40	50	UHF4LN0250316	56,77
2.5	0.30	4	2.5	18	2.40	60	UHF4LN0250318	56,84
2.5	0.30	4	2.5	20	2.40	60	UHF4LN0250320	56,84
2.5	0.30	4	2.5	25	2.40	60	UHF4LN0250325	56,92
2.5	0.30	4	2.5	30	2.40	75	UHF4LN0250330	60,67
2.5	0.50	4	2.5	8	2.40	50	UHF4LN0250508	59,55
2.5	0.50	4	2.5	12	2.40	50	UHF4LN0250512	60,11
2.5	0.50	4	2.5	16	2.40	50	UHF4LN0250516	60,11
2.5	0.50	4	2.5	20	2.40	60	UHF4LN0250520	63,94
2.5	0.50	4	2.5	25	2.40	60	UHF4LN0250525	68,45
2.5	0.50	4	2.5	30	2.40	75	UHF4LN0250530	69,53
3	0.20	6	3	8	2.80	50	UHF4LN0300208	68,37
3	0.20	6	3	10	2.80	50	UHF4LN0300210	69,05
3	0.20	6	3	12	2.80	50	UHF4LN0300212	69,69
3	0.20	6	3	14	2.80	50	UHF4LN0300214	69,00
3	0.20	6	3	16	2.80	60	UHF4LN0300216	69,31
3	0.20	6	3	18	2.80	60	UHF4LN0300218	70,04
3	0.20	6	3	20	2.80	60	UHF4LN0300220	69,31
3	0.20	6	3	25	2.80	75	UHF4LN0300225	69,76
3	0.30	6	3	8	2.80	50	UHF4LN0300308	69,00
3	0.30	6	3	10	2.80	50	UHF4LN0300310	65,55
3	0.30	6	3	12	2.80	50	UHF4LN0300312	69,00
3	0.30	6	3	14	2.80	50	UHF4LN0300314	69,00
3	0.30	6	3	16	2.80	60	UHF4LN0300316	72,96
3	0.30	6	3	18	2.80	60	UHF4LN0300318	72,96
3	0.30	6	3	20	2.80	60	UHF4LN0300320	73,69
3	0.30	6	3	30	2.80	75	UHF4LN0300330	72,78
3	0.50	6	3	8	2.80	50	UHF4LN0300508	72,69
3	0.50	6	3	10	2.80	50	UHF4LN0300510	69,90
3	0.50	6	3	12	2.80	50	UHF4LN0300512	72,73
3	0.50	6	3	14	2.80	50	UHF4LN0300514	72,69
3	0.50	6	3	16	2.80	60	UHF4LN0300516	73,86
3	0.50	6	3	18	2.80	60	UHF4LN0300518	82,72
3	0.50	6	3	20	2.80	60	UHF4LN0300520	82,72
3	0.50	6	3	30	2.80	75	UHF4LN0300530	83,60
4	0.30	6	4	10	3.70	60	UHF4LN0400310	72,82
4	0.30	6	4	15	3.70	60	UHF4LN0400315	75,73
4	0.30	6	4	20	3.70	60	UHF4LN0400320	72,82
4	0.30	6	4	25	3.70	75	UHF4LN0400325	75,26
4	0.30	6	4	32	3.70	75	UHF4LN0400332	72,78
4	0.30	6	4	40	3.70	75	UHF4LN0400340	75,26
4	0.50	6	4	10	3.70	60	UHF4LN0400510	82,62
4	0.50	6	4	15	3.70	60	UHF4LN0400515	84,13
4	0.50	6	4	20	3.70	60	UHF4LN0400520	82,62
4	0.50	6	4	25	3.70	75	UHF4LN0400525	84,23
4	0.50	6	4	32	3.70	75	UHF4LN0400532	82,54
4	0.50	6	4	40	3.70	75	UHF4LN0400540	84,23

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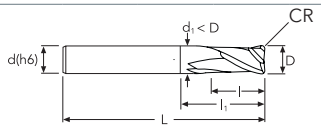
OSAWA NORM | UH | NMG UH RED | <70 HRC | 40° | RADIUS | Z2

UHCS4 - catalogue page 597



OSAWA NORM | UH | NMG UH RED | <70 HRC | 40° | RADIUS | Z4



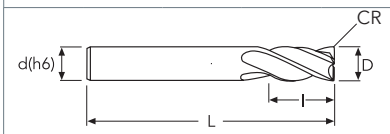
		UHCS2		UHCS4
P		☆		☆
M				
K		☆		☆
N				
S				
H		★		★

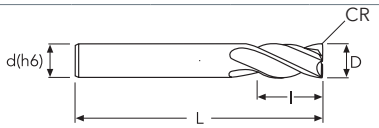
D	CR	d(h6)	l	l1	d1	L	EDP No.	€	EDP No.	€
1	0.10	4	2	3	0.95	50	UHCS2010	**66,62**	UHCS4010	**66,62**
1.5	0.10	4	2.5	4	1.45	50	UHCS2015	**66,62**	UHCS4015	**66,62**
2	0.10	4	3	6	1.95	50	UHCS2020	**66,62**	UHCS4020	**66,62**
3	0.10	6	4.5	8	2.85	55	UHCS2030	**72,92**	UHCS4030	**72,92**
4	0.10	6	6	10	3.85	55	UHCS2040	**72,92**	UHCS4040	**72,92**
5	0.20	6	6	11	4.85	50	UHCS2050	**72,92**	UHCS4050	**72,92**
6	0.20	6	9	15	5.85	60	UHCS2060	**72,92**	UHCS4060	**72,92**
8	0.20	8	12	20	7.70	70	UHCS2080	**92,33**	UHCS4080	**92,33**
10	0.20	10	15	25	9.70	70	UHCS2100	**138,27**	UHCS4100	**138,27**
12	0.30	12	18	30	11.70	80	UHCS2120	**190,83**	UHCS4120	**190,83**

UH410 - catalogue page 599



OSAWA NORM | UH | NMG UH RED | <70 HRC | 40° | RADIUS | Z4





		UH410		UH410
P		☆		☆
M				
K		☆		☆
N				
S				
H		★		★

D	CR	d(h6)	l	L	EDP No.	€	D	CR	d(h6)	l	L	EDP No.	€
1	0.20	6	3	50	UH41001002	**63,55**	10	2.00	10	22	70	UH41010020	**117,58**
1.5	0.20	6	4.5	50	UH41001502	**63,55**	12	0.30	12	25	75	UH41012003	**155,41**
2	0.30	6	6.5	50	UH41002003	**63,55**	12	0.50	12	25	75	UH41012005	**155,41**
2.5	0.30	6	6.5	50	UH41002503	**63,55**	12	1.00	12	25	75	UH41012010	**155,41**
2.5	0.50	6	6.5	50	UH41002505	**63,55**	12	1.50	12	25	75	UH41012015	**155,41**
3	0.20	6	9	50	UH41003002	**61,76**	12	2.00	12	25	75	UH41012020	**155,41**
3	0.30	6	9	50	UH41003003	**61,76**	12	3.00	12	25	75	UH41012030	**155,41**
3	0.50	6	9	50	UH41003005	**61,76**	14	0.50	14	32	90	UH41014005	**236,08**
4	0.30	6	12	50	UH41004003	**63,18**	14	1.00	14	32	90	UH41014010	**236,08**
4	0.50	6	12	50	UH41004005	**63,18**	16	0.50	16	32	90	UH41016005	**287,65**
4	1.00	6	12	50	UH41004010	**65,38**	16	1.00	16	32	90	UH41016010	**287,65**
5	0.30	6	15	50	UH41005003	**62,73**	16	2.00	16	32	90	UH41016020	**287,65**
5	0.50	6	15	50	UH41005005	**62,73**	18	1.00	18	38	100	UH41018010	**378,35**
5	1.00	6	15	50	UH41005010	**64,92**	20	0.50	20	38	100	UH41020005	**468,54**
6	0.30	6	16	50	UH41006003	**65,28**	20	1.00	20	38	100	UH41020010	**468,54**
6	0.50	6	16	50	UH41006005	**65,28**	20	2.00	20	38	100	UH41020020	**468,54**
6	1.00	6	16	50	UH41006010	**65,28**							
8	0.30	8	20	64	UH41008003	**83,13**							
8	0.50	8	20	64	UH41008005	**83,13**							
8	1.00	8	20	64	UH41008010	**83,13**							
8	1.50	8	20	64	UH41008015	**83,13**							
8	2.00	8	20	64	UH41008020	**83,13**							
10	0.30	10	22	70	UH41010003	**122,96**							
10	0.50	10	22	70	UH41010005	**117,58**							
10	1.00	10	22	70	UH41010010	**117,58**							
10	1.50	10	22	70	UH41010015	**117,58**							

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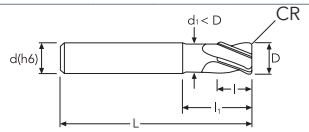
OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z4



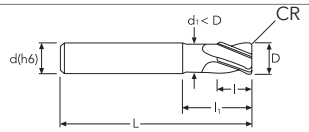
	UH411
P	☆
M	
K	☆
N	
S	
H	★

DxCR	d(h6)	l	l1	d1	L	EDP No.	€
3x0.30	6	4	12	2.85	55	UH4110300312	80,84
3x0.30	6	4	20	2.85	60	UH4110300320	80,84
3x0.50	6	4	10	2.85	55	UH4110300510	80,84
3x0.50	6	4	20	2.85	60	UH4110300520	80,84
4x0.30	6	6	12	3.85	55	UH4110400312	80,84
4x0.30	6	6	20	3.85	60	UH4110400320	80,84
4x0.50	6	6	12	3.85	55	UH4110400512	80,84
4x0.50	6	6	20	3.85	60	UH4110400520	80,84
4x1.00	6	6	12	3.85	55	UH4110401012	80,84
6x0.50	6	9	15	5.85	60	UH4110600520	80,84
6x1.00	6	9	15	5.85	60	UH4110601020	80,84
8x0.50	8	12	20	7.70	70	UH4110800525	99,25
8x1.00	8	12	20	7.70	70	UH4110801025	99,25
8x2.00	8	12	20	7.70	70	UH4110802025	99,25
10x0.50	10	15	25	9.70	70	UH4111000532	148,63
10x1.00	10	15	25	9.70	70	UH4111001032	148,63
10x2.00	10	15	25	9.70	70	UH4111002032	148,63
12x0.50	12	18	30	11.70	80	UH4111200538	205,13
12x1.00	12	18	30	11.70	80	UH4111201038	205,13
12x2.00	12	18	30	11.70	80	UH4111202038	205,13

UH412 - catalogue page 604



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z4



	UH412
P	☆
M	
K	☆
N	
S	
H	★

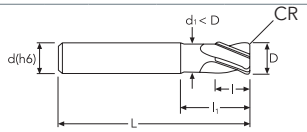
DxCR	d(h6)	l	l1	d1	L	EDP No.	€
2x0.30	6	4	30	1.90	75	UH4120200330	83,88
2x0.30	6	4	60	1.90	100	UH4120200360	99,13
3x0.30	6	5	30	2.80	75	UH4120300330	83,88
3x0.30	6	5	60	2.80	100	UH4120300360	99,13
3x0.50	6	5	30	2.80	75	UH4120300530	83,88
3x0.50	6	5	60	2.80	100	UH4120300560	99,13
4x0.30	6	8	32	3.70	75	UH4120400332	83,88
4x0.30	6	8	60	3.70	100	UH4120400360	99,13
4x0.50	6	8	32	3.70	75	UH4120400532	83,88
4x0.50	6	8	60	3.70	100	UH4120400560	99,13
6x0.50	6	9	20	5.85	90	UH4120600520	93,75
6x1.00	6	9	20	5.85	90	UH4120601020	93,75
8x0.50	8	12	25	7.70	100	UH4120800525	121,82
8x1.00	8	12	25	7.70	100	UH4120801025	121,82
10x0.50	10	15	32	9.70	100	UH4121000532	169,03
10x1.00	10	15	32	9.70	100	UH4121001032	169,03
10x2.00	10	15	32	9.70	100	UH4121002032	169,03
12x0.50	12	18	38	11.70	110	UH4121200538	259,34
12x1.00	12	18	38	11.70	110	UH4121201038	259,34
12x2.00	12	18	38	11.70	110	UH4121202038	259,34

OSAWA

UH413 - catalogue page 606



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 40° | RADIUS | Z4



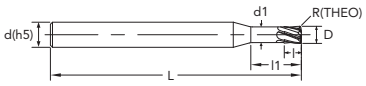
	UH413
P	☆
M	
K	☆
N	
S	
H	★

DxCR	d(h6)	l	l1	d1	L	EDP No.	€
6x0.30	6	10	60	5.50	125	UH4130600360	98,78
6x0.50	6	10	60	5.50	125	UH4130600560	98,78
6x1.00	6	10	60	5.50	125	UH4130601060	98,78
8x0.30	8	12	60	7.40	125	UH4130800360	128,41
8x0.50	8	12	60	7.40	125	UH4130800560	128,41
8x1.00	8	12	60	7.40	125	UH4130801060	128,41
8x2.00	8	12	60	7.40	125	UH4130802060	128,41
10x0.30	10	14	85	9.20	125	UH4131000385	172,87
10x0.50	10	14	85	9.20	125	UH4131000585	172,87
10x1.00	10	14	85	9.20	125	UH4131001085	172,87
10x2.00	10	14	85	9.20	125	UH4131002085	172,87
12x0.50	12	16	110	11.00	150	UH41312005110	276,59
12x1.00	12	16	110	11.00	150	UH41312010110	276,59
12x2.00	12	16	110	11.00	150	UH41312020110	276,59
16x0.50	16	22	110	15.00	150	UH41316005110	459,00
16x1.00	16	22	110	15.00	150	UH41316010110	459,00

UHF-RT - catalogue page 593



OSAWA NORM | UH | NMG / UH RED | <70 HRC | 20° | HIGH FEED | Z4~Z6



	UHF470RT	UHF670RT
P	☆	☆
M		
K		
N		
S		
H	★	★

D	R(THEO)	d(h5)	l	l1	d1	L	Z	EDP No.	€	€
2	0.13	6	2	6	1.9	50	4	UHF470RT020	106,50	
3	0.19	6	3	9	2.9	60	4	UHF470RT030	106,50	
4	0.25	6	4	12	3.9	60	6	UHF670RT040		119,25
5	0.31	6	5	15	4.7	60	6	UHF670RT050		119,25
6	0.38	6	5	18	5.5	60	6	UHF670RT060		119,25
8	0.50	8	7	24	7.5	75	6	UHF670RT080		138,31
10	0.63	10	8	30	9.5	90	6	UHF670RT100		186,18
12	0.75	12	10	36	11.5	100	6	UHF670RT120		222,20

UH610R - catalogue page 608

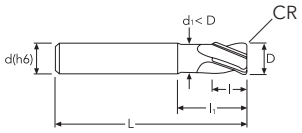


OSAWA NORM | UH | NMG UH RED | <70 HRC | 50° | RADIUS | Z6

UH611R - catalogue page 610



OSAWA NORM | UH | NMG UH RED | <70 HRC | 50° | RADIUS | Z6



	UH610R	UH611R
P	☆	☆
M		
K	☆	☆
N		
S		
H	★	★

D	CR	d(h6)	l	l1	d1	L	EDP No.	€	l	L	EDP No.	€
6	0.50	6	6	15	5.80	50	UH610R05060	**92,52**	15	90	UH611R05060	**98,96**
8	0.50	8	8	25	7.80	60	UH610R05080	**110,46**	20	100	UH611R05080	**124,16**
10	0.50	10							25	100	UH611R05100	**187,29**
10	1.00	10	10	30	9.80	70	UH610R10100	**172,53**	25	100	UH611R10100	**187,29**
12	0.50	12							30	110	UH611R05120	**255,54**
12	1.00	12	12	30	11.80	75	UH610R10120	**206,18**	30	110	UH611R10120	**255,54**
16	1.00	16							32	130	UH611R10160	**420,10**
20	1.00	20							38	140	UH611R10200	**614,98**
20	2.00	20							38	140	UH611R20200	**616,43**

MHMB204 - catalogue page 548/612





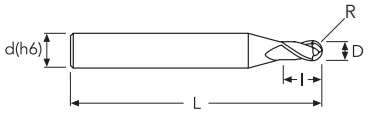
OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL

MHMB206 - catalogue page 550/614





OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL



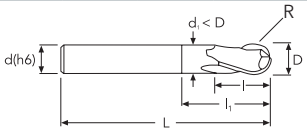
	MHMB204	MHMB206
P	★	★
M		
K	★	★
N		
S		
H	★	★

D	R	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€
0.2	0.10	4	0.2	50	MHMB200204	**90,10**					
0.3	0.15	4	0.3	50	MHMB200304	**80,79**					
0.4	0.20	4	0.4	50	MHMB200404	**74,59**	6	0.4	50	MHMB200406	**96,89**
0.5	0.25	4	0.4	50	MHMB200504	**68,38**	6	0.5	50	MHMB200506	**89,58**
0.6	0.30	4	0.5	50	MHMB200604	**66,80**	6	0.6	50	MHMB200606	**87,53**
0.7	0.35	4	0.6	50	MHMB200704	**70,42**					
0.8	0.40	4	0.6	50	MHMB200804	**62,12**	6	0.8	50	MHMB200806	**81,96**
0.9	0.45	4	0.8	50	MHMB200904	**70,42**					
1	0.50	4	0.8	50	MHMB201004	**54,62**					
1.5	0.75	4	1.35	50	MHMB201504	**58,55**					
2	1.00	4	1.7	50	MHMB202004	**62,94**					

UHCSB2 - catalogue page 623



OSAWA NORM | UH | NMG UH RED | <70 HRC | 30° | BALL NOSE | Z2 BALL



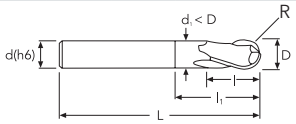
	UHCSB2
P	☆
M	
K	☆
N	
S	
H	★

D	R	d(h6)	l	L	EDP No.	€
1	0.50	6	1.5	40	UHCSB2010	**81,45**
1.5	0.75	6	2.5	40	UHCSB2015	**81,45**
2	1.00	6	3	40	UHCSB2020	**73,83**
2.5	1.25	6	3	50	UHCSB2025	**81,16**
3	1.50	6	4.5	50	UHCSB2030	**83,52**
4	2.00	6	6	50	UHCSB2040	**83,52**
5	2.50	6	7.5	50	UHCSB2050	**89,86**
6	3.00	6	9	50	UHCSB2060	**89,86**
8	4.00	8	12	50	UHCSB2080	**129,67**
10	5.00	10	15	60	UHCSB2100	**195,04**
12	6.00	12	18	60	UHCSB2120	**234,69**
14	7.00	14	32	90	UHCSB2140	**316,25**
16	8.00	16	32	90	UHCSB2160	**361,43**
18	9.00	18	38	100	UHCSB2180	**516,33**
20	10.00	20	38	100	UHCSB2200	**638,96**

UH250 - catalogue page 625



OSAWA NORM | UH | NMG UH RED | <70 HRC | 30° | BALL NOSE | Z2 BALL



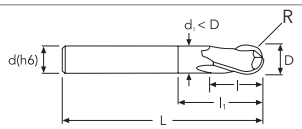
	UH250
P	☆
M	
K	☆
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
1	0.50	4	1	2.2	0.95	50	UH250010	**100,73**
1.5	0.75	4	1.5	3	1.45	50	UH250015	**100,73**
2	1.00	6	2	4	1.95	50	UH250020	**95,66**
2.5	1.25	6	4	10	2.40	50	UH250025	**89,11**
3	1.50	6	3	6	2.85	60	UH250030	**95,66**
4	2.00	6	4	8	3.85	70	UH250040	**100,02**
5	2.50	6	5	10	4.85	80	UH250050	**101,70**
6	3.00	6	6	12	5.85	90	UH250060	**105,02**
8	4.00	8	8	16	7.70	100	UH250080	**133,63**
10	5.00	10	10	20	9.70	100	UH250100	**198,25**
12	6.00	12	12	24	11.70	110	UH250120	**256,78**
14	7.00	14	32	80	13.00	125	UH250140	**378,02**
16	8.00	16	32	80	15.00	125	UH250160	**432,03**
18	9.00	18	38	80	17.00	125	UH250180	**612,06**
20	10.00	20	38	80	19.00	125	UH250200	**726,05**

UH253 - catalogue page 627



OSAWA NORM | UH | NMG UH RED | <70 HRC | 30° | BALL NOSE | Z2 BALL

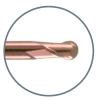


	UH253		UH253
P	☆		☆
M			
K	☆		☆
N			
S			
H	★		★

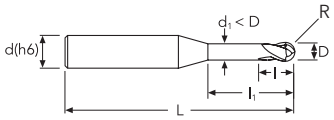
D	R	d(h6)	l	l1	d1	L	EDP No.	€	d(h6)	l	l1	d1	L	EDP No.	€
1	0.50	6	3	7	0.90	75	UH25301075	**82,39**	6	3	10	0.90	100	UH253010100	**96,12**
1.5	0.75	6	3	10	1.40	75	UH25301575	**82,39**	6	3	15	1.40	100	UH253015100	**96,12**
2	1.00	6	4	14	1.90	75	UH25302075	**82,39**	6	4	20	1.90	100	UH253020100	**96,12**
2.5	1.25	6	4	18	2.40	75	UH25302575	**82,39**							
3	1.50	6	5	21	2.80	75	UH25303075	**82,39**	6	5	30	2.80	100	UH253030100	**96,12**
4	2.00	6	8	28	3.70	75	UH25304075	**82,39**	6	8	40	3.70	100	UH253040100	**96,12**
5	2.50	6	9	50	4.60	100	UH253050100	**96,12**							
6	3.00	6	10	60	5.50	100	UH253060100	**96,12**	6	10	60	5.50	150	UH253060150	**120,41**
8	4.00	8	12	60	7.40	100	UH253080100	**133,79**	8	12	80	7.40	150	UH253080150	**173,87**
10	5.00	10	14	85	9.20	125	UH253100125	**234,10**	10	14	100	9.20	150	UH253100150	**280,90**
12	6.00	12	16	85	11.00	125	UH253120125	**287,62**	12	16	110	11.00	150	UH253120150	**321,04**
14	7.00	14	32	110	13.00	150	UH253140150	**446,34**	14	32	150	13.00	200	UH253140200	**577,27**
16	8.00	16	32	110	15.00	150	UH253160150	**446,34**	16	32	150	15.00	200	UH253160200	**577,27**
20	10.00	20	38	110	19.00	150	UH253200150	**702,24**	20	38	150	19.00	200	UH253200200	**904,58**

MHCRB2 - catalogue page 557/621





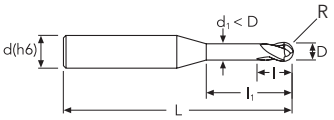
OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL



MHCRB2

P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
0.5	0.25	6	0.5	2	0.45	50	MHCRB20050206	**105,12**
0.5	0.25	6	0.5	4	0.45	50	MHCRB20050406	**105,12**
0.6	0.30	6	0.5	2	0.55	50	MHCRB20060206	**102,67**
0.6	0.30	6	0.5	4	0.55	50	MHCRB20060406	**102,67**
0.6	0.30	6	0.5	6	0.55	50	MHCRB20060606	**102,67**
0.8	0.40	6	0.8	2	0.75	50	MHCRB20080206	**85,37**
0.8	0.40	6	0.8	4	0.75	50	MHCRB20080406	**85,37**
0.8	0.40	6	0.8	6	0.75	50	MHCRB20080606	**85,37**
1.0	0.50	6	1	3	0.9	50	MHCRB20100306	**87,82**
1.0	0.50	6	1	6	0.9	50	MHCRB20100606	**87,82**
1.0	0.50	6	1	8	0.9	50	MHCRB20100806	**87,82**
1.0	0.50	6	1	10	0.9	50	MHCRB20101006	**87,82**
1.2	0.60	6	1.2	6	1.1	50	MHCRB20120606	**79,27**



MHCRB2

P	★
M	
K	★
N	
S	
H	★

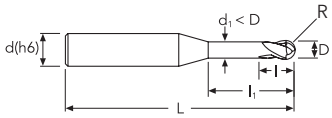
D	R	d(h6)	l	l1	d1	L	EDP No.	€
1.2	0.60	6	1.2	8	1.1	50	MHCRB20120806	**79,27**
1.2	0.60	6	1.2	10	1.1	50	MHCRB20121006	**79,27**
1.5	0.75	6	1.5	4	1.4	50	MHCRB20150406	**90,54**
1.5	0.75	6	1.5	8	1.4	50	MHCRB20150806	**92,79**
1.5	0.75	6	1.5	10	1.4	50	MHCRB20151006	**92,79**
1.5	0.75	6	1.5	12	1.4	50	MHCRB20151206	**92,79**
1.5	0.75	6	1.5	16	1.4	50	MHCRB20151606	**92,79**
2	1.00	6	3	6	1.9	50	MHCRB20200606	**76,95**
2	1.00	6	3	8	1.9	50	MHCRB20200806	**76,95**
2	1.00	6	3	10	1.9	50	MHCRB20201006	**78,34**
2	1.00	6	3	12	1.9	50	MHCRB20201206	**78,34**
2	1.00	6	3	16	1.9	50	MHCRB20201606	**83,84**
2	1.00	6	3	20	1.9	50	MHCRB20202006	**83,84**

MHLNB2 - catalogue page 552/616





OSAWA NORM | MH | NMG MH COAT | <70 HRC | 30° | BALL NOSE | Z2 BALL



MHLNB2

P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
0.2	0.10	4	0.2	0.5	0.17	50	MHLNB2002005	109,04
0.2	0.10	4	0.2	1	0.17	50	MHLNB200201	109,04
0.2	0.10	4	0.2	1.5	0.17	50	MHLNB2002015	109,04
0.3	0.15	4	0.3	1	0.27	50	MHLNB200301	98,49
0.3	0.15	4	0.3	2	0.27	50	MHLNB200302	98,49
0.3	0.15	4	0.3	3	0.27	50	MHLNB200303	98,49
0.4	0.20	4	0.4	1	0.37	50	MHLNB200401	91,45
0.4	0.20	4	0.4	2	0.37	50	MHLNB200402	91,45
0.4	0.20	4	0.4	3	0.37	50	MHLNB200403	91,45
0.4	0.20	4	0.4	4	0.37	50	MHLNB200404	91,45
0.4	0.20	4	0.4	5	0.37	50	MHLNB200405	91,45
0.5	0.25	4	0.4	2	0.45	50	MHLNB200502	84,42
0.5	0.25	4	0.4	3	0.45	50	MHLNB200503	84,42
0.5	0.25	4	0.4	4	0.45	50	MHLNB200504	84,42
0.5	0.25	4	0.4	5	0.45	50	MHLNB200505	84,42
0.5	0.25	4	0.4	6	0.45	50	MHLNB200506	84,42
0.5	0.25	4	0.4	8	0.45	50	MHLNB200508	84,42
0.6	0.30	4	0.5	2	0.55	50	MHLNB200602	80,90
0.6	0.30	4	0.5	3	0.55	50	MHLNB200603	80,90
0.6	0.30	4	0.5	4	0.55	50	MHLNB200604	80,90
0.6	0.30	4	0.5	5	0.55	50	MHLNB200605	80,90
0.6	0.30	4	0.5	6	0.55	50	MHLNB200606	80,90
0.6	0.30	4	0.5	8	0.55	50	MHLNB200608	80,90
0.8	0.40	4	0.6	2	0.75	50	MHLNB200802	77,38
0.8	0.40	4	0.6	4	0.75	50	MHLNB200804	77,38
0.8	0.40	4	0.6	5	0.75	50	MHLNB200805	77,38
0.8	0.40	4	0.6	6	0.75	50	MHLNB200806	77,38
0.8	0.40	4	0.6	7	0.75	50	MHLNB200807	77,38
0.8	0.40	4	0.6	8	0.75	50	MHLNB200808	77,38
0.8	0.40	4	0.6	10	0.75	50	MHLNB200810	77,38
1.0	0.50	4	0.8	3	0.9	50	MHLNB201003	65,07
1.0	0.50	4	0.8	4	0.9	50	MHLNB201004	65,07
1.0	0.50	4	0.8	5	0.9	50	MHLNB201005	65,07
1.0	0.50	4	0.8	6	0.9	50	MHLNB201006	65,07
1.0	0.50	4	0.8	7	0.9	50	MHLNB201007	65,07
1.0	0.50	4	0.8	8	0.9	50	MHLNB201008	65,07
1.0	0.50	4	0.8	9	0.9	50	MHLNB201009	65,07
1.0	0.50	4	0.8	10	0.9	50	MHLNB201010	65,07
1.0	0.50	4	0.8	12	0.9	50	MHLNB201012	65,07
1.0	0.50	4	0.8	14	0.9	50	MHLNB201014	65,07
1.0	0.50	4	0.8	16	0.9	50	MHLNB201016	65,07
1.0	0.50	4	0.8	20	0.9	60	MHLNB201020	65,07
1.2	0.60	4	1.0	6	1.1	50	MHLNB201206	65,07
1.2	0.60	4	1.0	8	1.1	50	MHLNB201208	65,07
1.2	0.60	4	1.0	10	1.1	50	MHLNB201210	65,07
1.2	0.60	4	1.0	12	1.1	50	MHLNB201212	65,07
1.4	0.70	4	1.1	8	1.3	50	MHLNB201408	65,07
1.4	0.70	4	1.1	12	1.3	50	MHLNB201412	65,07
1.4	0.70	4	1.1	16	1.3	50	MHLNB201416	65,07
1.5	0.75	4	1.2	8	1.4	50	MHLNB201508	65,07
1.5	0.75	4	1.2	12	1.4	50	MHLNB201512	67,70
1.5	0.75	4	1.2	16	1.4	50	MHLNB201516	65,07
1.5	0.75	4	1.2	18	1.4	60	MHLNB201518	65,07
1.5	0.75	6	2.4	12	1.4	50	MHLNB201520	66,86

MHLNB2

P	★
M	
K	★
N	
S	
H	★

D	R	d(h6)	l	l1	d1	L	EDP No.	€
1.6	0.80	4	1.3	8	1.5	50	MHLNB201608	65,07
1.6	0.80	4	1.3	12	1.5	50	MHLNB201612	65,07
1.6	0.80	4	1.3	16	1.5	50	MHLNB201616	65,07
1.6	0.80	4	1.3	20	1.5	60	MHLNB201620	65,07
1.8	0.90	4	1.4	8	1.7	50	MHLNB201808	65,07
1.8	0.90	4	1.4	12	1.7	50	MHLNB201812	65,07
1.8	0.90	4	1.4	16	1.7	50	MHLNB201816	65,07
1.8	0.90	4	1.4	20	1.7	60	MHLNB201820	65,07
2	1.00	4	1.6	4	1.9	50	MHLNB202004	63,31
2	1.00	4	1.6	6	1.9	50	MHLNB202006	63,31
2	1.00	4	1.6	8	1.9	50	MHLNB202008	63,31
2	1.00	4	1.6	10	1.9	50	MHLNB202010	63,31
2	1.00	4	1.6	12	1.9	50	MHLNB202012	63,31
2	1.00	4	1.6	14	1.9	50	MHLNB202014	63,31
2	1.00	4	1.6	16	1.9	50	MHLNB202016	63,31
2	1.00	4	1.6	18	1.9	60	MHLNB202018	65,07
2	1.00	4	1.6	20	1.9	60	MHLNB202020	65,07
2	1.00	4	1.6	22	1.9	60	MHLNB202022	65,07
2	1.00	4	1.6	25	1.9	75	MHLNB202025	71,22
2	1.00	4	1.6	30	1.9	75	MHLNB202030	73,87
3	1.50	6	2.4	8	2.8	50	MHLNB203008	84,42
3	1.50	6	2.4	10	2.8	50	MHLNB203010	84,42
3	1.50	6	2.4	12	2.85	50	MHLNB203012	86,47
3	1.50	6	2.4	16	2.8	60	MHLNB203016	89,57
3	1.50	6	2.4	20	2.8	60	MHLNB203020	93,06
3	1.50	6	2.4	25	2.8	75	MHLNB203025	98,49
3	1.50	6	2.4	30	2.8	75	MHLNB203030	98,49
3	1.50	6	2.4	35	2.8	75	MHLNB203035	98,49
4	2.00	6	3.2	10	3.7	50	MHLNB204010	84,42
4	2.00	6	3.2	16	3.7	60	MHLNB204016	84,42
4	2.00	6	3.2	20	3.7	60	MHLNB204020	84,42
4	2.00	6	3.2	25	3.7	75	MHLNB204025	98,49
4	2.00	6	3.2	30	3.7	75	MHLNB204030	98,49
4	2.00	6	3.2	35	3.7	75	MHLNB204035	98,49
4	2.00	6	3.2	40	3.7	100	MHLNB204040	105,52
4	2.00	6	3.2	45	3.7	100	MHLNB204045	105,52
4	2.00	6	3.2	50	3.7	100	MHLNB204050	105,52



HSS/CO - HSSP

GENERAL PURPOSE

The Osawa catalogue includes a wide range of HSS/Co - HSSP end mills, both coated and uncoated.

Il catalogo Osawa include un'ampia scelta di frese in HSS/Co - HSSP nudo e rivestito.

Der Osawa Katalog umfasst eine große Auswahl an beschichteten und unbeschichteten Fräsern aus HSS/Co - HSSP.

Le catalogue Osawa inclut une large gamme de fraises en HSS/Co - HSSP, soit revêtues, soit non revêtues.

El catálogo Osawa incluye una amplia variedad de fresas de HSS/Co - HSSP con o sin recubrimiento.

В каталоге Osawa также представлена широкая гамма концевых фрез изготовленных из HSS/Co - HSSP с покрытием и без покрытия.

WS2 - catalogue page 642

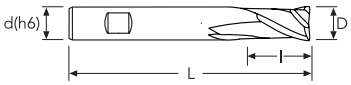


DIN 327 | N | HSS/Co BR | 30° | SQUARE | Z2

TAWS2 - catalogue page 642



DIN 327 | N | HSS/Co PV200 | 30° | SQUARE | Z2



	WS2	TAWS2
P	★	★
M	☆	☆
K	★	★
N	☆	☆
S		
H		

D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€
1	6	2.5	47	WS2010	**20,03**	TAWS2010	**27,75**
1.5	6	3	47	WS2015	**19,02**	TAWS2015	**26,74**
2	6	4	48	WS2020	**16,52**	TAWS2020	**24,44**
2.5	6	5	49	WS2025	**16,52**	TAWS2025	**24,40**
3	6	5	49	WS2030	**16,52**	TAWS2030	**24,44**
3.5	6	6	50	WS2035	**16,52**	TAWS2035	**24,44**
4	6	7	51	WS2040	**16,52**	TAWS2040	**24,44**
4.5	6	7	51	WS2045	**16,52**	TAWS2045	**24,44**
5	6	8	52	WS2050	**16,52**	TAWS2050	**24,44**
5.5	6	8	52	WS2055	**16,52**	TAWS2055	**24,44**
6	6	8	52	WS2060	**16,52**	TAWS2060	**24,44**
6.5	10	10	60	WS2065	**23,69**	TAWS2065	**37,93**
7	10	10	60	WS2070	**23,69**	TAWS2070	**37,51**
7.5	10	10	60	WS2075	**23,69**	TAWS2075	**37,93**
8	10	11	61	WS2080	**23,69**	TAWS2080	**37,51**
8.5	10	11	61	WS2085	**23,69**	TAWS2085	**39,77**
9	10	11	61	WS2090	**23,69**	TAWS2090	**38,77**
9.5	10	11	61	WS2095	**23,69**	TAWS2095	**39,29**
10	10	13	63	WS2100	**23,69**	TAWS2100	**38,77**
10.5	12	13	70	WS2105	**31,44**	TAWS2105	**48,16**
11	12	13	70	WS2110	**31,44**	TAWS2110	**48,16**
11.5	12	13	70	WS2115	**31,44**	TAWS2115	**48,16**
12	12	16	73	WS2120	**31,44**	TAWS2120	**47,57**
12.5	12	16	73	WS2125	**34,81**	TAWS2125	**51,36**
13	12	16	73	WS2130	**34,81**	TAWS2130	**51,64**
13.5	12	16	73	WS2135	**34,81**	TAWS2135	**51,64**
14	12	16	73	WS2140	**34,81**	TAWS2140	**51,50**
15	12	16	73	WS2150	**40,44**	TAWS2150	**58,11**
16	16	19	79	WS2160	**42,49**	TAWS2160	**61,70**
17	16	19	79	WS2170	**52,50**	TAWS2170	**74,73**
18	16	19	79	WS2180	**52,50**	TAWS2180	**75,45**
19	16	19	79	WS2190	**62,74**	TAWS2190	**91,85**
20	20	22	88	WS2200	**62,74**	TAWS2200	**99,03**
22	20	22	88	WS2220	**69,98**	TAWS2220	**109,54**
24	25	26	102	WS2240	**100,69**		
25	25	26	102	WS2250	**100,69**	TAWS2250	**145,27**
26	25	26	102	WS2260	**133,82**		
28	25	26	102	WS2280	**158,39**		
30	25	26	102	WS2300	**169,51**		

WS3 - catalogue page 649



DIN 844 | N | HSS/Co BR | 30° | SQUARE | Z3

TAWS3 - catalogue page 649

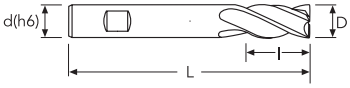


DIN 844 | N | HSS/Co PV200 | 50° | SQUARE | Z3

TAWSH3 - catalogue page 653



DIN 844 | N | HSS/Co PV200 | 50° | SQUARE | Z3



		WS3		TAWS3		TAWSH3
P		★		★		★
M		☆		☆		☆
K		★		★		★
N		☆		☆		☆
S						
H						

D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€
1	6	3	47	WS3010	**22,09**				
1.5	6	7	51	WS3015	**22,09**				
2	6	7	51	WS3020	**20,69**	TAWS3020	**28,42**		
2.5	6	8	52	WS3025	**20,69**	TAWS3025	**28,42**		
3	6	8	52	WS3030	**20,69**	TAWS3030	**28,42**		
3.5	6	10	54	WS3035	**20,69**	TAWS3035	**28,42**		
4	6	11	55	WS3040	**20,69**	TAWS3040	**28,42**		
4.5	6	11	55	WS3045	**20,69**	TAWS3045	**28,42**		
5	6	13	57	WS3050	**20,69**	TAWS3050	**28,42**		
5.5	6	13	57	WS3055	**20,69**	TAWS3055	**28,42**		
6	6	13	57	WS3060	**20,69**	TAWS3060	**28,42**	TAWSH3060	**38,72**
6.5	10	16	66	WS3065	**27,93**	TAWS3065	**41,57**		
7	10	16	66	WS3070	**27,93**	TAWS3070	**41,57**		
8	10	19	69	WS3080	**27,93**	TAWS3080	**41,57**	TAWSH3080	**55,55**
8.5	10	19	69	WS3085	**27,93**	TAWS3085	**43,61**		
9	10	19	69	WS3090	**27,93**	TAWS3090	**42,91**		
10	10	22	72	WS3100	**27,93**	TAWS3100	**42,91**	TAWSH3100	**56,90**
11	12	22	79	WS3110	**37,29**	TAWS3110	**53,67**		
12	12	26	83	WS3120	**37,29**	TAWS3120	**53,67**	TAWSH3120	**72,10**
13	12	26	83	WS3130	**40,95**	TAWS3130	**57,82**		
14	12	26	83	WS3140	**40,95**	TAWS3140	**59,44**	TAWSH3140	**79,92**
15	12	26	83	WS3150	**47,75**	TAWS3150	**66,33**		
16	16	32	92	WS3160	**50,02**	TAWS3160	**69,70**	TAWSH3160	**94,76**
18	16	32	92	WS3180	**61,80**	TAWS3180	**85,53**	TAWSH3180	**116,43**
20	20	38	104	WS3200	**73,86**	TAWS3200	**111,14**	TAWSH3200	**148,26**
22	20	38	104	WS3220	**82,27**	TAWS3220	**122,05**		
25	25	45	121	WS3250	**118,46**	TAWS3250	**162,96**		
30	25	45	121	WS3300	**200,07**				
32	32	53	133	WS3320	**225,60**				

WS4(6) - catalogue page 655

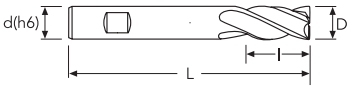


DIN 844 | N | HSS/Co BR | 30° | SQUARE | Z4~Z6

TAWS4(6) - catalogue page 655



DIN 844 | N | HSS/Co PV200 | 30° | SQUARE | Z4~Z6



							WS4(6)		TAWS4(6)	
P							★		★	
M							☆		☆	
K							★		★	
N							☆		☆	
S										
H										
D(e8)	d(h6)	l	L	Z		EDP No.	€	EDP No.	€	
2	6	7	51	4		WS4020	**20,69**	TAWS4020	**28,36**	
3	6	8	52	4		WS4030	**20,69**	TAWS4030	**28,36**	
4	6	11	55	4		WS4040	**20,69**	TAWS4040	**28,36**	
5	6	13	57	4		WS4050	**20,69**	TAWS4050	**28,36**	
6	6	13	57	4		WS4060	**20,69**	TAWS4060	**28,36**	
7	10	16	66	4		WS4070	**27,93**	TAWS4070	**41,43**	
8	10	19	69	4		WS4080	**27,93**	TAWS4080	**41,43**	
9	10	19	69	4		WS4090	**27,93**	TAWS4090	**42,85**	
10	10	22	72	4		WS4100	**27,93**	TAWS4100	**42,85**	
11	12	22	79	4		WS4110	**38,90**	TAWS4110	**55,91**	
12	12	26	83	4		WS4120	**38,90**	TAWS4120	**55,28**	
13	12	26	83	4		WS4130	**43,00**	TAWS4130	**60,38**	
14	12	26	83	4		WS4140	**43,00**	TAWS4140	**61,30**	
15	12	26	83	4		WS4150	**50,02**	TAWS4150	**69,33**	
16	16	32	92	4		WS4160	**52,50**	TAWS4160	**71,94**	
17	16	32	92	4				TAWS4170	**87,59**	
18	16	32	92	4		WS4180	**64,94**	TAWS4180	**88,16**	
19	16	32	92	4				TAWS4190	**109,61**	
20	20	38	104	4		WS4200	**77,51**	TAWS4200	**114,36**	
22	20	38	104	4		WS4220	**86,44**	TAWS4220	**126,13**	
24	25	45	121	6		WS6240	**124,24**			
25	25	45	121	4		WS4250	**124,24**	TAWS4250	**168,72**	
28	25	45	121	6		WS6280	**196,34**	TAWS6280	**251,92**	
30	25	45	121	6		WS6300	**210,02**	TAWS6300	**265,04**	
32	32	53	133	6				TAWS6320	**291,82**	
36	32	53	133	6				TAWS6360	**377,57**	
40	32*	63	143	6				TAWS6400	**457,98**	

*TAWS4(6) ø40 = d - 40 mm

TAWSR - catalogue page 659



DIN 844 | N | HSS/Co PV200 | 30° | NR COARSE | Z3~Z4

WSFR - catalogue page 661

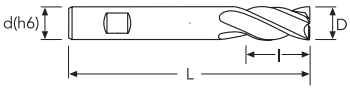


DIN 844 | N | HSS/Co BR | 30° | HR FINE | Z3~Z6

TAWSFR - catalogue page 661



DIN 844 | N | HSS/Co PV200 | 30° | HR FINE | Z3~Z6



						TAWSR		WSFR		TAWSFR
P						★		★		★
M						☆		☆		☆
K						★		★		★
N						☆		☆		☆
S										
H										
D(e8)	d(h6)	l	L	Z	EDP No.	€	EDP No.	€	EDP No.	€
6	6	13	57	3	TAWSR060	**51,06**	WSFR060	**48,70**	TAWSFR060	**55,29**
7	10	16	66	3	TAWSR070	**59,82**			TAWSFR070	**64,44**
8	10	19	69	3	TAWSR080	**59,82**	WSFR080	**51,92**	TAWSFR080	**64,44**
9	10	19	69	3	TAWSR090	**61,24**			TAWSFR090	**65,86**
10	10	22	72	4	TAWSR100	**61,24**	WSFR100	**51,92**	TAWSFR100	**65,86**
11	12	22	79	4	TAWSR110	**68,98**			TAWSFR110	**74,23**
12	12	26	83	4	TAWSR120	**68,20**	WSFR120	**57,70**	TAWSFR120	**73,20**
13	12	26	83	4	TAWSR130	**83,33**			TAWSFR130	**90,01**
14	12	26	83	4	TAWSR140	**83,92**	WSFR140	**73,42**	TAWSFR140	**90,39**
15	12	26	83	4	TAWSR150	**90,22**			TAWSFR150	**97,54**
16	16	32	92	4	TAWSR160	**93,26**	WSFR160	**82,20**	TAWSFR160	**100,33**
17	16	32	92	4	TAWSR170	**100,88**			TAWSFR170	**102,51**
18	16	32	92	4	TAWSR180	**101,24**	WSFR180	**86,37**	TAWSFR180	**108,86**
20	20	38	104	4	TAWSR200	**126,75**	WSFR200	**99,53**	TAWSFR200	**135,45**
22	20	38	104	5					TAWSFR220	**166,81**
25	25	45	121	5					TAWSFR250	**197,06**
28	25	45	121	6 CH*					TAWSFR280	**285,07**
30	25	45	121	6					TAWSFR300	**285,07**
32	32	53	133	6					TAWSFR320	**306,03**
36	32	53	133	6					TAWSFR360	**452,29**
40	32	63	143	6					TAWSFR400	**494,92**

*CH: center hole (no center cut)

WL4(6) - catalogue page 657



TAWL4(6) - catalogue page 657



WLFR - catalogue page 663



TAWLFR - catalogue page 663

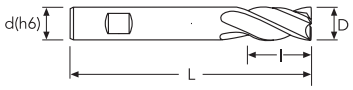


DIN 844 | N | HSS/Co BR | 30° | SQUARE | Z4~Z6

DIN 844 | N | HSS/Co PV200 | 30° | SQUARE | Z4~Z6

DIN 844 | N | HSS/Co BR | 30° | HR FINE | Z3~Z6

DIN 844 | N | HSS/Co PV200 | 30° | HR FINE | Z3~Z6



	WL4(6)	TAWL4(6)	WLFR	TAWLFR
P	★	★	★	★
M	☆	☆	☆	☆
K	★	★	★	★
N	☆	☆	☆	☆
S				
H				

D(e8)	d(h6)	l	L	Z	EDP No.	€	EDP No.	€	Z	EDP No.	€	EDP No.	€
3	6	12	56	4	WL4030	**26,84**	TAWL4030	**36,95**					
4	6	19	63	4	WL4040	**26,84**	TAWL4040	**36,95**					
5	6	24	68	4	WL4050	**26,84**	TAWL4050	**36,95**					
6	6	24	68	4	WL4060	**26,84**	TAWL4060	**35,69**	3	WLFR060	**62,96**	TAWLFR060	**71,74**
7	10	30	80	4	WL4070	**37,73**	TAWL4070	**58,32**					
8	10	38	88	4	WL4080	**37,73**	TAWL4080	**54,12**	3	WLFR080	**68,16**	TAWLFR080	**84,46**
9	10	38	88	4	WL4090	**37,73**	TAWL4090	**57,70**					
10	10	45	95	4	WL4100	**37,73**	TAWL4100	**54,34**	4	WLFR100	**68,16**	TAWLFR100	**84,75**
11	12	45	102	4	WL4110	**52,65**	TAWL4110	**78,93**					
12	12	53	110	4	WL4120	**52,65**	TAWL4120	**73,20**	4	WLFR120	**78,61**	TAWLFR120	**99,09**
13	12	53	110	4	WL4130	**60,11**	TAWL4130	**93,41**					
14	12	53	110	4	WL4140	**60,11**	TAWL4140	**81,76**	4	WLFR140	**109,98**	TAWLFR140	**131,56**
15	12	53	110	4	WL4150	**69,98**	TAWL4150	**102,45**					
16	16	63	123	4	WL4160	**73,49**	TAWL4160	**98,87**	4	WLFR160	**115,25**	TAWLFR160	**140,70**
17	16	63	123	4	WL4170	**91,00**	TAWL4170	**121,60**					
18	16	63	123	4	WL4180	**90,89**	TAWL4180	**122,85**	4	WLFR180	**130,90**	TAWLFR180	**162,71**
19	16	63	123	4	WL4190	**108,45**							
20	20	75	141	4	WL4200	**108,45**	TAWL4200	**158,91**	4	WLFR200	**144,06**	TAWLFR200	**194,37**
22	20	75	141	6			TAWL6220	**172,34**	5			TAWLFR220	**249,12**
25	25	90	166	6	WL6250	**174,04**	TAWL6250	**254,12**	5			TAWLFR250	**299,20**
30	25	90	166	6			TAWL6300	**347,58**	6			TAWLFR300	**430,11**
32	32	106	186	6			TAWL6320	**405,63**	6			TAWLFR320	**476,12**
36	32	106	186	6			TAWL6360	**517,52**	6			TAWLFR360	**578,47**
40	40*	125	217	6			TAWL6400	**690,61**	6			TAWLFR400	**727,62**

*TAWL4(6) ø40 = d - 40 mm



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.

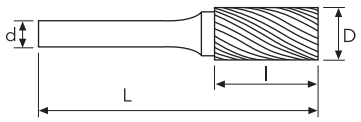
Retrouvez toute la qualité Osawa dans la gamme de limes rotatives carbure, disponibles dans une grande variété de formes et géométries.

Toda la calidad Osawa también se propone en la gama de limas rotativas de metal duro, disponibles con una amplia variedad de formas y geometrías.

Широкий выбор форм и геометрии в сочетании с высочайшим качеством характеризует линию твёрдосплавных борфрез Osawa.

SA - catalogue page 687






M

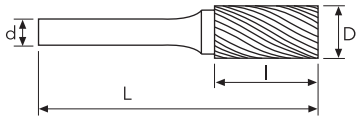

MPC

OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SA (M) €		SA (MPC) €
1.5	3		6	38	5	SA41M	**15,42**	SA41MPC	**15,42**
2.5	3		11	38	5	SA42M	**15,42**	SA42MPC	**15,42**
3.0	3		14	38	5	SA43M	**15,42**	SA43MPC	**15,42**
3.0		6	12	50	5	SA11M	**26,29**		
4.0	3		12	38	5	SA52M	**41,67**	SA52MPC	**41,67**
4.0		6	13	50	5	SA13M	**26,29**		
5.0	3		12.7	38	5	SA53M	**37,03**	SA53MPC	**37,03**
5.0		6	16	50	5	SA14M	**26,29**		
6.0		6	18	50	5	SA1M	**26,29**		
6.3	3		12.7	45	5	SA51M	**25,22**	SA51MPC	**25,22**
8.0		6	19	64	5	SA2M	**34,36**		
9.5		6	19	64	5	SA3M	**37,03**		
11.0		6	25	70	5	SA4M	**53,55**		
12.7		6	25	70	5	SA5M	**57,76**		
16.0		6	25	70	5	SA6M	**72,74**		
19.0		6	25	70	5	SA7M	**108,31**		
25.0		6	25	70	5	SA9M	**151,48**		

SB - catalogue page 688






M

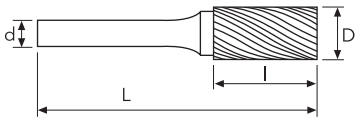

MPC

OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SB (M) €		SB (MPC) €
1.5	3		6	38	5	SB41M	**16,61**	SB41MPC	**16,61**
2.5	3		11	38	5	SB42M	**16,61**	SB42MPC	**16,61**
3.0	3		14	38	5	SB43M	**16,61**	SB43MPC	**16,61**
3.0		6	12	50	5	SB11M	**28,56**		
4.0		6	13	50	5	SB13M	**28,56**		
5.0		6	16	50	5	SB14M	**28,56**		
6.0		6	18	50	5	SB1M	**28,56**		
6.3	3		4.7	37	5	SB51M	**27,22**	SB51MPC	**27,22**
8.0		6	19	64	5	SB2M	**37,86**		
9.5		6	19	64	5	SB3M	**40,65**		
11.0		6	25	70	5	SB4M	**59,21**		
12.7		6	25	70	5	SB5M	**63,56**		
16.0		6	25	70	5	SB6M	**81,54**		

SC - catalogue page 689



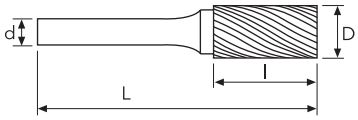


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SC (M) €		SC (MPC) €
2.5	3		11	38	5	SC41M	**15,42**	SC41MPC	**15,42**
3.0	3		14	38	5	SC42M	**15,42**	SC42MPC	**15,42**
3.0		6	12	50	5	SC11M	**30,49**		
4.0		6	14	50	5	SC13M	**30,49**		
5.0	3		12.7	38	5	SC53M	**37,03**	SC53MPC	**37,03**
5.0		6	16	50	5	SC14M	**30,49**		
6.0		6	18	50	5	SC1M	**30,49**		
6.3	3		12.7	45	5	SC51M	**25,22**	SC51MPC	**26,03**
8.0		6	19	63	5	SC2M	**37,49**		
9.5		6	19	63	5	SC3M	**41,27**		
11.0		6	25	70	5	SC4M	**58,97**		
12.7		6	25	70	5	SC5M	**64,76**		
16.0		6	25	70	5	SC6M	**81,40**		

SD - catalogue page 690



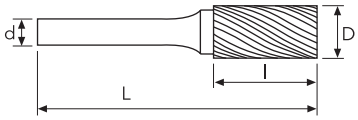


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SD (M) €		SD (MPC) €
2.5	3		2.3	38	5	SD41M	**15,42**	SD41MPC	**15,42**
3.0	3		2.5	38	5	SD42M	**15,42**	SD42MPC	**15,42**
3.0		6	2.5	50	5	SD11M	**28,10**		
5.0	3		4.7	38	5	SD53M	**37,03**	SD53MPC	**37,03**
5.0		6	4	50	5	SD14M	**28,10**		
6.0		6	4.7	50	5	SD1M	**28,10**		
6.3	3		5	38	5	SD51M	**25,22**	SD51MPC	**25,22**
8.0		6	6	52	5	SD2M	**30,15**		
9.5		6	8	54	5	SD3M	**33,89**		
11.0		6	9.5	55	5	SD4M	**39,08**		
12.7		6	11	56	5	SD5M	**45,57**		
16.0		6	14	60	5	SD6M	**56,56**		
19.0		6	16.5	62	5	SD7M	**78,02**		
25.0		6	22	68	5	SD9M	**134,10**		

SE - catalogue page 691



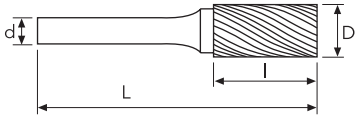


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SE (M) €		SE (MPC) €
3.0	3		5.5	38	5	SE41M	**15,42**	SE41MPC	**15,42**
6.0		6	10	50	5	SE1M	**34,36**		
5.0	3		7.1	38	5	SE53M	**37,03**	SE53MPC	**37,05**
6.3	3		9.5	42	5	SE51M	**25,22**	SE51MPC	**25,22**
9.5		6	16	60	5	SE3M	**41,27**		
12.7		6	22	67	5	SE5M	**60,31**		
16.0		6	25	70	5	SE6M	**83,82**		

SF - catalogue page 692



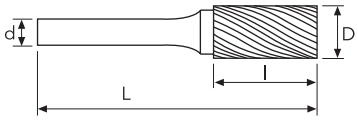


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SF (M) €		SF (MPC) €
3.0	3		6	38	5	SF41M	**15,42**	SF41MPC	**15,42**
3.0	3		14	38	5	SF42M	**15,42**	SF42MPC	**15,42**
3.0		6	12	50	5	SF11M	**31,95**		
5.0	3		12.7	38	5	SF53M	**37,03**	SF53MPC	**37,03**
6.0		6	18	50	5	SF1M	**31,95**		
6.3	3		12.7	45	5	SF51M	**25,22**	SF51MPC	**25,22**
9.6		6	19	64	5	SF3M	**40,27**		
11.0		6	25	70	5	SF4M	**55,96**		
12.7		6	25	70	5	SF5M	**59,55**		
16.0		6	25	70	5	SF6M	**82,37**		

SG - catalogue page 693



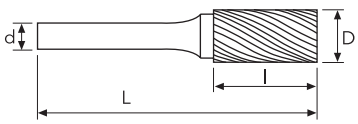


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SG (M) €		SG (MPC) €
3.0	3		6	38	5	SG41M	**15,42**	SG41MPC	**15,42**
3.0	3		10	38	5	SG43M	**15,42**	SG43MPC	**15,42**
3.0	3		14	38	5	SG44M	**15,42**	SG44MPC	**15,42**
5.0	3		12.7	38	5	SG53M	**37,03**	SG53MPC	**37,03**
6.0		6	18	50	5	SG1M	**31,95**		
6.3	3		12.7	45	5	SG51M	**25,22**	SG51MPC	**25,22**
8.0		6	19	64	5	SG2M	**38,83**		
9.5		6	19	64	5	SG3M	**42,94**		
12.7		6	25	70	5	SG5M	**58,50**		
16.0		6	25	70	5	SG6M	**81,30**		
19.0		6	25	70	5	SG7M	**108,31**		

SH - catalogue page 694



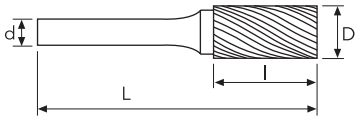


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	PACKAGING		SH (M) €		SH (MPC) €
3.0	3		6	38	5	SH41M	**15,42**	SH41MPC	**15,42**
5.0	3		9.5	38	5	SH53M	**37,03**	SH53MPC	**37,03**
8.0		6	19	64	5	SH2M	**42,32**		
12.7		6	32	77	5	SH5M	**86,22**		

SJ - catalogue page 695



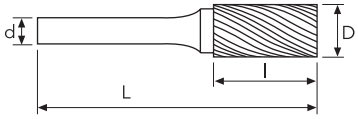


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SJ (M) €		SJ (MPC) €
3.0	3		2.5	38	60°	5	SJ42M	**15,42**	SJ42MPC	**15,42**
9.5		6	8	56	60°	5	SJ3M	**36,77**	SJ3MPC	
12.7		6	11	59	60°	5	SJ5M	**44,76**	SJ5MPC	

SK - catalogue page 696



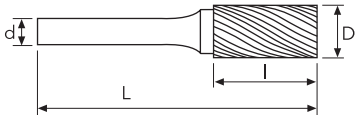


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SK (M) €		SK (MPC) €
3.0	3		1.5	38	90°	5	SK42M	**15,42**	SK42MPC	**15,42**
6.0		6	3	50	90°	5	SK1M	**28,10**		
9.5		6	4.7	53	90°	5	SK3M	**36,77**		
12.7		6	6.3	55	90°	5	SK5M	**44,76**		
16.0		6	8	57	90°	5	SK6M	**59,55**		

SL - catalogue page 697



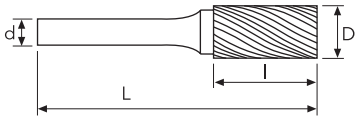


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SL (M) €		SL (MPC) €
3.0	3		10	38	10°	5	SL41M	**15,42**	SL41MPC	**15,42**
3.0	3		14	38	8°	5	SL42M	**15,42**	SL42MPC	**15,42**
5.0	3		12.7	38	14°	5	SL53M	**37,03**	SL53MPC	**37,03**
6.0		6	18	50	14°	5	SL1M	**32,67**		
8.0		6	25.4	70	14°	5	SL2M	**42,80**		
9.6		6	30.2	76	14°	5	SL3M	**51,50**		
12.7		6	32	77	14°	5	SL4M	**62,94**		
16.0		6	33.3	78	14°	5	SL5M	**121,77**		

SM - catalogue page 698



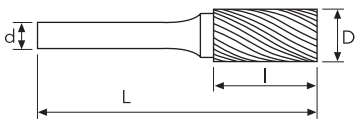


M MPC OSAWA NORM

D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SM (M) €		SM (MPC) €
3.0	3		8	38	18°	5	SM41M	**15,42**	SM41MPC	**15,42**
3.0	3		11	38	14°	5	SM42M	**15,42**	SM42MPC	**15,42**
3.0	3		15	38	10°	5	SM43M	**15,42**	SM43MPC	**15,42**
6.0		6	12.7	50	22°	5	SM1M	**30,99**		
6.0		6	20	50	14°	5	SM2M	**32,67**		
6.0		6	25	50	10°	5	SM3M	**34,86**		
6.3	3		12.7	51	22°	5	SM51M	**26,03**	SM51MPC	**26,03**
9.5		6	16	64	28°	5	SM4M	**51,61**		
12.7		6	22	71	28°	5	SM5M	**64,76**		
16.0		6	25	74	31°	5	SM6M	**86,22**		

SN - catalogue page 699





M MPC OSAWA NORM

D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SN (M) €		SN (MPC) €
3.0	3		4	38	10°	5	SN42M	**15,42**	SN42MPC	**15,42**
6.0		6	8	50	10°	5	SN1M	**31,25**		
9.5		6	9.5	55	13°	5	SN2M	**45,57**		
12.7		6	12.7	58	28°	5	SN4M	**64,40**		

GENERAL CONDITIONS OF SALE

These General Conditions of Sale apply to all orders accepted by SORMA S.p.A., with registered office in Via Don F. Tosatto no. 8, Mestre-Venice, Italy (hereinafter called "Seller") from any individual or body corporate having registered office or domicile in Italy or abroad and exercising its own commercial, business or professional activity (hereinafter called the "Purchaser") and govern all sales of goods specified in the catalogue of the Seller (hereinafter called the "Products"). Conditions differing from those contained herein will be effective only subject to written acceptance.

1. PRODUCTS
The Products subject of these sales are those specified in the catalogue of the Seller, with the specifications and drawings contained therein.

2. ORDERS
2.1 Orders, both direct and indirect, are always subject to acceptance by the Seller. The acknowledgement will describe the Products sold according to the catalogue code and will define the quantity of each product, the unit price, the delivery terms, and the transport and payment conditions. No order will be considered binding for the Seller until it has been accepted with acknowledgement issued by the latter.
2.2 Orders for non standard and/or special products and products to customer specifications shall be made in writing by the Purchaser and may under no circumstances be cancelled by the Purchaser once they have been accepted by the Seller.
2.3 The Seller reserves the right, at its discretion, to cancel the order if any further checks carried out on the customer's solvency suggest that it is expedient to do so.

3. PRICES, SHIPPING EXPENSES and PAYMENT CONDITIONS
3.1 The prices contained in the Seller's price list are binding if accepted by order acknowledgement of the Seller, unless said order acknowledgement specifies otherwise. The Purchaser shall immediately notify the Seller of all errors and omissions of any type in the payment conditions and in the prices contained in the acceptance document.
3.2 Prices do not include VAT and other taxes, customs duties or other charges that may be due on the Products in the country of the Purchaser and are expressed in the currency of the Seller's country unless agreed otherwise. The prices do not include shipping costs which will be sustained by the Purchaser.
3.3 The Seller also reserves the right to change the terms of payment of the Purchaser when, in its opinion, the financial conditions of the Purchaser and records of previous payments suggest that it is expedient to do so. The terms of payment are specified in the order acknowledgement. For all new customers, payment is by cash on delivery. The invoicing value date is essential for payments. For payments from abroad, expenses for the transfer of funds from the foreign bank to the Italian bank will be sustained entirely by the Purchaser.

4. DELIVERY TERMS AND PROCEDURES
4.1 The delivery terms specified in the order acknowledgement are binding, barring exemptions independent of the will of the Seller which will in any case be promptly notified to the Purchaser.
4.2 The Seller will make all efforts to observe the delivery dates or periods specified in the acknowledgement.
4.3 In the event of delayed delivery due to circumstances beyond the reasonable control of the Seller, such as (but not limited to) force majeure, strikes, unrest, accidents or conflicts, including any delay by the product manufacturing subcontractors or other, the Seller will have the right, as it chooses, either to extend the foreseen delivery period for a period equal to the duration of said cause or to cancel the sale, and in both cases will be exempt from all liability vis-à-vis the Purchaser in relation to the delayed or failed delivery.
Under no circumstances will the Seller be liable for delayed or failed delivery due to shortage of products.
4.4 The goods are sold ex works (ex works Incoterms 2010). The goods are shipped without insurance barring special provisions which will be agreed and charged to the Purchaser.

5. RISKS
All risks relating to the Products will be transferred from the Seller to the Purchaser at the place and time of delivery, described in the previous clause.

6. COMPLAINTS
6.1 The Purchaser will examine the Products immediately and with all due diligence and attention when they arrive at its premises and will inform the Seller without delay of any omission, defect or non-conformity encountered. Notification by the Purchaser of the omission, defect or non-conformity of the Products shall be made in writing by and no later than 10 days from receipt of the Products and shall contain a full description of the defects and omissions with reference to the transport documents relating to the Products. Once 10 days have elapsed from receipt of the Products by the Purchaser, as resulting from the transport documents, without the Purchaser having notified any lack or non-conformity of the Products, the latter will be considered definitively accepted by the Purchaser.
6.2 Further to the complaint, the Seller will provide, at its choice, either for replacement of the faulty Products or refund of the amount paid by the Purchaser for their purchase. The Seller is entitled to test the Products when they are returned and to charge the Purchaser for all costs sustained by the Seller in the event of the product turning out to be not faulty.

7. RETURNS
7.1 Any return will be accepted only if previously authorised and if sent carriage free. The Purchaser's transport document shall refer to the Seller's shipping documents. The Seller will not under any circumstances or for any reason credit goods supplied more than one year previously. The Seller only credits goods in their original packaging and under no circumstances if they are damaged. If goods are returned due to an error on the part of the Seller, return of the goods will be accepted carriage forward by post or by the Seller's regular forwarding agent. In the event of the above rules not being observed, no credit will be given and the goods will be rejected, charging the shipping expenses to the sender. The Seller is entitled to charge the Purchaser for the administration expenses of any returns not due to a fault in the product or in any case not due to the fault of the Seller.
7.2 The return of Products purchased via special offers or promotions, or as part of a "package" or "kit" of products may be subject to specific conditions, as described in the same or otherwise communicated to the Purchaser. No refund is permitted for individual products purchased as part of a "package" although the Seller may alternatively replace the individual product or request return of the entire "package" and refund the Purchaser the amounts paid for purchase of said "package".

8. WARRANTY
8.1 Within one year from the date of delivery and subject to the presentation of a complaint by the Purchaser according to the above "Complaints" clause, the product found to be faulty will be replaced free of charge by the Seller. In any case the Seller will not apply the warranty for the product found to be faulty due to incorrect or inappropriate use. In the event of a dispute, the manufacturer's technical report will prevail.
8.2 The Seller will be solely liable for damages caused to the Purchaser as an immediate and direct consequence of its own negligent or culpable non-fulfilment of the obligations under the contract.
8.3 Under no circumstances will the Seller be liable for indirect damages sustained by the Purchaser or third parties, for example, but not limited to, damage to image, loss of profit, production, contracts, penalties or refunds of any type, etc.

9. PACKAGING
Packaging is always invoiced at cost.

10. INVOICES
Invoicing is performed on the last working day of the month of shipment of the goods. The invoice, unless agreed otherwise, contains a summary of the transport documents for that month. For supplies abroad, the goods are shipped with accompanying invoice. It is the responsibility of the purchasing company to check that the general and fiscal particulars contained in the documents are correct.

11. JURISDICTION – COMPETENT COURT AND APPLICABLE LAW
11.1 All contractual or extra-contractual disputes concerning the interpretation, validity, effectiveness, execution or termination of this Contract will be referred exclusively to the Italian Judicial Authorities, Court of Venice.
11.2 This Contract will be interpreted and governed according to Italian law.

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SORMA
DIAMOND & CUTTING TOOLS

$OSMARTPL

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