NiTiCo 30

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

For material application ≤45 HRC

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

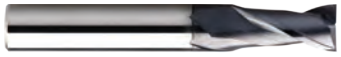
HPMT

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

P M K N S

Optimium DP Endmills with Differential Pitch

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

NiTiCo 30 STANDARD ENDMILLS

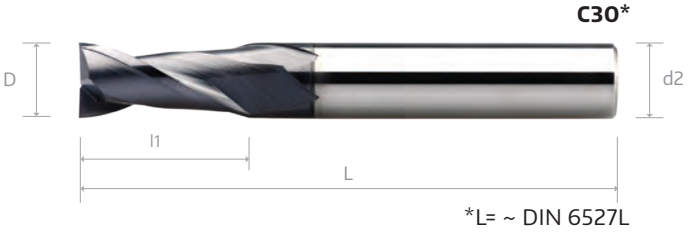
HPMT

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

NiTiCo 30 STANDARD ENDMILLS

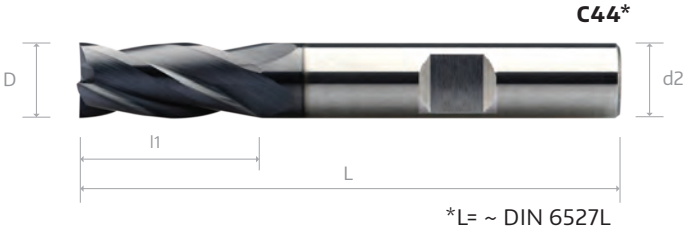
HPMT

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



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

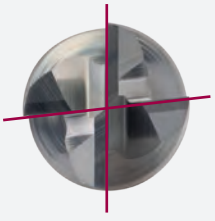
POSITIVE RAKE ANGLE

Enables smooth chip evacuation due to small size chips generated

04

DIFFERENTIAL PITCH DESIGN

For chatter free machining and excellent surface finishes



05

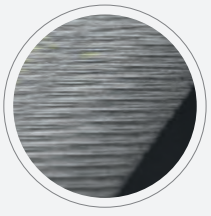
STABLE CUTTING EDGE

Allows for high speeds and feed rates greatly improving productivity

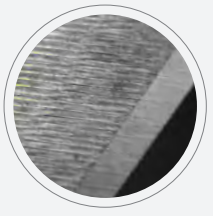
06

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

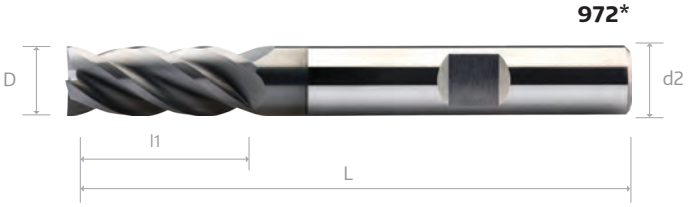
HPMT

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

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

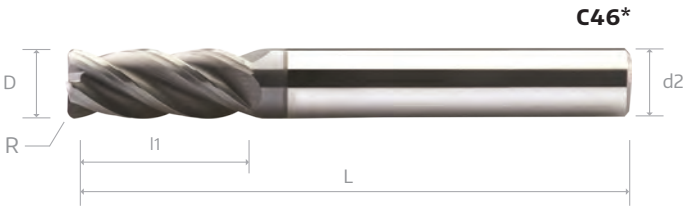
HPMT

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

NiTiCo 30

DPR TORUS ENDMILLS

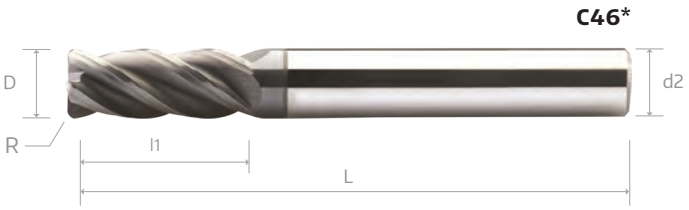
HPMT

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

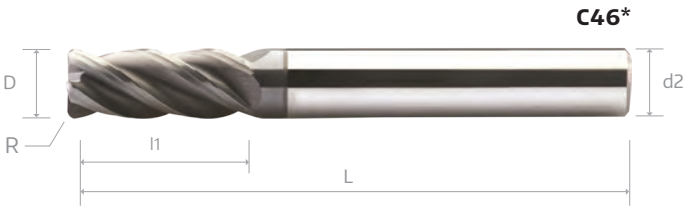
HPMT

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



HPT G6110 AlCrN

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

NiTiCo 30

DPR TORUS ENDMILLS

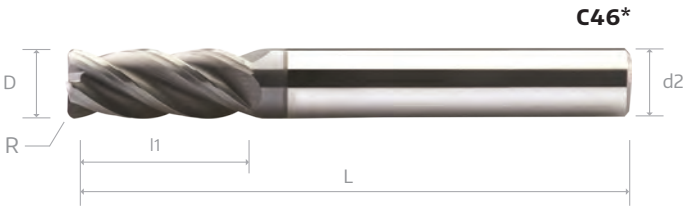
HPMT

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

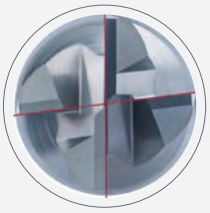
PERFECT EDGE GRINDING

- 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術**
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

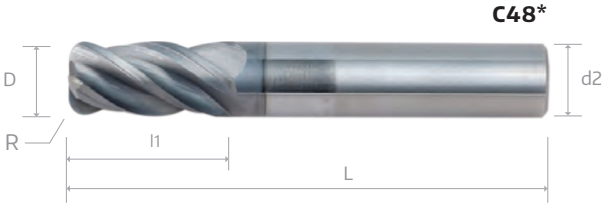
HPMT

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



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

NiTiCo 30

DP/DH TORUS ENDMILLS

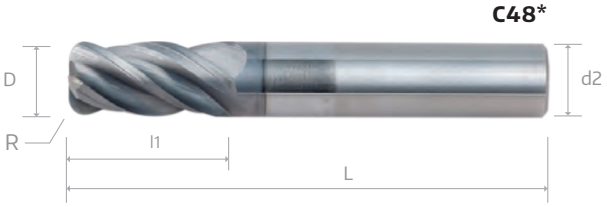
HPMT

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



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

HPMT

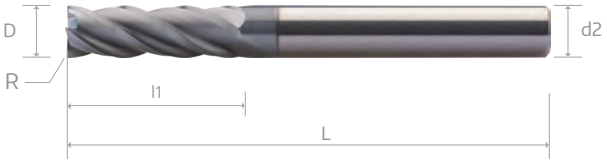
VHM NiTiCo 30 DP/DH Long Fräser mit ungleicher Teilung, 4 Zähne

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

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 *

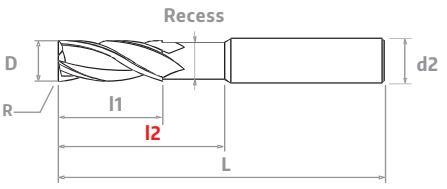
Tools with recess upon request

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

NiTiCo 30 DH STANDARD TORUS ENDMILLS

HPMT

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

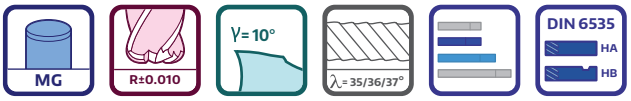
Fraises 2 tailles NiTiCo 30 DH Standard à pas décalés, 5 dents, en carbure monobloc

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



NiTiCo 30

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

NiTiCo 30 DH TORUS ENDMILLS – Long

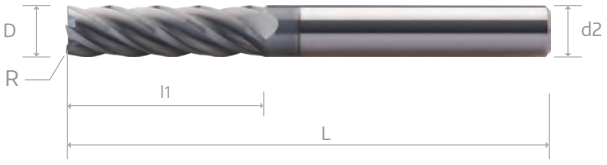
VHM NiTiCo 30 DH Long Fräser mit ungleicher Teilung, 5 Zähne

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

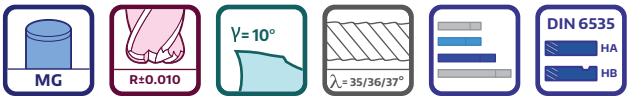
Frese NiTiCo 30 DH Long in metallo duro, passo differenziale, 5 taglienti

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
●	●	●	●	●	◉	●	●	●	○	○						

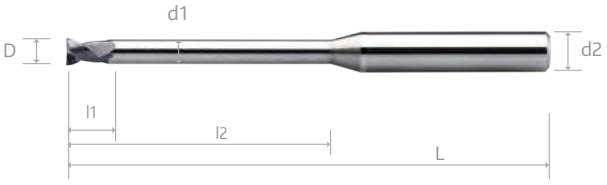
155

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	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

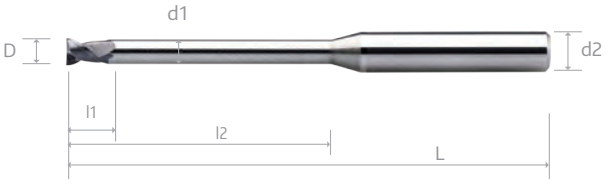
VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne

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

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
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
●	●	●	●	●	●	●	◉	●	●	●	○	○				

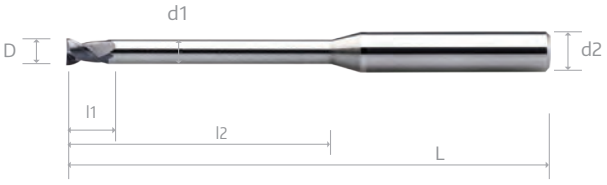
159

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

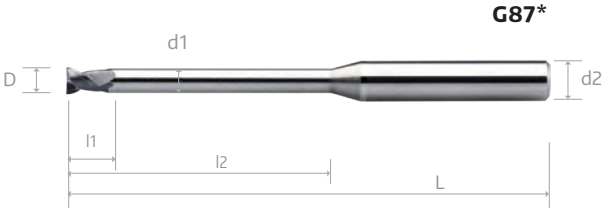
HPMT

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



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

Cutting Parameter

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

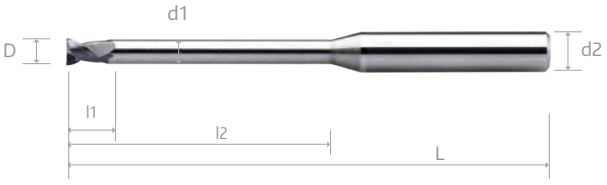
159

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
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
●	●	●	●	●	●	●	●	●	●	●	○	○				

159

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

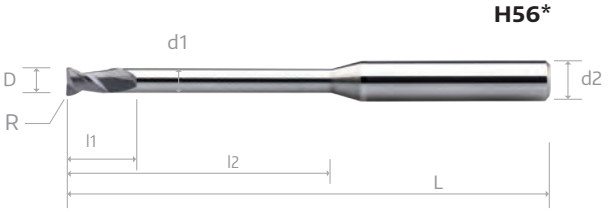
HPMT

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
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

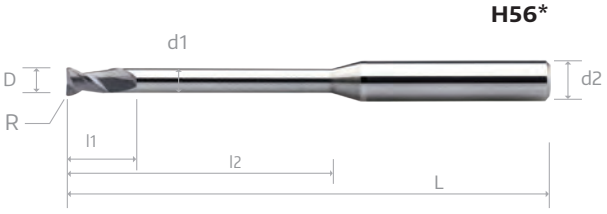
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	◉	●	●	●	○	○				

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
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 159

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

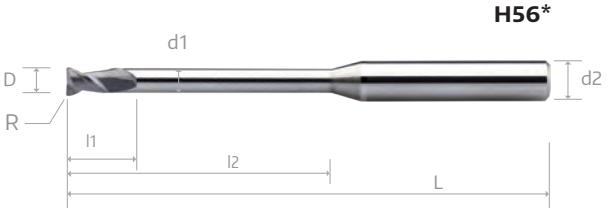
HPMT

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
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
●	●	●	●	●	◉	●	●	●	○	○						

159

NiTiCo 30 MINIATURE TORUS ENDMILLS – with Long Neck

HPMT

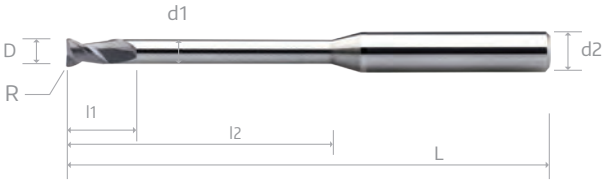
VHM NiTiCo 30 Torus-Kleinstfräser mit langem Hals, 2 Zähne

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

H56*



Z2

HPT G6110 AlCrN

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

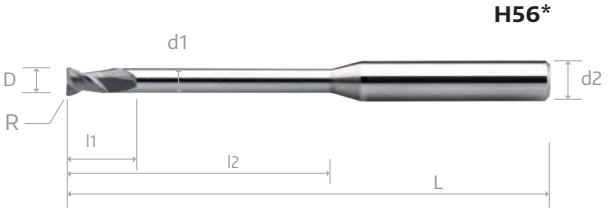
HPMT

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
●	●	●	●	●	◉	●	●	●	○	○						

159

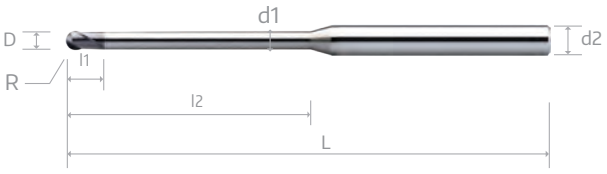
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

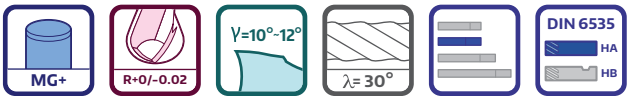
HPMT

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

157

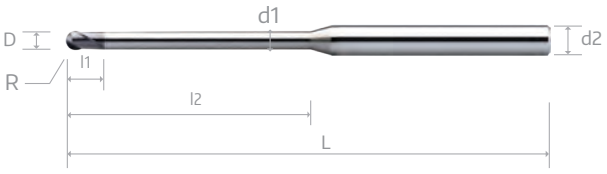
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

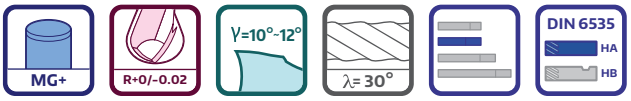
HPMT

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 157

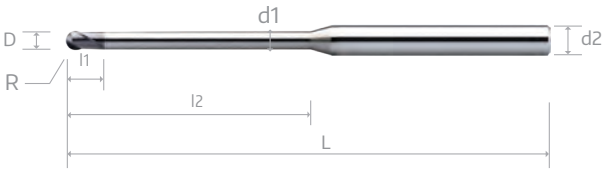
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

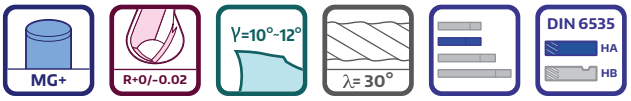
HPMT

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

NiTiCo 30

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

157

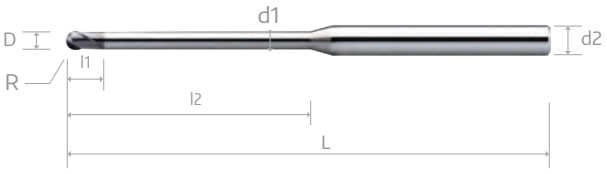
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

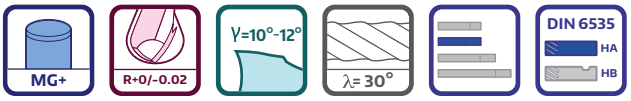
HPMT

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
●	●	●	●	●	◉	●	●	●	○	○						

157

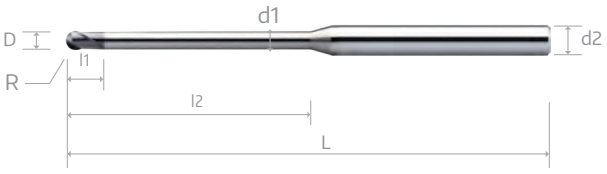
NiTiCo 30

MINIATURE BALLNOSE CUTTERS – with Long Neck

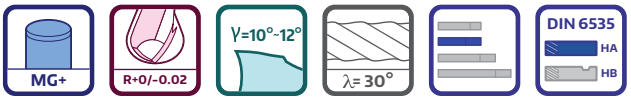
HPMT

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	•

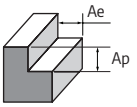
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

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

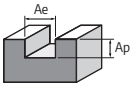
157

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



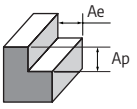
Standard Endmills 2 Flutes

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

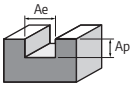
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

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

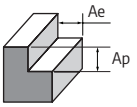


Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.60 × D		0.60 × D		0.55 × D		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

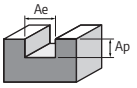
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

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

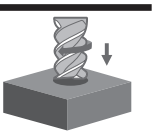


Slotting	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Proper-ties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.60 × D		0.60 × D		0.55 × 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

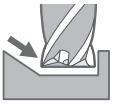
P M K S | P K

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



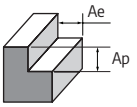
Standard Endmills 4 Flutes

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

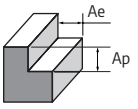
Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × 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

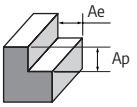
Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		-	
Cutting Depth, Ap (mm)	0.80 × D		0.80 × D		0.75 × 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

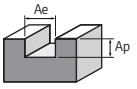
P M K S | P K

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



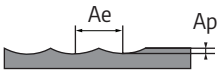
Roughing Endmills 4 Flutes

Side Milling	P						M				K				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast Iron		Ductile Cast Iron		Titanium	
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)
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	
Proper-ties	-		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

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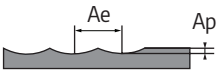
Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

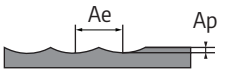


Miniature Ballnose Cutters - with Long Neck 2 Flutes

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

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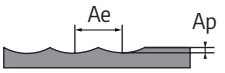
P M P

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

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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

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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

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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.