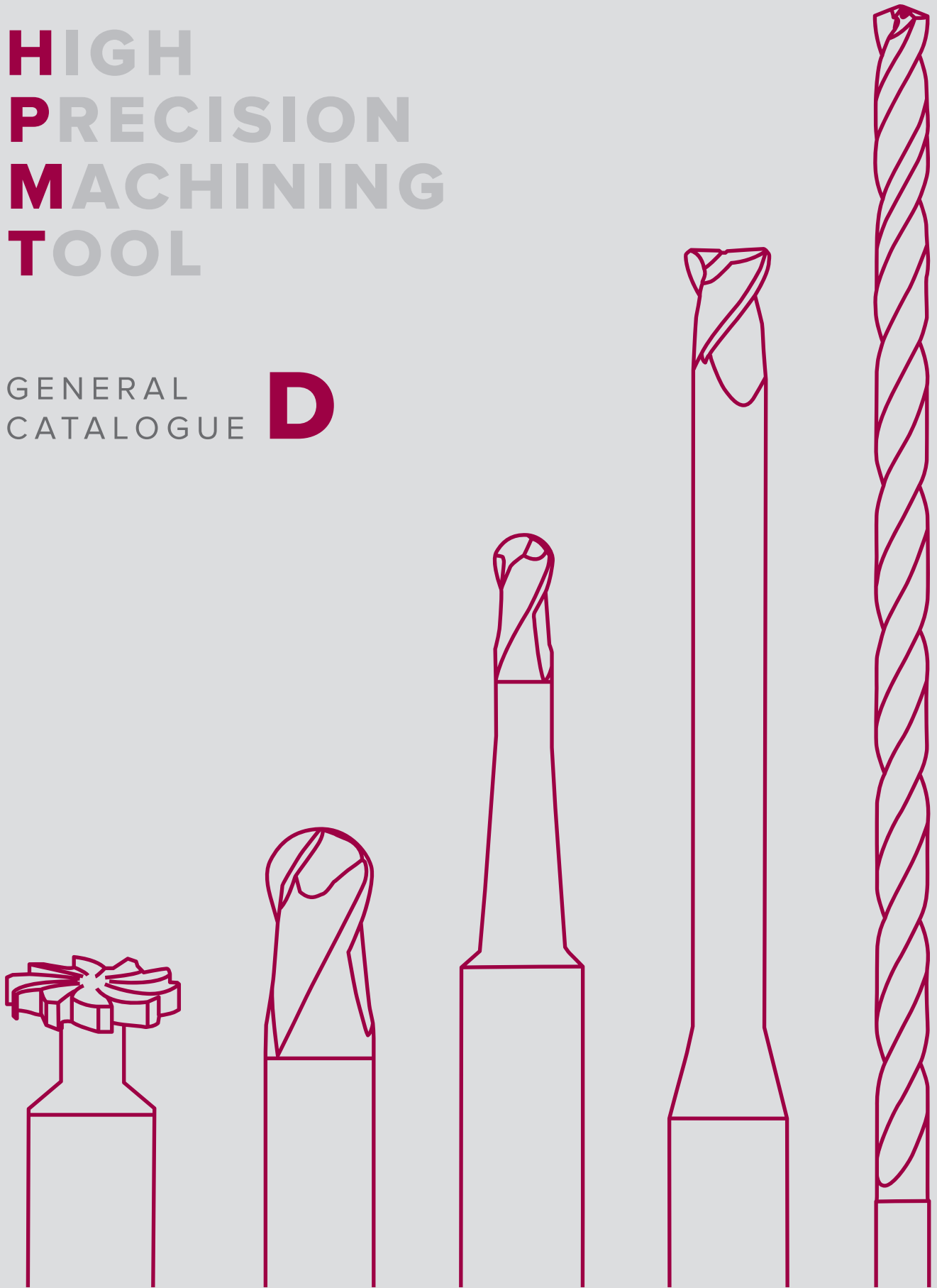
HPMT

THE FUTURE OF PRECISION MACHINING

HIGH PRECISION MACHINING TOOL

GENERAL CATALOGUE D



HOW TO USE

HPMT

the material.

		ALU LINE	SE 30	NiTiCo 30	OPTIMUM	SE 45	NiTiCo 45	PLUNGE MILL	SE 60	SE60X	SE GR	TE 45	TM	BN 30	BN 45	BN 60	BN 60X/P	BN GR
		FOR ALUMINIUM	≤35 HRC	≤45 HRC	≤40 HRC	36-52 HRC	36-52 HRC	PLUNGING	53-68 HRC	40-68 HRC	GRAPHITE	TAPER	THREAD MILL	≤35 HRC	36-52 HRC	53-68 HRC	40-68 HRC	GRAPHITE
N01	Aluminium wrought alloy, Si < 9%	▼	▽		▽			▼					▼	▽				
N02	Aluminium cast alloy, Si ≥ 9%	▼	▽		▽			▼					▼	▽				
N0[illegible]	Copper alloy	▼	▽		▽			▼					▼	▽				
K01	Grey cast iron		▽	▼	▽			▼					▼	▽	▼			
K02	Ductile cast iron		▽	▼	▽			▼					▼	▽	▼			
P01	Carbon steel		▽	▼	▽			▼					▼	▼	▽			
P02	Alloy steel		▽	▼	▽			▼					▼	▼	▽			
		24	27	28	29	30	35	36	36	40	41	42	44	45	46	48	50	51

ing Operation

1 Please select the materials to be machined
For Example: K02

2 • Please select the tool type needed.
• Based on First Choice and Second Choice.
For Example: NiTiCo 30 or Optimum

3 • Please refer the page number
• Page number guides to program part

NiTiCo 30 DP Endmills with Differential Pitch

NiTiCo 30 DP Standard Fräser mit ungleicher Teilung
Frese NiTiCo 30 DP Standard in metallo duro, passo differenziale
Fraises 2 tailles NiTiCo 30 DP Standard à pas décalés
NiTiCo 30 DP 系列 立铣刀 标准长度

	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	951	1 - 25	4	40°	•				•	•	•	122
	972				•			√	•	•	•	122
	C46	3 - 25			•				•	•	•	124
	C52				•			√	•	•	•	124

Please select the proper tool needed. 4
For Example: 951

5 Guides to Product Selection Page





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					951 * HA	972 * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	G6110	G6110
0300 040 03	3	9		40	3	○	-
0300 040 04	3	9		40	4	○	-
0300 050 06	3	9		50	6	○	○
0300 057 06	3	9		57	6	•	•
0400 050 04	4	12		50	4	○	-
0400 050 06	4	12		50	6	○	○
0400 057 06	4	12		57	6	•	•

6 Cutting Parameter. Page 153

7 How to Order. Page 22

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Solid Carbide Tools	**VHM Zerspannungswerkzeuge**	**Outils de coupe en carbure monobloc**	**Utensili in metallo**	**钨钢刀具**	
Index	Index	Index	Indice	索引	10
Programme	Programm	Gamme	Programma	程序	24
How to order	Wie bestellen	Comment commander	Come ordinare	订货指南	22
Square Endmills	**Schaftfräser**	**Fraises 2 tailles**	**Frese cilindriche**	**铣刀**	
Alu Line	Alu Line	Alu Line	Alu Line	Alu Line	57
SE 30 for materials ≤ 35 HRC	SE 30 für Materialien ≤ 35 HRC	SE 30 pour matières ≤ 35 HRC	SE 30 per materiali ≤ 35 HRC	SE 30 可用于 ≤ 35 HRC 以下之材料	95
NiTiCo 30 for materials ≤ 45 HRC	NiTiCo 30 für Materialien ≤ 45 HRC	NiTiCo 30 pour matières ≤ 45 HRC	NiTiCo 30 per materiali ≤ 45 HRC	NiTiCo 30 可用于45 HRC 以下之材料	117
Optimum Line for materials < 40 HRC	Optimum Line für Materialien < 40 HRC	Optimum Line pour matières < 40 HRC	Optimum Line per materiali < 40 HRC	Optimum Line 可用于40 HRC 以下之材料	165
SE 45 for m aterials 36-52 HRC	SE 45 für Materialien 36-52 HRC	SE 45 pour matières 36-52 HRC	SE 45 per materiali 36-52 HRC	SE 45 可用于36-52 HRC 以下之材料	173
NiTiCo 45 for materials 36-52 HRC	NiTiCo 45 für Materialien 36-52 HRC	NiTiCo 45 pour matières 36-52 HRC	NiTiCo 45 per materiali 36-52 HRC	NiTiCo 45 可用于36-52 HRC 以下之材料	241
Plunge-Mill	Plunge-Mill	Plunge-Mill	Plunge-Mill	Plunge-Mill	250
SE 60 for materials 53-68 HRC	SE 60 für Materialien 53-68 HRC	SE 60 pour matières 53-68 HRC	SE 60 per materiali 53-68 HRC	SE 60 可用于53-68 HRC 以下之材料	257
SE60X for materials 40-68 HRC	SE60X für Materialien 40-68 HRC	SE60X pour matières 40-68 HRC	SE60X per materiali 40-68 HRC	SE60X 可用于40-68 HRC 以下之材料	297
SE GR for milling graphite	SE GR für Graphitbearbeitung	SE GR pour usinage de graphite	SE GR per fresature in grafite	SE GR 用于石墨加工	321
TE = Die-Sinking Cutters	TE = Gesenkfräser	TE = Fraises coniques pour matrices	TE = Frese coniche per stampi	TE = 凹模铣刀	333
Thread Mill	Thread Mill	Thread Mill	Thread Mill	Thread Mill	346

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Ballnose	Radiusschaftfräser	Fraises à bout hémisphérique	Frese cilindriche a raggio	球头铣刀	
BN 30 for materials ≤ 35 HRC	BN 30 für Materialien ≤ 35 HRC	BN 30 pour matières ≤ 35 HRC	BN 30 per materiali ≤ 35 HRC	BN 30 可用于 ≤ 35 HRC 以下之材料	351
BN 45 for materials 36-52 HRC	BN 45 für Materialien 36-52 HRC	BN 45 pour matières 36-52 HRC	BN 45 per materiali 36-52 HRC	BN 45 可用于36-52 HRC 以下之材料	360
BN 60 for materials 53-68 HRC	BN 60 für Materialien 53-68 HRC	BN 60 pour matières 53-68 HRC	BN 60 per materiali 53-68 HRC	BN 60 可用于53-68 HRC 以下之材料	396
BN 60X for materials 40-68 HRC	BN 60X für Materialien 40-68 HRC	BN 60X pour matières 40-68 HRC	BN 60X per materiali 40-68 HRC	BN 60X 可用于40-68 HRC 以下之材料	423
BN GR for milling graphite	BN GR für Graphitbearbeitung	BN GR pour usinage de graphite	BN GR per fresature in grafite pour usinage de graphite	BN GR 用于石墨加工	443
RE 45 = Reamers	RE 45 = Reibahlen	RE 45 = alésoirs	RE 45 = alesatori	RE 45 = 铰刀	583
Drills	Spiralbohrer	Forets héllicoïdaux	Punte elicoidali	钻头	453
Special Tools	Sonderwerkzeuge	Outils spéciaux	Utensili speciali	特殊工具	597
Icons	Symbole	symboles	simboli	图标	626
Tolerances	Toleranzen	Tolérances	Tolleranze	公差	628
⚠	⚠	⚠	⚠	⚠	624

MATERIAL DIRECTORY



Please select the material.

		ENDMILLS												BALLNOSE					DRILLS											
																													
		ALU LINE	SE 30	NiTiCo 30	OPTIMUM	SE 45	NiTiCo 45	PLUNGE MILL	SE 60	SE60X	SE GR	TE 45	TM	BN 30	BN 45	BN 60	BN 60X/P	BN GR	NC Spot	DR ALU	DR 30	DR NiTiCo	DR 45	DR VA	DR-S	DR Mini	DR-L	DR 45SB	DR 60	RE 45
		FOR ALUMINIUM	≤35 HRC	≤45 HRC	≤40 HRC	36-52 HRC	36-52 HRC	PLUNGING	53-68 HRC	40-68 HRC	GRAPHITE	TAPER	THREAD MILL	≤35 HRC	36-52 HRC	53-68 HRC	40-68 HRC	GRAPHITE	≤35 HRC	NON FERROUS	≤35 HRC	≤35 HRC	≤45 HRC	≤45 HRC	≤45 HRC	≤45 HRC	≤45 HRC	≤45 HRC	≤68 HRC	Reamer
N01	Aluminium wrought alloy, Si < 9%	▼	▽		▽			▼				Die Sinking Operation	▼	▽					▼	▼	▽				▽	▼	Deep Hole Drilling			▼
N02	Aluminium cast alloy, Si ≥ 9%	▼	▽		▽			▼					▼	▽					▼	▼	▽				▽	▼				▼
N03	Copper alloy	▼	▽		▽			▼					▼	▽					▼	▼	▽				▽	▼				▼
K01	Grey cast iron		▽	▼	▽			▼					▼	▽	▼				▼				▽	▽	▼	▼		▼		▼
K02	Ductile cast iron		▽	▼	▽			▼					▼	▽	▼				▼				▽	▽	▼	▼		▼		▼
P01	Carbon steel		▽	▼	▽	▽		▼					▼	▼	▽				▼		▽		▽	▽	▼	▼		▼		▼
P02	Alloy steel		▽	▼	▽	▽		▼					▼	▼	▽				▼				▽	▽	▼	▼		▼		▼
P03	Prehardened steel, 35 ≤ HRC ≤ 45			▼	▽	▽	▽	▼		▽			▼		▼		▼		▼				▽	▽	▼	▼		▼	▽	▼
M01	Stainless steel, high machinability		▽	▼	▽			▽					▼	▼	▽				▼			▽	▽	▼	▽	▼		▽		▼
M02	Stainless steel, low machinability		▽	▽	▽	▽	▼						▼	▽	▼				▼			▽	▽	▼	▽	▼		▽		
S01	Titanium alloy		▽	▼	▽								▼	▼	▽				▼			▽	▽	▽	▼	▼		▼		
S02	Nickel alloy			▽	▽	▽	▼			▽			▼		▼				▼				▽	▽	▼	▼		▼		
S03	Cobalt alloy			▽	▽	▽	▼			▽			▼		▼				▼				▽	▽	▼	▼		▼		
H01	Hardened steel, 45 ≤ HRC < 52					▽			▽	▼					▼	▽	▼												▼	
H02	Hardened steel, ≥ 52HRC								▽	▼					▽	▽	▼												▼	
O01	Thermoplastics	▼																	▼		▽									▼
O02	Graphite										▼							▼												
		24	27	28	29	30	35	36	36	40	41	42	44	45	46	48	50	51	52	53	52	52	52	53	53	53	54	53	54	55

▼ First Choice

▽ Second Choice

	Deutsch	Français	Italiano	中文
	Materialgruppen	Groupes matiére	Gruppi materiali	材质主料
N01	Aluminiumlegierungen, Si < 9%	Alliages d'aluminium, Si < 9%	Leghe di alluminio, Si < 9%	锻造铝合金, Si < 9%
N02	Aluminiumguss, Si ≥ 9%	Avec, Si ≥ 9%	Con, Si ≥ 9%	铸造铝合金, Si ⩾ 9%
N03	Kupferlegierungen	Cuivres non alliés	Rame senza leghe	铜合金
K01	Grauguss	Gris Fontes	Grigio Ghise	灰色铸铁
K02	Gusseisen	Ductile Fontes	Duttile Ghise	球墨铸铁铸铁
P01	Kohlenstoffstähle	Carbone Aciers	Carbonio Acciai	碳钢材或铸钢
P02	Stahllegierungen	Alliages Aciers	leghe Acciai	合金钢材或铸钢
P03	Vorgehärtete Stähle, 35 ≤ HRC ≤ 45	Préchauffé Aciers, 35 ≤ HRC ≤ 45	Prehardened Acciai, 35 ≤ HRC ≤ 45	预硬化钢材或铸钢, 35 ≤ HRC ≤ 45
M01	Rostfreie Stähle <35 HRC	Aciers inoxydables, Usinabilité élevée	Acciai inossidabili, Elevata Lavorabilità	不锈钢, 沃斯田铁系, 高机械加工性
M02	Rostfreie Stähle ≥35 HRC	Aciers inoxydables, Faible usinabilité	Acciai inossidabili, Bassa lLavorabilità	不锈钢, 沃斯田铁系, 低机械加工性
S01	Titanlegierungen	Allliages de titane jusquà	Leghe di titanio fino	钛合金
S02	Nickellegierungen	Alliages de Ni	Leghe al Ni	镍、钴基
S03	Kobaltlegierungen	Alliages de Co	Leghe al Co	镍、金钢
H01	Gehärtete Stähle, 45 ≤ HRC < 52	Aciers trempés, 45 ≤ HRC < 52	Acciai temperati, 45 ≤ HRC < 52	预硬钢, 洛氏硬度, 45 ⩽ HRC < 52
H02	Gehärtete Stähle, ≥ 52 HRC	Aciers trempés, ≥ 52 HRC	Acciai temperati, ≥ 52 HRC	预硬钢, 洛氏硬度, ⩾ 52 HRC
O01	Thermoplaste	Thermoplastiques	Termoplastici	热塑性塑料 (无纤维)
O02	Grafit	Graphite	Grafite	石墨

COMPANY PROFILE

HPMT Industries Sdn. Bhd. started operations in 1999 with an aim to become a leading cutting tools manufacturing company in South-East-Asia.

With the latest production machinery and in house R & D facilities, HPMT is progressively developing new tools to serve the ever demanding industrial market. Implementing ISO 9001:2015 and working towards ISO/TS 16949:2002 will not only ensure consistent quality but also built customer's confidence.

Thus HPMT will progressively grow, producing high quality cutting tools to meet your stringent requirements. Whether special or standard cutting tools, you can always depend on us.





HPMT Industries Sdn. Bhd. hat ihre Tätigkeit 1999 aufgenommen mit dem Ziel ein führendes Unternehmen in der Herstellung von Zerspanungswerkzeugen in Südostasien zu werden. Mit modernen Produktionsmaschinen und eigener F & E Abteilung entwickelt HPMT weiter neue Werkzeuge, um den immer höheren Anforderungen der Kunden in der Industrie gerecht zu werden. Mit der ISO 9001:2015 Zertifizierung und dem Zugehen auf die ISO 16949:2002 Zertifizierung, sichert HPMT eine konstante Qualität und setzt damit auf das Vertrauen der Kunden.

HPMT wird kontinuierlich wachsen, weiterhin Werkzeuge hoher Qualität herstellen und den großen Anforderungen unserer Kunden entsprechen. Sei es für Sonder- oder Standardwerkzeuge, Sie können immer mit uns rechnen.

HPMT Industries Sdn. Bhd. a débuté son activité en 1999 dans le but de devenir un producteur leader d'outils coupants au Sud-Est-Asiatique. Avec un parc machine de dernière technologie et un département interne R & D (recherche et développement) HPMT développe progressivement de nouveaux outils pour un marché industriel toujours plus exigeant. En appliquant l'ISO 9001:2015 et en travaillant pour obtenir l'ISO/TS 16949:2002, HPMT non seulement assure une qualité constante de ses produits, mais développe aussi la confiance des clients dans ses produits.

Par conséquence, HPMT se développera progressivement en fabriquant des outils de haute qualité pour faire face à vos demandes. Que ce soit pour des outils spéciaux ou standards, vous pouvez compter sur nous.

La HPMT Industries Sdn. Bhd. ha cominciato a produrre utensili nel 1999 con l'intenzione di diventare un produttore leader di utensili da taglio nel Sud-Est-Asiatico. Con macchinari di produzione di punta ed un reparto di R & D (ricerca e sviluppo), la HPMT sta progressivamente sviluppando nuovi utensili al fine di servire il mercato industriale sempre più esigente. Con il certificato ISO 9001:2015 e muovendosi ad ottenere il certificato ISO/TS 16949:2002, la HPMT non solo assicura una qualità costante, ma aumenta la fiducia del cliente nel prodotto.

Pertanto, la HPMT continuerà a crescere producendo degli utensili da taglio di alta qualità per rispondere alle richieste esigenti dei clienti. Che sia per utensili speciali o standard, potete sempre contare su di noi.

HPMT 股份有限公司设立于 1999 年，目标是成为亚洲一流的切削工具制造厂。拥有最先进的制造机台及自主研发设备，HPMT 不断制造出符合市场严格要求的工具。通过 ISO 9001:2015 认证，并且朝通过 ISO/TS 16949:2002 努力，让您可以更加信赖我们工件的品质。

HPMT 将持续不断的成长，并以能制造出通过最严格要求的工件为目标，无论是标准或特殊工件，HPMT 都值得您信赖。

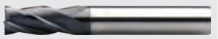
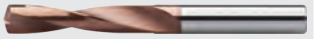
NO. INDEX

HPMT

EDP Number	N° Z	Helix Angle	T...n	B0819	C6110	B0909	D0120	DCT01	T8090	H2600	RC	Page / Seite / 页		Type / Typ / Type / Tipo / 系列
186	4	40°			○							207		SE 45 L
202	4	40°			○							208		SE 45 XL
301	2	50°	•									60		AL SE STD
303	3	50°	•									66		AL SE STD
311	4	40°			•							211		SE 45 STD
398	4	-		○								111		MG Mini 1/4 Corner
485	2	30°			•							369		BN 45 STD
543	4	40°			•							205		SE 45 STD
583	3/4	40°	•									334		TE 45 0.5° inclination
587	3/4	40°	•									335		TE 45 1.0° inclination
591	3/4	40°	•									336		TE 45 1.5° inclination
595	3/4	40°	•									337		TE 45 2.0° inclination
599	3/4	40°	•									338		TE 45 2.5° inclination
603	3/4	40°	•									339		TE 45 3.0° inclination
607	3/4	40°	•									340		TE 45 4.0° inclination
611	3/4	40°	•									341		TE 45 5.0° inclination
615	3/4	40°	•									342		TE 45 7.0° inclination
618	Z3	40°	•									343		TE 45 10.0° inclination
621	4/6	0°	•									584		RE 45 SHORT
623	4/6	12°	•									585		RE 45 L.H. / R.H. SHORT
625	4/6	0°	•									586		RE 45 R.H. DIN 212
627	4/6	12°	•									587		RE 45 L.H. / R.H. DIN 212
629	3/4/6	60°	•									591		RE 45 HIGH L.H. / R.H. DIN 212
630	3	40°		○							•	201		SE 45 STD SF
635	4	40°		○							•	205		SE 45 STD
644	2	30°	•									472		DR 30 ~ DIN 6539 - 3 x Ø
662	2	30°	•									454		DR NC 60°
664	2	30°	•									455		DR NC 90°
666	2	30°	•									456		DR NC 120°
729	2	30°	•									476		DR 30 - 5 x Ø
750	4	40°						•				324		SE GR STD
752	2	40°						•				325		SE GR LN
753	4	40°						•				326		SE GR LN
754	2	30°						•				446		BN GR STD
756	2	30°						•				447		BN GR L
786	2	40°		○							•	215		SE 45R LR L

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788	1	25°	•									58		AL SE STD
798	2	30°		•								98		SE 30 STD
800	3	30°		•								99		SE 30 STD
802	4	30°		•								100		SE 30 STD
806	4	30°		•								101		SE 30 L
810	4	30°		•								102		SE 30 XL
813	4	40°		○							•	216		SE 45R LR L
815	4	25°			•							316		BN60X FIN-MILL STD
816	2	40°		•								103		SE 30 STD
818	3	40°		•								104		SE 30 STD
820	4	40°		•								105		SE 30 STD
821	2	15°					•					580		DR 60 - 3 x Ø
823	2	15°					•					578		DR 60 - 5 x Ø
824	4	40°		•								106		SE 30 L
828	4	40°		•								107		SE 30 XL
834	2	40°		•								108		SE 30 MP 60°
836	2	40°		•								109		SE 30 MP 90°
838	2	40°		•								110		SE 30 MP 120°
851	4	30°		•								176		SE 45 STD
855	4	30°		•								177		SE 45 L
859	2	30°		•								178		SE 45 XL
862	4	40°			•							179		SE 45 STD
863	4	40°		•								179		SE 45 STD
866	4	40°			•							180		SE 45 L
867	4	40°		•								180		SE 45 L
870	2	40°			•							181		SE 45 XL
871	2	40°		•								181		SE 45 XL
883	2	40°		•								185		SE 45 MINI
885	2	40°		•								186		SE 45 MINI LN
886	2	40°		•								203		SE 45 STD
887	4	40°		•								205		SE 45 STD
889	4	40°		•								207		SE 45 L
891	4	40°		•								208		SE 45 XL
893	3	40°		•								201		SE 45 STD SF
895	4	40°		•								209		SE 45 LR L
897	4	40°		○							•	209		SE 45 LR L

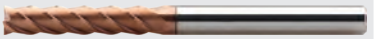
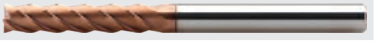
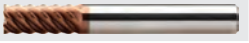
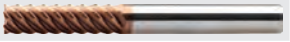
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899	4	40°		•								210		SE 45 LR XL
901	4	40°		○							•	210		SE 45 LR XL
904	4	40°		•								211		SE 45 STD
906	2	40°		•								215		SE 45R LR L
907	4	40°		•								216		SE 45R LR L
908	2	40°		•								218		SE 45R LR XL
909	4	40°		•								219		SE 45R LR XL
918	4	40°			•							168		OPTIMUM DP STD
923	2	30°		•								354		BN 30 STD
924	1	25°	○									58		AL SE STD
925	2	30°		•								355		BN 30 L
927	2	30°		•								356		BN 30 XL
929	2	30°		•								364		BN 45 STD
931	2	30°		•								366		BN 45 L
933	2	30°		•								367		BN 45 XL
935	2	30°		•								373		BN 45 MINI
937	2	30°		•								375		BN 45 MINI LN
940	2	30°		•								368		BN 45 STD
941	2	30°		•								368		BN 45 STD
942	2	30°		•								370		BN 45 L
943	2	30°		○							•	370		BN 45 L
944	2	30°		•								371		BN 45 XL
945	2	30°		○								371		BN 45 XL
951	4	40°			•							122		NiTiCo 30 DP
953	2	30°		•								454		DR NC 60°
955	2	30°		•								455		DR NC 90°
957	2	30°		•								456		DR NC 120°
958	2	30°		•								472		DR 30 ~ DIN 6539 - 3 x Ø
960	2	30°		•								476		DR 30 - 5 x Ø
965	2	30°		•								496		DR 45 - DIN 6537K - 3 x Ø
967	2	30°		•								508		DR 45 - DIN 6537L - 5 x Ø
972	4	40°			•							122		NiTiCo 30 DP WE
A01	2	40°				•						185		SE 45 MINI
A03	2	40°				•						186		SE 45 MINI LN
A04	2	40°				•						203		SE 45 STD
A05	2	40°				○					•	203		SE 45 STD

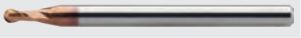
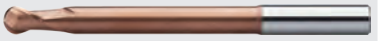
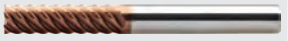
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A06	4	40°				•						205		SE 45 STD
A07	4	40°				○					•	205		SE 45 STD
A09	4	40°				•						207		SE 45 L
A11	4	40°				•						208		SE 45 XL
A14	3	40°				•						201		SE 45 STD SF
A15	3	40°				○					•	201		SE 45 STD SF
A18	4	40°				•						209		SE 45 LR L
A19	4	40°				○					•	209		SE 45 LR L
A22	4	40°				•						210		SE 45 LR XL
A23	4	40°				○					•	210		SE 45 LR XL
A25	2	40°				•						200		SE 45R TN
A26	4	40°				•						211		SE 45 STD
A28	2	40°				•						215		SE 45R LR L
A29	4	40°				•						216		SE 45R LR L
A30	2	40°				•						218		SE 45R LR XL
A31	2	40°				○					•	218		SE 45R LR XL
A32	4	40°				•						219		SE 45R LR XL
A33	4	40°				○					•	219		SE 45R LR XL
A34	4	40°				•						268		SE 60 STD SF
A35	4	40°				•						260		SE 60 STD
A36	4	40°				•						261		SE 60 L
A37	4	40°				•						262		SE 60 XL
A38	4	40°				•						263		SE 60 LR L
A39	4	40°				○					•	263		SE 60 LR L
A40	4	40°				•						264		SE 60 LR XL
A41	4	40°				○					•	264		SE 60 LR XL
A42	6/8	50°				•						265		SE 60 MF
A43	6/8	50°				○					•	265		SE 60 MF
A44	6/8	50°				•						266		SE 60 MF L
A45	6/8	50°				○					•	266		SE 60 MF L
A46	6/8	50°				•						267		SE 60 MF XL
A47	6/8	50°				○					•	267		SE 60 MF XL
A48	4	45°				•						269		SE 60R STD
A49	4	45°				○					•	269		SE 60R STD
A50	4	40°				•						270		SE 60R STD
A51	4	40°				•						274		SE 60R LR L

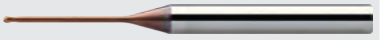
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A52	4	40°				○					•	274		SE 60R LR L
A53	4	40°				•						276		SE 60R LR XL
A54	4	40°				○						276		SE 60R LR XL
A55	2	40°				•						278		SE 60 MINI
A56	2	40°				•						279		SE 60 MINI LN
A57	2	30°				•						368		BN 45 STD
A58	2	30°				•					•	368		BN 45 STD
A59	2	30°				•						370		BN 45 L
A60	2	30°				○					•	370		BN 45 L
A61	2	30°				•						371		BN 45 XL
A62	2	30°				○					•	371		BN 45 XL
A63	2	30°				•						373		BN 45 MINI
A65	2	30°				•						374		BN 45 MINI LN
A66	2	30°				•						375		BN 45 MINI LN
A69	2	30°				•						400		BN 60 STD
A70	2	30°				○					•	400		BN 60 STD
A71	2	30°				•						403		BN 60 L
A72	2	30°				○					•	403		BN 60 L
A73	2	30°				•						404		BN 60 XL
A74	2	30°				○					•	404		BN 60 XL
A75	2	30°				•						406		BN 60 MINI
A76	2	30°				•						407		BN 60 MINI LN
A77	2	30°				•						412		BN 60 TN
A78	2	30°				•						379		BN 45 TN
A79	2	40°				•						191		SE 45R MINI LN
A80	2	40°				•						284		SE 60R MINI LN
A89	6/8	50°				•						221		SE 45 MF
A90	6/8	50°				•						222		SE 45 MF L
A91	6/8	50°				•						223		SE 45 MF XL
A94	6/8	50°				○					•	221		SE 45 MF
A95	6/8	50°				○					•	222		SE 45 MF L
A96	6/8	50°				○					•	223		SE 45 MF XL
A98	4	25°				•						316		SE60X FIN-MILL STD
A99	2	40°				○						215		SE 45R LR L
A1B	4	40°				○					•	216		SE 45R LR L
A1L	4	30°				•						402		BN 60 STD

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A1R	4	35°/38°				•						130		NiTiCo 30R DP/DH
A1T	4	35°/38°				•						130		NiTiCo 30R DP/DH
A4F	4	25°				•						310		SE60X FIN-MILL TN
A4G	4/6	25°				•						304		SE60X FIN-MILL LN
A4Q	2	30°				•						426		BN 60X STD
A4R	2	30°				•					•	426		BN 60X STD
A4S	2	30°				•						427		BN 60X MINI LN
A4T	2	30°				•						432		BN 60P STD
A5A	2	30°				•					•	432		BN 60P STD
A5B	2	30°				•						433		BN 60P MINI LN
B30	4	40°		•								182		SE 45R STD
B31	2	40°		○								203		SE 45 STD
B32	2	40°		○								218		SE 45R LR XL
B33	4	40°		○								219		SE 45R LR XL
B37	3/4	40°		•								334		TE 45 0.5° inclination
B38	3/4	40°		•								335		TE 45 1.0° inclination
B39	3/4	40°		•								336		TE 45 1.5° inclination
B40	3/4	40°		•								337		TE 45 2.0° inclination
B41	3/4	40°		•								338		TE 45 2.5° inclination
B42	3/4	40°		•								339		TE 45 3.0° inclination
B43	3/4	40°		•								340		TE 45 4.0° inclination
B44	3/4	40°		•								341		TE 45 5.0° inclination
B45	3/4	40°		•								342		TE 45 7.0° inclination
B46	Z3	40°		•								343		TE 45 10.0° inclination
B47	Z2	30°		•								500		DR 45 - DIN 6537L - 5 x Ø
B48	Z2	30°		•								504		DR 45 - DIN 6537K - 3 x Ø
B59	Z4	40°		•								182		SE 45R STD
B66	Z2	40°		•								191		SE 45R MINI LN
B71	6/8	50°		•								221		SE 45 MF
B73	6/8	50°		•								222		SE 45 MF L
B78	6/8	50°		•								223		SE 45 MF XL
B82	2	30°		•								365		BN 45 STD
B85	2	40°		•								449		BN GR XL
C14	6/8	50°		○								221		SE 45 MF
C15	6/8	50°		○								222		SE 45 MF L
C16	6/8	50°		○								223		SE 45 MF XL

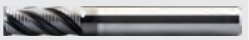
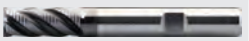
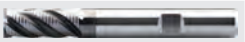
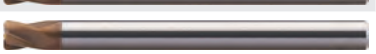
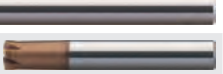
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C30	2	30°			•							118		NiTiCo 30 STD
C31	3	30°			•							118		NiTiCo 30 STD
C32	4	30°			•							118		NiTiCo 30 STD
C36	2	30°			•							364		BN 45 STD
C42	2	30°			○							119		NiTiCo 30 STD WE
C43	3	30°			○							119		NiTiCo 30 STD WE
C44	4	30°			○							119		NiTiCo 30 STD WE
C45	4	40°	•									71		AL SE DPR
C46	4	40°			•							124		NiTiCo 30 DPR
C47	4	40°			•							123		NiTiCo 30 RG
C48	4	35°/38°			•							130		NiTiCo 30 DP/DH
C50	4	35°/38°			•							130		NiTiCo 30 DP/DH
C51	4	40°	•									71		AL SE DPR WE
C52	4	40°			○							124		NiTiCo 30 DPR WE
C64	4	40°			•							123		NiTiCo 30 RG WE
C73	2	30°			•							518		DR VA - DIN 6537K - 3 x Ø
C77	2	30°			•							522		DR VA - DIN 6537L - 5 x Ø
D07	2	30°			•							484		DR NiTiCo - DIN 6537K - 3 x Ø
D08	2	30°			•							488		DR NiTiCo - DIN 6537L - 5 x Ø
D09	2	30°	•									460		DR ALU - DIN 6537K - 3 x Ø
D10	2	30°	•									464		DR ALU - DIN 6537L - 5 x Ø
F32	2	30°					○					570		DR 45 SB L - 8 x Ø
F33	2	30°			○							570		DR 45 SB L - 8 x Ø
G10	4	40°			•							254		PLUNGE-MILL
G12	4	40°			○						•	254		PLUNGE-MILL
G14	4	40°			•							244		NiTiCo 45 DP
G15	4	40°				•						244		NiTiCo 45 DP
G17	4	40°			○						•	244		NiTiCo 45 DP
G18	4	40°				○					•	244		NiTiCo 45 DP
G20	4	40°			•							244		NiTiCo 45 DP WE
G21	4	40°				•						244		NiTiCo 45 DP WE
G23	4	40°			○						•	244		NiTiCo 45 DP WE
G24	4	40°				○					•	244		NiTiCo 45 DP WE
G26	4	40°			•							245		NiTiCo 45 DP TORUS
G27	4	40°				•						245		NiTiCo 45 DP TORUS
G29	4	40°			○						•	245		NiTiCo 45 DP TORUS

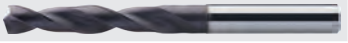
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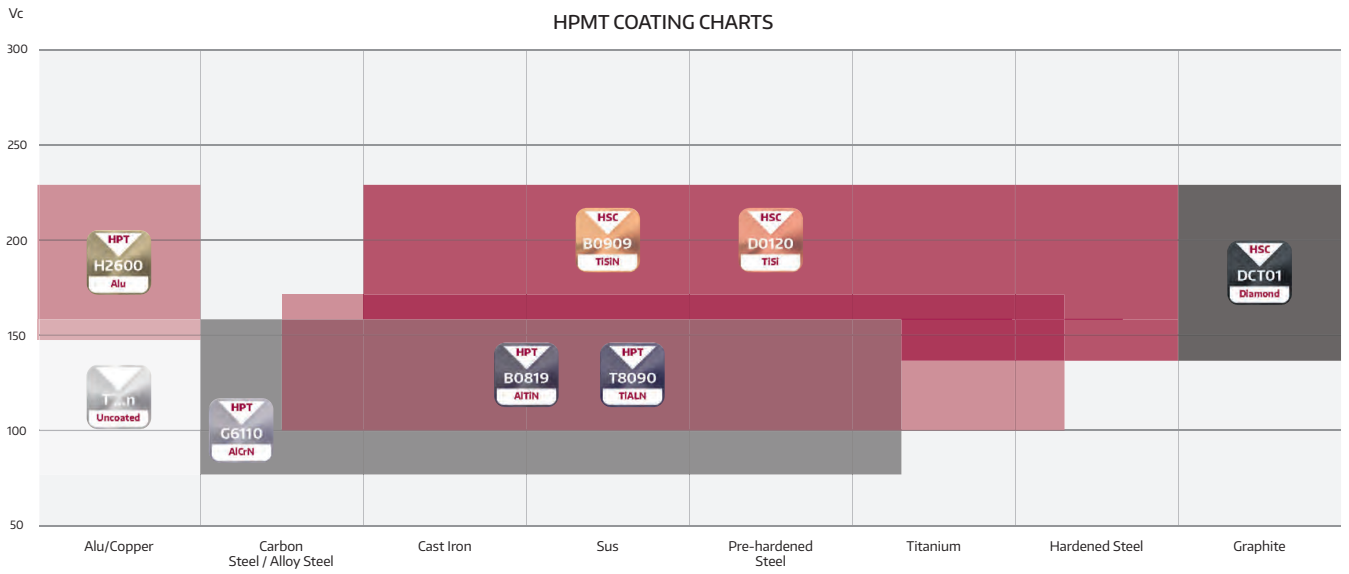
EDP Number	N° Z	Helix Angle	T... n	B0819	G6110	B0909	D0120	DCT01	T8090	H2600	RC	Page / Seite / 页		Type / Typ / Type / Tipo / 系列
G30	4	40°				○					•	245		NiTiCo 45 DP TORUS
G32	4	40°			•							245		NiTiCo 45 DP TORUS WE
G33	4	40°				•						245		NiTiCo 45 DP TORUS WE
G35	4	40°			○						•	245		NiTiCo 45 DP TORUS WE
G36	4	40°				○					•	245		NiTiCo 45 DP TORUS WE
G38	4	40°			•							247		NiTiCo 45 DP RG
G39	4	40°				•						247		NiTiCo 45 DP RG
G41	4	40°			○						•	247		NiTiCo 45 DP RG
G42	4	40°				○					•	247		NiTiCo 45 DP RG
G44	4	40°			•							247		NiTiCo 45 DP RG WE
G45	4	40°				•						247		NiTiCo 45 DP RG WE
G47	4	40°			○						•	247		NiTiCo 45 DP RG WE
G48	4	40°				○					•	247		NiTiCo 45 DP RG WE
G49	2	40°	•									59		AL SE STD
G50	3	40°	•									64		AL SE STD
G51	3	40°	•									65		AL SE L
G52	2	30°	○									61		AL SE STD TORUS
G53	2	30°	○								•	61		AL SE STD TORUS
G56	2	30°	○									62		AL SE L TORUS
G57	2	30°	○								•	62		AL SE L TORUS
G68	2	40°	•									73		AL SE MINI LN
G69	3	30°	○									68		AL SE STD TORUS
G70	3	30°	•									68		AL SE STD TORUS
G71	2	30°	•									63		AL SE REDUCE SHANK
G72	3	40°	•									69		AL SE DP TORUS RG
G73	3	40°	○								•	69		AL SE DP TORUS RG
G74	2	30°	•									78		AL BN STD
G75	2	30°	•								•	78		AL BN STD
G76	2	30°	•									79		AL BN MINI LN
G78	4/6	25°				•						300		SE60X FIN-MILL TORUS STD
G80	4/6	25°				○					•	300		SE60X FIN-MILL TORUS STD
G82	4/6	25°				•						302		SE60X FIN-MILL TORUS L
G84	4/6	25°				○					•	302		SE60X FIN-MILL TORUS L
G86	4/6	3°				•						313		SE60X SWEEP-MILL
G87	4	40°			•							135		NiTiCo 30 MINI LN
G88	4	40°			•							145		NiTiCo 30 MINI LN

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H03	2	30°			○							552		DR-L SB OF
H15	3/4/5	30°			•							349		THREAD MILL
H17	3/4/5	30°			•							349		THREAD MILL
H19	3/4/5	30°			•							348		THREAD MILL OF
H21	3/4/5	30°			•							348		THREAD MILL OF
H38	4	35°/38°			•							132		NiTiCo 30 DP/DH L
H39	4	35°/38°			•							132		NiTiCo 30 DP/DH L
H56	4	40°			•							140		NiTiCo 30 MINI LN
H86	4	40°						•				329		SE GR TORUS LN
J86	2	40°						•				328		SE GR TORUS LN
J89	5	35°/36° / 37°			•							133		NiTiCo 30 DH
J90	5	35°/36° / 37°			•							133		NiTiCo 30 DH WE
J92	5	35°/36° / 37°			•							134		NiTiCo 30 DH L
J93	5	35°/36° / 37°			•							134		NiTiCo 30 DH L WE
J97	4	35°/38°			•							132		NiTiCo 30 DP/DH L
J98	4	35°/38°			•							132		NiTiCo 30 DP/DH L WE
K30	3	40°	•									67		AL SE DP STD
K31	3	40°								•		67		AL SE DP STD
K38	4	40°			•							169		OPTIMUM R-LIKE DP STD WE
K47	4	40°			•							169		OPTIMUM R-LIKE DP STD
K52	4	40°			○							169		OPTIMUM R-LIKE DP STD
K53	4	40°			○						•	169		OPTIMUM R-LIKE DP STD WE
S42	4	40°	•									70		AL SE DP STD
W05	2	30°							•			562		DR-L SB OF
W08	2	30°							•			530		DR-S - DIN 6537K - 3 x Ø
W09	2	30°							•			534		DR-S - DIN 6537L - 5 x Ø
W10	2	30°							•			538		DR-S OF - DIN 6537K - 3 x Ø
W11	2	30°							•			542		DR-S OF - DIN 6537L - 5 x Ø

COATING CHART



Coatings				
Type of Coating	**Coating Materail**	**Hardness**	**Application Area**	**Coating Colour**
Uncoated	Uncoated	-/-	-/-	-/-
HPT B0819 AlTiN	AlTiN (Monolayer)	(HV 0.05) 3,300	Suitable for medium and high speed, wet and drymachining and good for machining steel with hardness up to HRC 52.	 Blue-Black
HSC B0909 TiSiN	TiSiN Based (Multilayer)	(HV 0.05) 3,600	Suitable for high speed (dry) and hard machining for difficult materials above HRC 52. Suitable for high speed machining with hardened steels above HRC 60. Vc & Vf = +30%	 Copper
HPT G6110 AlCrN	AlCrN (Monolayer)	(HV 0.05) 3,200	Suitable for low to medium high speed, wet and dry machining and good for machining steel with hardness and high temperature alloy up to HRC 52.	 Blue-Grey
HSC DCT01 Diamond	Diamond (Monolayer)	(GPA) 40-90	Suitable for machining graphite and composite reinforced plastic fiber glass (CRP) (e.g. graphite electrodes, crucibles, boats)	 Dark Grey
HPT H2600 Alu	Alu	2,600	Suitable for aluminium.	 Barley
HSC D0120 TiSi	TiSi Based (Multilayer)	(HV 0.05) 3,600	Suitable for high performance drilling in difficult machining material. Vc & Vf = +30%	 Copper
HPT T8090 TiALN	TiALN (Multilayer)	(HV 0.05) 3,300	Suitable for low and medium cutting speed undre wet machining.	 Blue-Black

OBSOLETED LISTING

HPMT

EDP No	Coating	Description	Alternative	Page No.
100	T...n	SE 30 STD	816	103
112	T...n	SE 30 STD	820	105
113	G6110	SE 45 LR L	895	209
114	G6110	SE 45 LR L RC	897	209
121	G6110	SE 45 LR XL	899	210
122	G6110	SE 45 LR XL RC	901	210
125	G6110	SE 45 MF	B71	221
142	DCT01	SE GRR STD	Special Made	-
162	G6110	SE 45 MINI LN	885	186
212	DCT02	SE GR STD	750	324
214	G6110	SE 45R TN	A25	200
255	G6110	SE 45R LR L	906	215
256	G6110	SE 45R LR L RC	786	215
263	G6110	SE45R LR L	907	216
264	G6110	SE45R LR L RC	813	216
283	G6110	SE 45R LR XL	A30	218
284	G6110	SE 45R LR XL RC	A31	218
291	G6110	SE 45R LR XL	909	219
292	G6110	SE 45R LR XL RC	B33	219
320	T...n	SE 30 L	824	106
326	T...n	SE 30 XL	828	107
365	G6110	SE 45 MF RC	C14	221
372	B0819	SE 60 L	A36	261
378	B0819	SE 60 XL	A37	262
384	B0819	SE 60 STD	A35	260
395	G6110	SE 45 MF L	B73	222
397	G6110	SE 45 MF L RC	C15	222
400	B0819	SE 45 STD	886	203
404	B0819	SE 60 LR L	A38	263
408	B0819	SE 60 LR XL	A40	264
431	G6110	SE 45 MF XL	B78	223
433	G6110	SE 45 MF XL RC	C16	223
435	T...n	MINIATURE ROUND CORNER	398	111
449	B0819	SE 60 LR L RC	A39	263
450	B0819	SE 60 MF	A42	265
451	B0819	SE 60 MF RC	A43	265
452	B0819	SE 60 MF L	A44	266
453	B0819	SE 60 MF L RC	A45	266
455	B0819	SE 60R LR L	A51	274
458	B0819	SE 60R LR L RC	A52	274
459	B0819	SE 60 MF XL	A46	267
473	G6110	BN 45 STD	A57	368
493	G6110	BN 45 L	A59	370
501	G6110	BN 45 L	A59	370
509	G6110	BN 45 XL	A61	371
529	B0819	BN 60 STD	A1L	402

EDP No	Coating	Description	Alternative	Page No.
535	G6110	SE 45 STD SF	893	201
545	B0819	BN 60 L	Special Made	-
558	B0819	SE 60 MF XL RC	A47	267
566	G6110	BN 45 MINI	A63	373
574	T...n	BN 30 STD	923	354
575	B0819	SE 60R STD RC	A49	269
577	T...n	BN 30 L	925	355
578	G6110	SE 45 STD	886	203
580	T...n	BN 30 XL	927	356
612	G6110	SE 45R MINI LN	B66	191
631	B0819	SE 60 LR XL RC	A41	264
639	D0700	SE GR STD RC	Special Made	-
641	D0700	SE GR LN	752	325
657	B0819	BN 60 STD	A69	400
658	B0819	BN 60 STD RC	A70	400
661	T...n	SE 30 STD	798	98
668	T...n	SE 30 MP	834	108
670	T...n	SE 30 MP	836	109
672	T...n	SE 30 MP	838	110
677	T...n	SE 30 STD	802	100
682	T...n	SE 30 L	806	101
686	T...n	SE 30 XL	810	102
724	G6110	SE 45 MINI LN	885	186
751	DCT01	SE GR STD RC	Special Made	-
755	DCT01	BN GR STD RC	Special Made	-
759	B0819	SE 60R STD RC	A49	269
763	DCT02	SE GR STD RC	Special Made	-
764	DCT02	SE GR LN	752	325
765	DCT02	SE GR LN	753	326
775	T...n	SE 30 STD	818	104
777	T...n	SE 30 STD	800	99
780	DCT02	BN GR STD	754	446
781	DCT02	BN GR STD RC	Special Made	-
784	DCT02	BN GR XL RC	B85	449
787	G6110	SE 45R MINI LN	B66	191
789	B0819	SE 60R STD	A48	269
790	B0819	BN 60 L	A71	403
791	B0819	BN 60 L RC	A72	403
797	B0819	BN 60 XL	A73	404
799	G6110	SE 45 MINI	883	185
809	DCT02	BN GR L RC	756	447
811	DCT02	SE GRR STD	Special Made	-
840	B0819	SE 45R RF	Special Made	-
848	G6110	SE 45 STD	886	203
850	G6110	SE 45 STD	851	176
854	G6110	SE 45 L	855	177

OBSOLETED LISTING

HPMT

EDP No	Coating	Description	Alternative	Page No.
858	G6110	SE 45 XL	202	208
860	G6110	SE 45 STD	886	203
861	B0819	SE 45 STD	886	203
874	D0700	SE GR LN	753	326
875	D0700	SE GR STD	750	324
884	B0819	SE 45 MINI LN	885	186
902	B0819	SE 45R MINI LN	B66	191
903	B0819	SE 45R TN	A25	200
910	B0819	SE 60 STD SF	A34	268
911	B0819	BN 60 XL RC	A74	404
912	D0700	BN GR STD	754	446
913	D0700	BN GR STD RC	Special Made	-
914	D0700	BN GR L RC	756	447
920	B0819	SE 60R STD	A50	270
936	B0819	BN45 MINI LN	A65	374
939	B0819	BN45 TN	A78	379
949	G6110	NiTiC0 30 DP/DH	951	122
969	D0120	DR 45 OF DIN 6537L 5 x Ø	967	508
977	B0819	SE 60 MINI LN	A56	279
984	B0819	BN 60 TN	A77	412
993	B0819	BN 60 MINI	A75	406
994	G6110	SE 45R RF	Special Made	-
997	B0819	BN 60 MINI LN	A76	407
A02	B0909	SE 45 MINI LN	A03	186
A24	B0909	SE 45R MINI LN	B66	191
A82	B0909	SE 45R RF	Special Made	-
A1N	B0909	NiTiC0 30 DP/DH	951	122
A1S	B0909	NiTiC0 30 DP/DH	972	122
B34	B0819	SE 60R LR XL	A53	276
B35	B0819	SE 60R LR XL RC	A54	276
B36	B0819	SE 60 MINI	A55	278
B52	D0120	DR 45 OF DIN 6537K 3 x Ø	B48	504
B68	B0819	SE 60R MINI LN	A80	284
C08	D0700	SE GRR STD	Special Made	-
C09	D0700	BN GR XL RC	B85	449
C34	G6110	SE 30 STD	798	98
C35	G6110	SE 30 STD	800	99
C37	G6110	SE 30 STD	802	100
C49	G6110	NiTiC0 30 DP/DH	972	122
C57	G6110	BN45 MINI LN	A65	374
C59	G6110	BN45 TN	A78	379
C65	G6110	BN 45 L	931	366
C95	G6110	DR 45 OF DIN 6537K 3 x Ø	B48	504
C96	G6110	DR 45 OF DIN 6537L 5 x Ø	967	508
C98	G6110	DR 30 DIN 6539 3 x Ø	958	472
C99	G6110	DR 30 5 x Ø	960	476

EDP No	Coating	Description	Alternative	Page No.
D01	G6110	DR 45 DIN 6537K 3 x Ø	965	496
D02	G6110	DR 45 DIN 6537L 5 x Ø	B47	500
F27	G6110	DR 45 SB OF 3 x Ø	Special Made	-
F28	G6110	DR 45 SB OF 3 x Ø	Special Made	-
F29	D0120	DR 45 SB OF 5 x Ø	F33	570
F30	G6110	DR 45 SB OF 5 x Ø	F33	570
F34	B0819	DR 45 SB 3 x Ø	Special Made	-
G54	T...n	AL SE STD TORUS	G52	61
G55	T...n	AL SE STD TORUS RC	G53	61
G58	T...n	AL SE L TORUS	G56	62
G59	T...n	AL SE L TORUS RC	G57	62
G60	T...n	ALU MF	Special Made	-
G61	T...n	ALU MF RC	Special Made	-
G62	T...n	ALU MF	Special Made	-
G63	T...n	ALU MF RC	Special Made	-
G64	T...n	ALU MF L	Special Made	-
G65	T...n	ALU MF L RC	Special Made	-
G66	T...n	ALU MF L	Special Made	-
G67	T...n	ALU MF L RC	Special Made	-

NiTiCo 45

DP STANDARD ENDMILLS

≤ 1.300 N/mm² + B0909 / G6110 ≤ 36 - 52 HRC

1

HPMT

VHM NiTiCo 45 DP Standard Fräser mitungleicher Teilung, 4 Zähne	Fraises 2 tailles NiTiCo 45 DP Standard à pas décalés, 4 dents, en carbure monobloc
Frese NiTiCo 45 DP Standard in metallo duro, passo differenziale, 4 taglienti	整体硬质合金 NiTiCo 45 DP 系列 立铣刀 4 刃 - 标准长度



*L= ~ DIN 6527L





EDP No. / EDV-Nr. / CODE usine / Codice EDP 4	Dimension (mm)					G14 * HA	G15 * HA	G20 * HB	G21 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0909	G6110	B0909
0300	3	9	15	57	6	•	•	•	•
* 0400	4	12	20	57	6	•	•	•	•
* 0500	5	13	20	57	6	•	•	•	•
* 0600	6	13	20	57	6	•	•	•	•
* 0800	8	20	30	64	8	•	•	•	•
* 1000	10	22	32	72	10	•	•	•	•
1200	12	26	37	83	12	•	•	•	•
* 1400	14	32	44	83	14	•	•	•	•
* 1600	16	32	46	92	16	•	•	•	•
* 1800	18	38	53	92	18	•	•	•	•
* 2000	20	38	58	104	20	•	•	•	•

2

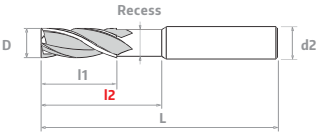
G17 * G18 * G23 * G24 *

3

NiTiCo 45

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagement sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○		●		●	●				

Cutting Parameter: 248

Technical specifications subject to change without prior notice

●	Not on Stock	Nicht aut Lager	Pas en Stock	Non a Magazzino	有存库
○	Ex Stock	Ab Lager	De Stock	Da Magazzino	无存库

HOW TO ORDER

Please define the style 1 you want to use.

Then please state catalogue number for the selected coating for tools without recess 2 or for tools with recess 3 and the diameter / EDP No. 4 (please always state the data mentioned in diameter line) you want to order.

Example based on page 244:
NiTiCo 45 DP Standard Endmills with Recess
B0909 coating = G18 3 - Ø 10mm 4 = **order line** G18 1000

WIE BESTELLEN

Bitte wählen Sie die Ausführung 1 die Sie benutzen möchten.

Danach geben Sie bitte die Katalog-Nummer für die ausgewählte Beschichtung für Werkzeuge ohne Freistellung 2 oder für Werkzeuge mit Freistellung 3 und die Abmessung / EDV-Nr. 4 (bitte alle Werte der Durchmesserposition mitangeben) an.

Beispiel gemäß Seite 244:
VHM NiTiCo 45 DP Standard Fräser mitungleicher Teilung
B0909 Beschichtung = G18 3 – Ø 10mm
4 = **Bestellzeile:** G18 1000

COMMENT COMMANDER

Prière de sélectionner l'exécution 1 que vous aimeriez employer.

Après veuillez s.v.p. indiquer le numéro de référence pour le revêtement choisi pour l'outil sans vdégagement 2 ou outil avec dégagement 3 ainsi que le diamètre / CODE usine 4 (prière de mentionner toutes les valeurs de la ligne diamère).

Example suivant page 244:
Fraises 2 tailles NiTiCo 45 DP Standrad en carbure monobloc.
Revêtement B0909 = G18 3 – Ø 10mm
4 = **ligne de commande:** G18 1000

COME ORDINARE

Selezionate p.f. la tipologia 1 che desiderate impiegare.

Dopo indicate il numero di catalogo per il rivestimento scelto per l'utensile senza riduzione del gambo 2 o con riduzione del gambo 3 come pure il diametro / Codice EDP 4 (p.f. riprendere tutti i valori della riga diametro) che volete ordinare.

Esempio basato sulla pagina 244:
Frese NiTiCo 45 DP Standard in metallo duro integrale con gole corte e riduzione del gambo
Rivestimento B0909 = G18 3 – Ø 10mm L
4 = **linea di ordine:** G18 1000

定货指南

首先确定您需要的型号 1

然后根据样本选择您需要订购刀具的涂层，带RC 2 或不带RC 3 以及直径/编号 4 (编号与直径同行)。

例如第244页：
NiTiCo 45 DP 系列 立铣刀 标准长度，带 RC
B0909 涂层=G18 3 -ϕ 10mm
4 = **订货号:** G18 1000

HPMT

N O

AL SE Single Flute Endmills

AL SE Einzahn Fräser / Frese AL SE 1 tagliente / Fraises AL SE à une dent / AL SE 系列 立铣刀- 1 刃	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	788	2 - 12	1	25°		•					•		58
	924				•	•					•		58

AL SE Standard Endmills

Standard AL SE Fräser / Frese AL SE Standard / Fraises AL SE Standard / AL SE 系列 立铣刀 标准长度	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
 HEAVY MACHINING FINISHING	301		2	50°		•				•	•		60
	303		3			•				•	•		66
	G49		2	40°		•				•			59
	G50		3			•				•			64

AL SE Standard DP Endmills

Standard DP AL SE Fräser / Frese AL SE DP Standard / Fraises AL SE DP Standard / AL SE DP 系列 立铣刀 标准长度	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	K30	1 - 16	3	40°	•					•	•		67
	K31					•				•	•		67

AL SE Standard Endmills

Standard AL SE fräser / Frese AL SE Standard / Fraises 2 tailles AL SE Standard / AL SE 系列 立铣刀 标准长度	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
 HEAVY MACHINING FINISHING	G52	2 - 20	2	30°	•	•				•	•		61
	G53				•	•		√		•	•		61

AL SE Endmills - Long

AL SE fräser, lang / Frese AL SE lunghe / Fraises 2 tailles AL SE longues / AL SE 系列 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
 HEAVY MACHINING FINISHING	G56	6 - 20	2	30°	•	•					•		62
	G57				•	•		√			•		62

N O

AL SE DP Standard Endmills with Differential Pitch

AL SE DP Standard Fräser mit ungleicher Teilung Frese AL SE DP Standard in metallo duro, passo differenziale Fraises 2 tailles AL SE DP Standard à pas décalés AL SE DP 系列 立铣刀 标准长度		EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	HEAVY MACHINING / FINISHING	G69	2 - 16	3	30°	•	•				•	•		68
		G70					•				•	•		68
	HEAVY MACHINING / FINISHING	C45	3 - 20	4	40°		•				•			71
		C51					•			√	•			71
	HEAVY MACHINING / FINISHING	S42					•				•			70

AL SE DP Torus Roughing Endmills

AL SE DP Torus Schruppfräser Frese per sgrossare AL SE DP toroidali Fraises ébauches 2 tailles AL SE DP toriques AL SE DP 系列 粗皮 立铣刀 - 标准长度	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	G72	6 - 20	3	40°		•				•	•		69
	G73					•		√		•	•		69

AL SE Endmills Reduce Shank

AL SE Fräser Frese AL SE Fraises 2 tailles AL SE AL SE 系列 立铣刀 - 标准长度		EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	HEAVY MACHINING / FINISHING	G71	3.2 - 20.3	2	30°	•	•				•	•		63

AL SE Miniature Endmills with Long Neck

AL SE Kleinstfräser mit langem Hals Micro-frese AL SE in metallo duro integrale con collo lungo Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long AL SE DP 系列 长颈短刃 立铣刀	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Operation			Page
	G68	0.2 - 4	2	40°		•				•			73

AL BN Ballnose Cutters Standard

AL BN Radiusschaftfräser Standard Frese cilindriche a raggio AL BN standard Fraises à bout hémisphérique AL BN standard AL SE 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Tolerance		Page
	G74	3 - 20	2	30°		•				Diameter	Tol. µm	78
										~Ø2.5	0 / -20	
	G75					•		√		Ø3.0 - Ø6.0	0 / -25	78
										> 3Ø6.0	0 / -30	

AL BN Miniature Ballnose Cutters with Long Neck

Kleinst-Radiusfräser AL BN mit langem Hals Micro-frese cilindriche AL BN a raggio con collo lungo Micro-fraises AL BN en carbure monobloc avec bout hémisphérique et cou long AL SE 系列 长颈短刃 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	Flute Polished	T ... n	H2600	RC	Weldon	Tolerance		Page
	G76	0.2 - 4	2	30°		•				Diameter	Tol. µm	79
										Ø0.1 - Ø2.0	0 / -20	
										Ø3.0 - Ø6.0	0 / -25	
										Ø6.0 - Ø30.0	0 / -30	

P M K N S

SE 30 Endmills - Standard

SE 30 Fräser - Standard / Frese SE 30 - Standard / Fraises SE 30 - Standard / SE 30 系列 立铣刀	EDP	Ø	N° Z	Angle	Point Angle	B0819	RC	Weldon	Operation			Page
	816	1 - 25	2	40°		•			•			103
	818		3			•			•			104
	820		4			•			•			105
	798		2	30°		•			•			98
	800		3			•			•			99
	802		4			•			•			100

SE 30 Endmills - Long

SE 30 Fräser - Long / Frese SE 30 - lunghe / Fraises SE 30 - longues / SE 30 系列 立铣刀 - 中长	EDP	Ø	N° Z	Angle	Point Angle	B0819	RC	Weldon	Operation			Page
	824	3 - 20	4	40°		•						106
	806			30°		•						101

SE 30 Endmills - Extra-Long

SE 30 Fräser - extra-lang / Frese SE 30 - lunghe / Fraises SE 30 - longues / SE 30 系列 立铣刀 - 加长	EDP	Ø	N° Z	Angle	Point Angle	B0819	RC	Weldon	Operation			Page
	828	3 - 20	4	40°		•						107
	810			30°		•						102

SE 30 Multi-Purpose Endmills

SE 30 VHM Mehrzweck / Fresa SE 30 multiplo impiego angolo / Fraises SE 30 multiple usage / SE 30 系列 多功能立铣刀	EDP	Ø	N° Z	Angle	Point Angle	B0819	RC	Weldon	Operation			Page
	834	3 - 20	2	40°	60°	•						108
	836				90°	•						109
	838				120°	•						110

SE 30

Miniature Round Corner Milling Cutters

P M K N S

Viertelrund Profilfräser Frese 1/4 circolare Fraises 1/4 de cercle 圆弧倒角刀	EDP	ø	N° Z	Angle	Point Angle	B0819	RC	Weldon	Operation			Page
	398	1 - 2.5	4	-		•						111

NiTiCo 30

NiTiCo 30 DP/DH Endmills with Differential Pitch and Differential Helix Angles

P M K S

NiTiCo 30 DP/DH Fräser mit ungleicher Teilung und ungleichen Drallwinkeln Frese NiTiCo 30R DP/DH in metallo duro integrale a passo ed eliche variabili Fraises 2 tailles NiTiCo 30 DP/DH à pas décalés et hélices différentes NiTiCo 30 系列 不等分 割及 不等份 螺族角 立铣刀	EDP	ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	C48	4 - 25	4	35°/38°	•				•	•	•	130
	C50				•			√	•	•	•	130
	A1R					•			•	•	•	130
	A1T					•		√	•	•	•	130

NiTiCo 30 DP Endmills with Differential Pitch

NiTiCo 30 DP Standard Fräser mit ungleicher Teilung Frese NiTiCo 30 DP Standard in metallo duro, passo differenziale Fraises 2 tailles NiTiCo 30 DP Standard à pas décalés NiTiCo 30 DP 系列 立铣刀 标准长度	EDP	ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	951	1 - 25	4	40°	•				•	•	•	122
	972				•			√	•	•	•	122
	C46	3 - 25			•				•	•	•	124
	C52				•			√	•	•	•	124

NiTiCo 30 DP Roughing with Differential Pitch

DP Schruppfräser NiTiCo 30 mit ungleicher Teilung Frese per sgrossare NiTiCo 30 DP in metallo duro, passo differenziale Fraises ébauches 2 tailles NiTiCo 30 DP à pas décalés NiTiCo 30 DP 系列 粗加工 标准长度	EDP	ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	C47	1 - 25	4	40°	•				•	•	•	123
	C64			30°	•				•	•	•	123

NiTiCo 30

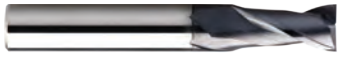
HPMT

P M K S

NiTiCo 30 Miniature with Long Neck

NiTiCo 30 Kleinst mit langem Hals Micro toroidali NiTiCo 30 in metallo duro integrale con collo lungo Micro toriques NiTiCo 30 2 tailles en carbure monobloc avec cou long NiTiCo 30 系列 长颈短刃 立铣刀, 铣刀 / 球头	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	G87	0.2 -4	2	40°	•				•			135
	H56				•				•			140
	G88				•					Profilling		145

NiTiCo 30 Standard Endmills

Fraises 2 tailles NiTiCo 30 Standard Frese NiTiCo 30 Standard NiTiCo 30 Standard Fräser NiTiCo 30 系列 立铣刀 标准长度	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	C30	1 - 25	4	40°	•				•			118
	C31				•				•			118
	C32				•				•			118
	C42	3 - 25			•			√	•			119
	C43				•			√	•			119
	C44				•			√	•			119

OPTIMUM

Optimium DP Endmills with Differential Pitch

P M K N S

Optimium DP Fräser mit ungleicher Teilung Frese Optimium DP Standard in metallo duro, passo differenziale Fraises 2 tailles Optimium DP Standard à pas décalés Optimium DP 系列 立铣刀 标准长度	EDP	Ø	N° Z	G6110	Helix Angle	B0909	RC	Weldon	Operation			Page
 HEAVY MACHINING DP FINISHING	918	1 - 20	4	•	40°				•	•	•	168
 HEAVY MACHINING DP FINISHING	K38	1 - 20		•				√	•	•	•	169
	K47			•					•	•	•	169
	K52			•			√		•	•	•	169
	K53			•			√	√	•	•	•	169

SE 45

HPMT

P M S H

SE 45 Endmills - Standard

SE 45 Fräser - Standard Nuten Frese SE 45 - Standard Fraises 2 tailles SE 45 standard SE 45 系列 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	851	1 - 25	4	30°	•					•			176
	862			40°		•				•			179
	863				•					•			179

SE 45 Endmills - Long

SE 45 Fräser - lang Frese SE 45 - lunghe Fraises SE 45 longues SE 45 系列 密齿 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	855	3 - 20	4	30°	•					•			177
	866			40°		•				•			180
	867				•					•			180

SE 45 Endmills - Extra-Long

SE 45 Fräser - extra-lang Frese SE 45 - extra-lunghe Fraises SE 45 - extra-longues SE 45 系列 密齿 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	859	3 - 20	4	30°	•					•			178
	870			40°		•				•			181
	871				•					•			181

SE 45R Torus Endmills - Standard

SE 45R Standard Torusfräser Frese SE 45R toroidali Standard Fraises toriques SE 45R - Standard SE 45R 系列 圆鼻 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	B59	3 - 20	4	40°		•				•			182
	B30				•					•			182

SE 45

HPMT

P M S H

SE 45 Short Flutes Endmills

SE 45 Fräser mit kurzen Nuten Frese SE 45 con gole corte Fraises SE 45 - standard SE 45 系列 立铣刀 - 短刃	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	893	1 - 25	3	40°	•					•			201
	630				•			√		•			201
	A14						•			•			201
	A15						•	√		•			201

SE 45 Endmills - Standard

SE 45 Fräser - Standard Nuten Frese SE 45 - Standard Fraises 2 tailles SE 45 standard SE 45 系列 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	886	1 - 25	2	40°	•					•			203
	B31				•			√		•			203
	A04						•			•			203
	A05						•	√		•			203
	887		4		•					•			205
	635				•			√		•			205
	543					•				•			205
	A06						•			•			205
	A07						•	√		•			205

SE 45 Endmills - Long

SE 45 Fräser - lang Frese SE 45 - lunghe Fraises SE 45 longues SE 45 系列 密齿 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	889	3 - 20	4	40°	•					•			207
	A09						•	√		•			207

SE 45 Endmills - Extra-Long

SE 45 Fräser - extra-lang Frese SE 45 - extra-lunghe Fraises SE 45 - extra-longues SE 45 系列 密齿 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	891	3 - 20	4	40°	•					•			208
	A11						•	√		•			208

P M S H

SE 45 Short-Flutes LONG REACH Endmills Long

SE 45 LONG REACH Fräser lang - mit kurzen Nuten Frese SE 45 LONG REACH lunghe con gole corte Fraises SE 45 LONG REACH longues avec goujures courtes SE 45 系列 短刃 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	895	3 - 20	4	40°	•								209
	897				•			√					209
	A18						•						209
	A19						•	√					209

SE 45 Short-Flutes LONG REACH Endmills, Extra-Long

SE 45 LONG REACH Fräser extra-lang - mit kurzen Nuten Frese SE 45 LONG REACH extra-lunghe con gole corte Fraises SE 45 LONG REACH extra-longues avec goujures courte SE 45 系列 短刃 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	899	3 - 20	4	40°	•								210
	901				•			√					210
	A22						•						210
	A23						•	√					210

SE 45 MultiFlute Endmills

SE 45 Mehrzahnfräser Frese SE 45 multi-taglienti Fraises SE 45 multi-dents SE 45 系列 密齿 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	B71	3 - 20	6/8	50°	•					•			221
	C14				•			√		•			221
	A89						•			•			221
	A94						•	√		•			221

SE 45 MultiFlute Endmills - Long

SE 45 Mehrzahnfräser - Lang Frese SE 45 multi-taglienti Lunghe Fraises SE 45 multidents - long SE 45 系列 密齿 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	B73	3 - 20	6/8	50°	•					•			222
	C15				•			√		•			222
	A90						•			•			222
	A95						•	√		•			222

P M S H

SE 45 MultiFlute Endmills - Extra-Long

SE 45 Mehrzahnfräser - Extra-Lang Frese SE 45 multi-taglienti Extra-Lunghe Fraises SE 45 multidents Extra-Longues SE 45 系列 密齿 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	B78	3 - 20	6/8	50°	•					•			223
	C16				•			√		•			223
	A91						•			•			223
	A96						•	√		•			223

SE 45R Torus Endmills with Taper Neck

SE 45R Torusfräser mit konischem Hals Frese toroidali SE 45R con collo conico Fraises 2 tailles SE 45R toriques avec cou conique SE 45R 系列 圆鼻锥颈位 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	A25	1.0 - 12	2	40°			•			•			200

SE 45 Miniature Endmills

SE 45 Kleinstfräser Micro-frese SE 45 Micro-fraises SE 45 SE 45 系列 微型 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	883	0.1 - 2	2	40°	•					•			185
	A01						•			•			185

SE 45 Miniature Endmills with Long Neck

SE 45 Kleinstfräser mit langem Hals Micro-frese SE 45 con collo lungo Micro-fraises SE 45 avec cou long SE 45 系列 长颈短刃 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	885	0.2 - 4	2	40°	•					•			186
	A03						•			•			186

SE 45R Miniature Torus Endmills with Long Neck

SE 45R Torus-Kleinstfräser mit langem Hals Micro-frese SE 45R torodidali con collo lungo Micro-fraises SE 45R 2 tailles toriques avec cou long SE 45R 系列 长颈短刃 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
	B66	0.2 - 4	2	40°	•					•			191
	A79						•			•			191

P M S H

SE 45R Torus Endmills Standard

SE 45R Standard Torusfräser
Frese SE 45R toroidali Standard
Fraises toriques SE 45R Standard
SE 45R 系列 圆鼻 立铣刀



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
311	1 - 20	4	40°		•				•			211
904				•					•			211
A26						•			•			231

SE 45R Short Flutes LONG REACH Torus Endmills, Long

SE 45R LONG REACH lange Torusfräser mit kurzen Nuten
Frese toroidali SE 45R LONG REACH lunghe con gole corte
Fraises toriques SE 45R LONG REACH longues avec goujures
SE 45R 系列 圆鼻短刃 立铣刀 - 中长



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
906	3 - 20	2	40°	•								215
786				•			√					215
A28						•						215
A99						•	√					215
907		4		•								216
813				•			√					216
A29						•						216
A1B						•	√					216

SE 45R Short Flutes LONG REACH Torus Endmills, Extra-Long

SE 45R LONG REACH extra-langge Torusfräser mit kurzen Nuten
Frese toroidali SE 45R LONG REACH extra-lunghe con gole corte
Fraises toriques SE 45R LONG REACH extra-longues avec
SE 45R 系列 圆鼻短刃 立铣刀 - 加长



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
908	3 - 20	2	40°	•								218
B32				•			√					218
A30						•						218
A31						•	√					218
909		4		•								219
B33				•			√					219
A32						•						219
A33						•	√					219

HPMT

P M S H

NiTiCo 45 DP Standard Endmills with Differential Pitch

NiTiCo 45 DP Standard Fräser mit ungleicher Teilung
Frese NiTiCo 45 DP Standard in metallo duro, passo differenziale
Fraises 2 tailles NiTiCo 45 DP Standard à pas décalés, en carbure monobloc
整体硬质合金 SE 45 NiTiCo 45 DP 系列 立铣刀标准长度



HEAVY MACHINING FINISHING

EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
G14	3 - 20	4	40°	•				•			244
G17				•		√		•			244
G15					•			•			244
G18					•	√		•			244
G20				•			√	•			244
G23				•		√	√	•			244
G21					•		√	•			244
G24					•	√	√	•			244

NiTiCo 45 DP Torus Endmills with Differential Pitch

NiTiCo 45 DP Torusfräser mit ungleicher Teilung
Frese NiTiCo 45 DP toriche, in metallo duro integrale, passo differenziale
Fraises 2 tailles NiTiCo 45 DP toriques à pas décalés en carbure monobloc
整体硬质合金 NiTiCo 45 DP 系列 圆鼻 立铣刀



HEAVY MACHINING FINISHING

EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
G26	3 - 20	4	40°	•				•			245
G29				•		√		•			245
G27					•			•			245
G30					•	√		•			245
G32				•			√	•			245
G35				•		√	√	•			245
G33					•		√	•			245
G36					•	√	√	•			245

NiTiCo 45 DP Roughing Endmills with Differential Pitch

DP Schruppfräser NiTiCo 45 mit ungleicher Teilung
Frese per sgrossare NiTiCo 45 DP in metallo duro, passo differenziale, 4 taglienti
Fraises ébauches 2 tailles NiTiCo 45 DP à pas décalés
整体硬质合金 NiTiCo 45 DP 系列 粗皮 立铣刀 标准长度



HEAVY MACHINING FINISHING

EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
G38	6 - 20	4	40°	•				•			247
G41				•		√		•			247
G39					•			•			247
G42					•	√		•			247
G44				•			√	•			247
G47				•		√	√	•			247
G45				•			√	•			247
G48				•		√	√	•			247

PLUNGE-MILL

HPMT

Plunge-Mill Endmills

P M K N

Plunge-Mill Fräser / Frese Plunge-Mill / Fraises 2 tailles Plunge-Mill / Plunge-Mill 系列 立铣刀	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	G10	1 - 20	3	40°	•				•	•		254
	G12				•		√		•	•		254

SE 60

SE 60 Short Flutes Endmills

H

SE 60 Fräser mit kurzen Nuten / Frese SE 60 con gole corte / Fraises SE 60 - standard / SE 60 系列 立铣刀 - 短刃	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A34	3 - 16	4	45°	•			•			268

SE 60 Endmills - Standard

SE 60 Fräser - Standard Nuten / Frese SE 60 - Standard / Fraises 2 tailles SE 60 standard / SE 60 系列 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A35	1 - 25	4	40°	•			•			260

SE 60 Endmills - Long

SE 60 Fräser - lang / Frese SE 60 - lunghe / Fraises SE 60 longues / SE 60 系列 密齿 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A36	3 - 20	4	40°	•						261

SE 60 Endmills - Extra-Long

SE 60 Fräser - extra-lang / Frese SE 60 - extra-lunghe / Fraises SE 60 extra-longues / SE 60 系列 密齿 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A37	3 - 20	4	40°	•						262

H

SE 60 Short-Flutes LONG REACH Endmills, Long

SE 60 LONG REACH Fräser lang - mit kurzen Nuten Frese SE 60 LONG REACH lunghe con gole corte Fraises SE 60 LONG REACH longues avec goujures courtes SE 60 系列 短刃 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A38	3 - 20	4	40°	•						263
	A39					√					263

SE 60 Short-Flutes LONG REACH Endmills, Extra-Long

SE 60 LONG REACH Fräser extra-lang - mit kurzen Nuten Frese SE 60 LONG REACH extra-lunghe con gole corte Fraises SE 60 LONG REACH extra-longues avec goujures courtes SE 60 系列 短刃 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A40	3 - 20	4	40°	•						264
	A41					√					264

SE 60 MultiFlute Endmills

SE 60 Mehrzahnfräser Frese SE 60 multi-taglienti Fraises SE 60 multi-dents SE 60 系列 密齿 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A42	3 - 20	6/8	50°	•						265
	A43					√					265

SE 60 MultiFlute Endmills - Long

SE 60 Mehrzahnfräser - Lang Frese SE 60 multi-taglienti Lunghe Fraises SE 60 multidents - long SE 60 系列 密齿 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A44	3 - 20	6/8	50°	•						266
	A45					√					266

SE 60 MultiFlute Endmills - Extra-Long

SE 60 Mehrzahnfräser - Extra-Lang Frese SE 60 multi-taglienti Extra-Lunghe Fraises SE 60 multidents Extra-Longues SE 60 系列 密齿 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A46	3 - 20	6/8	50°	•						267
	A47					√					267

H

SE 60 Miniature Endmills

SE 60 Kleinstfräser / Micro-frese SE 60 / Micro-fraises SE 60 / SE 60 系列 微型 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A55	0.2 - 0.9	2	40°	•						278

SE 60 Miniature Endmills with Long Neck

SE 60 Kleinstfräser mit langem Hals / Micro-frese SE 60 con collo lungo / Micro-fraises SE 60 avec cou long / SE 60 系列 长颈短刃 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A56	0.2 - 4	2	40°	•			•			279

SE 60R Miniature Torus Endmills with Long Neck

SE 60R Torus-Kleinstfräser mit langem Hals / Micro-frese SE 60R torodidali con collo lungo / Micro-fraises SE 60R 2 tailles toriques avec cou long / SE 60R 系列 长颈短刃 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A80	0.2 - 4	2	40°	•			•			284

SE 60R Short Flutes Torus Endmills Standard

SE 60R Standard Torusfräser - mit kurzen Nuten / Frese SE 60R toroidali Standard, gole corte / Fraises toriques SE 60R - Standard, goujure courtes / SE 60R 系列 圆鼻 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A48	3 - 16	4	40°	•						269
	A49					√					269

SE 60R Torus Endmills Standard

SE 60R Standard Torusfräser / Frese SE 60R toroidali Standard / Fraises toriques SE 60R Standard / SE 60R 系列 圆鼻 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A50	1 - 20	4	40°	•			•			270

H

SE 60R Short Flutes LONG REACH Torus Endmills, Long

SE 60R LONG REACH lange Torusfräser mit kurzen Nuten Frese toroidali SE 60R LONG REACH lunghe con gole corte Fraises toriques SE 60R LONG REACH longues avec goujures courtes SE 60R 系列 圆鼻短刃 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A51	2 - 16	4	40°	•						274
	A52					√					274

SE 60R Short Flutes LONG REACH Torus Endmills, Extra-Long

SE 60R LONG REACH extra-langge Torusfräser mit kurzen Nuten Frese toroidali SE 60R LONG REACH extra-lunghe con gole corte Fraises toriques SE 60R LONG REACH extra-longues avec goujures courtes SE 60R 系列 圆鼻短刃 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	A53	2 - 16	4	40°	•						276
	A54					√					276

HPMT

P S H

SE60X Fin-Mill Torus Endmills - Standard

SE60X Fin-Mill Torusfräser - Standard Frese SE60X Fin-Mill toroidali, in metallo duro integrale - Standard Fraises 2 tailles SE60X Fin-Mill toriques Standard SE60X Fin-Mill 系列 圆鼻 立铣刀 4/6 刃 – 标准长度	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	G78	2 - 12	4/6	25°	•						300
	G80				•	√					300

SE60X Fin-Mill Torus Endmills - Long

SE60X Fin-Mill Langer Torusfräser Frese SE60X Fin-Mill toroidali lunghe, in metallo duro integrale Fraises 2 tailles SE60X Fin-Mill toriques longues SE60X Fin-Mill 系列 圆鼻 立铣刀 4/6 刃 – 中长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	G82	2 - 12	4/6	25°	•						302
	G84				•	√					302

SE60X Sweep-Mill Torus Endmills

SE60X Torusfräser Frese Toroidali in metallo duro SE60X Fraises 2 tailles toriques SE60X Sweep SE60X 系列 圆鼻立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	G86	3 - 12	4/6	3°	•						313

SE60X Miniature Endmills with Long Neck

SE60X Kleinstfräser mit langem Hals Micro-frese SE60X con collo lungo Micro-fraises SE60X avec cou long SE60X 系列 长颈短刃 立铣刀 – 加长	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
 NEW	A4G	0.2 - 4	2/4	25°	•						304

SE60X Miniature Ballnose Cutters with Taper Neck

SE60X Kleinst-Radiusschaftfräser mit kegeligem Hals Micro-frese cilindriche a raggio SE60X con collo Micro-fraises à bout hémisphérique SE60X avec cou SE60X 系列 锥颈位 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
 NEW	A4F	1 - 6	4	25°	•						310

SE60X

SE60X Double R Ballnose Cutters

P S H

SE60X Double R Radiusschaft-, fräser Frese cilindriche a raggio in metallo duro integrale, tipo SE60X Double R Fraises SE60X Double R SE60X Double R 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0909	RC	Weldon	Operation			Page
	815	4 - 16	2	30°	•						316
	A98										316

SE GR

SE GR Standard Endmills - Diamond

O

SE GR VHM Fräser - Diamant Frese SE GR rivestite - diamante Fraises 2 tailles revêtues - diamant SE GR 系列 立铣刀 - 石墨操作	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Operation			Page
	750	1 - 12	4	40°	•			•	•		324

SE GR Miniature Endmills with Long Neck - Diamond

SE GR Kleinstfräser mit langem Hals - Diamant Micro-frese SE GR con collo lungo - diamante Micro-fraises SE GR avec cou long - diamant SE GR 系列 长颈短刃 立铣刀 - 加长 - 石墨操作	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Operation			Page
	752	0.5 - 6	2	40°	•			•	•		325
	753	1 - 12	4	40°	•			•	•		326

SE GR Miniature Torus Endmills with Long Neck - Diamond

SE GR Toruskleinstfräser mit langem Hals - Diamant Micro-frese toroidali SE GR con collo lungo - diamante Micro-fraises toriques SE GR avec cou long - diamant SE GR 系列 圆鼻长颈短刃 立铣刀 - 石墨操作	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Operation			Page
	J86	0.5 - 0.8	2	40°	•			•	•		328
	H86	1 - 12	4	40°	•			•	•		329

HPMT

P M K N S

TE 45 Die Sinking Cutters with 0.5° Inclination

TE 45 Gesenkfräser mit einem Winkel von 0.5° Frese coniche con un angolo di 0.5° Fraises pour matrices avec 0.5° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 0.5°	EDP	Ø	N° Z	Helix Angle	Inclination	T...n	B0819	RC	Weldon	Page
	583	0.5 - 16	3 / 4	30°	0.5°	•				334
	B37						•			334

TE 45 Die Sinking Cutters with 1.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 1.0° Frese coniche con un angolo di 1.0° Fraises pour matrices avec 1.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 1.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T...n	B0819	RC	Weldon	Page
	587	0.5 - 16	3 / 4	30°	1.0°	•				335
	B38						•			335

TE 45 Die Sinking Cutters with 1.5° Inclination

TE 45 Gesenkfräser mit einem Winkel von 1.5° Frese coniche con un angolo di 1.5° Fraises pour matrices avec 1.5° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 1.5°	EDP	Ø	N° Z	Helix Angle	Inclination	T...n	B0819	RC	Weldon	Page
	591	0.5 - 16	3 / 4	30°	1.5°	•				336
	B39						•			336

TE 45 Die Sinking Cutters with 2.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 2.0° Frese coniche con un angolo di 2.0° Fraises pour matrices avec 2.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 2.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T...n	B0819	RC	Weldon	Page
	595	0.5 - 16	3 / 4	30°	2.0°	•				337
	B40						•			337

TE 45 Die Sinking Cutters with 2.5° Inclination

TE 45 Gesenkfräser mit einem Winkel von 2.5° Frese coniche con un angolo di 2.5° Fraises pour matrices avec 2.5° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 2.5°	EDP	Ø	N° Z	Helix Angle	Inclination	T...n	B0819	RC	Weldon	Page
	599	0.5 - 8	3 / 4	30°	2.5°	•				338
	B41						•			338

HPMT

P M K N S

TE 45 Die Sinking Cutters with 3.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 3.0° Frese coniche con un angolo di 3.0° Fraises pour matrices avec 3.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 3.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T... n	B0819	RC	Weldon	Page
	603	0.5 - 16	3 / 4	30°	3.0°	•				339
	B42						•			339

TE 45 Die Sinking Cutters with 4.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 4,0° Frese coniche con un angolo di 4,0° Fraises pour matrices avec 4,0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 4.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T... n	B0819	RC	Weldon	Page
	607	2.5 - 10	3 / 4	30°	4.0°	•				340
	B43						•			340

TE 45 Die Sinking Cutters with 5.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 5.0° Frese coniche con un angolo di 5.0° Fraises pour matrices avec 5.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 5.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T... n	B0819	RC	Weldon	Page
	611	0.5 - 16	3 / 4	30°	5.0°	•				341
	B44						•			341

TE 45 Die Sinking Cutters with 7.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 7.0° Frese coniche con un angolo di 7.0° Fraises pour matrices avec 7.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度7.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T... n	B0819	RC	Weldon	Page
	615	0.5 - 16	3 / 4	30°	7.0°	•				342
	B45						•			342

TE 45 Die Sinking Cutters with 10.0° Inclination

TE 45 Gesenkfräser mit einem Winkel von 10.0° Frese coniche con un angolo di 10.0° Fraises pour matrices avec 10.0° d'inclinaison TE 45 系列 锥度 立铣刀 - 锥度 10.0°	EDP	Ø	N° Z	Helix Angle	Inclination	T... n	B0819	RC	Weldon	Page
	618	0.5 - 6	3	30°	10.0°	•				343
	B46						•			343

Solid Carbide M / MF Thread-Mill

P M K N S

VHM Fräser M / MF Thread mill Frese M / MF Thread mill in metallo duro integrale Fraises 2 tailles M / MF en carbure monobloc 整体硬质合金硬质合金螺纹铣刀	EDP	Ø	N° Z	Helix Angle	Thread Length	G6110		RC	Weldon	Page
	H15	6 - 20	4	30°	2 X D	•	•			349
	H17					•	•			349

Solid Carbide M / MF Thread-Mill

VHM Fräser M / MF Thread mill Frese M / MF Thread mill in metallo duro integrale Fraises 2 tailles M / MF en carbure monobloc 整体硬质合金硬质合金螺纹铣刀	EDP	Ø	N° Z	Helix Angle	Thread Length	G6110		RC	Weldon	Page
	H19	6 - 20	4	30°	2 X D	•				348
	H21					•				348

BN 30

HPMT

P M K N S

BN 30 Ballnose Cutters - Standard

BN 30 Radiusschaftfräser - Standard Frese cilindriche a raggio BN 30 - standard Fraises à bout hémisphérique BN 30 - standard BN 30 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	**923**	3 - 20	2	30°		•				Ø0.1 - Ø2.9	0 / -20	354
										Ø3.0 - Ø6.0	0 / -25	
										Ø6.0 - Ø30.0	0 / -30	

BN 30 Ballnose Cutters - Long

BN 30 Radiusschaftfräser - lang Frese cilindriche a raggio BN 30 - lunghe Fraises à bout hémisphérique BN 30 - longues BN 30 系列 球头 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	**925**	3 - 20	2	30°		•				Ø0.1 - Ø2.9	0 / -20	355
										Ø3.0 - Ø6.0	0 / -25	
										Ø6.0 - Ø30.0	0 / -30	

BN 30 Ballnose Cutters - Extra-Long

BN 30 Radiusschaftfräser - extra-lang Frese cilindriche a raggio BN 30 - extra-lunghe Fraises à bout hémisphérique BN 30 - extra-longues BN 30 系列 球头 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	**927**	3 - 20	2	30°		•				Ø0.1 - Ø2.9	0 / -20	356
										Ø3.0 - Ø6.0	0 / -25	
										Ø6.0 - Ø30.0	0 / -30	

BN 45

HPMT

P M K S H

BN 45 Ballnose Cutters - Standard

BN 45 Radiusschaftfräser - Standard Frese cilindriche a raggio BN 45 - standard Fraises à bout hémisphérique BN 45 - standard BN 45 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	929	1 - 25	2	30°	•					Diameter	Tol. µm	364
	C36					•				Ø0.1 - Ø2.9	0 / -20	364
	B82	3 - 25	4		•							369
	940	1 - 25	2		•					Ø3.0 - Ø6.0	0 / -25	368
	941				•			√				368
	A57						•			Ø6.0 - Ø30.0	0 / -30	368
	A58						•	√				368

BN 45 Ballnose Cutters - Long

BN 45 Radiusschaftfräser - lang Frese cilindriche a raggio BN 45 - lunghe Fraises à bout hémisphérique BN 45 - longues BN 45 系列 球头 立铣刀 - 中长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	931	1 - 20	2	30°	•					Diameter	Tol. µm	366
	942				•							370
	943				•			√		Ø0.1 - Ø2.9	0 / -20	370
	A59						•			Ø3.0 - Ø6.0	0 / -25	370
	A60						•	√		Ø6.0 - Ø30.0	0 / -30	370

BN 45 Ballnose Cutters - Extra-Long

BN 45 Radiusschaftfräser - extra-lang Frese cilindriche a raggio BN 45 - lunghe Fraises à bout hémisphérique BN 45 extra-longues BN 45 系列 球头 立铣刀 - 加长	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	933	1 - 20	2	30°	•					Diameter	Tol. µm	367
	944				•							371
	945				•			√		Ø0.1 - Ø2.9	0 / -20	371
	A61						•			Ø3.0 - Ø6.0	0 / -25	371
	A62						•	√		Ø6.0 - Ø30.0	0 / -30	371

BN 45 Miniature Ballnose Cutters

BN 45 Kleinst-Radiusschaftfräser Micro-frese cilindriche a raggio BN 45 Micro-fraises à bout hémisphérique BN 45 BN 45 系列 微型球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	935	0.2 - 0.9	2	30°	•					Diameter	Tol. µm	373
	A63						•			Ø0.1 - Ø0.7	0 / -12	373
										Ø0.7 - Ø4.0	0 / -20	

HPMT

P M K S H

BN 45 Miniature Ballnose Cutters with Long Neck

BN 45 Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN 45 con collo lungo Micro-fraises à bout hémisphérique BN 45 avec cou BN 45 系列 长颈短刀 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	A65	0.5 - 4	2	30°			•			Diameter Ø0.1 - Ø2.9 Ø3.0 - Ø6.0 Ø6.0 - Ø30.0	Tol. µm 0 / -20 0 / -25 0 / -30	374

BN 45 Miniature Ballnose Cutters with Long Neck

BN 45 Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN 45 con collo lungo Micro-fraises à bout hémisphérique BN 45 avec cou BN 45 系列 长颈短刀 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	937	0.2 - 4	2	30°	•					Diameter Ø0.1 - Ø2.9	Tol. µm 0 / -20	375
	A66						•			Ø3.0 - Ø6.0 Ø6.0 - Ø30.0	0 / -25 0 / -30	375

BN 45 Miniature Ballnose Cutters with Taper Neck

BN 45 Kleinst-Radiusschaftfräser mit kegeligem Hals Micro-frese cilindriche a raggio BN 45 con collo conico Micro-fraises à bout hémisphérique BN 45 avec cou conique BN 45 系列 锥颈位 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
	939	1 - 10	2	30°	•					Diameter Ø0.1 - Ø2.9	Tol. µm 0 / -20	379
	A78						•			Ø3.0 - Ø6.0 Ø6.0 - Ø30.0	0 / -25 0 / -30	379

H

BN 60 Ballnose Cutters - Standard

BN 60 Radiusschaftfräser - Standard
Frese cilindriche a raggio BN 60 - standard
Fraises à bout hémisphérique BN 60 - standard
BN 60 系列 球头 立铣刀



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
									Diameter	Tol. µm	
A69	0.5 - 25	2	30°			•			Ø0.1 - Ø2.0	0 / -20	400
A70						•	•		Ø3.0 - Ø6.0	0 / -25	400
A1L	3 - 25	4				•			Ø6.0 - Ø30.0	0 / -30	402

BN 60 Ballnose Cutters - Long

BN 60 Radiusschaftfräser - lang
Frese cilindriche a raggio BN 60 - lunghe
Fraises à bout hémisphérique BN 60 - longues
BN 60 系列 球头 立铣刀 - 中长



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
									Diameter	Tol. µm	
A71	1 - 20	2	30°			•			Ø0.1 - Ø2.0	0 / -20	403
A72						•	•		Ø3.0 - Ø6.0	0 / -25	403
									Ø6.0 - Ø30.0	0 / -30	

BN 60 Ballnose Cutters - Extra-Long

BN 60 Radiusschaftfräser - extra-lang
Frese cilindriche a raggio BN 60 - extra-lunghe
Fraises à bout hémisphérique BN 60 - extra-longues
ABN 60 系列 球头 立铣刀 - 加长



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
									Diameter	Tol. µm	
A73	1 - 20	2	30°			•			Ø0.1 - Ø2.0	0 / -20	404
A74						•	•		Ø3.0 - Ø6.0	0 / -25	404
									Ø6.0 - Ø30.0	0 / -30	

BN 60 Miniature Ballnose Cutters

BN 60 Kleinst-Radiusschaftfräser
Micro-frese cilindriche a raggio BN 60
Micro-fraises à bout hémisphérique BN 60
BN 60 系列 微型球头 立铣刀



EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
									Diameter	Tol. µm	
A75	0.2 - 0.9	2	30°			•			Ø0.1 - Ø0.7	0 / -12	406
									Ø0.7 - Ø4.0	0 / -20	

H

BN 60 Miniature Ballnose Cutters with Long Neck

BN 60 Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN 60 con collo lungo Micro-fraises à bout hémisphérique BN 60 avec cou BN 60 系列 长颈短刃 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A76	0.2 - 4	2	30°			•			Ø0.1 - Ø2.0	0 / -12	407
										Ø3.0 - Ø6.0	0 / -20	
										Ø6.0 - Ø30.0	0 / -30	

BN 60 Miniature Ballnose Cutters with Taper Neck

BN 60 Kleinst-Radiusschaftfräser mit kegeligem Hals Micro-frese cilindriche a raggio BN 60 con collo Micro-fraises à bout hémisphérique BN 60 avec cou BN 60 系列 锥颈位 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A77	1 - 12	2	30°			•			Ø0.1 - Ø2.0	0 / -12	412
										Ø3.0 - Ø6.0	0 / -20	
										Ø6.0 - Ø30.0	0 / -30	

BN 60X

BN 60X Ballnose Cutters - Standard

P H

BN 60X Radiusschaftfräser - Standard Frese cilindriche a raggio BN 60X - standard Fraises à bout hémisphérique BN 60X - standard BN 60X 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A4R	0.5 - 20	2	30°			•			Ø ≤ 3	+0.000 -0.012	426
	A4Q						•	√		Ø > 3	+0.000 -0.020	426

BN 60X Miniature Ballnose Cutters with Long Neck

BN 60X Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN 60X con collo lungo Micro-fraises à bout hémisphérique BN 60X avec cou BN 60X 系列 长颈短刃 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A4S	0.2 - 4	2	30°			•			Ø ≤ 3	+0.000 -0.012	427
										Ø > 3	+0.000 -0.020	

BN 60P

BN 60P Ballnose Cutters - Standard

P H

BN 60P Radiusschaftfräser - Standard Frese cilindriche a raggio BN 60P - standard Fraises à bout hémisphérique BN 60P - standard BN 60P 系列 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A4T	0.5 - 20	2	30°			•			Ø ≤ 3	+0.000 -0.006	432
	A5A						•	√		Ø > 3	+0.000 -0.010	432

BN 60P Miniature Ballnose Cutters with Long Neck

BN 60P Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN 60P con collo lungo Micro-fraises à bout hémisphérique BN 60P avec cou BN 60P 系列 长颈短刃 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Tolerance		Page
										Diameter	Tol. µm	
	A5B	0.2 - 4	2	30°			•			Ø ≤ 3	+0.000 -0.006	433
										Ø > 3	+0.000 -0.010	

BN GR Standard Ballnose Cutters - Diamond

BN GR Standard Radius- Fräser, Diamant Frese cilindriche BN GR standard a raggio rivestite diamante Fraises BN GR standard à bout hémisphérique, revêtue diamant BN GR 系列 球头 立铣刀 石墨操作	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Tolerance		Page
	754	1 - 12	2	30°	•			Diameter	Tol. µm	446
								Ø0.1 - Ø2.0	0 / -20	
								Ø3.0 - Ø6.0	0 / -25	
								Ø6.0 - Ø30.0	0 / -30	

BN GR Miniature Ballnose Cutters with Long Neck

BN GR Kleinst-Radiusschaftfräser mit langem Hals Micro-frese cilindriche a raggio BN GR con collo lungo Micro-fraises à bout hémisphérique BN GR avec cou BN GR 系列 长颈短刃 球头 立铣刀	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Tolerance		Page
	756	0.5 - 12	2	30°	•			Diameter	Tol. µm	447
								Ø0.1 - Ø2.0	0 / -20	
								Ø3.0 - Ø6.0	0 / -25	
								Ø6.0 - Ø30.0	0 / -30	

BN GR Extra-Long Ballnose Cutters - Diamond

BN GR extra-lange Radius-Fräser Diamant Frese cilindriche extra-lunghe a raggio rivestite diamante Fraises SE BN extra-longues à bout hémisphérique, revêtue diamant BN GR 系列 球头 立铣刀 - 石墨操作 - 加长	EDP	Ø	N° Z	Helix Angle	DCT01	RC	Weldon	Tolerance		Page
	B85	2 - 8	2	30°	•			Diameter	Tol. µm	449
								Ø0.1 - Ø2.0	0 / -20	
								Ø3.0 - Ø6.0	0 / -25	
								Ø6.0 - Ø30.0	0 / -30	

NC Spotting Drills

P M K N S H O

NC-Positionierungsbohrer / Punte NC di posiziona-mento / Forets NC de pointage / 中心钻	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	D0120	G6110	T8090	Point Drilling		Page
	662	3 - 16	2	30°	•					60°		454
	953					•						454
	664				•					90°		455
	955					•						455
	666				•					120°		456
	957					•						456

DR 30 Twist Drills with 140° Point Angle

DR 30 Spiralbohrer mit 140° Spitzenwinkel / DR 30 Punte ellicoidali con 140° angolo di punta / DR 30 Forets hélicoïdal avec 140° angle de pointe / DR 30 外冷却 钻头 - 柄部标准 140°	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
	644	1 - 16	2	30°	•					3 X Ø		472
	958					•						472
	729				•					5 X Ø		476
	960					•						476

DR NiTiCo Oil Feed Twist Drills 130° Point Angle

DR NiTiCo Kühlkanalbohrer Spiralbohrer nach 130° Spitzenwinkel / DR NiTiCo Punte con fori di lubrifica zione angolo dipunta 130° / DR NiTiCo Forets à trous d'huile, 130° angle de pointe / DR NiTiCo 内冷却钻头 - 相等于柄部标准	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
	D07	3 - 20	2	30°				•		3 X Ø	•	484
	D08							•		5 X Ø	•	488

DR 45 Twist Drills 140° Point Angle

DR 45 Spiralbohrer nach 140° Spitzenwinkel / DR 45 Punte elicoidali in metallo duro integrale normazione sec., 140° angolo di punta / DR 30 Forets hélicoïdal avec 140° angle de pointe / DR 30 外冷却 钻头 - 柄部标准 140°	EDP	Ø	N° Z	Helix Angle	T ... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
	965	3 - 20	2	30°		•				3 X Ø		496
	B47					•				5 X Ø		496
	B48					•				3 X Ø	•	508
	967					•				5 X Ø	•	508

P M K N S H O

DR 45 SB Oil Feed Twist Drills 140° Point Angle

DR 45 SB Kühlkanalbohrer Spiralbohrer nach 140° Spitzenwinkel
DR 45 SB Punte con fori di lubrifica zione angolo di punta 140°
DR 45 SB Forets à trous d'huile, 140° angle de pointe
DR 45 SB 内冷却钻头 - 相等于柄部标准

EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
F32	3 - 20	2	30°				•		8 X Ø	•	536
F33						•				•	536

DR ALU Oil Feed Twist Drills 130° Point Angle

DR ALU Kühlkanalbohrer Spiralbohrer nach 130° Spitzenwinkel
DR ALU Punte con fori di lubrifica zione angolo di punta 130°
DR ALU Forets à trous d'huile, 130° angle de pointe
DR ALU 内冷却钻头 - 相等于柄部标准

EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
D09	3 - 20	2	30°	•					3 X Ø	•	460
D10				•					5 X Ø	•	464

DR VA Oil Feed Twist Drills 130° Point Angle

DR VA Kühlkanalbohrer Spiralbohrer nach 130° Spitzenwinkel
DR VA Punte con fori di lubrifica zione angolo di punta 130°
DR VA Forets à trous d'huile, 130° angle de pointe
DR VA 内冷却钻头 - 相等于柄部标准

EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
C73	3 - 20	2	30°				•		3 X Ø	•	518
C77							•		5 X Ø	•	522

DR-S Twist Drills 140° Point Angle

DR-S Spiralbohrer nach 140° Spitzenwinkel
DR-S Punte elicoidali in metallo duro integrale normazione sec,140° angolo di punta
DR-S Forets hélicoïdaux en carbure, 140° angle de pointe
DR-S 钻头 - 相等于柄部标准

EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
W08	3 - 20	2	30°				•		3 X Ø		530
W09							•				534
W10							•		5 X Ø	•	538
W11							•			•	542

DR Mini Oil Feed Twist Drills 135° Point Angle

DR Mini Kühlkanalbohrer Spiralbohrer nach 135° Spitzenwinkel
DR Mini Punte con fori di lubrifica zione angolo di punta 135°
DR Mini Forets à trous d'huile, 135° angle de pointe
DR Mini 内冷却钻头 - 相等于柄部标准

EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
H03	1 - 3	2	30°				•		5, 8, 12, 15, 20, 25, 30 X Ø	•	552

DR-L Oil Feed Twist Drills 135° Point Angle

P M K N S H O

DR-L Kühlkanalbohrer Spiralbohrer nach 135° Spitzenwinkel DR-L Punte con fori di lubrifica zione angolo di punta 135° DR-L Forets à trous d'huile, 135° angle de pointe DR-L 内冷却钻头 - 相等于柄部标准	EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
 NEW	W05	3 - 10	2	30°					•	12, 15, 20 X Ø	•	562

DR 60 Twist Drills 150° Point Angle

DR 60 Spiralbohrer nach 150° Spitzenwinkel DR 60 Punte elicoidali in metallo duro integrale normazione sec., 150° angolo di punta DR 60 Forets hélicoïdaux en carbure, 150° angle de pointe DR 60 钻头 - 相等于柄部标准	EDP	Ø	N° Z	Helix Angle	T... n	B0819	D0120	G6110	T8090	Depth Drilling		Page
	823	3 - 13	2	30°			•			3 X Ø		578
	821						•			5 X Ø		580

RE 45

HPMT

P M K N S

RE 45 Short Reamers Straight Flutes, r.h. Cut

RE 45 kurze Maschinenreibahlen, gerade Nuten Alesatori macchina corti, gole diritte Alésoirs machine courts, goujures droites RE 45 系列 直槽 铰刀	EDP	Ø	N° Z	Helix Angle	T ... n	CX 45°	CX 45°	Page
	621	1.5 - 16	4/6		•	•		584

RE 45 Short Reamers 12° l.h. Helix, r.h. Cut Double, Lead Entrance

RE 45 kurze Maschinenreibahlen, 12° Linksdrall, rechtsschneidend doppelter Alesatori macchina corti, eliche 12° a sinistra, taglio a destra doppio imbocco Alésoirs machine courts, hélices à gauche 12°, coupe à droite double entrée RE 45 系列 螺旋 铰刀	EDP	Ø	N° Z	Helix Angle	T ... n	CX 45°	CX 45°	Page
	623	1.5 - 16	4/6		•		•	585

RE 45 DIN 212 Reamers Straight Flutes, r.h.

RE 45 DIN 212 Maschinenreibahlen, gerade Nuten Alesatori macchina DIN 212 gole diritte Alésoirs machine DIN 212, goujures droites RE 45 系列 直槽 铰刀 - DIN 212	EDP	Ø	N° Z	Helix Angle	T ... n	CX 45°	CX 45°	Page
	625	2 - 16	4/6		•	•		586

RE 45 DIN 212 Reamers 12° l.h. Helix, r.h. cut Double Lead Entrance

RE 45 DIN 212 Maschinenreibahlen, 12° Linksdrall, rechtsschneidend, doppelter Anschnitt Alesatori macchina DIN 212 gole diritte Alésoirs machine DIN 212, goujures droites RE 45 系列 直槽 铰刀 - DIN 212	EDP	Ø	N° Z	Helix Angle	T ... n	CX 45°	CX 45°	Page
	627	2 - 16	4/6		•		•	587

RE 45 Machine Reamers 60° l.h. Helix, r.h. Cut Special Lead Entrance

RE 45 Maschinenreibahlen 60° Linksdrall, rechtsschneidend, Sonderanschnitt Alesatori macchina con eliche 60° a sinistra, taglio a destra, imbocco Alésoirs machine , hélices à gauche 60°, coupe à droite, entrée spéciale RE 45 系列 高螺旋 铰刀	EDP	Ø	N° Z	Helix Angle	T ... n	CX 45°	CX 45°	Page
	629	2 - 16	3/4/6		•		•	591



ALU LINE

- Wide range of carbide endmills
- For Aluminium and non-ferrous materials

This series includes endmills and ballnose



AL SE SINGLE FLUTE ENDMILLS

HPMT

VHM AL SE Einzahn Fräser | Fraises AL SE en carbure monobloc à une dent

Frese AL SE in metallo duro integrale ad 1 taglienti | 整体硬质合金 AL SE 系列 立铣刀 1 刃 - 标准长度

788*







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					788 *	924 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Normal	Flute Polished
						T ... n	T ... n
0200	2	10		40	2	•	○
0300	3	12		40	3	•	○
0400	4	15		50	4	•	○
0500	5	16		50	5	•	○
0600	6	20		60	6	•	○
0800	8	22		63	8	•	○
1000	10	25		72	10	•	○
1200	12	30		83	12	•	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

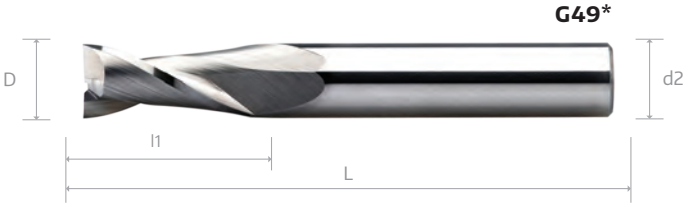
Cutting Parameter: 83

Technical specifications subject to change without prior notice

AL SE STANDARD ENDMILLS

HPMT

VHM AL SE Standard Fräser, 2 Zähne	Fraises 2 tailles AL SE standard - 2 dents, en carbure monobloc
Frese AL SE in metallo duro integrale, 2 taglienti	整体硬质合金 AL SE 系列 立铣刀 2 刃 - 标准长度







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					G49 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0100 040 04	1	3		40	4	•
0150 040 04	1.5	4.5		40	4	•
0200 040 04	2	6.5		40	4	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	31		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
2000	20	38		100	20	•

Ø mm	Tol. µm
0.1~2.9	-0/ -20
3.0~6.0	-0/-25
6.0~30.0	-0/-30

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

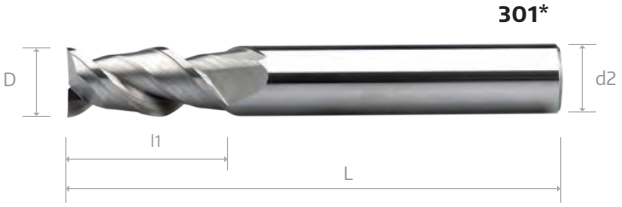
83

AL SE STANDARD ENDMILLS

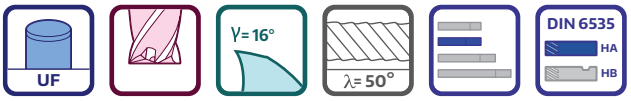
HPMT

VHM AL SE Standard Fräser, 2 Zähne | Fraises 2 tailles AL SE standard - 2 dents, en carbure monobloc

Frese AL SE in metallo duro integrale, 2 taglienti | 整体硬质合金 AL SE 系列 立铣刀 2 刃 - 标准长度







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					301 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

83

Spécifications techniques sujettes à changement sans avis prélable

AL SE STANDARD ENDMILLS (EDGE PROTECTION)

HPMT

VHM AL SE Standard Fräser, 2 Zähne | Fraises 2 tailles AL SE standard - 2 dents, en carbure monobloc

Frese AL SE in metallo duro integrale, 2 taglienti | 整体硬质合金 AL SE 系列 立铣刀 2 刃 - 标准长度

G52*







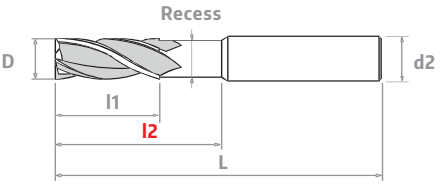
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G52 *
= * + Ø data	D	l 1	l 2	d3	L	d2 (h6)	R	T ... n
0200	2	6.5		2.8	40	4	0.1	○
0200 050 06	2	6.5		2.8	50	6	0.1	○
0300	3	9	15	2.8	40	3	0.1	○
0300 050 06	3	9	15	2.8	50	6	0.1	○
0400	4	12	20	3.7	50	4	0.1	○
0400 050 06 06	4	6	12	3.7	50	6	0.1	○
0400 050 06	4	12	20	3.7	50	6	0.1	○
0500 050 06	5	15	20	4.6	50	6	0.1	○
0600 060 09	6	9	18	5.5	60	6	0.1	○
0600 060	6	20	30	5.5	60	6	0.1	○
0800 12	8	12	24	7.4	64	8	0.1	○
0800	8	20	30	7.4	64	8	0.1	○
1000 15	10	15	32	9.2	75	10	0.1	○
1000	10	22	32	9.2	75	10	0.1	○
1200 18	12	18	37	11	75	12	0.1	○
1200	12	25	37	11	75	12	0.1	○
1400	14	32	44	13	90	14	0.1	○
1600 24	16	24	40	15	90	16	0.1	○
1600	16	32	46	15	90	16	0.1	○
2000	20	38	60	19	100	20	0.1	○

G53*

Tools with recess upon request

Fräser mit Freistellung auf Bestellung | Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a | 密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●													●	

Cutting Parameter: 83

AL SE LONG ENDMILLS (EDGE PROTECTION)

HPMT

VHM AL SE fräser, lang, 2 Zähne | Fraises 2 tailles AL SE longues - 2 dents, en carbure monobloc

Frese AL SE lunghe in metallo duro integrale, 2 taglienti | 整体硬质合金 AL SE 系列 立铣刀 2 刃 - 中长

G56*





Z2



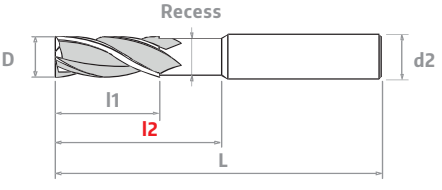
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G56 *
= * + Ø data	D	l 1	l 2	d3	L	d2 (h6)	R	T ... n
0600	6	16	40	5.5	80	6	0.1	○
0800	8	20	40	7.4	80	8	0.1	○
1000	10	22	60	9.2	100	10	0.1	○
1200	12	25	60	11	100	12	0.1	○
1400	14	32	75	13	125	14	0.1	○
1600	16	32	75	15	125	16	0.1	○
2000	20	38	75	19	125	20	0.1	○

G57*

Tools with recess upon request

Fräser mit Freistellung auf Bestellung | Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a | 密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●													●	

Cutting Parameter

84

若有技术规格变更，恕不事先通知

AL SE ENDMILLS with Reduce Shank

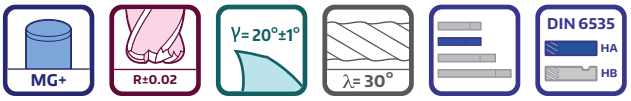
HPMT

VHM AL SE Torusfräser, lang, 2 Zähne	Fraises 2 tailles AL SE toriques longues - 2 dents, en carbure monobloc
Frese AL SE toroidali lunghe in metallo duro integrale, 2 taglienti	整体硬质合金 AL SE 系列 立铣刀 2 刃 - 中长

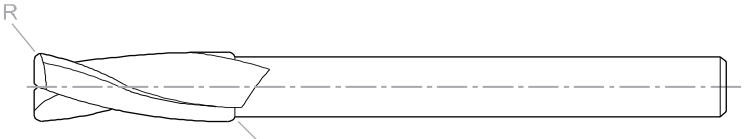
G71*







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G71*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	Flute Polished T ... n
0320 075	3.2	4		75	3	0.1	○
0420 075	4.2	5		75	4	0.1	○
0520 075	5.2	6		75	5	0.1	○
0620 075	6.2	8		75	6	0.1	•
0620 100	6.2	8		100	6	0.1	•
0820 075	8.2	10		75	8	0.1	•
0820 100	8.2	10		100	8	0.1	•
1030 100	10.3	14		100	10	0.1	•
1030 125	10.3	14		125	10	0.1	•
1230 100	12.3	16		100	12	0.1	•
1230 125	12.3	16		125	12	0.1	•
1630 125	16.3	20		125	16	0.1	•
2030 125	20.3	25		125	20	0.1	•



All tools grinded with small radius to reduce line marked during step milling.

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter: 83

AL SE STANDARD ENDMILLS

HPMT

VHM AL SE Standard Fräser, 3 Zähne | Fraises 2 tailles AL SE standard - 3 dents, en carbure monobloc

Frese AL SE in metallo duro integrale, 3 taglienti | 整体硬质合金 AL SE 系列 立铣刀 3 刃 - 标准长度

G50*





Z3



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					G50 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0100 040 04	1	3		40	4	•
0150 040 04	1.5	4.5		40	4	•
0200 040 04	2	6.5		40	4	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	31		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
2000	20	38		100	20	•

Ø mm	Tol. µm
0.1~2.9	-0/ -20
3.0~6.0	-0/-25
6.0~30.0	-0/-30

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

85

Technische änderungen ohne vorherige information vorbehalten

AL SE ENDMILLS – Long

HPMT

VHM AL SE Fräser, lang, 3 Zähne	Fraises 2 tailles AL SE longues - 3 dents, en carbure monobloc
Frese AL SE lunghe in metallo duro integrale, 3 taglienti	整体硬质合金 AL SE 系列 立铣刀 3 刃 - 中长

G51*





Z3



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					G51 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0300	3	19		60	3	•
0300 075 06	3	19		75	6	•
0400	4	19		60	4	•
0400 075 06	4	19		75	6	•
0500	5	19		75	6	•
0600 075	6	31		75	6	•
0600 100	6	38		100	6	•
0800 075	8	31		75	8	•
0800 100	8	41		100	8	•
1000 100	10	50		100	10	•
1000 125	10	57		125	10	•
1200 100	12	50		100	12	•
1200 150	12	75		150	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•

Ø mm	Tol. µm
0.1~2.9	-0/ -20
3.0~6.0	-0/-25
6.0~30.0	-0/-30

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

86

AL SE STANDARD ENDMILLS

HPMT

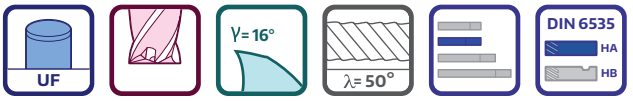
VHM AL SE Standard Fräser, 3 Zähne | Fraises 2 tailles AL SE standard - 3 dents, en carbure monobloc

Frese AL SE in metallo duro integrale, 3 taglienti | 整体硬质合金 AL SE 系列 立铣刀 3 刃 - 标准长度

303*







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					303 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

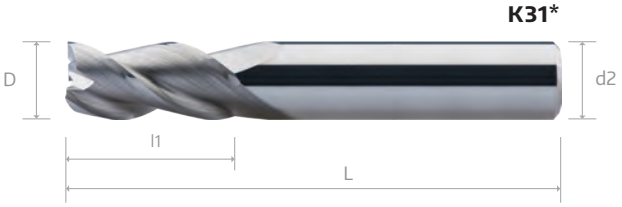
Cutting Parameter: 85

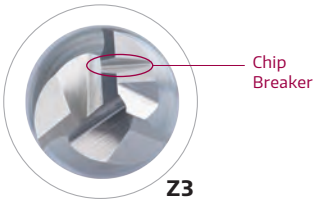
Modifiche Techiche possibili senza preavviso

AL SE STANDARD DP ENDMILLS

HPMT

VHM AL SE Standard DP Fräser, 3 Zähne	Fraises 2 tailles AL SE standard DP - 3 dents, en carbure monobloc
Frese AL SE DP in metallo duro integrale, 3 taglienti	整体硬质合金 AL SE 系列 立铣刀 3 刃 - 标准长度







HPT H2600 Alu

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					K30 *	K31 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n	H2600
0100 040 04	1	3		40	4	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	9		40	3	•	•
0300 050 06	3	9		50	6	•	•
0400	4	12		50	4	•	•
0400 050 06	4	12		50	6	•	•
0500 050 06	5	15		50	6	•	•
0600 050	6	16		50	6	•	•
0600 060	6	20		60	6	•	•
0800	8	20		64	8	•	•
1000 070	10	22		70	10	•	•
1000 075	10	31		75	10	•	•
1200	12	25		75	12	•	•
1600	16	32		90	16	•	•

Ø mm	Tol. µm
0.1~2.9	-0/ -20
3.0~6.0	-0/-25
6.0~30.0	-0/-30

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

85

若有技术规格变更，恕不事先通知

AL SE DP STANDARD ENDMILLS (EDGE PROTECTION)

HPMT

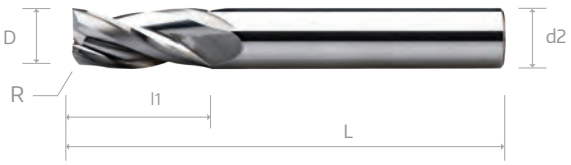
VHM Standard AL SE DP fräser, 3 Zähne

Fraises 2 tailles AL SE DP standard - 2 dents, en carbure monobloc

Frese AL SE DP in metallo duro integrale, 2 taglienti

整体硬质合金 AL SE DP 系列 立铣刀 2 刃 - 标准长度

G69*





Z3



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G70 *	G69 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	Normal	Flute Polished
							T ... n	T ... n
0200	2	6.5		40	4	0.1	•	○
0200 050 06	2	6.5		50	6	0.1	•	○
0300	3	9		40	3	0.1	•	○
0300 050 06	3	9		50	6	0.1	•	○
0400	4	12		50	4	0.1	•	○
0400 050 06	4	12		50	6	0.1	•	○
0500 050 06	5	15		50	6	0.1	•	○
0600 060	6	20		60	6	0.1	•	○
0800	8	20		64	8	0.1	•	○
1000	10	22		75	10	0.1	•	○
1200	12	25		75	12	0.1	•	○
1400	14	32		90	14	0.1	•	○
1600	16	32		90	16	0.1	•	○

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

85

Technical specifications subject to change without prior notice

AL SE DP TORUS ROUGHING ENDMILLS

HPMT

VHM AL SE DPR Torusfräser mit ungleicher Teilung, 3 Zähne

Fraises 2 tailles AL SE DPR toriques à pas décalés

Frese AL SE DPR toriche, in metallo duro integrale, passo differenziale, 3 taglienti

整体硬质合金 AL SE DP 系列 立铣刀 3 刃 - 标准长度

C72*





Z3



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G72 *
= * + Ø data	D	l 1	l 2	d3	L	d2 (h6)	R	T ... n
0600	6	13	24	5.5	60	6	0.1	•
0600 075	6	13	40	5.5	75	6	0.1	•
0800	8	20	28	7.4	64	8	0.1	•
0800 075	8	20	40	7.4	75	8	0.1	•
1000 075	10	22	35	9.2	75	10	0.1	•
1000 100	10	22	60	9.2	100	10	0.1	•
1200 075	12	26	40	11	75	12	0.12	•
1200 100	12	26	60	11	100	12	0.12	•
1600 090	16	32	40	15	90	16	0.16	•
1600 125	16	32	75	15	125	16	0.16	•
2000 100	20	40	50	19	100	20	0.2	•
2000 150	20	40	100	19	150	20	0.2	•

G73*

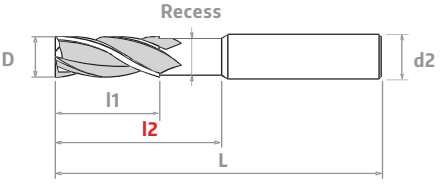
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

86

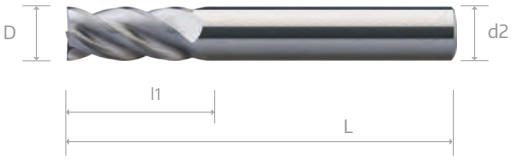
AL SE DP STANDARD ENDMILLS

HPMT

VHM AL SE DP Standard Fräser, 4 Zähne | Fraises 2 tailles AL SE DP standard - 4 dents, en carbure monobloc

Frese AL SE DP in metallo duro integrale, 4 taglienti | 整体硬质合金 AL SE DP 系列 立铣刀 4 刃 - 标准长度

S42*





Z4



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					S42*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n
0300 057 06	3	9		57	6	•
0400 057 06	4	12		57	6	•
0500 057 06	5	13		57	6	•
0600 057	6	13		57	6	•
0800 064	8	20		64	8	•
1000 072	10	22		72	10	•
1200 083	12	26		83	12	•
1400 090	14	32		90	14	•
1600 092	16	32		92	16	•
2000 104	20	38		104	20	•

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

87

Spécifications techniques sujettes à changement sans avis prélable

AL SE DPR TORUS ENDMILLS

HPMT

VHM AL SE DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles AL SE DPR toriques à pas décalés

Frese AL SE DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 AL SE DP 系列 立铣刀 4 刃 - 标准长度

C45*





Z4



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C45 * HA	C51 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	T ... n	T ... n
0300 057 0600 030	3	9		57	6	0.3	•	•
0300 057 0600 050	3	9		57	6	0.5	•	•
0400 057 0600 030	4	12		57	6	0.3	•	•
0400 057 0600 050	4	12		57	6	0.5	•	•
0500 057 0600 030	5	15		57	6	0.3	•	•
0500 057 0600 050	5	15		57	6	0.5	•	•
0600 057 0600 030	6	16		57	6	0.3	•	•
0600 057 0600 050	6	16		57	6	0.5	•	•
0600 057 0600 100	6	16		57	6	1	•	•
0800 064 0800 030	8	20		64	8	0.3	•	•
0800 064 0800 050	8	20		64	8	0.5	•	•
0800 064 0800 100	8	20		64	8	1	•	•
0800 064 0800 150	8	20		64	8	1.5	•	•
0800 064 0800 200	8	20		64	8	2	•	•
1000 072 1000 030	10	22		72	10	0.3	•	•
1000 072 1000 050	10	22		72	10	0.5	•	•
1000 072 1000 100	10	22		72	10	1	•	•
1200 083 1200 030	12	26		83	12	0.3	•	•
1200 083 1200 050	12	26		83	12	0.5	•	•
1200 083 1200 100	12	26		83	12	1	•	•
1200 083 1200 200	12	26		83	12	2	•	•
1200 083 1200 250	12	26		83	12	2.5	•	•
1200 083 1200 300	12	26		83	12	3	•	•
1400 083 1400 050	14	32		83	14	0.5	•	•
1400 083 1400 100	14	32		83	14	1	•	•
1400 083 1400 150	14	32		83	14	1.5	•	•

cont'd ▶

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

87

Modifiche Techiche possibili senza preavviso

AL SE DPR TORUS ENDMILLS

HPMT

VHM AL SE DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles AL SE DPR toriques à pas décalés

Frese AL SE DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 AL SE DP 系列 立铣刀 4 刃 - 标准长度

C45*





Z4



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C45 * HA	C51 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	T ... n	T ... n
1400 083 1400 200	14	32		83	14	2	•	•
1400 083 1400 300	14	32		83	14	3	•	•
1600 092 1600 030	16	32		92	16	0.3	•	•
1600 092 1600 050	16	32		92	16	0.5	•	•
1600 092 1600 100	16	32		92	16	1	•	•
1600 092 1600 200	16	32		92	16	2	•	•
1600 092 1600 250	16	32		92	16	2.5	•	•
1600 092 1600 300	16	32		92	16	3	•	•
1600 092 1600 400	16	32		92	16	4	•	•
2000 104 2000 030	20	38		104	20	0.3	•	•
2000 104 2000 050	20	38		104	20	0.5	•	•
2000 104 2000 100	20	38		104	20	1	•	•
2000 104 2000 200	20	38		104	20	2	•	•
2000 104 2000 250	20	38		104	20	2.5	•	•
2000 104 2000 300	20	38		104	20	3	•	•
2000 104 2000 400	20	38		104	20	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

87

若有技术规格变更，恕不事先通知

AL SE MINIATURE ENDMILLS - with Long Neck

HPMT

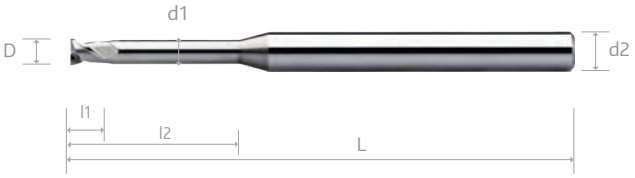
VHM AL SE Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long, 2 dents

Micro-frese AL SE in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 AL SE 系列 长颈短刃 立铣刀 2 刃

G68*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G68*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	T ... n
0020 050 0400	0.2	0.3	-	50	-	4	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	•
0030 050 0400	0.3	0.4	-	50	-	4	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	•
0040 050 0400	0.4	0.6	-	50	-	4	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	•
0050 050 0400	0.5	0.7	-	50	-	4	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	•
0060 050 0400	0.6	0.9	-	50	-	4	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	•
0070 050 0400	0.7	1.0	-	50	-	4	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	•
0070 050 0400 080	0.7	1.0	8	50	0.65	4	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

92

AL SE MINIATURE ENDMILLS - with Long Neck

HPMT

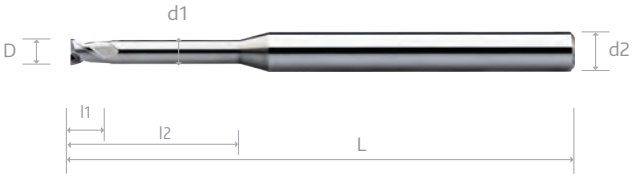
VHM AL SE Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long, 2 dents

Micro-frese AL SE in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 AL SE 系列 长颈短刃 立铣刀 2 刃

G68*







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G68*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	T ... n
0080 050 0400	0.8	1.2	-	50	-	4	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	•
0090 050 0400	0.9	1.4	-	50	-	4	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	•
0090 050 0400 080	0.9	1.4	8	50	0.85	4	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	•
0100 050 0400	1.0	1.5	-	50	-	4	•
0100 050 0400 060	1.0	1.5	6	50	0.9	4	•
0100 050 0400 080	1.0	1.5	8	50	0.9	4	•
0100 050 0400 100	1.0	1.5	10	50	0.9	4	•
0100 050 0400 120	1.0	1.5	12	50	0.9	4	•
0100 050 0400 140	1.0	1.5	14	50	0.9	4	•
0100 050 0400 160	1.0	1.5	16	50	0.9	4	•
0120 050 0400	1.2	1.8	-	50	-	4	•
0120 050 0400 060	1.2	1.8	6	50	1.1	4	•
0120 050 0400 080	1.2	1.8	8	50	1.1	4	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	•
0140 050 0400	1.4	2.1	-	50	-	4	•
0140 050 0400 060	1.4	2.1	6	50	1.3	4	•
0140 050 0400 080	1.4	2.1	8	50	1.3	4	•
0140 050 0400 100	1.4	2.1	10	50	1.3	4	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter 92

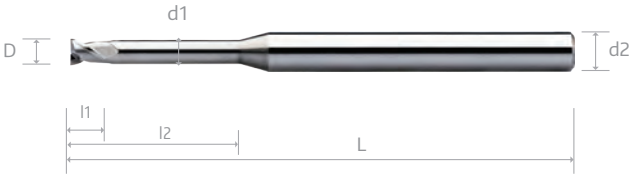
Technische änderungen ohne vorherige information vorbehalten

AL SE MINIATURE ENDMILLS - with Long Neck

HPMT

VHM AL SE Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese AL SE in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 AL SE 系列 长颈短刃 立铣刀 2 刃

G68*







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G68*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	T ... n
0150 050 0400	1.5	2.3	-	50	-	4	•
0150 050 0400 060	1.5	2.3	6	50	1.4	4	•
0150 050 0400 080	1.5	2.3	8	50	1.4	4	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	•
0150 060 0400	1.5	2.3	-	60	-	4	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	•
0160 050 0400	1.6	2.4	-	50	-	4	•
0160 050 0400 060	1.6	2.4	6	50	1.5	4	•
0160 050 0400 080	1.6	2.4	8	50	1.5	4	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	•
0160 060 0400	1.6	2.4	-	60	-	4	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	•
0180 050 0400	1.8	2.7	-	50	-	4	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	•
0180 050 0400 120	1.8	2.7	12	50	1.7	4	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	•
0180 060 0400	1.8	2.7	-	60	-	4	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

92

AL SE MINIATURE ENDMILLS - with Long Neck

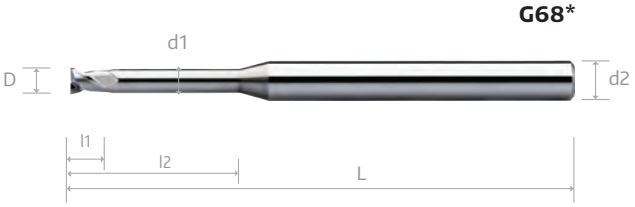
HPMT

VHM AL SE Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long, 2 dents

Micro-frese AL SE in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 AL SE 系列 长颈短刃 立铣刀 2 刃







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G68*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	T ... n
0200 050 0400	2	3	-	50	-	4	•
0200 050 0400 060	2	3	6	50	1.9	4	•
0200 050 0400 080	2	3	8	50	1.9	4	•
0200 050 0400 100	2	3	10	50	1.9	4	•
0200 050 0400 120	2	3	12	50	1.9	4	•
0200 050 0400 140	2	3	14	50	1.9	4	•
0200 050 0400 160	2	3	16	50	1.9	4	•
0200 060 0400	2	3	-	60	-	4	•
0200 060 0400 180	2	3	18	60	1.9	4	•
0200 060 0400 200	2	3	20	60	1.9	4	•
0200 075 0400	2	3	-	75	-	4	•
0200 075 0400 250	2	3	25	75	1.9	4	•
0200 075 0400 300	2	3	30	75	1.9	4	•
0250 050 0400	2.5	3.7	-	50	-	4	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	•
0250 060 0400	2.5	3.7	-	60	-	4	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	•
0250 060 0400 250	2.5	3.7	25	60	2.4	4	•
0250 075 0400	2.5	3.7	-	75	-	4	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	•
0300 050 0600	3	4.5	-	50	-	6	•
0300 050 0600 080	3	4.5	8	50	2.8	6	•
0300 050 0600 100	3	4.5	10	50	2.8	6	•
0300 050 0600 120	3	4.5	12	50	2.8	6	•
0300 050 0600 140	3	4.5	14	50	2.8	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

92

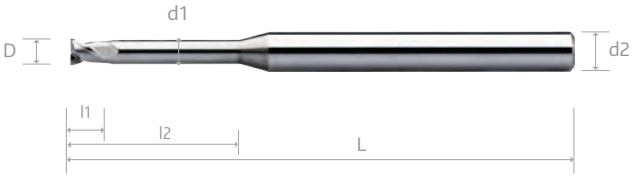
Modifiche Techiche possibili senza preavviso

AL SE MINIATURE ENDMILLS - with Long Neck

HPMT

VHM AL SE Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises AL SE 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese AL SE in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 AL SE 系列 长颈短刃 立铣刀 2 刃

G68*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G68*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	T ... n
0300 060 0600	3	4.5	-	60	-	6	•
0300 060 0600 160	3	4.5	16	60	2.8	6	•
0300 060 0600 180	3	4.5	18	60	2.8	6	•
0300 060 0600 200	3	4.5	20	60	2.8	6	•
0300 075 0600	3	4.5	-	75	2.8	6	•
0300 075 0600 250	3	4.5	25	75	2.8	6	•
0400 060 0600	4	4.5	-	60	-	6	•
0400 060 0600 100	4	4.5	10	60	3.7	6	•
0400 060 0600 150	4	4.5	15	60	3.7	6	•
0400 060 0600 200	4	4.5	20	60	3.7	6	•
0400 075 0600	4	4.5	-	75	3.7	6	•
0400 075 0600 250	4	4.5	25	75	3.7	6	•
0400 075 0600 300	4	4.5	30	75	3.7	6	•
0400 075 0600 400	4	4.5	40	75	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter 92

若有技术规格变更，恕不事先通知

AL BN STANDARD BALLNOSE CUTTERS

HPMT

VHM Standard AL-BN Radiusschaftfräser, 2 Zähne

Fraises AL-BN Standard en carbure monobloc, à bout hémi-sphérique,2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo AL-BN Standard, 2 taglienti

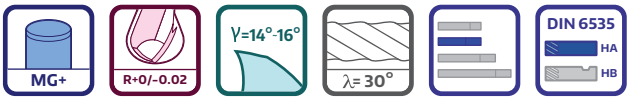
整体硬质合金 AL-BN 系列 球头 立铣刀 2 刃 - 标准长度

G74*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G74*
= * + Ø data	D	R	l 1	l 2	d3	L	d2 (h6)	T ... n
0300	3	1.5	5	20	2.8	57	6	•
0400	4	2	6	20	3.7	57	6	•
0500	5	2.5	7	20	4.6	57	6	•
0600	6	3	8	20	5.5	57	6	•
0800	8	4	10	25	7.4	64	8	•
1000	10	5	12	35	9.2	75	10	•
1200	12	6	14	35	11	75	12	•
1600	16	8	18	45	15	90	16	•
2000	20	10	22	50	19	100	20	•

G75*

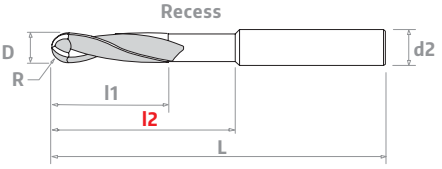
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Ø mm	Tol. µm
~ Ø 2.5	+0/ -0.020
Ø 3 ~ Ø 6	+0/-0.025
>Ø 6	+0/-0.030

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

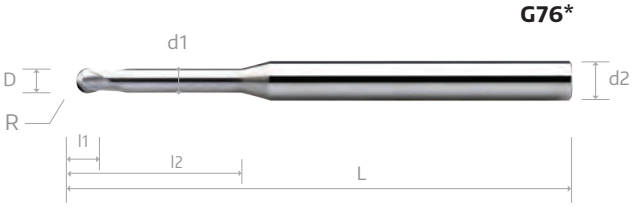
88

Technical specifications subject to change without prior notice

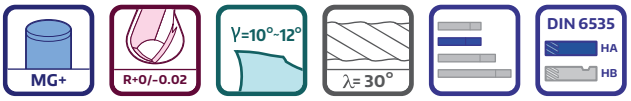
AL BN MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

VHM Kleinst-Radiusfräser AL BN mit langem Hals, 2 Zähne	Micro-fraises AL BN en carbure monobloc avec bout hémisphérique et cou long, 2 dents
Micro-frese cilindriche AL BN a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 AL BN 系列 长颈短刃 球头 立铣刀 2 刃







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G76*
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	T ... n
0020 050 0400	0.2	0.10	0.2	-	50	-	4	•
0020 050 0400 005	0.2	0.10	0.2	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.10	0.2	1	50	0.17	4	•
0020 050 0400 015	0.2	0.10	0.2	1.5	50	0.17	4	•
0030 050 0400	0.3	0.15	0.3	-	50	-	4	•
0030 050 0400 010	0.3	0.15	0.3	1	50	0.27	4	•
0030 050 0400 020	0.3	0.15	0.3	2	50	0.27	4	•
0030 050 0400 030	0.3	0.15	0.3	3	50	0.27	4	•
0040 050 0400	0.4	0.20	0.4	-	50	-	4	•
0040 050 0400 010	0.4	0.20	0.4	1	50	0.37	4	•
0040 050 0400 020	0.4	0.20	0.4	2	50	0.37	4	•
0040 050 0400 030	0.4	0.20	0.4	3	50	0.37	4	•
0040 050 0400 040	0.4	0.20	0.4	4	50	0.37	4	•
0040 050 0400 050	0.4	0.20	0.4	5	50	0.37	4	•
0050 050 0400	0.5	0.25	0.4	-	50	-	4	•
0050 050 0400 020	0.5	0.25	0.4	2	50	0.45	4	•
0050 050 0400 030	0.5	0.25	0.4	3	50	0.45	4	•
0050 050 0400 040	0.5	0.25	0.4	4	50	0.45	4	•
0050 050 0400 050	0.5	0.25	0.4	5	50	0.45	4	•
0050 050 0400 060	0.5	0.25	0.4	6	50	0.45	4	•
0050 050 0400 080	0.5	0.25	0.4	8	50	0.45	4	•
0060 050 0400	0.6	0.30	0.5	-	50	-	4	•
0060 050 0400 020	0.6	0.30	0.5	2	50	0.55	4	•
0060 050 0400 030	0.6	0.30	0.5	3	50	0.55	4	•
0060 050 0400 040	0.6	0.30	0.5	4	50	0.55	4	•
0060 050 0400 050	0.6	0.30	0.5	5	50	0.55	4	•
0060 050 0400 060	0.6	0.30	0.5	6	50	0.55	4	•
0060 050 0400 080	0.6	0.30	0.5	8	50	0.55	4	•
0080 050 0400	0.8	0.40	0.6	-	50	-	4	•
0080 050 0400 020	0.8	0.40	0.6	2	50	0.75	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

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AL BN MINIATURE BALLNOSE CUTTERS – with Long Neck

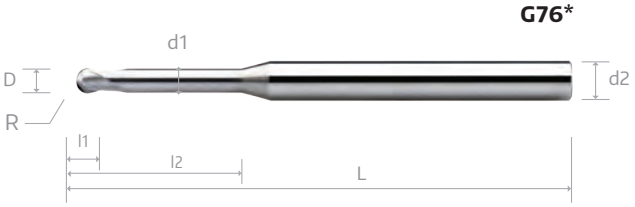
HPMT

VHM Kleinst-Radiusfräser AL BN mit langem Hals, 2 Zähne

Micro-fraises AL BN en carbure monobloc avec bout hémisphérique et cou long, 2 dents

Micro-frese cilindriche AL BN a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 AL BN 系列 长颈短刃 球头 立铣刀 2 刃







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G76*
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	T ... n
0080 050 0400 040	0.8	0.40	0.6	4	50	0.75	4	•
0080 050 0400 050	0.8	0.40	0.6	5	50	0.75	4	•
0080 050 0400 060	0.8	0.40	0.6	6	50	0.75	4	•
0080 050 0400 070	0.8	0.40	0.6	7	50	0.75	4	•
0080 050 0400 080	0.8	0.40	0.6	8	50	0.75	4	•
0080 050 0400 100	0.8	0.40	0.6	10	50	0.75	4	•
0100 050 0400	1.0	0.50	0.8	-	50	-	4	•
0100 050 0400 030	1.0	0.50	0.8	3	50	0.9	4	•
0100 050 0400 040	1.0	0.50	0.8	4	50	0.9	4	•
0100 050 0400 050	1.0	0.50	0.8	5	50	0.9	4	•
0100 050 0400 060	1.0	0.50	0.8	6	50	0.9	4	•
0100 050 0400 070	1.0	0.50	0.8	7	50	0.9	4	•
0100 050 0400 080	1.0	0.50	0.8	8	50	0.9	4	•
0100 050 0400 090	1.0	0.50	0.8	9	50	0.9	4	•
0100 050 0400 100	1.0	0.50	0.8	10	50	0.9	4	•
0100 050 0400 120	1.0	0.50	0.8	12	50	0.9	4	•
0100 050 0400 140	1.0	0.50	0.8	14	50	0.9	4	•
0100 050 0400 160	1.0	0.50	0.8	14	50	0.9	4	•
0100 060 0400	1.0	0.50	0.8	-	60	-	4	•
0100 060 0400 200	1.0	0.50	0.8	20	60	0.9	4	•
0120 050 0400	1.2	0.60	1.0	-	50	-	4	•
0120 050 0400 060	1.2	0.60	1.0	6	50	1.1	4	•
0120 050 0400 080	1.2	0.60	1.0	8	50	1.1	4	•
0120 050 0400 100	1.2	0.60	1.0	10	50	1.1	4	•
0120 050 0400 120	1.2	0.60	1.0	12	50	1.1	4	•
0140 050 0400	1.4	0.70	1.1	-	50	-	4	•
0140 050 0400 080	1.4	0.70	1.1	8	50	1.3	4	•
0140 050 0400 120	1.4	0.70	1.1	12	50	1.3	4	•
0140 050 0400 160	1.4	0.70	1.1	16	50	1.3	4	•
0150 050 0400	1.5	0.75	1.2	-	50	-	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

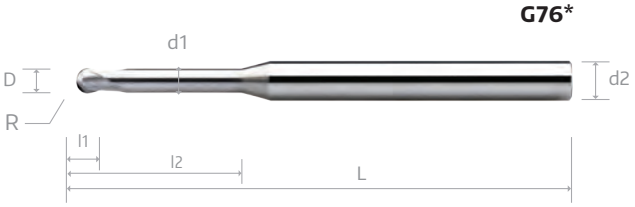
89

Spécifications techniques sujettes à changement sans avis prélable

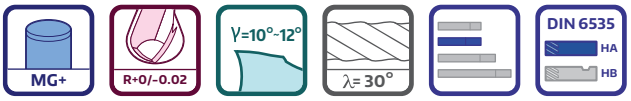
AL BN MINIATURE BALLNOSE CUTTERS - with Long Neck

HPMT

VHM Kleinst-Radiusfräser AL BN mit langem Hals, 2 Zähne	Micro-fraises AL BN en carbure monobloc avec bout hémisphérique et cou long, 2 dents
Micro-frese cilindriche AL BN a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 AL BN 系列 长颈短刃 球头 立铣刀 2 刃







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G76*
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	T ... n
0150 050 0400 080	1.5	0.75	1.2	8	50	1.4	4	•
0150 050 0400 120	1.5	0.75	1.2	12	50	1.4	4	•
0150 050 0400 160	1.5	0.75	1.2	16	50	1.4	4	•
0150 060 0400	1.5	0.75	1.2	-	60	1.4	4	•
0150 060 0400 180	1.5	0.75	1.2	18	60	1.4	4	•
0160 050 0400	1.6	0.80	1.3	-	50	-	4	•
0160 050 0400 080	1.6	0.80	1.3	8	50	1.5	4	•
0160 050 0400 120	1.6	0.80	1.3	12	50	1.5	4	•
0160 050 0400 160	1.6	0.80	-	16	50	1.5	4	•
0160 060 0400	1.6	0.80	1.3	-	60	1.5	4	•
0160 060 0400 200	1.6	0.80	1.3	20	60	1.5	4	•
0180 050 0400	1.8	0.90	1.4	-	50	-	4	•
0180 050 0400 080	1.8	0.90	1.4	8	50	1.7	4	•
0180 050 0400 120	1.8	0.90	1.4	12	50	1.7	4	•
0180 050 0400 160	1.8	0.90	1.4	16	50	1.7	4	•
0180 060 0400 200	1.8	0.90	1.4	20	60	1.7	4	•
0200 050 0400	2	1	1.6	-	50	-	4	•
0200 050 0400 040	2	1	1.6	4	50	1.9	4	•
0200 050 0400 060	2	1	1.6	6	50	1.9	4	•
0200 050 0400 080	2	1	1.6	8	50	1.9	4	•
0200 050 0400 100	2	1	1.6	10	50	1.9	4	•
0200 050 0400 120	2	1	1.6	12	50	1.9	4	•
0200 050 0400 140	2	1	1.6	14	50	1.9	4	•
0200 050 0400 160	2	1	1.6	16	50	1.9	4	•
0200 060 0400	2	1	1.6	-	60	-	4	•
0200 060 0400 180	2	1	1.6	18	60	1.9	4	•
0200 060 0400 200	2	1	1.6	20	60	1.9	4	•
0200 060 0400 220	2	1	1.6	22	60	-	4	•
0200 075 0400	2	1	1.6	-	75	1.9	4	•
0200 075 0400 250	2	1	1.6	25	75	1.9	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

89

Modifiche Techiche possibili senza preavviso

AL BN MINIATURE BALLNOSE CUTTERS – with Long Neck

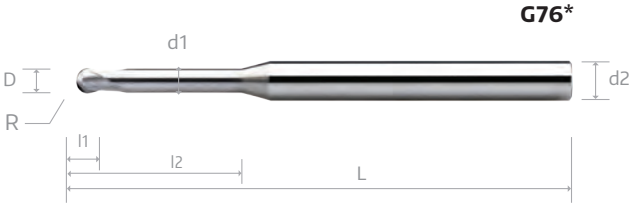
HPMT

VHM Kleinst-Radiusfräser AL BN mit langem Hals, 2 Zähne

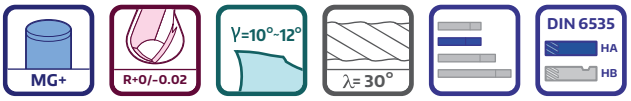
Micro-fraises AL BN en carbure monobloc avec bout hémisphérique et cou long, 2 dents

Micro-frese cilindriche AL BN a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 AL BN 系列 长颈短刃 球头 立铣刀 2 刃







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G76*
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	T ... n
0200 075 0400 300	2	1	1.6	30	75	1.9	4	•
0300 050 0600	3	1.5	2.4	-	50	-	6	•
0300 050 0600 080	3	1.5	2.4	8	50	2.8	6	•
0300 050 0600 100	3	1.5	2.4	10	50	2.8	6	•
0300 060 0600	3	1.5	2.4	-	60	-	6	•
0300 060 0600 160	3	1.5	2.4	16	60	2.8	6	•
0300 060 0600 200	3	1.5	2.4	20	60	2.8	6	•
0300 075 0600	3	1.5	2.4	-	75	-	6	•
0300 075 0600 250	3	1.5	2.4	25	75	2.8	6	•
0300 075 0600 300	3	1.5	2.4	30	75	2.8	6	•
0300 075 0600 350	3	1.5	2.4	35	75	2.8	6	•
0400 050 0600	4	2	3.2	-	50	-	6	•
0400 050 0600 100	4	2	3.2	10	50	3.7	6	•
0400 060 0600	4	2	3.2	-	60	-	6	•
0400 060 0600 160	4	2	3.2	16	60	3.7	6	•
0400 060 0600 200	4	2	3.2	20	60	3.7	6	•
0400 075 0600	4	2	3.2	-	75	-	6	•
0400 075 0600 250	4	2	3.2	25	75	3.7	6	•
0400 075 0600 300	4	2	3.2	30	75	3.7	6	•
0400 075 0600 350	4	2	3.2	35	75	3.7	6	•
0400 100 0600	4	2	3.2	-	100	-	6	•
0400 100 0600 400	4	2	3.2	40	100	3.7	6	•
0400 100 0600 450	4	2	3.2	45	100	3.7	6	•
0400 100 0600 500	4	2	3.2	50	100	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

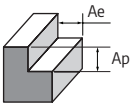
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•													•	

Cutting Parameter

89

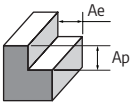
若有技术规格变更，恕不事先通知

Single Flute Endmills



Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	400	0.016	300	0.017	350	0.012	350	0.016
3		0.028		0.030		0.024		0.030
4		0.044		0.046		0.040		0.045
5		0.063		0.065		0.060		0.063
6		0.085		0.091		0.080		0.086
8		0.126		0.138		0.120		0.129
10		0.173		0.189		0.170		0.180
12		0.226		0.251		0.220		0.242

Standard Endmills 2 Flutes



Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	400	0.004	300	0.004	350	0.002	350	0.004
2		0.008		0.009		0.006		0.009
3		0.015		0.016		0.013		0.015
4		0.023		0.024		0.020		0.023
5		0.032		0.034		0.028		0.033
6		0.044		0.047		0.040		0.044
8		0.064		0.071		0.060		0.066
10		0.088		0.097		0.084		0.092
12		0.115		0.129		0.110		0.124
14		0.135		0.150		0.130		0.145
16		0.160		0.180		0.152		0.172
20		0.200		0.225		0.192		0.215

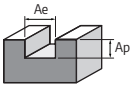
N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

AL SE Recommended Cutting Data

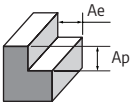
HPMT

Standard Endmills 2 Flutes



Slotting	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	250	0.004	200	0.004	220	0.003	230	0.004
2		0.009		0.009		0.008		0.008
3		0.014		0.014		0.012		0.013
4		0.020		0.019		0.017		0.019
5		0.029		0.026		0.024		0.026
6		0.040		0.035		0.032		0.035
8		0.059		0.054		0.050		0.052
10		0.080		0.072		0.068		0.072
12		0.102		0.092		0.088		0.094
14		0.131		0.115		0.110		0.118
16		0.161		0.146		0.140		0.148
20		0.201		0.182		0.175		0.191

Torus Long Endmills 2 Flutes

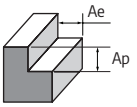


Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	400	0.035	300	0.038	350	0.030	350	0.036
8		0.052		0.057		0.045		0.053
10		0.071		0.078		0.065		0.074
12		0.092		0.103		0.085		0.099
14		0.108		0.120		0.100		0.116
16		0.128		0.144		0.120		0.138
20		0.160		0.180		0.152		0.172

N O

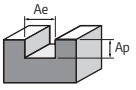
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 3 Flutes



Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	400	0.002	300	0.003	350	0.002	350	0.003
2		0.006		0.006		0.004		0.006
3		0.010		0.011		0.008		0.011
4		0.016		0.017		0.014		0.016
5		0.022		0.024		0.020		0.022
6		0.030		0.032		0.026		0.031
8		0.044		0.049		0.040		0.045
10		0.060		0.066		0.055		0.063
12		0.079		0.088		0.075		0.084
14		0.092		0.103		0.086		0.098
16		0.109		0.123		0.100		0.117
20		0.136		0.154		0.130		0.147

Standard Endmills 3 Flutes



Slotting	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	250	0.003	200	0.003	220	0.002	230	0.003
2		0.006		0.006		0.004		0.006
3		0.010		0.010		0.008		0.010
4		0.014		0.014		0.012		0.014
5		0.020		0.018		0.016		0.018
6		0.028		0.025		0.022		0.025
8		0.041		0.038		0.035		0.036
10		0.056		0.051		0.046		0.050
12		0.070		0.065		0.060		0.066
14		0.090		0.081		0.075		0.082
16		0.111		0.101		0.095		0.102
20		0.138		0.127		0.120		0.132

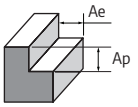
N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

AL SE Recommended Cutting Data

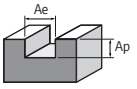
HPMT

DP Torus Roughing Endmills 3 Flutes



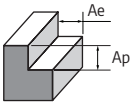
Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	400	0.033	300	0.036	350	0.030	350	0.034
8		0.048		0.054		0.042		0.050
10		0.066		0.073		0.060		0.069
12		0.086		0.097		0.080		0.093
16		0.120		0.135		0.115		0.129
20		0.150		0.169		0.145		0.161

DP Torus Roughing Endmills 3 Flutes



Slotting	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	250	0.030	200	0.028	220	0.025	230	0.027
8		0.045		0.042		0.036		0.040
10		0.061		0.056		0.052		0.055
12		0.077		0.071		0.067		0.072
16		0.122		0.112		0.108		0.112
20		0.152		0.139		0.135		0.145

Long Endmills 3 Flutes

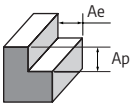


Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	400	0.008	300	0.009	350	0.007	350	0.009
4		0.013		0.013		0.011		0.013
5		0.018		0.019		0.016		0.018
6		0.024		0.026		0.021		0.024
8		0.035		0.039		0.031		0.036
10		0.048		0.053		0.044		0.050
12		0.063		0.070		0.060		0.068
14		0.073		0.082		0.068		0.079
16		0.087		0.098		0.085		0.094

N O

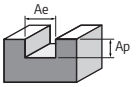
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 4 Flutes



Side Milling	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	400	0.008	300	0.009	350	0.007	350	0.009
4		0.013		0.014		0.010		0.013
5		0.018		0.019		0.016		0.018
6		0.024		0.026		0.020		0.024
8		0.035		0.039		0.030		0.036
10		0.047		0.052		0.042		0.049
12		0.061		0.069		0.058		0.066
14		0.071		0.081		0.068		0.077
16		0.085		0.096		0.080		0.092
20		0.106		0.120		0.100		0.114

Standard Endmills 4 Flutes



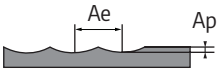
Slotting	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	250	0.008	200	0.009	220	0.007	230	0.008
4		0.012		0.012		0.010		0.012
5		0.017		0.016		0.014		0.015
6		0.023		0.021		0.018		0.021
8		0.033		0.032		0.029		0.030
10		0.045		0.042		0.040		0.041
12		0.057		0.053		0.050		0.053
14		0.072		0.066		0.060		0.066
16		0.088		0.082		0.078		0.082
20		0.110		0.103		0.100		0.106

N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

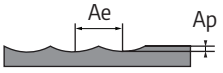
AL SE Recommended Cutting Data

HPMT



Standard Ballnose 2 Flutes

Finishing	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.063		0.063		0.060		0.062
4		0.084		0.084		0.080		0.082
5		0.134		0.134		0.130		0.131
6		0.195		0.195		0.188		0.190
8	250	0.193	200	0.193	220	0.185	230	0.189
10		0.196		0.196		0.190		0.192
12		0.195		0.195		0.188		0.190
16		0.156		0.156		0.150		0.152
20		0.156		0.156		0.150		0.152



Standard Ballnose 2 Flutes

Roughing	N						O	
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties	Si < 9%		Si ≥ 9%		-		-	
Cutting Depth, Ap (mm)	0.10 × D		0.10 × D		0.10 × D		0.10 × D	
Cutting Width, Ae (mm)	0.20 × D		0.20 × D		0.20 × D		0.20 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.063		0.063		0.060		0.062
4		0.084		0.084		0.080		0.082
5		0.134		0.134		0.128		0.131
6		0.195		0.195		0.186		0.190
8	250	0.193	200	0.193	220	0.184	230	0.189
10		0.196		0.196		0.190		0.192
12		0.195		0.195		0.188		0.190
16		0.156		0.156		0.150		0.152
20		0.156		0.156		0.150		0.152

N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose with Long Neck 2 Flutes

Slotting			N						O	
Working material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.030	25	0.006	25	0.006	28	0.006	25	0.009
	1	0.017	25	0.006	25	0.006	28	0.005	25	0.009
	1.5	0.010	25	0.004	25	0.004	28	0.003	25	0.006
0.3	1	0.026	38	0.009	38	0.009	41	0.008	38	0.013
	2	0.020	38	0.008	38	0.008	41	0.007	38	0.011
	3	0.014	38	0.006	38	0.006	41	0.006	38	0.009
0.4	1	0.050	50	0.012	50	0.012	55	0.011	50	0.018
	2	0.034	50	0.009	50	0.009	55	0.008	48	0.014
	3	0.028	50	0.008	50	0.008	55	0.007	46	0.012
	4	0.020	50	0.006	50	0.006	55	0.006	43	0.011
	5	0.014	50	0.005	50	0.005	55	0.005	41	0.009
0.5	2	0.100	63	0.013	63	0.013	69	0.011	60	0.017
	3	0.080	63	0.012	63	0.012	69	0.011	57	0.016
	4	0.060	63	0.011	63	0.011	69	0.010	54	0.015
	5	0.045	63	0.011	63	0.011	69	0.010	51	0.014
	6	0.030	63	0.011	63	0.011	69	0.010	48	0.013
	8	0.020	63	0.010	63	0.010	69	0.009	47	0.012
0.6	2	0.120	75	0.019	75	0.019	83	0.017	72	0.024
	3	0.095	75	0.018	75	0.018	83	0.016	69	0.023
	4	0.070	75	0.018	75	0.018	83	0.016	65	0.022
	5	0.055	75	0.017	75	0.017	83	0.016	61	0.023
	6	0.040	75	0.017	75	0.017	83	0.015	58	0.024
	8	0.030	75	0.015	75	0.015	83	0.014	54	0.024
0.8	2	0.180	101	0.024	101	0.024	111	0.021	99	0.024
	4	0.160	101	0.023	101	0.023	111	0.020	97	0.024
	5	0.130	101	0.021	101	0.021	111	0.019	92	0.023
	6	0.100	101	0.020	101	0.020	111	0.018	87	0.022
	7	0.075	101	0.020	101	0.020	111	0.018	87	0.022
	8	0.050	101	0.020	101	0.020	111	0.018	87	0.022
	10	0.040	101	0.019	101	0.019	111	0.017	84	0.019

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Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

AL BN Recommended Cutting Data

HPMT

Miniature Ballnose with Long Neck 2 Flutes

Slotting			N						O	
Working material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1.0	3	0.250	126	0.031	126	0.031	138	0.028	113	0.034
	4	0.200	126	0.031	126	0.031	138	0.028	109	0.035
	5	0.180	126	0.031	126	0.031	138	0.027	106	0.035
	6	0.160	126	0.030	126	0.030	138	0.027	103	0.034
	7	0.140	126	0.029	126	0.029	138	0.026	101	0.033
	8	0.120	126	0.028	126	0.028	138	0.025	98	0.032
	9	0.100	126	0.028	126	0.028	138	0.025	94	0.031
	10	0.080	126	0.027	126	0.026	138	0.024	90	0.030
	12	0.060	126	0.027	126	0.025	138	0.022	87	0.028
	14	0.040	126	0.025	126	0.024	138	0.021	83	0.025
	20	0.015	126	0.023	126	0.022	138	0.020	81	0.023
1.2	6	0.180	151	0.032	151	0.031	166	0.028	132	0.034
	8	0.160	151	0.031	151	0.029	166	0.026	128	0.033
	10	0.120	151	0.030	151	0.028	166	0.025	124	0.033
	12	0.100	151	0.029	151	0.027	166	0.024	121	0.032
1.4	8	0.190	176	0.033	176	0.031	194	0.028	132	0.038
	12	0.185	176	0.031	176	0.029	194	0.026	125	0.036
	16	0.150	176	0.029	176	0.028	194	0.025	117	0.037
1.5	8	0.200	189	0.036	189	0.033	207	0.030	125	0.033
	12	0.180	189	0.034	189	0.030	207	0.027	114	0.032
	16	0.135	189	0.031	182	0.029	200	0.026	107	0.031
	18	0.090	189	0.028	171	0.028	188	0.025	101	0.028
1.6	8	0.210	201	0.036	201	0.034	221	0.031	133	0.035
	12	0.190	201	0.034	201	0.032	221	0.029	121	0.036
	16	0.170	201	0.031	186	0.032	205	0.029	115	0.035
	20	0.120	186	0.031	176	0.031	194	0.028	108	0.035
1.8	8	0.250	226	0.034	226	0.031	249	0.028	147	0.035
	12	0.210	223	0.033	218	0.031	240	0.027	136	0.035
	16	0.205	209	0.033	201	0.030	221	0.027	127	0.033
	20	0.150	181	0.033	178	0.031	196	0.028	119	0.035

cont' d ▶

N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose with Long Neck 2 Flutes

Slotting			N						O	
Working material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2.0	4	0.480	245	0.046	229	0.047	252	0.042	152	0.044
	6	0.440	239	0.046	223	0.045	245	0.041	140	0.045
	8	0.400	238	0.045	214	0.045	235	0.041	127	0.047
	10	0.360	232	0.043	209	0.043	229	0.039	123	0.047
	12	0.320	226	0.041	203	0.041	223	0.037	120	0.046
	14	0.280	220	0.038	198	0.038	218	0.035	117	0.045
	16	0.240	214	0.036	192	0.036	212	0.032	114	0.043
	18	0.210	208	0.035	187	0.035	206	0.032	111	0.042
	20	0.180	202	0.035	182	0.035	200	0.032	107	0.041
	22	0.150	196	0.035	177	0.035	194	0.031	104	0.039
	25	0.120	190	0.034	171	0.034	188	0.031	101	0.038
	30	0.090	187	0.033	164	0.032	180	0.028	99	0.035
3.0	8	0.650	283	0.074	264	0.075	290	0.068	150	0.061
	10	0.600	271	0.075	244	0.075	269	0.068	145	0.059
	16	0.520	262	0.073	237	0.073	260	0.065	140	0.058
	20	0.440	254	0.070	228	0.070	251	0.063	135	0.056
	25	0.360	244	0.068	220	0.068	242	0.061	130	0.054
	30	0.320	231	0.066	207	0.067	228	0.060	118	0.056
	35	0.300	217	0.065	198	0.065	218	0.059	113	0.054
4.0	10	0.850	364	0.076	264	0.094	290	0.084	151	0.102
	16	0.800	260	0.100	234	0.100	257	0.090	145	0.100
	20	0.694	251	0.097	226	0.097	249	0.087	140	0.097
	25	0.587	243	0.094	219	0.094	241	0.084	134	0.094
	30	0.480	234	0.090	211	0.090	232	0.081	131	0.089
	35	0.420	227	0.089	205	0.089	225	0.080	126	0.091
	40	0.360	221	0.088	199	0.088	218	0.079	122	0.090
	45	0.300	215	0.087	194	0.086	213	0.078	118	0.090
	50	0.240	209	0.085	187	0.085	206	0.077	114	0.090

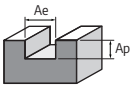


Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

AL SE Recommended Cutting Data

HPMT

Miniature Endmills with Long Neck 2 Flutes



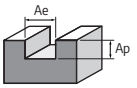
Slotting			N						O	
Working Material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.100	25	0.008	23	0.008	25	0.008	24	0.008
	1	0.040	24	0.007	21	0.007	22	0.007	22	0.007
	1.5	0.028	22	0.007	20	0.007	21	0.007	21	0.007
0.3	1	0.100	38	0.010	34	0.010	36	0.011	36	0.010
	2	0.050	33	0.009	30	0.009	32	0.009	31	0.009
	3	0.030	28	0.007	25	0.008	27	0.008	26	0.007
0.4	2	0.080	47	0.011	42	0.011	45	0.012	45	0.011
	3	0.058	44	0.010	39	0.011	42	0.012	42	0.010
	4	0.040	37	0.009	33	0.009	35	0.009	35	0.009
	5	0.033	34	0.008	31	0.008	33	0.008	32	0.008
0.5	2	0.125	63	0.014	57	0.014	61	0.015	60	0.014
	4	0.063	51	0.011	46	0.011	49	0.012	48	0.011
	6	0.043	42	0.009	38	0.009	41	0.009	40	0.009
	8	0.033	34	0.008	31	0.008	33	0.008	33	0.007
0.6	2	0.200	75	0.017	68	0.017	73	0.018	72	0.017
	4	0.100	66	0.015	59	0.015	63	0.016	62	0.015
	6	0.060	56	0.013	50	0.013	54	0.014	53	0.013
	8	0.045	51	0.011	46	0.012	49	0.013	48	0.011
	10	0.038	41	0.009	37	0.009	40	0.009	39	0.009
0.7	2	0.350	88	0.019	79	0.019	85	0.020	84	0.019
	4	0.140	82	0.018	74	0.018	79	0.019	78	0.018
	6	0.088	71	0.015	64	0.015	68	0.016	67	0.015
	8	0.063	65	0.014	59	0.014	63	0.015	62	0.014
	10	0.050	54	0.012	48	0.012	51	0.013	51	0.012
0.8	4	0.160	94	0.020	85	0.020	91	0.021	89	0.020
	6	0.115	87	0.018	79	0.018	85	0.019	83	0.018
	8	0.080	74	0.016	67	0.016	72	0.017	71	0.015
	10	0.068	68	0.014	61	0.014	65	0.015	65	0.014
	12	0.053	61	0.013	55	0.013	59	0.014	58	0.013
0.9	6	0.150	98	0.020	89	0.020	95	0.021	94	0.020
	8	0.113	91	0.018	82	0.018	88	0.019	87	0.018
	10	0.083	84	0.017	75	0.017	80	0.018	79	0.017
	15	0.058	62	0.013	55	0.013	59	0.014	59	0.013
1	6	0.168	109	0.022	98	0.022	105	0.023	104	0.022
	8	0.125	101	0.020	91	0.020	97	0.021	96	0.020
	10	0.100	93	0.019	84	0.019	90	0.020	88	0.019
	12	0.083	85	0.017	76	0.017	81	0.018	81	0.017
	14	0.073	77	0.015	69	0.015	74	0.016	73	0.015
	16	0.063	68	0.014	62	0.014	66	0.015	65	0.014

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N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



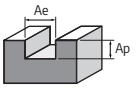
Slotting			N						O	
Working Material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1.2	6	0.240	141	0.028	127	0.028	136	0.029	134	0.028
	8	0.200	131	0.026	118	0.026	126	0.027	125	0.026
	10	0.150	121	0.024	109	0.024	117	0.025	115	0.024
	12	0.120	112	0.022	100	0.022	107	0.023	106	0.022
1.4	6	0.350	176	0.034	158	0.034	169	0.036	167	0.034
	8	0.280	165	0.032	148	0.032	158	0.034	156	0.032
	10	0.200	153	0.030	138	0.030	148	0.032	146	0.030
	12	0.175	142	0.027	128	0.027	137	0.028	135	0.027
	14	0.140	130	0.025	117	0.025	125	0.026	124	0.025
	16	0.128	130	0.025	117	0.025	125	0.026	124	0.025
1.5	6	0.375	189	0.036	170	0.036	182	0.038	179	0.036
	8	0.300	176	0.034	159	0.034	170	0.036	167	0.034
	10	0.250	164	0.031	148	0.031	158	0.033	156	0.031
	12	0.188	152	0.029	137	0.029	147	0.030	144	0.029
	14	0.168	152	0.029	137	0.029	147	0.030	144	0.029
	16	0.150	140	0.027	125	0.027	134	0.028	132	0.027
	18	0.125	127	0.024	115	0.024	123	0.025	121	0.024
	20	0.115	127	0.024	115	0.024	123	0.025	121	0.024
1.6	6	0.533	201	0.038	181	0.038	194	0.040	191	0.038
	8	0.320	188	0.036	169	0.035	181	0.037	178	0.036
	10	0.268	175	0.033	157	0.033	168	0.035	166	0.033
	12	0.228	175	0.033	157	0.033	168	0.035	166	0.033
	14	0.200	162	0.031	146	0.031	156	0.033	154	0.031
	16	0.160	149	0.028	134	0.028	143	0.029	141	0.028
	18	0.145	149	0.028	134	0.028	143	0.029	141	0.028
	20	0.133	136	0.026	121	0.026	129	0.027	131	0.025
1.8	6	0.600	226	0.043	204	0.043	218	0.045	215	0.043
	8	0.450	226	0.043	204	0.043	218	0.045	215	0.043
	10	0.360	212	0.040	191	0.040	204	0.042	201	0.040
	12	0.300	197	0.037	177	0.037	189	0.039	187	0.037
	14	0.258	197	0.037	177	0.037	189	0.039	187	0.037
	16	0.225	182	0.035	164	0.035	175	0.037	173	0.035
	18	0.180	167	0.032	150	0.032	161	0.034	159	0.032
	20	0.163	167	0.032	150	0.032	161	0.034	159	0.032

cont' d ▶

N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



Slotting			N						O	
Working Material			Wrought Aluminium		Cast Aluminium		Copper Alloy		Thermoplastics	
Properties			Si < 9%		Si ≥ 9%		Si ≥ 9%		-	
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	6	0.668	251	0.047	226	0.047	242	0.049	239	0.047
	8	0.500	251	0.047	226	0.047	242	0.049	239	0.047
	10	0.400	235	0.044	212	0.044	227	0.046	223	0.044
	12	0.333	219	0.041	197	0.041	211	0.043	208	0.041
	14	0.285	219	0.041	197	0.041	211	0.043	208	0.041
	16	0.250	202	0.038	182	0.038	195	0.040	192	0.038
	18	0.223	202	0.038	182	0.038	195	0.040	192	0.038
	20	0.200	186	0.035	167	0.035	179	0.037	177	0.035
	25	0.168	170	0.032	153	0.032	164	0.034	161	0.032
	30	0.133	153	0.029	138	0.029	148	0.030	146	0.029
2.5	8	0.833	314	0.058	283	0.058	303	0.061	298	0.058
	10	0.625	314	0.058	283	0.058	303	0.061	298	0.058
	12	0.625	314	0.058	283	0.058	303	0.061	298	0.058
	14	0.500	294	0.054	265	0.054	284	0.057	279	0.054
	16	0.418	273	0.050	246	0.050	263	0.053	260	0.050
	18	0.358	273	0.050	246	0.050	263	0.053	260	0.050
	20	0.313	253	0.047	228	0.047	244	0.049	240	0.047
	25	0.250	233	0.043	209	0.043	224	0.045	221	0.043
	30	0.208	212	0.039	191	0.039	204	0.041	202	0.039
3	8	1.500	377	0.068	339	0.068	363	0.071	358	0.068
	10	1.000	377	0.068	339	0.068	363	0.071	358	0.068
	12	0.750	377	0.068	339	0.068	363	0.071	358	0.068
	14	0.750	377	0.068	339	0.068	363	0.071	358	0.068
	16	0.600	353	0.064	318	0.064	340	0.067	335	0.064
	18	0.500	328	0.059	295	0.059	316	0.062	312	0.059
	20	0.500	328	0.059	295	0.059	316	0.062	312	0.059
	25	0.375	304	0.055	273	0.055	292	0.058	288	0.055
4	10	2.000	450	0.096	405	0.096	433	0.101	427	0.096
	15	1.333	450	0.096	405	0.096	433	0.101	427	0.096
	20	0.800	421	0.089	380	0.089	407	0.093	400	0.089
	25	0.668	392	0.083	353	0.083	378	0.087	372	0.083
	30	0.573	392	0.083	353	0.083	378	0.087	372	0.083
	40	0.400	333	0.071	300	0.071	321	0.075	317	0.071

N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

SE 30

- For general machining
- Cost efficiency

For material application ≤35 HRC.



SE 30



01

GASH LAND DESIGN

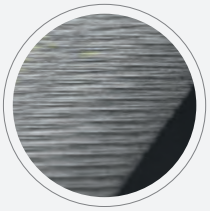
Significantly improves strength and provide great chipping resistance



02

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



03

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



04

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation

05

POSITIVE RAKE ANGLE

Which suitable for Material Groups

P M K N S

DEUTSCH

01 **STIRNSCHLIFF DESIGN**
Verbessert die Leistung deutlich und bietet Schutz gegen Ausbrüche

02 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

03 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
- Weniger Materialanhaftungen an der Schneide
- Für stabile Bearbeitung

04 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
- Erhöht die Härte und und bietet bessere Verschleißfestigkeit
- Höhere Temperaturbeständigkeit
- Glatte Oberfläche für besseren Spänefluß

05 **POSITIVER SPANWINKEL**
Geeignet für die Materialgruppen P,M,K,N,S

FRANÇAIS

01 **CONCEPTION DE FRAISE POUR L'USINAGE GENERAL**
Améliore considérablement la solidité et apporte

02 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

03 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
- Moins de matériau adhère à l'arête tranchante
- Pour un usinage stable

04 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
- Augmente la dureté et la résistance à l'abrasion
- Résistance thermique supérieure
- Évacuation des copeaux plus fluide

05 **ANGLE DE COUPE POSITIF**
Adapté pour les matériaux P, M, K, N, S

ITALIANO

01 **STRUTTURA AREA SGROSSATURA**
Migliora notevolmente la potenza e offre un'eccellente resistenza alle scheggiature

02 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

03 **PREPARAZIONE DELL'ANGOLO DI taglio**
Migliora la durata dello strumento
- Meno materiale che aderisce sull'angolo di taglio
- Per una lavorazione stabile

04 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
- Aumenta la durezza e una maggiore resistenza all'usura abrasiva
- Resistenza termica superiore
- Evacuazione dei trucioli più semplice

05 **ANGOLO DI TAGLIO POSITIVO**
Adatto per il materiale P,M,K,N,S

中文

01 **刀具底刃的设计**
强化刀具，并降低崩刃的几率

02 **偏心研磨**
最佳偏心研磨，可避免加工时摩擦，同时保持刀具的最高刚性

03 **刃部钝化处理**
提高刀具寿命和切削过程的稳定性

04 **卓越的涂层**
- 强化刀具的硬度和抗热性
- 降低积屑瘤并拥有更顺畅的排屑

05 **正前角的设计**
适合加工碳素钢、不锈钢、铸铁、有色金属和钛的材料

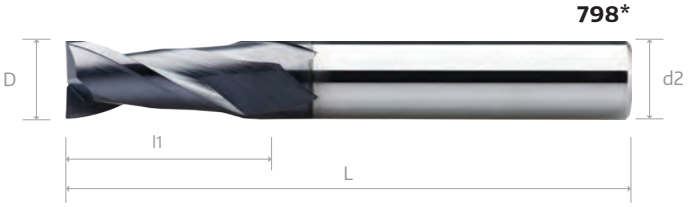
SE 30 STANDARD ENDMILLS

≤ 900 N/mm² + B0819 ≤ 35 HRC

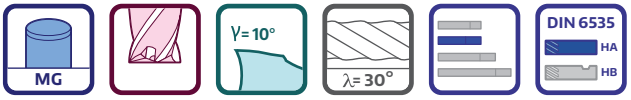
HPMT

VHM SE 30 Standard Fräser, 2 Zähne | Fraises 2 tailles SE 30 standard - 2 dents, en carbure monobloc

Frese SE 30 in metallo duro integrale, 2 taglienti | 整体硬质合金 SE 30 系列 立铣刀 2 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					798 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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Technical specifications subject to change without prior notice

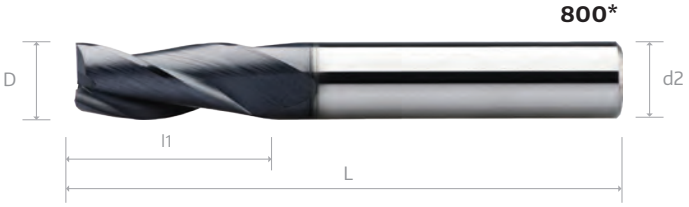
SE 30 STANDARD ENDMILLS

≤ 900 N/mm² + B0819 ≤ 35 HRC

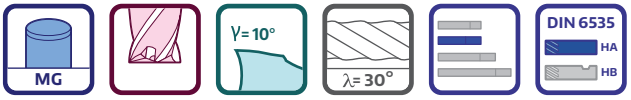
HPMT

VHM SE 30 Standard Fräser, 3 Zähne | Fraises 2 tailles SE 30 standard - 3 dents, en carbure monobloc

Frese SE 30 in metallo duro integrale, 3 taglienti | 整体硬质合金 SE 30 系列 立铣刀 3 刃 - 标准长度







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					800 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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Technische änderungen ohne vorherige information vorbehalten

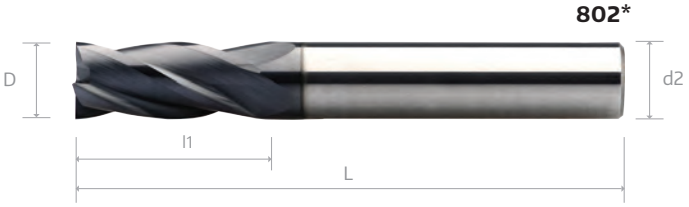
SE 30 STANDARD ENDMILLS

≤ 900 N/mm² + B0819 ≤ 35 HRC

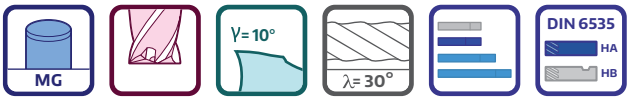
HPMT

VHM SE 30 Standard Fräser, 4 Zähne | Fraises 2 tailles SE 30 standard - 4 dents, en carbure monobloc

Frese SE 30 in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 30 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					802 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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Spécifications techniques sujettes à changement sans avis prélable

SE 30 ENDMILLS – Long

≤ 900 N/mm² + B0819 ≤ 35 HRC

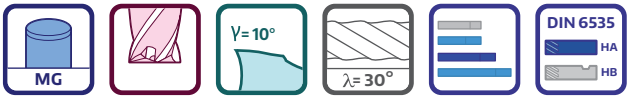
HPMT

VHM Fräser SE Long, 4 Zähne	Fraises 2 tailles SE 30 Longue - 4 dents, en carbure monobloc
Frese SE 30 lang in metallo duro integrale, 4 taglienti	整体硬质合金 SE 30 系列 立铣刀 4 刃 - 中长

806*









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					806 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	19		60	3	•
0300 075 06	3	19		75	6	•
0400	4	19		60	4	•
0400 075 06	4	19		75	6	•
0500	5	19		60	5	•
0500 075 06	5	19		75	6	•
0600	6	31		75	6	•
0800	8	31		75	8	•
1000 075	10	31		75	10	•
1000 100	10	50		100	10	•
1200	12	50		100	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•
1800	18	57		125	18	•
2000	20	57		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

Cutting Parameter

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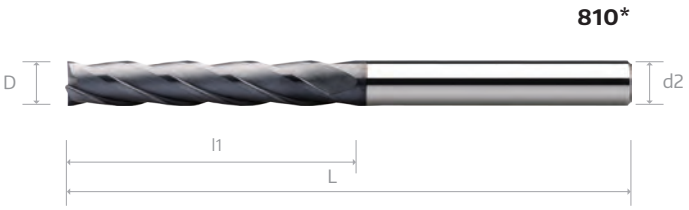
SE 30 ENDMILLS - Extra-Long

≤ 900 N/mm² + B0819 ≤ 35 HRC

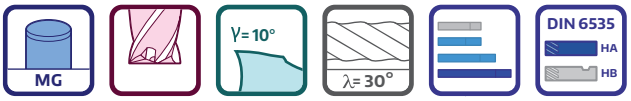
HPMT

VHM SE 30 Extra-Long Fräser, 4 Zähne | Fraises 2 tailles SE 30 extra-longue- 4 dents, en carbure monobloc

Frese SE 30 extra-lunga in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 30 系列 立铣刀 4 刃 - 加长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					810 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	25		100	3	•
0300 100 06	3	25		100	6	•
0400	4	31		100	4	•
0400 100 06	4	31		100	6	•
0500	5	31		100	5	•
0500 100 06	5	31		100	6	•
0600	6	38		100	6	•
0800	8	41		100	8	•
1000	10	57		125	10	•
1200	12	75		150	12	•
1400	14	75		150	14	•
1600	16	75		150	16	•
1800	18	75		150	18	•
2000	20	75		150	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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若有技术规格变更，恕不事先通知

SE 30 STANDARD ENDMILLS

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM SE 30 Standard Fräser, 2 Zähne

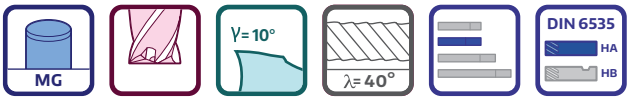
Fraises 2 tailles SE 30 standard - 2 dents, en carbure monobloc

Frese SE 30 in metallo duro integrale, 2 taglienti

整体硬质合金 SE 30 系列 立铣刀 2 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					816 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0350 050 04	3.5	12		50	4	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0450 050 05	4.5	15		50	5	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0550 050 06	5.5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0700 064 08	7	20		64	8	•
0800	8	20		64	8	•
0900 070 10	9	22		70	10	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1100 075 12	11	25		75	12	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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SE 30 STANDARD ENDMILLS

≤ 900 N/mm² + B0819 ≤ 35 HRC

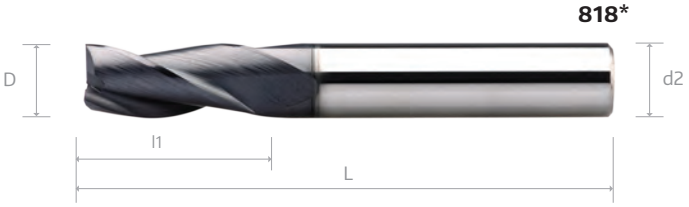
HPMT

VHM SE 30 Standard Fräser, 3 Zähne

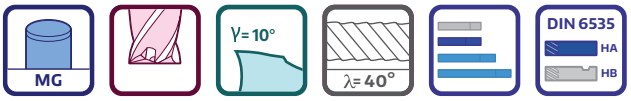
Fraises 2 tailles SE 30 standard - 3 dents, en carbure monobloc

Frese SE 30 in metallo duro integrale, 3 taglienti

整体硬质合金 SE 30 系列 立铣刀 3 刃 - 标准长







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					818 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0350 050 04	3.5	12		50	4	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0450 050 05	4.5	15		50	5	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0550 050 06	5.5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0700 064 08	7	20		64	8	•
0800	8	20		64	8	•
0900 070 10	9	22		70	10	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1100 075 12	11	25		75	12	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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Technische änderungen ohne vorherige information vorbehalten

SE 30 STANDARD ENDMILLS

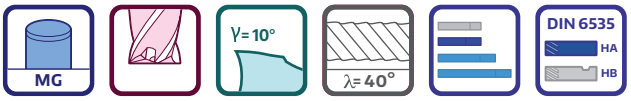
≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM SE 30 Standard Fräser, 4 Zähne	Fraises 2 tailles SE 30 standard - 4 dents, en carbure monobloc
Frese SE 30 in metallo duro integrale, 4 taglienti	整体硬质合金 SE 30 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					820 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0350 050 04	3.5	12		50	4	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0450 050 05	4.5	15		50	5	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0550 050 06	5.5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0700 064 08	7	20		64	8	•
0800	8	20		64	8	•
0900 070 10	9	22		70	10	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1100 075 12	11	25		75	12	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

Cutting Parameter

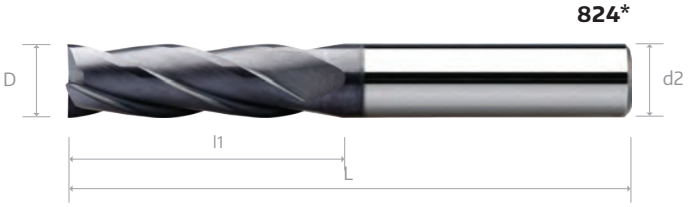
114

SE 30 ENDMILLS – Long

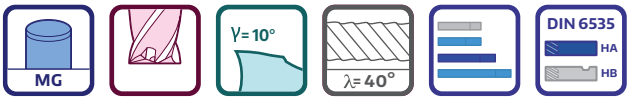
≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM Fräser SE Long, 4 Zähne	Fraises 2 tailles SE 30 Longue - 4 dents, en carbure monobloc
Frese SE 30 lang in metallo duro integrale, 4 taglienti	整体硬质合金 SE 30 系列 立铣刀 4 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					824 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	19		60	3	•
0300 060 04	3	19		60	4	•
0300 075 06	3	19		75	6	•
0400	4	19		60	4	•
0400 075 06	4	19		75	6	•
0500	5	19		60	5	•
0500 075 06	5	19		75	6	•
0600	6	31		75	6	•
0800	8	31		75	8	•
1000 075	10	31		75	10	•
1000 100	10	50		100	10	•
1200	12	50		100	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•
1800	18	57		125	18	•
2000	20	57		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

115

Modifiche Techiche possibili senza preavviso

SE 30 ENDMILLS - Extra-Long

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

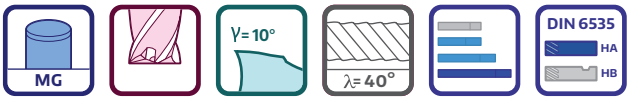
VHM SE 30 Extra-Long Fräser, 4 Zähne	Fraises 2 tailles SE 30 Extra-Longue- 4 dents, en carbure monobloc
Frese SE 30 extra-lunga in metallo duro integrale, 4 taglienti	整体硬质合金 SE 30 系列 立铣刀 4 刃 - 加长

828*





Z4



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					828 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	25		100	3	•
0300 100 04	3	25		100	4	○
0300 100 06	3	25		100	6	○
0400	4	31		100	4	•
0400 100 06	4	31		100	6	○
0500	5	31		100	5	○
0500 100 06	5	31		100	6	○
0600	6	38		100	6	•
0800	8	41		100	8	•
1000	10	57		125	10	•
1200	12	75		150	12	•
1400	14	75		150	14	○
1600	16	75		150	16	○
1800	18	75		150	18	○
2000	20	75		150	20	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

Cutting Parameter

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若有技术规格变更，恕不事先通知

SE 30 MULTI-PURPOSE ENDMILLS – 60° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

SE 30 VHM Mehrzweck-Fräser, Spitzenwinkel: 60°

Fraises SE 30 multiple usage en carbure monobloc, angle de pointe: 60°monobloc

Fresa SE 30 multiplo impiego in metallo duro integrale, angolo di punta: 60°

整体硬质合金 SE 30 系列 多功能立銑刀 2 刃 - 倒角 60°









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					834 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300 040	3	9		40	3	•
0400 050	4	12		50	4	•
0500 050	5	15		50	5	•
0600 050	6	16		50	6	•
0800 064	8	20		64	8	•
1000 070	10	22		70	10	•
1200 075	12	25		75	12	•
1600 090	16	32		90	16	•
2000 100	20	38		100	20	•

Condition				
V-Groove	V-Nut	Rainure-V	Ranura V	V-槽
Chamfer	Senken	Chamfreiner	Svasare	倒角
Interpolation	Zirkularfräsen	Interpolation	Interpolazione	插值法
Drilling	Bohren	Percer	Forare	钻孔
Centering-Spotting	Zentrieren / Positionieren	Centrer / Positionner	Centrare / Posizionare	中心钻
Side Milling & Chamfer	Kantenbearbeitung und Senken	Usinage Latéral et Chamfreiner	Asportazione Laterale e Svasare	铣边 & 倒角

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

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Technical specifications subject to change without prior notice

SE 30 MULTI-PURPOSE ENDMILLS – 90° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

SE 30 VHM Mehrzweck-Fräser, Spitzenwinkel: 90°	Fraises SE 30 multiple usage en carbure monobloc, angle de pointe: 90°monobloc
Fresa SE 30 multiplo impiego in metallo duro integrale, angolo di punta: 90°	整体硬质合金 SE 30 系列 多功能立銑刀 2 刃 - 倒角 90°









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					836 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300 040	3	9		40	3	•
0400 050	4	12		50	4	•
0500 050	5	15		50	5	•
0600 050	6	16		50	6	•
0800 064	8	20		64	8	•
1000 070	10	22		70	10	•
1200 075	12	25		75	12	•
1600 090	16	32		90	16	•
2000 100	20	38		100	20	•

Condition				
V-Groove	V-Nut	Rainure-V	Ranura V	V-槽
Chamfer	Senken	Chamfreiner	Svasare	倒角
Interpolation	Zirkularfräsen	Interpolation	Interpolazione	插值法
Drilling	Bohren	Percer	Forare	钻孔
Centering-Spotting	Zentrieren / Positionieren	Centrer / Positionner	Centrare / Posizionare	中心钻
Side Milling & Chamfer	Kantenbearbeitung und Senken	Usinage Latéral et Chamfreiner	Asportazione Laterale e Svasare	铣边 & 倒角

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

Cutting Parameter: 116

SE 30 MULTI-PURPOSE ENDMILLS – 120° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

SE 30 VHM Mehrzweck-Fräser, Spitzenwinkel: 120°

Fraises SE 30 multiple usage en carbure monobloc, angle de pointe: 120°monobloc

Fresa SE 30 multiplo impiego in metallo duro integrale, angolo di punta: 120°

整体硬质合金 SE 30 系列 多功能立銑刀 2 刃 - 倒角 120°









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					838 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300 040	3	9		40	3	•
0400 050	4	12		50	4	•
0500 050	5	15		50	5	•
0600 050	6	16		50	6	•
0800 064	8	20		64	8	•
1000 070	10	22		70	10	•
1200 075	12	25		75	12	•
1600 090	16	32		90	16	•
2000 100	20	38		100	20	•

Condition				
V-Groove	V-Nut	Rainure-V	Ranura V	V-槽
Chamfer	Senken	Chamfreiner	Svasare	倒角
Interpolation	Zirkularfräsen	Interpolation	Interpolazione	插值法
Drilling	Bohren	Percer	Forare	钻孔
Centering-Spotting	Zentrieren / Positionieren	Centrer / Positionner	Centrare / Posizionare	中心钻
Side Milling & Chamfer	Kantenbearbeitung und Senken	Usinage Latéral et Chamfreiner	Asportazione Laterale e Svasare	铣边 & 倒角

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

116

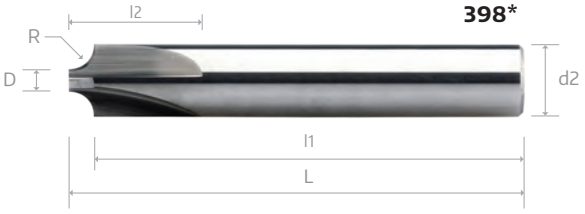
Spécifications techniques sujettes à changement sans avis prélable

SE 30 MG MINIATURE ROUND CORNER MILLING CUTTERS

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

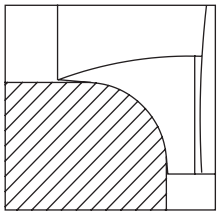
VHM Viertelrund Profilfräser, 4 Zähne	Fraises 1/4 de cercle en carbure monobloc, 4 dents
Frese 1/4 circolare in metallo duro integrale, 4 taglienti	整体硬质合金 圆弧倒角刀 4 刃





MG | DIN 6535 HA HB | HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						398 *
= * + Ø data	D ± 0.1	R ± 0.02	l 1	l 2	L	d2 (h6)	B0819
0025 010	1.0	0.25	49.48	7	50	3	○
0030 010	1.0	0.30	49.46	7	50	3	○
0040 010	1.0	0.40	49.36	7	50	3	○
0050 015	1.5	0.50	49.24	10	50	4	○
0060 015	1.5	0.60	49.14	10	50	4	○
0070 015	1.5	0.70	49.05	10	50	4	○
0080 015	1.5	0.80	48.96	10	50	4	○
0090 015	1.5	0.90	48.87	10	50	4	○
0100 015	1.5	1.00	48.78	10	50	4	○
0125 020	2.0	1.25	48.49	12	50	6	○
0150 020	2.0	1.50	48.26	12	50	6	○
0175 020	2.0	1.75	48.03	12	50	6	○
0200 025	2.5	2.00	47.74	14	50	8	○
0225 025	2.5	2.25	47.51	14	50	8	○
0250 025	2.5	2.50	47.28	14	50	8	○
0150 035	3.5	1.50	68.27	16	70	10	○
0200 030	3.0	2.00	67.84	16	70	10	○
0250 035	3.5	2.50	72.36	18	75	12	○
0300 030	3.0	3.00	71.92	18	75	12	○
0350 045	4.5	3.50	86.4	20	90	16	○
0400 040	4.0	4.00	85.96	20	90	16	○
0450 035	3.5	4.50	85.52	20	90	16	○
0500 030	3.0	5.00	85.09	20	90	16	○
0550 045	4.5	5.50	94.56	22	100	20	○
0600 040	4.0	6.00	94.13	22	100	20	○



These cutters are designed for CNC machines. They allow to machine even very thin materials. Easy to regrind.

Diese Profilfräser sind für den Einsatz auf CNC Maschinen und für die Bearbeitung dünner Werkstücke geeignet und leicht nachschleifbar.

Ces fraises 1/4 de cercle sont conçues pour l'emploi sur des centres CNC et permettent d'usiner des matériaux très minces. Faciles à réaffûter.

Queste frese 1/4 circolare sono concepite per l'impiego su centri CNC e permettono di lavorare parti sottili. Riaffilatura facile.

此切削刀具是專為CNC加工中心設計使用 可以在非常薄片工件加工 容易再磨研。

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○			○	○	○						

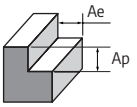
Cutting Parameter: 116

Modifiche Techiche possibili senza preavviso

SE 30 Recommended Cutting Data

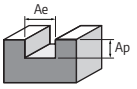
HPMT

Standard Endmills 2 Flutes



Side milling	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.85 × D		0.80 × D		0.80 × D		0.65 × D		0.70 × D		0.80 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.006		0.006		0.003		0.005		0.005
2		0.010		0.012		0.012		0.008		0.011		0.011
3		0.015		0.019		0.019		0.014		0.018		0.018
4		0.021		0.026		0.026		0.021		0.026		0.027
5		0.028		0.034		0.034		0.029		0.035		0.038
6		0.035		0.043		0.043		0.039		0.045		0.049
8		0.048		0.060		0.060		0.057		0.064		0.072
10	160	0.063	110	0.078	110	0.078	70	0.077	80	0.085	60	0.097
12		0.079		0.097		0.097		0.099		0.108		0.125
14		0.095		0.118		0.118		0.125		0.133		0.155
16		0.113		0.140		0.140		0.152		0.160		0.189
18		0.132		0.163		0.163		0.182		0.188		0.226
20		0.151		0.187		0.187		0.215		0.220		0.265
22		0.172		0.213		0.213		0.250		0.252		0.307
25		0.202		0.250		0.250		0.299		0.300		0.367

Standard Endmills 2 Flutes



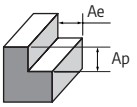
Slotting	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.65 × D		0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.002		0.003		0.003
2		0.006		0.007		0.007		0.004		0.007		0.007
3		0.009		0.011		0.011		0.007		0.011		0.012
4		0.012		0.016		0.016		0.011		0.016		0.018
5		0.016		0.020		0.020		0.015		0.022		0.024
6		0.020		0.026		0.026		0.021		0.028		0.032
8		0.028		0.036		0.036		0.030		0.040		0.047
10	160	0.037	110	0.047	110	0.047	70	0.041	80	0.053	60	0.063
12		0.046		0.058		0.058		0.053		0.068		0.081
14		0.056		0.071		0.071		0.066		0.084		0.101
16		0.066		0.084		0.084		0.081		0.101		0.123
18		0.078		0.098		0.098		0.097		0.119		0.147
20		0.089		0.113		0.113		0.114		0.138		0.172
22		0.101		0.128		0.128		0.133		0.159		0.200
25		0.119		0.150		0.150		0.159		0.189		0.239

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

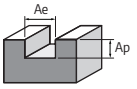
HPMT

Standard Endmills 3 Flutes



Side milling	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.85 × D		0.80 × D		0.80 × D		0.65 × D		0.70 × D		0.80 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.006		0.006		0.003		0.005		0.005
2		0.009		0.012		0.012		0.008		0.011		0.011
3		0.015		0.019		0.019		0.014		0.018		0.018
4		0.021		0.026		0.026		0.021		0.026		0.027
5		0.028		0.034		0.034		0.029		0.035		0.038
6		0.035		0.043		0.043		0.039		0.045		0.049
8		0.048		0.060		0.060		0.056		0.064		0.072
10	160	0.063	110	0.078	110	0.078	70	0.077	80	0.085	60	0.097
12		0.079		0.097		0.097		0.099		0.108		0.125
14		0.095		0.118		0.118		0.125		0.133		0.155
16		0.113		0.140		0.140		0.152		0.160		0.189
18		0.132		0.163		0.163		0.182		0.188		0.226
20		0.151		0.187		0.187		0.215		0.219		0.265
22		0.172		0.213		0.213		0.250		0.252		0.307
25		0.202		0.250		0.250		0.299		0.299		0.367

Standard Endmills 3 Flutes

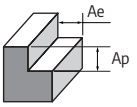


Slotting	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.65 × D		0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.002		0.003		0.003
2		0.006		0.007		0.007		0.004		0.007		0.007
3		0.009		0.011		0.011		0.007		0.011		0.012
4		0.012		0.016		0.016		0.011		0.016		0.018
5		0.016		0.020		0.020		0.015		0.022		0.024
6		0.020		0.026		0.026		0.021		0.028		0.032
8		0.028		0.036		0.036		0.030		0.040		0.047
10	160	0.037	110	0.047	110	0.047	70	0.041	80	0.053	60	0.063
12		0.046		0.058		0.058		0.053		0.068		0.081
14		0.056		0.071		0.071		0.066		0.084		0.101
16		0.066		0.084		0.084		0.081		0.101		0.123
18		0.078		0.098		0.098		0.097		0.119		0.147
20		0.089		0.112		0.112		0.114		0.138		0.172
22		0.101		0.128		0.128		0.133		0.159		0.200
25		0.119		0.150		0.150		0.159		0.189		0.239

P M K N S | P K

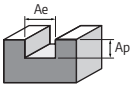
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 4 Flutes



Side milling	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.85 × D		0.80 × D		0.80 × D		0.65 × D		0.70 × D		0.80 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.006		0.006		0.003		0.005		0.005
2		0.009		0.012		0.012		0.008		0.011		0.011
3		0.015		0.019		0.019		0.014		0.018		0.018
4		0.021		0.026		0.026		0.021		0.026		0.027
5		0.028		0.034		0.034		0.029		0.035		0.038
6		0.035		0.043		0.043		0.039		0.045		0.049
8		0.048		0.060		0.060		0.056		0.064		0.072
10	160	0.063	110	0.078	110	0.078	70	0.077	80	0.085	60	0.097
12		0.079		0.097		0.097		0.099		0.108		0.125
14		0.095		0.118		0.118		0.125		0.133		0.155
16		0.113		0.140		0.140		0.152		0.160		0.189
18		0.132		0.163		0.163		0.182		0.189		0.225
20		0.151		0.187		0.187		0.215		0.219		0.265
22		0.172		0.213		0.213		0.250		0.252		0.307
25		0.202		0.250		0.250		0.299		0.299		0.367

Standard Endmills 4 Flutes



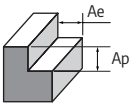
Side milling	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.85 × D		0.80 × D		0.80 × D		0.65 × D		0.70 × D		0.80 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.006		0.006		0.003		0.005		0.005
2		0.009		0.012		0.012		0.008		0.011		0.011
3		0.015		0.019		0.019		0.014		0.018		0.018
4		0.021		0.026		0.026		0.021		0.026		0.027
5		0.028		0.034		0.034		0.029		0.035		0.038
6		0.035		0.043		0.043		0.039		0.045		0.049
8		0.048		0.060		0.060		0.056		0.064		0.072
10	160	0.063	110	0.078	110	0.078	70	0.077	80	0.085	60	0.097
12		0.079		0.097		0.097		0.099		0.108		0.125
14		0.095		0.118		0.118		0.125		0.133		0.155
16		0.113		0.140		0.140		0.152		0.160		0.189
18		0.132		0.163		0.163		0.182		0.189		0.225
20		0.151		0.187		0.187		0.215		0.219		0.265
22		0.172		0.213		0.213		0.250		0.252		0.307
25		0.202		0.250		0.250		0.299		0.299		0.367

P M K N S | P K

Recommended Cutting Data

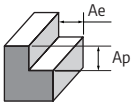
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Endmills 4 Flutes



Slotting	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.65 × D		0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.002		0.003		0.003
2		0.006		0.007		0.007		0.004		0.007		0.007
3		0.009		0.011		0.011		0.007		0.011		0.012
4		0.012		0.016		0.016		0.011		0.016		0.018
5		0.016		0.020		0.020		0.015		0.022		0.024
6		0.020		0.026		0.026		0.021		0.028		0.032
8		0.028		0.036		0.036		0.030		0.040		0.047
10	160	0.037	110	0.047	110	0.047	70	0.041	80	0.053	60	0.063
12		0.046		0.058		0.058		0.053		0.068		0.081
14		0.056		0.071		0.071		0.066		0.084		0.101
16		0.066		0.084		0.084		0.081		0.101		0.123
18		0.078		0.098		0.098		0.097		0.119		0.147
20		0.089		0.112		0.112		0.114		0.138		0.172
22		0.101		0.128		0.128		0.133		0.159		0.200
25		0.119		0.150		0.150		0.159		0.189		0.239

Long Endmills 4 Flutes



Side milling	N		P		K				M		S	
Working Material	Copper Alloy		Carbon Steel		Grey Cast Iron		Ductile Cast Iron		Stainless Steel		Titanium	
Properties	-		-		-		-		High machinability		-	
Cutting Depth, Ap (mm)	0.85 × D		0.80 × D		0.80 × D		0.65 × D		0.70 × D		0.80 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.004		0.004		0.003		0.004		0.004
2		0.008		0.009		0.009		0.006		0.009		0.009
3		0.012		0.015		0.015		0.011		0.014		0.015
4		0.017		0.021		0.021		0.017		0.021		0.022
5		0.022		0.027		0.027		0.023		0.028		0.030
6		0.028		0.034		0.034		0.031		0.036		0.040
8		0.039		0.048		0.048		0.045		0.051		0.057
10	160	0.050	110	0.062	110	0.062	70	0.061	80	0.068	60	0.077
12		0.063		0.078		0.078		0.080		0.086		0.100
14		0.076		0.094		0.094		0.100		0.106		0.124
16		0.090		0.112		0.112		0.122		0.128		0.151
18		0.105		0.130		0.130		0.146		0.151		0.180
20		0.121		0.150		0.150		0.172		0.176		0.212
22		0.138		0.170		0.170		0.200		0.202		0.246
25		0.162		0.200		0.200		0.239		0.239		0.294

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Multi-Purpose Endmills 2 Flutes

Chamfering	N		P		M	
Working Material	Copper Alloy		Carbon Steel		Stainless Steel	
Properties	-		-		High machinability	
Cutting Depth, Ap (mm)	-		-		-	
Cutting Width, Ae (mm)	-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	225	0.004	130	0.005	80	0.004
4		0.006		0.007		0.004
5		0.009		0.009		0.006
6		0.012		0.012		0.009
8		0.015		0.016		0.012
10		0.021		0.021		0.015
12		0.025		0.025		0.018
16		0.037		0.037		0.028
20		0.049		0.046		0.037

Miniature Round Corner Milling Cutters 4 Flutes

Chamfering	N		P		M	
Working Material	Copper Alloy		Carbon Steel		Stainless Steel	
Properties	-		-		High machinability	
Cutting Depth, Ap (mm)	-		-		-	
Cutting Width, Ae (mm)	-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1.0	225	0.010	130	0.005	80	0.005
1.5		0.014		0.006		0.005
2.0		0.018		0.007		0.005
2.5		0.018		0.009		0.006



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

NiTiCo 30

- Manufacture to the highest standards
- With the state of the art CNC equipment

For material application ≤45 HRC



NiTiCo 30 STANDARD ENDMILLS

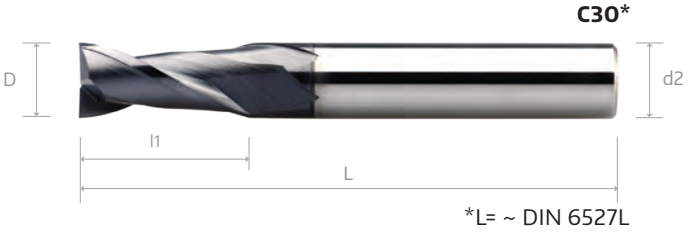
HPMT

VHM NiTiCo 30 Standard Fräser mit Weldon Schaft, 2/3/4 Zähne

Fraises 2 tailles NiTiCo 30 Standard avec queue Weldon - 2/3/4 dents, en carbure monobloc

Frese NiTiCo 30 Standard con codolo Weldon in metallo duro integrale, 2/3/4 taglienti

整体硬质合金 NiTiCo 30 系列 立铣刀 2/3/4 刃 - 标准长度



*L= ~ DIN 6527L









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					C30 *	C31 *	C32 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	G6110	G6110
0100 040 03	1	3		40	3	•	•	•
0100 050 04	1	3		50	4	•	•	•
0150 040 03	1.5	4.5		40	3	•	•	•
0150 050 04	1.5	4.5		50	4	•	•	•
0200 040 03	2	6.5		40	3	•	•	•
0200 050 04	2	6.5		50	4	•	•	•
0250 040 03	2.5	6.5		40	3	•	•	•
0250 050 04	2.5	6.5		50	4	•	•	•
0300	3	9		40	3	•	•	•
0300 050 06	3	9		50	6	•	•	•
0400	4	12		50	4	•	•	•
0400 050 06	4	12		50	6	•	•	•
0500	5	15		50	5	•	•	•
0500 050 06	5	15		50	6	•	•	•
0600 050	6	16		50	6	•	•	•
0600 060	6	20		60	6	•	•	•
0800	8	20		64	8	•	•	•
1000 070	10	22		70	10	•	•	•
1000 075	10	22		75	10	•	•	•
1200	12	25		75	12	•	•	•
1400	14	32		90	14	•	•	•
1600	16	32		90	16	•	•	•
1800	18	38		100	18	•	•	•
2000	20	38		100	20	•	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	◉	●	●	●	○	○				

150/151/152

Technical specifications subject to change without prior notice

NiTiCo 30 STANDARD ENDMILLS

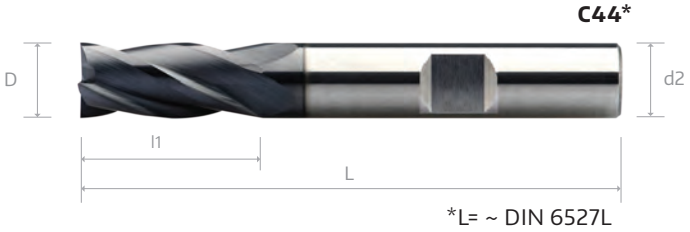
HPMT

VHM NiTiCo 30 Standard Fräser mit Weldon Schaft, 2/3/4 Zähne

Fraises 2 tailles NiTiCo 30 Standard avec queue Weldon - 2/3/4 dents, en carbure monobloc

Frese NiTiCo 30 Standard con codolo Weldon in metallo duro integrale, 2/3/4 taglienti

整体硬质合金 NiTiCo 30 系列 立铣刀 2/3/4 刃 - 标准长度



*L= ~ DIN 6527L









NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					C42 *	C43 *	C44 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	G6110	G6110
0300 050 06	3	9		50	6	○	○	○
0400 050 06	4	12		50	6	○	○	○
0500 050 06	5	15		50	6	○	○	○
0600 050	6	16		50	6	○	○	○
0800	8	20		64	8	○	○	○
1000 070	10	22		70	10	○	○	○
1200	12	25		75	12	○	○	○
1400	14	32		90	14	○	○	○
1600	16	32		90	16	○	○	○
1800	18	38		100	18	○	○	○
2000	20	38		100	20	○	○	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	●	●	●	●	●	●	○	○				

150/151/152

NiTiCo 30 DP

01

4 FLUTES DESIGN

For slotting and side milling



02

OPTIMIZED TOOL GEOMETRY

Allows for improved shearing and decreased spindle loads



03

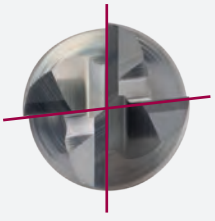
POSITIVE RAKE ANGLE

Enables smooth chip evacuation due to small size chips generated

04

DIFFERENTIAL PITCH DESIGN

For chatter free machining and excellent surface finishes



05

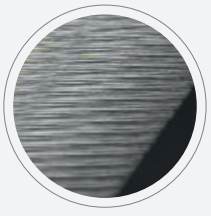
STABLE CUTTING EDGE

Allows for high speeds and feed rates greatly improving productivity

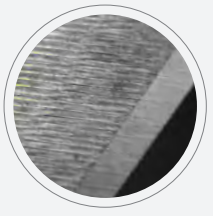
06

THE PREFECT EDGE DESIGN

Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life



Eccentric Grinding



Perfect Edge Grinding

DEUTSCH

01 **4-SCHNEIDIGES DESIGN**
Zum Nuten- und Kantenfräsen

02 **OPTIMIERTE GEOMETRIE**
Ermöglicht bessere Spanbildung und verringert die Spindelbelastungen

03 **POSITIVER SPANWINKEL**
Ermöglicht eine gute Spanabfuhr durch kleine Späne

04 **UNGLEICHE TEILUNG (DP)**
Für vibrationsarme Bearbeitung und hervorragende Oberflächengüte

05 **STABILE SCHNEIDE**
Ermöglicht hohe Schnitt- und Vorschubgeschwindigkeiten für höhere Produktivität

06 **PERFEKTES SCHNEIDKANTENDESIGN**
Bietet eine stabile Schneidkante ohne Abplatzungen und somit Verlängerung der Werkzeuglebensdauer

FRANÇAIS

01 **CONCEPTION À 4 GOUJURES**
Pour le rainurage et le contournage

02 **GÉOMÉTRIE DE L'OUTIL OPTIMISÉE**
Permet un cisaillement amélioré et des charges diminuées sur l'allonge

03 **ANGLE DE COUPE POSITIF**
Permet une évacuation des copeaux fluide en raison de la petite taille des copeaux générés

04 **CONCEPTION À PAS DIFFÉRENTIEL**
Pour un usinage sans vibrations et un très bon etat de surface

05 **ARÊTE TRANCHANTE STABLE**
Permet des vitesses et des débits copeaux élevés améliorant considérablement la productivité

06 **CONCEPTION PARFAITE DES ARÊTES**
Moins d'ecaillage par la conception du DP

ITALIANO

01 **STRUTTURA A 4 SCANALATURE**
Per strozzatura e fresatura laterale

02 **GEOMETRIA DELLO STRUMENTO OTTIMIZZATA**
Consente una migliore forza di taglio e carichi ridotti del Mandrino

03 **ANGOLO DI TAGLIO POSITIVO**
Consente una tranquilla evacuazione dei trucioli grazie alle loro piccole dimensioni

04 **STRUTTURA DEL PASSO DIFFERENZIALE**
Per una lavorazione senza vibrazione e finiture superficiali eccellenti

05 **ANGOLO DI TAGLIO STABILE**
Consente elevate velocità e tassi di avanzamento, migliorando enormemente la produttività

06 **LA STRUTTURA DI ANGOLI PERFETTA**
Offre un angolo di taglio stabile con una possibilità più ridotta di scheggiatura, prolungando la durata dello strumento

中文

01 **4 刃设计**
用于开槽和侧铣

02 **优化的刀具几何形状**
允许改进剪切和减少主轴负载

03 **正前角**
由于产生小尺寸的去屑，可以实现平滑的排屑

04 **不等分设计**
用于无颤振机械加工和优异的表面光洁度

05 **稳定的切削刃**
允许高速和切削速率，大大提高生产效率

06 **完美的边刃设计**
大大降低崩裂的可能性，提供稳定的切削刃，同时延长刀具寿命

NiTiCo 30 DP STANDARD ENDMILLS

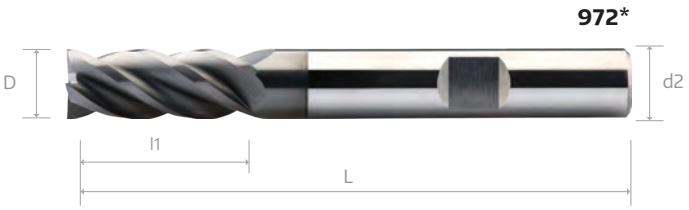
HPMT

VHM NiTiCo 30 DP Standard Fräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 30 DP Standard à pas décalés, 4 dents, en carbure monobloc

Frese NiTiCo 30 DP Standard in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DP 系列 立铣刀 4 刃 - 标准长度



*L= ~ DIN 6527L







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					951 * HA	972 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	G6110
0300 040 03	3	9		40	3	○	-
0300 040 04	3	9		40	4	○	-
0300 050 06	3	9		50	6	○	○
* 0300 057 06	3	9		57	6	●	●
0400 050 04	4	12		50	4	○	-
0400 050 06	4	12		50	6	○	○
* 0400 057 06	4	12		57	6	●	●
0500 050 05	5	13		50	5	○	-
0500 050 06	5	13		50	6	○	○
* 0500 057 06	5	13		57	6	●	●
0600 050	6	13		50	6	○	○
* 0600 057	6	13		57	6	●	●
* 0800 064	8	20		64	8	●	●
1000 070	10	22		70	10	○	○
* 1000 072	10	22		72	10	●	●
1000 075	10	22		75	10	○	○
* 1200 075	12	26		75	12	○	○
1200 083	12	26		83	12	●	●
* 1400 083	14	32		83	14	●	●
1400 090	14	32		90	14	○	○
1600 090	16	32		90	16	○	○
* 1600 092	16	32		92	16	●	●
* 1800 092	18	38		92	18	●	●
1800 100	18	38		100	18	○	○
2000 100	20	38		100	20	○	○
* 2000 104	20	38		104	20	●	●

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	◉	●	●	●	○	○							

Cutting Parameter

152

Spécifications techniques sujettes à changement sans avis prélable

NiTiCo 30 DP ROUGHING ENDMILLS

HPMT

VHM DP Schruppfräser NiTiCo 30 mit ungleicher Teilung, 4 Zähne

Fraises ébauches 2 tailles NiTiCo 30 DP à pas décalés - 4 dents, en carbure monobloc

Frese per sgrossare NiTiCo 30 DP in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DP 系列 粗皮 立铣刀 4 刃 - 标准长度



*L= ~ DIN 6527L







NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP		Dimension (mm)					C47 * HA	C64 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	C	G6110	G6110
0600 050	6	16		50	6	0.1	○	○
* 0600 057	6	16		57	6	0.1	●	●
* 0800 064	8	20		64	8	0.2	●	●
1000 070	10	22		70	10	0.2	○	○
* 1000 072	10	22		72	10	0.2	●	●
1000 075	10	22		75	10	0.2	○	○
* 1200 075	12	26		75	12	0.2	○	○
1200 083	12	26		83	12	0.2	●	●
1400 083	14	26		83	14	0.3	●	●
1400 090	14	32		90	14	0.3	○	○
1600 090	16	32		90	16	0.3	○	○
* 1600 092	16	32		92	16	0.3	●	●
* 1800 092	18	32		92	18	0.3	●	●
1800 100	18	38		100	18	0.3	○	○
2000 100	20	38		100	20	0.4	○	○
* 2000 104	20	38		104	20	0.4	●	●

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	●	●	●	●	●	●	○	○				

Cutting Parameter

156

NiTiCo 30

DPR TORUS ENDMILLS

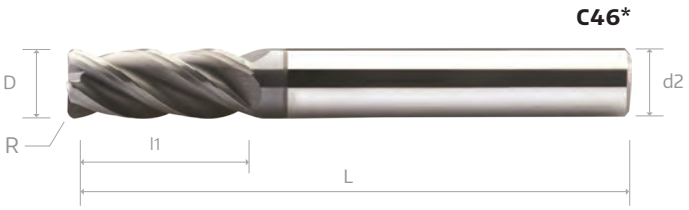
HPMT

VHM SE NiTiCo 30 DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 30 DPR toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 30 DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DPR 系列 圆鼻立铣刀 4 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C46 * HA	C52 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	G6110
0300 040 0300 030	3	9		40	3	0.3	•	-
0300 040 0300 050	3	9		40	3	0.5	•	-
0300 040 0400 030	3	9		40	4	0.3	•	-
0300 040 0400 050	3	9		40	4	0.5	•	-
0300 050 0600 030	3	9		50	6	0.3	•	-
0300 050 0600 050	3	9		50	6	0.5	•	-
0300 057 0600 030	3	9		57	6	0.3	•	-
0300 057 0600 050	3	9		57	6	0.5	•	-
0400 050 0400 030	4	12		50	4	0.3	•	-
0400 050 0400 050	4	12		50	4	0.5	•	-
0400 050 0400 100	4	12		50	4	1	•	-
0400 050 0600 030	4	12		50	6	0.3	•	-
0400 050 0600 050	4	12		50	6	0.5	•	-
0400 050 0600 100	4	12		50	6	1	•	-
0400 057 0600 030	4	12		57	6	0.3	•	-
0400 057 0600 050	4	12		57	6	0.5	•	-
0400 057 0600 100	4	12		57	6	1	•	-
0500 050 0500 030	5	15		50	5	0.3	•	-
0500 050 0500 050	5	15		50	5	0.5	•	-
0500 050 0500 100	5	15		50	5	1	•	-
0500 050 0600 030	5	15		50	6	0.3	•	-
0500 050 0600 050	5	15		50	6	0.5	•	-
0500 050 0600 100	5	15		50	6	1	•	-
0500 057 0600 030	5	15		57	6	0.3	•	-
0500 057 0600 050	5	15		57	6	0.5	•	-
0600 050 0600 030	6	16		50	6	0.3	•	○
0600 050 0600 050	6	16		50	6	0.5	•	○
0600 050 0600 100	6	16		50	6	1	•	○
0600 057 0600 030	6	16		57	6	0.3	•	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

Cutting Parameter

152

若有技术规格变更，恕不事先通知

NiTiCo 30

DPR TORUS ENDMILLS

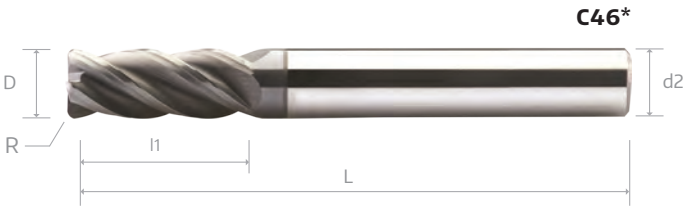
HPMT

VHM SE NiTiCo 30 DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 30 DPR toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 30 DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DPR 系列 圆鼻立铣刀 4 刃









NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C46 * HA	C52 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	G6110
0600 057 0600 050	6	16		57	6	0.5	•	○
0600 057 0600 100	6	16		57	6	1	•	○
0600 060 0600 030	6	20		60	6	0.3	•	○
0600 060 0600 050	6	20		60	6	0.5	•	○
0600 060 0600 100	6	20		60	6	1	•	○
0800 064 0800 030	8	20		64	8	0.3	•	○
0800 064 0800 050	8	20		64	8	0.5	•	○
0800 064 0800 100	8	20		64	8	1	•	○
0800 064 0800 150	8	20		64	8	1.5	•	○
0800 064 0800 200	8	20		64	8	2	•	○
1000 070 1000 030	10	22		70	10	0.3	•	○
1000 070 1000 050	10	22		70	10	0.5	•	○
1000 070 1000 100	10	22		70	10	1	•	○
1000 070 1000 150	10	22		70	10	1.5	•	○
1000 070 1000 200	10	22		70	10	2	•	○
1000 072 1000 030	10	22		72	10	0.3	•	○
1000 072 1000 050	10	22		72	10	0.5	•	○
1000 072 1000 100	10	22		72	10	1	•	○
1000 075 1000 030	10	22		75	10	0.3	•	○
1000 075 1000 050	10	22		75	10	0.5	•	○
1000 075 1000 100	10	22		75	10	1	•	○
1000 075 1000 150	10	22		75	10	1.5	•	○
1000 075 1000 200	10	22		75	10	2	•	○
1200 075 1200 030	12	25		75	12	0.3	•	○
1200 075 1200 050	12	25		75	12	0.5	•	○
1200 075 1200 100	12	25		75	12	1	•	○
1200 075 1200 150	12	25		75	12	1.5	•	○
1200 075 1200 200	12	25		75	12	2	•	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	•	•	•	•	•	•	○	○				

Cutting Parameter

152

NiTiCo 30

DPR TORUS ENDMILLS

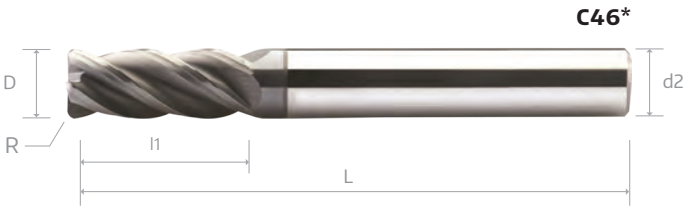
HPMT

VHM SE NiTiCo 30 DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 30 DPR toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 30 DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DPR 系列 圆鼻立铣刀 4 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C46 * HA	C52 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	G6110
1200 075 1200 250	12	25		75	12	2.5	•	○
1200 075 1200 300	12	25		75	12	3	•	○
1200 083 1200 030	12	26		83	12	0.3	•	○
1200 083 1200 050	12	26		83	12	0.5	•	○
1200 083 1200 100	12	26		83	12	1	•	○
1200 083 1200 200	12	26		83	12	2	•	○
1200 083 1200 250	12	26		83	12	2.5	•	○
1200 083 1200 300	12	26		83	12	3	•	○
1400 083 1400 030	14	32		83	14	0.3	•	○
1400 083 1400 050	14	32		83	14	0.5	•	○
1400 083 1400 100	14	32		83	14	1	•	○
1400 083 1400 150	14	32		83	14	1.5	•	○
1400 083 1400 200	14	32		83	14	2	•	○
1400 083 1400 300	14	32		83	14	3	•	○
1400 090 1400 050	14	32		90	14	0.5	•	○
1400 090 1400 100	14	32		90	14	1	•	○
1400 090 1400 150	14	32		90	14	1.5	•	○
1400 090 1400 200	14	32		90	14	2	•	○
1400 090 1400 300	14	32		90	14	3	•	○
1600 090 1600 050	16	32		90	16	0.5	•	○
1600 090 1600 100	16	32		90	16	1	•	○
1600 090 1600 150	16	32		90	16	1.5	•	○
1600 090 1600 200	16	32		90	16	2	•	○
1600 090 1600 250	16	32		90	16	2.5	•	○
1600 090 1600 300	16	32		90	16	3	•	○
1600 090 1600 400	16	32		90	16	4	•	○
1600 092 1600 030	16	32		92	16	0.3	•	○
1600 092 1600 050	16	32		92	16	0.5	•	○
1600 092 1600 100	16	32		92	16	1	•	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

Cutting Parameter

152

Technische änderungen ohne vorherige information vorbehalten

NiTiCo 30

DPR TORUS ENDMILLS

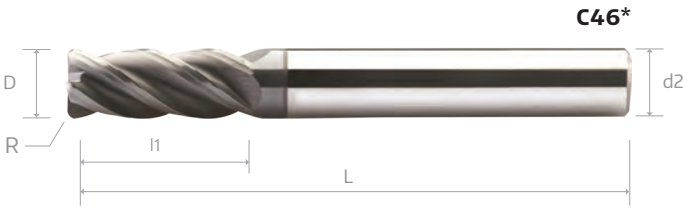
HPMT

VHM SE NiTiCo 30 DPR Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 30 DPR toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 30 DPR toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 30 DPR 系列 圆鼻立铣刀 4 刃









NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C46 * HA	C52 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	G6110
1600 092 1600 200	16	32		92	16	2	●	○
1600 092 1600 250	16	32		92	16	2.5	●	○
1600 092 1600 300	16	32		92	16	3	●	○
1600 092 1600 400	16	32		92	16	4	●	○
1800 092 1800 030	18	38		92	18	0.3	●	○
1800 092 1800 050	18	38		92	18	0.5	●	○
1800 092 1800 100	18	38		92	18	1	●	○
1800 092 1800 200	18	38		92	18	2	●	○
1800 092 1800 300	18	38		92	18	3	●	○
1800 100 1800 050	18	38		100	18	0.5	●	○
1800 100 1800 100	18	38		100	18	1	●	○
1800 100 1800 150	18	38		100	18	1.5	●	○
1800 100 1800 200	18	38		100	18	2	●	○
1800 100 1800 300	18	38		100	18	3	●	○
2000 100 2000 050	20	38		100	20	0.5	●	○
2000 100 2000 100	20	38		100	20	1	●	○
2000 100 2000 150	20	38		100	20	1.5	●	○
2000 100 2000 200	20	38		100	20	2	●	○
2000 100 2000 250	20	38		100	20	2.5	●	○
2000 100 2000 300	20	38		100	20	3	●	○
2000 100 2000 400	20	38		100	20	4	●	○
2000 104 2000 030	20	38		104	20	0.3	●	○
2000 104 2000 050	20	38		104	20	0.5	●	○
2000 104 2000 100	20	38		104	20	1	●	○
2000 104 2000 200	20	38		104	20	2	●	○
2000 104 2000 250	20	38		104	20	2.5	●	○
2000 104 2000 300	20	38		104	20	3	●	○
2000 104 2000 400	20	38		104	20	4	●	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	●	●	●	●	●	●	○	○				

Cutting Parameter

152

NiTiCo 30 DP/DH

01

DIFFERENTIAL HELIX DESIGN

To reduce the cutting forces and improves machining performance

02

PERFECT EDGE GRINDING

- Improves surface finishing
- Enables higher cutting speeds
- High CNC repeatability within 0.010mm

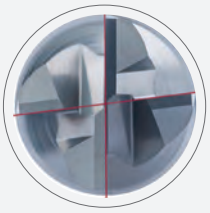




03

DIFFERENTIAL PITCH DESIGN

- For chatter free machining and excellent surface finishes



04

CORNER RADIUS

- Available for more precise finishing and superior corner protection

05

STABLE CUTTING EDGE

Allows for high speeds and feed rates greatly improving productivity

06

SUITABLE FOR MATERIAL GROUPS

P M K S

DEUTSCH

01 **UNGLEICHE DRALLSTEIGUNG (DH)**
Zur Schnittkraftreduzierung und Leistungssteigerung

02 **KLEINSTFASE ENTLANG DER SCHNEIDEN**
- Ermöglicht hohe CNC-Wiederholbarkeit innerhalb 0.01mm
- Für bessere Oberflächen am WerkstückErmöglicht höhere Schnittgeschwindigkeiten

03 **UNGLEICHE TEILUNG (DP)**
Für vibrationsarme Bearbeitung und hervorragende Oberflächengüte

04 **ECKENRADIUS**
Für hervorragenden Schneideckenschutz

05 **STABILE SCHNEIDE**
Ermöglicht hohe Schnitt- und Vorschubgeschwindigkeiten für höhere Produktivität

06 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, K, S**

FRANÇAIS

01 **CONCEPTION À HÉLICE VARIABLE**
Reduit les efforts de coupes et améliore les performances d'usinage

02 **GRANDE PRECISION REPETEE**
Très bonne répétabilité de l'usinage sur cnc à moins de 0,010 mm

03 **CONCEPTION A PAS DECALE**
Pour un usinage sans vibrations et un très bon etat de surface

04 **RAYONS TORIQUES**
Disponible pour une finition plus précise et une protection des arêtes

05 **CONCEPTION PARFAITE DES ARÊTES**
Permet des vitesses et des débits élevés améliorant considérablement la productivité

06 **ADAPTÉ AUX MATÉRIAUX P, M, K, S**

ITALIANO

01 **STRUTTURA ELLITTICA DIFFERENZIALE**
Per ridurre le forze di taglio e migliorare le performance di lavorazione

02 **MARGINE DI PRECISIONE**
Consente un'elevata ripetibilità cnc entro 0,010 mm

03 **STRUTTURA DEL PASSO DIFFERENZIALE**
Per una lavorazione senza vibrazione e finiture superficiali eccellenti

04 **RAGGIO DELL'ANGOLO**
Disponibile per una finitura più precisa e una protezione degli angoli superiore

05 **ANGOLO DI TAGLIO STABILE**
Consente elevate velocità e tassi di avanzamento, migliorando enormemente la produttività

06 **ADATTO PER IL MATERIALE P, M, K, S**

中文

01 **不等距螺旋的设计**
减少切削阻力，提高加工效率

02 **高精度的刀具研磨技术**
重复加工公差可到达0.010mm

03 **不等分割的设计**
降低刀具的振动

04 **圆角转角的设计**
提昇刀具壽命及獲得更佳的加工光潔面

05 **稳定的切削刃**
提高进给速率和生产率

06 **适合加工钢、不锈钢、铸铁、超合金和钛的材料**

NiTiCo 30

DP/DH TORUS ENDMILLS

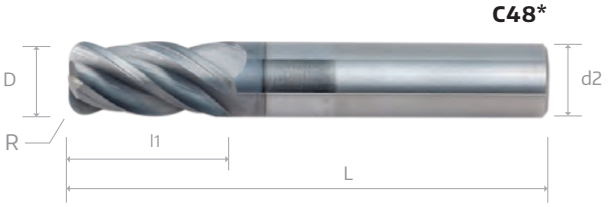
HPMT

VHM NiTiCo 30R DP/DH Fräser mit ungleicher Teilung und ungleichen Drallwinkeln, 4 Zähne

Frese NiTiCo 30R DP/DH in metallo duro integrale a passo ed eliche variabili, 4 taglienti

Fraises 2 tailles NiTiCo 30R DP/DH toriques à pas décalés et hélices différentes, en carbure monobloc, 4 dents

整体硬质合金 NiTiCo 30R 系列 不等分 割及 不等份 螺旋角 立铣刀 4 刃 - 标准长度





MG | R±0.010 | γ= 10° | λ= 35/38° | DP | DIN 6535 HA HB | HPT G6110 AlCrN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C48 * HA	A1R * HA	C50 * HB	A1T * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	R	G6110	B0909	G6110	B0909
0400 057 0600 030	4	11		57	6	0.3	•	•	•	•
0400 057 0600 050	4	11		57	6	0.5	•	•	•	•
0500 057 0600 030	5	13		57	6	0.3	•	•	•	•
0500 057 0600 050	5	13		57	6	0.5	•	•	•	•
0600 057 0600 030	6	13		57	6	0.3	•	•	•	•
0600 057 0600 050	6	13		57	6	0.5	•	•	•	•
0600 057 0600 100	6	13		57	6	1	•	•	•	•
0800 064 0800 030	8	20		64	8	0.3	•	•	•	•
0800 064 0800 050	8	20		64	8	0.5	•	•	•	•
0800 064 0800 100	8	20		64	8	1	•	•	•	•
1000 072 1000 030	10	22		72	10	0.3	•	•	•	•
1000 072 1000 050	10	22		72	10	0.5	•	•	•	•
1000 072 1000 100	10	22		72	10	1	•	•	•	•
1200 083 1200 030	12	26		83	12	0.3	•	•	•	•
1200 083 1200 050	12	26		83	12	0.5	•	•	•	•
1200 083 1200 100	12	26		83	12	1	•	•	•	•
1200 083 1200 200	12	26		83	12	2	•	•	•	•
1200 083 1200 250	12	26		83	12	2.5	•	•	•	•
1200 083 1200 300	12	26		83	12	3	•	•	•	•
1400 083 1400 030	14	26		83	14	0.3	•	•	•	•
1400 083 1400 050	14	26		83	14	0.5	•	•	•	•
1400 083 1400 100	14	26		83	14	1	•	•	•	•
1400 083 1400 200	14	26		83	14	2	•	•	•	•
1400 083 1400 300	14	26		83	14	3	•	•	•	•

cont'd ▶

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	◕	●	●	●	○	○				

152

Technical specifications subject to change without prior notice

NiTiCo 30

DP/DH TORUS ENDMILLS

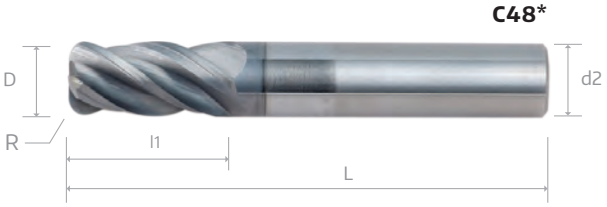
HPMT

VHM NiTiCo 30R DP/DH Fräser mit ungleicher Teilung und ungleichen Drallwinkeln, 4 Zähne

Fraises 2 tailles NiTiCo 30R DP/DH toriques à pas décalés et hélices différentes, en carbure monobloc, 4 dents

Frese NiTiCo 30R DP/DH in metallo duro integrale a passo ed eliche variabili, 4 taglienti

整体硬质合金 NiTiCo 30R 系列 不等分 割及 不等份 螺旋角 立铣刀 4 刃 - 标准长度







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C48 * HA	A1R * HA	C50 * HB	A1T * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	R	G6110	B0909	G6110	B0909
1600 092 1600 030	16	32		92	16	0.3	•	•	•	•
1600 092 1600 050	16	32		92	16	0.5	•	•	•	•
1600 092 1600 100	16	32		92	16	1	•	•	•	•
1600 092 1600 200	16	32		92	16	2	•	•	•	•
1600 092 1600 250	16	32		92	16	2.5	•	•	•	•
1600 092 1600 300	16	32		92	16	3	•	•	•	•
1600 092 1600 400	16	32		92	16	4	•	•	•	•
1800 092 1800 030	18	32		92	18	0.3	•	•	•	•
1800 092 1800 050	18	32		92	18	0.5	•	•	•	•
1800 092 1800 100	18	32		92	18	1	•	•	•	•
1800 092 1800 200	18	32		92	18	2	•	•	•	•
1800 092 1800 300	18	32		92	18	3	•	•	•	•
2000 104 2000 030	20	38		104	20	0.3	•	•	•	•
2000 104 2000 050	20	38		104	20	0.5	•	•	•	•
2000 104 2000 100	20	38		104	20	1	•	•	•	•
2000 104 2000 200	20	38		104	20	2	•	•	•	•
2000 104 2000 250	20	38		104	20	2.5	•	•	•	•
2000 104 2000 300	20	38		104	20	3	•	•	•	•
2000 104 2000 400	20	38		104	20	4	•	•	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

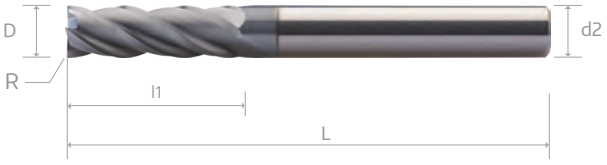
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	•	•	•	•	•	•	○	○				

Cutting Parameter: 152

NiTiCo 30 DP/DH STANDARD TORUS ENDMILLS – Long

VHM NiTiCo 30 DP/DH Long Fräser mit ungleicher Teilung, 4 Zähne	Fraises 2 tailles NiTiCo 30 DP/DH Long à pas décalés, 4 dents, en carbure monobloc
Frese NiTiCo 30 DP/DH Long in metallo duro, passo differenziale, 4 taglienti	整体硬质合金 NiTiCo 30 DP/DH 系列 立铣刀4 刃 - 中长

J97*





Z4

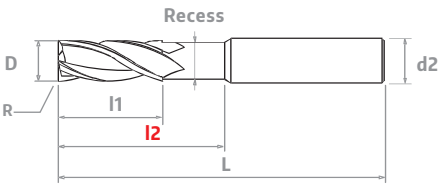
MG | R±0.010 | γ = 10° | λs = 35/36/37° | DP | DIN 6535 HA HB | HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						J97 *	J98 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	HA G6110	HB G6110
0400 075 06	4	19	32	75	6	0.1	•	•
0500 075 06	5	19	32	75	6	0.1	•	•
0600 075	6	25	32	75	6	0.1	•	•
0800 075	8	30	38	75	8	0.2	•	•
1000 100	10	40	50	100	10	0.2	•	•
1200 100	12	45	55	100	12	0.3	•	•
1600 125	16	65	75	125	16	0.3	•	•
2000 125	20	65	75	125	20	0.3	•	•

H38 * H39 *

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	◉	●	●	●	○	○							

Cutting Parameter: 155

Spécifications techniques sujettes à changement sans avis prélable

NiTiCo 30 DH STANDARD TORUS ENDMILLS

HPMT

VHM NiTiCo 30 DH Standard Fräser mit ungleicher Teilung, 5 Zähne

Fraises 2 tailles NiTiCo 30 DH Standard à pas décalés, 5 dents, en carbure monobloc

Frese NiTiCo 30 DH Standard in metallo duro, passo differenziale, 5 taglienti

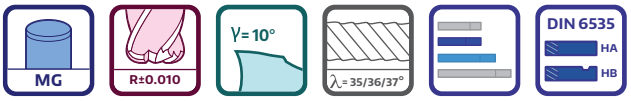
整体硬质合金 NiTiCo 30 DH 系列 立铣刀5 刃 - 标准长度

J89*





Z5



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						J89 *	J90 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	HA G6110	HB G6110
0400 057 06	4	12		57	6	0.1	•	•
0500 057 06	5	13		57	6	0.1	•	•
0600 057	6	13		57	6	0.1	•	•
0800 064	8	20		64	8	0.2	•	•
1000 072	10	22		72	10	0.2	•	•
1200 083	12	26		83	12	0.3	•	•
1600 092	16	32		92	16	0.3	•	•
2000 104	20	38		104	20	0.3	•	•

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	○	○					

Cutting Parameter

154

Modifiche Techiche possibili senza preavviso

NiTiCo 30 DH TORUS ENDMILLS – Long

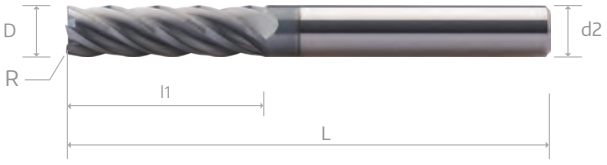
VHM NiTiCo 30 DH Long Fräser mit ungleicher Teilung, 5 Zähne

Fraises 2 tailles NiTiCo 30 DH Long à pas décalés, 5 dents, en carbure monobloc

Frese NiTiCo 30 DH Long in metallo duro, passo differenziale, 5 taglienti

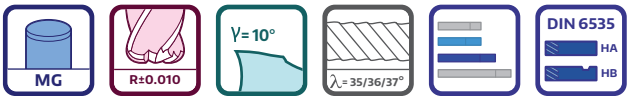
整体硬质合金 NiTiCo 30 DH 系列 立铣刀5 刃 - 中长

J92*





Z5



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						J92 *	J93 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	HA G6110	HB G6110
0600 075	6	25		75	6	0.1	•	•
0800 075	8	25		75	8	0.2	•	•
1000 100	10	38		100	10	0.2	•	•
1200 100	12	45		100	12	0.3	•	•
1600 125	16	55		125	16	0.3	•	•
2000 125	20	65		125	20	0.3	•	•

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

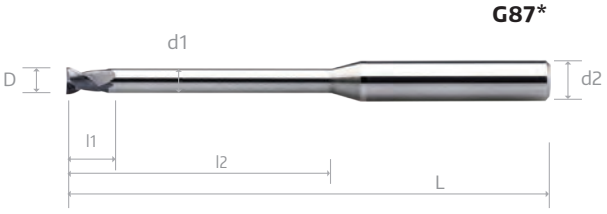
155

若有技术规格变更，恕不事先通知

NiTiCo 30 MINIATURE ENDMILLS – with Long Neck

HPMT

VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese NiTiCo 30 in metallo duro integralecon collo lungo, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G87 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	G6110
0020 050 0400	0.2	0.3	-	50	0.17	4	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	•
0030 050 0400	0.3	0.4	-	50	0.27	4	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	•
0040 050 0400	0.4	0.6	-	50	0.37	4	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	•
0050 050 0400	0.5	0.7	-	50	0.45	4	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	•
0060 050 0400	0.6	0.9	-	50	0.55	4	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	•
0070 050 0400	0.7	1.0	-	50	0.65	4	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

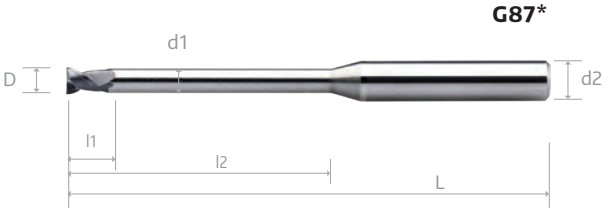
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	•	•	•	•	•	•	○	○				

Cutting Parameter 159

NiTiCo 30 MINIATURE ENDMILLS – with Long Neck

HPMT

VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese NiTiCo 30 in metallo duro integralecon collo lungo, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G87 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	G6110
0070 050 0400 080	0.7	1.0	8	50	0.65	4	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	•
0080 050 0400	0.8	1.2	-	50	0.75	4	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	•
0090 050 0400	0.9	1.4	-	50	0.85	4	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	•
0090 050 0400 080	0.9	1.4	8.0	50	0.85	4	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	•
0100 050 0400	1.0	1.5	-	50	0.9	4	•
0100 050 0400 060	1.0	1.5	6.0	50	0.9	4	•
0100 050 0400 080	1.0	1.5	8.0	50	0.9	4	•
0100 050 0400 100	1.0	1.5	10	50	0.9	4	•
0100 050 0400 120	1.0	1.5	12	50	0.9	4	•
0100 050 0400 140	1.0	1.5	14	50	0.9	4	•
0100 050 0400 160	1.0	1.5	16	50	0.9	4	•
0120 050 0400	1.2	1.8	-	50	1.1	4	•
0120 050 0400 060	1.2	1.8	6.0	50	1.1	4	•
0120 050 0400 080	1.2	1.8	8.0	50	1.1	4	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	•
0140 050 0400	1.4	2.1	-	50	1.3	4	•
0140 050 0400 060	1.4	2.1	6.0	50	1.3	4	•
0140 050 0400 080	1.4	2.1	8.0	50	1.3	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	◐	●	●	●	○	○				

159

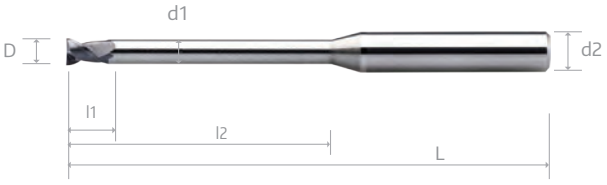
Technische änderungen ohne vorherige information vorbehalten

NiTiCo 30 MINIATURE ENDMILLS – with Long Neck

HPMT

VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese NiTiCo 30 in metallo duro integralecon collo lungo, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃

G87*





Z2



HPT G6110 AlCrN

NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G87 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	G6110
0140 050 0400 100	1.4	2.1	10	50	1.3	4	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	•
0150 050 0400	1.5	2.3	-	50	1.4	4	•
0150 050 0400 060	1.5	2.3	6.0	50	1.4	4	•
0150 050 0400 080	1.5	2.3	8.0	50	1.4	4	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	•
0150 060 0400	1.5	2.3	-	60	1.4	4	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	•
0160 050 0400	1.6	2.4	-	50	1.5	4	•
0160 050 0400 060	1.6	2.4	6.0	50	1.5	4	•
0160 050 0400 080	1.6	2.4	8.0	50	1.5	4	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	•
0160 060 0400	1.6	2.4	-	60	1.5	4	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	•
0180 050 0400	1.8	2.7	-	50	1.7	4	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	•	•	•	•	•	•	○	○				

Cutting Parameter

159

NiTiCo 30 MINIATURE ENDMILLS – with Long Neck

HPMT

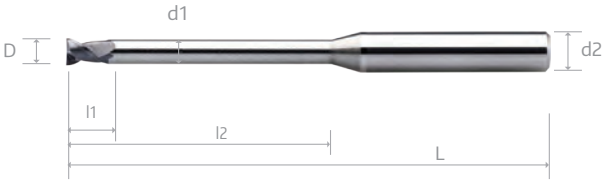
VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 in metallo duro integralecon collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃

G87*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G87 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	G6110
0180 050 0400 120	1.8	2.7	12	50	1.7	4	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	•
0180 060 0400	1.8	2.7	-	60	1.7	4	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	•
0200 050 0400	2	3	-	50	1.9	4	•
0200 050 0400 060	2	3	6	50	1.9	4	•
0200 050 0400 080	2	3	8	50	1.9	4	•
0200 050 0400 100	2	3	10	50	1.9	4	•
0200 050 0400 120	2	3	12	50	1.9	4	•
0200 050 0400 140	2	3	14	50	1.9	4	•
0200 050 0400 160	2	3	16	50	1.9	4	•
0200 060 0400	2	3	-	60	1.9	4	•
0200 060 0400 180	2	3	18	60	1.9	4	•
0200 060 0400 200	2	3	20	60	1.9	4	•
0200 075 0400	2	3	-	75	1.9	4	•
0200 075 0400 250	2	3	25	75	1.9	4	•
0200 075 0400 300	2	3	30	75	1.9	4	•
0250 050 0400	2.5	3.7	-	50	2.4	4	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	•
0250 060 0400	2.5	3.7	-	60	2.4	4	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

Cutting Parameter

159

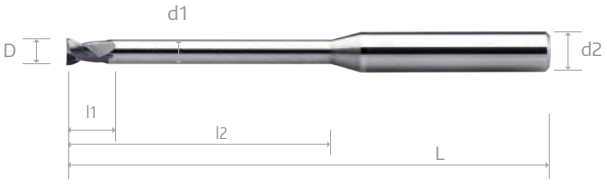
Modifiche Techiche possibili senza preavviso

NiTiCo 30 MINIATURE ENDMILLS – with Long Neck

HPMT

VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese NiTiCo 30 in metallo duro integralecon collo lungo, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃

G87*









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G87 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	G6110
0250 060 0400 250	2.5	3.7	25	60	2.4	4	•
0250 075 0400	2.5	3.7	-	75	2.4	4	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	•
0300 050 0600	3	4.5	-	50	2.8	6	•
0300 050 0600 080	3	4.5	8	50	2.8	6	•
0300 050 0600 100	3	4.5	10	50	2.8	6	•
0300 050 0600 120	3	4.5	12	50	2.8	6	•
0300 050 0600 140	3	4.5	14	50	2.8	6	•
0300 060 0600	3	4.5	-	60	2.8	6	•
0300 060 0600 160	3	4.5	16	60	2.8	6	•
0300 060 0600 180	3	4.5	18	60	2.8	6	•
0300 060 0600 200	3	4.5	20	60	2.8	6	•
0300 075 0600	3	4.5	-	75	2.8	6	•
0300 075 0600 250	3	4.5	25	75	2.8	6	•
0400 060 0600	4	4.5	-	60	3.7	6	•
0400 060 0600 100	4	4.5	10	60	3.7	6	•
0400 060 0600 150	4	4.5	15	60	3.7	6	•
0400 060 0600 200	4	4.5	20	60	3.7	6	•
0400 075 0600	4	4.5	-	75	3.7	6	•
0400 075 0600 250	4	4.5	25	75	3.7	6	•
0400 075 0600 300	4	4.5	30	75	3.7	6	•
0400 075 0600 400	4	4.5	40	75	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	○	○				

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NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

HPMT

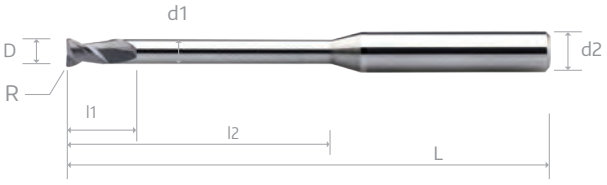
VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 torodiadali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃

H56*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H56 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	G6110
0020 050 0400	0.2	0.3	-	50	0.17	4	0.05	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	0.05	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	0.05	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	0.05	•
0030 050 0400	0.3	0.4	-	50	0.27	4	0.05	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	0.05	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	0.05	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	0.05	•
0040 050 0400	0.4	0.6	-	50	0.37	4	0.05	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	0.05	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	0.05	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	0.05	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	0.05	•
0050 050 0400	0.5	0.7	-	50	0.45	4	0.05	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	0.05	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	0.05	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	0.05	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	0.05	•
0060 050 0400	0.6	0.9	-	50	0.55	4	0.05	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	0.05	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	0.05	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	0.05	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	0.05	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	0.05	•
0070 050 0400	0.7	1.0	-	50	0.65	4	0.10	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	0.10	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	0.10	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	0.10	•
0070 050 0400 080	0.7	1.0	8	50	0.65	4	0.10	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	0.10	•

cont'd ►

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

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Technical specifications subject to change without prior notice

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

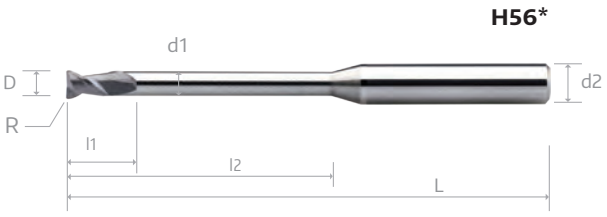
HPMT

VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 torodiadali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H56 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	G6110
0080 050 0400	0.8	1.2	-	50	0.75	4	0.10	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	0.10	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	0.10	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	0.10	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	0.10	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	0.10	•
0090 050 0400	0.9	1.4	-	50	0.85	4	0.10	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	0.10	•
0090 050 0400 080	0.9	1.4	8	50	0.85	4	0.10	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	0.10	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	0.10	•
0100 050 0400	1.0	1.5	-	50	0.9	4	0.10	•
0100 050 0400 060	1.0	1.5	6	50	0.9	4	0.10	•
0100 050 0400 080	1.0	1.5	8	50	0.9	4	0.10	•
0100 050 0400 100	1.0	1.5	10	50	0.9	4	0.10	•
0100 050 0400 120	1.0	1.5	12	50	0.9	4	0.10	•
0100 050 0400 140	1.0	1.5	14	50	0.9	4	0.10	•
0100 050 0400 160	1.0	1.5	16	50	0.9	4	0.10	•
0120 050 0400	1.2	1.8	-	50	1.1	4	0.10	•
0120 050 0400 060	1.2	1.8	6	50	1.1	4	0.10	•
0120 050 0400 080	1.2	1.8	8	50	1.1	4	0.10	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	0.10	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	0.10	•
0140 050 0400	1.4	2.1	-	50	1.3	4	0.10	•
0140 050 0400 060	1.4	2.1	6	50	1.3	4	0.10	•
0140 050 0400 080	1.4	2.1	8	50	1.3	4	0.10	•
0140 050 0400 100	1.4	2.1	10	50	1.3	4	0.10	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	0.10	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	0.10	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	0.10	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	○	○					

Cutting Parameter

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NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

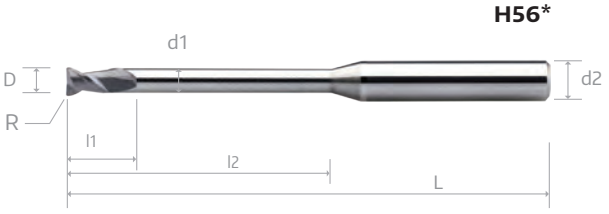
HPMT

VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 torodiadali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H56 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	G6110
0150 050 0400	1.5	2.3	-	50	1.4	4	0.20	•
0150 050 0400 060	1.5	2.3	6	50	1.4	4	0.20	•
0150 050 0400 080	1.5	2.3	8	50	1.4	4	0.20	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	0.20	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	0.20	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	0.20	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	0.20	•
0150 060 0400	1.5	2.3	-	60	1.4	4	0.20	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	0.20	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	0.20	•
0160 050 0400	1.6	2.4	-	50	1.5	4	0.20	•
0160 050 0400 060	1.6	2.4	6	50	1.5	4	0.20	•
0160 050 0400 080	1.6	2.4	8	50	1.5	4	0.20	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	0.20	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	0.20	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	0.20	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	0.20	•
0160 060 0400	1.6	2.4	-	60	1.5	4	0.20	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	0.20	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	0.20	•
0180 050 0400	1.8	2.7	-	50	1.7	4	0.20	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	0.20	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	0.20	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	0.20	•
0180 050 0400 120	1.8	2.7	12	50	1.7	4	0.20	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	0.20	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	0.20	•
0180 060 0400	1.8	2.7	-	60	1.7	4	0.20	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	0.20	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	0.20	•

cont'd ►

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

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Spécifications techniques sujettes à changement sans avis prélable

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

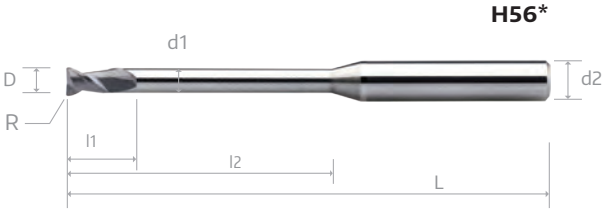
HPMT

VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 torodiadali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









NiTiCo 30

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H56 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	G6110
0200 050 0400	2	3	-	50	1.9	4	0.20	•
0200 050 0400 060	2	3	6	50	1.9	4	0.20	•
0200 050 0400 080	2	3	8	50	1.9	4	0.20	•
0200 050 0400 100	2	3	10	50	1.9	4	0.20	•
0200 050 0400 120	2	3	12	50	1.9	4	0.20	•
0200 050 0400 140	2	3	14	50	1.9	4	0.20	•
0200 050 0400 160	2	3	16	50	1.9	4	0.20	•
0200 060 0400	2	3	-	60	1.9	4	0.20	•
0200 060 0400 180	2	3	18	60	1.9	4	0.20	•
0200 060 0400 200	2	3	20	60	1.9	4	0.20	•
0200 075 0400	2	3	-	75	1.9	4	0.20	•
0200 075 0400 250	2	3	25	75	1.9	4	0.20	•
0200 075 0400 300	2	3	30	75	1.9	4	0.20	•
0250 050 0400	2.5	3.7	-	50	2.4	4	0.30	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	0.30	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	0.30	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	0.30	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	0.30	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	0.30	•
0250 060 0400	2.5	3.7	-	60	2.4	4	0.30	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	0.30	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	0.30	•
0250 060 0400 250	2.5	3.7	25	60	2.4	4	0.30	•
0250 075 0400	2.5	3.7	-	75	2.4	4	0.30	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	0.30	•
0300 050 0600	3	4.5	-	50	2.8	6	0.30	•
0300 050 0600 080	3	4.5	8	50	2.8	6	0.30	•
0300 050 0600 100	3	4.5	10	50	2.8	6	0.30	•
0300 050 0600 120	3	4.5	12	50	2.8	6	0.30	•
0300 050 0600 140	3	4.5	14	50	2.8	6	0.30	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	•	•	•	•	•	•	○	○				

Cutting Parameter 159

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

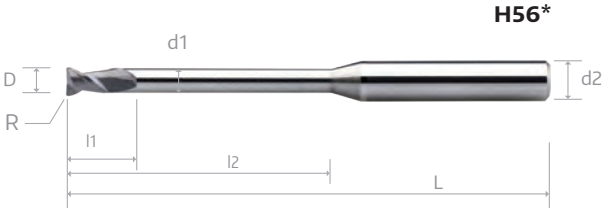
HPMT

VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese NiTiCo 30 torodiadali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 NiTiCo 30 系列 长颈短刃 立铣刀2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H56 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	G6110
0300 060 0600	3	4.5	-	60	2.8	6	0.30	•
0300 060 0600 160	3	4.5	16	60	2.8	6	0.30	•
0300 060 0600 180	3	4.5	18	60	2.8	6	0.30	•
0300 060 0600 200	3	4.5	20	60	2.8	6	0.30	•
0300 075 0600	3	4.5	-	75	2.8	6	0.30	•
0300 075 0600 250	3	4.5	25	75	2.8	6	0.30	•
0400 060 0600	4	4.5	10	60	3.7	6	0.40	•
0400 060 0600 100	4	4.5	10	60	3.7	6	0.40	•
0400 060 0600 150	4	4.5	15	60	3.7	6	0.40	•
0400 060 0600 200	4	4.5	20	60	3.7	6	0.40	•
0400 075 0600	4	4.5	-	75	3.7	6	0.40	•
0400 075 0600 250	4	4.5	25	75	3.7	6	0.40	•
0400 075 0600 300	4	4.5	30	75	3.7	6	0.40	•
0400 075 0600 400	4	4.5	40	75	3.7	6	0.40	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

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若有技术规格变更，恕不事先通知

NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

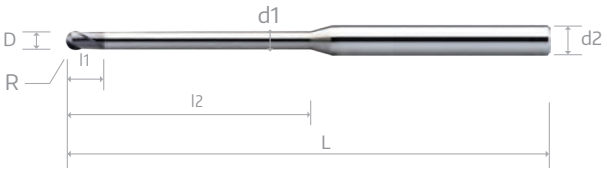
VHM NiTiCo 30 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises NiTiCo 30 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche NiTiCo 30 a raggio con collo lungo in metallo duro integrale, 2 taglienti

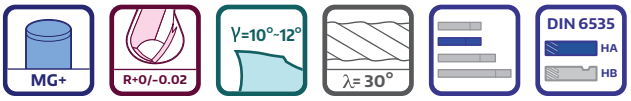
整体硬质合金 NiTiCo 30 系列 长颈短刃 球头 立铣刀 2 刃

G88*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G88 *
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	G6110
0020 050 0400	0.2	0.10	0.2	-	50	0.17	4	•
0020 050 0400 005	0.2	0.10	0.2	1	50	0.17	4	•
0020 050 0400 010	0.2	0.10	0.2	1	50	0.17	4	•
0020 050 0400 015	0.2	0.10	0.2	2	50	0.17	4	•
0030 050 0400	0.3	0.15	0.3	-	50	0.27	4	•
0030 050 0400 010	0.3	0.15	0.3	1	50	0.27	4	•
0030 050 0400 020	0.3	0.15	0.3	2	50	0.27	4	•
0030 050 0400 030	0.3	0.15	0.3	3	50	0.27	4	•
0040 050 0400	0.4	0.20	0.4	-	50	0.37	4	•
0040 050 0400 010	0.4	0.20	0.4	1	50	0.37	4	•
0040 050 0400 020	0.4	0.20	0.4	2	50	0.37	4	•
0040 050 0400 030	0.4	0.20	0.4	3	50	0.37	4	•
0040 050 0400 040	0.4	0.20	0.4	4	50	0.37	4	•
0040 050 0400 050	0.4	0.20	0.4	5	50	0.37	4	•
0050 050 0400	0.5	0.25	0.4	-	50	0.45	4	•
0050 050 0400 020	0.5	0.25	0.4	2	50	0.45	4	•
0050 050 0400 030	0.5	0.25	0.4	3	50	0.45	4	•
0050 050 0400 040	0.5	0.25	0.4	4	50	0.45	4	•
0050 050 0400 050	0.5	0.25	0.4	5	50	0.45	4	•
0050 050 0400 060	0.5	0.25	0.4	6	50	0.45	4	•
0050 050 0400 080	0.5	0.25	0.4	8	50	0.45	4	•
0060 050 0400	0.6	0.30	0.5	-	50	0.55	4	•
0060 050 0400 020	0.6	0.30	0.5	2	50	0.55	4	•
0060 050 0400 030	0.6	0.30	0.5	3	50	0.55	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	○	○					

Cutting Parameter

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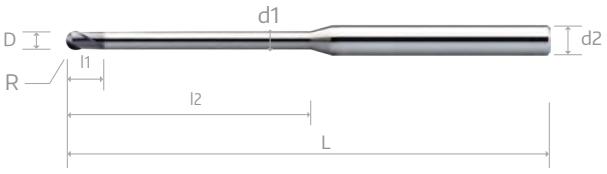
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

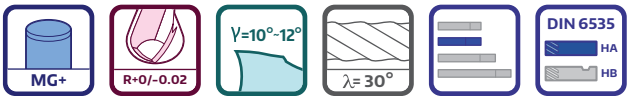
VHM NiTiCo 30 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche NiTiCo 30 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 球头 立铣刀 2 刃

G88*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G88 *
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	G6110
0060 050 0400 040	0.6	0.30	0.5	4	50	0.55	4	•
0060 050 0400 050	0.6	0.30	0.5	5	50	0.55	4	•
0060 050 0400 060	0.6	0.30	0.5	6	50	0.55	4	•
0060 050 0400 080	0.6	0.30	0.5	8	50	0.55	4	•
0080 050 0400	0.8	0.40	0.6	-	50	0.75	4	•
0080 050 0400 020	0.8	0.40	0.6	2	50	0.75	4	•
0080 050 0400 040	0.8	0.40	0.6	4	50	0.75	4	•
0080 050 0400 050	0.8	0.40	0.6	5	50	0.75	4	•
0080 050 0400 060	0.8	0.40	0.6	6	50	0.75	4	•
0080 050 0400 070	0.8	0.40	0.6	7	50	0.75	4	•
0080 050 0400 080	0.8	0.40	0.6	8	50	0.75	4	•
0080 050 0400 100	0.8	0.40	0.6	10	50	0.75	4	•
0100 050 0400	1.0	0.50	0.8	-	50	0.9	4	•
0100 050 0400 030	1.0	0.50	0.8	3	50	0.9	4	•
0100 050 0400 040	1.0	0.50	0.8	4	50	0.9	4	•
0100 050 0400 050	1.0	0.50	0.8	5	50	0.9	4	•
0100 050 0400 060	1.0	0.50	0.8	6	50	0.9	4	•
0100 050 0400 070	1.0	0.50	0.8	7	50	0.9	4	•
0100 050 0400 080	1.0	0.50	0.8	8	50	0.9	4	•
0100 050 0400 090	1.0	0.50	0.8	9	50	0.9	4	•
0100 050 0400 100	1.0	0.50	0.8	10	50	0.9	4	•
0100 050 0400 120	1.0	0.50	0.8	12	50	0.9	4	•
0100 050 0400 140	1.0	0.50	0.8	14	50	0.9	4	•
0100 050 0400 160	1.0	0.50	0.8	14	50	0.9	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

Cutting Parameter

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Technische änderungen ohne vorherige information vorbehalten

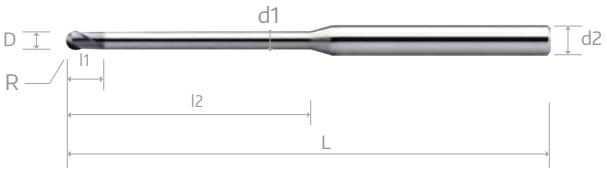
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

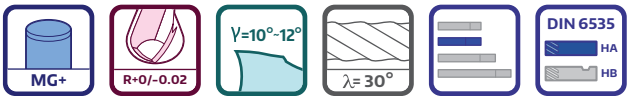
VHM NiTiCo 30 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche NiTiCo 30 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 球头 立铣刀 2 刃

G88*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G88 *
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	G6110
0100 060 0400	1.0	0.50	0.8	-	60	0.9	4	•
0100 060 0400 200	1.0	0.50	0.8	20	60	0.9	4	•
0120 050 0400	1.2	0.60	1.0	-	50	1.1	4	•
0120 050 0400 060	1.2	0.60	1.0	6	50	1.1	4	•
0120 050 0400 080	1.2	0.60	1.0	8	50	1.1	4	•
0120 050 0400 100	1.2	0.60	1.0	10	50	1.1	4	•
0120 050 0400 120	1.2	0.60	1.0	12	50	1.1	4	•
0140 050 0400	1.4	0.70	1.1	-	50	1.3	4	•
0140 050 0400 080	1.4	0.70	1.1	8	50	1.3	4	•
0140 050 0400 120	1.4	0.70	1.1	12	50	1.3	4	•
0140 050 0400 160	1.4	0.70	1.1	16	50	1.3	4	•
0150 050 0400	1.5	0.75	1.2	-	50	1.4	4	•
0150 050 0400 080	1.5	0.75	1.2	8	50	1.4	4	•
0150 050 0400 120	1.5	0.75	1.2	12	50	1.4	4	•
0150 050 0400 160	1.5	0.75	1.2	16	50	1.4	4	•
0150 060 0400 180	1.5	0.75	1.2	18	60	1.4	4	•
0160 050 0400	1.6	0.80	1.3	-	50	1.5	4	•
0160 050 0400 080	1.6	0.80	1.3	8	50	1.5	4	•
0160 050 0400 120	1.6	0.80	1.3	12	50	1.5	4	•
0160 050 0400 160	1.6	0.80	1.3	16	50	1.5	4	•
0160 060 0400 200	1.6	0.80	1.3	20	60	1.5	4	•
0180 050 0400	1.8	0.90	1.4	-	50	1.7	4	•
0180 050 0400 080	1.8	0.90	1.4	8	50	1.7	4	•
0180 050 0400 120	1.8	0.90	1.4	12	50	1.7	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	○	○						

Cutting Parameter

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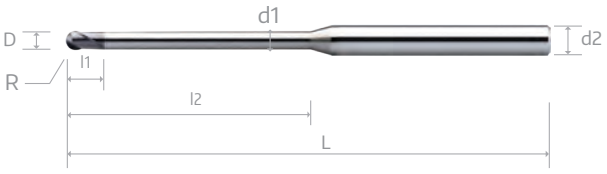
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

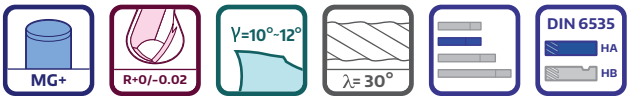
VHM NiTiCo 30 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche NiTiCo 30 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 球头 立铣刀 2 刃

G88*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G88 *
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	G6110
0180 050 0400 160	1.8	0.90	1.4	16	50	1.7	4	•
0180 060 0400 200	1.8	0.9	1.4	20	60	1.7	4	•
0200 050 0400	2	1	1.6	-	50	1.9	4	•
0200 050 0400 040	2	1	1.6	4	50	1.9	4	•
0200 050 0400 060	2	1	1.6	6	50	1.9	4	•
0200 050 0400 080	2	1	1.6	8	50	1.9	4	•
0200 050 0400 100	2	1	1.6	10	50	1.9	4	•
0200 050 0400 120	2	1	1.6	12	50	1.9	4	•
0200 050 0400 140	2	1	1.6	14	50	1.9	4	•
0200 050 0400 160	2	1	1.6	16	50	1.9	4	•
0200 060 0400	2	1	1.6	-	60	1.9	4	•
0200 060 0400 180	2	1	1.6	18	60	1.9	4	•
0200 060 0400 200	2	1	1.6	20	60	1.9	4	•
0200 060 0400 220	2	1	1.6	22	60	1.9	4	•
0200 075 0400	2	1	1.6	-	75	1.9	4	•
0200 075 0400 250	2	1	1.6	25	75	1.9	4	•
0200 075 0400 300	2	1	1.6	30	75	1.9	4	•
0300 050 0600	3	2	2.4	-	50	2.8	6	•
0300 050 0600 080	3	2	2.4	8	50	2.8	6	•
0300 050 0600 100	3	2	2.4	10	50	2.8	6	•
0300 060 0600	3	2	2.4	-	60	2.8	6	•
0300 060 0600 160	3	2	2.4	16	60	2.8	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	◉	●	●	●	○	○						

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Modifiche Techiche possibili senza preavviso

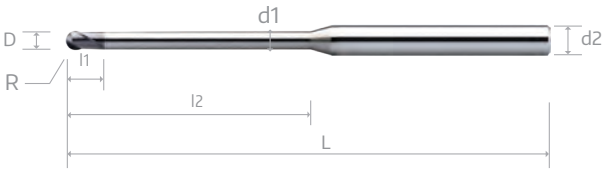
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

HPMT

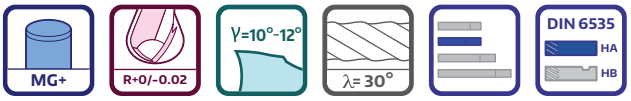
VHM NiTiCo 30 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises NiTiCo 30 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche NiTiCo 30 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 NiTiCo 30 系列 长颈短刃 球头 立铣刀 2 刃

G88*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							G88 *
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	G6110
0300 060 0600 200	3	2	2.4	20	60	2.8	6	•
0300 075 0600	3	2	2.4	-	75	2.8	6	•
0300 075 0600 250	3	2	2.4	25	75	2.8	6	•
0300 075 0600 300	3	2	2.4	30	75	2.8	6	•
0300 075 0600 350	3	2	2.4	35	75	2.8	6	•
0400 050 0600	4	2	3.2	-	50	3.7	6	•
0400 050 0600 100	4	2	3.2	10	50	3.7	6	•
0400 060 0600	4	2	3.2	-	60	3.7	6	•
0400 060 0600 160	4	2	3.2	16	60	3.7	6	•
0400 060 0600 200	4	2	3.2	20	60	3.7	6	•
0400 075 0600	4	2	3.2	-	75	3.7	6	•
0400 075 0600 250	4	2	3.2	25	75	3.7	6	•
0400 075 0600 300	4	2	3.2	30	75	3.7	6	•
0400 075 0600 350	4	2	3.2	35	75	3.7	6	•
0400 100 0600	4	2	3.2	-	100	3.7	6	•
0400 100 0600 400	4	2	3.2	40	100	3.7	6	•
0400 100 0600 450	4	2	3.2	45	100	3.7	6	•
0400 100 0600 500	4	2	3.2	50	100	3.7	6	•

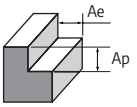
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	○	○					

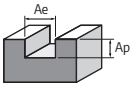
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若有技术规格变更，恕不事先通知



Standard Endmills 2 Flutes

Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.005		0.006		0.004		0.005		0.005		0.004		0.002		0.003
2		0.010		0.012		0.008		0.010		0.012		0.008		0.005		0.008
3		0.015		0.019		0.014		0.017		0.021		0.013		0.008		0.014
4		0.022		0.026		0.019		0.024		0.032		0.018		0.012		0.020
5		0.028		0.034		0.025		0.033		0.045		0.023		0.017		0.028
6		0.036		0.043		0.032		0.042		0.061		0.029		0.023		0.037
8	140	0.049	130	0.059	135	0.045	90	0.060	45	0.089	170	0.041	125	0.033	85	0.053
10		0.065		0.076		0.060		0.079		0.121		0.053		0.045		0.072
12		0.081		0.095		0.075		0.101		0.157		0.066		0.059		0.093
14		0.098		0.115		0.092		0.124		0.197		0.080		0.074		0.116
16		0.116		0.136		0.109		0.150		0.242		0.095		0.090		0.141
18		0.135		0.158		0.128		0.177		0.290		0.111		0.108		0.168
20		0.155		0.182		0.148		0.206		0.343		0.128		0.127		0.197



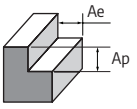
Standard Endmills 2 Flutes

Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D		0.60 × D		0.45 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.003		0.004		0.003		0.002		0.003
2		0.006		0.007		0.006		0.007		0.009		0.005		0.004		0.006
3		0.009		0.011		0.009		0.012		0.015		0.009		0.006		0.011
4		0.013		0.016		0.013		0.017		0.024		0.012		0.010		0.016
5		0.017		0.020		0.018		0.023		0.033		0.016		0.013		0.022
6		0.021		0.026		0.022		0.030		0.044		0.020		0.018		0.029
8	140	0.030	130	0.035	120	0.031	80	0.042	40	0.065	150	0.028	105	0.026	70	0.042
10		0.039		0.046		0.041		0.056		0.088		0.036		0.035		0.057
12		0.048		0.057		0.052		0.072		0.115		0.045		0.046		0.073
14		0.059		0.069		0.063		0.088		0.145		0.055		0.057		0.091
16		0.069		0.082		0.076		0.106		0.177		0.065		0.070		0.111
18		0.081		0.095		0.089		0.125		0.212		0.076		0.083		0.133
20		0.093		0.109		0.102		0.146		0.251		0.087		0.098		0.156

P M K S | P K

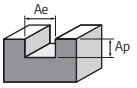
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 3 Flutes



Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.005		0.004		0.004		0.003		0.004		0.002		0.004
2		0.009		0.011		0.008		0.008		0.008		0.009		0.006		0.009
3		0.014		0.017		0.014		0.013		0.014		0.014		0.010		0.015
4		0.019		0.023		0.019		0.019		0.022		0.019		0.015		0.022
5		0.025		0.030		0.025		0.026		0.030		0.025		0.021		0.030
6		0.032		0.038		0.032		0.034		0.040		0.032		0.028		0.040
8	140	0.044	130	0.052	120	0.045	100	0.048	60	0.059	140	0.044	90	0.041	70	0.058
10		0.057		0.068		0.060		0.064		0.081		0.057		0.056		0.078
12		0.072		0.085		0.075		0.081		0.105		0.072		0.072		0.100
14		0.087		0.102		0.092		0.100		0.132		0.087		0.091		0.125
16		0.103		0.121		0.109		0.120		0.161		0.103		0.111		0.152
18		0.120		0.141		0.128		0.141		0.194		0.120		0.133		0.181
20		0.138		0.161		0.148		0.165		0.228		0.138		0.157		0.213

Standard Endmills 3 Flutes

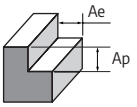


Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D		0.60 × D		0.45 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.002		0.003		0.002		0.002		0.002		0.002		0.002		0.002
2		0.005		0.006		0.005		0.005		0.005		0.005		0.004		0.006
3		0.008		0.010		0.008		0.008		0.009		0.008		0.007		0.010
4		0.011		0.014		0.012		0.012		0.014		0.011		0.010		0.014
5		0.015		0.018		0.016		0.016		0.020		0.015		0.014		0.020
6		0.019		0.023		0.020		0.021		0.026		0.019		0.018		0.026
8	140	0.026	130	0.031	120	0.028	100	0.030	60	0.038	140	0.026	90	0.027	70	0.037
10		0.034		0.041		0.037		0.040		0.052		0.034		0.036		0.051
12		0.043		0.051		0.046		0.051		0.068		0.043		0.047		0.065
14		0.052		0.061		0.056		0.063		0.086		0.052		0.059		0.081
16		0.062		0.073		0.067		0.075		0.105		0.062		0.072		0.099
18		0.072		0.084		0.079		0.089		0.126		0.072		0.087		0.118
20		0.083		0.097		0.091		0.104		0.148		0.083		0.102		0.139

P M K S | P K

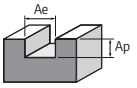
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 4 Flutes



Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.005		0.007		0.005		0.005		0.004		0.005		0.003		0.005
2		0.012		0.014		0.011		0.011		0.011		0.012		0.008		0.012
3		0.018		0.022		0.018		0.018		0.019		0.018		0.013		0.020
4		0.026		0.031		0.026		0.026		0.029		0.026		0.020		0.029
5		0.033		0.040		0.034		0.035		0.040		0.033		0.028		0.040
6		0.042		0.050		0.043		0.045		0.054		0.042		0.038		0.053
8	140	0.059	130	0.070	120	0.061	100	0.064	60	0.079	140	0.059	90	0.055	70	0.077
10		0.076		0.091		0.080		0.085		0.107		0.076		0.075		0.104
12		0.095		0.113		0.100		0.108		0.140		0.095		0.097		0.133
14		0.116		0.136		0.122		0.133		0.175		0.116		0.121		0.167
16		0.137		0.161		0.146		0.160		0.215		0.137		0.148		0.203
18		0.160		0.187		0.171		0.188		0.258		0.160		0.177		0.242
20		0.184		0.215		0.198		0.220		0.304		0.184		0.209		0.284

Standard Endmills 4 Flutes

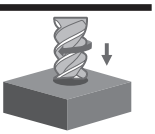


Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.60 × D		0.60 × D		0.55 × D		0.50 × D		0.45 × D		0.60 × D		0.45 × D		0.45 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.004		0.003		0.003		0.003		0.003		0.002		0.003
2		0.007		0.008		0.007		0.007		0.007		0.007		0.005		0.007
3		0.011		0.013		0.011		0.011		0.012		0.011		0.009		0.013
4		0.015		0.019		0.016		0.016		0.019		0.015		0.013		0.019
5		0.020		0.024		0.021		0.022		0.026		0.020		0.018		0.026
6		0.025		0.030		0.026		0.028		0.035		0.025		0.024		0.034
8	140	0.035	130	0.042	120	0.037	100	0.040	60	0.051	140	0.035	90	0.036	70	0.050
10		0.046		0.054		0.049		0.053		0.070		0.046		0.049		0.067
12		0.057		0.068		0.061		0.068		0.091		0.057		0.063		0.087
14		0.069		0.082		0.075		0.084		0.114		0.069		0.079		0.108
16		0.082		0.097		0.090		0.101		0.140		0.082		0.096		0.132
18		0.096		0.112		0.105		0.119		0.168		0.096		0.115		0.157
20		0.110		0.129		0.121		0.138		0.198		0.110		0.136		0.184

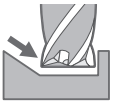
P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 4 Flutes



Plunging	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	-		-		-		-		-		-		-		-	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		0.014		0.014		0.013		0.006		0.006		0.005		0.006		0.013
4		0.020		0.020		0.019		0.010		0.009		0.007		0.009		0.017
5		0.024		0.027		0.026		0.012		0.011		0.009		0.011		0.022
6		0.028		0.032		0.031		0.016		0.013		0.011		0.013		0.027
8		0.045		0.046		0.044		0.022		0.017		0.015		0.017		0.037
10	125	0.060	110	0.061	100	0.059	95	0.027	55	0.023	135	0.019	55	0.023	65	0.046
12		0.075		0.077		0.075		0.034		0.027		0.024		0.027		0.059
14		0.088		0.090		0.088		0.041		0.032		0.033		0.032		0.069
16		0.106		0.109		0.107		0.049		0.037		0.037		0.037		0.083
18		0.119		0.122		0.120		0.055		0.059		0.045		0.059		0.094
20		0.138		0.143		0.141		0.063		0.077		0.050		0.077		0.109



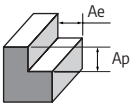
Standard Endmills 4 Flutes

Ramping	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	45°		45°		45°		15°		10°		45°		15°		10°	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		0.017		0.017		0.016		0.006		0.006		0.005		0.006		0.013
4		0.024		0.024		0.024		0.010		0.009		0.007		0.009		0.017
5		0.031		0.032		0.031		0.012		0.011		0.009		0.011		0.022
6		0.038		0.039		0.038		0.016		0.013		0.011		0.013		0.027
8		0.053		0.054		0.053		0.022		0.017		0.015		0.017		0.037
10	125	0.069	110	0.071	100	0.071	95	0.027	55	0.023	135	0.019	55	0.023	65	0.046
12		0.087		0.090		0.090		0.034		0.027		0.024		0.027		0.059
14		0.101		0.105		0.104		0.041		0.032		0.033		0.032		0.069
16		0.121		0.126		0.126		0.049		0.037		0.037		0.037		0.083
18		0.136		0.141		0.141		0.055		0.059		0.045		0.059		0.094
20		0.157		0.164		0.165		0.063		0.077		0.050		0.077		0.109

P M K S | P K

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Standard Endmills 5 Flutes

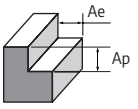
Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	140	0.026	130	0.031	120	0.026	95	0.027	50	0.034	140	0.026	100	0.018	60	0.034
5		0.034		0.040		0.034		0.037		0.048		0.034		0.026		0.047
6		0.042		0.050		0.043		0.047		0.064		0.042		0.034		0.062
8		0.059		0.070		0.061		0.067		0.095		0.059		0.049		0.090
10		0.076		0.091		0.080		0.089		0.129		0.076		0.067		0.121
12		0.095		0.113		0.100		0.113		0.168		0.095		0.087		0.156
16		0.137		0.161		0.146		0.168		0.258		0.137		0.133		0.236
20		0.184		0.215		0.198		0.231		0.365		0.184		0.188		0.331

Standard Endmills 5 Flutes

Trochoidal Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy steel		Prehardened steel		Stainless steel		Stainless steel		Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.12 × D		0.12 × D		0.12 × D		0.12 × D		0.12 × D		0.12 × D		0.12 × D		0.12 × D	
D	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	250	0.032	220	0.028	200	0.020	100	0.016	90	0.016	200	0.028	140	0.020	90	0.016
5		0.040		0.035		0.025		0.020		0.020		0.035		0.025		0.020
6		0.048		0.042		0.030		0.024		0.024		0.042		0.030		0.024
8		0.064		0.056		0.040		0.032		0.032		0.056		0.040		0.032
10		0.080		0.070		0.050		0.040		0.040		0.070		0.050		0.040
12		0.096		0.084		0.060		0.048		0.048		0.084		0.060		0.048
16		0.128		0.112		0.080		0.064		0.064		0.112		0.080		0.064
20		0.160		0.140		0.100		0.080		0.080		0.140		0.100		0.080

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Long Endmills 5 Flutes

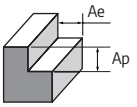
Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	140	0.020	130	0.025	120	0.020	95	0.022	50	0.027	140	0.020	100	0.015	60	0.027
5		0.027		0.032		0.027		0.029		0.039		0.027		0.020		0.038
6		0.034		0.040		0.034		0.038		0.052		0.034		0.027		0.049
8		0.047		0.056		0.048		0.054		0.076		0.047		0.040		0.072
10		0.061		0.073		0.064		0.071		0.103		0.061		0.054		0.097
12		0.076		0.090		0.080		0.091		0.134		0.076		0.070		0.125
16		0.110		0.129		0.117		0.134		0.206		0.110		0.107		0.189
20		0.147		0.172		0.158		0.185		0.292		0.147		0.150		0.265

Long Endmills 5 Flutes

Trochoidal Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy steel		Prehardened steel		Stainless steel		Stainless steel		Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D	
Cutting Width, ae	0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	200	0.032	180	0.028	150	0.020	80	0.016	70	0.016	160	0.028	100	0.020	70	0.016
5		0.040		0.035		0.025		0.020		0.020		0.035		0.025		0.020
6		0.048		0.042		0.030		0.024		0.024		0.042		0.030		0.024
8		0.064		0.056		0.040		0.032		0.032		0.056		0.040		0.032
10		0.080		0.070		0.050		0.040		0.040		0.070		0.050		0.040
12		0.096		0.084		0.060		0.048		0.048		0.084		0.060		0.048
16		0.128		0.112		0.080		0.064		0.064		0.112		0.080		0.064
20		0.160		0.140		0.100		0.080		0.080		0.140		0.100		0.080

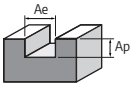
P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



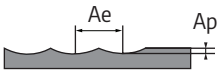
Roughing Endmills 4 Flutes

Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × D		0.70 × D		0.65 × D		0.80 × D		0.65 × D		0.65 × D	
Cutting Width, Ae (mm)	0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D		0.45 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	160	0.044	150	0.052	140	0.044	95	0.057	45	0.086	160	0.044	115	0.035	100	0.044
8		0.062		0.073		0.062		0.081		0.126		0.062		0.052		0.064
10		0.080		0.094		0.082		0.107		0.172		0.080		0.070		0.087
12		0.100		0.117		0.103		0.136		0.224		0.100		0.091		0.112
14		0.121		0.142		0.126		0.168		0.281		0.121		0.114		0.140
16		0.144		0.168		0.150		0.202		0.344		0.144		0.139		0.170
18		0.168		0.195		0.176		0.238		0.413		0.168		0.166		0.203
20		0.193		0.224		0.203		0.277		0.487		0.193		0.196		0.238



Roughing Endmills 4 Flutes

Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy steel		Prehardened steel		Stainless steel		Stainless steel		Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting depth, ap	0.36 × D		0.36 × D		0.34 × D		0.32 × D		0.30 × D		0.36 × D		0.30 × D		0.30 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	160	0.044	150	0.052	140	0.044	95	0.057	45	0.086	160	0.044	115	0.035	100	0.044
8		0.062		0.073		0.062		0.081		0.126		0.062		0.052		0.064
10		0.080		0.094		0.082		0.107		0.172		0.080		0.070		0.087
12		0.100		0.117		0.103		0.136		0.224		0.100		0.091		0.112
14		0.121		0.142		0.126		0.168		0.281		0.121		0.114		0.140
16		0.144		0.168		0.150		0.202		0.344		0.144		0.139		0.170
18		0.168		0.195		0.176		0.238		0.413		0.168		0.166		0.203
20		0.193		0.224		0.203		0.277		0.487		0.193		0.196		0.238



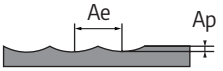
Miniature Ballnose Cutters - with Long Neck 2 Flutes

Profiling		P						M		
Working material		Carbon steel			Pre-hardened steel			Stainless steel		
Properties		-			35 ≤ HRC < 45			High machinability		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.020	25	0.004	0.016	25	0.003	0.018	25	0.004
	1	0.014	25	0.004	0.011	25	0.003	0.013	25	0.004
	1.5	0.008	25	0.003	0.006	25	0.003	0.007	25	0.003
0.3	1	0.021	38	0.005	0.017	38	0.005	0.019	38	0.005
	2	0.012	38	0.005	0.010	38	0.004	0.011	38	0.005
	3	0.008	38	0.005	0.006	38	0.004	0.007	38	0.005
0.4	1	0.040	50	0.008	0.032	50	0.008	0.036	50	0.008
	2	0.028	50	0.006	0.022	50	0.006	0.025	50	0.006
	3	0.016	50	0.005	0.013	46	0.005	0.014	49	0.005
	4	0.010	50	0.005	0.008	46	0.005	0.009	49	0.005
	5	0.006	48	0.005	0.005	41	0.005	0.005	43	0.005
0.5	2	0.035	63	0.012	0.028	63	0.011	0.032	63	0.012
	3	0.030	63	0.009	0.024	63	0.008	0.027	63	0.009
	4	0.020	57	0.009	0.016	48	0.008	0.018	51	0.009
	5	0.018	57	0.009	0.014	48	0.008	0.016	51	0.009
	6	0.013	50	0.008	0.010	43	0.008	0.012	45	0.009
	8	0.008	50	0.008	0.006	43	0.008	0.007	45	0.009
0.6	2	0.063	75	0.023	0.050	75	0.020	0.057	75	0.023
	3	0.041	75	0.018	0.033	75	0.016	0.037	75	0.018
	4	0.026	75	0.017	0.021	75	0.015	0.023	75	0.017
	5	0.020	75	0.014	0.016	75	0.012	0.018	75	0.014
	6	0.015	75	0.014	0.012	75	0.012	0.014	75	0.014
	8	0.015	60	0.013	0.012	51	0.011	0.014	54	0.013
0.8	2	0.120	101	0.027	0.096	101	0.024	0.108	101	0.027
	4	0.078	101	0.027	0.062	101	0.024	0.070	101	0.027
	5	0.059	101	0.024	0.047	101	0.022	0.053	101	0.024
	6	0.042	101	0.023	0.034	101	0.020	0.038	101	0.023
	7	0.031	101	0.020	0.025	95	0.018	0.028	97	0.020
	8	0.020	101	0.016	0.016	89	0.014	0.018	94	0.016
	10	0.020	80	0.015	0.016	68	0.014	0.018	72	0.015
1.0	3	0.200	126	0.038	0.160	126	0.034	0.180	126	0.038
	4	0.140	126	0.038	0.112	126	0.034	0.126	126	0.038
	5	0.090	126	0.035	0.072	125	0.033	0.081	126	0.035
	6	0.060	126	0.032	0.048	121	0.030	0.054	126	0.031
	7	0.060	122	0.022	0.048	104	0.020	0.054	110	0.022
	8	0.060	122	0.022	0.048	104	0.020	0.054	110	0.022
	9	0.045	122	0.022	0.036	104	0.020	0.041	110	0.022
	10	0.038	122	0.022	0.030	104	0.020	0.034	110	0.022
	12	0.025	90	0.021	0.020	77	0.019	0.023	81	0.021
	14	0.020	90	0.021	0.016	77	0.019	0.018	81	0.021
	20	0.010	68	0.020	0.008	58	0.018	0.009	61	0.020
1.2	6	0.110	151	0.035	0.088	134	0.034	0.099	134	0.034
	8	0.060	141	0.029	0.048	120	0.033	0.054	120	0.033
	10	0.053	130	0.025	0.042	111	0.022	0.048	111	0.022
	12	0.045	130	0.023	0.036	111	0.022	0.041	111	0.022

cont' d ▶



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



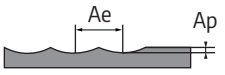
Miniature Ballnose Cutters - with Long Neck 2 Flutes

Profiling		P						M		
Working material		Carbon steel			Pre-hardened steel			Stainless steel		
Properties		-			35 ≤ HRC < 45			High machinability		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.4	8	0.110	144	0.036	0.088	122	0.033	0.099	130	0.036
	12	0.053	133	0.027	0.042	113	0.024	0.048	120	0.027
	16	0.035	99	0.025	0.028	84	0.023	0.032	89	0.025
1.5	8	0.090	155	0.040	0.072	131	0.033	0.081	139	0.036
	12	0.090	142	0.030	0.072	121	0.027	0.081	128	0.030
	16	0.038	106	0.028	0.030	90	0.026	0.034	95	0.028
	18	0.038	106	0.028	0.030	90	0.026	0.034	95	0.028
1.6	8	0.220	183	0.042	0.176	155	0.040	0.198	165	0.042
	12	0.098	165	0.044	0.078	140	0.039	0.088	148	0.044
	16	0.060	141	0.031	0.048	120	0.028	0.054	127	0.031
	20	0.040	105	0.030	0.032	89	0.026	0.036	94	0.030
1.8	8	0.260	191	0.048	0.208	162	0.042	0.234	172	0.048
	12	0.105	159	0.036	0.084	135	0.031	0.095	143	0.036
	16	0.068	159	0.036	0.054	135	0.031	0.061	143	0.036
	20	0.045	118	0.034	0.036	100	0.030	0.041	106	0.034
2.0	4	0.400	198	0.075	0.320	168	0.068	0.360	178	0.075
	6	0.400	198	0.067	0.320	168	0.060	0.360	178	0.067
	8	0.280	198	0.067	0.224	168	0.060	0.252	178	0.067
	10	0.210	185	0.060	0.168	157	0.054	0.189	167	0.060
	12	0.120	167	0.060	0.096	141	0.054	0.108	150	0.060
	14	0.120	167	0.052	0.096	141	0.047	0.108	150	0.052
	16	0.120	155	0.036	0.096	131	0.032	0.108	139	0.036
	18	0.090	143	0.036	0.072	121	0.032	0.081	128	0.036
	20	0.075	143	0.036	0.060	121	0.032	0.068	128	0.036
	22	0.050	112	0.034	0.040	96	0.031	0.045	101	0.034
	25	0.050	106	0.034	0.040	90	0.030	0.045	95	0.034
	30	0.030	106	0.034	0.024	90	0.030	0.027	95	0.034
3.0	8	0.600	226	0.113	0.480	192	0.100	0.540	204	0.113
	10	0.420	226	0.113	0.336	192	0.100	0.378	204	0.113
	16	0.315	211	0.081	0.252	179	0.073	0.284	190	0.081
	20	0.180	176	0.068	0.144	150	0.060	0.162	158	0.068
	25	0.120	176	0.068	0.096	150	0.060	0.108	158	0.068
	30	0.120	163	0.067	0.096	139	0.060	0.108	147	0.067
	35	0.080	121	0.064	0.064	103	0.057	0.072	108	0.064
4.0	10	0.600	217	0.150	0.480	185	0.135	0.540	195	0.150
	16	0.420	217	0.150	0.336	185	0.135	0.378	195	0.150
	20	0.420	189	0.120	0.336	160	0.108	0.378	170	0.120
	25	0.240	170	0.108	0.192	143	0.097	0.216	152	0.108
	30	0.160	156	0.090	0.128	133	0.081	0.144	141	0.090
	35	0.100	156	0.090	0.080	133	0.081	0.090	141	0.090
	40	0.100	156	0.090	0.080	133	0.081	0.090	141	0.090
	45	0.100	116	0.085	0.080	98	0.077	0.090	104	0.085
	50	0.100	116	0.085	0.080	98	0.077	0.090	104	0.085



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



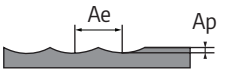
Roughing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.020	25	0.007	0.014	24	0.005	0.018	25	0.007
	1	0.014	25	0.007	0.010	24	0.005	0.013	25	0.007
	1.5	0.008	25	0.007	0.006	22	0.005	0.007	23	0.006
0.3	1	0.021	38	0.007	0.015	32	0.005	0.019	34	0.007
	2	0.012	34	0.007	0.008	29	0.005	0.011	31	0.006
	3	0.008	34	0.007	0.006	29	0.005	0.007	31	0.006
0.4	2	0.028	40	0.011	0.020	34	0.008	0.025	36	0.011
	3	0.016	36	0.010	0.011	31	0.008	0.014	33	0.010
	4	0.010	36	0.010	0.007	31	0.008	0.009	33	0.010
	5	0.010	32	0.009	0.007	27	0.006	0.009	29	0.009
0.5	2	0.035	50	0.011	0.025	43	0.010	0.032	45	0.011
	4	0.020	45	0.010	0.014	38	0.008	0.018	41	0.010
	6	0.013	40	0.009	0.009	34	0.006	0.012	36	0.009
	8	0.008	40	0.008	0.006	34	0.006	0.007	36	0.008
0.6	2	0.042	60	0.016	0.029	51	0.012	0.038	54	0.016
	4	0.024	54	0.014	0.017	46	0.012	0.022	49	0.014
	6	0.015	54	0.014	0.011	46	0.012	0.014	49	0.014
	8	0.015	48	0.013	0.011	41	0.008	0.014	43	0.013
	10	0.009	48	0.013	0.006	41	0.008	0.008	43	0.013
0.7	2	0.070	70	0.016	0.049	60	0.012	0.063	63	0.016
	4	0.049	63	0.014	0.034	54	0.012	0.044	57	0.014
	6	0.018	63	0.014	0.013	54	0.012	0.016	57	0.014
	8	0.018	56	0.013	0.013	48	0.008	0.016	51	0.013
	10	0.018	56	0.013	0.013	48	0.008	0.016	51	0.013
0.8	4	0.056	80	0.016	0.039	68	0.014	0.050	72	0.016
	6	0.032	72	0.014	0.022	62	0.014	0.029	65	0.014
	8	0.020	72	0.014	0.014	62	0.012	0.018	65	0.014
	10	0.020	64	0.013	0.014	55	0.008	0.018	58	0.013
	12	0.012	64	0.013	0.008	55	0.008	0.011	58	0.013
0.9	6	0.036	81	0.017	0.025	69	0.014	0.032	73	0.017
	8	0.023	81	0.016	0.016	69	0.013	0.021	73	0.016
	10	0.023	72	0.013	0.016	62	0.008	0.021	65	0.013
	15	0.014	72	0.011	0.010	62	0.007	0.013	65	0.010
1.0	6	0.040	81	0.022	0.028	69	0.020	0.036	73	0.022
	8	0.040	81	0.022	0.028	69	0.019	0.036	73	0.022
	10	0.025	81	0.022	0.018	69	0.018	0.023	73	0.022
	12	0.025	72	0.019	0.018	62	0.013	0.023	65	0.019
	14	0.025	72	0.019	0.018	62	0.013	0.023	65	0.019
	16	0.015	72	0.016	0.011	62	0.012	0.014	65	0.016
1.2	6	0.084	97	0.024	0.059	82	0.020	0.076	87	0.024
	8	0.048	87	0.022	0.034	74	0.020	0.043	78	0.022
	10	0.030	87	0.022	0.021	74	0.019	0.027	78	0.022
	12	0.030	87	0.022	0.021	74	0.018	0.027	78	0.022

cont' d ▶

P M P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



Roughing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.4	6	0.100	99	0.024	0.070	84	0.018	0.090	89	0.024
	8	0.078	89	0.022	0.055	84	0.017	0.070	89	0.023
	10	0.057	89	0.022	0.040	84	0.016	0.051	89	0.022
	12	0.035	89	0.022	0.025	75	0.018	0.032	80	0.022
	14	0.035	79	0.019	0.025	75	0.018	0.032	80	0.022
	16	0.035	79	0.019	0.025	75	0.017	0.032	80	0.020
1.5	6	0.110	106	0.026	0.077	90	0.021	0.099	95	0.026
	8	0.080	95	0.024	0.056	81	0.021	0.072	85	0.026
	10	0.060	95	0.022	0.042	81	0.021	0.054	85	0.024
	12	0.060	95	0.022	0.042	81	0.021	0.054	85	0.022
	14	0.038	95	0.022	0.027	81	0.021	0.034	85	0.022
	16	0.038	84	0.019	0.027	72	0.013	0.034	76	0.019
	18	0.038	84	0.019	0.027	72	0.013	0.034	76	0.019
	20	0.038	84	0.019	0.027	72	0.013	0.034	76	0.019
1.6	6	0.110	105	0.029	0.077	89	0.021	0.099	94	0.030
	8	0.110	105	0.029	0.077	89	0.019	0.099	94	0.026
	10	0.070	105	0.029	0.049	89	0.019	0.063	94	0.026
	12	0.070	94	0.026	0.049	80	0.018	0.063	84	0.024
	14	0.070	94	0.026	0.049	80	0.018	0.063	84	0.024
	16	0.042	94	0.025	0.029	80	0.017	0.038	84	0.023
	18	0.042	94	0.025	0.029	80	0.017	0.038	84	0.023
	20	0.042	94	0.024	0.029	80	0.016	0.038	84	0.022
1.8	6	0.130	118	0.029	0.091	100	0.021	0.117	106	0.032
	8	0.130	118	0.029	0.091	100	0.019	0.117	106	0.029
	10	0.081	118	0.029	0.057	100	0.019	0.073	106	0.029
	12	0.081	106	0.026	0.057	90	0.018	0.073	95	0.026
	14	0.081	106	0.026	0.057	90	0.018	0.073	95	0.026
	16	0.050	106	0.025	0.035	90	0.017	0.045	95	0.025
	18	0.050	106	0.025	0.035	90	0.017	0.045	95	0.025
	20	0.050	106	0.024	0.035	90	0.016	0.045	95	0.024
2.0	6	0.200	106	0.035	0.140	90	0.026	0.180	95	0.035
	8	0.140	106	0.035	0.098	90	0.026	0.126	95	0.035
	10	0.140	106	0.035	0.098	90	0.026	0.126	95	0.035
	12	0.100	95	0.032	0.070	81	0.026	0.090	85	0.032
	14	0.080	95	0.032	0.056	81	0.026	0.072	85	0.032
	16	0.080	95	0.030	0.056	81	0.023	0.072	85	0.032
	18	0.050	95	0.030	0.035	81	0.023	0.045	85	0.032
	20	0.050	95	0.029	0.035	81	0.023	0.045	85	0.029
	25	0.050	84	0.025	0.035	72	0.017	0.045	76	0.025
	30	0.030	84	0.025	0.021	72	0.017	0.027	76	0.025

cont' d ▶



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes

Roughing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
2.5	8	0.180	113	0.043	0.126	96	0.032	0.162	102	0.043
	10	0.180	113	0.043	0.126	96	0.031	0.162	102	0.043
	12	0.180	113	0.043	0.126	96	0.030	0.162	102	0.043
	14	0.140	108	0.042	0.098	91	0.029	0.126	97	0.043
	16	0.100	102	0.041	0.070	86	0.029	0.090	92	0.041
	18	0.100	102	0.038	0.070	86	0.029	0.090	92	0.038
	20	0.100	102	0.036	0.070	86	0.029	0.090	92	0.036
	25	0.080	96	0.034	0.056	82	0.026	0.072	86	0.034
	30	0.060	90	0.032	0.042	77	0.022	0.054	82	0.031
3.0	8	0.300	121	0.043	0.210	103	0.032	0.270	108	0.043
	10	0.255	121	0.043	0.179	103	0.032	0.230	108	0.043
	12	0.210	121	0.043	0.147	103	0.032	0.189	108	0.043
	14	0.180	115	0.043	0.126	97	0.033	0.162	103	0.042
	16	0.150	108	0.043	0.105	92	0.032	0.135	98	0.039
	18	0.135	108	0.041	0.095	92	0.032	0.122	98	0.039
	20	0.120	108	0.040	0.084	92	0.032	0.108	98	0.039
	25	0.080	108	0.040	0.056	92	0.032	0.072	98	0.039
4.0	10	0.365	118	0.111	0.256	101	0.094	0.329	107	0.099
	15	0.250	112	0.106	0.175	96	0.090	0.225	101	0.096
	20	0.280	107	0.099	0.196	90	0.085	0.252	96	0.090
	25	0.160	107	0.089	0.112	90	0.076	0.144	96	0.081
	30	0.160	107	0.089	0.112	90	0.076	0.144	96	0.081
	40	0.100	96	0.090	0.070	82	0.076	0.090	87	0.080



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes

Finishing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.015	25	0.005	0.011	25	0.005	0.014	24	0.004
	1	0.011	25	0.005	0.008	25	0.005	0.010	24	0.004
	1.5	0.006	25	0.005	0.004	23	0.005	0.005	22	0.004
0.3	1	0.021	38	0.006	0.015	34	0.006	0.019	32	0.004
	2	0.012	34	0.005	0.008	31	0.005	0.011	29	0.004
	3	0.008	34	0.005	0.006	31	0.005	0.007	29	0.004
0.4	2	0.028	40	0.010	0.020	36	0.010	0.025	34	0.007
	3	0.016	36	0.008	0.011	33	0.008	0.014	31	0.007
	4	0.010	36	0.008	0.007	33	0.008	0.009	31	0.007
	5	0.010	32	0.006	0.007	29	0.006	0.009	27	0.005
0.5	2	0.035	50	0.010	0.025	45	0.010	0.032	43	0.008
	4	0.020	45	0.008	0.014	41	0.008	0.018	38	0.007
	6	0.013	40	0.007	0.009	36	0.007	0.012	34	0.005
	8	0.008	40	0.006	0.006	36	0.006	0.007	34	0.004
0.6	2	0.042	60	0.014	0.029	54	0.014	0.038	51	0.010
	4	0.024	54	0.013	0.017	49	0.013	0.022	46	0.011
	6	0.015	54	0.011	0.011	49	0.012	0.014	46	0.009
	8	0.015	48	0.010	0.011	43	0.010	0.014	41	0.007
	10	0.009	48	0.010	0.006	43	0.010	0.008	41	0.007
0.7	2	0.070	70	0.014	0.049	63	0.014	0.063	60	0.010
	4	0.049	63	0.011	0.034	57	0.012	0.044	54	0.009
	6	0.018	63	0.011	0.013	57	0.012	0.016	54	0.009
	8	0.018	56	0.009	0.013	51	0.009	0.016	48	0.006
	10	0.018	56	0.009	0.013	51	0.009	0.016	48	0.006
0.8	4	0.056	80	0.014	0.039	72	0.014	0.050	68	0.012
	6	0.032	72	0.011	0.022	65	0.012	0.029	62	0.012
	8	0.020	72	0.011	0.014	65	0.012	0.018	62	0.009
	10	0.020	64	0.009	0.014	58	0.009	0.018	55	0.006
	12	0.012	64	0.009	0.008	58	0.009	0.011	55	0.006
0.9	6	0.036	81	0.014	0.025	73	0.014	0.032	69	0.012
	8	0.023	81	0.013	0.016	73	0.014	0.021	69	0.012
	10	0.023	72	0.010	0.016	65	0.010	0.021	62	0.007
	15	0.014	72	0.008	0.010	65	0.008	0.013	62	0.006
1.0	6	0.035	81	0.019	0.025	73	0.020	0.032	69	0.018
	8	0.035	81	0.019	0.025	73	0.020	0.032	69	0.018
	10	0.022	81	0.017	0.015	73	0.018	0.020	69	0.016
	12	0.022	72	0.015	0.015	65	0.015	0.020	62	0.010
	14	0.022	72	0.015	0.015	65	0.015	0.020	62	0.010
	16	0.012	72	0.013	0.008	65	0.013	0.011	62	0.010
1.2	6	0.084	97	0.021	0.059	87	0.021	0.076	82	0.017
	8	0.048	87	0.020	0.034	78	0.020	0.043	74	0.017
	10	0.030	87	0.020	0.021	78	0.020	0.027	74	0.017
	12	0.030	87	0.016	0.021	78	0.015	0.027	74	0.014

cont' d ▶



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes

Finishing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.4	6	0.100	99	0.021	0.070	89	0.021	0.090	84	0.016
	8	0.078	95	0.021	0.055	89	0.021	0.070	84	0.015
	10	0.057	92	0.020	0.040	89	0.020	0.051	84	0.015
	12	0.035	89	0.019	0.025	80	0.020	0.032	75	0.016
	14	0.035	79	0.017	0.025	80	0.020	0.032	75	0.016
	16	0.035	79	0.017	0.025	80	0.019	0.032	75	0.015
1.5	6	0.110	106	0.021	0.077	95	0.022	0.099	90	0.018
	8	0.060	95	0.022	0.042	85	0.022	0.054	81	0.018
	10	0.060	95	0.019	0.042	85	0.020	0.054	81	0.018
	12	0.060	95	0.019	0.042	85	0.020	0.054	81	0.018
	14	0.038	95	0.019	0.027	85	0.020	0.034	81	0.018
	16	0.038	84	0.017	0.027	76	0.017	0.034	72	0.012
	18	0.038	84	0.017	0.027	76	0.017	0.034	72	0.012
	20	0.038	84	0.017	0.027	76	0.015	0.034	72	0.010
1.6	6	0.110	105	0.024	0.077	94	0.024	0.099	89	0.019
	8	0.110	105	0.024	0.077	94	0.024	0.099	89	0.018
	10	0.070	105	0.021	0.049	94	0.024	0.063	89	0.018
	12	0.070	105	0.021	0.049	84	0.021	0.063	80	0.016
	14	0.070	105	0.021	0.049	84	0.021	0.063	80	0.016
	16	0.042	93	0.018	0.029	84	0.021	0.038	80	0.015
	18	0.042	93	0.018	0.029	84	0.021	0.038	80	0.015
	20	0.042	93	0.018	0.029	84	0.020	0.038	80	0.014
1.8	6	0.130	118	0.024	0.091	106	0.024	0.117	100	0.019
	8	0.130	118	0.024	0.091	106	0.024	0.117	100	0.018
	10	0.081	118	0.022	0.057	106	0.024	0.073	100	0.018
	12	0.081	118	0.022	0.057	95	0.021	0.073	90	0.016
	14	0.081	118	0.022	0.057	95	0.021	0.073	90	0.016
	16	0.050	105	0.019	0.035	95	0.021	0.045	90	0.015
	18	0.050	105	0.019	0.035	95	0.021	0.045	90	0.015
	20	0.050	105	0.019	0.035	95	0.020	0.045	90	0.014
2.0	6	0.200	106	0.028	0.140	95	0.028	0.180	90	0.023
	8	0.140	106	0.028	0.098	95	0.028	0.126	90	0.023
	10	0.140	106	0.028	0.098	95	0.028	0.126	90	0.023
	12	0.080	95	0.029	0.056	85	0.029	0.072	81	0.023
	14	0.080	95	0.029	0.056	85	0.029	0.072	81	0.023
	16	0.080	95	0.026	0.056	85	0.026	0.072	81	0.021
	18	0.050	95	0.026	0.035	85	0.026	0.045	81	0.021
	20	0.050	95	0.023	0.035	85	0.023	0.045	81	0.019
	25	0.050	84	0.023	0.035	76	0.023	0.045	72	0.014
	30	0.030	84	0.020	0.021	76	0.020	0.027	72	0.012

cont' d ▶

P M P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes

Finishing		P						M		
Working material		Carbon Steel			Pre-hardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
2.5	8	0.180	113	0.039	0.126	102	0.039	0.162	96	0.030
	10	0.180	113	0.038	0.126	102	0.038	0.162	96	0.028
	12	0.180	113	0.035	0.126	102	0.036	0.162	96	0.026
	14	0.140	108	0.034	0.098	97	0.035	0.126	91	0.026
	16	0.100	102	0.032	0.070	92	0.032	0.090	86	0.026
	18	0.100	102	0.032	0.070	92	0.032	0.090	86	0.025
	20	0.100	102	0.030	0.070	92	0.030	0.090	86	0.024
	25	0.080	96	0.028	0.056	86	0.026	0.072	82	0.021
	30	0.060	90	0.025	0.042	82	0.022	0.054	77	0.018
3.0	8	0.300	121	0.039	0.210	108	0.040	0.270	103	0.029
	10	0.255	121	0.039	0.179	108	0.040	0.230	103	0.029
	12	0.210	121	0.039	0.147	108	0.040	0.189	103	0.029
	14	0.165	115	0.038	0.116	103	0.038	0.149	97	0.030
	16	0.120	108	0.036	0.084	98	0.036	0.108	92	0.029
	18	0.120	108	0.035	0.084	98	0.035	0.108	92	0.029
	20	0.120	108	0.034	0.084	98	0.034	0.108	92	0.029
	25	0.080	108	0.034	0.056	98	0.034	0.072	92	0.029
4.0	10	0.365	118	0.100	0.256	101	0.095	0.329	101	0.085
	15	0.250	112	0.096	0.175	101	0.086	0.225	96	0.081
	20	0.280	107	0.089	0.196	96	0.081	0.252	90	0.076
	25	0.160	107	0.081	0.112	96	0.073	0.144	90	0.069
	30	0.160	107	0.081	0.112	96	0.073	0.144	90	0.061
	40	0.100	96	0.063	0.070	87	0.057	0.090	82	0.053



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



OPTIMUM

- Bring you premium features
- At cost-effective rates

For material application ≤40 HRC

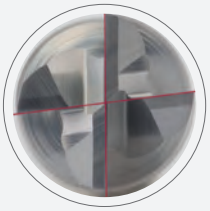
OPTIMUM

01

DIFFERENTIAL PITCH (DP) DESIGN

Reduce Vibrations

Maximizes productivity and tool life



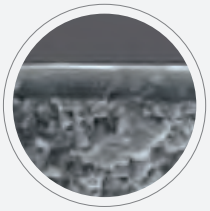
End Face View

02

SUPERIOR COATING

Enchances Heat Resistance

- Reduce tool wear to achieve cost-effective machining

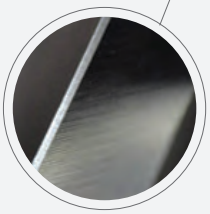


03

IDEAL CUTTING EDGE

Enchances Durability

- Provide edge protection to prolong tool life





04

SUITABLE FOR MATERIAL GROUPS

P M K N S

DEUTSCH

01 **UNGLEICHE TEILUNG (DP)**
Reduziert Vibrationen
· Maximiert die Produktivität und die Werkzeuglebensdauer

02 **AUSGEZEICHNETE BESCHICHTUNG**
Verbessert die Hitzebeständigkeit
· Reduziert den Werkzeugverschleiß und das bedeutet eine kostengünstige Bearbeitung

03 **PERFEKTE SCHNEIDE**
Verbesserte Haltbarkeit
· Bietet Schneidkantenschutz, um die Lebensdauer des Werkzeugs zu verlängern

04 **GEEIGNET FÜR MATERIALGRUPPEN P,M,K,N,S**

FRANÇAIS

01 **CONCEPTION À PAS DIFFÉRENTIEL (PD)**
Réduit les vibrations
· Optimise la productivité et la durée de vie de l'outil

02 **REVÊTEMENT SUPÉRIEUR**
Augmente la résistance à la chaleur
· Réduit l'usure de l'outil pour parvenir à un usinage économique

03 **ARÊTE TRANCHANTE IDÉALE**
Augmente la durabilité
· Protège les arêtes pour prolonger la durée de vie de l'outil

04 **ADAPTÉ AUX MATÉRIAUX P, M, K, N, S**

ITALIANO

01 **STRUTTURA DEL PASSO DIFFERENZIALE (DP)**
Riduce le vibrazioni
· Ottimizza la produttività e la durata dello strumento

02 **RIVESTIMENTO SUPERIORE**
Migliora la resistenza al calore
· Riduce l'usura dello strumento per raggiungere una lavorazione efficace in termini di costi

03 **ANGOLO DI TAGLIO IDEALE**
Migliora la resistenza
· Offre una protezione degli angoli per prolungare la durata dello strumento

04 **ADATTO PER MATERIALE P,M,K,N,S**

中文

01 分割的抗震设计
降低刀具加工時的振动
• 延長刀具寿命
• 獲得更佳的生产率

02 卓越的涂层
提升刀具的抗热能力
• 降低刀具的磨损与加工成本

03 完美精密研磨的刀刃
增加刀具的耐用性
刀刃经过特别处理可加强刀具表现与寿命

04 适合加工钢、不锈钢、铸铁、有色金属、超合金和钛的材料

OPTIMUM LINE DP STANDARD ENDMILLS

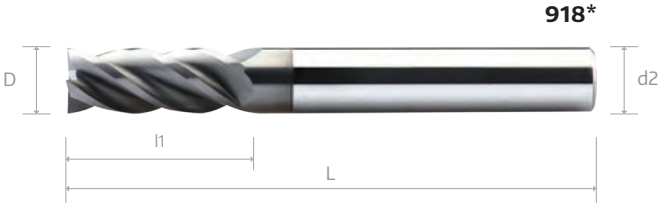
HPMT

VHM Optimum Line DP Standard Fräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles Optimum LineDP Standard à pas décalés, 4 dents, en carbure monobloc

Frese Optimum Line DP Standard in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 Optimum Line DP 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					918 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110
0100 050 03	1	3		50	3	•
0100 050 04	1	3		50	4	•
0150 050 03	1.5	4.5		50	3	•
0150 050 04	1.5	4.5		50	4	•
0200 050 03	2	6.5		50	3	•
0200 050 04	2	6.5		50	4	•
0250 050 03	2.5	6.5		50	3	•
0250 050 04	2.5	6.5		50	4	•
0300 050 03	3	9		50	3	•
0300 050 04	3	9		50	4	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06 15	5	15		50	6	•
0600 050 16	6	16		50	6	•
0600 060	6	20		60	6	•
0800 22	8	22		64	8	•
1000 070 27	10	27		70	10	•
1000 075	10	22		75	10	•
1200 075 32	12	32		75	12	•
1400	14	32		90	14	○
1600	16	32		90	16	•
1800	18	38		100	18	○
2000	20	38		100	20	•

Ø mm	Tol. µm
3.0~6.0	-0/-20
6.0~30.0	-0/-25

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

170

Technical specifications subject to change without prior notice

OPTIMUM LINE DP R-LIKE ENDMILLS

HPMT

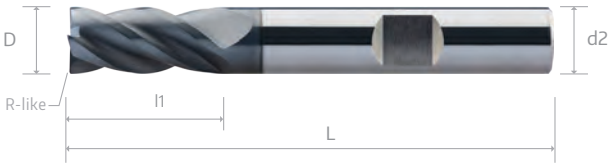
VHM Optimum Line DP Fräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles Optimum LineDP à pas décalés, 4 dents, en carbure monobloc

Frese Optimum Line DP in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 Optimum Line DP 系列 立铣刀 4 刃 - 标准长度

K38*





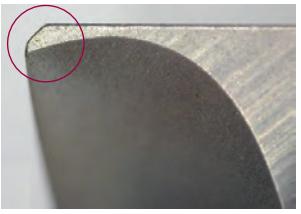
Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						K47 * HA	K38 * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	R - Like	G6110	G6110
0100 050 03	1	3		50	3	0.02	•	-
0150 050 03	1.5	4.5		50	3	0.05	•	-
0200 050 03	2	6.5		50	3	0.05	•	-
0250 050 03	2.5	6.5		50	3	0.05	•	-
0300 050 03	3	9	15	50	3	0.1	•	-
0300 050 06	3	9	15	50	6	0.1	•	•
0400	4	12	20	50	4	0.1	•	-
0400 050 06	4	12	20	50	6	0.1	•	•
0500	5	15	20	50	5	0.1	•	-
0500 050 06 15	5	15	20	50	6	0.1	•	•
0600 050 16	6	16	20	50	6	0.1	•	•
0600 060	6	20	30	60	6	0.1	•	•
0800 22	8	22	30	64	8	0.2	•	•
1000 075	10	22	32	75	10	0.2	•	•
1000 070 27	10	27	32	70	10	0.2	•	•
1200 075 32	12	32	37	75	12	0.2	•	•
1400	14	32	44	90	14	0.2	•	•
1600	16	32	46	90	16	0.2	•	•
1800	18	38	53	100	18	0.2	○	○
2000	20	38	58	100	20	0.2	•	•

K52* K53*



R - Like is functional for enhance edge protection.

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○	○	○	○	○	○	○	○				

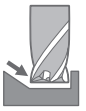
Cutting Parameter

170

OPTIMUM

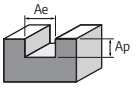
Technische änderungen ohne vorherige information vorbehalten

DP Standard Endmills 4 Flutes



Ramping	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Ramping depth	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping angle	45°		45°		30°		15°		10°		45°		30°		45°		10°	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		0.017		0.017		0.016		0.005		0.005		0.005		0.013		0.012		0.012
4		0.024		0.024		0.023		0.009		0.006		0.006		0.017		0.017		0.016
5		0.031		0.032		0.031		0.011		0.008		0.008		0.022		0.023		0.021
6		0.037		0.038		0.037		0.015		0.009		0.010		0.027		0.028		0.025
8		0.052		0.054		0.053		0.020		0.013		0.014		0.038		0.040		0.035
10	120	0.069	105	0.071	95	0.070	90	0.024	50	0.017	125	0.018	150	0.047	135	0.049	60	0.043
12		0.086		0.090		0.089		0.030		0.021		0.023		0.060		0.063		0.057
14		0.101		0.105		0.104		0.037		0.024		0.031		0.070		0.077		0.066
16		0.120		0.126		0.126		0.045		0.038		0.035		0.084		0.093		0.080
18		0.135		0.141		0.141		0.050		0.051		0.043		0.094		0.105		0.090
20		0.157		0.165		0.165		0.058		0.069		0.048		0.110		0.122		0.105

DP Standard Endmills 4 Flutes

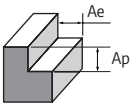


Slotting	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	0.60 × D		0.50 × D		0.50 × D		0.50 × D		0.30 × D		0.60 × D		0.80 × D		0.70 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		0.009		0.009		0.011		0.007		0.005		0.005		0.009		0.009		0.011
4		0.013		0.012		0.015		0.012		0.006		0.007		0.012		0.012		0.015
5		0.017		0.016		0.020		0.014		0.008		0.009		0.016		0.016		0.019
6		0.020		0.019		0.024		0.019		0.009		0.010		0.019		0.019		0.023
8		0.028		0.027		0.034		0.025		0.013		0.014		0.026		0.027		0.032
10	190	0.035	175	0.034	120	0.043	95	0.033	50	0.017	140	0.018	250	0.033	220	0.034	65	0.040
12		0.045		0.043		0.055		0.045		0.021		0.023		0.041		0.043		0.052
14		0.055		0.053		0.069		0.056		0.024		0.028		0.051		0.052		0.061
16		0.063		0.061		0.079		0.066		0.038		0.032		0.058		0.060		0.073
18		0.074		0.073		0.094		0.082		0.051		0.040		0.068		0.071		0.083
20		0.083		0.081		0.105		0.091		0.069		0.045		0.075		0.079		0.097

P M K N S | P K

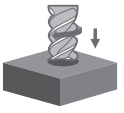
Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



DP Standard Endmills 4 Flutes

Side Milling	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	1.15 × D		1.00 × D		1.00 × D		1.00 × D		0.70 × D		1.00 × D		1.20 × D		1.10 × D		0.80 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.006		0.005		0.002		0.002		0.007		0.003		0.003		0.006
2		0.006		0.012		0.011		0.004		0.005		0.015		0.006		0.006		0.014
3		0.009		0.018		0.017		0.007		0.008		0.024		0.009		0.009		0.024
4		0.013		0.027		0.022		0.009		0.010		0.032		0.012		0.012		0.031
5		0.017		0.034		0.031		0.014		0.013		0.042		0.016		0.016		0.047
6		0.020		0.041		0.037		0.016		0.016		0.050		0.019		0.019		0.056
8	200	0.028	185	0.061	140	0.056	100	0.024	50	0.023	160	0.071	260	0.027	230	0.027	80	0.079
10		0.035		0.076		0.070		0.030		0.028		0.088		0.033		0.034		0.098
12		0.045		0.102		0.094		0.038		0.038		0.110		0.042		0.043		0.130
14		0.055		0.125		0.118		0.049		0.048		0.134		0.049		0.050		0.158
16		0.063		0.143		0.139		0.057		0.055		0.153		0.058		0.060		0.181
18		0.074		0.168		0.167		0.071		0.068		0.186		0.065		0.068		0.212
20		0.082		0.187		0.185		0.086		0.075		0.206		0.076		0.079		0.236



DP Standard Endmills 4 Flutes

Plunging	P						K		N			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Grey Cast iron		Wrought Aluminium		Cast Aluminium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		-		Si < 9%		Si ≥ 9%	
Cutting Depth, Ap (mm)	-		-		-		-		-		-	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3		0.016		0.016		0.015		0.005		0.012		0.012
4		0.023		0.023		0.022		0.006		0.016		0.017
5		0.030		0.030		0.029		0.008		0.022		0.022
6		0.036		0.036		0.035		0.010		0.026		0.027
8		0.050		0.051		0.050		0.014		0.036		0.038
10	125	0.066	110	0.068	100	0.067	125	0.018	155	0.046	140	0.048
12		0.083		0.086		0.085		0.023		0.058		0.061
14		0.097		0.100		0.099		0.031		0.067		0.075
16		0.116		0.120		0.119		0.035		0.081		0.090
18		0.130		0.135		0.134		0.043		0.091		0.101
20		0.151		0.157		0.157		0.048		0.106		0.118

 P M K N S  P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



SE 45

- For general machining
- Cost efficiency

For material application between
36 HRC to 52 HRC

SE 45



01

GASH LAND DESIGN

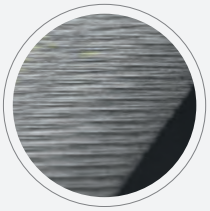
Significantly improves strength and provide great chipping resistance



02

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



03

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



04

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation

05

SUITABLE FOR MATERIAL GROUPS

P M S H

DEUTSCH

01 **STIRNSCHLIFF DESIGN**
Verbessert die Leistung deutlich und bietet Schutz gegen Ausbrüche

02 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

03 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
· Weniger Materialanhaftungen an der Schneide
· Für stabile Bearbeitung

04 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
· Erhöht die Härte und und bietet bessere Verschleißfestigkeit
· Höhere Temperaturbeständigkeit
· Glatte Oberfläche für besseren Spänefluß

05 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, S, H**

FRANÇAIS

01 **CONCEPTION DE FRAISE POUR L'USINAGE GENERAL**
Améliore considérablement la solidité et apporte

02 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

03 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
· Moins de matériau adhère à l'arête tranchante
· Pour un usinage stable

04 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
· Augmente la dureté et la résistance à l'abrasion
· Résistance thermique supérieure
· Évacuation des copeaux plus fluide

05 **ADAPTÉ AUX MATÉRIAUX P, M, S, H**

ITALIANO

01 **STRUTTURA AREA SGROSSATURA**
Migliora notevolmente la potenza e offre un'eccellente resistenza alle scheggiature

02 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

03 **PREPARAZIONE DELL'ANGOLO DI taglio**
Migliora la durata dello strumento
· Meno materiale che aderisce sull'angolo di taglio
· Per una lavorazione stabile

04 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
· Aumenta la durezza e una maggiore resistenza all'usura abrasiva
· Resistenza termica superiore
· Evacuazione dei trucioli più semplice

05 **ADATTO PER IL MATERIALE P, M, S, H**

中文

01 **刀具底刃的设计**
强化刀具，并降低崩刃的几率

02 **偏心研磨**
最佳偏心研磨，可避免加工时摩擦，同时保持刀具的最高刚性

03 **刃部钝化处理**
· 提高刀具寿命和切削过程的稳定性

04 **卓越的涂层**
· 强化刀具的硬度和抗热性
· 降低积屑瘤并拥有更顺畅的排屑

05 **近零度前角的设计**
· 适合加工铸钢，超合金和硬化钢的材料 P, M, S, H

SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

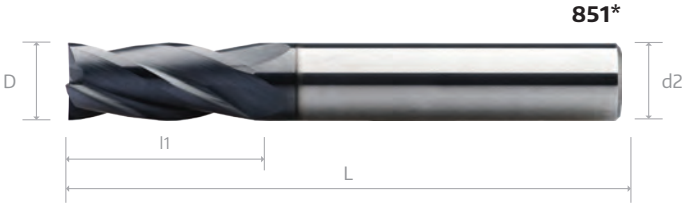
HPMT

VHM SE 45 Standard Fräser, 4 Zähne

Fraises 2 tailles SE 45 standard - 4 dents, en carbure monobloc

Frese SE 45 in metallo duro integrale, 4 taglienti

整体硬质合金 SE 45 系列 立铣刀 4 刃 - 标准长度







HPT B0819 AITiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					851 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

226

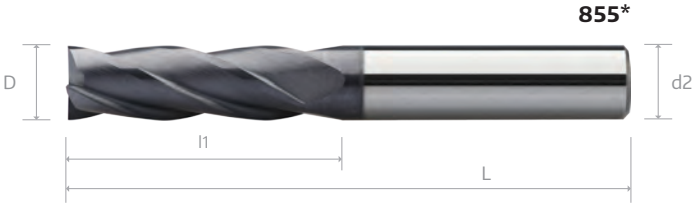
Technical specifications subject to change without prior notice

SE 45 ENDMILLS - Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Fräser SE 45 Long, 4 Zähne	Fraises 2 tailles SE45Longue - 4 dents, en carbure monobloc
Frese SE 45 lang in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					855 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	19		60	3	•
0300 075 06	3	19		75	6	•
0400	4	19		60	4	•
0400 075 06	4	19		75	6	•
0500	5	19		60	5	•
0500 075 06	5	19		75	6	•
0600	6	31		75	6	•
0800	8	31		75	8	•
1000 075	10	31		75	10	•
1000 100	10	50		100	10	•
1200	12	50		100	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•
1800	18	57		125	18	•
2000	20	57		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 232

SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE45Extra-Long Fräser, 4 Zähne	Fraises 2 tailles SE 45 extra-longue- 4 dents, en carbure monobloc
Frese SE 45 extra-lunga in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 加长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					859 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819
0300	3	25		100	3	•
0300 100 06	3	25		100	6	•
0400	4	31		100	4	•
0400 100 06	4	31		100	6	•
0500	5	31		100	5	•
0500 100 06	5	31		100	6	•
0600	6	38		100	6	•
0800	8	41		100	8	•
1000	10	57		125	10	•
1200	12	75		150	12	•
1400	14	75		150	14	•
1600	16	75		150	16	•
1800	18	75		150	18	•
2000	20	75		150	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 233

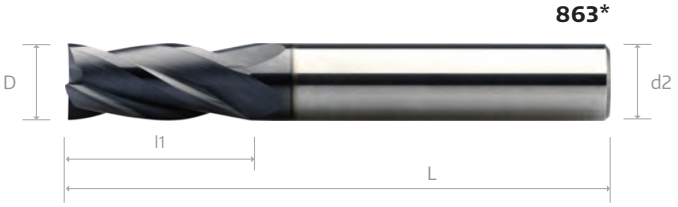
Spécifications techniques sujettes à changement sans avis prélable

SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser, 4 Zähne	Fraises 2 tailles SE 45 standard - 4 dents, en carbure monobloc
Frese SE 45 in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					862*	863 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	9		40	3	•	•
0300 050 04	3	9		50	4	•	•
0300 050 06	3	9		50	6	•	•
0400	4	12		50	4	•	•
0400 050 06	4	12		50	6	•	•
0500	5	15		50	5	•	•
0500 050 06	5	15		50	6	•	•
0600 050	6	16		50	6	•	•
0600 060	6	20		60	6	•	•
0800	8	20		64	8	•	•
1000 070	10	22		70	10	•	•
1000 075	10	22		75	10	•	•
1200	12	25		75	12	•	•
1400	14	32		90	14	•	•
1600	16	32		90	16	•	•
1800	18	38		100	18	•	•
2000	20	38		100	20	•	•
2200	22	40		100	22	•	•
2500	25	40		100	25	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

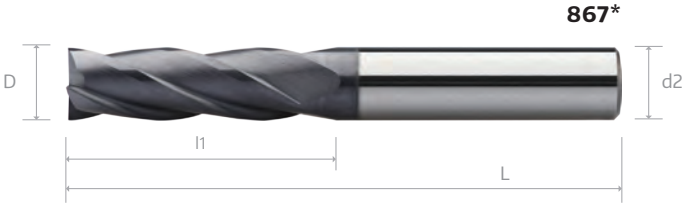
Cutting Parameter: 226

SE 45 ENDMILLS - Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Fräser SE 45 Long, 4 Zähne	Fraises 2 tailles SE45Longue - 4 dents, en carbure monobloc
Frese SE 45 lang in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					866 *	867 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819
0300	3	19		60	3	•	•
0300 075 06	3	19		75	6	•	•
0400	4	19		60	4	•	•
0400 075 06	4	19		75	6	•	•
0500	5	19		60	5	•	•
0500 075 06	5	19		75	6	•	•
0600	6	31		75	6	•	•
0800	8	31		75	8	•	•
1000 075	10	31		75	10	•	•
1000 100	10	50		100	10	•	•
1200	12	50		100	12	•	•
1400	14	57		125	14	•	•
1600	16	57		125	16	•	•
1800	18	57		125	18	•	•
2000	20	57		125	20	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

232

若有技术规格变更，恕不事先通知

SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE45Extra-Long Fräser, 4 Zähne	Fraises 2 tailles SE 45 extra-longue- 4 dents,
Frese SE 45 extra-lunga in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 加长

871*





Z4



HPT G6110 AlCrN

HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					870 *	871 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819
0300	3	25		100	3	•	•
0300 100 06	3	25		100	6	•	•
0400	4	31		100	4	•	•
0400 100 06	4	31		100	6	•	•
0500	5	31		100	5	•	•
0500 100 06	5	31		100	6	•	•
0600	6	38		100	6	•	•
0800	8	41		100	8	•	•
1000	10	57		125	10	•	•
1200	12	75		150	12	•	•
1400	14	75		150	14	•	•
1600	16	75		150	16	•	•
1800	18	75		150	18	•	•
2000	20	75		150	20	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 233

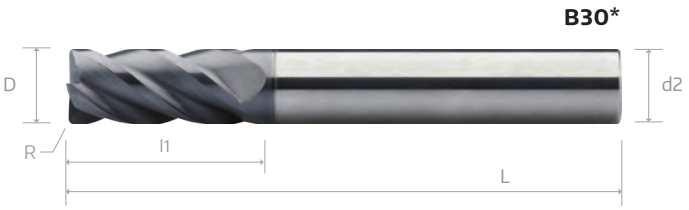
Technical specifications subject to change without prior notice

SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne	Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents
Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度







HPT G6110 AlCrN

HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B59*	B30 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819
0100 040 0400 020	1	3		40	4	0.2	●	●
0100 050 0600 020	1	3		50	6	0.2	●	●
0150 040 0400 020	1.5	4.5		40	4	0.2	●	●
0150 050 0600 020	1.5	4.5		50	6	0.2	●	●
0200 040 0400 020	2	6.5		40	4	0.2	○	○
0200 040 0400 030	2	6.5		40	4	0.3	●	●
0200 050 0600 020	2	6.5		50	6	0.2	○	○
0200 050 0600 030	2	6.5		50	6	0.3	●	●
0250 040 0400 020	2.5	6.5		40	4	0.2	○	○
0250 040 0400 030	2.5	6.5		40	4	0.3	●	●
0250 040 0400 050	2.5	6.5		40	4	0.5	●	●
0250 050 0600 020	2.5	6.5		50	6	0.2	○	○
0250 050 0600 030	2.5	6.5		50	6	0.3	●	●
0250 050 0600 050	2.5	6.5		50	6	0.5	●	●
0300 040 0300 020	3	9		40	3	0.2	○	○
0300 040 0300 030	3	9		40	3	0.3	●	●
0300 040 0300 050	3	9		40	3	0.5	●	●
0300 040 0400 020	3	9		40	4	0.2	○	○
0300 040 0400 030	3	9		40	4	0.3	●	●
0300 040 0400 050	3	9		40	4	0.5	●	●
0300 050 0600 020	3	9		50	6	0.2	○	○
0300 050 0600 030	3	9		50	6	0.3	●	●
0300 050 0600 050	3	9		50	6	0.5	●	●
0400 050 0400 020	4	12		50	4	0.2	○	○
0400 050 0400 030	4	12		50	4	0.3	●	●
0400 050 0400 050	4	12		50	4	0.5	●	●
0400 050 0400 100	4	12		50	4	1	●	●
0400 050 0600 020	4	12		50	6	0.2	○	○
0400 050 0600 030	4	12		50	6	0.3	●	●
0400 050 0600 050	4	12		50	6	0.5	●	●

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

226

Technische änderungen ohne vorherige information vorbehalten

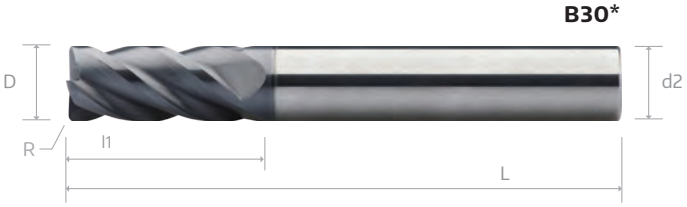
SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents

Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B59*	B30 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819
0400 050 0600 100	4	12		50	6	1	•	•
0500 050 0500 020	5	15		50	5	0.2	○	○
0500 050 0500 030	5	15		50	5	0.3	•	•
0500 050 0500 050	5	15		50	5	0.5	•	•
0500 050 0500 100	5	15		50	5	1	•	•
0500 050 0600 020	5	15		50	6	0.2	○	○
0500 050 0600 030	5	15		50	6	0.3	•	•
0500 050 0600 050	5	15		50	6	0.5	•	•
0500 050 0600 100	5	15		50	6	1	•	•
0600 050 0600 020	6	16		50	6	0.2	○	○
0600 050 0600 030	6	16		50	6	0.3	•	•
0600 050 0600 050	6	16		50	6	0.5	•	•
0600 050 0600 100	6	16		50	6	1	•	•
0600 060 0600 020	6	20		60	6	0.2	○	○
0600 060 0600 030	6	20		60	6	0.3	•	•
0600 060 0600 050	6	20		60	6	0.5	•	•
0600 060 0600 100	6	20		60	6	1	•	•
0800 064 0800 020	8	20		64	8	0.2	○	○
0800 064 0800 030	8	20		64	8	0.3	•	•
0800 064 0800 050	8	20		64	8	0.5	•	•
0800 064 0800 100	8	20		64	8	1	•	•
0800 064 0800 150	8	20		64	8	1.5	•	•
0800 064 0800 200	8	20		64	8	2	•	•
1000 070 1000 030	10	22		70	10	0.3	•	•
1000 070 1000 050	10	22		70	10	0.5	•	•
1000 070 1000 100	10	22		70	10	1	•	•
1000 070 1000 150	10	22		70	10	1.5	•	•
1000 070 1000 200	10	22		70	10	2	•	•
1000 075 1000 030	10	22		75	10	0.3	•	•
1000 075 1000 050	10	22		75	10	0.5	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 226

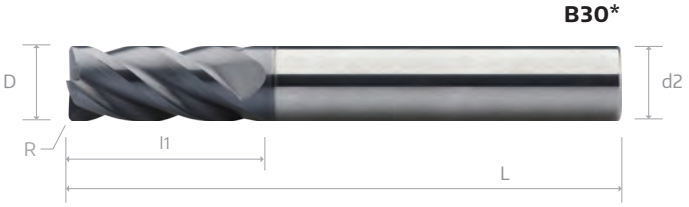
SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents

Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度







HPT G6110 AlCrN | HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B59*	B30 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819
1000 075 1000 100	10	22		75	10	1	•	•
1000 075 1000 150	10	22		75	10	1.5	•	•
1000 075 1000 200	10	22		75	10	2	•	•
1200 075 1200 030	12	25		75	12	0.3	•	•
1200 075 1200 050	12	25		75	12	0.5	•	•
1200 075 1200 100	12	25		75	12	1	•	•
1200 075 1200 150	12	25		75	12	1.5	•	•
1200 075 1200 200	12	25		75	12	2	•	•
1200 075 1200 300	12	25		75	12	3	•	•
1400 090 1400 050	14	32		90	14	0.5	•	•
1400 090 1400 100	14	32		90	14	1	•	•
1400 090 1400 150	14	32		90	14	1.5	•	•
1400 090 1400 200	14	32		90	14	2	•	•
1400 090 1400 300	14	32		90	14	3	•	•
1600 090 1600 050	16	32		90	16	0.5	•	•
1600 090 1600 100	16	32		90	16	1	•	•
1600 090 1600 150	16	32		90	16	1.5	•	•
1600 090 1600 200	16	32		90	16	2	•	•
1600 090 1600 300	16	32		90	16	3	•	•
1800 100 1800 050	18	38		100	18	0.5	○	○
1800 100 1800 100	18	38		100	18	1	○	○
1800 100 1800 150	18	38		100	18	1.5	○	○
1800 100 1800 200	18	38		100	18	2	○	○
1800 100 1800 300	18	38		100	18	3	○	○
2000 100 2000 050	20	38		100	20	0.5	•	•
2000 100 2000 100	20	38		100	20	1	•	•
2000 100 2000 150	20	38		100	20	1.5	•	•
2000 100 2000 200	20	38		100	20	2	•	•
2000 100 2000 300	20	38		100	20	3	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 226

Modifiche Techiche possibili senza preavviso

SE 45 MINIATURE ENDMILLS

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Kleinstfräser, 2 Zähne	Micro-Fraises 2 tailles SE 45 en carbure monobloc, 2 dents
Micro-frese SE 45 in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45 系列 微型 立铣刀 2 刃

A01*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					883 *	A01*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0010 03	0.1	0.2		40	3	•	•
0010 04	0.1	0.2		40	4	•	•
0020 03	0.2	0.4		40	3	•	•
0020 04	0.2	0.4		40	4	•	•
0030 03	0.3	0.6		40	3	•	•
0030 04	0.3	0.6		40	4	•	•
0040 03	0.4	0.8		40	3	•	•
0040 04	0.4	0.8		40	4	•	•
0050 03	0.5	1.0		40	3	•	•
0050 04	0.5	1.0		40	4	•	•
0060 03	0.6	1.2		40	3	•	•
0060 04	0.6	1.2		40	4	•	•
0070 03	0.7	1.4		40	3	•	•
0070 04	0.7	1.4		40	4	•	•
0080 03	0.8	1.6		40	3	•	•
0080 04	0.8	1.6		40	4	•	•
0090 03	0.9	1.8		40	3	•	•
0090 04	0.9	1.8		40	4	•	•
0100 03	1.0	2		40	3	•	•
0110 03	1.1	2.2		40	3	•	•
0120 03	1.2	2.4		40	3	•	•
0130 03	1.3	2.6		40	3	•	•
0140 03	1.4	2.8		40	3	•	•
0150 03	1.5	3		40	3	•	•
0160 03	1.6	3.2		40	3	•	•
0170 03	1.7	3.4		40	3	•	•
0180 03	1.8	3.6		40	3	•	•
0190 03	1.9	3.8		40	3	•	•
0200 03	2.0	4		40	3	•	•

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 238

若有技术规格变更，恕不事先通知

SE 45 MINIATURE ENDMILLS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

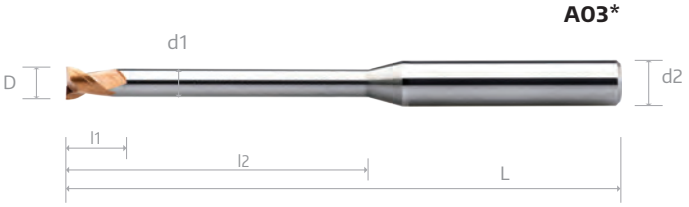
HPMT

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents

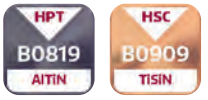
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						885 *	A03*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	B0819	B0909
0020 050 0400	0.2	0.3	-	50	-	4	•	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	•	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	•	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	•	•
0030 050 0400	0.3	0.4	-	50	-	4	•	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	•	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	•	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	•	•
0040 050 0400	0.4	0.6	-	50	-	4	•	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	•	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	•	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	•	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	•	•
0050 050 0400	0.5	0.7	-	50	-	4	•	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	•	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	•	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	•	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	•	•
0060 050 0400	0.6	0.9	-	50	-	4	•	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	•	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	•	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	•	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	•	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	•	•
0070 050 0400	0.7	1.0	-	50	-	4	•	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	•	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	•	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 236

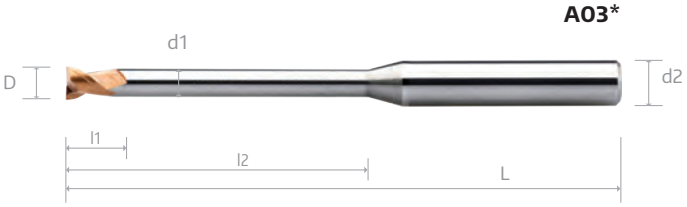
Technical specifications subject to change without prior notice

SE 45 MINIATURE ENDMILLS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

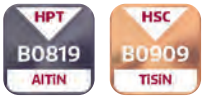
HPMT

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						885 *	A03*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	B0819	B0909
0070 050 0400 080	0.7	1.0	8	50	0.65	4	•	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	•	•
0080 050 0400	0.8	1.2	-	50	-	4	•	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	•	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	•	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	•	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	•	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	•	•
0090 050 0400	0.9	1.4	-	50	-	4	•	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	•	•
0090 050 0400 080	0.9	1.4	8.0	50	0.85	4	•	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	•	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	•	•
0100 050 0400	1	1.5	-	50	-	4	•	•
0100 050 0400 060	1	1.5	6	50	0.9	4	•	•
0100 050 0400 080	1	1.5	8	50	0.9	4	•	•
0100 050 0400 100	1	1.5	10	50	0.9	4	•	•
0100 050 0400 120	1	1.5	12	50	0.9	4	•	•
0100 050 0400 140	1	1.5	14	50	0.9	4	•	•
0100 050 0400 160	1	1.5	16	50	0.9	4	•	•
0120 050 0400	1.2	1.8	-	50	-	4	•	•
0120 050 0400 060	1.2	1.8	6	50	1.1	4	•	•
0120 050 0400 080	1.2	1.8	8	50	1.1	4	•	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	•	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	•	•
0140 050 0400	1.4	2.1	-	50	-	4	•	•
0140 050 0400 060	1.4	2.1	6	50	1.3	4	•	•
0140 050 0400 080	1.4	2.1	8	50	1.3	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

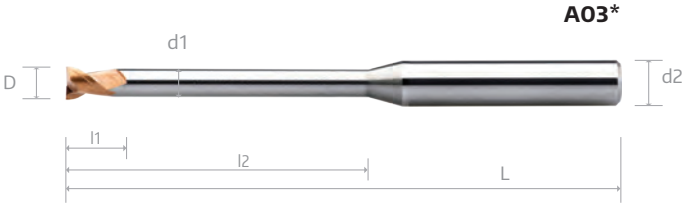
Cutting Parameter: 236

SE 45 MINIATURE ENDMILLS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃







HPT B0819 AlTiN — HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						885 *	A03*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	B0819	B0909
0140 050 0400 100	1.4	2.1	10	50	1.3	4	•	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	•	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	•	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	•	•
0150 050 0400	1.5	2.3	-	50	-	4	•	•
0150 050 0400 060	1.5	2.3	6	50	1.4	4	•	•
0150 050 0400 080	1.5	2.3	8	50	1.4	4	•	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	•	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	•	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	•	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	•	•
0150 060 0400	1.5	2.3	-	60	-	4	•	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	•	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	•	•
0160 050 0400	1.6	2.4	-	50	-	4	•	•
0160 050 0400 060	1.6	2.4	6	50	1.5	4	•	•
0160 050 0400 080	1.6	2.4	8	50	1.5	4	•	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	•	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	•	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	•	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	•	•
0160 060 0400	1.6	2.4	-	60	-	4	•	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	•	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	•	•
0180 050 0400	1.8	2.7	-	50	-	4	•	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	•	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	•	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 236

Spécifications techniques sujettes à changement sans avis prélable

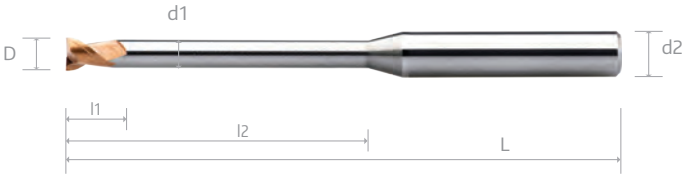
SE 45 MINIATURE ENDMILLS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃

A03*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						885 *	A03*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	B0819	B0909
0180 050 0400 120	1.8	2.7	12	50	1.7	4	•	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	•	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	•	•
0180 060 0400	1.8	2.7	-	60	-	4	•	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	•	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	•	•
0200 050 0400	2	3	-	50	-	4	•	•
0200 050 0400 060	2	3	6	50	1.9	4	•	•
0200 050 0400 080	2	3	8	50	1.9	4	•	•
0200 050 0400 100	2	3	10	50	1.9	4	•	•
0200 050 0400 120	2	3	12	50	1.9	4	•	•
0200 050 0400 140	2	3	14	50	1.9	4	•	•
0200 050 0400 160	2	3	16	50	1.9	4	•	•
0200 060 0400	2	3	-	60	-	4	•	•
0200 060 0400 180	2	3	18	60	1.9	4	•	•
0200 060 0400 200	2	3	20	60	1.9	4	•	•
0200 075 0400	2	3	-	75	-	4	•	•
0200 075 0400 250	2	3	25	75	1.9	4	•	•
0200 075 0400 300	2	3	30	75	1.9	4	•	•
0250 050 0400	2.5	3.7	-	50	-	4	•	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	•	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	•	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	•	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	•	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	•	•
0250 060 0400	2.5	3.7	-	60	-	4	•	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	•	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 236

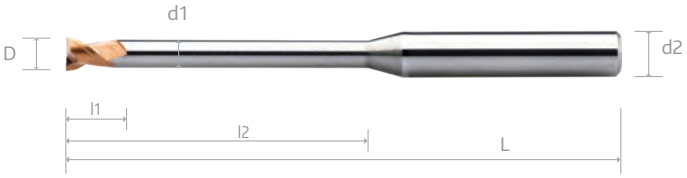
SE 45 MINIATURE ENDMILLS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

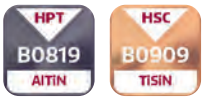
VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃

A03*









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						885 *	A03*
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	B0819	B0909
0250 060 0400 250	2.5	3.7	25	60	2.4	4	•	•
0250 075 0400	2.5	3.7	-	75	-	4	•	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	•	•
0300 050 0600	3	4.5	-	50	-	6	•	•
0300 050 0600 080	3	4.5	8	50	2.8	6	•	•
0300 050 0600 100	3	4.5	10	50	2.8	6	•	•
0300 050 0600 120	3	4.5	12	50	2.8	6	•	•
0300 050 0600 140	3	4.5	14	50	2.8	6	•	•
0300 060 0600	3	4.5	-	60	-	6	•	•
0300 060 0600 160	3	4.5	16	60	2.8	6	•	•
0300 060 0600 180	3	4.5	18	60	2.8	6	•	•
0300 060 0600 200	3	4.5	20	60	2.8	6	•	•
0300 075 0600	3	4.5	-	75	-	6	•	•
0300 075 0600 250	3	4.5	25	75	2.8	6	•	•
0400 060 0600	4	4.5	-	60	-	6	•	•
0400 060 0600 100	4	4.5	10	60	3.7	6	•	•
0400 060 0600 150	4	4.5	15	60	3.7	6	•	•
0400 060 0600 200	4	4.5	20	60	3.7	6	•	•
0400 075 0600	4	4.5	-	75	-	6	•	•
0400 075 0600 250	4	4.5	25	75	3.7	6	•	•
0400 075 0600 300	4	4.5	30	75	3.7	6	•	•
0400 075 0600 400	4	4.5	40	75	3.7	6	•	•

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

236

若有技术规格变更，恕不事先通知

SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

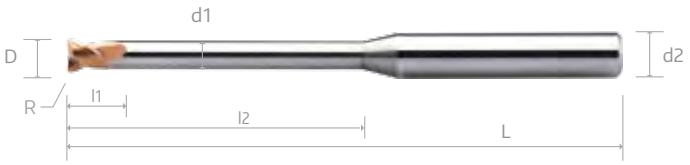
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

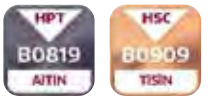
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0020 050 0400 R005	0.2	0.3	-	50	017	4	0.05	•	•
0020 050 0400 005 R005	0.2	0.3	0.5	50	0.17	4	0.05	•	•
0020 050 0400 010 R005	0.2	0.3	1.0	50	0.17	4	0.05	•	•
0020 050 0400 015 R005	0.2	0.3	1.5	50	0.17	4	0.05	•	•
0020 050 0400 020 R005	0.2	0.3	2.0	50	0.17	4	0.05	•	•
0020 050 0400 R005	0.3	0.4	-	50	0.27	4	0.05	•	•
0030 050 0400 010 R005	0.3	0.4	1.0	50	0.27	4	0.05	•	•
0030 050 0400 015 R005	0.3	0.4	1.5	50	0.27	4	0.05	•	•
0030 050 0400 020 R005	0.3	0.4	2.0	50	0.27	4	0.05	•	•
0030 050 0400 025 R005	0.3	0.4	2.5	50	0.27	4	0.05	•	•
0030 050 0400 030 R005	0.3	0.4	3.0	50	0.27	4	0.05	•	•
0030 050 0400 R010	0.3	0.4	-	50	0.27	4	0.1	•	•
0030 050 0400 010 R010	0.3	0.4	1.0	50	0.27	4	0.1	•	•
0030 050 0400 015 R010	0.3	0.4	1.5	50	0.27	4	0.1	•	•
0030 050 0400 020 R010	0.3	0.4	2.0	50	0.27	4	0.1	•	•
0030 050 0400 025 R010	0.3	0.4	2.5	50	0.27	4	0.1	•	•
0030 050 0400 030 R010	0.3	0.4	3.0	50	0.27	4	0.1	•	•
0040 050 0400 R005	0.4	0.6	-	50	0.37	4	0.05	•	•
0040 050 0400 010 R005	0.4	0.6	1.0	50	0.37	4	0.05	•	•
0040 050 0400 015 R005	0.4	0.6	1.5	50	0.37	4	0.05	•	•
0040 050 0400 020 R005	0.4	0.6	2.0	50	0.37	4	0.05	•	•
0040 050 0400 025 R005	0.4	0.6	2.5	50	0.37	4	0.05	•	•
0040 050 0400 030 R005	0.4	0.6	3.0	50	0.37	4	0.05	•	•
0040 050 0400 035 R005	0.4	0.6	3.5	50	0.37	4	0.05	•	•
0040 050 0400 040 R005	0.4	0.6	4.0	50	0.37	4	0.05	•	•
0040 050 0400 R010	0.4	0.6	-	50	0.37	4	0.1	•	•
0040 050 0400 010 R010	0.4	0.6	1.0	50	0.37	4	0.1	•	•
0040 050 0400 015 R010	0.4	0.6	1.5	50	0.37	4	0.1	•	•
0040 050 0400 020 R010	0.4	0.6	2.0	50	0.37	4	0.1	•	•
0040 050 0400 025 R010	0.4	0.6	2.5	50	0.37	4	0.1	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

236

SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

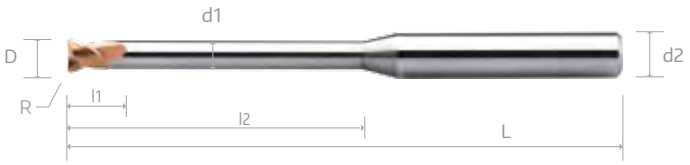
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

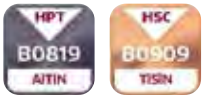
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0040 050 0400 030 R010	0.4	0.6	3.0	50	0.37	4	0.1	•	•
0040 050 0400 035 R010	0.4	0.6	3.5	50	0.37	4	0.1	•	•
0040 050 0400 040 R010	0.4	0.6	4.0	50	0.37	4	0.1	•	•
0050 050 0400 R005	0.5	0.7	-	50	0.45	4	0.05	•	•
0050 050 0400 020 R005	0.5	0.7	2.0	50	0.45	4	0.05	•	•
0050 050 0400 040 R005	0.5	0.7	4	50	0.45	4	0.05	•	•
0050 050 0400 060 R005	0.5	0.7	6	50	0.45	4	0.05	•	•
0050 050 0400 080 R005	0.5	0.7	8.0	50	0.45	4	0.05	•	•
0050 050 0400 R010	0.5	0.7	-	50	0.45	4	0.1	•	•
0050 050 0400 020 R010	0.5	0.7	2.0	50	0.45	4	0.1	•	•
0050 050 0400 040 R010	0.5	0.7	4.0	50	0.45	4	0.1	•	•
0050 050 0400 060 R010	0.5	0.7	6.0	50	0.45	4	0.1	•	•
0050 050 0400 080 R010	0.5	0.7	8.0	50	0.45	4	0.1	•	•
0060 050 0400 R010	0.6	0.9	-	50	0.55	4	0.1	•	•
0060 050 0400 020 R010	0.6	0.9	2.0	50	0.55	4	0.1	•	•
0060 050 0400 040 R010	0.6	0.9	4.0	50	0.55	4	0.1	•	•
0060 050 0400 060 R010	0.6	0.9	6.0	50	0.55	4	0.1	•	•
0060 050 0400 080 R010	0.6	0.9	8.0	50	0.55	4	0.1	•	•
0060 050 0400 100 R010	0.6	0.9	10.0	50	0.55	4	0.1	•	•
0070 050 0400 R010	0.7	1.0	-	50	0.65	4	0.1	•	•
0070 050 0400 020 R010	0.7	1.0	2.0	50	0.65	4	0.1	•	•
0070 050 0400 040 R010	0.7	1.0	4.0	50	0.65	4	0.1	•	•
0070 050 0400 060 R010	0.7	1.0	6.0	50	0.65	4	0.1	•	•
0070 050 0400 080 R010	0.7	1.0	8.0	50	0.65	4	0.1	•	•
0070 050 0400 100 R010	0.7	1.0	10.0	50	0.65	4	0.1	•	•
0080 050 0400 R005	0.8	1.2	-	50	0.75	4	0.05	•	•
0080 050 0400 040 R005	0.8	1.2	4.0	50	0.75	4	0.05	•	•
0080 050 0400 060 R005	0.8	1.2	6.0	50	0.75	4	0.05	•	•
0080 050 0400 080 R005	0.8	1.2	8.0	50	0.75	4	0.05	•	•
0080 050 0400 100 R005	0.8	1.2	10.0	50	0.75	4	0.05	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

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Technische änderungen ohne vorherige information vorbehalten

SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

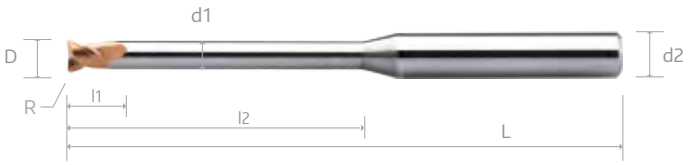
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

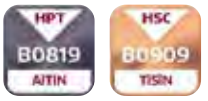
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0080 050 0400 120 R005	0.8	1.2	12.0	50	0.75	4	0.05	•	•
0080 050 0400 R010	0.8	1.2	-	50	0.75	4	0.1	•	•
0080 050 0400 040 R010	0.8	1.2	4.0	50	0.75	4	0.1	•	•
0080 050 0400 060 R010	0.8	1.2	6.0	50	0.75	4	0.1	•	•
0080 050 0400 080 R010	0.8	1.2	8.0	50	0.75	4	0.1	•	•
0080 050 0400 100 R010	0.8	1.2	10.0	50	0.75	4	0.1	•	•
0080 050 0400 120 R010	0.8	1.2	12.0	50	0.75	4	0.1	•	•
0090 050 0400 R010	0.9	1.4	-	50	0.85	4	0.1	•	•
0090 050 0400 060 R010	0.9	1.4	6.0	50	0.85	4	0.1	•	•
0090 050 0400 080 R010	0.9	1.4	8.0	50	0.85	4	0.1	•	•
0090 050 0400 100 R010	0.9	1.4	10.0	50	0.85	4	0.1	•	•
0090 050 0400 150 R010	0.9	1.4	15.0	50	0.85	4	0.1	•	•
0100 050 0400 R010	1	1.5	-	50	0.9	4	0.1	•	•
0100 050 0400 040 R010	1	1.5	4.0	50	0.9	4	0.1	•	•
0100 050 0400 060 R010	1	1.5	6.0	50	0.9	4	0.1	•	•
0100 050 0400 080 R010	1	1.5	8.0	50	0.9	4	0.1	•	•
0100 050 0400 100 R010	1	1.5	10.0	50	0.9	4	0.1	•	•
0100 050 0400 120 R010	1	1.5	12.0	50	0.9	4	0.1	•	•
0100 050 0400 140 R010	1	1.5	14.0	50	0.9	4	0.1	•	•
0100 050 0400 160 R010	1	1.5	16.0	50	0.9	4	0.1	•	•
0100 060 0400 R010	1	1.5	-	60	0.9	4	0.1	•	•
0100 060 0400 200 R010	1	1.5	20.0	60	0.9	4	0.1	•	•
0100 050 0400 R020	1	1.5	-	50	0.9	4	0.2	•	•
0100 050 0400 040 R020	1	1.5	4.0	50	0.9	4	0.2	•	•
0100 050 0400 060 R020	1	1.5	6.0	50	0.9	4	0.2	•	•
0100 050 0400 080 R020	1	1.5	8.0	50	0.9	4	0.2	•	•
0100 050 0400 100 R020	1	1.5	10.0	50	0.9	4	0.2	•	•
0100 050 0400 120 R020	1	1.5	12.0	50	0.9	4	0.2	•	•
0100 050 0400 140 R020	1	1.5	14.0	50	0.9	4	0.2	•	•
0100 050 0400 160 R020	1	1.5	16.0	50	0.9	4	0.2	•	•

cont'd ▶

SE 45

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

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SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

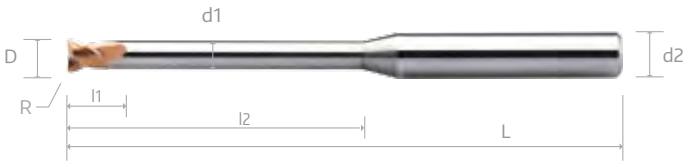
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

A79*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0100 060 0400 R020	1	1.5	-	50	0.9	4	0.2	•	•
0100 060 0400 200 R020	1	1.5	20.0	50	0.9	4	0.2	•	•
0100 050 0400 R030	1	1.5	-	50	0.9	4	0.3	•	•
0100 050 0400 060 R030	1	1.5	6.0	50	0.9	4	0.3	•	•
0100 050 0400 100 R030	1	1.5	10.0	50	0.9	4	0.3	•	•
0100 050 0400 160 R030	1	1.5	16.0	50	0.9	4	0.3	•	•
0100 060 0400 R030	1	1.5	-	60	0.9	4	0.3	•	•
0100 060 0400 200 R030	1	1.5	20.0	60	0.9	4	0.3	•	•
0120 050 0400 R010	1.2	1.8	-	50	1.1	4	0.1	•	•
0120 050 0400 060 R010	1.2	1.8	6.0	50	1.1	4	0.1	•	•
0120 050 0400 080 R010	1.2	1.8	8.0	50	1.1	4	0.1	•	•
0120 050 0400 100 R010	1.2	1.8	10.0	50	1.1	4	0.1	•	•
0120 050 0400 120 R010	1.2	1.8	12.0	50	1.1	4	0.1	•	•
0140 050 0400 R010	1.4	2.1	-	50	1.3	4	0.1	•	•
0140 050 0400 060 R010	1.4	2.1	6.0	50	1.3	4	0.1	•	•
0140 050 0400 080 R010	1.4	2.1	8.0	50	1.3	4	0.1	•	•
0140 050 0400 100 R010	1.4	2.1	10.0	50	1.3	4	0.1	•	•
0140 050 0400 120 R010	1.4	2.1	12.0	50	1.3	4	0.1	•	•
0140 050 0400 140 R010	1.4	2.1	14.0	50	1.3	4	0.1	•	•
0140 050 0400 160 R010	1.4	2.1	16.0	50	1.3	4	0.1	•	•
0150 050 0400 R010	1.5	2.3	-	50	1.4	4	0.1	•	•
0150 050 0400 060 R010	1.5	2.3	6.0	50	1.4	4	0.1	•	•
0150 050 0400 080 R010	1.5	2.3	8.0	50	1.4	4	0.1	•	•
0150 050 0400 120 R010	1.5	2.3	12.0	50	1.4	4	0.1	•	•
0150 050 0400 160 R010	1.5	2.3	16.0	50	1.4	4	0.1	•	•
0150 060 0400 R010	1.5	2.3	-	60	1.4	4	0.1	•	•
0150 060 0400 200 R010	1.5	2.3	20.0	60	1.4	4	0.1	•	•
0150 050 0400 R020	1.5	2.3	-	50	1.4	4	0.2	•	•
0150 050 0400 060 R020	1.5	2.3	6.0	50	1.4	4	0.2	•	•
0150 050 0400 080 R020	1.5	2.3	8.0	50	1.4	4	0.2	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

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Modifiche Techiche possibili senza preavviso

SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

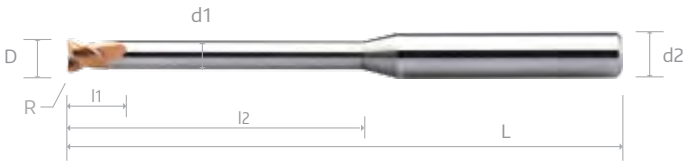
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

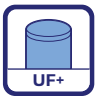
整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

A79*





Z2

















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0150 050 0400 100 R020	1.5	2.3	10.0	50	1.4	4	0.2	•	•
0150 050 0400 120 R020	1.5	2.3	12.0	50	1.4	4	0.2	•	•
0150 050 0400 140 R020	1.5	2.3	14.0	50	1.4	4	0.2	•	•
0150 050 0400 160 R020	1.5	2.3	16.0	50	1.4	4	0.2	•	•
0150 060 0400 R020	1.5	2.3	-	60	1.4	4	0.2	•	•
0150 060 0400 180 R020	1.5	2.3	18.0	60	1.4	4	0.2	•	•
0150 060 0400 R020	1.5	2.3	-	60	1.4	4	0.2	•	•
0150 060 0400 200 R020	1.5	2.3	20.0	60	1.4	4	0.2	•	•
0150 050 0400 R030	1.5	2.3	-	50	1.4	4	0.3	•	•
0150 050 0400 080 R030	1.5	2.3	8.0	50	1.4	4	0.3	•	•
0150 050 0400 160 R030	1.5	2.3	16.0	50	1.4	4	0.3	•	•
0150 060 0400 R030	1.5	2.3	-	60	1.4	4	0.3	•	•
0150 060 0400 200 R030	1.5	2.3	20.0	60	1.4	4	0.3	•	•
0160 050 0400 R010	1.6	2.4	-	50	1.5	4	0.1	•	•
0160 050 0400 060 R010	1.6	2.4	6.0	50	1.5	4	0.1	•	•
0160 050 0400 080 R010	1.6	2.4	8.0	50	1.5	4	0.1	•	•
0160 050 0400 100 R010	1.6	2.4	10.0	50	1.5	4	0.1	•	•
0160 050 0400 120 R010	1.6	2.4	12.0	50	1.5	4	0.1	•	•
0160 050 0400 140 R010	1.6	2.4	14.0	50	1.5	4	0.1	•	•
0160 050 0400 160 R010	1.6	2.4	16.0	50	1.5	4	0.1	•	•
0160 060 0400 R010	1.6	2.4	-	60	1.5	4	0.1	•	•
0160 060 0400 180 R010	1.6	2.4	18.0	60	1.5	4	0.1	•	•
0160 060 0400 R010	1.6	2.4	-	60	1.5	4	0.1	•	•
0160 060 0400 200 R010	1.6	2.4	20.0	60	1.5	4	0.1	•	•
0180 050 0400 R020	1.8	2.7	-	50	1.7	4	0.2	•	•
0180 050 0400 060 R020	1.8	2.7	6.0	50	1.7	4	0.2	•	•
0180 050 0400 080 R020	1.8	2.7	8.0	50	1.7	4	0.2	•	•
0180 050 0400 100 R020	1.8	2.7	10.0	50	1.7	4	0.2	•	•
0180 050 0400 120 R020	1.8	2.7	12.0	50	1.7	4	0.2	•	•
0180 050 0400 140 R020	1.8	2.7	14.0	50	1.7	4	0.2	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

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若有技术规格变更，恕不事先通知

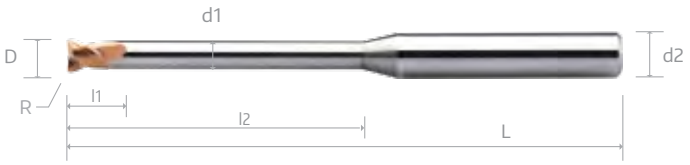
SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

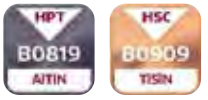
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0180 050 0400 160 R020	1.8	2.7	16.0	50	1.7	4	0.2	•	•
0180 060 0400 R020	1.8	2.7	-	60	1.7	4	0.2	•	•
0180 060 0400 180 R020	1.8	2.7	18.0	60	1.7	4	0.2	•	•
0180 060 0400 200 R020	1.8	2.7	20.0	60	1.7	4	0.2	•	•
0200 050 0400 R020	2	3	-	50	1.9	4	0.2	•	•
0200 050 0400 060 R020	2	3	6.0	50	1.9	4	0.2	•	•
0200 050 0400 080 R020	2	3	8.0	50	1.9	4	0.2	•	•
0200 050 0400 100 R020	2	3	10.0	50	1.9	4	0.2	•	•
0200 050 0400 120 R020	2	3	12.0	50	1.9	4	0.2	•	•
0200 050 0400 140 R020	2	3	14.0	50	1.9	4	0.2	•	•
0200 050 0400 160 R020	2	3	16.0	50	1.9	4	0.2	•	•
0200 060 0400 R020	2	3	-	60	1.9	4	0.2	•	•
0200 060 0400 180 R020	2	3	18.0	60	1.9	4	0.2	•	•
0200 060 0400 200 R020	2	3	20.0	60	1.9	4	0.2	•	•
0200 075 0400 R020	2	3	-	75	1.9	4	0.2	•	•
0200 075 0400 250 R020	2	3	25.0	75	1.9	4	0.2	•	•
0200 075 0400 300 R020	2	3	30.0	75	1.9	4	0.2	•	•
0200 050 0400 R030	2	3	-	50	1.9	4	0.3	•	•
0200 050 0400 080 R030	2	3	8.0	50	1.9	4	0.3	•	•
0200 050 0400 160 R030	2	3	16.0	50	1.9	4	0.3	•	•
0200 060 0400 R030	2	3	-	60	1.9	4	0.3	•	•
0200 060 0400 200 R030	2	3	20.0	60	1.9	4	0.3	•	•
0200 050 0400 R050	2	3	-	50	1.9	4	0.5	•	•
0200 050 0400 060 R050	2	3	6.0	50	1.9	4	0.5	•	•
0200 050 0400 080 R050	2	3	8.0	50	1.9	4	0.5	•	•
0200 050 0400 120 R050	2	3	12.0	50	1.9	4	0.5	•	•
0200 050 0400 160 R050	2	3	16.0	50	1.9	4	0.5	•	•
0200 060 0400 R050	2	3	-	60	1.9	4	0.5	•	•
0200 060 0400 200 R050	2	3	20.0	60	1.9	4	0.5	•	•
0200 075 0400 R050	2	3	-	60	1.9	4	0.5	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

236

Technical specifications subject to change without prior notice

SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

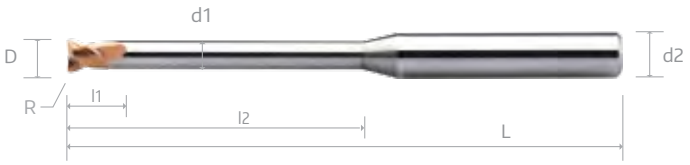
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

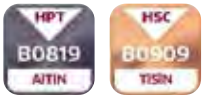
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0200 075 0400 250 R050	2	3	25.0	75	1.9	4	0.5	•	•
0200 075 0400 300 R050	2	3	30.0	75	1.9	4	0.5	•	•
0250 050 0400 R030	2.5	3.7	-	50	2.4	4	0.3	•	•
0250 050 0400 080 R030	2.5	3.7	8.0	50	2.4	4	0.3	•	•
0250 050 0400 100 R030	2.5	3.7	10.0	50	2.4	4	0.3	•	•
0250 050 0400 120 R030	2.5	3.7	12.0	50	2.4	4	0.3	•	•
0250 050 0400 140 R030	2.5	3.7	14.0	50	2.4	4	0.3	•	•
0250 050 0400 160 R030	2.5	3.7	16.0	50	2.4	4	0.3	•	•
0250 060 0400 R030	2.5	3.7	-	60	2.4	4	0.3	•	•
0250 060 0400 180 R030	2.5	3.7	18.0	60	2.4	4	0.3	•	•
0250 060 0400 200 R030	2.5	3.7	20.0	60	2.4	4	0.3	•	•
0250 060 0400 250 R030	2.5	3.7	25.0	60	2.4	4	0.3	•	•
0250 075 0400 R030	2.5	3.7	-	75	2.4	4	0.3	•	•
0250 075 0400 300 R030	2.5	3.7	30.0	75	2.4	4	0.3	•	•
0250 050 0400 R050	2.5	3.7	-	50	2.4	4	0.5	•	•
0250 050 0400 080 R050	2.5	3.7	8.0	50	2.4	4	0.5	•	•
0250 050 0400 120 R050	2.5	3.7	12.0	50	2.4	4	0.5	•	•
0250 050 0400 160 R050	2.5	3.7	16.0	50	2.4	4	0.5	•	•
0250 060 0400 R050	2.5	3.7	-	60	2.4	4	0.5	•	•
0250 060 0400 200 R050	2.5	3.7	20.0	60	2.4	4	0.5	•	•
0250 060 0400 250 R050	2.5	3.7	25.0	60	2.4	4	0.5	•	•
0250 075 0400 R050	2.5	3.7	-	75	2.4	4	0.5	•	•
0250 075 0400 300 R050	2.5	3.7	30.0	75	2.4	4	0.5	•	•
0300 050 0600 R020	3	4.5	-	50	2.8	6	0.2	•	•
0300 050 0600 080 R020	3	4.5	8.0	50	2.8	6	0.2	•	•
0300 050 0600 100 R020	3	4.5	10.0	50	2.8	6	0.2	•	•
0300 050 0600 120 R020	3	4.5	12.0	50	2.8	6	0.2	•	•
0300 050 0600 140 R020	3	4.5	14.0	50	2.8	6	0.2	•	•
0300 060 0600 R020	3	4.5	-	60	2.8	6	0.2	•	•
0300 060 0600 160 R020	3	4.5	16.0	60	2.8	6	0.2	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

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SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

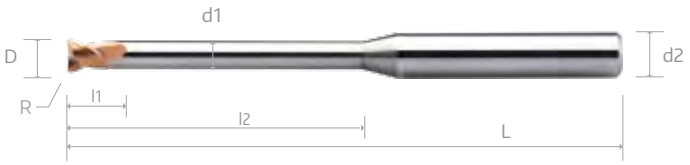
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti

整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃

A79*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0300 060 0600 180 R020	3	4.5	18.0	60	2.8	6	0.2	•	•
0300 060 0600 200 R020	3	4.5	20.0	60	2.8	6	0.2	•	•
0300 075 0600 R020	3	4.5	-	75	2.8	6	0.2	•	•
0300 075 0600 250 R020	3	4.5	25.0	75	2.8	6	0.2	•	•
0300 050 0600 R030	3	4.5	-	50	2.8	6	0.3	•	•
0300 050 0600 080 R030	3	4.5	8.0	50	2.8	6	0.3	•	•
0300 050 0600 100 R030	3	4.5	10.0	50	2.8	6	0.3	•	•
0300 050 0600 120 R030	3	4.5	12.0	50	2.8	6	0.3	•	•
0300 050 0600 140 R030	3	4.5	14.0	50	2.8	6	0.3	•	•
0300 060 0600 R030	3	4.5	-	60	2.8	6	0.3	•	•
0300 060 0600 160 R030	3	4.5	16.0	60	2.8	6	0.3	•	•
0300 060 0600 180 R030	3	4.5	18.0	60	2.8	6	0.3	•	•
0300 060 0600 200 R030	3	4.5	20.0	60	2.8	6	0.3	•	•
0300 075 0600 R030	3	4.5	-	75	2.8	6	0.3	•	•
0300 075 0600 250 R030	3	4.5	25.0	75	2.8	6	0.3	•	•
0300 050 0600 R050	3	4.5	-	50	2.8	6	0.5	•	•
0300 050 0600 080 R050	3	4.5	8.0	50	2.8	6	0.5	•	•
0300 050 0600 100 R050	3	4.5	10.0	50	2.8	6	0.5	•	•
0300 050 0600 120 R050	3	4.5	12.0	50	2.8	6	0.5	•	•
0300 050 0600 140 R050	3	4.5	14.0	50	2.8	6	0.5	•	•
0300 060 0600 R050	3	4.5	-	60	2.8	6	0.5	•	•
0300 060 0600 160 R050	3	4.5	16.0	60	2.8	6	0.5	•	•
0300 060 0600 180 R050	3	4.5	18.0	60	2.8	6	0.5	•	•
0300 060 0600 200 R050	3	4.5	20.0	60	2.8	6	0.5	•	•
0300 075 0600 R050	3	4.5	-	75	2.8	6	0.5	•	•
0300 075 0600 250 R050	3	4.5	25.0	75	2.8	6	0.5	•	•
0400 060 0600 R030	4	4.5	-	60	3.7	6	0.3	•	•
0400 060 0600 100 R030	4	4.5	10.0	60	3.7	6	0.3	•	•
0400 060 0600 150 R030	4	4.5	15.0	60	3.7	6	0.3	•	•
0400 060 0600 200 R030	4	4.5	20.0	60	3.7	6	0.3	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

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Spécifications techniques sujettes à changement sans avis prélable

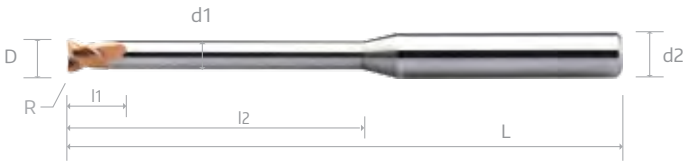
SE 45R MINIATURE TORUS ENDMILLS - with Long Neck

≤ 1.300 N/mm² + B0819 /B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R torodidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬⊠合金 SE 45R 系列 ⊠⊠短刃 立⊠刀 2 刃

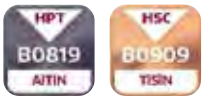
A79*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
0400 075 0600 R030	4	4.5	-	75	3.7	6	0.3	•	•
0400 075 0600 250 R030	4	4.5	25.0	75	3.7	6	0.3	•	•
0400 075 0600 300 R030	4	4.5	30.0	75	3.7	6	0.3	•	•
0400 075 0600 400 R030	4	4.5	40	75	3.7	6	0.3	•	•
0400 075 0600 R050	4	4.5	-	60	3.7	6	0.5	•	•
0400 060 0600 100 R050	4	4.5	10	60	3.7	6	0.5	•	•
0400 060 0600 150 R050	4	4.5	15	60	3.7	6	0.5	•	•
0400 060 0600 200 R050	4	4.5	20	60	3.7	6	0.5	•	•
0400 075 0600 R050	4	4.5	-	75	3.7	6	0.5	•	•
0400 075 0600 250 R050	4	4.5	25	75	3.7	6	0.5	•	•
0400 075 0600 300 R050	4	4.5	30	75	3.7	6	0.5	•	•
0400 075 0600 400 R050	4	4.5	40	75	3.7	6	0.5	•	•

SE 45

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

236

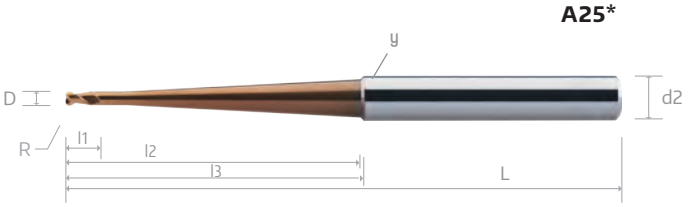
Modifiche Techiche possibili senza preavviso

SE 45R TORUS ENDMILLS – with Taper Neck

≤ 1.300 N/mm² + B0909 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Torusfräser mit konischem Hals, 2 Zähne	Fraises 2 tailles SE 45R toriques avec cou conique en carbure monobloc, 2 dents
Frese toroidali SE 45R con collo conico in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45R 系列 圆鼻锥颈位 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A25*
= * + Ø data	D	l 1	l 2	l3	L	d2 (h6)	y	R	B0909
0100 020 06 080	1	1.5	4	20	60	6	8°	0.5	•
0100 040 06 040	1	1.5	4	40	75	6	4.0°	0.5	•
0150 020 06 070	1.5	2.3	7.5	20	60	6	7°	0.75	•
0150 040 06 035	1.5	2.3	7.5	40	75	6	3.5°	0.75	•
0200 020 06 057	2	3	8	20	60	6	5.7°	0.5	•
0200 040 06 029	2	3	8	40	75	6	2.9°	0.5	•
0200 040 06 010	2	3	8	40	75	6	1°	0.5	•
0300 020 06 043	3	3.5	10	20	60	6	4.3°	0.5	•
0300 040 06 021	3	3.5	12	40	75	6	2.1°	0.5	•
0300 045 06 010	3	3.5	12	45	75	6	1°	0.5	•
0400 020 06 029	4	4	12	20	60	6	2.9°	1	•
0400 040 06 014	4	4	20	40	75	6	1.4°	1	•
0400 060 06 010	4	4	20	60	100	6	1°	0.5	•
0600 020 06 000	6	6	20	20	60	6	-	2	•
0600 040 06 000	6	6	40	40	75	6	-	1	•
0600 060 08 010	6	6	25	60	100	8	1°	2	•
0600 080 08 010	6	6	25	80	125	8	1°	1	•
0800 025 08 000	8	7	25	25	64	8	-	2	•
0800 060 08 000	8	7	60	60	100	8	-	2	•
0800 075 10 008	8	7	30	75	125	10	0.8°	1	•
0800 105 10 006	8	7	20	105	150	10	0.6°	1	•
1000 030 10 000	10	8	30	30	75	10	-	3	•
1000 075 10 000	10	8	75	75	125	10	-	3	•
1000 070 12 008	10	8	30	70	125	12	0.8°	3	•
1200 035 12 000	12	10	35	35	100	12	-	4	•
1200 070 12 000	12	10	70	70	125	12	-	4	•
1200 100 16 012	12	10	35	100	150	16	1.2°	4	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

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若有技术规格变更，恕不事先通知

SE 45 STANDARD ENDMILLS, SHORT FLUTE

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

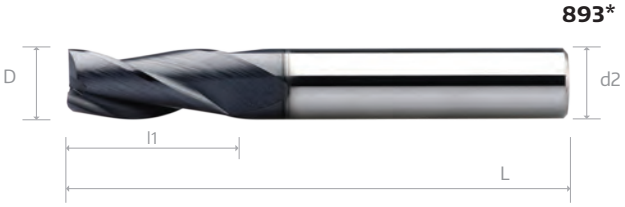
HPMT

VHM SE 45 Standard Fräser mit kuezen Nuten, 3 Zähne

Fraises 2 tailles SE 45 Standard à hélices courtes en carbure monobloc, 3 dents

Frese SE 45 Standard con gole corte in metallo duro integrale, 3 taglienti

整体硬质合金 SE 45 系列 立铣刀 3 刃 - 标准长度-短刃







HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					893 *	A14 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	7	15	40	3	•	•
0300 050 06	3	7	15	50	6	•	•
0350 050 04	3.5	8	20	50	4	•	•
0400	4	8	20	50	4	•	•
0400 050 06	4	8	20	50	6	•	•
0450 050 05	4.5	10	20	50	5	•	•
0500	5	10	20	50	5	•	•
0500 050 06	5	10	20	50	6	•	•
0550 050 06	5.5	10	20	50	6	•	•
0600 050	6	10	20	50	6	•	•
0600 060	6	13	30	60	6	•	•
0700 064 08	7	16	30	64	8	•	•
0800	8	16	30	64	8	•	•
0900 070 10	9	19	32	70	10	•	•
1000 070	10	19	32	70	10	•	•
1000 075	10	19	32	75	10	•	•

630* A15*

cont'd ▶

SE 45

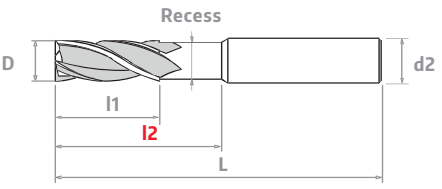
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

230

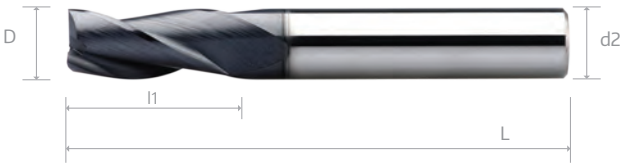
SE 45 STANDARD ENDMILLS, SHORT FLUTE

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser mit kuezen Nuten, 3 Zähne	Fraises 2 tailles SE 45 Standard à hélices courtes en carbure monobloc, 3 dents
Frese SE 45 Standard con gole corte in metallo duro integrale, 3 taglienti	整体硬质合金 SE 45 系列 立铣刀 3 刃 - 标准长度-短刃

893*







HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					893 *	A14 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
1100 075 12	11	22	37	75	12	•	•
1200	12	22	37	75	12	•	•
1400	14	22	44	90	14	•	•
1600	16	26	46	90	16	•	•
1800	18	26	53	100	18	•	•
2000	20	32	58	100	20	•	•
2200	22	32	58	100	22	•	•
2500	25	36	58	100	25	•	•

630* A15*

SE 45

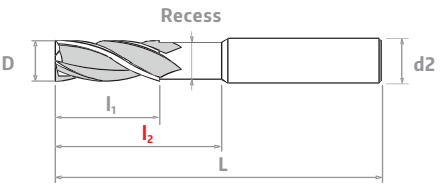
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

230

Technische änderungen ohne vorherige information vorbehalten

SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser, 2 Zähne	Fraises 2 tailles SE 45 standard - 2 dents, en carbure monobloc
Frese SE 45 in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45 系列 立铣刀 2 刃 - 标准长度







HPT B0819 AlTiN — HSC B0909 TiSiN

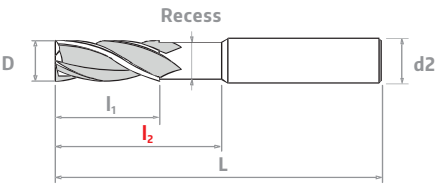
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					886 *	A04 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	9	15	40	3	•	•
0300 050 06	3	9	15	50	6	•	•
0350 050 04	3.5	12	20	50	4	•	•
0400	4	12	20	50	4	•	•
0400 050 06	4	12	20	50	6	•	•
0450 050 05	4.5	15	20	50	5	•	•
0500	5	15	20	50	5	•	•
0500 050 06	5	15	20	50	6	•	•
0550 050 06	5.5	15	20	50	6	•	•
0600 050	6	16	20	50	6	•	•
0600 060	6	20	30	60	6	•	•
0700 064 08	7	20	30	64	8	•	•
0800	8	20	30	64	8	•	•
0900 070 10	9	22	32	70	10	•	•
1000 070	10	22	32	70	10	•	•
1000 075	10	22	32	75	10	•	•

B31* A05*

cont'd ▶

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 224

SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser, 2 Zähne	Fraises 2 tailles SE 45 standard - 2 dents, en carbure monobloc
Frese SE 45 in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45 系列 立铣刀 2 刃 - 标准长度







HPT B0819 AlTiN

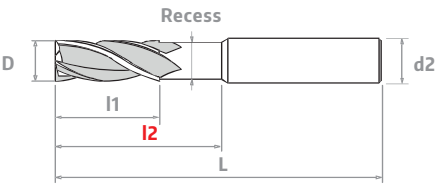
HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					886 *	A04 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
1100 075 12	11	25	37	75	12	•	•
1200	12	25	37	75	12	•	•
1400	14	32	44	90	14	•	•
1600	16	32	46	90	16	•	•
1800	18	38	53	100	18	•	•
2000	20	38	58	100	20	•	•
2200	22	40	58	100	22	•	•
2500	25	40	58	100	25	•	•
						B31*	A05*

SE 45

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

224

Modifiche Techiche possibili senza preavviso

SE 45 STANDARD ENDMILLS

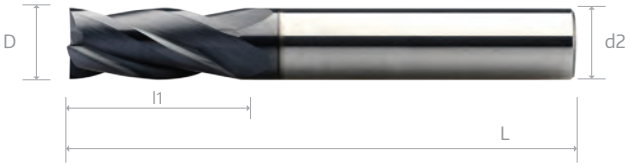
≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser, 4 Zähne | Fraises 2 tailles SE 45 standard - 4 dents, en carbure monobloc

Frese SE 45 in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 45 系列 立铣刀 4 刃 - 标准长度

887*







HPT G6110 AlCrN | HPT B0819 AlTiN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					543	887 *	A06 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819	B0909
0100 040 03	1	3		40	3	○	•	•
0100 050 04	1	3		50	4	○	•	•
0150 040 03	1.5	4.5		40	3	○	•	•
0150 050 04	1.5	4.5		50	4	○	•	•
0200 040 03	2	6.5		40	3	○	•	•
0200 050 04	2	6.5		50	4	○	•	•
0250 040 03	2.5	6.5		40	3	○	•	•
0250 050 04	2.5	6.5		50	4	○	•	•
0300	3	9	15	40	3	○	•	•
0300 050 06	3	9	15	50	6	○	•	•
0350 050 04	3.5	12	20	50	4	○	•	•
0400	4	12	20	50	4	○	•	•
0400 050 06	4	12	20	50	6	○	•	•
0450 050 05	4.5	15	20	50	5	○	•	•
0500	5	15	20	50	5	○	•	•
0500 050 06	5	15	20	50	6	○	•	•
0550 050 06	5.5	15	20	50	6	○	•	•
0600 050	6	16	20	50	6	○	•	•
0600 060	6	20	30	60	6	○	•	•
0700 064 08	7	20	30	64	8	○	•	•
0800	8	20	30	64	8	○	•	•
0900 070 10	9	22	32	70	10	○	•	•
1000 070	10	22	32	70	10	○	•	•
1000 075	10	22	32	75	10	○	•	•

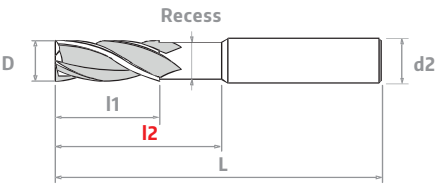
635* A07*

cont'd ▶

Tools with recess upon request

Fräser mit Freistellung auf Bestellung | Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a | 密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	•	○			○	○	•			

Cutting Parameter: 226

若有技术规格变更，恕不事先通知

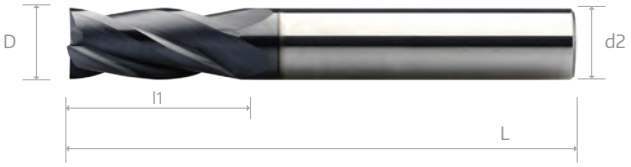
SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 Standard Fräser, 4 Zähne	Fraises 2 tailles SE 45 standard - 4 dents, en carbure monobloc
Frese SE 45 in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 标准长度

887*





Z4



HPT G6110 AlCrN | HPT B0819 AlTiN | HSC B0909 TiSiN

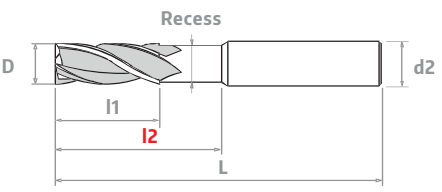
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					543	887 *	A06 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819	B0909
1100 075 12	11	25	37	75	12	○	•	•
1200	12	25	37	75	12	○	•	•
1400	14	32	44	90	14	○	•	•
1600	16	32	46	90	16	○	•	•
1800	18	38	53	100	18	○	•	•
2000	20	38	58	100	20	○	•	•
2200	22	40	58	100	22	○	•	•
2500	25	40	58	100	25	○	•	•

635* A07*

SE 45

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	•	○			○	○	•			

226

Technical specifications subject to change without prior notice

SE 45 ENDMILLS - Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Fräser SE 45 Long, 4 Zähne	Fraises 2 tailles SE45Longue - 4 dents, en carbure monobloc
Frese SE 45 lang in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 中长

889*





Z4



HPT G6110 AlCrN | HPT B0819 AlTiN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					186 *	889 *	A09 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819	B0909
0300	3	19		60	3	○	•	•
0300 075 06	3	19		75	6	○	•	•
0400	4	19		60	4	○	•	•
0400 075 06	4	19		75	6	○	•	•
0500	5	19		60	5	○	•	•
0500 075 06	5	19		75	6	○	•	•
0600	6	31		75	6	○	•	•
0800	8	31		75	8	○	•	•
1000 075	10	31		75	10	○	•	•
1000 100	10	50		100	10	○	•	•
1200	12	50		100	12	○	•	•
1400	14	57		125	14	○	•	•
1600	16	57		125	16	○	•	•
1800	18	57		125	18	○	•	•
2000	20	57		125	20	○	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	•	○			○	○	•			

Cutting Parameter: 232

Technische änderungen ohne vorherige information vorbehalten

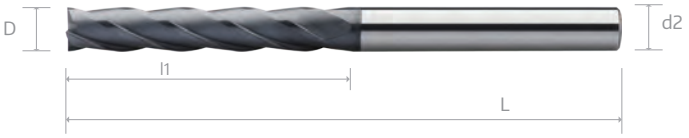
SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE45Extra-Long Fräser, 4 Zähne	Fraises 2 tailles SE 45 extra-longue- 4 dents, en carbure monobloc
Frese SE 45 extra-lunga in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45 系列 立铣刀 4 刃 - 加长

891*





Z4



HPT G6110 AlCrN | HPT B0819 AlTiN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					202 *	891 *	A11 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0819	B0819
0300	3	25		100	3	○	●	●
0300 100 06	3	25		100	6	○	●	●
0400	4	31		100	4	○	●	●
0400 100 06	4	31		100	6	○	●	●
0500	5	31		100	5	○	●	●
0500 100 06	5	31		100	6	○	●	●
0600	6	38		100	6	○	●	●
0800	8	41		100	8	○	●	●
1000	10	57		125	10	○	●	●
1200	12	75		150	12	○	●	●
1400	14	75		150	14	○	●	●
1600	16	75		150	16	○	●	●
1800	18	75		150	18	○	●	●
2000	20	75		150	20	○	●	●

SE 45

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

233

Spécifications techniques sujettes à changement sans avis prélable

SE 45 SHORT FLUTES LONG REACH ENDMILLS – Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45 lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne

Fraises 2 tailles SE 45 LONG REACH longues à hélices courtes en carbure monobloc, 4 dents

Frese SE 45 LONG REACH lunghe in metallo duro integrale, con gole corte, 4 taglienti

整体硬质合金 SE 45 系列 短刃 立铣刀 4 刃 - 中长







HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					895 *	A18 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0300	3	5	30	60	3	•	•
0300 075 06	3	5	30	75	6	•	•
0400	4	8	32	60	4	•	•
0400 075 06	4	8	32	75	6	•	•
0500	5	9	32	60	5	•	•
0500 075 06	5	9	32	75	6	•	•
0600	6	10	40	75	6	•	•
0800	8	12	40	75	8	•	•
1000 075	10	14	40	75	10	•	•
1000 100	10	14	60	100	10	•	•
1200	12	16	60	100	12	•	•
1400	14	22	85	125	14	•	•
1600	16	22	85	125	16	•	•
1800	18	26	85	125	18	•	•
2000	20	26	85	125	20	•	•

897 * A19 *

SE 45

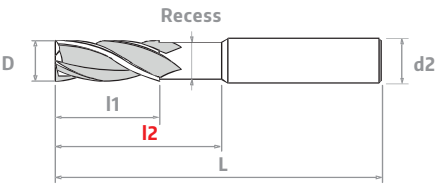
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

229

SE 45 SHORT FLUTES LONG REACH ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

VHM SE 45 extra-lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne

Fraises 2 tailles SE 45 LONG REACH extra-longues à hélices courtes en carbure monobloc, 4 dents

Frese SE 45 LONG REACH extra-lunghe in metallo duro integrale, con gole corte, 4 taglienti

整体硬质合金 SE 45 系列 短刃 立铣刀 4 刃 - 加长

A22*





Z4

UF | γ = 3° | λ = 40° | DIN 6535 HA HB | HPT B0819 AlTiN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					899 *	A22 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0300	3	5	60	100	3	•	•
0300 100 06	3	5	60	100	6	•	•
0400	4	8	60	100	4	•	•
0400 100 06	4	8	60	100	6	•	•
0500	5	9	60	100	5	•	•
0500 100 06	5	9	60	100	6	•	•
0600	6	10	60	100	6	•	•
0800	8	12	60	100	8	•	•
1000	10	14	85	125	10	•	•
1200	12	16	110	150	12	•	•
1400	14	22	110	150	14	•	•
1600	16	22	110	150	16	•	•
1800	18	26	110	150	18	•	•
2000	20	26	110	150	20	•	•

901 * A23 *

SE 45

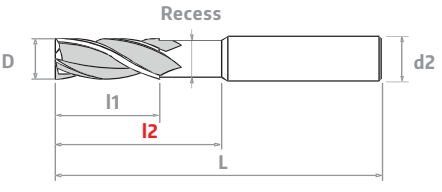
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

229

若有技术规格变更，恕不事先通知

SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne	Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents
Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度







HPT G6110 AlCrN | HPT B0819 AlTiN | HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						311 *	904 *	A26*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819	B0909
0100 050 0400 020	1	3		50	4	0.2	•	•	•
0100 050 0600 020	1	3		50	6	0.2	•	•	•
0150 050 0400 020	1.5	4.5		50	4	0.2	•	•	•
0150 050 0600 020	1.5	4.5		50	6	0.2	•	•	•
0200 050 0400 020	2	6.5		50	4	0.2	•	•	•
0200 050 0400 030	2	6.5		50	4	0.3	•	•	•
0200 050 0600 020	2	6.5		50	6	0.2	•	•	•
0200 050 0600 030	2	6.5		50	6	0.3	•	•	•
0250 050 0400 020	2.5	6.5		50	4	0.2	•	•	•
0250 050 0400 030	2.5	6.5		50	4	0.3	•	•	•
0250 050 0400 050	2.5	6.5		50	4	0.5	•	•	•
0250 050 0600 020	2.5	6.5		50	6	0.2	•	•	•
0250 050 0600 030	2.5	6.5		50	6	0.3	•	•	•
0250 050 0600 050	2.5	6.5		50	6	0.5	•	•	•
0300 040 0300 020	3	9		40	3	0.2	•	•	•
0300 040 0300 030	3	9		40	3	0.3	•	•	•
0300 040 0300 050	3	9		40	3	0.5	•	•	•
0300 050 0400 020	3	9		50	4	0.2	•	•	•
0300 050 0400 030	3	9		50	4	0.3	•	•	•
0300 050 0400 050	3	9		50	4	0.5	•	•	•
0300 050 0600 020	3	9		50	6	0.2	•	•	•
0300 050 0600 030	3	9		50	6	0.3	•	•	•
0300 050 0600 050	3	9		50	6	0.5	•	•	•
0300 060 0600 020	3	9		60	6	0.2	•	•	•
0300 060 0600 030	3	9		60	6	0.3	•	•	•
0300 060 0600 050	3	9		60	6	0.5	•	•	•
0400 050 0400 020	4	12		50	4	0.2	•	•	•
0400 050 0400 030	4	12		50	4	0.3	•	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 226

Technical specifications subject to change without prior notice

SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents

Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						311 *	904 *	A26*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819	B0909
0400 050 0400 050	4	12		50	4	0.5	•	•	•
0400 050 0400 100	4	12		50	4	1	•	•	•
0400 050 0600 020	4	12		50	6	0.2	•	•	•
0400 050 0600 030	4	12		50	6	0.3	•	•	•
0400 050 0600 050	4	12		50	6	0.5	•	•	•
0400 050 0600 100	4	12		50	6	1	•	•	•
0400 060 0600 020	4	12		60	6	0.2	•	•	•
0400 060 0600 030	4	12		60	6	0.3	•	•	•
0400 060 0600 050	4	12		60	6	0.5	•	•	•
0400 060 0600 100	4	12		60	6	1	•	•	•
0500 050 0500 020	5	15		50	5	0.2	•	•	•
0500 050 0500 030	5	15		50	5	0.3	•	•	•
0500 050 0500 050	5	15		50	5	0.5	•	•	•
0500 050 0500 100	5	15		50	5	1	•	•	•
0500 050 0600 020	5	15		50	6	0.2	•	•	•
0500 050 0600 030	5	15		50	6	0.3	•	•	•
0500 050 0600 050	5	15		50	6	0.5	•	•	•
0500 050 0600 100	5	15		50	6	1	•	•	•
0500 060 0600 020	5	15		60	6	0.2	•	•	•
0500 060 0600 030	5	15		60	6	0.3	•	•	•
0500 060 0600 050	5	15		60	6	0.5	•	•	•
0500 060 0600 100	5	15		60	6	1	•	•	•
0600 050 0600 020	6	16		50	6	0.2	•	•	•
0600 050 0600 030	6	16		50	6	0.3	•	•	•
0600 050 0600 050	6	16		50	6	0.5	•	•	•
0600 050 0600 100	6	16		50	6	1	•	•	•
0600 060 0600 020	6	20		60	6	0.2	•	•	•
0600 060 0600 030	6	20		60	6	0.3	•	•	•

cont'd ▶

SE 45

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

226

Technische änderungen ohne vorherige information vorbehalten

SE 45R STANDARD TORUS ENDMILLS

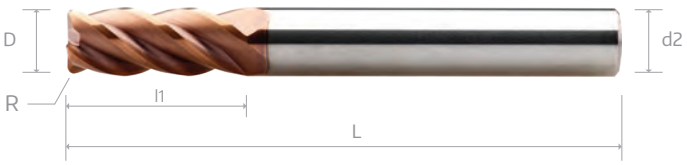
≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents

Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度

A26*





Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						311 *	904 *	A26*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819	B0909
0600 060 0600 050	6	20		60	6	0.5	•	•	•
0600 060 0600 100	6	20		60	6	1	•	•	•
0800 064 0800 020	8	20		64	8	0.2	•	•	•
0800 064 0800 030	8	20		64	8	0.3	•	•	•
0800 064 0800 050	8	20		64	8	0.5	•	•	•
0800 064 0800 100	8	20		64	8	1	•	•	•
0800 064 0800 150	8	20		64	8	1.5	•	•	•
0800 064 0800 200	8	20		64	8	2	•	•	•
1000 070 1000 020	10	22		70	10	0.2	•	•	•
1000 070 1000 030	10	22		70	10	0.3	•	•	•
1000 070 1000 050	10	22		70	10	0.5	•	•	•
1000 070 1000 100	10	22		70	10	1	•	•	•
1000 070 1000 150	10	22		70	10	1.5	•	•	•
1000 070 1000 200	10	22		70	10	2	•	•	•
1000 075 1000 020	10	22		75	10	0.2	•	•	•
1000 075 1000 030	10	22		75	10	0.3	•	•	•
1000 075 1000 050	10	22		75	10	0.5	•	•	•
1000 075 1000 100	10	22		75	10	1	•	•	•
1000 075 1000 150	10	22		75	10	1.5	•	•	•
1000 075 1000 200	10	22		75	10	2	•	•	•
1200 075 1200 020	12	25		75	12	0.2	•	•	•
1200 075 1200 030	12	25		75	12	0.3	•	•	•
1200 075 1200 050	12	25		75	12	0.5	•	•	•
1200 075 1200 100	12	25		75	12	1	•	•	•
1200 075 1200 150	12	25		75	12	1.5	•	•	•
1200 075 1200 200	12	25		75	12	2	•	•	•
1200 075 1200 300	12	25		75	12	3	•	•	•
1400 090 1400 030	14	32		90	14	0.3	•	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

226

SE 45 STANDARD TORUS ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R Standard Torusfräser, 4 Zähne

Fraises 2 tailles SE 45R toriques Standard en carbure monobloc, 4 dents

Frese SE 45R toroidali Standard, in metallo duro integrale, 4 taglienti

整体硬质合金 SE 45R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						311 *	904 *	A26*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0819	B0909
1400 090 1400 050	14	32		90	14	0.5	•	•	•
1400 090 1400 100	14	32		90	14	1	•	•	•
1400 090 1400 150	14	32		90	14	1.5	•	•	•
1400 090 1400 200	14	32		90	14	2	•	•	•
1400 090 1400 300	14	32		90	14	3	•	•	•
1600 090 1600 030	16	32		90	16	0.3	•	•	•
1600 090 1600 050	16	32		90	16	0.5	•	•	•
1600 090 1600 100	16	32		90	16	1	•	•	•
1600 090 1600 150	16	32		90	16	1.5	•	•	•
1600 090 1600 200	16	32		90	16	2	•	•	•
1600 090 1600 300	16	32		90	16	3	•	•	•
1800 100 1800 030	18	38		100	18	0.3	○	○	○
1800 100 1800 050	18	38		100	18	0.5	○	○	○
1800 100 1800 100	18	38		100	18	1	○	○	○
1800 100 1800 150	18	38		100	18	1.5	○	○	○
1800 100 1800 200	18	38		100	18	2	○	○	○
1800 100 1800 300	18	38		100	18	3	○	○	○
2000 100 2000 030	20	38		100	20	0.3	•	•	•
2000 100 2000 050	20	38		100	20	0.5	•	•	•
2000 100 2000 100	20	38		100	20	1	•	•	•
2000 100 2000 150	20	38		100	20	1.5	•	•	•
2000 100 2000 200	20	38		100	20	2	•	•	•
2000 100 2000 300	20	38		100	20	3	•	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

226

Modifiche Techiche possibili senza preavviso

SE 45R SHORT FLUTES LONG REACH TORUS ENDMILLS – Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

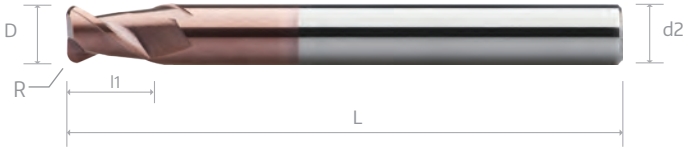
VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 2 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 2 dents

Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 2 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 2 刃 - 中长

A28*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						906 *	A28 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0819	B0909
0200 075 0600 030	2	4	30	75	6	0.3	•	•
0300 075 0600 030	3	5	30	75	6	0.3	•	•
0300 075 0600 050	3	5	30	75	6	0.5	•	•
0400 075 0600 030	4	8	32	75	6	0.3	•	•
0400 075 0600 050	4	8	32	75	6	0.5	•	•
0500 075 0600 030	5	9	32	75	6	0.3	•	•
0500 075 0600 050	5	9	32	75	6	0.5	•	•
0600 075 0600 030	6	10	40	75	6	0.3	•	•
0600 075 0600 050	6	10	40	75	6	0.5	•	•
0600 075 0600 100	6	10	40	75	6	1	•	•
0800 075 0800 030	8	12	40	75	8	0.3	•	•
0800 075 0800 050	8	12	40	75	8	0.5	•	•
0800 075 0800 100	8	12	40	75	8	1	•	•
1000 075 1000 050	10	14	40	75	10	0.5	•	•
1000 075 1000 100	10	14	40	75	10	1	•	•
1000 075 1000 200	10	14	40	75	10	2	•	•
1000 100 1000 050	10	14	60	100	10	0.5	•	•
1000 100 1000 100	10	14	60	100	10	1	•	•
1000 100 1000 200	10	14	60	100	10	2	•	•
1200 100 1200 050	12	16	60	100	12	0.5	•	•
1200 100 1200 100	12	16	60	100	12	1	•	•
1200 100 1200 200	12	16	60	100	12	2	•	•
1600 125 1600 050	16	22	85	125	16	0.5	•	•
1600 125 1600 100	16	22	85	125	16	1	•	•
1600 125 1600 200	16	22	85	125	16	2	•	•
1600 125 1600 300	16	22	85	125	16	3	•	•

786 * A99 *

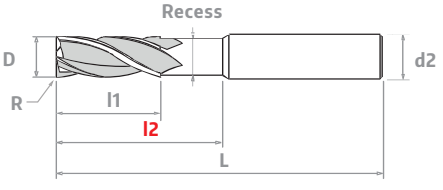
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

228

若有技术规格变更，恕不事先通知

SE 45R SHORT FLUTES LONG REACH ENDMILLS – Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 4 dents

Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 4 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 中长

A29*





Z4



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						907 *	A29 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0819	B0909
0200 075 0600 020	2	4	30	75	6	0.2	•	•
0200 075 0600 030	2	4	30	75	6	0.3	•	•
0300 075 0600 020	3	5	30	75	6	0.2	•	•
0300 075 0600 030	3	5	30	75	6	0.3	•	•
0300 075 0600 050	3	5	30	75	6	0.5	•	•
0400 075 0600 020	4	8	32	75	6	0.2	•	•
0400 075 0600 030	4	8	32	75	6	0.3	•	•
0400 075 0600 050	4	8	32	75	6	0.5	•	•
0500 075 0600 020	5	9	32	75	6	0.2	•	•
0500 075 0600 030	5	9	32	75	6	0.3	•	•
0500 075 0600 050	5	9	32	75	6	0.5	•	•
0600 075 0600 020	6	10	40	75	6	0.2	•	•
0600 075 0600 030	6	10	40	75	6	0.3	•	•
0600 075 0600 050	6	10	40	75	6	0.5	•	•
0600 075 0600 100	6	10	40	75	6	1	•	•
0800 075 0800 020	8	12	40	75	8	0.2	•	•
0800 075 0800 030	8	12	40	75	8	0.3	•	•
0800 075 0800 050	8	12	40	75	8	0.5	•	•
0800 075 0800 100	8	12	40	75	8	1	•	•
1000 075 1000 020	10	14	40	75	10	0.2	•	•
1000 075 1000 030	10	14	40	75	10	0.3	•	•
1000 075 1000 050	10	14	40	75	10	0.5	•	•
1000 075 1000 100	10	14	40	75	10	1	•	•
1000 075 1000 200	10	14	40	75	10	2	•	•
1000 100 1000 020	10	14	60	100	10	0.2	•	•
1000 100 1000 030	10	14	60	100	10	0.3	•	•

813 A1B

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

229

SE 45

Technical specifications subject to change without prior notice

SE 45R

SHORT FLUTES LONG REACH ENDMILLS – Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 4 dents

Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 4 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 中长

A29*





Z4



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						907 *	A29 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0819	B0909
1000 100 1000 050	10	14	60	100	10	0.5	•	•
1000 100 1000 100	10	14	60	100	10	1	•	•
1000 100 1000 200	10	14	60	100	10	2	•	•
1200 100 1200 020	12	16	60	100	12	0.2	•	•
1200 100 1200 030	12	16	60	100	12	0.3	•	•
1200 100 1200 050	12	16	60	100	12	0.5	•	-
1200 100 1200 100	12	16	60	100	12	1	•	-
1200 100 1200 200	12	16	60	100	12	2	•	-
1600 125 1600 030	16	22	85	125	16	0.3	•	-
1600 125 1600 050	16	22	85	125	16	0.5	•	-
1600 125 1600 100	16	22	85	125	16	1	•	-
1600 125 1600 200	16	22	85	125	16	2	•	-
1600 125 1600 300	16	22	85	125	16	3	•	-
							813	A1B

SE 45

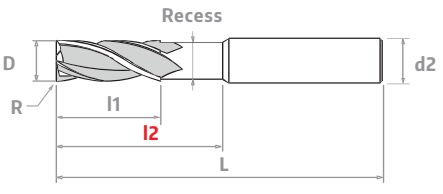
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

229

SE 45R

SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 2 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 2 dents

Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 2 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 2 刃 - 加长

A30*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						908 *	A30 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0819	B0909
0200 100 0600 030	2	4	60	100	6	0.3	•	•
0300 100 0600 030	3	5	60	100	6	0.3	•	•
0300 100 0600 050	3	5	60	100	6	0.5	•	•
0400 100 0600 030	4	8	60	100	6	0.3	•	•
0400 100 0600 050	4	8	60	100	6	0.5	•	•
0500 100 0600 030	5	9	60	100	6	0.3	•	•
0500 100 0600 050	5	9	60	100	6	0.5	•	•
0600 100 0600 030	6	10	60	100	6	0.3	•	•
0600 100 0600 050	6	10	60	100	6	0.5	•	•
0600 100 0600 100	6	10	60	100	6	1	•	•
0800 100 0800 030	8	12	60	100	8	0.3	•	•
0800 100 0800 050	8	12	60	100	8	0.5	•	•
0800 100 0800 100	8	12	60	100	8	1	•	•
1000 125 1000 050	10	14	85	125	10	0.5	•	•
1000 125 1000 100	10	14	85	125	10	1	•	•
1000 125 1000 200	10	14	85	125	10	2	•	•
1200 150 1200 050	12	16	110	150	12	0.5	•	•
1200 150 1200 100	12	16	110	150	12	1	•	•
1200 150 1200 200	12	16	110	150	12	2	•	•
1600 150 1600 050	16	22	110	150	16	0.5	•	•
1600 150 1600 100	16	22	110	150	16	1	•	•
1600 150 1600 200	16	22	110	150	16	2	•	•
1600 150 1600 300	16	22	110	150	16	3	•	•

B32 * A31 *

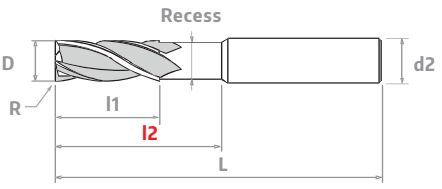
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

228

Spécifications techniques sujettes à changement sans avis prélable

SE 45R

SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 4 dents

Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 4 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 加长

A32*





Z4



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						909 *	A32 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0819	B0909
0200 100 0600 020	2	4	60	100	6	0.2	•	•
0200 100 0600 030	2	4	60	100	6	0.3	•	•
0300 100 0600 020	3	5	60	100	6	0.2	•	•
0300 100 0600 030	3	5	60	100	6	0.3	•	•
0300 100 0600 050	3	5	60	100	6	0.5	•	•
0300 100 0600 100	3	5	60	100	6	1	•	•
0400 100 0600 020	4	8	60	100	6	0.2	•	•
0400 100 0600 030	4	8	60	100	6	0.3	•	•
0400 100 0600 050	4	8	60	100	6	0.5	•	•
0400 100 0600 100	4	8	60	100	6	1	•	•
0500 100 0600 020	5	9	60	100	6	0.2	•	•
0500 100 0600 030	5	9	60	100	6	0.3	•	•
0500 100 0600 050	5	9	60	100	6	0.5	•	•
0500 100 0600 100	5	9	60	100	6	1	•	•
0600 100 0600 020	6	10	60	100	6	0.2	•	•
0600 100 0600 030	6	10	60	100	6	0.3	•	•
0600 100 0600 050	6	10	60	100	6	0.5	•	•
0600 100 0600 100	6	10	60	100	6	1	•	•
0600 125 0600 020	6	10	60	125	6	0.2	•	•
0600 125 0600 030	6	10	60	125	6	0.3	•	•
0600 125 0600 050	6	10	60	125	6	0.5	•	•
0600 125 0600 100	6	10	60	125	6	1	•	•
0800 100 0800 020	8	12	60	100	8	0.2	•	•
0800 100 0800 030	8	12	60	100	8	0.3	•	•
0800 100 0800 050	8	12	60	100	8	0.5	•	•
0800 100 0800 100	8	12	60	100	8	1	•	•
0800 100 0800 200	8	12	60	100	8	2	•	•
0800 125 0800 020	8	12	60	125	8	0.2	•	•

B33* A33*

cont'd ▶

SE 45

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

229

SE 45R

SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 4 dents

Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 4 taglienti

整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 加长

A32*





Z4



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						909 *	A32 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0819	B0909
0800 125 0800 030	8	12	60	125	8	0.3	•	•
0800 125 0800 050	8	12	85	125	8	0.5	•	•
0800 125 0800 100	8	12	85	125	8	1	•	•
0800 125 0800 200	8	12	85	125	8	2	•	•
1000 125 1000 020	10	14	85	125	10	0.2	•	•
1000 125 1000 030	10	14	85	125	10	0.3	•	•
1000 125 1000 050	10	14	85	125	10	0.5	•	•
1000 125 1000 100	10	14	85	125	10	1	•	•
1000 125 1000 200	10	14	85	125	10	2	•	•
1000 150 1000 020	10	14	85	150	10	0.2	•	•
1000 150 1000 030	10	14	85	150	10	0.3	•	•
1000 150 1000 050	10	14	85	150	10	0.5	•	•
1000 150 1000 100	10	14	85	150	10	1	•	•
1000 150 1000 200	10	14	85	150	10	2	•	•
1200 150 1200 020	12	16	110	150	12	0.2	•	•
1200 150 1200 030	12	16	110	150	12	0.3	•	•
1200 150 1200 050	12	16	110	150	12	0.5	•	•
1200 150 1200 100	12	16	110	150	12	1	•	•
1200 150 1200 200	12	16	110	150	12	2	•	•
1600 150 1600 030	16	22	110	150	16	0.3	•	•
1600 150 1600 050	16	22	110	150	16	0.5	•	•
1600 150 1600 100	16	22	110	150	16	1	•	•
1600 150 1600 200	16	22	110	150	16	2	•	•
1600 150 1600 300	16	22	110	150	16	3	•	•

B33* A33*

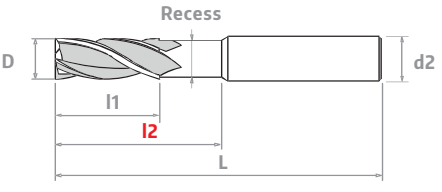
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

229

若有技术规格变更，恕不事先通知

SE 45 MULTIFLUTE ENDMILLS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Mehrzahnfräser SE 45 - 6 bzw. 8 Zähne	Fraises 2 tailles Multidents SE 45 en carbure monobloc, 6 respectivement 8 dents
Frese multi-taglienti SE 45 in metallo duro integrale, 6 respettivamente 8 taglienti	整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 标准长度

B71*







HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B71*	A89*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0300 050 06	3	8	20	50	6	•	•
0400 050 06	4	11	20	50	6	•	•
0500 050 06	5	13	20	50	6	•	•
0600 050	6	15	20	50	6	•	•
0600 060	6	20	30	60	6	•	•
0800	8	20	30	64	8	•	•
1000	10	22	32	70	10	•	•
1200	12	25	37	75	12	•	•
1400	14	30	44	90	14	•	•

8

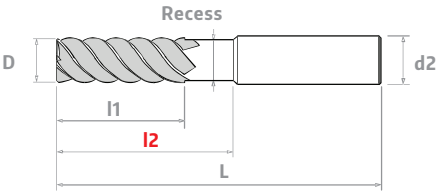
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B71*	A89*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
1600	16	30	46	90	16	•	•
1800	18	35	53	100	18	•	•
2000	20	38	58	100	20	•	•

C14 * A94 *

SE 45

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter: 234

SE 45 MULTIFLUTE ENDMILLS - Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM lange Mehrzahnfräser SE 45 -6 bzw. 8 Zähne

Fraises 2 tailles Multidents SE 45 longues en carbure monobloc, 6 respectivement 8 dents

Frese multi-taglienti SE 45 lunghe in metallo duro integrale, 6 respettivamente 8 taglienti

整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 中长

B73*





Z6



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B73*	A90*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0300 075 06	3	19	30	75	6	•	•
0400 075 06	4	19	32	75	6	•	•
0500 075 06	5	19	32	75	6	•	•
0600	6	31	40	75	6	•	•
0800	8	31	40	75	8	•	•
1000	10	45	60	100	10	•	•
1200	12	50	60	100	12	•	•
1400	14	57	85	125	14	•	•

8

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B73*	A90*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
1600	16	57	85	125	16	•	•
1800	18	57	85	125	18	•	•
2000	20	57	85	125	20	•	•

C15 * A95 *

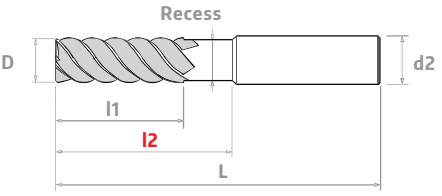
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

234

Technische änderungen ohne vorherige information vorbehalten

SE 45 MULTIFLUTE ENDMILLS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM extra-lange Mehrzahnfräser SE 45 -6 bzw. 8 Zähne

Fraises 2 tailles Multidents SE 45 extra-longues en carbure monobloc, 6 respectivement 8 dents

Frese multi-taglienti SE 45 extra-lunghe in metallo duro integrale, 6 respettivamente 8 taglienti

整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 加长

B78*





Z6



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B78*	A91*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
0300 100 06	3	25	60	100	6	•	•
0400 100 06	4	31	60	100	6	•	•
0500 100 06	5	31	60	100	6	•	•
0600	6	38	60	100	6	•	•
0800	8	41	60	100	8	•	•
1000	10	57	85	125	10	•	•
1200	12	75	110	150	12	•	•
1400	14	75	110	150	14	•	•

8

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					B78*	A91*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0819	B0909
1600	16	75	110	150	16	•	•
1800	18	75	110	150	18	•	•
2000	20	75	110	150	20	•	•

C16 * A96 *

SE 45

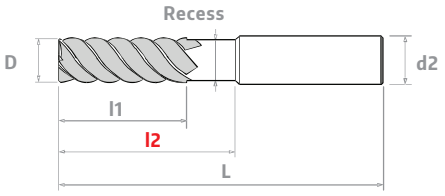
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

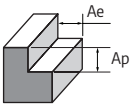


Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○			○	○	●			

Cutting Parameter

235



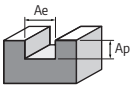
Standard Endmills 2 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.80 × D		0.80 × D		0.80 × D		1.00 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.40 × D		0.40 × D		0.40 × D		0.60 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.005		0.007		0.006		0.007		0.007		0.007		0.007
2		0.012		0.015		0.013		0.015		0.015		0.015		0.015
3		0.020		0.025		0.023		0.025		0.025		0.025		0.025
4		0.029		0.035		0.032		0.035		0.035		0.035		0.035
5		0.037		0.045		0.041		0.045		0.045		0.045		0.046
6		0.047		0.058		0.052		0.057		0.057		0.057		0.058
8		0.063		0.078		0.070		0.078		0.078		0.078		0.078
10	140	0.082	120	0.101	110	0.091	70	0.100	50	0.100	65	0.100	60	0.101
12		0.105		0.130		0.117		0.135		0.135		0.135		0.132
14		0.129		0.159		0.143		0.164		0.164		0.164		0.158
16		0.147		0.181		0.163		0.180		0.180		0.180		0.181
18		0.174		0.214		0.193		0.211		0.211		0.211		0.215
20		0.200		0.247		0.223		0.244		0.244		0.244		0.245
22		0.226		0.279		0.251		0.286		0.286		0.286		0.276
25		0.259		0.320		0.288		0.333		0.333		0.333		0.314

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

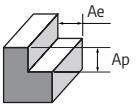
Standard Endmills 2 Flutes



Slotting	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.00 × D		0.30 × D		0.30 × D		0.30 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.006		0.007		0.006		0.007		0.007		0.007		0.007
2		0.014		0.015		0.015		0.015		0.015		0.015		0.015
3		0.023		0.025		0.025		0.025		0.025		0.025		0.025
4		0.032		0.035		0.035		0.034		0.034		0.034		0.035
5		0.040		0.045		0.045		0.046		0.046		0.046		0.045
6		0.053		0.059		0.058		0.060		0.060		0.060		0.059
8		0.071		0.078		0.079		0.078		0.078		0.078		0.079
10	130	0.090	110	0.101	100	0.100	65	0.100	40	0.100	60	0.100	50	0.102
12		0.115		0.131		0.128		0.127		0.127		0.127		0.132
14		0.141		0.158		0.157		0.161		0.161		0.161		0.159
16		0.162		0.182		0.180		0.181		0.181		0.181		0.182
18		0.188		0.218		0.208		0.214		0.214		0.214		0.212
20		0.219		0.239		0.244		0.258		0.258		0.258		0.244
22		0.257		0.275		0.286		0.267		0.267		0.267		0.276
25		0.277		0.314		0.308		0.320		0.320		0.320		0.314

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

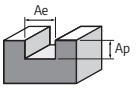


Standard Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.004		0.005		0.004		0.005		0.005		0.005		0.005
2		0.009		0.010		0.009		0.011		0.011		0.011		0.011
3		0.014		0.016		0.014		0.017		0.017		0.017		0.017
4		0.019		0.022		0.019		0.024		0.024		0.024		0.025
5		0.026		0.028		0.026		0.032		0.032		0.032		0.032
6		0.032		0.034		0.032		0.039		0.039		0.039		0.040
8		0.043		0.046		0.043		0.056		0.056		0.056		0.057
10	130	0.061	120	0.059	110	0.061	70	0.075	50	0.075	65	0.075	60	0.075
12		0.078		0.071		0.078		0.092		0.092		0.092		0.090
14		0.091		0.088		0.091		0.116		0.116		0.116		0.112
16		0.102		0.099		0.102		0.133		0.133		0.133		0.133
18		0.124		0.113		0.124		0.158		0.158		0.158		0.161
20		0.144		0.129		0.144		0.181		0.181		0.181		0.182
22		0.177		0.146		0.177		0.211		0.211		0.211		0.204
25		0.211		0.165		0.211		0.258		0.258		0.258		0.244

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Endmills 4 Flutes

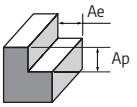


Slotting	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.00 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.005		0.004		0.005		0.005		0.005		0.005
2		0.007		0.010		0.008		0.011		0.011		0.011		0.011
3		0.011		0.015		0.012		0.016		0.016		0.016		0.016
4		0.015		0.020		0.017		0.024		0.024		0.024		0.024
5		0.020		0.026		0.022		0.032		0.032		0.032		0.031
6		0.025		0.032		0.027		0.039		0.039		0.039		0.039
8		0.033		0.044		0.036		0.061		0.061		0.061		0.061
10	120	0.042	110	0.059	100	0.047	65	0.079	40	0.079	60	0.079	50	0.081
12		0.051		0.071		0.056		0.098		0.098		0.098		0.101
14		0.061		0.084		0.067		0.131		0.131		0.131		0.129
16		0.075		0.101		0.084		0.159		0.159		0.159		0.160
18		0.086		0.118		0.096		0.189		0.189		0.189		0.187
20		0.100		0.128		0.111		0.238		0.238		0.238		0.224
22		0.122		0.145		0.136		0.242		0.242		0.242		0.251
25		0.149		0.171		0.165		0.295		0.295		0.295		0.290

P M S H P

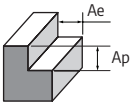
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Short Flute Long Endmills 2 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.00 × D		1.00 × D		1.00 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2		0.008		0.010		0.009		0.013		0.013		0.013		0.012
3		0.013		0.015		0.014		0.019		0.019		0.019		0.019
4		0.017		0.021		0.019		0.027		0.027		0.027		0.026
5		0.022		0.026		0.024		0.035		0.035		0.035		0.034
6	120	0.027	110	0.032	100	0.030	60	0.045	40	0.045	55	0.045	50	0.043
8		0.041		0.043		0.046		0.064		0.064		0.064		0.062
10		0.054		0.055		0.060		0.081		0.081		0.081		0.077
12		0.067		0.069		0.074		0.101		0.101		0.101		0.097
16		0.086		0.093		0.096		0.141		0.141		0.141		0.136

Short Flute Extra-Long Endmills 2 Flutes

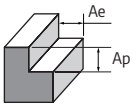


Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.00 × D		1.00 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
		0.007		0.009		0.008		0.011		0.011		0.011		0.011
3		0.011		0.014		0.013		0.017		0.017		0.017		0.017
4		0.015		0.019		0.017		0.025		0.025		0.025		0.024
5		0.019		0.023		0.021		0.032		0.032		0.032		0.031
6	120	0.023	110	0.029	100	0.026	60	0.040	40	0.040	55	0.040	50	0.039
8		0.032		0.039		0.035		0.058		0.058		0.058		0.056
10		0.040		0.049		0.044		0.072		0.072		0.072		0.070
12		0.050		0.062		0.056		0.091		0.091		0.091		0.088
16		0.067		0.083		0.075		0.127		0.127		0.127		0.122

P M S H P

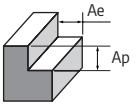
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Short Flute Long Endmills 4 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.012		0.014		0.012		0.015		0.015		0.015		0.015
4		0.016		0.019		0.016		0.021		0.021		0.021		0.021
5		0.022		0.024		0.022		0.027		0.027		0.027		0.027
6		0.027		0.029		0.027		0.033		0.033		0.033		0.034
8		0.036		0.039		0.036		0.048		0.048		0.048		0.048
10	130	0.052	120	0.050	110	0.052	70	0.064	50	0.064	65	0.064	60	0.064
12		0.066		0.060		0.066		0.079		0.079		0.079		0.077
14		0.078		0.075		0.078		0.098		0.098		0.098		0.095
16		0.086		0.084		0.086		0.113		0.113		0.113		0.113
18		0.105		0.096		0.105		0.133		0.133		0.133		0.136
20		0.124		0.111		0.124		0.153		0.153		0.153		0.154

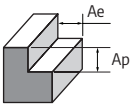
Short Flute Extra-Long Endmills 4 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.011		0.012		0.011		0.014		0.014		0.014		0.014
4		0.015		0.017		0.015		0.019		0.019		0.019		0.019
5		0.02		0.021		0.02		0.025		0.025		0.025		0.025
6		0.024		0.026		0.024		0.031		0.031		0.031		0.031
8		0.033		0.035		0.033		0.043		0.043		0.043		0.043
10	130	0.047	120	0.045	110	0.047	70	0.058	50	0.058	65	0.058	60	0.058
12		0.059		0.054		0.059		0.07		0.07		0.07		0.07
14		0.07		0.067		0.07		0.085		0.085		0.085		0.085
16		0.078		0.076		0.078		0.102		0.102		0.102		0.102
18		0.093		0.086		0.093		0.122		0.122		0.122		0.122
20		0.114		0.099		0.114		0.139		0.139		0.139		0.139

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



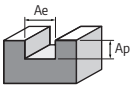
Short Flute Endmills 3 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	130	0.006	120	0.010	110	0.007	70	0.008	50	0.008	65	0.008	60	0.008
2		0.013		0.021		0.015		0.016		0.016		0.016		0.016
3		0.020		0.033		0.022		0.026		0.026		0.026		0.026
4		0.033		0.051		0.036		0.038		0.038		0.038		0.038
5		0.046		0.067		0.051		0.055		0.055		0.055		0.055
6		0.055		0.083		0.061		0.066		0.066		0.066		0.066
7		0.068		0.099		0.075		0.084		0.084		0.084		0.084
8		0.079		0.116		0.088		0.096		0.096		0.096		0.096
9		0.092		0.127		0.103		0.110		0.110		0.110		0.110
10		0.104		0.134		0.116		0.123		0.123		0.123		0.123
11		0.120		0.153		0.133		0.142		0.142		0.142		0.142
12		0.133		0.169		0.148		0.162		0.162		0.162		0.162
14		0.160		0.206		0.178		0.194		0.194		0.194		0.194
16		0.184		0.244		0.205		0.231		0.231		0.231		0.231
18		0.218		0.300		0.242		0.260		0.260		0.260		0.260
20		0.233		0.347		0.258		0.302		0.302		0.302		0.302
22		0.293		0.397		0.325		0.339		0.339		0.339		0.339
25		0.373		0.460		0.414		0.408		0.408		0.408		0.408

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

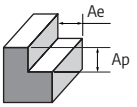
Short Flute Endmills 3 Flutes



Slotting	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		0.20 × D		0.20 × D		0.20 × D		0.20 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	120	0.006	110	0.014	100	0.007	60	0.009	40	0.009	55	0.009	50	0.009
2		0.013		0.029		0.014		0.020		0.020		0.020		0.020
3		0.022		0.044		0.025		0.032		0.032		0.032		0.032
4		0.029		0.066		0.033		0.047		0.047		0.047		0.047
5		0.042		0.087		0.047		0.062		0.062		0.062		0.061
6		0.053		0.109		0.059		0.074		0.074		0.074		0.073
7		0.068		0.127		0.076		0.089		0.089		0.089		0.088
8		0.081		0.150		0.090		0.106		0.106		0.106		0.107
9		0.093		0.164		0.103		0.129		0.129		0.129		0.127
10		0.105		0.193		0.116		0.150		0.150		0.150		0.153
11		0.121		0.213		0.135		0.167		0.167		0.167		0.173
12		0.134		0.226		0.149		0.182		0.182		0.182		0.189
14		0.156		0.272		0.174		0.228		0.228		0.228		0.225
16		0.181		0.314		0.201		0.263		0.263		0.263		0.264
18		0.206		0.342		0.229		0.307		0.307		0.307		0.304
20		0.232		0.414		0.258		0.358		0.358		0.358		0.338
22		0.255		0.455		0.283		0.392		0.392		0.392		0.406
25		0.293		0.522		0.326		0.480		0.480		0.480		0.471

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

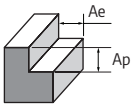


Long Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.004		0.003		0.004		0.004		0.004		0.004
2		0.007		0.008		0.007		0.009		0.009		0.009		0.009
3		0.011		0.013		0.011		0.014		0.014		0.014		0.014
4		0.016		0.018		0.016		0.020		0.020		0.020		0.020
5		0.021		0.022		0.021		0.026		0.026		0.026		0.026
6		0.025		0.027		0.025		0.032		0.032		0.032		0.032
8		0.034		0.037		0.034		0.045		0.045		0.045		0.045
10		0.049		0.047		0.049		0.060		0.060		0.060		0.060
12	130	0.062	120	0.057	110	0.062	70	0.072	50	0.072	65	0.072	60	0.072
14		0.073		0.070		0.073		0.090		0.090		0.090		0.090
16		0.082		0.080		0.082		0.107		0.107		0.107		0.107
18		0.097		0.090		0.097		0.129		0.129		0.129		0.129
20		0.119		0.103		0.119		0.146		0.146		0.146		0.146
22		0.142		0.114		0.142		0.163		0.163		0.163		0.163
25		0.169		0.130		0.169		0.195		0.195		0.195		0.195
20		0.233		0.347		0.258		0.302		0.302		0.302		0.302
22		0.293		0.397		0.325		0.339		0.339		0.339		0.339
25		0.373		0.460		0.414		0.408		0.408		0.408		0.408

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



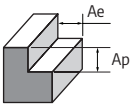
Extra-Long Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.004		0.003		0.004		0.004		0.004		0.004
2		0.006		0.007		0.006		0.008		0.008		0.008		0.008
3		0.010		0.011		0.010		0.012		0.012		0.012		0.012
4		0.014		0.015		0.014		0.017		0.017		0.017		0.017
5		0.018		0.019		0.018		0.023		0.023		0.023		0.023
6		0.022		0.024		0.022		0.028		0.028		0.028		0.028
8		0.030		0.032		0.030		0.040		0.040		0.040		0.040
10		0.043		0.041		0.043		0.053		0.053		0.053		0.053
12		0.055		0.050		0.055		0.063		0.063		0.063		0.063
14	130	0.064	120	0.061	110	0.064	70	0.079	50	0.079	65	0.079	60	0.079
16		0.072		0.070		0.072		0.093		0.093		0.093		0.093
18		0.085		0.078		0.085		0.113		0.113		0.113		0.113
20		0.104		0.090		0.104		0.128		0.128		0.128		0.128
22		0.124		0.100		0.124		0.143		0.143		0.143		0.143
25		0.147		0.113		0.147		0.170		0.170		0.170		0.170
20		0.233		0.347		0.258		0.302		0.302		0.302		0.302
22		0.293		0.397		0.325		0.339		0.339		0.339		0.339
25		0.373		0.460		0.414		0.408		0.408		0.408		0.408

P M S H P

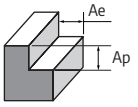
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Multiflute Endmills 6/8 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.015		0.015		0.015		0.019		0.019		0.019		0.019
4		0.021		0.021		0.021		0.027		0.027		0.027		0.027
5		0.028		0.029		0.028		0.035		0.035		0.035		0.035
6		0.035		0.036		0.035		0.044		0.044		0.044		0.045
8		0.049		0.048		0.049		0.061		0.061		0.061		0.062
10	130	0.064	120	0.064	110	0.064	70	0.078	50	0.078	65	0.078	60	0.079
12		0.080		0.077		0.080		0.102		0.102		0.102		0.100
14		0.094		0.093		0.094		0.125		0.125		0.125		0.121
16		0.110		0.109		0.110		0.150		0.150		0.150		0.151
18		0.130		0.133		0.130		0.186		0.186		0.186		0.189
20		0.139		0.164		0.139		0.222		0.222		0.222		0.223

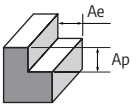
Multiflute Long Endmills 6/8 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.008		0.008		0.008		0.010		0.010		0.010		0.010
4		0.011		0.011		0.011		0.014		0.014		0.014		0.014
5		0.015		0.015		0.015		0.019		0.019		0.019		0.019
6		0.019		0.019		0.019		0.024		0.024		0.024		0.024
8		0.026		0.026		0.026		0.033		0.033		0.033		0.033
10	130	0.034	120	0.034	110	0.034	70	0.042	50	0.042	65	0.042	60	0.042
12		0.043		0.041		0.043		0.053		0.053		0.053		0.053
14		0.050		0.049		0.050		0.065		0.065		0.065		0.065
16		0.044		0.044		0.044		0.060		0.060		0.060		0.060
18		0.051		0.053		0.051		0.076		0.076		0.076		0.076
20		0.057		0.065		0.057		0.089		0.089		0.089		0.089

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



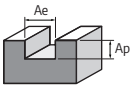
Multiflute Extra-Long Endmills 6/8 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.007		0.007		0.007		0.009		0.009		0.009		0.009
4		0.010		0.010		0.010		0.013		0.013		0.013		0.013
5		0.013		0.013		0.013		0.016		0.016		0.016		0.016
6		0.016		0.017		0.016		0.021		0.021		0.021		0.021
8		0.023		0.023		0.023		0.029		0.029		0.029		0.029
10	130	0.030	120	0.030	110	0.030	70	0.037	50	0.037	65	0.037	60	0.037
12		0.037		0.036		0.037		0.047		0.047		0.047		0.047
14		0.044		0.043		0.044		0.056		0.056		0.056		0.056
16		0.039		0.038		0.039		0.053		0.053		0.053		0.053
18		0.045		0.046		0.045		0.066		0.066		0.066		0.066
20		0.050		0.057		0.050		0.078		0.078		0.078		0.078

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



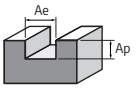
Slotting		P									M			S						H		
Working material		Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties		520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			-			-			45 ≤ HRC < 52		
D (mm)	Effec-tive Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.022	28	0.009	0.020	25	0.008	0.014	24	0.005	0.012	25.200	0.005	0.010	21	0.004	0.013	27.3	0.005	0.011	23.1	0.004
	1	0.015	28	0.009	0.014	25	0.008	0.010	24	0.005	0.008	25.200	0.005	0.007	21	0.004	0.009	27.3	0.005	0.008	23.1	0.004
	1.5	0.009	28	0.008	0.008	25	0.007	0.006	22	0.005	0.005	22.800	0.005	0.004	19	0.004	0.005	24.7	0.005	0.004	20.9	0.004
0.3	1	0.023	42	0.008	0.021	38	0.007	0.015	32	0.005	0.013	33.600	0.006	0.011	28	0.005	0.014	36.4	0.007	0.012	30.8	0.006
	2	0.013	37	0.008	0.012	34	0.007	0.008	29	0.005	0.007	30.000	0.005	0.006	25	0.004	0.008	32.5	0.005	0.007	27.5	0.004
	3	0.009	37	0.008	0.008	34	0.007	0.006	29	0.005	0.005	30.000	0.005	0.004	25	0.004	0.005	32.5	0.005	0.004	27.5	0.004
0.4	2	0.031	44	0.012	0.028	40	0.011	0.020	34	0.008	0.017	36.000	0.008	0.014	30	0.007	0.018	39	0.009	0.015	33	0.008
	3	0.018	40	0.011	0.016	36	0.010	0.011	31	0.008	0.010	32.400	0.008	0.008	27	0.007	0.010	35.1	0.009	0.009	29.7	0.008
	4	0.011	40	0.011	0.010	36	0.010	0.007	31	0.008	0.006	32.400	0.008	0.005	27	0.007	0.007	35.1	0.009	0.006	29.7	0.008
	5	0.011	35	0.010	0.010	32	0.009	0.007	27	0.006	0.006	28.800	0.007	0.005	24	0.006	0.007	31.2	0.008	0.006	26.4	0.007
0.5	2	0.039	55	0.012	0.035	50	0.011	0.025	43	0.010	0.022	45.600	0.008	0.018	38	0.007	0.023	49.4	0.009	0.020	41.8	0.008
	4	0.022	50	0.011	0.020	45	0.010	0.014	38	0.008	0.012	40.800	0.008	0.010	34	0.007	0.013	44.2	0.009	0.011	37.4	0.008
	6	0.014	44	0.010	0.013	40	0.009	0.009	34	0.006	0.008	36.000	0.007	0.007	30	0.006	0.009	39	0.008	0.008	33	0.007
	8	0.009	44	0.009	0.008	40	0.008	0.006	34	0.006	0.005	36.000	0.006	0.004	30	0.005	0.005	39	0.007	0.004	33	0.006
0.6	2	0.046	66	0.018	0.042	60	0.016	0.029	51	0.012	0.025	54.000	0.012	0.021	45	0.010	0.027	58.5	0.013	0.023	49.5	0.011
	4	0.026	59	0.015	0.024	54	0.014	0.017	46	0.012	0.014	49.200	0.012	0.012	41	0.010	0.016	53.3	0.013	0.013	45.1	0.011
	6	0.017	59	0.015	0.015	54	0.014	0.011	46	0.012	0.010	49.200	0.012	0.008	41	0.010	0.010	53.3	0.013	0.009	45.1	0.011
	8	0.017	53	0.014	0.015	48	0.013	0.011	41	0.008	0.010	43.200	0.011	0.008	36	0.009	0.010	46.8	0.012	0.009	39.6	0.010
	10	0.010	53	0.014	0.009	48	0.013	0.006	41	0.008	0.006	43.200	0.011	0.005	36	0.009	0.007	46.8	0.012	0.006	39.6	0.010
0.7	2	0.077	77	0.018	0.070	70	0.016	0.049	60	0.012	0.042	63.600	0.012	0.035	53	0.010	0.046	68.9	0.013	0.039	58.3	0.011
	4	0.054	69	0.015	0.049	63	0.014	0.034	54	0.012	0.030	57.600	0.012	0.025	48		0.033	62.4	0.013	0.028	52.8	0.011
	6	0.020	69	0.015	0.018	63	0.014	0.013	54	0.012	0.011	57.600	0.012	0.009	48	0.010	0.012	62.4	0.013	0.010	52.8	0.011
	8	0.020	62	0.014	0.018	56	0.013	0.013	48	0.008	0.011	50.400	0.011	0.009	42	0.009	0.012	54.6	0.012	0.010	46.2	0.010
	10	0.020	62	0.014	0.018	56	0.013	0.013	48	0.008	0.011	50.400	0.011	0.009	42	0.009	0.012	54.6	0.012	0.010	46.2	0.010
0.8	4	0.062	88	0.018	0.056	80	0.016	0.039	68	0.014	0.034	72.000	0.017	0.028	60	0.014	0.036	78	0.018	0.031	66	0.015
	6	0.035	79	0.015	0.032	72	0.014	0.022	62	0.014	0.019	72.000	0.017	0.016	60	0.014	0.021	78	0.018	0.018	66	0.015
	8	0.022	79	0.015	0.020	72	0.014	0.014	62	0.012	0.012	64.800	0.012	0.010	54	0.010	0.013	70.2	0.013	0.011	59.4	0.011
	10	0.022	70	0.014	0.020	64	0.013	0.014	55	0.008	0.012	57.600	0.011	0.010	48	0.009	0.013	62.4	0.012	0.011	52.8	0.010
	12	0.013	70	0.014	0.012	64	0.013	0.008	55	0.008	0.007	57.600	0.011	0.006	48	0.009	0.008	62.4	0.012	0.007	52.8	0.010
0.9	6	0.040	89	0.019	0.036	81	0.017	0.025	69	0.014	0.022	73.200	0.016	0.018	61	0.013	0.023	79.3	0.017	0.020	67.1	0.014
	8	0.025	89	0.018	0.023	81	0.016	0.016	69	0.013	0.014	73.200	0.014	0.012	61	0.012	0.016	79.3	0.016	0.013	67.1	0.013
	10	0.025	79	0.014	0.023	72	0.013	0.016	62	0.008	0.014	64.800	0.011	0.012	54	0.009	0.016	70.2	0.012	0.013	59.4	0.010
	15	0.025	79	0.014	0.023	72	0.013	0.016	62	0.008	0.014	64.800	0.011	0.012	54	0.009	0.016	70.2	0.012	0.013	59.4	0.010
1.0	6	0.044	89	0.024	0.040	81	0.022	0.028	69	0.020	0.024	78.000	0.022	0.020	65	0.018	0.026	84.5	0.023	0.022	71.5	0.020
	8	0.044	89	0.024	0.040	81	0.022	0.028	69	0.019	0.024	78.000	0.018	0.020	65	0.015	0.026	84.5	0.020	0.022	71.5	0.017
	10	0.028	89	0.024	0.025	81	0.022	0.018	69	0.018	0.016	73.200	0.018	0.013	61	0.015	0.017	79.3	0.020	0.014	67.1	0.017
	12	0.028	79	0.021	0.025	72	0.019	0.018	62	0.013	0.016	64.800	0.016	0.013	54	0.013	0.017	70.2	0.017	0.014	59.4	0.014
	14	0.028	79	0.021	0.025	72	0.019	0.018	62	0.013	0.016	64.800	0.016	0.013	54	0.013	0.017	70.2	0.017	0.014	59.4	0.014
	16	0.017	79	0.018	0.015	72	0.016	0.011	62	0.012	0.010	64.800	0.013	0.008	54	0.011	0.010	70.2	0.014	0.009	59.4	0.012

cont' d ▶

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



Slotting		P									M			S						H		
Working material		Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties		520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			-			-			45 ≤ HRC < 52		
D (mm)	Effec-tive Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.2	6	0.092	107	0.026	0.084	97	0.024	0.059	82	0.020	0.050	86.400	0.018	0.042	72	0.015	0.055	93.6	0.020	0.046	79.2	0.017
	8	0.053	96	0.024	0.048	87	0.022	0.034	74	0.020	0.029	78.000	0.018	0.024	65	0.015	0.031	84.5	0.020	0.026	71.5	0.017
	10	0.033	96	0.024	0.030	87	0.022	0.021	74	0.019	0.018	78.000	0.018	0.015	65	0.015	0.020	84.5	0.020	0.017	71.5	0.017
	12	0.033	96	0.024	0.030	87	0.022	0.021	74	0.018	0.018	78.000	0.018	0.015	65	0.015	0.020	84.5	0.020	0.017	71.5	0.017
1.4	6	0.110	107	0.026	0.100	97	0.024	0.070	84	0.018	0.060	88.800	0.018	0.050	74	0.015	0.065	96.2	0.020	0.055	81.4	0.017
	8	0.087	103	0.025	0.079	94	0.023	0.055	81	0.018	0.048	85.200	0.018	0.040	71	0.015	0.052	92.3	0.020	0.044	78.1	0.017
	10	0.063	100	0.024	0.057	91	0.022	0.040	78	0.017	0.035	82.800	0.018	0.029	69	0.015	0.038	89.7	0.020	0.032	75.9	0.017
	12	0.039	98	0.024	0.035	89	0.022	0.025	75	0.018	0.022	79.200	0.018	0.018	66	0.015	0.023	85.8	0.020	0.020	72.6	0.017
	14	0.039	87	0.021	0.035	79	0.019	0.025	67	0.013	0.022	79.200	0.018	0.018	66	0.015	0.023	85.8	0.020	0.020	72.6	0.017
	16	0.039	87	0.021	0.035	79	0.019	0.025	67	0.013	0.022	70.800	0.016	0.018	59	0.013	0.023	76.7	0.017	0.020	64.9	0.014
1.5	6	0.121	117	0.029	0.110	106	0.026	0.077	90	0.021	0.066	94.800	0.022	0.055	79	0.018	0.072	102.7	0.023	0.061	86.9	0.020
	8	0.088	105	0.026	0.080	95	0.024	0.056	81	0.021	0.048	85.200	0.022	0.040	71	0.018	0.052	92.3	0.023	0.044	78.1	0.020
	10	0.066	105	0.024	0.060	95	0.022	0.042	81	0.021	0.036	85.200	0.022	0.030	71	0.018	0.039	92.3	0.023	0.033	78.1	0.020
	12	0.066	105	0.024	0.060	95	0.022	0.042	81	0.021	0.036	85.200	0.018	0.030	71	0.015	0.039	92.3	0.020	0.033	78.1	0.017
	14	0.042	105	0.024	0.038	95	0.022	0.027	81	0.021	0.023	85.200	0.018	0.019	71	0.015	0.025	92.3	0.020	0.021	78.1	0.017
	16	0.042	92	0.021	0.038	84	0.019	0.027	72	0.013	0.023	75.600	0.016	0.019	63	0.013	0.025	81.9	0.017	0.021	69.3	0.014
	18	0.042	92	0.021	0.038	84	0.019	0.027	72	0.013	0.023	75.600	0.016	0.019	63	0.013	0.025	81.9	0.017	0.021	69.3	0.014
	20	0.042	92	0.021	0.038	84	0.019	0.027	72	0.013	0.023	75.600	0.016	0.019	63	0.013	0.025	81.9	0.017	0.021	69.3	0.014
1.6	6	0.121	116	0.032	0.110	105	0.029	0.077	89	0.021	0.066	93.600	0.022	0.055	78	0.018	0.072	101.4	0.023	0.061	85.8	0.020
	8	0.121	116	0.032	0.110	105	0.029	0.077	89	0.019	0.066	93.600	0.022	0.055	78	0.018	0.072	101.4	0.023	0.061	85.8	0.020
	10	0.088	99	0.035	0.080	90	0.032	0.056	89	0.019	0.048	75.600	0.026	0.040	63	0.022	0.052	81.9	0.029	0.044	69.3	0.024
	12	0.066	99	0.035	0.060	90	0.032	0.042	72	0.026	0.036	75.600	0.026	0.030	63	0.022	0.039	81.9	0.029	0.033	69.3	0.024
	14	0.066	92	0.032	0.060	84	0.029	0.042	72	0.026	0.036	68.400	0.026	0.030	57	0.022	0.039	74.1	0.029	0.033	62.7	0.024
	16	0.042	92	0.032	0.038	84	0.029	0.027	65	0.026	0.023	68.400	0.026	0.019	57	0.022	0.025	74.1	0.029	0.021	62.7	0.024
	18	0.042	84	0.033	0.038	76	0.030	0.027	65	0.026	0.023	61.200	0.020	0.019	51	0.017	0.025	66.3	0.022	0.021	56.1	0.019
	20	0.042	84	0.033	0.038	76	0.030	0.027	65	0.026	0.023	61.200	0.020	0.019	51	0.017	0.025	66.3	0.022	0.021	56.1	0.019
1.8	6	0.143	130	0.032	0.130	118	0.029	0.091	100	0.021	0.078	105.600	0.022	0.065	88	0.018	0.085	114.4	0.023	0.072	96.8	0.020
	8	0.143	130	0.032	0.130	118	0.029	0.091	100	0.019	0.078	105.600	0.022	0.065	88	0.018	0.085	114.4	0.023	0.072	96.8	0.020
	10	0.121	111	0.035	0.110	101	0.032	0.077	100	0.019	0.066	85.200	0.026	0.055	71	0.022	0.072	92.3	0.029	0.061	78.1	0.024
	12	0.121	111	0.035	0.110	101	0.032	0.077	81	0.026	0.066	85.200	0.026	0.055	71	0.022	0.072	92.3	0.029	0.061	78.1	0.024
	14	0.088	105	0.032	0.080	95	0.029	0.056	81	0.026	0.048	76.800	0.026	0.040	64	0.022	0.052	83.2	0.029	0.044	70.4	0.024
	16	0.088	105	0.032	0.080	95	0.029	0.056	73	0.026	0.048	76.800	0.026	0.040	64	0.022	0.052	83.2	0.029	0.044	70.4	0.024
	18	0.066	94	0.033	0.060	85	0.030	0.042	73	0.026	0.036	68.400	0.020	0.030	57	0.017	0.039	74.1	0.022	0.033	62.7	0.019
	20	0.042	94	0.033	0.038	85	0.030	0.027	73	0.026	0.023	68.400	0.020	0.019	57	0.017	0.025	74.1	0.022	0.021	62.7	0.019
2.0	6	0.220	117	0.039	0.200	106	0.035	0.140	90	0.026	0.120	94.800	0.026	0.100	79	0.022	0.130	102.7	0.029	0.110	86.9	0.024
	8	0.154	117	0.039	0.140	106	0.035	0.098	90	0.026	0.084	94.800	0.026	0.070	79	0.022	0.091	102.7	0.029	0.077	86.9	0.024
	10	0.154	117	0.039	0.140	106	0.035	0.098	90	0.026	0.084	94.800	0.026	0.070	79	0.022	0.091	102.7	0.029	0.077	86.9	0.024
	12	0.110	105	0.035	0.100	95	0.032	0.070	81	0.026	0.060	85.200	0.026	0.050	71	0.022	0.065	92.3	0.029	0.055	78.1	0.024
	14	0.088	105	0.035	0.080	95	0.032	0.056	81	0.026	0.048	85.200	0.026	0.040	71	0.022	0.052	92.3	0.029	0.044	78.1	0.024
	16	0.088	105	0.033	0.080	95	0.030	0.056	81	0.023	0.048	85.200	0.024	0.040	71	0.020	0.052	92.3	0.026	0.044	78.1	0.022
	18	0.055	105	0.033	0.050	95	0.030	0.035	81	0.023	0.030	85.200	0.024	0.025	71	0.020	0.033	92.3	0.026	0.028	78.1	0.022
	20	0.055	105	0.032	0.050	95	0.029	0.035	81	0.023	0.030	85.200	0.024	0.025	71	0.020	0.033	92.3	0.026	0.028	78.1	0.022
	25	0.055	92	0.028	0.050	84	0.025	0.035	72	0.017	0.030	75.600	0.020	0.025	63	0.017	0.033	81.9	0.022	0.028	69.3	0.019
	30	0.033	92	0.028	0.030	84	0.025	0.021	72	0.017	0.018	75.600	0.020	0.015	63	0.017	0.020	81.9	0.022	0.017	69.3	0.019

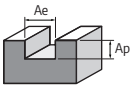
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P M S H P

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes

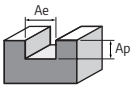


Slotting		P									M			S						H		
Working material		Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties		520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			-			-			45 ≤ HRC < 52		
D (mm)	Effec-tive Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
2.5	8	0.198	124	0.047	0.180	113	0.043	0.126	96	0.032	0.108	99.600	0.036	0.090	83	0.030	0.117	107.9	0.039	0.099	91.3	0.033
	10	0.198	124	0.047	0.180	113	0.043	0.126	96	0.031	0.108	99.600	0.032	0.090	83	0.027	0.117	107.9	0.035	0.099	91.3	0.030
	12	0.198	124	0.047	0.180	113	0.043	0.126	96	0.030	0.108	99.600	0.034	0.090	83	0.028	0.117	107.9	0.036	0.099	91.3	0.031
	14	0.154	119	0.046	0.140	108	0.042	0.098	91	0.029	0.084	94.800	0.034	0.070	79	0.028	0.091	102.7	0.036	0.077	86.9	0.031
	16	0.110	112	0.045	0.100	102	0.041	0.070	86	0.029	0.060	90.000	0.034	0.050	75	0.028	0.065	97.5	0.036	0.055	82.5	0.031
	18	0.110	112	0.042	0.100	102	0.038	0.070	86	0.029	0.060	90.000	0.034	0.050	75	0.028	0.065	97.5	0.036	0.055	82.5	0.031
	20	0.110	112	0.040	0.100	102	0.036	0.070	86	0.029	0.060	90.000	0.034	0.050	75	0.028	0.065	97.5	0.036	0.055	82.5	0.031
	25	0.088	106	0.037	0.080	96	0.034	0.056	82	0.026	0.048	85.200	0.029	0.040	71	0.024	0.052	92.3	0.031	0.044	78.1	0.026
	30	0.066	99	0.035	0.060	90	0.032	0.042	77	0.022	0.036	81.600	0.024	0.030	68	0.020	0.039	88.4	0.026	0.033	74.8	0.022
3.0	8	0.330	133	0.047	0.300	121	0.043	0.210	103	0.032	0.180	120.000	0.032	0.150	100	0.027	0.195	130	0.035	0.165	110	0.030
	10	0.281	133	0.047	0.255	121	0.043	0.179	103	0.032	0.154	120.000	0.032	0.128	100	0.027	0.166	130	0.035	0.141	110	0.030
	12	0.231	133	0.047	0.210	121	0.043	0.147	103	0.032	0.126	120.000	0.032	0.105	100	0.027	0.137	130	0.035	0.116	110	0.030
	14	0.198	127	0.047	0.180	115	0.043	0.126	97	0.033	0.108	112.800	0.032	0.090	94	0.027	0.117	122.2	0.035	0.099	103.4	0.030
	16	0.165	119	0.047	0.150	108	0.043	0.105	92	0.032	0.090	108.000	0.032	0.075	90	0.027	0.098	117	0.035	0.083	99	0.030
	18	0.149	119	0.045	0.135	108	0.041	0.095	92	0.032	0.082	108.000	0.032	0.068	90	0.027	0.088	117	0.035	0.075	99	0.030
	20	0.132	119	0.044	0.120	108	0.040	0.084	92	0.032	0.072	108.000	0.032	0.060	90	0.027	0.078	117	0.035	0.066	99	0.030
	25	0.088	119	0.044	0.080	108	0.040	0.056	92	0.032	0.048	108.000	0.032	0.040	90	0.027	0.052	117	0.035	0.044	99	0.030
4.0	10	0.440	130	0.110	0.400	118	0.100	0.280	101	0.085	0.240	106.800	0.076	0.200	89	0.063	0.260	115.7	0.082	0.220	97.9	0.069
	15	0.308	130	0.110	0.280	118	0.100	0.196	101	0.085	0.168	106.800	0.076	0.140	89	0.063	0.182	115.7	0.082	0.154	97.9	0.069
	20	0.308	118	0.109	0.280	107	0.099	0.196	90	0.085	0.168	94.800	0.077	0.140	79	0.064	0.182	102.7	0.083	0.154	86.9	0.070
	25	0.176	118	0.098	0.160	107	0.089	0.112	90	0.076	0.096	94.800	0.077	0.080	79	0.064	0.104	102.7	0.083	0.088	86.9	0.070
	30	0.176	118	0.098	0.160	107	0.089	0.112	90	0.076	0.096	94.800	0.077	0.080	79	0.064	0.104	102.7	0.083	0.088	86.9	0.070
	40	0.110	106	0.099	0.100	96	0.090	0.070	82	0.076	0.060	86.400	0.077	0.050	72	0.064	0.065	93.6	0.083	0.055	79.2	0.070

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Torus Endmills with Taper Neck 2 Flutes

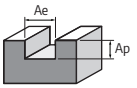


Slotting		P									M			S						H		
Working material		Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties		520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			–			-			45 ≤ HRC < 52		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1	20	0.066	75.9	0.052	0.060	69	0.047	0.060	63	0.041	0.050	61.2	0.049	0.042	51	0.041	0.055	66.3	0.053	0.046	56.1	0.045
	40	0.066	75.9	0.026	0.060	69	0.024	0.060	63	0.021	0.050	61.2	0.024	0.042	51	0.020	0.055	66.3	0.026	0.046	56.1	0.022
1.5	20	0.066	75.9	0.087	0.060	69	0.079	0.060	64	0.066	0.050	60	0.079	0.042	50	0.066	0.055	65	0.086	0.046	55	0.073
	40	0.066	75.9	0.043	0.060	69	0.039	0.060	64	0.033	0.050	60	0.040	0.042	50	0.033	0.055	65	0.043	0.046	55	0.036
2	20	0.165	75.9	0.110	0.150	69	0.100	0.150	63	0.080	0.126	60	0.096	0.105	50	0.080	0.137	65	0.104	0.116	55	0.088
	40	0.165	75.9	0.055	0.150	69	0.050	0.150	63	0.040	0.126	60	0.048	0.105	50	0.040	0.137	65	0.052	0.116	55	0.044
3	20	0.165	77	0.187	0.150	70	0.170	0.150	65	0.140	0.126	60	0.168	0.105	50	0.140	0.137	65	0.182	0.116	55	0.154
	40	0.165	77	0.094	0.150	70	0.085	0.150	65	0.070	0.126	60	0.084	0.105	50	0.070	0.137	65	0.091	0.116	55	0.077
	45	0.165	77	0.084	0.150	70	0.076	0.150	65	0.062	0.126	60	0.074	0.105	50	0.062	0.137	65	0.081	0.116	55	0.068
4	20	0.330	77	0.264	0.300	70	0.240	0.300	65	0.190	0.252	60	0.228	0.210	50	0.190	0.273	65	0.247	0.231	55	0.209
	40	0.330	77	0.132	0.300	70	0.120	0.300	65	0.095	0.252	60	0.114	0.210	50	0.095	0.273	65	0.124	0.231	55	0.105
	60	0.165	77	0.088	0.150	70	0.080	0.150	65	0.063	0.126	60	0.077	0.105	50	0.064	0.137	65	0.083	0.116	55	0.070
6	20	0.594	77	0.418	0.540	70	0.380	0.540	64	0.300	0.454	61.2	0.360	0.378	51	0.300	0.491	66.3	0.390	0.416	56.1	0.330
	40	0.297	77	0.210	0.270	70	0.191	0.270	64	0.150	0.227	61.2	0.180	0.189	51	0.150	0.246	66.3	0.195	0.208	56.1	0.165
	60	0.594	77	0.140	0.540	70	0.127	0.540	64	0.100	0.454	61.2	0.120	0.378	51	0.100	0.491	66.3	0.130	0.416	56.1	0.110
	80	0.297	77	0.105	0.270	70	0.095	0.270	64	0.075	0.227	61.2	0.091	0.189	51	0.076	0.246	66.3	0.099	0.208	56.1	0.084
8	25	0.506	77	0.562	0.460	70	0.511	0.460	65	0.400	0.386	60	0.480	0.322	50	0.400	0.419	65	0.520	0.354	55	0.440
	60	0.506	77	0.234	0.460	70	0.213	0.460	65	0.167	0.386	60	0.202	0.322	50	0.168	0.419	65	0.218	0.354	55	0.185
	75	0.253	77	0.187	0.230	70	0.170	0.230	65	0.133	0.193	60	0.160	0.161	50	0.133	0.209	65	0.173	0.177	55	0.146
	105	0.253	77	0.133	0.230	70	0.121	0.230	65	0.096	0.193	60	0.114	0.161	50	0.095	0.209	65	0.124	0.177	55	0.105
10	30	0.495	75.9	0.705	0.450	69	0.641	0.450	66	0.500	0.378	60	0.600	0.315	50	0.500	0.410	65	0.650	0.347	55	0.550
	70	0.495	75.9	0.303	0.450	69	0.275	0.450	66	0.214	0.378	60	0.240	0.315	50	0.200	0.410	65	0.260	0.347	55	0.220
	75	0.495	75.9	0.283	0.450	69	0.257	0.450	66	0.200	0.378	60	0.259	0.315	50	0.216	0.410	65	0.281	0.347	55	0.238
12	35	0.431	79.2	0.802	0.392	72	0.729	0.392	64	0.571	0.329	58.8	0.683	0.274	49	0.569	0.356	63.7	0.740	0.301	53.9	0.626
	70	0.431	79.2	0.403	0.392	72	0.366	0.392	64	0.285	0.329	58.8	0.342	0.274	49	0.285	0.356	63.7	0.371	0.301	53.9	0.314
	100	0.431	79.2	0.281	0.392	72	0.255	0.392	64	0.200	0.329	58.8	0.240	0.274	49	0.200	0.356	63.7	0.260	0.301	53.9	0.220

P M S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills 2 Flutes



Slotting	P									M			S						H		
Working material	Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties	520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			-			-			45 ≤ HRC < 52		
D (mm)	Ap (mm)	Vc(m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.1	0.030	13	0.004	0.030	13	0.004	0.020	12	0.003	0.012	9.600	0.002	0.010	8	0.002	0.013	10.4	0.003	0.011	8.8	0.002
0.2	0.060	25	0.005	0.060	25	0.005	0.040	19	0.004	0.024	15.600	0.004	0.020	13	0.003	0.026	16.9	0.004	0.022	14.3	0.003
0.3	0.090	34	0.006	0.090	34	0.006	0.060	25	0.005	0.036	19.200	0.004	0.030	16	0.003	0.039	20.8	0.004	0.033	17.6	0.003
0.4	0.120	41	0.006	0.120	41	0.006	0.080	30	0.006	0.048	22.800	0.005	0.040	19	0.004	0.052	24.7	0.005	0.044	20.9	0.004
0.5	0.150	48	0.007	0.150	48	0.007	0.100	35	0.006	0.060	26.400	0.005	0.050	22	0.004	0.065	28.6	0.005	0.055	24.2	0.004
0.6	0.180	55	0.008	0.180	55	0.008	0.120	40	0.007	0.072	28.800	0.006	0.060	24	0.005	0.078	31.2	0.007	0.066	26.4	0.006
0.7	0.210	61	0.008	0.210	61	0.008	0.140	44	0.007	0.084	31.200	0.006	0.070	26	0.005	0.091	33.8	0.007	0.077	28.6	0.006
0.8	0.240	67	0.009	0.240	67	0.009	0.160	48	0.008	0.096	34.800	0.007	0.080	29	0.006	0.104	37.7	0.008	0.088	31.9	0.007
0.9	0.270	73	0.009	0.270	73	0.009	0.180	52	0.008	0.108	37.200	0.007	0.090	31	0.006	0.117	40.3	0.008	0.099	34.1	0.007
1.0	0.300	79	0.010	0.300	79	0.010	0.200	56	0.009	0.120	39.600	0.008	0.100	33	0.007	0.130	42.9	0.009	0.110	36.3	0.008
1.1	0.330	85	0.010	0.330	85	0.010	0.220	60	0.009	0.132	42.000	0.010	0.110	35	0.008	0.143	45.5	0.010	0.121	38.5	0.009
1.2	0.360	90	0.010	0.360	90	0.010	0.240	63	0.010	0.144	43.200	0.010	0.120	36	0.008	0.156	46.8	0.010	0.132	39.6	0.009
1.3	0.390	95	0.011	0.390	95	0.011	0.260	67	0.010	0.156	45.600	0.011	0.130	38	0.009	0.169	49.4	0.012	0.143	41.8	0.010
1.4	0.420	100	0.011	0.420	100	0.011	0.280	70	0.011	0.168	48.000	0.011	0.140	40	0.009	0.182	52	0.012	0.154	44	0.010
1.5	0.450	106	0.012	0.450	106	0.012	0.300	74	0.011	0.180	49.200	0.012	0.150	41	0.010	0.195	53.3	0.013	0.165	45.1	0.011
1.6	0.480	111	0.013	0.480	111	0.013	0.320	77	0.012	0.192	51.600	0.012	0.160	43	0.010	0.208	55.9	0.013	0.176	47.3	0.011
1.7	0.510	115	0.013	0.510	115	0.013	0.340	80	0.012	0.204	54.000	0.013	0.170	45	0.011	0.221	58.5	0.014	0.187	49.5	0.012
1.8	0.540	120	0.013	0.540	120	0.013	0.360	84	0.013	0.216	55.200	0.013	0.180	46	0.011	0.234	59.8	0.014	0.198	50.6	0.012
1.9	0.570	125	0.014	0.570	125	0.014	0.380	87	0.013	0.228	57.600	0.014	0.190	48	0.012	0.247	62.4	0.016	0.209	52.8	0.013
2.0	0.600	129	0.014	0.600	129	0.014	0.400	90	0.014	0.240	58.800	0.014	0.200	49	0.012	0.260	63.7	0.016	0.220	53.9	0.013

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

NiTiCo 45

• No Vibration And Noise

For material application between
36 HRC to 52 HRC



NiTiCo 45

01

PERFECT EDGE GRINDING

- Improves surface finishing
- Enables higher cutting speeds
- High CNC repeatability within 0.010mm



02

DIFFERENTIAL PITCH (DP) DESIGN

Reduce Vibrations

Maximizes productivity and tool life



03

PVD COATING + COATING SELECTION

- Superior wear and chipping resistance due optimally matched coating and carbide material
- Prolong the tool life
- Enables higher cutting speeds



04

SUITABLE FOR MATERIAL GROUPS

P M S

DEUTSCH

01 **PERFEKTER KANTENSCHLIFF**
- Verbessert die Oberflächengüte
- Ermöglicht höhere Schnittgeschwindigkeiten
- Hohe CNC-Wiederholgenauigkeit innerhalb 0.01mm

02 **UNGLEICHE TEILUNG (DP)**
Reduziert Vibrationen
- Maximiert die Produktivität und die Werkzeuglebensdauer

03 **PVD-BESCHICHTUNG + HARTMETALLSORTE**
- Ausgezeichnete Beständigkeit gegen Verschleiß und Abplatzungen durch optimale Abstimmung von Material und Beschichtung
- Verlängert die Lebensdauer des Werkzeugs
- Ermöglicht höhere Schnittgeschwindigkeiten

04 **GEEIGNET FÜR DIE MATERIALGRUPPEN P, M, S**

FRANÇAIS

01 **MEULAGE PARFAIT DES ARÊTES**
Améliore la finition de surface permet des vitesses de coupe supérieures haute répétabilité de l'usinage sur cnc de 0,010 mm

02 **CONCEPTION À PAS DIFFÉRENTIEL (DP)**
Réduit les vibrations
- Optimise la productivité et la durée de vie de l'outil

03 **REVÊTEMENT SOUS FORME DE DÉPÔT EN PHASE VAPEUR + SÉLECTION DE CARBURE**
- Haute resistance à l'usure et à l'ecaillage, grâce au revêtement en totale adequation avec le carbure
- Prolonge la durée de vie de l'outil
- Permet des vitesses de coupe supérieures

04 **ADATTO PER IL MATERIALE P, M, S**

ITALIANO

01 **PERFETTA LEVIGATURA DEGLI SPIGOLI**
- Migliora la finitura superficiale
- Consente maggiori velocità di taglio
- Elevata ripetibilità cnc entro 0,010 mm

02 **STRUTTURA DEL PASSO DIFFERENZIALE (DP)**
Riduce le vibrazioni
- Ottimizza la produttività e la durata dello strumento

03 **RIVESTIMENTO PVD+SELEZIONE CARBURO**
- Resistenza ad usura e scheggiatura superiore grazie a rivestimento abbinato in modo ottimale e materiale in carburi
- Prolunga la vita dello strumento
- Consente maggiori velocità di taglio

04 **ADATTO PER IL MATERIALE P, M, S**

中文

01 **发线边的刀刃**
- 优良的工件表面光洁度
- 高速的切削速度
- 重复加工公差可到达0.010mm

02 **不等分割的设计**
- 减少刀具的振动

03 **独特的PVD涂层与钨钢棒材的选择**
- 优异的耐磨性和耐崩刀性
- 延长刀具寿命，并提高切削速度

04 **适合加工预硬钢、超合金的材料 P M S**

NiTiCo 45

DP STANDARD ENDMILLS

≤ 1.300 N/mm² + B0909 / G6110 ≤ 36 - 52 HRC

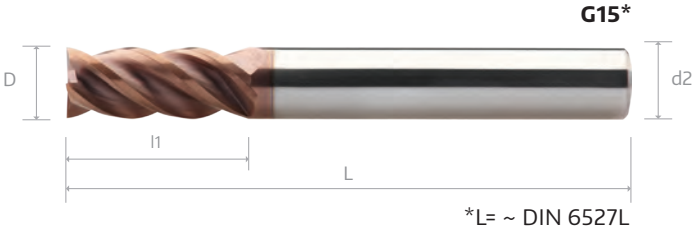
HPMT

VHM NiTiCo 45 DP Standard Fräser mitungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 45 DP Standard à pas décalés, 4 dents, en carbure monobloc

Frese NiTiCo 45 DP Standard in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 45 DP 系列 立铣刀 4 刃 - 标准长度



*L= ~ DIN 6527L







EDP No. / EDV-Nr. / CODE usine / Codice EDP		Dimension (mm)				G14 * HA	G15 * HA	G20 * HB	G21 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110	B0909	G6110	B0909
0300	3	9	15	57	6	•	•	•	•
* 0400	4	12	20	57	6	•	•	•	•
* 0500	5	13	20	57	6	•	•	•	•
* 0600	6	13	20	57	6	•	•	•	•
* 0800	8	20	30	64	8	•	•	•	•
* 1000	10	22	32	72	10	•	•	•	•
1200	12	26	37	83	12	•	•	•	•
* 1400	14	32	44	83	14	•	•	•	•
* 1600	16	32	46	92	16	•	•	•	•
* 1800	18	38	53	92	18	•	•	•	•
* 2000	20	38	58	104	20	•	•	•	•

G17 * G18 * G23 * G24 *

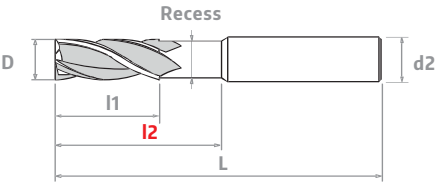
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○		●		●	●				

Cutting Parameter

248

Technical specifications subject to change without prior notice

NiTiCo 45

DP TORUS ENDMILLS

≤ 1.300 N/mm² + B0909 / G6110 ≤ 36 - 52 HRC

HPMT

VHM NiTiCo 45 DP Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 45 DP toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 45 DP toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiOVIANO 45 DP 系列 圆鼻立铣刀 4 刃

G32*



*L= ~ DIN 6527L



Z4



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G26 * HA	G27 * HA	G32 * HB	G33 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	G6110	B0909	G6110	B0909
0300 050 0600 030	3	9	15	50	6	0.3	•	•	•	•
0300 050 0600 050	3	9	15	50	6	0.5	•	•	•	•
* 0400 057 0600 030	4	12	20	57	6	0.3	•	•	•	•
* 0400 057 0600 050	4	12	20	57	6	0.5	•	•	•	•
* 0500 057 0600 100	4	12	20	57	6	1	•	•	•	•
* 0500 057 0600 030	5	15	20	57	6	0.3	•	•	•	•
* 0500 057 0600 050	5	15	20	57	6	0.5	•	•	•	•
* 0600 057 0600 030	6	16	20	57	6	0.3	•	•	•	•
* 0600 057 0600 050	6	16	20	57	6	0.5	•	•	•	•
* 0600 057 0600 100	6	16	20	57	6	1	•	•	•	•
* 0800 064 0800 030	8	20	30	64	8	0.3	•	•	•	•
* 0800 064 0800 050	8	20	30	64	8	0.5	•	•	•	•
* 0800 064 0800 100	8	20	30	64	8	1	•	•	•	•
* 0800 064 0800 150	8	20	30	64	8	1.5	•	•	•	•
* 0800 064 0800 200	8	20	30	64	8	2	•	•	•	•
* 1000 072 1000 030	10	22	32	72	10	0.3	•	•	•	•
* 1000 072 1000 050	10	22	32	72	10	0.5	•	•	•	•
* 1000 072 1000 100	10	22	32	72	10	1	•	•	•	•
1000 072 1000 150	10	22	32	72	10	1.5	•	•	•	•
1000 072 1000 200	10	22	32	72	10	2	•	•	•	•
* 1200 083 1200 030	12	26	37	83	12	0.3	•	•	•	•
* 1200 083 1200 050	12	26	37	83	12	0.5	•	•	•	•
* 1200 083 1200 100	12	26	37	83	12	1	•	•	•	•
* 1200 083 1200 200	12	26	37	83	12	2	•	•	•	•
1200 083 1200 250	12	26	37	83	12	2.5	•	•	•	•

G29 * G30 * G35 * G36 *

cont'd ▶

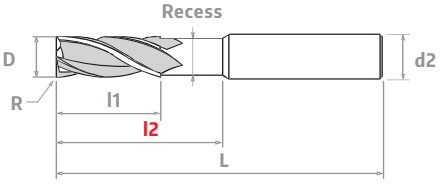
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○		●		●	●				

Cutting Parameter

248

Technische änderungen ohne vorherige information vorbehalten

NiTiCo 45

DP TORUS ENDMILLS

≤ 1.300 N/mm² + B0909 / G6110 ≤ 36 - 52 HRC

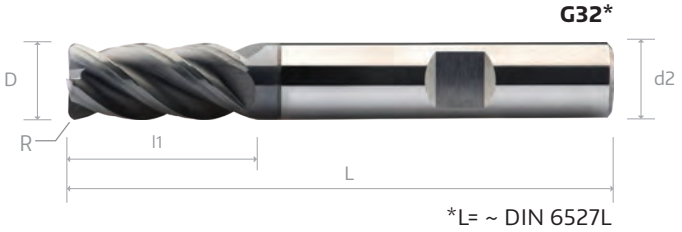
HPMT

VHM NiTiCo 45 DP Torusfräser mit ungleicher Teilung, 4 Zähne

Fraises 2 tailles NiTiCo 45 DP toriques à pas décalés en carbure monobloc, 4 dents

Frese NiTiCo 45 DP toriche, in metallo duro integrale, passo differenziale, 4 taglienti

整体硬质合金 NiOVIANO 45 DP 系列 圆鼻立铣刀 4 刃



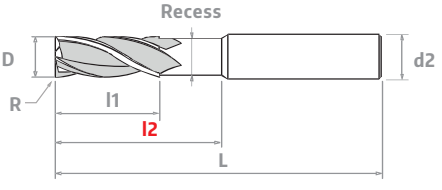
*L= ~ DIN 6527L





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G26 * HA	G27 * HA	G32 * HB	G33 * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	R	G6110	B0909	G6110	B0909
* 1200 083 1200 300	12	26	37	83	12	3	•	•	•	•
* 1400 083 1400 030	14	32	44	83	14	0.3	•	•	•	•
* 1400 083 1400 050	14	32	44	83	14	0.5	•	•	•	•
* 1400 083 1400 100	14	32	44	83	14	1	•	•	•	•
* 1400 083 1400 200	14	32	44	83	14	2	•	•	•	•
* 1400 083 1400 300	14	32	44	83	14	3	•	•	•	•
* 1600 092 1600 030	16	32	46	92	16	0.3	•	•	•	•
* 1600 092 1600 050	16	32	46	92	16	0.5	•	•	•	•
* 1600 092 1600 100	16	32	46	92	16	1	•	•	•	•
* 1600 092 1600 200	16	32	46	92	16	2	•	•	•	•
1600 092 1600 250	16	32	46	92	16	2.5	•	•	•	•
* 1600 092 1600 300	16	32	46	92	16	3	•	•	•	•
1600 092 1600 400	16	32	46	92	16	4	•	•	•	•
* 1800 092 1800 030	18	38	53	92	18	0.3	•	•	•	•
* 1800 092 1800 050	18	38	53	92	18	0.5	•	•	•	•
* 1800 092 1800 100	18	38	53	92	18	1	•	•	•	•
* 1800 092 1800 200	18	38	53	92	18	2	•	•	•	•
* 1800 092 1800 300	18	38	53	92	18	3	•	•	•	•
* 2000 104 2000 030	20	38	58	104	20	0.3	•	•	•	•
* 2000 104 2000 050	20	38	58	104	20	0.5	•	•	•	•
* 2000 104 2000 100	20	38	58	104	20	1	•	•	•	•
* 2000 104 2000 200	20	38	58	104	20	2	•	•	•	•
* 2000 104 2000 250	20	38	58	104	20	2.5	•	•	•	•
* 2000 104 2000 300	20	38	58	104	20	3	•	•	•	•
* 2000 104 2000 400	20	38	58	104	20	4	•	•	•	•

G29 *	G30 *	G35 *	G36 *



Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Utensilli con riduzione gambo su richiest a

Outils a vec dégagemen t sur demande

密齿立铣刀带颈位特别要求

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○		●		●	●				

Cutting Parameter: 248

Spécifications techniques sujettes à changement sans avis prélable

NiTiCo 45

DP ROUGHING ENDMILLS

≤ 1.300 N/mm² + B0909 / G6110 ≤ 36 - 52 HRC

HPMT

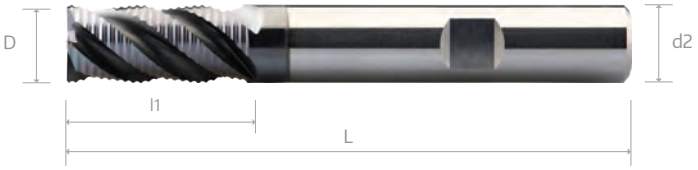
VHM DP Schruppfräser NiTiCo 45 mit ungleicher Teilung, 4 Zähne

Fraises ébauches 2 tailles NiTiCo 45 DP à pas décalés - 4 dents, en carbure monobloc

Frese per sgrossare NiTiCo 45 DP in metallo duro, passo differenziale, 4 taglienti

整体硬质合金 NiTiCo 45 DP 系列 粗皮 立铣刀 4 刃 - 标准长度

G44*



*L= ~ DIN 6527L



Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G38 * HA	G39 * HA	G44 * HB	G45 * HB
= * + Ø data	D	l 1	l 2	L	d2 (h6)	C	G6110	B0909	G6110	B0909
* 0600	6	13	20	57	6	0.1	•	•	•	•
* 0800	8	20	30	64	8	0.2	•	•	•	•
* 1000	10	22	32	72	10	0.2	•	•	•	•
1200	12	26	37	83	12	0.2	•	•	•	•
* 1400	14	26	44	83	14	0.3	•	•	•	•
* 1600	16	32	46	92	16	0.3	•	•	•	•
* 1800	18	32	53	92	18	0.3	•	•	•	•
* 2000	20	38	58	104	20	0.4	•	•	•	•

G41 * G42 * G47 * G48 *

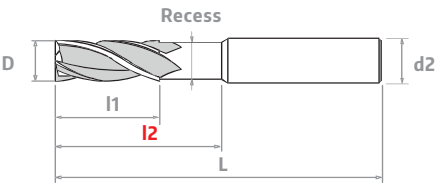
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

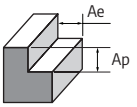


Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○		●		●	●				

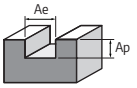
Cutting Parameter: 249

DP Endmills 4 Flutes



Side Milling	P				M		S			
Working Material	Alloy Steel		Prehardened Steel		Stainless steel		Nickel Alloy		Cobalt Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.60 × D		0.60 × D		0.40 × D		0.35 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	120	0.018	110	0.018	70	0.016	65	0.018	55	0.019
4		0.024		0.025		0.022		0.024		0.028
5		0.032		0.032		0.030		0.031		0.035
6		0.039		0.037		0.035		0.038		0.043
8		0.053		0.048		0.045		0.05		0.057
10		0.066		0.065		0.060		0.064		0.073
12		0.080		0.082		0.078		0.079		0.090
14		0.095		0.099		0.092		0.095		0.110
16		0.110		0.113		0.108		0.114		0.130
18		0.126		0.127		0.120		0.133		0.152
20		0.139		0.143		0.135		0.15		0.172

DP Endmills 4 Flutes

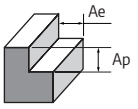


Slotting	P				M		S			
Working Material	Alloy Steel		Prehardened Steel		Stainless steel		Nickel Alloy		Cobalt Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	120	0.016	110	0.018	65	0.140	60	0.018	50	0.018
4		0.022		0.025		0.020		0.025		0.025
5		0.028		0.029		0.025		0.029		0.029
6		0.035		0.037		0.032		0.037		0.037
8		0.046		0.048		0.042		0.048		0.048
10		0.058		0.059		0.054		0.059		0.059
12		0.068		0.069		0.064		0.073		0.069
14		0.077		0.08		0.074		0.09		0.082
16		0.094		0.092		0.088		0.113		0.099
18		0.112		0.105		0.100		0.138		0.121
20		0.128		0.116		0.111		0.167		0.142

P M S P

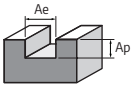
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DP Roughing Endmills 4 Flutes



Side Milling	P				M		S			
Working Material	Alloy Steel		Prehardened Steel		Stainless steel		Nickel Alloy		Cobalt Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.60 × D		0.60 × D		0.40 × D		0.35 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	120	0.047	110	0.044	70	0.040	65	0.045	55	0.051
8		0.064		0.058		0.054		0.06		0.069
10		0.079		0.078		0.074		0.077		0.087
12		0.096		0.099		0.092		0.095		0.107
14		0.113		0.118		0.110		0.114		0.132
16		0.132		0.136		0.128		0.136		0.156
18		0.151		0.152		0.148		0.159		0.182
20		0.167		0.172		0.163		0.179		0.206
16		0.110		0.113		0.108		0.114		0.130
18		0.126		0.127		0.120		0.133		0.152
20		0.139		0.143		0.135		0.15		0.172

DP Roughing Endmills 4 Flutes



Slotting	P				M		S			
Working Material	Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-	
Cutting depth, ap	0.84 × D		0.72 × D		1.20 × D		0.48 × D		0.42 × D	
Cutting Width, ae	1.00 × D		1.00 × D		0.60 × D		1.00 × D		1.00 × D	
D	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	120	0.047	110	0.044	70	0.040	65	0.045	55	0.051
8		0.064		0.058		0.052		0.060		0.069
10		0.079		0.078		0.074		0.077		0.087
12		0.096		0.099		0.093		0.095		0.107
14		0.113		0.118		0.105		0.114		0.132
16		0.132		0.136		0.125		0.136		0.156
18		0.151		0.152		0.141		0.159		0.182
20		0.167		0.172		0.160		0.179		0.206
16		0.110		0.113		0.108		0.114		0.130
18		0.126		0.127		0.120		0.133		0.152
20		0.139		0.143		0.135		0.15		0.172

P M S P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

PLUNGE MILL

For material
P, M, K, N
application (≤ 35 HRC)

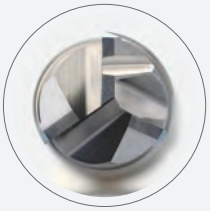


PLUNGE-MILL

01

SPECIAL END-FACE GASHING

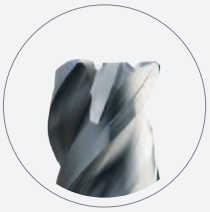
- Improves chip formation and flow
- Enables plunging on inclined surface
- Designed to prevent chipping at corner



02

PERFECT EDGE GRINDING

- Improves surface finishing
- Enables higher cutting speeds
- High cnc repeatability within 0.010mm



03

SMOOTH PVD AlCrN COATING

- Prolong the tool life
- Reduce friction
- Improves chip flow
- Enables higher cutting speeds



04

SUPERIOR “DRILL” LIKE FLUTING

- Improves chip evacuation
- Reduce vibration during slotting / milling

DEUTSCH

01 **SPEZIELLER STIRNANSCHLIFF**
- Verbessert die Spanbildung und den Spanfluss
- Ermöglicht das Eintauchen auf geneigten Flächen
- Verhindert das Abplatzen an den Schneidecken

02 **PERFEKTER KANTENSCHLIFF**
- Verbessert die Oberflächenqualität
- Ermöglicht höhere Schnittgeschwindigkeiten
- Hohe CNC-Wiederholgenauigkeit innerhalb 0.01mm

03 **GLATTE PVD AlCrN-BESCHICHTUNG**
- Verlängert die Lebensdauer des Werkzeugs
- Reduziert die Reibung
- Ermöglicht höhere Schnittgeschwindigkeiten

04 **BESONDERE SPANNUTEN WIE BEIM BOHREN**
- Verbessert den Spanfluss
- Reduziert Vibrationen beim Nutenfräsen/Fräsen

FRANÇAIS

01 **GOUJURES CONCUES POUR L'USINAGE MULTI-FONCTIONS**
- Améliore la formation et le débit des copeaux
- Permet une plongée sur surface inclinée

02 **MEULAGE PARFAIT DES ARÊTES**
- Améliore la finition de surface
- Permet des vitesses de coupe supérieures
- Haute répétabilité de l'usinage sur CNC à moins de 0,010 mm

03 **REVÊTEMENT AlCrN SOUS FORME DE DÉPÔT EN PHASE VAPEUR**
- Prolonge la durée de vie de l'outil
- Réduit le taux de friction

04 **BRISE COPAUX POUR LE PERCAGE**
- Améliore l'évacuation des copeaux
- Réduit les vibrations en poche / fraisage

ITALIANO

01 **SGROSSATURA SPECIFICA DEL LATO FINALE**
- Migliora la formazione e il flusso di trucioli
- Consente immersione su superficie inclinata
- Progettata per evitare formazione di trucioli sugli angoli

02 **PERFETTA LEVIGATURA DEGLI SPIGOLI**
- Migliora la finitura superficiale
- Consente maggiori velocità di taglio
- Elevata ripetibilità cnc entro 0,010 mm

03 **RIVESTIMENTO PVD AlCrN LISCIO**
- prolunga la vita dello strumento
- riduce la frizione
migliora il flusso dei trucioli
consente maggiori velocità di taglio

04 **SCANALATURA SUPERIORE SIMILE A "TRAPANO"**
- Migliora l'evacuazione dei trucioli
- Riduce la vibrazione durante strozzatura/fresatura

中文

01 **特殊的端面切割**
- 改善去屑的形成和流动
- 能够在倾斜表面上钻孔
- 旨在防止拐角处形成崩裂

02 **完美的边刃研磨**
- 改善表面光洁度
- 实现更高的切削速率
- 在 0.010mm 内数控系统可重复性高

03 **平滑 PVD AlCrN 涂层**
- 延长刀具寿命
- 减少摩擦
- 改善排屑流动
- 实现更高的切削速率

04 **犹如开槽般的"钻孔"**
- 改善排屑
- 在开槽/铣削过程中减少振动

PLUNGE MILL

3 Flutes,
For Plunging + Slotting + Milling

≤ 900 N/mm² + G6110 ≤ 35 HRC

HPMT

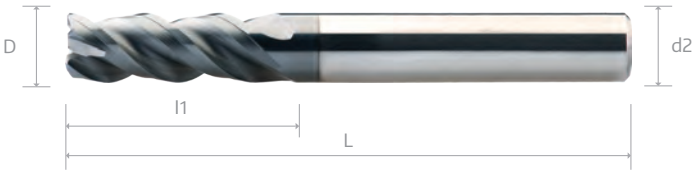
VHM Schaftfräser, 3 Schneiden, zum Bohren, Nuten- und Umfangsfräsen

Fraises 2 tailles PLUNGE MILL Plongée, 3 dents, en carbure monobloc, pour usinages en plongée, rainurage

Frese in metallo duro, 3 taglienti, Per lavorazioni a Tuffo, dal pieno e contornature

整体硬质合金 PLUNGE MILL 系列.立铣刀3刃, 适用于开槽.侧铣.插铣

G10*





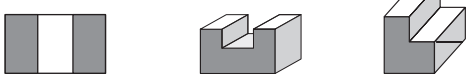
Z3



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G10 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	C	G6110
0100 050 04	1	1.5	5	50	4	0.1	•
0150 050 04	1.5	2.3	7.5	50	4	0.1	•
0200 050 04	2	3	10	50	4	0.1	•
0250 050 04	2.5	3.8	12.5	50	4	0.1	•
0300 050 06	3	6	15	50	6	0.2	•
0400 050 06	4	8	20	50	6	0.2	•
0500 050 06	5	10	20	50	6	0.25	•
0600 050	6	13	20	50	6	0.25	•
0800	8	20	30	64	8	0.3	•
1000	10	22	32	75	10	0.3	•
1200	12	25	37	75	12	0.3	•
1600	16	32	46	90	16	0.3	○

G12 *



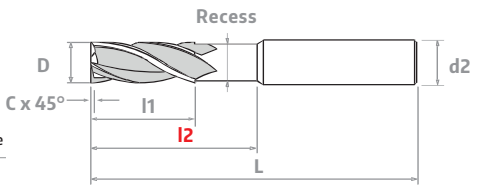
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

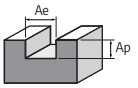
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	○								

Cutting Parameter: 255

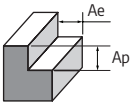
Technical specifications subject to change without prior notice

3 Flutes



Slotting	N						P						M		K			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron	
Properties	Si < 9%		Si ≥ 9%		-		-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D		0.20 × D		0.20 × D		0.50 × D		0.20 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.006	150	0.004	175	0.005	130	0.004	120	0.003	85	0.002	75	0.001	130	0.004	75	0.005
2		0.015		0.012		0.014		0.010		0.007		0.006		0.004		0.010		0.012
3		0.027		0.021		0.024		0.017		0.013		0.011		0.006		0.017		0.017
4		0.041		0.033		0.037		0.027		0.019		0.017		0.008		0.027		0.027
5		0.056		0.045		0.051		0.037		0.027		0.023		0.012		0.037		0.035
6		0.074		0.059		0.067		0.049		0.036		0.030		0.016		0.049		0.045
8		0.099		0.079		0.089		0.065		0.048		0.040		0.022		0.065		0.061
10		0.124		0.099		0.111		0.081		0.060		0.050		0.027		0.081		0.075
12		0.149		0.119		0.134		0.097		0.072		0.060		0.033		0.097		0.090
16		0.163		0.130		0.146		0.106		0.078		0.068		0.037		0.106		0.105

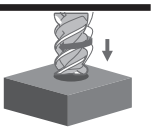
3 Flutes



Side Milling	N						P						M		K			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Carbon Steel		Alloy steel		Prehardened steel		Stainless steel		Grey Cast Iron		Ductile Cast Iron	
Proper-ties	Si < 9%		Si ≥ 9%		-		-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.00 × D		1.00 × D		1.50 × D		1.00 × D	
Cutting Width, Ae (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.02 × D		0.02 × D		0.05 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.006	150	0.004	175	0.005	130	0.004	120	0.003	85	0.002	75	0.001	130	0.004	75	0.005
2		0.015		0.012		0.014		0.010		0.007		0.006		0.004		0.010		0.012
3		0.027		0.021		0.024		0.017		0.013		0.011		0.006		0.017		0.017
4		0.041		0.033		0.037		0.027		0.019		0.017		0.008		0.027		0.027
5		0.056		0.045		0.051		0.037		0.027		0.023		0.012		0.037		0.035
6		0.074		0.059		0.067		0.049		0.036		0.030		0.016		0.049		0.045
8		0.099		0.079		0.089		0.065		0.048		0.040		0.022		0.065		0.061
10		0.124		0.099		0.111		0.081		0.060		0.050		0.027		0.081		0.075
12		0.149		0.119		0.134		0.097		0.072		0.060		0.033		0.097		0.090
16		0.163		0.130		0.146		0.106		0.078		0.068		0.037		0.106		0.105

P M K N | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



3 Flutes

Plunging	N						P						M		K			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Carbon Steel		Alloy Steel		Prehardened Steel		Stainless steel		Grey Cast Iron		Ductile Cast Iron	
Properties	Si < 9%		Si ≥ 9%		-		-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		-		-	
Cutting Depth, Ap (mm)	-		-		-		-		-		-		-		-		-	
Cutting Width, Ae (mm)	-		-		-		-		-		-		-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.002	150	0.002	175	0.002	130	0.002	120	0.002	85	0.002	75	0.001	130	0.002	75	0.003
2		0.006		0.006		0.006		0.006		0.004		0.004		0.002		0.006		0.007
3		0.011		0.011		0.010		0.010		0.007		0.007		0.003		0.010		0.012
4		0.016		0.016		0.016		0.016		0.012		0.011		0.005		0.016		0.019
5		0.023		0.023		0.022		0.022		0.016		0.014		0.007		0.022		0.026
6		0.030		0.030		0.029		0.030		0.020		0.018		0.010		0.030		0.035
8		0.040		0.040		0.039		0.039		0.027		0.024		0.013		0.039		0.047
10		0.050		0.050		0.048		0.049		0.034		0.030		0.017		0.049		0.059
12		0.060		0.060		0.058		0.059		0.041		0.037		0.020		0.059		0.070
16		0.064		0.064		0.062		0.063		0.046		0.043		0.023		0.063		0.075

P M K N | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



SE 60

- For general machining
- Cost efficiency

For material application between
53 HRC to 68 HRC

SE 60



01

GASH LAND DESIGN

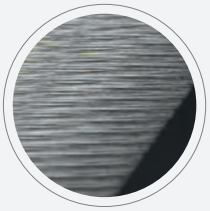
Significantly improves strength and provide great chipping resistance



02

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



03

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



04

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation

05

SUITABLE FOR MATERIAL GROUPS

H

DEUTSCH

01 **STIRNSCHLIFF DESIGN**
Verbessert die Leistung deutlich und bietet Schutz gegen Ausbrüche

02 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

03 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
· Weniger Materialanhaftungen an der Schneide
· Für stabile Bearbeitung

04 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
· Erhöht die Härte und und bietet bessere Verschleißfestigkeit
· Höhere Temperaturbeständigkeit
· Glatte Oberfläche für besseren Spänefluß

05 **GEEIGNET FÜR DIE MATERIALIGRUPPEN H**

FRANÇAIS

01 **CONCEPTION DE FRAISE POUR L'USINAGE GENERAL**
Améliore considérablement la solidité et apporte

02 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

03 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
· Moins de matériau adhère à l'arête tranchante
· Pour un usinage stable

04 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
· Augmente la dureté et la résistance à l'abrasion
· Résistance thermique supérieure
· Évacuation des copeaux plus fluide

05 **ADAPTÉ AUX MATÉRIAUX H**

ITALIANO

01 **STRUTTURA AREA SGROSSATURA**
Migliora notevolmente la potenza e offre un'eccellente resistenza alle scheggiature

02 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

03 **PREPARAZIONE DELL'ANGOLO DI TAGLIO**
Migliora la durata dello strumento
· Meno materiale che aderisce sull'angolo di taglio
· Per una lavorazione stabile

04 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
· Aumenta la durezza e una maggiore resistenza all'usura abrasiva
· Resistenza termica superiore
· Evacuazione dei trucioli più semplice

05 **ADATTO PER IL MATERIALE H**

中文

01 **刀具底刃的设计**
强化刀具，并降低崩刃的几率

02 **偏心研磨**
最佳偏心研磨，可避免加工时摩擦，同时保持刀具的最高刚性

03 **刃部钝化处理**
提高刀具寿命和切削过程的稳定性

04 **卓越的涂层**
· 强化刀具的硬度和抗热性
· 降低积屑瘤并拥有更顺畅的排屑

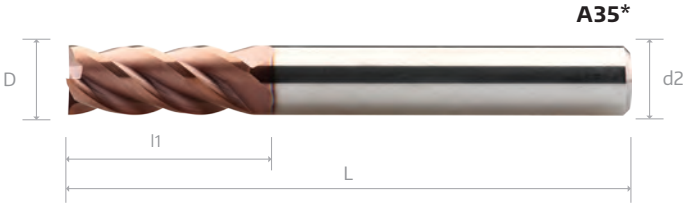
05 **超合金和钛的材料 H**

SE 60 STANDARD ENDMILLS

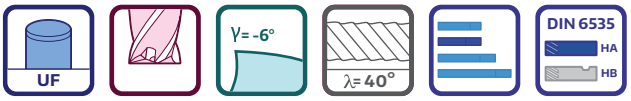
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Standard Fräser, 4 Zähne	Fraises 2 tailles SE 60 Standard en carbure monobloc, 4 dents
Frese SE 60 Standard in metallo duro integrale, 4 taglienti	整体硬质合金 SE 60 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A35 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0100 050 04	1	3		50	4	•
0100 050 06	1	3		50	6	•
0150 050 04	1.5	4.5		50	4	•
0150 050 06	1.5	4.5		50	6	•
0200 050 04	2	6.5		50	4	•
0200 050 06	2	6.5		50	6	•
0250 050 04	2.5	6.5		50	4	•
0250 050 06	2.5	6.5		50	4	•
0300 050 04	3	9		50	4	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

289

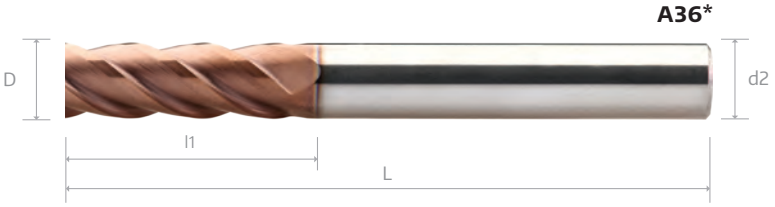
Technical specifications subject to change without prior notice

SE 60 ENDMILLS – Long

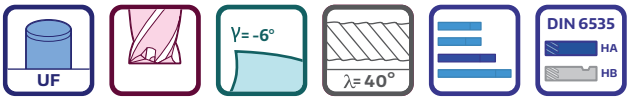
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM Fräser SE 60 Long, 4 Zähne	Fraises 2 tailles SE60 Longue - 4 dents, en carbure monobloc
Frese SE 60 in metallo duro integrale, 4 taglienti	整体硬质合金 SE 60 系列 立铣刀 4 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A36 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 075 06	3	19		75	6	•
0400 075 06	4	19		75	6	•
0500	5	19		60	5	•
0500 075 06	5	19		75	6	•
0600	6	31		75	6	•
0800	8	31		75	8	•
1000 075	10	31		75	10	•
1000 100	10	50		100	10	•
1200	12	50		100	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•
1800	18	57		125	18	•
2000	20	57		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 290

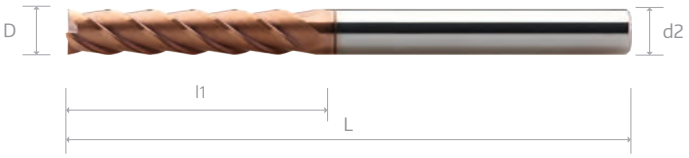
SE 60 ENDMILLS – Extra Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

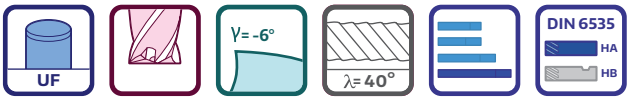
VHM SE 60 Extra-Long Fräser, 4 Zähne	Fraises 2 tailles SE60 Extra-Longue- 4 dents, en carbure monobloc
Frese SE 60 Extra-Lunga in metallo duro integrale, 4 taglienti	整体硬质合金 SE 60 系列 立铣刀 4 刃 - 加长

A37*





Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A37 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 100 06	3	25		100	6	o
0400 100 06	4	31		100	6	o
0500 100 06	5	31		100	6	o
0600	6	38		100	6	•
0800	8	41		100	8	•
1000	10	57		125	10	•
1200	12	75		150	12	•
1400	14	75		150	14	o
1600	16	75		150	16	•
1800	18	75		150	18	o
2000	20	75		150	20	o

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

290

Spécifications techniques sujettes à changement sans avis prélable

SE 60 SHORT FLUTES LONG REACH ENDMILLS - Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

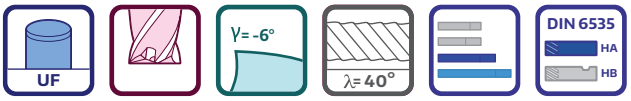
VHM SE 60 lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne	Fraises 2 tailles SE 60 LONG REACH longues à hélices courtes en carbure monobloc, 4 dents
Frese SE 60 LONG REACH lunghe in metallo duro integrale, con gole corte, 4 taglienti	整体硬质合金 SE 60 系列 短刃 立铣刀 4 刃 - 中长

A39*





Z4



HSC B0909 TISIN

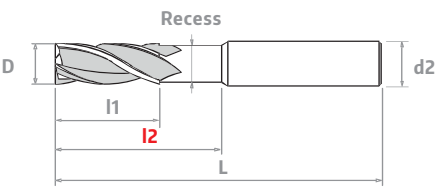
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A38 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 075 06	3	5	30	75	6	•
0400 075 06	4	8	32	75	6	•
0500 075 06	5	9	32	75	6	•
0600	6	10	40	75	6	•
0800	8	12	40	75	8	•
1000 075	10	14	40	75	10	•
1000 100	10	14	60	100	10	•
1200	12	16	60	100	12	•
1400	14	22	85	125	14	•
1600	16	22	85	125	16	•
1800	18	26	85	125	18	•
2000	20	26	85	125	20	•

A39 *

SE 60

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

291

SE 60 SHORT FLUTES LONG REACH ENDMILLS - Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

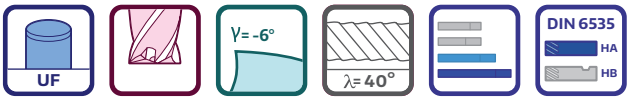
HPMT

VHM SE 60 extra-lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne	Fraises 2 tailles SE 60 LONG REACH extra-longues à hélices courtes en carbure monobloc, 4 dents
Frese SE 60 LONG REACH extra-lunghe in metallo duro integrale, con gole corte, 4 taglienti	整体硬质合金 SE 60 系列 短刃 立铣刀 4 刃 - 加长

A40*







HSC B0909 TISIN

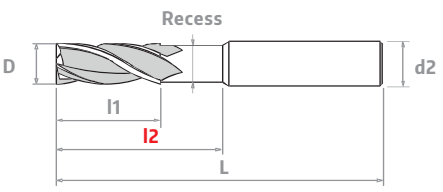
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A40 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 100 06	3	5	60	100	6	•
0400 100 06	4	8	60	100	6	•
0500 100 06	5	9	60	100	6	•
0600	6	10	60	100	6	•
0800	8	12	60	100	8	•
1000	10	14	85	125	10	•
1200	12	16	110	150	12	•
1400	14	22	110	150	14	•
1600	16	22	110	150	16	•
1800	18	26	110	150	18	•
2000	20	26	110	150	20	•

A41 *

SE 60

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 291

若有技术规格变更，恕不事先通知

SE 60 MULTIFLUTE ENDMILLS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

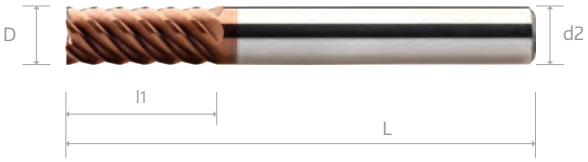
VHM Mehrzahnfräser SE 60 - 6 bzw. 8 Zähne

Fraises 2 tailles Multidents SE 60 en carbure monobloc, 6 respectivement 8 dents

Frese multi-taglienti SE 60 in metallo duro integrale, 6 respettivamente 8 taglienti

整体硬质合金 SE 60 系列 密齿 立铣刀 6 - 8 刃 - 标准长度

A42*





Z6



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A42 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 050 06	3	8	20	50	6	•
0400 050 06	4	11	20	50	6	•
0500 050 06	5	13	20	50	6	•
0600 050	6	15	20	50	6	•
0600 060	6	20	30	60	6	•
0800	8	20	30	64	8	•
1000	10	22	32	70	10	•
1200	12	25	37	75	12	•
1400	14	30	44	90	14	•

8

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A42 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
1600	16	30	46	90	16	•
1800	18	35	53	100	18	•
2000	20	38	58	100	20	•

A43 *

SE 60

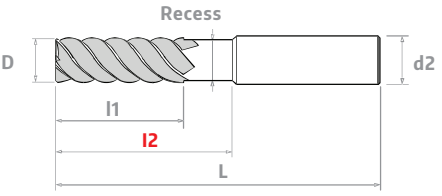
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

292

SE 60 MULTIFLUTE ENDMILLS – Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM lange Mehrzahnfräser SE 60 -6 bzw. 8 Zähne

Fraises 2 tailles Multidents SE 60 longues en carbure monobloc, 6 respectivement 8 dents

Frese multi-taglienti SE 60lunghe in metallo duro integrale, 6 respettivamente 8 taglienti

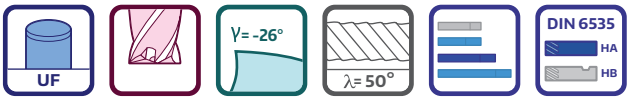
整体硬质合金 SE 60 系列 密齿 立铣刀 6 - 8 刃 - 中长

A44*





Z6



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A44 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 075 06	3	19	30	75	6	•
0400 075 06	4	19	32	75	6	•
0500 075 06	5	19	32	75	6	•
0600	6	31	40	75	6	•
0800	8	31	40	75	8	•
1000	10	45	60	100	10	•
1200	12	50	60	100	12	•
1400	14	57	85	125	14	•

8

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A44 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
1600	16	57	85	125	16	•
1800	18	57	85	125	18	•
2000	20	57	85	125	20	•

A45 *

SE 60

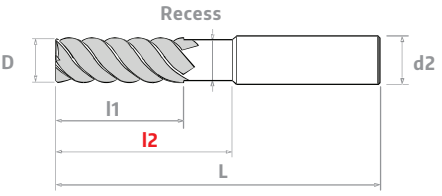
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

292

Technische änderungen ohne vorherige information vorbehalten

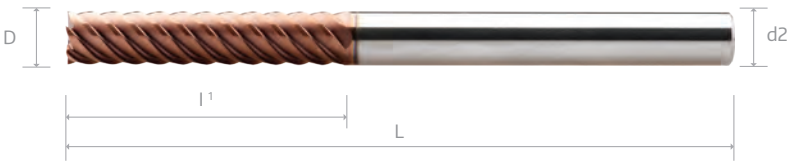
SE 60 MULTIFLUTE ENDMILLS – Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM extra-lange Mehrzahnfräser SE 60 - 6 bzw. 8 Zähne	Fraises 2 tailles Multidents SE 60 extra-longues en carbure monobloc, 6 respectivement 8 dents
Frese multi-taglienti SE 60 extra-lunghe in metallo duro integrale, 6 respettivamente 8 taglienti	整体硬质合金 SE 60 系列 密齿 立铣刀 - 8 刃 - 加长

A46*









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A46 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 100 06	3	25	60	100	6	•
0400 100 06	4	31	60	100	6	•
0500 100 06	5	31	60	100	6	•
0600	6	38	60	100	6	•
0800	8	41	60	100	8	•
1000	10	57	85	125	10	•
1200	12	75	110	150	12	•
1400	14	75	110	150	14	•

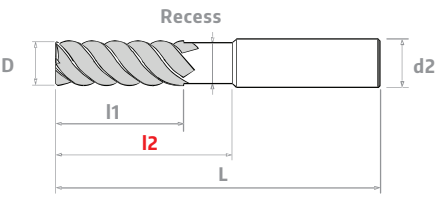
8

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A46 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
1600	16	75	110	150	16	•
1800	18	75	110	150	18	•
2000	20	75	110	150	20	•

A47 *

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 292

SE 60

SE 60 STANDARD ENDMILLS, SHORT FLUTES

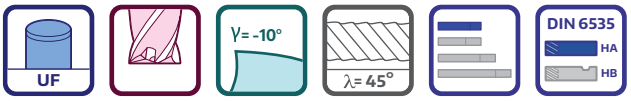
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Standard Fräser, 4 Zähne	Fraises 2 tailles SE 60 Standard en carbure monobloc, 4 dents
Frese SE 60 Standard in metallo duro integrale, 4 taglienti	整体硬质合金 SE 60 系列 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A34 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	B0909
0300 060 06	3	4		60	6	•
0400 060 06	4	5		60	6	•
0500 060 06	5	6		60	6	•
0600	6	7		60	6	•
0800	8	9		64	8	•
1000	10	11		70	10	•
1200	12	13		75	12	•
1600	16	17		90	16	•

SE 60

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

290

Modifiche Techiche possibili senza preavviso

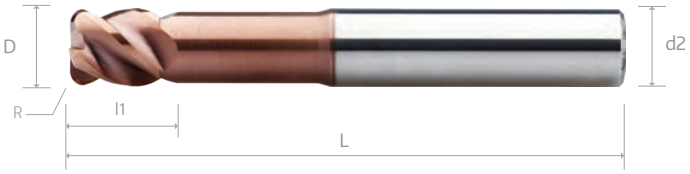
SE 60R SHORT FLUTE TORUS ENDMILLS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

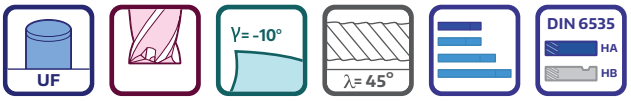
VHM SE 60R Standard Torusfräser, kurzen Nuten, 4 Zähne	Fraises toriques 2 tailles SE 60R toriques, goujures courtes, 4 dents
Frese toroidali SE 60R in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 60R 系列 圆鼻短刃 立铣刀 4 刃 - 标准长度

A49*





Z4



HSC B0909 TISIN

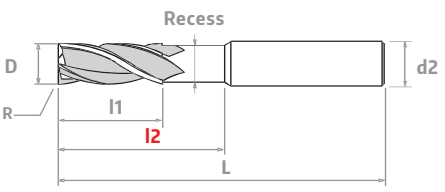
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A48 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0300 060 0600 030	3	4	14	60	6	0.3	•
0300 060 0600 050	3	4	14	60	6	0.5	•
0400 060 0600 030	4	5	16	60	6	0.3	•
0400 060 0600 050	4	5	16	60	6	0.5	•
0500 060 0600 030	5	6	18	60	6	0.3	•
0500 060 0600 050	5	6	18	60	6	0.5	•
0600 060 0600 030	6	7	20	60	6	0.3	•
0600 060 0600 050	6	7	20	60	6	0.5	•
0600 060 0600 100	6	7	20	60	6	1.0	•
0800 064 0800 030	8	9	26	64	8	0.3	•
0800 064 0800 050	8	9	26	64	8	0.5	•
0800 064 0800 100	8	9	26	64	8	1.0	•
1000 070 1000 050	10	11	31	70	10	0.5	•
1000 070 1000 100	10	11	31	70	10	1.0	•
1000 070 1000 200	10	11	31	70	10	2.0	•
1200 075 1200 050	12	13	37	75	12	0.5	•
1200 075 1200 100	12	13	37	75	12	1.0	•
1200 075 1200 200	12	13	37	75	12	2.0	•
1600 090 1600 050	16	17	43	90	16	0.5	•
1600 090 1600 100	16	17	43	90	16	1.0	•
1600 090 1600 200	16	17	43	90	16	2.0	•
1600 090 1600 300	16	17	43	90	16	3.0	•

A49 *

SE 60

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 290

若有技术规格变更，恕不事先通知

SE 60R

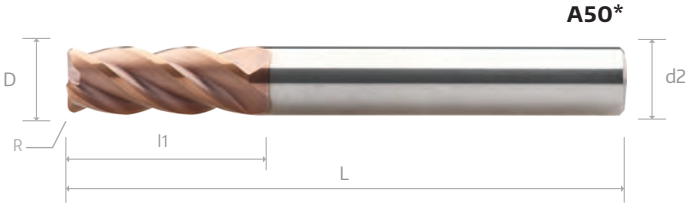
STANDARD TORUS ENDMILLS

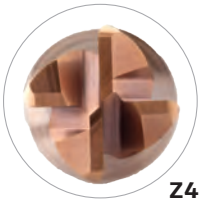
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 60R toriques Standard en carbure monobloc, 4 dents

Frese SE 60R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 60R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A50 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
0100 050 0400 020	1	3		50	4	0.2	•
0100 050 0600 020	1	3		50	6	0.2	•
0150 050 0400 020	1.5	4.5		50	4	0.2	•
0150 050 0600 020	1.5	4.5		50	6	0.2	•
0200 050 0400 020	2	6.5		50	4	0.2	•
0200 050 0400 030	2	6.5		50	4	0.3	•
0200 050 0600 020	2	6.5		5 0	6	0.2	•
0200 050 0600 030	2	6.5		5 0	6	0.3	•
0250 050 0400 020	2.5	6.5		50	4	0.2	•
0250 050 0400 030	2.5	6.5		50	4	0.3	•
0250 050 0400 050	2.5	6.5		50	4	0.5	•
0250 050 0600 020	2.5	6.5		50	6	0.2	•
0250 050 0600 030	2.5	6.5		50	6	0.3	•
0250 050 0600 050	2.5	6.5		50	6	0.5	•
0300 040 0300 020	3	9		40	3	0.2	•
0300 040 0300 030	3	9		40	3	0.3	•
0300 040 0300 050	3	9		40	3	0.5	•
0300 050 0400 020	3	9		50	4	0.2	•
0300 050 0400 030	3	9		50	4	0.3	•
0300 050 0400 050	3	9		50	4	0.5	•
0300 050 0600 020	3	9		50	6	0.2	•
0300 050 0600 030	3	9		50	6	0.3	•
0300 050 0600 050	3	9		50	6	0.5	•
0300 060 0600 020	3	9		60	6	0.2	•
0300 060 0600 030	3	9		60	6	0.3	•
0300 060 0600 050	3	9		60	6	0.5	•
0400 050 0400 020	4	12		50	4	0.2	•
0400 050 0400 030	4	12		50	4	0.3	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

289

Technical specifications subject to change without prior notice

SE 60R

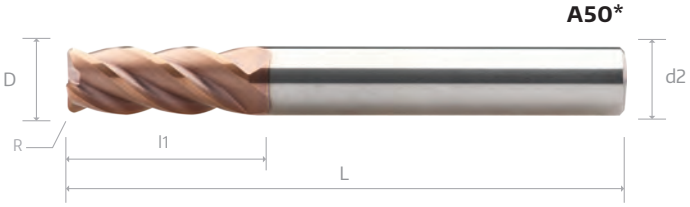
STANDARD TORUS ENDMILLS

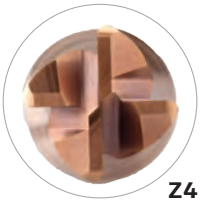
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 60R toriques Standard en carbure monobloc, 4 dents

Frese SE 60R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 60R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A50 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
0400 050 0400 050	4	12		50	4	0.5	•
0400 050 0400 100	4	12		50	4	1	•
0400 050 0600 020	4	12		50	6	0.2	•
0400 050 0600 030	4	12		50	6	0.3	•
0400 050 0600 050	4	12		50	6	0.5	•
0400 050 0600 100	4	12		50	6	1	•
0400 060 0600 020	4	12		60	6	0.2	•
0400 060 0600 030	4	12		60	6	0.3	•
0400 060 0600 050	4	12		60	6	0.5	•
0400 060 0600 100	4	12		60	6	1	•
0500 050 0500 020	5	15		50	5	0.2	•
0500 050 0500 030	5	15		50	5	0.3	•
0500 050 0500 050	5	15		50	5	0.5	•
0500 050 0500 100	5	15		50	5	1	•
0500 050 0600 020	5	15		50	6	0.2	•
0500 050 0600 030	5	15		50	6	0.3	•
0500 050 0600 050	5	15		50	6	0.5	•
0500 050 0600 100	5	15		50	6	1	•
0500 060 0600 020	5	15		60	6	0.2	•
0500 060 0600 030	5	15		60	6	0.3	•
0500 060 0600 050	5	15		60	6	0.5	•
0500 060 0600 100	5	15		60	6	1	•
0600 050 0600 020	6	16		50	6	0.2	•
0600 050 0600 030	6	16		50	6	0.3	•
0600 050 0600 050	6	16		50	6	0.5	•
0600 050 0600 100	6	16		50	6	1.0	•
0600 060 0600 020	6	20		60	6	0.2	•
0600 060 0600 030	6	20		60	6	0.3	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 289

Technische änderungen ohne vorherige information vorbehalten

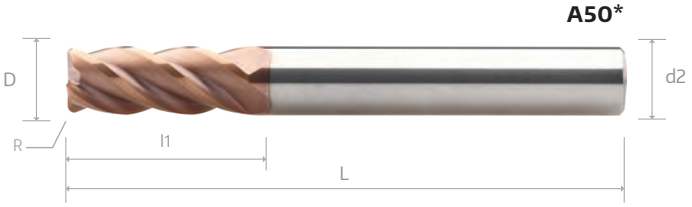
SE 60R STANDARD TORUS ENDMILLS

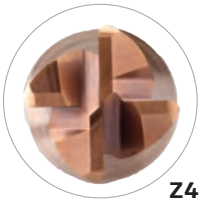
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Standard Torusfräser, 4 Zähne | Fraises 2 tailles SE 60R toriques Standard en carbure monobloc, 4 dents

Frese SE 60R toroidali Standard, in metallo duro integrale, 4 taglienti | 整体硬质合金 SE 60R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A50 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
0600 060 0600 050	6	20		60	6	0.5	•
0600 060 0600 100	6	20		60	6	1.0	•
0800 064 0800 020	8	20		64	8	0.2	•
0800 064 0800 030	8	20		64	8	0.3	•
0800 064 0800 050	8	20		64	8	0.5	•
0800 064 0800 100	8	20		64	8	1.0	•
0800 064 0800 150	8	20		64	8	1.5	•
0800 064 0800 200	8	20		64	8	2	•
1000 070 1000 020	10	22		70	10	0.2	•
1000 070 1000 030	10	22		70	10	0.3	•
1000 070 1000 050	10	22		70	10	0.5	•
1000 070 1000 100	10	22		70	10	1.0	•
1000 070 1000 150	10	22		70	10	1.5	•
1000 070 1000 200	10	22		70	10	2.0	•
1000 075 1000 020	10	22		75	10	0.2	•
1000 075 1000 030	10	22		75	10	0.3	•
1000 075 1000 050	10	22		75	10	0.5	•
1000 075 1000 100	10	22		75	10	1.0	•
1000 075 1000 150	10	22		75	10	1.5	•
1000 075 1000 200	10	22		75	10	2.0	•
1200 075 1200 020	12	25		75	12	0.2	•
1200 075 1200 030	12	25		75	12	0.3	•
1200 075 1200 050	12	25		75	12	0.5	•
1200 075 1200 100	12	25		75	12	1.0	•
1200 075 1200 150	12	25		75	12	1.5	•
1200 075 1200 200	12	25		75	12	2.0	•
1200 075 1200 300	12	25		75	12	3.0	•
1400 090 1400 030	14	32		90	14	0.3	o

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 289

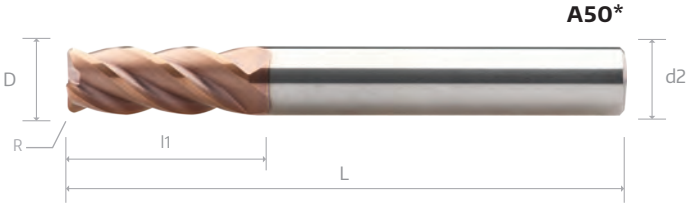
Spécifications techniques sujettes à changement sans avis prélable

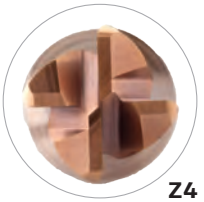
SE 60R STANDARD TORUS ENDMILLS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Standard Torusfräser, 4 Zähne	Fraises 2 tailles SE 60R toriques Standard en carbure monobloc, 4 dents
Frese SE 60R toroidali Standard, in metallo duro integrale, 4 taglienti	整体硬质合金 SE 60R 系列 圆鼻 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A50 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
1400 090 1400 050	14	32		90	14	0.5	o
1400 090 1400 100	14	32		90	14	1.0	o
1400 090 1400 150	14	32		90	14	1.5	o
1400 090 1400 200	14	32		90	14	2	o
1400 090 1400 300	14	32		90	14	3	o
1600 090 1600 030	16	32		90	16	0.3	•
1600 090 1600 050	16	32		90	16	0.5	•
1600 090 1600 100	16	32		90	16	1	•
1600 090 1600 150	16	32		90	16	1.5	•
1600 090 1600 200	16	32		90	16	2	•
1600 090 1600 300	16	32		90	16	3	•
1800 100 1800 030	18	38		100	18	0.3	•
1800 100 1800 050	18	38		100	18	0.5	•
1800 100 1800 100	18	38		100	18	1	•
1800 100 1800 150	18	38		100	18	1.5	•
1800 100 1800 200	18	38		100	18	2	•
1800 100 1800 300	18	38		100	18	3	•
2000 100 2000 030	20	38		100	20	0.3	•
2000 100 2000 050	20	38		100	20	0.5	•
2000 100 2000 100	20	38		100	20	1	•
2000 100 2000 150	20	38		100	20	1.5	•
2000 100 2000 200	20	38		100	20	2	•
2000 100 2000 300	20	38		100	20	3	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 289

SE 60R

SHORT FLUTES TORUS ENDMILLS – LONG REACH – Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises 2 tailles SE 60R LONG REACH toriques longues, goujures courtes, 4 dents

Frese SE 60R LONG REACH toroidali lunghe in metallo duro integrale, gole corte, 4 taglienti

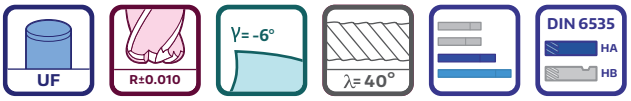
整体硬质合金 SE 60R 系列 圆鼻短刃 立铣刀 4 刃 - 中长

A51*





Z4



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A51 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0200 075 0600 020	2	4	30	75	6	0.2	•
0200 075 0600 030	2	4	30	75	6	0.3	•
0300 075 0600 020	3	5	30	75	6	0.2	•
0300 075 0600 030	3	5	30	75	6	0.3	•
0300 075 0600 050	3	5	30	75	6	0.5	•
0400 075 0600 020	4	8	32	75	6	0.2	•
0400 075 0600 030	4	8	32	75	6	0.3	•
0400 075 0600 050	4	8	32	75	6	0.5	•
0500 075 0600 020	5	9	32	75	6	0.2	•
0500 075 0600 030	5	9	32	75	6	0.3	•
0500 075 0600 050	5	9	32	75	6	0.5	•
0600 075 0600 020	6	10	40	75	6	0.2	•
0600 075 0600 030	6	10	40	75	6	0.3	•
0600 075 0600 050	6	10	40	75	6	0.5	•
0600 075 0600 100	6	10	40	75	6	1	•
0800 075 0800 020	8	12	40	75	8	0.2	•
0800 075 0800 030	8	12	40	75	8	0.3	•
0800 075 0800 050	8	12	40	75	8	0.5	•
0800 075 0800 100	8	12	40	75	8	1	•
1000 075 1000 020	10	14	40	75	10	0.2	•
1000 075 1000 030	10	14	40	75	10	0.3	•
1000 075 1000 050	10	14	40	75	10	0.5	•
1000 075 1000 100	10	14	40	75	10	1	•
1000 075 1000 200	10	14	40	75	10	2	•
1000 100 1000 020	10	14	60	100	10	0.2	•
1000 100 1000 030	10	14	60	100	10	0.3	•

SE 60

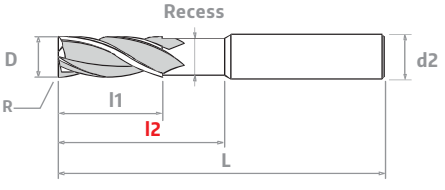
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



A52 *
cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

291

若有技术规格变更，恕不事先通知

SE 60R

SHORT FLUTES TORUS ENDMILLS – LONG REACH – Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

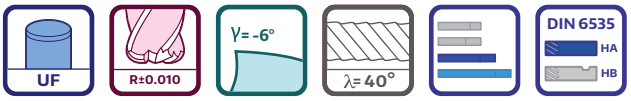
VHM SE 60R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne	Fraises 2 tailles SE 60R LONG REACH toriques longues, goujures courtes, 4 dents
Frese SE 60R LONG REACH toroidali lunghe in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 60R 系列 圆鼻短刃 立铣刀 4 刃 - 中长

A51*





Z4



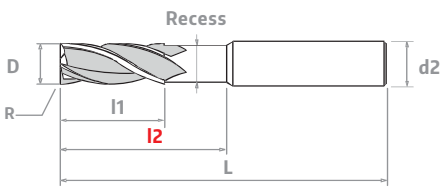
HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A51 *
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
1000 100 1000 050	10	14	60	100	10	0.5	•
1000 100 1000 100	10	14	60	100	10	1	•
1000 100 1000 200	10	14	60	100	10	2	•
1200 100 1200 020	12	16	60	100	12	0.2	•
1200 100 1200 030	12	16	60	100	12	0.3	•
1200 100 1200 050	12	16	60	100	12	0.5	•
1200 100 1200 100	12	16	60	100	12	1	•
1200 100 1200 200	12	16	60	100	12	2	•
1600 125 1600 030	12	16	60	100	12	3	•
1600 125 1600 050	16	22	85	125	16	0.5	•
1600 125 1600 100	16	22	85	125	16	1	•
1600 125 1600 200	16	22	85	125	16	2	•
1600 125 1600 300	16	22	85	125	16	3	•

A52 *

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 291

SE 60

Technical specifications subject to change without prior notice

SE 60R

SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

Fraises toriques 2 tailles SE 60R LONG REACH extra-longues, goujures courtes, 4 dents

Frese torodali SE 60R LONG REACH extra-lunghe in metallo duro integrale, gole corte,4 taglienti

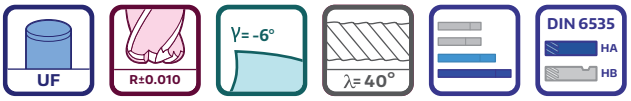
整体硬质合金 SE 60R 系列 圆鼻短刃 立铣刀 4 刃 -加长

A53*





Z4



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A53 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0200 100 0600 020	2	4	60	100	6	0.2	•
0200 100 0600 030	2	4	60	100	6	0.3	•
0300 100 0600 020	3	5	60	100	6	0.2	•
0300 100 0600 030	3	5	60	100	6	0.3	•
0300 100 0600 050	3	5	60	100	6	0.5	•
0300 100 0600 100	3	5	60	100	6	1	•
0400 100 0600 020	4	8	60	100	6	0.2	•
0400 100 0600 030	4	8	60	100	6	0.3	•
0400 100 0600 050	4	8	60	100	6	0.5	•
0400 100 0600 100	4	8	60	100	6	1	•
0500 100 0600 020	5	9	60	100	6	0.2	•
0500 100 0600 030	5	9	60	100	6	0.3	•
0500 100 0600 050	5	9	60	100	6	0.5	•
0500 100 0600 100	5	9	60	100	6	1	•
0600 100 0600 020	6	10	60	100	6	0.2	•
0600 100 0600 030	6	10	60	100	6	0.3	•
0600 100 0600 050	6	10	60	100	6	0.5	•
0600 100 0600 100	6	10	60	100	6	1	•
0600 125 0600 020	6	10	60	125	6	0.2	•
0600 125 0600 030	6	10	60	125	6	0.3	•
0600 125 0600 050	6	10	60	125	6	0.5	•
0600 125 0600 100	6	10	60	125	6	1	•
0800 100 0800 020	8	12	60	100	8	0.2	•
0800 100 0800 030	8	12	60	100	8	0.3	•
0800 100 0800 050	8	12	60	100	8	0.5	•
0800 100 0800 100	8	12	60	100	8	1	•

A54 *
cont'd ▶

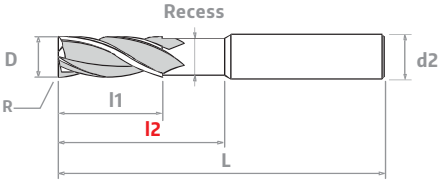
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

291

Technische änderungen ohne vorherige information vorbehalten

SE 60R

SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

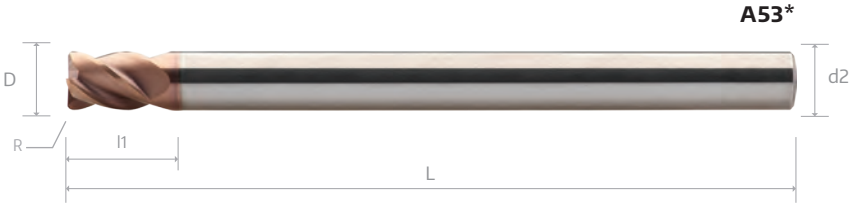
HPMT

VHM SE 60R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne

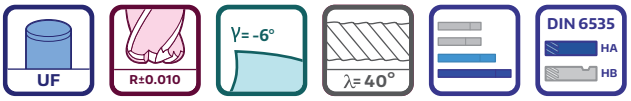
Fraises toriques 2 tailles SE 60R LONG REACH extra-longues, goujures courtes, 4 dents

Frese torodali SE 60R LONG REACH extra-lunghe in metallo duro integrale, gole corte,4 taglienti

整体硬质合金 SE 60R 系列 圆鼻短刃 立铣刀 4 刃 -加长



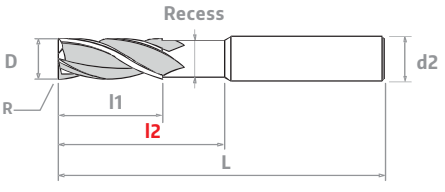




HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A53 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0800 100 0800 200	8	12	60	100	8	2	•
0800 125 0800 020	8	12	60	125	8	0.2	•
0800 125 0800 030	8	12	60	125	8	0.3	•
0800 125 0800 050	8	12	60	125	8	0.5	•
0800 125 0800 100	8	12	60	125	8	1	•
0800 125 0800 200	8	12	60	125	8	2	•
1000 125 1000 020	10	14	85	125	10	0.2	•
1000 125 1000 030	10	14	85	125	10	0.3	•
1000 125 1000 050	10	14	85	125	10	0.5	•
1000 125 1000 100	10	14	85	125	10	1	•
1000 125 1000 200	10	14	85	125	10	2	•
1000 150 1000 020	10	14	85	150	10	0.2	•
1000 150 1000 030	10	14	85	150	10	0.3	•
1000 150 1000 050	10	14	85	150	10	0.5	•
1000 150 1000 100	10	14	85	150	10	1	•
1000 150 1000 200	10	14	85	150	10	2	•
1200 150 1200 020	12	16	110	150	12	0.2	•
1200 150 1200 030	12	16	110	150	12	0.3	•
1200 150 1200 050	12	16	110	150	12	0.5	•
1200 150 1200 100	12	16	110	150	12	1	•
1200 150 1200 200	12	16	110	150	12	2	•
1600 150 1600 030	16	22	110	150	16	0.3	•
1600 150 1600 050	16	22	110	150	16	0.5	•
1600 150 1600 100	16	22	110	150	16	1	•
1600 150 1600 200	16	22	110	150	16	2	•
1600 150 1600 300	16	22	110	150	16	3	•

A54 *



Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 291

SE 60

SE 60 MINIATURE ENDMILLS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser, 2 Zähne	Micro-Fraises 2 tailles SE 60 en carbure monobloc, 2 dents
Micro-frese SE 60 in metallo duro integrale, 2 taglienti	整体硬质合金 SE 60 系列 微型 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					A55 *
= * + Ø data	D	l1	l2	L	d2 (h6)	B0909
0010 03	0.1	0.2		40	3	•
0010 04	0.1	0.2		40	4	•
0020 03	0.2	0.4		40	3	•
0020 04	0.2	0.4		40	4	•
0030 03	0.3	0.6		40	3	•
0030 04	0.3	0.6		40	4	•
0040 03	0.4	0.8		40	3	•
0040 04	0.4	0.8		40	4	•
0050 03	0.5	1.0		40	3	•
0050 04	0.5	1.0		40	4	•
0060 03	0.6	1.2		40	3	•
0060 04	0.6	1.2		40	4	•
0070 03	0.7	1.4		40	3	•
0070 04	0.7	1.4		40	4	•
0080 03	0.8	1.6		40	3	•
0080 04	0.8	1.6		40	4	•
0090 03	0.9	1.8		40	3	•
0090 04	0.9	1.8		40	4	•

SE 60

Ø mm	Tol. µm
0.1~0.7	0/ -12
0.7~4.0	0/-20

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

293

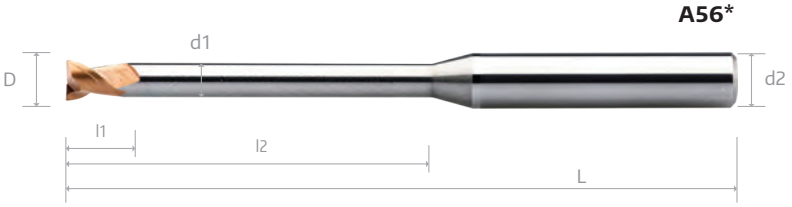
Modifiche Techiche possibili senza preavviso

SE 60 MINIATURE ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 60 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 60 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A56 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	B0909
0020 050 0400	0.2	0.3	-	50	-	4	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	•
0030 050 0400	0.3	0.4	-	50	-	4	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	•
0040 050 0400	0.4	0.6	-	50	-	4	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	•
0050 050 0400	0.5	0.7	-	50	-	4	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	•
0060 050 0400	0.6	0.9	-	50	-	4	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	•
0070 050 0400	0.7	1.0	-	50	-	4	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

若有技术规格变更，恕不事先通知

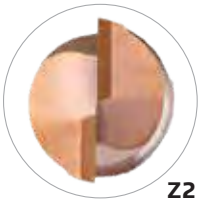
SE 60 MINIATURE ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 60 2 tailles en carbure monobloc avec cou long, 2 dents4 dents
Micro-frese SE 60 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A56 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	B0909
0070 050 0400 080	0.7	1.0	8	50	0.65	4	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	•
0080 050 0400	0.8	1.2	-	50	-	4	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	•
0090 050 0400	0.9	1.4	-	50	-	4	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	•
0090 050 0400 080	0.9	1.4	8	50	0.85	4	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	•
0100 050 0400	1	1.5	-	50	-	4	•
0100 050 0400 060	1	1.5	6	50	0.9	4	•
0100 050 0400 080	1	1.5	8	50	0.9	4	•
0100 050 0400 100	1	1.5	10	50	0.9	4	•
0100 050 0400 120	1	1.5	12	50	0.9	4	•
0100 050 0400 140	1	1.5	14	50	0.9	4	•
0100 050 0400 160	1	1.5	16	50	0.9	4	•
0120 050 0400	1.2	1.8	-	50	-	4	•
0120 050 0400 060	1.2	1.8	6	50	1.1	4	•
0120 050 0400 080	1.2	1.8	8	50	1.1	4	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	•
0140 050 0400	1.4	2.1	-	50	-	4	•
0140 050 0400 060	1.4	2.1	6	50	1.3	4	•
0140 050 0400 080	1.4	2.1	8	50	1.3	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

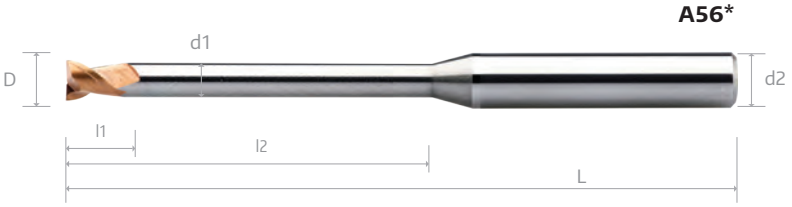
Technical specifications subject to change without prior notice

SE 60 MINIATURE ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 60 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 60 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A56 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	B0909
0140 050 0400 100	1.4	2.1	10	50	1.3	4	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	•
0150 050 0400	1.5	2.3	-	50	-	4	•
0150 050 0400 060	1.5	2.3	6	50	1.4	4	•
0150 050 0400 080	1.5	2.3	8	50	1.4	4	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	•
0150 060 0400	1.5	2.3	-	60	-	4	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	•
0160 050 0400	1.6	2.4	-	50	-	4	•
0160 050 0400 060	1.6	2.4	6	50	1.5	4	•
0160 050 0400 080	1.6	2.4	8.0	50	1.5	4	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	•
0160 060 0400	1.6	2.4	-	60	-	4	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	•
0180 050 0400	1.8	2.7	-	50	-	4	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

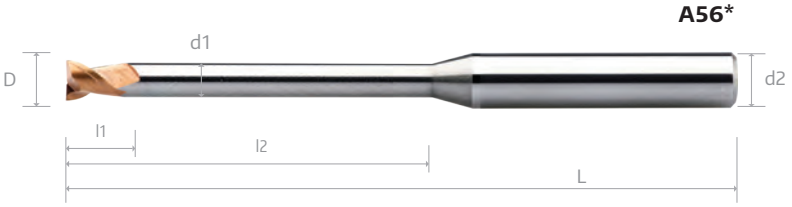
Technische änderungen ohne vorherige information vorbehalten

SE 60 MINIATURE ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 60 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 60 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A56 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	B0909
0180 050 0400 120	1.8	2.7	12	50	1.7	4	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	•
0180 060 0400	1.8	2.7	-	60	-	4	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	•
0200 050 0400	2	3	-	50	-	4	•
0200 050 0400 060	2	3	6	50	1.9	4	•
0200 050 0400 080	2	3	8	50	1.9	4	•
0200 050 0400 100	2	3	10	50	1.9	4	•
0200 050 0400 120	2	3	12	50	1.9	4	•
0200 050 0400 140	2	3	14	50	1.9	4	•
0200 050 0400 160	2	3	16	50	1.9	4	•
0200 060 0400	2	3	-	60	-	4	•
0200 060 0400 180	2	3	18	60	1.9	4	•
0200 060 0400 200	2	3	20	60	1.9	4	•
0200 075 0400	2	3	-	75	-	4	•
0200 075 0400 250	2	3	25	75	1.9	4	•
0200 075 0400 300	2	3	30	75	1.9	4	•
0250 050 0400	2.5	3.7	-	50	-	4	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	•
0250 060 0400	2.5	3.7	-	60	-	4	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

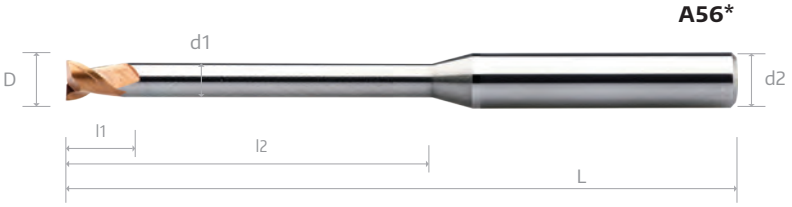
Spécifications techniques sujettes à changement sans avis prélable

SE 60 MINIATURE ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 60 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 60 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60 系列 长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A56 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	B0909
0250 075 0400	2.5	3.7	-	75	-	4	•
0250 075 0400 250	2.5	3.7	25	75	2.4	4	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	•
0300 050 0400	2.5	4.5	-	50	-	4	•
0300 050 0400 080	2.5	4.5	8	50	2.8	4	•
0300 050 0600	3	4.5	-	50	-	6	•
0300 050 0600 080	3	4.5	8	50	2.8	6	•
0300 050 0600 100	3	4.5	-	50	-	6	•
0300 050 0600 120	3	4.5	12	50	2.8	6	•
0300 050 0400 140	3	4.5	-	50	-	4	•
0300 050 0600 140	3	4.5	14	50	2.8	6	•
0300 060 0600	3	4.5	-	60	-	6	•
0300 060 0600 160	3	4.5	16	60	2.8	6	•
0300 060 0600 180	3	4.5	18	60	2.8	6	•
0300 060 0600 200	3	4.5	20	60	2.8	6	•
0300 075 0400	3	4.5	-	75	-	4	•
0300 075 0400 250	3	4.5	25	75	2.8	4	•
0300 075 0600 250	3	4.5	25	75	2.8	6	•
0400 060 0600	4	4.5	-	60	-	6	•
0400 060 0600 100	4	4.5	10	60	3.7	6	•
0400 060 0600 150	4	4.5	15	60	3.7	6	•
0400 060 0600 200	4	4.5	20	60	3.7	6	•
0400 075 0600	4	4.5	-	75	-	6	•
0400 075 0600 250	4	4.5	25	75	3.7	6	•
0400 075 0600 300	4	4.5	30	75	3.7	6	•
0400 075 0600 400	4	4.5	40	75	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 294

SE 60

Modifiche Techiche possibili senza preavviso

SE 60R MINIATURE TORUS ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti avec cou long, 2 dents
Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60R 系列 圆鼻长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A80 *
= * + Ø data	D	l1	l2	L	d1	R	d2 (h6)	B0909
0020 050 0400	0.2	0.3	-	50	-	0.02	4	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	0.02	4	•
0020 050 0400 010	0.2	0.3	1	50	0.17	0.02	4	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	0.02	4	•
0030 050 0400	0.3	0.4	-	50	-	0.03	4	•
0030 050 0400 010	0.3	0.4	1	50	0.27	0.03	4	•
0030 050 0400 020	0.3	0.4	2	50	0.27	0.03	4	•
0030 050 0400 030	0.3	0.4	3	50	0.27	0.03	4	•
0040 050 0400	0.4	0.6	-	50	-	0.03	4	•
0040 050 0400 020	0.4	0.6	2	50	0.37	0.03	4	•
0040 050 0400 030	0.4	0.6	3	50	0.37	0.03	4	•
0040 050 0400 040	0.4	0.6	4	50	0.37	0.03	4	•
0040 050 0400 050	0.4	0.6	5	50	0.37	0.03	4	•
0050 050 0400	0.5	0.7	-	50	-	0.05	4	•
0050 050 0400 020	0.5	0.7	2	50	0.45	0.05	4	•
0050 050 0400 040	0.5	0.7	4	50	0.45	0.05	4	•
0050 050 0400 060	0.5	0.7	6	50	0.45	0.05	4	•
0050 050 0400 080	0.5	0.7	8	50	0.45	0.05	4	•
0060 050 0400	0.6	0.9	-	50	-	0.05	4	•
0060 050 0400 020	0.6	0.9	2	50	0.55	0.05	4	•
0060 050 0400 040	0.6	0.9	4	50	0.55	0.05	4	•
0060 050 0400 060	0.6	0.9	6	50	0.55	0.05	4	•
0060 050 0400 080	0.6	0.9	8	50	0.55	0.05	4	•
0060 050 0400 100	0.6	0.9	10	50	0.55	0.05	4	•
0070 050 0400	0.7	1.0	-	50	-	0.08	4	•
0070 050 0400 020	0.7	1.0	2	50	0.65	0.08	4	•
0070 050 0400 040	0.7	1.0	4	50	0.65	0.08	4	•
0070 050 0400 060	0.7	1.0	6	50	0.65	0.08	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

若有技术规格变更，恕不事先通知

SE 60R MINIATURE TORUS ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti

Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti avec cou long, 2 dents

整体硬质合金 SE 60R 系列 圆鼻长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A80 *
= * + Ø data	D	l1	l2	L	d1	R	d2 (h6)	B0909
0070 050 0400 080	0.7	1.0	8	50	0.65	0.08	4	•
0070 050 0400 100	0.7	1.0	10	50	0.65	0.08	4	•
0080 050 0400	0.8	1.2	-	50	-	0.08	4	•
0080 050 0400 040	0.8	1.2	4	50	0.75	0.08	4	•
0080 050 0400 060	0.8	1.2	6	50	0.75	0.08	4	•
0080 050 0400 080	0.8	1.2	8	50	0.75	0.08	4	•
0080 050 0400 100	0.8	1.2	10	50	0.75	0.08	4	•
0080 050 0400 120	0.8	1.2	12	50	0.75	0.08	4	•
0090 050 0400	0.9	1.4	-	50	-	0.08	4	•
0090 050 0400 060	0.9	1.4	6	50	0.85	0.08	4	•
0090 050 0400 080	0.9	1.4	8.0	50	0.85	0.08	4	•
0090 050 0400 100	0.9	1.4	10	50	0.85	0.08	4	•
0090 050 0400 150	0.9	1.4	15	50	0.85	0.08	4	•
0100 050 0400	1.0	1.5	-	50	-	0.1	4	•
0100 050 0400 060	1.0	1.5	6	50	0.9	0.1	4	•
0100 050 0400 080	1.0	1.5	8	50	0.9	0.1	4	•
0100 050 0400 100	1.0	1.5	10	50	0.9	0.1	4	•
0100 050 0400 120	1.0	1.5	12	50	0.9	0.1	4	•
0100 050 0400 140	1.0	1.5	14	50	0.9	0.1	4	•
0100 050 0400 160	1.0	1.5	16	50	0.9	0.1	4	•
0120 050 0400	1.2	1.8	-	50	-	0.1	4	•
0120 050 0400 060	1.2	1.8	6	50	1.1	0.1	4	•
0120 050 0400 080	1.2	1.8	8	50	1.1	0.1	4	•
0120 050 0400 100	1.2	1.8	10	50	1.1	0.1	4	•
0120 050 0400 120	1.2	1.8	12	50	1.1	0.1	4	•
0140 050 0400	1.4	2.1	-	50	-	0.15	4	•
0140 050 0400 060	1.4	2.1	6	50	1.3	0.15	4	•
0140 050 0400 080	1.4	2.1	8	50	1.3	0.15	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

SE 60R MINIATURE TORUS ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Torus-Kleinstfräser mit langem Hals, 2 Zähne

Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti

Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti avec cou long, 2 dents

整体硬质合金 SE 60R 系列 圆鼻长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A80 *
= * + Ø data	D	l1	l2	L	d1	R	d2 (h6)	B0909
0140 050 0400 100	1.4	2.1	10	50	1.3	0.15	4	•
0140 050 0400 120	1.4	2.1	12	50	1.3	0.15	4	•
0140 050 0400 140	1.4	2.1	14	50	1.3	0.15	4	•
0140 050 0400 160	1.4	2.1	16	50	1.3	0.15	4	•
0150 050 0400	1.5	2.3	-	50	-	0.15	4	•
0150 050 0400 060	1.5	2.3	6	50	1.4	0.15	4	•
0150 050 0400 080	1.5	2.3	8	50	1.4	0.15	4	•
0150 050 0400 100	1.5	2.3	10	50	1.4	0.15	4	•
0150 050 0400 120	1.5	2.3	12	50	1.4	0.15	4	•
0150 050 0400 140	1.5	2.3	14	50	1.4	0.15	4	•
0150 050 0400 160	1.5	2.3	16	50	1.4	0.15	4	•
0150 060 0400	1.5	2.3	18	60	1.4	0.15	4	•
0150 060 0400 180	1.5	2.3	18	60	1.4	0.15	4	•
0150 060 0400 200	1.5	2.3	20	60	1.4	0.15	4	•
0160 050 0400	1.6	2.4	-	50	-	0.15	4	•
0160 050 0400 060	1.6	2.4	6	50	1.5	0.15	4	•
0160 050 0400 080	1.6	2.4	8	50	1.5	0.15	4	•
0160 050 0400 100	1.6	2.4	10	50	1.5	0.15	4	•
0160 050 0400 120	1.6	2.4	12	50	1.5	0.15	4	•
0160 050 0400 140	1.6	2.4	14	50	1.5	0.15	4	•
0160 050 0400 160	1.6	2.4	16	50	1.5	0.15	4	•
0160 050 0400	1.6	2.4	-	50	-	0.15	4	•
0160 060 0400 180	1.6	2.4	18	60	1.5	0.15	4	•
0160 060 0400 200	1.6	2.4	20	60	1.5	0.15	4	•
0180 050 0400	1.8	2.7	-	50	-	0.2	4	•
0180 050 0400 060	1.8	2.7	6	50	1.7	0.2	4	•
0180 050 0400 080	1.8	2.7	8	50	1.7	0.2	4	•
0180 050 0400 100	1.8	2.7	10	50	1.7	0.2	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

294

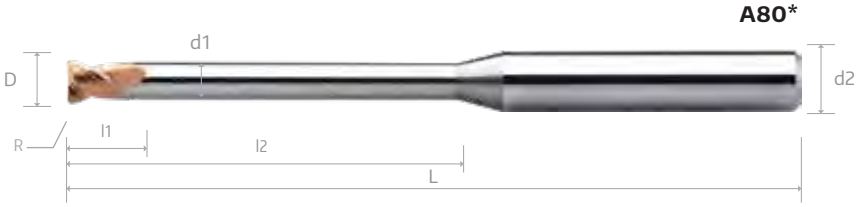
Technische änderungen ohne vorherige information vorbehalten

SE 60R MINIATURE TORUS ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti avec cou long, 2 dents
Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60R 系列 圆鼻长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A80 *
= * + Ø data	D	l1	l2	L	d1	R	d2 (h6)	B0909
0180 050 0400 120	1.8	2.7	12	50	1.7	0.2	4	•
0180 050 0400 140	1.8	2.7	14	50	1.7	0.2	4	•
0180 050 0400 160	1.8	2.7	16	50	1.7	0.2	4	•
0180 060 0400	1.8	2.7	-	60	-	0.2	4	•
0180 060 0400 180	1.8	2.7	18	60	1.7	0.2	4	•
0180 060 0400 200	1.8	2.7	20	60	1.7	0.2	4	•
0200 050 0400	2	3	-	50	-	0.2	4	•
0200 050 0400 060	2	3	6	50	1.9	0.2	4	•
0200 050 0400 080	2	3	8	50	1.9	0.2	4	•
0200 050 0400 100	2	3	10	50	1.9	0.2	4	•
0200 050 0400 120	2	3	12	50	1.9	0.2	4	•
0200 050 0400 140	2	3	14	50	1.9	0.2	4	•
0200 050 0400 160	2	3	16	50	1.9	0.2	4	•
0200 060 0400	2	3	-	60	-	0.2	4	•
0200 060 0400 180	2	3	18	60	1.9	0.2	4	•
0200 060 0400 200	2	3	20	60	1.9	0.2	4	•
0200 075 0400	2	3	-	75	-	0.2	4	•
0200 075 0400 250	2	3	25	75	1.9	0.2	4	•
0200 075 0400 300	2	3	30	75	1.9	0.2	4	•
0250 050 0400	2.5	3.7	-	50	-	0.3	4	•
0250 050 0400 080	2.5	3.7	8	50	2.4	0.3	4	•
0250 050 0400 100	2.5	3.7	10	50	2.4	0.3	4	•
0250 050 0400 120	2.5	3.7	12	50	2.4	0.3	4	•
0250 050 0400 140	2.5	3.7	14	50	2.4	0.3	4	•
0250 050 0400 160	2.5	3.7	16	50	2.4	0.3	4	•
0250 060 0400	2.5	3.7	-	60	-	0.3	4	•
0250 060 0400 180	2.5	3.7	18	60	2.4	0.3	4	•
0250 060 0400 200	2.5	3.7	20	60	2.4	0.3	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

294

SE 60R

MINIATURE TORUS ENDMILLS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM SE 60R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti avec cou long, 2 dents
Micro-frese torodali SE 60R in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 60R 系列 圆鼻长颈短刃 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A80 *
= * + Ø data	D	l1	l2	L	d1	R	d2 (h6)	B0909
0250 060 0400 250	2.5	3.7	25	60	2.4	0.3	4	•
0250 075 0400	2.5	3.7	-	75	-	0.3	4	•
0250 075 0400 300	2.5	3.7	30	75	2.4	0.3	4	•
0300 050 0600	3	4.5	-	50	-	0.3	6	•
0300 050 0600 080	3	4.5	8	50	2.8	0.3	6	•
0300 050 0600 100	3	4.5	10	50	2.8	0.3	6	•
0300 050 0600 120	3	4.5	12	50	2.8	0.3	6	•
0300 050 0600 140	3	4.5	14	50	2.8	0.3	6	•
0300 060 0600	3	4.5	-	60	-	0.3	6	•
0300 060 0600 160	3	4.5	16	60	2.8	0.3	6	•
0300 060 0600 180	3	4.5	18	60	2.8	0.3	6	•
0300 060 0600 200	3	4.5	20	60	2.8	0.3	6	•
0300 075 0600	3	4.5	-	75	-	0.3	6	•
0300 075 0600 250	3	4.5	25	75	2.8	0.3	6	•
0400 060 0600	4	4.5	-	60	-	0.4	6	•
0400 060 0600 100	4	4.5	10	60	3.7	0.4	6	•
0400 060 0600 150	4	4.5	15	60	3.7	0.4	6	•
0400 060 0600 200	4	4.5	20	60	3.7	0.4	6	•
0400 075 0600	4	4.5	-	75	-	0.4	6	•
0400 075 0600 250	4	4.5	25	75	3.7	0.4	6	•
0400 075 0600 300	4	4.5	30	75	3.7	0.4	6	•
0400 075 0600 400	4	4.5	40	75	3.7	0.4	6	•

SE 60

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

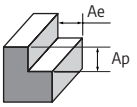
Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

294

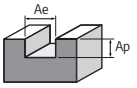
Modifiche Techiche possibili senza preavviso

Standard Endmills 4 Flutes



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	60	0.012	50	0.013
2		0.025		0.026
3		0.039		0.042
4		0.061		0.060
5		0.073		0.080
6		0.091		0.100
7		0.101		0.110
8		0.111		0.121
10		0.131		0.141
12		0.167		0.181
14		0.187		0.202
16		0.205		0.221
18		0.236		0.255
20		0.262		0.283
22		0.288		0.311
25		0.327		0.353

Standard Endmills 4 Flutes

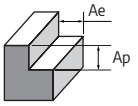


Slotting	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.12 × D		0.09 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	55	0.006	45	0.004
2		0.013		0.008
3		0.026		0.013
4		0.038		0.017
5		0.044		0.027
6		0.057		0.036
7		0.060		0.040
8		0.064		0.045
10		0.071		0.045
12		0.096		0.063
14		0.104		0.068
16		0.110		0.070
18		0.129		0.085
20		0.143		0.098
22		0.157		0.108
25		0.179		0.122

H

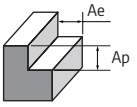
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Endmills 4 Flutes



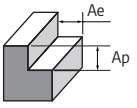
Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	60	0.031	50	0.034
4		0.049		0.048
5		0.059		0.064
6		0.073		0.080
8		0.089		0.097
10		0.105		0.113
12		0.134		0.145
14		0.150		0.163
16		0.163		0.176
18		0.189		0.204
20		0.209		0.226

Extra-Long Endmills 4 Flutes



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	60	0.027	50	0.030
4		0.042		0.042
5		0.051		0.056
6		0.064		0.070
8		0.078		0.084
10		0.092		0.099
12		0.116		0.126
14		0.130		0.141
16		0.145		0.156
18		0.165		0.178
20		0.183		0.198

Short Flute Endmills 4 Flutes



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	60	0.039	50	0.042
4		0.060		0.060
5		0.074		0.080
6		0.091		0.100
8		0.110		0.121
10		0.132		0.141
12		0.166		0.181
16		0.204		0.221

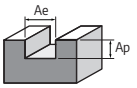


H

Recommended Cutting Data

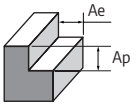
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Short Flute Endmills 4 Flutes



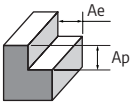
Slotting	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.15 × D		0.10 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	55	0.026	45	0.013
4		0.038		0.017
5		0.044		0.027
6		0.057		0.036
8		0.064		0.045
10		0.071		0.045
12		0.096		0.063
16		0.110		0.070

Short Flute Long Reach – Long Endmills 4 Flutes



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	60	0.020	50	0.021
3		0.031		0.034
4		0.049		0.048
5		0.059		0.064
6		0.073		0.080
8		0.089		0.097
10		0.105		0.113
12		0.134		0.145
14		0.150		0.163
16		0.163		0.176
18		0.189		0.204
20		0.209		0.226

Short Flute Long Reach – Extra-Long Endmills 4 Flutes



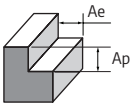
Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	60	0.017	50	0.019
3		0.027		0.030
4		0.042		0.042
5		0.051		0.056
6		0.064		0.070
8		0.078		0.084
10		0.092		0.099
12		0.116		0.126
14		0.130		0.141
16		0.145		0.156
18		0.165		0.178
20		0.183		0.198



H

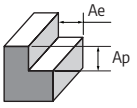
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Multiflute Endmills



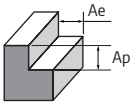
Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	70	0.027	60	0.029
4		0.041		0.040
5		0.049		0.053
6		0.061		0.066
8		0.075		0.081
10		0.090		0.096
12		0.113		0.121
14		0.128		0.137
16		0.106		0.113
18		0.121		0.130
20		0.135		0.144

Multiflute – Long Endmills



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	70	0.022	60	0.023
4		0.033		0.032
5		0.040		0.043
6		0.049		0.053
8		0.060		0.065
10		0.072		0.077
12		0.091		0.097
14		0.103		0.110
16		0.084		0.090
18		0.097		0.104
20		0.108		0.115

Multiflute – Extra Long Endmills



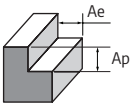
Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	70	0.019	60	0.020
4		0.028		0.028
5		0.034		0.037
6		0.043		0.046
8		0.053		0.057
10		0.063		0.067
12		0.079		0.085
14		0.089		0.095
16		0.075		0.080
18		0.085		0.091
20		0.094		0.101



H

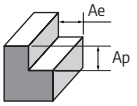
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Endmills 2 Flutes



Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.1	70	0.003	60	0.003
0.2		0.006		0.006
0.3		0.009		0.010
0.4		0.012		0.013
0.5		0.014		0.015
0.6		0.016		0.017
0.7		0.020		0.021
0.8		0.022		0.023
0.9		0.024		0.025
16		0.145		0.156
18		0.165		0.178
20		0.183		0.198

Miniature Endmills 2 Flutes

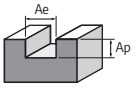


Side Milling	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.1	70	0.003	60	0.003
0.2		0.006		0.006
0.3		0.009		0.010
0.4		0.012		0.013
0.5		0.014		0.015
0.6		0.016		0.017
0.7		0.020		0.021
0.8		0.022		0.023
0.9		0.024		0.025

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



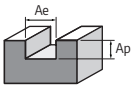
Slotting		H					
Working material		Hardened Steel					
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.010	21	0.004	0.009	20	0.004
	1.0	0.070	21	0.004	0.630	20	0.004
	1.5	0.004	19	0.004	0.004	18	0.004
0.3	1.0	0.011	28	0.005	0.009	26	0.004
	2.0	0.006	25	0.004	0.005	24	0.004
	3.0	0.004	25	0.004	0.004	24	0.004
0.4	2.0	0.014	30	0.007	0.013	28	0.006
	3.0	0.008	27	0.007	0.007	25	0.006
	4.0	0.005	27	0.007	0.005	25	0.006
	5.0	0.005	24	0.006	0.005	22	0.005
0.5	4.0	0.010	34	0.007	0.009	32	0.006
	6.0	0.007	30	0.006	0.006	28	0.005
	8.0	0.004	30	0.005	0.004	28	0.004
0.6	2.0	0.021	45	0.010	0.019	42	0.008
	4.0	0.012	41	0.010	0.011	38	0.009
	6.0	0.008	41	0.010	0.007	38	0.009
	8.0	0.008	36	0.009	0.007	34	0.007
	10.0	0.005	36	0.009	0.004	34	0.007
0.7	2.0	0.035	53	0.010	0.032	49	0.008
	4.0	0.025	48	0.010	0.022	44	0.009
	6.0	0.009	48	0.010	0.008	44	0.009
	8.0	0.009	42	0.009	0.008	39	0.007
	10.0	0.009	42	0.009	0.008	39	0.007
0.8	4.0	0.028	60	0.010	0.025	56	0.008
	6.0	0.016	54	0.010	0.014	51	0.009
	8.0	0.010	54	0.010	0.009	51	0.009
	10.0	0.010	48	0.009	0.009	45	0.007
	12.0	0.006	48	0.009	0.005	45	0.007
0.9	6.0	0.018	61	0.010	0.016	57	0.009
	8.0	0.012	61	0.010	0.010	57	0.009
	10.0	0.012	54	0.009	0.010	51	0.007
	15.0	0.012	54	0.009	0.010	51	0.007
1.0	6.0	0.020	61	0.015	0.018	57	0.013
	8.0	0.020	61	0.015	0.018	57	0.013
	10.0	0.013	61	0.015	0.011	57	0.013
	12.0	0.013	54	0.013	0.011	51	0.011
	14.0	0.013	54	0.013	0.011	51	0.011
	16.0	0.008	54	0.011	0.007	51	0.009
1.2	6.0	0.042	72	0.015	0.038	67	0.013
	8.0	0.024	65	0.015	0.022	61	0.013
	10.0	0.015	65	0.015	0.014	61	0.013
	12.0	0.015	65	0.015	0.014	61	0.013
1.4	6.0	0.050	74	0.015	0.045	69	0.013
	8.0	0.042	66	0.015	0.038	62	0.013
	10.0	0.028	66	0.015	0.025	62	0.013
	12.0	0.018	66	0.015	0.016	62	0.013
	14.0	0.018	66	0.015	0.016	62	0.013
	16.0	0.018	59	0.013	0.016	55	0.011

cont' d ▶

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



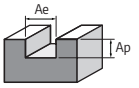
Slotting		H					
Working material		Hardened Steel					
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.5	6.0	0.055	79	0.015	0.050	74	0.013
	8.0	0.030	71	0.015	0.027	66	0.013
	10.0	0.030	71	0.015	0.027	66	0.013
	12.0	0.030	71	0.015	0.027	66	0.013
	14.0	0.019	71	0.015	0.017	66	0.013
	16.0	0.019	63	0.013	0.017	59	0.011
	18.0	0.019	63	0.013	0.017	59	0.011
	20.0	0.019	63	0.013	0.017	59	0.011
1.6	6.0	0.055	78	0.017	0.050	73	0.014
	8.0	0.055	78	0.017	0.050	73	0.014
	10.0	0.032	70	0.016	0.029	66	0.014
	12.0	0.032	70	0.016	0.029	66	0.014
	14.0	0.020	70	0.016	0.018	66	0.014
	16.0	0.020	70	0.016	0.018	66	0.014
	18.0	0.020	63	0.014	0.018	58	0.012
	20.0	0.020	63	0.014	0.018	58	0.012
1.8	6.0	0.065	88	0.017	0.059	83	0.014
	8.0	0.065	88	0.017	0.059	83	0.014
	10.0	0.036	79	0.016	0.032	74	0.014
	12.0	0.036	79	0.016	0.032	74	0.014
	14.0	0.036	79	0.016	0.032	74	0.014
	16.0	0.023	79	0.016	0.020	74	0.014
	18.0	0.023	79	0.016	0.020	74	0.014
	20.0	0.023	71	0.014	0.020	66	0.012
2.0	6.0	0.100	79	0.020	0.090	74	0.017
	8.0	0.070	79	0.020	0.063	74	0.017
	10.0	0.070	79	0.020	0.063	74	0.017
	12.0	0.040	71	0.020	0.036	67	0.017
	14.0	0.040	71	0.020	0.036	67	0.017
	16.0	0.040	71	0.020	0.036	67	0.017
	18.0	0.025	71	0.020	0.023	67	0.017
	20.0	0.025	71	0.020	0.023	67	0.017
	25.0	0.025	63	0.017	0.023	59	0.014
	30.0	0.015	63	0.017	0.014	59	0.014
2.5	8.0	0.090	85	0.025	0.081	79	0.021
	10.0	0.090	85	0.025	0.081	79	0.021
	12.0	0.090	85	0.025	0.081	79	0.021
	14.0	0.070	81	0.025	0.063	75	0.021
	16.0	0.050	76	0.025	0.045	71	0.021
	18.0	0.050	76	0.025	0.045	71	0.021
	20.0	0.050	76	0.025	0.045	71	0.021
	25.0	0.050	76	0.025	0.045	71	0.021
	30.0	0.050	76	0.025	0.045	71	0.021

cont' d ▶

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Endmills with Long Neck 2 Flutes



Slotting		H					
Working material		Hardened Steel					
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
3.0	8.0	0.150	90	0.025	0.135	85	0.021
	10.0	0.128	90	0.025	0.115	85	0.021
	12.0	0.105	90	0.025	0.095	85	0.021
	14.0	0.083	86	0.025	0.074	80	0.021
	16.0	0.060	81	0.025	0.054	76	0.022
	18.0	0.060	81	0.025	0.054	76	0.022
	20.0	0.060	81	0.025	0.054	76	0.022
	25.0	0.040	81	0.025	0.036	76	0.022
4.0	10.0	0.200	89	0.063	0.180	83	0.055
	15.0	0.140	89	0.063	0.126	83	0.055
	20.0	0.140	79	0.064	0.126	74	0.055
	25.0	0.080	79	0.072	0.072	74	0.055
	30.0	0.080	79	0.064	0.072	74	0.055
	40.0	0.050	72	0.064	0.045	67	0.056

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



SE 60X

Suitable for high speed milling

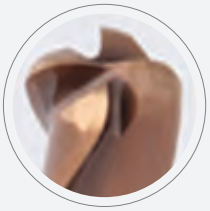
For material application between
40 HRC to 68 HRC

SE 60X Fin-Mill

01

4/6 FLUTES

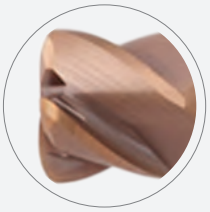
2x to 3x feed rate in comparison with conventional 2 flutes cutter



02

TOUGH PVD SILICON BASED COATING

- Prolong the tool life
- Enables higher cutting speeds
- Increases hardness and higher abrasive wear resistance smoother chips evacuation





03

SUITABLE FOR MATERIAL GROUP

P S H

DEUTSCH

01 **4/6 SCHNEIDEN**
Zwei- bzw. dreifacher Vorschub gegenüber Fräsern mit 2 Schneiden

02 **PVD-SILIZIUM-HARTBESCHICHTUNG**
- Verlängert die Lebensdauer des Werkzeugs
- Ermöglicht höhere Schnittgeschwindigkeiten
- Erhöht die Hitzebeständigkeit, deshalb sehr gut geeignet für Trockenbearbeitung

03 **GEEIGNET FÜR DIE MATERIALGRUPPEN P, S, H**

FRANÇAIS

01 **4/6 GOUJURES**
Débit 2 à 3 fois plus élevé que les dispositifs de coupe conventionnels à 2 goujures

02 **REVÊTEMENT À BASE DE SILICIUM SOUS FORME DE DÉPÔT EN PHASE VAPEUR RÉSISTANT**
- Prolonge la durée de vie de l'outil
- Permet des vitesses de coupe supérieures
- Augmente la résistance à la chaleur, donc parfaitement adapté à l'usinage à sec

03 **ADAPTÉ AU MATÉRIAUX P, S, H**

ITALIANO

01 **4/6 SCANALATURE**
Velocità di avanzamento 2 o 3 volte maggiore rispetto a cutter tradizionali a 2 scanalature

02 **RIVESTIMENTO IN SILICONE PVD RESISTENTE**
- Prolunga la vita dello strumento
- Consente maggiori velocità di taglio
- Aumenta la resistenza al calore ed è quindi adatto per la lavorazione a secco

03 **ADATTO PER MATERIALE P, S, H**

中文

01 **4/6 刃**
比2 刃刀具相比，进给速度提高 2 倍到 3 倍

02 **PVD 硅基涂层**
- 延长刀具寿命
- 提高抗热性（适合干加工）
- 优异的耐磨性和耐崩刀性

03 **适用高硬度材料**

SE 60X

FIN-MILL TORUS ENDMILLS - STANDARD

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-mill Torusfräser, -Standard, 4 / 6 Zähne

Fraises 2 tailles SE 60X Fin-mill toriques en carbure monobloc - Standard, 4 / 6 dents

Frese SE 60X Fin-mill toroidali, in metallo duro integrale - Standard, 4 / 6 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻立铣刀 4 / 6 刃 - 标准长度







HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G78*
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
0200 060 0600 030	2	2	10	60	6	0.3	•
0200 060 0600 050	2	2	20	60	6	0.5	•
0300 060 0600 030	3	3	21	60	6	0.3	•
0300 060 0600 050	3	3	21	60	6	0.5	•
0400 060 0600 030	4	4	12	60	6	0.3	•
0400 060 0600 050	4	4	12	60	6	0.5	•
0600 060 0600 030	6	6	20	60	6	0.3	•
0600 060 0600 050	6	6	20	60	6	0.5	•
0600 060 0600 100	6	6	20	60	6	1	•

G80 *

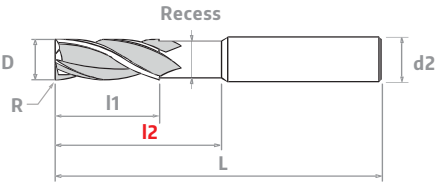
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

317

SE 60X

Technical specifications subject to change without prior notice

SE 60X FIN-MILL TORUS ENDMILLS - STANDARD

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-mill Torusfräser, -Standard, 4 / 6 Zähne

Fraises 2 tailles SE 60X Fin-mill toriques en carbure monobloc - Standard, 4 / 6 dents

Frese SE 60X Fin-mill toroidali, in metallo duro integrale - Standard, 4 / 6 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻立铣刀 4 / 6 刃 - 标准长度

G78*





Z6



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G78*
= * + Ø data	D	l1	l2	L	d2 (h6)	R	B0909
0800 064 0800 030	8	8	24	64	8	0.3	•
0800 064 0800 050	8	8	24	64	8	0.5	•
0800 064 0800 100	8	8	24	64	8	1	•
0800 064 0800 200	8	8	24	64	8	2	•
1000 075 1000 030	10	10	30	75	10	0.3	•
1000 075 1000 050	10	10	30	75	10	0.5	•
1000 075 1000 100	10	10	30	75	10	1	•
1000 075 1000 200	10	10	30	75	10	2	•
1200 075 1200 030	12	12	30	75	12	0.3	•
1200 075 1200 050	12	12	30	75	12	0.5	•
1200 075 1200 100	12	12	30	75	12	1	•
1200 075 1200 200	12	12	30	75	12	2	•

G80 *

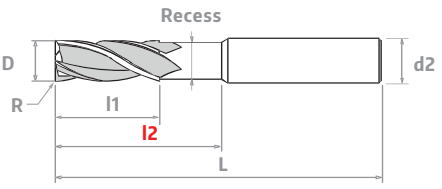
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

317

SE 60X

Technische änderungen ohne vorherige information vorbehalten

SE 60X FIN-MILL TORUS ENDMILLS - LONG

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-mill Langer Torusfräser, 4 / 6 Zähne	Fraises 2 tailles SE 60X Fin-mill toriques longues en carbure monobloc, 4 / 6 dents
Frese SE 60X Fin-mill toroidali lunghe, in metallo duro integrale, 4 / 6 taglienti	整体硬质合金 SE 60X Fin-mill 系列 圆鼻 立铣刀 4 / 6 刃 - 中长度

G82*





Z4



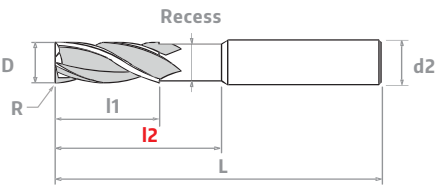


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G82*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0200 075 0600 030	2	2	35	75	6	0.3	•
0200 075 0600 050	2	2	35	75	6	0.5	•
0300 075 0600 030	3	3	30	75	6	0.3	•
0300 075 0600 050	3	3	30	75	6	0.5	•
0400 075 0600 030	4	4	32	75	6	0.3	•
0400 075 0600 050	4	4	32	75	6	0.5	•
0600 075 0600 030	6	6	40	75	6	0.3	•
0600 075 0600 050	6	6	40	75	6	0.5	•
0600 075 0600 100	6	6	40	75	6	1	•

G84 *

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter: 317

SE 60X

Spécifications techniques sujettes à changement sans avis prélable

SE 60X FIN-MILL TORUS ENDMILLS - LONG

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-mill Langer Torusfräser, 4 / 6 Zähne

Fraises 2 tailles SE 60X Fin-mill toriques longues en carbure monobloc, 4 / 6 dents

Frese SE 60X Fin-mill toroidali lunghe, in metallo duro integrale, 4 / 6 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻 立铣刀 4 / 6 刃 - 中长度

G82*





Z6



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G82*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R	B0909
0800 100 0800 030	8	8	60	100	8	0.3	•
0800 100 0800 050	8	8	60	100	8	0.5	•
0800 100 0800 100	8	8	60	100	8	1	•
0800 100 0800 200	8	8	60	100	8	2	•
1000 100 1000 030	10	10	60	100	10	0.3	•
1000 100 1000 050	10	10	60	100	10	0.5	•
1000 100 1000 100	10	10	60	100	10	1	•
1000 100 1000 200	10	10	60	100	10	2	•
1200 100 1200 030	12	12	60	100	12	0.3	•
1200 100 1200 050	12	12	60	100	12	0.5	•
1200 100 1200 100	12	12	60	100	12	1	•
1200 100 1200 200	12	12	60	100	12	2	•

G84 *

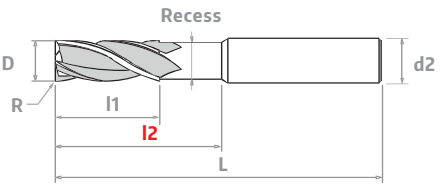
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

317

SE 60X

Modifiche Techiche possibili senza preavviso

SE 60X FIN-MILL TORUS LONG NECK

≤ 1.600 N/mm² + B0909 40 - 68 HRC

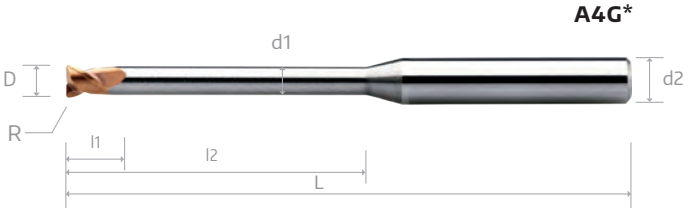
HPMT

VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne

Micro-fraises Fin-Mill 2/4 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti

整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0020 050 0400 R005	0.2	0.2	-	50	-	0.05	4	2	o
0020 050 0400 005 R005	0.2	0.2	0.5	50	0.17	0.05	4	2	o
0020 050 0400 010 R005	0.2	0.2	1	50	0.17	0.05	4	2	o
0020 050 0400 015 R005	0.2	0.2	1.5	50	0.17	0.05	4	2	o
0020 050 0400 020 R005	0.2	0.2	2	50	0.17	0.05	4	2	o
0030 050 0400 R005	0.3	0.3	-	50	-	0.05	4	2	o
0030 050 0400 010 R005	0.3	0.3	1	50	0.27	0.05	4	2	o
0030 050 0400 015 R005	0.3	0.3	1.5	50	0.27	0.05	4	2	o
0030 050 0400 020 R005	0.3	0.3	2	50	0.27	0.05	4	2	o
0030 050 0400 025 R005	0.3	0.3	3	50	0.27	0.05	4	2	o
0030 050 0400 030 R005	0.3	0.3	3	50	0.27	0.05	4	2	o
0040 050 0400 R005	0.4	0.4	-	50	-	0.05	4	2	o
0040 050 0400 010 R005	0.4	0.4	1	50	0.37	0.05	4	2	o
0040 050 0400 015 R005	0.4	0.4	2	50	0.37	0.05	4	2	o
0040 050 0400 020 R005	0.4	0.4	2	50	0.37	0.05	4	2	o
0040 050 0400 025 R005	0.4	0.4	3	50	0.37	0.05	4	2	o
0040 050 0400 030 R005	0.4	0.4	3	50	0.37	0.05	4	2	o
0040 050 0400 035 R005	0.4	0.4	4	50	0.37	0.05	4	2	o
0040 050 0400 040 R005	0.4	0.4	4	50	0.37	0.05	4	2	o
0050 050 0400 R005	0.5	0.5	-	50	-	0.05	4	2	o
0050 050 0400 010 R005	0.5	0.5	1	50	0.45	0.05	4	2	o
0050 050 0400 020 R005	0.5	0.5	2	50	0.45	0.05	4	2	o
0050 050 0400 030 R005	0.5	0.5	3	50	0.45	0.05	4	2	o
0050 050 0400 040 R005	0.5	0.5	4	50	0.45	0.05	4	2	o
0050 050 0400 050 R005	0.5	0.5	5	50	0.45	0.05	4	2	o
0050 050 0400 060 R005	0.5	0.5	6	50	0.45	0.05	4	2	o
0060 050 0400 R010	0.6	0.6	-	50	-	0.1	4	2	•
0060 050 0400 020 R010	0.6	0.6	2	50	0.55	0.1	4	2	•
0060 050 0400 040 R010	0.6	0.6	4	50	0.55	0.1	4	2	•
0060 050 0400 060 R010	0.6	0.6	6	50	0.55	0.1	4	2	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter: 318

Technical specifications subject to change without prior notice

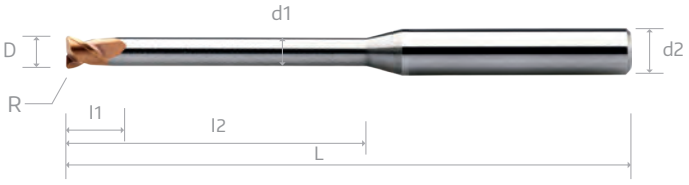
SE 60X FIN-MILL TORUS LONG NECK

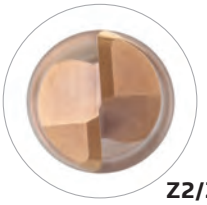
≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne	Micro-fraises Flutes Fin-Mill 2/4 tailles toriques en carbure mono-bloc avec cou long, 2 dents
Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti	整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃

A4G*





Z2/Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0060 050 0400 080 R010	0.6	0.6	8	50	0.55	0.1	4	2	•
0060 050 0400 100 R010	0.6	0.6	10	50	0.55	0.1	4	2	•
0080 050 0400 R010	0.8	0.8	-	50	-	0.1	4	2	•
0080 050 0400 040 R010	0.8	0.8	4	50	0.75	0.1	4	2	•
0080 050 0400 060 R010	0.8	0.8	6	50	0.75	0.1	4	2	•
0080 050 0400 080 R010	0.8	0.8	8	50	0.75	0.1	4	2	•
0080 050 0400 120 R010	0.8	0.8	12	50	0.75	0.1	4	2	•
0100 050 0400 R010	1	1	-	50	-	0.1	4	4	•
0100 050 0400 040 R010	1	1	4	50	0.9	0.1	4	4	•
0100 050 0400 060 R010	1	1	6.0	50	0.9	0.1	4	4	•
0100 050 0400 080 R010	1	1	8.0	50	0.9	0.1	4	4	•
0100 050 0400 100 R010	1	1	10	50	0.9	0.1	4	4	•
0100 050 0400 120 R010	1	1	12	50	0.9	0.1	4	4	•
0100 050 0400 140 R010	1	1	14	50	0.9	0.1	4	4	•
0100 050 0400 160 R010	1	1	16	50	0.9	0.1	4	4	•
0100 075 0400 R010	1	1	-	75	-	0.1	4	4	•
0100 075 0400 200 R010	1	1	20	75	0.9	0.1	4	4	•
0100 050 0400 R020	1	1	-	50	-	0.2	4	4	•
0100 050 0400 040 R020	1	1	4	50	0.9	0.2	4	4	•
0100 050 0400 060 R020	1	1	6.0	50	0.9	0.2	4	4	•
0100 050 0400 080 R020	1	1	8.0	50	0.9	0.2	4	4	•
0100 050 0400 100 R020	1	1	10	50	0.9	0.2	4	4	•
0100 050 0400 120 R020	1	1	12	50	0.9	0.2	4	4	•
0100 050 0400 140 R020	1	1	14	50	0.9	0.2	4	4	•
0100 050 0400 160 R020	1	1	16	50	0.9	0.2	4	4	•
0100 060 0400 R020	1	1	-	60	-	0.2	4	4	•
0100 060 0400 200 R020	1	1	20	60	0.9	0.2	4	4	•
0100 050 0400 R030	1	1	-	50	-	0.3	4	4	•
0100 050 0400 060 R030	1	1	6.0	50	0.9	0.3	4	4	•
0100 050 0400 100 R030	1	1	10	50	0.9	0.3	4	4	•

*Remark: Z2 no DP

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

318

Technische änderungen ohne vorherige information vorbehalten

SE 60X FIN-MILL TORUS LONG NECK

≤ 1.600 N/mm² + B0909 40 - 68 HRC

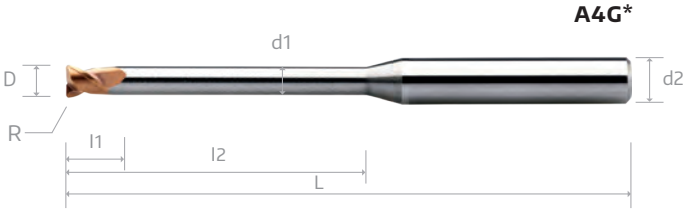
HPMT

VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne

Micro-fraises Flutes Fin-Mill 2/4 tailles toriques en carbure mono-bloc avec cou long, 2 dents

Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti

整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0100 050 0400 160 R030	1	1	16	50	0.9	0.3	4	4	•
0100 060 0400 R030	1	1	-	60	-	0.3	4	4	•
0100 060 0400 200 R013	1	1	20	60	0.9	0.3	4	4	•
0150 050 0400 R010	1.5	1.5	-	50	-	0.1	4	4	•
0150 050 0400 060 R010	1.5	1.5	6	50	1.4	0.1	4	4	•
0150 050 0400 080 R010	1.5	1.5	8.0	50	1.4	0.1	4	4	•
0150 050 0400 120 R010	1.5	1.5	12	50	1.4	0.1	4	4	•
0150 050 0400 160 R010	1.5	1.5	16	50	1.4	0.1	4	4	•
0150 060 0400 R010	1.5	1.5	-	60	-	0.1	4	4	•
0150 060 0400 200 R010	1.5	1.5	20	60	1.4	0.1	4	4	•
0150 050 0400 R020	1.5	1.5	-	50	-	0.2	4	4	•
0150 050 0400 060 R020	1.5	1.5	6.0	50	1.4	0.2	4	4	•
0150 050 0400 080 R020	1.5	1.5	8.0	50	1.4	0.2	4	4	•
0150 050 0400 100 R020	1.5	1.5	10	50	1.4	0.2	4	4	•
0150 050 0400 120 R020	1.5	1.5	12	50	1.4	0.2	4	4	•
0150 050 0400 140 R020	1.5	1.5	14	50	1.4	0.2	4	4	•
0150 050 0400 160 R020	1.5	1.5	16	50	1.4	0.2	4	4	•
0150 060 0400 R020	1.5	1.5	-	60	-	0.2	4	4	•
0150 060 0400 180 R020	1.5	1.5	18	60	1.4	0.2	4	4	•
0150 060 0400 200 R020	1.5	1.5	20	60	1.4	0.2	4	4	•
0150 050 0400 R030	1.5	1.5	-	50	-	0.3	4	4	•
0150 050 0400 080 R030	1.5	1.5	8.0	50	1.4	0.3	4	4	•
0150 050 0400 160 R030	1.5	1.5	16	50	1.4	0.3	4	4	•
0150 060 0400 R030	1.5	1.5	-	60	1.4	0.3	4	4	•
0150 060 0400 200 R030	1.5	1.5	20	60	1.4	0.3	4	4	•
0200 050 0400 R020	2	2	-	50	-	0.2	4	4	•
0200 050 0400 060 R020	2	2	6	50	1.9	0.2	4	4	•
0200 050 0400 080 R020	2	2	8	50	1.9	0.2	4	4	•
0200 050 0400 100 R020	2	2	10	50	1.9	0.2	4	4	•
0200 050 0400 120 R020	2	2	12	50	1.9	0.2	4	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter: 318

Spécifications techniques sujettes à changement sans avis prélable

SE 60X FIN-MILL TORUS LONG NECK

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

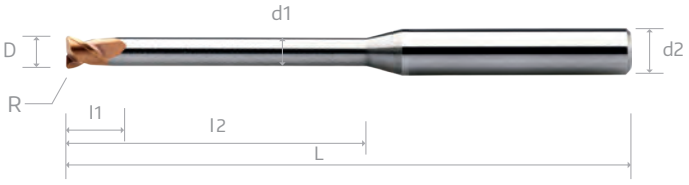
VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne

Micro-fraises Flutes Fin-Mill 2/4 tailles toriques en carbure mono-bloc avec cou long, 2 dents

Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti

整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃

A4G*





Z4



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0200 050 0400 140 R020	2	2	14	50	1.9	0.2	4	4	•
0200 050 0400 160 R020	2	2	16	50	1.9	0.2	4	4	•
0200 060 0400 R020	2	2	-	60	-	0.2	4	4	•
0200 060 0400 180 R020	2	2	18	60	1.9	0.2	4	4	•
0200 060 0400 200 R020	2	2	20	60	1.9	0.2	4	4	•
0200 075 0400 R020	2	2	-	75	-	0.2	4	4	•
0200 075 0400 250 R020	2	2	25	75	1.9	0.2	4	4	•
0200 075 0400 300 R020	2	2	30	75	1.9	0.2	4	4	•
0200 050 0400 R030	2	2	-	50	-	0.3	4	4	•
0200 050 0400 080 R030	2	2	8	50	1.9	0.3	4	4	•
0200 050 0400 160 R030	2	2	16	50	1.9	0.3	4	4	•
0200 060 0400 R030	2	2	-	60	-	0.3	4	4	•
0200 060 0400 200 R030	2	2	20	60	1.9	0.3	4	4	•
0200 050 0400 R050	2	2	-	50	-	0.5	4	4	•
0200 050 0400 060 R050	2	2	6	50	1.9	0.5	4	4	•
0200 050 0400 080 R050	2	2	8	50	1.9	0.5	4	4	•
0200 050 0400 120 R050	2	2	12	50	1.9	0.5	4	4	•
0200 050 0400 160 R050	2	2	16	50	1.9	0.5	4	4	•
0200 060 0400 R050	2	2	-	60	-	0.5	4	4	•
0200 060 0400 200 R050	2	2	20	60	1.9	0.5	4	4	•
0200 075 0400 R050	2	2	-	75	-	0.5	4	4	•
0200 075 0400 250 R050	2	2	25	75	1.9	0.5	4	4	•
0200 075 0400 300 R050	2	2	30	75	1.9	0.5	4	4	•
0250 050 0400 R030	2.5	2.5	-	50	-	0.3	4	4	•
0250 050 0400 080 R030	2.5	2.5	8	50	2.4	0.3	4	4	•
0250 050 0400 100 R030	2.5	2.5	10	50	2.4	0.3	4	4	•
0250 050 0400 120 R030	2.5	2.5	12	50	2.4	0.3	4	4	•
0250 050 0400 140 R030	2.5	2.5	14	50	2.4	0.3	4	4	•
0250 050 0400 160 R030	2.5	2.5	16	50	2.4	0.3	4	4	•
0250 060 0400 R030	2.5	2.5	-	60	-	0.3	4	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

318

SE 60X FIN-MILL TORUS LONG NECK

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

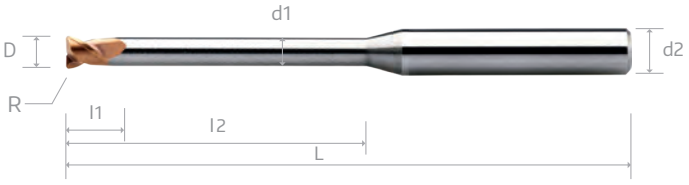
VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne

Micro-fraises Flutes Fin-Mill 2/4 tailles toriques en carbure mono-bloc avec cou long, 2 dents

Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti

整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃

A4G*





Z4



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0250 060 0400 180 R030	2.5	2.5	18	60	2.4	0.3	4	4	•
0250 060 0400 200 R030	2.5	2.5	20	60	2.4	0.3	4	4	•
0250 060 0400 250 R030	2.5	2.5	25	60	2.4	0.3	4	4	•
0250 075 0400 R030	2.5	2.5	-	75	-	0.3	4	4	•
0250 075 0400 300 R030	2.5	2.5	30	75	2.4	0.3	4	4	•
0250 050 0400 R050	2.5	2.5	-	50	-	0.5	4	4	•
0250 050 0400 080 R050	2.5	2.5	8	50	2.4	0.5	4	4	•
0250 050 0400 120 R050	2.5	2.5	12	50	2.4	0.5	4	4	•
0250 050 0400 160 R050	2.5	2.5	16	50	2.4	0.5	4	4	•
0250 060 0400 R050	2.5	2.5	-	60	-	0.5	4	4	•
0250 060 0400 200 R050	2.5	2.5	20	60	2.4	0.5	4	4	•
0250 060 0400 250 R050	2.5	2.5	25	60	2.4	0.5	4	4	•
0250 075 0400 R050	2.5	2.5	-	75	-	0.5	4	4	•
0250 075 0400 300 R050	2.5	2.5	30	75	2.4	0.5	4	4	•
0300 050 0600 R020	3	3	-	50	-	0.2	6	4	•
0300 050 0600 080 R020	3	3	8	50	2.8	0.2	6	4	•
0300 050 0600 100 R020	3	3	10	50	2.8	0.2	6	4	•
0300 050 0600 120 R020	3	3	12	50	2.8	0.2	6	4	•
0300 050 0600 140 R020	3	3	14	50	2.8	0.2	6	4	•
0300 060 0600 R020	3	3	-	60	-	0.2	6	4	•
0300 060 0600 160 R020	3	3	16	60	2.8	0.2	6	4	•
0300 060 0600 180 R020	3	3	18	60	2.8	0.2	6	4	•
0300 060 0600 200 R020	3	3	20	60	2.8	0.2	6	4	•
0300 075 0600 R020	3	3	-	75	-	0.2	6	4	•
0300 075 0600 250 R020	3	3	25	75	2.8	0.2	6	4	•
0300 050 0600 R030	3	3	-	50	-	0.3	6	4	•
0300 050 0600 080 R030	3	3	8	50	2.8	0.3	6	4	•
0300 050 0600 100 R030	3	3	10	50	2.8	0.3	6	4	•
0300 050 0600 120 R030	3	3	12	50	2.8	0.3	6	4	•
0300 050 0600 140 R030	3	3	14	50	2.8	0.3	6	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

318

若有技术规格变更，恕不事先通知

SE 60X FIN-MILL TORUS LONG NECK

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

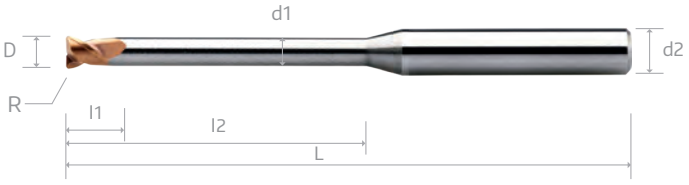
VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne

Micro-fraises Fin-Mill 2/4 tailles toriques en carbure monobloc avec cou long, 2 dents

Micro-frese torodali SE 60X Fin-Mill in metallo duro integrale con collo lungo, 2/4 taglienti

整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃

A4G*





Z4



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A4G*
= * + Ø data	D	l 1	l 2	L	d1	R	d2 (h6)	Z	B0909
0300 060 0600 R030	3	3	-	60	-	0.3	6	4	•
0300 060 0600 160 R030	3	3	16	60	2.8	0.3	6	4	•
0300 060 0600 180 R030	3	3	18	60	2.8	0.3	6	4	•
0300 060 0600 200 R030	3	3	20	60	2.8	0.3	6	4	•
0300 075 0600 R030	3	3	-	75	-	0.3	6	4	•
0300 075 0600 300 R030	3	3	30	75	2.8	0.3	6	4	•
0300 050 0600 R050	3	3	-	50	-	0.5	6	4	•
0300 050 0600 080 R050	3	3	8	50	2.8	0.5	6	4	•
0300 050 0600 100 R050	3	3	10	50	2.8	0.5	6	4	•
0300 050 0600 120 R050	3	3	12	50	2.8	0.5	6	4	•
0300 050 0600 140 R050	3	3	14	50	2.8	0.5	6	4	•
0300 060 0600 R050	3	3	-	60	-	0.5	6	4	•
0300 060 0600 160 R050	3	3	16	60	2.8	0.5	6	4	•
0300 060 0600 180 R050	3	3	18	60	2.8	0.5	6	4	•
0300 060 0600 200 R050	3	3	20	60	2.8	0.5	6	4	•
0300 075 0600 R050	3	3	-	75	-	0.5	6	4	•
0300 075 0600 300 R050	3	3	30	75	2.8	0.5	6	4	•
0400 060 0600 R030	4	4	-	60	-	0.3	6	4	•
0400 060 0600 100 R030	4	4	10	60	3.7	0.3	6	4	•
0400 060 0600 150 R030	4	4	15	60	3.7	0.3	6	4	•
0400 060 0600 200 R030	4	4	20	60	3.7	0.3	6	4	•
0400 075 0600 R030	4	4	-	75	-	0.3	6	4	•
0400 075 0600 250 R030	4	4	25	75	3.7	0.3	6	4	•
0400 075 0600 320 R030	4	4	32	75	3.7	0.3	6	4	•
0400 075 0600 400 R030	4	4	40	75	3.7	0.3	6	4	•
0400 060 0600 R050	4	4	-	60	-	0.5	6	4	•
0400 060 0600 100 R050	4	4	10	60	3.7	0.5	6	4	•
0400 060 0600 150 R050	4	4	15	60	3.7	0.5	6	4	•
0400 060 0600 200 R050	4	4	20	60	3.7	0.5	6	4	•
0400 075 0600 R050	4	4	-	75	-	0.5	6	4	•
0400 075 0600 250 R050	4	4	25	75	3.7	0.5	6	4	•
0400 075 0600 320 R050	4	4	32	75	3.7	0.5	6	4	•
0400 075 0600 400 R050	4	4	40	75	3.7	0.5	6	4	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

318

Technical specifications subject to change without prior notice

SE 60X FIN-MILL TORUS ENDMILLS – Taper Neck

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Fin-mill 60 Torusfräser, - Standard, 4 Zähne

Fraises 2 tailles SE 60X Fin-mill 60 toriques en carbure monobloc - Standard, 4 dents

Frese SE 60X Fin-mill 60 toroidali, in metallo duro integrale - Standard, 4 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻立铣刀 4 刃 - 标准长度

A4F*





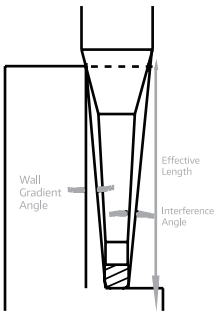
Z4



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A4F*
= * + Ø data	D	l1	l2	l3	d1	L	d2 (h6)	y	R		1°	2°	3°	B0909
0100 015 06 010 R010	1.0	1.0	2.0	15	1.35	60	6	1°	0.1	8.31°	15.08	15.35	15.61	•
0100 020 06 010 R010	1.0	1.0	2.0	20	1.53	60	6	1°	0.1	6.47°	20.08	20.43	20.78	•
0100 025 06 010 R010	1.0	1.0	2.0	25	1.70	60	6	1°	0.1	5.30°	25.08	25.52	25.96	•
0100 030 06 010 R010	1.0	1.0	2.0	30	1.88	75	6	1°	0.1	4.49°	30.08	30.61	31.13	•
0100 035 06 010 R010	1.0	1.0	2.0	35	2.05	75	6	1°	0.1	3.89°	35.08	35.70	36.31	•
0100 006 06 030 R010	1.0	1.0	2.0	6	1.32	60	6	3°	0.1	17.07°	-	6.04	6.15	•
0100 010 06 030 R010	1.0	1.0	2.0	10	1.74	60	6	3°	0.1	11.83°	-	-	10.14	•
0100 020 06 010 R020	1.0	1.0	2.0	20	1.53	60	6	1°	0.2	6.50°	20.08	20.43	20.78	•
0100 025 06 010 R020	1.0	1.0	2.0	25	1.70	60	6	1°	0.2	5,32°	25.08	25.52	25.95	•
0100 030 06 010 R020	1.0	1.0	2.0	30	1.88	75	6	1°	0.2	4.50°	30.08	30.60	31.13	•
0100 035 06 010 R020	1.0	1.0	2.0	35	2.05	75	6	1°	0.2	3.90°	35.08	35.69	36.30	•
0100 006 06 030 R020	1.0	1.0	2.0	6	1.32	60	6	3°	0.2	17.27°	-	6.04	6.14	•
0100 010 06 030 R020	1.0	1.0	2.0	10	1.74	60	6	3°	0.2	11.93°	-	-	10.13	•
0150 015 06 010 R020	1.5	1.5	3.0	15	1.82	60	6	1°	0.2	7.59°	15.10	15.36	15.62	•
0150 020 06 010 R020	1.5	1.5	3.0	20	1.99	60	6	1°	0.2	5.89°	20.10	20.45	20.80	•
0150 025 06 010 R020	1.5	1.5	3.0	25	2.17	60	6	1°	0.2	4.81°	25.10	25.54	25.97	•
0150 030 06 010 R020	1.5	1.5	3.0	30	2.34	75	6	1°	0.2	4.07°	30.10	30.62	31.15	•
0150 010 06 030 R020	1.5	1.5	3.0	10	2.13	60	6	1°	0.2	10.86°	-	10.02	10.19	•
0150 015 06 030 R020	1.5	1.5	3.0	15	2.66	60	6	3°	0.2	7.78°	-	-	15.18	•
0150 015 06 010 R030	1.5	1.5	3.0	15	1.82	60	6	3°	0.3	1.63°	15.10	15.36	15.62	•
0150 020 06 010 R030	1.5	1.5	3.0	20	1.99	60	6	1°	0.3	5.92°	21.10	20.44	20.79	•
0150 025 06 010 R030	1.5	1.5	3.0	25	2.17	60	6	1°	0.3	4.83°	25.10	25.53	25.97	•
0150 030 06 010 R030	1.5	1.5	3.0	30	2.34	75	6	1°	0.3	4.08°	30.10	30.62	31.14	•
0150 010 06 030 R030	1.5	1.5	3.0	10	2.13	60	6	3°	0.3	10.95°	-	10.02	10.18	•

cont'd ▶



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

320

Technische änderungen ohne vorherige information vorbehalten

SE 60X FIN-MILL TORUS ENDMILLS – Taper Neck

≤ 1.600 N/mm² + B0909 40 - 68 HRC

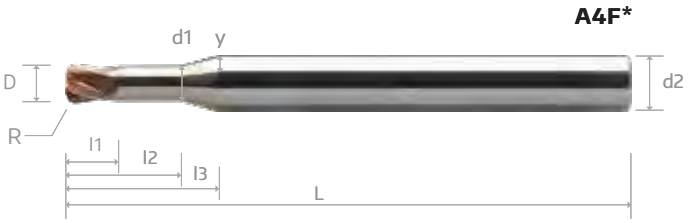
HPMT

VHM SE 60X Fin-mill 60 Torusfräser, - Standard, 4 Zähne

Fraises 2 tailles SE 60X Fin-mill 60 toriques en carbure monobloc - Standard, 4 dents

Frese SE 60XFin-mill 60 toroidali, in metallo duro integrale - Standard, 4 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻立铣刀 4 刃 - 标准长度







HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A4F*
= * + Ø data	D	l1	l2	l3	d1	L	d2 (h6)	y	R		1°	2°	3°	B0909
0150 015 06 030 R030	1.5	1.5	3.0	15	2.66	60	6	3°	0.3	7.83°	-	-	15.17	•
0200 015 06 010 R020	2.0	2.0	4.0	15	2.28	60	6	1°	0.2	6.85°	15.12	15.38	15.64	•
0200 020 06 010 R020	2.0	2.0	4.0	20	2.46	60	6	1°	0.2	5.30°	20.12	20.47	20.81	•
0200 025 06 010 R020	2.0	2.0	4.0	25	2.63	60	6	1°	0.2	4.32°	25.12	25.55	25.99	•
0200 040 06 010 R020	2.0	2.0	4.0	30	2.81	75	6	1°	0.2	3.46°	30.12	30.64	31.16	•
0200 040 06 010 R020	2.0	2.0	4.0	40	3.61	75	6	1°	0.2	2,78°	40.12	40.82	41.51	•
0200 050 06 010 R020	2.0	2.0	4.0	50	3.51	100	6	1°	0.2	2.24°	50.12	50.99	51.86	•
0200 015 06 030 R020	2.0	2.0	4.0	15	3.05	60	6	3°	0.2	7.01°	-	-	15.24	•
0200 020 06 030 R020	2.0	2.0	4.0	20	3.58	60	6	3°	0.2	5.44°	-	-	20.23	•
0200 015 06 010 R030	2.0	2.0	4.0	15	2.28	60	6	1°	0.3	6.89°	15.12	15.38	15.63	•
0200 020 06 010 R030	2.0	2.0	4.0	20	2.46	60	6	1°	0.3	5.32°	20.12	20.46	20.81	•
0200 025 06 010 R030	2.0	2.0	4.0	25	2.63	60	6	1°	0.3	4.34°	25.12	25.55	25.98	•
0200 030 06 010 R030	2.0	2.0	4.0	30	2.81	75	6	1°	0.3	3.66°	30.12	30.64	31.16	•
0200 040 06 010 R030	2.0	2.0	4.0	40	3.16	75	6	1°	0.3	2.78°	40.12	40.81	41.51	•
0200 050 06 010 R030	2.0	2.0	4.0	50	3.51	100	6	1°	0.3	2.25°	50.12	50.99	51.86	•
0200 015 06 030 R030	2.0	2.0	4.0	15	3.05	60	6	3°	0.3	7.05°	-	-	15.23	•
0200 020 06 030 R030	2.0	2.0	4.0	20	3.58	60	6	3°	0.3	5.46°	-	-	20.22	•
0200 015 06 010 R050	2.0	2.0	4.0	15	2.28	60	6	1°	0.5	6.97°	15.11	15.37	15.62	•
0200 020 06 010 R050	2.0	2.0	4.0	20	2.46	60	6	1°	0.5	5.37°	20.11	20.46	20.80	•
0200 025 06 010 R050	2.0	2.0	4.0	25	2.63	60	6	1°	0.5	4.37°	25.11	25.54	25.97	•
0200 030 06 010 R050	2.0	2.0	4.0	30	2.81	75	6	1°	0.5	3.68°	30.11	30.63	31.15	•
0200 040 06 010 R050	2.0	2.0	4.0	40	3.16	75	6	1°	0.5	2.80°	40.11	40.80	41.50	•
0200 050 06 010 R050	2.0	2.0	4.0	50	3.51	100	6	1°	0.5	2.26°	50.11	50.98	51.85	•
0200 015 06 030 R050	2.0	2.0	4.0	15	3.05	60	6	3°	0.5	7.14°	-	-	15.22	•
0200 020 06 030 R050	2.0	2.0	4.0	20	3.58	60	6	3°	0.5	5.52°	-	-	20.21	•
0300 015 06 010 R020	3.0	3.0	4.0	15	3.18	60	6	1°	0.2	5.29°	15.17	15.43	15.69	•
0300 020 06 010 R020	3.0	3.0	6.0	20	3.29	60	6	1°	0.2	4.06°	20.20	20.55	20.90	•
0300 030 06 010 R020	3.0	3.0	6.0	30	3.64	75	6	1°	0.2	2.77°	30.20	30.73	31.25	•
0300 040 06 010 R020	3.0	3.0	6.0	40	3.99	75	6	1°	0.2	2.11°	40.20	40.90	41.60	•
0300 050 06 010 R020	3.0	3.0	6.0	50	4.34	100	6	1°	0.2	1.70°	50.20	51.08	51.95	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter: 320

SE 60X FIN-MILL TORUS ENDMILLS – Taper Neck

≤ 1.600 N/mm² + B0909 40 - 68 HRC

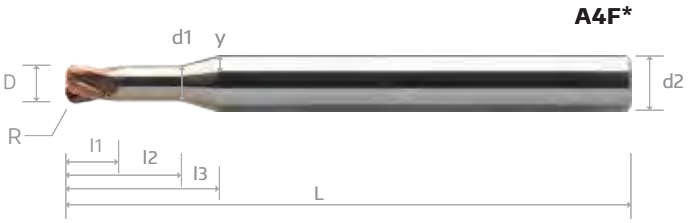
HPMT

VHM SE 60X Fin-mill 60 Torusfräser, - Standard, 4 Zähne

Fraises 2 tailles SE 60XFin-mill 60 toriques en carbure monobloc - Standard, 4 dents

Frese SE 60X Fin-mill 60 toroidali, in metallo duro integrale - Standard, 4 taglienti

整体硬质合金 SE 60X Fin-mill 系列 圆鼻立铣刀 4 刃 - 标准长度







HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A4F*
= * + Ø data	D	l1	l2	l3	d1	L	d2 (h6)	y	R		1°	2°	3°	B0909
0300 060 06 010 R020	3.0	3.0	6.0	60	4.69	100	6	1⁰	0.2	1.42⁰	60.20	61.25	62.30	•
0300 015 06 010 R050	3.0	3.0	4.0	15	3.18	60	6	1⁰	0.5	5.39⁰	15.16	15.42	15.68	•
0300 020 06 010 R050	3.0	3.0	6.0	20	3.29	60	6	1⁰	0.5	4.11⁰	20.20	20.54	20.89	•
0300 030 06 010 R050	3.0	3.0	6.0	30	3.64	75	6	1⁰	0.5	2.80⁰	30.20	30.72	31.24	•
0300 040 06 010 R050	3.0	3.0	6.0	40	3.99	75	6	1⁰	0.5	2.12⁰	40.20	40.89	41.59	•
0300 050 06 010 R050	3.0	3.0	6.0	50	4.34	100	6	1⁰	0.5	1.71⁰	50.20	51.07	51.94	•
0300 060 06 010 R050	3.0	3.0	6.0	60	4.69	100	6	1⁰	0.5	1.43⁰	60.20	61.24	62.29	•
0400 020 06 010 R050	4.0	4.0	8.0	20	4.12	75	6	1⁰	0.5	2.80⁰	20.29	20.63	20.98	•
0400 040 06 010 R050	4.0	4.0	8.0	40	4.82	75	6	1⁰	0.5	1.43⁰	40.29	40.98	41.68	•
0600 050 08 010 R100	6.0	6.0	8.0	50	6.97	100	6	1⁰	1.0	1.16⁰	50.38	51.24	52.10	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S0	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter: 320

Modifiche Techiche possibili senza preavviso

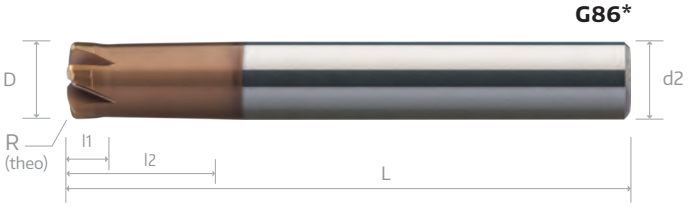
SE 60X

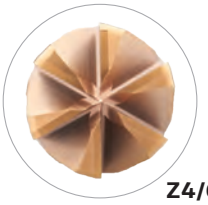
SWEEP-MILL ROUGHING TORUS ENDMILLS (FINISHING)

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Sweep-Mill Torusfräser, 4/6 Schneiden	Fraises 2 tailles toriques SE 60X Sweep-Mill en carbure monobloc, 4 / 6 dents, pour opération d'ébauche
Frese Toroidali in metallo duro SE 60X Sweep-Mill, 4 / 6 taglienti	整体硬质合金 SE 60X Sweep-Mill 系列 圆鼻立铣刀 4/6刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G86*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R(theo)	B0909
0300 057 0600 060	3	1.5	6	57	6	0.3	•
0300 057 0600 120	3	1.5	12	57	6	0.3	•
0400 057 0600 080	4	1.5	8	57	6	0.4	•
0400 057 0600 150	4	1.5	16	57	6	0.4	•
0500 057 0600 100	5	2	10	57	6	0.5	•
0500 057 0600 210	5	2	22	57	6	0.5	•
0600 057 0600 120	6	2.5	12	57	6	0.6	•
0600 057 0600 260	6	2.5	26	57	6	0.6	•



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						G86*
= * + Ø data	D	l 1	l 2	L	d2 (h6)	R(theo)	B0909
0800 063 0800 160	8	3	16	63	8	0.8	•
0800 063 0800 310	8	3	32	63	8	0.8	•
1000 072 1000 200	10	3.5	20	72	10	1	•
1000 072 1000 360	10	3.5	36	72	10	1	•
1200 083 1200 240	12	4	24	83	12	1.2	•
1200 083 1200 410	12	4	43	83	12	1.2	•

Ø mm	HPMT Standard
0.1 < 3.0	-10 / -25
3.0 ~ 6.0	-10 / -38
60. ~10.0	-10 / -50
10.0 ~ 12.0	-10 / -50

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

Cutting Parameter

317

SE 60X

若有技术规格变更，恕不事先通知

SE 60X DOUBLE R

01

VERY LARGE RADIUS WITH CENTER CUTTING

- Increase stock removal rate
- Enables higher cutting feed
- Suitable for both roughing and finishing



02

SHORT FLUTES WITH CORNER RADIUS

- Short flute to increase toughness
- Prolong tool life with reinforce large corner radius



03

TOUGH PVD SILICON BASED COATING

- Prolong the tool life
- Enables higher cutting speeds
- Increases hardness and higher abrasive wear resistance smoother chips evacuation



04

SUITABLE FOR MATERIAL GROUP

P S H

DEUTSCH

01 **SEHR GROSSER RADIUS MIT ZENTRUMSCHNITT**
- Erhöhung des Spanvolumens
- Ermöglicht eine höhere Schnittgeschwindigkeit
- Geeignet zum Schruppen und Schlichten

02 **PVD-SILIZIUM-HARTBESCHICHTUNG**
- Verlängert die Lebensdauer des Werkzeugs
- Ermöglicht höhere Schnittgeschwindigkeiten
- Erhöht die Hitzebeständigkeit, deshalb sehr gut geeignet für Trockenbearbeitung

03 **KURZE SCHNEIDEN MIT ECKRADIUS**
- Erhöhung der Zähigkeit durch kurze Schneiden
- Verlängert die Werkzeuglebensdauer durch verstärkten großen Eckradius

04 **GEEIGNET FÜR MATERIALGRUPPE P, S, H**

FRANÇAIS

01 **RAYON TRÈS LARGE AVEC COUPE AU CENTRE**
- Augmente le taux d'évacuation du matériau
- Adapté pour ebauche et semi finition

02 **REVÊTEMENT À BASE DE SILICIUM SOUS FORME DE DÉPÔT EN PHASE VAPEUR RÉSISTANT**
- Prolonge la durée de vie de l'outil
- Permet des vitesses de coupe supérieures
- Augmente la résistance à la chaleur, donc parfaitement adapté à l'usinage à sec

03 **AUGMENTE LA RÉSISTANCE GRÂCE AUX GOUJURES COURTES**
Prolonge la durée de vie de l'outil grâce double rayon

04 **ADAPTÉ AU MATÉRIAUX P, S, H**

ITALIANO

01 **RAGGIO MOLTO LARGO CON TAGLIO CENTRALE**
- Aumenta il tasso di asportazione
- Consente avanzamento di taglio superiore
- Adatto per sgrossatura e finitura

02 **RIVESTIMENTO IN SILICONE PVD RESISTENTE**
- Prolunga la vita dello strumento
- Consente maggiori velocità di taglio
- Aumenta la resistenza al calore ed è quindi adatto per la lavorazione a secco

03 **SCANALATURE CORTE CON RAGGIO D'ANGOLO**
- Aumenta la resistenza grazie alle scanalature corte
- Prolunga la vita dello strumento con raggio d'angolo ampio e rinforzato

04 **ADATTO PER MATERIALE P, S, H**

中文

01 **拥有中心切割**
- 拥有高金屬切除率
- 提高进给速度
- 适用于粗加工和精加工

02 **PVD 硅基涂层**
- 延长刀具寿命
- 提高抗热性 (适合干加工)
- 优异的耐磨性和耐崩刀性

03 **短刃圆角转角的设计**
- 短刃有助提高韧性
- 延长刀具寿命

04 **适合加工硬钢材料 P, S, H**

SE 60X DOUBLE R BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 40 - 68 HRC

HPMT

VHM SE 60X Standard Fräser mit ungleicher Teilung, 4 Zähne

Fraises SE 60X Double R en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo SE 60X Double R, 4 taglienti

整体硬⊠合金 SE 60X Double R系列 球⊠ 立⊠刀 2 刃 - ⊠准⊠度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									815 *	A98 *
= * + Ø data	D1	D3	L1	L2	L3	r1	r2	Ap max	d2 (h6)	G6110	B0909
0400	4	3.90	50	9	4	0.5	4	0.8	6	•	•
0500	5	4.90	50	11	5	0.6	5	1	6	•	•
0600	6	5.90	50	13	6	0.8	6	1.2	6	•	•
0800	8	7.90	64	19	8	1	8	1.6	8	•	•
1000	10	9.90	75	21	10	1.5	10	2.2	10	•	•
1200	12	11.90	75	25	12	2	12	2.8	12	•	•
1600	16	15.90	90	33	16	2.5	16	3.6	16	•	•

Ø mm	HPMT Standard
0.1 < 3.0	-10 / -25
3.0 ~ 6.0	-10 / -38
60. ~10.0	-10 / -50
10.0 ~ 12.0	-10 / -50

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○				○	○	●	●		

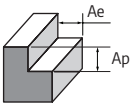
Cutting Parameter

317

SE 60X

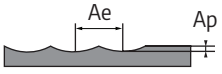
若有技术规格变更，恕不事先通知

Fin-Mill Torus Endmills 4/6 Flutes



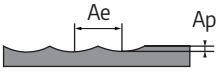
Side Milling	P		S				H			
Working Material	Prehardened steel		Nickel alloy		Cobalt alloy		Hardened steel			
Properties	35 ≤ HRC < 45		-		-		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting Depth, Ap (mm)	0.05 × D		0.034 × D		0.034 × D		0.04 × D		0.034 × D	
Cutting Width, Ae (mm)	0.31 × D		0.31 × D		0.31 × D		0.31 × D		0.31 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	90	0.075	40	0.075	50	0.075	80	0.075	70	0.075
3		0.120		0.120		0.120		0.120		0.120
4		0.200		0.200		0.200		0.199		0.199
6		0.231		0.231		0.231		0.233		0.232
8		0.375		0.375		0.375		0.373		0.373
10		0.405		0.405		0.405		0.412		0.410
12		0.435		0.435		0.435		0.439		0.425

Sweep-Mill Torus Endmills 4/6 Flutes



Profiling	P		S		H			
Working Material	Prehardened Steel		Nickel Alloy		Hardened Steel			
Properties	35 ≤ HRC < 45		-		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting Depth, Ap (mm)	0.025 × D		0.025 × D		0.025 × D		0.025 × D	
Cutting Width, Ae (mm)	0.400 × D		0.300 × D		0.330 × D		0.300 × D	
D (mm)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
3	100	0.142	45	0.142	85	0.142	80	0.142
4		0.199		0.200		0.199		0.199
5		0.242		0.243		0.244		0.243
6		0.288		0.288		0.288		0.291
8		0.429		0.432		0.429		0.430
10		0.477		0.480		0.481		0.489
12		0.568		0.577		0.566		0.583

Double R Ballnose Cutters 2 Flutes

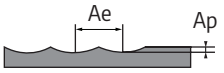


Roughing	P		S		H			
Working Material	Prehardened Steel		Nickel Alloy		Hardened Steel			
Properties	35 ≤ HRC < 45		-		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting Depth, Ap (mm)	0.100 × D		0.025 × D		0.080 × D		0.060 × D	
Cutting Width, Ae (mm)	0.700 × D		0.300 × D		0.700 × D		0.700 × D	
D (mm)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
4	120	0.058	50	0.058	100	0.057	85	0.057
5		0.078		0.078		0.077		0.078
6		0.100		0.100		0.100		0.101
8		0.137		0.138		0.137		0.137
10		0.165		0.164		0.163		0.164
12		0.196		0.197		0.194		0.193
16		0.274		0.275		0.274		0.274



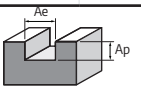
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Double R Ballnose Cutters 2 Flutes



Finishing	P		S		H			
Working Material	Prehardened Steel		Nickel Alloy		Hardened Steel			
Properties	35 ≤ HRC < 45		-		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting Depth, Ap (mm)	0.080 × D		0.030 × D		0.060 × D		0.030 × D	
Cutting Width, Ae (mm)	0.600 × D		0.600 × D		0.600 × D		0.600 × D	
D (mm)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
4	135	0.046	55	0.046	110	0.046	95	0.046
5		0.062		0.062		0.062		0.063
6		0.081		0.081		0.081		0.082
8		0.110		0.110		0.110		0.110
10		0.142		0.142		0.143		0.143
12		0.172		0.173		0.173		0.174
16		0.235		0.235		0.235		0.234

Fin-Mill Torus Long Neck 2 Flutes



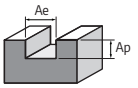
Slotting		P			S						H					
Working material		Pre-hardened Steel			Nickel alloy			Cobalt alloy			Hardened Steel					
Properties		35 ≤ HRC < 45			-			-			45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.016	25	0.008	0.012	15.400	0.004	0.012	17.600	0.005	0.013	24	0.007	0.012	22	0.006
	1.0	0.011	25	0.008	0.008	15.400	0.004	0.008	17.600	0.005	0.009	24	0.007	0.008	22	0.006
	1.5	0.006	25	0.008	0.005	14.700	0.004	0.005	16.800	0.005	0.005	22	0.007	0.005	21	0.006
	2.0	0.006	24	0.008	0.005	14.000	0.005	0.005	16.000	0.006	0.005	21	0.007	0.005	20	0.007
0.3	1.0	0.017	38	0.009	0.013	22.400	0.005	0.013	25.600	0.006	0.014	34	0.008	0.013	32	0.007
	1.5	0.013	37	0.009	0.010	21.000	0.005	0.010	24.000	0.006	0.010	32	0.008	0.010	30	0.007
	2.0	0.010	31	0.009	0.007	18.200	0.005	0.007	20.800	0.006	0.008	28	0.008	0.007	26	0.007
	2.5	0.008	31	0.009	0.006	18.200	0.005	0.006	20.800	0.006	0.007	28	0.008	0.006	26	0.007
	3.0	0.006	30	0.008	0.005	16.800	0.004	0.005	19.200	0.005	0.005	26	0.007	0.005	24	0.006
0.4	1.0	0.020	41	0.012	0.015	23.800	0.007	0.015	27.200	0.008	0.016	36	0.011	0.015	34	0.010
	1.5	0.016	41	0.012	0.012	23.800	0.007	0.012	27.200	0.008	0.013	36	0.011	0.012	34	0.010
	2.0	0.013	41	0.011	0.010	23.800	0.006	0.010	27.200	0.007	0.010	36	0.010	0.010	34	0.009
	2.5	0.012	38	0.011	0.009	22.400	0.006	0.009	25.600	0.007	0.010	34	0.010	0.009	32	0.009
	3.0	0.011	31	0.010	0.008	18.200	0.006	0.008	20.800	0.006	0.009	28	0.009	0.008	26	0.008
	3.5	0.010	29	0.010	0.007	16.800	0.006	0.007	19.200	0.006	0.008	26	0.009	0.007	24	0.008
	4.0	0.006	26	0.010	0.005	14.700	0.006	0.005	16.800	0.006	0.005	23	0.009	0.005	21	0.008
0.5	1.0	0.024	51	0.012	0.018	29.400	0.007	0.018	33.600	0.008	0.020	45	0.011	0.018	42	0.010
	2.0	0.018	51	0.012	0.014	29.400	0.007	0.014	33.600	0.008	0.015	45	0.011	0.014	42	0.010
	3.0	0.014	41	0.012	0.010	23.800	0.006	0.010	27.200	0.007	0.011	37	0.010	0.010	34	0.009
	4.0	0.014	37	0.012	0.010	21.000	0.006	0.010	24.000	0.007	0.011	33	0.010	0.010	30	0.009
	5.0	0.009	32	0.012	0.007	18.900	0.006	0.007	21.600	0.007	0.007	28	0.010	0.007	27	0.009
	6.0	0.006	29	0.009	0.005	16.800	0.005	0.005	19.200	0.006	0.005	25	0.009	0.005	24	0.007
0.6	2.0	0.028	61	0.015	0.021	35.000	0.008	0.021	40.000	0.010	0.023	54	0.013	0.021	50	0.012
	4.0	0.019	50	0.015	0.014	28.700	0.008	0.014	32.800	0.009	0.016	44	0.013	0.014	41	0.011
	6.0	0.012	39	0.015	0.009	22.400	0.008	0.009	25.600	0.009	0.010	34	0.013	0.009	32	0.011
	8.0	0.010	37	0.015	0.008	21.000	0.008	0.008	24.000	0.009	0.008	32	0.013	0.008	30	0.011
	10.0	0.007	33	0.014	0.005	18.900	0.007	0.005	21.600	0.008	0.006	29	0.012	0.005	27	0.010
0.8	4.0	0.026	85	0.017	0.019	49.000	0.009	0.019	56.000	0.010	0.021	75	0.015	0.019	70	0.013
	6.0	0.015	65	0.017	0.011	37.800	0.009	0.011	43.200	0.010	0.012	58	0.015	0.011	54	0.013
	8.0	0.012	52	0.015	0.009	30.100	0.008	0.009	34.400	0.010	0.010	46	0.014	0.009	43	0.012
	12.0	0.010	47	0.014	0.007	27.300	0.008	0.007	31.200	0.009	0.008	41	0.013	0.007	39	0.011

P S H P

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Fin-Mill Torus Long Neck 4 Flutes

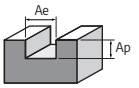


Slotting		P			S						H					
Working material		Pre-hardened Steel			Nickel alloy			Cobalt alloy			Hardened Steel					
Properties		35 ≤ HRC < 45			-			-			45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.0	4	0.030	96	0.020	0.023	59.500	0.013	0.023	63.200	0.013	0.025	85	0.018	0.023	79	0.016
	6	0.019	78	0.020	0.014	48.300	0.013	0.014	51.200	0.013	0.016	69	0.018	0.014	64	0.016
	8	0.019	69	0.020	0.014	42.700	0.013	0.014	45.600	0.013	0.016	61	0.018	0.014	57	0.016
	10	0.012	61	0.020	0.009	37.100	0.013	0.009	40.000	0.013	0.010	53	0.018	0.009	50	0.016
	12	0.012	54	0.016	0.009	32.900	0.011	0.009	35.200	0.010	0.010	47	0.016	0.009	44	0.013
	14	0.010	54	0.015	0.007	32.900	0.011	0.007	35.200	0.010	0.008	47	0.015	0.007	44	0.012
	16	0.007	54	0.015	0.005	32.900	0.009	0.005	35.200	0.009	0.006	47	0.013	0.005	44	0.011
	20	0.005	41	0.015	0.004	25.200	0.009	0.004	26.400	0.009	0.004	36	0.013	0.004	33	0.011
1.5	6	0.052	106	0.022	0.039	65.800	0.013	0.039	69.600	0.014	0.042	94	0.019	0.039	87	0.017
	8	0.048	101	0.022	0.036	62.300	0.013	0.036	66.400	0.014	0.039	89	0.019	0.036	83	0.017
	12	0.048	81	0.022	0.036	49.700	0.013	0.036	52.800	0.014	0.039	71	0.019	0.036	66	0.017
	16	0.036	72	0.020	0.027	44.100	0.013	0.027	47.200	0.013	0.029	63	0.018	0.027	59	0.016
	20	0.024	63	0.017	0.018	39.200	0.012	0.018	41.600	0.012	0.020	56	0.017	0.018	52	0.015
2.0	6	0.064	123	0.042	0.048	76.300	0.024	0.048	81.600	0.023	0.052	109	0.034	0.048	102	0.029
	8	0.056	112	0.042	0.042	69.300	0.024	0.042	73.600	0.023	0.046	99	0.034	0.042	92	0.029
	10	0.044	102	0.040	0.033	63.000	0.024	0.033	67.200	0.024	0.036	90	0.034	0.033	84	0.030
	12	0.032	91	0.038	0.024	56.000	0.024	0.024	60.000	0.023	0.026	80	0.034	0.024	75	0.029
	14	0.032	86	0.038	0.024	52.500	0.024	0.024	56.000	0.024	0.026	75	0.034	0.024	70	0.030
	16	0.032	81	0.038	0.024	49.700	0.024	0.024	53.600	0.023	0.026	71	0.034	0.024	67	0.029
	18	0.030	75	0.038	0.023	46.900	0.022	0.023	49.600	0.022	0.025	67	0.032	0.023	62	0.028
	20	0.028	70	0.038	0.021	43.400	0.021	0.021	46.400	0.021	0.023	62	0.030	0.021	58	0.026
	25	0.020	70	0.038	0.015	43.400	0.021	0.015	46.400	0.021	0.016	62	0.030	0.015	58	0.026
	30	0.014	67	0.038	0.010	41.300	0.021	0.010	44.000	0.021	0.011	59	0.030	0.010	55	0.026
2.5	8	0.077	119	0.038	0.058	72.800	0.024	0.058	77.600	0.024	0.062	104	0.034	0.058	97	0.030
	10	0.072	114	0.038	0.054	70.700	0.024	0.054	74.400	0.023	0.059	101	0.034	0.054	93	0.029
	12	0.067	108	0.038	0.050	67.200	0.023	0.050	72.000	0.023	0.055	96	0.033	0.050	90	0.029
	14	0.062	104	0.038	0.047	63.700	0.023	0.047	68.000	0.022	0.051	91	0.033	0.047	85	0.028
	16	0.058	98	0.038	0.043	60.900	0.022	0.043	64.800	0.022	0.047	87	0.032	0.043	81	0.028
	18	0.053	93	0.038	0.040	57.400	0.022	0.040	61.600	0.022	0.043	82	0.031	0.040	77	0.027
	20	0.048	88	0.038	0.036	54.600	0.021	0.036	58.400	0.021	0.039	78	0.030	0.036	73	0.026
	25	0.036	86	0.038	0.027	53.200	0.021	0.027	56.800	0.022	0.029	76	0.030	0.027	71	0.027
	30	0.024	84	0.038	0.018	51.800	0.021	0.018	55.200	0.021	0.020	74	0.030	0.018	69	0.026
3.0	8	0.072	128	0.053	0.054	79.100	0.029	0.054	84.800	0.030	0.059	113	0.042	0.054	106	0.037
	10	0.064	128	0.053	0.048	79.100	0.029	0.048	84.800	0.030	0.052	113	0.042	0.048	106	0.037
	12	0.056	128	0.053	0.042	79.100	0.029	0.042	84.800	0.030	0.046	113	0.042	0.042	106	0.037
	14	0.048	128	0.053	0.036	79.100	0.029	0.036	84.800	0.030	0.039	113	0.042	0.036	106	0.037
	16	0.040	128	0.053	0.030	79.100	0.029	0.030	84.800	0.030	0.033	113	0.042	0.030	106	0.037
	18	0.040	115	0.053	0.030	70.000	0.029	0.030	76.000	0.030	0.033	100	0.042	0.030	95	0.037
	20	0.040	104	0.053	0.030	63.700	0.029	0.030	68.800	0.030	0.033	91	0.042	0.030	86	0.037
	25	0.036	92	0.050	0.027	56.700	0.029	0.027	60.800	0.028	0.029	81	0.041	0.027	76	0.035
	30	0.032	81	0.047	0.024	50.400	0.027	0.024	53.600	0.026	0.026	72	0.038	0.024	67	0.033
4.0	10	0.184	147	0.065	0.138	91.700	0.036	0.138	97.600	0.036	0.150	131	0.052	0.138	122	0.045
	15	0.164	134	0.065	0.123	81.900	0.036	0.123	87.200	0.037	0.133	117	0.052	0.123	109	0.046
	20	0.144	121	0.065	0.108	72.100	0.036	0.108	78.400	0.037	0.117	103	0.052	0.108	98	0.046
	25	0.136	109	0.062	0.102	67.200	0.034	0.102	71.200	0.035	0.111	96	0.049	0.102	89	0.044
	32	0.120	99	0.058	0.090	60.900	0.032	0.090	64.000	0.033	0.098	87	0.046	0.090	80	0.041
	40	0.104	88	0.054	0.078	54.600	0.030	0.078	58.400	0.030	0.085	78	0.043	0.078	73	0.037

P S H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Fin-Mill Torus Taper Neck 4 Flutes



Face milling		P				S						H					
Working material		Pre-hardened Steel				Nickel alloy			Cobalt alloy			Hardened Steel					
Properties		35 ≤ HRC < 45				-			-			45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective Length	Ae (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.0	6	0.500	0.043	70	0.033	0.500	41.300	0.009	0.500	47.200	0.010	0.019	60	0.032	0.014	59	0.013
	10	0.500	0.024	70	0.033	0.500	35.000	0.009	0.500	40.000	0.010	0.015	60	0.032	0.009	50	0.013
	15	0.500	0.016	63	0.032	0.500	31.500	0.009	0.500	36.000	0.010	0.010	54	0.032	0.006	45	0.013
	20	0.500	0.012	63	0.032	0.500	31.500	0.009	0.500	36.000	0.010	0.008	54	0.032	0.005	45	0.013
	25	0.500	0.010	56	0.033	0.500	28.000	0.009	0.500	32.000	0.010	0.006	48	0.032	0.004	40	0.013
	30	0.500	0.008	52	0.033	0.500	25.900	0.009	0.500	29.600	0.010	0.005	45	0.033	0.003	37	0.013
	35	0.500	0.007	49	0.033	0.500	24.500	0.009	0.500	28.000	0.010	0.004	42	0.032	0.003	35	0.013
1.5	10	0.750	0.054	70	0.056	0.750	35.000	0.015	0.750	40.000	0.018	0.034	60	0.056	0.020	50	0.022
	15	0.750	0.041	67	0.056	0.750	33.600	0.016	0.750	38.400	0.018	0.026	57	0.056	0.015	48	0.023
	20	0.750	0.027	63	0.056	0.750	31.500	0.016	0.750	36.000	0.018	0.017	54	0.056	0.010	45	0.023
	25	0.750	0.023	63	0.056	0.750	31.500	0.016	0.750	36.000	0.018	0.014	54	0.056	0.009	45	0.023
	30	0.750	0.018	63	0.056	0.750	31.500	0.016	0.750	36.000	0.018	0.011	54	0.056	0.007	45	0.023
2.0	15	1.000	0.064	70	0.085	1.000	35.000	0.024	1.000	40.000	0.027	0.040	60	0.085	0.024	50	0.034
	20	1.000	0.048	70	0.085	1.000	35.000	0.024	1.000	40.000	0.027	0.030	60	0.085	0.018	50	0.034
	25	1.000	0.038	63	0.085	1.000	31.500	0.024	1.000	36.000	0.027	0.024	54	0.085	0.014	45	0.034
	30	1.000	0.032	63	0.085	1.000	31.500	0.024	1.000	36.000	0.027	0.020	54	0.085	0.012	45	0.034
	40	1.000	0.024	63	0.085	1.000	31.500	0.024	1.000	36.000	0.027	0.015	54	0.085	0.009	45	0.034
	50	1.000	0.019	56	0.085	1.000	28.000	0.024	1.000	32.000	0.027	0.012	48	0.085	0.007	40	0.034
3.0	15	1.400	0.144	70	0.143	1.400	35.000	0.040	1.400	40.000	0.046	0.117	60	0.143	0.084	50	0.057
	20	1.400	0.108	70	0.143	1.400	35.000	0.040	1.400	40.000	0.046	0.068	60	0.143	0.041	50	0.057
	30	1.400	0.072	70	0.143	1.400	35.000	0.040	1.400	40.000	0.046	0.045	60	0.143	0.027	50	0.057
	40	1.400	0.054	63	0.142	1.400	31.500	0.040	1.400	36.000	0.046	0.034	55	0.142	0.020	45	0.057
	50	1.400	0.043	63	0.142	1.400	31.500	0.040	1.400	36.000	0.046	0.027	55	0.142	0.016	45	0.057
	60	1.400	0.036	63	0.142	1.400	31.500	0.040	1.400	36.000	0.046	0.023	55	0.142	0.014	45	0.057
4.0	20	1.800	0.192	73	0.212	1.800	37.100	0.059	1.800	42.400	0.067	0.118	63	0.213	0.069	53	0.084
	40	1.800	0.096	63	0.206	1.800	31.500	0.057	1.800	36.000	0.066	0.061	55	0.204	0.035	45	0.082
6.0	50	2.500	0.174	77	0.343	2.500	38.500	0.097	2.500	44.000	0.110	0.108	70	0.337	0.066	55	0.138

P S H P

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



SE GR

Diamond coated end mills special for machining graphite and composite reinforced plastic fiber glass (CRP).

SE GR

01

SPECIAL DESIGN

· Designed specifically for machining graphite



02

DIAMOND COATING

· Up to 10 times more tool life compare to conventional

03

INCREASING PRODUCTIVITY AND LOWER PRODUCTION COSTS

04

PRODUCE PRECISION PARTS AT HIGHER FEED RATE

05

SUITABLE FOR MATERIAL GRAPHITE

DEUTSCH

01 **SPEZIELLES DESIGN**
Speziell für Graphitbearbeitung entwickelt

02 **DIAMANTBESCHICHTUNG**
Bis zu 10 mal mehr Standzeit im Vergleich zu konventionellen Beschichtungen

03 **STEIGERT DIE PRODUKTIVITÄT UND SENKT DIE PRODUKTIONSKOSTEN**

04 **PRODUZIERT PRÄZISIONSTEILE MIT HÖHERER VORSCHUBGESCHWINDIGKEIT**

05 **GEEIGNET FÜR GRAPHITMATERIAL**

FRANÇAIS

01 **CONCEPTION SPÉCIALE**
spécifiquement pour l'usinage de graphite

02 **REVÊTEMENT DIAMANTÉ**
10 fois plus de durée de vie de l'outil par rapport aux outils conventionnels

03 **AUGMENTE LA PRODUCTIVITÉ ET RÉDUIT LES COÛTS DE PRODUCTION**

04 **PRODUIRE DES PIÈCES DE PRECISION AVEC DES CONDITIONS DE COUPES PLUS ÉLEVÉES**

05 **ADAPTÉ POUR LE GRAPHITE**

ITALIANO

01 **DESIGN SPECIALE**
Progettato specificamente per la lavorazione della grafite

02 **RIVESTIMENTO DI DIAMANTE**
Vita utensile fino a 10 volte più lunga rispetto agli utensili convenzionali

03 **AUMENTO DELLA PRODUTTIVITÀ E MINOR COSTO DI LAVORAZIONE**

04 **PRODUZIONE DI PARTI PRECISE CON AVANZAMENTI ELEVATI**

05 **ADATTO PER LA LAVORAZIONE DI GRAPHITE**

中文

01 **专为石墨机械加工设计**
强化刀具，并降低崩刃的几率

02 **钻石涂成**
最大延长刀具寿命10倍

03 **提高生产力和降低生产成本**

04 **生产精密零件于高进给速度**

05 **适用于石墨材质**

SE GR

STANDARD ENDMILLS

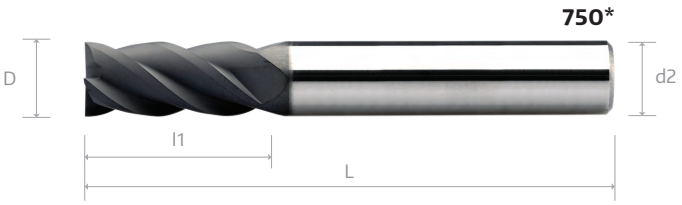
For Graphite

VHM SE GR Fräser, 4 Zähne, DIAMANT bzw. DLC beschichtet zur Bearbeitung von Grafit

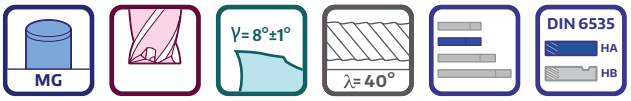
Fraises 2 tailles SE GR en carbure monobloc, 4 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite monobloc

Frese SE GR in metallo duro integrale,4 taglienti, rivestite DIAMANTE respettivamenta DLC per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
4 刃 - DLC 钻石涂层 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					750 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	DCT01
0100 040 03	1	3		40	3	•
0150 040 03	1.5	4.5		40	3	•
0200 040 03	2	6.5		40	3	•
0250 040 03	2.5	6.5		40	3	•
0300	3	9		40	3	•
0400	4	12		50	4	•
0500	5	15		50	5	•
0600	6	20		60	6	•
0800	8	20		64	8	•
1000	10	22		70	10	•
1200	12	25		75	12	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

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Technical specifications subject to change without prior notice

SE GR ENDMILLS – with Long Neck

For Graphite

HPMT

VHM lange SE GR Fräser mit langem Hals, 2 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

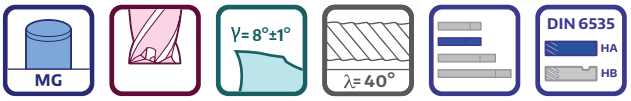
Fraises 2 tailles SE GR avec cou long longues en carbure monobloc, 2 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

Frese SE GR in metallo duro integrale, 2 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
2 刃 - DLC 钻石涂层 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						752 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	DCT01
0050 050 03	0.5	1	6	50	0.45	3	•
0060 050 03	0.6	1.2	6	50	0.55	3	•
0080 050 03	0.8	1.6	8	50	0.75	3	•
0100 060 03	1	3	10	60	0.9	3	•
0100 060 04	1	3	10	60	0.9	4	•
0200 060 04	2	6.5	20	60	1.9	4	•
0300 075 03	3	9	30	75	2.8	3	•
0300 075 06	3	9	30	75	2.8	6	•
0400 100 04	4	25	40	100	3.7	4	•
0600	6	25	60	100	5.5	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

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Technische änderungen ohne vorherige information vorbehalten

SE GR

ENDMILLS – with Long Neck

For Graphite

HPMT

VHM lange SE GR Fräser mit langem Hals, 4 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

Fraises 2 tailles SE GR avec cou long longues en carbure monobloc, 4 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

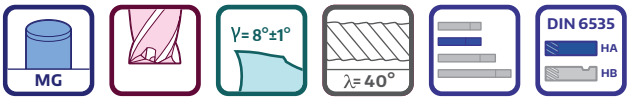
Frese SE GR in metallo duro integrale, 4 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
4 刃 - DLC 钻石涂层 - 中长





Z4



HSC DCT01 Diamond

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						753 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	DCT01
0100 060 0300 100	1	3	10	60	0.9	3	•
0100 060 0300 120	1	3	12	60	0.9	3	o
0100 060 0300 160	1	3	16	60	0.9	3	o
0100 060 0400 100	1	3	10	60	0.9	4	•
0100 060 0400 120	1	3	12	60	0.9	4	o
0100 060 0400 160	1	3	12	60	0.9	4	o
0150 060 0300 100	1.5	4.5	10	60	1.4	3	o
0150 060 0300 160	1.5	4.5	16	60	1.4	3	•
0150 060 0300 180	1.5	4.5	18	60	1.4	3	o
0150 060 0400 100	1.5	4.5	10	60	1.4	4	o
0150 060 0400 180	1.5	4.5	16	60	1.4	4	•
0150 060 0400 180	1.5	4.5	18	60	1.4	4	o
0200 060 0300 100	2	6.5	10	60	1.9	3	o
0200 060 0300 160	2	6.5	16	60	1.9	3	o
0200 060 0300 200	2	6.5	20	60	1.9	3	•
0200 060 0400 100	2	6.5	10	60	1.9	4	o
0200 060 0400 160	2	6.5	16	60	1.9	4	o
0200 060 0400 200	2	6.5	20	60	1.9	4	•
0300 075 0300 150	3	9	15	75	2.8	3	o
0300 075 0300 300	3	9	30	75	2.8	3	•
0300 075 0400 150	3	9	15	75	2.8	4	o
0300 075 0400 300	3	9	30	75	2.8	4	•
0400 075 0400 200	4	15	20	75	3.7	4	o
0400 075 0400 320	4	15	32	75	3.7	4	•
0400 100 0400 250	4	15	25	100	3.7	4	o
0400 100 0400 320	4	15	32	100	3.7	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

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Spécifications techniques sujettes à changement sans avis prélable

SE GR ENDMILLS – with Long Neck

For Graphite

VHM lange SE GR Fräser mit langem Hals, 4 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

Fraises 2 tailles SE GR avec cou long longues en carbure monobloc, 4 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

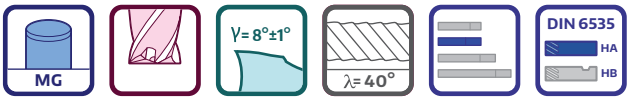
Frese SE GR in metallo duro integrale, 4 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
4 刃 - DLC 钻石涂层 - 中长





Z4





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						753 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	DCT01
0600 075 0600 400	6	25	40	75	5.5	6	o
0600 100 0600 400	6	25	40	100	5.5	6	•
0800 100 0800 400	8	25	40	100	7.4	8	•
0800 150 0800 400	8	25	40	150	7.4	8	o
1000 100 1000 400	10	25	40	100	9.2	10	•
1000 150 1000 400	10	25	40	150	9.2	10	o
1200 100 1200 400	12	25	40	100	11	12	•
1200 150 1200 400	12	25	40	150	11	12	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

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SE GR

TORUS ENDMILLS – with Long Neck

For Graphite

VHM lange SE GR Torusfräser mit langem Hals, 2 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

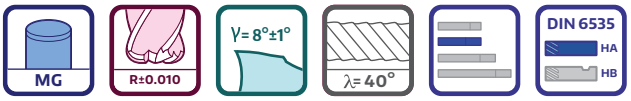
Fraises 2 tailles SE GR toriques avec cou long longues en carbure monobloc, 2 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

Frese SE GR toroidali in metallo duro integrale, 2 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
2 刃 - DLC 钻石涂层 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							J86 *
= * + Ø data	D	l 1	l 2	L	d1	d2 (h6)	R	DCT01
0050 050 0300 060	0.5	1	6	50	0.45	3	0.05	•
0050 050 0400 060	0.5	1	6	50	0.45	4	0.05	•
0060 050 0400 060	0.6	1.2	6	50	0.55	4	0.05	•
0080 050 0300 080	0.8	1.6	8	50	0.75	3	0.05	•
0080 050 0400 080	0.8	1.6	8	50	0.75	4	0.05	•
0080 050 0300 150	0.8	1.6	15	50	0.75	3	0.05	•
0080 050 0400 150	0.8	1.6	15	50	0.75	4	0.05	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

332

若有技术规格变更，恕不事先通知

SE GR TORUS ENDMILLS – with Long Neck

For Graphite

HPMT

VHM lange SE GR Fräser mit langem Hals, 4 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

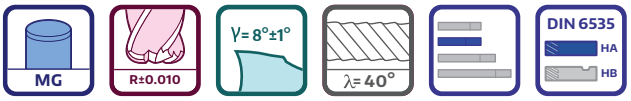
Frese SE GR in metallo duro integrale, 4 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

Fraises 4 tailles SE GR avec cou long longues en carbure monobloc, 4 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
4 刃 - DLC 钻石涂层 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H86 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	DCT01
0100 060 0300 100 R005	1	3	10	60	0.9	3	0.05	•
0100 060 0400 100 R005	1	3	10	60	0.9	4	0.05	•
0100 060 0300 150 R005	1	3	15	60	0.9	3	0.05	•
0100 060 0400 150 R005	1	3	15	60	0.9	4	0.05	•
0100 060 0300 100 R010	1	3	10	60	0.9	3	0.01	•
0100 060 0400 100 R010	1	3	10	60	0.9	4	0.01	•
0100 060 0300 150 R010	1	3	15	60	0.9	3	0.01	•
0100 060 0400 150 R010	1	3	15	60	0.9	4	0.01	•
0150 060 0300 100 R005	1.5	4.5	10	60	1.4	3	0.05	•
0150 060 0400 100 R005	1.5	4.5	10	60	1.4	4	0.05	•
0150 060 0300 150 R005	1.5	4.5	15	60	1.4	3	0.05	•
0150 060 0400 150 R005	1.5	4.5	15	60	1.4	4	0.05	•
0150 060 0300 100 R010	1.5	4.5	10	60	1.4	3	0.01	•
0150 060 0400 100 R010	1.5	4.5	10	60	1.4	4	0.01	•
0150 060 0300 150 R010	1.5	4.5	15	60	1.4	3	0.01	•
0150 060 0400 150 R010	1.5	4.5	15	60	1.4	4	0.01	•
0200 060 0300 200 R005	2	6.5	20	60	1.9	3	0.05	•
0200 060 0400 200 R005	2	6.5	20	60	1.9	4	0.05	•
0200 060 0300 300 R005	2	6.5	30	60	1.9	3	0.05	•
0200 060 0400 300 R005	2	6.5	30	60	1.9	4	0.05	•
0200 060 0300 150 R010	2	6.5	20	60	1.9	3	0.01	•
0200 060 0400 150 R010	2	6.5	20	60	1.9	4	0.01	•
0200 060 0300 300 R010	2	6.5	30	60	1.9	3	0.01	•
0200 060 0400 300 R010	2	6.5	30	60	1.9	4	0.01	•
0300 060 0300 200 R020	3	9	20	60	2.8	3	0.2	•
0300 060 0400 200 R020	3	9	20	60	2.8	4	0.2	•
0300 075 0300 150 R020	3	9	15	75	2.8	3	0.2	•
0300 075 0300 150 R050	3	9	15	75	2.8	3	0.5	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

Cutting Parameter: 332

SE GR TORUS ENDMILLS – with Long Neck

For Graphite

VHM lange SE GR Fräser mit langem Hals, 4 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

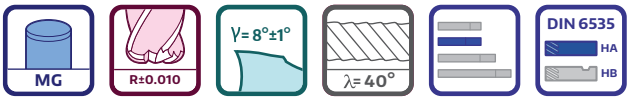
Fraises 4 tailles SE GR avec cou long longues en carbure monobloc, 4 dents, revêtues DIAMANT respectivement DLC pour usinage de graphite

Frese SE GR in metallo duro integrale, 4 taglienti, rivestite DIAMANTE respettivamenta DLC, con collo lungo, per lavorazioni in grafite

整体硬质合金 SE GR 系列 立铣刀 - 石墨操作
4 刃 - DLC 钻石涂层 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							H86 *
= * + Ø data	D	l1	l2	L	d1	d2 (h6)	R	DCT01
0300 075 0300 150 R020	3	9	15	75	2.8	4	0.2	•
0300 075 0300 150 R050	3	9	15	75	2.8	4	0.5	•
0300 075 0300 300 R020	3	9	30	75	2.8	3	0.2	•
0300 075 0300 300 R050	3	9	30	75	2.8	3	0.5	•
0300 075 0400 300 R020	3	9	30	75	2.8	4	0.2	•
0300 075 0400 300 R050	3	9	30	75	2.8	4	0.5	•
0400 060 0400 200 R030	4	12	20	60	3.7	4	0.3	•
0400 075 0400 320 R020	4	12	32	75	3.7	4	0.2	•
0400 075 0400 320 R030	4	12	32	75	3.7	4	0.3	•
0400 075 0400 320 R050	4	12	32	75	3.7	4	0.5	•
0400 100 0400 400 R020	4	25	40	100	3.7	4	0.2	•
0400 100 0400 400 R030	4	25	40	100	3.7	4	0.3	•
0400 100 0400 400 R050	4	25	40	100	3.7	4	0.5	•
0600 075 0600 400 R030	6	25	40	75	5.5	6	0.3	•
0600 075 0600 400 R050	6	25	40	75	5.5	6	0.5	•
0600 100 0600 400 R030	6	25	40	100	5.5	6	0.3	•
0600 100 0600 400 R050	6	25	40	100	5.5	6	0.5	•
0800 100 0800 400 R050	8	25	40	100	7.4	8	0.5	•
0800 150 0800 400 R050	8	25	40	150	7.4	8	0.5	•
1000 100 1000 400 R050	10	25	40	100	9.2	10	0.5	•
1000 150 1000 400 R050	10	25	40	150	9.2	10	0.5	•
1200 100 1200 400 R050	12	25	40	100	11	12	0.5	•
1200 150 1200 400 R050	12	25	40	150	11	12	0.5	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

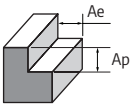
Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

332

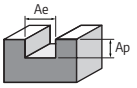
Technical specifications subject to change without prior notice

Standard Endmills 4 Flutes



Side Milling	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.50 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
1.0	225	0.003
2.0		0.008
2.5		0.010
3.0		0.013
4.0		0.019
5.0		0.026
6.0		0.034
8.0		0.063
10.0		0.096
12.0		0.115

Standard Endmills 4 Flutes



Slotting	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.02 × D	
Cutting Width, Ae (mm)	1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)
1.0	180	0.003
2.0		0.005
2.5		0.008
3.0		0.010
4.0		0.016
5.0		0.022
6.0		0.029
8.0		0.042
10.0		0.057
12.0		0.073

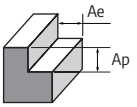


Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

SE GR Recommended Cutting Data

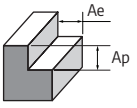
HPMT

Endmills with Long Neck 2 Flutes



Side Milling	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.50 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	180	0.009
2		0.014
3		0.024
4		0.035
5		0.048
6		0.063
8		0.090
10		0.123
12		0.156

Endmills with Long Neck 4 Flutes



Side Milling	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.50 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	180	0.011
2		0.017
3		0.029
4		0.042
5		0.057
6		0.074
8		0.104
10		0.140
12		0.177

O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

TE 45

Solid carbide Tapered end mills are designed with a constant spiral prevent chatter during use and resist side thrusts and deflection.

For material application is up to 52 HRC.



TE 45 DIE – SINKING CUTTERS – with 0.5° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

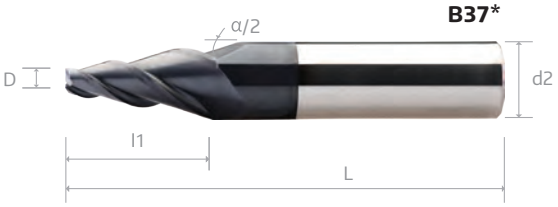
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 0.5° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 0.5° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 0.5° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 0.5°





Z3/4



HPT B0819 AITIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						583 *	B37 *
= * + Ø data	D	l1	l2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 040 0300 10	2.5	10		40	3	3	•	•
0250 060 0300 20	2.5	20		60	3	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 060 0400 20	3	20		60	4	3	•	•
0300 060 0400 30	3	30		60	4	3	•	•
0350 060 0400 20	3.5	20		60	4	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0400 060 0500 20	4	20		60	5	3	•	•
0400 075 0500 30	4	30		75	5	3	•	•
0500 060 0600 20	5	20		60	6	3	•	•
0500 075 0600 30	5	30		75	6	3	•	•
0500 100 0600 50	5	50		100	6	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0600 075 0800 30	6	30		75	8	3	•	•
0600 100 0800 60	6	60		100	8	3	•	•
0800 070 1000 25	8	25		70	10	4	•	•
0800 075 1000 30	8	30		75	10	4	•	•
0800 100 1000 60	8	60		100	10	4	•	•
1000 075 1200 30	10	30		75	12	4	•	•
1200 075 1400 30	12	30		75	14	4	•	•
1200 100 1400 50	12	50		100	14	4	•	•
1600 100 1800 60	16	60		100	18	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

344/345

Technical specifications subject to change without prior notice

TE 45 DIE – SINKING CUTTERS – with 1.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

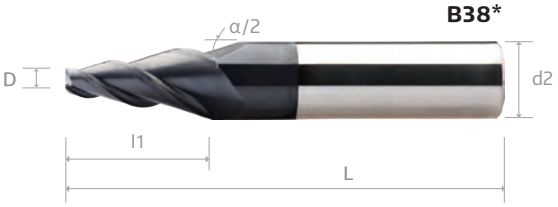
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 1.0° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 1.0° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 1.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 1.0









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						587 *	B38 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 040 0300 10	2.5	10		40	3	3	•	•
0250 060 0300 20	2.5	20		60	3	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 060 0400 20	3	20		60	4	3	•	•
0300 060 0400 30	3	30		60	4	3	•	•
0350 060 0400 20	3.5	20		60	4	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0400 060 0500 20	4	20		60	5	3	•	•
0400 075 0500 30	4	30		75	5	3	•	•
0500 060 0600 20	5	20		60	6	3	•	•
0500 075 0600 30	5	30		75	6	3	•	•
0500 100 0600 50	5	50		100	6	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0600 075 0800 30	6	30		75	8	3	•	•
0600 100 0800 60	6	60		100	8	3	•	•
0800 070 1000 25	8	25		70	10	4	•	•
0800 075 1000 30	8	30		75	10	4	•	•
0800 100 1000 60	8	60		100	10	4	•	•
1000 075 1200 30	10	30		75	12	4	•	•
1200 075 1400 30	12	30		75	14	4	•	•
1200 100 1400 50	12	50		100	14	4	•	•
1600 100 1800 60	16	60		100	18	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 344/345

Technische änderungen ohne vorherige information vorbehalten

TE 45 DIE – SINKING CUTTERS – with 1.5° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

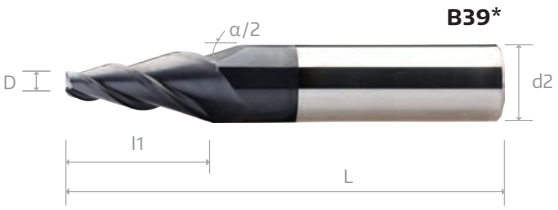
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 1.5° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 1.5° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 1.5° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 1.5°





Z3/4

MG | 1.5° | γ = 3° | λ = 40° | DIN 6535 HA HB | | DIN 6535 HA HB | HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						591 *	B39 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 060 0400 20	2.5	20		60	4	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 060 0400 19	3	19		60	4	3	•	•
0300 075 0500 35	3	35		75	5	3	•	•
0350 060 0500 20	3.5	20		60	5	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0400 060 0500 19	4	19		60	5	3	•	•
0400 075 0600 35	4	35		75	6	3	•	•
0500 060 0600 20	5	20		60	6	3	•	•
0500 075 0800 35	5	35		75	8	3	•	•
0500 100 0800 57	5	57		100	8	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0600 075 0800 35	6	35		75	8	3	•	•
0600 100 1000 60	6	60		100	10	3	•	•
0800 070 1000 25	8	25		70	10	4	•	•
0800 075 1000 35	8	35		75	10	4	•	•
0800 100 1200 60	8	60		100	12	4	•	•
1000 075 1200 38	10	38		75	12	4	•	•
1200 075 1400 35	12	35		75	14	4	•	•
1200 100 1600 60	12	60		100	16	4	•	•
1600 100 2000 65	16	65		100	20	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	344/345
•	•	•	•	•	•	•	•	•	•	•	•	•					

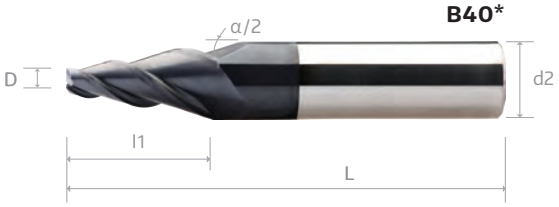
Spécifications techniques sujettes à changement sans avis prélable

TE 45 DIE – SINKING CUTTERS – with 2.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 2.0° - 3 bzw. 4 Zähne	Fraises coniques TE 45 pour matrices en carbure monobloc avec 2.0° d'inclinaison, 3 respectivement 4 dents
Frese coniche TE 45 con un angolo di 2.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti	整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 2.0°









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						595 *	B40 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 060 0400 20	2.5	20		60	4	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 060 0500 25	3	25		60	5	3	•	•
0300 075 0600 40	3	40		75	6	3	•	•
0350 060 0500 20	3.5	20		60	5	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0400 060 0600 20	4	20		60	6	3	•	•
0400 075 0600 28	4	28		75	6	3	•	•
0500 064 0800 20	5	20		64	8	3	•	•
0500 075 0800 35	5	35		75	8	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0600 075 0800 28	6	28		75	8	3	•	•
0600 100 1000 57	6	57		100	10	3	•	•
0800 070 1000 25	8	25		70	10	4	•	•
0800 075 1000 28	8	28		75	10	4	•	•
0800 100 1200 57	8	57		100	12	4	•	•
1000 075 1400 28	10	28		75	12	4	•	•
1200 075 1400 28	12	28		75	14	4	•	•
1200 100 1600 57	12	57		100	16	4	•	•
1600 100 2000 55	16	55		100	20	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 344/345

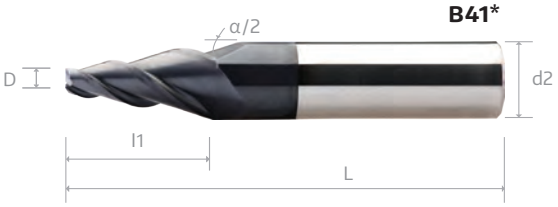
Modifiche Techiche possibili senza preavviso

TE 45 DIE – SINKING CUTTERS – with 2.5° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 2.5° - 3 bzw. 4 Zähne	Fraises coniques TE 45 pour matrices en carbure monobloc avec 2.5° d'inclinaison, 3 respectivement 4 dents
Frese coniche TE 45 con un angolo di 2.5° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti	整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 2.5°





Z3/4



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						599 *	B41 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0500 064 0800 20	5	20		64	8	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0800 070 1000 23	8	23		70	10	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

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若有技术规格变更，恕不事先通知

TE 45 DIE – SINKING CUTTERS – with 3.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

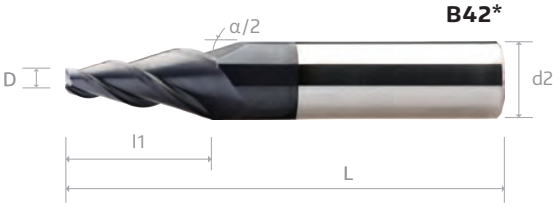
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 3.0° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 3.0° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 3.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 3.0°







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						603*	B42 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 060 0500 20	2.5	20		60	5	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 060 0600 25	3	25		60	6	3	•	•
0300 075 0800 40	3	40		75	8	3	•	•
0350 060 0600 23	3.5	23		60	6	3	•	•
0400 050 0600 15	4	15		50	6	3	•	•
0400 075 0800 38	4	38		75	8	3	•	•
0500 064 0800 20	5	20		64	8	3	•	•
0500 075 0800 28	5	28		75	8	3	•	•
0600 064 0800 20	6	20		64	8	3	•	•
0600 075 1000 38	6	38		75	10	3	•	•
0600 100 1200 57	6	57		100	12	3	•	•
0800 075 1200 25	8	25		75	12	4	•	•
0800 075 1200 38	8	38		75	12	4	•	•
0800 100 1400 57	8	57		100	14	4	•	•
1000 075 1400 38	10	38		75	14	4	•	•
1200 075 1600 38	12	38		75	16	4	•	•
1200 100 1800 55	12	55		100	18	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

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Technical specifications subject to change without prior notice

TE 45 DIE – SINKING CUTTERS – with 4.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

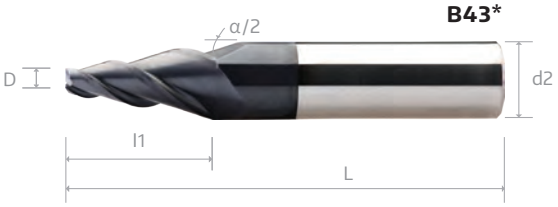
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 4.0° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 4.0° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 4.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 4.0°





Z3/4



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						607*	B43 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0250 060 0600 25	2.5	25		60	6	3	•	•
0300 075 0800 35	3	35		75	8	3	•	•
0350 075 0800 32	3.5	32		75	8	3	•	•
0400 075 0800 28	4	28		75	8	3	•	•
0500 075 1000 35	5	35		75	10	3	•	•
0600 100 1200 42	6	42		100	12	3	•	•
0800 075 1200 28	8	28		75	12	4	•	•
0800 100 1600 57	8	57		100	16	4	•	•
1000 100 1600 42	10	42		100	16	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

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Technische änderungen ohne vorherige information vorbehalten

TE 45 DIE – SINKING CUTTERS – with 5.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

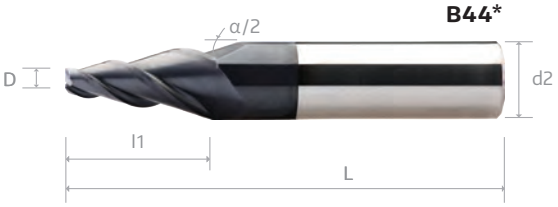
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 5.0° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 5.0° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 5.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 5.0°





Z3/4

MG | 5.0° | γ = 3° | λ = 40° | DIN 6535 HA HB | | DIN 6535 HA HB | HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						611*	B44 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0400 08	2.5	8		50	4	3	•	•
0250 060 0600 20	2.5	20		60	6	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 075 0800 28	3	28		75	8	3	•	•
0300 075 1000 40	3	40		75	10	3	•	•
0350 075 0800 25	3.5	25		75	8	3	•	•
0400 064 0800 15	4	15		64	8	3	•	•
0400 075 0800 22	4	22		75	8	3	•	•
0500 070 1000 20	5	20		70	10	3	•	•
0500 075 1000 28	5	28		75	10	3	•	•
0600 070 1000 20	6	20		70	10	3	•	•
0600 075 1200 34	6	34		75	12	3	•	•
0600 100 1600 57	6	57		100	16	3	•	•
0800 090 1600 25	8	25		90	16	4	•	•
0800 075 1400 34	8	34		75	14	4	•	•
0800 100 1800 57	8	57		100	18	4	•	•
1000 075 1600 34	10	34		75	16	4	•	•
1000 100 1800 45	10	45		100	18	4	•	•
1200 100 2000 45	12	45		100	20	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 344/345

Technical specifications subject to change without prior notice

TE 45 DIE – SINKING CUTTERS – with 7.0° Inclination, 3 Respectively 4 Flutes

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

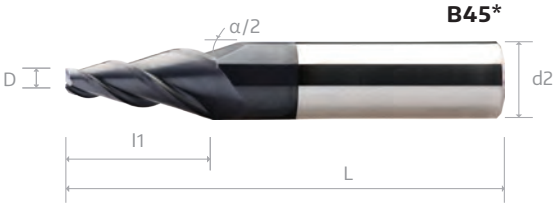
HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 7.0° - 3 bzw. 4 Zähne

Fraises coniques TE 45 pour matrices en carbure monobloc avec 7.0° d'inclinaison, 3 respectivement 4 dents

Frese coniche TE 45 con un angolo di 7.0° per stampi in metallo duro integrale, 3 respettivamente 4 taglienti

整体硬质合金 TE 45 系列 锥度 立铣刀 3 / 4 刃 - 锥度 7.0°





Z3/4



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						615*	B45 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	Z	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	3	•	•
0060 040 0300 03	0.6	3		40	3	3	•	•
0080 040 0300 03	0.8	3		40	3	3	•	•
0100 050 0400 04	1	4		50	4	3	•	•
0150 050 0400 05	1.5	5		50	4	3	•	•
0200 050 0400 06	2	6		50	4	3	•	•
0250 050 0600 08	2.5	8		50	6	3	•	•
0250 075 0800 22	2.5	22		75	8	3	•	•
0300 050 0600 10	3	10		50	6	3	•	•
0300 075 1000 28	3	28		75	10	3	•	•
0300 100 1400 44	3	44		100	14	3	•	•
0350 075 1000 26	3.5	26		75	10	3	•	•
0400 064 0800 15	4	15		64	8	3	•	•
0400 075 1000 24	4	24		75	10	3	•	•
0400 075 1200 32	4	32		75	12	3	•	•
0500 070 1000 20	5	20		70	10	3	•	•
0500 075 1200 28	5	28		75	12	3	•	•
0600 075 1400 32	6	32		75	14	3	•	•
0600 100 1800 48	6	48		100	18	3	•	•
0800 075 1600 32	8	32		75	16	4	•	•
0800 100 2000 48	8	48		100	20	4	•	•
1000 075 1800 32	10	32		75	18	4	•	•
1200 100 2000 32	12	32		100	20	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

344/345

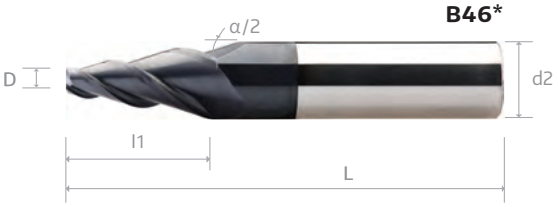
Spécifications techniques sujettes à changement sans avis prélable

TE 45 DIE – SINKING CUTTERS – with 10.0° Inclination

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM TE 45 Gesenkfräser, kegelig mit einem Winkel von 10.0° - 3 Zähne	Fraises coniques TE 45 pour matrices en carbure monobloc avec 10.0° d'inclinaison, 3 dents
Frese coniche TE 45 con un angolo di 10.0° per stampi in metallo duro integrale, 3 taglienti	整体硬质合金 TE 45 系列 锥度 立铣刀 3刃 - 锥度 10.0°





MG | 10.0° | γ = 3° | λ = 40° | DIN 6535 HA HB | | DIN 6535 HA HB | HPT B0819 AlTiN

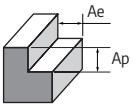
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					618*	B46 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	T ... n	B0819
0050 040 0300 02	0.5	2		40	3	•	•
0060 040 0300 03	0.6	3		40	3	•	•
0080 040 0300 03	0.8	3		40	3	•	•
0100 050 0400 04	1	4		50	4	•	•
0150 050 0400 05	1.5	5		50	4	•	•
0200 050 0600 06	2	6		50	6	•	•
0250 050 0600 08	2.5	8		50	6	•	•
0250 075 1000 21	2.5	21		75	10	•	•
0300 064 0800 10	3	10		64	8	•	•
0300 075 1200 25	3	25		75	12	•	•
0300 100 1800 42	3	42		100	18	•	•
0350 075 1200 24	3.5	24		75	12	•	•
0400 070 1000 15	4	15		70	10	•	•
0400 075 1200 22	4	22		75	12	•	•
0400 100 1600 34	4	34		100	16	•	•
0500 075 1200 20	5	20		75	12	•	•
0500 075 1600 31	5	31		75	16	•	•
0600 100 1800 34	6	34		100	18	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 344

Modifiche Techiche possibili senza preavviso



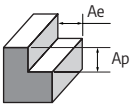
Die Sinking Cutters 3 Flutes

Side Milling	P						M				K			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High machinability		Low machinability		-		-	
Cutting Depth, Ap (mm)	2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.5	60	0.002	55	0.001	50	0.001	45	0.001	30	0.001	60	0.002	30	0.002
1.0		0.003		0.003		0.002		0.003		0.003		0.003		0.004
1.5		0.005		0.004		0.003		0.004		0.004		0.005		0.005
2.0		0.006		0.006		0.004		0.005		0.006		0.007		0.007
2.5		0.008		0.007		0.005		0.006		0.007		0.009		0.009
3.0		0.009		0.009		0.006		0.008		0.008		0.010		0.010
3.5		0.011		0.010		0.007		0.009		0.010		0.012		0.012
4.0		0.013		0.011		0.008		0.010		0.011		0.014		0.014
5.0		0.016		0.014		0.010		0.013		0.014		0.018		0.018
6.0		0.019		0.017		0.012		0.015		0.017		0.021		0.021

Side Milling	N						S			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
0.5	120	0.001	100	0.001	110	0.001	40	0.001	30	0.001
1.0		0.004		0.004		0.004		0.003		0.003
1.5		0.005		0.005		0.005		0.004		0.004
2.0		0.007		0.007		0.007		0.005		0.006
2.5		0.009		0.009		0.009		0.007		0.007
3.0		0.011		0.011		0.011		0.008		0.008
3.5		0.013		0.012		0.012		0.009		0.010
4.0		0.014		0.014		0.014		0.010		0.011
5.0		0.018		0.018		0.018		0.013		0.014
6.0		0.021		0.021		0.021		0.016		0.017

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Die Sinking Cutters 4 Flutes

Side Milling	P						M				K			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High machinability		Low machinability		-		-	
Cutting Depth, Ap (mm)	2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
8	60	0.025	55	0.022	50	0.018	45	0.018	30	0.021	60	0.027	30	0.027
10		0.032		0.026		0.022		0.023		0.025		0.034		0.033
12		0.038		0.032		0.027		0.027		0.031		0.041		0.041
16		0.050		0.043		0.035		0.036		0.042		0.054		0.054

Side Milling	N						S			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	2.50 × D		2.50 × D		2.50 × D		2.50 × D		2.50 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D		0.02 × D		0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
8	120	0.028	100	0.028	110	0.028	40	0.017	30	0.019
10		0.036		0.035		0.036		0.021		0.023
12		0.042		0.042		0.043		0.025		0.028
16		0.056		0.056		0.057		0.034		0.038

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

THREAD MILL

For material
P, M, K, N, S
application (≤ 35 HRC)



THREAD MILL for ISO Metric Internal Thread without Oil Hole

HPMT

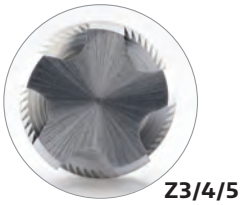
VHM Fräser M /MF Thread mill 4 Zähne

Fraises 2 tailles M /MF Thread mill - 4 dents en carbure monobloc

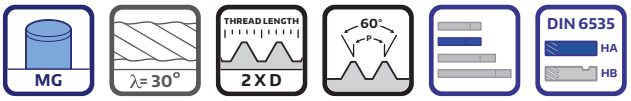
Frese M /MF Thread mill in metallo duro integrale 4 taglienti

整体硬质合金 硬质合金螺纹铣刀





Z3/4/5



HPT G6110 AlCrN

THREAD MILL

M

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								H19*
= * + Ø data	M	l 1	l 2	P	d1	L	d2 (h6)	Z	G6110
0600	≥M6	13.00		1.00	4.5	57	6	3	•
0800	≥M8	17.50		1.25	6	60	6	3	•
1000	≥M10	21.00		1.50	7.5	75	8	4	•
1200	≥M12	26.25		1.75	9.5	75	10	4	•
1400	≥M14	30.00		2.00	10	83	10	4	•
1600	≥M16	34.00		2.00	12	83	12	4	•

MF

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								H21*
= * + Ø data	M	l 1	l 2	P	d1	L	d2 (h6)	Z	G6110
0800	≥M8	17.00		1.00	6.0	57	6	3	•
0800 057 06	≥M8	17.25		0.75	6.0	57	6	3	•
1000	≥M10	21.00		1.00	8.0	64	8	4	•
1200	≥M12	25.50		1.50	9.5	72	10	4	•
1200 072	≥M12	26.25		1.25	9.5	72	10	4	•
1200 072 10	≥M12	25.00		1.00	9.5	72	10	4	•
1400	≥M14	30.00		1.50	10.0	83	10	4	•
1400 083 10	≥M14	29.00		1.00	10.0	83	10	4	•
1600	≥M16	34.50		1.50	12.0	83	12	4	•
1600 083 12	≥M16	33.00		1.00	12.0	83	12	4	•
1800	≥M18	37.50		1.50	14.0	90	14	5	•
1800 090 14	≥M18	37.00		1.00	14.0	90	14	5	•
2000	≥M20	42.00		1.50	16.0	92	16	5	•
2000 092 16	≥M20	41.00		1.00	16.0	92	16	5	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

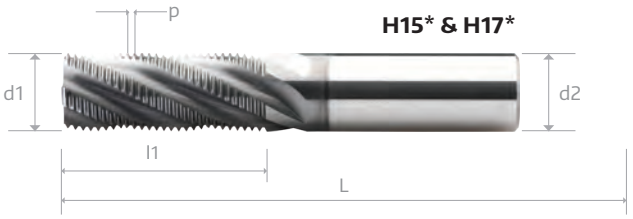
350

Technical specifications subject to change without prior notice

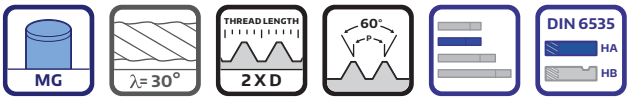
THREAD MILL for ISO Metric Internal Thread with Oil Hole

HPMT

VHM Fräser M /MF Thread mill 4 Zähne	Fraises 2 tailles M /MF Thread mill - 4 dents en carbure monobloc
Frese M /MF Thread mill in metallo duro integrale 4 taglienti	整体硬质合金 硬质合金螺纹铣刀









M

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								H15*
= * + Ø data	M	l1	l2	P	d1	L	d2 (h6)	Z	G6110
0600	≥M6	13.00		1.00	4.5	57	6	3	•
0800	≥M8	17.50		1.25	6	60	6	3	•
1000	≥M10	21.00		1.50	7.5	75	8	4	•
1200	≥M12	26.25		1.75	9.5	75	10	4	•
1400	≥M14	30.00		2.00	10	83	10	4	•
1600	≥M16	34.00		2.00	12	83	12	4	•

MF

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								H17*
= * + Ø data	M	l1	l2	P	d1	L	d2 (h6)	Z	G6110
0800	≥M8	17.00		1.00	6.0	57	6	3	•
0800 057 06	≥M8	17.25		0.75	6.0	57	6	3	•
1000	≥M10	21.00		1.00	8.0	64	8	4	•
1200	≥M12	25.50		1.50	9.5	72	10	4	•
1200 072	≥M12	26.25		1.25	9.5	72	10	4	•
1200 072 10	≥M12	25.00		1.00	9.5	72	10	4	•
1400	≥M14	30.00		1.50	10.0	83	10	4	•
1400 083 10	≥M14	29.00		1.00	10.0	83	10	4	•
1600	≥M16	34.50		1.50	12.0	83	12	4	•
1600 083 12	≥M16	33.00		1.00	12.0	83	12	4	•
1800	≥M18	37.50		1.50	14.0	90	14	5	•
1800 090 14	≥M18	37.00		1.00	14.0	90	14	5	•
2000	≥M20	42.00		1.50	16.0	92	16	5	•
2000 092 16	≥M20	41.00		1.00	16.0	92	16	5	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 350

For ISO Metric Thread 4 Flutes

Thread Milling	P						M				K			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High machinability		Low machinability		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	100	0.020	90	0.010	90	0.005	60	0.010	55	0.005	100	0.020	100	0.020
8		0.040		0.030		0.025		0.020		0.015		0.040		0.040
10		0.050		0.040		0.035		0.027		0.021		0.050		0.050
12		0.060		0.050		0.045		0.034		0.027		0.060		0.060
14		0.070		0.060		0.055		0.041		0.033		0.070		0.070
16		0.080		0.070		0.065		0.048		0.039		0.080		0.080
18		0.090		0.080		0.075		0.055		0.045		0.090		0.090
20		0.100		0.090		0.085		0.060		0.050		0.100		0.100

Thread Milling	N						S			
Working Material	Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
6	200	0.030	200	0.030	200	0.030	40	0.010	35	0.010
8		0.050		0.050		0.050		0.020		0.020
10		0.058		0.058		0.058		0.027		0.027
12		0.066		0.066		0.066		0.034		0.034
14		0.074		0.074		0.074		0.041		0.041
16		0.082		0.082		0.082		0.048		0.048
18		0.090		0.090		0.090		0.055		0.055
20		0.100		0.100		0.100		0.060		0.060

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

BN 30

- For general machining
- Cost efficiency

For material application ≤35 HRC

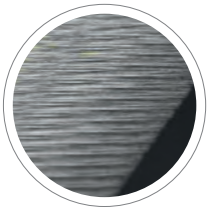


BN 30

01

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



02

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



03

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation



04

SUITABLE FOR MATERIAL GROUPS

P M K N S

DEUTSCH

01 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

02 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
· Weniger Materialanhaftungen an der Schneide
· Für stabile Bearbeitung

03 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
· Erhöht die Härte und und bietet bessere Verschleißfestigkeit
· Höhere Temperaturbeständigkeit
· Glatte Oberfläche für besseren Spänefluß

04 **GEEIGNET FÜR DIE MATERIALGRUPPEN P, M, K, N, S**

FRANÇAIS

01 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

02 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
· Moins de matériau adhère à l'arête tranchante
· Pour un usinage stable

03 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
· Augmente la dureté et la résistance à l'abrasion
· Résistance thermique supérieure
· Évacuation des copeaux plus fluide

04 **ADAPTÉ POUR LES MATÉRIAUX P, M, K, N, S**

ITALIANO

01 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

02 **PREPARAZIONE DELL'ANGOLO DI TAGLIO**
Migliora la durata dello strumento
· Meno materiale che aderisce sull'angolo di taglio
· Per una lavorazione stabile

03 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
· Aumenta la durezza e una maggiore resistenza all'usura abrasiva
· Resistenza termica superiore
· Evacuazione dei trucioli più semplice

04 **ADATTO PER IL MATERIALE P, M, K, N, S**

中文

01 **刀具底刃的设计**
强化刀具，并降低崩刃的几率

02 **切削刃设置提高刀具寿命**
提高刀具寿命
· 较少的材料粘粘在切削刃上
· 用于稳定加工

03 **优异的涂层，减少摩擦**
· 增加硬度，提高材料耐磨性
· 更高的抗热性
· 更顺畅的排屑

04 **适合加工预硬钢、超合金的材料 P, M, K, N, S**

BN 30

STANDARD BALLNOSE CUTTERS

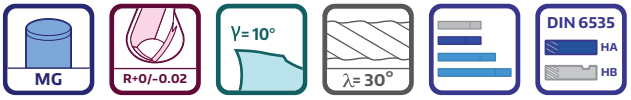
≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM Standard BN 30 Radiusschaftfräser, 2 Zähne	Fraises BN 30 Standard en carbure monobloc, à bout hémisphérique, 2 dents
Frese cilindriche a raggio in metallo duro integrale, tipo BN 30 Standard, 2 taglienti	整体硬质合金 BN 30 系列 球头 立铣刀 2 刃 - 标准长度







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						923 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0300	3	1.5	9		40	3	•
0300 050 06	3	1.5	9		50	6	•
0400	4	2	14		50	4	•
0400 050 06	4	2	14		50	6	•
0500	5	2.5	15		50	5	•
0500 050 06	5	2.5	15		50	6	•
0600 050	6	3	20		50	6	•
0600 060	6	3	20		60	6	•
0800	8	4	20		64	8	•
1000 070	10	5	22		70	10	•
1000 075	10	5	22		75	10	•
1200	12	6	25		75	12	•
1400	14	7	30		90	14	•
1600	16	8	30		90	16	•
1800	18	9	38		100	18	•
2000	20	10	38		100	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	●	●		●	○	●						

Cutting Parameter: 357

Technical specifications subject to change without prior notice

BN 30 BALLNOSE CUTTERS – Long

≤ 900 N/mm² + B0819 ≤ 35 HRC

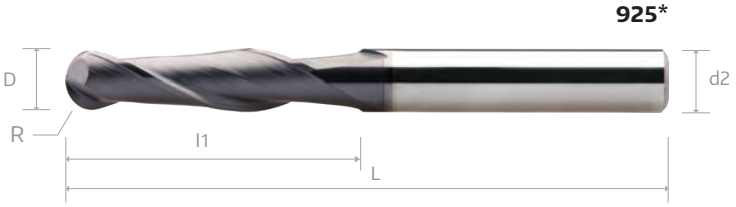
HPMT

VHM lange BN 30 Radiusschaftfräser, 2 Zähne

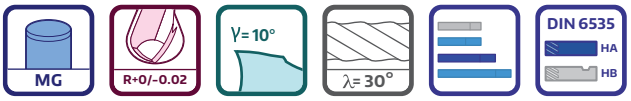
Fraises BN 30 longues en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 30 lunghe, 2 taglienti

整体硬质合金 BN 30 系列 球头 立铣刀 2 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						925 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0300	3	1.5	19		60	3	•
0300 075 06	3	1.5	19		75	6	•
0400	4	2	19		60	4	•
0400 075 06	4	2	19		75	6	•
0500	5	2.5	19		60	5	•
0500 075 06	5	2.5	19		75	6	•
0600	6	3	31		75	6	•
0800	8	4	31		75	8	•
1000 075	10	5	31		75	10	•
1000 100	10	5	31		100	10	•
1200	12	6	50		100	12	•
1400	14	7	57		125	14	•
1600	16	8	57		125	16	•
1800	18	9	57		125	18	•
2000	20	10	57		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	●	●		●	○	●						

Cutting Parameter: 358

Technische änderungen ohne vorherige information vorbehalten

BN 30

BALLNOSE CUTTERS – Extra-Long

≤ 900 N/mm² + B0819 ≤ 35 HRC

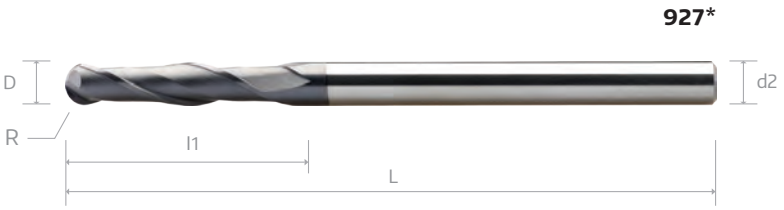
HPMT

HM extra-lange BN 30 Radiusschaftfräser, 2 Zähne

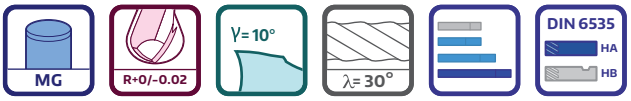
Fraises BN 30 extra-longues en carbure monobloc, à bout hémi-sphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 30 extra-lunghe, 2 taglienti

整体硬质合金 BN 30 系列 球头 立铣刀 2 刃 - 加长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						927 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0300	3	1.5	25		100	3	•
0300 100 06	3	1.5	25		100	6	•
0400	4	2	31		100	4	•
0400 100 06	4	2	31		100	6	•
0500	5	2.5	31		100	5	•
0500 100 06	5	2.5	31		100	6	•
0600 100	6	3	38		100	6	•
0600 150	6	3	38		150	6	•
0800 100	8	4	41		100	8	•
0800 150	8	4	41		150	8	•
1000 125	10	5	45		125	10	•
1000 150	10	5	45		150	10	•
1200 125	12	6	75		125	12	•
1200 150	12	6	75		150	12	•
1400 150	14	7	75		150	14	•
1400 200	14	7	75		200	14	•
1600 150	16	8	75		150	16	•
1600 200	16	8	75		200	16	•
1800 150	18	9	75		150	18	•
1800 200	18	9	75		200	18	•
2000 150	20	10	75		150	20	•
2000 200	20	10	75		200	20	•

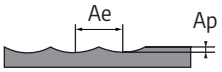
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	●	●		●	○	●						

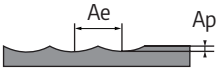
359

Spécifications techniques sujettes à changement sans avis prélable



Standard Ballnose Cutters 2 Flutes

Roughing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.080		0.080		0.080		0.080		0.080
4		0.101		0.101		0.101		0.101		0.101
5		0.117		0.117		0.117		0.117		0.117
6		0.139		0.139		0.139		0.140		0.140
8		0.159		0.159		0.159		0.159		0.159
10	150	0.179	100	0.179	150	0.179	175	0.179	70	0.179
12		0.199		0.199		0.199		0.201		0.201
14		0.212		0.212		0.212		0.209		0.209
16		0.223		0.223		0.223		0.224		0.224
18		0.220		0.220		0.220		0.224		0.224
20		0.223		0.223		0.223		0.223		0.223

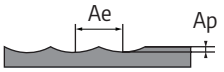


Standard Ballnose Cutters 2 Flutes

Finishing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.080		0.080		0.080		0.080		0.080
4		0.101		0.101		0.101		0.101		0.101
5		0.117		0.117		0.117		0.117		0.117
6		0.139		0.139		0.139		0.140		0.140
8		0.159		0.159		0.159		0.159		0.159
10	150	0.179	100	0.179	150	0.179	175	0.179	70	0.179
12		0.199		0.199		0.199		0.201		0.201
14		0.212		0.212		0.212		0.209		0.209
16		0.223		0.223		0.223		0.224		0.224
18		0.220		0.220		0.220		0.224		0.224
20		0.223		0.223		0.223		0.223		0.223

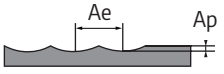
P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Long Ballnose Cutters 2 Flutes

Roughing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.064		0.064		0.064		0.064		0.064
4		0.081		0.081		0.081		0.081		0.081
5		0.093		0.093		0.093		0.093		0.093
6		0.112		0.112		0.112		0.112		0.112
8		0.127		0.127		0.127		0.127		0.127
10	150	0.143	100	0.143	150	0.143	175	0.143	70	0.143
12		0.159		0.159		0.159		0.161		0.161
14		0.169		0.169		0.169		0.167		0.167
16		0.179		0.178		0.179		0.179		0.180
18		0.176		0.176		0.176		0.179		0.179
20		0.178		0.178		0.178		0.179		0.179

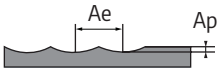


Long Ballnose Cutters 2 Flutes

Finishing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.064		0.064		0.064		0.064		0.064
4		0.081		0.081		0.081		0.081		0.081
5		0.093		0.093		0.093		0.093		0.093
6		0.112		0.112		0.112		0.112		0.112
8		0.127		0.127		0.127		0.127		0.127
10	150	0.143	100	0.143	150	0.143	175	0.143	70	0.143
12		0.159		0.159		0.159		0.161		0.161
14		0.169		0.169		0.169		0.167		0.167
16		0.179		0.178		0.179		0.179		0.180
18		0.176		0.176		0.176		0.179		0.179
20		0.178		0.178		0.178		0.179		0.179

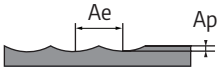
P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Extra Long Ballnose Cutters 2 Flutes

Roughing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.056		0.056		0.056		0.056		0.056
4		0.071		0.071		0.071		0.071		0.070
5		0.082		0.082		0.082		0.082		0.082
6		0.098		0.098		0.098		0.098		0.098
8		0.111		0.111		0.111		0.112		0.111
10	150	0.125	100	0.125	150	0.125	175	0.125	70	0.125
12		0.139		0.139		0.139		0.141		0.141
14		0.148		0.148		0.148		0.146		0.146
16		0.156		0.156		0.156		0.157		0.157
18		0.154		0.154		0.154		0.157		0.157
20		0.156		0.156		0.156		0.156		0.156



Extra Long Ballnose Cutters 2 Flutes

Finishing	P		M		K		N		S	
Working Material	Carbon Steel		Stainless Steel		Cast Iron		Copper Alloy		Titanium Alloy	
Properties	-		High machinability		-		-		-	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.05 × D		0.05 × D		0.05 × D		0.05 × D		0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.056		0.056		0.056		0.056		0.056
4		0.071		0.071		0.071		0.071		0.070
5		0.082		0.082		0.082		0.082		0.082
6		0.098		0.098		0.098		0.098		0.098
8		0.111		0.111		0.111		0.112		0.111
10	150	0.125	100	0.125	150	0.125	175	0.125	70	0.125
12		0.139		0.139		0.139		0.141		0.141
14		0.148		0.148		0.148		0.146		0.146
16		0.156		0.156		0.156		0.157		0.157
18		0.154		0.154		0.154		0.157		0.157
20		0.156		0.156		0.156		0.156		0.156

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



BN 45

- For general machining
- Cost efficiency

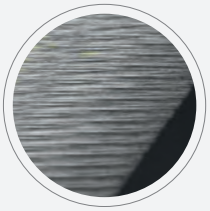
For materials application
between 36 HRC to 52 HRC.

BN 45

01

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



02

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



03

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation



04

SUITABLE FOR MATERIAL GROUPS

P M K S H

DEUTSCH

01 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

02 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
· Weniger Materialanhaftungen an der Schneide
· Für stabile Bearbeitung

03 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
· Erhöht die Härte und und bietet bessere Verschleißfestigkeit
· Höhere Temperaturbeständigkeit
· Glatte Oberfläche für besseren Spänefluß

04 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, K, S, H**

FRANÇAIS

01 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

02 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
· Moins de matériau adhère à l'arête tranchante
· Pour un usinage stable

03 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
· Augmente la dureté et la résistance à l'abrasion
· Résistance thermique supérieure
· Évacuation des copeaux plus fluide

04 **ADAPTÉ AUX MATÉRIAUX P, M, K, S, H**

ITALIANO

01 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

02 **PREPARAZIONE DELL'ANGOLO DI TAGLIO**
Migliora la durata dello strumento
· Meno materiale che aderisce sull'angolo di taglio
· Per una lavorazione stabile

03 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
· Aumenta la durezza e una maggiore resistenza all'usura abrasiva
· Resistenza termica superiore
· Evacuazione dei trucioli più semplice

04 **ADATTO PER IL MATERIALE P, M, K, S, H**

中文

01 **刀具底刃的设计**
强化刀具，并降低崩刃的几率

02 **偏心研磨**
· 最佳偏心研磨，可避免加工时摩擦
· 同时保持刀具的最高刚性

03 **卓越的涂层**
· 强化刀具的硬度和抗热性
· 降低积屑瘤并拥有更顺畅的排屑

04 **适合加工铸钢，超合金和硬化钢的材料**

BN 45 STANDARD BALLNOSE CUTTERS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Standard BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 Standard en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 Standard, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 标准长度







HPT G6110 AlCrN

HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C36 *	929 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	G6110	B0819
0100 040 03	1	0.5	3		40	3	o	•
0100 050 04	1	0.5	3		50	4	o	•
0150 040 03	1.5	0.75	3		40	3	o	•
0150 050 04	1.5	0.75	3		50	4	o	•
0200 040 03	2	1	4		40	3	o	•
0200 050 04	2	1	4		50	4	o	•
0250 040 03	2.5	1.25	4		40	3	o	•
0250 050 04	2.5	1.25	4		50	4	o	•
0300	3	1.5	5		40	3	o	•
0300 050 04	3	1.5	5		50	4	o	•
0300 050 06	3	1.5	5		50	6	o	•
0350 050 04	3.5	1.75	8		50	4	o	•
0400	4	2	8		50	4	o	•
0400 050 06	4	2	8		50	6	o	•
0450 050 05	4.5	2.25	9		50	5	o	•
0500	5	2.5	9		50	5	o	•
0500 050 06	5	2.5	9		50	6	o	•
0550 050 06	5.5	2.75	10		50	6	o	•
0600 050	6	3	10		50	6	o	•
0600 060	6	3	10		60	6	o	•
0700 064 08	7	3.5	12		64	8	o	•
0800	8	4	12		64	8	o	•
0900 070 10	9	4.5	14		70	10	o	•
1000 070	10	5	14		70	10	o	•
1000 075	10	5	14		75	10	o	•
1100 075 12	11	5.5	16		75	12	o	•
1200	12	6	16		75	12	o	•
1400	14	7	32		90	14	o	•
1600	16	8	32		90	16	o	•
1800	18	9	38		100	18	o	•
2000	20	10	38		100	20	o	•
2200	22	11	40		100	22	o	•
2500	25	12.5	40		100	25	o	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•		○	○	•		○	•		○	•	•	•	○		

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Technical specifications subject to change without prior notice

BN 45 STANDARD BALLNOSE CUTTERS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Standard BN 45 Radiusschaftfräser, 4 Zähne	Fraises BN 45 Standard en carbure monobloc, à bout hémisphérique, 4 dents
Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 Standard, 4 taglienti	整体硬质合金 BN 45 系列 球头 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B82 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0300	3	1.5	5		40	3	•
0300 050 06	3	1.5	5		50	6	•
0350 050 04	3.5	1.75	8		50	4	•
0400	4	2	8		50	4	•
0400 050 06	4	2	8		50	6	•
0450 050 05	4.5	2.25	9		50	5	•
0500	5	2.5	9		50	5	•
0500 050 06	5	2.5	9		50	6	•
0550 050 06	5.5	2.75	10		50	6	•
0600 050	6	3	10		50	6	•
0600 060	6	3	10		60	6	•
0700 064 08	7	3.5	12		64	8	•
0800	8	4	12		64	8	•
0900 070 10	9	4.5	14		70	10	•
1000 070	10	5	14		70	10	•
1000 075	10	5	14		75	10	•
1100 075 12	11	5.5	16		75	12	•
1200	12	6	16		75	12	•
1400	14	7	32		90	14	•
1600	16	8	32		90	16	•
1800	18	9	38		100	18	•
2000	20	10	38		100	20	•
2200	22	11	40		100	22	•
2500	25	12.5	40		100	25	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	○	○	●	○	●	○	●	●	●	○		

Cutting Parameter: 388

Technische änderungen ohne vorherige information vorbehalten

BN 45 BALLNOSE CUTTERS – Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Standard BN 45 Radiusschaftfräser, 4 Zähne

Fraises BN 45 longues en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 Standard, 4 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 中长







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						931 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0100 060 03	1	0.5	3		60	3	•
0100 075 04	1	0.5	3		75	4	•
0150 060 03	1.5	0.75	3		60	3	•
0150 075 04	1.5	0.75	3		75	4	•
0200 060 03	2	1	4		60	3	•
0200 075 04	2	1	4		75	4	•
0250 060 03	2.5	1.25	4		60	3	•
0250 075 04	2.5	1.25	4		75	4	•
0300	3	1.5	5		60	3	•
0300 075 04	3	1.5	5		75	4	•
0300 075 06	3	1.5	5		75	6	•
0400	4	2	8		60	4	•
0400 075 06	4	2	8		75	6	•
0500	5	2.5	9		60	5	•
0500 075 06	5	2.5	9		75	6	•
0600	6	3	10		75	6	•
0800	8	4	12		75	8	•
1000 075	10	5	14		75	10	•
1000 100	10	5	14		100	10	•
1200	12	6	16		100	12	•
1400	14	7	32		125	14	•
1600	16	8	32		125	16	•
1800	18	9	38		125	18	•
2000	20	10	38		125	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	○				

384

Spécifications techniques sujettes à changement sans avis prélable

BN 45 BALLNOSE CUTTERS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM extra-lange BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 extra-longues en carbure monobloc, à bout hémi-sphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 extra-lunghe, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 加长

933*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						933 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819
0100 100 03	1	0.5	3		100	3	•
0100 100 04	1	0.5	3		100	4	•
0150 100 03	1.5	0.75	3		100	3	•
0150 100 04	1.5	0.75	3		100	4	•
0200 100 03	2	1	4		100	3	•
0200 100 04	2	1	4		100	4	•
0250 100 03	2.5	1.25	4		100	3	•
0250 100 04	2.5	1.25	4		100	4	•
0300	3	1.5	5		100	3	•
0300 100 04	3	1.5	5		100	4	•
0300 100 06	3	1.5	5		100	6	•
0400	4	2	8		100	4	•
0400 100 06	4	2	8		100	6	•
0500	5	2.5	9		100	5	•
0500 100 06	5	2.5	9		100	6	•
0600 100	6	3	10		100	6	•
0600 150	6	3	10		150	6	•
0800 100	8	4	12		100	8	•
0800 150	8	4	12		150	8	•
1000 125	10	5	14		125	10	•
1000 150	10	5	14		150	10	•
1200 125	12	6	16		125	12	•
1200 150	12	6	16		150	12	•
1400 150	14	7	32		150	14	•
1400 200	14	7	32		200	14	•
1600 150	16	8	32		150	16	•
1600 200	16	8	32		200	16	•
1800 150	18	9	38		150	18	•
1800 200	18	9	38		200	18	•
2000 150	20	10	38		150	20	•
2000 200	20	10	38		200	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	○	○	●	○	●	○	●	●	●	○				

386

BN 45 STANDARD BALLNOSE CUTTERS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

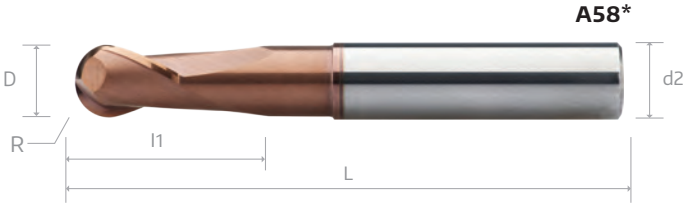
HPMT

VHM Standard BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 Standard en carbure monobloc, à bout hémisphérique, 2 dents

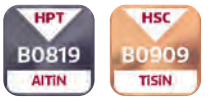
Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 Standard, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 标准长度





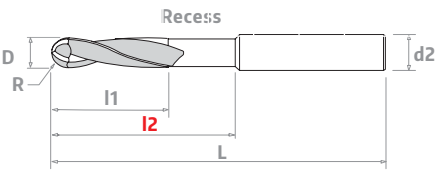




EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						940 *	A57*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819	B0909
0100 040 03	1	0.5	3	4	40	3	•	•
0100 050 04	1	0.5	3	4	50	4	•	•
0150 040 03	1.5	0.75	3	6	40	3	•	•
0150 050 04	1.5	0.75	3	6	50	4	•	•
0200 040 03	2	1	4	8	40	3	•	•
0200 050 04	2	1	4	8	50	4	•	•
0250 040 03	2.5	1.25	4	10	40	3	•	•
0250 050 04	2.5	1.25	4	10	50	4	•	•
0300	3	1.5	5	14	40	3	•	•
0300 050 04	3	1.5	5	14	50	4	•	•
0300 050 06	3	1.5	5	14	50	6	•	•
0400	4	2	8	20	50	4	•	•
0400 050 06	4	2	8	20	50	6	•	•
0500	5	2.5	9	20	50	5	•	•
0500 050 06	5	2.5	9	20	50	6	•	•
0600 050	6	3	10	20	50	6	•	•
0600 060	6	3	10	30	60	6	•	•
0800	8	4	12	30	64	8	•	•
1000	10	5	14	32	70	10	•	•
1200	12	6	16	38	75	12	•	•
1400	14	7	32	44	90	14	•	•
1600	16	8	32	46	90	16	•	•
1800	18	9	38	53	100	18	•	•
2000	20	10	38	58	100	20	•	•
2200	22	11	40	58	100	22	•	•
2500	25	12.5	40	58	100	25	•	•

941 * A58 *

Tools with recess upon request



Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter 382

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	○				

若有技术规格变更，恕不事先通知

BN 45 STANDARD BALLNOSE CUTTERS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Standard BN 45 Radiusschaftfräser, 4 Zähne	Fraises BN 45 Standard en carbure monobloc, à bout hémisphérique, 4 dents
Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 Standard, 4 taglienti	整体硬质合金 BN 45 系列 球头 立铣刀 4 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						485 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	G6110
0300	3	1.5	5		40	3	●
0300 050 06	3	1.5	5		50	6	●
0400	4	2	8		50	4	●
0400 050 06	4	2	8		50	6	●
0500	5	2.5	9		50	5	●
0500 050 06	5	2.5	9		50	6	●
0600 050	6	3	10		50	6	●
0600 060	6	3	10		60	6	●
0800	8	4	12		64	8	●
1000	10	5	14		70	10	●
1200	12	6	16		75	12	●
1400	14	7	32		90	14	●
1600	16	8	32		90	16	●
1800	18	9	38		100	18	●
2000	20	10	38		100	20	●
2200	22	11	40		100	22	●
2500	25	12.5	40		100	25	●

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	○				

Cutting Parameter: 388

Technical specifications subject to change without prior notice

BN 45 BALLNOSE CUTTERS - Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM lange BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 longues en carbure monobloc, à bout hémisphérique, 2 dents

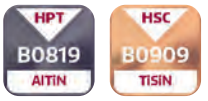
Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 lunghe, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 中长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						942 *	A59*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819	B0909
0100 060 03	1	0.5	3	7	60	3	•	•
0100 075 04	1	0.5	3	7	75	4	•	•
0150 060 03	1.5	0.75	3	10	60	3	•	•
0150 075 04	1.5	0.75	3	10	75	4	•	•
0200 060 03	2	1	4	14	60	3	•	•
0200 075 04	2	1	4	14	75	4	•	•
0250 060 03	2.5	1.25	4	18	60	3	•	•
0250 075 04	2.5	1.25	4	18	75	6	•	•
0300	3	1.5	5	21	60	4	•	•
0300 075 06	3	1.5	5	21	75	6	•	•
0400	4	2	8	28	60	4	•	•
0400 075 06	4	2	8	28	75	6	•	•
0500	5	2.5	9	32	60	5	•	•
0500 075 06	5	2.5	9	32	75	6	•	•
0600	6	3	10	40	75	6	•	•
0800	8	4	10	40	75	8	•	•
1000 075	10	5	12	40	75	10	•	•
1000 100	10	5	14	60	100	10	•	•
1200	12	6	16	60	100	12	•	•
1400	14	7	32	80	125	14	•	•
1600	16	8	32	80	125	16	•	•
1800	18	9	38	80	125	18	•	•
2000	20	10	38	80	125	20	•	•

943 * A60 *

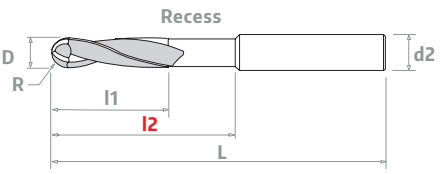
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•		○		○		•		•		•		•			

384

Technische änderungen ohne vorherige information vorbehalten

BN 45 BALLNOSE CUTTERS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM extra-lange BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 extra-longues en carbure monobloc, à bout hémi-sphérique, 2 dents

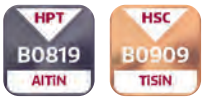
Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 extra-lunghe, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 加长









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						944 *	A61*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819	B0909
0100 100 03	1	0.5	3	10	100	3	•	•
0100 100 04	1	0.5	3	10	100	4	•	•
0150 100 03	1.5	0.75	3	15	100	3	•	•
0150 100 04	1.5	0.75	3	15	100	4	•	•
0200 100 03	2	1	4	20	100	3	•	•
0200 100 04	2	1	4	20	100	4	•	•
0250 100 03	2.5	1.25	4	25	100	3	•	•
0250 100 04	2.5	1.25	4	25	100	4	•	•
0300	3	1.5	5	30	100	3	•	•
0300 100 06	3	1.5	5	30	100	6	•	•
0400	4	2	8	40	100	4	•	•
0400 100 06	4	2	8	40	100	6	•	•
0500	5	2.5	9	50	100	5	•	•
0500 100 06	5	2.5	9	50	100	6	•	•
0600 100	6	3	10	60	100	6	•	•
0600 150	6	3	10	60	150	6	•	•
0800 100	8	4	12	60	100	8	•	•
0800 150	8	4	12	80	150	8	•	•
1000 125	10	5	14	85	125	10	•	•
1000 150	10	5	14	100	150	10	•	•
1200 125	12	6	16	85	125	12	•	•
1200 150	12	6	16	110	150	12	•	•
1400 150	14	7	32	110	150	14	•	•
1400 200	14	7	32	150	200	14	•	•

945* A62*

cont'd ▶

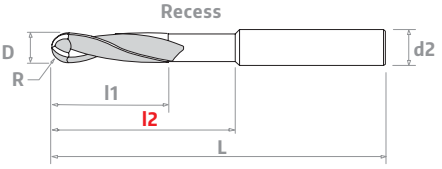
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli riduzione gambo su richiest

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	○					

Cutting Parameter: 386

BN 45 BALLNOSE CUTTERS - Extra-Long

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM extra-lange BN 45 Radiusschaftfräser, 2 Zähne

Fraises BN 45 extra-longues en carbure monobloc, à bout hémi-sphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 45 extra-lunghe, 2 taglienti

整体硬质合金 BN 45 系列 球头 立铣刀 2 刃 - 加长

A62*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						944 *	A61*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819	B0909
1600 150	16	8	32	110	150	16	•	•
1600 200	16	8	32	150	200	16	•	•
1800 150	18	9	38	110	150	18	•	•
1800 200	18	9	38	150	200	18	•	•
2000 150	20	10	38	110	150	20	•	•
2000 200	20	10	38	150	200	20	•	•

945* A62*

BN 45

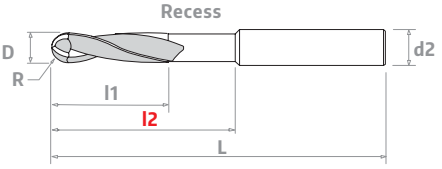
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	○				

386

若有技术规格变更，恕不事先通知

BN 45 MINIATURE BALLNOSE CUTTERS

≤ 1.300 N/mm² + B0819 ≤ 36 - 52 HRC

HPMT

VHM Radiuskleinstschaftfräser BN 45, 2 Zähne	Micro-fraises BN 45 en carbure monobloc à bout hémisphérique, 2 dents
Micro-frese cilindriche a raggio in metallo duro integrale, tipo BN 45, 2 taglienti	整体硬质合金 BN 45 系列 微型球头 立铣刀 2 刃 - 标准长度

A63*





Z2



HPT B0819 AlTiN

HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						935 *	A63*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0819	B0909
0020 03	0.2	0.1	0.4		40	3	•	•
0020 04	0.2	0.1	0.4		40	4	•	•
0030 03	0.3	0.15	0.6		40	3	•	•
0030 04	0.3	0.15	0.6		40	4	•	•
0040 03	0.4	0.2	0.8		40	3	•	•
0040 04	0.4	0.2	0.8		40	4	•	•
0050 03	0.5	0.25	1.2		40	3	•	•
0050 04	0.5	0.25	1.2		40	4	•	•
0060 03	0.6	0.3	1.4		40	3	•	•
0060 04	0.6	0.3	1.4		40	4	•	•
0070 03	0.7	0.35	1.6		40	3	•	•
0070 04	0.7	0.35	1.6		40	4	•	•
0080 03	0.8	0.4	1.8		40	3	•	•
0080 04	0.8	0.4	1.8		40	4	•	•
0090 03	0.9	0.45	2		40	3	•	•
0090 04	0.9	0.45	2		40	4	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			•	•	○	○	•	○	•	○	•	•	•	○		

Cutting Parameter: 391

Technical specifications subject to change without prior notice

BN 45

BN 45 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

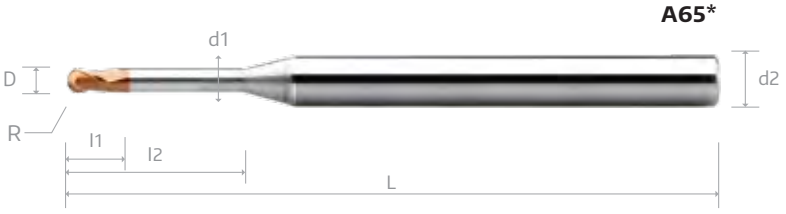
HPMT

VHM BN 45 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 45 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 45 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 45 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A65*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0050 060 0600 025	0.5	0.25	0.5	2.5	60	0.45	6	•
0060 060 0600 060	0.6	0.3	0.6	6	60	0.55	6	•
0080 060 0600 040	0.8	0.4	0.8	4	60	0.75	6	•
0080 060 0600 080	0.8	0.4	0.8	8	60	0.75	6	•
0100 060 0600 050	1.0	0.5	1.5	5	60	0.9	6	•
0100 060 0600 080	1.0	0.5	1.5	8	60	0.9	6	•
0100 060 0600 120	1.0	0.5	1.5	12	60	0.9	6	•
0120 060 0600 060	1.2	0.6	1.8	6	60	1.1	6	•
0150 060 0600 080	1.5	0.75	2.3	8	60	1.4	6	•
0150 060 0600 120	1.5	0.75	2.3	12	60	1.4	6	•
0150 060 0600 160	1.5	0.75	2.3	16	60	1.4	6	•
0160 060 0600 160	1.6	0.8	2.4	16	60	1.5	6	•
0180 060 0600 160	1.8	0.9	2.7	16	60	1.7	6	•
0200 060 0600 120	2.0	1	3	12	60	1.9	6	•
0200 060 0600 160	2.0	1	3	16	60	1.9	6	•
0200 075 0600 200	2.0	1	3	20	75	1.9	6	•
0250 075 0600 125	2.5	1.25	3	12.5	75	2.4	6	•
0300 075 0600 160	3.0	1.5	4.5	16	75	2.8	6	•
0300 075 0600 200	3.0	1.5	4.5	20	75	2.8	6	•
0400 075 0600 200	4.0	2	6	20	75	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●		○	○	●		○	●		○	●	●	●	○		

392

Technische änderungen ohne vorherige information vorbehalten

BN 45 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

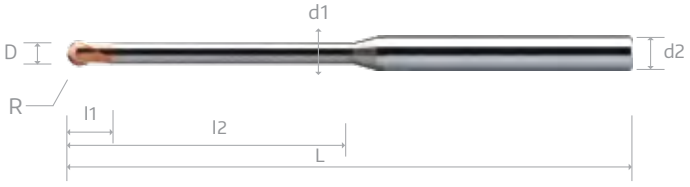
VHM BN 45 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 45 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 45 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 45 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

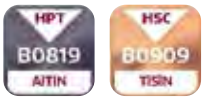
A66*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							937*	A66*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0819	B0909
0020 050 0400	0.2	0.10	0.2	-	50	-	4	•	•
0020 050 0400 005	0.2	0.10	0.2	0.5	50	0.17	4	•	•
0020 050 0400 010	0.2	0.10	0.2	1.0	50	0.17	4	•	•
0020 050 0400 015	0.2	0.10	0.2	1.5	50	0.17	4	•	•
0030 050 0400	0.3	0.15	0.3	-	50	-	4	•	•
0030 050 0400 010	0.3	0.15	0.3	1.0	50	0.27	4	•	•
0030 050 0400 020	0.3	0.15	0.3	2.0	50	0.27	4	•	•
0030 050 0400 030	0.3	0.15	0.3	3.0	50	0.27	4	•	•
0040 050 0400	0.4	0.20	0.4	-	50	-	4	•	•
0040 050 0400 010	0.4	0.20	0.4	1.0	50	0.37	4	•	•
0040 050 0400 020	0.4	0.20	0.4	2.0	50	0.37	4	•	•
0040 050 0400 030	0.4	0.20	0.4	3.0	50	0.37	4	•	•
0040 050 0400 040	0.4	0.20	0.4	4.0	50	0.37	4	•	•
0040 050 0400 050	0.4	0.20	0.4	5.0	50	0.37	4	•	•
0050 050 0400	0.5	0.25	0.4	-	50	-	4	•	•
0050 050 0400 020	0.5	0.25	0.4	2.0	50	0.45	4	•	•
0050 050 0400 030	0.5	0.25	0.4	3.0	50	0.45	4	•	•
0050 050 0400 040	0.5	0.25	0.4	4.0	50	0.45	4	•	•
0050 050 0400 050	0.5	0.25	0.4	5.0	50	0.45	4	•	•
0050 050 0400 060	0.5	0.25	0.4	6.0	50	0.45	4	•	•
0050 050 0400 080	0.5	0.25	0.4	8.0	50	0.45	4	•	•
0060 050 0400	0.6	0.30	0.5	-	50	-	4	•	•
0060 050 0400 020	0.6	0.30	0.5	2.0	50	0.55	4	•	•
0060 050 0400 030	0.6	0.30	0.5	3.0	50	0.55	4	•	•
0060 050 0400 040	0.6	0.30	0.5	4.0	50	0.55	4	•	•
0060 050 0400 050	0.6	0.30	0.5	5.0	50	0.55	4	•	•
0060 050 0400 060	0.6	0.30	0.5	6.0	50	0.55	4	•	•
0060 050 0400 080	0.6	0.30	0.5	8.0	50	0.55	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	○	○	●	○	●	○	●	●	●	○		

Cutting Parameter

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BN 45 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

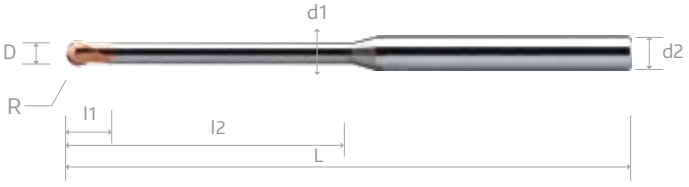
VHM BN 45 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 45 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 45 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 45 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

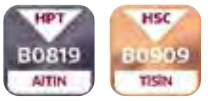
A66*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							937*	A66*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0819	B0909
0080 050 0400	0.8	0.40	0.6	-	50	-	4	•	•
0080 050 0400 020	0.8	0.40	0.6	2.0	50	0.75	4	•	•
0080 050 0400 040	0.8	0.40	0.6	4.0	50	0.75	4	•	•
0080 050 0400 050	0.8	0.40	0.6	5.0	50	0.75	4	•	•
0080 050 0400 060	0.8	0.40	0.6	6.0	50	0.75	4	•	•
0080 050 0400 070	0.8	0.40	0.6	7.0	50	0.75	4	•	•
0080 050 0400 080	0.8	0.40	0.6	8.0	50	0.75	4	•	•
0080 050 0400 100	0.8	0.40	0.6	10.0	50	0.75	4	•	•
0100 050 0400	1.0	0.50	0.8	-	50	-	4	•	•
0100 050 0400 030	1.0	0.50	0.8	3.0	50	0.9	4	•	•
0100 050 0400 040	1.0	0.50	0.8	4	50	0.9	4	•	•
0100 050 0400 050	1.0	0.50	0.8	5	50	0.9	4	•	•
0100 050 0400 060	1.0	0.50	0.8	6	50	0.9	4	•	•
0100 050 0400 070	1.0	0.50	0.8	7	50	0.9	4	•	•
0100 050 0400 080	1.0	0.50	0.8	8	50	0.9	4	•	•
0100 050 0400 090	1.0	0.50	0.8	9	50	0.9	4	•	•
0100 050 0400 100	1.0	0.50	0.8	10	50	0.9	4	•	•
0100 050 0400 120	1.0	0.50	0.8	12	50	0.9	4	•	•
0100 050 0400 140	1.0	0.50	0.8	14	50	0.9	4	•	•
0100 050 0400 160	1.0	0.50	0.8	16	50	0.9	4	•	•
0100 060 0400	1.0	0.50	0.8	-	60	-	4	•	•
0100 060 0400 200	1.0	0.50	0.8	20	60	0.9	4	•	•
0120 050 0400	1.2	0.60	1.0	-	50	-	4	•	•
0120 050 0400 060	1.2	0.60	1.0	6	50	1.1	4	•	•
0120 050 0400 080	1.2	0.60	1.0	8	50	1.1	4	•	•
0120 050 0400 100	1.2	0.60	1.0	10	50	1.1	4	•	•
0120 050 0400 120	1.2	0.60	1.0	12	50	1.1	4	•	•
0140 050 0400	1.4	0.70	1.1	-	50	-	4	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●		○	○	●		○	●		○	●	●	●	○		

Cutting Parameter

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Modifiche Techiche possibili senza preavviso

BN 45 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

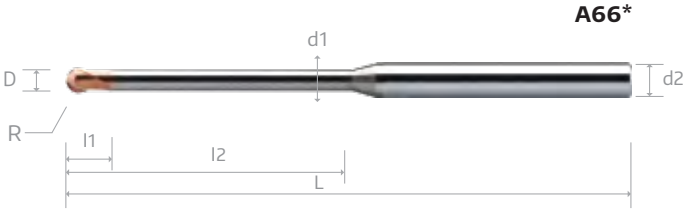
HPMT

VHM BN 45 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 45 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

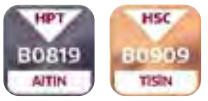
Micro-frese cilindriche BN 45 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 45 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							937*	A66*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0819	B0909
0140 050 0400 080	1.4	0.70	1.1	8	50	1.3	4	•	•
0140 050 0400 120	1.4	0.70	1.1	12	50	1.3	4	•	•
0140 050 0400 160	1.4	0.70	1.1	16	50	1.3	4	•	•
0150 050 0400	1.5	0.75	1.2	-	50	-	4	•	•
0150 050 0400 080	1.5	0.75	1.2	8	50	1.4	4	•	•
0150 050 0400 120	1.5	0.75	1.2	12	50	1.4	4	•	•
0150 050 0400 160	1.5	0.75	1.2	16	50	1.4	4	•	•
0150 060 0400	1.5	0.75	1.2	-	60	-	4	•	•
0150 060 0400 180	1.5	0.75	1.2	18	60	1.4	4	•	•
0160 050 0400	1.6	0.80	1.3	-	50	-	4	•	•
0160 050 0400 080	1.6	0.80	1.3	8	50	1.5	4	•	•
0160 050 0400 120	1.6	0.80	1.3	12	50	1.5	4	•	•
0160 050 0400 160	1.6	0.80	1.3	16	50	1.5	4	•	•
0160 060 0400	1.6	0.80	1.3	-	60	-	4	•	•
0160 060 0400 200	1.6	0.80	1.3	20	60	1.5	4	•	•
0180 050 0400	1.8	0.90	1.4	-	50	-	4	•	•
0180 050 0400 080	1.8	0.90	1.4	8	50	1.7	4	•	•
0180 050 0400 120	1.8	0.90	1.4	12	50	1.7	4	•	•
0180 050 0400 160	1.8	0.90	1.4	16	50	1.7	4	•	•
0180 060 0400	1.8	0.9	1.4	-	60	-	4	•	•
0180 060 0400 200	1.8	0.9	1.4	20	60	1.7	4	•	•
0200 050 0400	2	1	1.6	-	50	-	4	•	•
0200 050 0400 040	2	1	1.6	4	50	1.9	4	•	•
0200 050 0400 060	2	1	1.6	6	50	1.9	4	•	•
0200 050 0400 080	2	1	1.6	8	50	1.9	4	•	•
0200 050 0400 100	2	1	1.6	10	50	1.9	4	•	•
0200 050 0400 120	2	1	1.6	12	50	1.9	4	•	•
0200 050 0400 140	2	1	1.6	14	50	1.9	4	•	•
0200 050 0400 160	2	1	1.6	16	50	1.9	4	•	•
0200 060 0400	2	1	1.6	-	60	-	4	•	•
0200 060 0400 180	2	1	1.6	18	60	1.9	4	•	•
0200 060 0400 200	2	1	1.6	20	60	1.9	4	•	•
0200 060 0400 220	2	1	1.6	22	60	1.9	4	•	•

cont'd ▶

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	○				

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若有技☒☒格☒更，恕不事先通知

BN 45

MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.300 N/mm² + B0819 / B0909 ≤ 36 - 52 HRC

HPMT

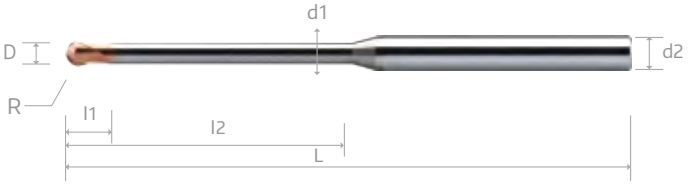
VHM BN 45 Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 45 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 45 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 45 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

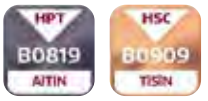
A66*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							937*	A66*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0819	B0909
0200 075 0400	2	1	1.6	-	75	-	4	•	•
0200 075 0400 250	2	1	1.6	25	75	1.9	4	•	•
0200 075 0400 300	2	1	1.6	30	75	1.9	4	•	•
0300 050 0600	3	1.5	2.4	-	50	-	6	•	•
0300 050 0600 080	3	1.5	2.4	8	50	2.8	6	•	•
0300 050 0600 100	3	1.5	2.4	10	50	2.8	6	•	•
0300 060 0600	3	1.5	2.4	-	60	-	6	•	•
0300 060 0600 160	3	1.5	2.4	16	60	2.8	6	•	•
0300 060 0600 200	3	1.5	2.4	20	60	2.8	6	•	•
0300 075 0600	3	1.5	2.4	-	75	-	6	•	•
0300 075 0600 250	3	1.5	2.4	25	75	2.8	6	•	•
0300 075 0600 300	3	1.5	2.4	30	75	2.8	6	•	•
0300 075 0600 350	3	1.5	2.4	35	75	2.8	6	•	•
0400 050 0600	4	2	3.2	-	50	-	6	•	•
0400 050 0600 100	4	2	3.2	10	50	3.7	6	•	•
0400 060 0600	4	2	3.2	-	60	-	6	•	•
0400 060 0600 160	4	2	3.2	16	60	3.7	6	•	•
0400 060 0600 200	4	2	3.2	20	60	3.7	6	•	•
0400 075 0600	4	2	3.2	-	75	-	6	•	•
0400 075 0600 250	4	2	3.2	25	75	3.7	6	•	•
0400 075 0600 300	4	2	3.2	30	75	3.7	6	•	•
0400 075 0600 350	4	2	3.2	35	75	3.7	6	•	•
0400 100 0600	4	2	3.2	-	100	-	6	•	•
0400 100 0600 400	4	2	3.2	40	100	3.7	6	•	•
0400 100 0600 450	4	2	3.2	45	100	3.7	6	•	•
0400 100 0600 500	4	2	3.2	50	100	3.7	6	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•		○	○	•		○	•		○	•	•	•	○		

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Technical specifications subject to change without prior notice

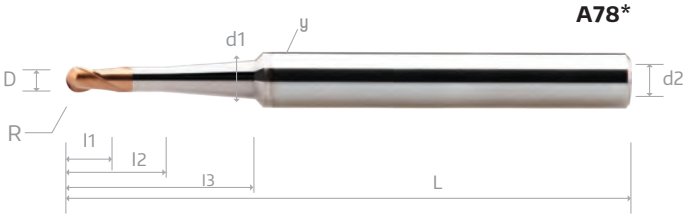
BN 45 BALLNOSE CUTTERS– with Taper Neck

≤ 1.300 N/mm² + B0909 ≤ 36 - 52 HRC

HPMT

VHM Torusfräser, - Standard, 2 Zähne | Fraises 2 tailles toriques en carbure monobloc - Standard, 2dents

Frese in metallo duro integrale - Standard, 2 taglienti | 整体硬质合金 系列 圆鼻 立铣刀 2 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A78*
= * + Ø data	D	R	l 1	l 2	l 3	d1	L	γ	d2(h6)		1°	2°	3°	B0909
0100 010 06 010	1.0	0.5	1.0	2.0	10	1.18	60	1°	6	11.85°	10.28	10.24	10.41	•
0100 015 06 010	1.0	0.5	1.0	2.0	15	1.35	60	1°	6	8.45°	15.08	15.33	15.59	•
0100 020 06 010	1.0	0.5	1.0	2.0	20	1.53	60	1°	6	6.56°	20.08	20.42	20.76	•
0100 025 06 010	1.0	0.5	1.0	2.0	25	1.70	60	1°	6	5.36°	25.08	25.51	25.94	•
0100 010 06 015	1.0	0.5	1.0	2.0	10	1.32	60	1.5°	6	11.92°	10.01	10.17	10.34	•
0100 015 06 015	1.0	0.5	1.0	2.0	15	1.58	60	1.5°	6	8.51°	-	15.21	15.47	•
0100 020 06 015	1.0	0.5	1.0	2.0	20	1.84	60	1.5°	6	6.61°	-	20.26	20.60	•
0100 025 06 015	1.0	0.5	1.0	2.0	25	2.10	60	1.5°	6	5.40°	-	25.30	25.73	•
0100 020 06 020	1.0	0.5	1.0	2.0	10	1.46	60	2°	6	11.99°	-	10.10	10.27	•
0100 015 06 020	1.0	0.5	1.0	2.0	15	1.81	60	2°	6	8.57°	-	15.10	15.35	•
0100 020 06 020	1.0	0.5	1.0	2.0	20	2.16	60	2°	6	6.66°	-	20.09	20.43	•
0100 010 06 030	1.0	0.5	1.0	2.0	10	1.74	60	3°	6	12.13	-	-	10.12	•
0100 015 06 030	1.0	0.5	1.0	2.0	15	2.26	60	3°	6	8.68°	-	-	15.11	•
0100 020 06 030	1.0	0.5	1.0	2.0	20	2.79	60	3°	6	6.75°	-	-	20.10	•
0100 015 06 050	1.0	0.5	1.0	2.0	15	3.17	60	5°	6	8.93°	-	-	-	•
0100 020 06 050	1.0	0.5	1.0	2.0	20	4.05	60	5°	6	6.96°	-	-	-	•
0150 010 06 010	1.5	0.8	1.5	3.0	10	1.64	60	1°	6	11.14°	10.09	10.25	10.42	•
0150 015 06 010	1.5	0.8	1.5	3.0	15	1.82	60	1°	6	7.84°	15.09	15.34	15.59	•
0150 020 06 010	1.5	0.8	1.5	3.0	20	1.99	60	1°	6	6.04°	20.09	20.43	20.77	•
0150 030 06 010	1.5	0.8	1.5	3.0	30	2.34	75	1°	6	4.14°	30.09	30.60	31.12	•
0150 010 06 010	1.5	0.8	1.5	3.0	10	1.89	60	2°	6	11.26°	-	10.13	10.29	•
0150 015 06 020	1.5	0.8	1.5	3.0	15	2.24	60	2°	6	7.94°	-	15.12	15.37	•
0150 020 06 020	1.5	0.8	1.5	3.0	20	2.59	60	2°	6	6.13°	-	20.12	20.45	•
0150 030 06 020	1.5	0.8	1.5	3.0	30	3.29	75	2°	6	4.20°	-	30.12	30.62	•
0150 015 06 030	1.5	0.8	1.5	3.0	15	2.66	60	3°	6	8.04°	-	-	15.15	•
0150 020 06 030	1.5	0.8	1.5	3.0	20	3.18	60	3°	6	6.22°	-	-	20.14	•
0150 030 06 030	1.5	0.8	1.5	3.0	30	4.23	75	3°	6	4.27°	-	-	30.12	•
0150 015 06 050	1.5	0.8	1.5	3.0	15	3.50	60	5°	6	8.26°	-	-	-	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	●	○			

Cutting Parameter: 395

Technische änderungen ohne vorherige information vorbehalten

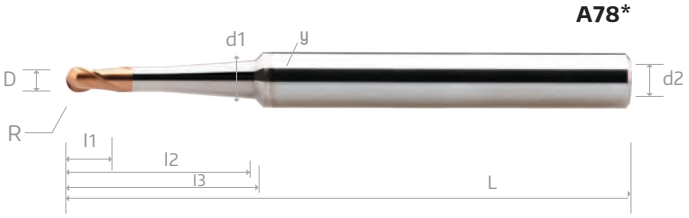
BN 45 BALLNOSE CUTTERS– with Taper Neck

≤ 1.300 N/mm² + B0909 ≤ 36 - 52 HRC

HPMT

VHM Torusfräser, - Standard, 2 Zähne | Fraises 2 tailles toriques en carbure monobloc - Standard, 2dents

Frese in metallo duro integrale - Standard, 2 taglienti | 整体硬质合金 系列 圆鼻 立铣刀 2 刃 - 标准长度







HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A78*
= * + Ø data	D	R	l 1	l 2	l 3	d1	L	y	d2(h6)		1°	2°	3°	B0909
0150 020 06 050	1.5	0.8	1.5	3.0	20	4.38	75	5°	6	6.40°	-	-	-	•
0200 012 06 010	2.0	1.0	2.0	4.0	12	2.18	60	1°	6	8.81°	12.10	12.30	12.49	•
0200 016 06 010	2.0	1.0	2.0	4.0	16	2.32	60	1°	6	6.77°	16.10	16.37	16.63	•
0200 020 06 010	2.0	1.0	2.0	4.0	20	2.46	60	1°	6	5.50°	20.10	20.44	20.77	•
0200 025 06 010	2.0	1.0	2.0	4.0	25	2.63	60	1°	6	4.45°	25.10	25.53	25.95	•
0200 030 06 010	2.0	1.0	2.0	4.0	30	2.81	75	1°	6	3.74°	30.10	30.61	31.12	•
0200 035 06 010	2.0	1.0	2.0	4.0	35	2.98	75	1°	6	3.22°	35.10	35.70	36.30	•
0200 040 06 001	2.0	1.0	2.0	4.0	40	3.61	75	1°	6	2.83°	45.10	40.79	41.47	•
0200 012 06 020	2.0	1.0	2.0	4.0	12	2.46	60	2°	6	8.90°	-	12.15	12.35	•
0200 016 06 020	2.0	1.0	2.0	4.0	16	2.74	60	2°	6	6.86°	-	16.15	16.41	•
0200 020 06 020	2.0	1.0	2.0	4.0	20	3.02	60	2°	6	5.57°	-	20.15	20.48	•
0200 030 06 020	2.0	1.0	2.0	4.0	30	3.72	75	2°	6	3.80°	-	30.14	30.64	•
0200 040 06 020	2.0	1.0	2.0	4.0	40	4.41	75	2°	6	2.88°	-	40.14	40.81	•
0200 012 06 030	2.0	1.0	2.0	4.0	12	2.74	60	3°	6	9.00°	-	12.01	12.20	•
0200 016 06 030	2.0	1.0	2.0	4.0	16	3.16	60	3°	6	6.94°	-	-	16.19	•
0200 020 06 030	2.0	1.0	2.0	4.0	20	3.58	60	3°	6	5.65°	-	-	20.18	•
0200 030 06 030	2.0	1.0	2.0	4.0	30	4.63	75	3°	6	3.85°	-	-	30.16	•
0200 040 06 030	2.0	1.0	2.0	4.0	40	5.67	75	3°	6	2.92°	-	-	40.15	•
0200 020 06 050	2.0	1.0	2.0	4.0	20	4.70	60	5°	6	5.81°	-	-	-	•
0300 015 06 010	3.0	1.5	3.0	6.0	15	3.11	60	1°	6	5.73°	15.18	15.42	15.66	•
0300 020 06 010	3.0	1.5	3.0	6.0	20	3.29	60	1°	6	4.32°	20.18	20.51	20.83	•
0300 030 06 010	3.0	1.5	3.0	6.0	30	3.64	75	1°	6	2.89°	30.18	30.68	31.18	•
0300 040 06 010	3.0	1.5	3.0	6.0	40	3.99	75	1°	6	2.17°	40.18	40.86	41.53	•
0300 050 06 010	3.0	1.5	3.0	6.0	50	4.34	100	1°	6	1.74°	50.18	51.03	51.88	•
0300 015 06 020	3.0	1.5	3.0	6.0	15	3.43	60	2°	6	5.79°	15.02	15.26	15.49	•
0300 020 06 020	3.0	1.5	3.0	6.0	20	3.78	75	2°	6	4.37°	-	20.25	20.58	•
0300 030 06 020	3.0	1.5	3.0	6.0	30	4.48	75	2°	6	2.93°	-	30.25	30.74	•
0300 040 06 020	3.0	1.5	3.0	6.0	40	5.17	75	2°	6	2.21°	-	40.24	40.91	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter 395

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	○	○	●	○	●	○	●	●	●	●	●	○			

Spécifications techniques sujettes à changement sans avis prélable

BN 45 BALLNOSE CUTTERS– with Taper Neck

≤ 1.300 N/mm² + B0909 ≤ 36 - 52 HRC

HPMT

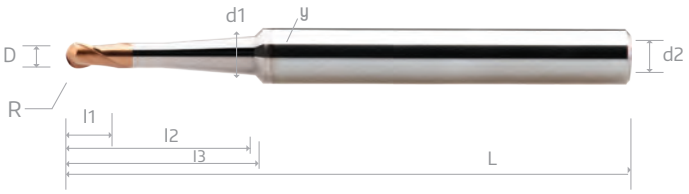
VHM Torusfräser, - Standard, 2 Zähne

Fraises 2 tailles toriques en carbure monobloc - Standard, 2dents

Frese in metallo duro integrale - Standard, 2 taglienti

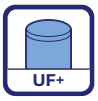
整体硬质合金 系列 圆鼻 立铣刀 2 刃 - 标准长度

A78*





Z2















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle (Effective Length)			A78*
= * + Ø data	D	R	l 1	l 2	l 3	d1	L	y	d2(h6)		1°	2°	3°	B0909
0300 020 06 030	3.0	1.5	3.0	6.0	20	4.27	60	3°	6	4.43°	-	20.00	20.32	•
0300 030 06 030	3.0	1.5	3.0	6.0	30	5.32	75	3°	6	2.98°	-	-	30.30	•
0300 050 06 030	3.0	1.5	3.0	6.0	50	7.41	100	3°	6	1.80°	-	-	50.26	•
0300 018 06 050	3.0	1.5	3.0	6.0	18	4.90	60	5°	6	5.03°	-	-	-	•
0400 020 06 010	4.0	2.0	4.0	8.0	20	4.12	60	1°	6	3.02°	20.26	20.58	20.90	•
0400 040 06 010	4.0	2.0	4.0	8.0	40	4.82	75	1°	6	1.48°	40.26	40.93	41.60	•
0400 060 06 010	4.0	2.0	4.0	8.0	60	5.52	100	1°	6	0.98°	60.26	61.28	62.30	•
0500 030 06 010	5.0	2.5	5.0	10.0	30	5.30	75	1°	6	1.03°	30.34	30.82	31.31	•
0500 040 06 010	5.0	2.5	5.0	10.0	40	5.65	75	1°	6	0.76°	40.24	41.00	41.66	•
0600 030 08 010	6.0	3.0	6.0	12.0	30	6.13	100	1°	8	2.05°	30.41	30.89	31.37	•
0600 040 08 010	6.0	3.0	6.0	12.0	40	6.48	100	1°	8	1.52°	40.41	41.07	41.72	•
0600 060 08 010	6.0	3.0	6.0	12.0	60	7.18	100	1°	8	1.00°	60.41	61.42	62.42	•
0700 050 10 010	8.0	4.0	8.0	14.0	50	8.66	100	1°	10	1.23°	50.48	51.29	52.11	•
0800 060 10 010	8.0	4.0	8.0	14.0	60	9.01	100	1°	10	1.01°	60.48	61.47	62.46	•
0800 070 10 010	8.0	4.0	8.0	14.0	70	9.35	100	1°	10	0.86°	70.48	71.64	72.81	•
0800 080 10 010	8.0	4.0	8.0	14.0	80	9.70	100	1°	10	0.75°	80.48	81.82	83.16	•
1000 060 12 010	10.0	5.0	10.0	18.0	60	10.67	100	1°	12	1.03°	60.64	61.61	62.58	•
1000 075 12 010	10.0	5.0	10.0	18.0	75	11.19	125	1°	12	0.81°	75.64	76.87	78.11	•

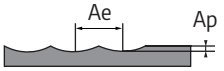
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	●	○	○	●	○	●	○	●	●	●	○		

395

Standard Ballnose Cutter 2 Flutes

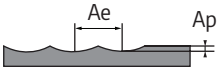


Rough-ing	P				M				K				S						H			
Work-ing Mate-rial	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Prop-erties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cut-ting Depth, Ap (mm)	0.120 × D		0.115 × D		0.115 × D		0.125 × D		0.130 × D		0.120 × D		0.125 × D		0.110 × D		0.115 × D		0.115 × D		0.115 × D	
Cut-ting Width, Ae (mm)	0.360 × D		0.345 × D		0.345 × D		0.375 × D		0.390 × D		0.360 × D		0.375 × D		0.340 × D		0.345 × D		0.345 × D		0.345 × D	
D (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)
1		0.032		0.030		0.033		0.033		0.033		0.033		0.033		0.015		0.023		0.023		0.015
2		0.044		0.042		0.047		0.047		0.047		0.047		0.047		0.021		0.032		0.032		0.021
3		0.057		0.054		0.060		0.060		0.060		0.060		0.060		0.027		0.040		0.040		0.027
4		0.063		0.060		0.067		0.067		0.067		0.067		0.067		0.030		0.045		0.045		0.030
5		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.063		0.063		0.042
6		0.101		0.096		0.107		0.107		0.107		0.107		0.107		0.048		0.072		0.072		0.048
7		0.107		0.101		0.113		0.113		0.113		0.113		0.113		0.051		0.076		0.076		0.051
8		0.114		0.107		0.120		0.120		0.121		0.121		0.120		0.054		0.081		0.081		0.054
9	150	0.120	100	0.113	70	0.127	150	0.127	200	0.126	150	0.126	80	0.127	40	0.057	55	0.085	75	0.085	50	0.057
10		0.127		0.120		0.133		0.133		0.133		0.133		0.133		0.060		0.090		0.090		0.060
11		0.132		0.126		0.139		0.139		0.140		0.140		0.139		0.063		0.095		0.095		0.063
12		0.139		0.132		0.146		0.146		0.146		0.146		0.146		0.066		0.099		0.099		0.066
14		0.145		0.137		0.152		0.152		0.152		0.152		0.152		0.069		0.103		0.103		0.069
16		0.152		0.144		0.160		0.160		0.159		0.159		0.160		0.072		0.108		0.108		0.072
18		0.157		0.150		0.166		0.166		0.166		0.166		0.166		0.075		0.113		0.113		0.075
20		0.164		0.155		0.172		0.172		0.174		0.174		0.172		0.078		0.116		0.116		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Ballnose Cutter 2 Flutes

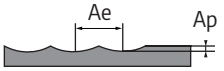


Finishing	P				M				K				S						H			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.040 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
Cutting Width, Ae (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.040 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.032		0.030		0.033		0.033		0.033		0.033		0.033		0.015		0.023		0.023		0.015
2		0.044		0.042		0.047		0.047		0.047		0.047		0.047		0.021		0.032		0.032		0.021
3		0.057		0.054		0.060		0.060		0.060		0.060		0.060		0.027		0.040		0.040		0.027
4		0.063		0.060		0.067		0.067		0.067		0.067		0.067		0.030		0.045		0.045		0.030
5		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.063		0.063		0.042
6		0.101		0.096		0.107		0.107		0.107		0.107		0.107		0.048		0.072		0.072		0.048
7		0.107		0.101		0.113		0.113		0.113		0.113		0.113		0.051		0.076		0.076		0.051
8		0.114		0.107		0.120		0.120		0.121		0.121		0.120		0.054		0.081		0.081		0.054
9	150	0.120	100	0.113	70	0.127	150	0.127	200	0.126	150	0.126	80	0.127	40	0.057	55	0.085	75	0.085	50	0.057
10		0.127		0.120		0.133		0.133		0.133		0.133		0.133		0.060		0.090		0.090		0.060
11		0.132		0.126		0.139		0.139		0.140		0.140		0.139		0.063		0.095		0.095		0.063
12		0.139		0.132		0.146		0.146		0.146		0.146		0.146		0.066		0.099		0.099		0.066
14		0.145		0.137		0.152		0.152		0.152		0.152		0.152		0.069		0.103		0.103		0.069
16		0.152		0.144		0.160		0.160		0.159		0.159		0.160		0.072		0.108		0.108		0.072
18		0.157		0.150		0.166		0.166		0.166		0.166		0.166		0.075		0.113		0.113		0.075
20		0.164		0.155		0.172		0.172		0.174		0.174		0.172		0.078		0.116		0.116		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Ballnose Cutter 2 Flutes

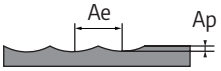


Roughing	P				M				K				S						H			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.120 × D		0.115 × D		0.115 × D		0.125 × D		0.130 × D		0.115 × D		0.125 × D		0.115 × D		0.115 × D		0.115 × D		0.115 × D	
Cutting Width, Ae (mm)	0.360 × D		0.345 × D		0.345 × D		0.375 × D		0.390 × D		0.345 × D		0.375 × D		0.345 × D		0.345 × D		0.345 × D		0.345 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.025		0.024		0.027		0.027		0.027		0.027		0.027		0.012		0.012		0.018		0.012
2		0.035		0.034		0.037		0.037		0.037		0.037		0.037		0.017		0.017		0.025		0.017
3		0.046		0.043		0.048		0.048		0.048		0.048		0.048		0.022		0.022		0.032		0.022
4		0.051		0.048		0.053		0.053		0.053		0.053		0.053		0.024		0.024		0.036		0.024
5		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
6		0.081		0.077		0.085		0.085		0.086		0.086		0.085		0.038		0.038		0.058		0.038
7		0.086		0.081		0.090		0.090		0.090		0.090		0.090		0.040		0.040		0.061		0.040
8		0.091		0.086		0.096		0.096		0.096		0.096		0.096		0.043		0.043		0.065		0.043
9	150	0.096	100	0.090	70	0.101	150	0.101	200	0.101	150	0.101	80	0.101	40	0.045	55	0.045	75	0.068	50	0.045
10		0.101		0.096		0.106		0.106		0.106		0.106		0.106		0.048		0.048		0.072		0.048
11		0.106		0.101		0.111		0.111		0.112		0.112		0.111		0.050		0.050		0.076		0.050
12		0.111		0.106		0.117		0.117		0.117		0.117		0.117		0.053		0.053		0.079		0.053
14		0.116		0.110		0.122		0.122		0.121		0.121		0.122		0.055		0.055		0.082		0.055
16		0.122		0.115		0.128		0.128		0.127		0.127		0.128		0.057		0.057		0.086		0.057
18		0.126		0.120		0.132		0.132		0.132		0.132		0.132		0.060		0.060		0.090		0.060
20		0.131		0.124		0.138		0.138		0.139		0.139		0.138		0.062		0.062		0.093		0.062
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Ballnose Cutter 2 Flutes

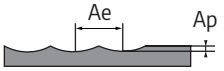


Finishing	P				M				K				S						H			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
Cutting Width, Ae (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.025		0.024		0.027		0.027		0.027		0.027		0.027		0.012		0.012		0.018		0.012
2		0.035		0.034		0.037		0.037		0.037		0.037		0.037		0.017		0.017		0.025		0.017
3		0.046		0.043		0.048		0.048		0.048		0.048		0.048		0.022		0.022		0.032		0.022
4		0.051		0.048		0.053		0.053		0.053		0.053		0.053		0.024		0.024		0.036		0.024
5		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
6		0.081		0.077		0.085		0.085		0.086		0.086		0.085		0.038		0.038		0.058		0.038
7		0.086		0.081		0.090		0.090		0.090		0.090		0.090		0.040		0.040		0.061		0.040
8		0.091		0.086		0.096		0.096		0.096		0.096		0.096		0.043		0.043		0.065		0.043
9	150	0.096	100	0.090	70	0.101	150	0.101	200	0.101	150	0.101	80	0.101	40	0.045	55	0.045	75	0.068	50	0.045
10		0.101		0.096		0.106		0.106		0.106		0.106		0.106		0.048		0.048		0.072		0.048
11		0.106		0.101		0.111		0.111		0.112		0.112		0.111		0.050		0.050		0.076		0.050
12		0.111		0.106		0.117		0.117		0.117		0.117		0.117		0.053		0.053		0.079		0.053
14		0.116		0.110		0.122		0.122		0.121		0.121		0.122		0.055		0.055		0.082		0.055
16		0.122		0.115		0.128		0.128		0.127		0.127		0.128		0.057		0.057		0.086		0.057
18		0.126		0.120		0.132		0.132		0.132		0.132		0.132		0.060		0.060		0.090		0.060
20		0.131		0.124		0.138		0.138		0.139		0.139		0.138		0.062		0.062		0.093		0.062
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Extra Long Ballnose Cutter 2 Flutes



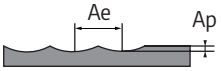
Roughing	P		M		K		S			H	
Working Material	Alloy Steel	Prehardened Steel	Stainless Steel	Stainless Steel	Grey Cast Iron	Ductile Cast Iron	Titanium alloy	Nickel Alloy	Cobalt Alloy	Hardened Steel	
Properties	520 < Rm < 1200	35 ≤ HRC < 45	Low Machinability	High Machinability	-	-	-	-	-	45 ≤ HRC < 52	52 ≤ HRC ≤ 68
Cutting Depth, Ap (mm)	0.120 × D	0.115 × D	0.115 × D	0.125 × D	0.130 × D	0.115 × D	0.125 × D	0.115 × D	0.115 × D	0.115 × D	0.115 × D
Cutting Width, Ae (mm)	0.360 × D	0.345 × D	0.345 × D	0.375 × D	0.390 × D	0.345 × D	0.375 × D	0.345 × D	0.345 × D	0.345 × D	0.345 × D

D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.022		0.021		0.023		0.023		0.023		0.023		0.023		0.011		0.011		0.016		0.011
2		0.031		0.029		0.033		0.033		0.033		0.033		0.033		0.015		0.015		0.022		0.015
3		0.040		0.038		0.042		0.042		0.042		0.042		0.042		0.019		0.019		0.028		0.019
4		0.044		0.042		0.047		0.047		0.047		0.047		0.047		0.021		0.021		0.032		0.021
5		0.062		0.059		0.065		0.065		0.065		0.065		0.065		0.030		0.030		0.044		0.030
6		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
7		0.075		0.071		0.079		0.079		0.079		0.079		0.079		0.035		0.035		0.053		0.035
8		0.080		0.075		0.084		0.084		0.084		0.084		0.084		0.038		0.038		0.056		0.038
9	150	0.084	100	0.079	70	0.089	150	0.089	200	0.088	150	0.088	80	0.089	40	0.040	55	0.040	75	0.059	50	0.040
10		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.042		0.063		0.042
11		0.093		0.088		0.097		0.097		0.098		0.098		0.097		0.044		0.044		0.066		0.044
12		0.098		0.092		0.103		0.103		0.102		0.102		0.103		0.046		0.046		0.069		0.046
14		0.101		0.096		0.107		0.107		0.106		0.106		0.107		0.048		0.048		0.072		0.048
16		0.106		0.101		0.112		0.112		0.112		0.112		0.112		0.050		0.050		0.075		0.050
18		0.110		0.105		0.116		0.116		0.116		0.116		0.116		0.053		0.053		0.079		0.053
20		0.115		0.109		0.120		0.120		0.122		0.122		0.120		0.055		0.055		0.082		0.055
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Extra Long Ballnose Cutter 2 Flutes

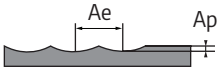


Finishing	P				M				K				S						H			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
Cutting Width, Ae (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.022		0.021		0.023		0.023		0.023		0.023		0.023		0.011		0.011		0.016		0.011
2		0.031		0.029		0.033		0.033		0.033		0.033		0.033		0.015		0.015		0.022		0.015
3		0.040		0.038		0.042		0.042		0.042		0.042		0.042		0.019		0.019		0.028		0.019
4		0.044		0.042		0.047		0.047		0.047		0.047		0.047		0.021		0.021		0.032		0.021
5		0.062		0.059		0.065		0.065		0.065		0.065		0.065		0.030		0.030		0.044		0.030
6		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
7		0.075		0.071		0.079		0.079		0.079		0.079		0.079		0.035		0.035		0.053		0.035
8		0.080		0.075		0.084		0.084		0.084		0.084		0.084		0.038		0.038		0.056		0.038
9	150	0.084	100	0.079	70	0.089	150	0.089	200	0.088	150	0.088	80	0.089	40	0.040	55	0.040	75	0.059	50	0.040
10		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.042		0.063		0.042
11		0.093		0.088		0.097		0.097		0.098		0.098		0.097		0.044		0.044		0.066		0.044
12		0.098		0.092		0.103		0.103		0.102		0.102		0.103		0.046		0.046		0.069		0.046
14		0.101		0.096		0.107		0.107		0.106		0.106		0.107		0.048		0.048		0.072		0.048
16		0.106		0.101		0.112		0.112		0.112		0.112		0.112		0.050		0.050		0.075		0.050
18		0.110		0.105		0.116		0.116		0.116		0.116		0.116		0.053		0.053		0.079		0.053
20		0.115		0.109		0.120		0.120		0.122		0.122		0.120		0.055		0.055		0.082		0.055
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Ballnose Cutter 4 Flutes



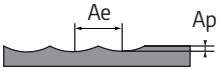
Roughing	P		M		K		S			H	
Working Material	Alloy Steel	Prehardened Steel	Stainless Steel	Stainless Steel	Grey Cast Iron	Ductile Cast Iron	Titanium alloy	Nickel Alloy	Cobalt Alloy	Hardened Steel	
Properties	520 < Rm < 1200	35 ≤ HRC < 45	Low Machinability	High Machinability	-	-	-	-	-	45 ≤ HRC < 52	52 ≤ HRC ≤ 68
Cutting Depth, Ap (mm)	0.120 × D	0.115 × D	0.115 × D	0.125 × D	0.130 × D	0.115 × D	0.125 × D	0.115 × D	0.115 × D	0.115 × D	0.115 × D
Cutting Width, Ae (mm)	0.360 × D	0.345 × D	0.345 × D	0.375 × D	0.390 × D	0.345 × D	0.375 × D	0.345 × D	0.345 × D	0.345 × D	0.345 × D

D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.057		0.054		0.060		0.060		0.060		0.060		0.060		0.027		0.027		0.040		0.027
4		0.063		0.060		0.067		0.067		0.067		0.067		0.067		0.030		0.030		0.045		0.030
5		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.042		0.063		0.042
6		0.101		0.096		0.107		0.107		0.107		0.107		0.107		0.048		0.048		0.072		0.048
7		0.107		0.101		0.113		0.113		0.113		0.113		0.113		0.051		0.051		0.076		0.051
8		0.114		0.107		0.120		0.120		0.121		0.121		0.120		0.054		0.054		0.081		0.054
9		0.120		0.113		0.127		0.127		0.126		0.126		0.127		0.057		0.057		0.085		0.057
10		0.127		0.120		0.133		0.133		0.133		0.133		0.133		0.060		0.060		0.090		0.060
11	150	0.133	100	0.126	70	0.139	150	0.139	200	0.140	150	0.140	80	0.139	40	0.063	55	0.063	75	0.095	50	0.063
12		0.139		0.132		0.146		0.146		0.146		0.146		0.146		0.066		0.066		0.099		0.066
14		0.145		0.137		0.152		0.152		0.152		0.152		0.152		0.069		0.069		0.103		0.069
16		0.152		0.144		0.160		0.160		0.159		0.159		0.160		0.072		0.072		0.108		0.072
18		0.157		0.150		0.165		0.165		0.166		0.166		0.165		0.075		0.075		0.113		0.075
20		0.164		0.155		0.172		0.172		0.174		0.174		0.172		0.078		0.078		0.116		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.078		0.117		0.078
25		0.165		0.156		0.173		0.173		0.174		0.174		0.173		0.078		0.078		0.117		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Ballnose Cutter 4 Flutes

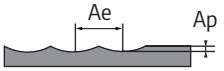


Rough-ing	P				M				K				S						H			
Work-ing Mate-rial	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Prop-erties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machin-ability		High Machin-ability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cut-ting Depth, Ap (mm)	0.120 × D		0.115 × D		0.115 × D		0.125 × D		0.130 × D		0.115 × D		0.125 × D		0.115 × D		0.115 × D		0.115 × D		0.115 × D	
Cut-ting Width, Ae (mm)	0.360 × D		0.345 × D		0.345 × D		0.375 × D		0.390 × D		0.345 × D		0.375 × D		0.345 × D		0.345 × D		0.345 × D		0.345 × D	
D (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)
3		0.057		0.054		0.060		0.060		0.060		0.060		0.060		0.027		0.027		0.040		0.027
4		0.063		0.060		0.067		0.067		0.067		0.067		0.067		0.030		0.030		0.045		0.030
5		0.089		0.084		0.093		0.093		0.093		0.093		0.093		0.042		0.042		0.063		0.042
6		0.101		0.096		0.107		0.107		0.107		0.107		0.107		0.048		0.048		0.072		0.048
7		0.107		0.101		0.113		0.113		0.113		0.113		0.113		0.051		0.051		0.076		0.051
8		0.114		0.107		0.120		0.120		0.121		0.121		0.120		0.054		0.054		0.081		0.054
9		0.120		0.113		0.127		0.127		0.126		0.126		0.127		0.057		0.057		0.085		0.057
10		0.127		0.120		0.133		0.133		0.133		0.133		0.133		0.060		0.060		0.090		0.060
11	150	0.133	100	0.126	70	0.139	150	0.139	200	0.140	150	0.140	80	0.139	40	0.063	55	0.063	75	0.095	50	0.063
12		0.139		0.132		0.146		0.146		0.146		0.146		0.146		0.066		0.066		0.099		0.066
14		0.145		0.137		0.152		0.152		0.152		0.152		0.152		0.069		0.069		0.103		0.069
16		0.152		0.144		0.160		0.160		0.159		0.159		0.160		0.072		0.072		0.108		0.072
18		0.157		0.150		0.165		0.165		0.166		0.166		0.165		0.075		0.075		0.113		0.075
20		0.164		0.155		0.172		0.172		0.174		0.174		0.172		0.078		0.078		0.116		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.078		0.117		0.078
25		0.165		0.156		0.173		0.173		0.174		0.174		0.173		0.078		0.078		0.117		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Ballnose Cutter 4 Flutes

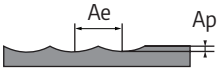


Rough-ing	P				M				K				S						H			
Work-ing Mate-rial	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Prop-erties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machin-ability		High Machin-ability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cut-ting Depth, Ap (mm)	0.120 × D		0.115 × D		0.115 × D		0.125 × D		0.130 × D		0.115 × D		0.125 × D		0.115 × D		0.115 × D		0.115 × D		0.115 × D	
Cut-ting Width, Ae (mm)	0.360 × D		0.345 × D		0.345 × D		0.375 × D		0.390 × D		0.345 × D		0.375 × D		0.345 × D		0.345 × D		0.345 × D		0.345 × D	
D (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)
3		0.046		0.043		0.048		0.048		0.048		0.048		0.048		0.022		0.022		0.032		0.022
4		0.051		0.048		0.053		0.053		0.053		0.053		0.053		0.024		0.024		0.036		0.024
5		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
6		0.081		0.077		0.085		0.085		0.086		0.086		0.085		0.038		0.038		0.058		0.038
7		0.086		0.081		0.090		0.090		0.090		0.090		0.090		0.040		0.040		0.061		0.040
8		0.091		0.086		0.096		0.096		0.096		0.096		0.096		0.043		0.043		0.064		0.043
9		0.096		0.090		0.101		0.101		0.101		0.101		0.101		0.045		0.045		0.068		0.045
10		0.101		0.096		0.106		0.106		0.106		0.106		0.106		0.048		0.048		0.072		0.048
11	150	0.106	100	0.101	70	0.111	150	0.111	200	0.112	150	0.112	80	0.111	40	0.050	55	0.050	75	0.076	50	0.050
12		0.111		0.106		0.117		0.117		0.117		0.117		0.117		0.053		0.053		0.079		0.053
14		0.116		0.110		0.122		0.122		0.121		0.121		0.122		0.055		0.055		0.082		0.055
16		0.122		0.115		0.128		0.128		0.127		0.127		0.128		0.057		0.057		0.086		0.057
18		0.126		0.120		0.132		0.132		0.132		0.132		0.132		0.060		0.060		0.090		0.060
20		0.131		0.124		0.138		0.138		0.139		0.139		0.138		0.062		0.062		0.093		0.062
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.078		0.117		0.078
25		0.165		0.156		0.173		0.173		0.174		0.174		0.173		0.078		0.078		0.117		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

P M K S H | P K

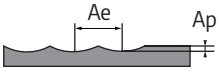
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Ballnose Cutter 4 Flutes



Finishing	P				M				K				S						H			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Titanium alloy		Nickel Alloy		Cobalt Alloy		Hardened Steel			
Properties	520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		High Machinability		-		-		-		-		-		45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
Cutting Width, Ae (mm)	0.040 × D		0.030 × D		0.030 × D		0.050 × D		0.050 × D		0.030 × D		0.050 × D		0.030 × D		0.030 × D		0.030 × D		0.030 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3		0.046		0.043		0.048		0.048		0.048		0.048		0.048		0.022		0.022		0.032		0.022
4		0.051		0.048		0.053		0.053		0.053		0.053		0.053		0.024		0.024		0.036		0.024
5		0.071		0.067		0.075		0.075		0.075		0.075		0.075		0.034		0.034		0.050		0.034
6		0.081		0.077		0.085		0.085		0.086		0.086		0.085		0.038		0.038		0.058		0.038
7		0.086		0.081		0.090		0.090		0.090		0.090		0.090		0.040		0.040		0.061		0.040
8		0.091		0.086		0.096		0.096		0.096		0.096		0.096		0.043		0.043		0.064		0.043
9		0.096		0.090		0.101		0.101		0.101		0.101		0.101		0.045		0.045		0.068		0.045
10		0.101		0.096		0.106		0.106		0.106		0.106		0.106		0.048		0.048		0.072		0.048
11	150	0.106	100	0.101	70	0.111	150	0.111	200	0.112	150	0.112	80	0.111	40	0.050	55	0.050	75	0.076	50	0.050
12		0.111		0.106		0.117		0.117		0.117		0.117		0.117		0.053		0.053		0.079		0.053
14		0.116		0.110		0.122		0.122		0.121		0.121		0.122		0.055		0.055		0.082		0.055
16		0.122		0.115		0.128		0.128		0.127		0.127		0.128		0.057		0.057		0.086		0.057
18		0.126		0.120		0.132		0.132		0.132		0.132		0.132		0.060		0.060		0.090		0.060
20		0.131		0.124		0.138		0.138		0.139		0.139		0.138		0.062		0.062		0.093		0.062
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.078		0.117		0.078
25		0.165		0.156		0.173		0.173		0.174		0.174		0.173		0.078		0.078		0.117		0.078
22		0.166		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078
25		0.165		0.156		0.174		0.174		0.174		0.174		0.174		0.078		0.117		0.117		0.078

Miniature Ballnose 2 Flutes



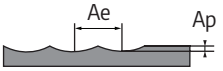
Profiling	P						M					K					S			H		
Working material	Alloy Steel			Pre-hardened Steel			Stainless Steel			Stainless Steel		Grey Cast Iron			Ductile Cast Iron		Nickel Alloy			Hardened Steel		
Properties	520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			High Machinability		-			-		-			45 ≤ HRC < 52		
D (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.039	20	0.030	0.035	16	0.027	0.038	10.8	0.018	18	0.030	0.040	20	0.030	18	0.027	0.038	7.560	0.013	0.033	14	0.026
0.3	0.039	30	0.030	0.035	24	0.027	0.038	16.2	0.018	27	0.030	0.040	30	0.030	27	0.027	0.038	11.340	0.013	0.033	22	0.026
0.4	0.052	40	0.030	0.046	32	0.027	0.050	21.6	0.018	36	0.030	0.052	40	0.030	36	0.027	0.050	15.120	0.013	0.044	29	0.026
0.5	0.065	50	0.030	0.058	41	0.027	0.063	27	0.018	45	0.030	0.066	50	0.030	45	0.027	0.063	18.900	0.013	0.055	36	0.026
0.6	0.078	50	0.040	0.069	41	0.036	0.075	27	0.024	45	0.040	0.078	50	0.040	45	0.036	0.075	18.900	0.017	0.066	36	0.034
0.7	0.091	55	0.040	0.081	45	0.036	0.088	30	0.024	50	0.040	0.091	55	0.040	50	0.036	0.088	21.000	0.017	0.077	40	0.034
0.8	0.104	60	0.040	0.092	49	0.036	0.100	32.4	0.024	54	0.040	0.104	60	0.040	54	0.036	0.100	22.680	0.017	0.088	43	0.034
0.9	0.117	70	0.045	0.104	57	0.041	0.113	37.8	0.027	63	0.045	0.117	70	0.045	63	0.0405	0.113	26.460	0.019	0.099	50	0.038

P M K S H | P K

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter with Long Neck 2 Flutes



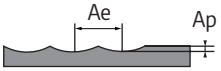
Profiling		P						M					K					S			H		
Working material		Alloy Steel			Pre-hardened Steel			Stainless Steel			Stainless Steel		Grey Cast Iron			Ductile Cast Iron		Nickel Alloy			Hardened Steel		
Properties		520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			High Machin-ability		-			-		-			45 ≤ HRC < 52		
D (mm)	Effec-tive length	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)
	0.5	0.020	25	0.004	0.016	25	0.004	0.018	15.000	0.002	25	0.004	0.019	25	0.005	22.500	0.005	0.018	10.500	0.002	0.013	25	0.003
0.2	1	0.014	25	0.004	0.011	25	0.004	0.013	15.000	0.002	25	0.004	0.013	25	0.005	22.500	0.005	0.013	10.500	0.002	0.009	25	0.003
	1.5	0.008	25	0.004	0.006	25	0.003	0.007	15.000	0.002	25	0.004	0.007	25	0.004	22.500	0.004	0.007	10.500	0.002	0.005	25	0.003
	1	0.021	38	0.006	0.017	38	0.006	0.019	22.800	0.004	38	0.006	0.020	38	0.007	34.200	0.006	0.019	15.960	0.003	0.014	38	0.005
0.3	2	0.012	38	0.006	0.010	38	0.005	0.011	22.800	0.004	38	0.006	0.011	38	0.006	34.200	0.005	0.011	15.960	0.003	0.008	38	0.004
	3	0.008	38	0.006	0.006	38	0.005	0.007	22.800	0.004	38	0.006	0.007	38	0.006	34.200	0.005	0.007	15.960	0.003	0.005	38	0.004
	1	0.040	50	0.007	0.032	50	0.006	0.036	30.000	0.004	50	0.007	0.037	50	0.007	45.000	0.006	0.036	21.000	0.003	0.026	45	0.005
	2	0.028	50	0.007	0.022	50	0.006	0.025	30.000	0.004	50	0.007	0.026	50	0.007	45.000	0.006	0.025	21.000	0.003	0.018	45	0.005
0.4	3	0.016	50	0.006	0.013	46	0.005	0.014	29.400	0.003	49	0.005	0.015	50	0.006	45.000	0.005	0.014	20.580	0.002	0.010	41	0.004
	4	0.010	50	0.006	0.008	46	0.005	0.009	29.400	0.003	49	0.005	0.009	50	0.006	45.000	0.005	0.009	20.580	0.002	0.007	41	0.004
	5	0.008	48	0.005	0.006	41	0.005	0.007	25.800	0.003	43	0.005	0.007	48	0.005	43.200	0.005	0.007	18.060	0.002	0.005	36	0.004
	2	0.035	63	0.010	0.028	53	0.009	0.032	34.200	0.006	57	0.010	0.033	63	0.010	56.700	0.009	0.032	23.940	0.004	0.023	47	0.009
	3	0.030	57	0.009	0.024	48	0.008	0.027	30.600	0.005	51	0.009	0.028	57	0.009	51.300	0.008	0.027	21.420	0.004	0.020	42	0.008
0.5	4	0.020	57	0.009	0.016	48	0.008	0.018	30.600	0.005	51	0.009	0.019	57	0.009	51.300	0.008	0.018	21.420	0.004	0.013	42	0.008
	5	0.018	57	0.009	0.014	48	0.008	0.016	30.600	0.005	51	0.009	0.017	57	0.009	51.300	0.008	0.016	21.420	0.004	0.012	42	0.008
	6	0.013	50	0.008	0.010	43	0.008	0.012	27.000	0.005	45	0.009	0.012	50	0.008	45.000	0.007	0.012	18.900	0.004	0.008	38	0.008
	8	0.008	50	0.008	0.006	43	0.008	0.007	27.000	0.005	45	0.009	0.007	50	0.008	45.000	0.007	0.007	18.900	0.004	0.005	38	0.008
	2	0.042	75	0.015	0.034	64	0.013	0.038	40.800	0.009	68	0.015	0.039	75	0.015	67.500	0.014	0.038	28.560	0.006	0.027	57	0.012
	3	0.034	75	0.015	0.027	64	0.013	0.031	40.800	0.009	68	0.015	0.032	75	0.015	67.500	0.014	0.031	28.560	0.006	0.022	57	0.012
	4	0.024	68	0.014	0.019	58	0.012	0.022	36.600	0.008	61	0.014	0.022	68	0.014	61.200	0.013	0.022	25.620	0.006	0.016	51	0.011
0.6	5	0.020	68	0.013	0.016	58	0.012	0.018	36.600	0.008	61	0.014	0.019	68	0.013	61.200	0.012	0.018	25.620	0.006	0.013	51	0.011
	6	0.015	68	0.013	0.012	58	0.012	0.014	36.600	0.008	61	0.014	0.014	68	0.013	61.200	0.012	0.014	25.620	0.006	0.010	51	0.011
	8	0.015	60	0.013	0.012	51	0.011	0.014	32.400	0.008	54	0.013	0.014	60	0.013	54.000	0.012	0.014	22.680	0.005	0.010	45	0.010
	2	0.080	101	0.018	0.064	85	0.016	0.072	54.000	0.011	90	0.018	0.075	101	0.018	90.900	0.016	0.072	37.800	0.008	0.052	75	0.015
	4	0.056	101	0.018	0.045	85	0.016	0.050	54.000	0.011	90	0.018	0.052	101	0.018	90.900	0.016	0.050	37.800	0.008	0.036	75	0.015
	5	0.045	90	0.016	0.036	77	0.014	0.041	48.600	0.010	81	0.016	0.042	90	0.016	81.000	0.014	0.041	34.020	0.007	0.029	68	0.014
0.8	6	0.032	90	0.016	0.026	77	0.014	0.029	48.600	0.010	81	0.016	0.030	90	0.016	81.000	0.014	0.029	34.020	0.007	0.021	68	0.014
	7	0.026	85	0.016	0.021	73	0.014	0.023	46.200	0.010	77	0.016	0.024	85	0.016	76.500	0.014	0.023	32.340	0.007	0.017	64	0.014
	8	0.020	80	0.016	0.016	68	0.014	0.018	43.200	0.010	72	0.016	0.019	80	0.016	72.000	0.014	0.018	30.240	0.007	0.013	60	0.014
	10	0.020	80	0.015	0.016	68	0.014	0.018	43.200	0.009	72	0.015	0.019	80	0.015	72.000	0.014	0.018	30.240	0.006	0.013	60	0.013

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P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter with Long Neck 2 Flutes



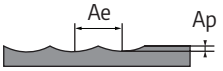
Profiling		P						M					K					S			H		
Working material		Alloy Steel			Pre-hardened Steel			Stainless Steel			Stainless Steel		Grey Cast Iron			Ductile Cast Iron		Nickel Alloy			Hardened Steel		
Properties		520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			High Machin-ability		-			-		-			45 ≤ HRC < 52		
D (mm)	Effec-tive length	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)
1.0	3	0.100	113	0.025	0.080	96	0.023	0.090	61.200	0.015	102	0.025	0.094	113	0.025	101.700	0.023	0.090	42.840	0.011	0.065	85	0.021
	4	0.070	113	0.025	0.056	96	0.023	0.063	61.200	0.015	102	0.025	0.066	113	0.025	101.700	0.023	0.063	42.840	0.011	0.046	85	0.021
	5	0.060	113	0.025	0.048	96	0.023	0.054	61.200	0.015	102	0.025	0.056	113	0.025	101.700	0.023	0.054	42.840	0.011	0.039	85	0.021
	6	0.040	102	0.023	0.032	86	0.020	0.036	55.200	0.013	92	0.022	0.037	102	0.023	91.800	0.021	0.036	38.640	0.009	0.026	76	0.019
	7	0.040	102	0.023	0.032	86	0.020	0.036	55.200	0.013	92	0.022	0.037	102	0.023	91.800	0.021	0.036	38.640	0.009	0.026	76	0.019
	8	0.040	102	0.023	0.032	86	0.020	0.036	55.200	0.013	92	0.022	0.037	102	0.023	91.800	0.021	0.036	38.640	0.009	0.026	76	0.019
	9	0.030	102	0.023	0.024	86	0.020	0.027	55.200	0.013	92	0.022	0.028	102	0.023	91.800	0.021	0.027	38.640	0.009	0.020	76	0.019
	10	0.025	102	0.023	0.020	86	0.020	0.023	55.200	0.013	92	0.022	0.023	102	0.023	91.800	0.021	0.023	38.640	0.009	0.016	76	0.019
	12	0.025	90	0.021	0.020	77	0.019	0.023	48.600	0.013	81	0.021	0.023	90	0.021	81.000	0.019	0.023	34.020	0.009	0.016	68	0.018
	14	0.020	90	0.021	0.016	77	0.019	0.018	48.600	0.013	81	0.021	0.019	90	0.021	81.000	0.019	0.018	34.020	0.009	0.013	68	0.018
	16	0.015	90	0.021	0.012	77	0.019	0.014	48.600	0.013	81	0.021	0.014	90	0.021	81.000	0.019	0.014	34.020	0.009	0.010	68	0.018
	20	0.010	68	0.020	0.008	58	0.018	0.009	36.600	0.012	61	0.020	0.009	68	0.020	61.200	0.018	0.009	25.620	0.008	0.007	51	0.017
1.2	6	0.040	109	0.026	0.032	92	0.025	0.036	58.800	0.016	98	0.026	0.037	109	0.026	98.100	0.023	0.036	41.160	0.011	0.026	81	0.022
	8	0.040	109	0.026	0.032	92	0.025	0.036	58.800	0.016	98	0.026	0.037	109	0.026	98.100	0.023	0.036	41.160	0.011	0.026	81	0.022
	10	0.035	109	0.025	0.028	92	0.024	0.032	58.800	0.015	98	0.025	0.033	109	0.025	98.100	0.023	0.032	41.160	0.011	0.023	81	0.021
	12	0.030	109	0.023	0.024	92	0.022	0.027	58.800	0.014	98	0.023	0.028	109	0.023	98.100	0.021	0.027	41.160	0.010	0.020	81	0.020
1.4	8	0.055	111	0.030	0.044	94	0.027	0.050	60.000	0.018	100	0.030	0.051	111	0.030	99.900	0.027	0.050	42.000	0.013	0.036	83	0.026
	12	0.035	111	0.027	0.028	94	0.024	0.032	60.000	0.016	100	0.027	0.033	111	0.027	99.900	0.024	0.032	42.000	0.011	0.023	83	0.024
	16	0.035	99	0.025	0.028	84	0.023	0.032	53.400	0.015	89	0.025	0.033	99	0.025	89.100	0.023	0.032	37.380	0.011	0.023	74	0.022
1.5	8	0.060	119	0.030	0.048	101	0.027	0.054	64.200	0.018	107	0.030	0.056	119	0.030	107.100	0.027	0.054	44.940	0.013	0.039	89	0.024
	12	0.060	119	0.030	0.048	101	0.027	0.054	64.200	0.018	107	0.030	0.056	119	0.030	107.100	0.027	0.054	44.940	0.013	0.039	89	0.024
	16	0.038	106	0.028	0.030	90	0.026	0.034	57.000	0.017	95	0.028	0.036	106	0.028	95.400	0.025	0.034	39.900	0.012	0.025	79	0.023
	18	0.038	106	0.028	0.030	90	0.026	0.034	57.000	0.017	95	0.028	0.036	106	0.028	95.400	0.025	0.034	39.900	0.012	0.025	79	0.023
1.6	8	0.110	131	0.035	0.088	111	0.031	0.099	70.800	0.021	118	0.035	0.103	131	0.035	117.900	0.032	0.099	49.560	0.015	0.072	98	0.030
	12	0.065	118	0.031	0.052	100	0.028	0.059	63.600	0.019	106	0.032	0.061	118	0.031	106.200	0.028	0.059	44.520	0.013	0.042	88	0.027
	16	0.040	118	0.031	0.032	100	0.028	0.036	63.600	0.019	106	0.032	0.037	118	0.031	106.200	0.028	0.036	44.520	0.013	0.026	88	0.027
	20	0.040	105	0.030	0.032	89	0.026	0.036	56.400	0.018	94	0.030	0.037	105	0.030	94.500	0.027	0.036	39.480	0.013	0.026	78	0.026
1.8	8	0.130	147	0.040	0.104	125	0.035	0.117	79.200	0.024	132	0.040	0.122	147	0.040	132.300	0.036	0.117	55.440	0.017	0.085	110	0.033
	12	0.070	132	0.036	0.056	113	0.031	0.063	71.400	0.022	119	0.036	0.066	132	0.036	118.800	0.032	0.063	49.980	0.015	0.046	100	0.030
	16	0.045	132	0.036	0.036	113	0.031	0.041	71.400	0.022	119	0.036	0.042	132	0.036	118.800	0.032	0.041	49.980	0.015	0.029	100	0.030
	20	0.045	118	0.034	0.036	100	0.030	0.041	63.600	0.020	106	0.034	0.042	118	0.034	106.200	0.031	0.041	44.520	0.014	0.029	88	0.028

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P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter with Long Neck 2 Flutes

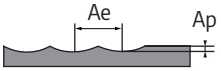


Profiling		P						M					K					S			H		
Working material		Alloy Steel			Pre-hardened Steel			Stainless Steel			Stainless Steel		Grey Cast Iron			Ductile Cast Iron		Nickel Alloy			Hardened Steel		
Properties		520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			High Machin-ability		-			-		-			45 ≤ HRC < 52		
D (mm)	Effec-tive length	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)
	4	0.200	132	0.050	0.160	112	0.045	0.180	71.400	0.030	119	0.050	0.187	132	0.050	118.800	0.045	0.180	49.980	0.021	0.130	99	0.043
	6	0.200	132	0.045	0.160	112	0.040	0.180	71.400	0.027	119	0.045	0.187	132	0.045	118.800	0.041	0.180	49.980	0.019	0.130	99	0.038
	8	0.140	132	0.045	0.112	112	0.040	0.126	71.400	0.027	119	0.045	0.131	132	0.045	118.800	0.041	0.126	49.980	0.019	0.091	99	0.038
	10	0.140	132	0.040	0.112	112	0.036	0.126	71.400	0.024	119	0.040	0.131	132	0.040	118.800	0.036	0.126	49.980	0.017	0.091	99	0.034
	12	0.080	119	0.040	0.064	101	0.036	0.072	64.200	0.024	107	0.040	0.075	119	0.040	107.100	0.036	0.072	44.940	0.017	0.052	89	0.034
2.0	14	0.080	119	0.040	0.064	101	0.036	0.072	64.200	0.024	107	0.040	0.075	119	0.040	107.100	0.036	0.072	44.940	0.017	0.052	89	0.034
	16	0.080	119	0.036	0.064	101	0.032	0.072	64.200	0.022	107	0.036	0.075	119	0.036	107.100	0.032	0.072	44.940	0.015	0.052	89	0.031
	18	0.080	119	0.036	0.064	101	0.032	0.072	64.200	0.022	107	0.036	0.075	119	0.036	107.100	0.032	0.072	44.940	0.015	0.052	89	0.031
	20	0.050	119	0.036	0.040	101	0.032	0.045	64.200	0.022	107	0.036	0.047	119	0.036	107.100	0.032	0.045	44.940	0.015	0.033	89	0.031
	25	0.050	106	0.034	0.040	90	0.030	0.045	57.000	0.020	95	0.034	0.047	106	0.034	95.400	0.031	0.045	39.900	0.014	0.033	79	0.029
	30	0.030	106	0.034	0.024	90	0.030	0.027	57.000	0.020	95	0.034	0.028	106	0.034	95.400	0.031	0.027	39.900	0.014	0.020	79	0.029
	8	0.300	151	0.075	0.240	128	0.067	0.270	81.600	0.045	136	0.075	0.281	151	0.075	135.900	0.068	0.270	57.120	0.032	0.195	113	0.063
	10	0.210	151	0.075	0.168	128	0.067	0.189	81.600	0.045	136	0.075	0.197	151	0.075	135.900	0.068	0.189	57.120	0.032	0.137	113	0.063
	16	0.210	151	0.068	0.168	128	0.060	0.189	81.600	0.040	136	0.067	0.197	151	0.068	135.900	0.061	0.189	57.120	0.028	0.137	113	0.057
3.0	20	0.120	136	0.067	0.096	115	0.061	0.108	73.800	0.040	123	0.067	0.112	136	0.067	122.400	0.060	0.108	51.660	0.028	0.078	102	0.057
	25	0.080	136	0.067	0.064	115	0.061	0.072	73.800	0.040	123	0.067	0.075	136	0.067	122.400	0.060	0.072	51.660	0.028	0.052	102	0.057
	30	0.080	136	0.067	0.064	115	0.061	0.072	73.800	0.040	123	0.067	0.075	136	0.067	122.400	0.060	0.072	51.660	0.028	0.052	102	0.057
	35	0.080	121	0.064	0.064	103	0.057	0.072	64.800	0.038	108	0.064	0.075	121	0.064	108.900	0.058	0.072	45.360	0.027	0.052	90	0.054
	10	0.400	145	0.100	0.320	123	0.090	0.360	78.600	0.060	131	0.100	0.374	145	0.100	130.500	0.090	0.360	55.020	0.042	0.260	108	0.085
	16	0.280	145	0.100	0.224	123	0.090	0.252	78.600	0.060	131	0.100	0.262	145	0.100	130.500	0.090	0.252	55.020	0.042	0.182	108	0.085
	20	0.280	145	0.100	0.224	123	0.090	0.252	78.600	0.060	131	0.100	0.262	145	0.100	130.500	0.090	0.252	55.020	0.042	0.182	108	0.085
	25	0.160	131	0.089	0.128	111	0.081	0.144	70.200	0.054	117	0.090	0.150	129	0.090	116.100	0.081	0.144	49.140	0.038	0.104	98	0.076
4.0	30	0.160	131	0.089	0.128	111	0.081	0.144	70.200	0.054	117	0.090	0.150	129	0.090	116.100	0.081	0.144	49.140	0.038	0.104	98	0.076
	35	0.100	131	0.089	0.080	111	0.081	0.090	70.200	0.054	117	0.090	0.094	129	0.090	116.100	0.081	0.090	49.140	0.038	0.065	98	0.076
	40	0.100	131	0.089	0.080	111	0.081	0.090	70.200	0.054	117	0.090	0.094	129	0.090	116.100	0.081	0.090	49.140	0.038	0.065	98	0.076
	45	0.100	116	0.085	0.080	98	0.077	0.090	62.400	0.051	104	0.085	0.094	116	0.085	104.400	0.077	0.090	43.680	0.036	0.065	87	0.072
	50	0.100	116	0.085	0.080	98	0.077	0.090	62.400	0.051	104	0.085	0.094	116	0.085	104.400	0.077	0.090	43.680	0.036	0.065	87	0.072

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

BN 45 Ballnose Cutter with Taper Neck 2 Flutes



Profiling		P						M					K					S			H		
Working material		Alloy Steel			Pre-hardened Steel			Stainless Steel			Stainless Steel		Grey Cast Iron			Ductile Cast Iron		Nickel Alloy			Hardened Steel		
Properties		520 < Rm < 1200			35 ≤ HRC < 45			High Machinability			Low Machin-ability		-			-		-			45 ≤ HRC < 52		
D (mm)	Effec-tive length	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)	Ap (mm)	Vc (m/ min)	Fz (mm)
1.0	20	0.020	52	0.040	0.016	36	0.038	0.018	26	0.024	44	0.040	0.019	49	0.040	44	0.036	0.018	18	0.017	0.013	34	0.035
	40	0.009	31	0.035	0.007	22	0.033	0.008	16	0.021	27	0.035	0.008	30	0.035	27	0.032	0.008	11	0.015	0.006	20	0.030
1.5	20	0.040	52	0.060	0.032	36	0.053	0.036	26	0.036	44	0.060	0.037	49	0.060	44	0.054	0.036	18	0.025	0.026	34	0.052
	40	0.028	52	0.060	0.022	36	0.053	0.025	26	0.036	44	0.060	0.026	49	0.060	44	0.054	0.025	18	0.025	0.018	34	0.052
2.0	20	0.060	77	0.090	0.048	53	0.090	0.054	39	0.054	65	0.090	0.056	72	0.090	65	0.081	0.054	27	0.038	0.039	50	0.080
	40	0.030	62	0.080	0.024	43	0.070	0.027	32	0.048	53	0.080	0.028	58	0.080	52	0.072	0.027	22	0.034	0.020	40	0.070
3.0	20	0.150	120	0.135	0.120	84	0.120	0.135	61	0.081	102	0.135	0.140	113	0.135	102	0.122	0.135	43	0.057	0.098	78	0.105
	40	0.060	78	0.119	0.048	55	0.105	0.054	40	0.073	66	0.121	0.056	74	0.120	67	0.108	0.054	28	0.051	0.039	51	0.105
	45	0.050	78	0.119	0.040	55	0.105	0.045	40	0.073	66	0.121	0.047	74	0.120	67	0.108	0.045	28	0.051	0.033	51	0.105
4.0	20	0.320	150	0.120	0.256	113	0.114	0.288	76	0.072	127	0.120	0.300	141	0.120	127	0.108	0.288	53	0.050	0.208	98	0.108
	40	0.140	119	0.102	0.112	90	0.097	0.126	61	0.061	102	0.102	0.131	113	0.102	102	0.092	0.126	43	0.043	0.091	78	0.092
	60	0.070	98	0.102	0.056	73	0.097	0.063	50	0.061	83	0.102	0.066	92	0.103	83	0.093	0.063	35	0.043	0.046	63	0.092
5.0	40	0.250	149	0.113	0.200	113	0.107	0.225	76	0.067	127	0.112	0.234	141	0.112	127	0.101	0.225	53	0.047	0.163	97	0.102
6.0	20	0.450	151	0.125	0.360	113	0.119	0.405	77	0.075	128	0.125	0.421	141	0.126	127	0.113	0.405	54	0.053	0.293	98	0.113
	40	0.400	151	0.113	0.320	113	0.107	0.360	77	0.068	128	0.113	0.374	141	0.113	127	0.102	0.360	54	0.047	0.260	98	0.101
	60	0.220	121	0.106	0.176	90	0.101	0.198	61	0.064	102	0.106	0.206	113	0.107	102	0.096	0.198	43	0.045	0.143	77	0.095
	80	0.140	98	0.107	0.112	74	0.101	0.126	50	0.064	83	0.107	0.131	92	0.106	83	0.095	0.126	35	0.045	0.091	64	0.096
8.0	25	0.500	151	0.122	0.400	113	0.116	0.450	77	0.073	128	0.122	0.468	143	0.121	129	0.109	0.450	54	0.051	0.325	98	0.109
	60	0.430	151	0.122	0.344	113	0.116	0.387	77	0.073	128	0.122	0.402	143	0.121	129	0.109	0.387	54	0.051	0.280	98	0.109
	75	0.330	151	0.122	0.264	113	0.116	0.297	77	0.073	128	0.122	0.309	143	0.121	129	0.109	0.297	54	0.051	0.215	98	0.109
	105	0.250	121	0.115	0.200	98	0.101	0.225	62	0.069	103	0.115	0.234	116	0.113	104	0.102	0.225	43	0.048	0.163	78	0.103
10.0	30	0.700	151	0.135	0.560	97	0.121	0.630	77	0.081	129	0.135	0.655	145	0.134	131	0.121	0.630	54	0.057	0.455	97	0.121
	70	0.700	151	0.135	0.560	97	0.121	0.630	77	0.081	129	0.135	0.655	145	0.134	131	0.121	0.630	54	0.057	0.455	97	0.121
	75	0.500	151	0.135	0.400	97	0.121	0.450	77	0.081	129	0.135	0.468	145	0.134	131	0.121	0.450	54	0.057	0.325	97	0.121
12.0	35	0.700	151	0.138	0.560	98	0.121	0.630	77	0.081	128	0.135	0.655	143	0.134	129	0.121	0.630	54	0.057	0.455	98	0.121
	70	0.700	151	0.138	0.560	98	0.121	0.630	77	0.081	128	0.135	0.655	143	0.134	129	0.121	0.630	54	0.057	0.455	98	0.121
	90	0.500	151	0.138	0.400	98	0.121	0.450	77	0.081	128	0.135	0.468	143	0.134	129	0.121	0.450	54	0.057	0.325	98	0.121

P M K S H | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



BN 60

- For general machining
- Cost efficiency

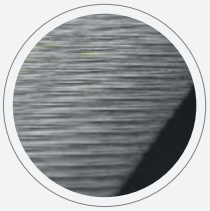
- For material application 68 HRC

BN 60

01

ECCENTRIC GRINDING

Optimum eccentric grinding in order to avoid rubbing, while maintaining maximum cutting tool strength.



02

CUTTING EDGE PREPARATION

Enhances Tool Life

- Less material adhere on the cutting edge
- For stable machining



03

SUPERIOR COATING TO REDUCE FRICTION

- Increases hardness and higher abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation



04

SUITABLE FOR MATERIAL GROUPS H

H

DEUTSCH

01 **EXZENTRISCHER SCHLIFF**
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität

02 **SCHNEIDKANTENBEHANDLUNG**
Verbessert die Werkzeuglebensdauer
· Weniger Materialanhaftungen an der Schneide
· Für stabile Bearbeitung

03 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
· Erhöht die Härte und und bietet bessere Verschleißfestigkeit
· Höhere Temperaturbeständigkeit
· Glatte Oberfläche für besseren Spänefluß

04 **GEEIGNET FÜR DIE MATERIALIGRUPPEN H**

FRANÇAIS

01 **MEULAGE EXCENTRIQUE**
Meulage optimal diminuant le coeficient de friction tout en maintenant une bonne acuité de l'arête de coupe

02 **PRÉPARATION DES ARÊTES DE COUPES**
Améliore la durée de vie de l'outil
· Moins de matériau adhère à l'arête tranchante
· Pour un usinage stable

03 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
· Augmente la dureté et la résistance à l'abrasion
· Résistance thermique supérieure
· Évacuation des copeaux plus fluide

04 **ADAPTÉ AUX MATÉRIAUX H**

ITALIANO

01 **LEVIGATURA ORBITALE**
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio

02 **PREPARAZIONE DELL'ANGOLO DI TAGLIO**
Migliora la durata dello strumento
· Meno materiale che aderisce sull'angolo di taglio
· Per una lavorazione stabile

03 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
· Aumenta la durezza e una maggiore resistenza all'usura abrasiva
· Resistenza termica superiore
· Evacuazione dei trucioli più semplice

04 **ADATTO PER IL MATERIALE H**

中文

01 **偏心研磨**
最佳偏心研磨，可避免摩擦，同时保持最大切削刀具强度

02 **切削刃设置提高刀具寿命**
提高刀具寿命
· 较少的材料粘粘在切削刃上
· 用于稳定加工

03 **优异的涂层，减少摩擦**
· 增加硬度，提高材料耐磨性
· 更高的抗热性
· 更顺畅的排屑

04 **超合金和钛的材料 H**

BN 60 STANDARD BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

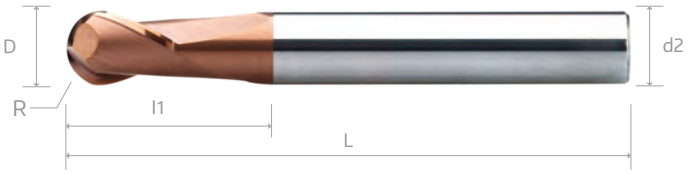
VHM Standard BN 60 Radiusschaftfräser, 2 Zähne

Fraises BN 60 Standard en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 Standard, 2 taglienti

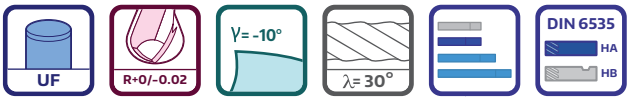
整体硬质合金 BN 60 系列 球头 立铣刀 2 刃 - 标准长度

A69*





Z2



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A69*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
0050 050 04	0.5	0.25	1.2		50	4	•
0050 050 06	0.5	0.25	1.2		50	6	•
0060 050 04	0.6	0.3	1.4		50	4	•
0060 050 06	0.6	0.3	1.4		50	6	•
0080 050 04	0.8	0.4	1.8		50	4	•
0080 050 06	0.8	0.4	1.8		50	6	•
0100 050 04	1	0.5	3	4	50	4	•
0100 050 06	1	0.5	3	4	50	6	•
0150 050 04	1.5	0.75	3	6	50	4	•
0150 050 06	1.5	0.75	3	6	50	6	•
0200 050 04	2	1	4	8	50	4	•
0200 050 06	2	1	4	8	50	6	•
0250 050 04	2.5	1.25	4	10	50	4	•
0250 050 06	2.5	1.25	4	10	50	6	•
0300 050 03	3	1.5	5	14	50	3	•
0300 050 04	3	1.5	5	14	50	4	•
0300 050 06	3	1.5	5	14	50	6	•
0400	4	2	8	20	50	4	•
0400 050 06	4	2	8	20	50	6	•
0500	5	2.5	9	20	50	5	•
0500 050 06	5	2.5	9	20	50	6	•
0600 050	6	3	10	20	50	6	•
0600 060	6	3	10	30	60	6	•
0800	8	4	12	30	64	8	•
1000	10	5	14	32	70	10	•
1200	12	6	16	38	75	12	•

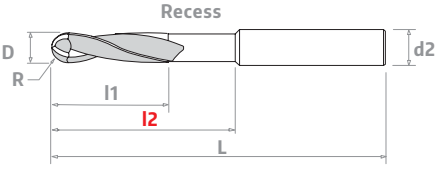
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



A70 *
cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 413

Technical specifications subject to change without prior notice

BN 60 STANDARD BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

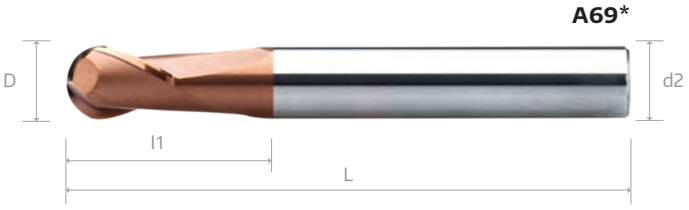
HPMT

VHM Standard BN 60 Radiusschaftfräser, 2 Zähne

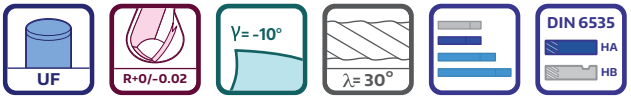
Fraises BN 60 Standard en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 Standard, 2 taglienti

整体硬质合金 BN 60 系列 球头 立铣刀 2 刃 - 标准长度





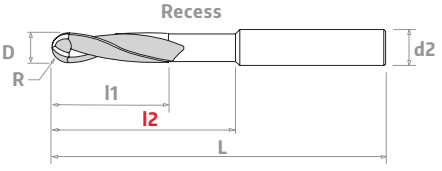




EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A69*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
1400	14	7	32	44	90	14	•
1600	16	8	32	46	90	16	•
1800	18	9	38	53	100	18	•
2000	20	10	38	58	100	20	•
2200	22	11	40	58	100	22	•
2500	25	12.85	40	58	100	25	•

A70 *

Tools with recess upon request



Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 413

Technische änderungen ohne vorherige information vorbehalten

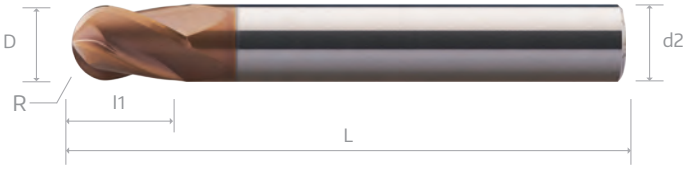
BN 60 STANDARD BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

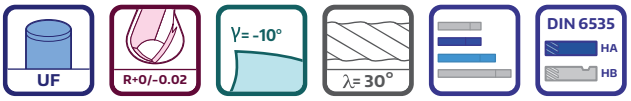
VHM Standard BN 60 Radiusschaftfräser, 4 Zähne	Fraises BN 60 Standard en carbure monobloc, à bout hémisphérique, 4 dents
Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 Standard, 4 taglienti	整体硬质合金 BN 60 系列 球头 立铣刀 4 刃 - 标准长度

A1L*





Z4



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A1L*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
0300	3	1.5	5		40	3	•
0300 050 06	3	1.5	5		50	6	•
0400	4	2	8		50	4	•
0400 050 06	4	2	8		50	6	•
0500	5	2.5	9		50	5	•
0500 050 06	5	2.5	9		50	6	•
0600 050	6	3	10		50	6	•
0600 060	6	3	10		60	6	•
0800	8	4	12		64	8	•
1000	10	5	14		70	10	•
1200	12	6	16		75	12	•
1400	14	7	32		90	14	•
1600	16	8	32		90	16	•
1800	18	9	38		100	18	•
2000	20	10	38		100	20	•
2200	22	11	40		100	22	•
2500	25	12.5	40		100	25	•

BN 60

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

416

Spécifications techniques sujettes à changement sans avis prélable

BN 60

BN 60 BALLNOSE CUTTERS – Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM lange BN 60 Radiusschaftfräser, 2 Zähne

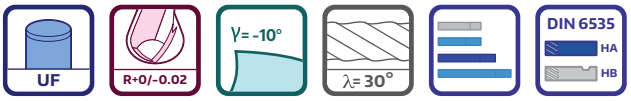
Fraises BN 60 longues en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 lunghe, 2 taglienti

整体硬质合金 BN 60 系列 球头 立铣刀 2 刃 - 中长





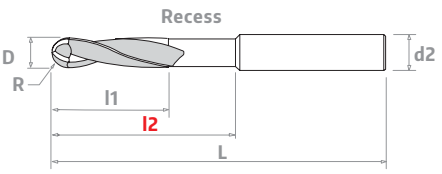




EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A71*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
0100 04	1	0.5	3	7	75	4	•
0100 075 06	1	0.5	3	7	75	6	•
0150 04	1.5	0.75	3	10	75	4	•
0150 075 06	1.5	0.75	3	10	75	6	•
0200 04	2	1	4	14	75	4	•
0200 075 06	2	1	4	14	75	6	•
0250 04	2.5	1.25	4	18	75	4	•
0250 075 06	2.5	1.25	4	18	75	6	•
0300	3	1.5	5	21	60	3	•
0300 075 06	3	1.5	5	21	75	6	•
0400	4	2	8	28	60	4	•
0400 075 06	4	2	8	28	75	6	•
0500	5	2.5	9	32	60	5	•
0500 075 06	5	2.5	9	32	75	6	•
0600	6	3	10	40	75	6	•
0800	8	4	12	40	75	8	•
1000 075	10	5	14	40	75	10	•
1000 100	10	5	14	60	100	10	•
1200	12	6	16	60	100	12	•
1400	14	7	32	80	125	14	•
1600	16	8	32	80	125	16	•
1800	18	9	38	80	125	18	•
2000	20	10	38	80	125	20	•

A72 *

Tools with recess upon request



Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

414

BN 60 BALLNOSE CUTTERS - Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM extra-lange BN 60 Radiusschaftfräser, 2 Zähne

Fraises BN 60 extra-longues en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 extra-lunghe, 2 taglienti

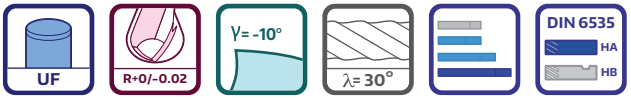
整体硬质合金 BN 60 系列 球头 立铣刀 2 刃 - 加长

A74*





Z2



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A73*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
0100 04	1	0.5	3	10	100	4	•
0100 100 06	1	0.5	3	10	100	6	•
0150 04	1.5	0.75	3	15	100	4	•
0150 100 06	1.5	0.75	3	15	100	6	•
0200 04	2	1	4	20	100	4	•
0200 100 06	2	1	4	20	100	6	•
0250 04	2.5	1.25	4	25	100	4	•
0250 100 06	2.5	1.25	4	25	100	6	•
0300 04	3	1.5	5	30	100	4	•
0300 100 06	3	1.5	5	30	100	6	•
0400	4	2	8	40	100	4	•
0400 100 06	4	2	8	40	100	6	•
0500	5	2.5	9	50	100	5	•
0500 100 06	5	2.5	9	50	100	6	•
0600 100	6	3	10	60	100	6	•
0600 150	6	3	10	60	150	6	•
0800 100	8	4	12	60	100	8	•
0800 150	8	4	12	80	150	8	•
1000 125	10	5	14	85	125	10	•
1000 150	10	5	14	100	150	10	•
1200 125	12	6	16	85	125	12	•
1200 150	12	6	16	110	150	12	•
1400 150	14	7	32	110	150	14	•
1400 200	14	7	32	150	200	14	•
1600 150	16	8	32	110	150	16	•
1600 200	16	8	32	150	200	16	•

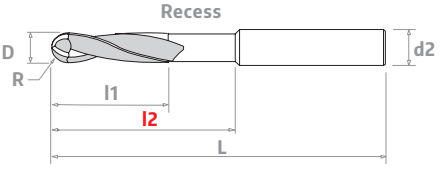
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



A74 *
cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

415

若有技术规格变更，恕不事先通知

BN 60 BALLNOSE CUTTERS - Extra-Long

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM extra-lange BN 60 Radiusschaftfräser, 2 Zähne

Fraises BN 60 extra-longues en carbure monobloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60 extra-lunghe, 2 taglienti

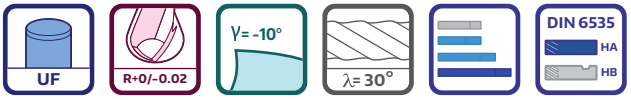
整体硬质合金 BN 60 系列 球头 立铣刀 2 刃 - 加长

A74*





Z2



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A73*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
1800 150	18	9	38	110	150	18	•
1800 200	18	9	38	150	200	18	•
2000 150	20	10	38	110	150	20	•
2000 200	20	10	38	150	200	20	•

A74 *

BN 60

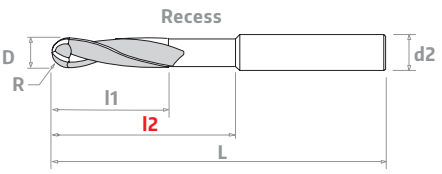
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

415

BN 60 MINIATURE BALLNOSE CUTTERS

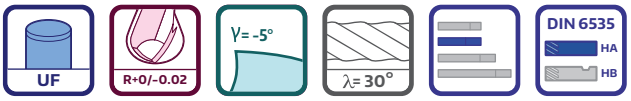
≤ 1.600 N/mm² + B0909 ≤ 53 - 63 HRC

HPMT

VHM Radiuskleinstschaftfräser BN 60, 2 Zähne	Micro-fraises BN 60 en carbure monobloc à bout hémisphérique, 2 dents
Micro-frese cilindriche a raggio in metallo duro integrale, tipo BN 60, 2 taglienti	整体硬质合金 BN 60 系列 微型球头 立铣刀 2 刃 - 标准长度









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A75*
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	B0909
0020 03	0.2	0.1	0.4		40	3	•
0020 04	0.2	0.1	0.4		40	4	•
0030 03	0.3	0.15	0.6		40	3	•
0030 04	0.3	0.15	0.6		40	4	•
0040 03	0.4	0.2	0.8		40	3	•
0040 04	0.4	0.2	0.8		40	4	•
0050 03	0.5	0.25	1.2		40	3	•
0050 04	0.5	0.25	1.2		40	4	•
0060 03	0.6	0.3	1.4		40	3	•
0060 04	0.6	0.3	1.4		40	4	•
0070 03	0.7	0.35	1.6		40	3	•
0070 04	0.7	0.35	1.6		40	4	•
0080 03	0.8	0.4	1.8		40	3	•
0080 04	0.8	0.4	1.8		40	4	•
0090 03	0.9	0.45	2		40	3	•
0090 04	0.9	0.45	2		40	4	•

D*

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 418

Technische änderungen ohne vorherige information vorbehalten

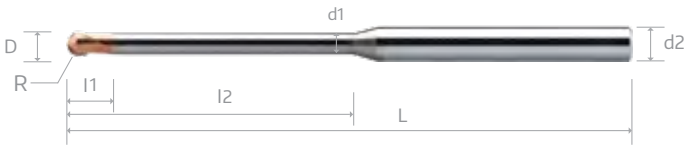
BN 60 MINIATURE BALLNOSE CUTTERS – with Long Neck

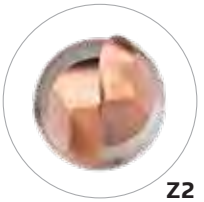
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM BN 60 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60 系列 长颈短刃 球头 立铣刀 2 刃

A76*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A76*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0020 050 0400	0.2	0.10	0.2	-	50	-	4	•
0020 050 0400 005	0.2	0.10	0.2	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.10	0.2	1.0	50	0.17	4	•
0020 050 0400 015	0.2	0.10	0.2	1.5	50	0.17	4	•
0030 050 0400	0.3	0.15	0.3	-	50	-	4	•
0030 050 0400 010	0.3	0.15	0.3	1.0	50	0.27	4	•
0030 050 0400 020	0.3	0.15	0.3	2.0	50	0.27	4	•
0030 050 0400 030	0.3	0.15	0.3	3.0	50	0.27	4	•
0040 050 0400	0.4	0.20	0.4	-	50	-	4	•
0040 050 0400 010	0.4	0.20	0.4	1.0	50	0.37	4	•
0040 050 0400 020	0.4	0.20	0.4	2.0	50	0.37	4	•
0040 050 0400 030	0.4	0.20	0.4	3.0	50	0.37	4	•
0040 050 0400 040	0.4	0.20	0.4	4.0	50	0.37	4	•
0040 050 0400 050	0.4	0.20	0.4	5.0	50	0.37	4	•
0050 050 0400	0.5	0.25	0.4	-	50	-	4	•
0050 050 0400 020	0.5	0.25	0.4	2.0	50	0.45	4	•
0050 050 0400 030	0.5	0.25	0.4	3.0	50	0.45	4	•
0050 050 0400 040	0.5	0.25	0.4	4.0	50	0.45	4	•
0050 050 0400 050	0.5	0.25	0.4	5.0	50	0.45	4	•
0050 050 0400 060	0.5	0.25	0.4	6.0	50	0.45	4	•
0050 050 0400 080	0.5	0.25	0.4	8.0	50	0.45	4	•
0060 050 0400	0.6	0.30	0.5	-	50	-	4	•
0060 050 0400 020	0.6	0.30	0.5	2.0	50	0.55	4	•
0060 050 0400 030	0.6	0.30	0.5	3.0	50	0.55	4	•
0060 050 0400 040	0.6	0.30	0.5	4.0	50	0.55	4	•
0060 050 0400 050	0.6	0.30	0.5	5.0	50	0.55	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 418

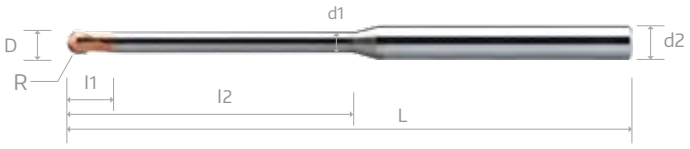
BN 60 MINIATURE BALLNOSE CUTTERS – with Long Neck

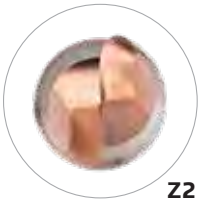
≤ 1.600 N/mm² + B0909 ≤ 53 - 65 HRC

HPMT

VHM BN 60 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60 系列 长颈短刃 球头 立铣刀 2 刃

A76*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A76*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0060 050 0400 060	0.6	0.30	0.5	6.0	50	0.55	4	•
0060 050 0400 080	0.6	0.30	0.5	8.0	50	0.55	4	•
0080 050 0400	0.8	0.40	0.6	-	50	-	4	•
0080 050 0400 020	0.8	0.40	0.6	2.0	50	0.75	4	•
0080 050 0400 040	0.8	0.40	0.6	4.0	50	0.75	4	•
0080 050 0400 050	0.8	0.40	0.6	5.0	50	0.75	4	•
0080 050 0400 060	0.8	0.40	0.6	6.0	50	0.75	4	•
0080 050 0400 070	0.8	0.40	0.6	7.0	50	0.75	4	•
0080 050 0400 080	0.8	0.40	0.6	8.0	50	0.75	4	•
0080 050 0400 100	0.8	0.40	0.6	10.0	50	0.75	4	•
0100 050 0400	1.0	0.50	0.8	-	50	-	4	•
0100 050 0400 030	1.0	0.50	0.8	3.0	50	0.9	4	•
0100 050 0400 040	1.0	0.50	0.8	4.0	50	0.9	4	•
0100 050 0400 050	1.0	0.50	0.8	5.0	50	0.9	4	•
0100 050 0400 060	1.0	0.50	0.8	6.0	50	0.9	4	•
0100 050 0400 070	1.0	0.50	0.8	7.0	50	0.9	4	•
0100 050 0400 080	1.0	0.50	0.8	8.0	50	0.9	4	•
0100 050 0400 090	1.0	0.50	0.8	9.0	50	0.9	4	•
0100 050 0400 100	1.0	0.50	0.8	10.0	50	0.9	4	•
0100 050 0400 120	1.0	0.50	0.8	12.0	50	0.9	4	•
0100 050 0400 140	1.0	0.50	0.8	14.0	50	0.9	4	•
0100 050 0400 160	1.0	0.50	0.8	16	50	0.9	4	•
0100 060 0400	1.0	0.50	0.8	-	60	-	4	•
0100 060 0400 200	1.0	0.50	0.8	20.0	60	0.9	4	•
0120 050 0400	1.2	0.60	1.0	-	50	-	4	•
0120 050 0400 060	1.2	0.60	1.0	6.0	50	1.1	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

418

Modifiche Techiche possibili senza preavviso

BN 60 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 65 HRC

HPMT

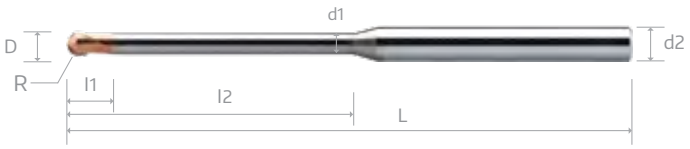
VHM BN 60 Kleinstradiusfräser mit langem Hals, 2 Zähne

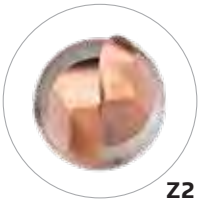
Micro-fraises BN 60 à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60 a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60 系列 长颈短刃 球头 立铣刀 2 刃

A76*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A76*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0120 050 0400 080	1.2	0.60	1.0	8.0	50	1.1	4	•
0120 050 0400 100	1.2	0.60	1.0	10.0	50	1.1	4	•
0120 050 0400 120	1.2	0.60	1.0	12.0	50	1.1	4	•
0140 050 0400	1.4	0.70	1.1	-	50	-	4	•
0140 050 0400 080	1.4	0.70	1.1	8.0	50	1.3	4	•
0140 050 0400 120	1.4	0.70	1.1	12.0	50	1.3	4	•
0140 050 0400 160	1.4	0.70	1.1	16.0	50	1.3	4	•
0150 050 0400	1.5	0.75	1.2	-	50	-	4	•
0150 050 0400 080	1.5	0.75	1.2	8.0	50	1.4	4	•
0150 050 0400 120	1.5	0.75	1.2	12.0	50	1.4	4	•
0150 050 0400 160	1.5	0.75	1.2	16.0	50	1.4	4	•
0150 060 0400	1.5	0.75	1.2	-	60	-	4	•
0150 060 0400 180	1.5	0.75	1.2	18.0	60	1.4	4	•
0160 050 0400	1.6	0.80	1.3	-	50	-	4	•
0160 050 0400 080	1.6	0.80	1.3	8.0	50	1.5	4	•
0160 050 0400 120	1.6	0.80	1.3	12.0	50	1.5	4	•
0160 050 0400 160	1.6	0.80	1.3	16.0	50	1.5	4	•
0160 060 0400	1.6	0.08	1. 3	-	60	-	4	•
0160 060 0400 200	1.6	0.80	1.3	20.0	60	1.5	4	•
0180 050 0400	1.8	0.90	1.4	-	50	-	4	•
0180 050 0400 080	1.8	0.90	1.4	8.0	50	1.7	4	•
0180 050 0400 120	1.8	0.90	1.4	12.0	50	1.7	4	•
0180 050 0400 160	1.8	0.90	1.4	16.0	50	1.7	4	•
0180 060 0400	1.8	0.90	1.4	-	60	-	4	•
0180 060 0400 200	1.8	0.90	1.4	20	60	1.7	4	•
0200 050 0400	2	1	1.6	-	50	-	4	•
0200 050 0400 040	2	1	1.6	4	50	1.9	4	•
0200 050 0400 060	2	1	1.6	6	50	1.9	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

418

若有技术规格变更，恕不事先通知

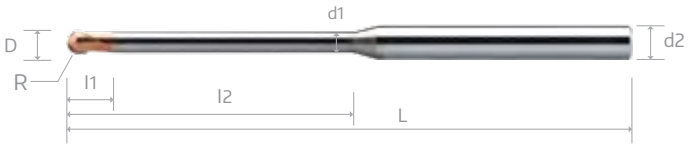
BN 60 MINIATURE BALLNOSE CUTTERS – with Long Neck

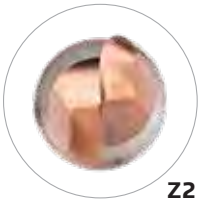
≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM BN 60 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60 系列 长颈短刃 球头 立铣刀 2 刃

A76*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A76*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0200 050 0400 080	2	1	1.6	8	50	1.9	4	•
0200 050 0400 100	2	1	1.6	10	50	1.9	4	•
0200 050 0400 120	2	1	1.6	12	50	1.9	4	•
0200 050 0400 140	2	1	1.6	14	50	1.9	4	•
0200 050 0400 160	2	1	1.6	16	50	1.9	4	•
0200 060 0400	2	1	1.6	-	60	-	4	•
0200 060 0400 180	2	1	1.6	18	60	1.9	4	•
0200 060 0400 200	2	1	1.6	20	60	1.9	4	•
0200 060 0400 220	2	1	1.6	22	60	1.9	4	•
0200 075 0400	2	1	1.6	-	75	-	4	•
0200 075 0400 250	2	1	1.6	25	75	1.9	4	•
0200 075 0400 300	2	1	1.6	30	75	1.9	4	•
0300 050 0600	3	1.5	2.4	-	50	-	6	•
0300 050 0600 080	3	1.5	2.4	8	50	2.8	6	•
0300 050 0600 100	3	1.5	2.4	10	50	2.8	6	•
0300 060 0600	3	1.5	2.4	-	60	-	6	•
0300 060 0600 160	3	1.5	2.4	16	60	2.8	6	•
0300 060 0600 200	3	1.5	2.4	20	60	2.8	6	•
0300 075 0600	3	1.5	2.4	-	75	-	6	•
0300 075 0600 250	3	1.5	2.4	25	75	2.8	6	•
0300 075 0600 300	3	1.5	2.4	30	75	2.8	6	•
0300 075 0600 350	3	1.5	2.4	35	75	2.8	6	•
0400 050 0600	4	2	3.2	-	50	-	6	•
0400 050 0600 100	4	2	3.2	10	50	3.7	6	•
0400 060 0600	4	2	3.2	-	60	-	6	•
0400 060 0600 160	4	2	3.2	16	60	3.7	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter

418

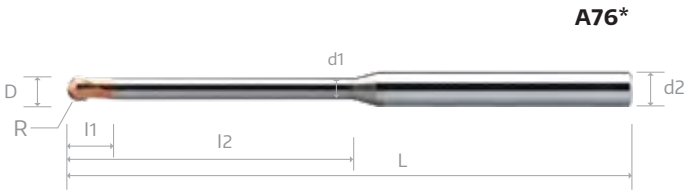
Technical specifications subject to change without prior notice

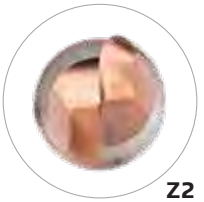
BN 60 MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 53 - 68 HRC

HPMT

VHM BN 60 Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60 à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60 a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60 系列 长颈短刃 球头 立铣刀 2 刃









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A76*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0400 060 0600 200	4	2	3.2	20	60	3.7	6	•
0400 075 0600	4	2	3.2	-	75	-	6	•
0400 075 0600 250	4	2	3.2	25	75	3.7	6	•
0400 075 0600 300	4	2	3.2	30	75	3.7	6	•
0400 075 0600 350	4	2	3.2	35	75	3.7	6	•
0400 100 0600	4	2	3.2	-	100	-	6	•
0400 100 0600 400	4	2	3.2	40	100	3.7	6	•
0400 100 0600 450	4	2	3.2	45	100	3.7	6	•
0400 100 0600 500	4	2	3.2	50	100	3.7	6	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

Cutting Parameter: 418

Technische änderungen ohne vorherige information vorbehalten

BN 60

BALLNOSE CUTTERS– with Taper Neck

≤ 1.600 N/mm² + B0909 ≤ 43 - 68 HRC

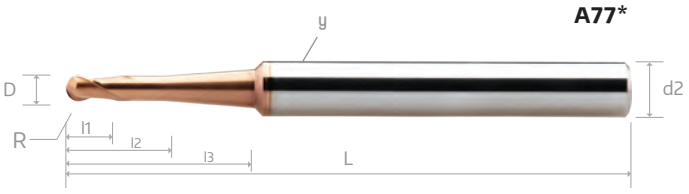
HPMT

VHM Torusfräser, - Standard, 2 Zähne

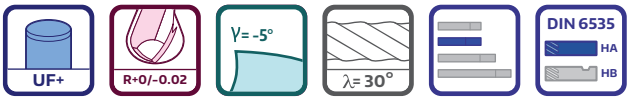
Fraises 2 tailles toriques en carbure monobloc - Standard, 2dents

Frese in metallo duro integrale - Standard, 2 taglienti

整体硬质合金 BN 60 系列 圆鼻 立铣刀 2 刃 - 标准长度







HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								A77*
= * + Ø data	D	R	l 1	l 2	l 3	L	d2 (h6)	y	B0909
0100 020 06 080	1.0	0.5	1.5	4.0	20	60	6	8°	•
0100 040 06 040	1.0	0.5	1.5	4.0	40	75	6	4°	•
0150 020 06 070	1.5	0.8	2.3	7.5	20	60	6	7°	•
0150 040 06 035	1.5	0.8	2.3	7.5	40	75	6	3.5°	•
0200 020 06 067	2.0	1.0	3.0	8.0	20	60	6	6.7°	•
0200 040 06 029	2.0	1.0	3.0	8.0	40	75	6	2.9°	•
0200 040 06 010	2.0	1.0	3.0	8.0	40	75	6	1°	•
0300 020 06 043	3.0	1.5	3.5	10.0	20	60	6	4.3°	•
0300 040 06 022	3.0	1.5	3.5	12.0	40	75	6	2.2°	•
0300 045 06 010	3.0	1.5	3.5	12.0	45	75	6	1°	•
0400 020 06 029	4.0	2.0	4.0	12.0	20	60	6	2.9°	•
0400 040 06 014	4.0	2.0	4.0	20.0	40	75	6	1.4°	•
0400 060 06 010	4.0	2.0	4.0	20.0	60	100	6	1°	•
0500 040 06 007	5.0	2.5	6.0	25.0	40	75	6	0.7°	•
0600 020 06 000	6.0	3.0	6.0	20.0	20	60	6	-	•
0600 040 06 000	6.0	3.0	6.0	40.0	40	75	6	-	•
0600 060 08 010	6.0	3.0	6.0	25.0	60	100	8	1°	•
0600 080 08 010	6.0	3.0	6.0	25.0	80	125	8	1°	•
0800 025 08 000	8.0	4.0	7.0	25.0	25	64	8	-	•
0800 060 08 000	8.0	4.0	7.0	60.0	60	100	8	-	•
0800 075 10 008	8.0	4.0	7.0	30.0	75	125	10	0.8°	•
0800 105 10 006	8.0	4.0	7.0	20.0	105	150	10	0.6°	•
1000 030 10 000	10.0	5.0	8.0	30.0	30	75	10	-	•
1000 075 10 000	10.0	5.0	8.0	75.0	75	125	10	-	•
1000 070 10 008	10.0	5.0	8.0	30.0	70	125	12	0.8°	•
1000 070 12 008	12.0	6.0	10.0	35.0	35	100	12	-	•
1200 070 12 000	12.0	6.0	10.0	70.0	70	125	12	-	•
1200 090 16 013	12.0	6.0	10.0	35.0	90	150	16	1.3°	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

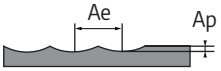
Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
													•	•		

421

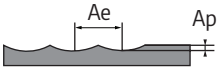
Spécifications techniques sujettes à changement sans avis prélable

Standard Ballnose Cutters 2 Flutes



Roughing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		52 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.029	80	0.024
2		0.041		0.034
3		0.053		0.043
4		0.059		0.048
5		0.082		0.067
6		0.094		0.077
8		0.105		0.086
10		0.117		0.096
12		0.129		0.106
14		0.134		0.110
16		0.140		0.115
18		0.147		0.120
20		0.151		0.124
22		0.152		0.125
25		0.152		0.125

Standard Ballnose Cutters 2 Flutes



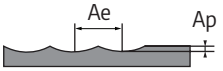
Finishing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.029	80	0.024
2		0.041		0.034
3		0.053		0.043
4		0.059		0.048
5		0.082		0.067
6		0.094		0.077
8		0.105		0.086
10		0.117		0.096
12		0.129		0.106
14		0.134		0.110
16		0.140		0.115
18		0.147		0.120
20		0.151		0.124
22		0.152		0.125
25		0.152		0.125



H

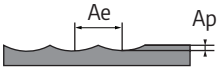
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Ballnose Cutters 2 Flutes



Roughing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.023	80	0.019
2		0.033		0.027
3		0.042		0.035
4		0.047		0.038
5		0.066		0.054
6		0.075		0.061
8		0.084		0.069
10		0.094		0.077
12		0.103		0.084
14		0.107		0.088
16		0.112		0.092
18		0.117		0.096
20		0.121		0.099
22		0.122		0.100
25		0.122		0.100

Long Ballnose Cutters 2 Flutes



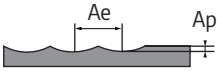
Finishing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.023	80	0.019
2		0.033		0.027
3		0.042		0.035
4		0.047		0.038
5		0.066		0.054
6		0.075		0.061
8		0.084		0.069
10		0.094		0.077
12		0.103		0.084
14		0.107		0.088
16		0.112		0.092
18		0.117		0.096
20		0.121		0.099
22		0.122		0.100
25		0.122		0.100



H

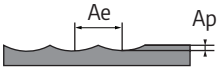
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Extra Long Ballnose Cutters 2 Flutes



Roughing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.021	80	0.017
2		0.029		0.024
3		0.037		0.030
4		0.041		0.034
5		0.057		0.047
6		0.066		0.054
8		0.073		0.060
10		0.082		0.067
12		0.090		0.074
14		0.093		0.077
16		0.098		0.080
18		0.103		0.084
20		0.106		0.087
22		0.106		0.087
25		0.107		0.088

Extra Long Ballnose Cutters 2 Flutes

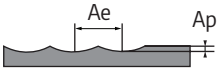


Finishing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	100	0.021	80	0.017
2		0.029		0.024
3		0.037		0.030
4		0.041		0.034
5		0.057		0.047
6		0.066		0.054
8		0.073		0.060
10		0.082		0.067
12		0.090		0.074
14		0.093		0.077
16		0.098		0.080
18		0.103		0.084
20		0.106		0.087
22		0.106		0.087
25		0.107		0.088

 **H**

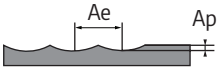
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Standard Ballnose Cutters 4 Flutes



Roughing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-
2	-	-	-	-
3	100	0.105	80	0.086
4		0.117		0.096
5		0.164		0.135
6		0.187		0.154
8		0.210		0.172
10		0.234		0.192
12		0.257		0.211
14		0.267		0.219
16		0.280		0.230
18		0.293		0.241
20		0.303		0.248
22		0.304		0.249
25		0.305		0.250

Standard Ballnose Cutters 4 Flutes



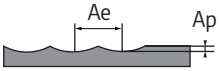
Finishing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-
2	-	-	-	-
3	100	0.105	80	0.086
4		0.117		0.096
5		0.164		0.135
6		0.187		0.154
8		0.210		0.172
10		0.234		0.192
12		0.257		0.211
14		0.267		0.219
16		0.280		0.230
18		0.293		0.241
20		0.303		0.249
22		0.304		0.249
25		0.304		0.250



H

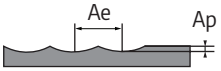
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Ballnose Cutters 4 Flutes



Roughing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-
2	-	-	-	-
3	100	0.084	80	0.069
4		0.094		0.077
5		0.131		0.108
6		0.150		0.123
8		0.168		0.137
10		0.187		0.154
12		0.206		0.169
14		0.214		0.175
16		0.224		0.184
18		0.235		0.193
20		0.242		0.199
22		0.243		0.200
25		0.244		0.200

Long Ballnose Cutters 4 Flutes



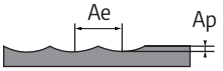
Finishing	H			
Working Material	Hardened Steel			
Properties	45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-
2	-	-	-	-
3	100	0.084	80	0.069
4		0.094		0.077
5		0.131		0.108
6		0.150		0.123
8		0.168		0.137
10		0.187		0.154
12		0.206		0.169
14		0.214		0.175
16		0.224		0.184
18		0.235		0.193
20		0.242		0.199
22		0.243		0.200
25		0.244		0.200



H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes



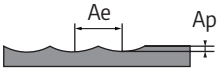
Profiling		H					
Working material		Hardened Steels			Hardened Steels		
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.013	25	0.003	0.012	25	0.003
	1.0	0.009	25	0.003	0.008	25	0.003
	1.5	0.005	25	0.003	0.005	24	0.002
0.3	1.0	0.014	38	0.005	0.013	38	0.004
	2.0	0.008	38	0.004	0.007	36	0.004
	3.0	0.005	38	0.004	0.005	36	0.004
0.4	1.0	0.026	45	0.005	0.024	42	0.005
	2.0	0.018	45	0.005	0.017	42	0.005
	3.0	0.010	41	0.004	0.010	38	0.004
	4.0	0.007	41	0.004	0.006	38	0.004
	5.0	0.003	36	0.004	0.002	38	0.004
0.5	2.0	0.023	47	0.009	0.021	44	0.009
	3.0	0.020	42	0.008	0.018	40	0.008
	4.0	0.013	42	0.008	0.012	40	0.008
	5.0	0.012	42	0.008	0.011	40	0.008
	6.0	0.008	38	0.008	0.008	35	0.007
	8.0	0.005	38	0.008	0.005	35	0.007
0.6	2.0	0.027	57	0.012	0.025	53	0.010
	3.0	0.022	57	0.012	0.020	53	0.010
	4.0	0.016	51	0.011	0.014	48	0.010
	5.0	0.013	51	0.011	0.012	48	0.005
	6.0	0.010	51	0.011	0.009	48	0.009
	8.0	0.010	45	0.010	0.009	42	0.008
0.8	2.0	0.052	75	0.015	0.048	70	0.014
	4.0	0.036	75	0.015	0.034	70	0.014
	5.0	0.029	68	0.014	0.027	63	0.013
	6.0	0.021	68	0.014	0.019	63	0.013
	7.0	0.017	64	0.014	0.016	60	0.013
	8.0	0.013	60	0.014	0.012	56	0.013
	10.0	0.013	60	0.013	0.012	56	0.012

cont' d ▶

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes



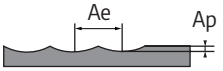
Profiling		H					
Working material		Hardened Steels			Hardened Steels		
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.0	3.0	0.065	85	0.021	0.060	79	0.020
	4.0	0.046	85	0.021	0.042	79	0.020
	5.0	0.039	85	0.021	0.036	79	0.020
	6.0	0.026	76	0.019	0.024	81	0.016
	7.0	0.026	76	0.019	0.024	71	0.018
	8.0	0.026	76	0.019	0.024	71	0.018
	9.0	0.020	76	0.019	0.018	71	0.018
	10.0	0.016	76	0.019	0.015	71	0.018
	12.0	0.016	68	0.018	0.015	63	0.017
	14.0	0.013	68	0.017	0.012	63	0.017
	20.0	0.007	51	0.017	0.006	47	0.016
1.2	6.0	0.029	81	0.022	0.027	76	0.020
	8.0	0.026	81	0.022	0.024	76	0.020
	10.0	0.023	81	0.021	0.021	76	0.019
	12.0	0.020	81	0.020	0.018	76	0.018
1.4	8.0	0.033	83	0.026	0.033	77	0.025
	12.0	0.023	83	0.024	0.021	77	0.022
	16.0	0.023	74	0.022	0.021	69	0.021
1.5	8.0	0.039	89	0.024	0.036	83	0.022
	12.0	0.039	89	0.024	0.036	83	0.022
	16.0	0.025	79	0.023	0.023	74	0.021
	18.0	0.018	79	0.023	0.016	74	0.021
1.6	8.0	0.072	98	0.030	0.066	91	0.028
	12.0	0.042	88	0.027	0.039	82	0.025
	16.0	0.026	88	0.027	0.024	82	0.025
	20.0	0.026	78	0.026	0.024	73	0.024
1.8	8.0	0.085	110	0.033	0.078	103	0.030
	12.0	0.046	100	0.030	0.042	93	0.027
	16.0	0.029	100	0.030	0.027	93	0.027
	20.0	0.029	88	0.028	0.027	83	0.025

cont' d ▶

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes

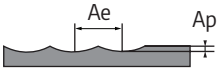


Profiling		H					
Working material		Hardened Steels			Hardened Steels		
Properties		45 ≤ HRC < 52			52 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
2.0	4.0	0.130	99	0.043	0.120	92	0.040
	6.0	0.130	99	0.038	0.120	92	0.036
	8.0	0.091	99	0.038	0.084	92	0.036
	10.0	0.091	99	0.034	0.084	92	0.032
	12.0	0.052	89	0.034	0.000	83	0.032
	14.0	0.052	89	0.034	0.048	83	0.032
	16.0	0.052	89	0.031	0.048	83	0.029
	18.0	0.039	89	0.031	0.036	83	0.029
	20.0	0.033	89	0.031	0.030	83	0.029
	22.0	0.033	84	0.029	0.030	79	0.027
	25.0	0.033	79	0.029	0.030	74	0.027
	30.0	1.950	79	0.029	0.180	74	0.027
3.0	8.0	0.195	113	0.063	0.180	106	0.060
	10.0	0.137	113	0.063	0.126	106	0.060
	16.0	0.137	113	0.057	0.126	106	0.054
	20.0	0.078	102	0.057	0.072	95	0.054
	25.0	0.052	102	0.057	0.048	102	0.050
	30.0	0.052	102	0.057	0.048	95	0.054
	35.0	0.052	90	0.054	0.048	85	0.051
4.0	10.0	0.260	108	0.085	0.240	102	0.080
	16.0	0.182	108	0.085	0.168	102	0.080
	20.0	0.182	108	0.085	0.168	102	0.080
	25.0	0.104	98	0.076	0.096	90	0.072
	30.0	0.104	98	0.076	0.096	90	0.072
	35.0	0.065	98	0.076	0.060	90	0.072
	40.0	0.065	98	0.076	0.060	90	0.072
	45.0	0.065	87	0.072	0.060	80	0.069
	50.0	0.065	87	0.072	0.060	80	0.069

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Taper Neck 2 Flutes



Profiling		H					
Working material		Hardened Steels			Hardened Steels		
Properties		45 ≤ HRC < 52s			53 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.0	4.0	0.036	52	0.040	0.033	52	0.035
1.5	7.5	0.046	52	0.060	0.042	52	0.053
2.0	8.0	0.098	62	0.080	0.090	62	0.070
3.0	10.0	0.176	78	0.119	0.162	78	0.105
	12.0	0.176	78	0.119	0.162	78	0.105
4.0	12.0	0.208	98	0.108	0.192	98	0.102
	20.0	0.208	98	0.108	0.192	98	0.102
5.0	25.0	0.221	97	0.102	0.204	97	0.096
6.0	20.0	0.293	98	0.113	0.270	98	0.107
	25.0	0.293	98	0.113	0.270	98	0.107
	40.0	0.260	98	0.101	0.240	98	0.095
8.0	20.0	0.325	98	0.109	0.300	98	0.104
	25.0	0.325	98	0.109	0.300	98	0.104
	30.0	0.325	98	0.109	0.300	98	0.104
	60.0	0.280	98	0.109	0.258	98	0.104
10.0	30.0	0.325	97	0.121	0.300	97	0.115
	75.0	0.325	97	0.121	0.300	97	0.115
12.0	35.0	0.325	98	0.135	0.300	98	0.129
	70.0	0.325	98	0.135	0.300	98	0.129

H

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



BN 60X/P

- Designed to bring you premium features and benefits
- With upgraded better surface finishing and wear resistant

For material application 40 - 68 HRC

BN 60X/P

01

RADIUS TOLERANCE

BN60X Radius Tolerance

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

BN60P Radius Tolerance

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

02

ENHANCED GEOMETRY DESIGN

- Enhances tool stability and rigidity
- Improves finishing application



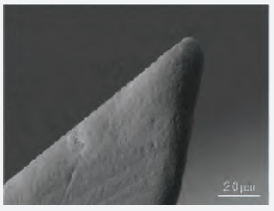
03

UNIQUE CUTTING EDGE TREATMENT

- Reduces tool chipping
- Prolongs tool life



Before



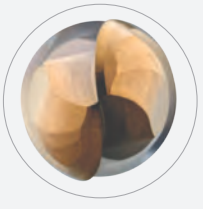
After

04

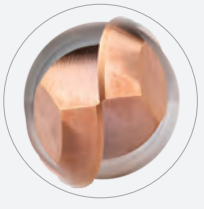
SUITABLE TO MACHINE MATERIAL FROM 40 TO 60 HRC FOR

- Profilling application
- Semi finishing application
- Finishing application

END FACE VIEW - DIFFERENT GRINDING METHOD



BN60X Ballnose



HPMT Standard Ballnose

05

SUITABLE FOR MATERIAL GRAPHITE

P **H**

DEUTSCH

01 **RADIUSTOLERANZ**
- BN60X Radiustoleranz
- BN60P Radiustoleranz

02 **VERBESSERTE WERKZEUGGEOMETRIE**
- Verbessert die Werkzeugstabilität und -steifigkeit
- Verbessert die Schlichtfräsanwendung

03 **EINZIGARTIGE BEHANDLUNG DER SCHNEIDKANTEN**
- Reduziert das Absplittern des Werkzeugs
- Verlängert die Werkzeuglebensdauer

04 **GEEIGNET FÜR MATERIALHÄRTE VON 40 BIS 60 HRC AN:**
- Profilfräsanwendung
- Vorschlichtfräsanwendung
- Schlichtfräsanwendung

05 **GEEIGNET FÜR MATERIALGRUPPEN P, H**

FRANÇAIS

01 **TOLERANCE DU RAYON**
- BN60X Radius Tolerance
- BN60P Radius Tolerance

02 **CONCEPTION DE LA GÉOMETRIE AMELIORÉE**
- Ameliore la rigidité et la stabilité de l'outil
- Ameliore l'application de finition

03 **PREPARATION UNIQUE DE L'ARETE DE COUPE**

04 **CONVIENT POUR L'USINAGE DES MATIERES DE 40 À 60 HRC**
- application de copiage
- Application de semi finition
- Application de finition

05 **CONVIENT POUR LES GROUPES MATIERES**

ITALIANO

01 **TOLLERANZA SUL RAGGIO**
- BN60X: tolleranza sul raggio
- BN60P: tolleranza sul raggio

02 **GEOMETRIA MIGLIORATA**
- Maggiore stabilità e rigidità
- Miglior finitura

03 **INNOVATIVA PREPARAZIONE DEL TAGLIENTE**
- Riduce il ischio di scheggiature
- Aumenta la durata dell'utensile

04 **ADATTA ALLA FRESATURA DI MATERIALI DA 40 A 60HRC IN APPLICAZIONI DI**
- Copiatura
- Semi finitura
- Finitura

05 **ADATTA PER GRUPPI MATERIALE P, H**

中文

01 **圆弧公差**
- BN60X
- BN60P

02 **增强刀具几何设计**
- 增强刀具稳定度和刚性
- 提高精加工

03 **特殊切削刃设置**
- 减少刀具磨损
- 提高刀具寿命

04 **适用于40至60洛氏硬度加工材料**
- 仿形銑削
- 半加工
- 精加工

05 **适合加工硬化钢的材料**

BN 60X

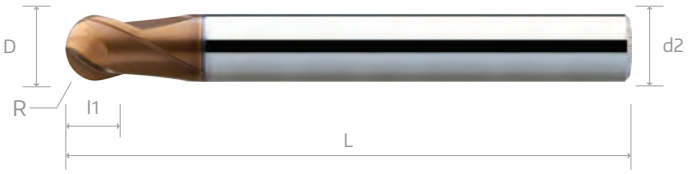
STANDARD BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM Standard BN 60X Radiusschaftfräser, 2 Zähne	Fraises BN 60X Standard en carbure monobloc, à bout hémisphérique, 2 dents
Frese cilindriche a raggio in metallo duro integrale, tipo BN 60X Standard, 2 taglienti	整体硬质合金 BN 60X 系列 球头 立铣刀 2 刃 - 标准长度

A4Q*





Z2

UF+ | γ = 0° | λ = 30° | DIN 6535 HA HB | HSC B0909 TiSiN

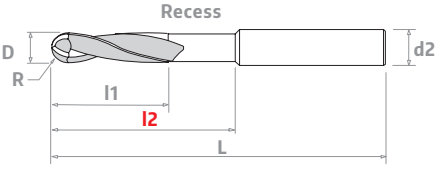
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A4Q*
= * + Ø data	D	R	l1	l2	L	d2 (h6)	B0909
0050	0.5	0.25	0.5		50	4	•
0060	0.6	0.3	0.6		50	4	•
0080	0.8	0.4	0.8		50	4	•
0100	1	0.5	1	4	50	4	•
0150	1.5	0.75	1.5	6	50	4	•
0200	2	1	2	8	50	4	•
0250	2.5	1.25	2.5	10	50	4	•
0300 050 04	3	1.5	3	14	50	4	•
0300 050 06	3	1.5	3	14	50	6	•
0400 050 06	4	2	4	20	50	6	•
0500 050 06	5	2.5	5	20	50	6	•
0600 050	6	3	6	20	50	6	•
0600 060	6	3	6	30	60	6	•
0800	8	4	8	30	64	8	•
1000	10	5	10	32	70	10	•
1200	12	6	12	38	75	12	•
1600	16	8	16	46	90	16	○
1800	18	9	18	53	100	18	○
2000	20	10	20	58	100	20	○

A4R*

BN 60X/P

Tools with recess upon request

Fräser mit Freistellung auf Bestellung	Outils a vec dégagemen t sur demande
Utensilli con riduzione gambo su richiest a	密齿立铣刀带颈位特别要求



Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter: 438

Technical specifications subject to change without prior notice

BN 60X MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60X Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60X à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60X a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60X 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A4S*





Z2



HSC B0909 TISiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A4S*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0020 050 0400	0.2	0.10	0.15	-	50	-	4	•
0020 050 0400 005	0.2	0.10	0.15	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.10	0.15	1	50	0.17	4	•
0020 050 0400 015	0.2	0.10	0.15	1.5	50	0.17	4	•
0030 050 0400	0.3	0.15	0.23	-	50	-	4	•
0030 050 0400 010	0.3	0.15	0.23	1	50	0.27	4	•
0030 050 0400 020	0.3	0.15	0.23	2	50	0.27	4	•
0030 050 0400 030	0.3	0.15	0.23	3	50	0.27	4	•
0040 050 0400	0.4	0.2	0.30	-	50	-	4	•
0040 050 0400 010	0.4	0.20	0.30	1	50	0.37	4	•
0040 050 0400 020	0.4	0.20	0.30	2	50	0.37	4	•
0040 050 0400 030	0.4	0.20	0.30	3	50	0.37	4	•
0040 050 0400 040	0.4	0.20	0.30	4	50	0.37	4	•
0040 050 0400 050	0.4	0.20	0.30	5	50	0.37	4	•
0050 050 0400	0.5	0.25	0.35	-	50	-	4	•
0050 050 0400 020	0.5	0.25	0.35	2	50	0.45	4	•
0050 050 0400 030	0.5	0.25	0.35	3	50	0.45	4	•
0050 050 0400 040	0.5	0.25	0.35	4	50	0.45	4	•
0050 050 0400 050	0.5	0.25	0.35	5	50	0.45	4	•
0050 050 0400 060	0.5	0.25	0.35	6	50	0.45	4	•
0050 050 0400 080	0.5	0.25	0.35	8	50	0.45	4	•
0060 050 0400	0.6	0.3	0.42	-	50	-	4	•
0060 050 0400 020	0.6	0.30	0.42	2	50	0.55	4	•
0060 050 0400 030	0.6	0.30	0.42	3	50	0.55	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter: 439

BN 60X MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60X Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60X à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60X a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60X 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A4S*





Z2



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A4S*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0060 050 0400 040	0.6	0.30	0.42	4	50	0.55	4	•
0060 050 0400 050	0.6	0.30	0.42	5	50	0.55	4	•
0060 050 0400 060	0.6	0.30	0.42	6	50	0.55	4	•
0060 050 0400 080	0.6	0.30	0.42	8	50	0.55	4	•
0080 050 0400	0.8	0.4	0.48	-	50	-	4	•
0080 050 0400 020	0.8	0.40	0.48	2	50	0.75	4	•
0080 050 0400 040	0.8	0.40	0.48	4	50	0.75	4	•
0080 050 0400 050	0.8	0.40	0.48	5	50	0.75	4	•
0080 050 0400 060	0.8	0.40	0.48	6	50	0.75	4	•
0080 050 0400 070	0.8	0.40	0.48	7	50	0.75	4	•
0080 050 0400 080	0.8	0.40	0.48	8	50	0.75	4	•
0080 050 0400 100	0.8	0.40	0.48	10	50	0.75	4	•
0100 050 0400	1.0	0.50	0.80	-	50	-	4	•
0100 050 0400 030	1.0	0.50	0.80	3	50	0.9	4	•
0100 050 0400 040	1.0	0.50	0.80	4	50	0.9	4	•
0100 050 0400 050	1.0	0.50	0.80	5	50	0.9	4	•
0100 050 0400 060	1.0	0.50	0.80	6	50	0.9	4	•
0100 050 0400 070	1.0	0.50	0.80	7	50	0.9	4	•
0100 050 0400 080	1.0	0.50	0.80	8	50	0.9	4	•
0100 050 0400 090	1.0	0.50	0.80	9	50	0.9	4	•
0100 050 0400 100	1.0	0.50	0.80	10	50	0.9	4	•
0100 050 0400 120	1.0	0.50	0.80	12	50	0.9	4	•
0100 050 0400 140	1.0	0.50	0.80	14	50	0.9	4	•
0100 050 0400 160	1.0	0.50	0.80	16	50	0.9	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter 439

Spécifications techniques sujettes à changement sans avis prélable

BN 60X

MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60X Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60X à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60X a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60X 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A4S*





Z2



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A4S*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0100 060 0400	1.0	0.50	0.80	-	60	-	4	•
0100 060 0400 200	1.0	0.50	0.80	20	60	0.9	4	•
0120 050 0400	1.2	0.60	1.08	-	50	-	4	•
0120 050 0400 060	1.2	0.60	1.08	6	50	1.1	4	•
0120 050 0400 080	1.2	0.60	1.08	8	50	1.1	4	•
0120 050 0400 100	1.2	0.60	1.08	10	50	1.1	4	•
0120 050 0400 120	1.2	0.60	1.08	12	50	1.1	4	•
0140 050 0400	1.4	0.70	1.26	-	50	-	4	•
0140 050 0400 080	1.4	0.70	1.26	8	50	1.3	4	•
0140 050 0400 120	1.4	0.70	1.26	12	50	1.3	4	•
0140 050 0400 160	1.4	0.70	1.26	16	50	1.3	4	•
0150 050 0400	1.5	0.75	1.35	-	50	-	4	•
0150 050 0400 080	1.5	0.75	1.35	8	50	1.4	4	•
0150 050 0400 120	1.5	0.75	1.35	12	50	1.4	4	•
0150 050 0400 160	1.5	0.75	1.35	16	50	1.4	4	•
0150 060 0400	1.5	0.75	1.35	-	60	-	4	•
0150 060 0400 180	1.5	0.75	1.35	18	60	1.4	4	•
0160 050 0400	1.6	0.80	1.44	-	50	-	4	•
0160 050 0400 080	1.6	0.80	1.44	8	50	1.5	4	•
0160 050 0400 120	1.6	0.80	1.44	12	50	1.5	4	•
0160 050 0400 160	1.6	0.80	1.44	16	50	1.5	4	•
0160 060 0400	1.6	0.80	1.44	-	60	-	4	•
0160 060 0400 200	1.6	0.80	1.44	20	60	1.5	4	•
0180 050 0400	1.8	0.90	1.62	-	50	-	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter

439

BN 60X MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60X Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60X à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60X a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60X 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A4S*





Z2



HSC B0909 TISiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A4S*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0180 050 0400 080	1.8	0.90	1.62	8	50	1.7	4	•
0180 050 0400 120	1.8	0.90	1.62	12	50	1.7	4	•
0180 050 0400 160	1.8	0.90	1.62	16	50	1.7	4	•
0180 060 0400	1.8	0.9	1.62	-	60	-	4	•
0180 060 0400 200	1.8	0.9	1.62	20	60	1.7	4	•
0200 050 0400	2	1	1.70	-	50	-	4	•
0200 050 0400 040	2	1	1.70	4	50	1.9	4	•
0200 050 0400 060	2	1	1.70	6	50	1.9	4	•
0200 050 0400 080	2	1	1.70	8	50	1.9	4	•
0200 050 0400 100	2	1	1.70	10	50	1.9	4	•
0200 050 0400 120	2	1	1.70	12	50	1.9	4	•
0200 050 0400 140	2	1	1.70	14	50	1.9	4	•
0200 050 0400 160	2	1	1.70	16	50	1.9	4	•
0200 060 0400	2	1	1.70	-	60	-	4	•
0200 060 0400 180	2	1	1.70	18	60	1.9	4	•
0200 060 0400 200	2	1	1.70	20	60	1.9	4	•
0200 060 0400 220	2	1	1.70	22	60	1.9	4	•
0200 075 0400	2	1	1.70	-	75	-	4	•
0200 075 0400 250	2	1	1.70	25	75	1.9	4	•
0200 075 0400 300	2	1	1.70	30	75	1.9	4	•
0300 050 0600	3	1.5	2.40	-	50	-	6	•
0300 050 0600 080	3	1.5	2.40	8	50	2.8	6	•
0300 050 0600 100	3	1.5	2.40	10	50	2.8	6	•
0300 060 0600	3	1.5	2.40	-	60	-	6	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter 439

若有技术规格变更，恕不事先通知

BN 60X

MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60X Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60X à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60X a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60X 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A4S*





Z2



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A4S*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0300 060 0600 160	3	1.5	2.40	16	60	2.8	6	•
0300 060 0600 200	3	1.5	2.40	20	60	2.8	6	•
0300 075 0600	3	1.5	2.40	-	75	-	6	•
0300 075 0600 250	3	1.5	2.40	25	75	2.8	6	•
0300 075 0600 300	3	1.5	2.40	30	75	2.8	6	•
0300 075 0600 350	3	1.5	2.40	35	75	2.8	6	•
0400 050 0600	4	2	3.00	-	50	-	6	•
0400 050 0600 100	4	2	3.00	10	50	3.7	6	•
0400 060 0600 160	4	2	3.00	16	60	3.7	6	•
0400 060 0600 200	4	2	3.00	20	60	3.7	6	•
0400 075 0600	4	2	3.00	-	75	-	6	•
0400 075 0600 250	4	2	3.00	25	75	3.7	6	•
0400 075 0600 300	4	2	3.00	30	75	3.7	6	•
0400 075 0600 350	4	2	3.00	35	75	3.7	6	•
0400 100 0600	4	2	3.00	-	100	-	6	•
0400 100 0600 400	4	2	3.00	40	100	3.7	6	•
0400 100 0600 450	4	2	3.00	45	100	3.7	6	•
0400 100 0600 500	4	2	3.00	50	100	3.7	6	•

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.012
Ø > 3	+0.000 -0.020

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter

439

BN 60P STANDARD BALLNOSE CUTTERS

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

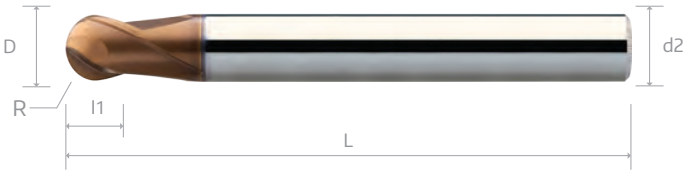
VHM Standard BN 60P Radiusschaftfräser, 2 Zähne

Fraises BN 60P Standard en carbure mono-bloc, à bout hémisphérique, 2 dents

Frese cilindriche a raggio in metallo duro integrale, tipo BN 60P Standard, 2 taglienti

整体硬质合金 BN 60P 系列 球头 立铣刀 2 刃 - 标准长度

A4T*





Z2



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						A4T*
= * + Ø data	D	R	l1	l2	L	d2 (h6)	B0909
0050	0.5	0.25	0.5		50	4	•
0060	0.6	0.3	0.6		50	4	•
0080	0.8	0.4	0.8		50	4	•
0100	1	0.5	1	4	50	4	•
0150	1.5	0.75	1.5	6	50	4	•
0200	2	1	2	8	50	4	•
0250	2.5	1.25	2.5	10	50	4	•
0300 050 04	3	1.5	3	14	50	4	•
0300 050 06	3	1.5	3	14	50	6	•
0400 050 06	4	2	4	20	50	6	•
0500 050 06	5	2.5	5	20	50	6	•
0600 050	6	3	6	20	50	6	•
0600 060	6	3	6	30	60	6	•
0800	8	4	8	30	64	8	•
1000	10	5	10	32	70	10	•
1200	12	6	12	38	75	12	•
1600	16	8	16	46	90	16	•
1800	18	9	18	53	100	18	•
2000	20	10	20	58	100	20	•

A5A*

BN 60X/P

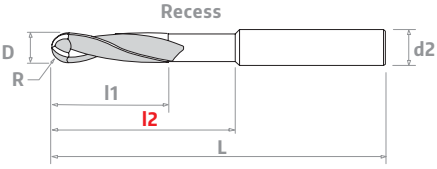
Tools with recess upon request

Fräser mit Freistellung auf Bestellung

Outils a vec dégagemen t sur demande

Utensilli con riduzione gambo su richiest a

密齿立铣刀带颈位特别要求



Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter

438

Technische änderungen ohne vorherige information vorbehalten

BN 60P MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60P Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60P à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60P a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60P 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A5B*





Z2



HSC B0909 TISiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A5B*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0020 050 0400	0.2	0.10	0.15	-	50	-	4	•
0020 050 0400 005	0.2	0.10	0.15	0.5	50	0.17	4	•
0020 050 0400 010	0.2	0.10	0.15	1	50	0.17	4	•
0020 050 0400 015	0.2	0.10	0.15	1.5	50	0.17	4	•
0030 050 0400	0.3	0.15	0.23	-	50	-	4	•
0030 050 0400 010	0.3	0.15	0.23	1	50	0.27	4	•
0030 050 0400 020	0.3	0.15	0.23	2	50	0.27	4	•
0030 050 0400 030	0.3	0.15	0.23	3	50	0.27	4	•
0040 050 0400	0.4	0.2	0.30	-	50	-	4	•
0040 050 0400 010	0.4	0.20	0.30	1	50	0.37	4	•
0040 050 0400 020	0.4	0.20	0.30	2	50	0.37	4	•
0040 050 0400 030	0.4	0.20	0.30	3	50	0.37	4	•
0040 050 0400 040	0.4	0.20	0.30	4	50	0.37	4	•
0040 050 0400 050	0.4	0.20	0.30	5	50	0.37	4	•
0050 050 0400	0.5	0.25	0.35	-	50	-	4	•
0050 050 0400 020	0.5	0.25	0.35	2	50	0.45	4	•
0050 050 0400 030	0.5	0.25	0.35	3	50	0.45	4	•
0050 050 0400 040	0.5	0.25	0.35	4	50	0.45	4	•
0050 050 0400 050	0.5	0.25	0.35	5	50	0.45	4	•
0050 050 0400 060	0.5	0.25	0.35	6	50	0.45	4	•
0050 050 0400 080	0.5	0.25	0.35	8	50	0.45	4	•
0060 050 0400	0.6	0.3	0.42	-	50	-	4	•
0060 050 0400 020	0.6	0.30	0.42	2	50	0.55	4	•
0060 050 0400 030	0.6	0.30	0.42	3	50	0.55	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter

439

BN 60P MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

VHM BN 60P Kleinstradiusfräser mit langem Hals, 2 Zähne

Micro-fraises BN 60P à bout hémisphérique en carbure monobloc avec cou long, 2 dents

Micro-frese cilindriche BN 60P a raggio con collo lungo in metallo duro integrale, 2 taglienti

整体硬质合金 BN 60P 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A5B*





Z2



HSC B0909 TISIN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A5B*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0060 050 0400 040	0.6	0.30	0.42	4	50	0.55	4	•
0060 050 0400 050	0.6	0.30	0.42	5	50	0.55	4	•
0060 050 0400 060	0.6	0.30	0.42	6	50	0.55	4	•
0060 050 0400 080	0.6	0.30	0.42	8	50	0.55	4	•
0080 050 0400	0.8	0.4	0.48	-	50	-	4	•
0080 050 0400 020	0.8	0.40	0.48	2	50	0.75	4	•
0080 050 0400 040	0.8	0.40	0.48	4	50	0.75	4	•
0080 050 0400 050	0.8	0.40	0.48	5	50	0.75	4	•
0080 050 0400 060	0.8	0.40	0.48	6	50	0.75	4	•
0080 050 0400 070	0.8	0.40	0.48	7	50	0.75	4	•
0080 050 0400 080	0.8	0.40	0.48	8	50	0.75	4	•
0080 050 0400 100	0.8	0.40	0.48	10	50	0.75	4	•
0100 050 0400	1.0	0.50	0.80	-	50	-	4	•
0100 050 0400 030	1.0	0.50	0.80	3	50	0.9	4	•
0100 050 0400 040	1.0	0.50	0.80	4	50	0.9	4	•
0100 050 0400 050	1.0	0.50	0.80	5	50	0.9	4	•
0100 050 0400 060	1.0	0.50	0.80	6	50	0.9	4	•
0100 050 0400 070	1.0	0.50	0.80	7	50	0.9	4	•
0100 050 0400 080	1.0	0.50	0.80	8	50	0.9	4	•
0100 050 0400 090	1.0	0.50	0.80	9	50	0.9	4	•
0100 050 0400 100	1.0	0.50	0.80	10	50	0.9	4	•
0100 050 0400 120	1.0	0.50	0.80	12	50	0.9	4	•
0100 050 0400 140	1.0	0.50	0.80	14	50	0.9	4	•
0100 050 0400 160	1.0	0.50	0.80	16	50	0.9	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

439

Modifiche Techiche possibili senza preavviso

BN 60P

MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60P Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60P à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60P a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60P 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A5B*





Z2



HSC B0909 TiSiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A5B*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0100 060 0400	1.0	0.50	0.80	-	60	-	4	•
0100 060 0400 200	1.0	0.50	0.80	20	60	0.9	4	•
0120 050 0400	1.2	0.60	1.08	-	50	1.1	4	•
0120 050 0400 060	1.2	0.60	1.08	6	50	1.1	4	•
0120 050 0400 080	1.2	0.60	1.08	8	50	1.1	4	•
0120 050 0400 100	1.2	0.60	1.08	10	50	1.1	4	•
0120 050 0400 120	1.2	0.60	1.08	12	50	1.1	4	•
0140 050 0400	1.4	0.70	1.26	-	50	-	4	•
0140 050 0400 080	1.4	0.70	1.26	8	50	1.3	4	•
0140 050 0400 120	1.4	0.70	1.26	12	50	1.3	4	•
0140 050 0400 160	1.4	0.70	1.26	16	50	1.3	4	•
0150 050 0400	1.5	0.75	1.35	-	50	-	4	•
0150 050 0400 080	1.5	0.75	1.35	8	50	1.4	4	•
0150 050 0400 120	1.5	0.75	1.35	12	50	1.4	4	•
0150 050 0400 160	1.5	0.75	1.35	16	50	1.4	4	•
0150 060 0400	1.5	0.75	1.35	-	60	-	4	•
0150 060 0400 180	1.5	0.75	1.35	18	60	1.4	4	•
0160 050 0400	1.6	0.80	1.44	-	50	-	4	•
0160 050 0400 080	1.6	0.80	1.44	8	50	1.5	4	•
0160 050 0400 120	1.6	0.80	1.44	12	50	1.5	4	•
0160 050 0400 160	1.6	0.80	1.44	16	50	1.5	4	•
0160 060 0400	1.6	0.80	1.44	-	60	-	4	•
0160 060 0400 200	1.6	0.80	1.44	20	60	1.5	4	•
0180 050 0400	1.8	0.90	1.62	-	50	-	4	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

Cutting Parameter: 439

若有技术规格变更，恕不事先通知

BN 60P MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60P Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60P à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60P a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60P 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A5B*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0180 050 0400 080	1.8	0.90	1.62	8	50	1.7	4	•
0180 050 0400 120	1.8	0.90	1.62	12	50	1.7	4	•
0180 050 0400 160	1.8	0.90	1.62	16	50	1.7	4	•
0180 060 0400	1.8	0.9	1.62	-	60	-	4	•
0180 060 0400 200	1.8	0.9	1.62	20	60	1.7	4	•
0200 050 0400	2	1	1.70	-	50	-	4	•
0200 050 0400 040	2	1	1.70	4	50	1.9	4	•
0200 050 0400 060	2	1	1.70	6	50	1.9	4	•
0200 050 0400 080	2	1	1.70	8	50	1.9	4	•
0200 050 0400 100	2	1	1.70	10	50	1.9	4	•
0200 050 0400 120	2	1	1.70	12	50	1.9	4	•
0200 050 0400 140	2	1	1.70	14	50	1.9	4	•
0200 050 0400 160	2	1	1.70	16	50	1.9	4	•
0200 060 0400	2	1	1.70	-	60	-	4	•
0200 060 0400 180	2	1	1.70	18	60	1.9	4	•
0200 060 0400 200	2	1	1.70	20	60	1.9	4	•
0200 060 0400 220	2	1	1.70	22	60	1.9	4	•
0200 075 0400	2	1	1.70	-	75	-	4	•
0200 075 0400 250	2	1	1.70	25	75	1.9	4	•
0200 075 0400 300	2	1	1.70	30	75	1.9	4	•
0300 050 0600	3	1.5	2.40	-	50	-	6	•
0300 050 0600 080	3	1.5	2.40	8	50	2.8	6	•
0300 050 0600 100	3	1.5	2.40	10	50	2.8	6	•
0300 060 0600	3	1.5	2.40	-	60	-	6	•

cont'd ▶

Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

439

Technical specifications subject to change without prior notice

BN 60P MINIATURE BALLNOSE CUTTERS – with Long Neck

≤ 1.600 N/mm² + B0909 ≤ 40 - 68 HRC

HPMT

VHM BN 60P Kleinstradiusfräser mit langem Hals, 2 Zähne	Micro-fraises BN 60P à bout hémisphérique en carbure monobloc avec cou long, 2 dents
Micro-frese cilindriche BN 60P a raggio con collo lungo in metallo duro integrale, 2 taglienti	整体硬质合金 BN 60P 系列 长颈短刃 球头 立铣刀 2 刃 - Ø6柄

A5B*





Z2



HSC B0909 TISiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							A5B*
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	B0909
0300 060 0600 160	3	1.5	2.40	16	60	2.8	6	•
0300 060 0600 200	3	1.5	2.40	20	60	2.8	6	•
0300 075 0600	3	1.5	2.40	-	75	-	6	•
0300 075 0600 250	3	1.5	2.40	25	75	2.8	6	•
0300 075 0600 300	3	1.5	2.40	30	75	2.8	6	•
0300 075 0600 350	3	1.5	2.40	35	75	2.8	6	•
0400 050 0600	4	2	3.00	-	50	-	6	•
0400 050 0600 100	4	2	3.00	10	50	3.7	6	•
0400 060 0600 160	4	2	3.00	16	60	3.7	6	•
0400 060 0600 200	4	2	3.00	20	60	3.7	6	•
0400 075 0600	4	2	3.00	-	75	-	6	•
0400 075 0600 250	4	2	3.00	25	75	3.7	6	•
0400 075 0600 300	4	2	3.00	30	75	3.7	6	•
0400 075 0600 350	4	2	3.00	35	75	3.7	6	•
0400 100 0600	4	2	3.00	-	100	-	6	•
0400 100 0600 400	4	2	3.00	40	100	3.7	6	•
0400 100 0600 450	4	2	3.00	45	100	3.7	6	•
0400 100 0600 500	4	2	3.00	50	100	3.7	6	•

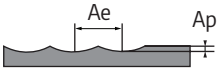
Diameter	Radius Tolerance
Ø ≤ 3	+0.000 -0.006
Ø > 3	+0.000 -0.010

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							•						•	○		

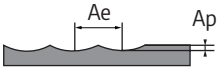
Cutting Parameter: 439

Standard Ballnose Cutters 2 Flutes



Roughing	P		H			
Working Material	Prehardened Steel		Hardened Steel			
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.10 × D		0.10 × D		0.07 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.21 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	140	0.043	120	0.035	100	0.029
2		0.060		0.049		0.040
3		0.078		0.063		0.052
4		0.087		0.070		0.058
5		0.121		0.098		0.081
6		0.138		0.112		0.092
8		0.155		0.126		0.103
10		0.173		0.140		0.115
12		0.190		0.154		0.127
14		0.197		0.160		0.132
16		0.207		0.168		0.138
18		0.216		0.176		0.144
20		0.224		0.182		0.149
22		0.224		0.182		0.150
25		0.225		0.183		0.150

Standard Ballnose Cutters 2 Flutes



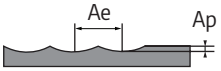
Finishing	P		H			
Working Material	Prehardened Steel		Hardened Steel			
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
Cutting Depth, Ap (mm)	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, Ae (mm)	0.02 × D		0.02 × D		0.02 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	140	0.043	120	0.035	100	0.029
2		0.060		0.049		0.040
3		0.078		0.063		0.052
4		0.087		0.070		0.058
5		0.121		0.098		0.081
6		0.138		0.112		0.092
8		0.155		0.126		0.103
10		0.173		0.140		0.115
12		0.190		0.154		0.127
14		0.197		0.160		0.132
16		0.207		0.168		0.138
18		0.216		0.176		0.144
20		0.224		0.182		0.149
22		0.224		0.182		0.150
25		0.225		0.183		0.150



Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes



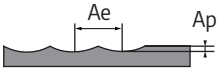
Profiling		P			H					
Working material		Pre-hardened Steels			Hardened Steel					
Properties		35 ≤ HRC < 45			45 ≤ HRC < 52			53 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.2	0.5	0.016	25	0.005	0.013	25	0.004	0.012	25	0.003
	1.0	0.011	25	0.005	0.009	25	0.004	0.008	25	0.003
	1.5	0.006	25	0.004	0.005	25	0.003	0.005	25	0.003
0.3	1.0	0.017	38	0.007	0.014	38	0.006	0.013	38	0.005
	2.0	0.010	38	0.005	0.008	38	0.005	0.007	38	0.004
	3.0	0.006	38	0.005	0.005	38	0.005	0.005	38	0.004
0.4	1.0	0.032	50	0.007	0.026	50	0.005	0.024	49	0.005
	2.0	0.022	50	0.007	0.018	50	0.005	0.017	49	0.005
	3.0	0.013	50	0.005	0.010	47	0.005	0.010	44	0.004
	4.0	0.008	50	0.005	0.007	47	0.005	0.006	44	0.004
	5.0	0.006	47	0.005	0.003	42	0.004	0.002	44	0.004
0.5	2.0	0.028	61	0.009	0.023	54	0.009	0.021	51	0.009
	3.0	0.024	55	0.008	0.020	49	0.008	0.018	46	0.008
	4.0	0.016	55	0.008	0.013	49	0.008	0.012	46	0.008
	5.0	0.014	55	0.008	0.012	49	0.008	0.011	46	0.008
	6.0	0.010	49	0.008	0.008	43	0.008	0.008	41	0.007
	8.0	0.006	49	0.008	0.005	43	0.008	0.005	41	0.007
0.6	2.0	0.034	74	0.013	0.027	65	0.012	0.025	61	0.010
	3.0	0.027	74	0.013	0.022	65	0.012	0.020	61	0.010
	4.0	0.019	66	0.012	0.016	59	0.011	0.014	55	0.009
	5.0	0.016	66	0.012	0.013	59	0.011	0.012	55	0.005
	6.0	0.012	66	0.012	0.010	59	0.011	0.009	55	0.009
	8.0	0.012	59	0.011	0.010	52	0.010	0.009	49	0.009
0.8	2.0	0.064	98	0.016	0.052	87	0.015	0.048	81	0.014
	4.0	0.045	98	0.016	0.036	87	0.015	0.034	81	0.014
	5.0	0.036	88	0.014	0.029	78	0.014	0.027	73	0.013
	6.0	0.026	88	0.014	0.021	78	0.014	0.019	73	0.013
	7.0	0.021	83	0.014	0.017	74	0.013	0.016	69	0.013
	8.0	0.016	79	0.014	0.013	69	0.014	0.012	65	0.013
	10.0	0.016	79	0.014	0.013	69	0.013	0.012	65	0.012

cont' d ▶

P H P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes



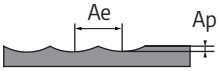
Profiling		P			H					
Working material		Pre-hardened Steels			Hardened Steel					
Properties		35 ≤ HRC < 45			45 ≤ HRC < 52			53 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
1.0	3.0	0.080	111	0.022	0.065	98	0.021	0.060	91	0.020
	4.0	0.056	111	0.022	0.046	98	0.021	0.042	91	0.020
	5.0	0.048	111	0.022	0.039	98	0.021	0.036	91	0.020
	6.0	0.032	100	0.020	0.026	88	0.019	0.024	93	0.016
	7.0	0.032	100	0.020	0.026	88	0.019	0.024	82	0.018
	8.0	0.032	100	0.020	0.026	88	0.019	0.024	82	0.018
	9.0	0.024	100	0.020	0.020	88	0.019	0.018	82	0.018
	10.0	0.020	100	0.020	0.016	88	0.019	0.015	82	0.018
	12.0	0.020	89	0.019	0.016	78	0.018	0.015	73	0.017
	14.0	0.016	89	0.019	0.013	78	0.017	0.012	73	0.017
	20.0	0.008	66	0.018	0.007	58	0.017	0.006	55	0.016
1.2	6.0	0.036	106	0.025	0.029	94	0.022	0.027	87	0.020
	8.0	0.032	106	0.025	0.026	94	0.022	0.024	87	0.020
	10.0	0.028	106	0.024	0.023	94	0.021	0.021	87	0.019
	12.0	0.024	106	0.023	0.020	94	0.020	0.018	87	0.018
1.4	8.0	0.044	108	0.027	0.036	95	0.026	0.033	89	0.025
	12.0	0.028	108	0.024	0.023	95	0.024	0.021	89	0.022
	16.0	0.028	96	0.023	0.023	85	0.022	0.021	79	0.021
1.5	8.0	0.048	116	0.027	0.039	102	0.024	0.036	96	0.022
	12.0	0.048	116	0.027	0.039	102	0.024	0.036	96	0.022
	16.0	0.030	103	0.026	0.025	91	0.023	0.023	85	0.021
	18.0	0.030	103	0.026	0.025	91	0.023	0.023	85	0.021
1.6	8.0	0.088	128	0.031	0.072	113	0.030	0.066	105	0.028
	12.0	0.052	115	0.028	0.042	102	0.027	0.039	95	0.025
	16.0	0.032	115	0.028	0.026	102	0.027	0.024	95	0.025
	20.0	0.032	102	0.026	0.026	90	0.026	0.024	84	0.024
1.8	8.0	0.104	144	0.035	0.085	127	0.033	0.078	118	0.030
	12.0	0.056	130	0.028	0.046	114	0.030	0.042	106	0.027
	16.0	0.036	130	0.028	0.029	114	0.030	0.027	106	0.027
	20.0	0.036	115	0.026	0.029	101	0.028	0.027	94	0.025

cont' d ▶

P H | P

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Miniature Ballnose Cutter – Long Neck 2 Flutes



Profiling		P			H					
Working material		Pre-hardened Steels			Hardened Steel					
Properties		35 ≤ HRC < 45			45 ≤ HRC < 52			53 ≤ HRC ≤ 68		
D (mm)	Effective length	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
2.0	4.0	0.160	129	0.045	0.130	114	0.043	0.120	106	0.040
	6.0	0.160	129	0.040	0.130	114	0.038	0.120	106	0.036
	8.0	0.112	129	0.040	0.091	114	0.038	0.084	106	0.036
	10.0	0.112	129	0.036	0.091	114	0.034	0.084	106	0.032
	12.0	0.064	116	0.036	0.052	102	0.034	0.000	96	0.032
	14.0	0.064	116	0.036	0.052	102	0.034	0.048	96	0.032
	16.0	0.064	116	0.032	0.052	102	0.031	0.048	96	0.029
	18.0	0.048	116	0.032	0.039	102	0.031	0.036	96	0.029
	20.0	0.040	116	0.032	0.033	102	0.031	0.030	96	0.029
	22.0	0.040	109	0.031	0.033	97	0.029	0.030	90	0.027
	25.0	0.040	103	0.031	0.033	91	0.029	0.030	85	0.027
	30.0	0.024	103	0.031	1.950	91	0.029	0.180	85	0.027
3.0	8.0	0.240	147	0.067	0.195	130	0.063	0.180	122	0.060
	10.0	0.168	147	0.067	0.137	130	0.063	0.126	122	0.060
	16.0	0.168	147	0.061	0.137	130	0.057	0.126	122	0.054
	20.0	0.096	133	0.060	0.078	117	0.057	0.072	109	0.054
	25.0	0.064	133	0.060	0.052	117	0.057	0.048	109	0.054
	30.0	0.064	133	0.060	0.052	117	0.057	0.048	109	0.054
	35.0	0.064	118	0.057	0.052	104	0.054	0.048	97	0.051
4.0	10.0	0.320	141	0.090	0.260	124	0.085	0.240	117	0.080
	16.0	0.224	141	0.090	0.182	124	0.085	0.168	117	0.080
	20.0	0.224	141	0.090	0.182	124	0.085	0.168	117	0.080
	25.0	0.128	127	0.081	0.104	112	0.077	0.096	104	0.072
	30.0	0.128	127	0.081	0.104	112	0.077	0.096	104	0.072
	35.0	0.080	127	0.081	0.065	112	0.077	0.060	104	0.072
	40.0	0.080	127	0.081	0.065	112	0.077	0.060	104	0.072
	45.0	0.080	113	0.077	0.065	99	0.073	0.060	93	0.068
	50.0	0.080	113	0.077	0.065	99	0.073	0.060	93	0.068



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



BN GR

Diamond coated ball nose cutters special for machining graphite and composite reinforced plastic fiber glass (CRP).

BN GR

01

SPECIAL DESIGN

· Designed specifically for machining graphite



02

DIAMOND COATING

· Up to 10 times more tool life compare to conventional

03

INCREASING PRODUCTIVITY AND LOWER PRODUCTION COSTS

04

PRODUCE PRECISION PARTS AT HIGHER FEED RATE

05

SUITABLE FOR MATERIAL GRAPHITE

DEUTSCH

01 **SPEZIELLES DESIGN**
Speziell für Graphitbearbeitung entwickelt

02 **DIAMANTBESCHICHTUNG**
Bis zu 10 mal mehr Standzeit im Vergleich zu konventionellen Beschichtungen

03 **STEIGERT DIE PRODUKTIVITÄT UND SENKT DIE PRODUKTIONSKOSTEN**

04 **PRODUZIERT PRÄZISIONSTEILE MIT HÖHERER VORSCHUBGESCHWINDIGKEIT**

05 **GEEIGNET FÜR GRAPHITMATERIAL**

FRANÇAIS

01 **CONCEPTION SPÉCIALE**
spécifiquement pour l'usinage de graphite

02 **REVÊTEMENT DIAMANTÉ**
10 fois plus de durée de vie de l'outil par rapport aux outils conventionnels

03 **AUGMENTE LA PRODUCTIVITÉ ET RÉDUIT LES COÛTS DE PRODUCTION**

04 **PRODUIRE DES PIÈCES DE PRECISION AVEC DES CONDITIONS DE COUPES PLUS ÉLEVÉES**

05 **ADAPTÉ POUR LE GRAPHITE**

ITALIANO

01 **DESIGN SPECIALE**
Progettato specificamente per la lavorazione della grafite

02 **RIVESTIMENTO DI DIAMANTE**
Vita utensile fino a 10 volte più lunga rispetto agli utensili convenzionali

03 **AUMENTO DELLA PRODUTTIVITÀ E MINOR COSTO DI LAVORAZIONE**

04 **PRODUZIONE DI PARTI PRECISE CON AVANZAMENTI ELEVATI**

05 **ADATTO PER LA LAVORAZIONE DI GRAPHITE**

中文

01 **专为石墨机械加工设计**
强化刀具，并降低崩刃的几率

02 **钻石涂成**
最大延长刀具寿命10倍

03 **提高生产力和降低生产成本**

04 **生产精密零件于高进给速度**

05 **适用于石墨材质**

BN GR STANDARD BALLNOSE CUTTERS

For Graphite

HPMT

VHM BN GR Radiusschaftfräser, 2 Zähne, DIAMANT bzw. DLC beschichtet zur Bearbeitung von Grafit

Fraises BN GR standard en carbure monobloc à bout hémisphérique, 2 dents, revêtue DIAMANT respectivement DLC,pour usinage de graphite

Frese clindriche a raggio tipo BN GR standard in metallo duro integrale, 2 taglienti, rivestite DIAMANTE respettivamente DLC per lavorazioni in grafite

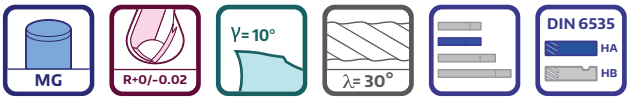
整体硬质合金 BN GR 系列 球头 立铣刀 - 石墨操作
2 刃 -DLC 钻石涂层 - 标准长度

754*





Z2



HSC DCT01 Diamond

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						754 *
= * + Ø data	D	R	l1	l2	L	d2 (h6)	DCT01
0100 040 03	1	0.5	3		40	3	•
0150 040 03	1.5	0.75	3		40	3	•
0200 040 03	2	1	4		40	3	•
0250 040 03	2.5	1.25	4		40	3	•
0300	3	1.5	5		40	3	•
0400	4	2	8		50	4	•
0600	6	3	10		60	6	•
0800	8	4	12		64	8	•
1000	10	5	14		70	10	•
1200	12	6	16		75	12	•

BN GR

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

450

Technical specifications subject to change without prior notice

BN GR BALLNOSE CUTTERS – with Long Neck

For Graphite

HPMT

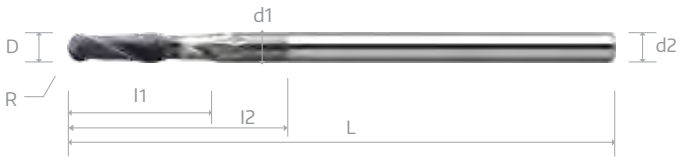
VHM lange BN GR Radiusschaftfräser 2 Zähne, mit Freistellung, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

Fraises BN GR longues en carbure monobloc à bout hémisphérique, 2 dents, revêtue DIAMANT respectivement DLC, avec dégagement pour usinage de graphite

Frese clindriche lunghe a raggio tipo BN GR in metallo duro integrale, 2 taglienti, rivestite DIAMANTE, respettivamente DLC, con diminuzione del collo, per lavorazioni in grafite

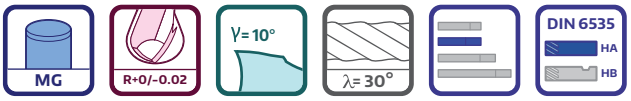
整体硬质合金 BN GR 系列 球头 立铣刀 - 石墨操作
2 刃 - DLC 钻石涂层 - 中长，带颈位

756*





Z2



HSC DCT01 Diamond

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							756 *
= * + Ø data	D	R	l1	l2	L	d1	d2 (h6)	DCT01
0050 050 0300 060	0.5	0.25	1	6	50	0.45	3	•
0050 050 0300 080	0.5	0.25	1	8	50	0.45	3	○
0060 050 0300 060	0.6	0.3	1.2	6	50	0.55	3	•
0060 050 0300 080	0.6	0.3	1.2	8	50	0.55	3	○
0060 050 0300 100	0.6	0.3	1.2	10	50	0.55	3	○
0080 050 0300 080	0.8	0.4	1.6	8	50	0.75	3	•
0080 050 0300 100	0.8	0.4	1.6	10	50	0.75	3	○
0080 050 0300 120	0.8	0.4	1.6	12	50	0.75	3	○
0100 060 0300 100	1	0.5	3	10	60	0.9	3	•
0100 060 0300 120	1	0.5	3	12	60	0.9	3	○
0100 060 0300 160	1	0.5	3	16	60	0.9	3	○
0100 060 0400 100	1	0.5	3	10	60	0.9	4	•
0100 060 0400 120	1	0.5	3	12	60	0.9	4	○
0100 060 0400 160	1	0.5	3	16	60	0.9	4	○
0150 060 0300 100	1.5	0.75	3	10	60	1.4	3	○
0150 060 0300 160	1.5	0.75	3	16	60	1.4	3	•
0150 060 0300 180	1.5	0.75	3	18	60	1.4	3	○
0150 060 0300 200	1.5	0.75	3	20	60	1.4	3	○
0150 060 0400 100	1.5	0.75	3	10	60	1.4	4	○
0150 060 0400 160	1.5	0.75	3	16	60	1.4	4	•
0150 060 0400 180	1.5	0.75	3	18	60	1.4	4	○
0150 060 0400 200	1.5	0.75	3	20	60	1.4	4	○
0200 060 0300 100	2	1	4	10	60	1.9	3	•
0200 060 0300 160	2	1	4	16	60	1.9	3	○
0200 060 0300 200	2	1	4	20	60	1.9	3	○
0200 060 0400 100	2	1	4	10	60	1.9	4	•
0200 060 0400 160	2	1	4	16	60	1.9	4	○
0200 060 0400 200	2	1	4	20	60	1.9	4	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

Cutting Parameter

451

BN GR BALLNOSE CUTTERS – with Long Neck

For Graphite

HPMT

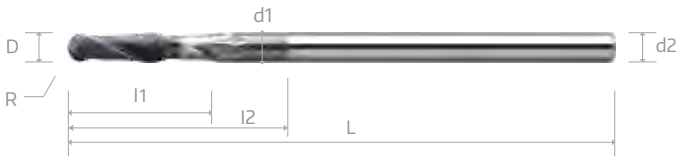
VHM lange BN GR Radiusschaftfräser 2 Zähne, mit Freistellung, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

Fraises BN GR longues en carbure monobloc à bout hémisphérique, 2 dents, revêtue DIAMANT respectivement DLC, avec dégagement pour usinage de graphite

Frese clindriche lunghe a raggio tipo BN GR in metallo duro integrale, 2 taglienti, rivestite DIAMANTE, respettivamente DLC, con diminuzione del collo, per lavorazioni in grafite

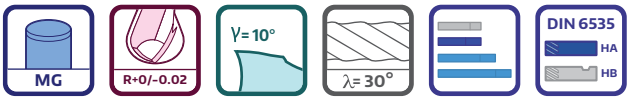
整体硬质合金 BN GR 系列 球头 立铣刀 - 石墨操作
2 刃 - DLC 钻石涂层 - 中长，带颈位

756*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							756 *
= * + Ø data	D	R	l 1	l 2	L	d1	d2 (h6)	DCT01
0300 075 03	3	1.5	5		75	-	3	•
0300 075 0400 150	3	1.5	5	15	75	2.8	4	•
0300 075 0400 300	3	1.5	5	30	75	2.8	4	○
0400 075 04	4	2	6		75	-	4	○
0400 100 04	4	2	8		100	-	4	•
0600 075 06	6	3	10		75	-	6	○
0600 100 06	6	3	10		100	-	6	•
0800 100 08	8	4	12		100	-	8	•
0800 150 08	8	4	12		150	-	8	○
1000 100 10	10	5	14		100	-	10	•
1000 150 10	10	5	14		150	-	10	○
1200 100 12	12	6	16		100	-	12	•
1200 150 12	12	6	16		150	-	12	•

BN GR

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

451

•

Spécifications techniques sujettes à changement sans avis prélable

BN GR BALLNOSE CUTTERS - Extra-Long

For Graphite

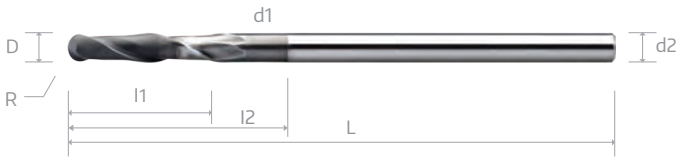
VHM extra-lange BN GR Radiusschaftfräser, 2 Zähne, DIAMANT bzw. DLC beschichtet, zur Bearbeitung von Grafit

Fraises BN GR extra-longues en carbure monobloc à bout hémisphérique, 2 dents, revêtue DIAMANT respectivement DLC, pour usinage de graphite

Frese clindriche a raggio tipo BN GR extra-lunghe in metallo duro integrale, 2 taglienti, rivestite DIAMANTE, respettivamente DLC per lavorazioni in grafite

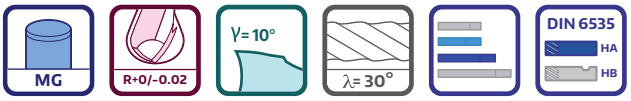
整体硬质合金 BN GR 系列 球头 立铣刀 - 石墨操作
2 刃 - DLC 钻石涂层 -加长

B85*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B85 *
= * + Ø data	D	R	l 1	l 2	L	d2 (h6)	DCT01
0200 080 03	2	1	10	20	80	3	•
0300 080 03	3	1.5	15	25	80	3	•
0400	4	2	20	30	100	4	•
0500	5	2.5	30	50	120	5	•
0600	6	3	30	50	150	6	•
0800	8	4	40	60	150	8	•

BN GR

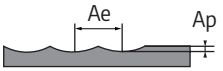
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
																•

452

Standard Endmills 2 Flutes



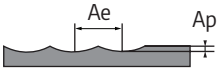
Roughing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.10 × D	
Cutting Width, Ae (mm)	0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	285	0.005
2		0.010
3		0.017
4		0.025
5		0.034
6		0.045
8		0.084
10		0.124
12		0.149

Finishing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.05 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	285	0.005
2		0.010
3		0.017
4		0.025
5		0.034
6		0.045
8		0.084
10		0.124
12		0.149

O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Long Neck Endmills 2 Flutes



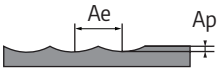
Roughing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.10 × D	
Cutting Width, Ae (mm)	0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	285	0.004
2		0.008
3		0.014
4		0.020
5		0.028
6		0.036
8		0.067
10		0.099
12		0.119

Finishing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.05 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
1	285	0.004
2		0.008
3		0.014
4		0.020
5		0.028
6		0.036
8		0.067
10		0.099
12		0.119



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Extra Long Neck Endmills 2 Flutes



Roughing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.10 × D	
Cutting Width, Ae (mm)	0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)
2	285	0.007
3		0.012
4		0.018
5		0.024
6		0.031
8		0.059

Finishing	O	
Working Material	Graphite	
Properties	-	
Cutting Depth, Ap (mm)	0.05 × D	
Cutting Width, Ae (mm)	0.05 × D	
D (mm)	Vc (m/min)	Fz (mm)
2	285	0.007
3		0.012
4		0.018
5		0.024
6		0.031
8		0.059

O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DRILLS

For material application is up to 68 HRC.



NC SPOTTING DRILLS – 60° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

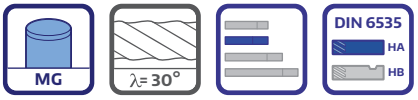
VHM NC Positionierungsbohrer Spizenwinkel: 60°	Forets NC de pointage en carbure monobloc, angle de pointe: 60°
Punte NC di posizionamento in metallo duro integrale, angolo di punta: 60°	整体硬质合金 中心钻 2 刃 - 倒角 60°

953*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					662 *	953 *
= * + Ø data	D (h6)	l 1	l 2	L	d2 (h6)	T ... n	B0819
0300 040	3	6		40	3	•	•
0300 060	3	6		60	3	•	•
0300 100	3	6		100	3	•	•
0400 050	4	8		50	4	•	•
0400 075	4	8		75	4	•	•
0400 100	4	8		100	4	•	•
0500 050	5	12		50	5	•	•
0500 075	5	12		75	5	•	•
0500 100	5	12		100	5	•	•
0600 050	6	16		50	6	•	•
0600 075	6	16		75	6	•	•
0600 100	6	16		100	6	•	•
0800 064	8	20		64	8	•	•
0800 100	8	20		100	8	•	•
1000 070	10	25		70	10	•	•
1000 100	10	25		100	10	•	•
1000 125	10	25		125	10	•	•
1000 150	10	25		150	10	•	•
1200 075	12	25		75	12	•	•
1200 100	12	25		100	12	•	•
1200 125	12	25		125	12	•	•
1200 150	12	25		150	12	•	•
1600 090	16	26		90	16	•	•
1600 125	16	26		125	16	•	•
1600 150	16	26		150	16	•	•

NC SPOT

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

457

Technical specifications subject to change without prior notice

NC SPOTTING DRILLS – 90° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM NC Positionierungsbohrer Spizenwinkel: 90°	Forets NC de pointage en carbure monobloc, angle de pointe: 90°
Punte NC di posizionamento in metallo duro integrale, angolo di punta: 90°	整体硬质合金 中心钻 2 刃 - 倒角 90°

955*





Z2

MG | λ= 30° | DIN 6535 HA HB

HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					664 *	955 *
= * + Ø data	D (h6)	l 1	l 2	L	d2 (h6)	T ... n	B0819
0300 040	3	6		40	3	•	•
0300 060	3	6		60	3	•	•
0300 100	3	6		100	3	•	•
0400 050	4	8		50	4	•	•
0400 075	4	8		75	4	•	•
0400 100	4	8		100	4	•	•
0500 050	5	12		50	5	•	•
0500 075	5	12		75	5	•	•
0500 100	5	12		100	5	•	•
0600 050	6	16		50	6	•	•
0600 075	6	16		75	6	•	•
0600 100	6	16		100	6	•	•
0800 064	8	20		64	8	•	•
0800 100	8	20		100	8	•	•
1000 070	10	25		70	10	•	•
1000 100	10	25		100	10	•	•
1000 125	10	25		125	10	•	•
1000 150	10	25		150	10	•	•
1200 075	12	25		75	12	•	•
1200 100	12	25		100	12	•	•
1200 125	12	25		125	12	•	•
1200 150	12	25		150	12	•	•
1600 090	16	26		90	16	•	•
1600 125	16	26		125	16	•	•
1600 150	16	26		150	16	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter: 457

NC SPOT

Technische änderungen ohne vorherige information vorbehalten

NC SPOTTING DRILLS – 120° Point Angle

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM NC Positionierungsbohrer Spizenwinkel: 120°	Forets NC de pointage en carbure monobloc, angle de pointe: 120°
Punte NC di posizionamento in metallo duro integrale, angolo di punta: 120°	整体硬质合金 中心钻 2 刃 - 倒角 120°

957*





Z2

MG | λ = 30° | DIN 6535 HA HB

HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					666 *	957 *
= * + Ø data	D (h6)	l 1	l 2	L	d2 (h6)	T ... n	B0819
0300 040	3	6		40	3	•	•
0300 060	3	6		60	3	•	•
0300 100	3	6		100	3	•	•
0400 050	4	8		50	4	•	•
0400 075	4	8		75	4	•	•
0400 100	4	8		100	4	•	•
0500 050	5	12		50	5	•	•
0500 075	5	12		75	5	•	•
0500 100	5	12		100	5	•	•
0600 050	6	16		50	6	•	•
0600 075	6	16		75	6	•	•
0600 100	6	16		100	6	•	•
0800 064	8	20		64	8	•	•
0800 100	8	20		100	8	•	•
1000 070	10	25		70	10	•	•
1000 100	10	25		100	10	•	•
1000 125	10	25		125	10	•	•
1000 150	10	25		150	10	•	•
1200 075	12	25		75	12	•	•
1200 100	12	25		100	12	•	•
1200 125	12	25		125	12	•	•
1200 150	12	25		150	12	•	•
1600 090	16	26		90	16	•	•
1600 125	16	26		125	16	•	•
1600 150	16	26		150	16	•	•

NC SPOT

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter: 457

Spécifications techniques sujettes à changement sans avis prélable

NC Spotting Drills

Working Material	P						M				K	
	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High machinability		Low machinability		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	100	0.080	70	0.072	40	0.043	35	0.071	40	0.050	85	0.106
4		0.103		0.089		0.054		0.087		0.065		0.135
5		0.125		0.104		0.063		0.102		0.079		0.163
6		0.147		0.116		0.074		0.116		0.095		0.189
8		0.189		0.147		0.084		0.137		0.116		0.242
10		0.231		0.168		0.105		0.168		0.147		0.294
12		0.273		0.189		0.116		0.189		0.168		0.336
16		0.347		0.231		0.147		0.221		0.221		0.431

Working Material	N						S			
	Wrought Aluminum		Cast Aluminum		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	190	0.145	230	0.134	150	0.103	45	0.053	25	0.036
4		0.180		0.168		0.130		0.067		0.044
5		0.212		0.201		0.155		0.081		0.054
6		0.242		0.231		0.179		0.095		0.063
8		0.305		0.294		0.231		0.116		0.074
10		0.357		0.347		0.273		0.147		0.095
12		0.410		0.399		0.315		0.168		0.105
16		0.504		0.504		0.399		0.210		0.137



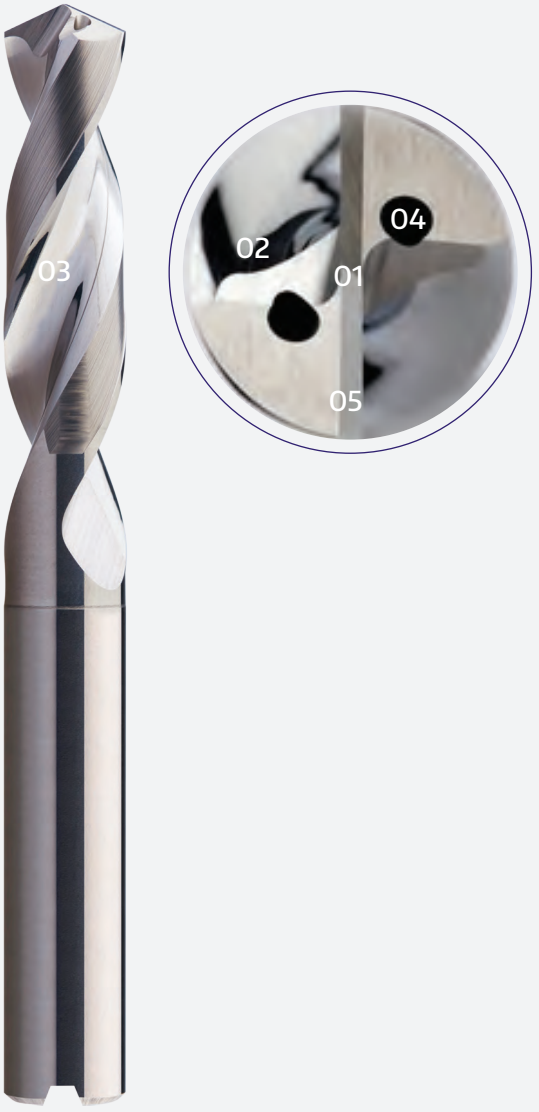
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR ALU

01

SELF-CENTERING GEOMETRY

· Excellent hole quality without centre drilling operations



02

VARY CUTTING EDGE

· Maximum chip space for fast chip evacuation initial cutting point near the center

03

FLUTES POLISHED

· Ensures fast, efficient chips evacuation and drasticaly reduces built-up edge

04

OIL HOLE FOR HIGH PERFORMANCE DRILLING

· Increases cutting speeds and feeds by more than 30% Improves surface finish on the machined component

05

TOP EDGE FLUTE GEOMETRY

· The reduced flute geometry generates initial cutting and fracturing of the chips to promote smooth chip evacuation

06

SHARP CUTTING EDGES

· Allow for improved shearing capability and chip control in aluminium alloys

07

SUITABLE FOR MATERIAL GROUP

N

DEUTSCH

01 **SELBSTZENTRIERENDE GEOMETRIE**
- Ausgezeichnete Bohrungsqualität ohne Vorzentrieren

02 **BOGENFÖRMIGE NUTENFORM**
- Maximaler Spanraum für schnellen Spanabfluß Anfangsschnittpunkt in der Nähe des Zentrums

03 **POLIERTE SPANNUTTEN**
Sorgt für schnellen effizienten Spänefluß und reduziert Aufbauschneiden

04 **KÜHLKANALBOHRER FÜR HOCHLEISTUNGSBOHREN**
Erhöht die Schnittgeschwindigkeit und den Vorschub um mehr als 30%. Verbessert die Oberflächenqualität in der Bohrungswand.

05 **SCHNEIDKANTEN- UND NUTENGEOMETRIE**
- Durch die einfache Schneidenform werden die ersten Späne so schnell gebrochen dass diese leichter abgeführt werden können

06 **SCHARFE SCHNEIDKANTEN**
- Ermöglicht verbesserte Scherfähigkeit und Spansteuerung in Aluminiumlegierungen

07 **GEEIGNET FÜR DIE MATERIALIGRUPPEN N**

FRANÇAIS

01 **GÉOMÉTRIE AUTO-CENTRANT**
- Excellente geometrie et precision des trous

02 **GOUJURE À FORME INCURVÉE**
- Large gougure pour un degagement maximal des copeaux

03 **GOUJURES HAUTEMENT POLIES**
- Garantit une évacuation des copeaux rapide et efficace et réduit radicalement l'accumulation sur les arêtes

04 **TROU D'HUILE**
- Augmente les vitesses de coupe de plus de 30 % Améliore l'etat de surface

05 **GÉOMÉTRIE DES GOUJURES D'ARÊTE SUPÉRIEURE**
- La géométrie des goujures réduite génère une découpe et un fractionnement des copeaux pour favoriser une évacuation fluide des copeaux

06 **ACUITÉE D'ARÊTE OPTIMALE**
- Permet un meilleur contrôle des copeaux dans les alliages d'aluminium

07 **ADAPTÉ AUX MATÉRIAUX N**

ITALIANO

01 **GEOMETRIA AUTOCENTRANTE**
- Qualità del foro eccellenza senza operazioni di foratura centrale

02 **FORMA DELLA SCANALATURA CURVA**
- Spazio massimo dei trucioli per un'evacuazione più veloce Punta tagliente iniziale vicina al centro

03 **SCANALATURE ALTAMENTE LEVIGATE**
- Assicura una evacuazione rapida ed efficace e riduce enormemente la formazione di materiale di riporto

04 **FORO DELL'OLIO PER FORATURA AD ALTE PRESTAZIONE**
- Aumenta le velocità di taglio e l'avanzamento di oltre il 30% Migliora la finitura superficiale del componente lavorato

05 **SCHNEIDKANTEN- UND NUTENGEOMETRIE**
- La geometri ridotta della scanalatura genera tagli e rotture iniziali dei trucioli per favorirne un'evacuazione ottimale

06 **ANGOLI DI TAGLIO AFFILATI**
- Consente capacità di taglio migliorate e il controllo dei trucioli nelle leghe di acciaio

07 **ADATTO PER IL MATERIALE N**

中文

01 **定圆心的几何形状**
- 优质的钻孔质量

02 **曲槽形的设计**
- 加大的溝槽有利于快速排屑
- 切割点靠近中心

03 **鏡面抛光的排屑槽**
- 更快速、高效的排屑和极减少鐵屑堆積

04 **高性能的内油孔**
- 切削速率和进给提高 30% 以上
- 优良工件的表面光洁度

05 **顶尖沟槽的几何形状**
- 更顺畅的排屑，提高生产率

06 **锋利的切削刃**
- 改善铝合金的剪切能力和铁屑控制

07 **适合加工有色金属的材料**

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm²

HPMT

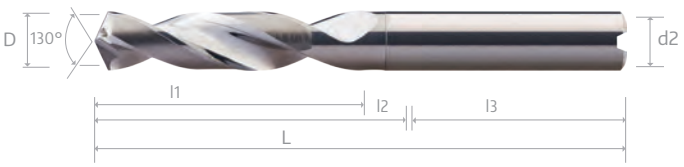
VHM DR ALU Kühlkanalbohrer nach DIN 6537K, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

D09*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
* 0300 062 03	3	14	20	36	62	3	○
0300	3	14	20	36	62	6	•
* 0310 062 03	3.1	14	20	36	62	3	○
0310	3.1	14	20	36	62	6	•
* 0320 062 03	3.2	14	20	36	62	3	○
0320	3.2	14	20	36	62	6	•
0330	3.3	14	20	36	62	6	•
0340	3.4	14	20	36	62	6	•
0350	3.5	14	20	36	62	6	•
0360	3.6	14	20	36	62	6	•
0370	3.7	14	20	36	62	6	•
0380	3.8	17	24	36	66	6	•
0390	3.9	17	24	36	66	6	•
* 0400 066 04	4	17	24	36	66	4	○
0400	4	17	24	36	66	6	•
* 0410 066 04	4.1	17	24	36	66	4	○
0410	4.1	17	24	36	66	6	•
* 0420 066 04	4.2	17	24	36	66	4	○
0420	4.2	17	24	36	66	6	•
0430	4.3	17	24	36	66	6	•
0440	4.4	17	24	36	66	6	•
0450	4.5	17	24	36	66	6	•
0460	4.6	17	24	36	66	6	•
0470	4.7	17	24	36	66	6	•
0480	4.8	20	28	36	66	6	•
0490	4.9	20	28	36	66	6	•
0500	5	20	28	36	66	6	•
0510	5.1	20	28	36	66	6	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter

469

Technical specifications subject to change without prior notice

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm²

HPMT

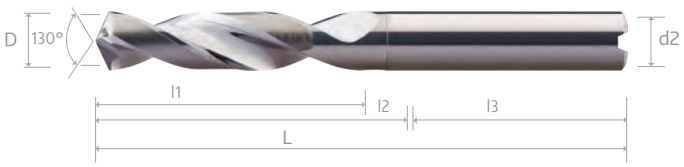
VHM DR ALU Kühlkanalbohrer nach DIN 6537K, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

D09*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP		Dimension (mm)					D09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	•
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	•
0600	6	20	28	36	66	6	•
* 0610 066 06	6.1	20	28	36	66	6	○
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	•
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	•
0700	7	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter

469

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm²

HPMT

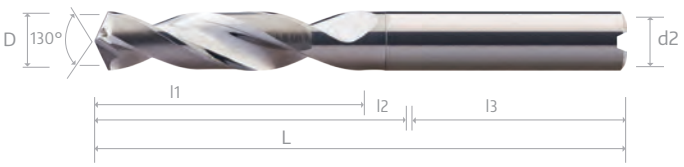
VHM DR ALU Kühlkanalbohrer nach DIN 6537K, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

D09*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
0790	7.9	29	41	36	79	8	•
0800	8	29	41	36	79	8	•
* 0810 079 08	8.1	29	41	36	79	8	○
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•
0900	9	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1020	10.2	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter

469

Spécifications techniques sujettes à changement sans avis prélable

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm²

HPMT

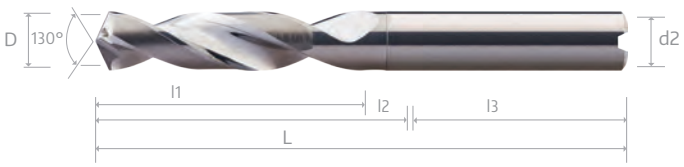
VHM DR ALU Kühlkanalbohrer nach DIN 6537K, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

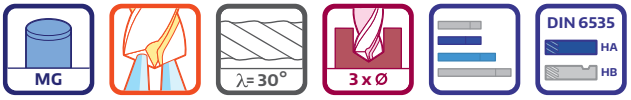
整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

D09*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
1130	11.3	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1200	12	40	55	45	102	12	•
1220	12.2	43	60	45	107	14	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1280	12.8	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1330	13.3	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1380	13.8	43	60	45	107	14	•
1400	14	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15	45	65	48	115	16	•
1530	15.3	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1580	15.8	45	65	48	115	16	•
1600	16	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20	55	79	50	131	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter: 469

DR ALU

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm²

HPMT

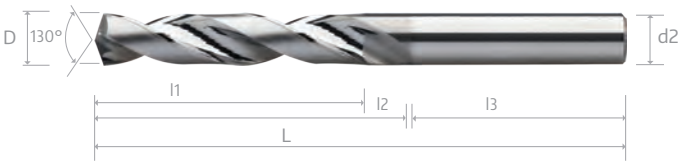
VHM DR ALU Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537KL con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

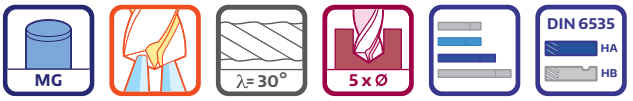
整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D10*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
* 0300 066 03	3	23	28	36	66	3	○
0300	3	23	28	36	66	6	●
* 0310 066 03	3.1	23	28	36	66	3	○
0310	3.1	23	28	36	66	6	●
* 0320 066 03	3.2	23	28	36	66	3	○
0320	3.2	23	28	36	66	6	●
0330	3.3	23	28	36	66	6	●
0340	3.4	23	28	36	66	6	●
0350	3.5	23	28	36	66	6	●
0360	3.6	23	28	36	66	6	●
0370	3.7	23	28	36	66	6	●
0380	3.8	29	36	36	74	6	●
0390	3.9	29	36	36	74	6	●
* 0400 074 04	4	29	36	36	74	4	○
0400	4	29	36	36	74	6	●
* 0410 074 04	4.1	29	36	36	74	4	○
0410	4.1	29	36	36	74	6	●
* 0420 074 04	4.2	29	36	36	74	4	○
0420	4.2	29	36	36	74	6	●
0430	4.3	29	36	36	74	6	●
0440	4.4	29	36	36	74	6	●
0450	4.5	29	36	36	74	6	●
0460	4.6	29	36	36	74	6	●
0470	4.7	29	36	36	74	6	●
0480	4.8	35	44	36	82	6	●
0490	4.9	35	44	36	82	6	●
0500	5	35	44	36	82	6	●
0510	5.1	35	44	36	82	6	●

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●														

Cutting Parameter

469

若有技☒☒格☒更，恕不事先通知

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 5 x Ø

≤ 700 N/mm²

HPMT

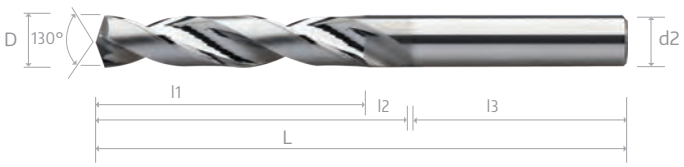
VHM DR ALU Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537KL con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

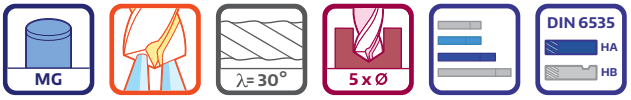
整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D10*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•
0600	6	35	44	36	82	6	•
* 0610 082 06	6.1	35	44	36	82	6	○
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter: 469

DR ALU

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm²

HPMT

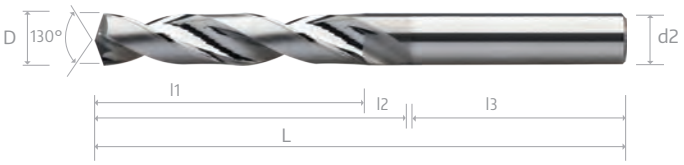
VHM DR ALU Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537KL con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

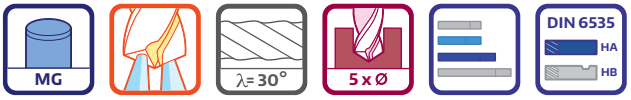
整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D10*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	8	•
* 0810 091 08	8.1	43	53	36	91	8	○
0810	8.1	49	61	40	103	10	•
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

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Technische änderungen ohne vorherige information vorbehalten

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 5 x Ø

≤ 700 N/mm²

HPMT

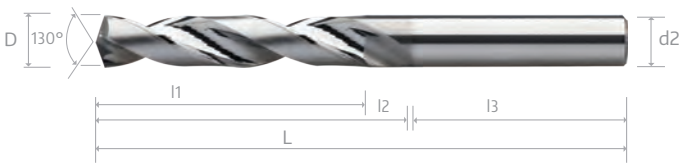
VHM DR ALU Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537KL con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

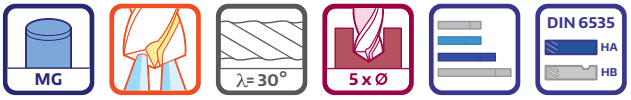
整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD，柄部标准 DIN 6535HA

D10*





Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•
1270	12.7	60	77	45	124	14	•
1280	12.8	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	48	133	16	•
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

Cutting Parameter

469

DR ALU

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 5 x Ø

≤ 700 N/mm²

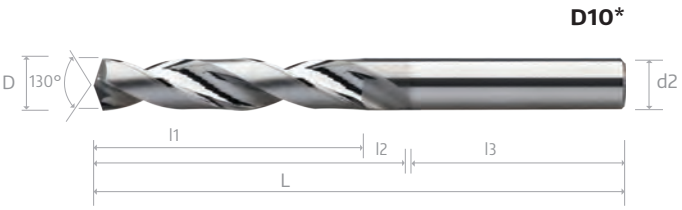
HPMT

VHM DR ALU Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

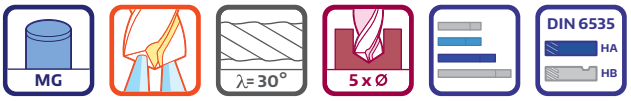
Forets hélicoïdaux DR ALU à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR ALU in metallo duro integrale norma DIN 6537KL con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR ALU 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA







EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T ... n
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•														

469

Spécifications techniques sujettes à changement sans avis prélable

DR ALU Recommended Cutting Data

HPMT

Oil Feed Twist Drills – 3 × Ø



Drilling	N					
Working Material	Wrought Aluminum		Cast Aluminum		Copper Alloy	
Properties	Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	270	0.160	250	0.163	235	0.113
4		0.191		0.198		0.136
5		0.223		0.234		0.158
6		0.254		0.270		0.188
7		0.286		0.307		0.211
8		0.316		0.342		0.234
9		0.348		0.378		0.275
10		0.379		0.414		0.299
11		0.412		0.449		0.325
12		0.443		0.485		0.350
13		0.475		0.521		0.418
14		0.506		0.557		0.445
15		0.538		0.592		0.473
16		0.568		0.629		0.500
17		0.600		0.665		0.528
18		0.631		0.700		0.555
19		0.664		0.736		0.584
20		0.695		0.772		0.612

Oil Feed Twist Drills – 5 × Ø



Drilling	N					
Working Material	Wrought Aluminum		Cast Aluminum		Copper Alloy	
Properties	Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	270	0.136	250	0.138	235	0.096
4		0.162		0.169		0.115
5		0.189		0.199		0.134
6		0.216		0.229		0.160
7		0.243		0.261		0.180
8		0.269		0.291		0.199
9		0.295		0.321		0.233
10		0.322		0.352		0.255
11		0.350		0.382		0.276
12		0.377		0.412		0.298
13		0.403		0.443		0.355
14		0.430		0.473		0.379
15		0.457		0.503		0.402
16		0.483		0.535		0.425
17		0.510		0.565		0.448
18		0.536		0.595		0.472
19		0.564		0.626		0.496
20		0.591		0.656		0.520



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

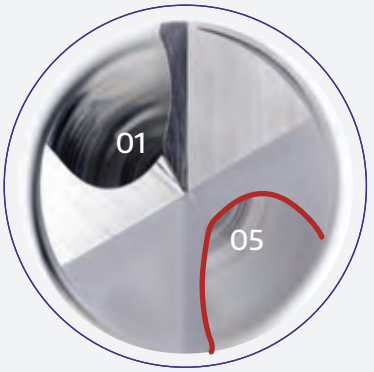
DR 30

01

SPLIT POINT DESIGN

· Provides self centering ability and reduced thrust





02

VARY CUTTING EDGE

· Produces small chips
· Improves chip evacuation

03

EFFECTIVE CLEARANCE AND GASH

· Lower cutting forces
· Improves chip formation and control

04

CORNER REINFORCEMENT

· Adds protection during the drilling process

05

J FLUTE SHAPE

· Provides better chip evacuation

06

SUITABLE FOR MATERIAL GROUPS

P N S

DEUTSCH

01 **KREUZANSCHLIFF**
Optimale Selbstzentrierung und reduziert Axialdruck

02 **S-FÖRMIGE SCHNEIDENGEOMETRIE**
- Erzeugt kleine Späneungen
- Verbessert den Spänefluß

03 **EFFEKTIVER SPANRAUM UND SCHNITT**
- Niedrigere Schnittkräfte
- Verbessert die Spanbildung und Spankontrolle

04 **SCHNEIDECKENVERSTÄRKUNG**
- Sorgt für mehr Schutz beim Bohren

05 **J-FÖRMIGE NUTEN**
- Bietet einen verbesserten Spänefluß

06 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, N, S**

FRANÇAIS

01 **CONCEPTION À AFFÛTAGE 4 FACES CROISÉES**
- Auto centrant, éfforts de coupes réduit

02 **PROTECTION DE L'ARÊTE DE COUPE**
- Très bon brise copeaux
- Améliore l'évacuation des copeaux

03 **DÉGAGEMENT ET RAINURE DE LOGEMENT EFFICACES**
- Forces de coupe inférieures
- Améliore la formation et le contrôle des copeaux

04 **RAYON TORIQUE SUR LES ARÊTES**
- Pour une meilleur protection pendant le percage

05 **GOUJURE À FORME EN J**
- Permet une meilleure évacuation des copeaux

06 **ADAPTÉ AUX MATÉRIAUX P, N, S**

ITALIANO

01 **STRUTTURA DEL PUNTO DI RIPARTIZIONE**
- Offre capacità autocentranti e spinta ridotta

02 **ANGOLO DI TAGLIO DEBOLE**
- Produce piccoli trucioli
- Migliora l'evacuazione dei trucioli

03 **GIOCO E SGROSSATURA EFFICACI**
- Forze di taglio inferiori
- Migliora la formazione e il controllo dei trucioli

04 **RAFFORZAMENTO DEGLI ANGOLI**
- Aggiunge protezione durante il processo di foratura

05 **FORMA DELLA SCANALATURA A J**
- Offre una migliore evacuazione dei trucioli

06 **ADATTO PER IL MATERIALE P, N, S**

中文

01 **不等分割的设计**
- 提供鑽孔定點能力和減小加工阻力

02 **不等径的切削刃**
- 有效斷屑使鐵屑順利排出

03 **高效率后角与凹槽的设计**
- 降低加工切削阻力
- 改善碎屑的形成和控制

04 **刀尖加强**
- 在钻孔过程时增加保护

05 **J 型槽**
- 提供更好的排屑

06 **适合加工碳钢, 有色金属和热塑的材料**

DR 30

TWIST DRILLS – Similar to DIN 6539 – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

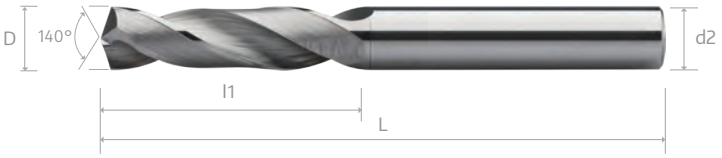
VHM DR 30 Spiralbohrer ähnlich DIN 6539, 140° Spitzenwinkel

Forets hélicoïdaux DR 30 en carbure monobloc semblable à DIN 6539, 140° angle de pointe

Punte elicoidali DR 30 in metallo duro simili a DIN 6539, angolo di punta 140°

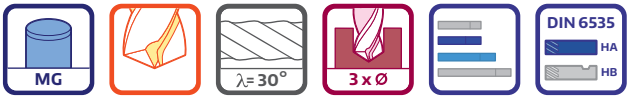
整体硬质合金 DR 30 外冷却 钻头 - 相等于DIN 6539 2 刃 - 加工深度 3xD

644*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						644 *	958 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
* 0100	1	6			40	2	•	•
* 0110	1.1	7			40	2	•	•
* 0120	1.2	8			40	2	•	•
* 0130	1.3	8			40	2	•	•
* 0140	1.4	9			40	2	•	•
* 0150	1.5	9			40	2	•	•
* 0160	1.6	10			40	2	•	•
* 0170	1.7	10			40	2	•	•
* 0180	1.8	11			40	2	•	•
* 0190	1.9	11			40	2	•	•
* 0200	2	12			40	2	•	•
* 0210	2.1	12			40	2.1	•	•
0220	2.2	13			40	2.2	•	•
* 0230	2.3	13			46	2.3	•	•
* 0240	2.4	14			46	2.4	•	•
* 0250	2.5	14			46	2.5	•	•
* 0260	2.6	14			46	2.6	•	•
0270	2.7	16			46	2.7	•	•
* 0280	2.8	16			49	2.8	•	•
* 0290	2.9	16			49	2.9	•	•
* 0300	3	16			49	3	•	•
0310	3.1	18			49	3.1	•	•
0320	3.2	18			49	3.2	•	•
* 0330	3.3	18			52	3.3	•	•
0340	3.4	20			52	3.4	•	•
0350	3.5	20			52	3.5	•	•
0360	3.6	20			52	3.6	•	•
0370	3.7	20			52	3.7	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

480

Technical specifications subject to change without prior notice

DR 30

TWIST DRILLS – Similar to DIN 6539 – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

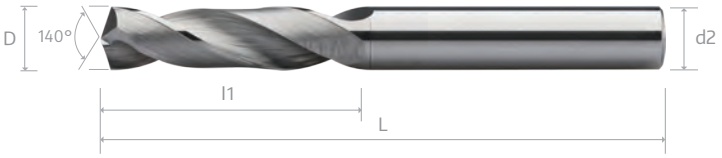
VHM DR 30 Spiralbohrer ähnlich DIN 6539, 140° Spitzenwinkel

Forets hélicoïdaux DR 30 en carbure monobloc semblable à DIN 6539, 140° angle de pointe

Punte elicoidali DR 30 in metallo duro simili a DIN 6539, angolo di punta 140°

整体硬质合金 DR 30 外冷却 钻头 - 相等于 DIN 6539 2 刃 - 加工深度 3xD

644*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						644 *	958 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
0380	3.8	22			55	3.8	•	•
0390	3.9	22			55	3.9	•	•
0400	4	22			55	4	•	•
0410	4.1	22			55	4.1	•	•
0420	4.2	22			55	4.2	•	•
0430	4.3	24			58	4.3	•	•
0440	4.4	24			58	4.4	•	•
0450	4.5	24			58	4.5	•	•
0460	4.6	24			58	4.6	•	•
0470	4.7	24			58	4.7	•	•
0480	4.8	26			62	4.8	•	•
0490	4.9	26			62	4.9	•	•
0500	5	26			62	5	•	•
0510	5.1	26			62	5.1	•	•
0520	5.2	26			62	5.2	•	•
* 0530	5.3	26			66	5.3	•	•
0540	5.4	28			66	5.4	•	•
0550	5.5	28			66	5.5	•	•
0560	5.6	28			66	5.6	•	•
0570	5.7	28			66	5.7	•	•
* 0580	5.8	28			70	5.8	•	•
* 0590	5.9	28			70	5.9	•	•
* 0600	6	28			70	6	•	•
0610	6.1	31			70	6.1	•	•
0620	6.2	31			70	6.2	•	•
0630	6.3	31			70	6.3	•	•
0640	6.4	31			70	6.4	•	•
0650	6.5	31			70	6.5	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

480

Technische änderungen ohne vorherige information vorbehalten

DR 30

TWIST DRILLS – Similar to DIN 6539 – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

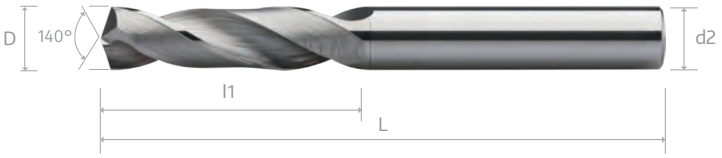
VHM DR 30 Spiralbohrer ähnlich DIN 6539,140° Spitzenwinkel

Forets hélicoïdaux DR 30 en carbure monobloc semblable à DIN 6539, 140° angle de pointe

Punte elicoidali DR 30 in metallo duro simili a DIN 6539, angolo di punta 140°

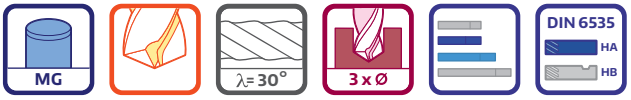
整体硬质合金 DR 30 外冷却 钻头 - 相等于 DIN 6539 2 刃 - 加工深度 3xD

644*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						644 *	958 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
0660	6.6	31			70	6.6	•	•
0670	6.7	31			70	6.7	•	•
0680	6.8	34			74	6.8	•	•
0690	6.9	34			74	6.9	•	•
0700	7	34			74	7	•	•
0710	7.1	34			74	7.1	•	•
0720	7.2	34			74	7.2	•	•
* 0730	7.3	34			79	7.3	•	•
* 0740	7.4	34			79	7.4	•	•
* 0750	7.5	34			79	7.5	•	•
0760	7.6	37			79	7.6	•	•
0770	7.7	37			79	7.7	•	•
0780	7.8	37			79	7.8	•	•
0790	7.9	37			79	7.9	•	•
0800	8	37			79	8	•	•
0810	8.1	37			79	8.1	•	•
0820	8.2	37			79	8.2	•	•
* 0830	8.3	37			84	8.3	•	•
* 0840	8.4	37			84	8.4	•	•
* 0850	8.5	37			84	8.5	•	•
0860	8.6	40			84	8.6	•	•
0870	8.7	40			84	8.7	•	•
0880	8.8	40			84	8.8	•	•
0890	8.9	40			84	8.9	•	•
0900	9	40			84	9	•	•
0910	9.1	40			84	9.1	•	•
0920	9.2	40			84	9.2	•	•
* 0930	9.3	40			89	9.3	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

480

Spécifications techniques sujettes à changement sans avis prélable

DR 30

TWIST DRILLS – Similar to DIN 6539 – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

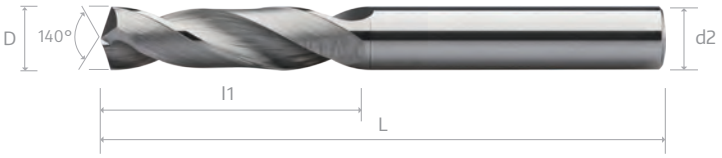
VHM DR 30 Spiralbohrer ähnlich DIN 6539, 140° Spitzenwinkel

Forets hélicoïdaux DR 30 en carbure monobloc semblable à DIN 6539, 140° angle de pointe

Punte elicoidali DR 30 in metallo duro simili a DIN 6539, angolo di punta 140°

整体硬质合金 DR 30 外冷却 钻头 - 相等于 DIN 6539 2 刃 - 加工深度 3xD

644*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						644 *	958 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
* 0940	9.4	40			89	9.4	•	•
* 0950	9.5	40			89	9.5	•	•
0960	9.6	43			89	9.6	•	•
0970	9.7	43			89	9.7	•	•
0980	9.8	43			89	9.8	•	•
0990	9.9	43			89	9.9	•	•
1000	10	43			89	10	•	•
1020	10.2	43			89	10.2	•	•
1050	10.5	43			95	10.5	•	•
1080	10.8	47			95	10.8	•	•
1100	11	47			95	11	•	•
* 1120	11.2	47			102	11.2	•	•
* 1130	11.3	47			102	11.3	•	•
* 1150	11.5	47			102	11.5	•	•
* 1180	11.8	47			102	11.8	•	•
1200	12	51			102	12	•	•
1220	12.2	51			102	12.2	•	•
* 1250	12.5	51			103	12.5	•	•
1280	12.8	51			103	12.8	•	•
1300	13	51			103	13	•	•
1350	13.5	54			107	13.5	•	•
1380	13.8	54			107	13.8	•	•
1400	14	54			107	14	•	•
1450	14.5	56			111	14.5	•	•
1500	15	56			111	15	•	•
1530	15.3	56			111	15.3	•	•
1550	15.5	58			115	15.5	•	•
1580	15.8	58			115	15.8	•	•
1600	16	58			115	16	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

480

Modifiche Techiche possibili senza preavviso

DR 30 TWIST DRILLS – 140° Point Angle – 5 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

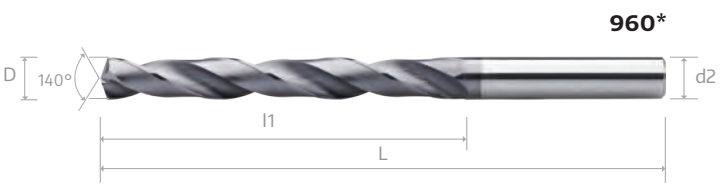
HPMT

VHM DR 30 Spiralbohrer nach HPMT Norm, 140° Spitzenwinkel

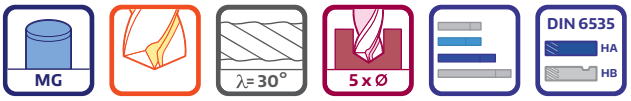
Forets hélicoïdaux DR 30 en carbure monobloc, norme usine, angle de pointe 140°

Punte elicoidali DR 30 in metallo duro integrale, norma HPMT, angolo di punta 140°

整体硬质合金 DR 30 外冷却 钻头 2 刃 - 加工深度 5xD









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						729 *	960 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
* 0100	1	12			40	2	•	•
* 0110	1.1	14			40	2	•	•
* 0120	1.2	16			40	2	•	•
* 0130	1.3	16			40	2	•	•
0140	1.4	18			40	2	•	•
0150	1.5	18			40	2	•	•
* 0160	1.6	20			49	2	•	•
* 0170	1.7	20			49	2	•	•
* 0180	1.8	22			49	2	•	•
0190	1.9	22			49	2	•	•
0200	2	24			49	2	•	•
0210	2.1	24			49	2.1	•	•
0220	2.2	27			53	2.2	•	•
0230	2.3	27			53	2.3	•	•
0240	2.4	30			57	2.4	•	•
0250	2.5	30			57	2.5	•	•
0260	2.6	30			57	2.6	•	•
0270	2.7	33			61	2.7	•	•
0280	2.8	33			61	2.8	•	•
0290	2.9	33			61	2.9	•	•
0300	3	33			61	3	•	•
0310	3.1	36			65	3.1	•	•
0320	3.2	36			65	3.2	•	•
0330	3.3	36			65	3.3	•	•
0340	3.4	39			70	3.4	•	•
0350	3.5	39			70	3.5	•	•
0360	3.6	39			70	3.6	•	•
0370	3.7	39			70	3.7	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

481

若有技术规格变更，恕不事先通知

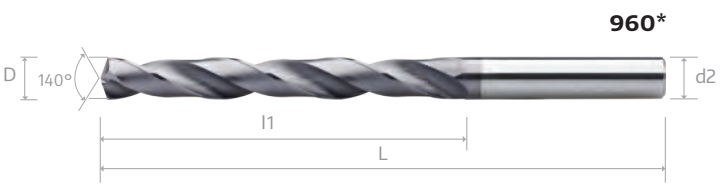
DR 30

TWIST DRILLS – 140° Point Angle – 5 x Ø

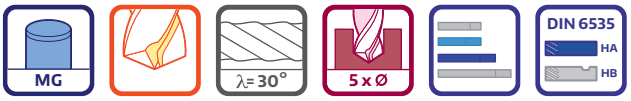
≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM DR 30 Spiralbohrer nach HPMT Norm, 140° Spitzenwinkel	Forets hélicoïdaux DR 30 en carbure monobloc, norme usine, angle de pointe 140°
Punte elicoidali DR 30 in metallo duro integrale, norma HPMT, angolo di punta 140°	整体硬质合金 DR 30 外冷却 钻头 2 刃 - 加工深度 5xD









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						729 *	960 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
0380	3.8	43			75	3.8	•	•
0390	3.9	43			75	3.9	•	•
0400	4	43			75	4	•	•
0410	4.1	43			75	4.1	•	•
0420	4.2	43			75	4.2	•	•
0430	4.3	47			80	4.3	•	•
0440	4.4	47			80	4.4	•	•
0450	4.5	47			80	4.5	•	•
0460	4.6	47			80	4.6	•	•
0470	4.7	47			80	4.7	•	•
0480	4.8	52			86	4.8	•	•
0490	4.9	52			86	4.9	•	•
0500	5	52			86	5	•	•
0510	5.1	52			86	5.1	•	•
0520	5.2	52			86	5.2	•	•
* 0530	5.3	52			86	5.3	•	•
0540	5.4	57			93	5.4	•	•
0550	5.5	57			93	5.5	•	•
0560	5.6	57			93	5.6	•	•
0570	5.7	57			93	5.7	•	•
* 0580	5.8	57			93	5.8	•	•
* 0590	5.9	57			93	5.9	•	•
* 0600	6	57			93	6	•	•
0610	6.1	63			101	6.1	•	•
0620	6.2	63			101	6.2	•	•
0630	6.3	63			101	6.3	•	•
0640	6.4	63			101	6.4	•	•
0650	6.5	63			101	6.5	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

481

Technical specifications subject to change without prior notice

DR 30 TWIST DRILLS – 140° Point Angle – 5 x Ø

≤ 900 N/mm² + B0819 ≤ 35 HRC

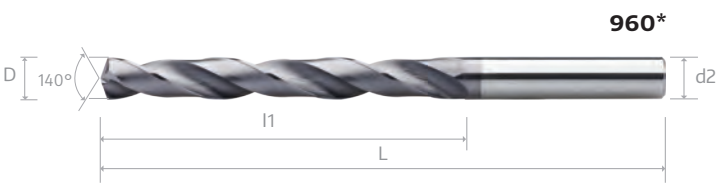
HPMT

VHM DR 30 Spiralbohrer nach HPMT Norm, 140° Spitzenwinkel

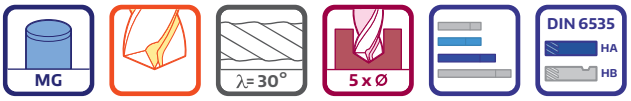
Forets hélicoïdaux DR 30 en carbure monobloc, norme usine, angle de pointe 140°

Punte elicoidali DR 30 in metallo duro integrale, norma HPMT, angolo di punta 140°

整体硬质合金 DR 30 外冷却 钻头 2 刃 - 加工深度 5xD









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						729 *	960 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
0660	6.6	63			101	6.6	•	•
0670	6.7	63			101	6.7	•	•
0680	6.8	69			109	6.8	•	•
0690	6.9	69			109	6.9	•	•
0700	7	69			109	7	•	•
0710	7.1	69			109	7.1	•	•
0720	7.2	69			109	7.2	•	•
0730	7.3	69			109	7.3	•	•
0740	7.4	69			109	7.4	•	•
0750	7.5	69			109	7.5	•	•
0760	7.6	75			117	7.6	•	•
0770	7.7	75			117	7.7	•	•
0780	7.8	75			117	7.8	•	•
0790	7.9	75			117	7.9	•	•
0800	8	75			117	8	•	•
0810	8.1	75			117	8.1	•	•
0820	8.2	75			117	8.2	•	•
0830	8.3	75			117	8.3	•	•
* 0840	8.4	75			117	8.4	•	•
0850	8.5	75			117	8.5	•	•
0860	8.6	81			125	8.6	•	•
0870	8.7	81			125	8.7	•	•
0880	8.8	81			125	8.8	•	•
* 0890	8.9	81			125	8.9	•	•
* 0900	9	81			125	9	•	•
* 0910	9.1	81			125	9.1	•	•
0920	9.2	81			125	9.2	•	•
0930	9.3	81			125	9.3	•	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter

481

Technische änderungen ohne vorherige information vorbehalten

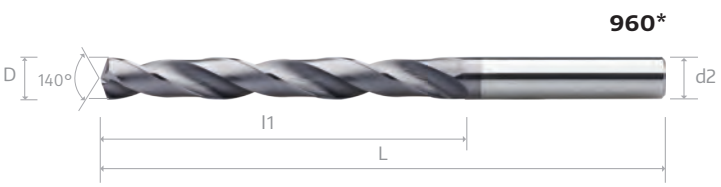
DR 30

TWIST DRILLS – 140° Point Angle – 5 x Ø

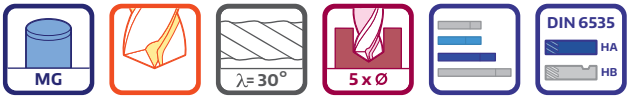
≤ 900 N/mm² + B0819 ≤ 35 HRC

HPMT

VHM DR 30 Spiralbohrer nach HPMT Norm, 140° Spitzenwinkel	Forets hélicoïdaux DR 30 en carbure monobloc, norme usine, angle de pointe 140°
Punte elicoidali DR 30 in metallo duro integrale, norma HPMT, angolo di punta 140°	整体硬质合金 DR 30 外冷却 钻头 2 刃 - 加工深度 5xD









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						729 *	960 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	T ... n	B0819
0940	9.4	81			125	9.4	•	•
0950	9.5	81			125	9.5	•	•
0960	9.6	87			133	9.6	•	•
0970	9.7	87			133	9.7	•	•
0980	9.8	87			133	9.8	•	•
0990	9.9	87			133	9.9	•	•
1000	10	87			133	10	•	•
1020	10.2	87			133	10.2	•	•
1050	10.5	87			133	10.5	•	•
1080	10.8	94			142	10.8	•	•
1100	11	94			142	11	•	•
1120	11.2	94			142	11.2	•	•
1130	11.3	94			142	11.3	•	•
1150	11.5	94			142	11.5	•	•
* 1180	11.8	101			151	11.8	•	•
1200	12	101			151	12	•	•
1220	12.2	101			151	12.2	•	•
1250	12.5	101			151	12.5	•	•
1280	12.8	101			151	12.8	•	•
1300	13	101			151	13	•	•
1350	13.5	108			160	13.5	•	•
1380	13.8	108			160	13.8	•	•
1400	14	108			160	14	•	•
1450	14.5	114			169	14.5	•	•
1500	15	114			169	15	•	•
* 1530	15.3	114			169	15.3	•	•
1550	15.5	120			178	15.5	•	•
1580	15.8	120			178	15.8	•	•
1600	16	120			178	16	•	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○			○										○	

Cutting Parameter: 481

DR 30 Recommended Cutting Data

HPMT



Twist Drills – 3 × Ø

Drilling	P		N				O	
Working Material	Carbon Steel		Wrought Aluminum		Cast Aluminum		Thermoplastics	
Properties	-		Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1	95	0.068	170	0.105	150	0.111	160	0.108
2		0.079		0.116		0.122		0.119
3		0.086		0.135		0.139		0.137
4		0.126		0.163		0.170		0.166
5		0.131		0.190		0.203		0.196
6		0.145		0.217		0.234		0.226
7		0.165		0.245		0.267		0.256
8		0.185		0.272		0.298		0.285
9		0.205		0.299		0.331		0.315
10		0.224		0.327		0.362		0.344
11		0.244		0.354		0.395		0.374
12		0.263		0.381		0.426		0.404
13		0.282		0.408		0.459		0.434
14		0.302		0.435		0.490		0.463
15		0.315		0.458		0.515		0.486
16		0.336		0.483		0.547		0.515

P N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Twist Drills – 5 × Ø



Drilling	P		N				O	
Working Material	Carbon Steel		Wrought Aluminum		Cast Aluminum		Thermoplastics	
Properties	-		Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1	95	0.058	170	0.089	150	0.095	160	0.092
2		0.067		0.098		0.104		0.101
3		0.073		0.115		0.118		0.116
4		0.107		0.138		0.145		0.141
5		0.112		0.162		0.172		0.167
6		0.123		0.185		0.199		0.192
7		0.140		0.208		0.227		0.217
8		0.157		0.231		0.253		0.242
9		0.174		0.254		0.281		0.268
10		0.190		0.278		0.308		0.293
11		0.207		0.301		0.336		0.318
12		0.223		0.324		0.362		0.343
13		0.240		0.347		0.390		0.369
14		0.257		0.369		0.417		0.393
15		0.268		0.389		0.437		0.413
16		0.286		0.411		0.465		0.438

P N O

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR NiTiCo

01

SELF-CENTERING GEOMETRY

· Excellent hole quality without centre drilling operations



02

CURVED FLUTE SHAPE

· Maximum chip space for fast chip evacuation
· Initial cutting point near the center

03

HIGHLY POLISHED FLUTES

· Ensures fast, efficient chips evacuation and drasticaly reduces built-up edge

04

OIL HOLE FOR HIGH PERFORMANCE DRILLING

· Increases cutting speeds and feeds by more than 30%
· Improves surface finish on the machined component

05

TOP EDGE FLUTE GEOMETRY

· The reduced flute geometry generates initial cutting and fracturing of the chips to promote smooth chip evacuation

06

SHARP CUTTING EDGES

· Allow for improved shearing capability and chip control in aluminium alloys

06

SUITABLE FOR MATERIAL M

M

DEUTSCH

01 **SELBSTZENTRIERENDE GEOMETRIE**
Ausgezeichnete Bohrungsqualität ohne Vorzentrieren

02 **BOGENFÖRMIGE NUTENFORM**
· Maximaler Spanraum für schnellen Spanabfluß
· Anfangsschnittpunkt in der Nähe des Zentrums

03 **EFFEKTIVER SPANRAUM UND SCHNITT**
Sorgt für schnellen effizienten Spänefluß und reduziert Aufbauschneiden

04 **KÜHLKANALBOHRER FÜR HOCHLEISTUNGSBOHREN**
Erhöht die Schnittgeschwindigkeit und den Vorschub um mehr als 30%. Verbessert die Oberflächenqualität in der Bohrungswand.

05 **SCHNEIDKANTEN- UND NUTENGEOMETRIE**
Durch die einfache Schneidenform werden die ersten Späne so schnell gebrochen, dass diese leichter abgeführt werden können.

06 **SCHNEIDKANTEN- UND NUTENGEOMETRIE**
Ermöglicht verbesserte Scherfähigkeit und Spansteuerung in Aluminiumlegierungen

07 **GEEIGNET FÜR DIE MATERIALIGRUPPEN M**

FRANÇAIS

01 **GÉOMÉTRIE AUTO-CENTRANT**
Excellente geometrie et precision des trous

02 **GOUJURE À FORME INCURVÉE**
large gougure pour un degagement maximal des copeaux

03 **GOUJURES HAUTEMENT POLIES**
Garantit une évacuation des copeaux rapide et efficace et réduit radicalement l'accumulation sur les arêtes

04 **TROU D'HUILE**
Augmente les vitesses de coupe de plus de 30% Améliore l'etat de surface

05 **GÉOMÉTRIE DES GOUJURES D'ARÊTE SUPÉRIEURE**
La géométrie des goujures réduite génère une découpe et un fractionnement des copeaux pour favoriser une évacuation fluide des copeaux

06 **ACUITÉE D'ARÊTE OPTIMALE**
Permet un meilleur contrôle des copeaux dans les alliages d'aluminium

07 **ADAPTÉ AUX MATÉRIAUX M**

ITALIANO

01 **GEOMETRIA AUTOCENTRANTE**
Qualità del foro eccellenza senza operazioni di foratura centrale

02 **FORMA DELLA SCANALATURA CURVA**
· Spazio massimo dei trucioli per un'evacuazione più veloce
· Punta tagliente iniziale vicina al centro

03 **SCANALATURE ALTAMENTE LEVIGATE**
Assicura una evacuazione rapida ed efficace e riduce enormemente la formazione di materiale di riporto

04 **FORO DELL'OLIO PER FORATURA AD ALTE PRESTAZIONE**
aumenta le velocità di taglio e l'avanzamento di oltre il 30% Migliora la finitura superficiale del componente lavorato

05 **GEOMETRIA DELLA SCANALATURA CON BORDO SUPERIORE**
La geometri ridotta della scanalatura genera tagli e rotture iniziali dei trucioli per favorirne un'evacuazione ottimale

06 **ANGOLI DI TAGLIO AFFILATI**
Consente capacità di taglio migliorate e il controllo dei trucioli nelle leghe di acciaio

07 **ADATTO PER IL MATERIALE M**

中文

01 **定圆心的几何形状**
优质的钻孔质量

02 **曲槽形的设计**
· 加大的溝槽有利于快速排屑
· 切割点靠近中心

03 **鏡面抛光的排屑槽**
更快速、高效的排屑和极减少鐵屑堆積

04 **高性能的内油孔**
切削速率和进给提高 30% 以上 优良工件的表面光洁度

05 **顶尖沟槽的几何形状**
更顺畅的排屑，提高生产率

06 **锋利的切削刃**
改善铝合金的剪切能力和铁屑控制

07 **适合加工有色金属的材料**

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm² ≤35 HRC

HPMT

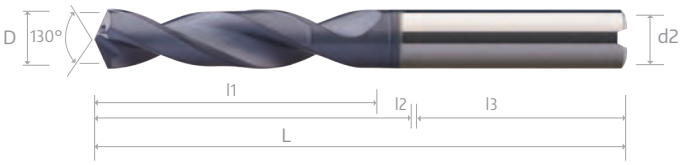
VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537K
130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc
selon DIN 6537K angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537K
con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于
DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

D07*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D07*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
* 0300 062 03	3	14	20	36	62	3	○
0300	3	14	20	36	62	6	●
* 0310 062 03	3.1	14	20	36	62	3	○
0310	3.1	14	20	36	62	6	●
* 0320 062 03	3.2	14	20	36	62	3	○
0320	3.2	14	20	36	62	6	●
0330	3.3	14	20	36	62	6	●
0340	3.4	14	20	36	62	6	●
0350	3.5	14	20	36	62	6	●
0360	3.6	14	20	36	62	6	●
0370	3.7	14	20	36	62	6	●
0380	3.8	17	24	36	66	6	●
0390	3.9	17	24	36	66	6	●
* 0400 066 04	4	17	24	36	66	4	○
0400	4	17	24	36	66	6	●
* 0410 066 04	4.1	17	24	36	66	4	○
0410	4.1	17	24	36	66	6	●
* 0420 066 04	4.2	17	24	36	66	4	○
0420	4.2	17	24	36	66	6	●
0430	4.3	17	24	36	66	6	●
0440	4.4	17	24	36	66	6	●
0450	4.5	17	24	36	66	6	●
0460	4.6	17	24	36	66	6	●
0470	4.7	17	24	36	66	6	●
0480	4.8	20	28	36	66	6	●
0490	4.9	20	28	36	66	6	●
0500	5	20	28	36	66	6	●
0510	5.1	20	28	36	66	6	●

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

492

Technical specifications subject to change without prior notice

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm² ≤35 HRC

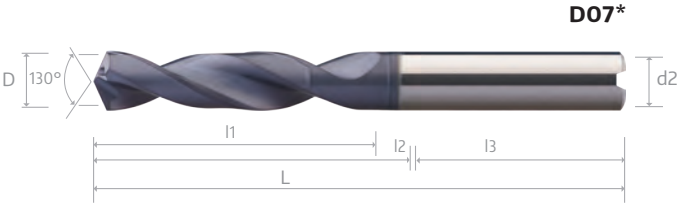
HPMT

VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537K
130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc
selon DIN 6537K angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537K
con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于
DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA



D07*



Z2



HPT G6110 AlCrN

DR NiTiCo

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D07*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	•
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	•
0600	6	20	28	36	66	6	•
* 0610 066 06	6.1	20	28	36	66	6	○
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	•
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	•
0700	7	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

492

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm² ≤35 HRC

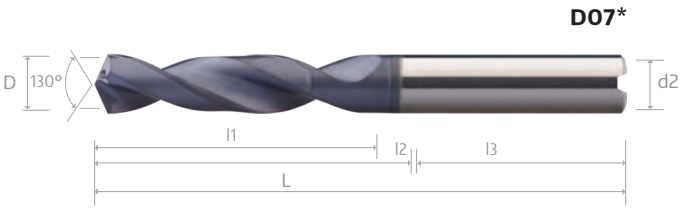
HPMT

VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537K
130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc
selon DIN 6537K angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537K
con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于
DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA







HPT G6110 AlCrN

DR NiTiCo

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D07*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0790	7.9	29	41	36	79	8	•
0800	8	29	41	36	79	8	•
* 0810 079 08	8.1	29	41	36	79	8	○
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•
0900	9	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1020	10.2	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

492

Spécifications techniques sujettes à changement sans avis prélable

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537K – 130° Point Angle – 3 x Ø

≤ 700 N/mm² ≤35 HRC

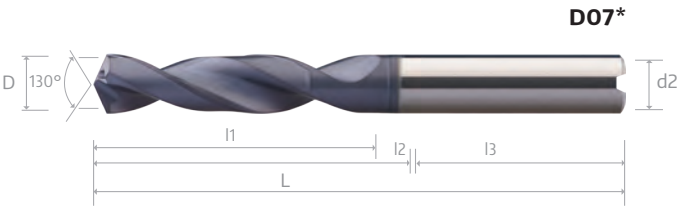
HPMT

VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537K
130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc
selon DIN 6537K angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537K
con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于
DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA



D07*



Z2



HPT G6110 AlCrN

DR NiTiCo

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D07*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
1130	11.3	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1200	12	40	55	45	102	12	•
1220	12.2	43	60	45	107	14	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1280	12.8	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1330	13.3	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1380	13.8	43	60	45	107	14	•
1400	14	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15	45	65	48	115	16	•
1530	15.3	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1580	15.8	45	65	48	115	16	•
1600	16	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20	55	79	50	131	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

492

Modifiche Techiche possibili senza preavviso

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm² ≤35 HRC

HPMT

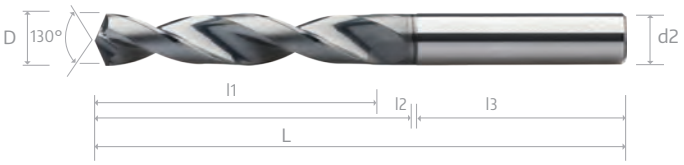
VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

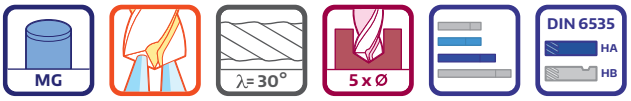
整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D08*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
* 0300 066 03	3	23	28	36	66	3	○
0300	3	23	28	36	66	6	●
* 0310 0 66 03	3.1	23	28	36	66	3	○
0310	3.1	23	28	36	66	6	●
* 0320 066 03	3.2	23	28	36	66	3	○
0320	3.2	23	28	36	66	6	●
0330	3.3	23	28	36	66	6	●
0340	3.4	23	28	36	66	6	●
0350	3.5	23	28	36	66	6	●
0360	3.6	23	28	36	66	6	●
0370	3.7	23	28	36	66	6	●
0380	3.8	29	36	36	74	6	●
0390	3.9	29	36	36	74	6	●
* 0400 074 04	4	29	36	36	74	4	○
0400	4	29	36	36	74	6	●
* 0410 074 04	4.1	29	36	36	74	4	○
0410	4.1	29	36	36	74	6	●
* 0420 074 04	4.2	29	36	36	74	4	○
0420	4.2	29	36	36	74	6	●
0430	4.3	29	36	36	74	6	●
0440	4.4	29	36	36	74	6	●
0450	4.5	29	36	36	74	6	●
0460	4.6	29	36	36	74	6	●
0470	4.7	29	36	36	74	6	●
0480	4.8	35	44	36	82	6	●
0490	4.9	35	44	36	82	6	●
0500	5	35	44	36	82	6	●
0510	5.1	35	44	36	82	6	●

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

493

若有技术规格变更，恕不事先通知

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm² ≤35 HRC

HPMT

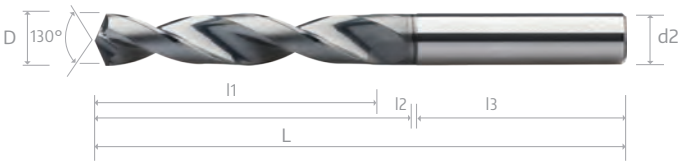
VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

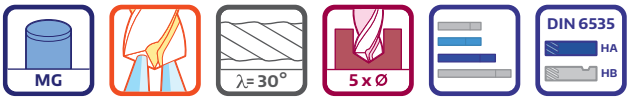
整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D08*





Z2



HPT G6110 AlCrN

DR NiTiCo

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•
0600	6	35	44	36	82	6	•
* 0610 082 06	6.1	35	44	36	82	6	○
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

493

Technical specifications subject to change without prior notice

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm² ≤35 HRC

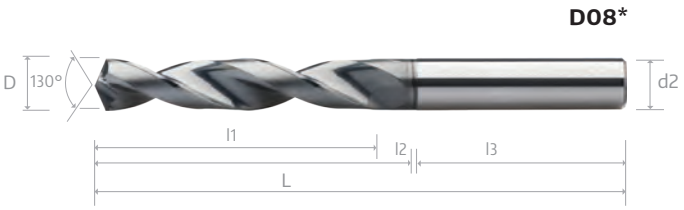
HPMT

VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

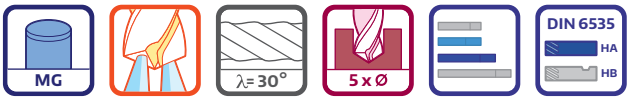
整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA



D08*



Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	8	•
* 0810 091 08	8.1	43	53	36	91	8	○
0810	8.1	49	61	40	103	10	•
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

493

Technische änderungen ohne vorherige information vorbehalten

DR NiTiCo

OIL FEED TWIST DRILLS – DIN 6537L – 130° Point Angle – 5 x Ø

≤ 700 N/mm² ≤35 HRC

HPMT

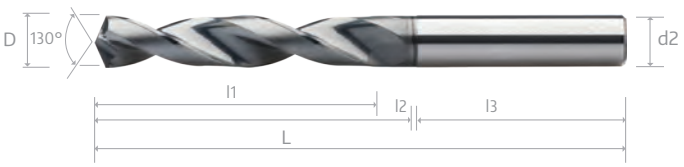
VHM DR NiTiCo Kühlkanalbohrer nach DIN 6537L, 130° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR NiTiCo à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 130°, queue selon DIN 6535HA

Punte elicoidali DR NiTiCo in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 130°, codolo DIN 6535HA

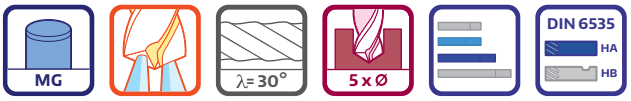
整体硬质合金 DR NiTiCo 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

D08*





Z2



HPT G6110 AlCrN

DR NiTiCo

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						D08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•
1270	12.7	60	77	45	124	14	•
1280	12.8	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	48	133	16	•
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
								○	○	○						

Cutting Parameter

493



Oil Feed Twist Drills – 3 × Ø

Working Material	M				S	
	Stainless Steel		Stainless Steel		Titanium Alloy	
Properties	High Machinability		Low Machinability		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	35	0.066	30	0.050	25	0.048
4		0.079		0.060		0.057
5		0.090		0.071		0.067
6		0.102		0.080		0.076
7		0.114		0.091		0.086
8		0.126		0.101		0.095
9		0.137		0.112		0.104
10		0.149		0.121		0.112
11		0.162		0.132		0.122
12		0.173		0.142		0.131
13		0.185		0.152		0.141
14		0.196		0.162		0.150
15		0.208		0.172		0.159
16		0.220		0.182		0.169
17		0.232		0.193		0.178
18		0.244		0.203		0.187
19		0.256		0.213		0.196
20		0.268		0.223		0.205

M S

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Oil Feed Twist Drills – 5 × Ø



Working Material	M				S	
	Stainless Steel		Stainless Steel		Titanium Alloy	
Properties	High Machinability		Low Machinability		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	35	0.056	30	0.042	25	0.041
4		0.067		0.051		0.049
5		0.077		0.060		0.057
6		0.086		0.068		0.064
7		0.097		0.077		0.073
8		0.107		0.086		0.080
9		0.117		0.095		0.088
10		0.127		0.103		0.096
11		0.137		0.112		0.104
12		0.147		0.121		0.112
13		0.157		0.129		0.120
14		0.167		0.137		0.127
15		0.177		0.146		0.135
16		0.187		0.155		0.143
17		0.197		0.164		0.151
18		0.207		0.172		0.159
19		0.218		0.181		0.167
20		0.228		0.190		0.174

DR 45

01

SPLIT POINT DESIGN

· Provides self centering ability and reduced thrust

02

VARY CUTTING EDGE

· Produces small chips
· Improves chip evacuation

03

EFFECTIVE CLEARANCE AND GASH

· Lower cutting forces
· Improves chip formation and control

04

CORNER REINFORCEMENT

· Adds protection during the drilling process

05

OIL HOLE V-GROOVE

· Improves the flushing out of chips during drilling

06

J FLUTE SHAPE

· Provides better chip evacuation





06

SUITABLE FOR MATERIAL P, M, K, S

P M K S

DEUTSCH

01 **KREUZANSCHLIFF**
Optimale Selbstzentrierung und reduziert Axialdruck

02 **S-FÖRMIGE SCHNEIDENGEOMETRIE**
· Erzeugt kleine Späne
· verbessert den Spänefluß

03 **EFFEKTIVER SPANRAUM UND SCHNITT**
· Niedrigere Schnittkräfte
· Verbessert die Spanbildung und Spankontrolle

04 **SCHNEIDECKENVERSTÄRKUNG**
Sorgt für mehr Stabilität beim Bohren

05 **KÜHLKANÄLE IN V-STIRNANSCHLIFF**
besseres Ausspülen der Späne während des Bohrens

06 **J-FÖRMIGE NUTEN**
bietet einen verbesserten Spänefluß

07 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, K, S**

FRANÇAIS

01 **CONCEPTION À AFFÛTAGE 4 FACES CROISÉES**
auto centrant, éfforts de coupes réduit

02 **PROTECTION DE L'ARÊTE DE COUPE**
· très bon brise copeaux
· Améliore l'évacuation des copeaux

03 **DÉGAGEMENT ET RAINURE DE LOGEMENT EFFICACES**
· Forces de coupe inférieures
· Améliore la formation et le contrôle des copeaux

04 **RAYON TORIQUE SUR LES ARÊTES**
pour une meilleur protection pendant le percage

05 **ARROSAGE AU CENTRE AVEC RAINURE DE COMMUNICATION**
Améliore l'évacuation des copeaux pendant le perçage

06 **GOUJURE À FORME EN J**
Permet une meilleure évacuation des copeaux

07 **ADAPTÉ AUX MATÉRIAUX P, M, K, S**

ITALIANO

01 **STRUTTURA DEL PUNTO DI RIPARTIZIONE**
Offre capacità autocentranti e spinta ridotta

02 **ANGOLO DI TAGLIO DEBOLE**
· Produce piccoli trucioli
· Migliora l'evacuazione dei trucioli

03 **GIOCO E SGROSSATURA EFFICACI**
· Forze di taglio inferiori
· Migliora la formazione e il controllo dei trucioli

04 **RAFFORZAMENTO DEGLI ANGOLI**
Aggiunge protezione durante il processo di foratura

05 **SCANALATURA A V DEL FORO DELL'OLIO**
Migliora l'espulsione dei trucioli durante la foratura

06 **FORMA DELLA SCANALATURA A J**
Offre una migliore evacuazione dei trucioli

07 **ADATTO PER IL MATERIALE P, M, K, S**

中文

01 **不等分割的设计**
提供鑽孔定點能力和减小加工阻力

02 **不等径的切削刃**
有效斷屑使鐵屑順利排出

03 **高效率后角与凹槽的设计**
降低加工切削阻力
改善鐵屑的形成和控制

04 **刀尖加强**
在钻孔过程时增加保护

05 **V 型油孔**
鑽孔時鐵屑更順利排出

06 **J 型槽**
提供更好的排屑

07 **适合加工钢、不锈钢、铸铁、超合金和钛的材料**

DR 45 TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 45 HRC

HPMT

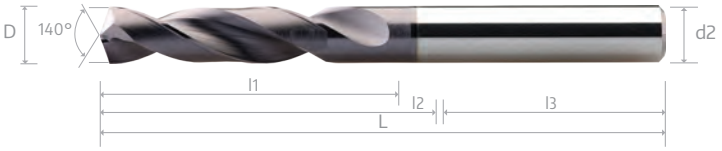
VHM DR 45 Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

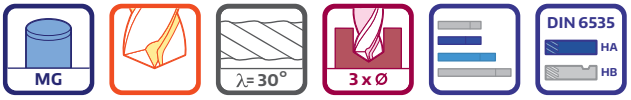
整体硬质合金 DR 45 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

965*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						965 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	B0819
0300	3	14	20	36	62	6	•
0310	3.1	14	20	36	62	6	•
0320	3.2	14	20	36	62	6	•
0330	3.3	14	20	36	62	6	•
0340	3.4	14	20	36	62	6	•
0350	3.5	14	20	36	62	6	•
0360	3.6	14	20	36	62	6	•
0370	3.7	14	20	36	62	6	•
0380	3.8	17	24	36	66	6	•
0390	3.9	17	24	36	66	6	•
0400	4	17	24	36	66	6	•
0410	4.1	17	24	36	66	6	•
0420	4.2	17	24	36	66	6	•
0430	4.3	17	24	36	66	6	•
0440	4.4	17	24	36	66	6	•
0450	4.5	17	24	36	66	6	•
0460	4.6	17	24	36	66	6	•
0470	4.7	17	24	36	66	6	•
0480	4.8	20	28	36	66	6	•
0490	4.9	20	28	36	66	6	•
0500	5	20	28	36	66	6	•
0510	5.1	20	28	36	66	6	•
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 512

Technical specifications subject to change without prior notice

DR 45 TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 45 HRC

HPMT

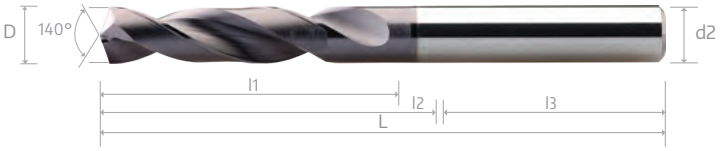
VHM DR 45 Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

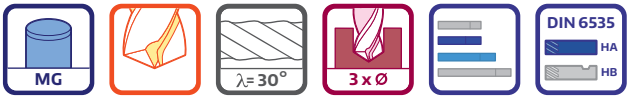
整体硬质合金 DR 45 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

965*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						965 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	B0819
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	•
0600	6	20	28	36	66	6	•
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	•
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	•
0700	7.0	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•
0790	7.9	29	41	36	79	8	•
0800	8.0	29	41	36	79	8	•
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 512

Technische änderungen ohne vorherige information vorbehalten

DR 45 TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 45 HRC

HPMT

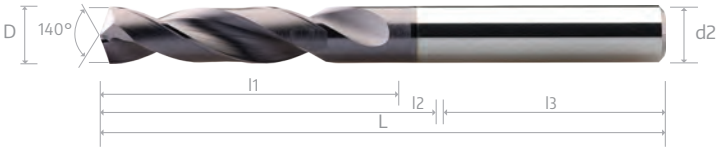
VHM DR 45 Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

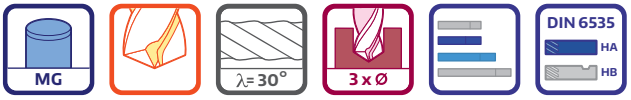
整体硬质合金 DR 45 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

965*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						965 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	B0819
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•
0900	9.0	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1010	10.1	40	55	45	102	12	•
1020	10.2	40	55	45	102	12	•
1030	10.3	40	55	45	102	12	•
1040	10.4	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1060	10.6	40	55	45	102	12	•
1070	10.7	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1090	10.9	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1110	11.1	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•
1130	11.3	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 512

Spécifications techniques sujettes à changement sans avis prélable

DR 45 TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≤ 900 N/mm² + B0819 ≤ 45 HRC

HPMT

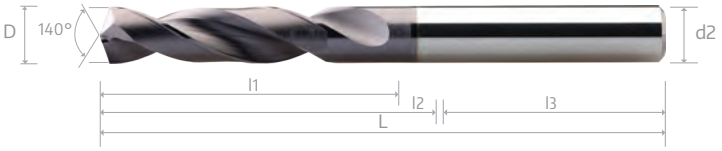
VHM DR 45 Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

965*









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						965 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	B0819
1140	11.4	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1160	11.6	40	55	45	102	12	•
1170	11.7	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1190	11.9	40	55	45	102	12	•
1200	12	40	55	45	102	12	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1400	14.0	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15.0	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1600	16.0	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17.0	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18.0	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19.0	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20.0	55	79	50	131	20	•

DR 45

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 512

DR 45 TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 45 HRC

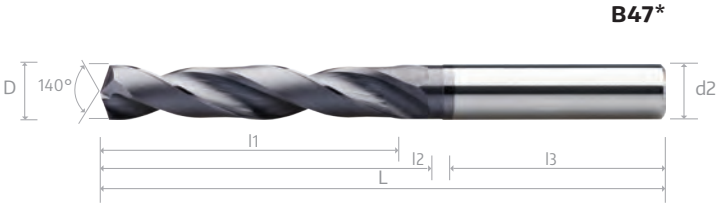
HPMT

VHM DR 45 Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

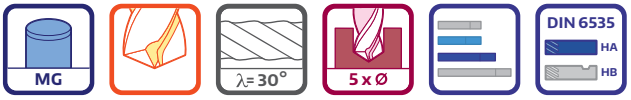
Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD，柄部标准 DIN 6535HA







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B47 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0300	3	23	28	36	66	6	•
0310	3.1	23	28	36	66	6	•
0320	3.2	23	28	36	66	6	•
0330	3.3	23	28	36	66	6	•
0340	3.4	23	28	36	66	6	•
0350	3.5	23	28	36	66	6	•
0360	3.6	23	28	36	66	6	•
0370	3.7	23	28	36	66	6	•
0380	3.8	29	36	36	74	6	•
0390	3.9	29	36	36	74	6	•
0400	4	29	36	36	74	6	•
0410	4.1	29	36	36	74	6	•
0420	4.2	29	36	36	74	6	•
0430	4.3	29	36	36	74	6	•
0440	4.4	29	36	36	74	6	•
0450	4.5	29	36	36	74	6	•
0460	4.6	29	36	36	74	6	•
0470	4.7	29	36	36	74	6	•
0480	4.8	35	44	36	82	6	•
0490	4.9	35	44	36	82	6	•
0500	5	35	44	36	82	6	•
0510	5.1	35	44	36	82	6	•
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 513

若有技☒☒格☒更，恕不事先通知

DR 45 TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 45 HRC

HPMT

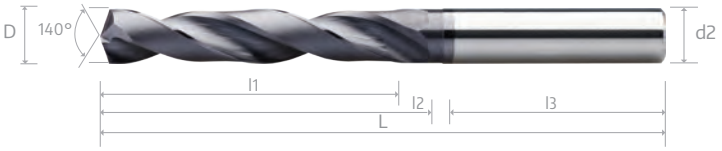
VHM DR 45 Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA

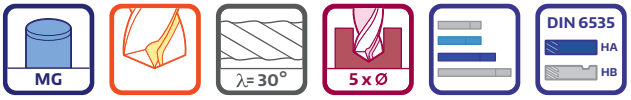
整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD，柄部标准 DIN 6535HA

B47*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B47 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0600	6	35	44	36	82	6	•
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	10	•
0810	8.1	49	61	40	103	10	•
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

513

Technical specifications subject to change without prior notice

DR 45 TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 45 HRC

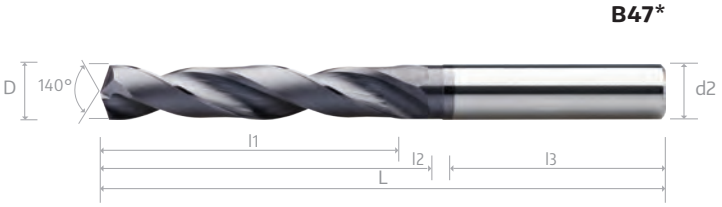
HPMT

VHM DR 45 Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

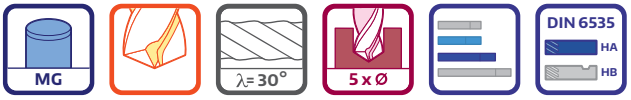
Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD，柄部标准 DIN 6535HA







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B47 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•
1270	12.7	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	45	133	16	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

513

Technische änderungen ohne vorherige information vorbehalten

DR 45

TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 45 HRC

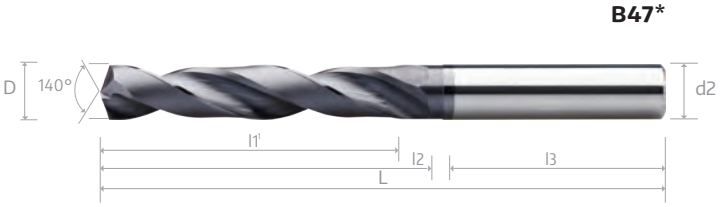
HPMT

VHM DR 45 Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

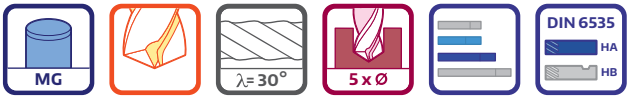
Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD，柄部标准 DIN 6535HA









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B47 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	B0819
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

513

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + B0819 / G6110 ≤ 48 HRC

HPMT

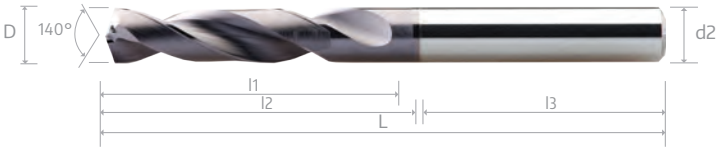
VHM DR 45 Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

B48*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B48 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
* 0300 062 03	3	14	20	36	62	3	○
0300	3	14	20	36	62	6	●
* 0310 062 03	3	14	20	36	62	3	○
0310	3	14	20	36	62	6	●
* 0320 062 03	3	14	20	36	62	3	○
0320	3	14	20	36	62	6	●
0330	3	14	20	36	62	6	●
0340	3	14	20	36	62	6	●
0350	4	14	20	36	62	6	●
0360	4	14	20	36	62	6	●
0370	4	14	20	36	62	6	●
0380	4	17	24	36	66	6	●
0390	4	17	24	36	66	6	●
* 0400 066 04	4	17	24	36	66	4	○
0400	4	17	24	36	66	6	●
* 0410 066 04	4	17	24	36	66	4	○
0410	4	17	24	36	66	6	●
* 0420 066 04	4	17	24	36	66	4	○
0420	4	17	24	36	66	6	●
0430	4	17	24	36	66	6	●
0440	4	17	24	36	66	6	●
0450	5	17	24	36	66	6	●
0460	5	17	24	36	66	6	●
0470	5	17	24	36	66	6	●
0480	5	20	28	36	66	6	●
0490	5	20	28	36	66	6	●
0500	5	20	28	36	66	6	●
0510	5	20	28	36	66	6	●
0520	5	20	28	36	66	6	●
0530	5	20	28	36	66	6	●

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

514

若有技☒☒格☒更，恕不事先通知

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + B0819 / G6110 ≤ 48 HRC

HPMT

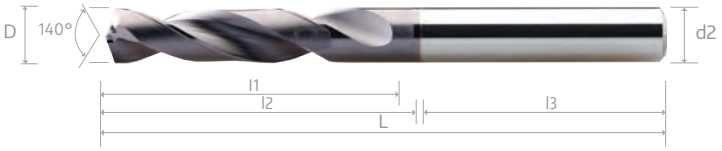
VHM DR 45 Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

B48*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B48 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	○
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	○
0600	6	20	28	36	66	6	•
* 0610 066 06	6.1	20	28	36	66	6	•
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	○
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	○
0700	7	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•
0790	7.9	29	41	36	79	8	•
0800	8	29	41	36	79	8	•
* 0810 079 08	8.1	29	41	36	79	8	○
0810	8.1	35	47	40	89	10	•

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter: 514

Technical specifications subject to change without prior notice

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + B0819 / G6110 ≤ 48 HRC

HPMT

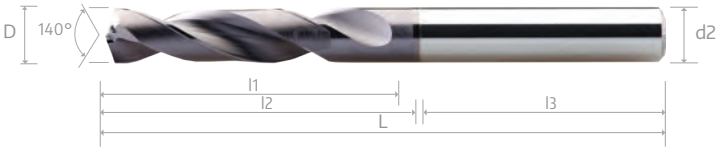
VHM DR 45 Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

B48*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B48 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•
0900	9	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1020	10.2	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•
1130	11.3	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1200	12	40	55	45	102	12	•
1220	12.2	43	60	45	107	14	•
1250	12.5	43	60	45	107	14	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

514

Technische änderungen ohne vorherige information vorbehalten

DR 45

OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + B0819 / G6110 ≤ 48 HRC

HPMT

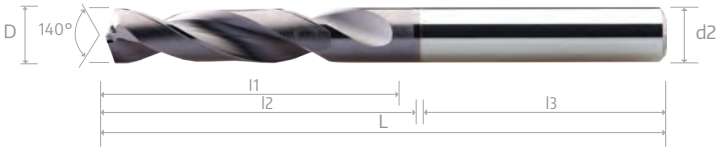
VHM DR 45 Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR 45 en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

B48*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						B48 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
1270	12.7	43	60	45	107	14	•
1280	12.8	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1330	13.3	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1380	13.8	43	60	45	107	14	•
1400	14	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15	45	65	48	115	16	•
1530	15.3	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1580	15.8	45	65	48	115	16	•
1600	16	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20	55	79	50	131	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

514

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 48 HRC

HPMT

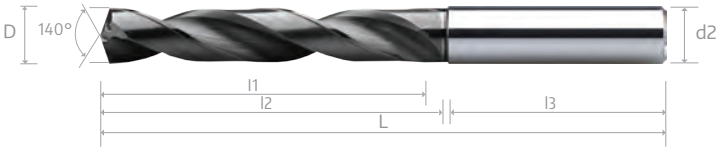
VHM DR 45 Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

olid Carbide DR 45 Oil Feed Twist Drills acc. to DIN 6537L, point angle 140°, shank acc. to DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

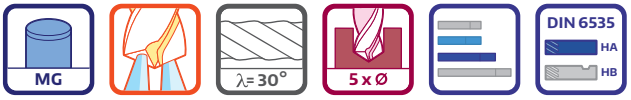
整体硬质合金 DR 45 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

967*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						967 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
* 0300 066 03	3	23	28	36	66	3	○
0300	3	23	28	36	66	6	•
* 0310 066 03	3.1	23	28	36	66	3	○
0310	3.1	23	28	36	66	6	•
* 0320 066 03	3.2	23	28	36	66	3	○
0320	3.2	23	28	36	66	6	•
0330	3.3	23	28	36	66	6	•
0340	3.4	23	28	36	66	6	•
0350	3.5	23	28	36	66	6	•
0360	3.6	23	28	36	66	6	•
0370	3.7	23	28	36	66	6	•
0380	3.8	29	36	36	74	6	•
0390	3.9	29	36	36	74	6	•
* 0400 074 04	4	29	36	36	74	4	○
0400	4	29	36	36	74	6	•
* 0410 074 04	4.1	29	36	36	74	4	○
0410	4.1	29	36	36	74	6	•
* 0420 074 04	4.2	29	36	36	74	4	○
0420	4.2	29	36	36	74	6	•
0430	4.3	29	36	36	74	6	•
0440	4.4	29	36	36	74	6	•
0450	4.5	29	36	36	74	6	•
0460	4.6	29	36	36	74	6	•
0470	4.7	29	36	36	74	6	•
0480	4.8	35	44	36	82	6	•
0490	4.9	35	44	36	82	6	•
0500	5	35	44	36	82	6	•
0510	5.1	35	44	36	82	6	•
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

515

若有技☒☒格☒更，恕不事先通知

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 48 HRC

HPMT

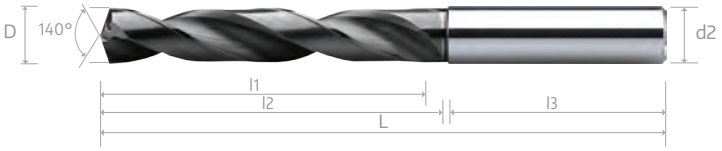
VHM DR 45 Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

olid Carbide DR 45 Oil Feed Twist Drills acc. to DIN 6537L, point angle 140°, shank acc. to DIN 6535HA

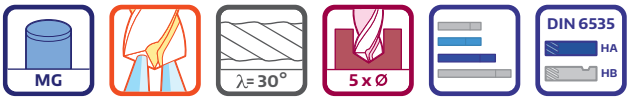
Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

967*







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						967 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•
0600	6	35	44	36	82	6	•
* 0610 066 06	6.1	35	44	36	82	6	○
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	8	•
* 0810 079 08	8.1	43	53	36	91	8	○
0810	8.1	49	61	40	103	10	•

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

515

Technical specifications subject to change without prior notice

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 48 HRC

HPMT

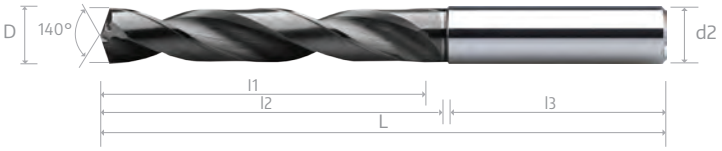
VHM DR 45 Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

olid Carbide DR 45 Oil Feed Twist Drills acc. to DIN 6537L, point angle 140°, shank acc. to DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

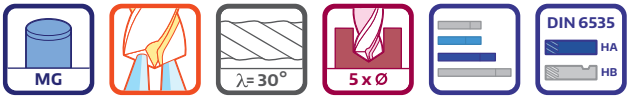
整体硬质合金 DR 45 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

967*





Z2



HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						967 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

515

Technische änderungen ohne vorherige information vorbehalten

DR 45 OIL FEED TWIST DRILLS – DIN 6537K – 5 x Ø

≤ 1.300 N/mm² + B0819 ≤ 48 HRC

HPMT

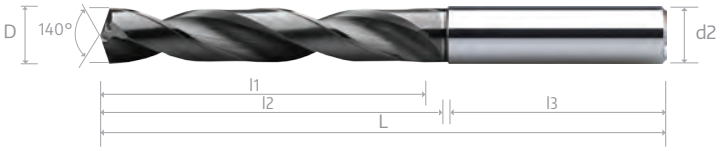
VHM DR 45 Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

olid Carbide DR 45 Oil Feed Twist Drills acc. to DIN 6537L, point angle 140°, shank acc. to DIN 6535HA

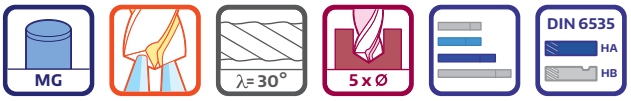
Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR 45 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

967*







HPT B0819 AlTiN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						967 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	B0819
1270	12.7	60	77	45	124	14	•
1280	12.8	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	48	133	16	•
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	○	○	○	○	○				

Cutting Parameter

515

HPMT



Twist Drills – 3 × Ø

	P				M				K				S			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3		0.086		0.025		0.078		0.059		0.080		0.076		0.036		0.057
4		0.106		0.030		0.092		0.070		0.100		0.095		0.044		0.067
5		0.126		0.036		0.106		0.083		0.120		0.114		0.054		0.079
6		0.145		0.040		0.120		0.095		0.140		0.133		0.063		0.089
7		0.170		0.045		0.134		0.107		0.160		0.152		0.072		0.101
8		0.194		0.049		0.148		0.119		0.180		0.171		0.081		0.111
9		0.215		0.054		0.162		0.131		0.200		0.190		0.090		0.122
10		0.235		0.058		0.175		0.143		0.219		0.209		0.099		0.132
11	90	0.256	20	0.063	40	0.190	30	0.155	95	0.240	85	0.224	20	0.108	30	0.144
12		0.276		0.067		0.204		0.167		0.260		0.247		0.117		0.154
13		0.297		0.072		0.217		0.179		0.280		0.266		0.126		0.166
14		0.317		0.077		0.231		0.190		0.300		0.285		0.134		0.176
15		0.338		0.082		0.245		0.203		0.320		0.303		0.144		0.187
16		0.358		0.086		0.259		0.214		0.340		0.323		0.152		0.198
17		0.379		0.091		0.273		0.227		0.360		0.342		0.162		0.209
18		0.400		0.096		0.287		0.238		0.380		0.361		0.171		0.219
19		0.420		0.101		0.301		0.251		0.400		0.380		0.180		0.231
20		0.441		0.105		0.315		0.263		0.420		0.399		0.189		0.242

P M K S | P K

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

HPMT

Twist Drills – 5 × Ø



	P				M				K				S			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3		0.073		0.021		0.066		0.050		0.068		0.064		0.030		0.048
4		0.090		0.026		0.079		0.060		0.085		0.080		0.037		0.057
5		0.107		0.030		0.090		0.071		0.102		0.097		0.046		0.067
6		0.123		0.034		0.102		0.080		0.119		0.113		0.054		0.076
7		0.145		0.038		0.114		0.091		0.136		0.129		0.062		0.086
8		0.165		0.042		0.126		0.101		0.153		0.145		0.069		0.095
9		0.183		0.046		0.137		0.112		0.170		0.162		0.077		0.104
10		0.200		0.049		0.149		0.121		0.187		0.178		0.084		0.112
11	90	0.218	20	0.054	40	0.162	30	0.132	95	0.204	85	0.190	20	0.092	30	0.122
12		0.235		0.057		0.173		0.142		0.221		0.210		0.099		0.131
13		0.253		0.061		0.185		0.152		0.238		0.226		0.107		0.141
14		0.270		0.065		0.196		0.162		0.255		0.242		0.114		0.150
15		0.287		0.070		0.208		0.172		0.272		0.258		0.122		0.159
16		0.304		0.073		0.220		0.182		0.289		0.275		0.129		0.169
17		0.322		0.078		0.232		0.193		0.306		0.291		0.137		0.178
18		0.340		0.081		0.244		0.203		0.323		0.307		0.145		0.187
19		0.357		0.086		0.256		0.213		0.340		0.323		0.153		0.196
20		0.441		0.089		0.268		0.223		0.357		0.339		0.161		0.205

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Oil Feed Twist Drills – 3 × Ø



	P				M				K				S			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3		0.101		0.027		0.089		0.068		0.106		0.101		0.042		0.060
4		0.123		0.034		0.106		0.081		0.131		0.125		0.053		0.072
5		0.145		0.039		0.122		0.095		0.156		0.148		0.062		0.084
6		0.167		0.044		0.138		0.109		0.181		0.171		0.071		0.096
7		0.192		0.049		0.155		0.123		0.206		0.195		0.082		0.108
8		0.216		0.055		0.170		0.136		0.230		0.218		0.091		0.120
9		0.237		0.060		0.186		0.151		0.255		0.242		0.102		0.132
10		0.258		0.064		0.202		0.164		0.279		0.265		0.111		0.144
11	100	0.279	25	0.069	50	0.219	40	0.179	105	0.303	95	0.289	25	0.122	35	0.155
12		0.299		0.074		0.234		0.192		0.328		0.312		0.131		0.167
13		0.319		0.079		0.250		0.205		0.353		0.335		0.142		0.180
14		0.339		0.084		0.266		0.219		0.377		0.358		0.151		0.191
15		0.360		0.089		0.281		0.233		0.402		0.381		0.161		0.203
16		0.380		0.096		0.298		0.246		0.426		0.405		0.171		0.215
17		0.401		0.101		0.314		0.261		0.452		0.428		0.181		0.227
18		0.422		0.106		0.330		0.274		0.476		0.452		0.190		0.238
19		0.442		0.110		0.347		0.289		0.501		0.476		0.201		0.251
20		0.463		0.116		0.362		0.302		0.525		0.499		0.210		0.263

P M K S | P K

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

HPMT



Oil Feed Twist Drills – 5 × Ø

	P				M				K				S			
Working Material	Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3		0.101		0.027		0.076		0.057		0.106		0.101		0.042		0.060
4		0.123		0.034		0.090		0.069		0.131		0.125		0.053		0.072
5		0.145		0.039		0.104		0.081		0.156		0.148		0.062		0.084
6		0.167		0.044		0.117		0.092		0.181		0.171		0.071		0.096
7		0.192		0.049		0.131		0.105		0.206		0.195		0.082		0.108
8		0.216		0.055		0.145		0.116		0.230		0.218		0.091		0.120
9		0.237		0.060		0.158		0.128		0.255		0.242		0.102		0.132
10		0.258		0.064		0.171		0.140		0.279		0.265		0.111		0.144
11		0.279		0.069		0.186		0.152		0.303		0.289		0.122		0.155
12	100	0.299	25	0.074	50	0.199	40	0.163	105	0.328	95	0.312	25	0.131	35	0.167
13		0.319		0.079		0.212		0.174		0.353		0.335		0.142		0.180
14		0.339		0.084		0.226		0.186		0.377		0.358		0.151		0.191
15		0.360		0.089		0.239		0.198		0.402		0.381		0.161		0.203
16		0.380		0.096		0.254		0.209		0.426		0.405		0.171		0.215
17		0.401		0.101		0.267		0.222		0.452		0.428		0.181		0.227
18		0.422		0.106		0.280		0.233		0.476		0.452		0.190		0.238
19		0.442		0.110		0.295		0.245		0.501		0.476		0.201		0.251
20		0.463		0.116		0.308		0.257		0.525		0.499		0.210		0.263

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR VA

01

RADIUS GASH DESIGN

- Edge protection for that particular area
- Generate shorter chip for better chip evacuation

02

X-THINNING

- Better self-centering on initial cutting





03

FLUTES POLISHED

- Ensures fast, efficient chips evacuation and drastically reduces built-up edge

04

STRAIGHT EDGE PROFILE

- Shorter chip and reinforced cutting edge

05

REGRIND AND HONING FRIENDLY

06

SUITABLE FOR MATERIAL GROUPS

P M K S

DEUTSCH

01 **RADIUS-SPANNUTENGEOMETRIE**
- Optimierter Kantenschutz für den Einsatz VA
- Erzeugt kleinere Späne für besseren Spänefluß

02 **X-AUSSPITZUNG**
- Bessere Selbstzentrierung beim Anschnittl

03 **POLIERTE SCHNEIDEN**
- Sorgt für schnellen effizienten Spänefluß und reduziert die Bildung von Aufbauschneiden

04 **GERADES KANTENPROFIL**
- Kürzerer Span und verstärkte Schneidkante

05 **LEICHT NACHZUSCHLEIFEN**

06 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, K, S**

FRANÇAIS

01 **CONCEPTION DES GOUJURES RAYONÉES**
- Protection des arêtes pour cette zone en particulier
- Génère des copeaux plus courts pour une meilleure évacuation

02 **AMINCISSEMENT EN X**
- Meilleur auto-centrage à l'attaque du percage

03 **GOUJURES HAUTEMENT POLIES**
- Garantit une évacuation des copeaux rapide et efficace et réduit radicalement

04 **PROFIL D'ARÊTE DROITE**
- Copeaux plus courts et arête de coupe renforcée

05 **COMPATIBLE AVEC LE RÉAFFÛTAGE ET LE PIERRAGE**

06 **ADAPTÉ AUX MATÉRIAUX P, M, K, S**

ITALIANO

01 **STRUTTURA SGROSSATURA RAGGIO**
- Protezione angoli per quell'area specifica
- Genera trucioli più piccoli per una migliore evacuazione

02 **X-ASSOTTIGLIAMENTO**
- Miglior autocentraggio al taglio iniziale

03 **SCANALATURE ALTAMENTE LEVIGATE**
- Assicura una evacuazione rapida ed efficace e riduce enormemente la formazione di materiale di riporto

04 **PROFILO DRITTO**
- Trucioli più corti e angolo di taglio rinforzato

05 **RIAFFILATURA E RIFINITURA**

06 **ADATTO PER IL MATERIALE P, M, K, S**

中文

01 **.圆角转角的设计**
- 刀具边缘保护
- 更短的碎屑与更好的排屑

02 **特殊的幾何設計**
钻洞时有最佳的定圆心

03 **鏡面抛光的排屑槽**
更快速、高效的排屑和极减少鐵屑堆積

04 **垂直切削刃設計**
有效斷屑並强化的切削刃

05 **易于反修研磨**

06 **适合加工钢, 铸铁, 不锈钢, 超合金和钛的材料**

DR VA

OIL FEED TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≥ 1.300 N/mm²

HPMT

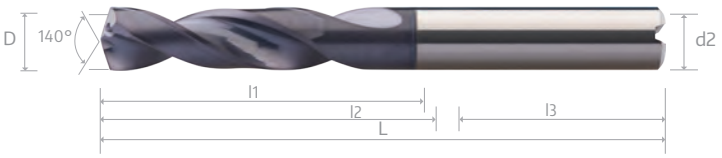
VHM DR VA Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

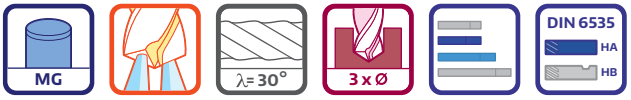
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C73*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C73 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
* 0300 062 03	3	14	20	36	62	3	○
0300	3	14	20	36	62	6	●
* 0310 062 03	3.1	14	20	36	62	3	○
0310	3.1	14	20	36	62	6	●
* 0320 062 03	3.2	14	20	36	62	3	○
0320	3.2	14	20	36	62	6	●
0330	3.3	14	20	36	62	6	●
0340	3.4	14	20	36	62	6	●
0350	3.5	14	20	36	62	6	●
0360	3.6	14	20	36	62	6	●
0370	3.7	14	20	36	62	6	●
0380	3.8	17	24	36	66	6	●
0390	3.9	17	24	36	66	6	●
* 0400 066 04	4	17	24	36	66	4	○
0400	4	17	24	36	66	6	●
* 0410 066 04	4.1	17	24	36	66	4	○
0410	4.1	17	24	36	66	6	●
* 0420 066 04	4.2	17	24	36	66	4	○
0420	4.2	17	24	36	66	6	●
0430	4.3	17	24	36	66	6	●
0440	4.4	17	24	36	66	6	●
0450	4.5	17	24	36	66	6	●
0460	4.6	17	24	36	66	6	●
0470	4.7	17	24	36	66	6	●
0480	4.8	20	28	36	66	6	●
0490	4.9	20	28	36	66	6	●
0500	5	20	28	36	66	6	●
0510	5.1	20	28	36	66	6	●

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter: 526

Technical specifications subject to change without prior notice

DR VA

OIL FEED TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≥ 1.300 N/mm²

HPMT

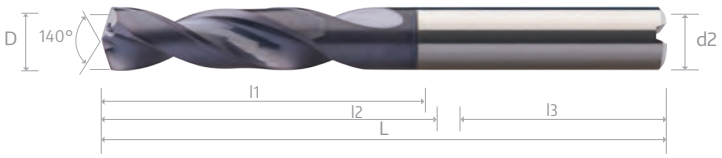
VHM DR VA Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

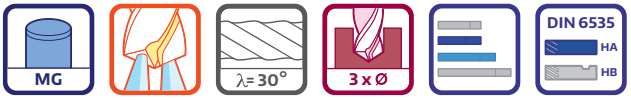
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C73*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C73 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	○
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	○
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	○
0600	6	20	28	36	66	6	•
* 0610 066 06	6.1	20	28	36	66	6	•
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	○
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	○
0700	7	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	○
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter: 526

DR VA

OIL FEED TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≥ 1.300 N/mm²

HPMT

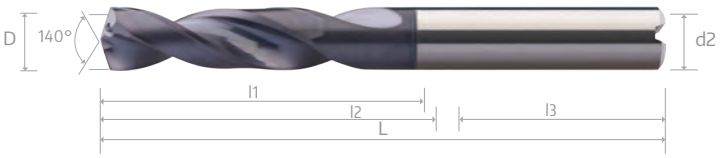
VHM DR VA Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

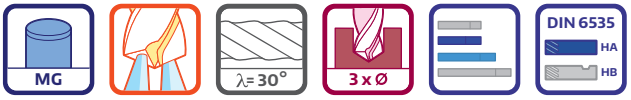
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C73*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C73 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0790	7.9	29	41	36	79	8	•
0800	8	29	41	36	79	8	•
* 0810 079 08	8.1	29	41	36	79	8	•
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•
0900	9	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1020	10.2	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter: 526

Spécifications techniques sujettes à changement sans avis prélable

DR VA

OIL FEED TWIST DRILLS – DIN 6537K – 140° Point Angle – 3 x Ø

≥ 1.300 N/mm²

HPMT

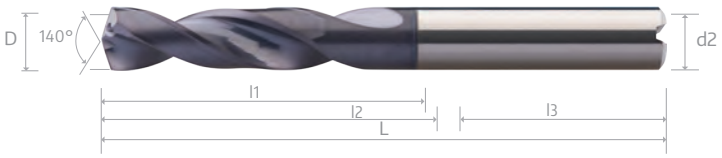
VHM DR VA Kühlkanalbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR 45 in metallo duro integrale norma DIN 6537K con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

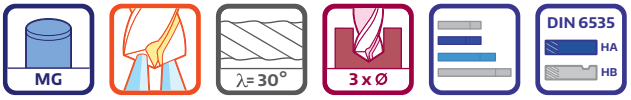
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C73*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C73 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
1130	11.3	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1200	12	40	55	45	102	12	•
1220	12.2	43	60	45	107	14	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1280	12.8	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1330	13.3	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1380	13.8	43	60	45	107	14	•
1400	14	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15	45	65	48	115	16	•
1530	15.3	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1580	15.8	45	65	48	115	16	•
1600	16	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20	55	79	50	131	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter

526

DR VA

OIL FEED TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≥ 1.300 N/mm²

HPMT

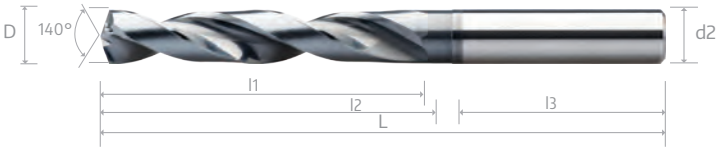
VHM DR VA Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR VA in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

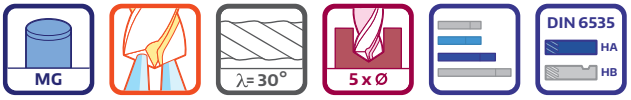
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C77*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C77 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
* 0300 066 03	3	23	28	36	66	3	○
0300	3	23	28	36	66	6	●
* 0310 066 03	3.1	23	28	36	66	3	○
0310	3.1	23	28	36	66	6	●
* 0320 066 03	3.2	23	28	36	66	3	○
0320	3.2	23	28	36	66	6	●
0330	3.3	23	28	36	66	6	●
0340	3.4	23	28	36	66	6	●
0350	3.5	23	28	36	66	6	●
0360	3.6	23	28	36	66	6	●
0370	3.7	23	28	36	66	6	●
0380	3.8	29	36	36	74	6	●
0390	3.9	29	36	36	74	6	●
* 0400 074 04	4	29	36	36	74	4	○
0400	4	29	36	36	74	6	●
* 0410 074 04	4.1	29	36	36	74	4	○
0410	4.1	29	36	36	74	6	●
* 0420 074 04	4.2	29	36	36	74	4	○
0420	4.2	29	36	36	74	6	●
0430	4.3	29	36	36	74	6	●
0440	4.4	29	36	36	74	6	●
0450	4.5	29	36	36	74	6	●
0460	4.6	29	36	36	74	6	●
0470	4.7	29	36	36	74	6	●
0480	4.8	35	44	36	82	6	●
0490	4.9	35	44	36	82	6	●
0500	5	35	44	36	82	6	●
0510	5.1	35	44	36	82	6	●

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter: 527

若有技☒☒格☒更，恕不事先通知

DR VA

OIL FEED TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≥ 1.300 N/mm²

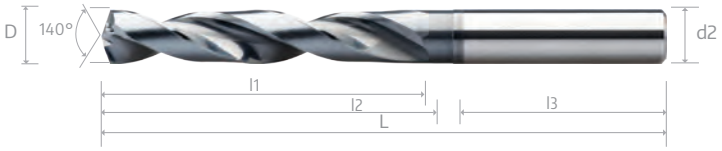
VHM DR VA Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR VA in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

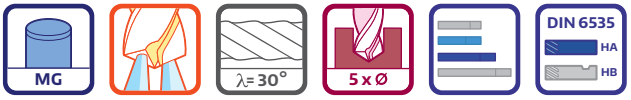
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C77*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C77 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•
0600	6	35	44	36	82	6	•
* 0610 082 06	6.1	35	44	36	82	6	○
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter: 527

Technical specifications subject to change without prior notice

DR VA

OIL FEED TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≥ 1.300 N/mm²

HPMT

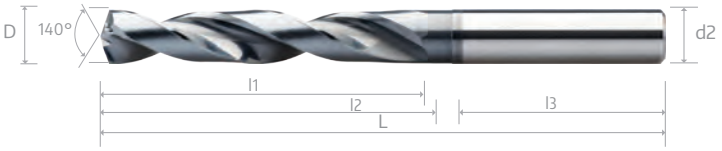
VHM DR VA Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR VA in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

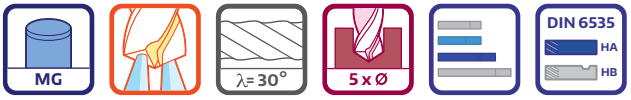
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C77*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C77 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	8	•
* 0810 091 08	8.1	43	53	36	91	8	○
0810	8.1	49	61	40	103	10	•
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter

527

Technische änderungen ohne vorherige information vorbehalten

DR VA

OIL FEED TWIST DRILLS – DIN 6537L – 140° Point Angle – 5 x Ø

≥ 1.300 N/mm²

HPMT

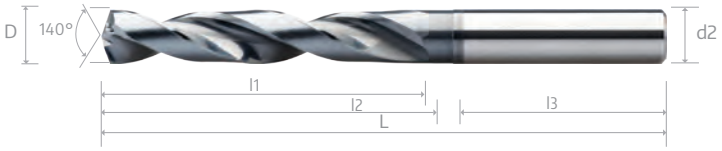
VHM DR VA Kühlkanalbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR VA à trous d'huile en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR VA in metallo duro integrale norma DIN 6537L con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

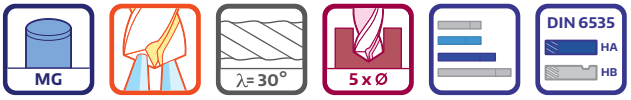
整体硬质合金 DR VA 内冷却 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD, 柄部标准 DIN 6535HA

C77*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						C77 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	G6110
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•
1270	12.7	60	77	45	124	14	•
1280	12.8	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	48	133	16	•
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			○	○	○	○	○	●	●	○	○	○				

Cutting Parameter

527

Oil Feed Twist Drills – 3 × Ø



Drilling	P						M				K				S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Gray Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.119		0.106		0.025		0.082		0.062		0.111		0.106		0.044		0.063
4		0.141		0.129		0.030		0.097		0.074		0.138		0.131		0.056		0.076
5		0.163		0.138		0.036		0.111		0.087		0.164		0.155		0.065		0.088
6		0.184		0.145		0.040		0.126		0.100		0.190		0.180		0.075		0.101
7		0.206		0.170		0.045		0.141		0.112		0.216		0.205		0.085		0.113
8		0.227		0.194		0.049		0.155		0.125		0.242		0.229		0.096		0.126
9		0.249		0.215		0.054		0.170		0.138		0.268		0.254		0.106		0.139
10		0.270		0.235		0.058		0.184		0.150		0.293		0.278		0.117		0.151
11		0.292		0.256		0.063		0.200		0.163		0.319		0.303		0.127		0.164
12	115	0.313	100	0.276	20	0.067	50	0.214	40	0.175	115	0.344	105	0.328	30	0.138	40	0.175
13		0.335		0.297		0.072		0.229		0.188		0.371		0.352		0.148		0.188
14		0.356		0.317		0.077		0.243		0.200		0.396		0.376		0.159		0.201
15		0.377		0.338		0.082		0.257		0.212		0.422		0.400		0.169		0.213
16		0.399		0.358		0.086		0.272		0.226		0.448		0.425		0.180		0.226
17		0.420		0.379		0.091		0.287		0.238		0.475		0.449		0.190		0.238
18		0.442		0.400		0.096		0.301		0.251		0.500		0.475		0.201		0.251
19		0.463		0.420		0.101		0.316		0.264		0.526		0.499		0.210		0.264
20		0.485		0.441		0.105		0.331		0.276		0.551		0.524		0.221		0.276

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Oil Feed Twist Drills – 5 × Ø



Drilling	P						M				K				S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Gray Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.101		0.090		0.021		0.070		0.053		0.095		0.090		0.037		0.054
4		0.120		0.110		0.026		0.082		0.062		0.117		0.112		0.047		0.064
5		0.138		0.117		0.030		0.095		0.074		0.139		0.132		0.055		0.075
6		0.156		0.123		0.034		0.107		0.085		0.162		0.153		0.063		0.086
7		0.175		0.145		0.038		0.120		0.095		0.184		0.174		0.072		0.096
8		0.193		0.165		0.042		0.132		0.106		0.205		0.195		0.081		0.107
9		0.212		0.183		0.046		0.145		0.117		0.228		0.216		0.090		0.118
10		0.229		0.200		0.049		0.156		0.128		0.249		0.237		0.099		0.129
11		0.248		0.218		0.054		0.170		0.138		0.271		0.258		0.108		0.139
12	115	0.266	100	0.235	20	0.057	50	0.182	40	0.149	115	0.293	105	0.278	30	0.117	40	0.149
13		0.285		0.253		0.061		0.195		0.160		0.315		0.299		0.126		0.160
14		0.303		0.270		0.065		0.206		0.170		0.336		0.320		0.135		0.170
15		0.320		0.287		0.070		0.219		0.180		0.359		0.340		0.144		0.181
16		0.339		0.304		0.073		0.231		0.192		0.381		0.361		0.153		0.192
17		0.357		0.322		0.078		0.244		0.203		0.403		0.382		0.162		0.203
18		0.376		0.340		0.081		0.256		0.213		0.425		0.403		0.170		0.213
19		0.394		0.357		0.086		0.269		0.224		0.447		0.424		0.179		0.224
20		0.412		0.375		0.089		0.281		0.235		0.469		0.445		0.187		0.235

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR-S

01

WIDER CHIP POCKET

· Enhances and smoother chip evacuation

02

STRAIGHT EDGE PROFILE

· Shorter chip and reinforced cutting edge

03

BIGGER K-VALUE

· Suitable for higher feed rate and enhances tool durability

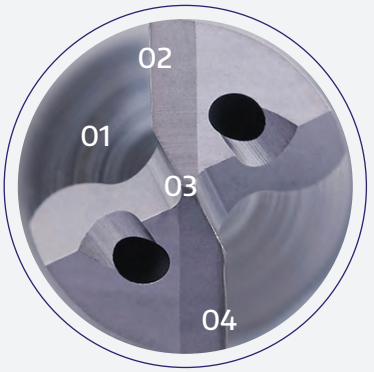
04

CORNER EDGE CHAMFER

· Ideal for cast iron and better surface finishing







05

VERSATILE

Suitable for Material Groups

P M K N S

DEUTSCH

01 **GRÖSSERE SPANRÄUME**
Verbessert Optimierte Spanabfahr

02 **GERADES SCHNEIDKANTENPROFIL**
Kürzere Späne und verstärkte Schneidkanten

03 **GRÖSSERE AUSPRÄGUNG DER QUERSCHNEIDE**
für höhere Vorschubgeschwindigkeit und höhere Standzeiten

04 **SCHNEIDECKENFASE**
Ideal für Gussbearbeitung und bessere Oberflächengüte

05 **VIELSEITIG**
Geeignet für 5 Materialgruppen

FRANÇAIS

01 **RÉCUPÉRATEUR DE COPEAUX PLUS LARGE**
· Évacuation des copeaux plus facile et plus fluide

02 **PROFIL D'ARÊTE DROITE**
· Copeaux plus courts et arête tranchante renforcée

03 **COEFFICIENT K SUPÉRIEUR**
· Adapté pour un débit plus élevé et améliore la durabilité de l'outil

04 **ARÊTE CHANFREIN DE COIN**
· Idéal pour la fonte et meilleure finition de surface

05 **POLYVALENT**
· Adapté au 5 groupes de matériaux

ITALIANO

01 **TASCA TRUCIOLI PIÙ AMPIA**
· Migliora e semplifica l'evacuazione dei trucioli

02 **PROFILO DRITTO**
· Trucioli più corti e angolo di taglio rinforzato

03 **VALORE K PIÙ GRANDE**
· Adatto per velocità di avanzamento più grandi e migliora la durata dello strumento

04 **TAGLIENTE DI SMUSSO**
· Ideale per ghisa e migliore finitura superficiale

05 **VERSATILE**
· Adatto per gruppi di 5 materiali

中文

01 **更宽的排屑槽**
使鐵屑更顺畅排出

02 **垂直的切削刃**
有效斷屑並强化的切削刃

03 **加大的鑽頭靜點**
· 提升加工的进给速度
· 提高刀具刚性与耐用性

04 **刀尖倒角**
使用在铸铁加工能獲得較佳的加工表面

05 **加工多方面材料**
适合加工钢，铸铁，不锈钢，有色金属，超合金和钛的材料

DR-S TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

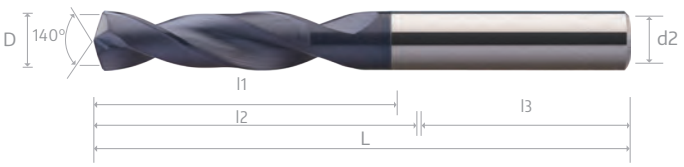
VHM DR-S Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

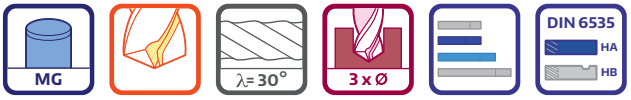
整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W08*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0300	3	14	20	36	62	6	•
0310	3.1	14	20	36	62	6	•
0320	3.2	14	20	36	62	6	•
0330	3.3	14	20	36	62	6	•
0340	3.4	14	20	36	62	6	•
0350	3.5	14	20	36	62	6	•
0360	3.6	14	20	36	62	6	•
0370	3.7	14	20	36	62	6	•
0380	3.8	17	24	36	66	6	•
0390	3.9	17	24	36	66	6	•
0400	4	17	24	36	66	6	•
0410	4.1	17	24	36	66	6	•
0420	4.2	17	24	36	66	6	•
0430	4.3	17	24	36	66	6	•
0440	4.4	17	24	36	66	6	•
0450	4.5	17	24	36	66	6	•
0460	4.6	17	24	36	66	6	•
0470	4.7	17	24	36	66	6	•
0480	4.8	20	28	36	66	6	•
0490	4.9	20	28	36	66	6	•
0500	5	20	28	36	66	6	•
0510	5.1	20	28	36	66	6	•
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	•
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

547/549

Technical specifications subject to change without prior notice

DR-S TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

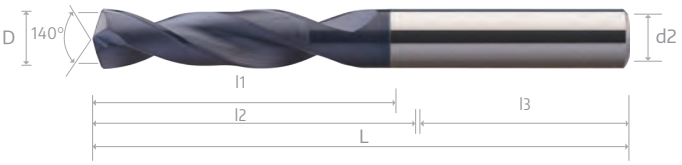
VHM DR-S Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W08*





Z2



HPT T8090 TiAlN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0600	6	20	28	36	66	6	•
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	•
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	•
0700	7.0	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•
0790	7.9	29	41	36	79	8	•
0800	8.0	29	41	36	79	8	•
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter

547/549

DR-S TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

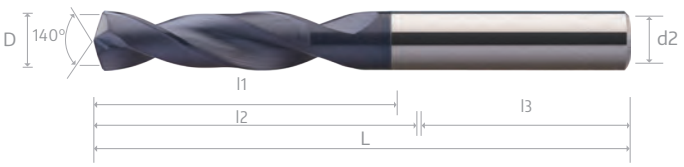
VHM DR-S Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W08*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0900	9.0	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1010	10.1	40	55	45	102	12	•
1020	10.2	40	55	45	102	12	•
1030	10.3	40	55	45	102	12	•
1040	10.4	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1060	10.6	40	55	45	102	12	•
1070	10.7	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1090	10.9	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1110	11.1	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•
1130	11.3	40	55	45	102	12	•
1140	11.4	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1160	11.6	40	55	45	102	12	•
1170	11.7	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1190	11.9	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

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Spécifications techniques sujettes à changement sans avis prélable

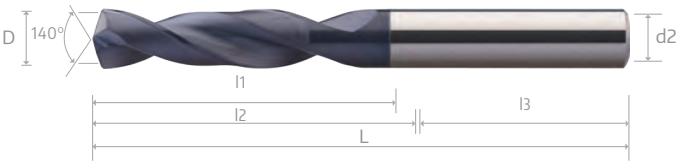
DR-S TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

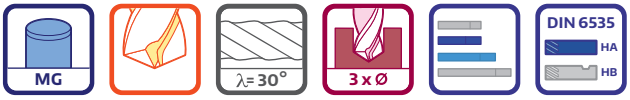
VHM DR-S Spiralbohrer nach DIN 6537K, 140° Spitzenwinkel, Schaft nach DIN 6535HA	Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA
Punte elicoidali DR-S in metallo duro integrale norma DIN 6537K angolo di punta 140°, codolo DIN 6535HA	整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W08*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W08 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
1200	12	40	55	45	102	12	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1400	14.0	43	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15.0	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1600	16.0	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17.0	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18.0	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19.0	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20.0	55	79	50	131	20	•

DR-S

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter

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Modifiche Techiche possibili senza preavviso

DR-S TWIST DRILLS – DIN 6537L – 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

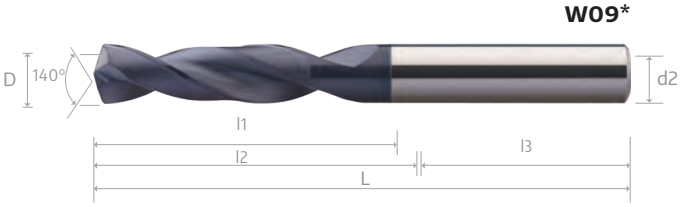
HPMT

VHM DR-S Spiralbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

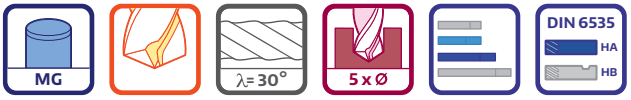
Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR-S 钻头 - 相等于 DIN 6537L
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA







HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0300	3	23	28	36	66	6	●
0310	3.1	23	28	36	66	6	○
0320	3.2	23	28	36	66	6	○
0330	3.3	23	28	36	66	6	○
0340	3.4	23	28	36	66	6	○
0350	3.5	23	28	36	66	6	○
0360	3.6	23	28	36	66	6	○
0370	3.7	23	28	36	66	6	○
0380	3.8	29	36	36	74	6	○
0390	3.9	29	36	36	74	6	●
0400	4	29	36	36	74	6	●
0410	4.1	29	36	36	74	6	○
0420	4.2	29	36	36	74	6	○
0430	4.3	29	36	36	74	6	○
0440	4.4	29	36	36	74	6	○
0450	4.5	29	36	36	74	6	●
0460	4.6	29	36	36	74	6	○
0470	4.7	29	36	36	74	6	○
0480	4.8	35	44	36	82	6	○
0490	4.9	35	44	36	82	6	○
0500	5	35	44	36	82	6	●
0510	5.1	35	44	36	82	6	○
0520	5.2	35	44	36	82	6	○
0530	5.3	35	44	36	82	6	○
0540	5.4	35	44	36	82	6	○
0550	5.5	35	44	36	82	6	●
0560	5.6	35	44	36	82	6	○
0570	5.7	35	44	36	82	6	○
0580	5.8	35	44	36	82	6	○
0590	5.9	35	44	36	82	6	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

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若有技术规格变更，恕不事先通知

DR-S TWIST DRILLS – DIN 6537L – 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

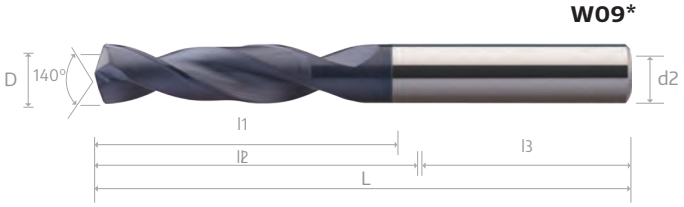
HPMT

VHM DR-S Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA

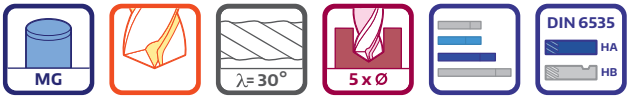
Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR-S 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0600	6	35	44	36	82	6	●
0610	**6.1**	43	53	36	91	8	○
0620	**6.2**	43	53	36	91	8	○
0630	**6.3**	43	53	36	91	8	○
0640	6.4	43	53	36	91	8	○
0650	6.5	43	53	36	91	8	●
0660	6.6	43	53	36	91	8	○
0670	6.7	43	53	36	91	8	○
0680	6.8	43	53	36	91	8	○
0690	6.9	43	53	36	91	8	○
0700	7.0	43	53	36	91	8	●
0710	7.1	43	53	36	91	8	○
0720	7.2	43	53	36	91	8	○
0730	7.3	43	53	36	91	8	○
0740	7.4	43	53	36	91	8	○
0750	7.5	43	53	36	91	8	●
0760	7.6	43	53	36	91	8	○
0770	7.7	43	53	36	91	8	○
0780	7.8	43	53	36	91	8	○
0790	7.9	43	53	36	91	8	○
0800	8.0	43	53	36	91	8	●
0810	8.1	49	61	40	103	10	○
0820	8.2	49	61	40	103	10	○
0830	8.3	49	61	40	103	10	○
0840	8.4	49	61	40	103	10	○
0850	8.5	49	61	40	103	10	●
0860	8.6	49	61	40	103	10	○
0870	8.7	49	61	40	103	10	○
0880	8.8	49	61	40	103	10	○
0890	8.9	49	61	40	103	10	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter: 547/549

Technical specifications subject to change without prior notice

DR-S TWIST DRILLS – DIN 6537L – 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

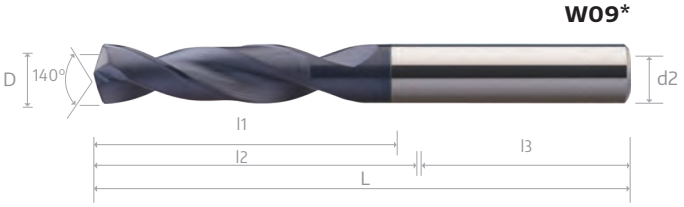
HPMT

VHM DR-S Spiralbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

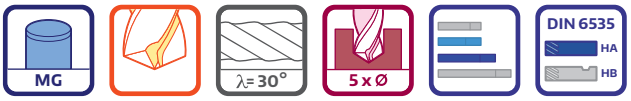
Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537L angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 DR-S 钻头 - 相等于 DIN 6537L
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA







HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0900	9.0	49	61	40	103	10	●
0910	9.1	49	61	40	103	10	○
0920	9.2	49	61	40	103	10	○
0930	9.3	49	61	40	103	10	○
0940	9.4	49	61	40	103	10	○
0950	9.5	49	61	40	103	10	●
0960	9.6	49	61	40	103	10	○
0970	9.7	49	61	40	103	10	○
0980	9.8	49	61	40	103	10	○
0990	9.9	49	61	40	103	10	○
1000	10	49	61	40	103	10	●
1020	10.2	56	71	45	118	12	○
1050	10.5	56	71	45	118	12	●
1080	10.8	56	71	45	118	12	○
1100	11	56	71	45	118	12	●
1120	11.2	56	71	45	118	12	○
1130	11.3	56	71	45	118	12	○
1150	11.5	56	71	45	118	12	●
1180	11.8	56	71	45	118	12	○
1200	12.0	56	71	45	118	12	●
1220	12.2	60	77	45	124	14	○
1250	12.5	60	77	45	124	14	●
1270	12.7	60	77	45	124	14	○
1280	12.8	60	77	45	124	14	○
1300	13	60	77	45	124	14	●
1330	13.3	60	77	45	124	14	○
1350	13.5	60	77	45	124	14	●
1370	13.7	60	77	45	124	14	○
1380	13.8	60	77	45	124	14	○
1400	14.0	60	77	45	124	14	●

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

547/549

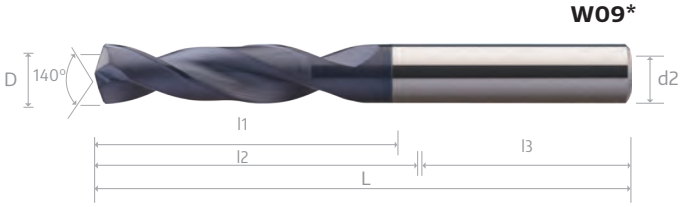
Technische änderungen ohne vorherige information vorbehalten

DR-S TWIST DRILLS – DIN 6537L – 5 x Ø

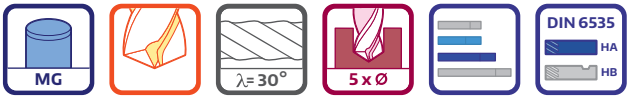
≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

VHM DR-S Spiralbohrer nach DIN 6537L, 140° Spitzenwinkel, Schaft nach DIN 6535HA	Forets hélicoïdaux DR-S en carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA
Punte elicoidali DR-S in metallo duro integrale norma DIN 6537L angolo di punta 140°, codolo DIN 6535HA	整体硬质合金 DR-S 钻头 - 相等于 DIN 6537L 2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA









EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W09 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
1450	14.5	63	83	48	133	16	●
1500	15.0	63	83	48	133	16	●
1530	15.3	63	83	48	133	16	○
1550	15.5	63	83	48	133	16	●
1580	15.8	63	83	48	133	16	○
1600	16	63	83	48	133	16	●
1650	16.5	71	93	48	143	18	●
1700	17	71	93	48	143	18	●
1750	17.5	71	93	48	143	18	●
1800	18	71	93	48	143	18	●
1850	18.5	77	101	50	153	20	●
1900	19	77	101	50	153	20	●
1950	19.5	77	101	50	153	20	●
2000	20	77	101	50	153	20	●

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter: 547/549

DR-S OIL FEED TWIST DRILLS - DIN 6537K - 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

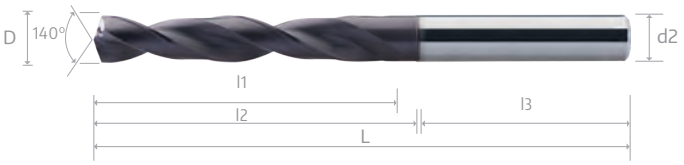
VHM DR-S Spiralbohrer nach DIN 6537K,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537K angolo di punta 140°, codolo DIN 6535HA

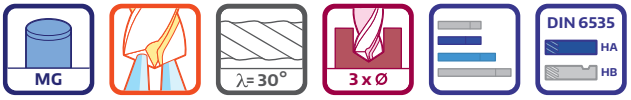
整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W10*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0300	3	14	20	36	62	6	•
0310	3.1	14	20	36	62	6	•
0320	3.2	14	20	36	62	6	•
0330	3.3	14	20	36	62	6	•
0340	3.4	14	20	36	62	6	•
0350	3.5	14	20	36	62	6	•
0360	3.6	14	20	36	62	6	•
0370	3.7	14	20	36	62	6	•
0380	3.8	17	24	36	66	6	•
0390	3.9	17	24	36	66	6	•
0400	4	17	24	36	66	6	•
0410	4.1	17	24	36	66	6	•
0420	4.2	17	24	36	66	6	•
0430	4.3	17	24	36	66	6	•
0440	4.4	17	24	36	66	6	•
0450	4.5	17	24	36	66	6	•
0460	4.6	17	24	36	66	6	•
0470	4.7	17	24	36	66	6	•
0480	4.8	20	28	36	66	6	•
0490	4.9	20	28	36	66	6	•
0500	5	20	28	36	66	6	•
0510	5.1	20	28	36	66	6	•
0520	5.2	20	28	36	66	6	•
0530	5.3	20	28	36	66	6	•
0540	5.4	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0560	5.6	20	28	36	66	6	•
0570	5.7	20	28	36	66	6	•
0580	5.8	20	28	36	66	6	•
0590	5.9	20	28	36	66	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

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Modifiche Techiche possibili senza preavviso

DR-S OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

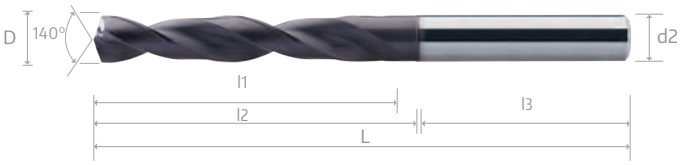
VHM DR-S Spiralbohrer nach DIN 6537K,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537K angolo di punta 140°, codolo DIN 6535HA

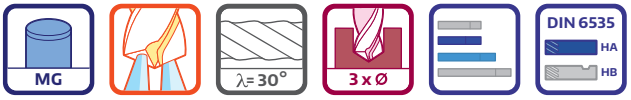
整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W10*





Z2



HPT T8090 TiAlN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0600	6	20	28	36	66	6	•
0610	6.1	24	34	36	79	8	•
0620	6.2	24	34	36	79	8	•
0630	6.3	24	34	36	79	8	•
0640	6.4	24	34	36	79	8	•
0650	6.5	24	34	36	79	8	•
0660	6.6	24	34	36	79	8	•
0670	6.7	24	34	36	79	8	•
0680	6.8	24	34	36	79	8	•
0690	6.9	24	34	36	79	8	•
0700	7.0	24	34	36	79	8	•
0710	7.1	29	41	36	79	8	•
0720	7.2	29	41	36	79	8	•
0730	7.3	29	41	36	79	8	•
0740	7.4	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0760	7.6	29	41	36	79	8	•
0770	7.7	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•
0790	7.9	29	41	36	79	8	•
0800	8.0	29	41	36	79	8	•
0810	8.1	35	47	40	89	10	•
0820	8.2	35	47	40	89	10	•
0830	8.3	35	47	40	89	10	•
0840	8.4	35	47	40	89	10	•
0850	8.5	35	47	40	89	10	•
0860	8.6	35	47	40	89	10	•
0870	8.7	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0890	8.9	35	47	40	89	10	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter

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若有技术规格变更，恕不事先通知

DR-S OIL FEED TWIST DRILLS - DIN 6537K - 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

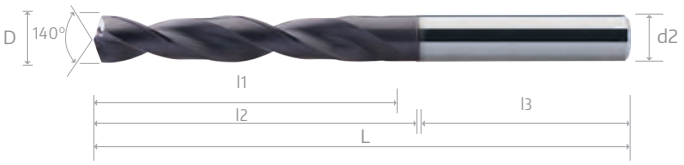
VHM DR-S Spiralbohrer nach DIN 6537K,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537K angolo di punta 140°, codolo DIN 6535HA

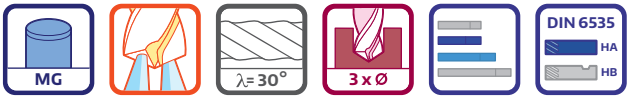
整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W10*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0900	9.0	35	47	40	89	10	•
0910	9.1	35	47	40	89	10	•
0920	9.2	35	47	40	89	10	•
0930	9.3	35	47	40	89	10	•
0940	9.4	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0960	9.6	35	47	40	89	10	•
0970	9.7	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
0990	9.9	35	47	40	89	10	•
1000	10	35	47	40	89	10	•
1010	10.1	40	55	45	102	12	•
1020	10.2	40	55	45	102	12	•
1030	10.3	40	55	45	102	12	•
1040	10.4	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•
1060	10.6	40	55	45	102	12	•
1070	10.7	40	55	45	102	12	•
1080	10.8	40	55	45	102	12	•
1090	10.9	40	55	45	102	12	•
1100	11	40	55	45	102	12	•
1110	11.1	40	55	45	102	12	•
1120	11.2	40	55	45	102	12	•
1130	11.3	40	55	45	102	12	•
1140	11.4	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1160	11.6	40	55	45	102	12	•
1170	11.7	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1190	11.9	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

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Technical specifications subject to change without prior notice

DR-S OIL FEED TWIST DRILLS – DIN 6537K – 3 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

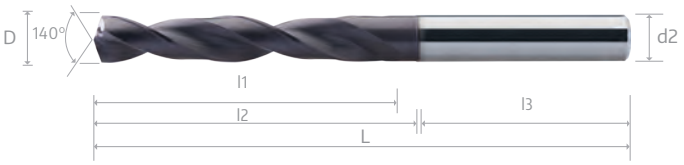
VHM DR-S Spiralbohrer nach DIN 6537K,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-S en carbure monobloc selon
DIN 6537K, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali DR-S in metallo duro integrale norma
DIN 6537K angolo di punta 140°, codolo DIN 6535HA

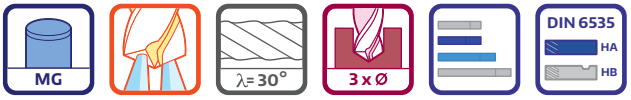
整体硬质合金 DR-S 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

W10*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W10 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
1200	12	40	55	45	102	12	•
1250	12.5	43	60	45	107	14	•
1270	12.7	43	60	45	107	14	•
1300	13	43	60	45	107	14	•
1350	13.5	43	60	45	107	14	•
1370	13.7	43	60	45	107	14	•
1400	14.0	45	60	45	107	14	•
1450	14.5	45	65	48	115	16	•
1500	15.0	45	65	48	115	16	•
1550	15.5	45	65	48	115	16	•
1600	16.0	45	65	48	115	16	•
1650	16.5	51	73	48	123	18	•
1700	17.0	51	73	48	123	18	•
1750	17.5	51	73	48	123	18	•
1800	18.0	51	73	48	123	18	•
1850	18.5	55	79	50	131	20	•
1900	19.0	55	79	50	131	20	•
1950	19.5	55	79	50	131	20	•
2000	20.0	55	79	50	131	20	•

DR-S

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

546/548

DR-S OIL FEED TWIST DRILLS – DIN 6537L – 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

VHM 45 Kühlkanalbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux 45 à trous d'huile carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali 45 in metallo duro integrale norma DIN 6537L
con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 45 内冷却 钻头 - 相等于
DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

W11*





Z2















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W11*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
* 0300 066 03	3	23	28	36	66	3	•
0300	3	23	28	36	66	6	•
* 0310 066 03	3.1	23	28	36	66	3	•
0310	3.1	23	28	36	66	6	•
* 0320 066 03	3.2	23	28	36	66	3	•
0320	3.2	23	28	36	66	6	•
0330	3.3	23	28	36	66	6	•
0340	3.4	23	28	36	66	6	•
0350	3.5	23	28	36	66	6	•
0360	3.6	23	28	36	66	6	•
0370	3.7	23	28	36	66	6	•
0380	3.8	29	36	36	74	6	•
0390	3.9	29	36	36	74	6	•
* 0400 074 04	4	29	36	36	74	4	•
0400	4	29	36	36	74	6	•
* 0410 074 04	4.1	29	36	36	74	4	•
0410	4.1	29	36	36	74	6	•
* 0420 074 04	4.2	29	36	36	74	4	•
0420	4.2	29	36	36	74	6	•
0430	4.3	29	36	36	74	6	•
0440	4.4	29	36	36	74	6	•
0450	4.5	29	36	36	74	6	•
0460	4.6	29	36	36	74	6	•
0470	4.7	29	36	36	74	6	•
0480	4.8	35	44	36	82	6	•
0490	4.9	35	44	36	82	6	•
0500	5	35	44	36	82	6	•
0510	5.1	35	44	36	82	6	•
0520	5.2	35	44	36	82	6	•
0530	5.3	35	44	36	82	6	•

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter

546/548

Spécifications techniques sujettes à changement sans avis prélable

DR-S OIL FEED TWIST DRILLS - DIN 6537L - 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

VHM 45 Kühlkanalbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux 45 à trous d'huile carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali 45 in metallo duro integrale norma DIN 6537L
con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 45 内冷却 钻头 - 相等于
DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

W11*





Z2















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W11*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0540	5.4	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0560	5.6	35	44	36	82	6	•
0570	5.7	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0590	5.9	35	44	36	82	6	•
0600	6	35	44	36	82	6	•
* 0610 082 06	6.1	35	44	36	82	6	•
0610	6.1	43	53	36	91	8	•
0620	6.2	43	53	36	91	8	•
0630	6.3	43	53	36	91	8	•
0640	6.4	43	53	36	91	8	•
0650	6.5	43	53	36	91	8	•
0660	6.6	43	53	36	91	8	•
0670	6.7	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0690	6.9	43	53	36	91	8	•
0700	7	43	53	36	91	8	•
0710	7.1	43	53	36	91	8	•
0720	7.2	43	53	36	91	8	•
0730	7.3	43	53	36	91	8	•
0740	7.4	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0760	7.6	43	53	36	91	8	•
0770	7.7	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•
0790	7.9	43	53	36	91	8	•
0800	8	43	53	36	91	8	•
* 0810 091 08	8.1	43	53	36	91	8	•
0810	8.1	49	61	40	103	10	•

* = HPMT STANDARD

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter: 546/548

DR-S OIL FEED TWIST DRILLS - DIN 6537L - 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

HPMT

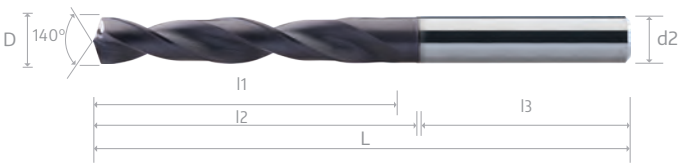
VHM 45 Kühlkanalbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux 45 à trous d'huile carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali 45 in metallo duro integrale norma DIN 6537L
con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 45 内冷却 钻头 - 相等于
DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

W11*





Z2















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W11*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
0820	8.2	49	61	40	103	10	•
0830	8.3	49	61	40	103	10	•
0840	8.4	49	61	40	103	10	•
0850	8.5	49	61	40	103	10	•
0860	8.6	49	61	40	103	10	•
0870	8.7	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0890	8.9	49	61	40	103	10	•
0900	9	49	61	40	103	10	•
0910	9.1	49	61	40	103	10	•
0920	9.2	49	61	40	103	10	•
0930	9.3	49	61	40	103	10	•
0940	9.4	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0960	9.6	49	61	40	103	10	•
0970	9.7	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
0990	9.9	49	61	40	103	10	•
1000	10	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•
1080	10.8	56	71	45	118	12	•
1100	11	56	71	45	118	12	•
1120	11.2	56	71	45	118	12	•
1130	11.3	56	71	45	118	12	•
1150	11.5	56	71	45	118	12	•
1180	11.8	56	71	45	118	12	•
1200	12	56	71	45	118	12	•
1220	12.2	60	77	45	124	14	•
1250	12.5	60	77	45	124	14	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

546/548

若有技术规格变更，恕不事先通知

DR-S OIL FEED TWIST DRILLS – DIN 6537L – 5 x Ø

≤ 1.300 N/mm² + T8090 ≤ 45 HRC

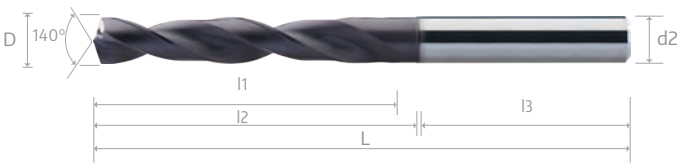
VHM 45 Kühlkanalbohrer nach DIN 6537L,
140° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux 45 à trous d'huile carbure monobloc selon DIN 6537L, angle de pointe 140°, queue selon DIN 6535HA

Punte elicoidali 45 in metallo duro integrale norma DIN 6537L
con fori di lubrificazione angolo di punta 140°, codolo DIN 6535HA

整体硬质合金 45 内冷却 钻头 - 相等于
DIN 6537L 2 刃 - 加工深度 5xD, 柄部标准 DIN 6535HA

W11*





Z2















EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						W11*
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	T8090
1270	12.7	60	77	45	124	14	•
1280	12.8	60	77	45	124	14	•
1300	13	60	77	45	124	14	•
1330	13.3	60	77	45	124	14	•
1350	13.5	60	77	45	124	14	•
1370	13.7	60	77	45	124	14	•
1380	13.8	60	77	45	124	14	•
1400	14	60	77	45	124	14	•
1450	14.5	63	83	48	133	16	•
1500	15	63	83	48	133	16	•
1530	15.3	63	83	48	133	16	•
1550	15.5	63	83	48	133	16	•
1580	15.8	63	83	48	133	16	•
1600	16	63	83	48	133	16	•
1650	16.5	71	93	48	143	18	•
1700	17	71	93	48	143	18	•
1750	17.5	71	93	48	143	18	•
1800	18	71	93	48	143	18	•
1850	18.5	77	101	50	153	20	•
1900	19	77	101	50	153	20	•
1950	19.5	77	101	50	153	20	•
2000	20	77	101	50	153	20	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	●	●	●	●	●	○	○	●	●	●				

Cutting Parameter: 546/548

Technical specifications subject to change without prior notice



Internal Coolant - Aggressive Cutting Parameter

Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Nickel Alloy		Titanium Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.140		0.150		0.120		0.070		0.050		0.170		0.110		0.170		0.170		0.170		0.040		0.040
4		0.164		0.175		0.139		0.085		0.059		0.200		0.134		0.203		0.203		0.203		0.049		0.050
5		0.186		0.198		0.156		0.099		0.067		0.227		0.156		0.233		0.233		0.233		0.057		0.060
6		0.205		0.218		0.172		0.111		0.075		0.252		0.176		0.261		0.261		0.261		0.065		0.069
7		0.224		0.237		0.186		0.124		0.082		0.275		0.196		0.287		0.287		0.287		0.072		0.078
8		0.241		0.255		0.199		0.135		0.088		0.297		0.214		0.312		0.312		0.312		0.079		0.087
9		0.257		0.272		0.212		0.146		0.095		0.317		0.232		0.335		0.335		0.335		0.086		0.095
10		0.272		0.288		0.224		0.157		0.101		0.337		0.250		0.358		0.358		0.358		0.093		0.104
11	145	0.287	95	0.303	70	0.235	60	0.167	50	0.106	120	0.356	80	0.266	350	0.380	385	0.380	385	0.380	40	0.099	40	0.112
12		0.301		0.318		0.246		0.177		0.112		0.374		0.283		0.401		0.401		0.401		0.105		0.120
13		0.315		0.332		0.256		0.187		0.117		0.391		0.298		0.421		0.421		0.421		0.111		0.128
14		0.328		0.346		0.266		0.197		0.122		0.408		0.314		0.441		0.441		0.441		0.117		0.135
15		0.341		0.359		0.276		0.206		0.127		0.425		0.329		0.460		0.460		0.460		0.123		0.143
16		0.353		0.372		0.285		0.215		0.132		0.440		0.344		0.479		0.479		0.479		0.128		0.150
17		0.365		0.384		0.294		0.224		0.137		0.456		0.358		0.497		0.497		0.497		0.134		0.158
18		0.377		0.396		0.303		0.233		0.141		0.471		0.372		0.515		0.515		0.515		0.139		0.165
19		0.389		0.408		0.312		0.242		0.146		0.486		0.386		0.533		0.533		0.533		0.145		0.172
20		0.400		0.420		0.320		0.250		0.150		0.500		0.400		0.550		0.550		0.550		0.150		0.180

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

External Coolant – Aggressive Cutting Parameter



Drilling	P						M				K				N					
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.140		0.150		0.120		0.070		0.050		0.170		0.110		0.170		0.170		0.170
4		0.164		0.175		0.139		0.085		0.059		0.200		0.134		0.203		0.203		0.203
5		0.186		0.198		0.156		0.099		0.067		0.227		0.156		0.233		0.233		0.233
6		0.205		0.218		0.172		0.111		0.075		0.252		0.176		0.261		0.261		0.261
7		0.224		0.237		0.186		0.124		0.082		0.275		0.196		0.287		0.287		0.287
8		0.241		0.255		0.199		0.135		0.088		0.297		0.214		0.312		0.312		0.312
9		0.257		0.272		0.212		0.146		0.095		0.317		0.232		0.335		0.335		0.335
10		0.272		0.288		0.224		0.157		0.101		0.337		0.250		0.358		0.358		0.358
11	100	0.287	75	0.303	55	0.235	45	0.167	35	0.106	85	0.356	60	0.266	280	0.380	270	0.380	270	0.380
12		0.301		0.318		0.246		0.177		0.112		0.374		0.283		0.401		0.401		0.401
13		0.315		0.332		0.256		0.187		0.117		0.391		0.298		0.421		0.421		0.421
14		0.328		0.346		0.266		0.197		0.122		0.408		0.314		0.441		0.441		0.441
15		0.341		0.359		0.276		0.206		0.127		0.425		0.329		0.460		0.460		0.460
16		0.353		0.372		0.285		0.215		0.132		0.440		0.344		0.479		0.479		0.479
17		0.365		0.384		0.294		0.224		0.137		0.456		0.358		0.497		0.497		0.497
18		0.377		0.396		0.303		0.233		0.141		0.471		0.372		0.515		0.515		0.515
19		0.389		0.408		0.312		0.242		0.146		0.486		0.386		0.533		0.533		0.533
20		0.400		0.420		0.320		0.250		0.150		0.500		0.400		0.550		0.550		0.550

P M K N | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Internal Coolant – Conventional Cutting Parameter



Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Nickel Alloy		Titanium Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.100		0.100		0.100		0.040		0.030		0.100		0.080		0.100		0.100		0.100		0.020		0.020
4		0.120		0.120		0.116		0.051		0.037		0.124		0.101		0.126		0.126		0.126		0.026		0.027
5		0.138		0.139		0.129		0.062		0.043		0.146		0.120		0.151		0.151		0.151		0.032		0.034
6		0.155		0.156		0.142		0.073		0.050		0.168		0.139		0.175		0.175		0.175		0.039		0.041
7		0.170		0.173		0.153		0.084		0.056		0.188		0.157		0.198		0.198		0.198		0.045		0.048
8		0.185		0.188		0.164		0.094		0.061		0.208		0.174		0.220		0.220		0.220		0.051		0.055
9		0.200		0.203		0.174		0.104		0.067		0.227		0.191		0.242		0.242		0.242		0.057		0.062
10		0.213		0.217		0.183		0.114		0.072		0.245		0.208		0.263		0.263		0.263		0.062		0.069
11	105	0.227	75	0.231	55	0.192	45	0.124	35	0.077	85	0.263	60	0.224	250	0.284	285	0.284	285	0.284	30	0.068	30	0.076
12		0.239		0.244		0.201		0.134		0.082		0.281		0.240		0.305		0.305		0.305		0.074		0.083
13		0.252		0.257		0.209		0.144		0.087		0.298		0.256		0.325		0.325		0.325		0.080		0.090
14		0.264		0.270		0.217		0.154		0.092		0.315		0.271		0.345		0.345		0.345		0.086		0.097
15		0.275		0.282		0.225		0.163		0.097		0.331		0.287		0.365		0.365		0.365		0.092		0.105
16		0.287		0.294		0.232		0.173		0.102		0.348		0.302		0.384		0.384		0.384		0.097		0.112
17		0.298		0.306		0.240		0.182		0.106		0.364		0.317		0.403		0.403		0.403		0.103		0.119
18		0.309		0.317		0.247		0.191		0.111		0.379		0.331		0.422		0.422		0.422		0.109		0.126
19		0.320		0.329		0.253		0.201		0.115		0.395		0.346		0.441		0.441		0.441		0.115		0.133
20		0.330		0.340		0.260		0.210		0.120		0.410		0.360		0.460		0.460		0.460		0.120		0.140

P M K N S | P K

Recommended Cutting Data

Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



External Coolant – Conventional Cutting Parameter

Drilling	P						M				K				N					
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3		0.100		0.100		0.100		0.040		0.030		0.100		0.080		0.100		0.100		0.100
4		0.120		0.120		0.116		0.051		0.037		0.124		0.101		0.126		0.126		0.126
5		0.138		0.139		0.129		0.062		0.043		0.146		0.120		0.151		0.151		0.151
6		0.155		0.156		0.142		0.073		0.050		0.168		0.139		0.175		0.175		0.175
7		0.170		0.173		0.153		0.084		0.056		0.188		0.157		0.198		0.198		0.198
8		0.185		0.188		0.164		0.094		0.061		0.208		0.174		0.220		0.220		0.220
9		0.200		0.203		0.174		0.104		0.067		0.227		0.191		0.242		0.242		0.242
10		0.213		0.217		0.183		0.114		0.072		0.245		0.208		0.263		0.263		0.263
11	85	0.227	65	0.231	45	0.192	35	0.124	25	0.077	65	0.263	40	0.224	195	0.284	230	0.284	230	0.284
12		0.239		0.244		0.201		0.134		0.082		0.281		0.240		0.305		0.305		0.305
13		0.252		0.257		0.209		0.144		0.087		0.298		0.256		0.325		0.325		0.325
14		0.264		0.270		0.217		0.154		0.092		0.315		0.271		0.345		0.345		0.345
15		0.275		0.282		0.225		0.163		0.097		0.331		0.287		0.365		0.365		0.365
16		0.287		0.294		0.232		0.173		0.102		0.348		0.302		0.384		0.384		0.384
17		0.298		0.306		0.240		0.182		0.106		0.364		0.317		0.403		0.403		0.403
18		0.309		0.317		0.247		0.191		0.111		0.379		0.331		0.422		0.422		0.422
19		0.320		0.329		0.253		0.201		0.115		0.395		0.346		0.441		0.441		0.441
20		0.330		0.340		0.260		0.210		0.120		0.410		0.360		0.460		0.460		0.460

P M K N | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR MINI

01

SPLIT POINT DESIGN

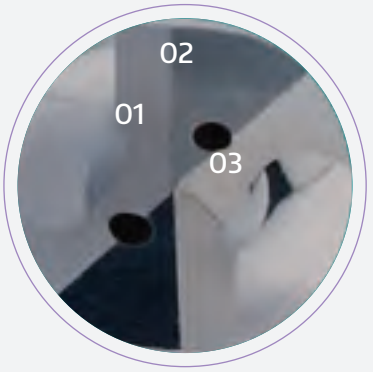
· Provides self centering ability and reduced thrust

02

X-THINNING

· Better self-centering on initial cutting





03

STRAIGHT EDGE PROFILE

· Shorter chip and reinforced cutting edge

04

G6110 COATING

· Monolayer AlCrN coating
· Enhances Tool Life

05

FLUTES POLISHED

· Smoother chips evacuation
· Less build up edge

06

POSITIVE RAKE ANGLE

Which suitable for Material Groups

P M K N S

DEUTSCH

01 **KREUZANSCHLIFF**
Optimale Selbstzentrierung und reduzierte Axialdruck

02 **X-AUSSPITZUNG**
· Bessere Selbstzentrierung beim Anschnitt

03 **GERADES KANTENPROFIL**
· Kürzerer Span und verstärkte Schneidkante

04 **G6110 BESCHICHTUNG**
· AlCrN-Beschichtung
· Verbessert die Werkzeuglebensdauer

05 **POLIERTE SCHNEIDEN**
· Verbesserter problemloser Spänefluß
· Weniger Aufbauschneiden

06 **GEEIGNET FÜR DIE MATERIALGRUPPEN P, K, N, M, S**

FRANÇAIS

01 **CONCEPTION À AFFÛTAGE 4 FACES CROISÉES**
· Auto centrant, éfforts de coupes réduit

02 **AMINCISSEMENT EN X**
· Meilleur centrage automatique lors de la coupe initiale

03 **PROFIL D'ARÊTE DROITE**
· Copeaux plus courts et arête tranchante renforcée

04 **REVÊTEMENT G6110**
· Revêtement AlCrN
· Améliore la durée de vie de l'outil

05 **GOUJURE POLIE**
· Évacuation des copeaux plus fluide
· Moins d'accumulation sur les arêtes

06 **ADAPTÉ AUX MATÉRIAUX P, K, N, M, S**

ITALIANO

01 **STRUTTURA DEL PUNTO DI RIPARTIZIONE**
· Offre capacità autocentranti e spinta ridotta

02 **X-ASSOTTIGLIAMENTO**
· Miglior autocentraggio al taglio iniziale

03 **PROFILO DRITTO**
· Trucioli più corti e angolo di taglio rinforzato

04 **RIVESTIMENTO G6110**
· Rivestimento AlCrN
· Migliora la durata dello strumento

05 **SCANALATURA LEVIGATA**
· Evacuazione dei trucioli più semplice
· Meno formazione di materiale di riporto

06 **ADATTO PER IL MATERIALE P, K, N, M, S**

中文

01 **分割点设计**
提供鑽孔時定點能力和減小推力

02 **特殊的幾何設計**
钻洞时有最佳的定圆心

03 **垂直的主切削刃**
有效斷屑並强化的切削刃

04 **卓越的刀具涂层**
·多层涂层提高刀具寿命
·提高刀具寿命

05 **抛光沟槽**
·提供更好的排屑
·提高切削速率，实现高性能钻孔减少鐵屑堆積

06 **适合加工钢，铸铁，不锈钢，有色金属，超合金和钛的材料**

DR MINI

OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR Mini in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

HO3*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0100 5	5 x D	1.00	6.5	8.0	50	3	○
H03 0100 8	8 x D		9.5	11.0	50	3	○
H03 0100 12	12 x D		13.5	15.0	55	3	○
H03 0100 20	20 x D		21.5	23.0	65	3	○
H03 0100 25	25 x D		26.5	28.0	70	3	○
H03 0100 30	30 x D		31.5	33.0	75	3	○
H03 0110 5	5 x D	1.10	7.2	8.7	50	3	○
H03 0110 8	8 x D		10.5	12.0	50	3	○
H03 0110 12	12 x D		14.9	16.4	55	3	○
H03 0110 20	20 x D		23.7	25.2	65	3	○
H03 0110 25	25 x D		29.2	30.7	70	3	○
H03 0110 30	30 x D		34.7	36.2	75	3	○
H03 0120 5	5 x D	1.20	7.8	9.3	50	3	○
H03 0120 8	8 x D		11.4	12.9	50	3	○
H03 0120 12	12 x D		16.2	17.7	55	3	○
H03 0120 20	20 x D		25.8	27.3	65	3	○
H03 0120 25	25 x D		31.8	33.3	75	3	○
H03 0120 30	30 x D		37.8	39.3	75	3	○
H03 0130 5	5 x D	1.30	8.5	10.0	50	3	○
H03 0130 8	8 x D		12.4	13.9	50	3	○
H03 0130 12	12 x D		17.6	19.1	55	3	○
H03 0130 20	20 x D		28.0	29.5	65	3	○
H03 0130 25	25 x D		34.5	36.0	75	3	○
H03 0130 30	30 x D		41.0	42.5	85	3	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

558/559

Technical specifications subject to change without prior notice

DR MINI

OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR Mini in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

H03*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0140 5	5 x D	1.40	9.1	10.6	50	3	○
H03 0140 8	8 x D		13.3	14.8	50	3	○
H03 0140 12	12 x D		18.9	20.4	55	3	○
H03 0140 20	20 x D		30.1	31.6	65	3	○
H03 0140 25	25 x D		37.1	38.6	75	3	○
H03 0140 30	30 x D		44.1	45.6	85	3	○
H03 0150 5	5 x D	1.50	9.8	11.3	50	3	○
H03 0150 8	8 x D		14.3	15.8	50	3	○
H03 0150 12	12 x D		20.3	21.8	55	3	○
H03 0150 20	20 x D		32.3	33.8	75	3	○
H03 0150 25	25 x D		39.8	41.3	80	3	○
H03 0150 30	30 x D		47.3	48.8	85	3	○
H03 0160 5	5 x D	1.60	10.4	11.9	50	3	○
H03 0160 8	8 x D		15.2	16.7	50	3	○
H03 0160 12	12 x D		21.6	23.1	65	3	○
H03 0160 20	20 x D		34.4	35.9	75	3	○
H03 0160 25	25 x D		42.4	43.9	80	3	○
H03 0160 30	30 x D		50.4	51.9	90	3	○
H03 0170 5	5 x D	1.70	11.1	12.6	55	3	○
H03 0170 8	8 x D		16.2	17.7	60	3	○
H03 0170 12	12 x D		23.0	24.5	65	3	○
H03 0170 20	20 x D		36.6	38.1	75	3	○
H03 0170 25	25 x D		45.1	46.6	80	3	○
H03 0170 30	30 x D		53.6	55.1	90	3	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

Cutting Parameter: 558/559

DR MINI

OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

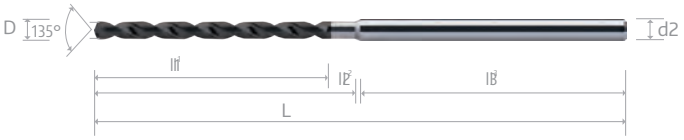
VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR Mini in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

HO3*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0180 5	5 x D	1.80	11.7	13.2	55	3	○
H03 0180 8	8 x D		17.1	18.6	60	3	○
H03 0180 12	12 x D		24.3	25.8	65	3	○
H03 0180 20	20 x D		38.7	40.2	75	3	○
H03 0180 25	25 x D		47.7	49.2	90	3	○
H03 0180 30	30 x D		56.7	58.2	100	3	○
H03 0190 5	5 x D	1.90	12.4	13.9	55	3	○
H03 0190 8	8 x D		18.1	19.6	60	3	○
H03 0190 12	12 x D		25.7	27.2	65	3	○
H03 0190 20	20 x D		40.9	42.4	75	3	○
H03 0190 25	25 x D		50.4	51.9	90	3	○
H03 0190 30	30 x D		59.9	61.4	100	3	○
H03 0200 5	5 x D	2.00	13.0	16.0	55	3	○
H03 0200 8	8 x D		19.0	22.0	60	3	○
H03 0200 12	12 x D		27.0	30.0	65	3	○
H03 0200 20	20 x D		43.0	46.0	82	3	○
H03 0200 25	25 x D		53.0	56.0	90	3	○
H03 0200 30	30 x D		63.0	66.0	100	3	○
H03 0210 5	5 x D	2.10	13.7	16.9	55	3	○
H03 0210 8	8 x D		20.0	23.2	60	3	○
H03 0210 12	12 x D		28.4	31.6	65	3	○
H03 0210 20	20 x D		45.2	48.4	82	3	○
H03 0210 25	25 x D		55.7	58.8	100	3	○
H03 0210 30	30 x D		66.2	69.3	110	3	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

Cutting Parameter: 558/559

Spécifications techniques sujettes à changement sans avis prélable

DR MINI

OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR Mini in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

H03*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0220 5	5 x D	2.20	14.3	17.6	55	3	○
H03 0220 8	8 x D		20.9	24.2	60	3	○
H03 0220 12	12 x D		29.7	33.0	65	3	○
H03 0220 20	20 x D		47.3	50.6	82	3	○
H03 0220 25	25 x D		58.3	61.6	100	3	○
H03 0220 30	30 x D		69.3	72.6	110	3	○
H03 0230 5	5 x D	2.30	15.0	18.5	55	3	○
H03 0230 8	8 x D		21.9	25.4	60	3	○
H03 0230 12	12 x D		31.1	34.6	65	3	○
H03 0230 20	20 x D		49.5	53.0	100	3	○
H03 0230 25	25 x D		61.0	64.4	100	3	○
H03 0230 30	30 x D		72.5	75.9	110	3	○
H03 0240 5	5 x D	2.40	15.6	19.2	55	3	○
H03 0240 8	8 x D		22.8	26.4	60	3	○
H03 0240 12	12 x D		32.4	36.0	75	3	○
H03 0240 20	20 x D		51.6	55.2	100	3	○
H03 0240 25	25 x D		63.6	67.2	100	3	○
H03 0240 30	30 x D		75.6	79.2	120	3	○
H03 0250 5	5 x D	2.50	16.3	20.1	55	3	○
H03 0250 8	8 x D		23.8	27.6	60	3	○
H03 0250 12	12 x D		33.8	37.6	75	3	○
H03 0250 20	20 x D		53.8	57.6	100	3	○
H03 0250 25	25 x D		66.3	70.0	110	3	○
H03 0250 30	30 x D		78.8	82.5	120	3	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

Cutting Parameter: 558/559

Modifiche Techiche possibili senza preavviso

DR MINI OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

HPMT

VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoida in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

HO3*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0260 5	5 x D	2.60	16.9	20.8	55	3	○
H03 0260 8	8 x D		24.7	28.6	60	3	○
H03 0260 12	12 x D		35.1	39.0	75	3	○
H03 0260 20	20 x D		55.9	59.8	100	3	○
H03 0260 25	25 x D		68.9	72.8	110	3	○
H03 0260 30	30 x D		81.9	85.8	120	3	○
H03 0270 5	5 x D	2.70	17.6	21.7	55	3	○
H03 0270 8	8 x D		25.7	29.8	60	3	○
H03 0270 12	12 x D		36.5	40.6	75	3	○
H03 0270 20	20 x D		58.1	62.2	100	3	○
H03 0270 25	25 x D		71.6	75.6	110	3	○
H03 0270 30	30 x D		85.1	89.1	130	3	○
H03 0280 5	5 x D	2.80	18.2	22.4	55	3	○
H03 0280 8	8 x D		26.6	30.8	60	3	○
H03 0280 12	12 x D		37.8	42.0	75	3	○
H03 0280 20	20 x D		60.2	64.4	100	3	○
H03 0280 25	25 x D		74.2	78.4	110	3	○
H03 0280 30	30 x D		88.2	92.4	130	3	○
H03 0290 5	5 x D	2.90	18.9	23.3	55	3	○
H03 0290 8	8 x D		27.6	32.0	60	3	○
H03 0290 12	12 x D		39.2	43.6	75	3	○
H03 0290 20	20 x D		61.4	65.8	100	3	○
H03 0290 25	25 x D		76.9	81.2	120	3	○
H03 0290 30	30 x D		91.4	95.7	130	3	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

558/559

若有技术规格变更，恕不事先通知

DR MINI

OIL FEED MINIATURE TWIST DRILLS – 135° Point Angle

VHM DR Mini Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR Mini à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR Mini in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR Mini 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

HO3*





Z2



HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2	L	d2 (h6)	G6110
H03 0300 5	5 x D	3.00	19.5	24.0	55	3	○
H03 0300 8	8 x D		28.5	33.0	60	3	○
H03 0300 12	12 x D		40.5	45.0	75	3	○
H03 0300 20	20 x D		64.5	69.0	100	3	○
H03 0300 25	25 x D		79.5	84.0	120	3	○
H03 0300 30	30 x D		94.5	99.0	130	3	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

Cutting Parameter: 558/559

Oil Feed Miniature Twist Drill – Point Angle 135°, 5 × Ø, 8 × Ø



Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1.0	27	0.042	23	0.042	28	0.016	25	0.016	20	0.013	33	0.021	26	0.013	43	0.063	41	0.060	39	0.057	9	0.013	8	0.011
1.5	40	0.047	35	0.047	41	0.021	33	0.021	26	0.017	46	0.026	31	0.016	64	0.079	61	0.075	57	0.071	10	0.016	8	0.013
2.0	52	0.053	47	0.053	47	0.032	36	0.037	29	0.029	60	0.032	39	0.021	84	0.084	79	0.080	75	0.076	12	0.021	10	0.018
2.5	64	0.058	57	0.058	59	0.037	37	0.042	30	0.034	71	0.047	38	0.026	98	0.095	93	0.090	89	0.085	12	0.032	10	0.027
3.0	74	0.063	68	0.063	68	0.053	40	0.053	31	0.042	80	0.058	40	0.032	106	0.105	100	0.100	95	0.095	13	0.053	11	0.045

Oil Feed Miniature Twist Drill – Point Angle 135°, 12 × Ø, 15 × Ø



Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1.0	26	0.040	22	0.040	27	0.015	24	0.015	19	0.012	31	0.020	25	0.012	41	0.060	39	0.057	37	0.054	9	0.012	8	0.010
1.5	38	0.045	33	0.045	39	0.020	31	0.020	25	0.016	44	0.025	30	0.015	61	0.075	58	0.071	55	0.068	9	0.015	8	0.013
2.0	50	0.050	44	0.050	45	0.030	35	0.035	28	0.028	57	0.030	37	0.020	80	0.080	75	0.076	72	0.072	11	0.020	9	0.017
2.5	61	0.055	54	0.055	56	0.035	35	0.040	28	0.032	68	0.045	36	0.025	94	0.090	90	0.086	85	0.081	12	0.030	9	0.026
3.0	72	0.060	64	0.060	65	0.050	38	0.050	30	0.040	76	0.055	38	0.030	101	0.100	95	0.095	90	0.090	12	0.050	10	0.043

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Oil Feed Miniature Twist Drill – Point Angle 135°, 20 × Ø, 25 × Ø



Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1.0	25	0.040	21	0.040	26	0.015	22	0.015	18	0.012	30	0.020	24	0.012	39	0.060	37	0.057	35	0.054	8	0.012	7	0.010
1.5	36	0.045	32	0.045	37	0.020	29	0.020	24	0.016	42	0.025	28	0.015	58	0.075	55	0.071	52	0.068	9	0.015	8	0.013
2.0	48	0.050	42	0.050	43	0.030	33	0.035	26	0.028	54	0.030	35	0.020	75	0.080	72	0.076	68	0.072	11	0.020	9	0.017
2.5	58	0.055	52	0.055	53	0.035	34	0.040	27	0.032	64	0.045	34	0.025	90	0.090	85	0.086	80	0.081	11	0.030	9	0.026
3.0	68	0.060	61	0.060	62	0.050	36	0.050	28	0.040	73	0.055	36	0.030	95	0.100	90	0.095	86	0.090	11	0.050	9	0.043

Oil Feed Miniature Twist Drill – Point Angle 135°, 30 × Ø



Drilling	P						M				K				N						S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties			520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1.0	20	0.038	20	0.038	24	0.014	21	0.014	17	0.011	28	0.019	23	0.011	37	0.057	35	0.054	33	0.051	8	0.011	7	0.010
1.5	25	0.043	20	0.043	35	0.019	28	0.019	22	0.015	40	0.024	27	0.014	55	0.071	52	0.068	49	0.064	8	0.014	7	0.012
2.0	30	0.048	25	0.048	40	0.029	31	0.033	25	0.027	51	0.029	33	0.019	72	0.076	68	0.072	64	0.068	10	0.019	9	0.016
2.5	40	0.052	35	0.052	50	0.033	32	0.038	25	0.030	60	0.043	32	0.024	85	0.086	80	0.081	76	0.077	10	0.029	9	0.024
3.0	50	0.057	45	0.057	58	0.048	34	0.048	27	0.038	69	0.052	34	0.029	90	0.095	86	0.090	81	0.086	11	0.048	9	0.040

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR-L

01

T8090 TIP COATING

Multilayer AlTiN coating enhance tool life



02

FLUTES POLISHED

- Smoother chips evacuation
- Less build up edge

03

HIGH PERFORMANCE DRILL WITH INTERNAL COOLING

- Enhances hole quality
- Increases tool durability

04

FOUR MARGIN FOR OPTIMUM HOLE QUALITY AND USE ON:

- Inclined hole exits
- Workpieces with cross holes

05

BENEFITS

- Drilling without pecking
- Maximum process reliability at deep drilling depths

06

APPLICABLE IN VARIOUS INDUSTRIES

- Mould & Die
- General Engineering
- Automotive
- Energy

07

POSITIVE RAKE ANGLE

Which suitable for Material Groups

P M K N S

DEUTSCH

01 **T8090 BESCHICHTUNG**
- Mehrlagen AlTiN-Beschichtung verbessert die Lebensdauer des Werkzeugs

02 **POLIERTE SCHNEIDE**
- Für ideale Spanabfuhr
- Weniger Aufbauschneiden

03 **HOCHLEISTUNGSBOHRER MIT INNENKÜHLUNG**
- Verbessert die Bohrungsqualität
- Erhöht die Haltbarkeit des Werkzeugs

04 **VIER FASENSCHLIFF FÜR OPTIMALE BOHRUNGSQUALITÄT UND EINSATZ FÜR**
- Schräglochaustritte
- Werkstücke mit Kreuzlöchern

05 **VORTEILE**
- Bohren ohne Spanentlüften
- Maximale Prozesssicherheit bei großen Bohrtiefen

06 **ANWENDBAR IN VERSCHIEDENEN BRANCHEN**
- Werkzeug- und Formenbau
- Maschinenbau
- Fahrzeugindustrie
- Energietechnik

07 **GEEIGNET FÜR DIE MATERIALIEN P, K, N, M, S**

FRANÇAIS

01 **REVÊTEMENT D'EXTRÉMITÉ T8090**
- Revêtement AlTiN multicouche pour une meilleure durée de vie de l'outil

02 **GOUJURE POLIE**
- Évacuation des copeaux plus fluide
- Moins d'accumulation sur les arêtes

03 **PERÇAGE HAUTE PERFORMANCE AVEC RÉFRIGÉRANT INTERNE**
- Améliore la qualité des orifices
- Augmente la durabilité de l'outil

04 **QUATRE MARGES POUR UNE QUALITÉ D'ORIFICES OPTIMALE ET UNE UTILISATION SUR**
- Sorties d'orifices inclinées
- Pièce travaillée avec orifices croisés

05 **AVANTAGES**
- Perçage sans piquetage
- Fiabilité optimale du processus à des grandes profondeurs de perçage

06 **VALABLE DANS DIVERS SECTEURS**
- Moule et matrice
- Ingénierie générale
- Automobile
- Énergie

07 **ADAPTÉ AUX MATÉRIAUX P, K, N, M, S**

ITALIANO

01 **RIVESTIMENTO PUNTA T8090**
- Il rivestimento AlTiN multistrato migliora la durata dello strumento

02 **SCANALATURA LEVIGATA**
- Evacuazione dei trucioli più semplice
- Meno formazione di materiale di riporto

03 **FORATURA AD ALTE PRESTAZIONI CON LIQUIDO REFRIGERANTE INTERNO**
- Migliora la qualità dei fori
- Aumenta la resistenza dello strumento

04 **QUATTRO MARGINI PER QUALITÀ OTTIMALE DEI FORI E UTILIZZO SU**
- Uscite fori inclinate
- Pezzi con fori trasversali

05 **VANTAGGI**
- Foratura senza avanzamento in profondità
- Affidabilità massima del processo a profondità di foratura estreme

06 **APPLICABILE IN VARI SETTORI**
- Stampo e matrice
- Ingegneria generale
- Automotive
- Energia

07 **ADATTO PER IL MATERIALE P, K, N, M, S**

中文

01 **卓越的刀具涂层**
- 多层 AlTiN 涂层可提高刀具寿命

02 **抛光沟槽**
- 更顺畅的排屑
- 减少鐵屑堆積

03 **具有内部冷却功能的高性能钻头**
- 提高钻孔质量
- 提高刀具耐用性

04 **四个刃带，确保最佳质量**
- 提高孔垂直度
- 更准的钻孔公差
- 可使用在倾斜钻孔
- 可加工交叉孔的工件

05 **特点**
- 无需定點钻孔
- 深钻加工最理想的选择

06 **用于各种行业**
- 模具业
- 一般工程业
- 汽车工业
- 能源工业

07 **适合加工钢，铸铁，不锈钢，有色金属，超合金和钛的材料**

DR-L SB OIL FEED TWIST DRILLS – 135° Point Angle

HPMT

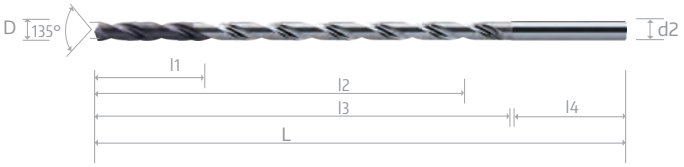
VHM DR-L Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-L à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR-L in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR-L 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

W05*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2 (Max. Drilling Depth)	l 3	l 4	L	d2 (h6)	T8090
W05 0310 12	12 x D	3.10	15.5	45	50	32	85	4	○
W05 0320 12	12 x D	3.20	16.0	45	50	32	85	4	○
W05 0330 12	12 x D	3.30	16.5	45	50	32	85	4	○
W05 0340 12	12 x D	3.40	17.0	48	54	32	90	4	○
W05 0350 12	12 x D		17.5	48	54	32	90	4	●
W05 0350 15	15 x D	3.50	17.5	55	60	32	95	4	●
W05 0350 20	20 x D		17.5	72	77	32	110	4	●
W05 0360 12	12 x D	3.60	18.0	48	54	32	90	4	○
W05 0370 12	12 x D	3.70	18.5	48	54	32	90	4	○
W05 0380 12	12 x D	3.80	19.0	57	64	32	100	4	○
W05 0390 12	12 x D	3.90	19.5	57	64	32	100	4	○
W05 0400 12	12 x D		20.0	57	64	32	100	4	●
W05 0400 15	15 x D	4.00	20.0	62	68	32	105	4	●
W05 0400 20	20 x D		20.0	82	88	32	125	4	●
W05 0410 12	12 x D	4.10	20.5	57	64	34	100	5	○
W05 0420 12	12 x D	4.20	21.0	57	64	34	100	5	○
W05 0430 12	12 x D	4.30	21.5	57	64	34	100	5	○
W05 0440 12	12 x D	4.40	22.0	57	64	34	100	5	○
W05 0450 12	12 x D		22.5	57	64	34	100	5	●
W05 0450 15	15 x D	4.50	22.5	70	76	34	115	5	●
W05 0450 20	20 x D		22.5	92	99	34	135	5	●
W05 0460 12	12 x D	4.60	23.0	57	64	34	100	5	○
W05 0470 12	12 x D	4.70	23.5	57	64	34	100	5	○
W05 0480 12	12 x D	4.80	24.0	67	74	34	110	5	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

566/567

Technische änderungen ohne vorherige information vorbehalten

DR-L SB OIL FEED TWIST DRILLS – 135° Point Angle

HPMT

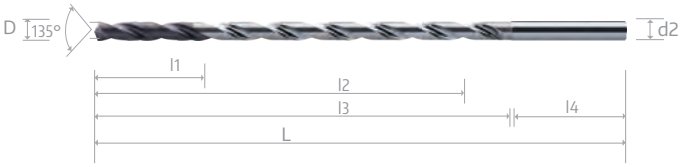
VHM DR-L Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-L à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR-L in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR-L 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

W05*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2 (Max. Drilling Depth)	l 3	l 4	L	d2 (h6)	T8090
W05 0490 12	12 x D	4.90	24.5	72	81	34	120	5	○
W05 0500 12	12 x D		25.0	72	81	34	120	5	•
W05 0500 15	15 x D	5.00	25.0	77	85	34	120	5	•
W05 0500 20	20 x D		25.0	102	110	34	145	5	•
W05 0510 12	12 x D	5.10	25.5	72	81	36	120	6	○
W05 0520 12	12 x D	5.20	26.0	72	81	36	120	6	○
W05 0530 12	12 x D	5.30	26.5	72	81	36	120	6	○
W05 0540 12	12 x D	5.40	27.0	72	81	36	120	6	○
W05 0550 12	12 x D		27.5	72	81	36	120	6	•
W05 0550 15	15 x D	5.50	27.5	85	93	36	130	6	•
W05 0550 20	20 x D		27.5	112	120	36	160	6	•
W05 0560 12	12 x D	5.60	28.0	72	81	36	120	6	○
W05 0570 12	12 x D	5.70	28.5	72	81	36	120	6	○
W05 0580 12	12 x D	5.80	29.0	72	81	36	120	6	○
W05 0590 12	12 x D	5.90	29.5	72	81	36	120	6	○
W05 0600 12	12 x D		30.0	72	81	36	120	6	•
W05 0600 15	15 x D	6.00	30.0	92	101	36	140	6	•
W05 0600 20	20 x D		30.0	122	131	36	170	6	•
W05 0610 12	12 x D	6.10	30.5	88	97	36	135	8	○
W05 0620 12	12 x D	6.20	31.0	88	97	36	135	8	○
W05 0630 12	12 x D	6.30	31.5	88	97	36	135	8	○
W05 0640 12	12 x D	6.40	32.0	96	108	36	145	8	○
W05 0650 12	12 x D	6.50	32.5	96	108	36	145	8	○
W05 0660 12	12 x D	6.60	33.0	96	108	36	145	8	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

Cutting Parameter: 566/567

DR-L SB OIL FEED TWIST DRILLS – 135° Point Angle

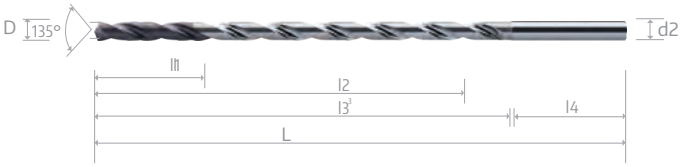
VHM DR-L Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-L à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR-L in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR-L 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

W05*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2 (Max. Drilling Depth)	l 3	l 4	L	d2 (h6)	T8090
W05 0670 12	12 x D	6.70	33.5	96	108	36	145	8	○
W05 0680 12	12 x D	6.80	34.0	96	108	36	145	8	○
W05 0690 12	12 x D	6.90	34.5	96	108	36	145	8	○
W05 0700 12	12 x D		35.0	96	108	36	145	8	•
W05 0700 15	15 x D	7.00	35.0	107	118	38	160	7	•
W05 0700 20	20 x D		35.0	142	153	38	195	7	•
W05 0710 12	12 x D	7.10	35.5	96	108	36	145	8	○
W05 0720 12	12 x D	7.20	36.0	96	108	36	145	8	○
W05 0730 12	12 x D	7.30	36.5	96	108	36	145	8	○
W05 0740 12	12 x D	7.40	37.0	96	108	36	145	8	○
W05 0750 12	12 x D	7.50	37.5	96	108	36	145	8	○
W05 0760 12	12 x D	7.60	38.0	96	108	36	145	8	○
W05 0770 12	12 x D	7.70	38.5	96	108	36	145	8	○
W05 0780 12	12 x D	7.80	39.0	96	108	36	145	8	○
W05 0790 12	12 x D	7.90	39.5	96	108	36	145	8	○
W05 0800 12	12 x D		40.0	96	108	36	145	8	•
W05 0800 15	15 x D	8.00	40.0	122	134	40	175	8	•
W05 0800 20	20 x D		40.0	162	174	40	215	8	•
W05 0810 12	12 x D	8.10	40.5	115	127	40	170	10	○
W05 0820 12	12 x D	8.20	41.0	120	135	40	180	10	○
W05 0830 12	12 x D	8.30	41.5	120	135	40	180	10	○
W05 0840 12	12 x D	8.40	42.0	120	135	40	180	10	○
W05 0850 12	12 x D	8.50	42.5	120	135	40	180	10	○
W05 0860 12	12 x D	8.60	43.0	120	135	40	180	10	○
W05 0870 12	12 x D	8.70	43.5	120	135	40	180	10	○
W05 0880 12	12 x D	8.80	44.0	120	135	40	180	10	○

cont'd ►

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•	•	•	•	•				

566/567

Modifiche Techiche possibili senza preavviso

DR-L SB OIL FEED TWIST DRILLS – 135° Point Angle

HPMT

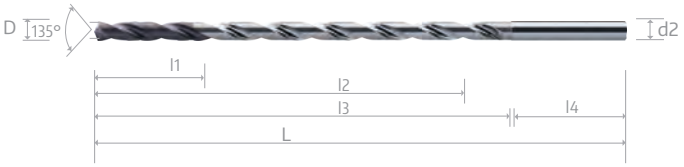
VHM DR-L Kühlkanalbohrer nach 135° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux DR-L à trous d'huile en carbure monobloc angle de pointe 135°, queue selon DIN 6535HA

Punte elicoidali DR-L in metallo duro integrale norma con fori di lubrificazione angolo di punta 135°, codolo DIN 6535HA

整体硬质合金 DR-L 内冷却 钻头 - 相等于 2 刃 - 加工深度，柄部标准 DIN 6535HA

W05*





Z2



HPT T8090 TIALN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)								Coating
= * + Ø data	Hole Depth l2/D	D (h7)	l 1	l 2 (Max. Drilling Depth)	l 3	l 4	L	d2 (h6)	T8090
W05 0890 12	12 x D	8.90	44.5	120	135	40	180	10	○
W05 0900 12	12 x D	9.00	45.0	120	135	40	180	10	●
W05 0900 15	15 x D		45.0	135	151	40	195	9	●
W05 0900 20	20 x D		45.0	182	196	40	240	9	●
W05 0910 12	12 x D	9.10	45.5	120	135	40	180	10	○
W05 0920 12	12 x D	9.20	46.0	120	135	40	180	10	○
W05 0930 12	12 x D	9.30	46.5	120	135	40	180	10	○
W05 0940 12	12 x D	9.40	47.0	120	135	40	180	10	○
W05 0950 12	12 x D	9.50	47.5	120	135	40	180	10	○
W05 0960 12	12 x D	9.60	48.0	120	135	40	180	10	○
W05 0970 12	12 x D	9.70	48.5	120	135	40	180	10	○
W05 0980 12	12 x D	9.80	49.0	120	135	40	180	10	○
W05 0990 12	12 x D	9.90	49.5	120	135	40	180	10	○
W05 1000 12	12 x D	10.00	50.0	120	135	40	180	10	●
W05 1000 15	15 x D		50.0	152	167	40	210	10	●
W05 1000 20	20 x D		50.0	202	217	40	260	10	●

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	●				

Cutting Parameter: 566/567

若有技术规格变更，恕不事先通知



Oil Feed Twist Drills – Point Angle 135°, 12 × Ø, 15 × Ø

Working Material	P						M				K				N						S			
	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machin-ability		Low Machin-ability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3.0	80	0.077	60	0.062	50	0.054	50	0.058	30	0.035	80	0.077	50	0.054	100	0.096	85	0.087	85	0.077	35	0.051	25	0.038
3.5	80	0.089	60	0.071	50	0.062	50	0.067	30	0.040	80	0.089	50	0.062	100	0.111	85	0.100	85	0.089	35	0.059	25	0.044
4.0	80	0.107	60	0.086	50	0.075	50	0.080	30	0.048	80	0.107	50	0.075	100	0.134	85	0.120	85	0.107	35	0.071	25	0.052
4.5	80	0.125	60	0.100	50	0.088	50	0.094	30	0.056	80	0.125	50	0.088	100	0.156	85	0.141	85	0.125	35	0.083	25	0.061
5.0	80	0.143	60	0.114	50	0.100	50	0.107	30	0.064	80	0.143	50	0.100	100	0.179	85	0.161	85	0.143	35	0.095	25	0.070
5.5	80	0.160	60	0.128	50	0.112	50	0.120	30	0.072	80	0.160	50	0.112	100	0.200	85	0.180	85	0.160	35	0.106	25	0.078
6.0	80	0.178	60	0.142	50	0.125	50	0.134	30	0.080	80	0.178	50	0.125	100	0.223	85	0.200	85	0.178	35	0.118	25	0.087
6.5	80	0.196	60	0.157	50	0.137	50	0.147	30	0.088	80	0.196	50	0.137	100	0.245	85	0.221	85	0.196	35	0.130	25	0.096
7.0	80	0.214	60	0.171	50	0.150	50	0.161	30	0.096	80	0.214	50	0.150	100	0.268	85	0.241	85	0.214	35	0.142	25	0.105
7.5	80	0.232	60	0.186	50	0.162	50	0.174	30	0.104	80	0.232	50	0.162	100	0.290	85	0.261	85	0.232	35	0.154	25	0.114
8.0	80	0.250	60	0.200	50	0.175	50	0.188	30	0.113	80	0.250	50	0.175	100	0.313	85	0.281	85	0.250	35	0.166	25	0.123
8.5	80	0.268	60	0.214	50	0.188	50	0.201	30	0.121	80	0.268	50	0.188	100	0.335	85	0.302	85	0.268	35	0.178	25	0.131
9.0	80	0.285	60	0.228	50	0.200	50	0.214	30	0.128	80	0.285	50	0.200	100	0.356	85	0.321	85	0.285	35	0.190	25	0.140
9.5	80	0.303	60	0.242	50	0.212	50	0.227	30	0.136	80	0.303	50	0.212	100	0.379	85	0.341	85	0.303	35	0.201	25	0.148
10.0	80	0.321	60	0.257	50	0.225	50	0.241	30	0.144	80	0.321	50	0.225	100	0.401	85	0.361	85	0.321	35	0.213	25	0.157

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

Oil Feed Twist Drills – Point Angle 135°, 20 × Ø, 25 × Ø



Working Material	P						M				K				N						S			
	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machin-ability		Low Machin-ability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**
3.0	70	0.077	45	0.062	35	0.054	45	0.058	25	0.035	65	0.077	35	0.054	80	0.096	65	0.087	65	0.077	30	0.051	20	0.051
3.5	70	0.089	45	0.071	35	0.062	45	0.067	25	0.040	65	0.089	35	0.062	80	0.111	65	0.100	65	0.089	30	0.059	20	0.059
4.0	70	0.107	45	0.086	35	0.075	45	0.080	25	0.048	65	0.107	35	0.075	80	0.134	65	0.120	65	0.107	30	0.071	20	0.071
4.5	70	0.125	45	0.100	35	0.088	45	0.094	25	0.056	65	0.125	35	0.088	80	0.156	65	0.141	65	0.125	30	0.083	20	0.083
5.0	70	0.143	45	0.114	35	0.100	45	0.107	25	0.064	65	0.143	35	0.100	80	0.179	65	0.161	65	0.143	30	0.095	20	0.095
5.5	70	0.160	45	0.128	35	0.112	45	0.120	25	0.072	65	0.160	35	0.112	80	0.200	65	0.180	65	0.160	30	0.106	20	0.106
6.0	70	0.178	45	0.142	35	0.125	45	0.134	25	0.080	65	0.178	35	0.125	80	0.223	65	0.200	65	0.178	30	0.118	20	0.118
6.5	70	0.196	45	0.157	35	0.137	45	0.147	25	0.088	65	0.196	35	0.137	80	0.245	65	0.221	65	0.196	30	0.130	20	0.130
7.0	70	0.214	45	0.171	35	0.150	45	0.161	25	0.096	65	0.214	35	0.150	80	0.268	65	0.241	65	0.214	30	0.142	20	0.142
7.5	70	0.232	45	0.186	35	0.162	45	0.174	25	0.104	65	0.232	35	0.162	80	0.290	65	0.261	65	0.232	30	0.154	20	0.154
8.0	70	0.250	45	0.200	35	0.175	45	0.188	25	0.113	65	0.250	35	0.175	80	0.313	65	0.281	65	0.250	30	0.166	20	0.166
8.5	70	0.268	45	0.214	35	0.188	45	0.201	25	0.121	65	0.268	35	0.188	80	0.335	65	0.302	65	0.268	30	0.178	20	0.178
9.0	70	0.285	45	0.228	35	0.200	45	0.214	25	0.128	65	0.285	35	0.200	80	0.356	65	0.321	65	0.285	30	0.190	20	0.190
9.5	70	0.303	45	0.242	35	0.212	45	0.227	25	0.136	65	0.303	35	0.212	80	0.379	65	0.341	65	0.303	30	0.201	20	0.201
10.0	70	0.321	45	0.256	35	0.224	45	0.240	25	0.144	65	0.321	35	0.224	80	0.402	65	0.361	65	0.321	30	0.212	20	0.212

Oil Feed Twist Drills – Point Angle 135°, 30 × Ø



Working Material	P						M				K				N						S			
	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties			520 < Rm < 1200		35 ≤ HRC < 45		High Machin-ability		Low Machin-ability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
D (mm)	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**	**Vc (m/ min)**	**fn (mm/ rev)**
3.0	65	0.077	45	0.062	35	0.054	40	0.058	20	0.035	60	0.077	30	0.054	70	0.096	60	0.087	60	0.077	30	0.051	20	0.038
3.5	65	0.089	45	0.071	35	0.062	40	0.067	20	0.040	60	0.089	30	0.062	70	0.111	60	0.100	60	0.089	30	0.059	20	0.044
4.0	65	0.107	45	0.086	35	0.075	40	0.080	20	0.048	60	0.107	30	0.075	70	0.134	60	0.120	60	0.107	30	0.071	20	0.052
4.5	65	0.125	45	0.100	35	0.088	40	0.094	20	0.056	60	0.125	30	0.088	70	0.156	60	0.141	60	0.125	30	0.083	20	0.061
5.0	65	0.143	45	0.114	35	0.100	40	0.107	20	0.064	60	0.143	30	0.100	70	0.179	60	0.161	60	0.143	30	0.095	20	0.070
5.5	65	0.160	45	0.128	35	0.112	40	0.120	20	0.072	60	0.160	30	0.112	70	0.200	60	0.180	60	0.160	30	0.106	20	0.078
6.0	65	0.178	45	0.142	35	0.125	40	0.134	20	0.080	60	0.178	30	0.125	70	0.223	60	0.200	60	0.178	30	0.118	20	0.087
6.5	65	0.196	45	0.157	35	0.137	40	0.147	20	0.088	60	0.196	30	0.137	70	0.245	60	0.221	60	0.196	30	0.130	20	0.096
7.0	65	0.214	45	0.171	35	0.150	40	0.161	20	0.096	60	0.214	30	0.150	70	0.268	60	0.241	60	0.214	30	0.142	20	0.105
7.5	65	0.232	45	0.186	35	0.162	40	0.174	20	0.104	60	0.232	30	0.162	70	0.290	60	0.261	60	0.232	30	0.154	20	0.114
8.0	65	0.250	45	0.200	35	0.175	40	0.188	20	0.113	60	0.250	30	0.175	70	0.313	60	0.281	60	0.250	30	0.166	20	0.123
8.5	65	0.268	45	0.214	35	0.188	40	0.201	20	0.121	60	0.268	30	0.188	70	0.335	60	0.302	60	0.268	30	0.178	20	0.131
9.0	65	0.285	45	0.228	35	0.200	40	0.214	20	0.128	60	0.285	30	0.200	70	0.356	60	0.321	60	0.285	30	0.190	20	0.139
9.5	65	0.303	45	0.242	35	0.212	40	0.227	20	0.136	60	0.303	30	0.212	70	0.379	60	0.341	60	0.303	30	0.201	20	0.147
10.0	65	0.321	45	0.256	35	0.224	40	0.240	20	0.144	60	0.321	30	0.224	70	0.402	60	0.361	60	0.321	30	0.212	20	0.155

DR 45 SB

01

SPLIT POINT DESIGN

- Provides self centering ability and reduced thrust

02

STRAIGHT CUTTING EDGE

- Produces small chips
- Improves chip evacuation

03

EFFECTIVE CLEARANCE AND GASH

- Lower cutting force
- Improves chip formation and control

04

CORNER REINFORCEMENT

- Adds protection during the drilling process

05

OIL HOLE V-GROOVE

- Improves the flushing out of chips during drilling

06

J FLUTE SHAPE

- Provides better chip evacuation

07

HIGH PERFORMANCE DRILL WITH INTERNAL COOLANT

- Enhances hole quality
- Increases tool durability

08

FLUTES POLISHED PASSAGE

- Provides better chips evacuation
- Increases feeds and speeds possible for high performance drilling
- Less built-up edge

09

FOUR MARGIN FOR OPTIMUM HOLE QUALITY

- Improve holes straightness
- Better holes tolerance
- Using on inclined hole exit
- Workpiece with cross holes





10

SUITABLE FOR MATERIAL GROUPS

P M K S

DEUTSCH

01 **KREUZANSCHLIFF**
Optimale Selbstzentrierung und reduziert Axialdruck

02 **GERADE SCHNEIDE**
- Erzeugt kleine Späne
- Verbessert die Spanabfuhr

03 **EFFEKTIVER SPANRAUM UND SCHNITT**
- Niedrigere Schnittkräfte
- Verbessert die Spanbildung und Spankontrolle

04 **SCHNEIDECKENVERSTÄRKUNG**
Sorgt für mehr Stabilität beim Bohren

05 **KÜHLKANÄLE IN V-STIRNANSCHLIFF**
- Besseres Ausspülen der Späne während des Bohrens

06 **J-FÖRMIGE NUTEN**
- Bietet einen verbesserten Spänefluß

07 **HOCHLEISTUNGSBOHRER MIT INNENKÜHLUNG**
- Verbessert die Bohrungsqualität
- Erhöht die Haltbarkeit des Werkzeugs

08 **POLIERTER NUTENÜBERGANG**
- Bietet einen verbesserten Spänefluß
- Erhöht Vorschübe und Schnittgeschwindigkeiten beim Hochleistungsbohren
- Weniger Aufbauschneiden

09 **VIER FASEN FÜR OPTIMALE BOHRUNGSQUALITÄT**
- Verbessert die Geradheit der Bohrung
- Bessere Bohrungstoleranz
- Einsatz beim schrägem Bohraustritt
- Werkstücke mit Kreuzbohrungen

10 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, K, S**

FRANÇAIS

01 **CONCEPTION À AFFÛTAGE 4 FACES CROISÉES**
- Auto centrant, éfforts de coupes réduit

02 **AFFUTAGE 4 FACES CROISÉES**
- Produit des copeaux de petite taille
- Améliore l'évacuation des copeaux

03 **DÉGAGEMENT ET RAINURE DE LOGEMENT EFFICACES**
- Forces de coupe inférieures
- Améliore la formation et le contrôle des copeaux

04 **RAYON TORIQUE SUR LES ARÊTES**
- Pour une meilleur protection pendant le percage

05 **SCANALATURA A V DEL FORO DELL'OLIO**
- Migliora l'espulsione dei trucioli durante la foratura

06 **FORMA DELLA SCANALATURA A J**
- Offre una migliore evacuazione dei trucioli

07 **PERÇAGE HAUTE PERFORMANCE À TROU D'HUILE**
- Améliore la qualité des percages
- Augmente la durée de vie de l'outil

08 **GOUJURE POLI**
- Permet une meilleure évacuation des copeaux
- Améliore les débits et les vitesses possibles pour un perçage haute performance
- Moins de collage sur les arêtes

09 **FORET DOUBLE LISTEL POUR QUALITÉ DE TROU H7**
- Améliore la rectitude des percages
- Meilleure tolérance des trous
- Utilisation pour trou debouchant sur une inclinaison
- Peut etre utilisé pour trous sécants

10 **ADAPTÉ AUX MATÉRIAUX P, M, K, S**

ITALIANO

01 **STRUTTURA DEL PUNTO DI RIPARTIZIONE**
- Offre capacità autocentranti e spinta ridotta

02 **ANGOLO DI TAGLIO DRITTO**
- Produce piccoli trucioli
- Migliora l'evacuazione dei trucioli

03 **GIOCO E SGROSSATURA EFFICACI**
- Forze di taglio inferiori
- Migliora la formazione e il controllo dei trucioli

04 **RAFFORZAMENTO DEGLI ANGOLI**
- Aggiunge protezione durante il processo di foratura

05 **SCANALATURA A V DEL FORO DELL'OLIO**
- Migliora l'espulsione dei trucioli durante la foratura

06 **FORMA DELLA SCANALATURA A J**
- Offre una migliore evacuazione dei trucioli

07 **FORATURA AD ALTE PRESTAZIONI CON LIQUIDO REFRIGERANTE INTERNO**
- Migliora la qualità dei fori
- Aumenta la resistenza dello strumento

08 **PASSAGGIO SCANALATURE LEVIGATE**
- Offre una migliore evacuazione dei trucioli
- Aumenta l'avanzamento e la velocità per una foratura ad alte prestazioni
- Meno formazione di materiale di riporto

09 **QUATTRO MARGINI PER UNA QUALITÀ DEI FORI OTTIMALE**
- Migliora la linearità dei fori
- Migliore tolleranza dei fori
- Utilizzo su uscita foro inclinata
- Pezzo con fori trasversali

10 **ADATTO PER IL MATERIALE P, M, K, S**

中文

01 **不等分割的设计**
提供鑽孔定點能力和減小加工阻力。

02 **垂直切削刃設計**
有效斷屑並强化的切削刃

03 **有效排屑能力**
- 有效減少加工阻力
- 減少鐵屑堆積

04 **刀尖R角設計**
在钻孔过程中增加保护

05 **V 型油孔**
鑽孔時鐵屑更順利排出

06 **J 型槽**
提供更好的排屑

07 **具有内冷却的高性能钻头**
- 提高钻孔质量
- 提高刀具耐用性

08 **抛光沟槽**
- 提供更好的排屑
- 提高切削速率与高性能钻孔
- 减少铁屑堆积

09 **四个刃带，确保最佳质量**
- 提高孔垂直度
- 更准的钻孔公差
- 可使用在倾斜钻孔
- 可加工交叉孔的工件

10 **适合加工钢、不锈钢、铸铁、超合金和钛的材料**

DR 45SB

LONG OF SPIRAL BURNISHING DRILLS – HPMT STANDARD – 140° Point Angle – 8 x Ø

≤ 1.300 N/mm² + G6110/ D0120 ≤ 45 HRC

HPMT

VHM DR 45 SB OF Lange 4 Fasen-Spiralbohrer nach HPMT Norm, mit Kühlkanälen - 140° Spitzenwinkel, Schaft nach DIN 6535HA

DR 45 SB OF Foret hélicoïdal double listel en carbure monobloc à trou d'huile, selon norme HPMT, queue DIN 6535HA

Punte elicoidali DR 45 SB OF a doppio margine in metallo duro integrale, norma HPMT, con fori di lubrificazione - angolo di punta 140°, codolo DIN 6535HA

整体硬质合金DR 45 SB LONG OF 内冷却钻头 顶角140°，柄部 标准 DIN 6535HA

F32*





Z2



HSC D0120 TiSi

HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						F32 *	F33 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	D0120	G6110
* 0300 085 03	3.0	32	40	36	85	3	○	○
0300	3.0	32	40	36	85	6	○	○
* 0310 085 03	3.1	32	40	36	85	3	○	○
0310	3.1	32	40	36	85	6	○	○
* 0320 085 03	3.2	32	40	36	85	3	○	○
0320	3.2	32	40	36	85	6	○	○
0330	3.3	32	40	36	85	6	○	○
0340	3.4	32	40	36	85	6	○	○
0350	3.5	32	40	36	85	6	○	○
0360	3.6	36	40	36	85	6	○	○
0370	3.7	36	40	36	85	6	○	○
0380	3.8	36	40	36	85	6	○	○
0390	3.9	36	40	36	85	6	○	○
* 0400 085 04	4.0	36	40	36	85	4	○	○
0400	4.0	38	46	36	85	6	○	○
* 0410 085 04	4.1	36	40	36	85	4	○	○
0410	4.1	38	46	36	85	6	○	○
* 0420 085 04	4.2	36	40	36	85	4	○	○
0420	4.2	38	46	36	85	6	○	○
0430	4.3	40	46	36	97	6	○	○
0440	4.4	40	46	36	97	6	○	○
0450	4.5	44	46	36	97	6	○	○
0460	4.6	44	46	36	97	6	○	○
0470	4.7	44	46	36	97	6	○	○
0480	4.8	44	46	36	97	6	○	○
0490	4.9	44	46	36	97	6	○	○
0500	5.0	48	57	36	97	6	○	○
0510	5.1	48	57	36	97	6	○	○

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter 574

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	○	○	●	●	●				

Technical specifications subject to change without prior notice

DR 45SB

LONG OF SPIRAL BURNISHING DRILLS – HPMT STANDARD – 140° Point Angle – 8 x Ø

≤ 1.300 N/mm² + G6110/ D0120 ≤ 45 HRC

HPMT

VHM DR 45 SB OF Lange 4 Fasen-Spiralbohrer nach HPMT Norm, mit Kühlkanälen - 140° Spitzenwinkel, Schaft nach DIN 6535HA

DR 45 SB OF Foret hélicoïdal double listel en carbure monobloc à trou d'huile, selon norme HPMT, queue DIN 6535HA

Punte elicoidali DR 45 SB OF a doppio margine in metallo duro integrale, norma HPMT, con fori di lubrificazione - angolo di punta 140°, codolo DIN 6535HA

整体硬质合金DR 45 SB LONG OF 内冷却钻头 顶角140°，柄部 标准 DIN 6535HA

F32*





Z2



HSC D0120 TiSi

HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP		Dimension (mm)					F32 *	F33 *
= * + Ø data	D (m7)	l1	l2	l3	L	d2 (h6)	D0120	G6110
0520	5.2	48	57	36	97	6	○	○
0530	5.3	48	57	36	97	6	○	○
0540	5.4	48	57	36	97	6	○	○
0550	5.5	48	57	36	97	6	○	○
0560	5.6	48	57	36	97	6	○	○
0570	5.7	48	57	36	97	6	○	○
0580	5.8	48	57	36	97	6	○	○
0590	5.9	48	57	36	97	6	○	○
0600	6.0	48	57	36	97	6	○	○
* 0610 097 06	6.1	48	57	36	97	6	○	○
0610	6.1	64	76	36	116	8	○	○
0620	6.2	64	76	36	116	8	○	○
0630	6.3	64	76	36	116	8	○	○
0640	6.4	64	76	36	116	8	○	○
0650	6.5	64	76	36	116	8	○	○
* 0660	6.6	64	76	36	116	8	○	○
0670	6.7	64	76	36	116	8	○	○
0680	6.8	64	76	36	116	8	○	○
0690	6.9	64	76	36	116	8	○	○
0700	7.0	64	76	36	116	8	○	○
0710	7.1	64	76	36	116	8	○	○
0720	7.2	64	76	36	116	8	○	○
0730	7.3	64	76	36	116	8	○	○
0740	7.4	64	76	36	116	8	○	○
0750	7.5	64	76	36	116	8	○	○
0760	7.6	64	76	36	116	8	○	○
0770	7.7	64	76	36	116	8	○	○
0780	7.8	64	76	36	116	8	○	○

cont'd ▶

* = HPMT STANDARD

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	○	○	●	●	●						

Cutting Parameter

574

DR 45SB

LONG OF SPIRAL BURNISHING DRILLS – HPMT STANDARD – 140° Point Angle – 8 x Ø

≤ 1.300 N/mm² + G6110/ D0120 ≤ 45 HRC

HPMT

VHM DR 45 SB OF Lange 4 Fasen-Spiralbohrer nach HPMT Norm, mit Kühlkanälen - 140° Spitzenwinkel, Schaft nach DIN 6535HA

DR 45 SB OF Foret hélicoïdal double listel en carbure monobloc à trou d'huile, selon norme HPMT, queue DIN 6535HA

Punte elicoidali DR 45 SB OF a doppio margine in metallo duro integrale, norma HPMT, con fori di lubrificazione - angolo di punta 140°, codolo DIN 6535HA

整体硬质合金DR 45 SB LONG OF 内冷却钻头 顶角140°，柄部 标准 DIN 6535HA

F32*





Z2

MG | λ= 30° | 8 x Ø | DIN 6535 HA HB | HSC D0120 TiSi | HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						F32 *	F33 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	D0120	G6110
0790	7.9	64	76	36	116	8	○	○
0800	8.0	64	76	36	116	8	○	○
* 0810 116 08	8.1	64	76	36	116	8	○	○
0810	8.1	80	95	40	142	10	○	○
0820	8.2	80	95	40	142	10	○	○
0830	8.3	80	95	40	142	10	○	○
0840	8.4	80	95	40	142	10	○	○
0850	8.5	80	95	40	142	10	○	○
0860	8.6	80	95	40	142	10	○	○
0870	8.7	80	95	40	142	10	○	○
0880	8.8	80	95	40	142	10	○	○
0890	8.9	80	95	40	142	10	○	○
0900	9.0	80	95	40	142	10	○	○
0910	9.1	80	95	40	142	10	○	○
0920	9.2	80	95	40	142	10	○	○
0930	9.3	80	95	40	142	10	○	○
0940	9.4	80	95	40	142	10	○	○
0950	9.5	80	95	40	142	10	○	○
0960	9.6	80	95	40	142	10	○	○
0970	9.7	80	95	40	142	10	○	○
0980	9.8	80	95	40	142	10	○	○
0990	9.9	80	95	40	142	10	○	○
1000	10.0	80	95	40	142	10	○	○
1020	10.2	96	114	45	163	12	○	○
1050	10.5	96	114	45	163	12	○	○
1080	10.8	96	114	45	163	12	○	○
1100	11.0	96	114	45	163	12	○	○
1120	11.2	96	114	45	163	12	○	○

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter 574

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	○	○	●	●	●						

Spécifications techniques sujettes à changement sans avis prélable

DR 45SB

LONG OF SPIRAL BURNISHING DRILLS – HPMT STANDARD – 140° Point Angle – 8 x Ø

≤ 1.300 N/mm² + G6110/ D0120 ≤ 45 HRC

HPMT

VHM DR 45 SB OF Lange 4 Fasen-Spiralbohrer nach HPMT Norm, mit Kühlkanälen - 140° Spitzenwinkel, Schaft nach DIN 6535HA

DR 45 SB OF Foret hélicoïdal double listel en carbure monobloc à trou d'huile, selon norme HPMT, queue DIN 6535HA

Punte elicoidali DR 45 SB OF a doppio margine in metallo duro integrale, norma HPMT, con fori di lubrificazione - angolo di punta 140°, codolo DIN 6535HA

整体硬质合金DR 45 SB LONG OF 内冷却钻头 顶角140°，柄部标准 DIN 6535HA

F32*





Z2



HSC D0120 TiSi

HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						F32 *	F33 *
= * + Ø data	D (m7)	l 1	l 2	l 3	L	d2 (h6)	D0120	G6110
1130	11.3	96	114	45	163	12	○	○
1150	11.5	96	114	45	163	12	○	○
1180	11.8	96	114	45	163	12	○	○
1200	12.0	96	114	45	163	12	○	○
1220	12.2	112	133	45	182	14	○	○
1250	12.5	112	133	45	182	14	○	○
1270	12.7	112	133	45	182	14	○	○
1280	12.8	112	133	45	182	14	○	○
1300	13.0	112	133	45	182	14	○	○
1350	13.5	112	133	45	182	14	○	○
1370	13.7	112	133	45	182	14	○	○
1400	14.0	112	133	45	182	14	○	○
1450	14.5	128	152	48	204	16	○	○
1500	15.0	128	152	48	204	16	○	○
1550	15.5	128	152	48	204	16	○	○
1600	16.0	128	152	48	204	16	○	○

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	○	○	●	●	●						

Cutting Parameter 574

Modifiche Techiche possibili senza preavviso

Long OF Spiral Burnishing Drills – 8 × Ø



	P						M				K				S			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron		Nickel Alloy		Titanium Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-		-	
D (mm)	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**	**Vc (m/min)**	**fn (mm/rev)**
3		0.090		0.081		0.022		0.071		0.054		0.085		0.081		0.034		0.048
4		0.107		0.099		0.027		0.085		0.065		0.105		0.100		0.042		0.058
5		0.124		0.116		0.032		0.098		0.077		0.125		0.119		0.049		0.067
6		0.141		0.133		0.036		0.110		0.087		0.145		0.137		0.057		0.077
7		0.158		0.153		0.040		0.124		0.099		0.165		0.156		0.065		0.086
8		0.173		0.173		0.044		0.137		0.109		0.184		0.174		0.074		0.096
9		0.190		0.190		0.048		0.149		0.121		0.204		0.193		0.082		0.106
10	105	0.207	100	0.207	20	0.051	50	0.162	40	0.131	105	0.224	95	0.212	25	0.089	35	0.116
11		0.224		0.224		0.056		0.174		0.143		0.243		0.231		0.098		0.124
12		0.239		0.239		0.059		0.187		0.153		0.263		0.250		0.105		0.133
13		0.255		0.255		0.063		0.200		0.165		0.282		0.268		0.113		0.144
14		0.271		0.271		0.067		0.212		0.174		0.301		0.287		0.121		0.153
15		0.288		0.288		0.071		0.225		0.187		0.321		0.305		0.128		0.162
16		0.305		0.305		0.077		0.238		0.197		0.341		0.324		0.137		0.172

P M K S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DR 60

01

CORNER EDGE CHAMFER

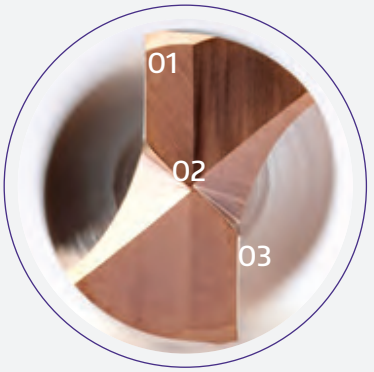
· Edge protection when machining on hardened material

02

THINNING

· Special Thinning for hardened material





03

BIGGER WEB THICKNESS

· Increases the tool rigidity

04

HELIX ANGLE

· Low Helix Angle 15°

05

TOUGH PVD SILICON BASED COATING

· Prolong the tool life
· Enables higher cutting speeds
· Increases heat resistance

06

SUITABLE FOR MATERIAL GROUP

H

DEUTSCH

01 **ECKENSCHUTZFASE**
· Kantenschutz bei der Bearbeitung von gehärtetem Material

02 **AUSSPITZUNG**
· Spezielle Stirnausspitzung für gehärtetes Material

03 **GRÖSSERER KERNDURCHMESSER**
· Erhöht die Werkzeugsteifigkeit

04 **DRALL**
· Kleiner Drallwinkel 15°

05 **ROBUSTE PVD-SILIZIUMBESCHICHTUNG**
· Verlängert die Werkzeuglebensdauer
· Ermöglicht höhere Schnittgeschwindigkeiten
· Verbesserte Hitzebeständigkeit

06 **GEEIGNET FÜR DIE MATERIALIGRUPPEN H**

FRANÇAIS

01 **RAYON TORIQUE SUR LES ARÊTES**
· Protection de l'arête lors de l'usinage de matériaux plus durs

02 **AMINCISSEMENT**
· Amincissement spécial pour les matériaux durcis

03 **AME RENFORCÉE**
· Augmente la rigidité de l'outil

04 **HÉLICE**
· Angle d'hélice faible de 15°

05 **REVÊTEMENT À BASE DE SILICIUM SOUS FORME DE DÉPÔT EN PHASE VAPEUR RÉSISTANT**
· Prolonge la durée de vie de l'outil
· Permet des vitesses de coupe supérieures
· Augmente la résistance à la chaleur

06 **ADAPTÉ AUX MATÉRIAUX H**

ITALIANO

01 **TAGLIENTE DI SMUSSO**
· Protezione degli angoli durante la lavorazione su materiali induriti

02 **ASSOTTIGLIAMENTO**
· Assottigliamento specifico per materiale indurito

03 **SPESSORE DEL NOCCIOLO PIÙ GRANDE**
· Aumenta la rigidità dello strumento

04 **ELICA**
· Angolo ellittico basso 15°

05 **RIVESTIMENTO IN SILICONE PVD RESISTENTE**
· Prolunga la vita dello strumento
· Consente maggiori velocità di taglio
· Aumenta la resistenza al calore

06 **ADATTO PER IL MATERIALE H**

中文

01 **刀尖倒角设计**
在硬化材料上进行加工时的边刃保护

02 **修磨横刃**
特殊修磨横刃加强切割硬化材料

03 **更大的靜點**
提高刀具刚性

04 **螺旋角**
低螺旋角 15°

05 **PVD 硅基涂层**
· 延长刀具寿命
· 提高抗热性 (适合干加工)
· 优异的耐磨性和耐崩刀性

06 **适合加工硬钢材料**

DR 60 TWIST DRILLS – DIN 6537K – 150° Point Angle – 3 x Ø

≤ 1.300 N/mm² + D0120 ≤ 68 HRC

HPMT

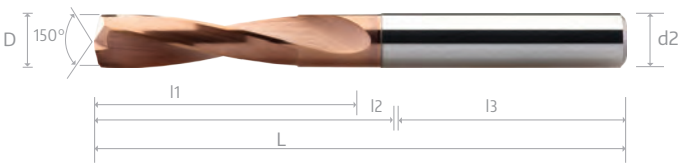
VHM Spiralbohrer nach DIN 6537K,
150° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux en carbure monobloc selon
DIN 6537K, angle de pointe 150°, queue selon DIN 6535HA

Punte elicoidali in metallo duro integrale norma
DIN 6537K angolo di punta 150°, codolo DIN 6535HA

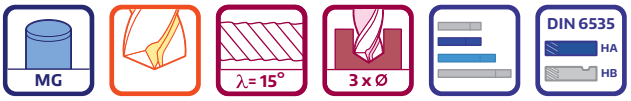
整体硬质合金 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

823*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						823 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	D0120
0300	3.0	14	20	36	62	6	•
0330	3.3	14	20	36	62	6	•
0350	3.5	14	20	36	62	6	•
0380	3.8	17	24	36	66	6	•
0400	4.0	17	24	36	66	6	•
0420	4.2	17	24	36	66	6	•
0450	4.5	17	24	36	66	6	•
0480	4.8	20	28	36	66	6	•
0500	5.0	20	28	36	66	6	•
0550	5.5	20	28	36	66	6	•
0580	5.8	20	28	36	66	6	•
0600	6.0	20	28	36	66	6	•
0650	6.5	29	41	36	79	8	•
0680	6.8	29	41	36	79	8	•
0700	7.0	29	41	36	79	8	•
0750	7.5	29	41	36	79	8	•
0780	7.8	29	41	36	79	8	•
0800	8.0	29	41	36	79	8	•
0850	8.5	35	47	40	89	10	•
0880	8.8	35	47	40	89	10	•
0900	9.0	35	47	40	89	10	•
0950	9.5	35	47	40	89	10	•
0980	9.8	35	47	40	89	10	•
1000	10.0	35	47	40	89	10	•
1020	10.2	40	55	45	102	12	•
1050	10.5	40	55	45	102	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○						●	●		

Cutting Parameter

582

Technical specifications subject to change without prior notice

DR 60 TWIST DRILLS – DIN 6537K – 150° Point Angle – 3 x Ø

≤ 1.300 N/mm² + D0120 ≤ 68 HRC

HPMT

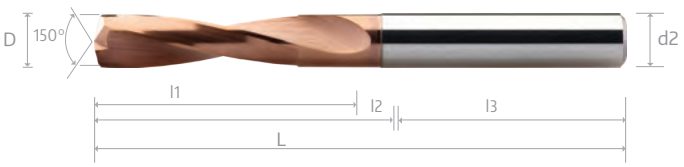
VHM Spiralbohrer nach DIN 6537K,
150° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux en carbure monobloc selon
DIN 6537K, angle de pointe 150°, queue selon DIN 6535HA

Punte elicoidali in metallo duro integrale norma
DIN 6537K angolo di punta 150°, codolo DIN 6535HA

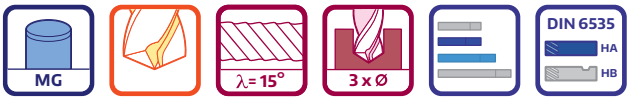
整体硬质合金 钻头 - 相等于 DIN 6537K
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

823*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						823 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	D0120
1080	10.8	40	55	45	102	12	•
1100	11.0	40	55	45	102	12	•
1150	11.5	40	55	45	102	12	•
1180	11.8	40	55	45	102	12	•
1200	12.0	40	55	45	102	12	•
1250	12.5	43	60	45	107	14	•
1280	12.8	43	60	45	107	14	•
1300	13.0	43	60	45	107	14	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○						●	●		

582

DR 60 TWIST DRILLS - DIN 6537L - 150° Point Angle - 5 x Ø

≤ 1.300 N/mm² + D0120 ≤ 68 HRC

HPMT

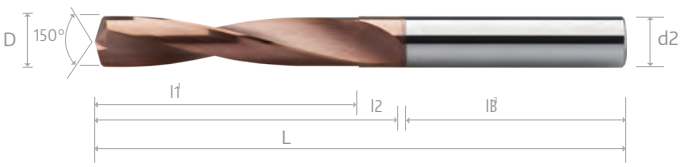
VHM Spiralbohrer nach DIN 6537L,
150° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux en carbure monobloc selon
DIN 6537L, angle de pointe 150°, queue selon DIN 6535HA

Punte elicoidali in metallo duro integrale norma
DIN 6537L angolo di punta 150°, codolo DIN 6535HA

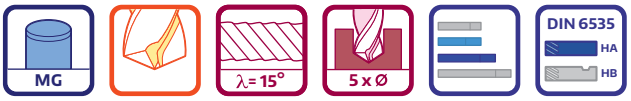
整体硬质合金 钻头 - 相等于 DIN 6537L
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

821*





Z2



HSC D0120 TiSi

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						821 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	D0120
0300	3.0	23	28	36	66	6	•
0330	3.3	23	28	36	66	6	•
0350	3.5	23	28	36	66	6	•
0380	3.8	29	36	36	82	6	•
0400	4.0	29	36	36	82	6	•
0420	4.2	29	36	36	82	6	•
0450	4.5	29	36	36	82	6	•
0480	4.8	35	44	36	82	6	•
0500	5.0	35	44	36	82	6	•
0550	5.5	35	44	36	82	6	•
0580	5.8	35	44	36	82	6	•
0600	6.0	35	44	36	82	6	•
0650	6.5	43	53	36	91	8	•
0680	6.8	43	53	36	91	8	•
0700	7.0	43	53	36	91	8	•
0750	7.5	43	53	36	91	8	•
0780	7.8	43	53	36	91	8	•
0800	8.0	43	53	36	91	8	•
0850	8.5	49	61	40	103	10	•
0880	8.8	49	61	40	103	10	•
0900	9.0	49	61	40	103	10	•
0950	9.5	49	61	40	103	10	•
0980	9.8	49	61	40	103	10	•
1000	10.0	49	61	40	103	10	•
1020	10.2	56	71	45	118	12	•
1050	10.5	56	71	45	118	12	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○						●	●		

Cutting Parameter

582

Spécifications techniques sujettes à changement sans avis prélable

DR 60 TWIST DRILLS – DIN 6537L – 150° Point Angle – 5 x Ø

≤ 1.300 N/mm² + D0120 ≤ 68 HRC

HPMT

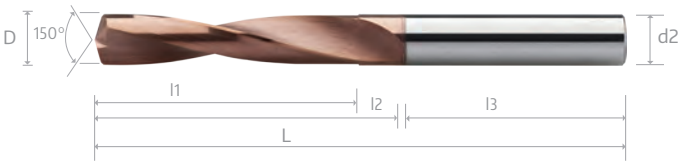
VHM Spiralbohrer nach DIN 6537L,
150° Spitzenwinkel, Schaft nach DIN 6535HA

Forets hélicoïdaux en carbure monobloc selon
DIN 6537L, angle de pointe 150°, queue selon DIN 6535HA

Punte elicoidali in metallo duro integrale norma
DIN 6537L angolo di punta 150°, codolo DIN 6535HA

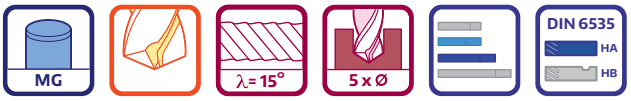
整体硬质合金 钻头 - 相等于 DIN 6537L
2 刃 - 加工深度 3xD，柄部标准 DIN 6535HA

821*





Z2





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						821 *
= * + Ø data	D (h7)	l 1	l 2	l 3	L	d2 (h6)	D0120
1080	10.8	71	71	45	118	12	•
1100	11.0	71	71	45	118	12	•
1150	11.5	71	71	45	118	12	•
1180	11.8	71	71	45	118	12	•
1200	12.0	71	71	45	118	12	•
1250	12.5	77	77	45	124	14	•
1280	12.8	77	77	45	124	14	•
1300	13.0	77	77	45	124	14	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
							○						•	•		

Cutting Parameter: 582

DR 60 Recommended Cutting Data

HPMT

Twist Drills – 3 × Ø



Working Material	P		H			
	Prehardened Steel		Hardened Steel		Hardened Steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		≥ 52 HRC	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	25	0.030	20	0.024	15	0.022
4		0.063		0.050		0.025
5		0.081		0.065		0.029
6		0.100		0.080		0.032
7		0.113		0.090		0.036
8		0.125		0.100		0.039
9		0.138		0.110		0.043
10		0.150		0.120		0.046
11		0.163		0.130		0.050
12		0.175		0.140		0.053
13		0.188		0.150		0.059

Twist Drills – 5 × Ø



Working Material	P		H			
	Prehardened Steel		Hardened Steel		Hardened Steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		≥ 52 HRC	
D (mm)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
3	25	0.025	20	0.020	15	0.019
4		0.054		0.043		0.021
5		0.069		0.055		0.025
6		0.085		0.068		0.027
7		0.096		0.077		0.031
8		0.106		0.085		0.033
9		0.118		0.094		0.037
10		0.128		0.102		0.039
11		0.139		0.111		0.043
12		0.149		0.119		0.045
13		0.160		0.128		0.050



Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



RE 45

For material application is ≤ 68 HRC.

RE 45 SHORT MACHINE REAMERS – STRAIGHT FLUTE, R.H. CUTTING

≤ 1.300 N/mm²

HPMT

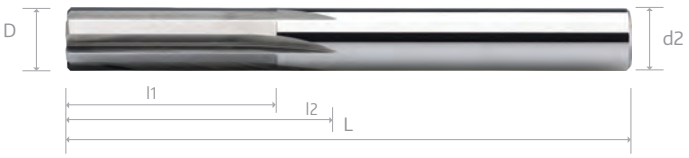
VHM RE 45 Maschinenreibahlen, kurz, gerade Nuten, 4 bzw. 6 Schneiden

Alésoirs machine RE 45 courts en carbure monobloc, goujures droites, 4 respectivement 6 goujures

Alesatori macchina RE 45 corti in metallo duro integrale, gole diritte, 4 respettivamente 6 taglienti

整体硬质合金 RE 45 系列 直槽 铰刀 4 刃 / 6刃 - 标准长度, 带颈位

621*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					621*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0150	1.5	9.5	11/15*	38	2	•
0200	2	12.5	14.5	44	2	•
0250	2.5	16	18.5	57	2.5	•
0300	3	16	19	57	3	•
0350	3.5	19	22.5	63	3.5	•
0400	4	19	23	63	4	•



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					621*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0450	4.5	22	26.5	70	4.5	•
0500	5	25.5	30.5	76	5	•
0550	5.5	25.5	31	76	5.5	•
0600	6	25.5	31.5	76	6	•
0650	6.5	28.5	35	83	6.5	•
0700	7	28.5	35.5	83	7	•
0750	7.5	28.5	36	83	7.5	•
0800	8	28.5	36.5	83	8	•
0850	8.5	32	40.5	89	8.5	•
0900	9	32	41	89	9	•
0950	9.5	32	41.5	89	9.5	•
1000	10	32	42	89	10	•
1050	10.5	32	42.5	89	10.5	•
1100	11	35	46	95	11	•
1150	11.5	35	46.5	95	11.5	•
1200	12	35	47	95	12	•
1300	13	38	51	102	13	•
1400	14	38	52	102	14	•
1500	15	44.5	53	102	15	•
1600	16	44.5	54	102	16	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

595

Technical specifications subject to change without prior notice

SHORT MACHINE REAMERS-L.H. HELIX, R.H. CUTTING - Double Lead Entrance

≤ 1.300 N/mm²

HPMT

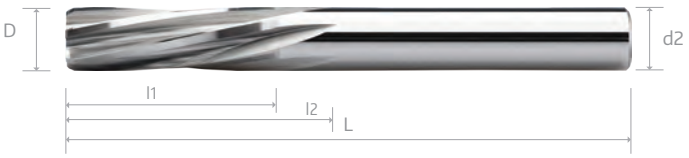
VHM RE 45 Maschinenreibahlen, kurz, 12° Linksdrall, rechtsschneidend, doppeiter Anschitt 4 bzw. 6 Schneiden

Alésoirs machine RE 45 courts en carbure monobloc, hélice 12° à gauche, coupe à droite double entrée 4 respectivement 6 goujures

Alesatori macchina RE 45 corti in metallo duro integrale, eliche 12° sinistra, taglio a destra, doppio imbocco 4 respettivamente 6 taglienti

整体硬质合金 RE 45 系列 螺旋 铰刀 4 刃 / 6 刃 - 标准长度, 带颈位

623*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					623*
= * + Ø data	D (H7)	l 1	l 2	L	d2 (h6)	T ... n
0150	1.5	9.5	11/15*	38	2	•
0200	2	12.5	14.5	44	2	•
0250	2.5	16	18.5	57	2.5	•
0300	3	16	19	57	3	•
0350	3.5	19	22.5	63	3.5	•
0400	4	19	23	63	4	•



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					623*
= * + Ø data	D (H7)	l 1	l 2	L	d2 (h6)	T ... n
0450	4.5	22	26.5	70	4.5	•
0500	5	25.5	30.5	76	5	•
0550	5.5	25.5	31	76	5.5	•
0600	6	25.5	31.5	76	6	•
0650	6.5	28.5	35	83	6.5	•
0700	7	28.5	35.5	83	7	•
0750	7.5	28.5	36	83	7.5	•
0800	8	28.5	36.5	83	8	•
0850	8.5	32	40.5	89	8.5	•
0900	9	32	41	89	9	•
0950	9.5	32	41.5	89	9.5	•
1000	10	32	42	89	10	•
1050	10.5	32	42.5	89	10.5	•
1100	11	35	46	95	11	•
1150	11.5	35	46.5	95	11.5	•
1200	12	35	47	95	12	•
1300	13	38	51	102	13	•
1400	14	38	52	102	14	•
1500	15	44.5	53	102	15	•
1600	16	44.5	54	102	16	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter

595

MACHINE REAMERS- R.H. CUTTING- ~DIN 212- Stright Flutes

≤ 1.300 N/mm²

HPMT

VHM RE 45 Maschinenreibahlen nach DIN 212, gerade Nuten, 4 bzw. 6 Schneiden

Alésoirs machine RE 45 selon DIN 212 en carbure, monobloc, goujures droites, 4 respectivement 6 goujures

Alesatori macchina RE 45 secondo DIN 212 in metallo duro integrale, 4 respettivamente 6 taglienti

整体硬质合金 RE 45 系列 直槽 铰刀 4 刃 / 6 刃 - 长度标准 ~DIN 212, 带颈位

625*





Z4/6

UF

C X 45°

DIN 6535 HA HB

4

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					625*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0200	2	11	13	49	2	•
0250	2.5	14	16.5	57	2.5	•
0300	3	15	18	61	3	•
0350	3.5	18	21.5	70	3.5	•
0400	4	19	23	75	4	•

6

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					625*
= * + Ø dataw	D (H7)	l1	l2	L	d2 (h6)	T ... n
0450	4.5	21	25.5	80	4.5	•
0500	5	23	28	86	5	•
0550	5.5	26	31.5	93	5.5	•
0600	6	26	32	93	6	•
0650	6.5	28	34.5	101	6.5	•
0700	7	31	38	109	7	•
0750	7.5	31	38.5	109	7.5	•
0800	8	33	41	117	8	•
0850	8.5	33	41.5	117	8.5	•
0900	9	36	45	125	9	•
0950	9.5	36	45.5	125	9.5	•
1000	10	38	48	133	10	•
1050	10.5	38	48.5	133	10.5	•
1100	11	41	52	142	11	•
1150	11.5	41	52.5	142	11.5	•
1200	12	44	56	151	12	•
1300	13	44	57	151	13	•
1400	14	47	61	160	14	•
1500	15	50	65	160	15	•
1600	16	52	68	170	16	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	595
•	•	•	•	•	•	•	•	•							•		

Spécifications techniques sujettes à changement sans avis prélable

MACHINE REAMERS - L.H. HELIX, R.H. CUTTING - Double Lead Entrance - ~ DIN 212

≤ 1.300 N/mm²

HPMT

VHM RE 45 Maschinenreibahlen nach DIN 212,12° Linksdrall, rechtsschneidend, doppelter Anschnitt, 4 bzw. 6 Schneiden

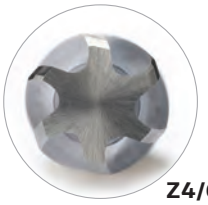
Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 12° à gauche, coupe à droite, double entrée, 4 respect. 6 goujures

Alesatori macchina Re 45 secondo DIN 212 in metallo duro integrale, elica 12° a sinistra, taglio a destra, doppio imbocco, 4 resp. 6 taglienti

整体硬质合金 RE 45 系列 螺旋 铰刀 4 刃 / 6刃 -标准长度 ~DIN 212, 带颈位

627*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					627*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0200	2	11	13	49	2	•
0210	2.1	11	13	49	2.1	•
0220	2.2	14	16.5	57	2.2	•
0230	2.3	14	16.5	57	2.3	•
0240	2.4	14	16.5	57	2.4	•
0250	2.5	14	16.5	57	2.5	•
0260	2.6	14	16.5	57	2.6	•
0270	2.7	15	16.5	61	2.7	•
0280	2.8	15	16.5	61	2.8	•
0290	2.9	15	16.5	61	2.9	•
0300	3	15	18	61	3	•
0310	3.1	15	18	61	3.1	•
0320	3.2	18	21.5	70	3.2	•
0330	3.3	18	21.5	70	3.3	•
0340	3.4	18	21.5	70	3.4	•
0350	3.5	18	21.5	70	3.5	•
0360	3.6	18	21.5	70	3.6	•
0370	3.7	19	23	75	3.7	•
0380	3.8	19	23	75	3.8	•
0390	3.9	19	23	75	3.9	•
0400	4	19	23	75	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter: 595

MACHINE REAMERS - L.H. HELIX, R.H. CUTTING - Double Lead Entrance - ~ DIN 212

≤ 1.300 N/mm²

HPMT

VHM RE 45 Maschinenreibahlen nach DIN 212,12° Linksdrall, rechtsschneidend, doppelter Anschnitt, 4 bzw. 6 Schneiden

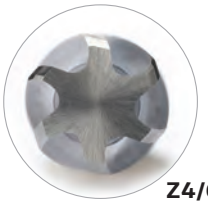
Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 12° à gauche, coupe à droite, double entrée, 4 respect. 6 goujures

Alesatori macchina Re 45 secondo DIN 212 in metallo duro integrale, elica 12° a sinistra, taglio a destra, doppio imbocco, 4 resp. 6 taglienti

整体硬质合金 RE 45 系列 螺旋 铰刀 4 刃 / 6刃 -标准长度 ~DIN 212, 带颈位

627*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					627*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0410	4.1	19	23	75	4.1	•
0420	4.2	21	25.5	80	4.2	•
0430	4.3	21	25.5	80	4.3	•
0440	4.4	21	25.5	80	4.4	•
0450	4.5	21	25.5	80	4.5	•
0460	4.6	21	25.5	80	4.6	•
0470	4.7	23	28	86	4.7	•
0480	4.8	23	28	86	4.8	•
0490	4.9	23	28	86	4.9	•
0500	5	23	28	86	5	•
0510	5.1	23	28	86	5.1	•
0520	5.2	26	31.5	93	5.2	•
0530	5.3	26	31.5	93	5.3	•
0540	5.4	26	31.5	93	5.4	•
0550	5.5	26	31.5	93	5.5	•
0560	5.6	26	31.5	93	5.6	•
0570	5.7	26	31.5	93	5.7	•
0580	5.8	26	31.5	93	5.8	•
0590	5.9	26	31.5	93	5.9	•
0600	6	26	32	93	6	•
0610	6.1	26	32	93	6.1	•
0620	6.2	28	34.5	101	6.2	•
0630	6.3	28	34.5	101	6.3	•
0640	6.4	28	34.5	101	6.4	•
0650	6.5	28	34.5	101	6.5	•
0660	6.6	28	34.5	101	6.6	•
0670	6.7	31	38	109	6.7	•
0680	6.8	31	38	109	6.8	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

595

若有技术规格变更，恕不事先通知

MACHINE REAMERS – L.H. HELIX, R.H. CUTTING – Double Lead Entrance – ~ DIN 212

≤ 1.300 N/mm²

HPMT

VHM RE 45 Maschinenreibahlen nach DIN 212,12° Linksdrall, rechtsschneidend, doppelter Anschnitt, 4 bzw. 6 Schneiden

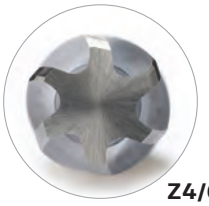
Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 12° à gauche, coupe à droite, double entrée, 4 respect. 6 goujures

Alesatori macchina Re 45 secondo DIN 212 in metallo duro integrale, elica 12° a sinistra, taglio a destra, doppio imbocco, 4 resp. 6 taglienti

整体硬质合金 RE 45 系列 螺旋 铰刀 4 刃 / 6刃 -标准长度 ~DIN 212, 带颈位

627*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					627*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0690	6.9	31	38	109	6.9	•
0700	7	31	38	109	7	•
0710	7.1	31	38	109	7.1	•
0720	7.2	31	38	109	7.2	•
0730	7.3	31	38	109	7.3	•
0740	7.4	31	38	109	7.4	•
0750	7.5	31	38.5	109	7.5	•
0760	7.6	31	38.5	109	7.6	•
0770	7.7	33	41	117	7.7	•
0780	7.8	33	41	117	7.8	•
0790	7.9	33	41	117	7.9	•
0800	8	33	41	117	8	•
0810	8.1	33	41	117	8.1	•
0820	8.2	33	41	117	8.2	•
0830	8.3	33	41	117	8.3	•
0840	8.4	33	41	117	8.4	•
0850	8.5	33	41	117	8.5	•
0860	8.6	33	41	117	8.6	•
0870	8.7	36	45.5	125	8.7	•
0880	8.8	36	45.5	125	8.8	•
0890	8.9	36	45.5	125	8.9	•
0900	9	36	45.5	125	9	•
0910	9.1	36	45.5	125	9.1	•
0920	9.2	36	45.5	125	9.2	•
0930	9.3	36	45.5	125	9.3	•
0940	9.4	36	45.5	125	9.4	•
0950	9.5	36	45.5	125	9.5	•
0960	9.6	36	45.5	125	9.6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter: 595

Technical specifications subject to change without prior notice

MACHINE REAMERS - L.H. HELIX, R.H. CUTTING - Double Lead Entrance - ~ DIN 212

≤ 1.300 N/mm²

HPMT

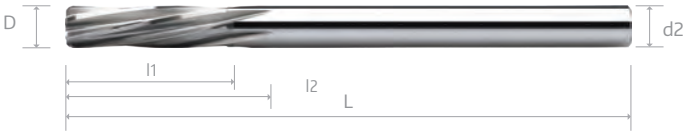
VHM RE 45 Maschinenreibahlen nach DIN 212,12° Linksdrall, rechtsschneidend, doppelter Anschnitt, 4 bzw. 6 Schneiden

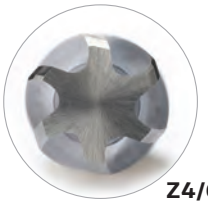
Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 12° à gauche, coupe à droite, double entrée, 4 respect. 6 goujures

Alesatori macchina Re 45 secondo DIN 212 in metallo duro integrale, elica 12° a sinistra, taglio a destra, doppio imbocco, 4 resp. 6 taglienti

整体硬质合金 RE 45 系列 螺旋 铰刀 4 刃 / 6刃 -标准长度 ~DIN 212, 带颈位

627*





Z4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					627*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0970	9.7	38	48	133	9.7	•
0980	9.8	38	48	133	9.8	•
0990	9.9	38	48	133	9.9	•
1000	10	38	48	133	10	•
1050	10.5	38	48.5	133	10.5	•
1100	11	41	52	142	11	•
1150	11.5	41	52.5	142	11.5	•
1200	12	44	56	151	12	•
1300	13	44	57	151	13	•
1400	14	47	61	160	14	•
1500	15	50	65	160	15	•
1600	16	52	68	170	16	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

595

Technische änderungen ohne vorherige information vorbehalten

MACHINE REAMERS HIGH L.H. HELIX, R.H. CUTTING - ~DIN 212

≤ 1.300 N/mm²

VHM RE 45 Maschinenreibahlen nach DIN 212, 60° Linksdrall, rechtsschneidend, Sonder- Anschnitt, 3 - 4 bzw. 6 Schneiden

Alesatori macchina RE 45 secondo DIN 212 in metallo duro integrale, elica 60° a sinistra, taglio a destra, imbocco speciale, 3-4 resp. 6 taglienti

Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 60° à gauche, coupe à droite, entrée spéciale, 3 - 4 resp. 6 goujures

整体硬质合金 RE 45 系列 高螺旋 铰刀 3 / 4 / 6 刃 - 标准长度 ~DIN 212, 带颈位

629*





Z3/4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					629*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0200	2	11		49	2	•
0210	2.1	11		49	2.1	•
0220	2.2	14		57	2.2	•
0230	2.3	14		57	2.3	•
0240	2.4	14		57	2.4	•
0250	2.5	14		57	2.5	•
0260	2.6	14		57	2.6	•
0270	2.7	15		61	2.7	•
0280	2.8	15		61	2.8	•
0290	2.9	15		61	2.9	•
0300	3	15		61	3	•
0310	3.1	15		61	3.1	•
0320	3.2	18		70	3.2	•
0330	3.3	18		70	3.3	•
0340	3.4	18		70	3.4	•
0350	3.5	18		70	3.5	•
0360	3.6	18		70	3.6	•
0370	3.7	19		75	3.7	•
0380	3.8	19		75	3.8	•
0390	3.9	19		75	3.9	•
0400	4	19		75	4	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter: 595

Spécifications techniques sujettes à changement sans avis prélable

MACHINE REAMERS HIGH L.H. HELIX, R.H. CUTTING - ~DIN 212

≤ 1.300 N/mm²

VHM RE 45 Maschinenreibahlen nach DIN 212, 60° Linksdrall, rechtsschneidend, Sonder- Anschnitt, 3 - 4 bzw. 6 Schneiden

Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 60° à gauche, coupe à droite, entrée spéciale, 3 - 4 resp. 6 goujures

Alesatori macchina RE 45 secondo DIN 212 in metallo duro integrale, elica 60° a sinistra, taglio a destra, imbocco speciale, 3-4 resp. 6 taglienti

整体硬质合金 RE 45 系列 高螺旋 铰刀 3 / 4 / 6 刃 - 标准长度 ~DIN 212, 带颈位

629*





Z3/4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					629*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0410	4.1	19		75	4.1	•
0420	4.2	21		80	4.2	•
0430	4.3	21		80	4.3	•
0440	4.4	21		80	4.4	•
0450	4.5	21		80	4.5	•
0460	4.6	21		80	4.6	•
0470	4.7	23		86	4.7	•
0480	4.8	23		86	4.8	•
0490	4.9	23		86	4.9	•
0500	5	23		86	5	•
0510	5.1	23		86	5.1	•
0520	5.2	26		93	5.2	•
0530	5.3	26		93	5.3	•
0540	5.4	26		93	5.4	•
0550	5.5	26		93	5.5	•
0560	5.6	26		93	5.6	•
0570	5.7	26		93	5.7	•
0580	5.8	26		93	5.8	•
0590	5.9	26		93	5.9	•
0600	6	26		93	6	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter: 595

Modifiche Techiche possibili senza preavviso

MACHINE REAMERS HIGH L.H. HELIX, R.H. CUTTING - ~DIN 212

≤ 1.300 N/mm²

VHM RE 45 Maschinenreibahlen nach DIN 212, 60° Linksdrall, rechtsschneidend, Sonder- Anschnitt, 3 - 4 bzw. 6 Schneiden

Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 60° à gauche, coupe à droite, entrée spéciale, 3 - 4 resp. 6 goujures

Alesatori macchina RE 45 secondo DIN 212 in metallo duro integrale, elica 60° a sinistra, taglio a destra, imbocco speciale, 3-4 resp. 6 taglienti

整体硬质合金 RE 45 系列 高螺旋 铰刀 3 / 4 / 6 刃 - 标准长度 ~DIN 212, 带颈位

629*





Z3/4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					629*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0610	6.1	26		93	6.1	•
0620	6.2	28		101	6.2	•
0630	6.3	28		101	6.3	•
0640	6.4	28		101	6.4	•
0650	6.5	28		101	6.5	•
0660	6.6	28		101	6.6	•
0670	6.7	31		109	6.7	•
0680	6.8	31		109	6.8	•
0690	6.9	31		109	6.9	•
0700	7	31		109	7	•
0710	7.1	31		109	7.1	•
0720	7.2	31		109	7.2	•
0730	7.3	31		109	7.3	•
0740	7.4	31		109	7.4	•
0750	7.5	31		109	7.5	•
0760	7.6	31		109	7.6	•
0770	7.7	33		117	7.7	•
0780	7.8	33		117	7.8	•
0790	7.9	33		117	7.9	•
0800	8	33		117	8	•
0810	8.1	33		117	8.1	•
0820	8.2	33		117	8.2	•
0830	8.3	33		117	8.3	•
0840	8.4	33		117	8.4	•
0850	8.5	33		117	8.5	•
0860	8.6	33		117	8.6	•
0870	8.7	36		125	8.7	•
0880	8.8	36		125	8.8	•

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

Cutting Parameter: 595

若有技术规格变更，恕不事先通知

MACHINE REAMERS HIGH L.H. HELIX, R.H. CUTTING - ~DIN 212

≤ 1.300 N/mm²

HPMT

VHM RE 45 Maschinenreibahlen nach DIN 212, 60° Linksdrall, rechtsschneidend, Sonder- Anschnitt, 3 - 4 bzw. 6 Schneiden

Alésoirs machine RE 45 selon DIN 212 en carbure monobloc, hélices 60° à gauche, coupe à droite, entrée spéciale, 3 - 4 resp. 6 goujures

Alesatori macchina RE 45 secondo DIN 212 in metallo duro integrale, elica 60° a sinistra, taglio a destra, imbocco speciale, 3-4 resp. 6 taglienti

整体硬质合金 RE 45 系列 高螺旋 铰刀 3 / 4 / 6 刃 - 标准长度 ~DIN 212, 带颈位

629*





Z3/4/6





EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					629*
= * + Ø data	D (H7)	l1	l2	L	d2 (h6)	T ... n
0890	8.9	36		125	8.9	•
0900	9	36		125	9	•
0910	9.1	36		125	9.1	•
0920	9.2	36		125	9.2	•
0930	9.3	36		125	9.3	•
0940	9.4	36		125	9.4	•
0950	9.5	36		125	9.5	•
0960	9.6	36		125	9.6	•
0970	9.7	38		133	9.7	•
0980	9.8	38		133	9.8	•
0990	9.9	38		133	9.9	•
1000	10	38		133	10	•
1050	10.5	38		133	10.5	•
1100	11	41		142	11	•
1150	11.5	41		142	11.5	•
1200	12	44		151	12	•
1300	13	44		151	13	•
1400	14	47		160	14	•
1500	15	50		160	15	•
1600	16	52		170	16	•

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
•	•	•	•	•	•	•	•	•							•	

595

Technical specifications subject to change without prior notice

Standard 4 / 6 Flute

Working Material	Stock Removal	P						M				K			
		Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Stainless Steel		Grey Cast Iron		Ductile Cast Iron	
Properties		-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-	
D (mm)		Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)1	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1	0.105		0.015		0.012		0.007		0.013		0.010		0.014		0.010
2	0.150		0.030		0.024		0.015		0.026		0.022		0.027		0.021
3	0.150		0.045		0.036		0.023		0.039		0.034		0.041		0.032
4	0.225		0.060		0.050		0.032		0.053		0.047		0.055		0.045
5	0.225		0.090		0.070		0.040		0.077		0.063		0.080		0.060
6	0.225		0.120		0.090		0.050		0.100		0.080		0.105		0.075
8	0.280	25	0.150	20	0.115	15	0.060	20	0.127	15	0.103	25	0.133	15	0.098
10	0.280		0.200		0.150		0.080		0.167		0.133		0.175		0.125
12	0.315		0.220		0.170		0.100		0.187		0.153		0.203		0.148
13	0.375		0.230		0.180		0.100		0.197		0.163		0.220		0.160
14	0.375		0.240		0.190		0.110		0.207		0.173		0.230		0.170
15	0.375		0.250		0.200		0.120		0.217		0.183		0.240		0.180
16	0.375		0.260		0.210		0.130		0.227		0.193		0.250		0.190

Standard 4 / 6 Flute

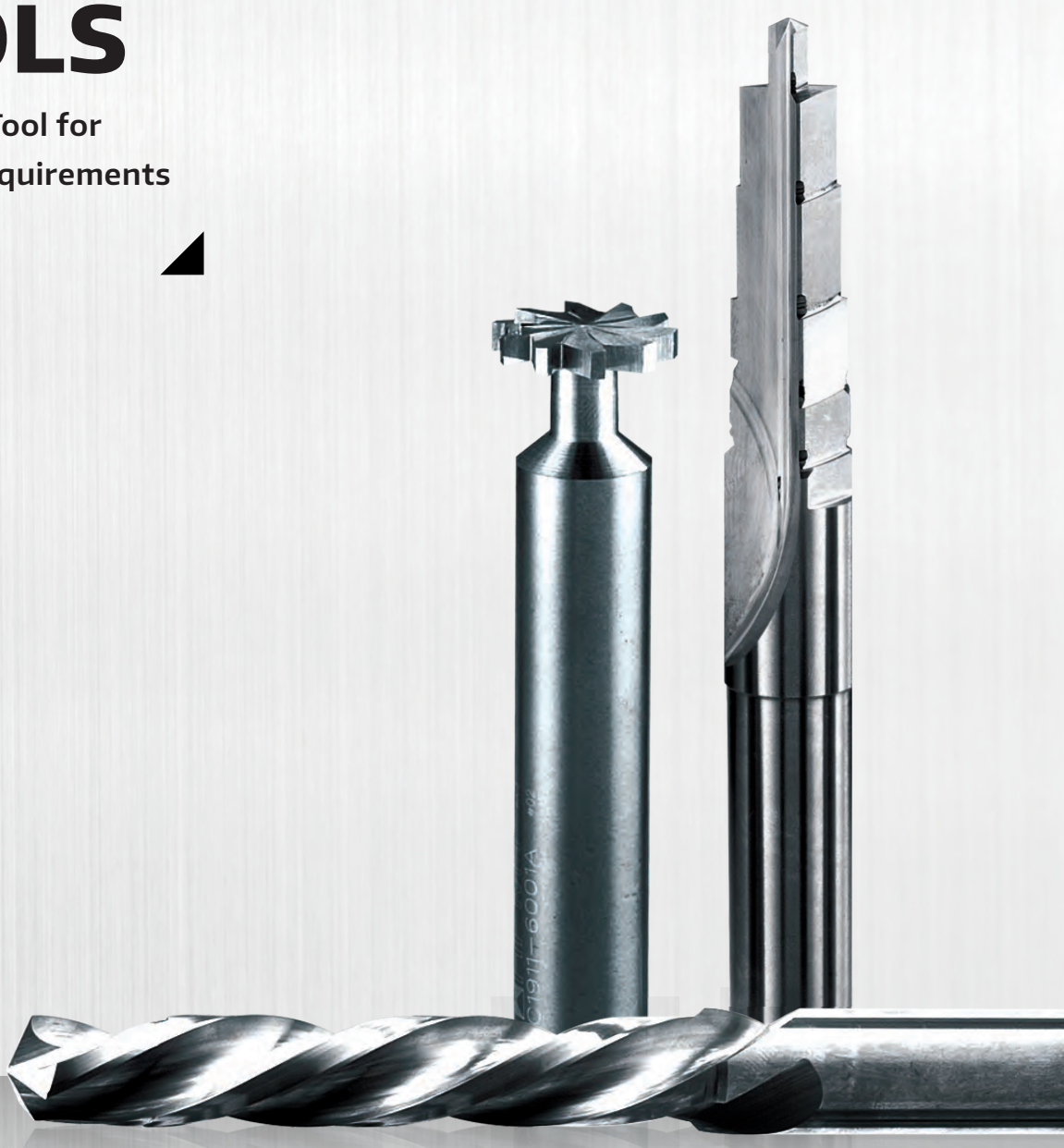
Working Material	Stock Removal	N						S				H			
		Wrought Aluminum		Cast Aluminum		Copper Alloy		Titanium Alloy		Nickel Alloy		Hardened Steel			
Properties		Si < 9%		Si ≥ 9%		-		-		-		45 ≤ HRC < 52		53 ≤ HRC ≤ 68	
D (mm)		Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)	Vc (m/min)	fn (mm/rev)
1	0.105		0.015		0.009		0.013		0.012		0.012		0.005		0.002
2	0.150		0.030		0.020		0.026		0.024		0.016		0.010		0.005
3	0.150		0.045		0.030		0.039		0.037		0.021		0.015		0.008
4	0.225		0.060		0.043		0.053		0.050		0.025		0.v		0.011
5	0.225		0.090		0.055		0.075		0.070		0.035		0.027		0.013
6	0.225		0.130		0.069		0.104		0.090		0.040		0.033		0.017
8	0.280	30	0.180	20	0.093	25	0.143	15	0.115	15	0.053	10	0.040	10	0.020
10	0.280		0.200		0.113		0.163		0.150		0.060		0.053		0.027
12	0.315		0.220		0.133		0.183		0.170		0.065		0.067		0.033
13	0.375		0.230		0.143		0.193		0.180		0.070		0.067		0.033
14	0.375		0.240		0.153		0.203		0.190		0.080		0.073		0.037
15	0.375		0.250		0.163		0.213		0.200		0.090		0.080		0.040
16	0.375		0.260		0.173		0.223		0.210		0.100		0.087		0.043

 P M K N S H  P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

SPECIAL TOOLS

Customized Tool for Individual Requirements



SPECIAL TOOLS REQUEST FORM

HPMT

Anfrage-Formulare für Sonderwerkzeuge	Fiches pour demandes d' outils spéciaux
Utensili Speciali	非标刀具

Special Tools			
ENDMILL	BALLNOSE	SPIRAL REAMER	STEP TWIST DRILL
ENDMILL with Corner Radius	TAPER BALLNOSE	STEP REAMER	CENTER DRILL
STEP ENDMILL	TAPER ENDMILL	T-SLOT CUTTER	BURNISHING DRILL
CORNER RADIUS CUTTER	STRAIGHT FLUTE REAMER	TWIST DRILL	STEP BURNISHING DRILL

Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

DEUTSCH

Sonderwerkzeuge			
Fräser	Radiusfräser	Reibahle mit Gedrallten Nuten	Stufenbohrer
Fräser mit Eckenradius	Kegeliger Radiusfräser	Stufen-Reibahle	Zentrierbohrer
Stufenfräser	Gesenkfräser	T-Fräser	4 Fasenbohrer
Viertelrund Profilfräser	Reibahle mit Geraden Nuten	Spiralbohrer	4 Fasen-Stufenbohrer

Firmenname			VHM	VHM	
Herr/Frau			Zu Zerspanendes Material		
Anfrage-Nr.			Beschichtung		
Arbeitsbedingungen	Vc:	Vf:	Kühlung	Trocken	Nass
Datum:	Stückzakl:		Bemerkung		

FRANÇAIS

Outils Spéciaux			
Fraise	Fraise Hémisphérique	Alésoir avec Goujures Hélicoïdal	Foret Étagé
Fraises avec Rayon	Fraise Hémisphérique Conique	Alésoir Étagé	Foret à Centrer
Fraise Étagée	Fraise Conique pour Matrices	Fraise à T	Foret Carré
Fraise ¼ de Cercle	Alésoir avec Goujures Droites	Foret Hélicoïdal	Foret Carré Étagé

Nom de la Société			Carbure Monobloc	VHM	
Mr/Mme			Matiére à Usiner		
Demande No.			Revétement		
Conditions d'Usinage	Vc:	Vf:	Lubrification	À Sec	Avec Lubrification
Date:	Quantité:		Ramarques		

ITALIANO

Utensili Speciali			
Fresa	Fresa Cilindrica a Raggio	Alesatore con Gole Elicoidale	Punta a Gradino
Fresa con Angolo Raggiato	Fresa Cilindrica a Raggio Conica	Alesatore a Gradino	Punta a Centrare
Fresa a Gradino	Fresa Conica	Fresa a T	Punta a 4 Fasi
Fresa ¼ Circolare	Alesatore con Gole Diritte	Punta Elicoidale	Punta a 4 Fasi a Gradino

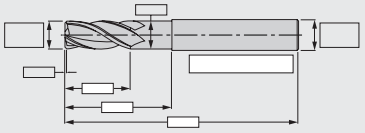
Nome della Società			Metallo Duro Integrale	VHM	
Sig./Sig.ra			Materiale da Lavorare		
Richiesta No.			Rivestimento		
Condizioni di Lavoro	Vc:	Vf:	Con Lubrificazione	A Secco	Con Lubrificazione
Date:	Quantità:		Osservazione		

中文

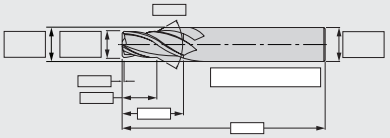
非标刀具			
端铣平刀	球头铣刀	螺旋铰刀	阶梯钻头
圆鼻端铣刀	锥度球头铣刀	阶梯铰刀	中心钻
阶梯铣刀	锥度端铣平刀	T 型刀	钻铰刀
倒圆弧铣刀	直刃铰刀	钻头	阶梯钻铰刀

用戶名称			刀具材料	VHM	
销售人员			被加工材料		
图纸編号			涂层种类		
切削参数	Vc:	Vf:	冷却方式	干 - 油雾/吹气	湿 - 切削剂/切削油
日期:	数量:		备注		

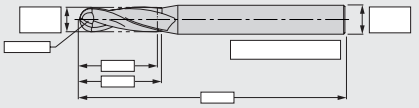
ENDMILL



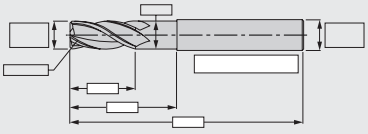
STEP ENDMILL



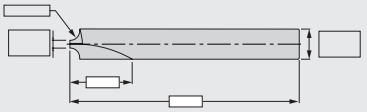
BALLNOSE



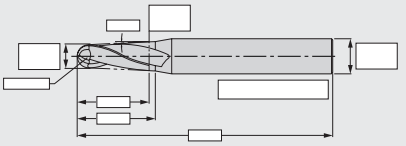
ENDMILL WITH CORNER RADIUS



CORNER RADIUS CUTTER



TAPER BALLNOSE

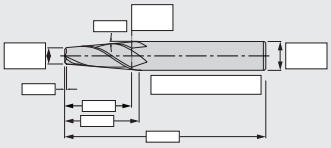


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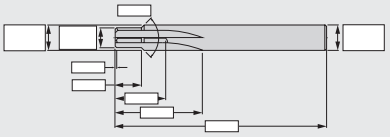
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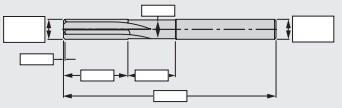
TAPER ENDMILL



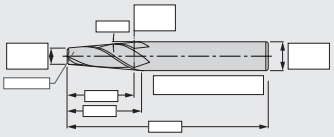
STEP REAMER



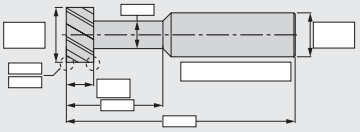
STRAIGHT FLUTE REAMER



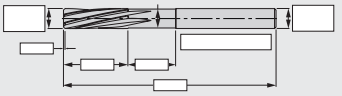
TAPER ENDMILL WITH CORNER RADIUS



T-SLOT ENDMILL



SPIRAL REAMER

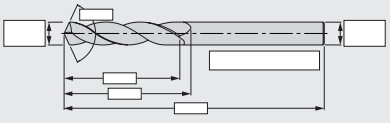


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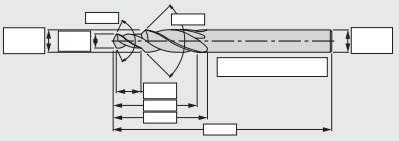
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PAGE 552

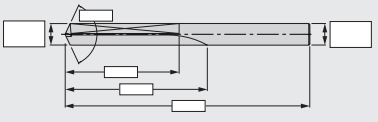
TWIST DRILL



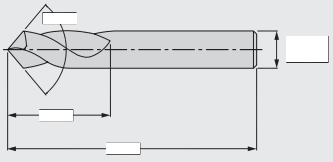
STEP TWIST DRILL



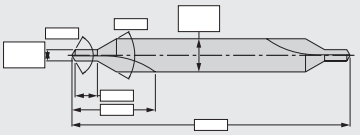
BURNISHING DRILL



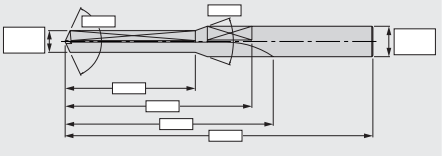
NC SPOT DRILL



CENTER DRILL



STEP BURNISHING DRILL

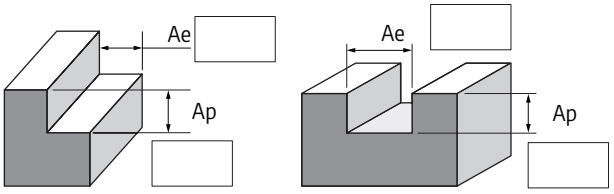


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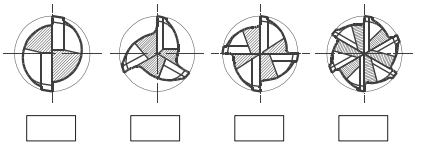
PAGE 552

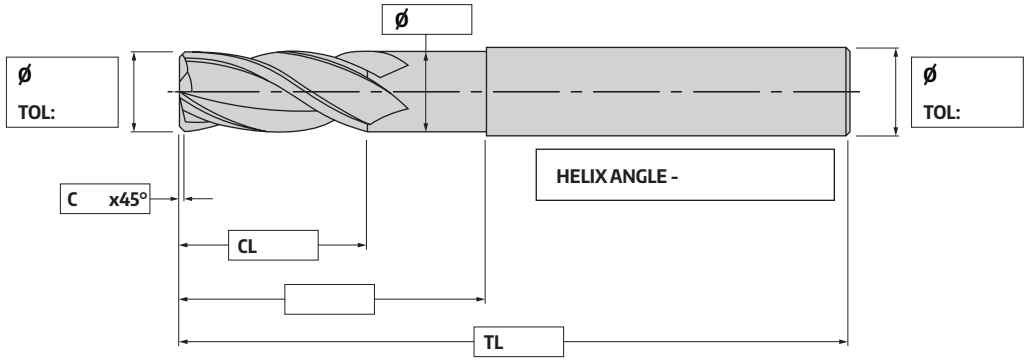
PAGE 552

ENDMILLS



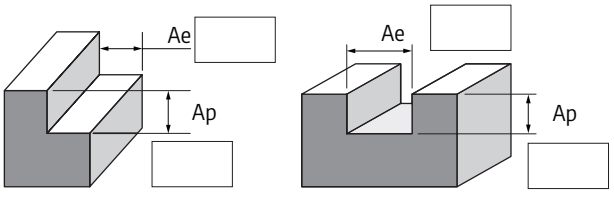
NUMBER OF FLUTE



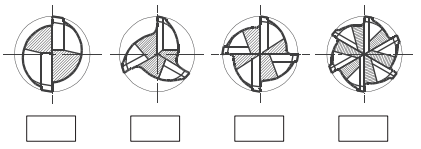


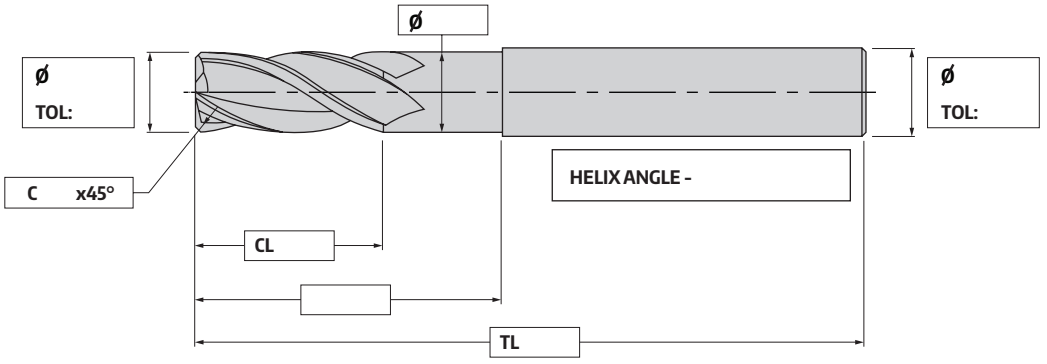
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

ENDMILLS WITH CORNER RADIUS



NUMBER OF FLUTE

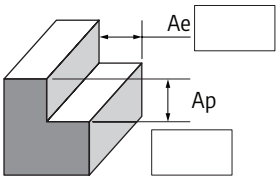




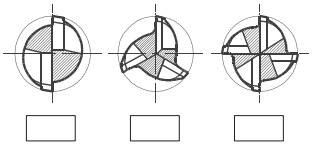
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

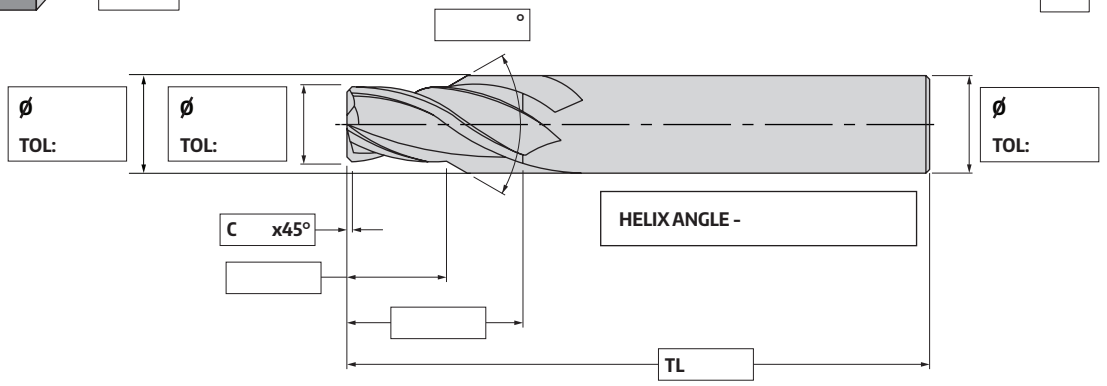
STEP ENDMILL

HPMT



NUMBER OF FLUTE



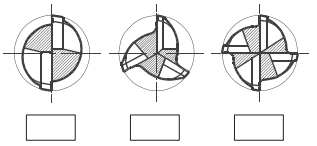


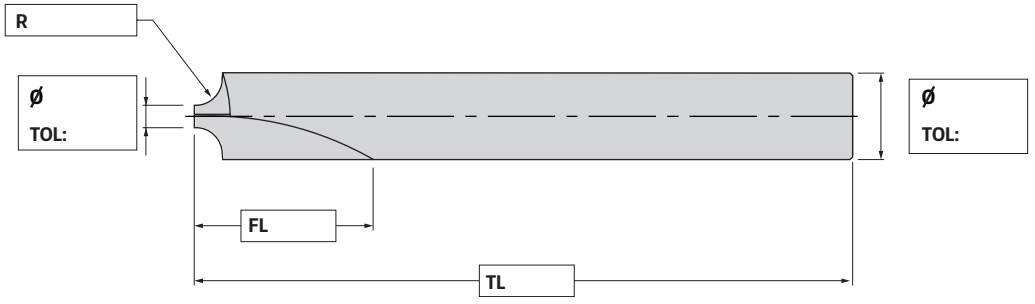
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

CORNER RADIUS CUTTER

HPMT

NUMBER OF FLUTE



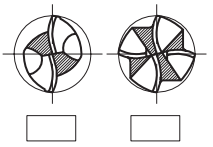


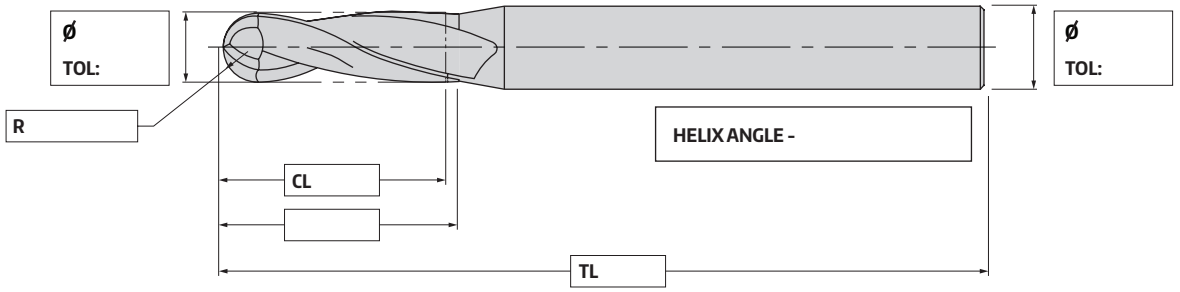
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

BALLNOSE

HPMT

NUMBER OF FLUTE



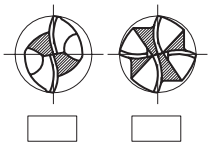


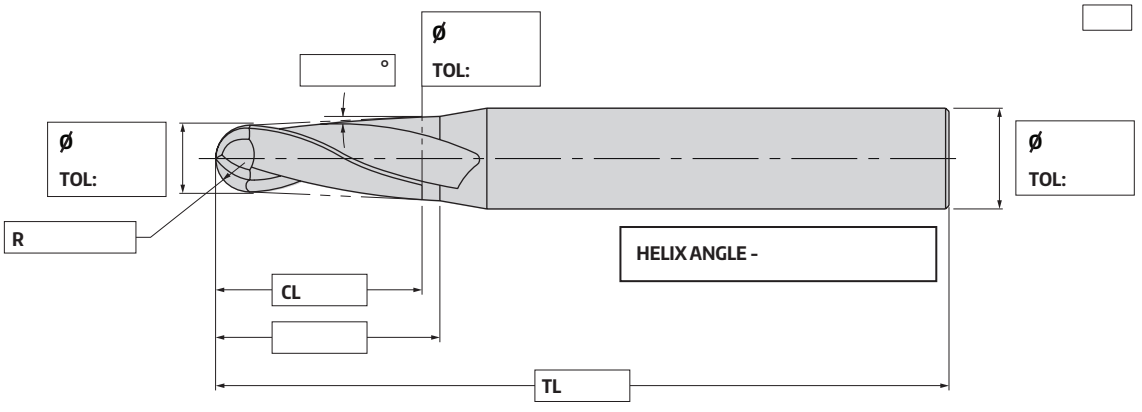
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

TAPER BALLNOSE

HPMT

NUMBER OF FLUTE



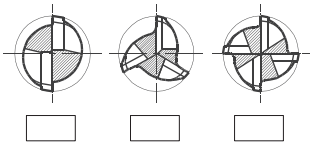


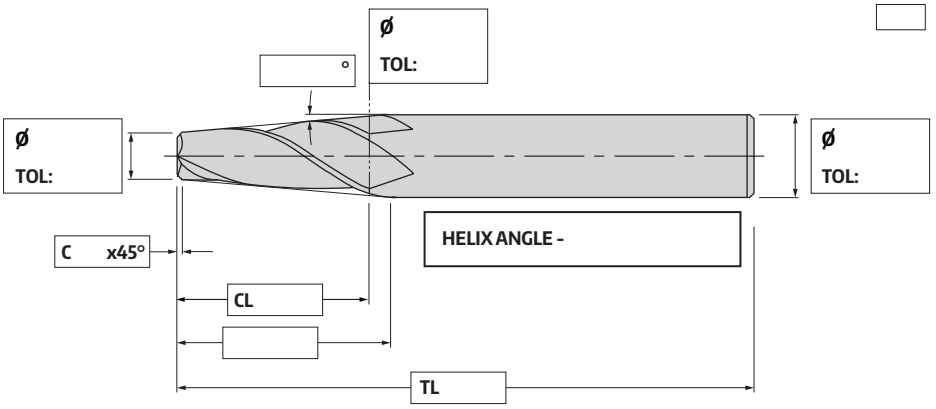
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

TAPER ENDMILL

HPMT

NUMBER OF FLUTE



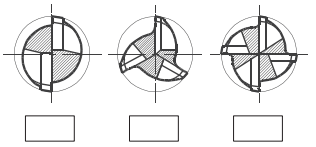


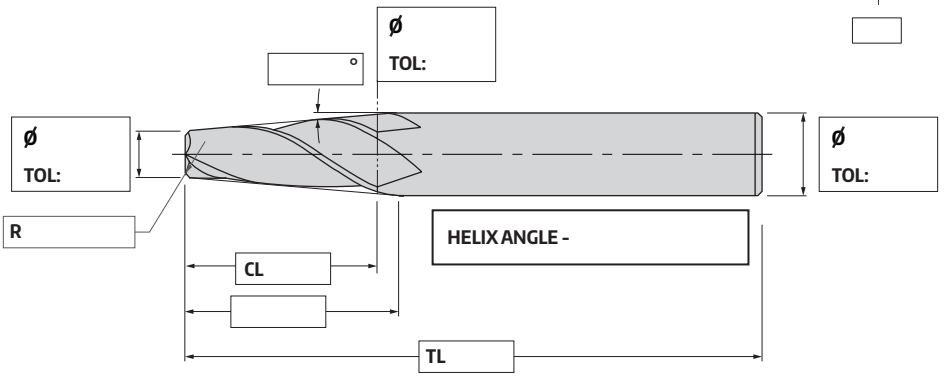
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

TAPER ENDMILL WITH CORNER RADIUS

HPMT

NUMBER OF FLUTE



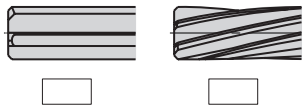


Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

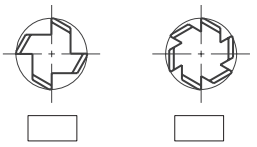
STEP REAMER

HPMT

TYPE OF FLUTE

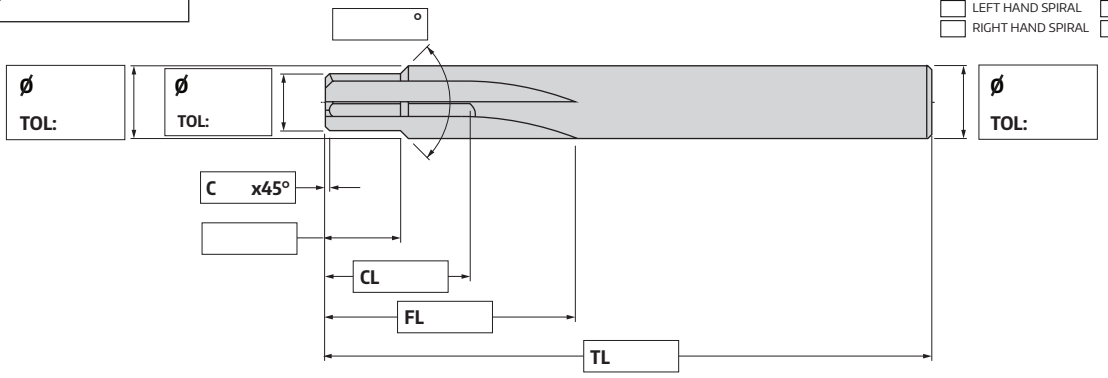


NUMBER OF FLUTE



LEFT HAND SPIRAL
RIGHT HAND SPIRAL
LEFT HAND CUTTING
RIGHT HAND CUTTING

HELIX ANGLE -

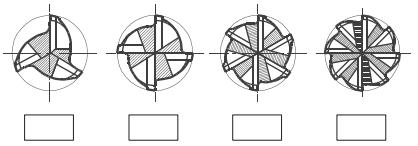


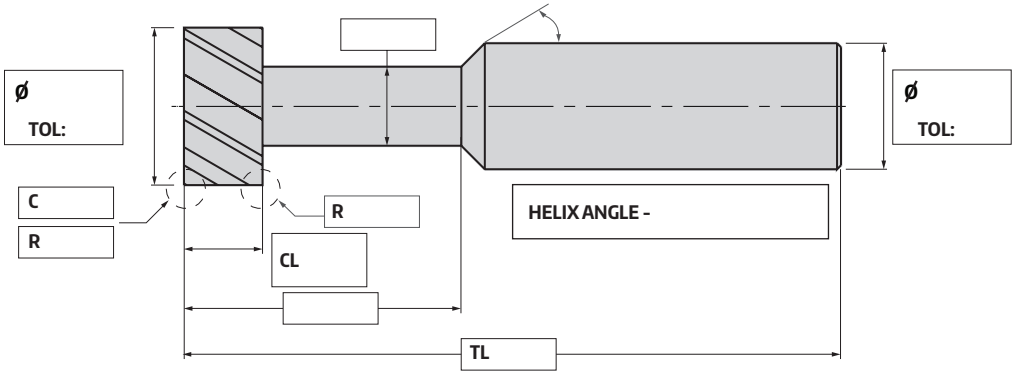
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

T-SLOT CUTTER

HPMT

NUMBER OF FLUTE



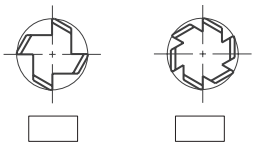


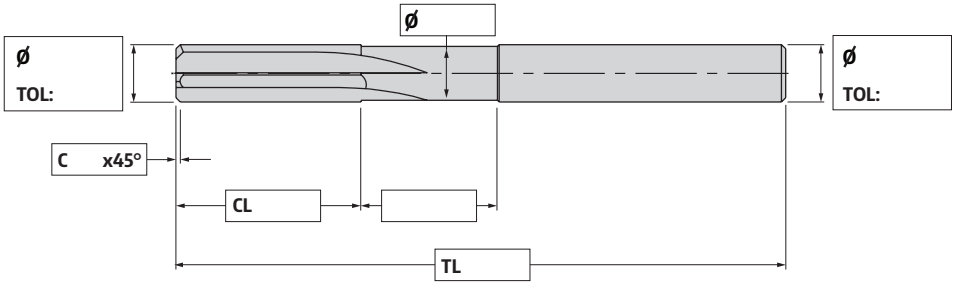
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

STRAIGHT FLUTE REAMER

HPMT

NUMBER OF FLUTE



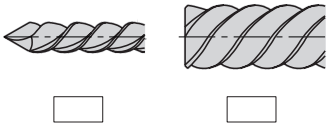


Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

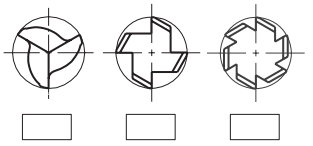
SPIRAL REAMER

HPMT

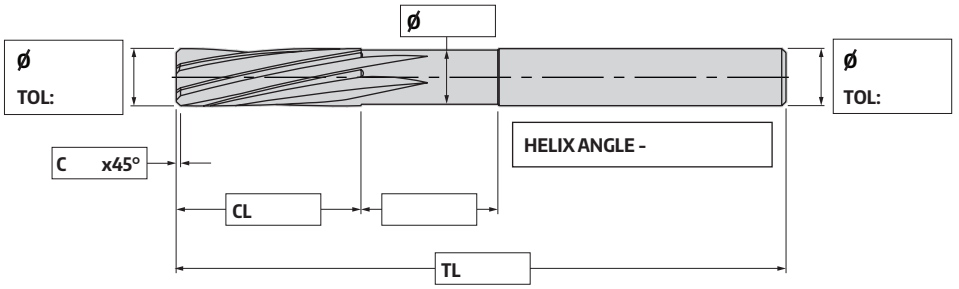
HIGH SPIRAL



NUMBER OF FLUTE



LEFT HAND SPIRAL
RIGHT HAND SPIRAL
LEFT HAND CUTTING
RIGHT HAND CUTTING

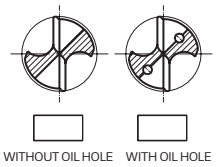


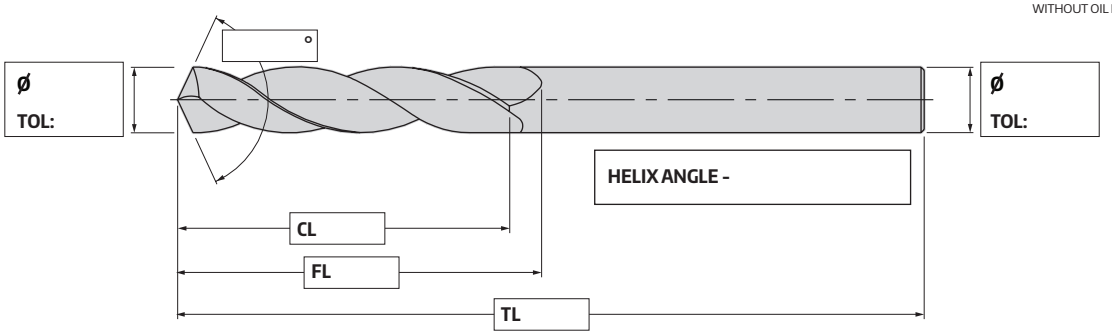
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

TWIST DRILL

HPMT

NUMBER OF FLUTE

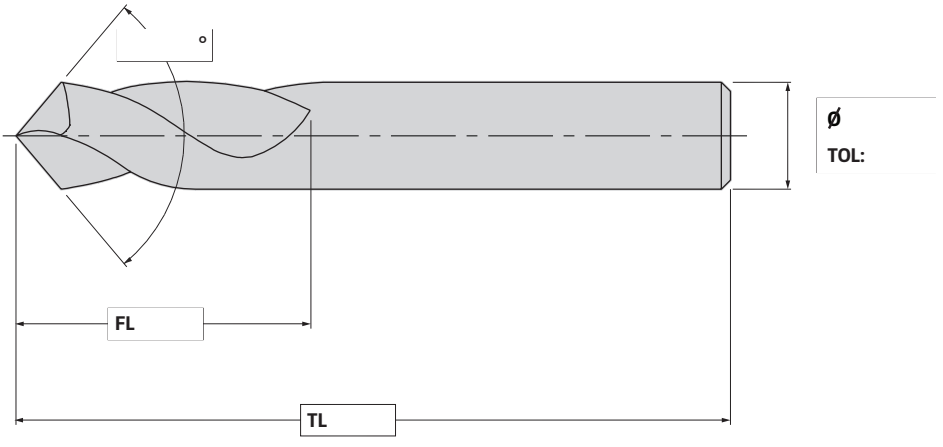




Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

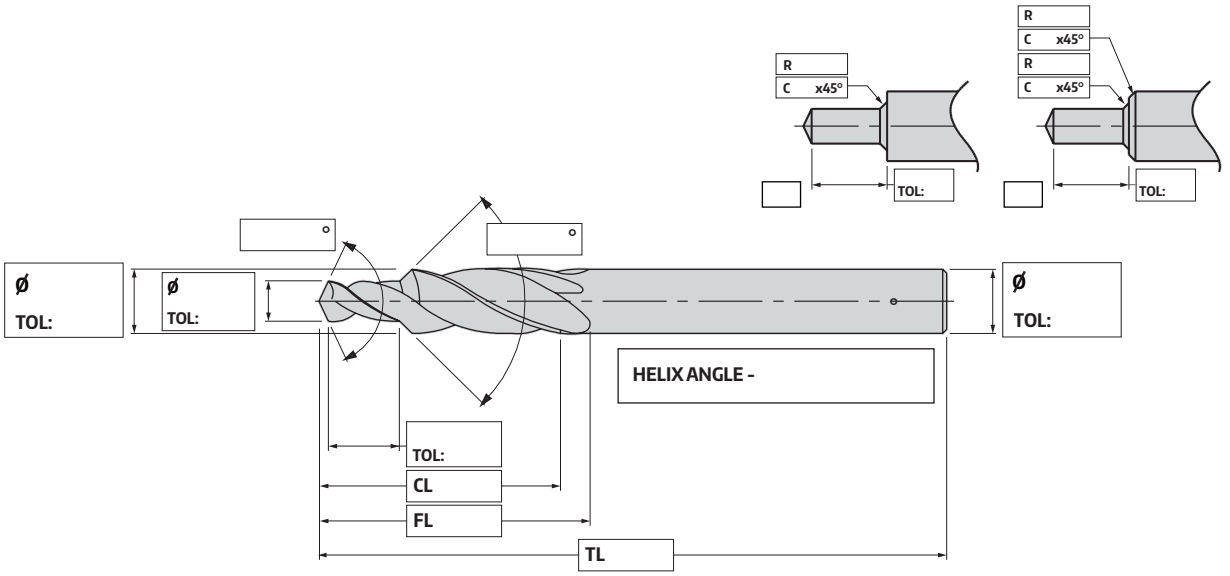
NC SPOT DRILL

HPMT



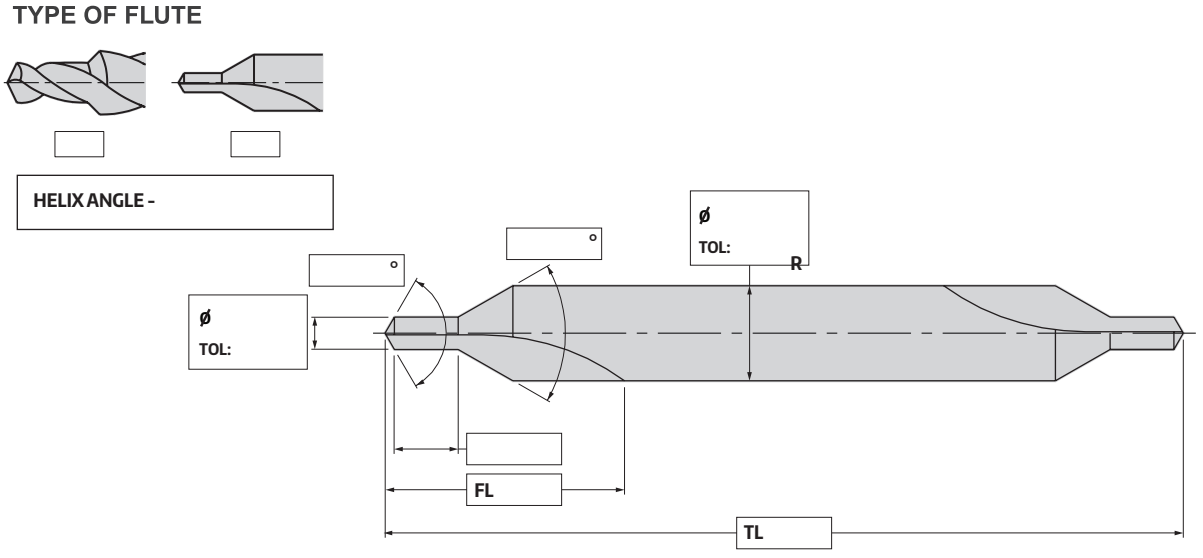
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

STEP TWIST DRILL



Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

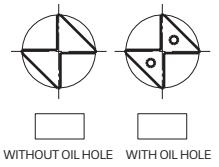
CENTER DRILL

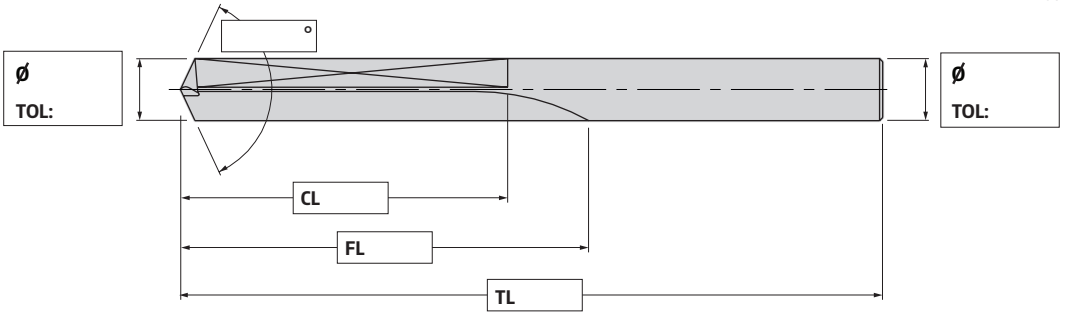


Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

BURNISHING DRILL

HPMT

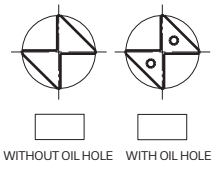


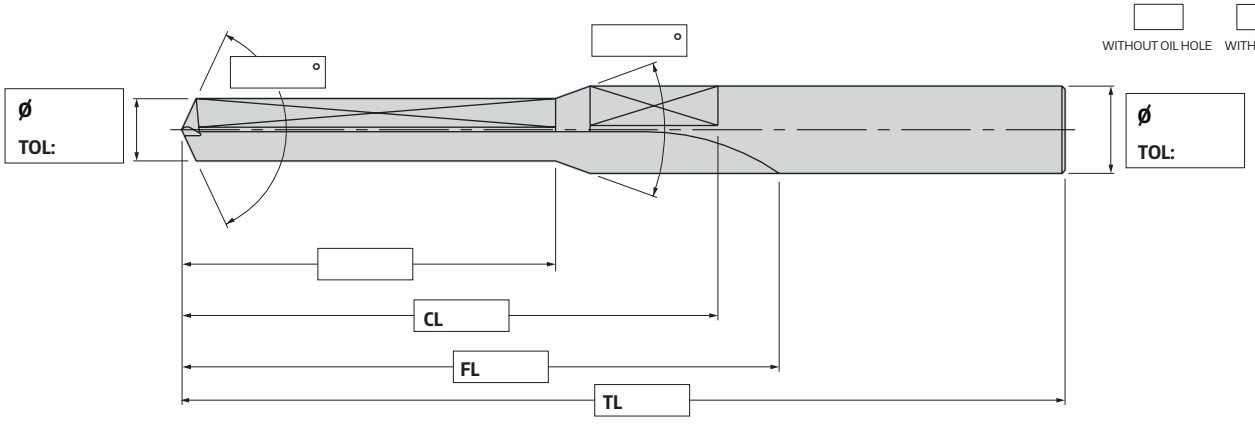


Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

STEP BURNISHING DRILL

HPMT

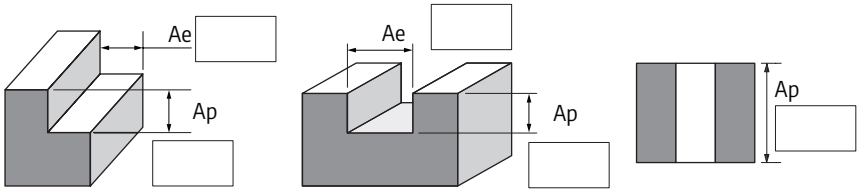




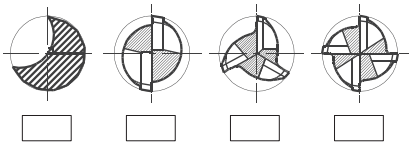
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

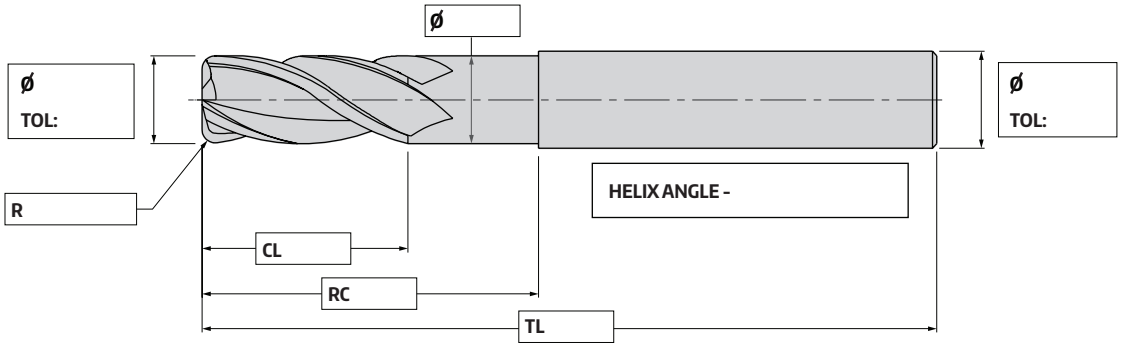
AL SE STANDARD ENDMILLS

HPMT



NUMBER OF FLUTE

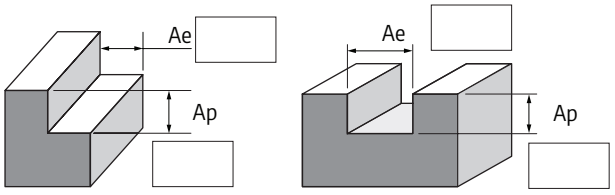




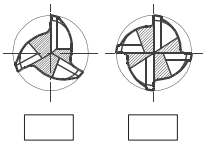
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

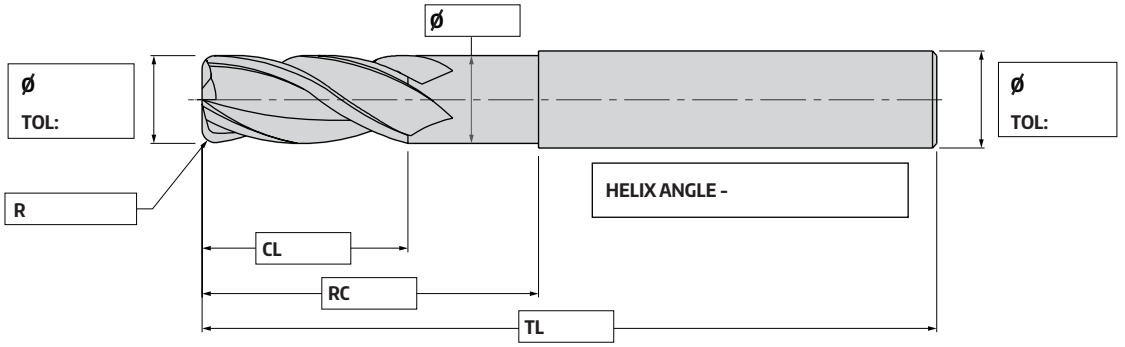
AL SE DP STANDARD TORUS ENDMILLS

HPMT



NUMBER OF FLUTE

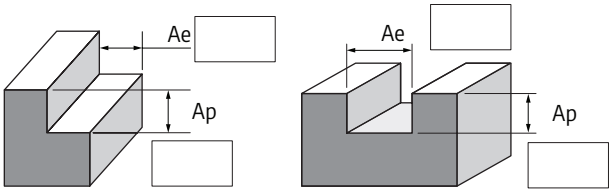




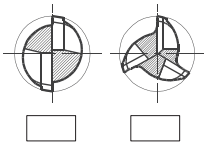
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

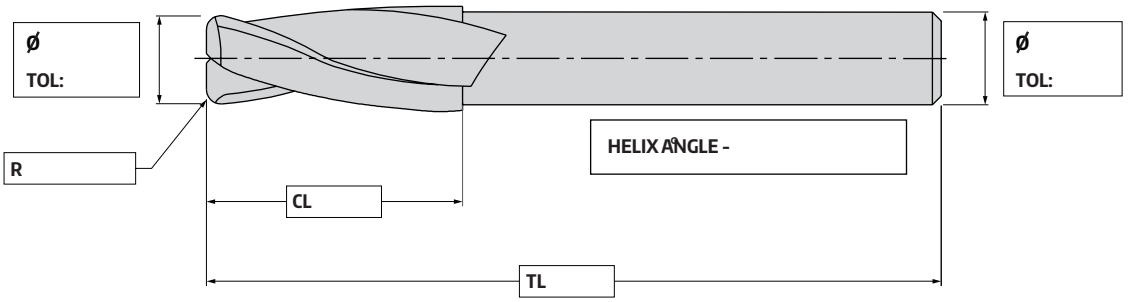
AL SE ENDMILLS WITH REDUCE SHANK

HPMT



NUMBER OF FLUTE

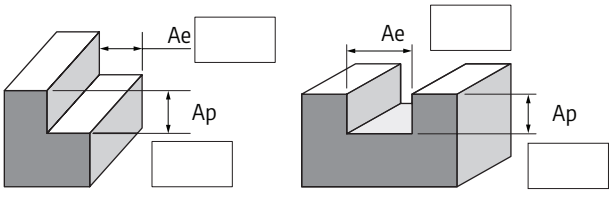




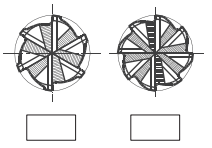
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

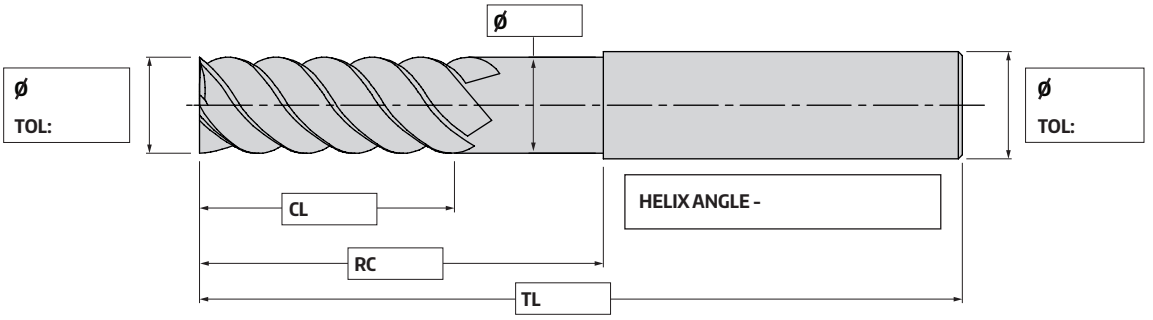
AL SE MULTIFLUTE ENDMILLS

HPMT



NUMBER OF FLUTE

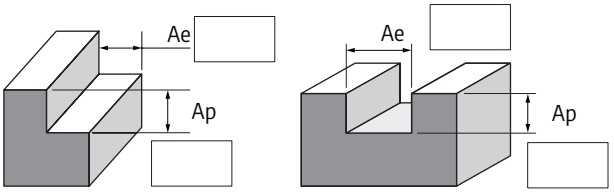




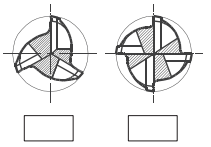
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

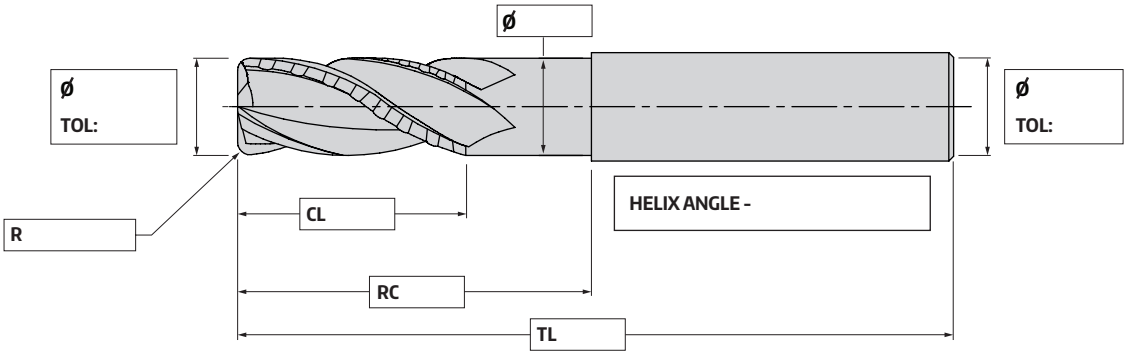
AL SE DP TORUS ROUGHING ENDMILLS

HPMT



NUMBER OF FLUTE

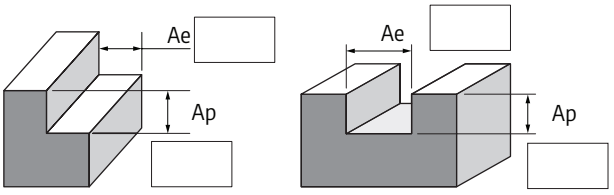




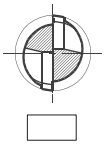
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

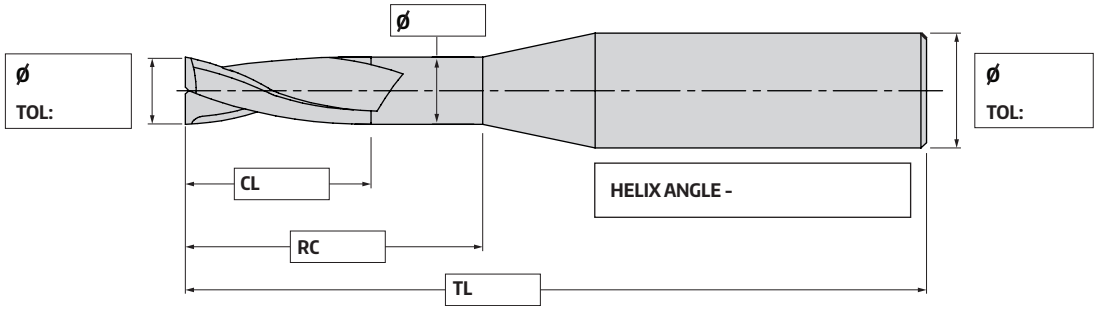
AL SE MINIATURE ENDMILLS

HPMT



NUMBER OF FLUTE

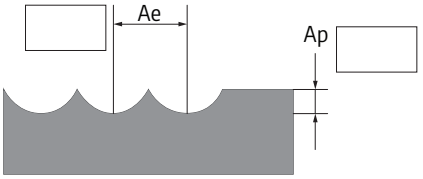




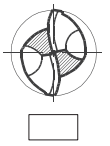
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

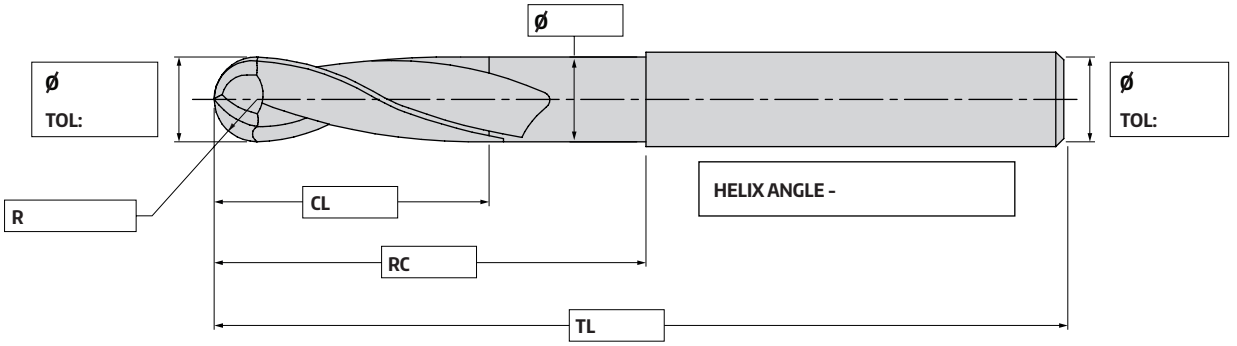
AL BN STANDARD BALLNOSE CUTTERS

HPMT



NUMBER OF FLUTE

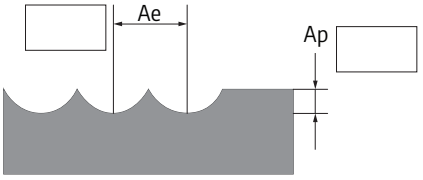




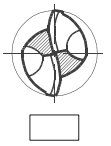
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

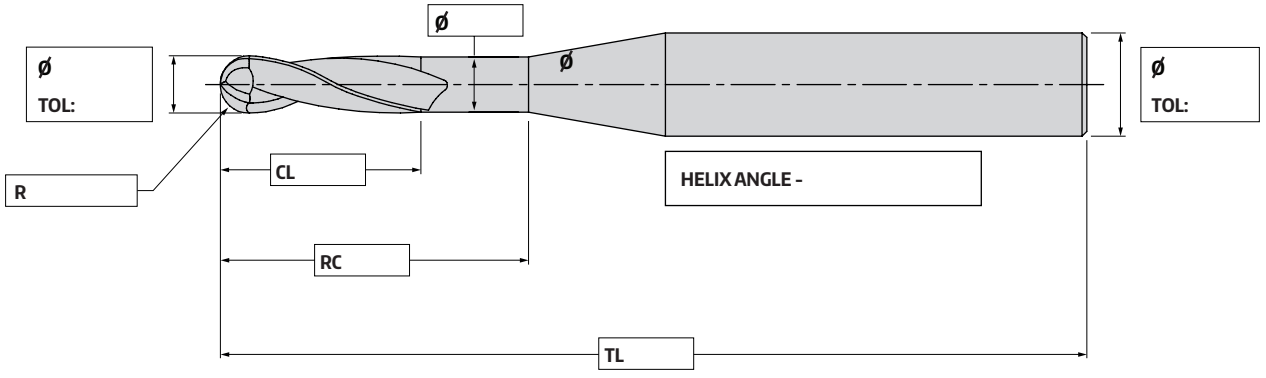
AL BN STANDARD BALLNOSE CUTTERS

HPMT



NUMBER OF FLUTE



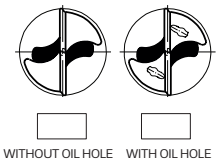


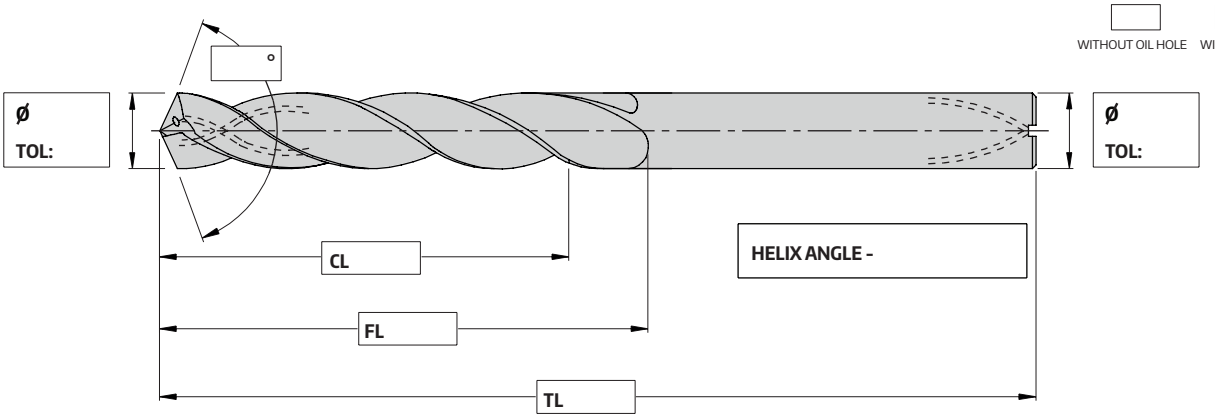
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

DR ALU TWIST DRILLS

HPMT

NUMBER OF FLUTE



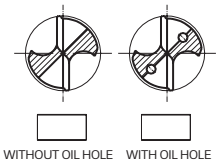


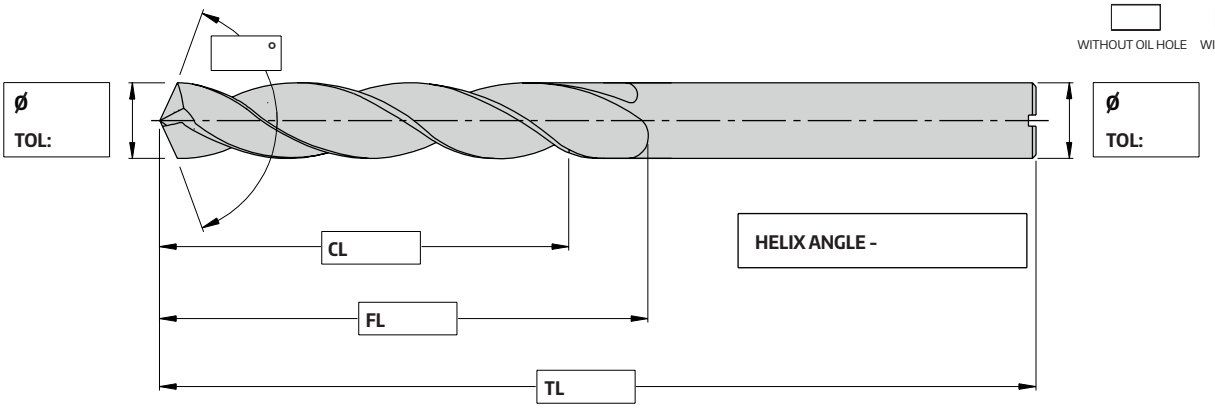
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

DR30 TWIST DRILLS

HPMT

NUMBER OF FLUTE

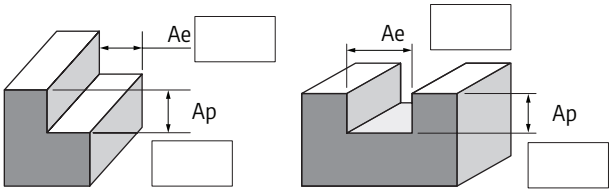




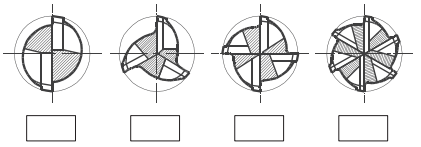
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

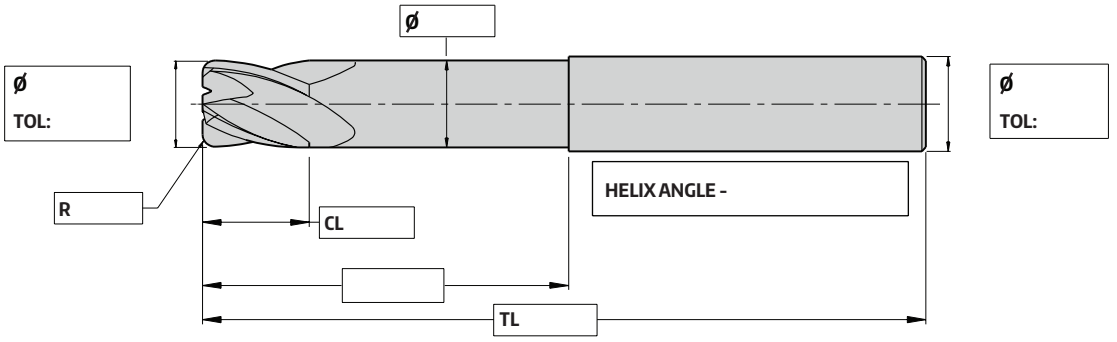
SE 60X FIN-MILL

HPMT



NUMBER OF FLUTE

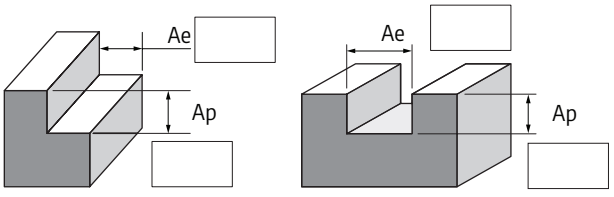




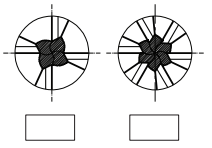
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

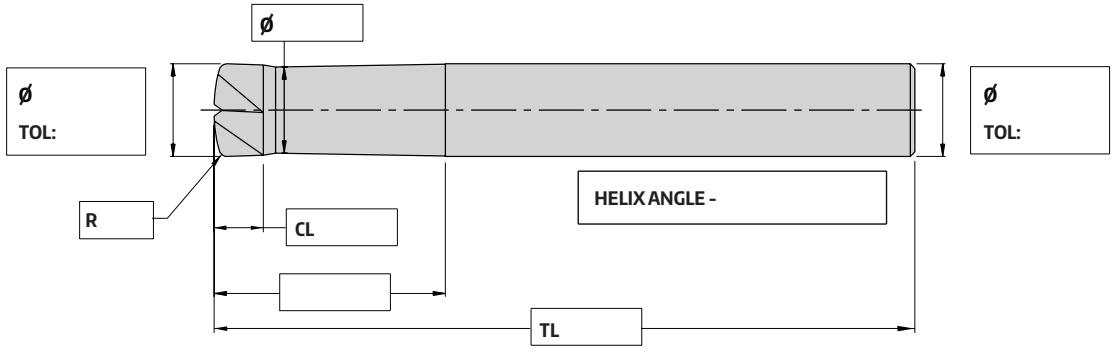
SE 60X SWEEP-MILL

HPMT



NUMBER OF FLUTE

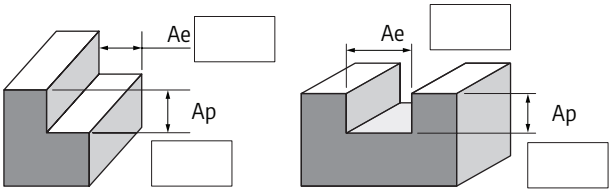




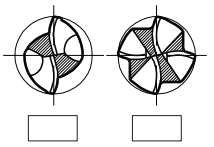
VHM

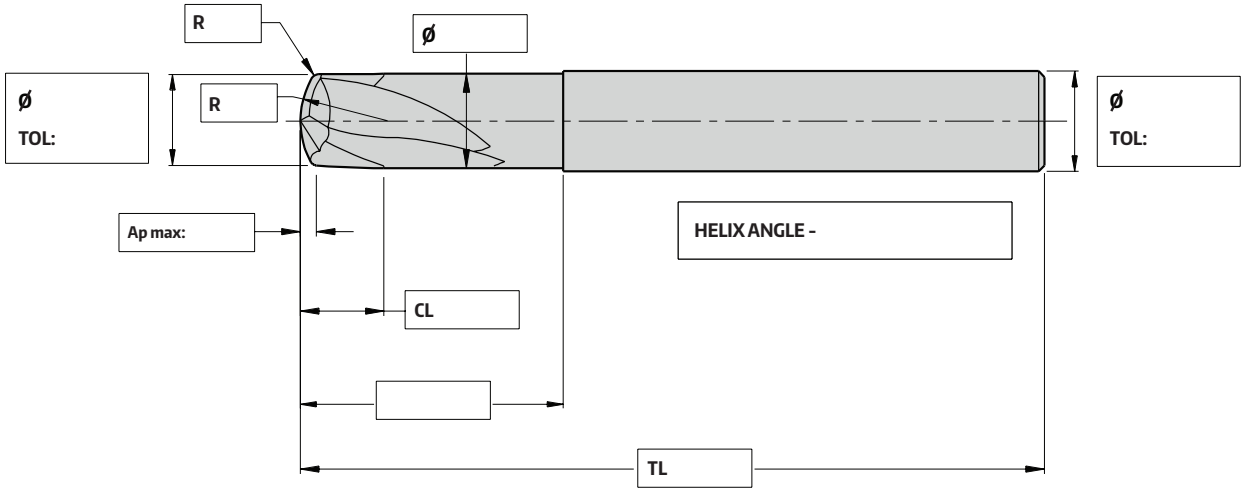
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

SE60X DOUBLE R



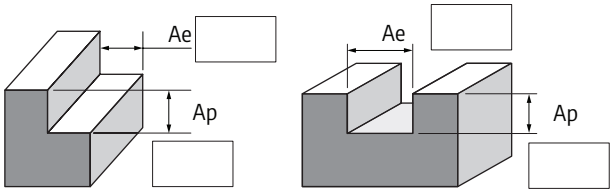
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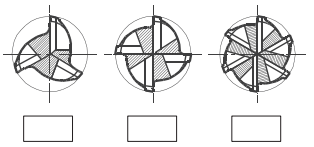


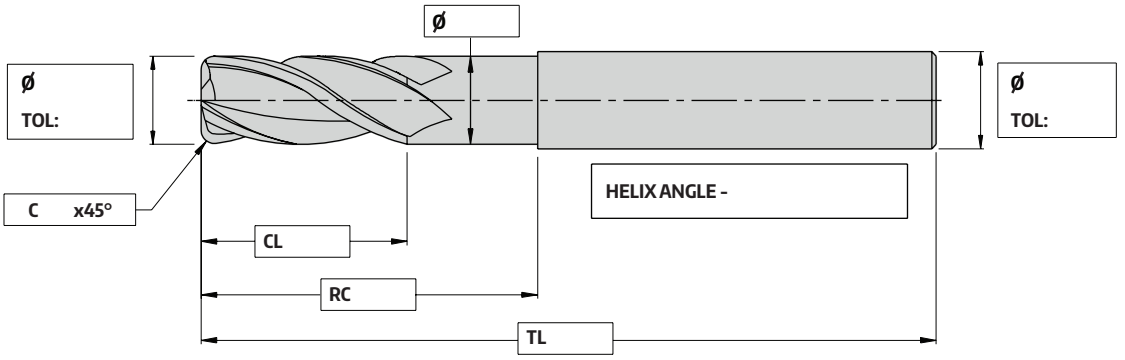
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

NITICO 45 DP NOVIANO



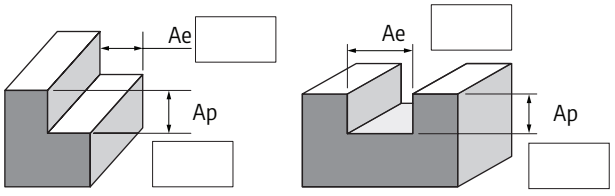
NUMBER OF FLUTE



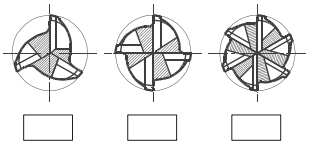


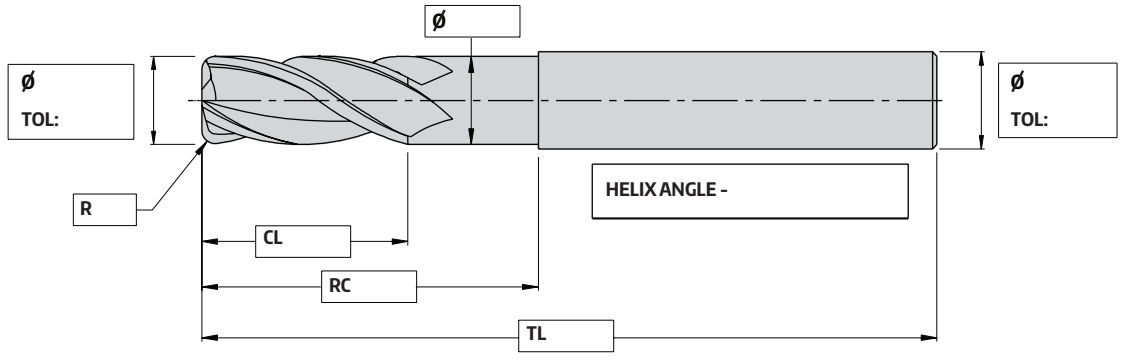
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

NITICO 45 DP NOVIANO WITH CORNER RADIUS



NUMBER OF FLUTE

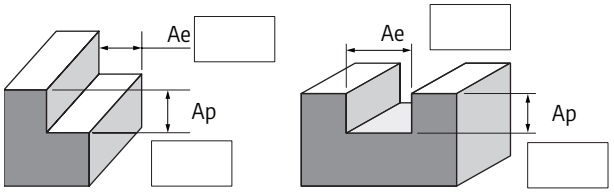




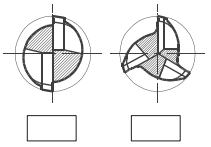
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

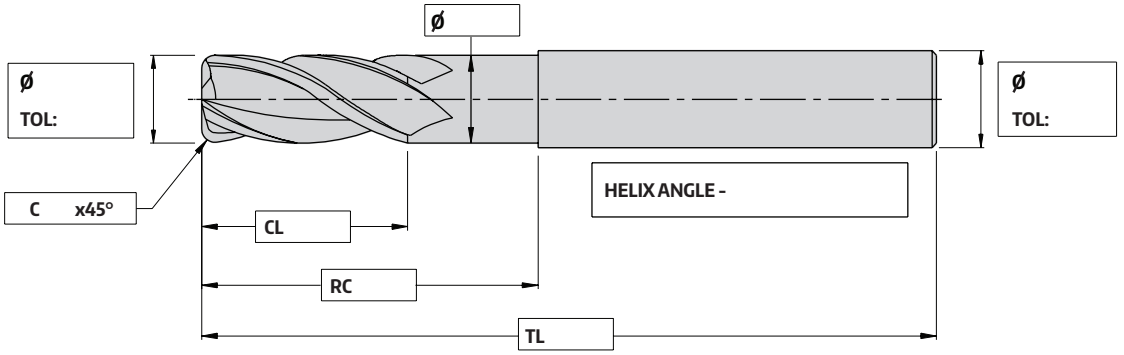
PLUNGE-MILL

HPMT



NUMBER OF FLUTE

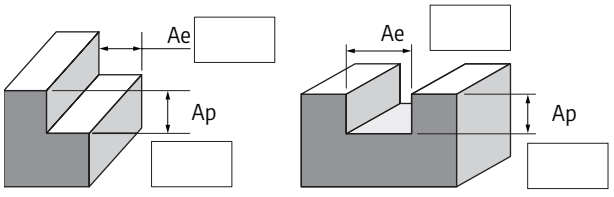




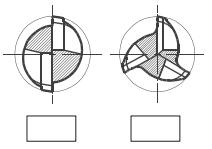
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		

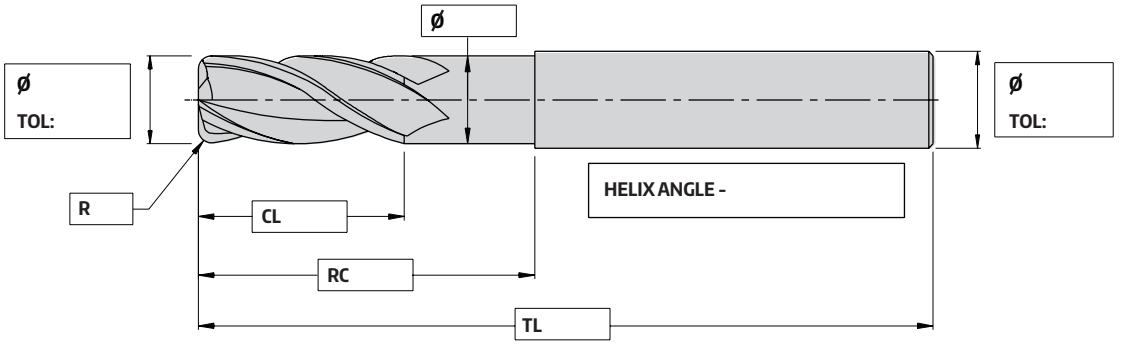
PLUNGE-MILL WITH CORNER RADIUS

HPMT

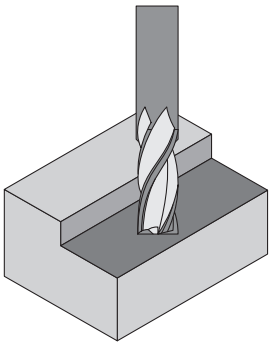


NUMBER OF FLUTE





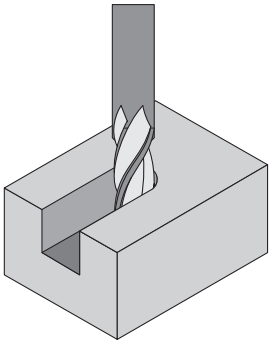
Customer's Name			Material	VHM	
Person (Mr/Ms)			Material to be Cut		
Enquiry Number			Coating		
Cutting Conditions	Vc:	Vf:	Coolant	Dry	Wet
Date:	Quantity:		Remark		



Face Milling:

A process that the front teeth of the tool are engaged to create a flat surface

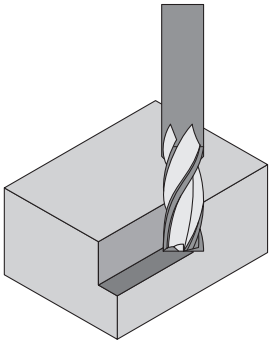
Tool engagement : small **Ap** and large **Ae**



Slotting:

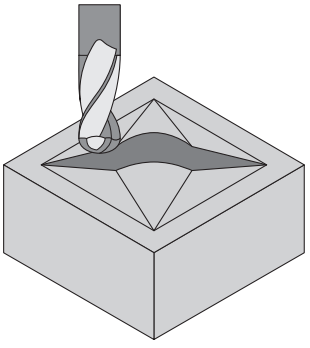
A process that full cutting diameter is engaged Ae=D while Ap up to 1 1/2 times.

D depending on the machining strategy in use.



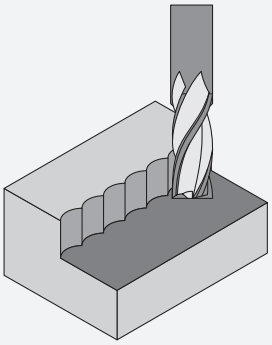
Side Milling:

A process that only the side of the tool is engaged. Ae is large while Ap is small.



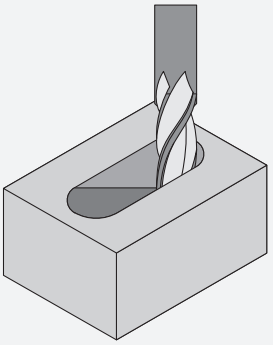
Profiling:

A process that the radius is engaged. Both Ae and Ap are small.



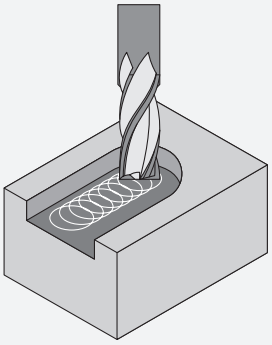
Plunging:

Open a deep slot with Z-axis drilling.



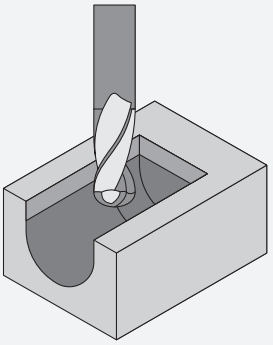
Ramping:

Open a pocket by making a Z-axis at an angle.



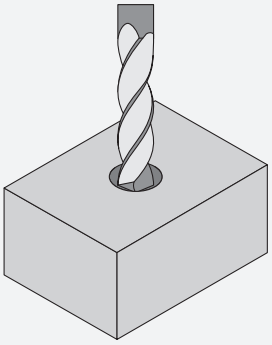
Trochoidal Milling:

Open a slot by making partial circular movement in either X-axis or Y-axis.
(Converting slotting to side milling)



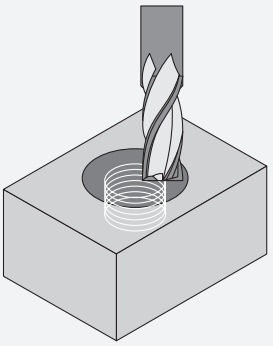
Push-Pull:

From 3D by making a up and down movement by following the profile of the form.



Drilling:

Open a hole with Z-axis movement.



Helical Interpolation:

Open a pocket with circular movement while the tool ramping in Z-axis.

WORK DATA
CALCULATION

HPMT

Deutsch	Français	Italiano	中文

Speed / rpm	Drehzahl	Velocità di Rotazione	Vitesse de Rotation	转速

$$n = \frac{Vc \times 1000}{D \times \pi} \quad [min^{-1}]$$

Cutting Speed	Schnittgeschwindigkeit	Vitesse de Coupe	Velocità di Taglio	切割速度

$$Vc = \frac{n \times D \times \pi}{1000} \quad [m/min]$$

Feed per Tooth	Vorschub pro Zahn	Avance par Dent	Avanzamento per Dente	每齿进给量

$$Fz = \frac{Vf}{Z \times n} \quad [mm]$$

Feed per Revolution	Vorschub pro Umdrehung	Avance par Tour	Tou Advance	提前土特产品

$$f = Fz \times Z \quad [mm]$$

Feed Speed	Vorschubgeschwindigkeit	Vitesse d'Avance	Avanzamento	进给速度

$$Vf = Fz \times Z \times n \quad [mm/min]$$

Feed Speed	Vorschubgeschwindigkeit	Vitesse d'Avance	Avanzamento	进给速度

$$hm = Fz \times \frac{\sqrt{Ae}}{D} \quad [mm]$$

Effective Diameter	Effektiver Durchmesser	Diamètre Effectif	Diametro Effettivo	有效直径

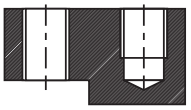
$$hm = 2 \times \sqrt{D \times Ap - Ap^2} \quad [mm]$$

Symbol key:

π = 3.1416
D = tool diameter (mm)
Z = Number of flutes
Ap = Cutting depth
Ae = Cutting width

TAB SIZE TABLE

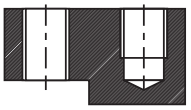
HPMT



Tab size holes

										DIN 5156 / DIN 5157	DIN 5156		DIN 40432 / DIN 40433	
Ø	M	Former M	MF	Former MF	UNC	Former UNC	UNF	Former UNF	BSW - W	BSP - G	BSPT - RC	NPT, NPTF	PG	TR
0.75	1 x 0.25													
0.85	1.1 x 0.25													
0.95	1.2 x 0.25													
1.10	1.4 x 0.3													
1.20									1/16 - 60					
1.25	1.6 x 0.35						0 - 80							
1.30	1.7 x 0.35													
1.45	1.8 x 0.35	1.6 x 0.35												
1.55					1 - 64		1 - 72							
1.60	2 x 0.4													
1.75	2.2 x 0.45		2 x 0.25											
1.85					2 - 56									
1.90	2.3 x 0.4						2 - 64		3/32 - 48					
1.95			2.2 x 0.25			2 - 56								
2.05	2.5 x 0.45		2.3 x 0.25											
2.10	2.6 x 0.45				3 - 48									
2.15			2.5 x 0.35				3 - 56							
2.25			2.6 x 0.35											
2.30		2.5 x 0.45				3 - 48								
2.35					4 - 40									
2.40							4 - 48							
2.50	3 x 0.5								1/6 - 40					
2.55						4 - 40								
2.60								4 - 48						
2.65			3 x 0.35		5 - 40									
2.70							5 - 44							
2.75		3 x 0.5												
2.85					6 - 32	5 - 40								
2.90	3.5 x 0.6							5 - 44						
2.95							6 - 40							
3.10						6 - 32								
3.15			3.5 x 0.35											
3.20		3.5 x 0.6						6 - 40	5/32 - 32					
3.30	4 x 0.7													
3.50			4 x 0.5		8 - 32		8 - 36							
3.60									3/16 - 24					
3.65		4 x 0.7												
3.75				4 x 0.5										
3.80						8 - 32		8 - 36						
3.90					10 - 24									
4.10							10 - 32							
4.20	5 x 0.8													
4.30						10 - 24								
4.45								10 - 32						

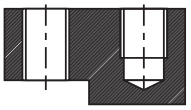
TAB SIZE TABLE



Tab size holes

										DIN 5156 / DIN 5157	DIN 5156		DIN 40432 / DIN 40433	
Ø	M	Former M	MF	Former MF	UNC	Former UNC	UNF	Former UNF	BSW - W	BSP - G	BSPT - RC	NPT, NPTF	PG	TR
4.50			5 x 0.5		12 - 24				7/32 - 24					
4.60		5 x 0.8												
4.70							12 - 28							
4.75				5 x 0.5										
5.00	6 x 1					12 - 24								
5.05								12 - 28						
5.10					1/4 - 20				1/4 - 20					
5.20			6 x 0.75											
5.50		6 x 1	6 x 0.5				1/4 - 28							
5.65				6 x 0.75										
5.75				6 x 0.5		1/4 - 20								
5.90								1/4 - 28						
6.00	7 x 1													
6.20			7 x 0.75											
6.30												1/16 - 27		
6.50		7 x 1							5/16 - 18					
6.60					5/16 - 18									
6.80	8 x 1.25									1/16 - 28				
6.90							5/16 - 24							
7.00			8 x 1											
7.20			8 x 0.75											
7.25						5/16 - 18								
7.40		8 x 1.25						5/16 - 24						
7.50			8 x 0.5	8 x 1										
7.80	9 x 1.25													
7.90									3/8 - 16					
8.00			9 x 1		3/8 - 16									
8.20											1/8 - 28			10 - 2
8.50	10 x 1.5						3/8 - 24					1/8 - 27		
8.70						3/8 - 16								
8.80			10 x 1.25							1/8 - 28				
9.00			10 x 1					3/8 - 24						
9.20			10 x 0.75											
9.25														12 - 3
9.30		10 x 1.5							7/16 - 14					
9.40				10 x 1.25	7/16 - 14									
9.50				10 x 1										
9.90							7/16 - 20							
10.00			10 x 1											
10.20	12 x 1.75													12 - 2
10.50			12 x 1.5						1/2 - 12					
10.80			12 x 1.25		1/2 - 13									
11.00			12 x 1								1/4 - 19			
11.10											1/4 - 19	1/4 - 18		

TAB SIZE TABLE



Tab size holes

Ø	M	Former M	MF	Former MF	UNC	Former UNC	UNF	Former UNF	BSW - W	DIN 5156 / DIN 5157 BSP - G	DIN 5156 BSPT - RC	NPT, NPTF	DIN 40432 / DIN 40433 PG	TR
11.20		12 x 1.75	12 x 0.75											
11.25														14 - 3
11.30				12 x 1.5										
11.50				12 x 1			1/2 - 20						7 - 20	
11.80						1/2" - 13				1/4 - 19				
12.00	14 x 2								9/16 - 12					
12.20					8/16 - 12									14 - 2
12.25														16 - 4
12.50			14 x 1.5											
12.80			14 x 1.25											
12.90							9/16 - 18							
13.00		14 x 2	14 x 1											
13.30				14 x 1.5										
13.50			15 x 1.5						5/8 - 11					
14.00	16 x 2		15 x 1								3/8 - 19		9 - 18	
14.25				14 x 1.25										18 - 4
14.50			16 x 1.5				5/8 - 18				3/8 - 19	3/8 - 18		
15.00		16 x 2	16 x 1											
15.25										3/8 - 19				
15.30				16 x 1.5										
15.50	18 x 2.5			16 x 1										
16.00			18 x 2											
16.25														20 - 4
16.50			18 x 1.5						3/4 - 10					
17.00			18 x 1											
17.25				18 x 1.5									11 - 18	22 - 5
17.50	20 x 2.5						3/4 - 16							
17.75												1/2 - 14		
18.00			20 x 2								1/2 - 14			
18.50			20 x 1.5		3/4 - 10									
18.60														
19.00			20 x 1							1/2			13.5 - 18	
19.25				20 x 1.5					7/8 - 9					24 - 5
19.50	22 x 2.5				7/8 - 9									
20.00			22 x 2											
20.40			22 x 1.5				7/8 - 14							
21.00	24 x 3		22 x 1							5/8 - 14				

WARNING
SAFETY NORMS

- Tools may shatter if broken.
  The wearing of eye protection is strongly advised in the vicinity of the working area.
- The correct using condition and handling of the tools is essential to secure maximum useful life and hazard free operation.
- Cutting tools have sharp edges and care must be taken, when handling, to avoid cuts/ lacerations to unprotected hands.
- The wearing of gloves is not recommended, as gloves may entangle with the rotating tools.
- Tools may hurt the user's feet when falling off.
  Safety shoes should be put on at all time.

SICHERHEITSHINWEISE

- Werkzeuge können splittern wenn sie zerbrechen. Schutzbrillen sollten im Arbeitsumfeld getragen werden.
- Die richtige Werkzeuganwendung ist unbedingt erforderlich, um die beste Nutzung und problemfreie Einsätze zu gewahrleisten.
- Zerspanungswerkzeuge haben scharfe Kanten, deshalb muss Sorgfalt angewendet werden um Schnitte/Abschürfungen an den ungeschützten Händen zu vermeiden.
- Das Tragen von Handschuhen ist nicht zu empfehlen, da Handschuhe sich mit den rotierenden Werkzeugen verwickeln können.
- Die Füße des Benutzers können verletzt werden, wenn die Werkzeuge herunterfallen. Deshalb sollten Sicherheitsschuhe immer getragen werden.

AVIS DE SÉCURITÉ

- Tout outil peut s'effriter lorsqu'il se casse. L'utilisation de lunettes protectrices dans l'aire de travail est recommandée.
- L'emploi et l'utilisation correcte de l'outil de coupe est essentiel afin de garantir une longue utilisation sans problèmes.
- Les outils coupants ont des arrêtes aigues et des précautions sont à prendre afin d'éviter des coupures/lacérations aux mains non protégées.
- L'emploi de gants n'est pas recommandé du fait que les gants peuvent s'enchêveter avec les outils en rotation.
- Les outils peuvent blesser les pieds de l'utilisateur lorsqu'ils tombent. Des souliers de protection doivent être portés à tout moment.

AVVISO DI SICUREZZA

- Les outils peuvent blesser les pieds de l'utilisateur lorsqu'ils tombent. Des souliers de protection doivent être portés à tout moment.
- L'impiego e la manutenzione corretta dell'utensile è essenziale per assicurarne la longevità e lavorare senza problemi.
- Utensili da taglio hanno taglienti vivi e bisogna prendere delle cautele al fine di evitare dei tagli/lacerazioni sulle mani non protette.
- Non si raccomanda di portare dei guanti dato che questi possono attorcigliarsi con gli utensili in rotazione.
- Quando utensili cadono, possono ferire i piedi dell'utente.
- Pertanto le scarpe di protezione sono da portarsi ad ogni momento.

警告 - 安全规范

- 刀具破损时会碎裂，在操作场所内请务必戴上眼睛保护措施。
- 正确保管及使用刀具，除了可以确保操作安全无虑、而且增加刀具使用寿命。
- 切削刀具的刃口锋利，操作使用时请务必小心，以避免对无保护双手割伤或破损。
- 不建议戴上手套，因为手套可能会被旋转机器卷入。
- 刀具掉落时会伤及使用者的双脚，全程应穿上安全鞋。

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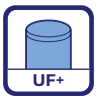
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DESCRIPTION OF THE ICONS (ENG)

HPMT

1 Tool Material (Tungsten Carbide)

	Micro Grain Carbide 90% WC 10% CO 92.0±0.5 HRA 0.8 micron Grain Size ISO Grade K10/K30		Micro Grain Carbide 93.5% WC 6% CO 93.5 HRA 0.6 micron Grain Size ISO Grade K05/K10
	Ultra Fine Carbide 86.5% WC 12% CO 93.0±0.5 HRA 0.5 micron Grain Size ISO Grade K10/K40		Ultra Fine Carbide 91% WC 9% CO 93.9 HRA 0.2 micron Grain Size ISO Grade K05/K10

2 Corner Form

	Sharp corner Edge		Corner Edge Radius Tolerance Of The Radius		Full Radius Tolerance Of The Radius
	Chamfer				

3 Cutting Geometry

	Display Rake Angle		Display Helix Angle of Flute		Taper Angle
	No Vibration		No Vibration		

4, 5, 6 Z , Constructional length & Shank design

	2 Flutes 3 Flutes 4 Flutes		Short Standard Long Extra-Long		HA = Plain shank HB = Weldon Shank

7 DR

	Without Oil Hole		Internal Oil Hole		Drilling Depth

8 Thread-Mill

	Without Oil Hole		Internal Oil Hole		

DESCRIPTION OF THE ICONS (ENG)

HPMT

9	Coatings						
Type of Coating	**Coating Material**	**Hardness**	**Oxidation Resistance Temperature**	**Coefficient of Friction**	**Standard Thickness**	**Application Area**	**Coating Colour**
Uncoated	Uncoated	-/-	-/-	-/-	-/-	-/-	-/-
HPT B0819 AlTiN	AlTiN (Monolayer)	(HV 0.05) 3,300	≥ 900°C ≤ 1,000°C	0.3	3 µm	Suitable for medium and high speed, wet and drymachining and good for machining steel with hardness up to HRC 52.	 Blue-Black
HSC B0909 TiSiN	TiSi Based (Multilayer)	(HV 0.05) 3,600	≤ 1,200°C	0.3	2.5 - 3.5 µm	Suitable for high speed (dry) and hard machining for difficult materials above HRC 52. Suitable for high speed machining with hardened steels above HRC 60. Vc & Vf = +30%	 Copper
HPT G6110 AlCrN	AlCrN (Monolayer)	(HV 0.05) 3,200	≤ 1,100°C	0.35	2.5 - 3.5 µm	Suitable for low to medium high speed, wet and dry machining and good for machining steel with hardness and high temperature alloy up to HRC 52.	 Blue-Grey
HSC DCT01 Diamond	Diamond (Monolayer)	(GPA) 40-90	≤ 600°C	0.15-0.20	4 - 6 µm	Suitable for machining graphite and composite reinforced plastic fiber glass (CRP) (e.g. graphite electrodes, crucibles, boats)	 Dark Grey
HPT H2600 Alu	Alu	2,600	600°C	0.35	1 - 3 µm	Suitable for aluminium.	 Barley
HSC D0120 TiSi	TiSi Based (Multilayer)	(HV 0.05) 3,600	≤ 1,200°C	0.3	2 - 3 µm	Suitable for high performance drilling in difficult machinning material. Vc & Vf = +30%	 Copper
HPT T8090 TiALN	TiALN (Multilayer)	(HV 0.05) 3,300	≤ 900°C	0.3-0.35	3 µm	Suitable for low and medium cutting speed undre wet machining.	 Blue-Black

***HSC = High Speed Cutting**
***HPT = High Performance Tools**

DESCRIPTION OF THE ICONS (ENG)

HPMT

10	Tolerances					
Ø mm	Tol. µm					
	HPMT	h6	h7	h9	m7	H7
0.1~2.9	-0 / -20	0 / -6	0 / -6	0 / -25	+12 / +2	+10 / 0
3.0~6.0	-0 / -25	0 / -8	0 / -12	0 / -30	+16 / +4	+12 / 0
6.0~10.0	-0 / -30	0 / -9	0 / -15	0 / -36	+21 / +6	+15 / 0
10.0~18.0		0 / -11	0 / -18	0 / -43	+25 / +7	+18 / 0
18.0~30.0		0 / -13	0 / -21	0 / -52	+29 / +8	+21 / 0

11	Recess										
Ø (mm)	3	4	5	6	8	10	12	14	16	18	20
Recess Ø (mm)	2.8	3.7	4.6	5.5	7.4	9.2	11	13	15	17	19

DESCRIPTION OF THE ICONS (OTHERS)

HPMT

	Beschreibung der Symbole	图标说明 (刀具规格)	Descriptions des symboles	Descrizione dei simboli
1	Werkstoffe (Vollhartmetall)	刀具材质(钨钢)	Matières de coupe (carbures monobloc)	Materiali da taglio (metallo duro integrale)
	Feinkorn 90% WC 10% CO 92.0±0.5 HRA Kerngröße: 0.8 m ISO Qualität: K10/K30	超微粒钨钢 90% 钨钢 10% 钴 硬度92.0±0.5 晶力度 0.8 micron ISO规格 K10 / K30	Micrograin 90% WC 10% CO 92.0±0.5 HRA Grain: 0.8 micron Qualité ISO: K10 / K30	Micrograno 90% WC 10% CO 92.0±0.5 HRA Grano: 0.8 micron Qualità ISO: K10 / K30
	Feinkorn 93.5% WC 6% CO 93.5 HRA Kerngröße: 0.6 m ISO Qualität: K05/K10	超微粒钨钢 93.5% 钨钢 6% 钴 硬度93.5 晶力度 0.6 micron ISO规格 K05 / K10	Micrograin 93.5% WC 6% CO 93.5 HRA Grain: 0.6 micron Qualité ISO: K05 / K10	Micrograno 93.5% WC 6% CO 93.5 HRA Grano: 0.6 micron Qualità ISO: K05 / K10
	Feinkorn 86.5% WC 12% CO 93.0±0.5 HRA Kerngröße: 0.5 m ISO Qualität: K10/K40	超细微粒钨钢 86.5% 钨钢 12% 钴 硬度93.0±0.5 晶力度 0.5 micron ISO规格 K10 / K40	Submicrograin 86.5% WC 12% CO 93.0±0.5 HRA Grain: 0.5 micron Qualité ISO: K10 / K40	Sub-micrograno 86.5% WC 12% CO 93.0±0.5 HRA Grano: 0.5 micron Qualità ISO: K10 / K40
	Feinkorn 91% WC 9% CO 93.9 HRA Kerngröße: 0.2 m ISO Qualität: K05/K10	超细微粒钨钢 91% 钨钢 9% 钴 硬度93.9 晶力度 0.2 micron ISO规格 K05 / K10	Submicrograin 91% WC 9% CO 93.9 HRA Grain: 0.2 micron Qualité ISO: K05 / K10	Sub-micrograno 91% WC 9% CO 93.9 HRA Grano: 0.2 micron Qualità ISO: K10 / K30
2	Eckenformen	刃鼻形式	Formes des angles	Forme degli angoli
	Scharfe Schneidecken	直角	Angles vifs	Angolo acuto/vivo
	Eckenradius - Torusfräser Radius - Toleranz	圆弧鼻角 圆弧公差	Angles à rayon - toriques tolérance des rayons	Angolo a raggio - toroidale tolleranza del raggio
	Radius - Fräser Radius - Toleranz	球头 圆弧公差	Bout hémisphérique tolérance des rayons	a raggio tolleranza del raggio
	Fase	倒角	Chamfer	Chamfer
3	Schneidengeometrien	刃口几何设计	Géometries de coupe	Geometrie da taglio
	Größe des Spanwinkels	前角	Indique la valeur de l'angle de coupe	Indica il valore dell'angolo di taglio
	Größe des Drallwinkels	螺旋角	Indique la valeur de l'angle d'hélice	Indica il valore dell'angolo dell'elica
	Neigungswinkel	锥度	angle du cône	angolo di conicità
	Keine Vibrationen	无振动	Pas de vibrations	senza vibrazioni
	Keine Vibrationen	无振动	Pas de vibrations	senza vibrazioni

DESCRIPTION OF THE ICONS (OTHERS)

HPMT

	Beschreibung der Symbole	图标说明 (刀具规格)	Descriptions des symboles	Descrizione dei simboli
4	Z	刃数	Z	Z
	2 Schneidig 3 Schneidig 4 Schneidig	2 刃 3 刃 4 刃	2 goujures 3 goujures 4 goujures	2 taglienti 3 taglienti 4 taglienti
5	Längen	长度规格	Longueurs	Lunghezze
	Kurz Standard Lang Extra-lang	短 标准 中长 加长	courte standard longue extra-longue	corta standard lunga extra-lunga
6	Schaftarten	刀柄形式	Types de queues	Tipi di codolo
	HA = Zylinderschaft HB = Zylinderschaft mit Weldon Fläche	HA = 平刀柄 HB = 平侧楔刀柄	HA = queue cylindrique HB = queue cylindrique et méplat Weldon	HA = codolo cilindrico HB = codolo cilindrico con piano Weldon
7	DR	钻头	DR	DR
	ohne ikz	无油孔	sans trou d'huile	senza foro di olio
	mit ikz	内部油孔	trou d'huile interne	olio di foro interno
	Bohrtiefe	钻孔深度	la profondeur de forage	perforazione profondità
8				
	ohne ikz	无油孔	sans trou d'huile	senza foro di olio
	mit ikz	内部油孔	trou d'huile interne	olio di foro interno

DESCRIPTION OF THE ICONS (OTHERS)

HPMT

	Beschreibung der Symbole	图标说明 (刀具规格)	Descriptions des symboles	Descrizione dei simboli
9	DR	钻头	DR	DR
Uncoated	Unbeschichtet	硬质合金	sans revêtement	senza rivestimento
HPT B0819 AlTiN	Schichtmaterial: AlTiN (einschichtig) Mikrohärte (HV 0,05): 3,300 Max. Anwendungstemperatur: ≥ 900°C ≤ 1000°C Reibungskoeffizient 0.3 Schichtdicke : 3 µm	涂层材料 = 氮化铝钛 (单层膜) 微硬度 (HV 0.05) ：3,300 最高工作温度：≥ 900°C ≤ 1000°C 摩擦系数： 0.3 厚度： 3微米	Revêtement = AlTiN (Monocouche) Dureté (HV 0,05): 3,300 Température max. d'utilisation: ≥ 900°C ≤ 1000°C Coefficient de friction: 0,25 Épaisseur du revêtement: 3 microns	Rivestimento AlTiN = (monostrato) Microdurezza (HV 0,05): 3,300 Temperatura massima di lavoro: ≥ 900°C ≤ 1000°C Coefficiente di frizione: 0,25 Spessore del rivestimento: 3 microns
HSC B0909 TiSiN	Schichtmaterial:TiSiN basierend (mehrlagig) Mikrohärte (HV 0,05): 3,600 Max. Anwendungstemperatur: ≥ 1200°C Reibungskoeffizient 0.3 Schichtdicke : 2.5 ~ 3.5 µm Vc & Vf = +30%	涂层材料 = 钛矽基层(多层次涂层) 微硬度 (HV 0.05) ：3,600 最高工作温度：≥ 1200°C 摩擦系数： 0.3 厚度：2.5 ~ 3.5微米 Vc & Vf = +30%	Revêtement = à base de TiSiN (multi couches) Dureté (HV 0,05): 3,600 Température max. d'utilisation: ≥ 1200°C Coefficient de friction: 0,3 Épaisseur du revêtement: 2.5 ~ 3.5 microns Vc & Vf = +30%	Rivestimento = a base di TiSiN (multi strato) Microdurezza (HV 0,05): 3,600 Temperatura massima di lavoro: ≥ 1200°C Coefficiente di frizione: 0,25 Spessore del rivestimento: 2.5 ~ 3.5 microns Vc & Vf = +30%
HPT G6110 AlCrN	Schichtmaterial:AlCrN (einschichtig) Mikrohärte (HV 0,05): 3,200 Max. Anwendungstemperatur: ≤ 1100°C Reibungskoeffizient 0.35 Schichtdicke : 2.5 ~ 3.5 µm	涂层材料 = 氮化铬铝 (单层膜) 微硬度 (HV 0.05) ： 3,200 最高工作温度：≤ 1100°C 摩擦系数： 0.35 厚度：2.5 ~ 3.5微米	Revêtement = AlCrN (monocouche) Dureté (HV 0,05): 3,200 Température max. d'utilisation: ≤ 1100°C Coefficient de friction: 0,35 Épaisseur du revêtement: 2.5 ~ 3.5 microns	Rivestimento = AlCrN (monostrato) Microdurezza (HV 0,05): 3,200 Temperatura massima di lavoro: ≤ 1100°C Coefficiente di frizione: 0,35 Spessore del rivestimento: 2.5 ~ 3.5 microns
HSC DCT01 Diamond	Schichtmaterial: Diamanten (einschichtig) Härte (GPA): 40 - 90 Max. Anwendungstemperatur: 600°C Reibungskoeffizient 0.15 - 0.20 Schichtdicke : 4 - 6 µm	涂层材 = 钻石 (单层膜) 微硬度 (GPA) : 40 - 90 最高工作温度 (°C) ≤ 600 摩擦系数 = 0.15 - 0.20 厚度：4 ~ 6 微米	Revêtement = diamanté (monocouche) Dureté (GPA) : 40 - 90 Température max. d'utilisation: (°C) ≤ 600 Coefficient de friction = 0,15 - 0,20 Épaisseur: 4 ~ 6 microns	Rivestimento = diamanti (monostrato) Durezza (GPA) : 40 - 90 Temperatura massima di lavoro: (°C) ≤ 600 Coefficiente di frizione = 0,15 - 0,20 Spessore rivestimento: 4 ~ 6 micron
HPT H2600 Alu	Schichtmaterial: Alu Härte (GPA): 2,600 Max. Anwendungstemperatur: 600°C Reibungskoeffizient 0.35 Schichtdicke : 1 - 3 µm	涂层材 = 钻石 (Alu) 微硬度 (GPA) : 2,600 最高工作温度 (°C) 600 摩擦系数 = 0.35 厚度：1 - 3 微米	Revêtement = Alu Dureté (GPA) : 2,600 Température max. d'utilisation: (°C) 600 Coefficient de friction = 0,35 Épaisseur: 1 - 3 microns	Rivestimento = Alu Durezza (GPA) : 2,600 Temperatura massima di lavoro: (°C) 600 Coefficiente di frizione = 0,35 Spessore rivestimento: 1 - 3 micron
HSC D0120 TiSi	Schichtmaterial: TiSi basierend (mehrlagig) Mikrohärte (HV 0,05): 3,600 Max. Anwendungstemperatur: 1200°C Reibungskoeffizient 0.3 Schichtdicke : 2~3 µm Vc & Vf = +30%	涂层材料 = 钛矽基层(多层次涂层) 微硬度 (HV 0.05) ：3,600 最高工作温度：≥ 1200°C 摩擦系数： 0.3 厚度：2 ~ 3 微米 Vc & Vf = +30%	Revêtement = à base de TiSi (multi couches) Dureté (HV 0,05): 3,600 Température max. d'utilisation: ≥ 1200°C Coefficient de friction: 0,3 Épaisseur du revêtement: 2 ~ 3 microns Vc & Vf = +30%	Rivestimento = a base di TiSi (multi strato) Microdurezza (HV 0,05): 3,600 Temperatura massima di lavoro: ≥ 1200°C Coefficiente di frizione: 0,25 Spessore del rivestimento: 2 ~ 3 microns Vc & Vf = +30%
HPT T8090 TiALN	Schichtmaterial: TiALN (mehrlagig) Mikrohärte (HV 0,05): 3,300 Max. Anwendungstemperatur : ≤ 900°C Reibungskoeffizient 0.3 - 0.35 Schichtdicke : 3 µm	涂层材料 = 氮化铝钛 (多层次涂层) 微硬度 (HV 0.05) ：3,300 最高工作温度：≤ 900°C 摩擦系数： 0.3 - 0.35 厚度： 3微米	Revêtement = TiALN (multi couches) Dureté (HV 0,05): 3,300 Température max. d'utilisation: ≤ 900°C Coefficient de friction: 0.3 - 0.35 Épaisseur du revêtement: 3 microns	Rivestimento TiALN (multi strato) Microdurezza (HV 0,05): 3,300 Temperatura massima di lavoro: ≤ 900°C Coefficiente di frizione: 0.3 - 0.35 Spessore del rivestimento: 3 microns
*HSC	für Hochgeschwindigtsfräsen geeignet	高速切削	pour UGV	fresatura ad alta velocità
*HPT	Hochleistungswerkzeug	高性能刀具	outil à haute performance	utensile di alto rendimento

DESCRIPTION OF THE ICONS (OTHERS)

HPMT

10	Toleranzen	公差	Tolérances	Tolleranze		
Ø mm	Tol. µm					
	HPMT	h6	h7	h9	m7	H7
0.1~2.9	-0 / -20	0 / -6	0 / -6	0 / -25	+12 / +2	+10 / 0
3.0~6.0	-0 / -25	0 / -8	0 / -12	0 / -30	+16 / +4	+12 / 0
6.0~10.0	-0 / -30	0 / -9	0 / -15	0 / -36	+21 / +6	+15 / 0
10.0~18.0		0 / -11	0 / -18	0 / -43	+25 / +7	+18 / 0
18.0~30.0		0 / -13	0 / -21	0 / -52	+29 / +8	+21 / 0

11	Recess										
Ø (mm)	3	4	5	6	8	10	12	14	16	18	20
Recess Ø (mm)	2.8	3.7	4.6	5.5	7.4	9.2	11	13	15	17	19

Material	HPMT	Description	Properties	W. Nr.	DIN	UNI	AFNOR	AISI/SAE/ASTM	JIS	Common Name
Aluminum wrought alloy, Si < 9%	N1	Aluminium alloys	Si < 9%	3.0255	Al99.5		A-5/1050A		(A1050)	
				3.0515	AlMn1					
				3.0517	AlMn1Cu		A-M1/3003		A3003	
				3.1255	AlCuSiMn		A-U4SG/2014			
				3.1655	AlCuBiPb		A-U5PbBi/2011		A2011	
				3.2161	G-AlSi8Cu3			A380		
				3.2341	G-AlSi5Mg	3599	A-S7G	B26	AC 4C	
				3.3206	AlMgSi0.5		A-GS/6060			
				3.3210	AlMgSi0.7		A-GSUC/6061		(A6063)	
				3.3315	AlMg1		A-G0.6			
				3.4335	AlZn4.5Mg1		A-Z5G/7020			
				3.4365	AlZnMgCu1.5		A-Z5GU/7075		A7075	
				3.5103	G-MgSe3Zn2Zr1		ZRE1	AMS 4442		
				3.5612	G-MgAl6Zn		G-A6-Z1	AZ61A		
				3.5812	G-MgAl8Zn		(G-A7-Z1)	AZ80A		
Aluminum cast alloy, Si ≥ 9%	N2	Aluminium alloys	9% < Si < 16%	3.2315	AlMgSi1		A-SGM0.7/6082			
				3.2381	G-AlSi10Mg		A-S10G	B85		
				3.2382	GD-AlSi12			A413.2		
		Aluminium alloys	Si > 16%					B390.0	ADC14	
Copper alloy	N3	Copper alloys		2.0940.01	CuAl10Fe		CuAl10Fe	CA952		
				2.0975.01	CuAl10Ni		CuAl10Ni5Fe5	CA955		
				2.0872	CuNi10Fe1Mn		CuNi10Fe1Mn			
					CuNi10Zn45					
				2.0790	CuNi18Zn19Pb		CuNi18Zn19Pb1			
				2.1176	CuPb10Sn		CuSn10Pb10	CA937		
				2.1050.01	CuSn10		CuSn10			
				2.1087	CuSn10Zn					
				2.1020	CuSn6		CuSn6		C5191	
				2.0240	CuZn15		CuZn15		C2300	
				2.0470	CuZn28Sn1		CuZn29Sn1			
				2.0321	CuZn37		CuZn37			
				2.0530	CuZn38Sn1					
				2.0401	CuZn39Pb3		CuZn39Pb3			
				2.0402	CuZn40Pb2		CuZn39Pb2			
				2.0410	CuZn44Pb2					
Grey cast iron	K1	Grey cast irons (GCI)		0.6150	GG-15	G15	Ft 15 D	A48 25 B	FC 150	
				0.6200	GG-20	G20	Ft 20 D	A48 30 B	FC 200	
					GG-220 HB			G 3500		
				0.6250	GG-25	G25	Ft 25 D	A48 35 B	FC 250	
				0.6300	GG-30	G30	Ft 30 D	A48 45 B	FC 300	
				0.6350	GG-35	G35	Ft 35 D	A48 50 B	FC 350	
Ductile cast iron	K2	Ductile Cast Iron		0.7033	GGG-35.3		FGS 370-17		FCD 350-22L	
				0.7040	GGG-40	GS 400-12	FGS 400-12	60-40-18	FCD 400-18L	
				0.7043	GGG-40.3	GSO 42/17	FGS-370-17	60-40-18		
				0.7050	GGG-50	GS 500-7	FGS 500-7	A536 80-55-6	FCD 500-7	
				0.7060	GGG-60	GS 600-3	FGS 600-3	A476 80-60-03	FCD 600-3	
				0.7070	GGG-70	GS 700-2	FGS 700-2	A536 100-70-03	FCD 700-2	
Carbon steel	P1	Free-cutting steels	360 < Rm < 880	1.0715	9 SMn 28	CF 9 SMn 28	S 250	1213	SUM 22	
				1.0718	9 SMnPb 28	CF 9 SMnPb 28	S 250 Pb	12 L 13	SUM 22 L	
				1.0721	10 S 20	CF 10 S 20	10 F 1	1108		
				1.0722	10 SPb 20	CF 10 SPb 20	10 PbF 2	11 L 08		
				1.0723	15 S 20				SUM 32	
				1.0726	35 S 20		35 MF 4	1140		
				1.0727	46 S 20		45 MF 4	1146		
				1.0736	9 SMn 36	CF 9 SMn 36	S 300	1215		
				1.0737	9 SMnPb 36	CF 9 SMnPb 36	S 300 Pb	12 L 14		
		Low alloy ferritic steels, C < 0.25%wt Low alloy weldable general structural steels	320 < Rm < 600	1.0037	St 37-2	Fe 360 B	E 24-2		STKM 12 C	
				1.0116	St 37-3	Fe 360 D FF	E 24-3, E 24-4	A 573 Gr. 58		
				1.0144	St 44-3 N	Fe 430 D FF	E 28-3, E 28-4	A 573 Gr. 70	SM 41 C	
				1.0301	C 10	C 10	AF 34 C 10, XC 10	1010	S 10 C	
				1.0401	C 15	C 15, C 16	AF3 7 C 12, XC 18	1015		
				1.0402	C 22	C 20, C 21	C 20	1023		
				1.0570	St 52-3	Fe 510 B	E 36-3, E 36-4		SM 50 YA	
				1.1141	Ck 15	C 15, C 16	XC 15, XC 18	1015	S 15 C, S 15 CK	
				1.1158	Ck 25	C 25	XC 25	1025	S 25 C	
		Ferritic & ferritic/pearlitic steels, C < 0.25%wt Weldable general structural steels Case hardening steels	430 < Rm < 610	1.2162	21 MnCr 5		20 NC 5		SCR 420 H	
				1.5415	15 Mo 3	16 Mo 3	15 D 3	A 204 Gr. A		
				1.5423	16 Mo 5	16 Mo 5		4520	SB 450 M	
				1.5752	14 NiCr 14		12 NC 15	3310, 9314	SNC 815 (H)	
				1.5919	15 CrNi 6	16 CrNi4	16 NC 6	4320		
				1.6587	18 CrNiMo 7 6	18 NiCrMo 7	18 NCD 6			
				1.7131	16 MnCr 5	16 MnCr 5	16 MC 5	5115	SCR 415	
				1.7139	16 MnCrS 5					
				1.7147	20 MnCr 5	20 MnCr 5	20 MC 5	5120	SMnC 420 (H)	
				1.7149	20 MnCrS 5		20 MnCrS 5	5120 H	SMnC 21 H	
				1.7335	13 CrMo 4 4	14 CrMo 4 5	15 CD 3.5	A 182-F11, F12		
				1.7337	16 CrMo 4 4	14 CrMo 4 5	15 CD 4.5	A 387 Gr. 12 Cl. 2		
				1.7380	10 CrMo 9 10	12 CrMo 9 10	10 CD 9.10	A 182-F22		

MATERIAL APPENDIX

HPMT

Material	HPMT	Description	Properties	W. Nr.	DIN	UNI	AFNOR	AISI/SAE/ASTM	JIS	Common Name
Alloy steel	P2	Low alloy general structural steels, 0.25% < C < 0.67%wt Low alloy Quench & Temper steels	520 < Rm < 1200	1.0501	C 35	C 35	AF 55 C 35	1035		
				1.0503	C 45	C 45	AF 65 C 45	1045	S 45 C	
				1.0511	C 40	C 40	AF 60 C 40	1040	S 40 C	
				1.0535	St 70-2	Fe 690	A 70-2	1055		
				1.0601	C 60	C 60	CC 55	1060		
				1.1157	40 Mn 4		35 M 5	1039		
				1.1165	30 Mn 5			1330	SMn 1 H, SCMn 2	
				1.1167	36 Mn 5		40 M 5	1335	SMn 438 (H), SCMn 3	
				1.1181	Ck 35	C 35	XC 38 H1	1035	S 35 C	
				1.1191	Ck 45	C 45	XC 42	1045	S 45 C	
				1.1221	Ck 60	C 60	XC 60	1064	S 58 C	
				1.1740	C 60 W		Y3 55	1060	SK 7	
		Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	550 < Rm < 1200	1.0904	55 Si 7	55 Si 8	55 S 7	9255		
				1.1201	42 CrMo 4	42 CrMo 4	42 CD 4	4142, 4140	SCM 440 (H)	
				1.1201	42 CrMo 4	42 CrMo 4	42 CD 4	4142, 4140	SCM 440 (H)	
				1.2330	35 CrMo 4	35 CrMo 4	34 CD 4	4135		
				1.2542	45 WCrV 7	45 WCrV 8 KU		S1		
				1.2714	56 NiCrMoV 7	56 NiCrMoV7-KU		L6	SKT 4	
				1.5121	46 MnSi 4			5045		
				1.5710	36 NiCr 6		35 NC 6	3135	SNC 236	
				1.5736	36 NiCr 10	35 NiCr 9	35 NC 11	3435	SNC 631 (H)	
				1.6511	36 CrNiMo 4	38 NiCrMo 4 (KB)	40 NCD 3	9840		
				1.6582	36 CrNiMo 6	35 NiCrMo 6 (KW)	35 NCD 6	4340	SNCM 447	
				1.7033	34 Cr 4	34 Cr 4 (KB)	32 C 4	5132	SCr 430 (H)	
				1.7035	41 Cr 4	41 Cr 4	42 C 4	5140	SCr 440 (H)	
				1.7218	25 CrMo 4	25 CrMo 4 (KB)	25 CD 4 S	4130	SCM 425	
				1.7361	32 CrMo 12	32 CrMo 12	30 CD 12			
				1.8159	50 CrV 4	51 CrV 4	50 CV 4	6150	SUP 10	
				1.8509	41 CrAlMo 7	41 CrAlMo 7	40 CAD 6.12	A 355 Cl. A	SACM 645	
Prehardened steel	P3	Low alloy through hardening steels, C > 0.67%wt Low alloy spriing and bearing steels	35 ≤ HRC < 45	1.1231	Ck 67	C 70	XC 68	1070		
				1.1274	Ck 101			1095	SUP 4	
				1.1545	C 105 W1	C 100 KU	Y1 105	W1		
				1.1645	C 105 W2	C 100 KU	Y1 105		SK 3	
				1.1663	C 125 W	C 120 KU	Y2 120	W1	SK 2	
		Through hardening steels, C > 0.67%wt Spring and bearing steels	35 ≤ HRC < 45	1.2210	115 CrV 3	107 CrV 3 KU	100 C 3	L2		
				1.2510	100 MnCrW 4	95 MnWCr 5 KU	90 MWCV 5	O1	SKS 3	
				1.2842	90 MnCrV 8	90 MnVCr 8 KU	90 MV 8	O2		
				1.3505	100 Cr 6	100 Cr 6	100 C 6	52100	SUJ 2	
Prehardened steel	P3	Tool steels High speed steels (HSS)	35 ≤ HRC < 45	1.2080	X 210 Cr 12	X 210 Cr 13 KU	Z 200 C 12	D3	SKD 1	
				1.2343	X 38 CrMoV 5 1	X 37 CrMoV 5 1 KU	Z 38 CDV 5	H11	SKD 6	
				1.2344	X 40 CrMoV 5 1	X 40 CrMo 5 1 1 KU	Z 40 CDV 5	H13	SKD 61	
				1.2363	X 100 CrMoV 5 1	X 100 CrMoV 5 1 KU	Z 100 CDV 5	A2	SKD 12	
				1.2365	X 32 CrMoV 3 3	30 CrMoV 12 27 KU	32 DCV 28	H10	SKD 7	
				1.2436	X 210 CrW 12	X 215 CrW 12 1 KU			SKD 2	
				1.2601	X 165 CrMoV 12	X 165 CrMoW 12 KU				
				1.2713	55 NiCrMoV 6		55 NCDV 7	L6	SKT 4	
				1.3243	S 6-5-2-5	HS 6-5-2-5	Z 85 WDKCV 06-05-05-04-02	M35	SKH 55	
				1.3247	S 2-10-1-8	HS 2-9-1-8	Z 110 DKCWV 09-08-04	M42	SKH 51	
				1.3255	S 18-1-2-5	HS 18-1-1-5	Z 80 WKCV 18-05-04-01	T4	SKH 3	
				1.3343	S 6-5-2	HS 6-5-2	Z 85 WDCV 06-05-04-02	M2	SKH 9, SKH 51	
				1.3348	S 2-9-2	HS 2-9-2	Z 100 DCWV 09-04-02-02	M7	SKH 58	
				1.3355	S 18-0-1	HS 18-0-1	Z 80 WCV 18-04-01	T1	SKH 2	

Material	HPMT	Description	Properties	W. Nr.	DIN	UNI	AFNOR	AISI/SAE/ASTM	JIS	Common Name
Stainless steel, high machinability	M1	Free-cutting austenitic stainless steel		1.4305	X 10 CrNiS 18 9	X 10 CrNi 18 09	Z 10 CNF 18.09	303	SUS 303	
		Low alloy austenitic stainless steels		1.4300	X 12 CrNi 18 8		Z 12 CN 18	302	SUS 302	
				1.4301	X 6 CrNi 18 10	X 5 CrNi 18 11	Z 6 CN 18.09	304	SUS 304	
				1.4306	X 2 CrNi 19 11	X 3 Cr Ni 18 11	Z 2 CN 18.10	304 L	SUS 304 L	
				1.4310	X 12 CrNi 17 7	X 12 CrNi 17.07	Z 12 CN 17.07	301	SUS 301	
				1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12	Z 3 CND 17.11.1	316	s	
				1.4550	X 6 CrNiNb 18 10	X 6 CrNiNb 18 11	Z 6 CNNb 18.10	347	SUS 347	
		Medium alloy austenitic stainless steels		1.4311	X 2 CrNiN 19 11	X 2 CrNiN 18 11	Z 2 CN 18.10 Az	304 LN	SUS 304 LN	
				1.4335	X 12 CrNi 25 21	X 6 CrNi 26 20	Z 12 CN 25.20	310 S	SUH 310, SUS 310 S	
				1.4429	X 2 CrNiMoN 17 13 3	X 2 CrNiMoN 17 13 3	Z 2 CND 17.13 Az	316 LN	SUS 316 LN	
				1.4435	X 2 CrNiMo 18 14 3	X 2 CrNiMo 17 13 2	Z 2 CND 17.13	316L	SCS 16, SUS 316L	
				1.4466	X 5 CrNi 18 15	X 5 CrNi 18 15		317	SUS 317	
				1.4893	X 9 CrNiSiNCe 21 11 2					252 MA
Stainless steel, low machinability	M2	Ferritic & martensitic stainless steels		1.4000	X 6 Cr 13	X 6 Cr 13	Z 6 C 12	403	SUS 403	
				1.4006	X 10 Cr 13	X 12 Cr 13	Z 10 C 13	410, CA-15	SUS 410	
				1.4016	X 6 Cr 17	X 8 Cr 17	Z 8 C 17	430	SUS 430	
				1.4021	X 20 Cr 13	X 20 Cr 13	Z 20 C 13	420	SUS 420 J 1	
				1.4031	X 40 Cr 13	X 40 Cr 14	Z 40 C 14	420	SUS 420	
				1.4109	X 65 CrMo 14		Z 70 D 14	440 A	SUS 440 A	
				1.4112	X 90 CrMoV 18	X CrTi 12	Z 2 CND 18 05	440 B	SUS 440 B	
				1.4125	X 105 CrMo 17	X 105 CrMo 17	Z 100 CD 17	440 C	SUS 440 C	
				1.4313	X 5 CrNi 13 4	X 6 CrNi 13 04	Z 5 CN 13.4		SCS 5	
				1.4749	X 18 CrN 28		Z 18 C 25	446		
		High alloy austenitic and duplex stainless steels		1.4417	X 2 CrNiMoSi 19 5		Z 2 CND 18.05.03			3RE60
				1.4460	X 4 CrNiMo 27 5 2	X 3 CrNiMo 27 5 2	Z 3 CND 25.7 Az	329	SUS 329 J 1	
				1.4462	X 2 CrNiMoN 22 5	X 2 CrNiMoN 22 5	Z 2 CND 22.05 Az	329 LN		SAF 2205
				1.4539	X 2 NiCrMoCu 25 20 5		Z 2 NCDU 25 20	904L		
		Difficult high alloy austenitic and duplex stainless steels		1.4410	X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4	Z 3 CND 25.07 Az	F 53		SAF 2507
				1.4529	X 1 CrNiMoN 20 18 7	X 1 CrNiMoN 20 18 7	Z 1 CNDU 20.18.05 Az			254 SMO
				1.4534	X 3 CrNiMoAl 13 8 2			XM-13		PH13-8Mo
				1.4540	X 4 CrNiCuNb 16 4		Z 4 CNUNb 16.4 M	XM-12		15-5-PH
				1.4568	X 7 CrNiAl 17 7	X 7 CrNiAl 17 7	Z 9 CAN 17.7	AMS 5528	SUS 631	17-7-PH
				1.4652	X 2 CrNiMoN 25 22 7					654 SMO
				1.4876	X 10 NiCrAlTi 32 20		Z 10 NC 32.21		NCF 800	Alloy 800
				1.4943	X 4 NiCrTi 25 15		Z 6 NCTDV 25.15	660	SUH 660	A286
Titanium alloy	S1	Titanium, low alloyed, (α)		3.7024						Ti
								AMS 4919		Ti 6-2-4-2
		Titanium, medium alloyed, (α+β)						AMS 4943		Ti 3Al-2.5V (grade 9)
				3.7164				AMS 4920, Grade 5		Ti 6Al-4V
		Titanium, high alloyed			TiV10Fe2Al3			AMS 4986		Ti 10V-2Fe-3Al
Nickel alloy	S2	Nickel based superalloys		2.4810						Hastelloy C
				2.4819						Hastelloy C-276
										IN 100
				2.4668						Inconel 718
				2.4669						Inconel X-750
				2.4631						Nimonic 80A
										René 41
										Udimet 500
				2.4654						Waspalloy
Cobalt alloy	S3	Cobalt based superalloys								Haynes 25
										Stellite 21
										Stellite 31

MATERIAL APPENDIX

HPMT

Material	HPMT	Description	Properties	W. Nr.	DIN	UNI	AFNOR	AISI/SAE/ASTM	JIS	Common Name
Hardened steel	H1 & H2	Case hardened steels	58 < HRC < 62	1.7131	16 MnCr 5	16 MnCr 5	16 MC 5	5115	SCR 415	
		Quenched & Tempered steels	38 < HRC < 56	1.1201	42 CrMo 4	42 CrMo 4	42 CD 4	4142, 4140	SCM 440 (H)	
				1.1231	Ck 67	C 70	XC 68	1070		
				1.1248	Ck 75	C 75	XC 75	1078, 1080		
				1.1274	Ck 101			1095	SUP 4	
				1.1545	C 105 W1	C 100 KU	Y1 105	W 1		
				1.2550	60 WCrV 7	55 WCrV 8 KU	55 WC 20	S1		
				1.7176	55 Cr 3	55 Cr 3	55 C 3	5155	SUP 9 (A)	
		Quenched & Tempered steels Bearing Steels	56 < HRC < 64	1.2210	115 CrV 3	107 CrV 3 KU	100 C 3	L2		
				1.2510	100 MnCrW 4	95 MnWCr 5 KU	90 MWCV 5	O1	SKS 3	
				1.2842	90 MnCrV 8	90 MnVCr 8 KU	90 MV 8	O2		
				1.3505	100 Cr 6	100 Cr 6	100 C 6	52100	SUJ 2	
		Tool steels High Speed Steels	38 < HRC < 64	1.2344	X 40 CrMoV 5 1	X 40 Crmo 5 1 1 KU	Z 40 CDV 5	H13	SKD 61	
				1.2363	X 100 CrMoV 5 1	X 100 CrMoV 5 1 KU	Z 100 CDV 5	A2	SKD 12	
				1.2379	X 155 CrVMo 12 1	X 155 CrVMo 12 1 KU	Z 160 CDV 12	D2	SKD 11	
				1.2436	X 210 CrW 12	X 215 CrW 12 1 KU			SKD 2	
				1.2601	X 165 CrMoV 12	X 165 CrMoW 12 KU				
				1.2713	55 CNiCrMoV6		55 NCDV 7	L6	SKT 4	
				1.3243	S 6-5-2-5	HS 6-5-2-5	Z 85 WDKCV 06-05-05-04-02	M35	SKH 55	
				1.3247	S 2-10-1-8	HS 2-9-1-8	Z 110 DKCWV 09-08-04	M42	SKH 51	
				1.3343	S 6-5-2	HS 6-5-2	Z 85 WDCV 06-05-04-0	M2	SKH 9, SKH 51	
				1.3355	S 18-0-1	HS 18-0-1	Z 80 WCV 18-04-01	T1	SKH 2	
		Martensitic stainless steels	38 < HRC < 50	1.4021	X 20 Cr 13	X 20 Cr 13	Z 20 C 13	420	SUS 420 J 1	
				1.4109	X 65 CrMo 14		Z 70 D 14	440 A	SUS 440 A	
				1.4112	X 90 CrMoV 18	X CrTi 12	Z 2 CND 18 05	440 B	SUS 440 B	
				1.4125	X 105 CrMo 17	X 105 CrMo 17	Z 100 CD 17	440 C	SUS 440 C	
		Precipitation hardened stainless steels	33 < HRC < 50	1.4534	X 3 CrNiMoAl 13 8 2			XM-13		PH13-8Mo
				1.4542	X 5 CrNiCuNb 17 4		Z 6 CNU 17.4	630	SCS 24, SUS 630	17-4-PH
				1.4568	X 7 CrNiAl 17 7	X 7 CrNiAl 17 7	Z 9 CAN 17.4	AMS 5528	SUS 631	17-7-PH
				1.4943	X 4 NiCrTi 25 15		Z 6 NCTDV 25.15	660	SUH 660	A286
		Manganese steels	23 < HRC < 64	1.3401	X 120 Mn 12		Z 120 M 12	A128 Grade A	SC MnH 1	
		White Cast Irons	50 < HRC < 64	G-X330 NiCr 4 2	FB Ni4 Cr2 BC		Grade 2 A	A532 IB(NiCr-LC)		Ni-Hard 2
				G-X260 NiCr4 2	FB Ni4 Cr2 HC		Grade 2 B	A532 IA (NiCr-HC)		Ni-Hard 1
				G-X300 CrNiSi 9 5 2	FB Cr9 Ni5		Grade 2 C, D, E	A532 ID (Ni-HiCr)		Ni-Hard 4
Thermoplastics	O1									
Graphite	O2									

HARDNESS CONVERSION CHART

HPMT

Tensile Strength Rm in N/mm2	Brinell Hardness HB	Rockwell Hardness HRC	Vickers Hardness HV	PSI
150	50		50	22
200	60		60	29
250	80		80	37
300	90		95	43
350	100		110	50
400	120		125	58
450	130		140	66
500	150		155	73
550	165		170	79
600	175		185	85
650	190		200	92
700	200		220	98
750	215		235	105
800	230	22	250	112
850	250	25	265	120
900	270	27	280	128
950	280	29	295	135
1000	300	31	310	143
1050	310	33	325	150
1100	320	34	340	158
1150	340	36	360	164
1200	350	38	375	170
1250	370	40	390	177
1300	380	41	405	185
1350	400	43	420	192
1400	410	44	435	200
1450	430	45	450	207
1500	440	46	465	214
1550	450	48	480	221
1600	470	49	495	228
		51	530	247
		53	560	265
		55	595	283
		57	635	57
		59	680	59
		61	720	61
		63	770	63
		64	800	64
		65	830	65
		66	870	66
		67	900	67
		68	940	68
		69	980	69

CERTIFICATE

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 053515**

Certificate Holder:

HPMT Industries Sdn. Bhd.
No. 5, Jalan Sungai Kayu Ara 32/39, Taman Berjaya,
Seksyen 32, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia

Scope: Manufacturing of Standard and Custom-made Metal Removing Cutting Tools

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2017-09-07 until 2018-08-14.
First certification 2005

2017-09-14

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

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CERTIFICATE

認證證書

標準 **ISO 9001:2015**

證書登記號碼 **01 100 053515**

證書持有者：

HPMT Industries Sdn. Bhd.
No. 5, Jalan Sungai Kayu Ara 32/39, Taman Berjaya,
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認證範圍： 制造標準及特制金屬切削刀具

證明完成了審核並滿足了 ISO 9001:2015 標準的要求。

有效期： 證書有效期從 2017-09-07 至 2018-08-14。
初次發證始於 2005 年

2017-09-14

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Zertifikat

Prüfungsnorm	**ISO 9001:2015**
Zertifikat-Registrier-Nr.	**01 100 053515**

Unternehmen:

HPMT Industries Sdn. Bhd.
No. 5, Jalan Sungai Kayu Ara 32/39, Taman Berjaya,
Seksyen 32, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia

Geltungsbereich: Herstellung von Standard- und Sonderzerspanungswerkzeugen aus Vollhartmetall

Durch ein Audit wurde der Nachweis erbracht, dass die Forderungen der ISO 9001:2015 erfüllt sind.

Gültigkeit: Dieses Zertifikat ist gültig vom 07.09.2017 bis 14.08.2018.
Erstzertifizierung 2005

14.09.2017

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