

 **OSAWA**  
D R I L L S   &   E N D   M I L L S



**SMART** PRICELIST

**03** 2023



## Smart Pricelist 03/2023



*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.*

# INDEX

2 ..... Materials classification

4 ..... Alphanumeric index

## 5. TYPHOON - CARBIDE DRILLS

6 ..... TYPHOON 3xD

10 ..... TYPHOON 5xD

13 ..... TYPHOON 8xD

14 ..... TYPHOON 12xD and 15xD

15 ..... TYPHOON 20xD, 25xD and 30xD

16 ..... TYPHOON MINI 5xD, 8xD and 12xD

17 ..... TYPHOON MINI 20xD, 25xD and 30xD

17 ..... TYPHOON - 90° Phase step drill

## 19. C-SD-TA

20 ..... NC Starting drills

## 21. HSS DRILLS

22 ..... HSS/Co - HSSE High performance drills

25 ..... HSS and HSS/Co drills - DIN338

28 ..... HSS and HSS/Co drills - DIN340

30 ..... HSS and HSS/Co drills - DIN345

## 33. CARBIDE END MILLS

33 ..... G2 general purpose

41 ..... MDTA general purpose

45 ..... HF VH/UP universal and multi-purpose

53 ..... MEF stainless steel and super alloys

55 ..... ALU non ferrous materials

59 ..... MEX (30÷55 HRC) and MH (30÷70 HRC)

71 ..... UH (<70HRC) and MH (30÷70 HRC)

## 83. HSS END MILLS

## 87. CARBIDE BURRS

MATERIALS		HARDNESS/Rm
<b>P1</b>	Free cutting steel and structural steel	< 500 N/mm <sup>2</sup>
<b>P2</b>	Carbon steel and low alloy steel	500 ÷ 700 N/mm <sup>2</sup>
<b>P3</b>	Medium alloy steel and heat treated steel	600 ÷ 800 N/mm <sup>2</sup>
<b>P4</b>	High alloy steel	800 ÷ 1000 N/mm <sup>2</sup>
<b>P5</b>	Tool steel	900 ÷ 1200 N/mm <sup>2</sup>
<b>P6</b>	High tensile strength steel	1200 ÷ 1480 N/mm <sup>2</sup> 38 ÷ 45 HRC
<b>P7</b>	Ferritic-Martensitic stainless steel	
<b>P8</b>	PH stainless steel	
<b>M1</b>	Austenitic stainless steel (good machinability)	
<b>M2</b>	Austenitic stainless steel (medium machinability) and Duplex	
<b>M3</b>	Super austenitic stainless steel and super Duplex	
<b>K1</b>	Grey cast iron	150 ÷ 250 HB
<b>K2</b>	Nodular cast iron	150 ÷ 350 HB
<b>K3</b>	Austenitic cast iron	120 ÷ 260 HB
<b>K4</b>	ADI cast iron	250 ÷ 500 HB
<b>N1</b>	Aluminium alloys ≤ 12% Si	
<b>N2</b>	Aluminium alloy > 12% Si and Aluminium-Magnesium	
<b>N3</b>	Copper alloy	
<b>N4</b>	Brass alloy and Bronze alloy	
<b>N5</b>	Plastic material	
<b>N6</b>	Carbon fiber and composite	
<b>S1</b>	Heat resistant super alloys (HRSA) Ni base (good machinability)	< 25 HRC
<b>S2</b>	Heat resistant super alloys (HRSA) Ni base (medium machinability)	25 ÷ 35 HRC
<b>S3</b>	Heat resistant super alloys (HRSA) Ni base (low machinability)	35 ÷ 45 HRC
<b>S4</b>	Low Titanium base alloy (good machinability)	
<b>S5</b>	High Titanium base alloy (medium machinability)	
<b>H1</b>	Hardened steel	50 ÷ 56 HRC
<b>H2</b>	Hardened bearing steel	54 ÷ 62 HRC
<b>H3</b>	Hardened tool steel	60 ÷ 65 HRC
<b>H4</b>	Hardened martensitic stainless steel	50 ÷ 56 HRC
<b>H5</b>	Hardened white cast iron	48 ÷ 55 HRC

ITEM No.	PAGE
118N	-
134N (234NVA)	28
1385NTI (1386STI)	25
1386STI	27
1386STI SET	-
138HB	-
138N	27
138N SET	-
138NTI	-
138WB	-
145N	32
145NTI	33
1692LS	-
1693LS	-
218LFTA	24
218NVA	-
234LS	30
234LSTH	30
234NVA	30
2385NTI (2386STI)	27
2386STI	27
2386STI SET	-
238LFTA	24
238NVA	27
238NVA SET	-
241LS	-
245N	33
2691LS	-
2691LSTH	-
2701LS	-
2702LS	-
343TA	6
3512HL	17
3512SUH MINI	19
3515HL	17
3520HL	18
3520SUH MINI	20
3525HL	18
3525SUH MINI	20
3530HL	18
3530SUH MINI	20
353ALH	8
353CV	7
353HPU	8
353HRC	8
353HVA	8
353PU	8
353SUH	8
355ALH	11
355HPU	11
355HVA	11
355PU	11
355SUH	11
355SUH MINI	19
3584HTA	15
358HGA	19
358SUH MINI	19
372HSD	20
373GA	8
373HGA	8
375GA	11
375HGA	11
980SUTA	24
990SUTA	24
A15FW	-
A16FW	-
BUR10	-
CSDTA 90°	22
CSDTA 120°	22

ITEM No.	PAGE
FFR	-
FM	-
G2210	40
G2211	40
G2212	40
G2250	44
G2251	44
G2310	40
G2311	40
G2312	40
G2410	40
G2411	40
G2412	40
G2413	40
G2CL4R	42
G2CS2	36
G2CS2R	42
G2CS4	38
G2CS4R	42
G2CSB2	43
G2CSB4	43
G2CSFR	41
G2CSH3	37
G2CSHM	41
G2WS2	39
G2WS4	39
G2WSFR	41
G2WSH3	39
GB205	36
GB255	43
GB305	37
GB405	38
HF342	51
HF440	50
HF441	50
HF442	51
HF443	51
HF444	50
HF445	50
HF450	54
HF451	54
HF452	55
HF542	52
HF642	53
HF643	53
HF742	53
HF743	53
HF840	50
HF842	51
HF844	50
HF850	54
HF852	55
HF871	54
HF942	52
HF943	52
HFA53	63
HFAL3	62
HFAL4	60
MCA212R	62
MDA310	61
MDA311	61
MDA312	61
MDCAB2	64
MDCL2	47
MDCL4	47
MDCSA1	60
MDCSA2	60
MDCSA3	61
MDCSAM	62

ITEM No.	PAGE
MDTA210	47
MDTA250	48
MDTA410	47
MDTACS2	46
MDTACS3	46
MDTACS4	46
MDTACSB2	48
MDTAUPR	47
MDTAWSH3	46
MEF600	58
MEF901	58
MEF902	58
MEFCS2	58
MEFCS4	58
MEFCSH3	58
MEX253	74
MEX410R	71
MEX400	68
MEX610R	72
MEX611R	72
MEXCL2	66
MEXCL4	68
MEXCLHM	69
MEXCLSB2	74
MEXCS2	66
MEXCS4R	71
MEXCSB2	73
MEXCSHM	69
MEXLN2	67
MEXLN2R	70
MEXLS2R	72
MEXLS4R	72
MEXM2	66
MEXM2SC	66
MHCRB2	74/89
MHLNB2	75/90
MHMB204	73/87
MHMB206	73/87
SA	98
SB	98
SC	99
SD	99
SE	99
SF	100
SG	100
SH	100
SJ	100
SK	101
SL	101
SM	101
SN	101
TAFFR	-
TAFM	-
TAWL2	-
TAWL3	-
TAWL4(6)	96
TAWLB2	-
TAWLFR	96
TAWS2	92
TAWS3	93
TAWS4(6)	94
TAWSB2	-
TAWSFR	95
TAWSH3	93
TAWSR	95
UH211	80
UH212	81
UH250	88
UH253	88

ITEM No.	PAGE
UH410	83
UH411	84
UH412	84
UH413	85
UH600	79
UH610R	86
UH611R	86
UH612	79
UHCS2	83
UHCS4	83
UHCSB2	87
UHF4	86
UHF4LN	82
UHF-RT	85
UHLN2	78
UHM204	79
UHM206	80
UMWS2	92
UMWS4	94
UMWSFR	95
WCR	-
WDC 45°	-
WDC 60°	-
WDD 45°	-
WDD 60°	-
WL2	-
WL3	-
WL4(6)	96
WLB2	-
WLFR	96
WS2	92
WS3	93
WS4(6)	94
WSA2	-
WSB2	-
WSFR	95
WTM	-
WWK	-





## 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:

- TA and CV: for general purpose
- PU and HPU: for universal applications ISO P, M, K, N, S
- GA and HGA: for general purpose, Weldon shank
- SUH/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:

- TA e CV: per uso generico
- PU e HPU: per applicazione universale ISO P, M, K, N, S
- GA e HGA: per uso generico, attacco Weldon
- SUH/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:

- TA und CV: für allgemeine Anwendung
- PU und HPU: universell einsetzbar auf ISO P, M, K, N, S
- GA und HGA: für allgemeine Anwendung, Weldon schaft
- SUH/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:

- TA et 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
- SUH/HVA : pour l'acier inoxydable
- ALH : pour l'aluminium
- 4HTA 8xD e HL 12xD-15xD-20xD-25xD-30xD : Géométrie à 4 arêtes 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:

- TA y CV: para uso general
- PU y HPU: para aplicaciones universales ISO P, M, K, N, S
- GA y HGA: para uso general, mango Weldon
- SUH/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:

- TA и CV: общего назначения
- PU и HPU: для универсального применения ISO P, M, K, N, S
- GA и HGA: общего назначения, с хвостовиком Weldon
- SUH/HVA: для нержавеющей 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

343TA - catalogue page 66



343TA will be exhausted and gradually replaced by new 353CV

3XD

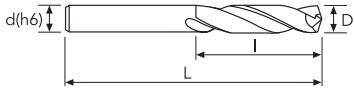
DIN 6539

TA

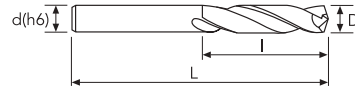
MG  
PV200

140°

30°



**343TA**



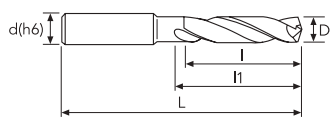
**343TA**

P						★	P						★
M						☆	M						☆
K						☆	K						☆
N						☆	N						☆
S							S						
H							H						
D(h7)	d(h6)	I	L	EDP No.	€		D(h7)	d(h6)	I	L	EDP No.	€	
1.00	2	6	40	343TA0100	18,11		6.80	6.8	34	74	343TA0680	51,04	
1.10	2	7	40	343TA0110	18,11		6.90	6.9	34	74	343TA0690	51,04	
1.20	2	8	40	343TA0120	18,11		7.00	7	34	74	343TA0700	50,68	
1.30	2	8	40	343TA0130	18,11		7.10	7.1	34	74	343TA0710	58,44	
1.40	2	9	40	343TA0140	18,11		7.20	7.2	34	74	343TA0720	58,44	
1.50	2	9	40	343TA0150	18,11		7.30	7.3	34	79	343TA0730	58,44	
1.60	2	10	40	343TA0160	18,11		7.40	7.4	34	79	343TA0740	58,44	
1.70	2	10	40	343TA0170	18,11		7.50	7.5	34	79	343TA0750	58,22	
1.80	2	11	40	343TA0180	18,11		7.60	7.6	37	79	343TA0760	64,14	
1.90	2	11	40	343TA0190	18,11		7.70	7.7	37	79	343TA0770	64,14	
2.00	2	12	40	343TA0200	18,11		7.80	7.8	37	79	343TA0780	64,14	
2.10	2.1	12	40	343TA0210	18,11		7.90	7.9	37	79	343TA0790	64,14	
2.20	2.2	13	40	343TA0220	18,88		8.00	8	37	79	343TA0800	64,14	
2.30	2.3	13	46	343TA0230	18,88		8.10	8.1	37	79	343TA0810	70,91	
2.40	2.4	14	46	343TA0240	18,88		8.20	8.2	37	79	343TA0820	70,91	
2.50	2.5	14	46	343TA0250	18,88		8.30	8.3	37	84	343TA0830	70,91	
2.60	2.6	14	46	343TA0260	18,88		8.40	8.4	37	84	343TA0840	70,91	
2.70	2.7	16	46	343TA0270	20,30		8.50	8.5	37	84	343TA0850	72,81	
2.80	2.8	16	49	343TA0280	21,00		8.60	8.6	40	84	343TA0860	76,76	
2.90	2.9	16	49	343TA0290	21,00		8.70	8.7	40	84	343TA0870	76,76	
3.00	3	16	49	343TA0300	21,71		8.80	8.8	40	84	343TA0880	76,76	
3.10	3.1	18	49	343TA0310	21,99		8.90	8.9	40	84	343TA0890	76,76	
3.20	3.2	18	49	343TA0320	21,99		9.00	9	40	84	343TA0900	73,44	
3.30	3.3	18	52	343TA0330	23,40		9.10	9.1	40	84	343TA0910	82,61	
3.40	3.4	20	52	343TA0340	23,40		9.20	9.2	40	84	343TA0920	82,61	
3.50	3.5	20	52	343TA0350	23,40		9.30	9.3	40	89	343TA0930	82,61	
3.60	3.6	20	52	343TA0360	24,25		9.40	9.4	40	89	343TA0940	82,61	
3.70	3.7	20	52	343TA0370	24,25		9.50	9.5	40	89	343TA0950	79,87	
3.80	3.8	22	55	343TA0380	25,45		9.60	9.6	43	89	343TA0960	85,01	
3.90	3.9	22	55	343TA0390	25,45		9.70	9.7	43	89	343TA0970	85,01	
4.00	4	22	55	343TA0400	25,45		9.80	9.8	43	89	343TA0980	85,01	
4.10	4.1	22	55	343TA0410	26,29		9.90	9.9	43	89	343TA0990	85,01	
4.20	4.2	22	55	343TA0420	26,29		10.00	10	43	89	343TA1000	81,84	
4.30	4.3	24	58	343TA0430	27,56		10.20	10.2	43	89	343TA1020	90,37	
4.40	4.4	24	58	343TA0440	27,56		10.50	10.5	43	95	343TA1050	91,78	
4.50	4.5	24	58	343TA0450	27,56		11.00	11	47	95	343TA1100	100,16	
4.60	4.6	24	58	343TA0460	27,56		11.50	11.5	47	102	343TA1150	102,84	
4.70	4.7	24	58	343TA0470	28,83		12.00	12	51	102	343TA1200	102,98	
4.80	4.8	26	62	343TA0480	29,32		12.50	12.5	51	103	343TA1250	142,88	
4.90	4.9	26	62	343TA0490	29,32		13.00	13	51	103	343TA1300	142,88	
5.00	5	26	62	343TA0500	29,32		13.50	13.5	54	107	343TA1350	150,29	
5.10	5.1	26	62	343TA0510	29,32		14.00	14	54	107	343TA1400	153,59	
5.20	5.2	26	62	343TA0520	34,62		14.50	14.5	56	111	343TA1450	174,46	
5.30	5.3	26	66	343TA0530	34,62		15.00	15	56	111	343TA1500	178,61	
5.40	5.4	28	66	343TA0540	34,62		15.50	15.5	58	115	343TA1550	184,33	
5.50	5.5	28	66	343TA0550	34,62		16.00	16	58	115	343TA1600	188,41	
5.60	5.6	28	66	343TA0560	36,23								
5.70	5.7	28	66	343TA0570	36,23								
5.80	5.8	28	70	343TA0580	36,23								
5.90	5.9	28	70	343TA0590	36,23								
6.00	6	28	70	343TA0600	36,23								
6.10	6.1	31	70	343TA0610	40,25								
6.20	6.2	31	70	343TA0620	40,25								
6.30	6.3	31	70	343TA0630	40,25								
6.40	6.4	31	70	343TA0640	40,25								
6.50	6.5	31	70	343TA0650	44,42								
6.60	6.6	31	70	343TA0660	50,90								
6.70	6.7	31	70	343TA0670	50,90								

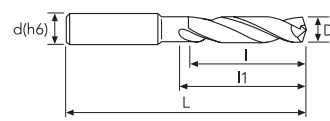




353CV - catalogue update 2023, page 6



353CV



353CV

P	M	K	N	S	H												
						★									★		
						☆									☆		
						☆									☆		
						☆									☆		
D(h7)	d(h6)	I	L	EDP No.	€	D(h7)	d(h6)	I	L	EDP No.	€	D(h7)	d(h6)	I	L	EDP No.	€
1.00	3	5	7	45	353CV0100	18,42	6.80	8	24	34	79	353CV0680				353CV0680	50,37
1.10	3	5	7	45	353CV0110	18,42	6.90	8	24	34	79	353CV0690				353CV0690	50,37
1.20	3	5	7	45	353CV0120	18,42	7.00	8	24	34	79	353CV0700				353CV0700	50,37
1.30	3	5	7	45	353CV0130	18,42	7.10	8	29	41	79	353CV0710				353CV0710	50,37
1.40	3	5	7	45	353CV0140	18,42	7.20	8	29	41	79	353CV0720				353CV0720	50,37
1.50	3	10	13	50	353CV0150	18,42	7.30	8	29	41	79	353CV0730				353CV0730	50,37
1.60	3	10	13	50	353CV0160	18,42	7.40	8	29	41	79	353CV0740				353CV0740	50,37
1.70	3	10	13	50	353CV0170	18,42	7.50	8	29	41	79	353CV0750				353CV0750	50,37
1.80	3	10	13	50	353CV0180	18,42	7.60	8	29	41	79	353CV0760				353CV0760	50,37
1.90	3	10	13	50	353CV0190	18,42	7.70	8	29	41	79	353CV0770				353CV0770	50,37
2.00	4	12	17	55	353CV0200	18,42	7.80	8	29	41	79	353CV0780				353CV0780	50,37
2.10	4	12	17	55	353CV0210	18,42	7.90	8	29	41	79	353CV0790				353CV0790	50,37
2.20	4	12	17	55	353CV0220	19,19	8.00	8	29	41	79	353CV0800				353CV0800	50,37
2.30	4	12	17	55	353CV0230	19,19	8.10	10	35	47	89	353CV0810				353CV0810	62,99
2.40	4	12	17	55	353CV0240	19,19	8.20	10	35	47	89	353CV0820				353CV0820	62,99
2.50	4	12	17	55	353CV0250	19,19	8.30	10	35	47	89	353CV0830				353CV0830	62,99
2.60	4	12	17	55	353CV0260	19,19	8.40	10	35	47	89	353CV0840				353CV0840	62,99
2.70	4	12	17	55	353CV0270	20,66	8.50	10	35	47	89	353CV0850				353CV0850	62,99
2.80	4	12	17	55	353CV0280	21,36	8.60	10	35	47	89	353CV0860				353CV0860	62,99
2.90	4	12	17	55	353CV0290	21,36	8.70	10	35	47	89	353CV0870				353CV0870	62,99
3.00	6	14	20	62	353CV0300	22,06	8.80	10	35	47	89	353CV0880				353CV0880	62,99
3.10	6	14	20	62	353CV0310	22,38	8.90	10	35	47	89	353CV0890				353CV0890	62,99
3.20	6	14	20	62	353CV0320	22,38	9.00	10	35	47	89	353CV0900				353CV0900	62,99
3.30	6	14	20	62	353CV0330	23,79	9.10	10	35	47	89	353CV0910				353CV0910	62,99
3.40	6	14	20	62	353CV0340	23,79	9.20	10	35	47	89	353CV0920				353CV0920	62,99
3.50	6	14	20	62	353CV0350	23,79	9.30	10	35	47	89	353CV0930				353CV0930	62,99
3.60	6	14	20	62	353CV0360	24,69	9.40	10	35	47	89	353CV0940				353CV0940	62,99
3.70	6	14	20	62	353CV0370	24,69	9.50	10	35	47	89	353CV0950				353CV0950	62,99
3.80	6	17	24	66	353CV0380	25,90	9.60	10	35	47	89	353CV0960				353CV0960	62,99
3.90	6	17	24	66	353CV0390	25,90	9.70	10	35	47	89	353CV0970				353CV0970	62,99
4.00	6	17	24	66	353CV0400	25,90	9.80	10	35	47	89	353CV0980				353CV0980	62,99
4.10	6	17	24	66	353CV0410	26,73	9.90	10	35	47	89	353CV0990				353CV0990	62,99
4.20	6	17	24	66	353CV0420	26,73	10.00	10	35	47	89	353CV1000				353CV1000	62,99
4.30	6	17	24	66	353CV0430	28,01	10.20	12	40	55	102	353CV1020				353CV1020	83,13
4.40	6	17	24	66	353CV0440	28,01	10.50	12	40	55	102	353CV1050				353CV1050	83,13
4.50	6	17	24	66	353CV0450	28,01	11.00	12	40	55	102	353CV1100				353CV1100	83,13
4.60	6	17	24	66	353CV0460	28,01	11.50	12	40	55	102	353CV1150				353CV1150	83,13
4.70	6	17	24	66	353CV0470	29,35	12.00	12	40	55	102	353CV1200				353CV1200	83,13
4.80	6	20	28	66	353CV0480	29,80	12.50	14	43	60	107	353CV1250				353CV1250	118,28
4.90	6	20	28	66	353CV0490	29,80	13.00	14	43	60	107	353CV1300				353CV1300	118,28
5.00	6	20	28	66	353CV0500	29,80	13.50	14	43	60	107	353CV1350				353CV1350	118,28
5.10	6	20	28	66	353CV0510	29,80	14.00	14	43	60	107	353CV1400				353CV1400	118,28
5.20	6	20	28	66	353CV0520	35,24	14.50	16	49	65	115	353CV1450				353CV1450	149,22
5.30	6	20	28	66	353CV0530	35,24	15.00	16	49	65	115	353CV1500				353CV1500	149,22
5.40	6	20	28	66	353CV0540	35,24	15.50	16	49	65	115	353CV1550				353CV1550	149,22
5.50	6	20	28	66	353CV0550	35,24	16.00	16	49	65	115	353CV1600				353CV1600	149,22
5.60	6	20	28	66	353CV0560	36,84											
5.70	6	20	28	66	353CV0570	36,84											
5.80	6	20	28	66	353CV0580	36,84											
5.90	6	20	28	66	353CV0590	36,84											
6.00	6	20	28	66	353CV0600	36,84											
6.10	8	24	34	79	353CV0610	50,37											
6.20	8	24	34	79	353CV0620	50,37											
6.30	8	24	34	79	353CV0630	50,37											
6.40	8	24	34	79	353CV0640	50,37											
6.50	8	24	34	79	353CV0650	50,37											
6.60	8	24	34	79	353CV0660	50,37											
6.70	8	24	34	79	353CV0670	50,37											



353PU - catalogue page 43



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

353HPU - catalogue page 43



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

373GA - catalogue page 13



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

373HGA - catalogue page 13



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

353SUH - catalogue page 79



353SUH will be exhausted and gradually replaced by new 353HVA

3XD	DIN 6537K	SUH	MG PV300	140°	30°
-----	-----------	-----	----------	------	-----

353HVA - catalogue update 2023, page 31



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

353ALH - catalogue page 93

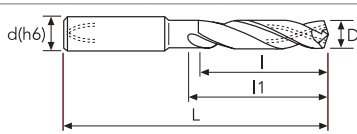


3XD	DIN 6537K	ALH	MG POLISHED	130°	30°
-----	-----------	-----	-------------	------	-----

353HRC - catalogue page 103



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



		353PU	353HPU	373GA	373HGA	353SUH	353HVA	353ALH	353HRC				
P		★	★	★	★	☆	☆						
M		★	★		☆	★	★						
K		★	★	★	★	☆							
N		☆	☆			☆		★					
S		★	★			☆	☆						
H									★				
D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€		
3.00	6	14	20	62	.....0300	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.10	6	14	20	62	.....0310	45,95	65,32	47,51	65,32	73,22	73,22	70,86	
3.20	6	14	20	62	.....0320	45,95	65,32	47,51	65,32	73,22	73,22	70,86	
3.30	6	14	20	62	.....0330	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.40	6	14	20	62	.....0340	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.50	6	14	20	62	.....0350	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.60	6	14	20	62	.....0360	45,95	65,32	47,51	65,32	73,22	73,22	70,86	
3.70	6	14	20	62	.....0370	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.80	6	17	24	66	.....0380	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
3.90	6	17	24	66	.....0390	45,95	65,32	47,51	65,32	73,22	73,22	70,86	
4.00	6	17	24	66	.....0400	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.10	6	17	24	66	.....0410	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.20	6	17	24	66	.....0420	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.30	6	17	24	66	.....0430	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.40	6	17	24	66	.....0440	45,95	65,32	47,51	65,32	73,22	73,22		
4.50	6	17	24	66	.....0450	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.60	6	17	24	66	.....0460	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.70	6	17	24	66	.....0470	45,95	65,32	47,51	65,32	73,22	73,22	70,86	
4.80	6	20	28	66	.....0480	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
4.90	6	20	28	66	.....0490	45,95	65,32	47,51	65,32	73,22	73,22		
5.00	6	20	28	66	.....0500	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.10	6	20	28	66	.....0510	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.20	6	20	28	66	.....0520	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.30	6	20	28	66	.....0530	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.40	6	20	28	66	.....0540	45,95	65,32	47,51	65,32	73,22	73,22		
5.50	6	20	28	66	.....0550	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.60	6	20	28	66	.....0560	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80
5.70	6	20	28	66	.....0570	45,95	65,32	47,51	65,32	73,22	73,22	70,86	

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



						353PU	353HPU	373GA	373HGA	353SUH	353HVA	353ALH	353HRC	
P	M	K	N	S	H									
D(m7)	d(h6)	I	I1	L	EDP No.	€	€	€	€	€	€	€	€	€
5.80	6	20	28	66	.....0580	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80	
5.90	6	20	28	66	.....0590	45,95	65,32	47,51	65,32	73,22	73,22			
6.00	6	20	28	66	.....0600	45,95	65,32	47,51	65,32	73,22	73,22	70,86	53,80	
6.10	8	24	34	79	.....0610	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
6.20	8	24	34	79	.....0620	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
6.30	8	24	34	79	.....0630	55,72	88,72	55,72	88,72	99,42	99,42	96,16		
6.40	8	24	34	79	.....0640	55,72	88,72	55,72	88,72	99,42	99,42			
6.50	8	24	34	79	.....0650	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
6.60	8	24	34	79	.....0660	55,72	88,72	55,72	88,72	99,42	99,42			
6.70	8	24	34	79	.....0670	55,72	88,72	55,72	88,72	99,42	99,42	96,16		
6.80	8	24	34	79	.....0680	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
6.90	8	24	34	79	.....0690	55,72	88,72	55,72	88,72	99,42	99,42		75,31	
7.00	8	24	34	79	.....0700	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
7.10	8	29	41	79	.....0710	55,72	88,72	55,72	88,72	99,42	99,42			
7.20	8	29	41	79	.....0720	55,72	88,72	55,72	88,72	99,42	99,42	96,16		
7.30	8	29	41	79	.....0730	55,72	88,72	55,72	88,72	99,42	99,42			
7.40	8	29	41	79	.....0740	55,72	88,72	55,72	88,72	99,42	99,42		75,31	
7.50	8	29	41	79	.....0750	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
7.60	8	29	41	79	.....0760	55,72	88,72	55,72	88,72	99,42	99,42			
7.70	8	29	41	79	.....0770	55,72	88,72	55,72	88,72	99,42	99,42			
7.80	8	29	41	79	.....0780	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
7.90	8	29	41	79	.....0790	55,72	88,72	55,72	88,72	99,42	99,42			
8.00	8	29	41	79	.....0800	55,72	88,72	55,72	88,72	99,42	99,42	96,16	75,31	
8.10	10	35	47	89	.....0810	70,00	99,51	70,00	99,51	111,45	111,45		99,88	
8.20	10	35	47	89	.....0820	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
8.30	10	35	47	89	.....0830	70,00	99,51	70,00	99,51	111,45	111,45	107,83		
8.40	10	35	47	89	.....0840	70,00	99,51	70,00	99,51	111,45	111,45			
8.50	10	35	47	89	.....0850	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
8.60	10	35	47	89	.....0860	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
8.70	10	35	47	89	.....0870	70,00	99,51	70,00	99,51	111,45	111,45		99,88	
8.80	10	35	47	89	.....0880	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
8.90	10	35	47	89	.....0890	70,00	99,51	70,00	99,51	111,45	111,45			
9.00	10	35	47	89	.....0900	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
9.10	10	35	47	89	.....0910	70,00	99,51	70,00	99,51	111,45	111,45			
9.20	10	35	47	89	.....0920	70,00	99,51	70,00	99,51	111,45	111,45			
9.30	10	35	47	89	.....0930	70,00	99,51	70,00	99,51	111,45	111,45		99,88	
9.40	10	35	47	89	.....0940	70,00	99,51	70,00	99,51	111,45	111,45			
9.50	10	35	47	89	.....0950	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
9.60	10	35	47	89	.....0960	70,00	99,51	70,00	99,51	111,45	111,45			
9.70	10	35	47	89	.....0970	70,00	99,51	70,00	99,51	111,45	111,45			
9.80	10	35	47	89	.....0980	70,00	99,51	70,00	99,51	111,45	111,45		99,88	
9.90	10	35	47	89	.....0990	70,00	99,51	70,00	99,51	111,45	111,45			
10.00	10	35	47	89	.....1000	70,00	99,51	70,00	99,51	111,45	111,45	107,83	99,88	
10.10	12	40	55	102	.....1010	92,39	145,50	92,39	145,50		159,51			
10.20	12	40	55	102	.....1020	92,39	141,06	92,39	141,06	159,51	159,51	154,34	148,86	
10.30	12	40	55	102	.....1030	92,39	141,06	92,39	141,06		159,51	154,34	148,86	
10.40	12	40	55	102	.....1040	95,66	141,06	95,66	141,06		159,51		148,86	
10.50	12	40	55	102	.....1050	92,39	141,06	92,39	141,06	159,51	159,51	154,34	148,86	
10.60	12	40	55	102	.....1060	89,92	145,50	89,92	145,50		159,51			
10.70	12	40	55	102	.....1070	95,66	145,51	95,66	145,51		159,51			
10.80	12	40	55	102	.....1080	92,39	141,06	92,39	141,06	159,51	159,51		148,86	
10.90	12	40	55	102	.....1090	93,63	145,51	93,63	145,51		159,51			
11.00	12	40	55	102	.....1100	92,39	141,06	92,39	141,06	159,51	159,51	154,34	148,86	
11.10	12	40	55	102	.....1110	93,63	145,51	93,63	145,51		159,51			
11.20	12	40	55	102	.....1120	92,39	141,06	92,39	141,06		159,51		148,86	
11.30	12	40	55	102	.....1130	89,92	141,06	89,92	141,06		159,51			
11.40	12	40	55	102	.....1140	93,63	145,51	93,63	145,51		159,51			
11.50	12	40	55	102	.....1150	92,39	141,06	92,39	141,06	159,51	159,51	154,34	148,86	
11.60	12	40	55	102	.....1160	93,63	145,51	93,63	145,51		159,51			
11.70	12	40	55	102	.....1170	93,63	145,51	93,63	145,51		159,51			
11.80	12	40	55	102	.....1180	92,39	141,06	92,39	141,06	159,51	159,51		148,86	
11.90	12	40	55	102	.....1190	93,63	145,51	93,63	145,51		159,51			
12.00	12	40	55	102	.....1200	92,39	141,06	92,39	141,06	159,51	159,51	154,34	148,86	
12.10	14	43	60	107	.....1210	144,58	203,35	144,58	203,35		222,89			

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



PARAMETERS

★ 1st choice ☆ suitable

						353PU	353HPU	373GA	373HGA	353SUH	353HVA	353ALH	353HRC
P	M	K	N	S	H								
D(m7)	d(h6)	I	I1	L	EDP No.	€	€	€	€	€	€	€	€
12.20	14	43	60	107	.....1220	131,45	197,06	131,45	197,06	222,89	222,89		182,19
12.30	14	43	60	107	.....1230	144,58	203,35	144,58					
12.40	14	43	60	107	.....1240	144,58	203,35	144,58					
12.50	14	43	60	107	.....1250	131,45	197,06	131,45	197,06	222,89	222,89		182,19
12.60	14	43	60	107	.....1260	144,58	203,35	144,58					
12.70	14	43	60	107	.....1270	144,58	193,58	144,58	193,58				
12.80	14	43	60	107	.....1280	144,58	197,06	144,58	197,06	222,89	222,89		182,19
12.90	14	43	60	107	.....1290	144,58	203,35	144,58					
13.00	14	43	60	107	.....1300	131,45	197,06	131,45	197,06	222,89	222,89		182,19
13.10	14	43	60	107	.....1310	144,58	203,35						
13.20	14	43	60	107	.....1320	144,58	203,35						
13.30	14	43	60	107	.....1330	144,58	197,06			222,89	222,89		
13.40	14	43	60	107	.....1340	144,58	203,35						
13.50	14	43	60	107	.....1350	131,45	197,06	131,45	197,06	222,89	222,89		
13.60	14	43	60	107	.....1360	144,58	203,35						
13.70	14	43	60	107	.....1370	144,58	193,58	144,58	193,58				
13.80	14	43	60	107	.....1380	144,58	197,06	144,58	197,06	222,89	222,89		
13.90	14	43	60	107	.....1390	144,58	203,35						
14.00	14	43	60	107	.....1400	131,45	197,06	131,45	197,06	222,89	256,83		
14.10	16	45	65	115	.....1410	182,43	234,38				256,83		
14.20	16	45	65	115	.....1420	182,43	234,38	182,43	242,38		256,83		303,17
14.30	16	45	65	115	.....1430	182,43	234,38						
14.50	16	45	65	115	.....1450	165,83	227,05	165,83	234,81	256,83	256,83		
14.60	16	45	65	115	.....1460	182,43	234,38						
14.70	16	45	65	115	.....1470	182,43		182,43					
14.80	16	45	65	115	.....1480	182,43	234,38	182,43	242,38				
15.00	16	49	65	115	.....1500	165,83	227,05	165,83	234,81	256,83	256,83		
15.10	16	49	65	115	.....1510	182,43	234,38						
15.20	16	49	65	115	.....1520	182,43	234,38	182,43	242,38				
15.30	16	49	65	115	.....1530	182,43	227,05	182,43	234,81	256,83	256,83		
15.50	16	49	65	115	.....1550	165,83	227,05	165,83	234,81	256,83	256,83		
15.60	16	49	65	115	.....1560	182,43	234,38						
15.70	16	49	65	115	.....1570	182,43	234,38	182,43					
15.80	16	49	65	115	.....1580	182,43	227,05	182,43	234,81	256,83	256,83		
16.00	16	49	65	115	.....1600	165,83	227,05	165,83	234,81	256,83			
16.10	18	52	73	123	.....1610		399,62						
16.20	18	52	73	123	.....1620		399,62						
16.30	18	52	73	123	.....1630		399,62				256,83		
16.50	18	52	73	123	.....1650	229,09	387,19	236,91	387,19	437,98	437,98		
16.70	18	52	73	123	.....1670		399,62						
16.80	18	52	73	123	.....1680		399,62						
17.00	18	52	73	123	.....1700	229,09	387,19	236,91	387,19	437,98	437,98		
17.10	18	52	73	123	.....1710		399,62						
17.20	18	52	73	123	.....1720		399,62						
17.50	18	52	73	123	.....1750	229,09	387,19	236,91	387,19	437,98	437,98		
17.60	18	52	73	123	.....1760		399,62						
17.70	18	52	73	123	.....1770		399,62						
17.80	18	52	73	123	.....1780		399,62						
18.00	18	52	73	123	.....1800	229,09	387,19	236,91	387,19	437,98	437,98		
18.10	20	55	79	131	.....1810		437,28						
18.20	20	55	79	131	.....1820		437,28						
18.30	20	55	79	131	.....1830		437,28						
18.50	20	55	79	131	.....1850	289,96	423,73	299,86	423,73	479,30	479,30		
18.60	20	55	79	131	.....1860		437,28						
18.70	20	55	79	131	.....1870		437,28						
18.80	20	55	79	131	.....1880		437,28						
19.00	20	55	79	131	.....1900	289,96	423,73	299,86	423,73	479,30	479,30		
19.20	20	55	79	131	.....1920		437,28						
19.30	20	55	79	131	.....1930		437,28						
19.50	20	55	79	131	.....1950	289,96	423,73	299,86	423,73	479,30	479,30		
19.60	20	55	79	131	.....1960		437,28						
19.80	20	55	79	131	.....1980		437,28						
20.00	20	55	79	131	.....2000	289,96	423,73	299,86	423,73	479,30	479,30		

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



355PU - catalogue page 52



355HPU - catalogue page 52



375GA- catalogue page 19



375HGA- catalogue page 19



355SUH - catalogue page 85



355SUH will be exhausted and gradually replaced by new 355HVA

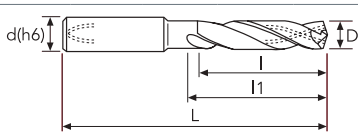
355HVA - catalogue update 2023, page 31



355ALH - catalogue page 97



5XD	DIN 6537L	PU	MG PV250	140°+C45°	30°
5XD	DIN 6537L	HPU	MG PV250	140°+C45°	30°
5XD	DIN 6537L	GA	MG PV400	140°	30°
5XD	DIN 6537L	HGA	MG PV400	140°	30°
5XD	DIN 6537L	SUH	MG PV300	140°	30°
5XD	DIN 6537L	HVA	MG PV350	140°	30°
5XD	DIN 6537L	ALH	MG POLISHED	130°	30°



		355PU	355HPU	375GA	375HGA	355SUH	355HVA	355ALH				
P		★	★	★	★	☆	☆					
M		★	★		☆	★	★					
K		★	★	★	★	☆						
N		☆	☆			☆		★				
S		★	★			☆	☆					
H												
D(m7)	d(h6)	l	l1	L	EDP No.	€	€	€	€	€	€	
3.00	6	23	28	66	.....0300	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.10	6	23	28	66	.....0310	51,38	82,67	53,13	82,67	93,95	93,95	
3.20	6	23	28	66	.....0320	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.25	6	23	28	66	.....0325		85,43					
3.30	6	23	28	66	.....0330	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.40	6	23	28	66	.....0340	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.50	6	23	28	66	.....0350	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.60	6	23	28	66	.....0360	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.70	6	23	28	66	.....0370	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.80	6	29	36	74	.....0380	51,38	82,67	53,13	82,67	93,95	93,95	90,85
3.90	6	29	36	74	.....0390	51,38	82,67	53,13	82,67	93,95	93,95	
4.00	6	29	36	74	.....0400	51,38	82,67	53,13	82,67	93,95	93,95	90,85
4.10	6	29	36	74	.....0410	51,38	82,67	53,13	82,67	93,95	93,95	
4.20	6	29	36	74	.....0420	51,38	82,67	53,13	82,67	93,95	93,95	90,85
4.30	6	29	36	74	.....0430	51,38	82,67	53,13	82,67	93,95	93,95	90,85
4.40	6	29	36	74	.....0440	51,38	82,67	53,13	82,67	93,95	93,95	
4.50	6	29	36	74	.....0450	51,38	82,67	53,13	82,67	93,95	93,95	90,85
4.60	6	29	36	74	.....0460	51,38	82,67	53,13	82,67	93,95	93,95	
4.65	6	29	36	74	.....0465		85,43					
4.70	6	29	36	74	.....0470	51,38	82,67	53,13	82,67	93,95	93,95	
4.80	6	35	44	82	.....0480	51,38	82,67	53,13	82,67	93,95	93,95	90,85
4.90	6	35	44	82	.....0490	51,38	82,67	53,13	82,67	93,95	93,95	
5.00	6	35	44	82	.....0500	51,38	82,67	53,13	82,67	93,95	93,95	90,85
5.10	6	35	44	82	.....0510	51,38	82,67	53,13	82,67	93,95	93,95	90,85
5.20	6	35	44	82	.....0520	51,38	82,67	53,13	82,67	93,95	93,95	90,85
5.30	6	35	44	82	.....0530	51,38	82,67	53,13	82,67	93,95	93,95	
5.40	6	35	44	82	.....0540	51,38	82,67	53,13	82,67	93,95	93,95	
5.50	6	35	44	82	.....0550	51,38	82,67	53,13	82,67	93,95	93,95	90,85
5.55	6	35	44	82	.....0555		85,43					
5.60	6	35	44	82	.....0560	51,38	82,67	53,13	82,67	93,95	93,95	90,85

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



PARAMETERS

★ 1st choice ☆ suitable



						355PU	355HPU	375GA	375HGA	355SUH	355HVA	355ALH
P						★	★	★	★	☆	☆	
M						★	★		☆	☆	★	
K						★	★	★	★	☆		
N						☆	☆			☆		★
S						★	★			☆	☆	
H												
D(m7)	d(h6)	I	I1	L	EDP No.	€	€	€	€	€	€	€
5.70	6	35	44	82	.....0570	51,38	82,67	53,13	82,67	93,95	93,95	
5.80	6	35	44	82	.....0580	51,38	82,67	53,13	82,67	93,95	93,95	90,85
5.90	6	35	44	82	.....0590	51,38	82,67	53,13	82,67	93,95	93,95	
6.00	6	35	44	82	.....0600	51,38	82,67	53,13	82,67	93,95	93,95	90,85
6.10	8	43	53	91	.....0610	61,65	91,28	61,65	94,39	103,72	103,72	
6.20	8	43	53	91	.....0620	61,65	91,28	61,65	94,39	103,72	103,72	100,32
6.30	8	43	53	91	.....0630	61,65	91,28	61,65	94,39	103,72	103,72	
6.40	8	43	53	91	.....0640	61,65	91,28	61,65	94,39	103,72	103,72	
6.50	8	43	53	91	.....0650	61,65	91,28	61,65	94,39	103,72	103,72	100,32
6.60	8	43	53	91	.....0660	61,65	91,28	61,65	94,39	103,72	103,72	
6.70	8	43	53	91	.....0670	61,65	91,28	61,65	94,39	103,72	103,72	100,32
6.80	8	43	53	91	.....0680	61,65	91,28	61,65	94,39	103,72	103,72	100,32
6.90	8	43	53	91	.....0690	61,65	91,28	61,65	94,39	103,72	103,72	100,32
7.00	8	43	53	91	.....0700	61,65	91,28	61,65	94,39	103,72	103,72	100,32
7.10	8	43	53	91	.....0710	61,65	91,28	61,65	94,39	103,72	103,72	
7.20	8	43	53	91	.....0720	61,65	91,28	61,65	94,39	103,72	103,72	100,32
7.30	8	43	53	91	.....0730	61,65	91,28	61,65	94,39	103,72	103,72	
7.40	8	43	53	91	.....0740	61,65	91,28	61,65	94,39	103,72	103,72	
7.45	8	43	53	91	.....0745		94,33					
7.50	8	43	53	91	.....0750	61,65	91,28	61,65	94,39	103,72	103,72	100,32
7.60	8	43	53	91	.....0760	61,65	91,28	61,65	94,39	103,72	103,72	
7.70	8	43	53	91	.....0770	61,65	91,28	61,65	94,39	103,72	103,72	
7.80	8	43	53	91	.....0780	61,65	91,28	61,65	94,39	103,72	103,72	100,32
7.90	8	43	53	91	.....0790	61,65	91,28	61,65	94,39	103,72	103,72	
8.00	8	43	53	91	.....0800	61,65	91,28	61,65	94,39	103,72	103,72	100,32
8.10	10	49	61	103	.....0810	77,93	110,00	77,93	110,00	126,27	126,27	
8.20	10	49	61	103	.....0820	77,93	110,00	77,93	110,00	126,27	126,27	122,18
8.30	10	49	61	103	.....0830	77,93	110,00	77,93	110,00	126,27	126,27	
8.40	10	49	61	103	.....0840	77,93	110,00	77,93	110,00	126,27	126,27	
8.50	10	49	61	103	.....0850	77,93	110,00	77,93	110,00	126,27	126,27	122,18
8.60	10	49	61	103	.....0860	77,93	110,00	77,93	110,00	126,27	126,27	
8.70	10	49	61	103	.....0870	77,93	110,00	77,93	110,00	126,27	126,27	
8.80	10	49	61	103	.....0880	77,93	110,00	77,93	110,00	126,27	126,27	122,18
8.90	10	49	61	103	.....0890	77,93	110,00	77,93	110,00	126,27	126,27	
9.00	10	49	61	103	.....0900	77,93	110,00	77,93	110,00	126,27	126,27	122,18
9.10	10	49	61	103	.....0910	77,93	110,00	77,93	110,00	126,27	126,27	
9.20	10	49	61	103	.....0920	77,93	110,00	77,93	110,00	126,27	126,27	
9.25	10	49	61	103	.....0925		113,74					
9.30	10	49	61	103	.....0930	77,93	110,00	77,93	110,00	126,27	126,27	
9.35	10	49	61	103	.....0935		113,74					
9.40	10	49	61	103	.....0940	77,93	110,00	77,93	110,00	126,27	126,27	
9.45	10	49	61	103	.....0945		113,74					
9.50	10	49	61	103	.....0950	77,93	110,00	77,93	110,00	126,27	126,27	122,18
9.60	10	49	61	103	.....0960	77,93	110,00	77,93	110,00	126,27	126,27	
9.70	10	49	61	103	.....0970	77,93	110,00	77,93	110,00	126,27	126,27	
9.80	10	49	61	103	.....0980	77,93	110,00	77,93	110,00	126,27	126,27	
9.90	10	49	61	103	.....0990	77,93	110,00	77,93	110,00	126,27	126,27	
10.00	10	49	61	103	.....1000	77,93	110,00	77,93	110,00	126,27	126,27	122,18
10.10	12	52	71	118	.....1010	127,51	164,81	127,51	164,81		182,42	
10.20	12	52	71	118	.....1020	119,05	158,97	119,05	158,97	182,42	182,42	176,49
10.30	12	52	71	118	.....1030	119,05	164,81	119,05	164,81	182,42	182,42	
10.40	12	52	71	118	.....1040	127,51	165,88	127,51	165,88		182,42	
10.50	12	52	71	118	.....1050	119,05	158,97	119,05	158,97	182,42	182,42	176,49
10.60	12	52	71	118	.....1060	127,51	165,88	127,51	165,88		182,42	
10.70	12	52	71	118	.....1070	127,51	165,88	127,51	165,88		182,42	
10.80	12	52	71	118	.....1080	119,05	158,97	119,05	158,97	182,42	182,42	
10.90	12	52	71	118	.....1090	127,51	165,88	127,51	165,88		182,42	
11.00	12	52	71	118	.....1100	119,05	158,97	119,05	158,97	182,42	182,42	176,49
11.10	12	52	71	118	.....1110	127,51	165,88	127,51	165,88		182,42	
11.20	12	52	71	118	.....1120	119,05	158,97	119,05	158,97	182,42	182,42	
11.25	12	52	71	118	.....1125		165,89				182,42	
11.30	12	52	71	118	.....1130	119,05	158,97	119,05	158,97	182,42	182,42	

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



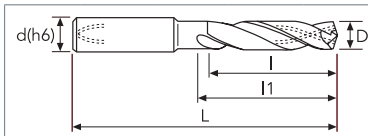
						355PU	355HPU	375GA	375HGA	355\$UH	355HVA	355ALH
P	M	K	N	S	H	€	€	€	€	€	€	€
D(m7)	d(h6)	I	I1	L	EDP No.	€	€	€	€	€	€	€
11.40	12	52	71	118	.....1140	127,51	165,88	127,51	165,88		182,42	
11.50	12	52	71	118	.....1150	119,05	158,97	119,05	158,97	182,42	182,42	176,49
11.60	12	52	71	118	.....1160	127,51	165,88	127,51	165,88		182,42	
11.70	12	52	71	118	.....1170	127,51	165,88	127,51	165,88		182,42	
11.80	12	52	71	118	.....1180	119,05	158,97	119,05	158,97	182,42	182,42	
11.90	12	52	71	118	.....1190	127,51	165,88	127,51	165,88		182,42	
12.00	12	52	71	118	.....1200	119,05	158,97	119,05	158,97	182,42	182,42	176,49
12.10	14	63	77	124	.....1210	164,16	219,40		219,40		241,31	
12.20	14	63	77	124	.....1220	157,33	210,34		210,34	241,31	241,31	
12.30	14	63	77	124	.....1230		219,40		219,40			
12.40	14	63	77	124	.....1240		219,40		219,40			
12.50	14	63	77	124	.....1250	157,34	210,34	157,34	210,34	241,31	241,31	
12.60	14	63	77	124	.....1260		219,40		219,40			
12.70	14	63	77	124	.....1270	157,34	210,33		210,33			
12.80	14	63	77	124	.....1280	157,34	210,34		210,34	241,31	241,31	
12.90	14	63	77	124	.....1290		219,40					
13.00	14	63	77	124	.....1300	157,34	210,34	157,34	210,34	241,31	241,31	
13.10	14	63	77	124	.....1310	164,17	219,40					
13.20	14	63	77	124	.....1320	164,17	219,40					
13.30	14	63	77	124	.....1330	157,34	210,34			241,31	241,31	
13.40	14	63	77	124	.....1340		219,40					
13.50	14	63	77	124	.....1350	157,34	210,34	157,34	210,34	241,31	241,31	
13.60	14	63	77	124	.....1360		219,40					
13.70	14	63	77	124	.....1370	157,34	210,33		210,33			
13.80	14	63	77	124	.....1380	157,34	210,34		210,34	241,31	241,31	
13.90	14	63	77	124	.....1390		219,40		219,40			
14.00	14	63	77	124	.....1400	157,34	210,34	157,34	210,34	241,31	241,31	
14.10	16	67	83	133	.....1410		280,88		280,88		308,97	
14.20	16	67	83	133	.....1420		265,10		265,10		308,97	
14.30	16	67	83	133	.....1430		280,88					
14.40	16	67	83	133	.....1440		280,88					
14.50	16	67	83	133	.....1450	189,06	269,27	189,06	269,27	308,97	308,97	
14.60	16	67	83	133	.....1460		280,88					
14.70	16	67	83	133	.....1470		280,88		280,88			
14.80	16	67	83	133	.....1480		280,88		280,88			
14.90	16	67	83	133	.....1490		280,88					
15.00	16	67	83	133	.....1500	189,06	269,27	189,06	269,27	308,97	308,97	
15.10	16	67	83	133	.....1510		280,88		280,88			
15.20	16	67	83	133	.....1520		280,88		280,88			
15.30	16	67	83	133	.....1530	195,53	269,27		269,27	308,97	308,99	
15.40	16	67	83	133	.....1540		280,88					
15.50	16	67	83	133	.....1550	189,06	269,27	189,06	269,27	308,97	308,97	
15.60	16	67	83	133	.....1560		280,88					
15.70	16	67	83	133	.....1570		280,88		280,88			
15.80	16	67	83	133	.....1580	195,53	269,27		269,27	308,99	308,97	
15.90	16	67	83	133	.....1590		280,88					
16.00	16	67	83	133	.....1600	189,06	269,27	189,06	269,27	308,97	308,97	
16.10	18	75	93	143	.....1610		433,37					
16.20	18	75	93	143	.....1620		433,37					
16.30	18	75	93	143	.....1630		433,37					
16.40	18	75	93	143	.....1640		433,37					
16.50	18	75	93	143	.....1650	274,55	415,38	283,93	415,38	476,63	476,63	
16.60	18	75	93	143	.....1660		433,37					
16.70	18	75	93	143	.....1670		433,37					
16.80	18	75	93	143	.....1680		433,37					
16.90	18	75	93	143	.....1690		433,37					
17.00	18	75	93	143	.....1700	274,55	415,38	283,93	415,38	476,63	476,63	
17.10	18	75	93	143	.....1710		433,37					
17.20	18	75	93	143	.....1720		433,37					
17.30	18	75	93	143	.....1730		433,37					
17.40	18	75	93	143	.....1740		433,37					
17.50	18	75	93	143	.....1750	274,55	415,38	283,93	415,38	476,63	476,63	

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



PARAMETERS

★ 1st choice ☆ suitable



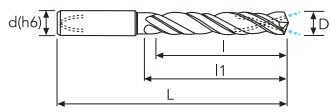
						355PU	355HPU	375GA	375HGA	355\$UH	355HVA	355ALH
P						★	★	★	★	☆	☆	
M						★	★		☆	★	★	
K						★	★	★	★	☆		
N						☆	☆			☆		★
S						★	★			☆	☆	
H												
D(m7)	d(h6)	I	I1	L	EDP No.	€	€	€	€	€	€	€
17.60	18	75	93	143	.....1760		433,37					
17.70	18	75	93	143	.....1770		433,37					
17.80	18	75	93	143	.....1780		433,37					
17.90	18	75	93	143	.....1790		433,37					
18.00	18	75	93	143	.....1800	274,55	415,38	283,93	415,38	476,63	476,63	
18.10	20	81	101	153	.....1810		504,89					
18.20	20	81	101	153	.....1820		504,89					
18.30	20	81	101	153	.....1830		504,89					
18.40	20	81	101	153	.....1840		504,89					
18.50	20	81	101	153	.....1850	355,33	484,02	355,33	484,02	555,33	555,33	
18.60	20	81	101	153	.....1860		504,89					
18.70	20	81	101	153	.....1870		504,89					
18.80	20	81	101	153	.....1880		504,89					
18.90	20	81	101	153	.....1890		504,89					
19.00	20	81	101	153	.....1900	355,33	484,02	355,33	484,02	555,33	555,33	
19.10	20	81	101	153	.....1910		504,89					
19.20	20	81	101	153	.....1920		504,89					
19.30	20	81	101	153	.....1930		504,89					
19.40	20	81	101	153	.....1940		504,89					
19.50	20	81	101	153	.....1950	355,33	484,02	355,33	484,02	555,33	555,33	
19.60	20	81	101	153	.....1960		504,89					
19.70	20	81	101	153	.....1970		504,89					
19.80	20	81	101	153	.....1980		504,89					
19.90	20	81	101	153	.....1990		504,89					
20.00	20	81	101	153	.....2000	355,33	484,02	355,33	484,02	555,33	555,33	

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

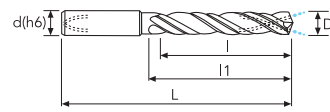




3584HTA - catalogue page 70



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	159,93	7.40	8	64	76	116	358HTA0740	195,62
3.10	6	32	40	85	358HTA0310	159,92	7.50	8	64	76	116	358HTA0750	195,62
3.20	6	32	40	85	358HTA0320	159,92	7.60	8	64	76	116	358HTA0760	195,62
3.30	6	32	40	85	358HTA0330	159,92	7.80	8	64	76	116	358HTA0780	195,62
3.40	6	32	40	85	358HTA0340	159,92	8.00	8	64	76	116	358HTA0800	195,62
3.50	6	32	40	85	358HTA0350	159,92	8.10	10	80	95	142	358HTA0810	268,42
3.60	6	36	40	85	358HTA0360	159,92	8.20	10	80	95	142	358HTA0820	268,42
3.70	6	36	40	85	358HTA0370	159,92	8.30	10	80	95	142	358HTA0830	268,42
3.80	6	36	40	85	358HTA0380	159,92	8.50	10	80	95	142	358HTA0850	268,42
4.00	6	38	46	85	358HTA0400	159,92	8.60	10	80	95	142	358HTA0860	268,42
4.10	6	38	46	85	358HTA0410	159,92	8.70	10	80	95	142	358HTA0870	268,42
4.20	6	38	46	85	358HTA0420	159,92	8.80	10	80	95	142	358HTA0880	268,42
4.30	6	40	46	97	358HTA0430	159,92	9.00	10	80	95	142	358HTA0900	268,42
4.50	6	44	46	97	358HTA0450	159,92	9.10	10	80	95	142	358HTA0910	268,42
4.60	6	44	46	97	358HTA0460	159,92	9.20	10	80	95	142	358HTA0920	268,42
4.70	6	44	46	97	358HTA0470	159,92	9.30	10	80	95	142	358HTA0930	268,42
4.80	6	44	46	97	358HTA0480	159,92	9.50	10	80	95	142	358HTA0950	268,42
5.00	6	48	57	97	358HTA0500	159,92	9.80	10	80	95	142	358HTA0980	268,42
5.10	6	48	57	97	358HTA0510	159,92	10.00	10	80	95	142	358HTA1000	268,42
5.20	6	48	57	97	358HTA0520	159,92	10.20	12	96	114	163	358HTA1020	389,50
5.30	6	48	57	97	358HTA0530	159,92	10.50	12	96	114	163	358HTA1050	389,50
5.50	6	48	57	97	358HTA0550	159,92	10.80	12	96	114	163	358HTA1080	389,50
5.60	6	48	57	97	358HTA0560	159,92	11.00	12	96	114	163	358HTA1100	389,50
5.80	6	48	57	97	358HTA0580	159,92	11.20	12	96	114	163	358HTA1120	389,50
5.90	6	48	57	97	358HTA0590	159,92	11.50	12	96	114	163	358HTA1150	389,50
6.00	6	48	57	97	358HTA0600	159,92	11.80	12	96	114	163	358HTA1180	389,50
6.10	8	64	76	116	358HTA0610	195,62	12.00	12	96	114	163	358HTA1200	389,50
6.20	8	64	76	116	358HTA0620	195,62	12.20	14	112	133	182	358HTA1220	545,86
6.30	8	64	76	116	358HTA0630	195,62	12.50	14	112	133	182	358HTA1250	545,86
6.50	8	64	76	116	358HTA0650	195,62	12.80	14	112	133	182	358HTA1280	545,86
6.70	8	64	76	116	358HTA0670	195,62	13.00	14	112	133	182	358HTA1300	545,86
6.80	8	64	76	116	358HTA0680	195,62	13.50	14	112	133	182	358HTA1350	545,86
6.90	8	64	76	116	358HTA0690	195,62	14.00	14	112	133	182	358HTA1400	545,86
7.00	8	64	76	116	358HTA0700	195,62	14.50	16	128	152	204	358HTA1450	688,42
7.10	8	64	76	116	358HTA0710	195,62	15.00	16	128	152	204	358HTA1500	688,42
7.20	8	64	76	116	358HTA0720	195,62	15.50	16	128	152	204	358HTA1550	688,42
7.30	8	64	76	116	358HTA0730	195,62	16.00	16	128	152	204	358HTA1600	688,42



PARAMETERS

★ 1st choice ☆ suitable

358HGA - catalogue update 2023, page 25



358HGA							358HGA						
P	M	K	N	S	H	€	P	M	K	N	S	H	€
D(m7)	d(h6)	l	l1	L	EDP No.	€	D(m7)	d(h6)	l	l1	L	EDP No.	€
3.00	6	29	34	72	358HGA0300	149,71	9.50	10	80	95	142	358HGA0950	247,27
3.10	6	29	34	72	358HGA0310	149,71	9.80	10	80	95	142	358HGA0980	247,27
3.20	6	29	34	72	358HGA0320	149,71	10.00	10	80	95	142	358HGA1000	247,27
3.30	6	29	34	72	358HGA0330	149,71	10.20	12	96	114	162	358HGA1020	309,10
3.40	6	29	34	72	358HGA0340	149,71	10.50	12	96	114	162	358HGA1050	309,10
3.50	6	29	34	72	358HGA0350	149,71	10.80	12	96	114	162	358HGA1080	309,10
3.60	6	29	34	72	358HGA0360	149,71	11.00	12	96	114	162	358HGA1100	309,10
3.70	6	29	34	72	358HGA0370	149,71	11.20	12	96	114	162	358HGA1120	309,10
3.80	6	36	43	81	358HGA0380	154,39	11.50	12	96	114	162	358HGA1150	309,10
3.90	6	36	43	81	358HGA0390	154,39	11.80	12	96	114	162	358HGA1180	309,10
4.00	6	36	43	81	358HGA0400	154,39	12.00	12	96	114	162	358HGA1200	309,10
4.10	6	36	43	81	358HGA0410	154,39	12.20	14	112	133	182	358HGA1220	421,62
4.20	6	36	43	81	358HGA0420	154,39	12.50	14	112	133	182	358HGA1250	421,62
4.30	6	36	43	81	358HGA0430	154,39	12.80	14	112	133	182	358HGA1280	421,62
4.50	6	36	43	81	358HGA0450	154,39	13.00	14	112	133	182	358HGA1300	421,62
4.60	6	36	43	81	358HGA0460	154,39	13.20	14	112	133	182	358HGA1320	421,62
4.70	6	36	43	81	358HGA0470	154,39	13.50	14	112	133	182	358HGA1350	421,62
4.80	6	48	57	95	358HGA0480	158,42	14.00	14	112	133	182	358HGA1400	421,62
4.90	6	48	57	95	358HGA0490	158,42	14.20	16	128	152	203	358HGA1420	593,34
5.00	6	48	57	95	358HGA0500	158,42	14.50	16	128	152	203	358HGA1450	593,34
5.10	6	48	57	95	358HGA0510	158,42	15.00	16	128	152	203	358HGA1500	593,34
5.20	6	48	57	95	358HGA0520	158,42	15.50	16	128	152	203	358HGA1550	593,34
5.30	6	48	57	95	358HGA0530	158,42	16.00	16	128	152	203	358HGA1600	593,34
5.50	6	48	57	95	358HGA0550	158,42	16.50	18	144	171	222	358HGA1650	683,15
5.60	6	48	57	95	358HGA0560	158,42	17.00	18	144	171	222	358HGA1700	683,15
5.70	6	48	57	95	358HGA0570	158,42	17.50	18	144	171	222	358HGA1750	683,15
5.80	6	48	57	95	358HGA0580	158,42	18.00	18	144	171	222	358HGA1800	683,15
5.90	6	48	57	95	358HGA0590	158,42	18.50	20	160	190	243	358HGA1850	841,84
6.00	6	48	57	95	358HGA0600	158,42	19.00	20	160	190	243	358HGA1900	841,84
6.10	8	64	76	114	358HGA0610	191,79	19.50	20	160	190	243	358HGA1950	841,84
6.20	8	64	76	114	358HGA0620	191,79	20.00	20	160	190	243	358HGA2000	841,84
6.30	8	64	76	114	358HGA0630	191,79							
6.40	8	64	76	114	358HGA0640	191,79							
6.50	8	64	76	114	358HGA0650	191,79							
6.60	8	64	76	114	358HGA0660	191,79							
6.70	8	64	76	114	358HGA0670	191,79							
6.80	8	64	76	114	358HGA0680	191,79							
6.90	8	64	76	114	358HGA0690	191,79							
7.00	8	64	76	114	358HGA0700	191,79							
7.10	8	64	76	114	358HGA0710	191,79							
7.20	8	64	76	114	358HGA0720	191,79							
7.30	8	64	76	114	358HGA0730	191,79							
7.40	8	64	76	114	358HGA0740	191,79							
7.50	8	64	76	114	358HGA0750	191,79							
7.60	8	64	76	114	358HGA0760	191,79							
7.80	8	64	76	114	358HGA0780	191,79							
8.00	8	64	76	114	358HGA0800	191,79							
8.10	10	80	95	142	358HGA0810	247,27							
8.20	10	80	95	142	358HGA0820	247,27							
8.30	10	80	95	142	358HGA0830	247,27							
8.50	10	80	95	142	358HGA0850	247,27							
8.60	10	80	95	142	358HGA0860	247,27							
8.70	10	80	95	142	358HGA0870	247,27							
8.80	10	80	95	142	358HGA0880	247,27							
9.00	10	80	95	142	358HGA0900	247,27							
9.10	10	80	95	142	358HGA0910	247,27							
9.20	10	80	95	142	358HGA0920	247,27							
9.30	10	80	95	142	358HGA0930	247,27							



3512HL - catalogue page 147

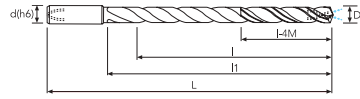


12XD OSAWA NORM HL MG PV250 135° 30°

3515HL - catalogue page 152



15XD OSAWA NORM HL MG PV250 135° 30°



							3512HL								3515HL	
P								★								★
M								★								★
K								★								★
N								☆								☆
S								☆								☆
H																
D(h7)	d(h6)	l	l1	L	I-4M	EDP No.	€	d(h6)	l	l1	L	I-4M	EDP No.	€		
3.10	4	45	50	85	15.5	3512HL0310N	236,27									
3.20	4	45	50	85	16	3512HL0320N	236,27									
3.30	4	45	50	85	16.5	3512HL0330N	236,27									
3.50	4	48	54	90	17.5	3512HL0350N	236,27	4	55	60	95	17.5	3515HL0350N	248,11		
3.70	4	48	54	90	18.5	3512HL0370N	236,27									
3.80	4	57	64	100	19	3512HL0380N	236,27									
4.00	4	57	64	100	20	3512HL0400N	236,27	4	62	68	105	20	3515HL0400N	248,11		
4.10	5	57	64	100	20.5	3512HL0410N	266,06									
4.20	5	57	64	100	21	3512HL0420N	266,06									
4.30	5	57	64	100	21.5	3512HL0430N	266,06									
4.50	5	57	64	100	22.5	3512HL0450N	266,06	5	67	73	110	21.5	3515HL0430N	266,06		
4.80	5	67	74	110	24	3512HL0480N	266,06	5	70	76	115	22.5	3515HL0450N	266,06		
5.00	5	72	81	120	25	3512HL0500N	266,06									
5.10	5	72	81	120	25.5	3512HL0510N	266,06	5	77	85	120	25	3515HL0500N	266,06		
5.20	6	72	81	120	26	3512HL0520N	266,06									
5.30	6	72	81	120	26.5	3512HL0530N	266,06									
5.50	6	72	81	120	27.5	3512HL0550N	266,06	6	85	93	130	27.5	3515HL0550N	277,88		
5.60	6	72	81	120	28	3512HL0560N	266,06									
5.80	6	72	81	120	29	3512HL0580N	266,06									
6.00	6	72	81	120	30	3512HL0600N	266,06	6	92	101	140	30	3515HL0600N	277,88		
6.10	8	88	97	135	30.5	3512HL0610N	313,35									
6.20	8	88	97	135	31	3512HL0620N	313,35									
6.30	8	88	97	135	31.5	3512HL0630N	313,35									
6.50	8	96	108	145	32.5	3512HL0650N	313,35	8	100	110	150	32.5	3515HL0650N	331,09		
6.80	8	96	108	145	34	3512HL0680N	313,35									
7.00	8	96	108	145	35	3512HL0700N	313,35	8	107	118	160	35	3515HL0700N	331,09		
7.50	8	96	108	145	37.5	3512HL0750N	313,35	8	115	126	165	37.5	3515HL0750N	331,09		
7.80	8	96	108	145	39	3512HL0780N	313,35									
8.00	8	96	108	145	40	3512HL0800N	313,35	10	125	137	180	40.5	3515HL0800N	331,09		
8.50	10	120	135	180	42.5	3512HL0850N	360,65	10	130	142	185	42.5	3515HL0850N	419,78		
8.60	10	120	135	180	43	3512HL0860N	360,65									
8.70	10	120	135	180	43.5	3512HL0870N	360,65									
8.80	10	120	135	180	44	3512HL0880N	360,65									
9.00	10	120	135	180	45	3512HL0900N	360,65	10	137	151	195	45	3515HL0900N	419,78		
9.50	10	120	135	180	47.5	3512HL0950N	360,65	10	145	159	200	47.5	3515HL0950N	419,78		
9.80	10	120	135	180	49	3512HL0980N	360,65									
10.00	10	120	135	180	50	3512HL1000N	360,65	10	152	167	210	50	3515HL1000N	419,78		

Check SUH MINI range for long drills below Ø3.1



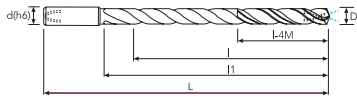
PARAMETERS

★ 1st choice ☆ suitable

3520HL - catalogue page 157



20XD OSAWA NORM HL MG PV250 135° 30°



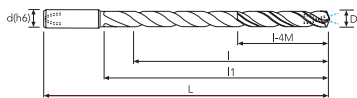
3520HL

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	269,32
3.30	4	68	73	110	16.5	3520HL0330N	269,32
3.50	4	72	77	110	17.5	3520HL0350N	269,32
4.00	4	82	88	125	20	3520HL0400N	269,32
4.50	5	92	99	135	22.5	3520HL0450N	330,76
5.00	5	102	110	145	25	3520HL0500N	330,76
5.50	6	112	120	160	27.5	3520HL0550N	342,92
6.00	6	122	131	170	30	3520HL0600N	342,92
6.50	8	132	142	180	32.5	3520HL0650N	407,95
7.00	8	142	153	195	35	3520HL0700N	407,95
7.50	8	152	163	205	37.5	3520HL0750N	407,95
8.00	8	162	174	215	40	3520HL0800N	407,95
8.50	10	172	185	230	42.5	3520HL0850N	565,97
9.00	10	182	196	240	45	3520HL0900N	565,97
9.50	10	192	206	250	47.5	3520HL0950N	565,97
10.00	10	202	217	260	50	3520HL1000N	565,97

3525HL - catalogue page 162



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	360,65
4.00	4	101	107	140	20	3525HL0400N	360,65
4.50	5	114	120	155	22.5	3525HL0450N	384,30
5.00	5	126	134	170	25	3525HL0500N	384,30
5.50	6	139	147	185	27.5	3525HL0550N	407,95
6.00	6	151	160	200	30	3525HL0600N	407,95
6.50	8	164	173	210	32.5	3525HL0650N	467,08
7.00	8	176	187	230	35	3525HL0700N	467,08
7.50	8	189	200	240	37.5	3525HL0750N	467,08
8.00	8	201	213	255	40	3525HL0800N	576,22
8.50	10	214	226	270	42.5	3525HL0850N	672,11
9.00	10	226	240	285	45	3525HL0900N	672,11

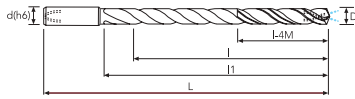
Check SUH MINI range for long drills below Ø3.1



3530HL - catalogue page 167



30XD OSAWA NORM HL MG PV250 135° 30°



3530HL

P							★
M							★
K							★
N							☆
S							☆
H							
D(h7)	d(h6)	I	I1	L	I-4M	EDP No.	€
3.50	4	106	111	145	17.5	3530HL0350N	419,78
4.00	4	121	127	160	20	3530HL0400N	419,78
4.50	5	136	143	180	22.5	3530HL0450N	431,60
5.00	5	151	159	195	25	3530HL0500N	431,60
5.50	6	166	174	215	27.5	3530HL0550N	461,16
6.00	6	181	190	230	30	3530HL0600N	461,16
6.50	8	196	206	245	32.5	3530HL0650N	532,11
7.00	8	211	222	265	35	3530HL0700N	532,11
7.50	8	226	237	280	37.5	3530HL0750N	532,11
8.00	8	241	253	295	40	3530HL0800N	682,36

Check SUH MINI range for long drills below Ø3.1

TYPHOON - MINI 5xD, 8xD and 12xD

355SUH MINI - catalogue page 114



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

358SUH MINI - catalogue page 118

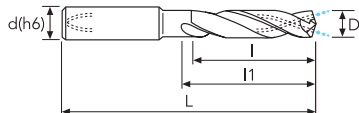


8XD OSAWA NORM SUH MINI MG PV300 135° 30°

3512SUH MINI - catalogue page 122



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



						355SUH				358SUH				3512SUH		
P	M	K	N	S	H	★	★	★	★	★	★	★	★	★		
D(h7)	d(h6)	EDP No.			I	I1	L	€	I	I1	L	€	I	I1	L	€
1.00	3	.....0100N			6.5	8	50	77,15	9.5	11	50	91,85	13.5	15	55	107,02
1.10	3	.....0110N			7.2	8.7	50	77,15	10.5	12	50	91,85	14.9	16.4	55	107,02
1.20	3	.....0120N			7.8	9.3	50	77,15	11.4	12.9	50	91,85	16.2	17.7	55	107,02
1.30	3	.....0130N			8.5	10	50	77,15	12.4	13.9	50	91,85	17.6	19.1	55	107,02
1.40	3	.....0140N			9.1	10.6	50	77,15	13.3	14.8	50	91,85	18.9	20.4	55	107,02
1.50	3	.....0150N			9.8	11.3	50	77,15	14.3	15.8	50	91,85	20.3	21.8	55	107,02
1.60	3	.....0160N			10.4	11.9	50	77,15	15.2	16.7	50	91,85	21.6	23.1	65	115,53
1.70	3	.....0170N			11.1	12.6	55	77,15	16.2	17.7	60	91,85	23	24.5	65	115,53
1.80	3	.....0180N			11.7	13.2	55	77,15	17.1	18.6	60	91,85	24.3	25.8	65	115,53
1.90	3	.....0190N			12.4	13.9	55	77,15	18.1	19.6	60	91,85	25.7	27.2	65	115,53
2.00	3	.....0200N			13	16	55	77,15	19	22	60	91,85	27	30	65	115,53
2.10	3	.....0210N			13.7	16.9	55	77,15	20	23.2	60	91,85	28.4	31.6	65	115,53
2.20	3	.....0220N			14.3	17.6	55	77,15	20.9	24.2	60	91,85	29.7	33	65	115,53
2.30	3	.....0230N			15	18.5	55	77,15	21.9	25.4	60	91,85	31.1	34.6	65	115,53
2.40	3	.....0240N			15.6	19.2	55	77,15	22.8	26.4	60	91,85	32.4	36	75	124,64
2.50	3	.....0250N			16.3	20.1	55	77,15	23.8	27.6	60	91,85	33.8	37.6	75	124,64
2.60	3	.....0260N			16.9	20.8	55	77,15	24.7	28.6	60	91,85	35.1	39	75	124,64
2.70	3	.....0270N			17.6	21.7	55	77,15	25.7	29.8	60	91,85	36.5	40.6	75	124,64
2.80	3	.....0280N			18.2	22.4	55	77,15	26.6	30.8	60	91,85	37.8	42	75	124,64
2.90	3	.....0290N			18.9	23.3	55	77,15	27.6	32	60	91,85	39.2	43.6	75	124,64
3.00	3	.....030003N			19.5	24	55	77,15	28.5	33	60	91,85	40.5	45	75	124,64

EDP N° = item code + ø (example: 355SUH mm 1.5 = 355SUH0150N)



PARAMETERS

★ 1st choice ☆ suitable

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

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

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

**3520SUH**

**3525SUH**

**3530SUH**

	3520SUH			3525SUH			3530SUH							
<b>P</b>	★			★			★							
<b>M</b>	★			★			★							
<b>K</b>	★			★			★							
<b>N</b>	☆			☆			☆							
<b>S</b>	☆			☆			☆							
<b>H</b>														
D(h7)	d(h6)	EDP No.	l	l1	L	€	l	l1	L	€	l	l1	L	€
1,00	3	.....0100N	21,5	23	65	<b>123,05</b>	26,5	28	70	<b>200,03</b>	31,5	33	75	<b>213,70</b>
1,20	3	.....0120N	25,8	27,3	65	<b>123,05</b>								
1,30	3	.....0130N	28	29,5	65	<b>123,05</b>								
1,50	3	.....0150N	32,3	33,8	75	<b>137,81</b>	39,8	41,3	80	<b>200,03</b>	47,3	48,8	85	<b>225,68</b>
1,60	3	.....0160N	34,4	35,9	75	<b>137,81</b>								
1,70	3	.....0170N	36,6	38,1	75	<b>137,81</b>								
1,80	3	.....0180N	38,7	40,2	75	<b>137,81</b>								
2,00	3	.....0200N	43	46	82	<b>137,81</b>	53	56	90	<b>207,41</b>	63	66	100	<b>222,51</b>
2,20	3	.....0220N	47,3	50,6	82	<b>137,81</b>								
2,30	3	.....0230N	49,5	53	100	<b>158,50</b>								
2,50	3	.....0250N	53,8	57,6	100	<b>158,50</b>	66,3	70	110	<b>207,41</b>	78,8	82,5	120	<b>227,30</b>
2,80	3	.....0280N	60,2	64,4	100	<b>158,50</b>								
3,00	3	.....0300N	64,5	69	100	<b>158,50</b>	79,5	84	120	<b>214,79</b>	94,5	99	130	<b>234,83</b>

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

## TYPHOON - 90° Phase step drill

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

**372HSD**

D(m7)	Type	D1(h10)	d(h6)	l	l1	L	EDP No.	€
2.50	M3 /C	4.00	4	9	25	62	372HSD0250	<b>124,45</b>
2.80	M3 /F	4.00	4	9	25	62	372HSD0280	<b>124,45</b>
3.30	M4 /C	5.00	6	11	28	66	372HSD0330	<b>118,39</b>
3.70	M4 /F	6.00	6	11	28	66	372HSD0370	<b>118,39</b>
4.20	M5 /C	6.00	6	14	28	66	372HSD0420	<b>118,39</b>
4.65	M5 /F	6.00	6	14	28	66	372HSD0465	<b>118,39</b>
5.00	M6 /C	8.00	8	17	41	79	372HSD0500	<b>142,28</b>
5.55	M6 /F	8.00	8	17	41	79	372HSD0555	<b>142,28</b>
6.80	M8 /C	10.00	10	21	47	89	372HSD0680	<b>165,10</b>
7.45	M8 /F	10.00	10	21	47	89	372HSD0745	<b>165,10</b>
8.50	M10 /C	12.00	12	26	55	102	372HSD0850	<b>224,24</b>
9.35	M10 /F	12.00	12	26	55	102	372HSD0935	<b>224,24</b>
10.30	M12 /C	14.00	14	30	60	107	372HSD1030	<b>307,27</b>
11.22	M12 /F	14.00	14	30	60	107	372HSD1122	<b>307,27</b>

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.

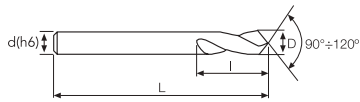
🇩🇪 Anbohrer mit Spitzenwinkel 90° und 120° für NC Maschinen. Zentrierung und Ansenkung auf einem sehr breiten Spektrum von Materialien.

🇫🇷 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.

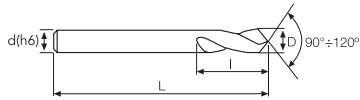
CSDTA90 - catalogue page 180



CSDTA90

P					★
M					★
K					★
N					★
S					☆
H					
D(h6)	d(h6)	I	L	EDP No.	€
6.00	6	16	50	CSDTA060A	35,54
8.00	8	20	64	CSDTA080A	48,78
10.00	10	25	70	CSDTA100A	77,10
12.00	12	25	75	CSDTA120A	94,63
16.00	16	26	90	CSDTA160A	178,84

CSDTA120 - catalogue page 180



CSDTA120

P					★
M					★
K					★
N					★
S					☆
H					
D(h6)	d(h6)	I	L	EDP No.	€
6.00	6	16	50	CSDTA060B	35,54
8.00	8	20	64	CSDTA080B	48,80
10.00	10	25	70	CSDTA100B	77,10
12.00	12	25	75	CSDTA120B	94,63
16.00	16	26	90	CSDTA160B	178,84







## HSS DRILLS

### HIGH PERFORMANCE 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 géométrie 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 самоцентрирующихся свёрл изготовленных из высококачественного HSS/Co и HSSE: LFTA предназначены для общего назначения и SUTA для нержавеющей 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 194



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

238LFTA - catalogue page 198



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

980SUTA - catalogue page 204

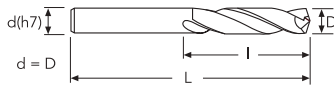


OSAWA NORM	SU	HSSE PV10	120°	38°
------------	----	-----------	------	-----

990SUTA - catalogue page 208



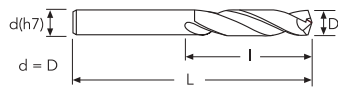
OSAWA NORM	SU	HSSE PV10	120°	38°
------------	----	-----------	------	-----



				218LFTA		238LFTA		980SUTA		990SUTA				
P	★													
M	☆													
K	★													
N	☆													
S	☆													
H														
D(h8)	d(h7)	EDP No.	I	L	€	I	L	€	I	L	€	I	L	€
2.00	2	P.....0200	12	38	15,56	24	49	18,65	12	44	19,61	24	56	21,11
2.10	2.1	P.....0210	12	38	16,26	24	49	19,32	12	44	22,05	24	56	23,88
2.20	2.2	P.....0220	13	40	16,26	27	53	19,32	13	45	22,05	27	59	23,88
2.30	2.3	P.....0230	13	40	16,26	27	53	19,32	13	45	22,05	27	59	23,88
2.40	2.4	P.....0240	14	43	16,95	30	57	19,64	14	46	22,05	30	62	23,88
2.50	2.5	P.....0250	14	43	15,56	30	57	18,31	14	46	19,61	30	62	21,11
2.60	2.6	P.....0260	14	43	16,26	30	57	18,81	14	46	21,24	30	62	23,20
2.70	2.7	P.....0270	16	46	16,95	33	61	19,64	16	48	21,24	33	65	23,20
2.80	2.8	P.....0280	16	46	16,95	33	61	19,64	16	48	21,24	33	65	23,20
2.90	2.9	P.....0290	16	46	16,95	33	61	19,64	16	48	21,24	33	65	23,20
3.00	3	P.....0300	16	46	16,26	33	61	18,81	16	48	18,66	33	65	19,95
3.10	3.1	P.....0310	18	49	17,43	36	65	20,52	18	50	22,05	36	68	23,88
3.20	3.2	P.....0320	18	49	17,43	36	65	20,52	18	50	22,05	36	68	23,88
3.30	3.3	P.....0330	18	49	17,43	36	65	20,52	18	50	22,05	36	68	23,88
3.40	3.4	P.....0340	20	52	17,27	39	70	20,89	20	52	22,05	39	71	23,88
3.50	3.5	P.....0350	20	52	17,61	39	70	21,02	20	52	22,05	39	71	23,88
3.60	3.6	P.....0360	20	52	18,44	39	70	22,06	20	52	25,50	39	71	27,67
3.70	3.7	P.....0370	20	52	18,44	39	70	22,06	20	52	25,50	39	71	27,67
3.80	3.8	P.....0380	22	55	18,44	43	75	22,06	22	54	23,47	43	75	25,50
3.90	3.9	P.....0390	22	55	18,44	43	75	22,06	22	54	25,50	43	75	27,67
4.00	4	P.....0400	22	55	17,93	43	75	21,55	22	54	23,47	43	75	25,50
4.10	4.1	P.....0410	22	55	19,00	43	75	24,43	22	66	29,01	43	87	33,96
4.20	4.2	P.....0420	22	55	19,00	43	75	24,43	22	66	26,79	43	87	31,45
4.30	4.3	P.....0430	24	58	21,55	47	80	25,28	24	68	29,01	47	91	33,75
4.40	4.4	P.....0440	24	58	21,55	47	80	25,28	24	68	29,01	47	91	33,75
4.50	4.5	P.....0450	24	58	20,33	47	80	23,05	24	68	33,62	47	91	31,18
4.60	4.6	P.....0460	24	58	21,55	47	80	25,28	24	68	33,35	47	91	38,48
4.70	4.7	P.....0470	24	58	21,55	47	80	25,28	24	68	33,35	47	91	38,48
4.80	4.8	P.....0480	26	62	21,55	52	86	25,28	26	70	33,35	52	96	40,18
4.90	4.9	P.....0490	26	62	21,55	52	86	25,28	26	70	33,35	52	96	40,18
5.00	5	P.....0500	26	62	20,52	52	86	23,76	26	70	30,37	52	96	37,07
5.10	5.1	P.....0510	26	62	21,69	52	86	27,38	26	70	30,37	52	96	37,07
5.20	5.2	P.....0520	26	62	21,69	52	86	27,38	26	70	34,63	52	96	41,26
5.30	5.3	P.....0530	26	62	21,87	52	86	27,24	26	70	37,94	52	96	45,38
5.40	5.4	P.....0540	28	66	25,47	57	93	33,12	28	72	37,94	57	101	44,98
5.50	5.5	P.....0550	28	66	24,11	57	93	30,08	28	72	34,63	57	101	40,98
5.60	5.6	P.....0560	28	66	25,47	57	93	33,12	28	72	42,88	57	101	50,39
5.70	5.7	P.....0570	28	66	25,79	57	93	33,46	28	72	42,88	57	101	50,39
5.80	5.8	P.....0580	28	66	25,79	57	93	33,46	28	72	42,88	57	101	50,39
5.90	5.9	P.....0590	28	66	25,47	57	93	32,93	28	72	42,88	57	101	50,39
6.00	6	P.....0600	28	66	24,62	57	93	33,99	28	72	38,69	57	101	45,99
6.10	6.1	P.....0610	31	70	28,60	63	101	33,57	31	75	43,02	63	107	52,89
6.20	6.2	P.....0620	31	70	28,92	63	101	37,95	31	75	43,02	63	107	52,89
6.30	6.3	P.....0630	31	70	28,60	63	101	37,00	31	75	43,02	63	107	52,89
6.40	6.4	P.....0640	31	70	30,24	63	101	39,81	31	75	43,02	63	107	52,89

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





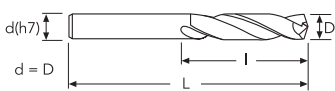
				218LFTA		238LFTA		980SUTA		990SUTA				
P	M	K	N	S	H									
★	☆	★	☆	★	☆									
D(h8)	d(h7)	EDP No.	I	L	€	I	L	€	I	L	€			
6.50	6.5	P.....0650	31	70	29,89	63	101	35,11	31	75	45,86	63	107	48,76
6.60	6.6	P.....0660	31	70	30,24	63	101	39,81	31	75	50,12	63	107	56,82
6.70	6.7	P.....0670	31	70	30,24	63	101	39,81	31	75	50,12	63	107	56,82
6.80	6.8	P.....0680	34	74	31,21	69	109	40,97	34	78	50,12	69	113	56,55
6.90	6.9	P.....0690	34	74	31,21	69	109	40,97	34	78	50,12	69	113	56,55
7.00	7	P.....0700	34	74	30,24	69	109	39,81	34	78	46,67	69	113	53,64
7.10	7.1	P.....0710	34	74	41,72	69	109	48,21	34	78	49,78	69	113	57,49
7.20	7.2	P.....0720	34	74	41,72	69	109	48,21	34	78	49,78	69	113	57,49
7.30	7.3	P.....0730	34	74	41,72	69	109	48,21	34	78	49,78	69	113	57,49
7.40	7.4	P.....0740	34	74	41,72	69	109	48,21	34	78	49,78	69	113	57,49
7.50	7.5	P.....0750	34	74	31,21	69	109	42,12	34	78	49,78	69	113	57,49
7.60	7.6	P.....0760	37	79	46,23	75	117	53,47	37	81	54,44	75	119	65,61
7.70	7.7	P.....0770	37	79	46,23	75	117	53,47	37	81	54,44	75	119	65,61
7.80	7.8	P.....0780	37	79	44,74	75	117	51,58	37	81	54,44	75	119	65,61
7.90	7.9	P.....0790	37	79	44,74	75	117	51,58	37	81	54,44	75	119	65,61
8.00	8	P.....0800	37	79	36,10	75	117	49,90	37	81	50,39	75	119	61,61
8.10	8.1	P.....0810	37	79	49,72	75	117	60,57	37	87	55,33	75	125	65,13
8.20	8.2	P.....0820	37	79	49,72	75	117	60,57	37	87	55,33	75	125	65,13
8.30	8.3	P.....0830	37	79	49,72	75	117	60,57	37	87	55,33	75	125	65,13
8.40	8.4	P.....0840	37	79	49,72	75	117	60,57	37	87	55,33	75	125	65,13
8.50	8.5	P.....0850	37	79	38,59	75	117	54,68	37	87	50,93	75	125	61,14
8.60	8.6	P.....0860	40	84	57,98	81	125	72,16	40	90	51,06	81	131	64,05
8.70	8.7	P.....0870	40	84	57,98	81	125	72,33	40	90	61,14	81	131	75,01
8.80	8.8	P.....0880	40	84	57,98	81	125	72,33	40	90	61,14	81	131	75,01
8.90	8.9	P.....0890	40	84	57,98	81	125	72,33	40	90	61,14	81	131	75,01
9.00	9	P.....0900	40	84	44,35	81	125	64,91	40	90	52,08	81	131	64,66
9.10	9.1	P.....0910	40	84	64,25	81	125	81,24	40	90	66,08	81	131	80,82
9.20	9.2	P.....0920	40	84	64,25	81	125	81,24	40	90	66,08	81	131	80,82
9.30	9.3	P.....0930	40	84	66,47	81	125	81,24	40	90	66,08	81	131	80,82
9.40	9.4	P.....0940	40	84	66,47	81	125	81,24	40	90	66,08	81	131	80,82
9.50	9.5	P.....0950	40	84	45,07	81	125	63,61	40	90	61,55	81	131	75,55
9.60	9.6	P.....0960	43	89	69,23	87	133	86,35	43	93	73,12	87	137	92,73
9.70	9.7	P.....0970	43	89	69,23	87	133	86,35	43	93	73,12	87	137	92,73
9.80	9.8	P.....0980	43	89	69,23	87	133	86,35	43	93	73,12	87	137	92,73
9.90	9.9	P.....0990	43	89	69,23	87	133	86,35	43	93	73,12	87	137	92,73
10.00	10	P.....1000	43	89	46,39	87	133	71,57	43	93	62,90	87	137	80,62
10.10	10.1	P.....1010							43	100	76,36	87	144	93,27
10.20	10.2	P.....1020	43	89	83,98	87	133	102,47	43	100	76,36	87	144	93,27
10.30	10.3	P.....1030	43	89	69,24	87	133	87,30	43	100	76,36	87	144	93,27
10.40	10.4	P.....1040							43	100	76,36	87	144	93,27
10.50	10.5	P.....1050	43	89	69,24	87	133	87,30	43	100	71,09	87	144	87,38
10.60	10.6	P.....1060							43	100	82,86	87	144	100,91
10.70	10.7	P.....1070							47	104	82,38	94	151	104,77
10.80	10.8	P.....1080	47	95	76,81	94	142	97,50	47	104	82,38	94	151	104,77
10.90	10.9	P.....1090							47	104	82,38	94	151	104,77
11.00	11	P.....1100	47	95	76,81	94	142	97,50	47	104	71,69	94	151	92,39
11.10	11.1	P.....1110							47	104	90,09	94	151	113,49
11.20	11.2	P.....1120	47	95	76,81	94	142	104,42	47	104	90,09	94	151	113,49
11.30	11.3	P.....1130	47	95	76,81	94	142	104,42	47	104	90,09	94	151	113,49
11.40	11.4	P.....1140							47	104	90,09	94	151	113,49
11.50	11.5	P.....1150	47	95	76,81	94	142	104,42	47	104	83,39	94	151	105,65
11.60	11.6	P.....1160							47	104	97,06	94	151	120,87
11.70	11.7	P.....1170							47	104	97,06	94	151	120,87
11.80	11.8	P.....1180	47	95	76,59	94	142	124,58	47	104	97,06	94	151	120,87
11.90	11.9	P.....1190							51	108	98,55	101	158	125,94
12.00	12	P.....1200	51	102	76,59	101	151	124,58	51	108	85,02	101	158	111,33
12.10	12.1	P.....1210							51	108	105,38	101	158	134,39
12.20	12.2	P.....1220	51	102	83,11	101	151	139,14	51	108	105,38	101	158	134,39
12.30	12.3	P.....1230							51	108	105,38	101	158	134,39
12.40	12.4	P.....1240							51	108	105,38	101	158	134,39
12.50	12.5	P.....1250	51	102	83,11	101	151	141,77	51	108	97,94	101	158	125,87
12.60	12.6	P.....1260							51	108	111,26	101	158	140,82
12.70	12.7	P.....1270							51	108	111,26	101	158	140,82

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



PARAMETERS

★ 1st choice ☆ suitable



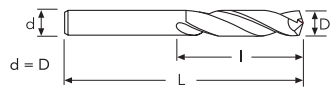
					218LFTA						238LFTA						980SUTA						990SUTA
P	★																						
M	☆																						
K	★																						
N	☆																						
S	☆																						
H	☆																						
D(h8)	d(h7)	EDP No.	I	L	€	I	L	€	I	L	€	I	L	€	I	L	€	I	L	€			
12.80	12.8	P.....1280	51	102	<b>110,15</b>	101	151	<b>177,73</b>	51	108	<b>111,26</b>	101	158	<b>140,82</b>									
12.90	12.9	P.....1290							51	108	<b>111,26</b>	101	158	<b>140,82</b>									
13.00	13	P.....1300	51	102	<b>110,15</b>	101	151	<b>177,73</b>	51	108	<b>99,50</b>	101	158	<b>127,29</b>									
13.30	13.3	P.....1330	54	107	<b>116,70</b>	108	160	<b>187,61</b>															
13.50	13.5	P.....1350	54	107	<b>116,70</b>	108	160	<b>187,61</b>				106	166	<b>147,92</b>									
13.80	13.8	P.....1380	54	107	<b>113,92</b>	108	160	<b>183,00</b>															
14.00	14	P.....1400	54	107	<b>113,92</b>	108	160	<b>183,00</b>				106	166	<b>147,38</b>									
14.10	14.1	P.....1410										109	169	<b>186,54</b>									
14.50	14.5	P.....1450	56	111	<b>121,63</b>	114	169	<b>194,96</b>				109	169	<b>172,13</b>									
14.80	14.8	P.....1480	56	111	<b>121,63</b>	114	169	<b>194,96</b>															
15.00	15	P.....1500	56	111	<b>121,63</b>	114	169	<b>194,96</b>				109	169	<b>172,33</b>									
15.30	15.3	P.....1530	56	111	<b>142,27</b>	120	178	<b>229,55</b>															
15.50	15.5	P.....1550	58	115	<b>142,27</b>	120	178	<b>229,55</b>				112	172	<b>200,41</b>									
15.60	15.6	P.....1560										112	172	<b>217,99</b>									
15.80	15.8	P.....1580	58	115	<b>130,42</b>	120	178	<b>237,27</b>															
16.00	16	P.....1600	58	115	<b>130,42</b>	120	178	<b>237,27</b>				112	172	<b>201,08</b>									
16.50	16.5	P.....1650	60	119	<b>145,53</b>	125	184	<b>237,70</b>				115	181	<b>233,21</b>									
17.00	17	P.....1700	60	119	<b>147,04</b>	125	184	<b>240,28</b>				115	181	<b>237,74</b>									
17.50	17.5	P.....1750	62	123	<b>150,07</b>	130	191	<b>245,57</b>				118	184	<b>283,93</b>									
17.60	17.6	P.....1760										118	184	<b>308,49</b>									
18.00	18	P.....1800	62	123	<b>151,73</b>	130	191	<b>248,45</b>				118	184	<b>289,41</b>									
18.50	18.5	P.....1850	64	127	<b>153,32</b>	135	198	<b>257,51</b>				122	188	<b>304,63</b>									
19.00	19	P.....1900	64	127	<b>156,43</b>	135	198	<b>262,35</b>				122	188	<b>311,13</b>									
19.50	19.5	P.....1950	66	131	<b>159,68</b>	140	205	<b>267,39</b>				125	191	<b>339,19</b>									
20.00	20	P.....2000	66	131	<b>164,14</b>	140	205	<b>274,47</b>				125	191	<b>382,48</b>									

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



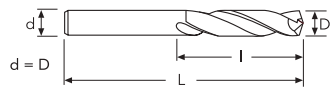






						138N		1386STI		238NVA		2386STI	
P							★		★		★		★
M							☆		☆		☆		☆
K							☆		★		☆		★
N							☆		☆		☆		☆
S									☆		☆		☆
H													☆
D(h8)	d	l	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€	EDP No.	€	
4.20	4.2	43	75	10	P138N0420	2,39	P1386STI0420	3,23	P238NVA0420	5,64	P2386STI0420	5,23	
4.25	4.25	43	75	10	P138N0425	2,74			P238NVA0425	6,18			
4.30	4.3	47	80	10	P138N0430	2,39	P1386STI0430	3,23	P238NVA0430	5,64	P2386STI0430	5,23	
4.40	4.4	47	80	10	P138N0440	2,39	P1386STI0440	3,23	P238NVA0440	5,64	P2386STI0440	5,23	
4.50	4.5	47	80	10	P138N0450	2,39	P1386STI0450	3,23	P238NVA0450	5,64	P2386STI0450	5,23	
4.60	4.6	47	80	10	P138N0460	2,74	P1386STI0460	3,62	P238NVA0460	5,87	P2386STI0460	5,23	
4.70	4.7	47	80	10	P138N0470	2,74	P1386STI0470	3,62	P238NVA0470	5,87	P2386STI0470	5,23	
4.75	4.75	47	80	10	P138N0475	2,95			P238NVA0475	6,56			
4.80	4.8	52	86	10	P138N0480	2,74	P1386STI0480	3,62	P238NVA0480	5,87	P2386STI0480	5,23	
4.90	4.9	52	86	10	P138N0490	2,74	P1386STI0490	3,62	P238NVA0490	5,87	P2386STI0490	5,23	
5.00	5	52	86	10	P138N0500	2,74	P1386STI0500	3,94	P238NVA0500	5,87	P2386STI0500	5,23	
5.10	5.1	52	86	10	P138N0510	2,74	P1386STI0510	3,94	P238NVA0510	7,10	P2386STI0510	6,61	
5.20	5.2	52	86	10	P138N0520	2,74	P1386STI0520	3,94	P238NVA0520	7,10	P2386STI0520	6,61	
5.25	5.25	52	86	10	P138N0525	2,74			P238NVA0525	7,71			
5.30	5.3	52	86	10	P138N0530	3,41	P1386STI0530	4,57	P238NVA0530	7,10	P2386STI0530	6,61	
5.40	5.4	57	93	10	P138N0540	3,41	P1386STI0540	4,57	P238NVA0540	7,10	P2386STI0540	6,61	
5.50	5.5	57	93	10	P138N0550	3,41	P1386STI0550	4,57	P238NVA0550	7,10	P2386STI0550	6,61	
5.60	5.6	57	93	10	P138N0560	3,41	P1386STI0560	4,57	P238NVA0560	7,79	P2386STI0560	7,27	
5.70	5.7	57	93	10	P138N0570	3,41	P1386STI0570	4,57	P238NVA0570	7,79	P2386STI0570	7,27	
5.75	5.75	57	93	10	P138N0575	3,41			P238NVA0575	8,55			
5.80	5.8	57	93	10	P138N0580	3,41	P1386STI0580	4,57	P238NVA0580	7,79	P2386STI0580	7,27	
5.90	5.9	57	93	10	P138N0590	3,41	P1386STI0590	4,57	P238NVA0590	7,79	P2386STI0590	7,27	
6.00	6	57	93	10	P138N0600	3,73	P1386STI0600	5,25	P238NVA0600	7,79	P2386STI0600	7,27	
6.10	6.1	63	101	10	P138N0610	4,05	P1386STI0610	5,25	P238NVA0610	8,48	P2386STI0610	8,09	
6.20	6.2	63	101	10	P138N0620	4,05	P1386STI0620	5,25	P238NVA0620	8,48	P2386STI0620	8,09	
6.25	6.25	63	101	10	P138N0625	4,20			P238NVA0625	9,31			
6.30	6.3	63	101	10	P138N0630	4,20	P1386STI0630	5,39	P238NVA0630	8,48	P2386STI0630	8,09	
6.40	6.4	63	101	10	P138N0640	4,20	P1386STI0640	5,39	P238NVA0640	8,48	P2386STI0640	8,09	
6.50	6.5	63	101	10	P138N0650	4,27	P1386STI0650	5,46	P238NVA0650	8,48	P2386STI0650	8,09	
6.60	6.6	63	101	5	P138N0660	4,27	P1386STI0660	5,46	P238NVA0660	8,78	P2386STI0660	8,74	
6.70	6.7	63	101	5	P138N0670	4,51	P1386STI0670	5,53	P238NVA0670	8,78	P2386STI0670	8,74	
6.75	6.75	69	109	5	P138N0675	4,51			P238NVA0675	9,69			
6.80	6.8	69	109	5	P138N0680	4,90	P1386STI0680	5,89	P238NVA0680	8,78	P2386STI0680	8,74	
6.90	6.9	69	109	5	P138N0690	4,90	P1386STI0690	5,89	P238NVA0690	8,78	P2386STI0690	8,74	
7.00	7	69	109	5	P138N0700	4,57	P1386STI0700	6,68	P238NVA0700	8,78	P2386STI0700	8,74	
7.10	7.1	69	109	5	P138N0710	5,36	P1386STI0710	6,89	P238NVA0710	10,61	P2386STI0710	10,70	
7.20	7.2	69	109	5	P138N0720	5,36	P1386STI0720	6,89	P238NVA0720	10,61	P2386STI0720	10,70	
7.25	7.25	69	109	5	P138N0725	5,36			P238NVA0725	11,76			
7.30	7.3	69	109	5	P138N0730	5,36	P1386STI0730	6,89	P238NVA0730	10,61	P2386STI0730	10,70	
7.40	7.4	69	109	5	P138N0740	5,52	P1386STI0740	7,03	P238NVA0740	10,61	P2386STI0740	10,70	
7.50	7.5	69	109	5	P138N0750	5,52	P1386STI0750	7,03	P238NVA0750	10,61	P2386STI0750	10,70	
7.60	7.6	75	117	5	P138N0760	5,52	P1386STI0760	7,03	P238NVA0760	11,45	P2386STI0760	11,76	
7.70	7.7	75	117	5	P138N0770	5,90	P1386STI0770	7,53	P238NVA0770	11,45	P2386STI0770	11,76	
7.75	7.75	75	117	5	P138N0775	5,90			P238NVA0775	12,68			
7.80	7.8	75	117	5	P138N0780	5,90	P1386STI0780	7,53	P238NVA0780	11,45	P2386STI0780	11,76	
7.90	7.9	75	117	5	P138N0790	5,90	P1386STI0790	7,53	P238NVA0790	11,45	P2386STI0790	11,76	
8.00	8	75	117	5	P138N0800	6,04	P1386STI0800	8,30	P238NVA0800	11,45	P2386STI0800	11,76	
8.10	8.1	75	117	5	P138N0810	6,82	P1386STI0810	9,28	P238NVA0810	12,83	P2386STI0810	12,91	
8.20	8.2	75	117	5	P138N0820	6,82	P1386STI0820	9,28	P238NVA0820	12,83	P2386STI0820	12,91	
8.25	8.25	75	117	5	P138N0825	6,82			P238NVA0825	14,12			
8.30	8.3	75	117	5	P138N0830	7,46	P1386STI0830	10,05	P238NVA0830	12,83	P2386STI0830	12,91	
8.40	8.4	75	117	5	P138N0840	7,46	P1386STI0840	10,05	P238NVA0840	12,83	P2386STI0840	12,91	
8.50	8.5	75	117	5	P138N0850	7,46	P1386STI0850	10,05	P238NVA0850	12,83	P2386STI0850	12,91	
8.60	8.6	81	125	5	P138N0860	8,23	P1386STI0860	10,90	P238NVA0860	14,50	P2386STI0860	14,54	
8.70	8.7	81	125	5	P138N0870	8,23	P1386STI0870	10,90	P238NVA0870	14,50	P2386STI0870	14,54	
8.75	8.75	81	125	5	P138N0875	8,23			P238NVA0875	14,50			
8.80	8.8	81	125	5	P138N0880	8,23	P1386STI0880	10,90	P238NVA0880	14,50	P2386STI0880	14,54	
8.90	8.9	81	125	5	P138N0890	8,23	P1386STI0890	10,90	P238NVA0890	14,50	P2386STI0890	14,54	
9.00	9	81	125	5	P138N0900	8,16	P1386STI0900	10,97	P238NVA0900	14,50	P2386STI0900	14,54	
9.10	9.1	81	125	5	P138N0910	8,79	P1386STI0910	11,53	P238NVA0910	19,93	P2386STI0910	18,05	
9.20	9.2	81	125	5	P138N0920	8,79	P1386STI0920	11,53	P238NVA0920	19,93	P2386STI0920	18,05	
9.25	9.25	81	125	5	P138N0925	9,21			P238NVA0925	19,93			
9.30	9.3	81	125	5	P138N0930	9,21	P1386STI0930	12,16	P238NVA0930	19,93	P2386STI0930	18,05	
9.40	9.4	81	125	5	P138N0940	9,21	P1386STI0940	12,16	P238NVA0940	19,93	P2386STI0940	18,05	





		138N		1386STI		238NVA		2386STI				
P	★			★		★		★				
M	☆			☆		☆		☆				
K	☆			★		☆		★				
N	☆			☆		☆		☆				
S				☆		☆		☆				
H												
D(h8)	d	I	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€		
9.50	9.5	81	125	5	P138N0950	9,21	P1386STI0950	12,16	P238NVA0950	19,93	P2386STI0950	18,05
9.60	9.6	87	133	5	P138N0960	10,56	P1386STI0960	12,51	P238NVA0960	18,32	P2386STI0960	18,05
9.70	9.7	87	133	5	P138N0970	10,56	P1386STI0970	12,51	P238NVA0970	18,32	P2386STI0970	18,05
9.75	9.75	87	133	5	P138N0975	10,56			P238NVA0975	18,32		
9.80	9.8	87	133	5	P138N0980	10,64	P1386STI0980	12,73	P238NVA0980	18,32	P2386STI0980	18,05
9.90	9.9	87	133	5	P138N0990	10,64	P1386STI0990	12,73	P238NVA0990	18,32	P2386STI0990	18,05
10.00	10	87	133	5	P138N1000	9,72	P1386STI1000	12,94	P238NVA1000	18,32	P2386STI1000	18,05
10.10	10.1	87	133	5	P138N1010	10,95	P1386STI1010	13,08			P2386STI1010	20,92
10.20	10.2	87	133	5	P138N1020	11,34	P1386STI1020	13,50	P238NVA1020	25,50	P2386STI1020	20,92
10.25	10.25	87	133	5	P138N1025	11,50						
10.30	10.3	87	133	5	P138N1030	11,50	P1386STI1030	13,85			P2386STI1030	20,92
10.40	10.4	87	133	5	P138N1040	11,50	P1386STI1040	13,85			P2386STI1040	20,92
10.50	10.5	87	133	5	P138N1050	11,50	P1386STI1050	13,85	P238NVA1050	25,50	P2386STI1050	20,92
10.60	10.6	87	133	5	P138N1060	11,65	P1386STI1060	13,92			P2386STI1060	21,57
10.70	10.7	94	142	5	P138N1070	11,65	P1386STI1070	13,92			P2386STI1070	21,57
10.75	10.75	94	142	5	P138N1075	11,65						
10.80	10.8	94	142	5	P138N1080	11,65	P1386STI1080	13,92			P2386STI1080	21,57
10.90	10.9	94	142	5	P138N1090	11,65	P1386STI1090	13,92			P2386STI1090	21,57
11.00	11	94	142	5	P138N1100	11,65	P1386STI1100	14,56	P238NVA1100	28,40	P2386STI1100	21,57
11.10	11.1	94	142	5	P138N1110	14,60	P1386STI1110	17,51			P2386STI1110	26,06
11.20	11.2	94	142	5	P138N1120	14,60	P1386STI1120	17,51			P2386STI1120	26,06
11.25	11.25	94	142	5	P138N1125	14,60						
11.30	11.3	94	142	5	P138N1130	14,60	P1386STI1130	17,51			P2386STI1130	26,06
11.40	11.4	94	142	5	P138N1140	14,60	P1386STI1140	17,51			P2386STI1140	26,06
11.50	11.5	94	142	5	P138N1150	14,60	P1386STI1150	17,51	P238NVA1150	31,45	P2386STI1150	26,06
11.60	11.6	94	142	5	P138N1160	14,60	P1386STI1160	17,51			P2386STI1160	26,06
11.70	11.7	94	142	5	P138N1170	14,60	P1386STI1170	17,51			P2386STI1170	26,06
11.75	11.75	94	142	5	P138N1175	14,60						
11.80	11.8	94	142	5	P138N1180	14,60	P1386STI1180	17,51			P2386STI1180	26,06
11.90	11.9	101	151	5	P138N1190	14,60	P1386STI1190	17,51			P2386STI1190	26,06
12.00	12	101	151	5	P138N1200	14,60	P1386STI1200	17,86	P238NVA1200	32,60	P2386STI1200	26,06
12.10	12.1	101	151	5	P138N1210	15,15	P1386STI1210	18,28			P2386STI1210	28,84
12.20	12.2	101	151	5	P138N1220	15,15	P1386STI1220	18,28			P2386STI1220	28,84
12.25	12.25	101	151	5	P138N1225	15,15						
12.30	12.3	101	151	5	P138N1230	15,15	P1386STI1230	18,28			P2386STI1230	28,84
12.40	12.4	101	151	5	P138N1240	17,16	P1386STI1240	20,25			P2386STI1240	28,84
12.50	12.5	101	151	5	P138N1250	17,16	P1386STI1250	21,09	P238NVA1250	39,01	P2386STI1250	29,90
12.60	12.6	101	151	5	P138N1260	17,16	P1386STI1260	21,09			P2386STI1260	29,90
12.70	12.7	101	151	5	P138N1270	17,16	P1386STI1270	21,09			P2386STI1270	29,90
12.75	12.75	101	151	5	P138N1275	17,16						
12.80	12.8	101	151	5	P138N1280	17,16	P1386STI1280	21,09			P2386STI1280	29,90
12.90	12.9	101	151	5	P138N1290	17,16	P1386STI1290	21,09			P2386STI1290	29,90
13.00	13	101	151	5	P138N1300	17,16	P1386STI1300	21,87	P238NVA1300	49,32	P2386STI1300	30,55
13.25	13.25	108	160	1	P138N1325	20,84						
13.50	13.5	108	160	1	P138N1350	19,19			P238NVA1350	50,92		
13.75	13.75	108	160	1	P138N1375	20,84						
14.00	14	108	160	1	P138N1400	19,19			P238NVA1400	53,06		
14.25	14.25	114	169	1	P138N1425	25,32						
14.50	14.5	114	169	1	P138N1450	23,14			P238NVA1450	53,44		
14.75	14.75	114	169	1	P138N1475	25,32						
15.00	15	114	169	1	P138N1500	23,14			P238NVA1500	54,12		
15.25	15.25	120	178	1	P138N1525	30,37						
15.50	15.5	120	178	1	P138N1550	30,37			P238NVA1550	61,38		
15.75	15.75	120	178	1	P138N1575	30,37						
16.00	16	120	178	1	P138N1600	27,76			P238NVA1600	63,06		
16.25	16.25	125	184	1	P138N1625	35,19						
16.50	16.5	125	184	1	P138N1650	35,19			P238NVA1650	69,47		
16.75	16.75	125	184	1	P138N1675	35,19						
17.00	17	125	184	1	P138N1700	32,16			P238NVA1700	69,47		
17.50	17.5	130	191	1	P138N1750	43,34			P238NVA1750	78,33		
18.00	18	130	191	1	P138N1800	39,61			P238NVA1800	78,33		
18.50	18.5	135	198	1	P138N1850	49,17			P238NVA1850	91,15		
19.00	19	135	198	1	P138N1900	43,80			P238NVA1900	91,15		
19.50	19.5	140	205	1	P138N1950	54,69						
20.00	20	140	205	1	P138N2000	55,44			P238NVA2000	107,72		



234NVA - catalogue page 252



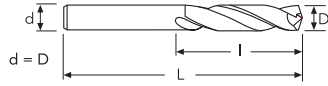
234LS - catalogue page 256



234LSTH - catalogue page 256



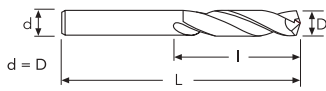
DIN 340	NH	HSS/CO* HT	130°	30°
* < Ø2 mm = 134NB HSS BR				
DIN 340	LS	HSS/CO OX	130°	35-40°
DIN 340	LS	HSS/CO PV15	130°	35-40°



						234NVA		234LS		234LSTH
P						★		★		★
M						★		★		★
K						☆		★		★
N						☆				
S						☆				
H										
D(h8)	d	I	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€
0.50	0.5	12	32	10	P134NB0050	23,68				
0.60	0.6	15	35	10	P134NB0060	18,39				
0.70	0.7	21	42	10	P134NB0070	16,85				
0.80	0.8	25	46	10	P134NB0080	16,85				
0.90	0.9	29	51	10	P134NB0090	15,16				
1.00	1	33	56	10	P134NB0100	10,98				
1.10	1.1	37	60	10	P134NB0110	11,30				
1.20	1.2	41	65	10	P134NB0120	11,30				
1.30	1.3	41	65	10	P134NB0130	11,30				
1.40	1.4	45	70	10	P134NB0140	10,35				
1.50	1.5	45	70	10	P134NB0150	8,98				
1.60	1.6	50	76	10	P134NB0160	9,46				
1.70	1.7	50	76	10	P134NB0170	9,46				
1.80	1.8	53	80	10	P134NB0180	9,12				
1.90	1.9	53	80	10	P134NB0190	9,12				
2.00	2	56	85	10	P234NVA0200	5,00	P234LS0200	5,31	P234LSTH0200	19,19
2.10	2.1	56	85	10	P234NVA0210	5,00	P234LS0210	5,77	P234LSTH0210	19,42
2.20	2.2	59	90	10	P234NVA0220	4,86	P234LS0220	5,77	P234LSTH0220	21,83
2.30	2.3	59	90	10	P234NVA0230	4,86	P234LS0230	5,77	P234LSTH0230	21,83
2.40	2.4	62	95	10	P234NVA0240	4,86	P234LS0240	5,77	P234LSTH0240	21,83
2.50	2.5	62	95	10	P234NVA0250	4,86	P234LS0250	5,77	P234LSTH0250	21,83
2.60	2.6	62	95	10	P234NVA0260	5,20	P234LS0260	6,13	P234LSTH0260	22,53
2.70	2.7	66	100	10	P234NVA0270	5,20	P234LS0270	6,13	P234LSTH0270	25,40
2.80	2.8	66	100	10	P234NVA0280	5,20	P234LS0280	6,13	P234LSTH0280	25,40
2.90	2.9	66	100	10	P234NVA0290	5,20	P234LS0290	6,13	P234LSTH0290	25,40
3.00	3	66	100	10	P234NVA0300	5,20	P234LS0300	6,13	P234LSTH0300	25,40
3.10	3.1	69	106	10	P234NVA0310	5,55	P234LS0310	7,15	P234LSTH0310	29,91
3.20	3.2	69	106	10	P234NVA0320	5,55	P234LS0320	7,15	P234LSTH0320	29,91
3.30	3.3	69	106	10	P234NVA0330	5,55	P234LS0330	7,15	P234LSTH0330	29,91
3.40	3.4	73	112	10	P234NVA0340	5,55	P234LS0340	7,15	P234LSTH0340	29,91
3.50	3.5	73	112	10	P234NVA0350	5,55	P234LS0350	7,15	P234LSTH0350	29,91
3.60	3.6	73	112	10	P234NVA0360	6,54	P234LS0360	8,45	P234LSTH0360	31,00
3.70	3.7	73	112	10	P234NVA0370	6,54	P234LS0370	8,45	P234LSTH0370	31,00
3.80	3.8	78	119	10	P234NVA0380	6,54	P234LS0380	8,45	P234LSTH0380	34,26
3.90	3.9	78	119	10	P234NVA0390	6,54	P234LS0390	8,45	P234LSTH0390	34,26
4.00	4	78	119	10	P234NVA0400	6,54	P234LS0400	8,45	P234LSTH0400	34,26
4.10	4.1	78	119	10	P234NVA0410	7,31				
4.20	4.2	78	119	10	P234NVA0420	7,31	P234LS0420	9,83	P234LSTH0420	35,50
4.30	4.3	82	126	10	P234NVA0430	7,31				
4.40	4.4	82	126	10	P234NVA0440	7,31				
4.50	4.5	82	126	10	P234NVA0450	7,31	P234LS0450	9,83	P234LSTH0450	42,10
4.60	4.6	82	126	10	P234NVA0460	7,60				
4.70	4.7	82	126	10	P234NVA0470	7,60				
4.80	4.8	87	132	10	P234NVA0480	7,60	P234LS0480	9,83	P234LSTH0480	42,10
4.90	4.9	87	132	10	P234NVA0490	7,60				
5.00	5	87	132	10	P234NVA0500	7,60	P234LS0500	9,83	P234LSTH0500	42,10
5.10	5.1	87	132	10	P234NVA0510	9,00				
5.20	5.2	87	132	10	P234NVA0520	9,00	P234LS0520	12,16	P234LSTH0520	44,12
5.30	5.3	87	132	10	P234NVA0530	9,00				
5.40	5.4	91	139	10	P234NVA0540	9,00				



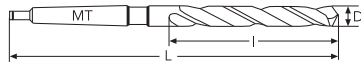




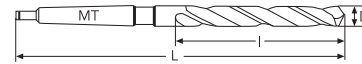
					234NVA		234LS		234LSTH	
P						★		★		★
M						★		★		★
K						☆		★		★
N						☆				
S						☆				
H						☆				
D(h8)	d	I	L	PACKAGING	EDP No.	€	EDP No.	€	EDP No.	€
5.50	5.5	91	139	10	P234NVA0550	9,00	P234LS0550	12,16	P234LSTH0550	47,46
5.60	5.6	91	139	10	P234NVA0560	10,05				
5.70	5.7	91	139	10	P234NVA0570	10,05				
5.80	5.8	91	139	10	P234NVA0580	10,05	P234LS0580	12,94	P234LSTH0580	48,32
5.90	5.9	91	139	10	P234NVA0590	10,05				
6.00	6	91	139	10	P234NVA0600	10,05	P234LS0600	12,94	P234LSTH0600	48,32
6.10	6.1	97	148	5	P234NVA0610	10,90				
6.20	6.2	97	148	5	P234NVA0620	10,90	P234LS0620	15,00	P234LSTH0620	55,54
6.30	6.3	97	148	5	P234NVA0630	10,90				
6.50	6.5	97	148	5	P234NVA0650	10,90	P234LS0650	15,00	P234LSTH0650	58,03
6.60	6.6	97	148	5	P234NVA0660	11,39				
6.70	6.7	97	148	5	P234NVA0670	11,39				
6.80	6.8	102	156	5	P234NVA0680	11,39	P234LS0680	16,30	P234LSTH0680	66,18
6.90	6.9	102	156	5	P234NVA0690	11,39				
7.00	7	102	156	5	P234NVA0700	11,39	P234LS0700	16,30	P234LSTH0700	66,18
7.10	7.1	102	156	5	P234NVA0710	13,85				
7.20	7.2	102	156	5	P234NVA0720	13,85	P234LS0720	17,43		
7.40	7.4	102	156	5	P234NVA0740	13,85				
7.50	7.5	102	156	5	P234NVA0750	13,85	P234LS0750	17,43	P234LSTH0750	69,14
7.60	7.6	109	165	5	P234NVA0760	14,84				
7.70	7.7	109	165	5	P234NVA0770	14,84				
7.80	7.8	109	165	5	P234NVA0780	14,84	P234LS0780	18,80		
7.90	7.9	109	165	5	P234NVA0790	14,84				
8.00	8	109	165	5	P234NVA0800	14,84	P234LS0800	18,80	P234LSTH0800	70,76
8.10	8.1	109	165	5	P234NVA0810	16,66				
8.20	8.2	109	165	5	P234NVA0820	16,66	P234LS0820	20,99		
8.30	8.3	109	165	5	P234NVA0830	16,66				
8.40	8.4	109	165	5	P234NVA0840	16,66				
8.50	8.5	109	165	5	P234NVA0850	16,66	P234LS0850	20,99	P234LSTH0850	77,21
8.60	8.6	115	175	5	P234NVA0860	18,91				
8.70	8.7	115	175	5	P234NVA0870	18,91				
8.80	8.8	115	175	5	P234NVA0880	18,91				
8.90	8.9	115	175	5	P234NVA0890	18,91				
9.00	9	115	175	5	P234NVA0900	18,91	P234LS0900	23,80	P234LSTH0900	85,68
9.10	9.1	115	175	5	P234NVA0910	25,94				
9.20	9.2	115	175	5	P234NVA0920	25,94				
9.30	9.3	115	175	5	P234NVA0930	25,94				
9.40	9.4	115	175	5	P234NVA0940	25,94				
9.50	9.5	115	175	5	P234NVA0950	25,94	P234LS0950	30,70	P234LSTH0950	92,75
9.60	9.6	121	184	5	P234NVA0960	23,63				
9.70	9.7	121	184	5	P234NVA0970	23,63				
9.80	9.8	121	184	5	P234NVA0980	23,63	P234LS0980	30,70		
9.90	9.9	121	184	5	P234NVA0990	23,63				
10.00	10	121	184	5	P234NVA1000	23,63	P234LS1000	30,70	P234LSTH1000	98,81
10.20	10.2	121	184	5	P234NVA1020	32,69				
10.50	10.5	121	184	5	P234NVA1050	32,69	P234LS1050	40,01	P234LSTH1050	106,58
10.80	10.8	128	195	5	P234NVA1080	32,69				
11.00	11	128	195	5	P234NVA1100	36,56	P234LS1100	40,44	P234LSTH1100	114,12
11.20	11.20	128	195	5	P234NVA1120	36,56				
11.50	11.5	128	195	5	P234NVA1150	40,50	P234LS1150	49,76	P234LSTH1150	122,50
11.80	11.80	128	195	5	P234NVA1180	42,05				
12.00	12	134	205	5	P234NVA1200	42,05	P234LS1200	49,76	P234LSTH1200	130,35
12.50	12.5	134	205	5			P234LS1250	58,45	P234LSTH1250	135,24
13.00	13	134	205	5			P234LS1300	59,09	P234LSTH1300	135,79



145N - catalogue page 265



145N



145N

145N						145N					
P	M	K	N	S	H	P	M	K	N	S	H
D(h8)	MT	I	L	EDP No.	€	D(h8)	MT	I	L	EDP No.	€
5.00	1	52	133	P145N0500	39,57	23.00	2	155	253	P145N2300	84,28
5.50	1	57	138	P145N0550	41,01	23.25	3	155	276	P145N2325	181,29
6.00	1	57	138	P145N0600	42,45	23.50	3	155	276	P145N2350	90,93
6.50	1	63	144	P145N0650	41,73	23.75	3	160	281	P145N2375	191,36
6.75	1	69	150	P145N0675	45,32	24.00	3	160	281	P145N2400	93,22
7.00	1	69	150	P145N0700	41,73	24.25	3	160	281	P145N2425	205,75
7.50	1	69	150	P145N0750	48,20	24.50	3	160	281	P145N2450	97,53
8.00	1	75	156	P145N0800	38,13	24.75	3	160	281	P145N2475	208,63
8.50	1	75	156	P145N0850	41,73	25.00	3	160	281	P145N2500	100,98
9.00	1	81	162	P145N0900	41,01	25.50	3	165	286	P145N2550	102,70
9.50	1	81	162	P145N0950	48,92	26.00	3	165	286	P145N2600	103,13
10.00	1	87	168	P145N1000	41,73	26.50	3	165	286	P145N2650	116,69
10.25	1	87	168	P145N1025	69,06	27.00	3	170	291	P145N2700	120,81
10.50	1	87	168	P145N1050	43,88	27.50	3	170	291	P145N2750	124,82
11.00	1	94	175	P145N1100	45,32	28.00	3	170	291	P145N2800	121,06
11.50	1	94	175	P145N1150	51,80	28.50	3	175	296	P145N2850	135,54
12.00	1	101	182	P145N1200	46,76	29.00	3	175	296	P145N2900	142,87
12.50	1	101	182	P145N1250	49,64	29.50	3	175	296	P145N2950	147,67
13.00	1	101	182	P145N1300	34,01	30.00	3	175	296	P145N3000	152,67
13.25	1	108	189	P145N1325	73,38	30.50	3	180	301	P145N3050	159,93
13.50	1	108	189	P145N1350	34,75	31.00	3	180	301	P145N3100	167,33
13.75	1	108	189	P145N1375	73,38	31.50	3	180	301	P145N3150	175,09
14.00	1	108	189	P145N1400	36,35	32.00	4	185	334	P145N3200	182,80
14.25	2	114	212	P145N1425	87,77	32.50	4	185	334	P145N3250	208,92
14.50	2	114	212	P145N1450	42,45	33.00	4	185	334	P145N3300	208,92
14.75	2	114	212	P145N1475	96,40	33.50	4	185	334	P145N3350	215,08
15.00	2	114	212	P145N1500	43,62	34.00	4	190	339	P145N3400	221,12
15.25	2	120	218	P145N1525	87,77	34.50	4	190	339	P145N3450	222,28
15.50	2	120	218	P145N1550	45,65	35.00	4	190	339	P145N3500	223,33
15.75	2	120	218	P145N1575	84,89	35.50	4	190	339	P145N3550	229,18
16.00	2	120	218	P145N1600	47,69	36.00	4	195	344	P145N3600	235,04
16.25	2	125	223	P145N1625	102,16	36.50	4	195	344	P145N3650	241,26
16.50	2	125	223	P145N1650	51,38	37.00	4	195	344	P145N3700	247,61
16.75	2	125	223	P145N1675	93,52	37.50	4	195	344	P145N3750	253,83
17.00	2	125	223	P145N1700	54,03	38.00	4	200	349	P145N3800	260,05
17.25	2	130	228	P145N1725	100,72	38.50	4	200	349	P145N3850	272,80
17.50	2	130	228	P145N1750	56,56	39.00	4	200	349	P145N3900	285,43
17.75	2	130	228	P145N1775	96,40	39.50	4	200	349	P145N3950	294,86
18.00	2	130	228	P145N1800	59,82	40.00	4	200	349	P145N4000	304,41
18.25	2	135	233	P145N1825	110,79	40.50	4	205	354	P145N4050	313,41
18.50	2	135	233	P145N1850	61,42	41.00	4	205	354	P145N4100	322,34
18.75	2	135	233	P145N1875	106,47	42.00	4	205	354	P145N4200	334,84
19.00	2	135	233	P145N1900	64,75	43.00	4	210	359	P145N4300	380,00
19.25	2	140	238	P145N1925	123,74	44.00	4	210	359	P145N4400	394,72
19.50	2	140	238	P145N1950	68,26	45.00	4	210	359	P145N4500	416,29
19.75	2	140	238	P145N1975	119,42	46.00	4	215	364	P145N4600	436,87
20.00	2	140	238	P145N2000	70,79	47.00	4	215	364	P145N4700	460,15
20.25	2	145	243	P145N2025	139,57	48.00	4	220	369	P145N4800	505,44
20.50	2	145	243	P145N2050	72,82	49.00	4	220	369	P145N4900	530,70
20.75	2	145	243	P145N2075	133,81	50.00	4	220	369	P145N5000	554,97
21.00	2	145	243	P145N2100	73,93	55.00	5	230	417	P145N5500	786,38
21.25	2	150	248	P145N2125	145,32	60.00	5	235	422	P145N6000	1025,23
21.50	2	150	248	P145N2150	75,41						
21.75	2	150	248	P145N2175	138,13						
22.00	2	150	248	P145N2200	78,06						
22.25	2	150	248	P145N2225	145,32						
22.50	2	155	253	P145N2250	81,70						
22.75	2	155	253	P145N2275	145,32						

145NTI - catalogue page 265

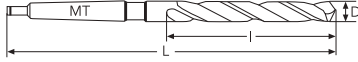


DIN 345		HSS TIN		
---------	--	------------	--	--

245N - catalogue page 270



DIN 345		HSS/CO OX		
---------	--	--------------	--	--



				145NTI	245N		
				★	★		
				☆	☆		
				☆	☆		
				☆	☆		
D(h8)	MT	I	L	EDP No.	€	EDP No.	€
13.00	1	101	182	P145NTI1300	<b>87,01</b>	P245N1300	<b>113,95</b>
13.50	1	108	189	P145NTI1350	<b>92,26</b>	P245N1350	<b>149,03</b>
14.00	1	108	189	P145NTI1400	<b>92,25</b>	P245N1400	<b>145,09</b>
14.50	2	114	212	P145NTI1450	<b>107,91</b>	P245N1450	<b>161,37</b>
15.00	2	114	212	P145NTI1500	<b>107,87</b>	P245N1500	<b>148,38</b>
15.50	2	120	218	P145NTI1550	<b>111,81</b>	P245N1550	<b>161,37</b>
16.00	2	120	218	P145NTI1600	<b>110,27</b>	P245N1600	<b>157,15</b>
16.50	2	125	223	P145NTI1650	<b>121,63</b>	P245N1650	<b>166,68</b>
17.00	2	125	223	P145NTI1700	<b>122,07</b>	P245N1700	<b>159,56</b>
17.50	2	130	228	P145NTI1750	<b>136,72</b>	P245N1750	<b>174,19</b>
18.00	2	130	228	P145NTI1800	<b>128,85</b>	P245N1800	<b>170,36</b>
18.50	2	135	233	P145NTI1850	<b>147,05</b>	P245N1850	<b>187,07</b>
19.00	2	135	233	P145NTI1900	<b>148,52</b>	P245N1900	<b>182,96</b>
19.50	2	140	238	P145NTI1950	<b>162,85</b>	P245N1950	<b>209,44</b>
20.00	2	140	238	P145NTI2000	<b>163,49</b>	P245N2000	<b>204,67</b>
20.50	2	145	243	P145NTI2050	<b>169,55</b>	P245N2050	<b>318,90</b>
21.00	2	145	243	P145NTI2100	<b>169,51</b>	P245N2100	<b>238,60</b>
21.50	2	150	248	P145NTI2150	<b>186,92</b>	P245N2150	<b>240,74</b>
22.00	2	150	248	P145NTI2200	<b>187,84</b>	P245N2200	<b>240,90</b>
22.50	2	155	253	P145NTI2250	<b>206,48</b>	P245N2250	<b>282,28</b>
23.00	2	155	253	P145NTI2300	<b>209,79</b>	P245N2300	<b>282,01</b>
23.50	3	155	276	P145NTI2350	<b>225,33</b>	P245N2350	<b>300,86</b>
24.00	3	160	281	P145NTI2400	<b>226,07</b>	P245N2400	<b>299,22</b>
24.50	3	160	281	P145NTI2450	<b>246,63</b>	P245N2450	<b>341,10</b>
25.00	3	160	281	P145NTI2500	<b>246,13</b>	P245N2500	<b>309,36</b>
26.00	3	165	286	P145NTI2600	<b>267,81</b>	P245N2600	<b>373,33</b>
27.00	3	170	291	P145NTI2700	<b>286,81</b>	P245N2700	<b>412,52</b>
28.00	3	170	291	P145NTI2800	<b>308,43</b>	P245N2800	<b>424,25</b>
29.00	3	175	296	P145NTI2900	<b>331,58</b>	P245N2900	<b>451,16</b>
30.00	3	175	296	P145NTI3000	<b>363,48</b>	P245N3000	<b>441,62</b>







## 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 298

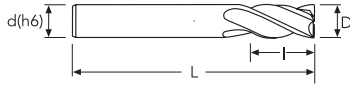


OSAWA NORM	N	MG BR	<45 HRC	30°	SQUARE	Z2
---------------	---	----------	------------	-----	--------	----

G2CS2 - catalogue page 300



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	15,22	G2CS2010	16,44
1.5	4	4.5	50	GB205015	15,22	G2CS2015	16,44
2	4	6	50	GB205020	15,22	G2CS2020	16,44
2.5	4	7	50			G2CS2025	17,30
3	4	8	50	GB205030	15,22	G2CS2030	16,44
3.5	4	10	50			G2CS2035	17,30
4	4	11	50	GB205040	15,22	G2CS2040	16,44
4.5	6	13	50			G2CS2045	22,00
5	6	13	50	GB205050	19,50	G2CS2050	20,39
5.5	6	13	50			G2CS2055	22,00
6	6	15	50	GB205060	19,50	G2CS2060	20,39
6.5	8	17	60			G2CS2065	38,17
7	8	17	60			G2CS2070	38,17
7.5	8	17	60			G2CS2075	38,17
8	8	20	60	GB205080	33,85	G2CS2080	34,16
8.5	10	23	75			G2CS2085	57,20
9	10	23	75			G2CS2090	57,20
10	10	30	75	GB205100	49,69	G2CS2100	48,83
10.5	12	25	75			G2CS2105	79,02
11	12	30	75			G2CS2110	79,02
12	12	30	75	GB205120	68,95	G2CS2120	67,27
13	14	26	83			G2CS2130	179,70
14	14	26	83			G2CS2140	109,48
15	16	32	92			G2CS2150	181,62
16	16	32	92			G2CS2160	124,73
17	20	40	100			G2CS2170	266,32
18	20	40	100			G2CS2180	242,54
20	20	40	100			G2CS2200	225,99

GB305 - catalogue page 307

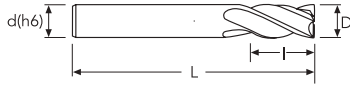


OSAWA NORM	N	MG BR	<45 HRC	45°	SQUARE	Z3
---------------	---	----------	------------	-----	--------	----

G2CSH3 - catalogue page 309



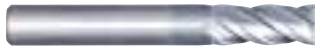
OSAWA NORM	N	MG PV200	<45 HRC	45°	SQUARE	Z3
---------------	---	-------------	------------	-----	--------	----



					GB305		G2CSH3
P					★		★
M					☆		☆
K					★		★
N					☆		☆
S							
H							
D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€
1	4	3	50	GB305010	15,22	G2CSH3010	16,44
1.5	4	4.5	50	GB305015	15,22	G2CSH3015	16,44
2	4	6	50	GB305020	15,22	G2CSH3020	16,44
2.5	4	7	50			G2CSH3025	17,30
3	4	8	50	GB305030	15,22	G2CSH3030	16,44
3.5	4	10	50			G2CSH3035	17,30
4	4	11	50	GB305040	15,22	G2CSH3040	16,44
4.5	6	13	50			G2CSH3045	22,00
5	6	13	50	GB305050	19,50	G2CSH3050	20,39
5.5	6	13	50			G2CSH3055	22,00
6	6	15	50	GB305060	19,50	G2CSH3060	20,39
6.5	8	17	60			G2CSH3065	38,17
7	8	17	60			G2CSH3070	38,17
7.5	8	17	60			G2CSH3075	38,17
8	8	20	60	GB305080	33,85	G2CSH3080	34,16
8.5	10	23	75			G2CSH3085	57,20
9	10	23	75			G2CSH3090	57,20
10	10	30	75	GB305100	49,69	G2CSH3100	48,83
10.5	12	25	75				
11	12	30	75			G2CSH3110	79,02
12	12	30	75	GB305120	68,95	G2CSH3120	67,27
13	14	26	83				
14	14	26	83			G2CSH3140	109,48
15	16	32	92				
16	16	32	92			G2CSH3160	124,73
17	20	40	100				
18	20	40	100			G2CSH3180	242,54
20	20	40	100			G2CSH3200	225,99



GB405 - catalogue page 315

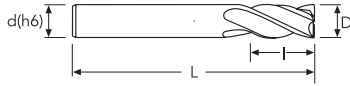


OSAWA NORM	N	MG BR	<45 HRC	30°	SQUARE	Z4
---------------	---	----------	------------	-----	--------	----

G2CS4 - catalogue page 317



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	15,22	G2CS4010	16,44
	1.5	4	4.5	50	GB405015	15,22	G2CS4015	16,44
	2	4	6	50	GB405020	15,22	G2CS4020	16,44
	2.5	4	7	50			G2CS4025	17,30
	3	4	8	50	GB405030	15,22	G2CS4030	16,44
	3.5	4	10	50			G2CS4035	17,30
	4	4	11	50	GB405040	15,22	G2CS4040	16,44
	4.5	6	13	50			G2CS4045	22,00
	5	6	13	50	GB405050	19,50	G2CS4050	20,39
	5.5	6	13	50			G2CS4055	22,00
	6	6	15	50	GB405060	19,50	G2CS4060	20,39
	6.5	8	17	60			G2CS4065	38,17
	7	8	17	60			G2CS4070	38,17
	7.5	8	17	60			G2CS4075	38,17
	8	8	20	60	GB405080	33,85	G2CS4080	34,16
	8.5	10	23	75			G2CS4085	57,20
	9	10	23	75			G2CS4090	57,20
	10	10	30	75	GB405100	49,69	G2CS4100	48,83
	10.5	12	25	75			G2CS4105	79,02
	11	12	30	75			G2CS4110	79,02
	12	12	30	75	GB405120	68,95	G2CS4120	67,27
	13	14	26	83			G2CS4130	127,39
	14	14	26	83			G2CS4140	109,48
	15	16	32	92			G2CS4150	154,31
	16	16	32	92			G2CS4160	124,73
	17	20	40	100			G2CS4170	266,32
	18	20	40	100			G2CS4180	242,54
	20	20	40	100			G2CS4200	225,99
	22	25	40	100			G2CS4220	427,49
	25	25	40	100			G2CS4250	427,49



G2WS2 - catalogue page 302



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

G2WSH3 - catalogue page 311

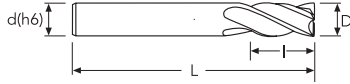


OSAWA NORM	N	MG PV200	<45 HRC	45°	SQUARE	Z3
---------------	---	-------------	------------	-----	--------	----

G2WS4 - catalogue page 319



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



					G2WS2		G2WSH3		G2WS4
P					★		★		★
M					☆		☆		☆
K					★		★		★
N					☆		☆		☆
S									
H									
D(e8)	d(h6)	I	L	EDP No.	€	EDP No.	€	EDP No.	€
3	6	8	57	G2WS2030	22,14	G2WSH3030	22,14	G2WS4030	22,14
4	6	11	57	G2WS2040	22,14	G2WSH3040	22,14	G2WS4040	22,14
5	6	13	57	G2WS2050	22,14	G2WSH3050	22,14	G2WS4050	22,14
6	6	13	57	G2WS2060	22,14	G2WSH3060	22,14	G2WS4060	22,14
8	8	19	63	G2WS2080	39,47	G2WSH3080	39,47	G2WS4080	39,47
10	10	22	72	G2WS2100	52,49	G2WSH3100	52,49	G2WS4100	52,49
12	12	26	83	G2WS2120	78,94	G2WSH3120	78,94	G2WS4120	78,94
14	14	26	83	G2WS2140	113,28	G2WSH3140	113,28	G2WS4140	113,28
16	16	32	92	G2WS2160	137,17	G2WSH3160	137,17	G2WS4160	137,17
20	20	38	104	G2WS2200	246,60	G2WSH3200	246,60	G2WS4200	246,60



G2210 / G2211 / G2212 - catalogue page 304



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

G2310 / G2311 / G2312 - catalogue page 313

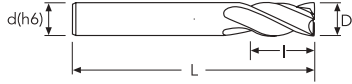


OSAWA NORM	N	MG PV200	<45 HRC	45°	SQUARE	Z3
------------	---	-------------	------------	-----	--------	----

G2410 / G2411 / G2412 / G2413 - catalogue page 321




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



					G2210		G2310		G2410
P					★		★		★
M					☆		☆		☆
K					★		★		★
N					☆		☆		☆
S									
H									
D(e8)	d(h6)	I	L	EDP No.	€	EDP No.	€	EDP No.	€
2	4	9	75	G2210020	31,00	G2310020	31,00	G2410020	31,00
2.5	4	10	75					G2410025	31,21
3	4	15	75	G2210030	31,00	G2310030	31,00	G2410030	31,00
3.5	4	15	75					G2410035	31,21
4	4	20	75	G2210040	31,00	G2310040	31,00	G2410040	31,00
4.5	6	20	75					G2410045	36,47
5	6	25	75	G2210050	36,20	G2310050	36,20	G2410050	36,20
6	6	25	75	G2210060	36,20	G2310060	36,20	G2410060	36,20
					G2211		G2311		G2411
3	6	15	100					G2411030	42,13
4	6	25	100			G2311040	42,13	G2411040	42,13
5	6	30	100	G2211050	42,58	G2311050	42,58	G2411050	42,58
6	6	30	100	G2211060	42,58	G2311060	42,58	G2411060	42,58
7	8	35	100			G2311070	75,74	G2411070	75,74
8	8	35	100	G2211080	73,66	G2311080	73,66	G2411080	73,66
9	10	40	100			G2311090	97,27	G2411090	98,16
10	10	40	100	G2211100	94,59	G2311100	94,59	G2411100	94,59
11	12	45	100			G2311110	128,92	G2411110	128,92
12	12	45	100	G2211120	124,23	G2311120	124,23	G2411120	124,23
					G2212		G2312		G2412
8	8	40	150	G2212080	107,20	G2312080	107,20	G2412080	107,20
10	10	50	150	G2212100	137,05	G2312100	137,05	G2412100	137,05
12	12	50	150	G2212120	180,69	G2312120	180,69	G2412120	180,69
16	16	70	150	G2212160	351,00	G2312160	351,00	G2412160	351,00
18	20	80	150					G2412180	493,99
20	20	80	150			G2312200	493,97	G2412200	493,97
									G2413
16	16	40	200					G2413160	400,25
20	20	40	200					G2413200	559,32



**G2CSHM - catalogue page 323**



OSAWA  
NORM

N

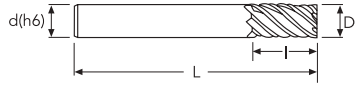
MG  
PV200

<45  
HRC

45°

SQUARE

Z6




G2CSHM

P	★
M	☆
K	★
N	☆
S	
H	

D	d(h6)	l	L	EDP No.	€
6	6	15	50	G2CSHM060	32,37
8	8	20	60	G2CSHM080	44,61
10	10	30	75	G2CSHM100	62,44
12	12	30	75	G2CSHM120	85,25
14	14	30	83	G2CSHM140	163,82
16	16	35	92	G2CSHM160	185,11
20	20	40	100	G2CSHM200	265,14

G2 - General purpose - 45° chamfer

**G2CSFR - catalogue page 325**



OSAWA  
NORM

N

MG  
PV200

<45  
HRC


30°

C45°

HR FINE

Z3-Z4

**G2WSFR - catalogue page 327**



OSAWA  
NORM

N

MG  
PV200

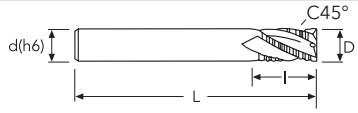
<45  
HRC

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	41,22					
5	0.35	6	13	50	3	G2CSFR050	41,22					
6	0.42	6	15	50	3	G2CSFR060	40,48	13	57	3	G2WSFR060	45,86
7	0.49	8	20	60	3	G2CSFR070	50,41					
8	0.56	8	20	60	3	G2CSFR080	44,59	19	63	3	G2WSFR080	50,51
9	0.63	10	25	75	3	G2CSFR090	80,91					
10	0.70	10	30	75	4	G2CSFR100	71,67	22	72	4	G2WSFR100	74,61
11	0.77	12	30	75	4	G2CSFR110	101,04					
12	0.84	12	30	75	4	G2CSFR120	97,36	26	83	4	G2WSFR120	106,10
13	0.91	14	30	83	4	G2CSFR130	141,34					
14	0.98	14	30	83	4	G2CSFR140	133,77	26	83	4	G2WSFR140	132,14
15	1.05	16	30	92	4	G2CSFR150	164,53					
16	1.12	16	35	92	4	G2CSFR160	152,56	32	92	4	G2WSFR160	159,46
20	1.40	20	40	100	4	G2CSFR200	229,99	38	104	4	G2WSFR200	260,85



G2CS2R - catalogue page 329



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

G2CS4R - catalogue page 331

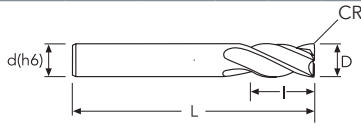


OSAWA NORM	N	MG PV200	<45 HRC	30°	RADIUS	Z4
---------------	---	-------------	------------	-----	--------	----

G2CL4R - catalogue page 333



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



							G2CS2R					G2CS4R					G2CL4R
P	M	K	N	S	H		★				★					★	
							☆				☆					☆	
							★				★					★	
							☆				☆					☆	
D	CR	d(h6)			I	L	EDP No.	€	EDP No.	€	I	L	EDP No.	€			
1	0.20	4			2	50	G2CS2R02010	24,40	G2CS4R02010	24,40							
1.5	0.20	4			3	50	G2CS2R02015	24,40	G2CS4R02015	24,40							
1.5	0.50	4			3	50	G2CS2R05015	24,40	G2CS4R05015	24,40							
2	0.20	4			4	50	G2CS2R02020	24,40	G2CS4R02020	24,40	4	75	G2CL4R02020	32,07			
2	0.50	4			4	50	G2CS2R05020	24,40	G2CS4R05020	24,40	4	75	G2CL4R05020	32,07			
2.5	0.20	4			5	50	G2CS2R02025	24,40	G2CS4R02025	24,40							
2.5	0.50	4			5	50	G2CS2R05025	24,40	G2CS4R05025	24,40							
3	0.20	4			6	50	G2CS2R02030	24,40	G2CS4R02030	24,40	6	75	G2CL4R02030	32,07			
3	0.50	4			6	50	G2CS2R05030	24,40	G2CS4R05030	24,40	6	75	G2CL4R05030	32,07			
3	1.00	4			6	50	G2CS2R10030	24,40	G2CS4R10030	24,40	6	75	G2CL4R10030	32,07			
4	0.20	4			8	50	G2CS2R02040	24,40	G2CS4R02040	24,40	8	75	G2CL4R02040	32,07			
4	0.50	4			8	50	G2CS2R05040	24,40	G2CS4R05040	24,40	8	75	G2CL4R05040	32,07			
4	1.00	4			8	50	G2CS2R10040	24,40	G2CS4R10040	24,40	8	75	G2CL4R10040	32,07			
5	0.50	6			10	50	G2CS2R05050	30,16	G2CS4R05050	30,16	10	75	G2CL4R05050	37,21			
5	1.00	6			10	50	G2CS2R10050	30,16	G2CS4R10050	30,16	10	75	G2CL4R10050	37,21			
6	0.20	6			12	50	G2CS2R02060	30,16	G2CS4R02060	30,16							
6	0.50	6			12	50	G2CS2R05060	30,16	G2CS4R05060	30,16	12	75	G2CL4R05060	37,21			
6	1.00	6			12	50	G2CS2R10060	30,16	G2CS4R10060	30,16	12	75	G2CL4R10060	37,21			
6	1.50	6			12	50	G2CS2R15060	30,16	G2CS4R15060	30,16							
6	2.00	6			12	50	G2CS2R20060	30,16	G2CS4R20060	30,16							
8	0.50	8			16	60	G2CS2R05080	51,69	G2CS4R05080	51,69	16	100	G2CL4R05080	73,39			
8	1.00	8			16	60	G2CS2R10080	51,69	G2CS4R10080	51,69	16	100	G2CL4R10080	73,39			
8	1.50	8			16	60	G2CS2R15080	51,69	G2CS4R15080	51,69							
8	2.00	8			16	60	G2CS2R20080	51,69	G2CS4R20080	51,69	16	100	G2CL4R20080	73,39			
10	0.50	10			20	75	G2CS2R05100	76,59	G2CS4R05100	76,59	20	100	G2CL4R05100	100,29			
10	1.00	10			20	75	G2CS2R10100	76,59	G2CS4R10100	76,59	20	100	G2CL4R10100	100,29			
10	1.50	10			20	75	G2CS2R15100	76,59	G2CS4R15100	76,59							
10	2.00	10			20	75	G2CS2R20100	76,59	G2CS4R20100	76,59	20	100	G2CL4R20100	100,29			
10	2.50	10			20	75			G2CS4R25100	76,59							
10	3.00	10			20	75			G2CS4R30100	76,59							
12	0.50	12			24	75	G2CS2R05120	99,24	G2CS4R05120	99,24	24	100	G2CL4R05120	126,91			
12	1.00	12			24	75	G2CS2R10120	99,24	G2CS4R10120	99,24	24	100	G2CL4R10120	126,91			
12	1.50	12			24	75	G2CS2R15120	99,24	G2CS4R15120	99,24							
12	2.00	12			24	75	G2CS2R20120	99,24	G2CS4R20120	99,24	24	100	G2CL4R20120	124,46			
12	2.50	12			24	75			G2CS4R25120	99,24							
12	3.00	12			24	75			G2CS4R30120	99,24							



GB255 - catalogue page 335



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

G2CSB2 - catalogue page 337

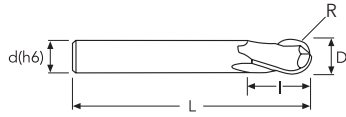


OSAWA NORM	N	MG PV200	<45 HRC	30°	BALL NOSE	Z2 BALL
---------------	---	-------------	------------	-----	-----------	---------

G2CSB4 - catalogue page 341



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)	I	L	EDP No.	€	EDP No.	€	EDP No.	€
1	0.50	4	2	50	GB255010	18,60	G2CSB2010	20,15	G2CSB4010	20,43
1.5	0.75	4	3	50	GB255015	18,60	G2CSB2015	20,15	G2CSB4015	20,43
2	1.00	4	4	50	GB255020	18,60	G2CSB2020	20,15	G2CSB4020	20,43
2.5	1.25	4	5	50			G2CSB2025	21,33		
3	1.50	4	6	50	GB255030	18,60	G2CSB2030	20,15	G2CSB4030	20,43
3.5	1.75	4	7	50			G2CSB2035	21,33		
4	2.00	4	8	50	GB255040	18,60	G2CSB2040	20,15	G2CSB4040	20,43
4.5	2.25	6	9	50			G2CSB2045	25,62		
5	2.50	6	10	50	GB255050	22,60	G2CSB2050	23,90	G2CSB4050	24,31
5.5	2.75	6	11	50			G2CSB2055	25,62		
6	3.00	6	12	50	GB255060	22,60	G2CSB2060	23,90	G2CSB4060	24,31
6.5	3.25	8	13	60			G2CSB2065	46,26		
7	3.50	8	14	60			G2CSB2070	45,13		
8	4.00	8	16	60	GB255080	38,53	G2CSB2080	41,09	G2CSB4080	42,51
9	4.50	10	18	75			G2CSB2090	57,05		
10	5.00	10	20	75	GB255100	55,99	G2CSB2100	58,21	G2CSB4100	60,85
12	6.00	12	24	75	GB255120	76,30	G2CSB2120	79,05	G2CSB4120	82,90
16	8.00	16	30	92			G2CSB2160	199,08	G2CSB4160	199,08
20	10.00	20	30	100			G2CSB2200	262,91	G2CSB4200	262,91



G2250 - catalogue page 339

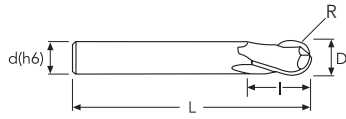


OSAWA NORM	N	MG PV200	<45 HRC	30°	BALL NOSE	Z2 BALL
---------------	---	-------------	------------	-----	-----------	---------

G2251 - catalogue page 339



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



						G2250					G2251
P	M	K	N	S	H	★	☆	★	☆	★	☆
D	R	d(h6)	I	L	EDP No.	€	I	L	EDP No.	€	
1	0.50	4	2	75	G2250010	<b>28,12</b>					
1.5	0.75	4	3	75	G2250015	<b>28,12</b>					
2	1.00	4	4	75	G2250020	<b>28,12</b>					
3	1.50	4	6	75	G2250030	<b>28,12</b>					
4	2.00	4	8	75	G2250040	<b>28,12</b>					
5	2.50	6	10	75	G2250050	<b>33,81</b>					
6	3.00	6	12	100	G2250060	<b>38,61</b>	12	150	G2251060	<b>58,74</b>	
8	4.00	8	16	100	G2250080	<b>70,12</b>	16	150	G2251080	<b>102,69</b>	
10	5.00	10	20	100	G2250100	<b>89,34</b>	20	150	G2251100	<b>130,17</b>	
12	6.00	12	24	100	G2250120	<b>120,69</b>	24	150	G2251120	<b>176,65</b>	
16	8.00	16					30	150	G2251160	<b>312,17</b>	
20	10.00	20					30	150	G2251200	<b>498,45</b>	





## MDTA

### GENERAL PURPOSE

🇺🇸 MDTA is the Osawa range of micrograin carbide end mills with PV200 coating. MDTA endmills have been developed for general purpose milling up to 45 HRC. The exclusive and innovative PV200 coating (3500HV) ensures the best performance, even in applications with air blow or MQL (Minimum Quantity Lubrication).

🇮🇹 MDTA sono le frese Osawa in metallo duro micrograna con rivestimento PV200 sviluppate per la fresatura di materiali generici sino a 45 HRC. L'esclusivo e innovativo rivestimento PV200 (3500HV) garantisce performance elevate anche in lavorazioni con impiego di refrigerazione con getto d'aria o MQL (Minimum Quantity Lubrication).

🇩🇪 MDTA sind Fräser von Osawa aus Mikrokörnungs-Hartmetall mit Beschichtung PV200, die für das Fräsen von allgemeinen Materialien bis zu 45 HRC entwickelt wurden. Die exklusive und innovative Beschichtung PV200 (3500HV) gewährleistet auch bei Bearbeitungen mit Kühlung durch Luftstrahl oder MQL (Minimum Quantity Lubrication) hohe Leistungen.

🇫🇷 MDTA sont les fraises Osawa en carbure micrograin avec revêtement PV200 développées pour le fraisage de matériaux génériques jusqu'à 45 HRC. Le revêtement PV200 (3500HV) exclusif et innovant garantit des performances élevées même pour les usinages employant un système de lubrification avec jet d'air ou MQL (Minimum Quantity Lubrication).

🇪🇸 MDTA son las fresas Osawa de metal duro micrograno con revestimiento PV200 desarrolladas para el fresado de materiales genéricos hasta 45 HRC. Su exclusivo e innovador revestimiento PV200 (3500HV) garantiza rendimientos elevados incluso en elaboraciones con el uso de refrigeración con chorro de aire o MQL (Minimum Quantity Lubrication).

🇷🇺 MDTA - это фрезы фирмы Osawa из твёрдого сплава с мелкозернистой структурой и покрытием PV200, предназначенные для стандартной обработки материалов с твёрдостью до 45 HRC. Эксклюзивное и инновационное покрытие PV200 (3500HV) гарантирует высокую производительность, даже, при обработке с обдувом воздухом или с масляным туманом.



MDTACS2 - catalogue page 344



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

MDTACS3 - catalogue page 350

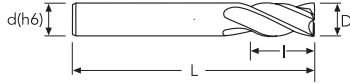


OSAWA NORM	N	MG PV200	<45 HRC	30°	SQUARE	Z3
------------	---	-------------	------------	-----	--------	----

MDTACS4 - catalogue page 354



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

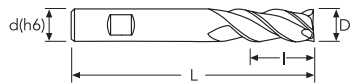


				MDTACS2		MDTACS3		MDTACS4	
P				★		★		★	
M				☆		☆		☆	
K				★		★		★	
N				☆		☆		☆	
S									
H									
D	d(h6)	I	L	EDP No.	€	EDP No.	€	EDP No.	€
1	3	3	40	MDTACS2010403	21,01	MDTACS3010403	21,01	MDTACS4010403	21,01
1	4	3	40	MDTACS2010404	23,66	MDTACS3010404	23,66	MDTACS4010404	23,66
1.5	3	4.5	40	MDTACS2015403	21,01	MDTACS3015403	21,01	MDTACS4015403	21,01
1.5	4	4.5	40	MDTACS2015404	23,66	MDTACS3015404	23,68	MDTACS4015404	23,66
2	2	8	32	MDTACS2020	22,86			MDTACS4020	22,86
2	3	6.5	40	MDTACS2020403	21,01	MDTACS3020403	21,01	MDTACS4020403	21,01
2	4	6.5	40	MDTACS2020404	23,66	MDTACS3020404	23,66	MDTACS4020404	23,66
2.5	3	6.5	40	MDTACS2025403	21,01	MDTACS3025403	21,01	MDTACS4025403	21,01
2.5	4	6.5	40	MDTACS2025404	23,66	MDTACS3025404	23,66	MDTACS4025404	23,66
3	3	9	40	MDTACS2030403	21,01	MDTACS3030403	21,01	MDTACS4030403	21,01
4	4	12	50	MDTACS2040504	23,66	MDTACS3040504	23,66	MDTACS4040504	23,66
5	6	15	50	MDTACS2050506	25,49	MDTACS3050506	25,49	MDTACS4050506	25,49
6	6	16	50	MDTACS2060	27,81	MDTACS3060	27,81	MDTACS4060	25,49
8	8	20	64	MDTACS208064	39,10	MDTACS308064	39,10	MDTACS408064	39,10
10	10	22	70	MDTACS2100	53,08	MDTACS3100	53,08	MDTACS4100	53,08
12	12	25	75	MDTACS212075	73,90	MDTACS312075	73,90	MDTACS412075	73,90
14	14	25	75	MDTACS2140	100,89	MDTACS3140	100,89	MDTACS4140	100,89
16	16	32	90	MDTACS216090	114,30	MDTACS316090	114,30	MDTACS416090	114,30
20	20	38	100	MDTACS220038	200,82	MDTACS320038	200,82	MDTACS420038	200,82

MDTAWSH3 - catalogue page 352



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



				MDTAWSH3	
P				★	
M				☆	
K				★	
N				☆	
S					
H					
D	d(h6)	I	L	EDP No.	€
3	6	7	57	MDTAWSH3030	35,88
4	6	8	57	MDTAWSH3040	35,88
5	6	10	57	MDTAWSH3050	35,88
6	6	10	57	MDTAWSH3060	35,88
8	8	16	63	MDTAWSH3080	50,92
10	10	19	72	MDTAWSH3100	77,68
12	12	22	83	MDTAWSH3120	115,37
14	14	22	83	MDTAWSH3140	158,86
16	16	26	92	MDTAWSH3160	202,72
20	20	32	104	MDTAWSH3200	348,31

**MDCL2 - catalogue page 348**



**MDCL4 - catalogue page 358**



**MDTA210 - catalogue page 346**



**MDTA410 - catalogue page 356**



OSAWA NORM

N

MG  
BR

<45  
HRC

30°

SQUARE

Z2

OSAWA NORM

N

MG  
BR

<45  
HRC

30°

SQUARE

Z4

OSAWA NORM

N

MG  
PV200

<45  
HRC

30°

SQUARE

Z2

OSAWA NORM

N

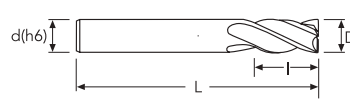
MG  
PV200

<45  
HRC

30°

SQUARE

Z4



MDCL2

MDCL4


MDTA210

MDTA410

P	★		★		★		★						
M	☆		☆		☆		☆						
K	★		★		★		★						
N	☆		☆		☆		☆						
S													
H													
D	d(h6)	I	L	EDP No.	€	EDP No.	€	I	L	EDP No.	€	EDP No.	€
3	3	30	75	MDCL2030	39,89	MDCL4030	39,89	20	60	MDTA210030	39,85	MDTA410030	39,85
4	4	30	75	MDCL2040	42,64	MDCL4040	42,64	20	60	MDTA210040	42,00	MDTA410040	42,00
5	5	40	100	MDCL2050	55,84	MDCL4050	55,84	25	75	MDTA210050	48,69	MDTA410050	48,69
6	6	50	150	MDCL2060	85,09	MDCL4060	87,87	30	75	MDTA210060	52,99	MDTA410060	52,99
8	8	50	150	MDCL2080	121,80	MDCL4080	124,58	30	75	MDTA210080	78,69	MDTA410080	78,69
10	10	60	150	MDCL2100	161,56	MDCL4100	164,34	40	100	MDTA210100	101,23	MDTA410100	101,23
12	12	75	150	MDCL2120	227,74	MDCL4120	196,73	45	100	MDTA210120	153,02	MDTA410120	153,02
14	14							45	100			MDTA410140	194,32
16	16							45	100			MDTA410160	265,69

MDTA - General purpose - 45° chamfer

**MDTAUPR - catalogue page 360**



OSAWA NORM

N

MG  
PV200

<45  
HRC

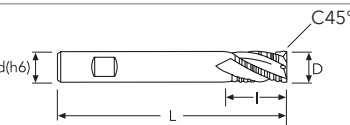
40°

C45°

HR FINE

Z3 UP

Z4 UP



MDTAUPR

P	★												
M	☆												
K	★												
N	☆												
S													
H													
D	C45°	d(h6)	I	L	z	EDP No.	€						
6	0.10	6	16	57	3	MDTAUPR060	53,21						
8	0.20	8	16	63	3	MDTAUPR080	59,34						
10	0.20	10	22	72	4	MDTAUPR100	91,72						
12	0.20	12	26	83	4	MDTAUPR120	129,56						
14	0.30	14	26	83	4	MDTAUPR140	157,81						
16	0.30	16	32	92	4	MDTAUPR160	200,80						
20	0.40	20	38	104	4	MDTAUPR200	306,55						

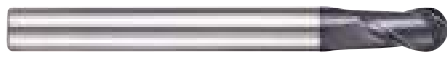


MDTACSB2 - catalogue page 362

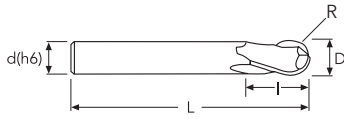


OSAWA NORM	N	MG PV200	<45 HRC	30°	BALL NOSE	Z2 BALL
---------------	---	-------------	------------	-----	-----------	---------

MDTA250 - catalogue page 364



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



						MDTACSB2					MDTA250
P						★					★
M						☆					☆
K						★					★
N						☆					☆
S											
H											
D	R	d(h6)	l	L	EDP No.	€	l	L	EDP No.	€	
1	0.50	3	3	40	MDTACSB2010	27,18					
1.5	0.75	3	5	40	MDTACSB2015	27,18					
2	1.00	3	7	40	MDTACSB2020	27,18					
2.5	1.25	3	8	40	MDTACSB2025	27,18					
3	1.50	3	10	40	MDTACSB2030	27,18	5	75	MDTA250030	39,41	
4	2.00	4	12	40	MDTACSB2040	28,98	8	75	MDTA250040	39,41	
5	2.50	5	14	50	MDTACSB2050	30,65	9	75	MDTA250050	43,01	
6	3.00	6	7	50	MDTACSB2060	33,87	10	100	MDTA250060	48,94	
8	4.00	8	9	60	MDTACSB2080	51,08	12	100	MDTA250080	73,70	
10	5.00	10	10	60	MDTACSB2100	68,22	14	100	MDTA250100	124,41	
12	6.00	12	14	70	MDTACSB2120	93,89	16	100	MDTA250120	159,21	





## 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.






















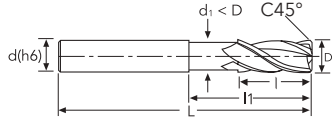
🇮🇹 HF EVOLution è la linea Osawa di frese universali in metallo duro micrograna con spoglie e rivestimenti specifici per la lavorazione ad alto rendimento di tutti i materiali della scala ISO. Le frese HF EVOLution sono disponibili in un'ampia gamma di tipologie, lunghezze e raggi torici. Sono gli utensili 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.

























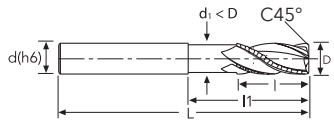
🇫🇷 HF EVOLution est la ligne Osawa de fraises universelles en carbure micrograin avec dépouilles et revêtements spécifiques pour l'usinage de haute performance de tous les matériaux de l'échelle ISO. Les fraises HF EVOLution sont disponibles dans une large gamme, longueurs et rayons. Ce sont des outils 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.

<p><b>HF840 - catalogue page 370</b></p> 				     																																																																																																																																																																																									
<p><b>HF440 - catalogue page 374</b></p> 				     																																																																																																																																																																																									
<p><b>HF441 - catalogue page 379</b></p> 				     																																																																																																																																																																																									
				<b>HF840</b>		<b>HF440</b>		<b>HF441</b>																																																																																																																																																																																					
<table border="1"> <tr><td>P</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>M</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>K</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>H</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> </table>				P	★										★							★	M	★										★							★	K	★										★							★	N																			S																			H	★										★							★																																																																								
P	★										★							★																																																																																																																																																																											
M	★										★							★																																																																																																																																																																											
K	★										★							★																																																																																																																																																																											
N																																																																																																																																																																																													
S																																																																																																																																																																																													
H	★										★							★																																																																																																																																																																											
<table border="1"> <thead> <tr> <th>D</th> <th>C45°</th> <th>d(h6)</th> <th>I</th> <th>L</th> <th>EDP No.</th> <th>€</th> <th>I</th> <th>l1</th> <th>d1</th> <th>L</th> <th>EDP No.</th> <th>€</th> <th>EDP No.</th> <th>€</th> </tr> </thead> <tbody> <tr><td>3</td><td>0.10</td><td>6</td><td>9</td><td>57</td><td>HF840030</td><td>37,96</td><td>9</td><td>15</td><td>2.80</td><td>57</td><td>HF440030</td><td>38,15</td><td>HF441030</td><td>38,15</td></tr> <tr><td>4</td><td>0.10</td><td>6</td><td>11</td><td>57</td><td>HF840040</td><td>37,96</td><td>11</td><td>18</td><td>3.80</td><td>57</td><td>HF440040</td><td>38,15</td><td>HF441040</td><td>38,15</td></tr> <tr><td>5</td><td>0.10</td><td>6</td><td>13</td><td>57</td><td>HF840050</td><td>37,96</td><td>13</td><td>19</td><td>4.80</td><td>57</td><td>HF440050</td><td>38,15</td><td>HF441050</td><td>38,15</td></tr> <tr><td>6</td><td>0.10</td><td>6</td><td>13</td><td>57</td><td>HF840060</td><td>37,96</td><td>13</td><td>20</td><td>5.80</td><td>57</td><td>HF440060</td><td>38,15</td><td>HF441060</td><td>38,15</td></tr> <tr><td>8</td><td>0.20</td><td>8</td><td>20</td><td>64</td><td>HF840080</td><td>53,76</td><td>20</td><td>26</td><td>7.80</td><td>64</td><td>HF440080</td><td>54,06</td><td>HF441080</td><td>54,06</td></tr> <tr><td>10</td><td>0.20</td><td>10</td><td>22</td><td>72</td><td>HF840100</td><td>79,45</td><td>22</td><td>30</td><td>9.80</td><td>72</td><td>HF440100</td><td>79,86</td><td>HF441100</td><td>79,86</td></tr> <tr><td>12</td><td>0.20</td><td>12</td><td>26</td><td>83</td><td>HF840120</td><td>102,42</td><td>26</td><td>36</td><td>11.80</td><td>83</td><td>HF440120</td><td>102,89</td><td>HF441120</td><td>102,89</td></tr> <tr><td>14</td><td>0.30</td><td>14</td><td>32</td><td>90</td><td>HF840140</td><td>136,91</td><td>32</td><td>36</td><td>13.70</td><td>90</td><td>HF440140</td><td>137,48</td><td>HF441140</td><td>137,48</td></tr> <tr><td>16</td><td>0.30</td><td>16</td><td>32</td><td>92</td><td>HF840160</td><td>178,58</td><td>32</td><td>42</td><td>15.70</td><td>92</td><td>HF440160</td><td>179,30</td><td>HF441160</td><td>179,30</td></tr> <tr><td>18</td><td>0.30</td><td>18</td><td>32</td><td>92</td><td>HF840180</td><td>249,41</td><td>32</td><td>42</td><td>17.70</td><td>92</td><td></td><td></td><td>HF441180</td><td>250,60</td></tr> <tr><td>20</td><td>0.40</td><td>20</td><td>38</td><td>104</td><td>HF840200</td><td>289,45</td><td>38</td><td>50</td><td>19.70</td><td>104</td><td>HF440200</td><td>290,86</td><td>HF441200</td><td>291,31</td></tr> </tbody> </table>				D	C45°	d(h6)	I	L	EDP No.	€	I	l1	d1	L	EDP No.	€	EDP No.	€	3	0.10	6	9	57	HF840030	37,96	9	15	2.80	57	HF440030	38,15	HF441030	38,15	4	0.10	6	11	57	HF840040	37,96	11	18	3.80	57	HF440040	38,15	HF441040	38,15	5	0.10	6	13	57	HF840050	37,96	13	19	4.80	57	HF440050	38,15	HF441050	38,15	6	0.10	6	13	57	HF840060	37,96	13	20	5.80	57	HF440060	38,15	HF441060	38,15	8	0.20	8	20	64	HF840080	53,76	20	26	7.80	64	HF440080	54,06	HF441080	54,06	10	0.20	10	22	72	HF840100	79,45	22	30	9.80	72	HF440100	79,86	HF441100	79,86	12	0.20	12	26	83	HF840120	102,42	26	36	11.80	83	HF440120	102,89	HF441120	102,89	14	0.30	14	32	90	HF840140	136,91	32	36	13.70	90	HF440140	137,48	HF441140	137,48	16	0.30	16	32	92	HF840160	178,58	32	42	15.70	92	HF440160	179,30	HF441160	179,30	18	0.30	18	32	92	HF840180	249,41	32	42	17.70	92			HF441180	250,60	20	0.40	20	38	104	HF840200	289,45	38	50	19.70	104	HF440200	290,86	HF441200	291,31						
D	C45°	d(h6)	I	L	EDP No.	€	I	l1	d1	L	EDP No.	€	EDP No.	€																																																																																																																																																																															
3	0.10	6	9	57	HF840030	37,96	9	15	2.80	57	HF440030	38,15	HF441030	38,15																																																																																																																																																																															
4	0.10	6	11	57	HF840040	37,96	11	18	3.80	57	HF440040	38,15	HF441040	38,15																																																																																																																																																																															
5	0.10	6	13	57	HF840050	37,96	13	19	4.80	57	HF440050	38,15	HF441050	38,15																																																																																																																																																																															
6	0.10	6	13	57	HF840060	37,96	13	20	5.80	57	HF440060	38,15	HF441060	38,15																																																																																																																																																																															
8	0.20	8	20	64	HF840080	53,76	20	26	7.80	64	HF440080	54,06	HF441080	54,06																																																																																																																																																																															
10	0.20	10	22	72	HF840100	79,45	22	30	9.80	72	HF440100	79,86	HF441100	79,86																																																																																																																																																																															
12	0.20	12	26	83	HF840120	102,42	26	36	11.80	83	HF440120	102,89	HF441120	102,89																																																																																																																																																																															
14	0.30	14	32	90	HF840140	136,91	32	36	13.70	90	HF440140	137,48	HF441140	137,48																																																																																																																																																																															
16	0.30	16	32	92	HF840160	178,58	32	42	15.70	92	HF440160	179,30	HF441160	179,30																																																																																																																																																																															
18	0.30	18	32	92	HF840180	249,41	32	42	17.70	92			HF441180	250,60																																																																																																																																																																															
20	0.40	20	38	104	HF840200	289,45	38	50	19.70	104	HF440200	290,86	HF441200	291,31																																																																																																																																																																															

HF UNI - VH/UP - 45° chamfer

<p><b>HF844 - catalogue page 385</b></p> 				      																																																																																																																																												
<p><b>HF444 - catalogue page 389</b></p> 				      																																																																																																																																												
<p><b>HF445 - catalogue page 393</b></p> 				      																																																																																																																																												
				<b>HF844</b>		<b>HF444</b>		<b>HF445</b>																																																																																																																																								
<table border="1"> <tr><td>P</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>M</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>K</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> <tr><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>H</td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td><td></td><td></td><td></td><td></td><td></td><td></td><td>★</td></tr> </table>				P	★																	★	M	★										★							★	K	★										★							★	N																			S																			H	★										★							★																											
P	★																	★																																																																																																																														
M	★										★							★																																																																																																																														
K	★										★							★																																																																																																																														
N																																																																																																																																																
S																																																																																																																																																
H	★										★							★																																																																																																																														
<table border="1"> <thead> <tr> <th>D</th> <th>C45°</th> <th>d(h6)</th> <th>I</th> <th>L</th> <th>EDP No.</th> <th>€</th> <th>I</th> <th>l1</th> <th>d1</th> <th>L</th> <th>EDP No.</th> <th>€</th> <th>EDP No.</th> <th>€</th> </tr> </thead> <tbody> <tr><td>6</td><td>0.10</td><td>6</td><td>16</td><td>57</td><td>HF844060</td><td>64,41</td><td>13</td><td>20</td><td>5.80</td><td>57</td><td>HF444060</td><td>64,40</td><td>HF445060</td><td>64,40</td></tr> <tr><td>8</td><td>0.20</td><td>8</td><td>20</td><td>64</td><td>HF844080</td><td>73,30</td><td>20</td><td>26</td><td>7.80</td><td>64</td><td>HF444080</td><td>73,31</td><td>HF445080</td><td>73,31</td></tr> <tr><td>10</td><td>0.20</td><td>10</td><td>22</td><td>72</td><td>HF844100</td><td>104,42</td><td>22</td><td>30</td><td>9.80</td><td>72</td><td>HF444100</td><td>104,42</td><td>HF445100</td><td>104,42</td></tr> <tr><td>12</td><td>0.20</td><td>12</td><td>26</td><td>83</td><td>HF844120</td><td>146,61</td><td>26</td><td>36</td><td>11.80</td><td>83</td><td>HF444120</td><td>146,61</td><td>HF445120</td><td>146,61</td></tr> <tr><td>14</td><td>0.20</td><td>14</td><td>26</td><td>83</td><td>HF844140</td><td>171,53</td><td>26</td><td>36</td><td>13.70</td><td>83</td><td>HF444140</td><td>171,53</td><td>HF445140</td><td>180,10</td></tr> <tr><td>16</td><td>0.30</td><td>16</td><td>32</td><td>92</td><td>HF844160</td><td>210,35</td><td>32</td><td>42</td><td>15.70</td><td>92</td><td>HF444160</td><td>210,35</td><td>HF445160</td><td>220,85</td></tr> <tr><td>18</td><td>0.30</td><td>18</td><td>32</td><td>92</td><td>HF844180</td><td>279,02</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>20</td><td>0.40</td><td>20</td><td>38</td><td>104</td><td>HF844200</td><td>346,64</td><td>38</td><td>50</td><td>19.70</td><td>104</td><td>HF444200</td><td>346,67</td><td>HF445200</td><td>354,37</td></tr> </tbody> </table>				D	C45°	d(h6)	I	L	EDP No.	€	I	l1	d1	L	EDP No.	€	EDP No.	€	6	0.10	6	16	57	HF844060	64,41	13	20	5.80	57	HF444060	64,40	HF445060	64,40	8	0.20	8	20	64	HF844080	73,30	20	26	7.80	64	HF444080	73,31	HF445080	73,31	10	0.20	10	22	72	HF844100	104,42	22	30	9.80	72	HF444100	104,42	HF445100	104,42	12	0.20	12	26	83	HF844120	146,61	26	36	11.80	83	HF444120	146,61	HF445120	146,61	14	0.20	14	26	83	HF844140	171,53	26	36	13.70	83	HF444140	171,53	HF445140	180,10	16	0.30	16	32	92	HF844160	210,35	32	42	15.70	92	HF444160	210,35	HF445160	220,85	18	0.30	18	32	92	HF844180	279,02									20	0.40	20	38	104	HF844200	346,64	38	50	19.70	104	HF444200	346,67	HF445200	354,37						
D	C45°	d(h6)	I	L	EDP No.	€	I	l1	d1	L	EDP No.	€	EDP No.	€																																																																																																																																		
6	0.10	6	16	57	HF844060	64,41	13	20	5.80	57	HF444060	64,40	HF445060	64,40																																																																																																																																		
8	0.20	8	20	64	HF844080	73,30	20	26	7.80	64	HF444080	73,31	HF445080	73,31																																																																																																																																		
10	0.20	10	22	72	HF844100	104,42	22	30	9.80	72	HF444100	104,42	HF445100	104,42																																																																																																																																		
12	0.20	12	26	83	HF844120	146,61	26	36	11.80	83	HF444120	146,61	HF445120	146,61																																																																																																																																		
14	0.20	14	26	83	HF844140	171,53	26	36	13.70	83	HF444140	171,53	HF445140	180,10																																																																																																																																		
16	0.30	16	32	92	HF844160	210,35	32	42	15.70	92	HF444160	210,35	HF445160	220,85																																																																																																																																		
18	0.30	18	32	92	HF844180	279,02																																																																																																																																										
20	0.40	20	38	104	HF844200	346,64	38	50	19.70	104	HF444200	346,67	HF445200	354,37																																																																																																																																		



HF842 - catalogue page 401



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

HF442 - catalogue page 405

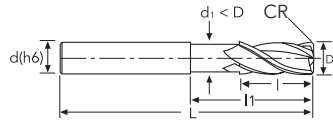


OSAWA NORM	MG PV300	<40 HRC	VH 36°/39°	RADIUS	Z4 UP
---------------	-------------	------------	------------	--------	-------

HF443 - catalogue page 410



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

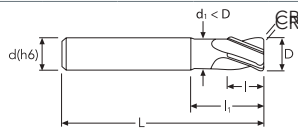


						HF842							HF442			HF443	
P	M	K	N	S	H												
★	★	★	★	★	★												
D	CR	d(h6)	I	L	EDP No.	€	I	l1	d1	L	EDP No.	€	EDP No.	€			
3	0.30	6					9	15	2.80	57	HF44203030	41,89	HF44303030	41,89			
3	0.50	6					9	15	2.80	57	HF44205030	41,89	HF44305030	41,89			
4	0.30	6	11	57	HF84203040	41,89	11	18	3.80	57	HF44203040	41,89	HF44303040	41,89			
4	0.50	6	11	57	HF84205040	41,89	11	18	3.80	57	HF44205040	41,89	HF44305040	41,89			
5	0.30	6	13	57	HF84203050	41,89	13	19	4.80	57	HF44203050	41,89					
5	0.50	6	13	57	HF84205050	41,89	13	19	4.80	57	HF44205050	41,89	HF44305050	41,89			
6	0.30	6	13	57	HF84203060	41,89	13	20	5.80	57	HF44203060	41,89					
6	0.50	6	13	57	HF84205060	41,89	13	20	5.80	57	HF44205060	41,89	HF44305060	41,89			
6	1.00	6	13	57	HF84210060	41,89	13	20	5.80	57	HF44210060	41,89	HF44310060	41,89			
8	0.50	8	20	64	HF84205080	59,37	20	26	7.80	64	HF44205080	59,37	HF44305080	59,37			
8	1.00	8	20	64	HF84210080	59,37	20	26	7.80	64	HF44210080	59,37	HF44310080	59,37			
10	0.50	10	22	72	HF84205100	87,72	22	30	9.80	72	HF44205100	87,72	HF44305100	87,72			
10	1.00	10	22	72	HF84210100	87,72	22	30	9.80	72	HF44210100	87,72	HF44310100	87,72			
12	0.50	12	26	83	HF84205120	113,11	26	36	11.80	83	HF44205120	113,11	HF44305120	113,11			
12	1.00	12	26	83	HF84210120	113,11	26	36	11.80	83	HF44210120	113,11	HF44310120	113,11			
12	2.00	12	26	83	HF84220120	113,11											
12	3.00	12	26	83	HF84230120	113,11											
14	1.00	14	26	83	HF84210140	151,22	26	36	13.70	83	HF44210140	151,22	HF44310140	151,22			
16	1.00	16	32	92	HF84210160	197,17	32	42	15.70	92	HF44210160	197,17	HF44310160	197,17			
16	2.00	16	32	92	HF84220160	197,17	32	42	15.70	92	HF44220160	197,17					
16	3.00	16	32	92	HF84230160	197,17											
18	1.00	18	32	92	HF84210180	275,42											
20	1.00	20	38	104	HF84210200	304,41	38	50	19.70	104	HF44210200	304,41	HF44310200	308,07			
20	2.00	20	38	104	HF84220200	304,41	38	50	19.70	104	HF44220200	304,41					
20	3.00	20	38	104	HF84230200	319,63											

HF342 - catalogue page 398



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



								HF342
P	M	K	N	S	H			
★	★	★	★	★	★			
D	CR	d(h6)	I	l1	d1	L	EDP No.	€
3	0.20	6	5	9	2.80	50	HF34202030	36,47
4	0.20	6	6	12	3.80	50	HF34202040	36,47
5	0.20	6	8	14	4.80	50	HF34202050	36,47
6	0.30	6	9	18	5.80	55	HF34203060	36,47
8	0.50	8	12	24	7.80	60	HF34205080	49,44
10	1.00	10	15	30	9.80	70	HF34210100	73,59
12	1.00	12	18	35	11.80	80	HF34210120	93,14



HF942 - catalogue page 418

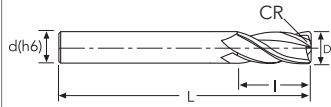


OSAWA NORM	MG PV300	<40 HRC	VH 36°/39°	RADIUS	Z4 UP
---------------	-------------	------------	------------	--------	-------

HF943 - catalogue page 422



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

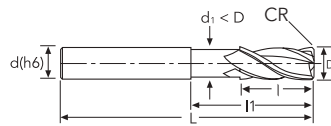


					HF942	HF943		
P					★	★		
M					★	★		
K					★	★		
N								
S					★	★		
H								
D	CR	d(h6)	I	L	EDP No.	€	EDP No.	€
4	0.10	6	19	75	HF9420104075	52,67	HF9430104075	55,57
5	0.10	6	19	75	HF9420105075	52,67	HF9430105075	55,57
6	0.10	6	25	75	HF9420106075	52,67	HF9430106075	55,57
8	0.20	8	30	75	HF9420208075	71,70	HF9430208075	75,20
10	0.20	10	40	100	HF94202100100	116,29	HF94302100100	120,94
12	0.30	12	45	100	HF94203120100	153,81	HF94303120100	158,46
16	0.30	16	65	125	HF94203160125	310,71	HF94303160125	318,86
20	0.30	20	65	125	HF94203200125	446,28	HF94303200125	455,02

HF542 - catalogue page 415



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



								HF542
P								★
M								★
K								★
N								
S								★
H								
D	CR	d(h6)	I	I1	d1	L	EDP No.	€
6	0.30	6	12	30	5.80	75	HF5420306075	49,22
6	0.50	6	12	30	5.80	75	HF5420506075	49,22
6	1.00	6	12	30	5.80	75	HF5421006075	50,84
6	0.30	6	12	30	5.80	100	HF54203060100	55,91
6	0.50	6	12	30	5.80	100	HF54205060100	55,91
6	1.00	6	12	30	5.80	100	HF54210060100	57,54
8	0.50	8	16	40	7.80	100	HF54205080100	77,74
8	1.00	8	16	40	7.80	100	HF54210080100	77,74
8	2.00	8	16	40	7.80	100	HF54220080100	79,36
10	0.50	10	20	50	9.80	125	HF54205100125	121,50
10	1.00	10	20	50	9.80	125	HF54210100125	121,50
10	2.00	10	20	50	9.80	125	HF54220100125	123,12
12	0.50	12	24	60	11.80	125	HF54205120125	161,52
12	1.00	12	24	60	11.80	125	HF54210120125	163,14
12	2.00	12	24	60	11.80	125	HF54220120125	165,30
12	3.00	12	24	60	11.80	125	HF54230120125	169,65
12	0.50	12	24	60	11.80	150	HF54205120150	182,92
12	1.00	12	24	60	11.80	150	HF54210120150	184,54
12	2.00	12	24	60	11.80	150	HF54220120150	186,71
12	3.00	12	24	60	11.80	150	HF54230120150	191,05
16	0.50	16	32	80	15.70	150	HF54205160150	291,12
16	1.00	16	32	80	15.70	150	HF54210160150	292,74
16	2.00	16	32	80	15.70	150	HF54220160150	294,90
16	3.00	16	32	80	15.70	150	HF54230160150	299,24
16	4.00	16	32	80	15.70	150	HF54240160150	300,32
20	0.50	20	40	100	19.70	150	HF54205200150	418,53
20	1.00	20	40	100	19.70	150	HF54210200150	420,15
20	2.00	20	40	100	19.70	150	HF54220200150	422,31
20	3.00	20	40	100	19.70	150	HF54230200150	426,66
20	4.00	20	40	100	19.70	150	HF54240200150	427,74





HF642 - catalogue page 426



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

HF643 - catalogue page 429



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

HF742 - catalogue page 432

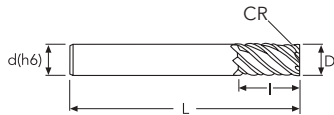


OSAWA NORM	MG PV300	<40 HRC	36°/37°/38°	RADIUS	Z5
---------------	-------------	------------	-------------	--------	----

HF743 - catalogue page 435



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



				HF642	HF643					HF742					HF743		
<b>P</b>					★		★					★					★
<b>M</b>					★		★					★					★
<b>K</b>					★		★					★					★
<b>N</b>																	
<b>S</b>					★		★					★					★
<b>H</b>																	
D	CR	d(h6)	I	L	EDP No.	€	EDP No.	€	I	L	EDP No.	€	EDP No.	€			
4	0.10	6	12	57	HF64201040	51,90	HF64301040	54,75									
5	0.10	6	13	57	HF64201050	51,90	HF64301050	54,75									
6	0.10	6	13	57	HF64201060	51,90	HF64301060	54,75	25	75	HF7420106075	61,62	HF7430106075	64,47			
8	0.20	8	20	64	HF64202080	74,08	HF64302080	77,51	25	75	HF7420208075	80,31	HF7430208075	83,74			
10	0.20	10	22	72	HF64202100	96,85	HF64302100	101,41	38	100	HF74202100100	119,52	HF74302100100	124,08			
12	0.30	12	26	83	HF64203120	136,76	HF64303120	141,32	45	100	HF74203120100	155,86	HF74303120100	160,42			
16	0.30	16	32	92	HF64203160	219,93	HF64303160	227,92	55	125	HF74203160125	317,45	HF74303160125	325,45			
20	0.30	20	38	104	HF64203200	373,58	HF64303200	382,15	65	125	HF74203200125	445,19	HF74303200125	453,76			



### HF871 - catalogue page 438



OSAWA NORM

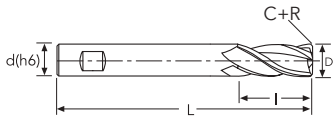
MG  
**PV300**

<40  
HRC

VH 36°/39°

C+R

Z4 UP


**HF871**

P	★
M	★
K	★
N	★
S	★
H	★

D	C+R	d(h6)	l	L	EDP No.	€
1	0.1	4*	3	50	HF871010	31,41
1.5	0.1	4*	4.5	50	HF871015	31,41
2	0.1	4*	6.5	50	HF871020	31,41
2.5	0.1	4*	6.5	50	HF871025	31,41
3	0.1	6	9	50	HF871030	34,07
3.5	0.1	6	11	57	HF871035	39,48
4	0.1	6	11	57	HF871040	34,07
4.5	0.1	6	13	57	HF871045	39,48
5	0.1	6	13	57	HF871050	34,07
5.5	0.1	6	13	57	HF871055	39,50
6	0.1	6	13	57	HF871060	34,07
7	0.2	8	20	64	HF871070	55,50
8	0.2	8	20	64	HF871080	49,20
9	0.2	10	22	72	HF871090	81,90
10	0.2	10	22	72	HF871100	72,17
11	0.2	12	26	83	HF871110	103,71
12	0.2	12	26	83	HF871120	92,67
13	0.2	14	26	83	HF871130	139,85
14	0.2	14	26	83	HF871140	134,12
15	0.2	16	32	92	HF871150	178,22
16	0.2	16	32	92	HF871160	160,71
18	0.2	18	32	92	HF871180	229,98
20	0.2	20	38	104	HF871200	258,76

\* cylindrical shank: Ø1mm+2.5mm

## 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

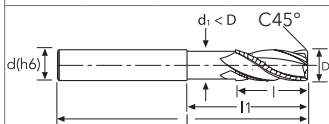
MG  
**PV300**

30÷55  
HRC

40°

C45°

Z4 UP


**HF850**
**HF450**
**HF451**

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

D	C45°	d(h6)	l	L	EDP No.	€	l	l1	d1	L	EDP No.	€	EDP No.	€
3	0.10	6	9	57	HF850030	46,56	9	15	2.80	57	HF450030	46,54	HF451030	46,54
4	0.10	6	11	57	HF850040	46,56	11	18	3.80	57	HF450040	46,54	HF451040	46,54
5	0.10	6	13	57	HF850050	46,56	13	19	4.80	57	HF450050	46,54	HF451050	46,54
6	0.10	6	13	57	HF850060	46,56	13	20	5.80	57	HF450060	46,54	HF451060	46,54
8	0.20	8	20	64	HF850080	65,96	20	26	7.80	64	HF450080	65,96	HF451080	65,96
10	0.20	10	22	72	HF850100	97,44	22	30	9.80	72	HF450100	97,44	HF451100	97,44
12	0.20	12	26	83	HF850120	125,6	26	36	11.80	83	HF450120	125,63	HF451120	125,63
14	0.30	14	32	90	HF850140	168	26	36	13.70	83	HF450140	167,96	HF451140	167,96
16	0.30	16	32	92	HF850160	219,1	32	42	15.70	92	HF450160	219,03	HF451160	219,03
20	0.40	20	38	104	HF850200	338,18	38	50	19.70	104	HF450200	338,17	HF451200	338,17



HF852 - catalogue page 455

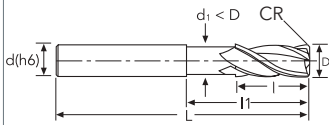


OSAWA NORM	MG PV300	30÷55 HRC	40°	RADIUS	Z4 UP
---------------	-------------	--------------	-----	--------	-------

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	51,16	
3	0.50	6					9	15	2.80	57	HF45205030	51,16	
4	0.30	6	11	57	HF85203040	51,17	11	18	3.80	57	HF45203040	51,16	
4	0.50	6	11	57	HF85205040	51,17	11	18	3.80	57	HF45205040	51,16	
5	0.30	6	15	57	HF85203050	51,17							
5	0.50	6	15	57	HF85205050	51,17	13	19	4.80	57	HF45205050	51,16	
6	0.30	6	13	57	HF85203060	51,17							
6	0.50	6	13	57	HF85205060	51,17	13	20	5.80	57	HF45205060	51,16	
6	1.00	6	13	57	HF85210060	51,17	13	20	5.80	57	HF45210060	51,16	
8	0.50	8	20	64	HF85205080	72,58	20	26	7.80	64	HF45205080	72,58	
8	1.00	8	20	64	HF85210080	72,58	20	26	7.80	64	HF45210080	72,58	
10	0.50	10	22	72	HF85205100	107,19	22	30	9.80	72	HF45205100	107,19	
10	1.00	10	22	72	HF85210100	107,19	22	30	9.80	72	HF45210100	107,19	
12	0.50	12	26	83	HF85205120	138,24	26	36	11.80	83	HF45205120	138,25	
12	1.00	12	26	83	HF85210120	138,24	26	36	11.80	83	HF45210120	138,25	
12	2.00	12	26	83	HF85220120	138,24							
12	3.00	12	26	83	HF85230120	138,24							
14	1.00	14	26	83	HF85210140	184,83							
16	1.00	16	32	92	HF85210160	240,98	32	42	15.70	92	HF45210160	240,93	
16	2.00	16	32	92	HF85220160	240,98	32	42	15.70	92	HF45220160	240,93	
20	1.00	20	38	104	HF85210200	371,95	38	50	19.70	104	HF45210200	371,95	
20	2.00	20	38	104	HF85220200	371,95	38	50	19.70	104	HF45220200	371,95	







## 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'usage 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 inoxidable, 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.

**MEFCS2 - catalogue page 464**

**MEFCSH3 - catalogue page 466**

**MEFCS4 - catalogue page 468**

**MEF600 - catalogue page 470**

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

35°

SQUARE

Z2

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

50°

SQUARE

Z3

Z4

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

35°

SQUARE

Z4

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

50°

SQUARE

Z6-Z8

**MEFCS2**

**MEFCSH3**

**MEFCS4**

**MEF600**

P	M	K	N	S	H	MEFCS2			MEFCSH3			MEFCS4			MEF600		
★	★				★	★			★			★			★		
D	d(h6)	I	L	EDP No.	€	EDP No.	€	EDP No.	€	I	L	z	EDP No.	€			
1	4	2.5	40	MEFCS2010	<b>50,25</b>												
1.5	4	4	40	MEFCS2015	<b>50,25</b>												
2	4	6	40	MEFCS2020	<b>45,65</b>			MEFCS4020	<b>45,65</b>								
2.5	4	8	40	MEFCS2025	<b>45,65</b>			MEFCS4025	<b>45,65</b>								
3	6	8	45	MEFCS2030	<b>65,97</b>			MEFCS4030	<b>65,97</b>								
4	6	11	45	MEFCS2040	<b>65,97</b>			MEFCS4040	<b>65,97</b>								
5	6	13	50	MEFCS2050	<b>65,97</b>			MEFCS4050	<b>65,97</b>								
6	6	13	50	MEFCS2060	<b>65,97</b>	MEFCSH3060	<b>85,74</b>	MEFCS4060	<b>65,97</b>	13	57	6	MEF600060	<b>77,23</b>			
8	8	19	60	MEFCS2080	<b>84,44</b>	MEFCSH3080	<b>109,90</b>	MEFCS4080	<b>84,44</b>	19	63	6	MEF600080	<b>97,88</b>			
10	10	22	70	MEFCS2100	<b>125,07</b>	MEFCSH3100	<b>162,55</b>	MEFCS4100	<b>125,07</b>	22	72	6	MEF600100	<b>146,49</b>			
12	12	26	75	MEFCS2120	<b>171,47</b>	MEFCSH3120	<b>222,96</b>	MEFCS4120	<b>171,47</b>	26	83	6	MEF600120	<b>199,07</b>			
14	14	26	85	MEFCS2140	<b>284,46</b>			MEFCS4140	<b>284,46</b>								
16	16	32	100	MEFCS2160	<b>284,46</b>	MEFCSH3160	<b>369,86</b>	MEFCS4160	<b>284,46</b>	32	92	6	MEF600160	<b>334,71</b>			
18	18					MEFCSH3180	<b>540,65</b>										
20	20					MEFCSH4200	<b>613,27</b>	MEFCS4200	<b>471,66</b>	38	104	8	MEF600200	<b>491,77</b>			

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

**MEF901 - catalogue page 472**

**MEF902 - catalogue page 474**

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

45°

C45°

HR FINE

Z3-Z6

OSAWA NORM

**VA**

UMG ENDLESS

<45 HRC

45°

C45°

HR FINE

Z4-Z6

**MEF901**

**MEF902**

P	M	K	N	S	H	MEF901										MEF902	
★	★				★	★										★	
D	C45°	d(h6)	I	L	z	EDP No.	€	I	I1	d1	L	z	EDP No.	€			
4	0.10	6	11	57	3	MEF901040	<b>87,73</b>										
5	0.10	6	13	57	4	MEF901050	<b>87,73</b>										
6	0.15	6	16	57	4	MEF901060	<b>87,73</b>	16	20	5.50	57	4	MEF902060	<b>105,37</b>			
8	0.20	8	16	63	4	MEF901080	<b>102,69</b>	16	26	7.50	63	4	MEF902080	<b>123,08</b>			
10	0.20	10	22	72	4	MEF901100	<b>153,36</b>	22	31	9.50	72	4	MEF902100	<b>184,17</b>			
12	0.20	12	26	83	4	MEF901120	<b>196,88</b>	26	37	11.50	83	4	MEF902120	<b>236,28</b>			
14	0.20	14	26	83	5	MEF901140	<b>238,95</b>										
16	0.20	16	32	92	5	MEF901160	<b>320,84</b>	32	51	15.50	92	5	MEF902160	<b>385,10</b>			
20	0.20	20	38	104	6	MEF901200	<b>516,48</b>	38	59	19.20	104	6	MEF902200	<b>619,80</b>			







## 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 superficie. 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, позволяющая получать зеркальную поверхность и работать в режиме DxD, в том числе для версий с 4-мя зубьями.



MDCSA1 - catalogue page 487



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

MDCSA2 - catalogue page 489

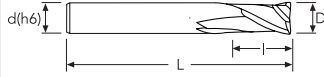


OSAWA NORM	ALU	MG POLISHED	45°	SQUARE	Z2
------------	-----	----------------	-----	--------	----

HFAL4 - catalogue page 478



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

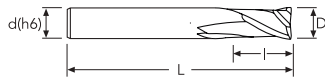


					MDCSA1						MDCSA2				
P	M	K	N	S	H										
						★						★			
D(e8)	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€					
1						4	3	40	MDCSA2010	27,22					
1.5						4	4.5	40	MDCSA2015	27,22					
2	2	10	40	MDCSA1020	25,07	4	6.5	40	MDCSA2020	27,22					
2.5						4	6.5	40	MDCSA2025	27,22					
3	3	12	40	MDCSA1030	25,07	6	8	57	MDCSA2030	34,90					
4	4	15	50	MDCSA1040	32,35	6	11	57	MDCSA2040	34,90					
5	5	16	50	MDCSA1050	37,12	6	13	57	MDCSA2050	34,90					
6	6	20	60	MDCSA1060	46,94	6	13	57	MDCSA2060	34,90					
8	8	22	63	MDCSA1080	71,94	8	19	63	MDCSA2080	55,89					
10	10	25	72	MDCSA1100	106,95	10	22	72	MDCSA2100	84,18					
12	12	30	83	MDCSA1120	152,15	12	26	83	MDCSA2120	118,02					
14						14	26	83	MDCSA2140	160,85					
16						16	32	92	MDCSA2160	202,97					
18						18	32	92	MDCSA2180	261,78					
20						20	38	104	MDCSA2200	338,87					

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	37,98						
4	6	12	57	HFAL4040	37,98						
5	6	13	57	HFAL4050	37,98						
6	6	13	57	HFAL4060	37,98						
8	8	20	64	HFAL4080	53,77						
10	10	22	72	HFAL4100	79,48						
12	12	26	83	HFAL4120	102,45						
14	14	32	90	HFAL4140	136,94						
16	16	32	92	HFAL4160	178,55						
20	20	38	104	HFAL4200	289,44						



MDCSA3 - catalogue page 492

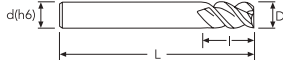


OSAWA NORM	ALU	MG POLISHED	55°	SQUARE	Z3
------------	-----	-------------	-----	--------	----

MDA310 - catalogue page 494



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

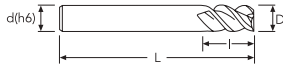


					MDCSA3						MDA310	
P												
M												
K												
N						★						★
S												
H												
D	d(h6)	l	L	EDP No.	€	d(h6)	l	L	EDP No.	€		
1	4	3	50	MDCSA3010	22,32							
1.5	4	4.5	50	MDCSA3015	22,32							
2	4	6	50	MDCSA3020	22,32							
3	4	8	50	MDCSA3030	22,32	6	12	75	MDA310030	38,69		
4	4	11	50	MDCSA3040	22,32	6	16	75	MDA310040	38,69		
5	6	13	50	MDCSA3050	26,76	6	20	75	MDA310050	38,73		
6	6	15	50	MDCSA3060	26,76	6	25	75	MDA310060	38,73		
8	8	20	60	MDCSA3080	44,30							
10	10	25	75	MDCSA3100	66,42							
12	12	30	75	MDCSA3120	90,14							
16	16	40	100	MDCSA3160	200,93							
20	20	40	100	MDCSA3200	277,18							

MDA311 - MDA312 - catalogue page 494



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	48,24							
4	6	20	100	MDA311040	48,24							
5	6	25	100	MDA311050	48,34							
6	6	30	100	MDA311060	48,34							
8	8	35	100	MDA311080	71,88	8	40	150	MDA312080	106,73		
10	10	40	100	MDA311100	92,88	10	50	150	MDA312100	125,90		
12	12	45	100	MDA311120	127,55	12	50	150	MDA312120	173,63		
16						16	70	150	MDA312160	312,14		
20						20	80	150	MDA312200	412,50		



MDCSAM - catalogue page 497



OSAWA NORM

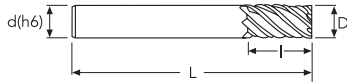
ALU

MG POLISHED

50°

SQUARE

Z6



MDCSAM

P									
M									
K									
N									★
S									
H									
D	d(h6)	I	L	EDP No.				€	
6	6	15	57	MDCSAM060				66,14	
8	8	20	64	MDCSAM080				95,86	
10	10	22	75	MDCSAM100				120,38	
12	12	25	75	MDCSAM120				157,15	

ALU - Corner radius

MCA212R - catalogue page 499



OSAWA NORM

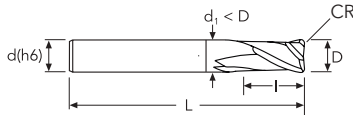
ALU

MG PV200

25°

RADIUS

Z2



MCA212R

P										
M										
K										
N										★
S										
H										
D	CR	d(h6)	I	I1	d1	L	EDP No.		€	
2	0.20	3	3	6	1.90	40	MCA212R02020		32,02	
3	0.20	3	4	8	2.80	40	MCA212R02030		34,43	
4	0.20	4	5	12	3.70	50	MCA212R02040		36,09	
5	0.20	5	8	14	4.80	50	MCA212R02050		36,90	
6	0.20	6	8	18	5.50	65	MCA212R02060		55,90	
8	0.20	8	10	22	7.40	70	MCA212R02080		65,73	
10	0.20	10	14	28	9.70	80	MCA212R02100		97,35	
12	0.20	12	16	35	11.00	90	MCA212R02120		134,70	

HFAL3 - catalogue page 481



OSAWA NORM

ALU

MG POLISHED

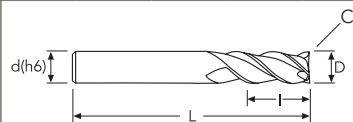
30°

RADIUS

Z3 UP



HFAL3



HFAL3

P															
M															
K															
N												★			
S															
H															
D	CR	d(h6)	I	L	EDP No.		€	D	CR	d(h6)	I	L	EDP No.		€
1	0.10	6	3	50	HFAL301010030		41,15	3	0.10	6	9	50	HFAL301030		41,15
1	0.10	6	5	50	HFAL301010050		41,15	3	0.10	6	12	50	HFAL301030120		41,15
1.5	0.10	6	4.5	50	HFAL301015045		41,15	4	0.10	6	12	50	HFAL301040		41,15
1.5	0.10	6	6	50	HFAL301015060		41,15	5	0.10	6	15	50	HFAL301050		41,15
1.5	0.10	6	8	50	HFAL301015080		41,15	6	0.10	6	20	60	HFAL301060		47,26
2	0.10	6	3	50	HFAL301020030		41,15	8	0.10	8	20	64	HFAL301080		66,76
2	0.10	6	5	50	HFAL301020050		41,15	10	0.10	10	22	75	HFAL301100		94,59
2	0.10	6	6.5	50	HFAL301020		41,15	12	0.10	12	25	75	HFAL301120		125,17
2	0.10	6	8	50	HFAL301020080		41,15	14	0.10	14	32	90	HFAL301140		184,69
2	0.10	6	10	50	HFAL301020100		41,15	16	0.10	16	32	90	HFAL301160		233,50
3	0.10	6	6	50	HFAL301030060		41,15	20	0.10	20	38	100	HFAL301200		343,40



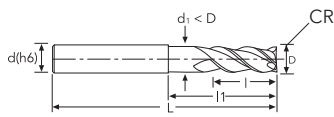
HFA53 - catalogue page 484



OSAWA  
NORM

ALU

MG  
BR



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	47,30				
3	0.50	6	5	18	2.80	60	HFA5305030	47,30				
4	0.50	6	6	22	3.80	60	HFA5305040	43,34				
4	1.00	6	6	22	3.80	60	HFA5310040	43,34				
5	0.50	6	8	24	4.80	60	HFA5305050	45,18				
5	1.00	6	8	24	4.80	60	HFA5310050	45,18				
6	0.50	6	9	29	5.80	65	HFA5305060	52,02				
6	1.00	6	9	29	5.80	65	HFA5310060	52,02				
6	2.00	6	9	29	5.80	65	HFA5320060	52,02				
8	0.50	8	12	39	7.80	75	HFA5305080	75,53				
8	1.00	8	12	39	7.80	75	HFA5310080	75,53				
8	2.00	8	12	39	7.80	75	HFA5320080	75,53				
8	3.00	8	12	39	7.80	75	HFA5330080	75,53				
10	0.50	10	15	52	9.80	100	HFA5305100	112,69				
10	1.00	10	15	52	9.80	100	HFA5310100	114,97				
10	2.00	10	15	52	9.80	100	HFA5320100	114,97				
10	3.00	10	15	52	9.80	100	HFA5330100	114,97				
10	4.00	10	15	52	9.80	100	HFA5340100	114,97				
12	0.50	12	18	62	11.80	120	HFA5305120	176,66				
12	1.00	12	18	62	11.80	120	HFA5310120	179,28				
12	2.00	12	18	62	11.80	120	HFA5320120	179,28				
12	3.00	12	18	62	11.80	120	HFA5330120	179,28				
12	4.00	12	18	62	11.80	120	HFA5340120	179,28				
16	0.50	16	24	82	15.70	130	HFA5305160	316,52				
16	1.00	16	24	82	15.70	130	HFA5310160	319,44				
16	2.00	16	24	82	15.70	130	HFA5320160	319,44				
16	3.00	16	24	82	15.70	130	HFA5330160	319,44				
16	4.00	16	24	82	15.70	130	HFA5340160	319,44				
20	0.50	20	30	100	19.70	150	HFA5305200	494,60				
20	1.00	20	30	100	19.70	150	HFA5310200	497,52				
20	2.00	20	30	100	19.70	150	HFA5320200	497,52				
20	3.00	20	30	100	19.70	150	HFA5330200	497,52				
20	4.00	20	30	100	19.70	150	HFA5340200	497,52				



PARAMETERS

★ 1st choice ☆ suitable

MDCAB2 - catalogue page 501



OSAWA  
NORM

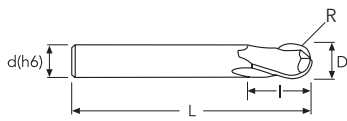
ALU

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	26,02
						1.5	0.75	4	3	50	MDCAB2015	26,02
						2	1.00	4	4	50	MDCAB2020	26,02
						3	1.50	4	6	50	MDCAB2030	26,02
						4	2.00	4	8	50	MDCAB2040	26,02
						5	2.50	6	10	50	MDCAB2050	32,58
						6	3.00	6	12	50	MDCAB2060	32,58
						8	4.00	8	16	60	MDCAB2080	52,12
						10	5.00	10	20	75	MDCAB2100	81,34
						12	6.00	12	24	75	MDCAB2120	110,24





## 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 performance 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).

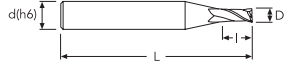
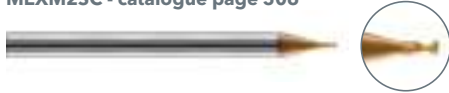
🇪🇸 MEX: Micrograno ultrafino y revestimiento Endless Orange para el mecanizado a alto rendimiento de materiales con una dureza comprendida entre 30 y 55 HRC. MH: Amplia gama para satisfacer aplicaciones de fresado general, copiado y súper acabado (30÷70 HRC).

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

MEXM2 - catalogue page 504



MEXM2SC - catalogue page 506



					MEXM2						MEXM2						MEXM2SC
P	★																
M																	
K	★																
N																	
S																	
H	★																
D	d(h6)	I	L	EDP No.	€	D	d(h6)	I	L	EDP No.	€	D	d(h6)	I	L	EDP No.	€
0.3	4	0.6	40	MEXM20030	62,36	1.2	3	2.4	40	MEXM20120	43,62	0.2	4	0.3	50	MEXM2SC0020	68,55
0.4	4	0.8	40	MEXM20040	54,42	1.3	3	2.6	40	MEXM20130	43,62	0.3	4	0.4	50	MEXM2SC0030	62,32
0.5	4	1	40	MEXM20050	47,59	1.4	3	2.8	40	MEXM20140	43,62	0.4	4	0.6	50	MEXM2SC0040	54,41
0.6	4	1.2	40	MEXM20060	47,59	1.5	3	3	40	MEXM20150	43,62	0.5	4	0.7	50	MEXM2SC0050	47,61
0.7	4	1.4	40	MEXM20070	47,59	1.6	3	3.2	40	MEXM20160	37,41	0.6	4	0.9	50	MEXM2SC0060	47,61
0.8	4	1.6	40	MEXM20080	43,62	1.7	3	3.4	40	MEXM20170	37,41	0.7	4	1	50	MEXM2SC0070	47,61
0.9	4	1.8	40	MEXM20090	43,62	1.8	3	3.6	40	MEXM20180	37,41	0.8	4	1.2	50	MEXM2SC0080	43,62
1	3	2	40	MEXM20100	43,62	1.9	3	3.8	40	MEXM20190	37,41	0.9	4	1.4	50	MEXM2SC0090	43,62
1.1	3	2.2	40	MEXM20110	43,62	2	3	4	40	MEXM20200	37,41						

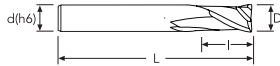
MEXCS2 - catalogue page 513



MEXCL2 - catalogue page 515



≥ Ø14



					MEXCS2						MEXCL2
P	★										
M											
K	★										
N											
S											
H	★										
D	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€	
1	4	2.5	40	MEXCS2010	49,32	6	8	60	MEXCL2010	79,24	
1.5	4	4	40	MEXCS2015	49,32	6	12	60	MEXCL2015	79,24	
2	4	6	40	MEXCS2020	44,86	6	12	60	MEXCL2020	76,20	
2.5	4	8	40	MEXCS2025	44,86						
3	6	8	55	MEXCS2030	65,25	6	15	60	MEXCL2030	78,83	
3.5	6	10	55	MEXCS2035	65,25						
4	6	10	55	MEXCS2040	65,25	6	20	60	MEXCL2040	78,83	
4.5	6	12	55	MEXCS2045	63,97						
5	6	13	55	MEXCS2050	65,25	6	25	70	MEXCL2050	80,05	
5.5	6	14	55	MEXCS2055	63,97						
6	6	15	60	MEXCS2060	65,25	6	25	70	MEXCL2060	80,33	
6.5	8	17	65	MEXCS2065	81,50						
7	8	18	65	MEXCS2070	81,44						
8	8	20	70	MEXCS2080	83,11	8	30	80	MEXCL2080	101,19	
8.5	10	21	70	MEXCS2085	120,42						
9	10	23	70	MEXCS2090	120,42						
10	10	22	75	MEXCS2100	122,80	10	35	90	MEXCL2100	128,77	
11	12	28	75	MEXCS2110	165,18						
12	12	26	80	MEXCS2120	168,45	12	40	90	MEXCL2120	188,69	
14	14	32	90	MEXCS2140	191,58						
16	16	32	90	MEXCS2160	249,11						
18	18	38	100	MEXCS2180	338,48						
20	20	38	100	MEXCS2200	415,14						





MEXLN2 - catalogue page 508



MEXLN2							MEXLN2						
P	M	K	N	S	H		P	M	K	N	S	H	
D	d(h6)	l	l1	d1	L	EDP No.	D	d(h6)	l	l1	d1	L	EDP No.
0.2	4	0.3	0.5	0.16	50	MEXLN2002005	1.6	4	2.4	10	1.55	50	MEXLN201610
0.2	4	0.3	1	0.16	50	MEXLN200201	1.6	4	2.4	12	1.55	50	MEXLN201612
0.2	4	0.3	1.5	0.16	50	MEXLN2002015	1.6	4	2.4	14	1.55	50	MEXLN201614
0.3	4	0.4	1	0.26	50	MEXLN200301	1.6	4	2.4	16	1.55	50	MEXLN201616
0.3	4	0.4	2	0.26	50	MEXLN200302	1.6	4	2.4	18	1.55	60	MEXLN201618
0.3	4	0.4	3	0.26	50	MEXLN200303	1.6	4	2.4	20	1.55	60	MEXLN201620
0.4	4	0.6	2	0.37	50	MEXLN200402	1.8	4	2.7	6	1.75	50	MEXLN201806
0.4	4	0.6	3	0.37	50	MEXLN200403	1.8	4	2.7	8	1.75	50	MEXLN201808
0.4	4	0.6	4	0.37	50	MEXLN200404	1.8	4	2.7	10	1.75	50	MEXLN201810
0.4	4	0.6	5	0.37	50	MEXLN200405	1.8	4	2.7	12	1.75	50	MEXLN201812
0.5	4	0.7	2	0.45	50	MEXLN200502	1.8	4	2.7	16	1.75	50	MEXLN201816
0.5	4	0.7	4	0.45	50	MEXLN200504	1.8	4	2.7	20	1.75	60	MEXLN201820
0.5	4	0.7	6	0.45	50	MEXLN200506	2	4	3.0	6	1.95	50	MEXLN202006
0.5	4	0.7	8	0.45	50	MEXLN200508	2	4	3.0	8	1.95	50	MEXLN202008
0.6	4	0.9	2	0.55	50	MEXLN200602	2	4	3.0	10	1.95	50	MEXLN202010
0.6	4	0.9	4	0.55	50	MEXLN200604	2	4	3.0	12	1.95	50	MEXLN202012
0.6	4	0.9	6	0.55	50	MEXLN200606	2	4	3.0	14	1.95	50	MEXLN202014
0.6	4	0.9	8	0.55	50	MEXLN200608	2	4	3.0	16	1.95	50	MEXLN202016
0.6	4	0.9	10	0.55	50	MEXLN200610	2	4	3.0	18	1.95	60	MEXLN202018
0.7	4	1.0	2	0.65	50	MEXLN200702	2	4	3.0	20	1.95	60	MEXLN202020
0.7	4	1.0	4	0.65	50	MEXLN200704	2	4	3.0	25	1.95	75	MEXLN202025
0.7	4	1.0	6	0.65	50	MEXLN200706	2	4	3.0	30	1.95	75	MEXLN202030
0.7	4	1.0	8	0.65	50	MEXLN200708	2.5	4	3.7	8	2.40	50	MEXLN202508
0.7	4	1.0	10	0.65	50	MEXLN200710	2.5	4	3.7	10	2.40	50	MEXLN202510
0.8	4	1.2	4	0.75	50	MEXLN200804	2.5	4	3.7	12	2.40	50	MEXLN202512
0.8	4	1.2	6	0.75	50	MEXLN200806	2.5	4	3.7	16	2.40	50	MEXLN202516
0.8	4	1.2	8	0.75	50	MEXLN200808	2.5	4	3.7	20	2.40	60	MEXLN202520
0.8	4	1.2	10	0.75	50	MEXLN200810	2.5	4	3.7	25	2.40	60	MEXLN202525
0.8	4	1.2	12	0.75	50	MEXLN200812	2.5	4	3.7	30	2.40	75	MEXLN202530
0.9	4	1.4	6	0.85	50	MEXLN200906	3	6	4.5	8	2.85	50	MEXLN203008
0.9	4	1.4	8	0.85	50	MEXLN200908	3	6	4.5	10	2.85	50	MEXLN203010
0.9	4	1.4	10	0.85	50	MEXLN200910	3	6	4.5	12	2.85	50	MEXLN203012
0.9	4	1.4	15	0.85	50	MEXLN200915	3	6	4.5	14	2.85	50	MEXLN203014
1	4	1.5	6	0.95	50	MEXLN201006	3	6	4.5	16	2.85	60	MEXLN203016
1	4	1.5	8	0.95	50	MEXLN201008	3	6	4.5	18	2.85	60	MEXLN203018
1	4	1.5	10	0.95	50	MEXLN201010	3	6	4.5	20	2.85	60	MEXLN203020
1	4	1.5	12	0.95	50	MEXLN201012	3	6	4.5	25	2.85	75	MEXLN203025
1	4	1.5	14	0.95	50	MEXLN201014	4	6	4.5	10	3.85	60	MEXLN204010
1	4	1.5	16	0.95	50	MEXLN201016	4	6	4.5	15	3.85	60	MEXLN204015
1.2	4	1.8	6	1.15	50	MEXLN201206	4	6	4.5	20	3.85	60	MEXLN204020
1.2	4	1.8	8	1.15	50	MEXLN201208	4	6	4.5	25	3.85	75	MEXLN204025
1.2	4	1.8	10	1.15	50	MEXLN201210	4	6	4.5	30	3.85	75	MEXLN204030
1.2	4	1.8	12	1.15	50	MEXLN201212	4	6	4.5	40	3.85	75	MEXLN204040
1.4	4	2.1	6	1.35	50	MEXLN201406							
1.4	4	2.1	8	1.35	50	MEXLN201408							
1.4	4	2.1	10	1.35	50	MEXLN201410							
1.4	4	2.1	12	1.35	50	MEXLN201412							
1.4	4	2.1	16	1.35	50	MEXLN201416							
1.5	4	2.3	6	1.45	50	MEXLN201506							
1.5	4	2.3	8	1.45	50	MEXLN201508							
1.5	4	2.3	10	1.45	50	MEXLN201510							
1.5	4	2.3	12	1.45	50	MEXLN201512							
1.5	4	2.3	14	1.45	50	MEXLN201514							
1.5	4	2.3	16	1.45	50	MEXLN201516							
1.5	4	2.3	18	1.45	60	MEXLN201518							
1.5	4	2.3	20	1.45	60	MEXLN201520							
1.6	4	2.4	6	1.55	50	MEXLN201606							
1.6	4	2.4	8	1.55	50	MEXLN201608							



PARAMETERS

★ 1st choice ☆ suitable

MEX400 - catalogue page 517

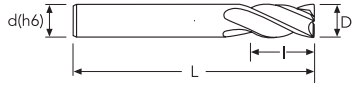


OSAWA NORM
MEX
NMG ENDLESS ORANGE
<55 HRC
40°
SQUARE
Z4 UP

MEXCL4 - catalogue page 519



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



					MEX400						MEXCL4						MEXCL4			
P	M	K	N	S	H															
D	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€					
						★					★					★				
1	4	3	50	MEX400010	37,42															
1.5	4	4.5	50	MEX400015	37,42															
2	4	6	40	MEX400020	38,12	6	8	60	MEXCL4020	85,98										
2.5	4	8	40	MEX400025	38,12															
3	6	8	55	MEX400030	57,87	6	15	60	MEXCL4030	85,98	6	25	100	MEXCL4030100	89,05					
3.5	6	10	55	MEX400035	57,87															
4	6	11	55	MEX400040	57,87	6	20	60	MEXCL4040	85,98	6	31	100	MEXCL4040100	89,05					
4.5	6	11	45	MEX400045	57,87															
5	6	13	55	MEX400050	57,87	6	25	70	MEXCL4050	87,63	6	31	100	MEXCL4050100	89,05					
5.5	6	13	55	MEX400055	57,87															
6	6	15	60	MEX400060	57,87	6	25	70	MEXCL4060	87,63	6	38	100	MEXCL4060100	89,05					
6.5	8	17	65	MEX400065	77,06															
7	8	18	65	MEX400070	77,06															
8	8	20	70	MEX400080	73,45	8	30	80	MEXCL4080	110,39	8	41	100	MEXCL4080100	114,49					
9	10	23	70	MEX400090	102,43															
10	10	22	75	MEX400100	102,43	10	35	90	MEXCL4100	141,20	10	57	125	MEXCL4100125	178,16					
11	12	28	75	MEX400110	147,12															
12	12	26	80	MEX400120	140,15	12	40	90	MEXCL4120	205,79	12	75	150	MEXCL4120150	264,47					
14	14	35	90	MEX400140	177,27	12	50	110	MEXCL4140	361,72	12	75	150	MEXCL4140150	356,12					
16	16	32	100	MEX400160	231,56	16	50	110	MEXCL4160	361,72	16	75	150	MEXCL4160150	439,10					
20	20	40	100	MEX400200	383,30	20	50	110	MEXCL4200	599,62	20	75	150	MEXCL4200150	669,65					
25	25	40	100	MEX400250	615,36	25	70	130	MEXCL4250	932,44										



MEXCSHM - catalogue page 521

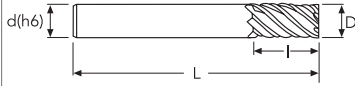


OSAWA NORM	<b>MEX</b>	UMG ENDLESS ORANGE	<55 HRC	50°	SQUARE	Z6-Z8
---------------	------------	--------------------------	------------	-----	--------	-------

MEXCLHM - catalogue page 523



OSAWA NORM	<b>MEX</b>	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	<b>70,71</b>	19	75	6	MEXCLHM030	<b>92,84</b>		
4	6	11	50	6	MEXCSHM040	<b>70,71</b>	19	75	6	MEXCLHM040	<b>92,84</b>		
5	6	13	50	6	MEXCSHM050	<b>70,71</b>	19	75	6	MEXCLHM050	<b>92,84</b>		
6	6	15	60	6	MEXCSHM060	<b>71,34</b>	25	80	6	MEXCLHM060	<b>96,75</b>		
8	8	20	70	6	MEXCSHM080	<b>94,50</b>	40	100	6	MEXCLHM080	<b>131,70</b>		
10	10	25	80	6	MEXCSHM100	<b>141,19</b>	45	120	6	MEXCLHM100	<b>214,03</b>		
12	12	30	80	6	MEXCSHM120	<b>193,55</b>	60	120	6	MEXCLHM120	<b>302,79</b>		
14	14	30	90	6	MEXCSHM140	<b>220,38</b>							
16	16	40	100	6	MEXCSHM160	<b>321,63</b>	80	150	6	MEXCLHM160	<b>542,91</b>		
18	18	35	100	8	MEXCSHM180	<b>351,82</b>							
20	20	50	100	8	MEXCSHM200	<b>447,95</b>	80	150	8	MEXCLHM200	<b>846,01</b>		

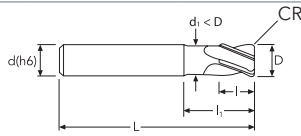


MEXLN2R - catalogue page 527



MEXLN2R								MEXLN2R																						
P	M	K	N	S	H	D	CR	d(h6)	l	l1	d1	L	EDP No.	€	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	77,58	★	★	★	★	★	★	1.5	0.20	4	2.3	10	1.45	50	MEXLN20150210	53,60	
						0.3	0.05	4	0.4	1.5	0.26	50	MEXLN20030065	77,58								1.5	0.20	4	2.3	12	1.45	50	MEXLN20150212	53,60
						0.3	0.05	4	0.4	2	0.26	50	MEXLN20030002	77,58								1.5	0.20	4	2.3	16	1.45	50	MEXLN20150216	54,83
						0.3	0.05	4	0.4	3	0.26	50	MEXLN20030003	77,58								1.5	0.20	4	2.3	20	1.45	60	MEXLN20150220	57,92
						0.3	0.10	4	0.4	1	0.26	50	MEXLN20030101	77,58								1.5	0.30	4	2.3	8	1.45	50	MEXLN20150308	52,95
						0.3	0.10	4	0.4	1.5	0.26	50	MEXLN20030165	77,58								1.5	0.30	4	2.3	16	1.45	50	MEXLN20150316	54,83
						0.3	0.10	4	0.4	2	0.26	50	MEXLN20030102	77,58								1.5	0.30	4	2.3	20	1.45	60	MEXLN20150320	57,92
						0.3	0.10	4	0.4	3	0.26	50	MEXLN20030103	77,58								1.6	0.10	4	2.4	8	1.55	50	MEXLN20160108	52,95
						0.4	0.05	4	0.6	1	0.37	50	MEXLN20040001	72,40								1.6	0.10	4	2.4	12	1.55	50	MEXLN20160112	53,60
						0.4	0.05	4	0.6	2	0.37	50	MEXLN20040006	72,40								1.6	0.10	4	2.4	16	1.55	50	MEXLN20160116	54,83
						0.4	0.05	4	0.6	3	0.37	50	MEXLN20040003	72,40								1.8	0.20	4	2.7	8	1.75	50	MEXLN20180208	52,95
						0.4	0.05	4	0.6	4	0.37	50	MEXLN20040004	72,40								1.8	0.20	4	2.7	12	1.75	50	MEXLN20180212	53,60
						0.4	0.10	4	0.6	1	0.37	50	MEXLN20040101	72,40								1.8	0.20	4	2.7	16	1.75	50	MEXLN20180216	54,83
						0.4	0.10	4	0.6	2	0.37	50	MEXLN20040102	72,40								2	0.20	4	3	6	1.95	50	MEXLN20200206	52,29
						0.4	0.10	4	0.6	3	0.37	50	MEXLN20040103	72,40								2	0.20	4	3	8	1.95	50	MEXLN20200208	52,29
						0.4	0.10	4	0.6	4	0.37	50	MEXLN20040104	72,40								2	0.20	4	3	10	1.95	50	MEXLN20200210	52,29
						0.5	0.05	4	0.7	2	0.45	50	MEXLN20050002	68,73								2	0.20	4	3	12	1.95	50	MEXLN20200212	53,60
						0.5	0.05	4	0.7	4	0.45	50	MEXLN20050004	68,73								2	0.20	4	3	14	1.95	50	MEXLN20200214	53,60
						0.5	0.05	4	0.7	6	0.45	50	MEXLN20050006	68,73								2	0.20	4	3	16	1.95	50	MEXLN20200216	54,83
						0.5	0.10	4	0.7	2	0.45	50	MEXLN20050102	68,73								2	0.20	4	3	20	1.95	60	MEXLN20200220	60,76
						0.5	0.10	4	0.7	4	0.45	50	MEXLN20050104	68,73								2	0.20	4	3	25	1.95	75	MEXLN20200225	63,69
						0.5	0.10	4	0.7	6	0.45	50	MEXLN20050106	68,73								2	0.20	4	3	30	1.95	75	MEXLN20200230	65,11
						0.6	0.10	4	0.9	2	0.55	50	MEXLN20060102	65,66								2	0.50	4	3	6	1.95	50	MEXLN20200506	52,29
						0.6	0.10	4	0.9	4	0.55	50	MEXLN20060104	65,66								2	0.50	4	3	8	1.95	50	MEXLN20200508	52,29
						0.6	0.10	4	0.9	6	0.55	50	MEXLN20060106	65,66								2	0.50	4	3	12	1.95	50	MEXLN20200512	53,60
						0.7	0.10	4	1.0	4	0.65	50	MEXLN20070104	69,17								2	0.50	4	3	16	1.95	50	MEXLN20200516	54,83
						0.7	0.10	4	1.0	6	0.65	50	MEXLN20070106	69,17								2	0.50	4	3	20	1.95	60	MEXLN20200520	60,76
						0.8	0.05	4	1.2	4	0.75	50	MEXLN20080004	65,66								2	0.50	4	3	25	1.95	75	MEXLN20200525	63,69
						0.8	0.05	4	1.2	6	0.75	50	MEXLN20080006	65,66								2	0.50	4	3	30	1.95	75	MEXLN20200530	65,11
						0.8	0.05	4	1.2	8	0.75	50	MEXLN20080008	65,92								2.5	0.30	4	3.7	8	2.40	50	MEXLN20250308	52,29
						0.8	0.10	4	1.2	4	0.75	50	MEXLN20080104	65,92								2.5	0.30	4	3.7	12	2.40	50	MEXLN20250312	52,29
						0.8	0.10	4	1.2	6	0.75	50	MEXLN20080106	65,92								2.5	0.30	4	3.7	16	2.40	50	MEXLN20250316	54,83
						0.8	0.10	4	1.2	8	0.75	50	MEXLN20080108	65,92								2.5	0.30	4	3.7	20	2.40	60	MEXLN20250320	60,76
						0.9	0.10	4	1.4	8	0.85	50	MEXLN20090108	69,59								2.5	0.30	4	3.7	25	2.40	60	MEXLN20250325	63,69
						0.9	0.10	4	1.4	15	0.85	50	MEXLN20090115	70,32								2.5	0.30	4	3.7	30	2.40	75	MEXLN20250330	65,11
						1	0.10	4	1.5	4	0.95	50	MEXLN20100104	54,16								2.5	0.50	4	3.7	8	2.40	50	MEXLN20250508	52,29
						1	0.10	4	1.5	6	0.95	50	MEXLN20100106	54,16								2.5	0.50	4	3.7	12	2.40	50	MEXLN20250512	53,60
						1	0.10	4	1.5	8	0.95	50	MEXLN20100108	54,16								2.5	0.50	4	3.7	16	2.40	50	MEXLN20250516	54,83
						1	0.10	4	1.5	10	0.95	50	MEXLN20100110	55,41								2.5	0.50	4	3.7	20	2.40	60	MEXLN20250520	60,76
						1	0.10	4	1.5	12	0.95	50	MEXLN20100112	56,02								2.5	0.50	4	3.7	25	2.40	60	MEXLN20250525	63,69
						1	0.10	4	1.5	16	0.95	50	MEXLN20100116	57,29								2.5	0.50	4	3.7	30	2.40	75	MEXLN20250530	65,11
						1	0.10	4	1.5	20	0.95	50	MEXLN20100120	57,29								3	0.20	6	4.5	10	2.85	50	MEXLN20300210	76,03
						1	0.20	4	1.5	4	0.95	50	MEXLN20100204	54,16								3	0.20	6	4.5	12	2.85	50	MEXLN20300212	76,03
						1	0.20	4	1.5	6	0.95	50	MEXLN20100206	54,16								3	0.20	6	4.5	16	2.85	60	MEXLN20300216	76,03
						1	0.20	4	1.5	8	0.95	50	MEXLN20100208	54,16								3	0.20	6	4.5	20	2.85	60	MEXLN20300220	76,03
						1	0.20	4	1.5	10	0.95	50	MEXLN20100210	55,41								3	0.20	6	4.5	25	2.85	75	MEXLN20300225	80,52
						1	0.20	4	1.5	12	0.95	50	MEXLN20100212	56,02								3	0.30	6	4.5	10	2.85	50	MEXLN20300310	76,03
						1	0.20	4	1.5	16	0.95	50	MEXLN20100216	57,29								3	0.30	6	4.5	12	2.85	50	MEXLN20300312	76,03
						1	0.20	4	1.5	20	0.95	50	MEXLN20100220	57,29								3	0.30	6	4.5	16	2.85	60	MEXLN20300316	76,03
						1	0.30	4	1.5	6	0.95	50	MEXLN20100306	54,16								3	0.30	6	4.5	20	2.85	60	MEXLN20300320	76,03
						1	0.30	4	1.5	10	0.95	50	MEXLN20100310	55,41								3	0.30	6	4.5	25	2.85	75	MEXLN20300325	80,52
						1	0.30	4	1.5	16	0.95	50	MEXLN20100316	57,29								3	0.50	6	4.5	10	2.85	50	MEXLN20300510	76,03
						1	0.30	4	1.5	20	0.95	50	MEXLN20100320	57,29								3	0.50	6	4.5	12	2.85	50	MEXLN20300512	76,03
						1.2	0.10	4	1.8	6	1.15	50	MEXLN20120106	52,95								3	0.50	6	4.5	16	2.85	60	MEXLN20300516	76,03
						1.2	0.10	4	1.8	8	1.15	50	MEXLN20120108	52,95								3	0.50	6	4.5	20	2.85	60	MEXLN20300520	76,03
						1.2	0.10	4	1.8	10	1.15	50	MEXLN20120110	53,60								3	0.50	6	4.5	25	2.85	75		

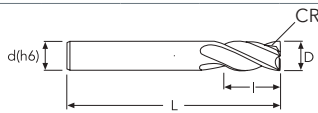
MEX410R - catalogue page 538



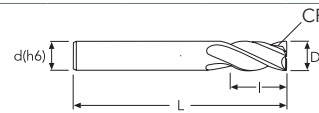
MEX410R

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	72,17
						2.5	0.25	6	3	6	2.40	50	MEX410R025025	72,17
						3	0.30	6	4	7	2.85	50	MEX410R03030	72,17
						4	0.50	6	5	9	3.85	50	MEX410R05040	72,17
						5	0.50	6	6	12	4.85	50	MEX410R05050	72,17
						6	0.50	6	7	14	5.80	60	MEX410R05060	72,17
						8	1.00	8	10	18	7.80	70	MEX410R10080	94,28
						10	1.00	10	12	25	9.80	75	MEX410R10100	137,10
						12	1.00	12	15	30	11.80	80	MEX410R10120	188,03

MEXCS4R - catalogue page 535



MEXCS4R



MEXCS4R

P	M	K	N	S	H	D	CR	d(h6)	l	L	EDP No.	€	P	M	K	N	S	H	D	CR	d(h6)	l	L	EDP No.	€
						1	0.20	4	3	50	MEXCS4R01002	46,89							12	1.50	12	25	75	MEXCS4R12015	165,41
						1.5	0.20	4	4.5	50	MEXCS4R01502	46,89							12	2.00	12	25	75	MEXCS4R12020	165,41
						2	0.20	4	6.5	50	MEXCS4R02002	46,89							12	3.00	12	25	75	MEXCS4R12030	165,41
						2	0.30	4	6.5	50	MEXCS4R02003	46,89							14	1.00	14	32	90	MEXCS4R14010	239,01
						2.5	0.20	4	6.5	50	MEXCS4R02502	47,43							16	0.50	16	32	90	MEXCS4R16005	291,23
						2.5	0.50	4	6.5	50	MEXCS4R02505	46,89							16	1.00	16	32	90	MEXCS4R16010	291,23
						3	0.20	4	9	50	MEXCS4R03002	46,89							16	2.00	16	32	90	MEXCS4R16020	291,23
						3	0.30	4	9	50	MEXCS4R03003	46,89							16	3.00	16	32	90	MEXCS4R16030	291,23
						3	0.50	4	9	50	MEXCS4R03005	46,89							18	0.50	18	38	100	MEXCS4R18005	383,05
						4	0.30	4	12	50	MEXCS4R04003	49,37							18	1.00	18	38	100	MEXCS4R18010	383,05
						4	0.50	4	12	50	MEXCS4R04005	49,37							20	0.50	20	38	100	MEXCS4R20005	457,11
						4	1.00	4	12	50	MEXCS4R04010	51,47							20	1.00	20	38	100	MEXCS4R20010	457,11
						5	0.30	5	15	50	MEXCS4R05003	55,52							20	2.00	20	38	100	MEXCS4R20020	457,11
						5	0.50	5	15	50	MEXCS4R05005	55,52							20	3.00	20	38	100	MEXCS4R20030	457,11
						5	1.00	5	15	50	MEXCS4R05010	57,62													
						6	0.30	6	16	50	MEXCS4R06003	62,32													
						6	0.50	6	16	50	MEXCS4R06005	62,32													
						6	1.00	6	16	50	MEXCS4R06010	62,32													
						8	0.30	8	20	64	MEXCS4R08003	88,47													
						8	0.50	8	20	64	MEXCS4R08005	88,47													
						8	1.00	8	20	64	MEXCS4R08010	88,47													
						8	1.50	8	20	64	MEXCS4R08015	88,47													
						8	2.00	8	20	64	MEXCS4R08020	88,47													
						10	0.30	10	22	75	MEXCS4R10003	130,87													
						10	0.50	10	22	75	MEXCS4R10005	130,87													
						10	1.00	10	22	75	MEXCS4R10010	130,87													
						10	1.50	10	22	75	MEXCS4R10015	130,87													
						10	2.00	10	22	75	MEXCS4R10020	130,87													
						12	0.30	12	25	75	MEXCS4R12003	165,41													
						12	0.50	12	25	75	MEXCS4R12005	165,41													
						12	1.00	12	25	75	MEXCS4R12010	165,41													



MEXLS2R - catalogue page 533

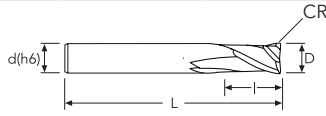


OSAWA NORM MEX UMG ENDLESS ORANGE <55 HRC 40° RADIUS Z2

MEXLS4R - catalogue page 540



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	74,80	MEXLS4R03020	74,80
3	0.30	6	5	75	MEXLS2R03030	74,80	MEXLS4R03030	74,80
3	0.50	6	5	75	MEXLS2R05030	74,80	MEXLS4R05030	74,80
4	0.30	6	8	75	MEXLS2R03040	74,80	MEXLS4R03040	74,80
4	0.50	6	8	75	MEXLS2R05040	74,80	MEXLS4R05040	74,80
5	0.30	6	9	75	MEXLS2R03050	74,80	MEXLS4R03050	74,80
5	0.50	6	9	75	MEXLS2R05050	74,80	MEXLS4R05050	74,80
6	0.30	6	10	75	MEXLS2R03060	74,80	MEXLS4R03060	74,80
6	0.50	6	10	75	MEXLS2R05060	74,80	MEXLS4R05060	74,80
6	1.00	6	10	75	MEXLS2R10060	74,80	MEXLS4R10060	74,80
8	0.30	8	12	75	MEXLS2R03080	95,24	MEXLS4R03080	95,24
8	0.50	8	12	75	MEXLS2R05080	95,24	MEXLS4R05080	95,24
8	1.00	8	12	75	MEXLS2R10080	95,24	MEXLS4R10080	95,24
10	0.50	10	14	100	MEXLS2R05100	149,66	MEXLS4R05100	149,66
10	1.00	10	14	100	MEXLS2R10100	149,66	MEXLS4R10100	149,66
12	0.50	12	16	100	MEXLS2R05120	197,24	MEXLS4R05120	180,81
12	1.00	12	16	100	MEXLS2R10120	197,24	MEXLS4R10120	180,81
16	0.50	16	22	125	MEXLS2R05160	349,14	MEXLS4R05160	349,14

MEX610R - catalogue page 542

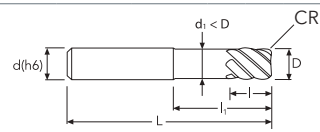


OSAWA NORM MEX UMG ENDLESS ORANGE <55 HRC 45° RADIUS Z6

MEX611R - catalogue page 544



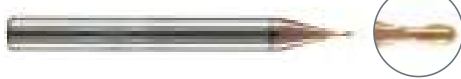
OSAWA NORM MEX UMG ENDLESS ORANGE <55 HRC 45° RADIUS Z6



								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	63,06	15	90	MEX611R05060	81,65
8	0.50	8	8	24	7.80	60	MEX610R05080	76,06	20	100	MEX611R05080	92,57
10	0.50	10	10	30	9.80	70	MEX610R10100	117,76	25	100	MEX611R05100	135,65
10	1.00	10	10	30	9.80	70	MEX610R10100	117,76	25	100	MEX611R10100	135,65
12	0.50	12	12	30	11.80	75	MEX610R10120	140,38	30	100	MEX611R05120	184,45
12	1.00	12	12	30	11.80	75	MEX610R10120	140,38	30	100	MEX611R10120	184,45



MHMB204 - catalogue page 546/609

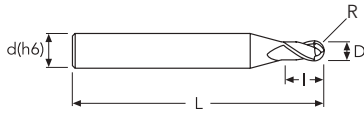


OSAWA NORM	MH	NMG MH COAT	<70 HRC	30°	BALL NOSE	Z2 BALL
------------	----	----------------	------------	-----	-----------	---------

MHMB206 - catalogue page 548/611



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

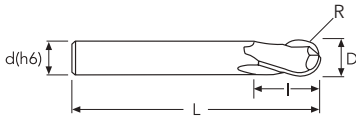


						MHMB204							MHMB206
P												★	
M													
K												★	
N													
S													
H												★	
D	R	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€		
0.2	0.10	4	0.2	50	MHMB200204	87,90							
0.3	0.15	4	0.3	50	MHMB200304	78,82							
0.4	0.20	4	0.4	50	MHMB200404	72,77	6	0.4	50	MHMB200406	94,53		
0.5	0.25	4	0.4	50	MHMB200504	66,71	6	0.5	50	MHMB200506	87,39		
0.6	0.30	4	0.5	50	MHMB200604	65,17	6	0.6	50	MHMB200606	85,39		
0.7	0.35	4	0.6	50	MHMB200704	68,70							
0.8	0.40	4	0.6	50	MHMB200804	60,60	6	0.8	50	MHMB200806	79,97		
0.9	0.45	4	0.8	50	MHMB200904	68,70							
1	0.50	4	0.8	50	MHMB201004	53,29							
1.5	0.75	4	1.35	50	MHMB201504	57,12							
2	1.00	4	1.7	50	MHMB202004	61,40							

MEXCSB2 - catalogue page 557



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



							MEXCSB2
P							★
M							
K							★
N							
S							
H							★
D	R	d(h6)	I	L	EDP No.	€	
1	0.50	3	3	38	MEXCSB2010	60,25	
1.5	0.75	3	3	38	MEXCSB2015	60,25	
2	1.00	6	3	50	MEXCSB2020	60,04	
2.5	1.25	4	4	50	MEXCSB202550	58,87	
3	1.50	6	4	50	MEXCSB2030	60,04	
4	2.00	6	5	54	MEXCSB2040	62,19	
5	2.50	6	6	54	MEXCSB2050	62,19	
6	3.00	6	12	60	MEXCSB2060	63,30	
8	4.00	8	14	60	MEXCSB2080	98,90	
10	5.00	10	18	70	MEXCSB2100	158,38	
12	6.00	12	22	80	MEXCSB2120	195,32	
14	7.00	14	32	90	MEXCSB2140	241,63	
16	8.00	16	32	90	MEXCSB2160	286,19	
18	9.00	18	38	100	MEXCSB2180	413,32	
20	10.00	20	38	100	MEXCSB2200	495,99	





MEXCLSB2 - catalogue page 559



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

MEX253 - catalogue page 561



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)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€											
1	0.50	4	2.5	50	MEXCLSB2010	64,85	4	3	75	MEX25301075	52,21	4	3	100	MEX253010100	65,26											
1.2	0.60	4	3	50	MEXCLSB2012	63,76																					
1.5	0.75	4	4	50	MEXCLSB2015	64,85	4	3	75	MEX25301575	52,21	4	3	100	MEX253015100	65,26											
2	1.00	6	5	50	MEXCLSB2020	61,61	4	4	75	MEX25302075	52,21	4	4	100	MEX253020100	65,26											
2.5	1.25	6	6	60	MEXCLSB2025	61,61																					
3	1.50	6	8	60	MEXCLSB2030	61,61	6	5	75	MEX25303075	58,71	6	5	100	MEX253030	86,20											
4	2.00	6	8	70	MEXCLSB2040	64,42	6	8	100	MEX253040	86,20																
5	2.50	6	10	80	MEXCLSB2050	66,65	6	9	100	MEX253050100	84,14																
6	3.00	6	12	90	MEXCLSB2060	72,11	6	10	150	MEX253060150	104,42																
8	4.00	8	14	100	MEXCLSB2080	112,67	8	12	150	MEX253080	142,82																
10	5.00	10	18	100	MEXCLSB2100	171,93	10	14	150	MEX25310150	207,79																
12	6.00	12	22	110	MEXCLSB2120	219,17	12	16	150	MEX25312150	230,72																
14	7.00	14	32	125	MEXCLSB2140	260,26																					
16	8.00	16	32	150	MEXCLSB2160	359,17	16	32	200	MEX253160	478,83																
20	10.00	20	38	150	MEXCLSB2200	576,98	20	38	200	MEX253200	763,59																

MHCRB2 - catalogue page 555/618



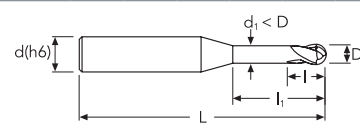
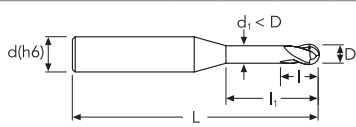
d-6

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)	I	I1	d1	L	EDP No.	€	D	R	d(h6)	I	I1	d1	L	EDP No.	€										
0.5	0.25	6	0.5	2	0.45	50	MHCRB20050206	102,55	1.2	0.60	6	1.2	8	1.1	50	MHCRB20120806	77,34										
0.5	0.25	6	0.5	4	0.45	50	MHCRB20050406	102,55	1.2	0.60	6	1.2	10	1.1	50	MHCRB20121006	77,34										
0.6	0.30	6	0.5	2	0.55	50	MHCRB20060206	100,16	1.5	0.75	6	1.5	4	1.4	50	MHCRB20150406	88,33										
0.6	0.30	6	0.5	4	0.55	50	MHCRB20060406	100,16	1.5	0.75	6	1.5	8	1.4	50	MHCRB20150806	90,53										
0.6	0.30	6	0.5	6	0.55	50	MHCRB20060606	100,16	1.5	0.75	6	1.5	10	1.4	50	MHCRB20151006	90,53										
0.8	0.40	6	0.8	2	0.75	50	MHCRB20080206	83,28	1.5	0.75	6	1.5	12	1.4	50	MHCRB20151206	90,53										
0.8	0.40	6	0.8	4	0.75	50	MHCRB20080406	83,28	1.5	0.75	6	1.5	16	1.4	50	MHCRB20151606	90,53										
0.8	0.40	6	0.8	6	0.75	50	MHCRB20080606	83,28	2	1.00	6	3	6	1.9	50	MHCRB20200606	75,07										
1	0.50	6	1	3	0.9	50	MHCRB20100306	85,68	2	1.00	6	3	8	1.9	50	MHCRB20200806	75,07										
1	0.50	6	1	6	0.9	50	MHCRB20100606	85,68	2	1.00	6	3	10	1.9	50	MHCRB20201006	76,43										
1	0.50	6	1	8	0.9	50	MHCRB20100806	85,68	2	1.00	6	3	12	1.9	50	MHCRB20201206	76,43										
1	0.50	6	1	10	0.9	50	MHCRB20101006	85,68	2	1.00	6	3	16	1.9	50	MHCRB20201606	81,80										
1.2	0.60	6	1.2	6	1.1	50	MHCRB20120606	77,34	2	1.00	6	3	20	1.9	50	MHCRB20202006	81,80										



MHLNB2 - catalogue page 550/613



MHLNB2									MHLNB2										
P	M	K	N	S	H				★	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.	€		
0.2	0.10	4	0.2	0.5	0.17	50	MHLNB2002005	106,38	1.8	0.90	4	1.4	8	1.7	50	MHLNB201808	63,48		
0.2	0.10	4	0.2	1	0.17	50	MHLNB200201	106,38	1.8	0.90	4	1.4	12	1.7	50	MHLNB201812	63,48		
0.2	0.10	4	0.2	1.5	0.17	50	MHLNB2002015	106,38	1.8	0.90	4	1.4	16	1.7	50	MHLNB201816	63,48		
0.3	0.15	4	0.3	1	0.27	50	MHLNB200301	96,09	1.8	0.90	4	1.4	20	1.7	60	MHLNB201820	63,48		
0.3	0.15	4	0.3	2	0.27	50	MHLNB200302	96,09	2	1.00	4	1.6	4	1.9	50	MHLNB202004	61,77		
0.3	0.15	4	0.3	3	0.27	50	MHLNB200303	96,09	2	1.00	4	1.6	6	1.9	50	MHLNB202006	61,77		
0.4	0.20	4	0.4	1	0.37	50	MHLNB200401	89,22	2	1.00	4	1.6	8	1.9	50	MHLNB202008	61,77		
0.4	0.20	4	0.4	2	0.37	50	MHLNB200402	89,22	2	1.00	4	1.6	10	1.9	50	MHLNB202010	61,77		
0.4	0.20	4	0.4	3	0.37	50	MHLNB200403	89,22	2	1.00	4	1.6	12	1.9	50	MHLNB202012	61,77		
0.4	0.20	4	0.4	4	0.37	50	MHLNB200404	89,22	2	1.00	4	1.6	14	1.9	50	MHLNB202014	61,77		
0.4	0.20	4	0.4	5	0.37	50	MHLNB200405	89,22	2	1.00	4	1.6	16	1.9	50	MHLNB202016	61,77		
0.5	0.25	4	0.4	2	0.45	50	MHLNB200502	82,36	2	1.00	4	1.6	18	1.9	60	MHLNB202018	63,48		
0.5	0.25	4	0.4	3	0.45	50	MHLNB200503	82,36	2	1.00	4	1.6	20	1.9	60	MHLNB202020	63,48		
0.5	0.25	4	0.4	4	0.45	50	MHLNB200504	82,36	2	1.00	4	1.6	22	1.9	60	MHLNB202022	63,48		
0.5	0.25	4	0.4	5	0.45	50	MHLNB200505	82,36	2	1.00	4	1.6	25	1.9	75	MHLNB202025	69,48		
0.5	0.25	4	0.4	6	0.45	50	MHLNB200506	82,36	2	1.00	4	1.6	30	1.9	75	MHLNB202030	72,06		
0.5	0.25	4	0.4	8	0.45	50	MHLNB200508	82,36	3	1.50	6	2.4	8	2.8	50	MHLNB203008	82,36		
0.6	0.30	4	0.5	2	0.55	50	MHLNB200602	78,93	3	1.50	6	2.4	10	2.8	50	MHLNB203010	82,36		
0.6	0.30	4	0.5	3	0.55	50	MHLNB200603	78,93	3	1.50	6	2.4	12	2.85	50	MHLNB203012	84,36		
0.6	0.30	4	0.5	4	0.55	50	MHLNB200604	78,93	3	1.50	6	2.4	16	2.8	60	MHLNB203016	87,38		
0.6	0.30	4	0.5	5	0.55	50	MHLNB200605	78,93	3	1.50	6	2.4	20	2.8	60	MHLNB203020	90,79		
0.6	0.30	4	0.5	6	0.55	50	MHLNB200606	78,93	3	1.50	6	2.4	25	2.8	75	MHLNB203025	96,09		
0.6	0.30	4	0.5	8	0.55	50	MHLNB200608	78,93	3	1.50	6	2.4	30	2.8	75	MHLNB203030	96,09		
0.8	0.40	4	0.6	2	0.75	50	MHLNB200802	75,50	3	1.50	6	2.4	35	2.8	75	MHLNB203035	96,09		
0.8	0.40	4	0.6	4	0.75	50	MHLNB200804	75,50	4	2.00	6	3.2	10	3.7	50	MHLNB204010	82,36		
0.8	0.40	4	0.6	5	0.75	50	MHLNB200805	75,50	4	2.00	6	3.2	16	3.7	60	MHLNB204016	82,36		
0.8	0.40	4	0.6	6	0.75	50	MHLNB200806	75,50	4	2.00	6	3.2	20	3.7	60	MHLNB204020	82,36		
0.8	0.40	4	0.6	7	0.75	50	MHLNB200807	75,50	4	2.00	6	3.2	25	3.7	75	MHLNB204025	96,09		
0.8	0.40	4	0.6	8	0.75	50	MHLNB200808	75,50	4	2.00	6	3.2	30	3.7	75	MHLNB204030	96,09		
0.8	0.40	4	0.6	10	0.75	50	MHLNB200810	75,50	4	2.00	6	3.2	35	3.7	75	MHLNB204035	96,09		
1	0.50	4	0.8	3	0.9	50	MHLNB201003	63,48	4	2.00	6	3.2	40	3.7	100	MHLNB204040	102,95		
1	0.50	4	0.8	4	0.9	50	MHLNB201004	63,48	4	2.00	6	3.2	45	3.7	100	MHLNB204045	102,95		
1	0.50	4	0.8	5	0.9	50	MHLNB201005	63,48	4	2.00	6	3.2	50	3.7	100	MHLNB204050	102,95		
1	0.50	4	0.8	6	0.9	50	MHLNB201006	63,48											
1	0.50	4	0.8	7	0.9	50	MHLNB201007	63,48											
1	0.50	4	0.8	8	0.9	50	MHLNB201008	63,48											
1	0.50	4	0.8	9	0.9	50	MHLNB201009	63,48											
1	0.50	4	0.8	10	0.9	50	MHLNB201010	63,48											
1	0.50	4	0.8	12	0.9	50	MHLNB201012	63,48											
1	0.50	4	0.8	14	0.9	50	MHLNB201014	63,48											
1	0.50	4	0.8	16	0.9	50	MHLNB201016	63,48											
1	0.50	4	0.8	20	0.9	60	MHLNB201020	63,48											
1.2	0.60	4	1.0	6	1.1	50	MHLNB201206	63,48											
1.2	0.60	4	1.0	8	1.1	50	MHLNB201208	63,48											
1.2	0.60	4	1.0	10	1.1	50	MHLNB201210	63,48											
1.2	0.60	4	1.0	12	1.1	50	MHLNB201212	63,48											
1.4	0.70	4	1.1	8	1.3	50	MHLNB201408	63,48											
1.4	0.70	4	1.1	12	1.3	50	MHLNB201412	63,48											
1.4	0.70	4	1.1	16	1.3	50	MHLNB201416	63,48											
1.5	0.75	4	1.2	8	1.4	50	MHLNB201508	63,48											
1.5	0.75	4	1.2	12	1.4	50	MHLNB201512	66,05											
1.5	0.75	4	1.2	16	1.4	50	MHLNB201516	63,48											
1.5	0.75	4	1.2	18	1.4	60	MHLNB201518	63,48											
1.5	0.75	6	2.4	12	1.4	50	MHLNB201520	65,23											
1.6	0.80	4	1.3	8	1.5	50	MHLNB201608	63,48											
1.6	0.80	4	1.3	12	1.5	50	MHLNB201612	63,48											
1.6	0.80	4	1.3	16	1.5	50	MHLNB201616	63,48											
1.6	0.80	4	1.3	20	1.5	60	MHLNB201620	63,48											







## 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.

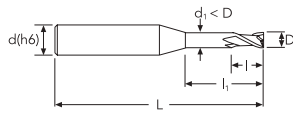
🇩🇪 Nano-Mikrokörnung und Beschichtung UH RED und MH auf TiSi-Basis für das Fräsen von gehärteten Materialien bis zu 70 HRC. Hohe Zuverlässigkeit und lange Standzeit auch bei Bearbeitungsverfahren mit hoher Geschwindigkeit und großem Vorschub und mit der Möglichkeit, ohne Kühlmittel zu arbeiten. Die spezifischen 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.

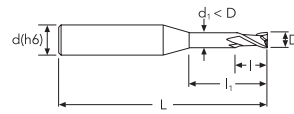
🇪🇸 Nano micrograno y revestimiento UH RED e MH a base de TiSi para el fresado de materiales templados hasta 70 HRC. Gran fiabilidad y duración en la utilización de estrategias de elaboración a alta velocidad o alto avance con la posibilidad de evitar la utilización del refrigerante. Las geometrías de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

🇷🇺 Нано-микрoзернистoсть 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.

UHLN2 - catalogue page 566



UHLN2

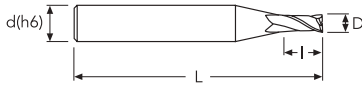


UHLN2

P	M	K	N	S	H	☆	P	M	K	N	S	H	☆		
D	d(h6)	l	l1	d1	L	EDP No.	€	D	d(h6)	l	l1	d1	L	EDP No.	€
0.2	4	0.3	0.5	0.16	50	UHLN2002005	88,86	1.6	4	2.4	8	1.55	50	UHLN201608	54,68
0.2	4	0.3	1	0.16	50	UHLN200201	88,86	1.6	4	2.4	10	1.55	50	UHLN201610	54,68
0.2	4	0.3	1.5	0.16	50	UHLN2002015	88,86	1.6	4	2.4	12	1.55	50	UHLN201612	54,68
0.3	4	0.4	1	0.26	50	UHLN200301	82,02	1.6	4	2.4	14	1.55	50	UHLN201614	54,68
0.3	4	0.4	2	0.26	50	UHLN200302	82,02	1.6	4	2.4	16	1.55	50	UHLN201616	54,68
0.3	4	0.4	3	0.26	50	UHLN200303	82,02	1.6	4	2.4	18	1.55	60	UHLN201618	54,68
0.4	4	0.6	2	0.37	50	UHLN200402	75,19	1.6	4	2.4	20	1.55	60	UHLN201620	54,68
0.4	4	0.6	3	0.37	50	UHLN200403	75,19	1.8	4	2.7	6	1.75	50	UHLN201806	54,68
0.4	4	0.6	4	0.37	50	UHLN200404	75,19	1.8	4	2.7	8	1.75	50	UHLN201808	54,68
0.4	4	0.6	5	0.37	50	UHLN200405	75,19	1.8	4	2.7	10	1.75	50	UHLN201810	54,68
0.5	4	0.7	2	0.45	50	UHLN200502	68,35	1.8	4	2.7	12	1.75	50	UHLN201812	54,68
0.5	4	0.7	4	0.45	50	UHLN200504	68,35	1.8	4	2.7	14	1.75	50	UHLN201814	54,68
0.5	4	0.7	6	0.45	50	UHLN200506	68,35	1.8	4	2.7	16	1.75	50	UHLN201816	54,68
0.5	4	0.7	8	0.45	50	UHLN200508	68,35	1.8	4	2.7	18	1.75	60	UHLN201818	54,68
0.6	4	0.9	2	0.55	50	UHLN200602	68,35	1.8	4	2.7	20	1.75	60	UHLN201820	54,68
0.6	4	0.9	4	0.55	50	UHLN200604	68,35	2	4	3	6	1.95	50	UHLN202006	51,26
0.6	4	0.9	6	0.55	50	UHLN200606	68,35	2	4	3	8	1.95	50	UHLN202008	51,26
0.6	4	0.9	8	0.55	50	UHLN200608	68,35	2	4	3	10	1.95	50	UHLN202010	51,26
0.6	4	0.9	10	0.55	50	UHLN200610	68,35	2	4	3	12	1.95	50	UHLN202012	51,26
0.7	4	1.0	2	0.65	50	UHLN200702	68,35	2	4	3	14	1.95	50	UHLN202014	51,26
0.7	4	1.0	4	0.65	50	UHLN200704	68,35	2	4	3	16	1.95	50	UHLN202016	51,26
0.7	4	1.0	6	0.65	50	UHLN200706	68,35	2	4	3	18	1.95	60	UHLN202018	54,68
0.7	4	1.0	8	0.65	50	UHLN200708	68,35	2	4	3	20	1.95	60	UHLN202020	54,68
0.7	4	1.0	10	0.65	50	UHLN200710	68,35	2	4	3	25	1.95	75	UHLN202025	54,68
0.8	4	1.2	4	0.75	50	UHLN200804	68,35	2	4	3	30	1.95	75	UHLN202030	54,68
0.8	4	1.2	6	0.75	50	UHLN200806	68,35	2.5	4	3.7	8	2.4	50	UHLN202508	54,68
0.8	4	1.2	8	0.75	50	UHLN200808	68,35	2.5	4	3.7	10	2.4	50	UHLN202510	54,68
0.8	4	1.2	10	0.75	50	UHLN200810	68,35	2.5	4	3.7	12	2.4	50	UHLN202512	54,68
0.8	4	1.2	12	0.75	50	UHLN200812	68,35	2.5	4	3.7	14	2.4	50	UHLN202514	54,68
0.9	4	1.4	6	0.85	50	UHLN200906	68,35	2.5	4	3.7	16	2.4	50	UHLN202516	54,68
0.9	4	1.4	8	0.85	50	UHLN200908	68,35	2.5	4	3.7	18	2.4	60	UHLN202518	54,68
0.9	4	1.4	10	0.85	50	UHLN200910	68,35	2.5	4	3.7	20	2.4	60	UHLN202520	54,68
0.9	4	1.4	15	0.85	50	UHLN200915	68,35	2.5	4	3.7	25	2.4	75	UHLN202525	61,52
1	4	1.5	6	0.95	50	UHLN201006	54,68	2.5	4	3.7	30	2.4	75	UHLN202530	61,52
1	4	1.5	8	0.95	50	UHLN201008	54,68	3	6	4.5	8	2.85	50	UHLN203008	75,19
1	4	1.5	10	0.95	50	UHLN201010	54,68	3	6	4.5	10	2.85	50	UHLN203010	75,19
1	4	1.5	12	0.95	50	UHLN201012	54,68	3	6	4.5	12	2.85	50	UHLN203012	75,19
1	4	1.5	14	0.95	50	UHLN201014	54,68	3	6	4.5	14	2.85	50	UHLN203014	75,19
1	4	1.5	16	0.95	50	UHLN201016	54,68	3	6	4.5	16	2.85	60	UHLN203016	75,19
1.2	4	1.8	6	1.15	50	UHLN201206	54,68	3	6	4.5	18	2.85	60	UHLN203018	75,19
1.2	4	1.8	8	1.15	50	UHLN201208	54,68	3	6	4.5	20	2.85	60	UHLN203020	75,19
1.2	4	1.8	10	1.15	50	UHLN201210	54,68	3	6	4.5	25	2.85	75	UHLN203025	82,02
1.2	4	1.8	12	1.15	50	UHLN201212	54,68	4	6	4.5	10	3.85	60	UHLN204010	75,19
1.4	4	2.1	6	1.35	50	UHLN201406	54,68	4	6	4.5	15	3.85	60	UHLN204015	75,19
1.4	4	2.1	8	1.35	50	UHLN201408	54,68	4	6	4.5	20	3.85	60	UHLN204020	75,19
1.4	4	2.1	10	1.35	50	UHLN201410	54,68	4	6	4.5	25	3.85	75	UHLN204025	82,02
1.4	4	2.1	12	1.35	50	UHLN201412	54,68	4	6	4.5	30	3.85	75	UHLN204030	82,02
1.4	4	2.1	14	1.35	50	UHLN201414	54,68	4	6	4.5	40	3.85	75	UHLN204040	82,02
1.4	4	2.1	16	1.35	50	UHLN201416	54,68								
1.5	4	2.3	6	1.45	50	UHLN201506	54,68								
1.5	4	2.3	8	1.45	50	UHLN201508	54,68								
1.5	4	2.3	10	1.45	50	UHLN201510	54,68								
1.5	4	2.3	12	1.45	50	UHLN201512	54,68								
1.5	4	2.3	14	1.45	50	UHLN201514	54,68								
1.5	4	2.3	16	1.45	50	UHLN201516	54,68								
1.5	4	2.3	18	1.45	60	UHLN201518	54,68								
1.5	4	2.3	20	1.45	60	UHLN201520	54,68								
1.6	4	2.4	6	1.55	50	UHLN201606	54,68								



UHM204 - catalogue page 564



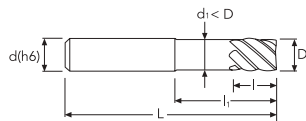
UHM204

P					☆
M					
K					☆
N					
S					
H					★
D	d(h6)	l	L	EDP No.	€
0.1	4	0.2	40	UHM200104	103,55
0.2	4	0.3	50	UHM200204	89,75
0.3	4	0.4	50	UHM200304	82,84
0.4	4	0.6	50	UHM200404	75,94
0.5	4	0.7	50	UHM200504	69,04
0.6	4	0.9	50	UHM200604	69,04
0.7	4	1	50	UHM200704	69,06
0.8	4	1.2	50	UHM200804	69,04
0.9	4	1.4	50	UHM200904	69,04

UH600 - catalogue page 571



UH612 - catalogue page 573



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	70,14	19	30	2.80	75	6	UH612030	96,41	
4	6	11	50	6	UH600040	70,14	19	32	3.70	75	6	UH612040	96,41	
5	6	13	50	6	UH600050	70,14	19	32	4.60	75	6	UH612050	96,41	
6	6	20	60	6	UH600060	70,14	38	60	5.50	100	6	UH612060	122,13	
8	8	20	64	6	UH600080	98,20	41	60	7.40	100	6	UH612080	167,11	
10	10	22	70	6	UH600100	140,28	57	85	9.20	125	6	UH612100	244,27	
12	12	25	75	6	UH600120	196,33	75	110	11.00	150	6	UH612120	321,42	
14	14	30	90	6	UH600140	259,49								
16	16	30	90	8	UH600160	321,42	75	110	15.00	150	8	UH612160	488,53	
20	20	38	100	8	UH600200	488,53	75	110	19.00	150	8	UH612200	621,13	





**UHM206 - catalogue page 575**

OSAWA NORM

UH

NMG  
UH RED

<70  
HRC

40°

RADIUS

Z2

P							UHM206
M							
K							☆
N							
S							
H							★
D	CR	d(h6)	I	L	EDP No.	€	
0.3		6	0.45	50	UHM200306	93,48	
0.4		6	0.6	50	UHM200406	87,74	
0.5	0.05	6	0.7	50	UHM200506	76,45	
0.6	0.05	6	0.9	50	UHM200606	73,41	
0.8	0.05	6	1.2	50	UHM200806	67,74	
1	0.10	6	1.5	50	UHM201006	63,58	
1.5	0.15	6	2.2	50	UHM201506	63,58	
2	0.15	6	2.2	50	UHM202006	63,58	

**UH211 - catalogue page 577**

OSAWA NORM

UH

NMG  
UH RED

<70  
HRC

40°

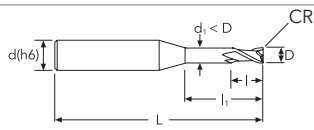
RADIUS

Z2

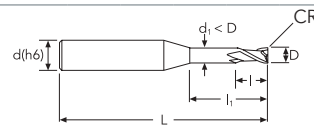
UH211							UH211										
P							P										
M							M										
K							K										
N							N										
S							S										
H							H										
D	CR	d(h6)	I	I1	d1	L	EDP No.	€	D	CR	d(h6)	I	I1	d1	L	EDP No.	€
1	0.10	4	2	4	0.95	50	UH2110100104	75,50	2	0.30	4	3	16	1.95	50	UH2110200316	78,65
1	0.10	4	2	6	0.95	50	UH2110100106	75,50	2	0.50	4	3	6	1.95	50	UH2110200506	75,50
1	0.10	4	2	8	0.90	50	UH2110100108	76,46	2	0.50	4	3	12	1.95	50	UH2110200512	75,50
1	0.20	4	2	4	0.95	50	UH2110100204	75,50	3	0.30	6	4.5	10	2.80	55	UH2110300310	76,67
1	0.20	4	2	8	0.95	50	UH2110100208	78,65	3	0.30	6	4.5	16	2.85	55	UH2110300316	78,87
1	0.30	4	2	4	0.90	50	UH2110100304	73,40	3	0.50	6	4.5	10	2.85	55	UH2110300510	78,87
1	0.30	4	2	8	0.95	50	UH2110100308	78,65	3	0.50	6	4.5	16	2.85	55	UH2110300516	78,87
1.5	0.10	4	2.5	6	1.45	50	UH2110150106	75,50	4	0.20	6	6	20	3.85	60	UH2110400220	78,87
1.5	0.10	4	2.5	10	1.45	50	UH2110150110	78,65	4	0.30	6	6	12	3.85	55	UH2110400312	78,87
1.5	0.20	4	2.5	8	1.45	50	UH2110150208	75,50	4	0.30	6	6	20	3.85	60	UH2110400320	78,87
1.5	0.20	4	2.5	12	1.45	50	UH2110150212	78,65	4	0.50	6	6	12	3.85	55	UH2110400512	78,87
2	0.10	4	3	6	1.95	50	UH2110200106	75,50	4	0.50	6	6	20	3.85	60	UH2110400520	78,87
2	0.10	4	3	12	1.95	50	UH2110200112	75,50	4	1.00	6	6	16	3.85	55	UH2110401016	78,87
2	0.20	4	3	6	1.95	50	UH2110200206	75,50	6	0.50	6	9	15	5.85	60	UH2110600520	78,87
2	0.20	4	3	12	1.95	50	UH2110200212	75,50	6	1.00	6	9	15	5.85	60	UH2110601020	78,87
2	0.30	4	3	8	1.95	50	UH2110200308	75,50	6	2.00	6	9	15	5.85	60	UH2110602020	78,87
2	0.30	4	3	12	1.95	50	UH2110200312	75,50									



UH212 - catalogue page 579



UH212



UH212

P	M	K	N	S	H	☆	P	M	K	N	S	H	☆				
D	CR	d(h6)	l	l1	d1	L	EDP No.	€	D	CR	d(h6)	l	l1	d1	L	EDP No.	€
0.2	0.02	4	0.3	0.5	0.16	50	UH21200202005	89,28	1.6	0.15	4	2.4	8	1.55	50	UH21201601508	59,54
0.2	0.02	4	0.3	1	0.16	50	UH2120020201	89,28	1.6	0.15	4	2.4	10	1.55	50	UH21201601510	59,54
0.2	0.02	4	0.3	1.5	0.16	50	UH21200202015	89,28	1.6	0.15	4	2.4	12	1.55	50	UH21201601512	59,54
0.3	0.03	4	0.4	1	0.26	50	UH21200300301	82,44	1.6	0.15	4	2.4	14	1.55	50	UH21201601514	59,54
0.3	0.03	4	0.4	2	0.26	50	UH21200300302	82,44	1.6	0.15	4	2.4	16	1.55	50	UH21201601516	59,54
0.3	0.03	4	0.4	3	0.26	50	UH21200300303	82,44	1.6	0.15	4	2.4	18	1.55	60	UH21201601518	59,54
0.4	0.03	4	0.6	2	0.37	50	UH21200400302	82,44	1.6	0.15	4	2.4	20	1.55	60	UH21201601520	59,54
0.4	0.03	4	0.6	3	0.37	50	UH21200400303	82,44	1.8	0.20	4	2.7	6	1.75	50	UH2120180206	59,54
0.4	0.03	4	0.6	4	0.37	50	UH21200400304	82,44	1.8	0.20	4	2.7	8	1.75	50	UH2120180208	59,54
0.4	0.03	4	0.6	5	0.37	50	UH21200400305	82,44	1.8	0.20	4	2.7	10	1.75	50	UH2120180210	59,54
0.5	0.05	4	0.7	2	0.45	50	UH21200500502	74,42	1.8	0.20	4	2.7	12	1.75	50	UH2120180212	59,54
0.5	0.05	4	0.7	4	0.45	50	UH21200500504	74,42	1.8	0.20	4	2.7	14	1.75	50	UH2120180214	59,54
0.5	0.05	4	0.7	6	0.45	50	UH21200500506	74,42	1.8	0.20	4	2.7	16	1.75	50	UH2120180216	59,54
0.5	0.05	4	0.7	8	0.45	50	UH21200500508	74,42	1.8	0.20	4	2.7	18	1.75	60	UH2120180218	59,54
0.6	0.05	4	0.9	2	0.55	50	UH21200600502	74,42	1.8	0.20	4	2.7	20	1.75	60	UH2120180220	59,54
0.6	0.05	4	0.9	4	0.55	50	UH21200600504	74,42	2	0.20	4	3	6	1.95	50	UH2120200206	59,54
0.6	0.05	4	0.9	6	0.55	50	UH21200600506	74,42	2	0.20	4	3	8	1.95	50	UH2120200208	59,54
0.6	0.05	4	0.9	8	0.55	50	UH21200600508	74,42	2	0.20	4	3	10	1.95	50	UH2120200210	59,54
0.6	0.05	4	0.9	10	0.55	50	UH21200600510	74,42	2	0.20	4	3	12	1.95	50	UH2120200212	59,54
0.7	0.08	4	1.0	2	0.65	50	UH21200700802	74,42	2	0.20	4	3	14	1.95	50	UH2120200214	59,54
0.7	0.08	4	1.0	4	0.65	50	UH21200700804	74,42	2	0.20	4	3	16	1.95	50	UH2120200216	59,54
0.7	0.08	4	1.0	6	0.65	50	UH21200700806	74,42	2	0.20	4	3	18	1.95	60	UH2120200218	59,54
0.7	0.08	4	1.0	8	0.65	50	UH21200700808	74,42	2	0.20	4	3	20	1.95	60	UH2120200220	59,54
0.7	0.08	4	1.0	10	0.65	50	UH21200700810	74,42	2	0.20	4	3	25	1.95	75	UH2120200225	66,95
0.8	0.08	4	1.2	4	0.75	50	UH21200800804	74,42	2	0.20	4	3	30	1.95	75	UH2120200230	66,95
0.8	0.08	4	1.2	6	0.75	50	UH21200800806	74,42	2.5	0.30	4	3.7	8	2.40	50	UH2120250308	59,54
0.8	0.08	4	1.2	8	0.75	50	UH21200800808	74,42	2.5	0.30	4	3.7	10	2.40	50	UH2120250310	59,54
0.8	0.08	4	1.2	10	0.75	50	UH21200800810	74,42	2.5	0.30	4	3.7	12	2.40	50	UH2120250312	59,54
0.8	0.08	4	1.2	12	0.75	50	UH21200800812	74,42	2.5	0.30	4	3.7	14	2.40	50	UH2120250314	59,57
0.9	0.08	4	1.4	6	0.85	50	UH21200900806	74,42	2.5	0.30	4	3.7	16	2.40	50	UH2120250316	59,54
0.9	0.08	4	1.4	8	0.85	50	UH21200900808	74,42	2.5	0.30	4	3.7	18	2.40	60	UH2120250318	59,54
0.9	0.08	4	1.4	10	0.85	50	UH21200900810	74,42	2.5	0.30	4	3.7	20	2.40	60	UH2120250320	59,54
0.9	0.08	4	1.4	15	0.85	50	UH21200900815	74,42	2.5	0.30	4	3.7	25	2.40	60	UH2120250325	66,95
1	0.10	4	1.5	6	0.95	50	UH2120100106	59,54	2.5	0.30	4	3.7	30	2.40	75	UH2120250330	66,95
1	0.10	4	1.5	8	0.95	50	UH2120100108	59,54	3	0.30	6	4.5	8	2.85	50	UH2120300308	66,95
1.0	0.10	4	1.5	10	0.95	50	UH2120100110	59,54	3	0.30	6	4.5	10	2.85	50	UH2120300310	66,95
1.0	0.10	4	1.5	12	0.95	50	UH2120100112	59,54	3	0.30	6	4.5	12	2.85	50	UH2120300312	66,95
1.0	0.10	4	1.5	14	0.95	50	UH2120100114	59,54	3	0.30	6	4.5	14	2.85	50	UH2120300314	66,95
1.0	0.10	4	1.5	16	0.95	50	UH2120100116	59,54	3	0.30	6	4.5	16	2.85	60	UH2120300316	66,95
1.2	0.10	4	1.8	6	1.15	50	UH2120120106	59,54	3	0.30	6	4.5	18	2.85	60	UH2120300318	66,95
1.2	0.10	4	1.8	8	1.15	50	UH2120120108	59,54	3	0.30	6	4.5	20	2.85	60	UH2120300320	66,95
1.2	0.10	4	1.8	10	1.15	50	UH2120120110	59,54	3	0.30	6	4.5	25	2.85	75	UH2120300325	74,42
1.2	0.10	4	1.8	12	1.15	50	UH2120120112	59,54	4	0.40	6	4.5	10	3.85	60	UH2120400410	66,95
1.4	0.15	4	2.1	6	1.35	50	UH21201401506	59,54	4	0.40	6	4.5	15	3.85	60	UH2120400415	66,95
1.4	0.15	4	2.1	8	1.35	50	UH21201401508	59,54	4	0.40	6	4.5	20	3.85	60	UH2120400420	66,95
1.4	0.15	4	2.1	10	1.35	50	UH21201401510	59,54	4	0.40	6	4.5	25	3.85	75	UH2120400425	74,42
1.4	0.15	4	2.1	12	1.35	50	UH21201401512	59,54	4	0.40	6	4.5	30	3.85	75	UH2120400430	74,42
1.4	0.15	4	2.1	14	1.35	50	UH21201401514	59,54	4	0.40	6	4.5	40	3.85	75	UH2120400440	74,42
1.4	0.15	4	2.1	16	1.35	50	UH21201401516	59,54									
1.5	0.15	4	2.3	6	1.45	50	UH21201501506	59,54									
1.5	0.15	4	2.3	8	1.45	50	UH21201501508	59,54									
1.5	0.15	4	2.3	10	1.45	50	UH21201501510	59,54									
1.5	0.15	4	2.3	12	1.45	50	UH21201501512	59,54									
1.5	0.15	4	2.3	14	1.45	50	UH21201501514	59,54									
1.5	0.15	4	2.3	16	1.45	50	UH21201501516	59,54									
1.5	0.15	4	2.3	18	1.45	60	UH21201501518	59,54									
1.5	0.15	4	2.3	20	1.45	60	UH21201501520	59,54									
1.6	0.15	4	2.4	6	1.55	50	UH21201601506	59,54									



PARAMETERS

★ 1st choice ☆ suitable

UHF4LN - catalogue page 586



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

UHF4LN										UHF4LN											
P										☆	P										☆
M											M										
K										☆	K										☆
N											N										
S											S										
H										★	H										★
D	CR	d(h6)	l	l1	d1	L	EDP No.	€	D	CR	d(h6)	l	l1	d1	L	EDP No.	€				
1	0.10	4	1	4	0.90	50	UHF4LN0100104	51,66	2.5	0.30	4	2.5	12	2.40	50	UHF4LN0250312	55,39				
1	0.10	4	1	6	0.90	50	UHF4LN0100106	51,66	2.5	0.30	4	2.5	14	2.40	50	UHF4LN0250314	55,39				
1	0.10	4	1	8	0.90	50	UHF4LN0100108	51,66	2.5	0.30	4	2.5	16	2.40	50	UHF4LN0250316	55,39				
1	0.10	4	1	10	0.90	50	UHF4LN0100110	51,66	2.5	0.30	4	2.5	18	2.40	60	UHF4LN0250318	55,45				
1	0.10	4	1	12	0.90	50	UHF4LN0100112	53,47	2.5	0.30	4	2.5	20	2.40	60	UHF4LN0250320	55,45				
1	0.10	4	1	14	0.90	50	UHF4LN0100114	53,47	2.5	0.30	4	2.5	25	2.40	60	UHF4LN0250325	55,54				
1	0.10	4	1	16	0.90	50	UHF4LN0100116	53,47	2.5	0.30	4	2.5	30	2.40	75	UHF4LN0250330	59,19				
1	0.10	4	1	20	0.90	75	UHF4LN0100120	62,72	2.5	0.50	4	2.5	8	2.40	50	UHF4LN0250508	58,09				
1	0.20	4	1	4	0.90	50	UHF4LN0100204	53,51	2.5	0.50	4	2.5	12	2.40	50	UHF4LN0250512	58,64				
1	0.20	4	1	6	0.90	50	UHF4LN0100206	53,51	2.5	0.50	4	2.5	16	2.40	50	UHF4LN0250516	58,64				
1	0.20	4	1	8	0.90	50	UHF4LN0100208	53,51	2.5	0.50	4	2.5	20	2.40	60	UHF4LN0250520	62,38				
1	0.20	4	1	10	0.90	50	UHF4LN0100210	53,51	2.5	0.50	4	2.5	25	2.40	60	UHF4LN0250525	66,78				
1	0.20	4	1	12	0.90	50	UHF4LN0100212	54,58	2.5	0.50	4	2.5	30	2.40	75	UHF4LN0250530	67,83				
1	0.20	4	1	14	0.90	50	UHF4LN0100214	54,58	3	0.20	6	3	8	2.80	50	UHF4LN0300208	66,70				
1	0.20	4	1	16	0.90	50	UHF4LN0100216	54,58	3	0.20	6	3	10	2.80	50	UHF4LN0300210	67,37				
1	0.20	4	1	20	0.90	60	UHF4LN0100220	57,85	3	0.20	6	3	12	2.80	50	UHF4LN0300212	67,99				
1	0.30	4	1	6	0.90	50	UHF4LN0100306	53,51	3	0.20	6	3	14	2.80	50	UHF4LN0300214	67,31				
1	0.30	4	1	10	0.90	50	UHF4LN0100310	53,51	3	0.20	6	3	16	2.80	60	UHF4LN0300216	67,62				
1	0.30	4	1	16	0.90	50	UHF4LN0100316	54,58	3	0.20	6	3	18	2.80	60	UHF4LN0300218	68,33				
1	0.30	4	1	20	0.90	60	UHF4LN0100320	57,85	3	0.20	6	3	20	2.80	60	UHF4LN0300220	67,62				
1.5	0.10	4	1.5	6	1.40	50	UHF4LN0150106	51,64	3	0.20	6	3	25	2.80	75	UHF4LN0300225	68,06				
1.5	0.10	4	1.5	8	1.40	50	UHF4LN0150108	51,64	3	0.30	6	3	8	2.80	50	UHF4LN0300308	67,32				
1.5	0.10	4	1.5	12	1.40	50	UHF4LN0150112	52,40	3	0.30	6	3	10	2.80	50	UHF4LN0300310	63,96				
1.5	0.10	4	1.5	16	1.40	50	UHF4LN0150116	52,40	3	0.30	6	3	12	2.80	50	UHF4LN0300312	67,32				
1.5	0.10	4	1.5	20	1.40	60	UHF4LN0150120	55,68	3	0.30	6	3	14	2.80	50	UHF4LN0300314	67,31				
1.5	0.20	4	1.5	6	1.40	50	UHF4LN0150206	53,20	3	0.30	6	3	16	2.80	60	UHF4LN0300316	71,18				
1.5	0.20	4	1.5	8	1.40	50	UHF4LN0150208	53,20	3	0.30	6	3	18	2.80	60	UHF4LN0300318	71,18				
1.5	0.20	4	1.5	10	1.40	50	UHF4LN0150210	53,20	3	0.30	6	3	20	2.80	60	UHF4LN0300320	71,89				
1.5	0.20	4	1.5	12	1.40	50	UHF4LN0150212	53,89	3	0.30	6	3	30	2.80	75	UHF4LN0300330	71,00				
1.5	0.20	4	1.5	14	1.40	50	UHF4LN0150214	53,89	3	0.50	6	3	8	2.80	50	UHF4LN0300508	70,92				
1.5	0.20	4	1.5	16	1.40	50	UHF4LN0150216	53,89	3	0.50	6	3	10	2.80	50	UHF4LN0300510	68,19				
1.5	0.20	4	1.5	18	1.40	60	UHF4LN0150218	57,17	3	0.50	6	3	12	2.80	50	UHF4LN0300512	70,96				
1.5	0.20	4	1.5	20	1.40	60	UHF4LN0150220	57,17	3	0.50	6	3	14	2.80	50	UHF4LN0300514	70,92				
1.5	0.30	4	1.5	8	1.40	50	UHF4LN0150308	53,20	3	0.50	6	3	16	2.80	60	UHF4LN0300516	72,06				
1.5	0.30	4	1.5	16	1.40	50	UHF4LN0150316	53,89	3	0.50	6	3	18	2.80	60	UHF4LN0300518	80,70				
1.5	0.30	4	1.5	20	1.40	60	UHF4LN0150320	57,17	3	0.50	6	3	20	2.80	60	UHF4LN0300520	80,70				
2	0.20	4	2	6	1.90	50	UHF4LN0200206	54,87	3	0.50	6	3	30	2.80	75	UHF4LN0300530	81,56				
2	0.20	4	2	8	1.90	50	UHF4LN0200208	54,87	4	0.30	6	4	10	3.70	60	UHF4LN0400310	71,04				
2	0.20	4	2	10	1.90	50	UHF4LN0200210	54,87	4	0.30	6	4	15	3.70	60	UHF4LN0400315	73,88				
2	0.20	4	2	12	1.90	50	UHF4LN0200212	55,39	4	0.30	6	4	20	3.70	60	UHF4LN0400320	71,04				
2	0.20	4	2	14	1.90	50	UHF4LN0200214	55,39	4	0.30	6	4	25	3.70	75	UHF4LN0400325	73,42				
2	0.20	4	2	16	1.90	50	UHF4LN0200216	55,39	4	0.30	6	4	32	3.70	75	UHF4LN0400332	71,00				
2	0.20	4	2	18	1.90	60	UHF4LN0200218	58,67	4	0.30	6	4	40	3.70	75	UHF4LN0400340	73,42				
2	0.20	4	2	20	1.90	60	UHF4LN0200220	58,67	4	0.50	6	4	10	3.70	60	UHF4LN0400510	80,61				
2	0.20	4	2	25	1.90	75	UHF4LN0200225	62,59	4	0.50	6	4	15	3.70	60	UHF4LN0400515	82,07				
2	0.20	4	2	30	1.90	75	UHF4LN0200230	62,59	4	0.50	6	4	20	3.70	60	UHF4LN0400520	80,61				
2	0.30	4	2	8	1.90	50	UHF4LN0200308	54,87	4	0.50	6	4	25	3.70	75	UHF4LN0400525	82,17				
2	0.30	4	2	16	1.90	50	UHF4LN0200316	55,39	4	0.50	6	4	32	3.70	75	UHF4LN0400532	80,53				
2	0.30	4	2	20	1.90	60	UHF4LN0200320	58,67	4	0.50	6	4	40	3.70	75	UHF4LN0400540	82,17				
2	0.50	4	2	6	1.90	50	UHF4LN0200506	58,29													
2	0.50	4	2	8	1.90	50	UHF4LN0200508	58,29													
2	0.50	4	2	12	1.90	50	UHF4LN0200512	58,64													
2	0.50	4	2	16	1.90	50	UHF4LN0200516	61,90													
2	0.50	4	2	20	1.90	60	UHF4LN0200520	65,57													
2	0.50	4	2	25	1.90	75	UHF4LN0200525	66,50													
2	0.50	4	2	30	1.90	75	UHF4LN0200530	66,50													
2.5	0.30	4	2.5	8	2.40	50	UHF4LN0250308	54,87													
2.5	0.30	4	2.5	10	2.40	50	UHF4LN0250310	54,87													



**UHCS2 - catalogue page 584**

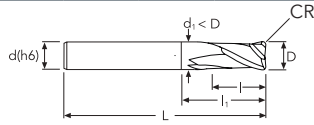


OSAWA NORM
UH
NMG UH RED
<70 HRC
40°
RADIUS
Z2

**UHCS4 - catalogue page 594**



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

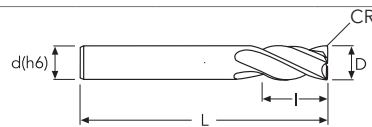
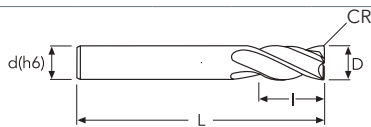


							UHCS2	UHCS4		
P								☆	☆	
M										
K								☆	☆	
N										
S										
H								★	★	
D	CR	d(h6)	l	l1	d1	L	EDP No.	€	EDP No.	€
1	0.10	4	2	3	0.95	50	UHCS2010	65,00	UHCS4010	65,00
1.5	0.10	4	2.5	4	1.45	50	UHCS2015	65,00	UHCS4015	65,00
2	0.10	4	3	6	1.95	50	UHCS2020	65,00	UHCS4020	65,00
3	0.10	6	4.5	8	2.85	55	UHCS2030	71,14	UHCS4030	71,14
4	0.10	6	6	10	3.85	55	UHCS2040	71,14	UHCS4040	71,14
5	0.20	6	6	11	4.85	50	UHCS2050	71,14	UHCS4050	71,14
6	0.20	6	9	15	5.85	60	UHCS2060	71,14	UHCS4060	71,14
8	0.20	8	12	20	7.70	70	UHCS2080	90,08	UHCS4080	90,08
10	0.20	10	15	25	9.70	70	UHCS2100	134,89	UHCS4100	134,89
12	0.30	12	18	30	11.70	80	UHCS2120	186,18	UHCS4120	186,18

**UH410 - catalogue page 596**



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



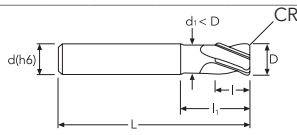
						UH410							UH410		
P							☆	P							☆
M								M							
K							☆	K							☆
N								N							
S								S							
H							★	H							★
D	CR	d(h6)	l	L	EDP No.	€	D	CR	d(h6)	l	L	EDP No.	€		
1	0.20	6	3	50	UH41001002	62,00	10	2.00	10	22	70	UH41010020	114,71		
1.5	0.20	6	4.5	50	UH41001502	62,00	12	0.30	12	25	75	UH41012003	151,62		
2	0.30	6	6.5	50	UH41002003	62,00	12	0.50	12	25	75	UH41012005	151,62		
2.5	0.30	6	6.5	50	UH41002503	62,00	12	1.00	12	25	75	UH41012010	151,62		
2.5	0.50	6	6.5	50	UH41002505	62,00	12	1.50	12	25	75	UH41012015	151,62		
3	0.20	6	9	50	UH41003002	60,25	12	2.00	12	25	75	UH41012020	151,62		
3	0.30	6	9	50	UH41003003	60,25	12	3.00	12	25	75	UH41012030	151,62		
3	0.50	6	9	50	UH41003005	60,25	14	0.50	14	32	90	UH41014005	230,32		
4	0.30	6	12	50	UH41004003	61,64	14	1.00	14	32	90	UH41014010	230,32		
4	0.50	6	12	50	UH41004005	61,64	16	0.50	16	32	90	UH41016005	280,64		
4	1.00	6	12	50	UH41004010	63,79	16	1.00	16	32	90	UH41016010	280,64		
5	0.30	6	15	50	UH41005003	61,20	16	2.00	16	32	90	UH41016020	280,64		
5	0.50	6	15	50	UH41005005	61,20	18	1.00	18	38	100	UH41018010	369,12		
5	1.00	6	15	50	UH41005010	63,34	20	0.50	20	38	100	UH41020005	457,11		
6	0.30	6	16	50	UH41006003	63,68	20	1.00	20	38	100	UH41020010	457,11		
6	0.50	6	16	50	UH41006005	63,68	20	2.00	20	38	100	UH41020020	457,11		
6	1.00	6	16	50	UH41006010	63,68									
8	0.30	8	20	64	UH41008003	81,10									
8	0.50	8	20	64	UH41008005	81,10									
8	1.00	8	20	64	UH41008010	81,10									
8	1.50	8	20	64	UH41008015	81,10									
8	2.00	8	20	64	UH41008020	81,10									
10	0.30	10	22	70	UH41010003	119,96									
10	0.50	10	22	70	UH41010005	114,71									
10	1.00	10	22	70	UH41010010	114,71									
10	1.50	10	22	70	UH41010015	114,71									



**UH411 - catalogue page 599**



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



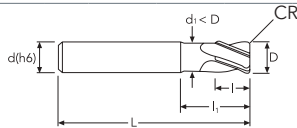
UH411

P							☆
M							
K							☆
N							
S							
H							★
DxCR	d(h6)	l	l1	d1	L	EDP No.	€
3x0.30	6	4	12	2.85	55	UH4110300312	78,87
3x0.30	6	4	20	2.85	60	UH4110300320	78,87
3x0.50	6	4	10	2.85	55	UH4110300510	78,87
3x0.50	6	4	20	2.85	60	UH4110300520	78,87
4x0.30	6	6	12	3.85	55	UH4110400312	78,87
4x0.30	6	6	20	3.85	60	UH4110400320	78,87
4x0.50	6	6	12	3.85	55	UH4110400512	78,87
4x0.50	6	6	20	3.85	60	UH4110400520	78,87
4x1.00	6	6	12	3.85	55	UH4110401012	78,87
6x0.50	6	9	15	5.85	60	UH4110600520	78,87
6x1.00	6	9	15	5.85	60	UH4110601020	78,87
8x0.50	8	12	20	7.70	70	UH4110800525	96,83
8x1.00	8	12	20	7.70	70	UH4110801025	96,83
8x2.00	8	12	20	7.70	70	UH4110802025	96,83
10x0.50	10	15	25	9.70	70	UH4111000532	145,00
10x1.00	10	15	25	9.70	70	UH4111001032	145,00
10x2.00	10	15	25	9.70	70	UH4111002032	145,00
12x0.50	12	18	30	11.70	80	UH4111200538	200,13
12x1.00	12	18	30	11.70	80	UH4111201038	200,13
12x2.00	12	18	30	11.70	80	UH4111202038	200,13

**UH412 - catalogue page 601**



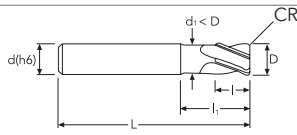
OSAWA NORM
UH
NMG UH RED
<70 HRC
40°
RADIUS
Z4



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	81,83
2x0.30	6	4	60	1.90	100	UH4120200360	96,72
3x0.30	6	5	30	2.80	75	UH4120300330	81,83
3x0.30	6	5	60	2.80	100	UH4120300360	96,72
3x0.50	6	5	30	2.80	75	UH4120300530	81,83
3x0.50	6	5	60	2.80	100	UH4120300560	96,72
4x0.30	6	8	32	3.70	75	UH4120400332	81,83
4x0.30	6	8	60	3.70	100	UH4120400360	96,72
4x0.50	6	8	32	3.70	75	UH4120400532	81,83
4x0.50	6	8	60	3.70	100	UH4120400560	96,72
6x0.50	6	9	20	5.85	90	UH4120600520	91,46
6x1.00	6	9	20	5.85	90	UH4120601020	91,46
8x0.50	8	12	25	7.70	100	UH4120800525	118,85
8x1.00	8	12	25	7.70	100	UH4120801025	118,85
10x0.50	10	15	32	9.70	100	UH4121000532	164,91
10x1.00	10	15	32	9.70	100	UH4121001032	164,91
10x2.00	10	15	32	9.70	100	UH4121002032	164,91
12x0.50	12	18	38	11.70	110	UH4121200538	253,01
12x1.00	12	18	38	11.70	110	UH4121201038	253,01
12x2.00	12	18	38	11.70	110	UH4121202038	253,01

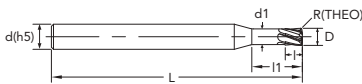
UH413 - catalogue page 603



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	96,37
6x0.50	6	10	60	5.50	125	UH4130600560	96,37
6x1.00	6	10	60	5.50	125	UH4130601060	96,37
8x0.30	8	12	60	7.40	125	UH4130800360	125,28
8x0.50	8	12	60	7.40	125	UH4130800560	125,28
8x1.00	8	12	60	7.40	125	UH4130801060	125,28
8x2.00	8	12	60	7.40	125	UH4130802060	125,28
10x0.30	10	14	85	9.20	125	UH4131000385	168,66
10x0.50	10	14	85	9.20	125	UH4131000585	168,66
10x1.00	10	14	85	9.20	125	UH4131001085	168,66
10x2.00	10	14	85	9.20	125	UH4131002085	168,66
12x0.50	12	16	110	11.00	150	UH41312005110	269,85
12x1.00	12	16	110	11.00	150	UH41312010110	269,85
12x2.00	12	16	110	11.00	150	UH41312020110	269,85
16x0.50	16	22	110	15.00	150	UH41316005110	447,81
16x1.00	16	22	110	15.00	150	UH41316010110	447,81

UHF-RT - catalogue page 590



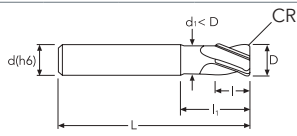
UHF470RT

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	103,90	
3	0.19	6	3	9	2.9	60	4	UHF470RT030	103,90	
4	0.25	6	4	12	3.9	60	6	UHF670RT040		116,34
5	0.31	6	5	15	4.7	60	6	UHF670RT050		116,34
6	0.38	6	5	18	5.5	60	6	UHF670RT060		116,34
8	0.50	8	7	24	7.5	75	6	UHF670RT080		134,93
10	0.63	10	8	30	9.5	90	6	UHF670RT100		181,64
12	0.75	12	10	36	11.5	100	6	UHF670RT120		216,78



**UHF4 - catalogue page 592**



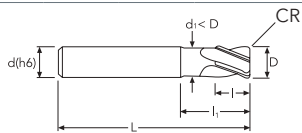
**UHF4**

P									☆
M									
K									☆
N									
S									
H									★
D	CR	d(h6)	l	l1	d1	L	z	EDP No.	€
2	0.50	6	1	6	1.95	70	4	UHF405020	94,53
3	0.50	6	1.2	8	2.85	70	4	UHF405030	94,53
4	0.50	6	1.5	10	3.85	70	4	UHF405040	94,53
5	0.50	6	2	10	4.85	70	4	UHF405050	94,53
6	0.50	6	2.5	12	5.85	90	4	UHF405060	103,44
6	1.00	6	2.5	12	5.85	90	4	UHF410060	103,44
8	1.00	8	3.5	16	7.7	100	4	UHF410080	132,08
8	2.00	8	3.5	16	7.7	100	4	UHF420080	132,08
10	1.00	10	4	20	9.7	100	4	UHF410100	186,19
10	2.00	10	4	20	9.7	100	4	UHF420100	186,19
12	2.00	12	5	25	11.7	110	4	UHF420120	261,30
12	3.00	12	5	25	11.7	110	4	UHF430120	261,30

**UH610R - catalogue page 605**



**UH611R - catalogue page 607**





**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	90,26	15	90	UH611R05060	96,55		
8	0.50	8	8	25	7.80	60	UH610R05080	107,77	20	100	UH611R05080	121,13		
10	0.50	10							25	100	UH611R05100	182,72		
10	1.00	10	10	30	9.80	70	UH610R10100	168,32	25	100	UH611R10100	182,72		
12	0.50	12							30	110	UH611R05120	249,30		
12	1.00	12	12	30	11.80	75	UH610R10120	201,16	30	110	UH611R10120	249,30		
16	1.00	16							32	130	UH611R10160	409,86		
20	1.00	20							38	140	UH611R10200	599,98		
20	2.00	20							38	140	UH611R20200	601,40		

**MHMB204 - catalogue page 546/609**

**MHMB206 - catalogue page 548/611**

OSAWA  
NORM

**MH**

NMG  
MH COAT

<70  
HRC

30°

BALL NOSE

Z2 BALL

OSAWA  
NORM

**MH**

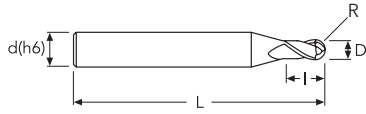
NMG  
MH COAT

<70  
HRC

30°


BALL NOSE

Z2 BALL



											MHMB204						MHMB206
P											★						★
M																	
K											★						★
N																	
S																	
H											★						★
D	R	d(h6)	I	L	EDP No.	€	d(h6)	I	L	EDP No.	€						
0.2	0.10	4	0.2	50	MHMB200204	<b>87,90</b>											
0.3	0.15	4	0.3	50	MHMB200304	<b>78,82</b>											
0.4	0.20	4	0.4	50	MHMB200404	<b>72,77</b>	6	0.4	50	MHMB200406	<b>94,53</b>						
0.5	0.25	4	0.4	50	MHMB200504	<b>66,71</b>	6	0.5	50	MHMB200506	<b>87,39</b>						
0.6	0.30	4	0.5	50	MHMB200604	<b>65,17</b>	6	0.6	50	MHMB200606	<b>85,39</b>						
0.7	0.35	4	0.6	50	MHMB200704	<b>68,70</b>											
0.8	0.40	4	0.6	50	MHMB200804	<b>60,60</b>	6	0.8	50	MHMB200806	<b>79,97</b>						
0.9	0.45	4	0.8	50	MHMB200904	<b>68,70</b>											
1	0.50	4	0.8	50	MHMB201004	<b>53,29</b>											
1.5	0.75	4	1.35	50	MHMB201504	<b>57,12</b>											
2	1.00	4	1.7	50	MHMB202004	<b>61,40</b>											

**UHCSB2 - catalogue page 620**



OSAWA  
NORM

**UH**

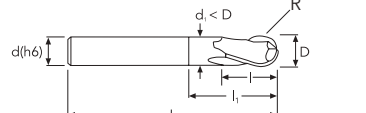
NMG  
UH RED

<70  
HRC

30°

BALL NOSE

Z2 BALL



											UHCSB2
P											☆
M											
K											☆
N											
S											
H											★
D	R	d(h6)	I	L	EDP No.	€					
1	0.50	6	1.5	40	UHCSB2010	<b>79,47</b>					
1.5	0.75	6	2.5	40	UHCSB2015	<b>79,47</b>					
2	1.00	6	3	40	UHCSB2020	<b>72,03</b>					
2.5	1.25	6	3	50	UHCSB2025	<b>79,18</b>					
3	1.50	6	4.5	50	UHCSB2030	<b>81,48</b>					
4	2.00	6	6	50	UHCSB2040	<b>81,48</b>					
5	2.50	6	7.5	50	UHCSB2050	<b>87,67</b>					
6	3.00	6	9	50	UHCSB2060	<b>87,67</b>					
8	4.00	8	12	50	UHCSB2080	<b>126,51</b>					
10	5.00	10	15	60	UHCSB2100	<b>190,28</b>					
12	6.00	12	18	60	UHCSB2120	<b>228,96</b>					
14	7.00	14	32	90	UHCSB2140	<b>308,54</b>					
16	8.00	16	32	90	UHCSB2160	<b>352,62</b>					
18	9.00	18	38	100	UHCSB2180	<b>503,74</b>					
20	10.00	20	38	100	UHCSB2200	<b>623,37</b>					

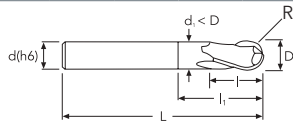




UH250 - catalogue page 622



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



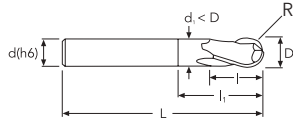
UH250

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	98,28
1.5	0.75	4	1.5	3	1.45	50	UH250015	98,28
2	1.00	6	2	4	1.95	50	UH250020	93,33
2.5	1.25	6	4	10	2.40	50	UH250025	86,94
3	1.50	6	3	6	2.85	60	UH250030	93,33
4	2.00	6	4	8	3.85	70	UH250040	97,58
5	2.50	6	5	10	4.85	80	UH250050	99,22
6	3.00	6	6	12	5.85	90	UH250060	102,46
8	4.00	8	8	16	7.70	100	UH250080	130,37
10	5.00	10	10	20	9.70	100	UH250100	193,42
12	6.00	12	12	24	11.70	110	UH250120	250,51
14	7.00	14	32	80	13.00	125	UH250140	368,80
16	8.00	16	32	80	15.00	125	UH250160	421,49
18	9.00	18	38	80	17.00	125	UH250180	597,13
20	10.00	20	38	80	19.00	125	UH250200	708,34

UH253 - catalogue page 624



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



UH253

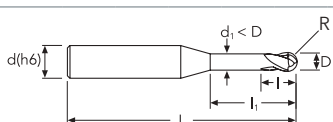
UH253

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	75	UH25301075	80,38	6	3	10	0.90	100	UH253010100	93,78
1.5	0.75	6	3	10	1.40	75	75	UH25301575	80,38	6	3	15	1.40	100	UH253015100	93,78
2	1.00	6	4	14	1.90	75	75	UH25302075	80,38	6	4	20	1.90	100	UH253020100	93,78
2.5	1.25	6	4	18	2.40	75	75	UH25302575	80,38							
3	1.50	6	5	21	2.80	75	75	UH25303075	80,38	6	5	30	2.80	100	UH253030100	93,78
4	2.00	6	8	28	3.70	75	75	UH25304075	80,38	6	8	40	3.70	100	UH253040100	93,78
5	2.50	6	9	50	4.60	100	100	UH253050100	93,78							
6	3.00	6	10	60	5.50	100	100	UH253060100	93,78	6	10	60	5.50	150	UH253060150	117,48
8	4.00	8	12	60	7.40	100	100	UH253080100	130,53	8	12	80	7.40	150	UH253080150	169,62
10	5.00	10	14	85	9.20	125	125	UH253100125	228,39	10	14	100	9.20	150	UH253100150	274,05
12	6.00	12	16	85	11.00	125	125	UH253120125	280,61	12	16	110	11.00	150	UH253120150	313,21
14	7.00	14	32	110	13.00	150	150	UH253140150	435,45	14	32	150	13.00	200	UH253140200	563,19
16	8.00	16	32	110	15.00	150	150	UH253160150	435,45	16	32	150	15.00	200	UH253160200	563,19
20	10.00	20	38	110	19.00	150	150	UH253200150	685,11	20	38	150	19.00	200	UH253200200	882,52

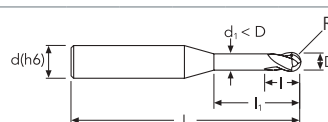




MHLNB2 - catalogue page 550/613



**MHLNB2**



**MHLNB2**

									★										★		
P	M	K	N	S	H						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.	€				
0.2	0.10	4	0.2	0.5	0.17	50	MHLNB2002005	106,38	1.6	0.80	4	1.3	8	1.5	50	MHLNB201608	63,48				
0.2	0.10	4	0.2	1	0.17	50	MHLNB200201	106,38	1.6	0.80	4	1.3	12	1.5	50	MHLNB201612	63,48				
0.2	0.10	4	0.2	1.5	0.17	50	MHLNB2002015	106,38	1.6	0.80	4	1.3	16	1.5	50	MHLNB201616	63,48				
0.3	0.15	4	0.3	1	0.27	50	MHLNB200301	96,09	1.6	0.80	4	1.3	20	1.5	60	MHLNB201620	63,48				
0.3	0.15	4	0.3	2	0.27	50	MHLNB200302	96,09	1.8	0.90	4	1.4	8	1.7	50	MHLNB201808	63,48				
0.3	0.15	4	0.3	3	0.27	50	MHLNB200303	96,09	1.8	0.90	4	1.4	12	1.7	50	MHLNB201812	63,48				
0.4	0.20	4	0.4	1	0.37	50	MHLNB200401	89,22	1.8	0.90	4	1.4	16	1.7	50	MHLNB201816	63,48				
0.4	0.20	4	0.4	2	0.37	50	MHLNB200402	89,22	1.8	0.90	4	1.4	20	1.7	60	MHLNB201820	63,48				
0.4	0.20	4	0.4	3	0.37	50	MHLNB200403	89,22	2	1.00	4	1.6	4	1.9	50	MHLNB202004	61,77				
0.4	0.20	4	0.4	4	0.37	50	MHLNB200404	89,22	2	1.00	4	1.6	6	1.9	50	MHLNB202006	61,77				
0.4	0.20	4	0.4	5	0.37	50	MHLNB200405	89,22	2	1.00	4	1.6	8	1.9	50	MHLNB202008	61,77				
0.5	0.25	4	0.4	2	0.45	50	MHLNB200502	82,36	2	1.00	4	1.6	10	1.9	50	MHLNB202010	61,77				
0.5	0.25	4	0.4	3	0.45	50	MHLNB200503	82,36	2	1.00	4	1.6	12	1.9	50	MHLNB202012	61,77				
0.5	0.25	4	0.4	4	0.45	50	MHLNB200504	82,36	2	1.00	4	1.6	14	1.9	50	MHLNB202014	61,77				
0.5	0.25	4	0.4	5	0.45	50	MHLNB200505	82,36	2	1.00	4	1.6	16	1.9	50	MHLNB202016	61,77				
0.5	0.25	4	0.4	6	0.45	50	MHLNB200506	82,36	2	1.00	4	1.6	18	1.9	60	MHLNB202018	63,48				
0.5	0.25	4	0.4	8	0.45	50	MHLNB200508	82,36	2	1.00	4	1.6	20	1.9	60	MHLNB202020	63,48				
0.6	0.30	4	0.5	2	0.55	50	MHLNB200602	78,93	2	1.00	4	1.6	22	1.9	60	MHLNB202022	63,48				
0.6	0.30	4	0.5	3	0.55	50	MHLNB200603	78,93	2	1.00	4	1.6	25	1.9	75	MHLNB202025	69,48				
0.6	0.30	4	0.5	4	0.55	50	MHLNB200604	78,93	2	1.00	4	1.6	30	1.9	75	MHLNB202030	72,06				
0.6	0.30	4	0.5	5	0.55	50	MHLNB200605	78,93	3	1.50	6	2.4	8	2.8	50	MHLNB203008	82,36				
0.6	0.30	4	0.5	6	0.55	50	MHLNB200606	78,93	3	1.50	6	2.4	10	2.8	50	MHLNB203010	82,36				
0.6	0.30	4	0.5	8	0.55	50	MHLNB200608	78,93	3	1.50	6	2.4	12	2.85	50	MHLNB203012	84,36				
0.8	0.40	4	0.6	2	0.75	50	MHLNB200802	75,50	3	1.50	6	2.4	16	2.8	60	MHLNB203016	87,38				
0.8	0.40	4	0.6	4	0.75	50	MHLNB200804	75,50	3	1.50	6	2.4	20	2.8	60	MHLNB203020	90,79				
0.8	0.40	4	0.6	5	0.75	50	MHLNB200805	75,50	3	1.50	6	2.4	25	2.8	75	MHLNB203025	96,09				
0.8	0.40	4	0.6	6	0.75	50	MHLNB200806	75,50	3	1.50	6	2.4	30	2.8	75	MHLNB203030	96,09				
0.8	0.40	4	0.6	7	0.75	50	MHLNB200807	75,50	3	1.50	6	2.4	35	2.8	75	MHLNB203035	96,09				
0.8	0.40	4	0.6	8	0.75	50	MHLNB200808	75,50	4	2.00	6	3.2	10	3.7	50	MHLNB204010	82,36				
0.8	0.40	4	0.6	10	0.75	50	MHLNB200810	75,50	4	2.00	6	3.2	16	3.7	60	MHLNB204016	82,36				
1.0	0.50	4	0.8	3	0.9	50	MHLNB201003	63,48	4	2.00	6	3.2	20	3.7	60	MHLNB204020	82,36				
1.0	0.50	4	0.8	4	0.9	50	MHLNB201004	63,48	4	2.00	6	3.2	25	3.7	75	MHLNB204025	96,09				
1.0	0.50	4	0.8	5	0.9	50	MHLNB201005	63,48	4	2.00	6	3.2	30	3.7	75	MHLNB204030	96,09				
1.0	0.50	4	0.8	6	0.9	50	MHLNB201006	63,48	4	2.00	6	3.2	35	3.7	75	MHLNB204035	96,09				
1.0	0.50	4	0.8	7	0.9	50	MHLNB201007	63,48	4	2.00	6	3.2	40	3.7	100	MHLNB204040	102,95				
1.0	0.50	4	0.8	8	0.9	50	MHLNB201008	63,48	4	2.00	6	3.2	45	3.7	100	MHLNB204045	102,95				
1.0	0.50	4	0.8	9	0.9	50	MHLNB201009	63,48	4	2.00	6	3.2	50	3.7	100	MHLNB204050	102,95				
1.0	0.50	4	0.8	10	0.9	50	MHLNB201010	63,48													
1.0	0.50	4	0.8	12	0.9	50	MHLNB201012	63,48													
1.0	0.50	4	0.8	14	0.9	50	MHLNB201014	63,48													
1.0	0.50	4	0.8	16	0.9	50	MHLNB201016	63,48													
1.0	0.50	4	0.8	20	0.9	60	MHLNB201020	63,48													
1.2	0.60	4	1.0	6	1.1	50	MHLNB201206	63,48													
1.2	0.60	4	1.0	8	1.1	50	MHLNB201208	63,48													
1.2	0.60	4	1.0	10	1.1	50	MHLNB201210	63,48													
1.2	0.60	4	1.0	12	1.1	50	MHLNB201212	63,48													
1.4	0.70	4	1.1	8	1.3	50	MHLNB201408	63,48													
1.4	0.70	4	1.1	12	1.3	50	MHLNB201412	63,48													
1.4	0.70	4	1.1	16	1.3	50	MHLNB201416	63,48													
1.5	0.75	4	1.2	8	1.4	50	MHLNB201508	63,48													
1.5	0.75	4	1.2	12	1.4	50	MHLNB201512	66,05													
1.5	0.75	4	1.2	16	1.4	50	MHLNB201516	63,48													
1.5	0.75	4	1.2	18	1.4	60	MHLNB201518	63,48													
1.5	0.75	6	2.4	12	1.4	50	MHLNB201520	65,23													





## 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 640



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

TAWS2 - catalogue page 640

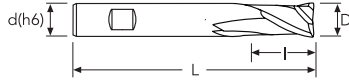


DIN 327	N	HSS/Co PV200	30°	SQUARE	Z2
---------	---	-----------------	-----	--------	----

UMWS2 - catalogue page 640



DIN 327	UM	HSS-P PV200	30°	SQUARE	Z2
---------	----	----------------	-----	--------	----



					WS2		TAWS2		UMWS2
P					★		★		★
M					☆		☆		☆
K					★		★		★
N					☆		☆		
S									
H									
D(e8)	d(h6)	I	L	EDP No.	€	EDP No.	€	EDP No.	€
1	6	2.5	47	WS2010	19,26	TAWS2010	26,68		
1.5	6	3	47	WS2015	18,28	TAWS2015	25,71		
2	6	4	48	WS2020	15,89	TAWS2020	23,50	UMWS2020	31,47
2.5	6	5	49	WS2025	15,89	TAWS2025	23,46		
3	6	5	49	WS2030	15,89	TAWS2030	23,50	UMWS2030	31,47
3.5	6	6	50	WS2035	15,89	TAWS2035	23,50		
4	6	7	51	WS2040	15,89	TAWS2040	23,50	UMWS2040	31,47
4.5	6	7	51	WS2045	15,89	TAWS2045	23,50		
5	6	8	52	WS2050	15,89	TAWS2050	23,50	UMWS2050	31,47
5.5	6	8	52	WS2055	15,89	TAWS2055	23,50		
6	6	8	52	WS2060	15,89	TAWS2060	23,50	UMWS2060	31,47
6.5	10	10	60	WS2065	22,78	TAWS2065	36,48		
7	10	10	60	WS2070	22,78	TAWS2070	36,07		
7.5	10	10	60	WS2075	22,78	TAWS2075	36,48		
8	10	11	61	WS2080	22,78	TAWS2080	36,07	UMWS2080	49,76
8.5	10	11	61	WS2085	22,78	TAWS2085	37,78		
9	10	11	61	WS2090	22,78	TAWS2090	37,28		
9.5	10	11	61	WS2095	22,78	TAWS2095	37,78		
10	10	13	63	WS2100	22,78	TAWS2100	37,28	UMWS2100	51,56
10.5	12	13	70	WS2105	30,23	TAWS2105	46,31		
11	12	13	70	WS2110	30,23	TAWS2110	46,31		
11.5	12	13	70	WS2115	30,23	TAWS2115	46,31		
12	12	16	73	WS2120	30,23	TAWS2120	45,74	UMWS2120	65,29
12.5	12	16	73	WS2125	33,47	TAWS2125	49,38		
13	12	16	73	WS2130	33,47	TAWS2130	49,66		
13.5	12	16	73	WS2135	33,47	TAWS2135	49,66		
14	12	16	73	WS2140	33,47	TAWS2140	49,52	UMWS2140	70,92
15	12	16	73	WS2150	38,89	TAWS2150	55,87		
16	16	19	79	WS2160	40,85	TAWS2160	59,33	UMWS2160	85,85
17	16	19	79	WS2170	50,48	TAWS2170	71,86		
18	16	19	79	WS2180	50,48	TAWS2180	72,55	UMWS2180	107,01
19	16	19	79	WS2190	60,33	TAWS2190	88,32		
20	20	22	88	WS2200	60,33	TAWS2200	95,22	UMWS2200	140,36
22	20	22	88	WS2220	67,29	TAWS2220	105,33		
24	25	26	102	WS2240	96,82				
25	25	26	102	WS2250	96,82	TAWS2250	139,69		
26	25	26	102	WS2260	128,67				
28	25	26	102	WS2280	152,30				
30	25	26	102	WS2300	162,99				

WS3 - catalogue page 647



TAWS3



DIN 844

N

HSS/Co  
BR

HSS/Co  
PV200



WS3

TAWS3

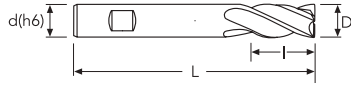
TAWSH3 - catalogue page 651



DIN 844

N

HSS/Co  
PV200



				WS3		TAWS3		TAWSH3	
				★		★		★	
				☆		☆		☆	
				★		★		★	
				☆		☆		☆	
D(e8)	d(h6)	l	L	EDP No.	€	EDP No.	€	EDP No.	€
1	6	3	47	WS3010	21,24				
1.5	6	7	51	WS3015	21,24				
2	6	7	51	WS3020	19,90	TAWS3020	27,33		
2.5	6	8	52	WS3025	19,90	TAWS3025	27,33		
3	6	8	52	WS3030	19,90	TAWS3030	27,33		
3.5	6	10	54	WS3035	19,90	TAWS3035	27,33		
4	6	11	55	WS3040	19,90	TAWS3040	27,33		
4.5	6	11	55	WS3045	19,90	TAWS3045	27,33		
5	6	13	57	WS3050	19,90	TAWS3050	27,33		
5.5	6	13	57	WS3055	19,90	TAWS3055	27,33		
6	6	13	57	WS3060	19,90	TAWS3060	27,33	TAWSH3060	37,23
6.5	10	16	66	WS3065	26,86	TAWS3065	39,97		
7	10	16	66	WS3070	26,86	TAWS3070	39,97		
8	10	19	69	WS3080	26,86	TAWS3080	39,97	TAWSH3080	53,42
8.5	10	19	69	WS3085	26,86	TAWS3085	41,26		
9	10	19	69	WS3090	26,86	TAWS3090	41,26		
10	10	22	72	WS3100	26,86	TAWS3100	41,26	TAWSH3100	54,71
11	12	22	79	WS3110	35,86	TAWS3110	51,60		
12	12	26	83	WS3120	35,86	TAWS3120	51,60	TAWSH3120	69,33
13	12	26	83	WS3130	39,37	TAWS3130	55,60		
14	12	26	83	WS3140	39,37	TAWS3140	57,16	TAWSH3140	76,85
15	12	26	83	WS3150	45,91	TAWS3150	63,78		
16	16	32	92	WS3160	48,09	TAWS3160	67,02	TAWSH3160	91,12
18	16	32	92	WS3180	59,42	TAWS3180	82,24	TAWSH3180	111,95
20	20	38	104	WS3200	71,02	TAWS3200	106,86	TAWSH3200	142,55
22	20	38	104	WS3220	79,11	TAWS3220	117,36		
25	25	45	121	WS3250	113,91	TAWS3250	156,69		
30	25	45	121	WS3300	192,38				
32	32	53	133	WS3320	216,92				



WS4(6) - catalogue page 653



TAWS4(6)



DIN 844

N

HSS/Co  
BR

HSS/Co  
PV200



UMWS4 - catalogue page 653



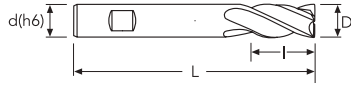
DIN 844

UM

HSS-P  
PV200



WS4(6) TAWS4(6)



					WS4(6)		TAWS4(6)		UMWS4	
P						★		★		★
M						☆		☆		★
K						★		★		★
N						☆		☆		
S										
H										
D(e8)	d(h6)	l	L	Z	EDP No.	€	EDP No.	€	EDP No.	€
2	6	7	51	4	WS4020	19,90	TAWS4020	27,27		
3	6	8	52	4	WS4030	19,90	TAWS4030	27,27	UMWS4030	36,50
4	6	11	55	4	WS4040	19,90	TAWS4040	27,27	UMWS4040	36,50
5	6	13	57	4	WS4050	19,90	TAWS4050	27,27	UMWS4050	36,50
6	6	13	57	4	WS4060	19,90	TAWS4060	27,27	UMWS4060	36,50
7	10	16	66	4	WS4070	26,86	TAWS4070	39,83		
8	10	19	69	4	WS4080	26,86	TAWS4080	39,83	UMWS4080	54,98
9	10	19	69	4	WS4090	26,86	TAWS4090	41,20		
10	10	22	72	4	WS4100	26,86	TAWS4100	41,20	UMWS4100	56,92
11	12	22	79	4	WS4110	37,41	TAWS4110	53,76		
12	12	26	83	4	WS4120	37,41	TAWS4120	53,15	UMWS4120	75,54
13	12	26	83	4	WS4130	41,35	TAWS4130	58,06		
14	12	26	83	4	WS4140	41,35	TAWS4140	58,94	UMWS4140	84,24
15	12	26	83	4	WS4150	48,09	TAWS4150	66,67		
16	16	32	92	4	WS4160	50,48	TAWS4160	69,17	UMWS4160	99,98
17	16	32	92	4			TAWS4170	84,22		
18	16	32	92	4	WS4180	62,44	TAWS4180	84,77	UMWS4180	125,16
19	16	32	92	4			TAWS4190	105,39		
20	20	38	104	4	WS4200	74,53	TAWS4200	109,96	UMWS4200	162,73
22	20	38	104	4	WS4220	83,12	TAWS4220	121,28		
24	25	45	121	6	WS6240	119,47				
25	25	45	121	4	WS4250	119,47	TAWS4250	162,23		
28	25	45	121	6	WS6280	188,79	TAWS6280	242,53		
30	25	45	121	6	WS6300	201,95	TAWS6300	254,85		
32	32	53	133	6			TAWS6320	280,60		
36	32	53	133	6			TAWS6360	363,04		
40	32*	63	143	6			TAWS6400	440,36		

\*TAWS4(6) ø40 = d - 40 mm





TAWSR - catalogue page 657



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

WSFR - catalogue page 659



TAWSFR

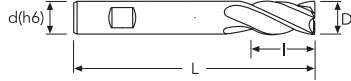


DIN 844	N	HSS/Co BR	HSS/Co PV200	30°	HR FINE	Z3-Z6
---------	---	--------------	-----------------	-----	------------	-------

UMWSFR - catalogue page 659



DIN 844	UM	HSS-P PV200	30°	HR FINE	Z3-Z4
---------	----	----------------	-----	------------	-------



						TAWSR		WSFR		TAWSFR		UMWSFR	
P							★		★		★		★
M							☆		☆		☆		☆
K							★		★		★		★
N							☆		☆		☆		☆
S													
H													
D(e8)	d(h6)	l	L	Z	EDP No.	€	EDP No.	€	EDP No.	€	EDP No.	€	
6	6	13	57	3	TAWSR060	49,10	WSFR060	46,83	TAWSFR060	53,17	UMWSFR060	58,66	
7	10	16	66	3	TAWSR070	57,52			TAWSFR070	61,96	UMWSFR070	79,09	
8	10	19	69	3	TAWSR080	57,52	WSFR080	49,92	TAWSFR080	61,96	UMWSFR080	79,09	
9	10	19	69	3	TAWSR090	58,88			TAWSFR090	63,32	UMWSFR090	81,10	
10	10	22	72	4	TAWSR100	58,88	WSFR100	49,92	TAWSFR100	63,32	UMWSFR100	81,10	
11	12	22	79	4	TAWSR110	66,32			TAWSFR110	71,38			
12	12	26	83	4	TAWSR120	65,58	WSFR120	55,48	TAWSFR120	70,39	UMWSFR120	96,63	
13	12	26	83	4	TAWSR130	80,12			TAWSFR130	86,55			
14	12	26	83	4	TAWSR140	80,70	WSFR140	70,59	TAWSFR140	86,91	UMWSFR140	119,06	
15	12	26	83	4	TAWSR150	86,75			TAWSFR150	93,79			
16	16	32	92	4	TAWSR160	89,67	WSFR160	79,03	TAWSFR160	96,48	UMWSFR160	133,73	
17	16	32	92	4	TAWSR170	97,00			TAWSFR170	98,57			
18	16	32	92	4	TAWSR180	97,35	WSFR180	83,04	TAWSFR180	104,67	UMWSFR180	149,67	
20	20	38	104	4	TAWSR200	121,87	WSFR200	95,70	TAWSFR200	130,24	UMWSFR200	187,64	
22	20	38	104	5					TAWSFR220	160,39			
25	25	45	121	5					TAWSFR250	189,48			
28	25	45	121	6 CH*					TAWSFR280	274,11			
30	25	45	121	6					TAWSFR300	274,11			
32	32	53	133	6					TAWSFR320	294,26			
36	32	53	133	6					TAWSFR360	434,90			
40	32	63	143	6					TAWSFR400	475,89			

\*CH: center hole (no center cut)



**WL4(6) - catalogue page 655**



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

**TAWL4(6) - catalogue page 655**



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

**WLFR - catalogue page 661**

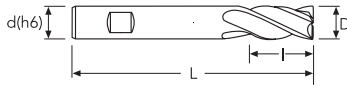


DIN 844	N	HSS/Co BR	30°	HR FINE	Z3-Z6
---------	---	--------------	-----	---------	-------

**TAWLFR - catalogue page 661**



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	25,80	TAWL4030	34,70					
	4	6	19	63	4	WL4040	25,80	TAWL4040	34,70					
	5	6	24	68	4	WL4050	25,80	TAWL4050	34,70					
	6	6	24	68	4	WL4060	25,80	TAWL4060	34,31	3	WLFR060	60,54	TAWLFR060	68,98
	7	10	30	80	4	WL4070	36,28	TAWL4070	52,62					
	8	10	38	88	4	WL4080	36,28	TAWL4080	52,04	3	WLFR080	65,54	TAWLFR080	81,21
	9	10	38	88	4	WL4090	36,28	TAWL4090	52,83					
	10	10	45	95	4	WL4100	36,28	TAWL4100	52,25	4	WLFR100	65,54	TAWLFR100	81,49
	11	12	45	102	4	WL4110	50,63	TAWL4110	71,16					
	12	12	53	110	4	WL4120	50,63	TAWL4120	70,38	4	WLFR120	75,59	TAWLFR120	95,28
	13	12	53	110	4	WL4130	57,80	TAWL4130	79,48					
	14	12	53	110	4	WL4140	57,80	TAWL4140	78,61	4	WLFR140	105,75	TAWLFR140	126,50
	15	12	53	110	4	WL4150	67,29	TAWL4150	96,13					
	16	16	63	123	4	WL4160	70,67	TAWL4160	95,07	4	WLFR160	110,81	TAWLFR160	135,28
	17	16	63	123	4	WL4170	87,50	TAWL4170	119,44					
	18	16	63	123	4	WL4180	87,40	TAWL4180	118,13	4	WLFR180	125,86	TAWLFR180	156,45
	19	16	63	123	4	WL4190	104,27	TAWL4190	154,50					
	20	20	75	141	4	WL4200	104,27	TAWL4200	152,79	4	WLFR200	138,52	TAWLFR200	186,90
	22	20	75	141	6	WL6220	116,30	TAWL6220	165,73	5			TAWLFR220	239,54
	25	25	90	166	6	WL6250	167,35	TAWL6250	244,34	5			TAWLFR250	287,69
	30	25	90	166	6			TAWL6300	334,21	6			TAWLFR300	413,56
	32	32	106	186	6			TAWL6320	390,03	6			TAWLFR320	457,81
	36	32	106	186	6			TAWL6360	497,61	6			TAWLFR360	556,22
	40	32*	125	217	6			TAWL6400	664,05	6			TAWLFR400	699,64

\*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 твердосплавных борфрез Osawa.

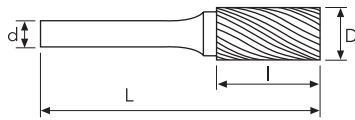
SA - catalogue page 685



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	PACKAGING	SA (M)		SA (MPC)	
						€		€	
1.5	3		6	38	5	SA41M	<b>14,62</b>	SA41MPC	<b>14,62</b>
2.5	3		11	38	5	SA42M	<b>14,62</b>	SA42MPC	<b>14,62</b>
3.0	3		14	38	5	SA43M	<b>14,62</b>	SA43MPC	<b>14,62</b>
3.0		6	12	50	5	SA11M	<b>24,92</b>		
4.0	3		12	38	5	SA52M	<b>39,49</b>	SA52MPC	<b>39,49</b>
4.0		6	13	50	5	SA13M	<b>24,92</b>		
5.0	3		12.7	38	5	SA53M	<b>35,10</b>	SA53MPC	<b>35,10</b>
5.0		6	16	50	5	SA14M	<b>24,92</b>		
6.0		6	18	50	5	SA1M	<b>24,92</b>		
6.3	3		12.7	45	5	SA51M	<b>23,90</b>	SA51MPC	<b>23,90</b>
8.0		6	19	64	5	SA2M	<b>32,57</b>		
9.5		6	19	64	5	SA3M	<b>35,10</b>		
11.0		6	25	70	5	SA4M	<b>50,76</b>		
12.7		6	25	70	5	SA5M	<b>54,75</b>		
16.0		6	25	70	5	SA6M	<b>68,94</b>		
19.0		6	25	70	5	SA7M	<b>102,66</b>		
25.0		6	25	70	5	SA9M	<b>143,58</b>		

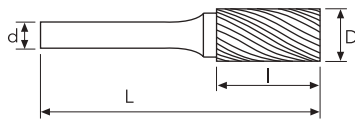
SB - catalogue page 686



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	PACKAGING	SB (M)		SB (MPC)	
						€		€	
1.5	3		6	38	5	SB41M	<b>15,75</b>	SB41MPC	<b>15,75</b>
2.5	3		11	38	5	SB42M	<b>15,75</b>	SB42MPC	<b>15,75</b>
3.0	3		14	38	5	SB43M	<b>15,75</b>	SB43MPC	<b>15,75</b>
3.0		6	12	50	5	SB11M	<b>27,07</b>		
4.0		6	13	50	5	SB13M	<b>27,07</b>		
5.0		6	16	50	5	SB14M	<b>27,07</b>		
6.0		6	18	50	5	SB1M	<b>27,07</b>		
6.3	3		4.7	37	5	SB51M	<b>25,80</b>	SB51MPC	<b>25,80</b>
8.0		6	19	64	5	SB2M	<b>35,89</b>		
9.5		6	19	64	5	SB3M	<b>38,53</b>		
11.0		6	25	70	5	SB4M	<b>56,13</b>		
12.7		6	25	70	5	SB5M	<b>60,25</b>		
16.0		6	25	70	5	SB6M	<b>77,29</b>		

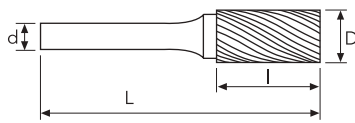
SC - catalogue page 687



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	I	L	PACKAGING	SC (M)		SC (MPC)	
						€		€	
2.5	3		11	38	5	SC41M	14,62	SC41MPC	14,62
3.0	3		14	38	5	SC42M	14,62	SC42MPC	14,62
3.0		6	12	50	5	SC11M	28,90		
4.0		6	14	50	5	SC13M	28,90		
5.0	3		12.7	38	5	SC53M	35,10	SC53MPC	35,10
5.0		6	16	50	5	SC14M	28,90		
6.0		6	18	50	5	SC1M	28,90		
6.3	3		12.7	45	5	SC51M	23,90	SC51MPC	24,67
8.0		6	19	63	5	SC2M	35,54		
9.5		6	19	63	5	SC3M	39,12		
11.0		6	25	70	5	SC4M	55,90		
12.7		6	25	70	5	SC5M	61,38		
16.0		6	25	70	5	SC6M	77,15		

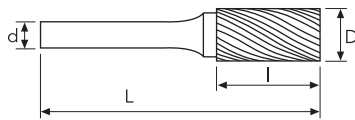
SD - catalogue page 688



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	I	L	PACKAGING	SD (M)		SD (MPC)	
						€		€	
2.5	3		2.3	38	5	SD41M	14,62	SD41MPC	14,62
3.0	3		2.5	38	5	SD42M	14,62	SD42MPC	14,62
3.0		6	2.5	50	5	SD11M	26,64		
5.0	3		4.7	38	5	SD53M	35,10	SD53MPC	35,10
5.0		6	4	50	5	SD14M	26,64		
6.0		6	4.7	50	5	SD1M	26,64		
6.3	3		5	38	5	SD51M	23,90	SD51MPC	23,90
8.0		6	6	52	5	SD2M	28,58		
9.5		6	8	54	5	SD3M	32,12		
11.0		6	9.5	55	5	SD4M	37,04		
12.7		6	11	56	5	SD5M	43,19		
16.0		6	14	60	5	SD6M	53,61		
19.0		6	16.5	62	5	SD7M	73,95		
25.0		6	22	68	5	SD9M	127,11		

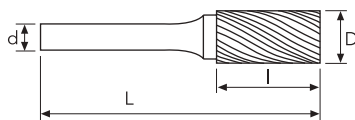
SE - catalogue page 689



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	I	L	PACKAGING	SE (M)		SE (MPC)	
						€		€	
3.0	3		5.5	38	5	SE41M	14,62	SE41MPC	14,62
6.0		6	10	50	5	SE1M	32,57		
5.0	3		7.1	38	5	SE53M	35,10	SE53MPC	35,11
6.3	3		9.5	42	5	SE51M	23,90	SE51MPC	23,90
9.5		6	16	60	5	SE3M	39,12		
12.7		6	22	67	5	SE5M	57,17		
16.0		6	25	70	5	SE6M	79,45		

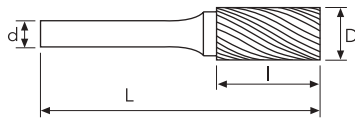
SF - catalogue page 690



OSAWA NORM

M

MPC



D	d (3)	d (6)	l	L	PACKAGING		SF (M)		SF (MPC)
						€		€	
3.0	3		6	38	5	SF41M	14,62	SF41MPC	14,62
3.0	3		14	38	5	SF42M	14,62	SF42MPC	14,62
3.0		6	12	50	5	SF11M	30,29		
5.0	3		12.7	38	5	SF53M	35,10	SF53MPC	35,10
6.0		6	18	50	5	SF1M	30,29		
6.3	3		12.7	45	5	SF51M	23,90	SF51MPC	23,90
9.6		6	19	64	5	SF3M	38,17		
11.0		6	25	70	5	SF4M	53,04		
12.7		6	25	70	5	SF5M	56,45		
16.0		6	25	70	5	SF6M	78,08		

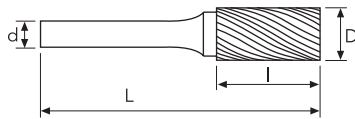
SG - catalogue page 691



OSAWA NORM

M

MPC



D	d (3)	d (6)	l	L	PACKAGING		SG (M)		SG (MPC)
						€		€	
3.0	3		6	38	5	SG41M	14,62	SG41MPC	14,62
3.0	3		10	38	5	SG43M	14,62	SG43MPC	14,62
3.0	3		14	38	5	SG44M	14,62	SG44MPC	14,62
5.0	3		12.7	38	5	SG53M	35,10	SG53MPC	35,10
6.0		6	18	50	5	SG1M	30,29		
6.3	3		12.7	45	5	SG51M	23,90	SG51MPC	23,90
8.0		6	19	64	5	SG2M	36,81		
9.5		6	19	64	5	SG3M	40,70		
12.7		6	25	70	5	SG5M	55,45		
16.0		6	25	70	5	SG6M	77,06		
19.0		6	25	70	5	SG7M	102,66		

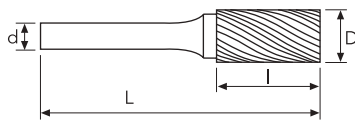
SH - catalogue page 692



OSAWA NORM

M

MPC



D	d (3)	d (6)	l	L	PACKAGING		SH (M)		SH (MPC)
						€		€	
3.0	3		6	38	5	SH41M	14,62	SH41MPC	14,62
5.0	3		9.5	38	5	SH53M	35,10	SH53MPC	35,10
8.0		6	19	64	5	SH2M	40,11		
12.7		6	32	77	5	SH5M	81,72		

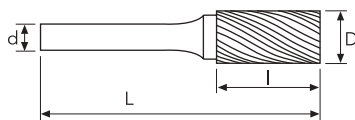
SJ - catalogue page 693



OSAWA NORM

M

MPC



D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SJ (M)		SJ (MPC)
						€		€		
3.0	3		2.5	38	60°	5	SJ42M	14,62	SJ42MPC	14,62
9.5		6	8	56	60°	5	SJ3M	34,86	SJ3MPC	
12.7		6	11	59	60°	5	SJ5M	42,42	SJ5MPC	

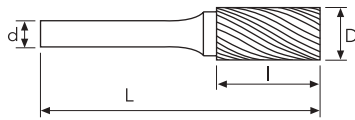
SK - catalogue page 694



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SK (M) €		SK (MPC) €
3.0	3		1.5	38	90°	5	SK42M	14,62	SK42MPC	14,62
6.0		6	3	50	90°	5	SK1M	26,64		
9.5		6	4.7	53	90°	5	SK3M	34,86		
12.7		6	6.3	55	90°	5	SK5M	42,42		
16.0		6	8	57	90°	5	SK6M	56,45		

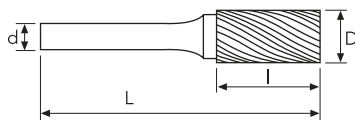
SL - catalogue page 695



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SL (M) €		SL (MPC) €
3.0	3		10	38	10°	5	SL41M	14,62	SL41MPC	14,62
3.0	3		14	38	8°	5	SL42M	14,62	SL42MPC	14,62
5.0	3		12.7	38	14°	5	SL53M	35,10	SL53MPC	35,10
6.0		6	18	50	14°	5	SL1M	30,97		
8.0		6	25.4	70	14°	5	SL2M	40,57		
9.6		6	30.2	76	14°	5	SL3M	48,82		
12.7		6	32	77	14°	5	SL4M	59,66		
16.0		6	33.3	78	14°	5	SL5M	115,43		

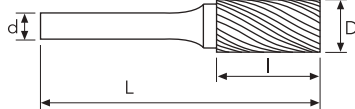
SM - catalogue page 696



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SM (M) €		SM (MPC) €
3.0	3		8	38	18°	5	SM41M	14,62	SM41MPC	14,62
3.0	3		11	38	14°	5	SM42M	14,62	SM42MPC	14,62
3.0	3		15	38	10°	5	SM43M	14,62	SM43MPC	14,62
6.0		6	12.7	50	22°	5	SM1M	29,37		
6.0		6	20	50	14°	5	SM2M	30,97		
6.0		6	25	50	10°	5	SM3M	33,05		
6.3	3		12.7	51	22°	5	SM51M	24,67	SM51MPC	24,67
9.5		6	16	64	28°	5	SM4M	48,92		
12.7		6	22	71	28°	5	SM5M	61,38		
16.0		6	25	74	31°	5	SM6M	81,72		

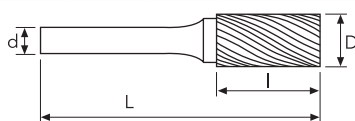
SN - catalogue page 697



OSAWA  
NORM

M

MPC



D	d (3)	d (6)	l	L	ANGLE	PACKAGING		SN (M) €		SN (MPC) €
3.0	3		4	38	10°	5	SN42M	14,62	SN42MPC	14,62
6.0		6	8	50	10°	5	SN1M	29,62		
9.5		6	9.5	55	13°	5	SN2M	43,19		
12.7		6	12.7	58	28°	5	SN4M	61,05		







# 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.













[www.osawa.it](http://www.osawa.it)

60 UTENSILERIA MECCANICA  
**ANDORNO**



\$OSMARTPL