



THE FUTURE OF PRECISION MACHINING



NiTiCo LINE







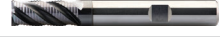

The solution for Stainless Steel and
Titanium machining.








STANDARD SERIES

	EDP No.	Design		Page	Stock
	C30	Standard		5	●
	C31	Standard		5	●
	C32	Standard		5	●
	C42	Standard With Weldon		6	○
	C43	Standard With Weldon		6	○
	C44	Standard With Weldon		6	○

DP SERIES











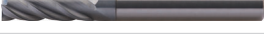
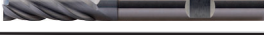
	EDP No.	Design		Page	Stock
	951	DP Standard		8	●
	972	DP Standard With Weldon		8	○
	C46	DP Standard Torus		10	●
	C52	DP Standard Torus With Weldon		10	○
	K79	DP Standard Torus with Recess & Weldon		10	○
	C47	DP Roughing		28	●
	C64	DP Roughing With Weldon		28	○
K69	DP Roughing & Finishing with Recess & Weldon		29	●	

DH SERIES

	EDP No.	Design		Page	Stock
	J89	DH Standard		15	●
	J90	DH Standard With Weldon		15	●
	J92	DH Long		16	○
	J93	DH Long With Weldon		16	○
	K65	DH Standard with CB, OH and Recess & Weldon		18	●
K67	DH Long with CB, OH and Recess & Weldon		19	●	




Legend : ● Ex stock ○ Not on stock

DP/DH SERIES

EDP No.	Design		Page	Stock
949	DP/DH Standard		21	●
C49	DP/DH Standard with Recess & Weldon		21	○
C48	DP/DH Standard Torus		25	●
C50	DP/DH Standard Torus with Weldon		25	●
A1R	DP/DH Standard Torus		25	○
A1T	DP/DH Standard Torus with Weldon		25	○
K70	DP/DH Standard OH with Recess & Weldon		22	○
K78	DP/DH Standard with Recess & Weldon		23	○
J97	DP/DH Long		27	○
J98	DP/DH Long with Weldon		27	○
H38	DP/DH Long with Recess		27	○
H39	DP/DH Long with Recess & Weldon		27	○



MINIATURE SERIES

EDP No.	Design		Page	Stock
G87	SE Miniature Long Neck		31	●
H56	SE Miniature Torus Long Neck		37	●
G88	BN Miniature Long Neck		43	●



Legend : ● Ex stock ○ Not on stock

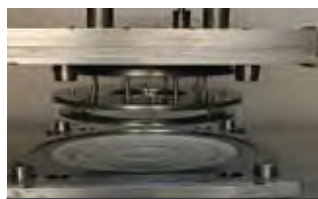
The NiTiCo Line is designed to deliver exceptional performance in durability and surface finishing for industrial-grade work pieces such as automotive, mould & die, consumer electronics, semiconductors, and dental.

Our Perfect Edge technology reduces vibration so that over course of tool life, surface finishing quality is maintained for longer, with more consistency and intended result over multiple operation cycles. This tool has been tested to perform under complicated machining operations including trochoidal milling.

Suitable for industries :



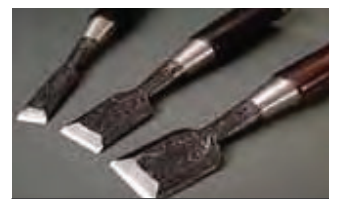
Automotive Component Maker



Press Tool Maker



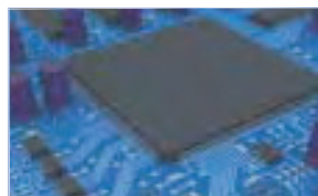
Plastic Injection Mold Maker



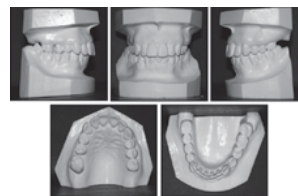
Forge Tool Maker



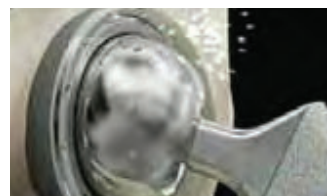
Printed Circuit Board and Electrical Components Maker



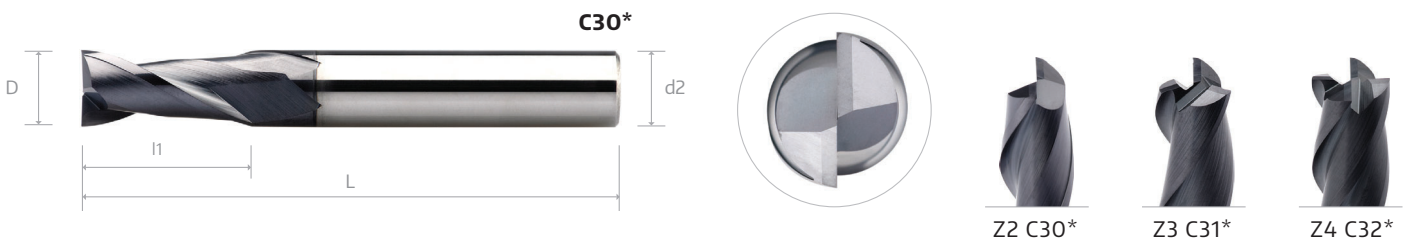
Semiconductor Molding Company



Orthopedic Implants Manufacturer



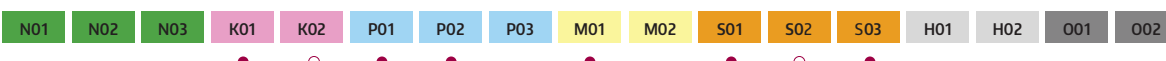
Dental Prosthetics Manufacturer



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)					C30*	C31*	C32*
	D	l1	l2	L	d2 (h6)	Normal	Normal	Normal
= * + Ø data								
0100 050 03	1	3		50	3	•	•	•
0100 050 04	1	3		50	4	•	•	•
0150 050 03	1.5	4.5		50	3	•	•	•
0150 050 04	1.5	4.5		50	4	•	•	•
0200 050 03	2	6.5		50	3	•	•	•
0200 050 04	2	6.5		50	4	•	•	•
0250 050 03	2.5	6.5		50	3	•	•	•
0250 050 04	2.5	6.5		50	4	•	•	•
0300 050 03	3	9		50	3	•	•	•
0300 050 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	•	•	•

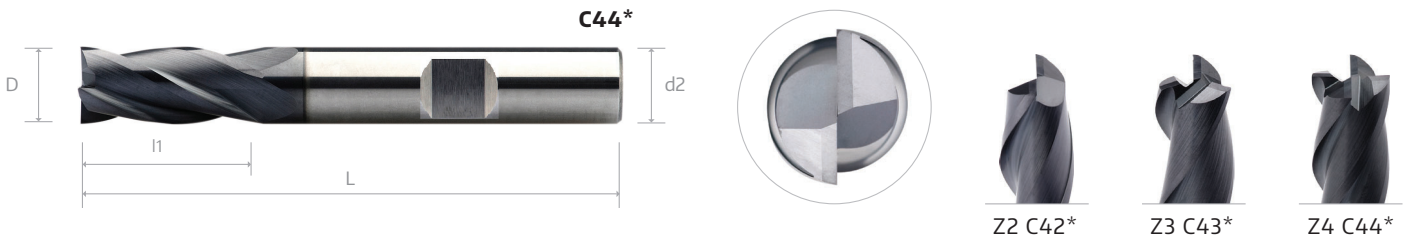
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter



47-49

C42 / C43 / C44 STANDARD ENDMILLS WITH WELDON



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)					C42*	C43*	C44*
	D	l1	l2	L	d2 (h6)	Normal	Normal	Normal
= * + Ø data								
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

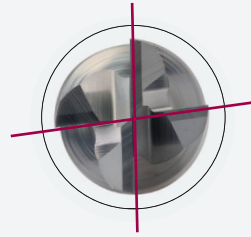


47 - 49

DP SERIES

951 DP

972 DP With Weldon



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

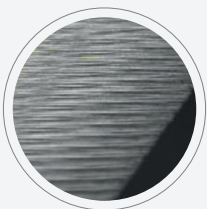
Differential Pitch Design

• For chatter free machining and excellent surface finishes

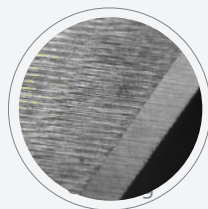
05

The Perfect Edge Design

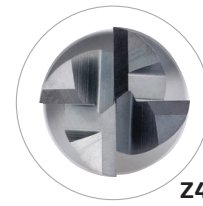
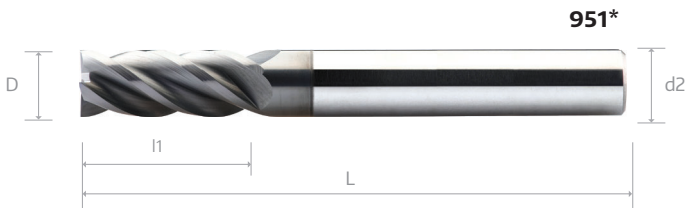
• Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life



Eccentric Grinding



Perfect Edge Grinding



*L= ~ DIN 6527L



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)					951*	972*
	D	l1	l2	L	d2 (h6)	HA	HB
= * + Ø data						Normal	Normal
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

Cutting Parameter

50 - 51

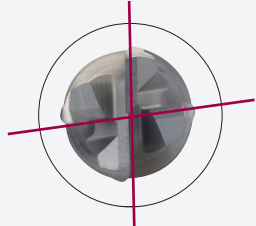
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类



DP SERIES

C46 DP Torus

C52 DP Torus
With Weldon



01

4 flutes design

· For Slotting and Side Milling

02

Stable Cutting Edge

· Allows for high speeds and feed rates greatly improving productivity

03

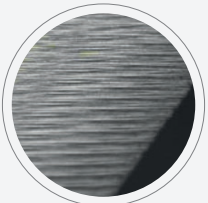
Differential Pitch Design

· For chatter free machining and excellent surface finishes

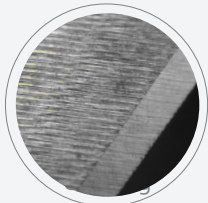
04

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



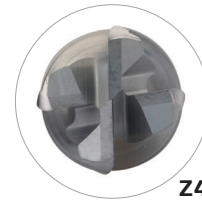
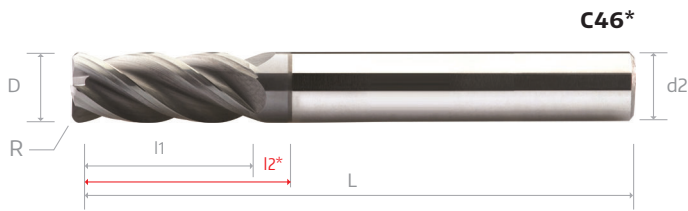
05

Corner Radius

· Available for more precise finishing and superior corner protection

C46 / C52 / K79

DPR TORUS ENDMILLS, ALSO WITH RECESS AND WELDON



*L= ~ DIN 6527L

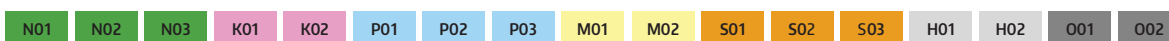


EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C46*	C52*	K79*
	D	l1	l2*	L	d2 (h6)	R	HA	HB	HB
= * + Ø data							Normal	Normal	Recess*
0300 040 0300 030	3	9	-	40	3	0.3	•	-	-
0300 040 0300 050	3	9	-	40	3	0.5	•	-	-
0300 040 0400 030	3	9	-	40	4	0.3	•	-	-
0300 040 0400 050	3	9	-	40	4	0.5	•	-	-
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	15	57	6	0.3	•	-	-
* 0300 057 0600 050	3	9	15	57	6	0.5	•	-	-
0400 050 0400 030	4	12	20	50	4	0.3	•	-	-
0400 050 0400 050	4	12	20	50	4	0.5	•	-	-
0400 050 0400 100	4	12	20	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	20	57	6	0.3	•	-	-
* 0400 057 0600 050	4	12	20	57	6	0.5	•	-	-
* 0400 057 0600 100	4	12	20	57	6	1	•	-	-
0500 050 0500 030	5	15	21	50	5	0.3	•	-	-
0500 050 0500 050	5	15	21	50	5	0.5	•	-	-
0500 050 0500 100	5	15	21	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	21	57	6	0.3	•	-	-
* 0500 057 0600 050	5	15	21	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	•	○	○

cont'd ►

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

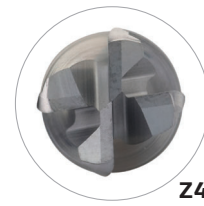
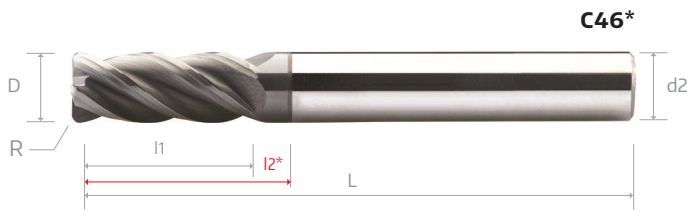
Cutting Parameter



50 - 51

C46 / C52 / K79

DPR TORUS ENDMILLS, ALSO WITH RECESS AND WELDON



*L= ~ DIN 6527L



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C46*	C52*	K79*
	D	l1	l2*	L	d2 (h6)	R	HA	HB	HB
= * + Ø data							Normal	Normal	Recess*
0600 057 0600 030	6	16	21	57	6	0.3	•	○	○
0600 057 0600 050	6	16	21	57	6	0.5	•	○	○
0600 057 0600 100	6	16	21	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	25	64	8	0.3	•	○	○
* 0800 064 0800 050	8	20	25	64	8	0.5	•	○	○
* 0800 064 0800 100	8	20	25	64	8	1	•	○	○
* 0800 064 0800 150	8	20	25	64	8	1.5	•	○	○
* 0800 064 0800 200	8	20	25	64	8	2	•	○	○
1000 070 1000 030	10	22	30	70	10	0.3	•	○	○
1000 070 1000 050	10	22	30	70	10	0.5	•	○	○
1000 070 1000 100	10	22	30	70	10	1	•	○	○
1000 070 1000 150	10	22	30	70	10	1.5	•	○	○
1000 070 1000 200	10	22	30	70	10	2	•	○	○
* 1000 072 1000 030	10	22	30	72	10	0.3	•	○	○
* 1000 072 1000 050	10	22	30	72	10	0.5	•	○	○
* 1000 072 1000 100	10	22	30	72	10	1	•	○	○
1000 075 1000 030	10	22	30	75	10	0.3	•	○	○
1000 075 1000 050	10	22	30	75	10	0.5	•	○	○
1000 075 1000 100	10	22	30	75	10	1	•	○	○
1000 075 1000 150	10	22	30	75	10	1.5	•	○	○
1000 075 1000 200	10	22	30	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	•	○	○

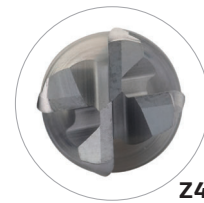
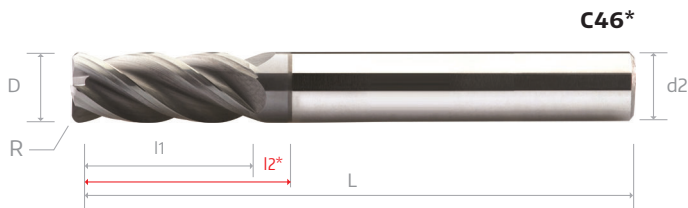
cont'd ►

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

Cutting Parameter



50 - 51



*L= ~ DIN 6527L



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C46*	C52*	K79*
	D	l1	l2*	L	d2 (h6)	R	HA	HB	HB
= * + Ø data							Normal	Normal	Recess*
1200 075 1200 200	12	25	-	75	12	2	•	○	○
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	35	83	12	0.3	•	○	○
* 1200 083 1200 050	12	26	35	83	12	0.5	•	○	○
* 1200 083 1200 100	12	26	35	83	12	1	•	○	○
* 1200 083 1200 200	12	26	35	83	12	2	•	○	○
* 1200 083 1200 250	12	26	35	83	12	2.5	•	○	○
* 1200 083 1200 300	12	26	35	83	12	3	•	○	○
* 1400 083 1400 030	14	32	38	83	14	0.3	•	○	○
* 1400 083 1400 050	14	32	38	83	14	0.5	•	○	○
* 1400 083 1400 100	14	32	38	83	14	1	•	○	○
* 1400 083 1400 150	14	32	38	83	14	1.5	•	○	○
* 1400 083 1400 200	14	32	38	83	14	2	•	○	○
* 1400 083 1400 300	14	32	38	83	14	3	•	○	○
1400 090 1400 050	14	32	38	90	14	0.5	•	○	○
1400 090 1400 100	14	32	38	90	14	1	•	○	○
1400 090 1400 150	14	32	38	90	14	1.5	•	○	○
1400 090 1400 200	14	32	38	90	14	2	•	○	○
1400 090 1400 300	14	32	38	90	14	3	•	○	○
1600 090 1600 050	16	32	42	90	16	0.5	•	○	○
1600 090 1600 100	16	32	42	90	16	1	•	○	○
1600 090 1600 150	16	32	42	90	16	1.5	•	○	○
1600 090 1600 200	16	32	42	90	16	2	•	○	○
1600 090 1600 250	16	32	42	90	16	2.5	•	○	○
1600 090 1600 300	16	32	42	90	16	3	•	○	○
1600 090 1600 400	16	32	42	90	16	4	•	○	○
* 1600 092 1600 030	16	32	42	92	16	0.3	•	○	○

cont'd ►

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

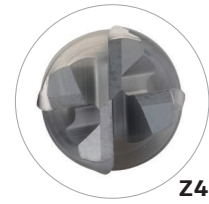
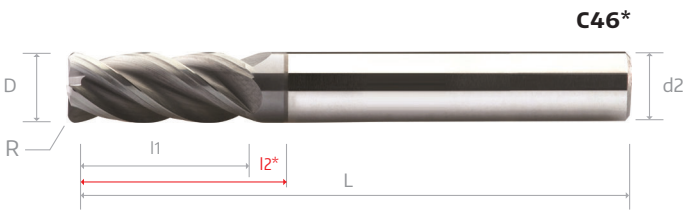
Cutting Parameter

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

50 - 51

C46 / C52 / K79

DPR TORUS ENDMILLS, ALSO WITH RECESS AND WELDON



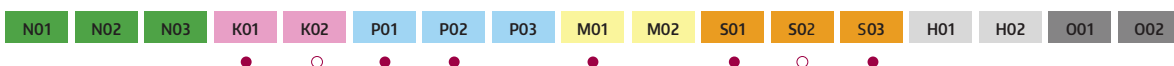
*L= ~ DIN 6527L



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C46*	C52*	K79*
	D	l1	l2*	L	d2 (h6)	R	HA	HB	HB
= * + Ø data							Normal	Normal	Recess*
* 1600 092 1600 050	16	32	42	92	16	0.5	•	-	-
* 1600 092 1600 100	16	32	42	92	16	1	•	-	-
* 1600 092 1600 200	16	32	42	92	16	2	•	-	-
* 1600 092 1600 250	16	32	42	92	16	2.5	•	-	-
* 1600 092 1600 300	16	32	42	92	16	3	•	-	-
* 1600 092 1600 400	16	32	42	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	50	100	18	0.5	•	-	-
1800 100 1800 100	18	38	50	100	18	1	•	-	-
1800 100 1800 150	18	38	50	100	18	1.5	•	-	-
1800 100 1800 200	18	38	50	100	18	2	•	-	-
1800 100 1800 300	18	38	50	100	18	3	•	-	-
2000 100 2000 050	20	38	50	100	20	0.5	•	-	-
2000 100 2000 100	20	38	50	100	20	1	•	-	-
2000 100 2000 150	20	38	50	100	20	1.5	•	-	-
2000 100 2000 200	20	38	50	100	20	2	•	-	-
2000 100 2000 250	20	38	50	100	20	2.5	•	-	-
2000 100 2000 300	20	38	50	100	20	3	•	-	-
2000 100 2000 400	20	38	50	100	20	4	•	-	-
* 2000 104 2000 030	20	38	50	104	20	0.3	•	-	-
* 2000 104 2000 050	20	38	50	104	20	0.5	•	○	○
* 2000 104 2000 100	20	38	50	104	20	1	•	○	○
* 2000 104 2000 200	20	38	50	104	20	2	•	○	○
* 2000 104 2000 250	20	38	50	104	20	2.5	•	○	○
* 2000 104 2000 300	20	38	50	104	20	3	•	○	○
* 2000 104 2000 400	20	38	50	104	20	4	•	○	○

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

Cutting Parameter



50 - 51

DH SERIES

J89 DH Standard

J90 DH Standard
With Weldon

J92 DH Long

J93 DH Long
With Weldon



01

5 Flutes Design

· The 5 flute design offers increased feed rates up to 25% over 4 flute tools and can be used in slotting, profiling and semi-finishing applications.

02

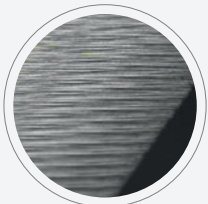
Small Corner Radius

· For less chipping of the cutting edges and longer tool life.

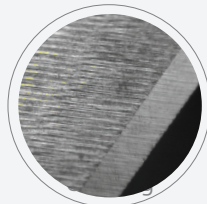
03

The Perfect Edge Design

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



Eccentric Grinding



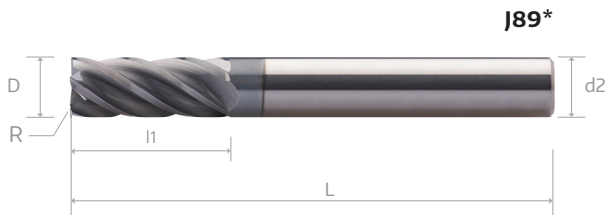
Perfect Edge Grinding



04

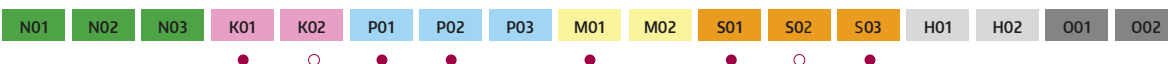
Variable Helix (DH)

· For chatter free machining and excellent surface finishes.



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						J89*	J90*
	D	l1	l2	L	d2 (h6)	R	HA	HB
= * + Ø data							Normal	Normal
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	•	•

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

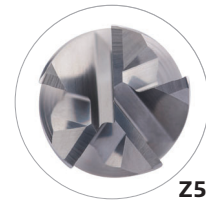
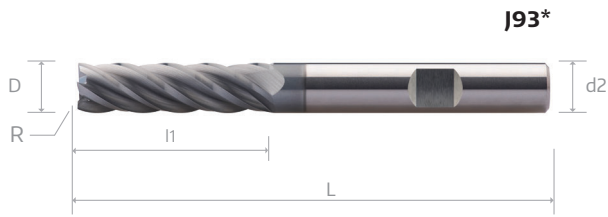


CNC Repeatability

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

Cutting Parameter

57



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						J92*	J93*
	D	l1	l2	L	d2 (h6)	R	HA	HB
= * + Ø data							Normal	Normal
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	○	○

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



CNC Repeatability

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

Cutting Parameter

58

DH SERIES

K65 DH CB With Weldon and Oil Hole

K67 DH Long CB With Weldon and Oil Hole

01

5 Flutes Design

- The 5 flute design offers increased feed rates up to 25% over 4 flute tools and can be used in slotting, profiling and semi-finishing applications.

02

Small Corner Radius

- For less chipping of the cutting edges and longer tool life.

03

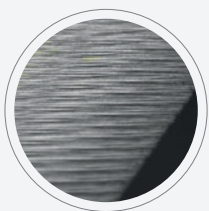
Variable Helix (DH)

- For chatter free machining and excellent surface finishes.

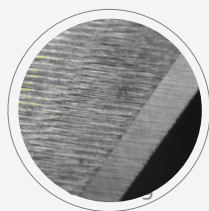
04

The Perfect Edge Design

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



Eccentric Grinding



Perfect Edge Grinding

05

Oil Hole for High Performance Milling

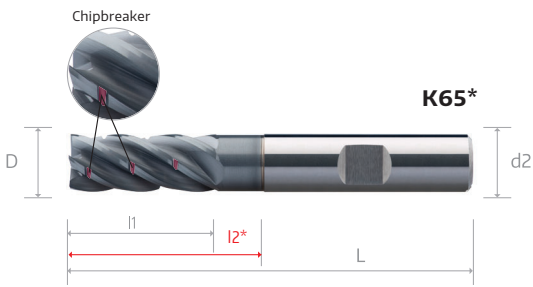
- Improves welding resistance
- Enables a wide range of machining processes
- Especially beneficial for Difficult to Cut Materials, offering stable machining



06

Optimized Geometry with Chipbreakers

- Efficiently shears work materials and shortens chips for improved chips removal.



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						K65*
	D	l1	l2	L	d2 (h6)	R	Coolant Hole
= * + Ø data							Recess*
0400 057 06	4	10	15	57	6	0.1	•
0600 057	6	15	20	57	6	0.1	•
0800 064	8	20	25	64	8	0.15	•
1000 072	10	25	30	72	10	0.2	•
1200 083	12	30	38	83	12	0.2	•
1600 092	16	39	44	92	16	0.3	•
2000 104	20	48	54	104	20	0.3	•

CNC Repeatability

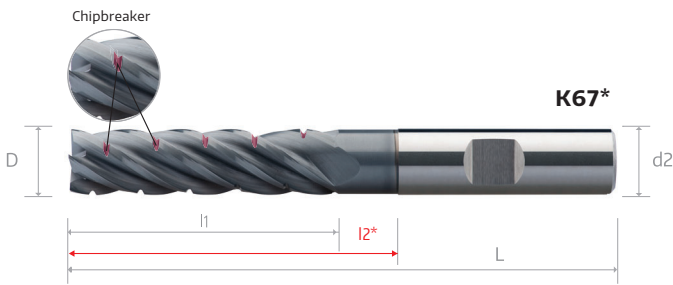
Ø1-Ø3 within 10µm
 Ø4-Ø8 within 15µm
 ≥ Ø10 within 20µm

Cutting Parameter

59

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





EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						K67*
	D	l1	l2	L	d2 (h6)	R	Coolant Hole
= * + Ø data							Recess*
0600 075	6	26	32	75	6	0.1	•
0800 075	8	32	38	75	8	0.15	•
1000 100	10	42	52	100	10	0.2	•
1200 100	12	42	54	100	12	0.2	•
1600 125	16	60	68	125	16	0.3	•
2000 125	20	67	75	125	20	0.3	•

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



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

Cutting Parameter

60

DP/DH SERIES

949 DP/DH

C49 DP/DH With Weldon

K78 DP/DH With Recess
And Weldon

01

Differential Helix Design

· To reduce the cutting forces and improves machining performance

02

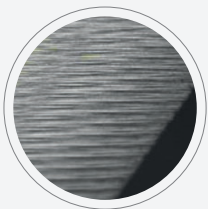
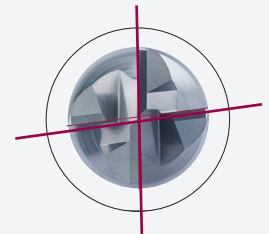
Differential Pitch Design

· For chatter free machining and excellent surface finishes

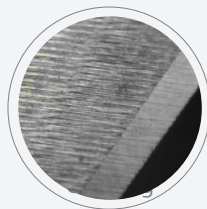
03

The Prefect Edge Design

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



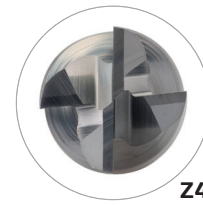
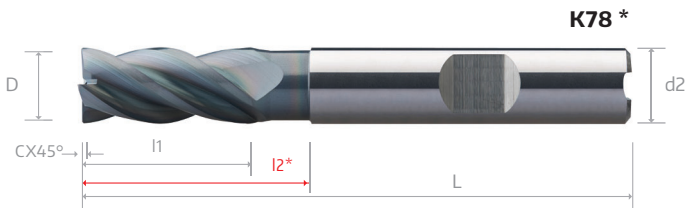
Eccentric Grinding



Perfect Edge Grinding

949/C49/K78

DP/DH STANDARD ENDMILLS,
ALSO WITH RECESS AND WELDON



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						949*	C49*	K78*
	D	l1	l2*	L	d2 (h6)	C	HA	HB	HB
							G6110 Normal	G6110 Normal	G6110 Recess*
= * + Ø data									
0400	4	11	15	57	6	0.1	•	○	○
0500	5	13	18	57	6	0.1	•	○	○
0600	6	13	19	57	6	0.1	•	○	○
0800	8	20	26	64	8	0.2	•	○	○
1000	10	22	30	72	10	0.2	•	○	○
1200	12	26	36	83	12	0.2	•	○	○
1400	14	26	36	83	14	0.3	•	○	○
1600	16	32	42	92	16	0.3	•	○	○
1800	18	32	-	92	18	0.3	•	○	○
2000	20	38	52	104	20	0.4	•	○	○

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

51 - 53

DP/DH SERIES



K70 DP/DH OH With Recess And Weldon

01

Differential Helix Design

- To reduce the cutting forces and improves machining performance

02

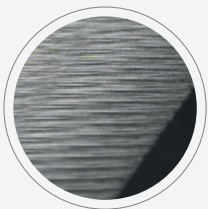
Differential Pitch Design

- For chatter free machining and excellent surface finishes

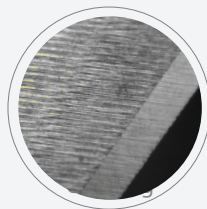
03

The Prefect Edge Design

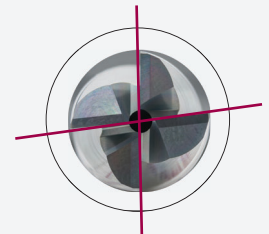
- Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life



Eccentric Grinding



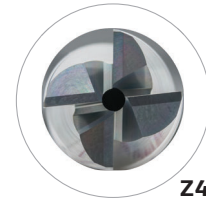
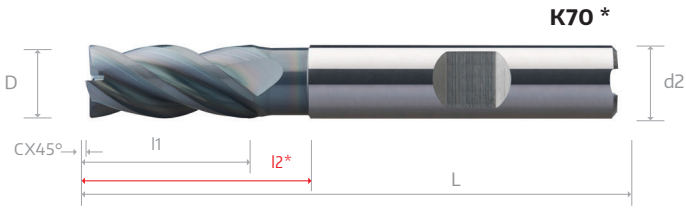
Perfect Edge Grinding



04

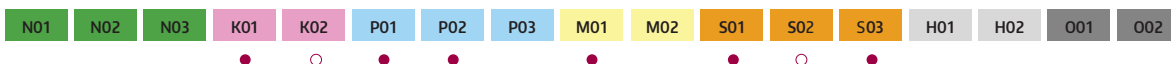
Oil Hole for High Performance Milling

- Improves welding resistance
- Enables a wide range of machining processes
- Especially beneficial for difficult to cut materials, offering stable machining



EDP-Nr / EDP No.	Dimension (mm)						K70*
	D	l1	l2*	L	d2 (h6)	C	Coolant Hole
							Recess*
0400	4	11	15	57	6	0.1	○
0500	5	13	18	57	6	0.1	○
0600	6	13	19	57	6	0.1	○
0800	8	20	26	64	8	0.2	○
1000	10	22	30	72	10	0.2	○
1200	12	26	36	83	12	0.2	○
1400	14	26	36	83	14	0.3	○
1600	16	32	42	92	16	0.3	○
2000	20	38	52	104	20	0.4	○

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



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

Cutting Parameter

54 - 55

DP/DH SERIES

C48 DP/DH Torus

C50 DP/DH Torus With Weldon

A1R DP/DH Torus

A1T DP/DH Torus With Weldon

J97 DP/DH Torus

J98 DP/DH Torus With Weldon

H38 DP/DH Torus With Recess

H39 DP/DH Torus With Recess and Weldon

01

Differential Helix Design

· To reduce the cutting forces and improves machining performance

02

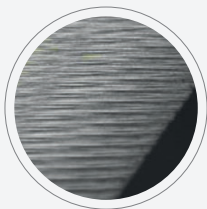
Differential Pitch Design

· For chatter free machining and excellent surface finishes

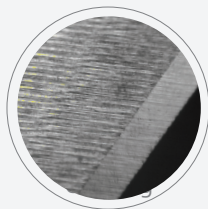
03

The Prefect Edge Design

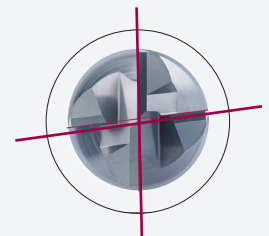
· Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life



Eccentric Grinding



Perfect Edge Grinding



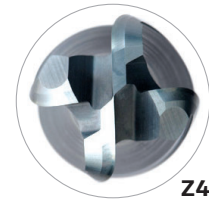
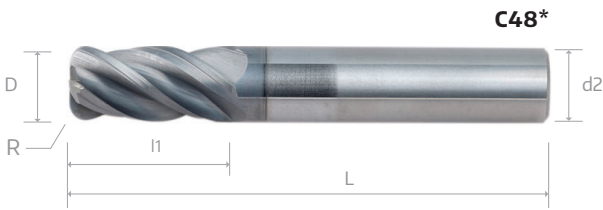
04

Corner Radius

· Available for more precise finishing and superior corner protection

C48 / C50 / A1R / A1T

DP/DH TORUS ENDMILLS,
ALSO WITH WELDON

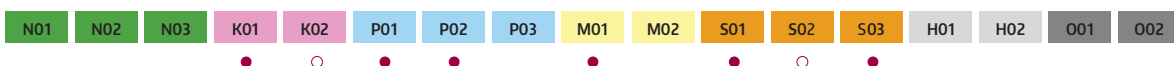


EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C48*	A1R*	C50*	A1T*
	D	l1	l2	L	d2 (h6)	R	HA	HB	HA	HB
							G6110 Normal	B0909 Normal	G6110 Normal	B0909 Normal
0400 057 0600 030	4	11		57	6	0.3	•	•	•	•
0400 057 0600 050	4	11		57	6	0.5	•	•	•	•
0500 057 0600 030	5	13		57	6	0.3	•	•	•	•
0500 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	•	•	•	•
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	•	•	•	•

cont'd ▶

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

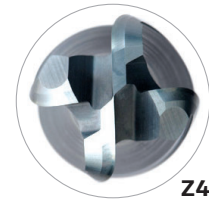
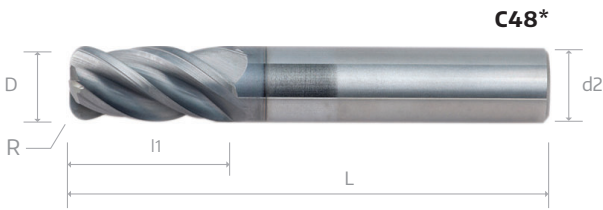
Cutting Parameter



51 - 53

C48 / C50 / A1R / A1T

DP/DH TORUS ENDMILLS,
ALSO WITH WELDON



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C48*	A1R*	C50*	A1T*
	D	l1	l2	L	d2 (h6)	R	HA	HB	HA	HB
							G6110 Normal	B0909 Normal	G6110 Normal	B0909 Normal
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

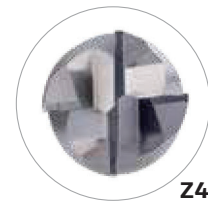
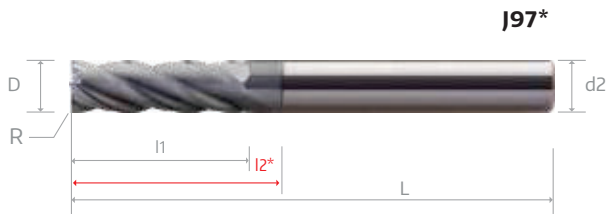
Cutting Parameter



51 - 53

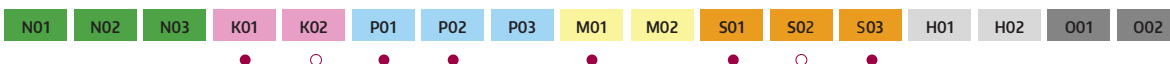
J97 / J98 / H38 / H39

DP/DH LONG TORUS
ENDMILLS, ALSO WITH
RECESS & WELDON



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						J97*	H38*	J98*	H39*
	D	l1	l2*	L	d2 (h6)	R	HA	HA	HB	HB
= * + Ø data							Normal	Recess*	Normal	Recess*
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	○	○	○	○

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

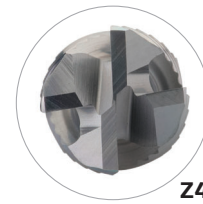
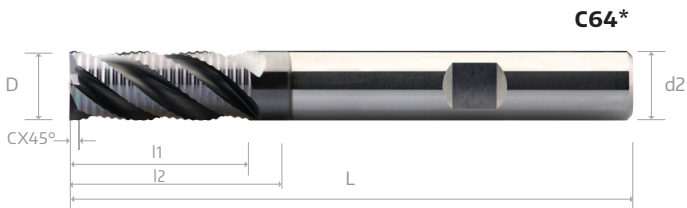


CNC Repeatability

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

Cutting Parameter

55



*L= ~ DIN 6527L



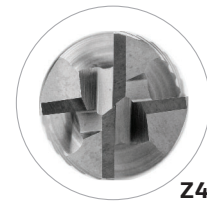
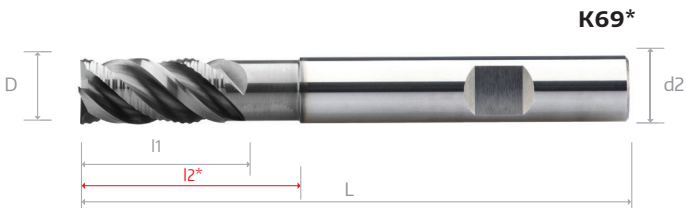
EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						C47*	C64*
	D	l1	l2	L	d2 (h6)	C	HA	HB
= * + Ø data							Normal	Normal
0600 050	6	16		50	6	0.1	○	○
* 0600 057	6	16		57	6	0.1	●	●
* 0800 064	8	20		64	8	0.2	●	●
1000 070	10	22		70	10	0.2	○	○
* 1000 072	10	22		72	10	0.2	●	●
1000 075	10	22		75	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

Cutting Parameter



56



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						K69*
	D	l1	l2*	L	d2 (h6)	C	HB Recess*
0600	6	14	20	62	6	0.2	○
0800	8	18	26	68	8	0.2	○
1000	10	22	32	80	10	0.2	○
1200	12	26	38	83	12	0.2	○
1600	16	34	44	92	16	0.3	○
2000	20	42	60	110	20	0.3	○

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

Cutting Parameter

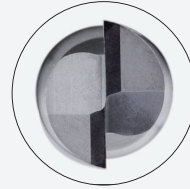


50 - 51

MINIATURE SERIES



G87 Long Neck Endmills



01

Reinforced neck design for better stability

- Performs high precision roughing and finishing without the deflection

02

Reduced neck diameter to avoid heeling

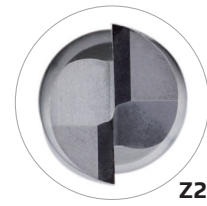
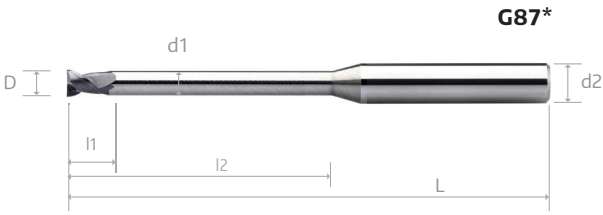
- Improves Performance in Off Center Contour Milling applications

03

Tough PVD coating plus carbide selection

- Superior wear and chipping resistance, prolongs tool life and enables higher cutting feeds and speeds





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

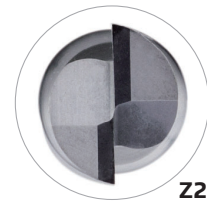
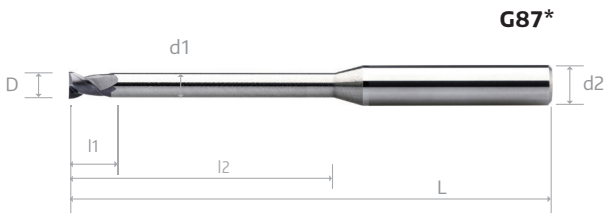
cont'd ►

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

61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						G87*
	D	l1	l2	d1	L	d2 (h6)	Normal
0070 050 0400 080	0.7	1.0	8	0.65	50	4	•
0070 050 0400 100	0.7	1.0	10	0.65	50	4	•
0080 050 0400	0.8	1.2	-	0.75	50	4	•
0080 050 0400 040	0.8	1.2	4	0.75	50	4	•
0080 050 0400 060	0.8	1.2	6	0.75	50	4	•
0080 050 0400 080	0.8	1.2	8	0.75	50	4	•
0080 050 0400 100	0.8	1.2	10	0.75	50	4	•
0080 050 0400 120	0.8	1.2	12	0.75	50	4	•
0090 050 0400	0.9	1.4	-	0.85	50	4	•
0090 050 0400 060	0.9	1.4	6	0.85	50	4	•
0090 050 0400 080	0.9	1.4	8	0.85	50	4	•
0090 050 0400 100	0.9	1.4	10	0.85	50	4	•
0090 050 0400 150	0.9	1.4	15	0.85	50	4	•
0100 050 0400	1.0	1.5	-	0.9	50	4	•
0100 050 0400 060	1.0	1.5	6	0.9	50	4	•
0100 050 0400 080	1.0	1.5	8	0.9	50	4	•
0100 050 0400 100	1.0	1.5	10	0.9	50	4	•
0100 050 0400 120	1.0	1.5	12	0.9	50	4	•
0100 050 0400 140	1.0	1.5	14	0.9	50	4	•
0100 050 0400 160	1.0	1.5	16	0.9	50	4	•
0120 050 0400	1.2	1.8	-	1.1	50	4	•
0120 050 0400 060	1.2	1.8	6	1.1	50	4	•
0120 050 0400 080	1.2	1.8	8	1.1	50	4	•
0120 050 0400 100	1.2	1.8	10	1.1	50	4	•
0120 050 0400 120	1.2	1.8	12	1.1	50	4	•
0140 050 0400	1.4	2.1	-	1.3	50	4	•
0140 050 0400 060	1.4	2.1	6	1.3	50	4	•
0140 050 0400 080	1.4	2.1	8	1.3	50	4	•

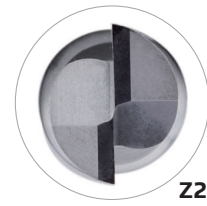
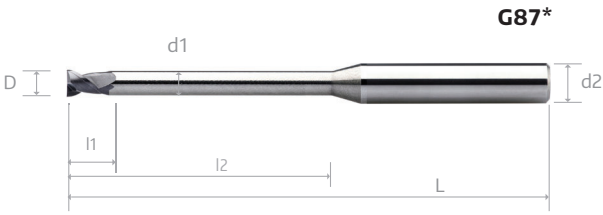
cont'd ►

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

61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						G87*
	D	l1	l2	d1	L	d2 (h6)	Normal
0140 050 0400 100	1.4	2.1	10	1.3	50	4	•
0140 050 0400 120	1.4	2.1	12	1.3	50	4	•
0140 050 0400 140	1.4	2.1	14	1.3	50	4	•
0140 050 0400 160	1.4	2.1	16	1.3	50	4	•
0150 050 0400	1.5	2.3	-	1.4	50	4	•
0150 050 0400 060	1.5	2.3	6	1.4	50	4	•
0150 050 0400 080	1.5	2.3	8	1.4	50	4	•
0150 050 0400 100	1.5	2.3	10	1.4	50	4	•
0150 050 0400 120	1.5	2.3	12	1.4	50	4	•
0150 050 0400 140	1.5	2.3	14	1.4	50	4	•
0150 050 0400 160	1.5	2.3	16	1.4	50	4	•
0150 060 0400	1.5	2.3	-	1.4	60	4	•
0150 060 0400 180	1.5	2.3	18	1.4	60	4	•
0150 060 0400 200	1.5	2.3	20	1.4	60	4	•
0160 050 0400	1.6	2.4	-	1.5	50	4	•
0160 050 0400 060	1.6	2.4	6	1.5	50	4	•
0160 050 0400 080	1.6	2.4	8	1.5	50	4	•
0160 050 0400 100	1.6	2.4	10	1.5	50	4	•
0160 050 0400 120	1.6	2.4	12	1.5	50	4	•
0160 050 0400 140	1.6	2.4	14	1.5	50	4	•
0160 050 0400 160	1.6	2.4	16	1.5	50	4	•
0160 060 0400	1.6	2.4	-	1.5	60	4	•
0160 060 0400 180	1.6	2.4	18	1.5	60	4	•
0160 060 0400 200	1.6	2.4	20	1.5	60	4	•
0180 050 0400	1.8	2.7	-	1.7	50	4	•
0180 050 0400 060	1.8	2.7	6	1.7	50	4	•
0180 050 0400 080	1.8	2.7	8	1.7	50	4	•
0180 050 0400 100	1.8	2.7	10	1.7	50	4	•

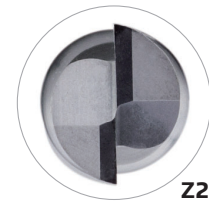
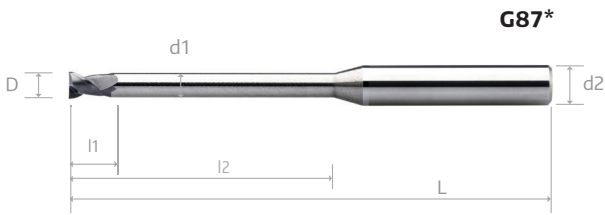
cont'd ►

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

Cutting Parameter



61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						G87*
	D	l1	l2	d1	L	d2 (h6)	Normal
0180 050 0400 120	1.8	2.7	12	1.7	50	4	•
0180 050 0400 140	1.8	2.7	14	1.7	50	4	•
0180 050 0400 160	1.8	2.7	16	1.7	50	4	•
0180 060 0400	1.8	2.7	-	1.7	60	4	•
0180 060 0400 180	1.8	2.7	18	1.7	60	4	•
0180 060 0400 200	1.8	2.7	20	1.7	60	4	•
0200 050 0400	2	3	-	1.9	50	4	•
0200 050 0400 060	2	3	6	1.9	50	4	•
0200 050 0400 080	2	3	8	1.9	50	4	•
0200 050 0400 100	2	3	10	1.9	50	4	•
0200 050 0400 120	2	3	12	1.9	50	4	•
0200 050 0400 140	2	3	14	1.9	50	4	•
0200 050 0400 160	2	3	16	1.9	50	4	•
0200 060 0400	2	3	-	1.9	60	4	•
0200 060 0400 180	2	3	18	1.9	60	4	•
0200 060 0400 200	2	3	20	1.9	60	4	•
0200 075 0400	2	3	-	1.9	75	4	•
0200 075 0400 250	2	3	25	1.9	75	4	•
0200 075 0400 300	2	3	30	1.9	75	4	•
0250 050 0400	2.5	3.7	-	2.4	50	4	•
0250 050 0400 080	2.5	3.7	8	2.4	50	4	•
0250 050 0400 100	2.5	3.7	10	2.4	50	4	•
0250 050 0400 120	2.5	3.7	12	2.4	50	4	•
0250 050 0400 140	2.5	3.7	14	2.4	50	4	•
0250 050 0400 160	2.5	3.7	16	2.4	50	4	•
0250 060 0400	2.5	3.7	-	2.4	60	4	•
0250 060 0400 180	2.5	3.7	18	2.4	60	4	•
0250 060 0400 200	2.5	3.7	20	2.4	60	4	•

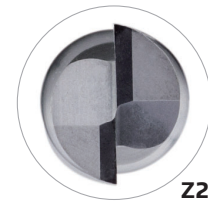
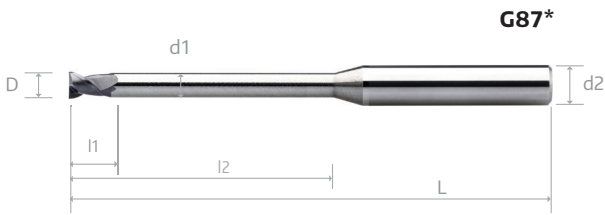
cont'd ►

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
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)						G87*
	D	l1	l2	d1	L	d2 (h6)	Normal
= * + Ø data							
0250 060 0400 250	2.5	3.7	25	2.4	60	4	•
0250 075 0400	2.5	3.7	-	2.4	75	4	•
0250 075 0400 300	2.5	3.7	30	2.4	75	4	•
0300 050 0600	3	4.5	-	2.8	50	6	•
0300 050 0600 080	3	4.5	8	2.8	50	6	•
0300 050 0600 100	3	4.5	10	2.8	50	6	•
0300 050 0600 120	3	4.5	12	2.8	50	6	•
0300 050 0600 140	3	4.5	14	2.8	50	6	•
0300 060 0600	3	4.5	-	2.8	60	6	•
0300 060 0600 160	3	4.5	16	2.8	60	6	•
0300 060 0600 180	3	4.5	18	2.8	60	6	•
0300 060 0600 200	3	4.5	20	2.8	60	6	•
0300 075 0600	3	4.5	-	2.8	75	6	•
0300 075 0600 250	3	4.5	25	2.8	75	6	•
0400 060 0600	4	4.5	-	3.7	60	6	•
0400 060 0600 100	4	4.5	10	3.7	60	6	•
0400 060 0600 150	4	4.5	15	3.7	60	6	•
0400 060 0600 200	4	4.5	20	3.7	60	6	•
0400 075 0600	4	4.5	-	3.7	75	6	•
0400 075 0600 250	4	4.5	25	3.7	75	6	•
0400 075 0600 300	4	4.5	30	3.7	75	6	•
0400 075 0600 400	4	4.5	40	3.7	75	6	•

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

Cutting Parameter

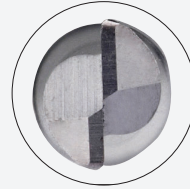


61 - 66

MINIATURE SERIES



H56 Torus Long Neck Endmills



01

Reinforced neck design for better stability

- Performs high precision roughing and finishing without the deflection

02

Reduced neck diameter to avoid heeling

- Improves Performance in Off Center Contour Milling applications

03

Tough PVD coating plus carbide selection

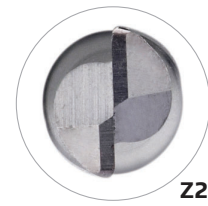
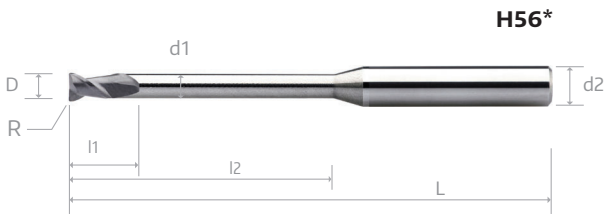
- Superior wear and chipping resistance, prolongs tool life and enables higher cutting feeds and speeds



04

Corner Radius

- Available for more precise finishing and superior corner protection



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							H56*
	D	l1	l2	d1	L	d2 (h6)	R	Normal
0020 050 0400	0.2	0.3	-	0.17	50	4	0.05	•
0020 050 0400 005	0.2	0.3	0.5	0.17	50	4	0.05	•
0020 050 0400 010	0.2	0.3	1	0.17	50	4	0.05	•
0020 050 0400 015	0.2	0.3	1.5	0.17	50	4	0.05	•
0030 050 0400	0.3	0.4	-	0.27	50	4	0.05	•
0030 050 0400 010	0.3	0.4	1	0.27	50	4	0.05	•
0030 050 0400 020	0.3	0.4	2	0.27	50	4	0.05	•
0030 050 0400 030	0.3	0.4	3	0.27	50	4	0.05	•
0040 050 0400	0.4	0.6	-	0.37	50	4	0.05	•
0040 050 0400 020	0.4	0.6	2	0.37	50	4	0.05	•
0040 050 0400 030	0.4	0.6	3	0.37	50	4	0.05	•
0040 050 0400 040	0.4	0.6	4	0.37	50	4	0.05	•
0040 050 0400 050	0.4	0.6	5	0.37	50	4	0.05	•
0050 050 0400	0.5	0.7	-	0.45	50	4	0.05	•
0050 050 0400 020	0.5	0.7	2	0.45	50	4	0.05	•
0050 050 0400 040	0.5	0.7	4	0.45	50	4	0.05	•
0050 050 0400 060	0.5	0.7	6	0.45	50	4	0.05	•
0050 050 0400 080	0.5	0.7	8	0.45	50	4	0.05	•
0060 050 0400	0.6	0.9	-	0.55	50	4	0.05	•
0060 050 0400 020	0.6	0.9	2	0.55	50	4	0.05	•
0060 050 0400 040	0.6	0.9	4	0.55	50	4	0.05	•
0060 050 0400 060	0.6	0.9	6	0.55	50	4	0.05	•
0060 050 0400 080	0.6	0.9	8	0.55	50	4	0.05	•
0060 050 0400 100	0.6	0.9	10	0.55	50	4	0.05	•
0070 050 0400	0.7	1	-	0.65	50	4	0.1	•
0070 050 0400 020	0.7	1	2	0.65	50	4	0.1	•
0070 050 0400 040	0.7	1	4	0.65	50	4	0.1	•
0070 050 0400 060	0.7	1	6	0.65	50	4	0.1	•

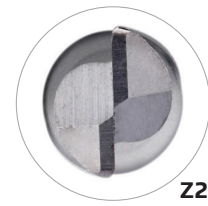
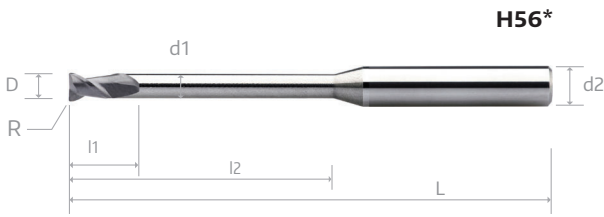
cont'd ►

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

Cutting Parameter



61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							H56*
	D	l1	l2	d1	L	d2 (h6)	R	Normal
= * + Ø data								
0070 050 0400 080	0.7	1	8	0.65	50	4	0.1	•
0070 050 0400 100	0.7	1	10	0.65	50	4	0.1	•
0080 050 0400	0.8	1.2	-	0.75	50	4	0.1	•
0080 050 0400 040	0.8	1.2	4	0.75	50	4	0.1	•
0080 050 0400 060	0.8	1.2	6	0.75	50	4	0.1	•
0080 050 0400 080	0.8	1.2	8	0.75	50	4	0.1	•
0080 050 0400 100	0.8	1.2	10	0.75	50	4	0.1	•
0080 050 0400 120	0.8	1.2	12	0.75	50	4	0.1	•
0090 050 0400	0.9	1.4	-	0.85	50	4	0.1	•
0090 050 0400 060	0.9	1.4	6	0.85	50	4	0.1	•
0090 050 0400 080	0.9	1.4	8	0.85	50	4	0.1	•
0090 050 0400 100	0.9	1.4	10	0.85	50	4	0.1	•
0090 050 0400 150	0.9	1.4	15	0.85	50	4	0.1	•
0100 050 0400	1.0	1.5	-	0.9	50	4	0.1	•
0100 050 0400 060	1.0	1.5	6	0.9	50	4	0.1	•
0100 050 0400 080	1.0	1.5	8	0.9	50	4	0.1	•
0100 050 0400 100	1.0	1.5	10	0.9	50	4	0.1	•
0100 050 0400 120	1.0	1.5	12	0.9	50	4	0.1	•
0100 050 0400 140	1.0	1.5	14	0.9	50	4	0.1	•
0100 050 0400 160	1.0	1.5	16	0.9	50	4	0.1	•
0120 050 0400	1.2	1.8	-	1.1	50	4	0.1	•
0120 050 0400 060	1.2	1.8	6	1.1	50	4	0.1	•
0120 050 0400 080	1.2	1.8	8	1.1	50	4	0.1	•
0120 050 0400 100	1.2	1.8	10	1.1	50	4	0.1	•
0120 050 0400 120	1.2	1.8	12	1.1	50	4	0.1	•
0140 050 0400	1.4	2.1	-	1.3	50	4	0.1	•
0140 050 0400 060	1.4	2.1	6	1.3	50	4	0.1	•
0140 050 0400 080	1.4	2.1	8	1.3	50	4	0.1	•

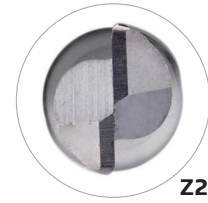
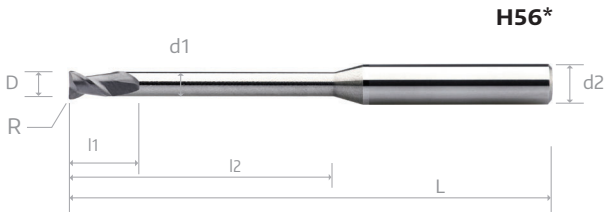
cont'd ►

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

61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							H56*
	D	l1	l2	d1	L	d2 (h6)	R	Normal
= * + Ø data								
0140 050 0400 100	1.4	2.1	10	1.3	50	4	0.1	•
0140 050 0400 120	1.4	2.1	12	1.3	50	4	0.1	•
0140 050 0400 140	1.4	2.1	14	1.3	50	4	0.1	•
0140 050 0400 160	1.4	2.1	16	1.3	50	4	0.1	•
0150 050 0400	1.5	2.3	-	1.4	50	4	0.2	•
0150 050 0400 060	1.5	2.3	6	1.4	50	4	0.2	•
0150 050 0400 080	1.5	2.3	8	1.4	50	4	0.2	•
0150 050 0400 100	1.5	2.3	10	1.4	50	4	0.2	•
0150 050 0400 120	1.5	2.3	12	1.4	50	4	0.2	•
0150 050 0400 140	1.5	2.3	14	1.4	50	4	0.2	•
0150 050 0400 160	1.5	2.3	16	1.4	50	4	0.2	•
0150 060 0400	1.5	2.3	-	1.4	60	4	0.2	•
0150 060 0400 180	1.5	2.3	18	1.4	60	4	0.2	•
0150 060 0400 200	1.5	2.3	20	1.4	60	4	0.2	•
0160 050 0400	1.6	2.4	-	1.5	50	4	0.2	•
0160 050 0400 060	1.6	2.4	6	1.5	50	4	0.2	•
0160 050 0400 080	1.6	2.4	8	1.5	50	4	0.2	•
0160 050 0400 100	1.6	2.4	10	1.5	50	4	0.2	•
0160 050 0400 120	1.6	2.4	12	1.5	50	4	0.2	•
0160 050 0400 140	1.6	2.4	14	1.5	50	4	0.2	•
0160 050 0400 160	1.6	2.4	16	1.5	50	4	0.2	•
0160 060 0400	1.6	2.4	-	1.5	60	4	0.2	•
0160 060 0400 180	1.6	2.4	18	1.5	60	4	0.2	•
0160 060 0400 200	1.6	2.4	20	1.5	60	4	0.2	•
0180 050 0400	1.8	2.7	-	1.7	50	4	0.2	•
0180 050 0400 060	1.8	2.7	6	1.7	50	4	0.2	•
0180 050 0400 080	1.8	2.7	8	1.7	50	4	0.2	•
0180 050 0400 100	1.8	2.7	10	1.7	50	4	0.2	•

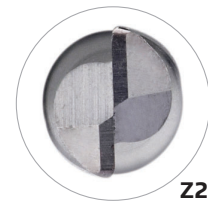
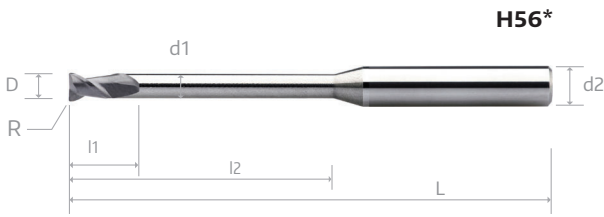
cont'd ►

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

Cutting Parameter



61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							H56*
	D	l1	l2	d1	L	d2 (h6)	R	Normal
0180 050 0400 120	1.8	2.7	12	1.7	50	4	0.2	•
0180 050 0400 140	1.8	2.7	14	1.7	50	4	0.2	•
0180 050 0400 160	1.8	2.7	16	1.7	50	4	0.2	•
0180 060 0400	1.8	2.7	-	1.7	60	4	0.2	•
0180 060 0400 180	1.8	2.7	18	1.7	60	4	0.2	•
0180 060 0400 200	1.8	2.7	20	1.7	60	4	0.2	•
0200 050 0400	2	3	-	1.9	50	4	0.2	•
0200 050 0400 060	2	3	6	1.9	50	4	0.2	•
0200 050 0400 080	2	3	8	1.9	50	4	0.2	•
0200 050 0400 100	2	3	10	1.9	50	4	0.2	•
0200 050 0400 120	2	3	12	1.9	50	4	0.2	•
0200 050 0400 140	2	3	14	1.9	50	4	0.2	•
0200 050 0400 160	2	3	16	1.9	50	4	0.2	•
0200 060 0400	2	3	-	1.9	60	4	0.2	•
0200 060 0400 180	2	3	18	1.9	60	4	0.2	•
0200 060 0400 200	2	3	20	1.9	60	4	0.2	•
0200 075 0400	2	3	-	1.9	75	4	0.2	•
0200 075 0400 250	2	3	25	1.9	75	4	0.2	•
0200 075 0400 300	2	3	30	1.9	75	4	0.2	•
0250 050 0400	2.5	3.7	-	2.4	50	4	0.3	•
0250 050 0400 080	2.5	3.7	8	2.4	50	4	0.3	•
0250 050 0400 100	2.5	3.7	10	2.4	50	4	0.3	•
0250 050 0400 120	2.5	3.7	12	2.4	50	4	0.3	•
0250 050 0400 140	2.5	3.7	14	2.4	50	4	0.3	•
0250 050 0400 160	2.5	3.7	16	2.4	50	4	0.3	•
0250 060 0400	2.5	3.7	-	2.4	60	4	0.3	•
0250 060 0400 180	2.5	3.7	18	2.4	60	4	0.3	•
0250 060 0400 200	2.5	3.7	20	2.4	60	4	0.3	•

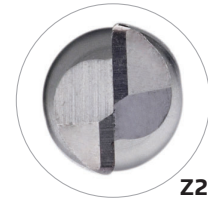
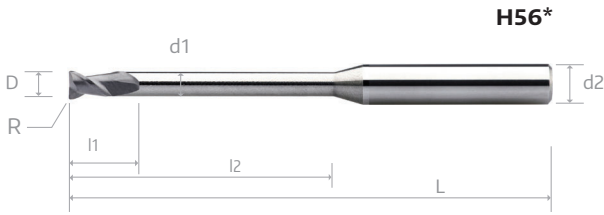
cont'd ►

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

Cutting Parameter

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

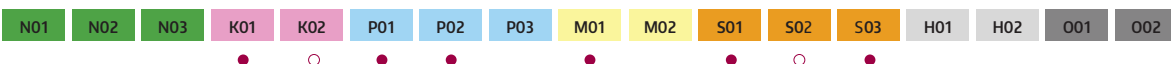
61 - 66



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							H56*
	D	l1	l2	d1	L	d2 (h6)	R	Normal
0250 060 0400 250	2.5	3.7	25	2.4	60	4	0.3	•
0250 075 0400	2.5	3.7	-	2.4	75	4	0.3	•
0250 075 0400 300	2.5	3.7	30	2.4	75	4	0.3	•
0300 050 0600	3	4.5	-	2.8	50	6	0.3	•
0300 050 0600 080	3	4.5	8	2.8	50	6	0.3	•
0300 050 0600 100	3	4.5	10	2.8	50	6	0.3	•
0300 050 0600 120	3	4.5	12	2.8	50	6	0.3	•
0300 050 0600 140	3	4.5	14	2.8	50	6	0.3	•
0300 060 0600	3	4.5	-	2.8	60	6	0.3	•
0300 060 0600 160	3	4.5	16	2.8	60	6	0.3	•
0300 060 0600 180	3	4.5	18	2.8	60	6	0.3	•
0300 060 0600 200	3	4.5	20	2.8	60	6	0.3	•
0300 075 0600	3	4.5	-	2.8	75	6	0.3	•
0300 075 0600 250	3	4.5	25	2.8	75	6	0.3	•
0400 060 0600	4	4.5	10	3.7	60	6	0.4	•
0400 060 0600 100	4	4.5	10	3.7	60	6	0.4	•
0400 060 0600 150	4	4.5	15	3.7	60	6	0.4	•
0400 060 0600 200	4	4.5	20	3.7	60	6	0.4	•
0400 075 0600	4	4.5	-	3.7	75	6	0.4	•
0400 075 0600 250	4	4.5	25	3.7	75	6	0.4	•
0400 075 0600 300	4	4.5	30	3.7	75	6	0.4	•
0400 075 0600 400	4	4.5	40	3.7	75	6	0.4	•

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

Cutting Parameter



61 - 66

MINIATURE SERIES



G88 Long Neck Ballnose Cutters



01

Reinforced neck design for better stability

- Performs high precision roughing and finishing without the deflection

02

Reduced neck diameter to avoid heeling

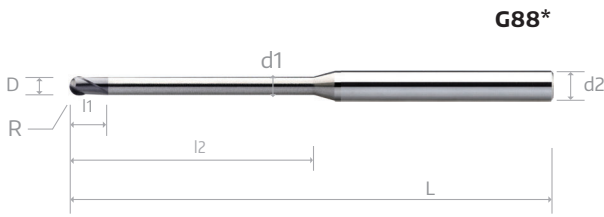
- Improves Performance in Off Center Contour Milling applications

03

Tough PVD coating plus carbide selection

- Superior wear and chipping resistance, prolongs tool life and enables higher cutting feeds and speeds



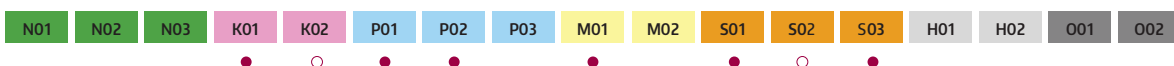


EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							G88*
	D	R	l1	l2	d1	L	d2 (h6)	
= * + Ø data								Normal
0020 050 0400	0.2	0.10	0.2	-	0.17	50	4	•
0020 050 0400 005	0.2	0.10	0.2	0.5	0.17	50	4	•
0020 050 0400 010	0.2	0.10	0.2	1	0.17	50	4	•
0020 050 0400 015	0.2	0.10	0.2	1.5	0.17	50	4	•
0030 050 0400	0.3	0.15	0.3	-	0.27	50	4	•
0030 050 0400 010	0.3	0.15	0.3	1	0.27	50	4	•
0030 050 0400 020	0.3	0.15	0.3	2	0.27	50	4	•
0030 050 0400 030	0.3	0.15	0.3	3	0.27	50	4	•
0040 050 0400	0.4	0.20	0.4	-	0.37	50	4	•
0040 050 0400 010	0.4	0.20	0.4	1	0.37	50	4	•
0040 050 0400 020	0.4	0.20	0.4	2	0.37	50	4	•
0040 050 0400 030	0.4	0.20	0.4	3	0.37	50	4	•
0040 050 0400 040	0.4	0.20	0.4	4	0.37	50	4	•
0040 050 0400 050	0.4	0.20	0.4	5	0.37	50	4	•
0050 050 0400	0.5	0.25	0.4	-	0.45	50	4	•
0050 050 0400 020	0.5	0.25	0.4	2	0.45	50	4	•
0050 050 0400 030	0.5	0.25	0.4	3	0.45	50	4	•
0050 050 0400 040	0.5	0.25	0.4	4	0.45	50	4	•
0050 050 0400 050	0.5	0.25	0.4	5	0.45	50	4	•
0050 050 0400 060	0.5	0.25	0.4	6	0.45	50	4	•
0050 050 0400 080	0.5	0.25	0.4	8	0.45	50	4	•
0060 050 0400	0.6	0.30	0.5	-	0.55	50	4	•
0060 050 0400 020	0.6	0.30	0.5	2	0.55	50	4	•
0060 050 0400 030	0.6	0.30	0.5	3	0.55	50	4	•
0060 050 0400 040	0.6	0.30	0.5	4	0.55	50	4	•
0060 050 0400 050	0.6	0.30	0.5	5	0.55	50	4	•
0060 050 0400 060	0.6	0.30	0.5	6	0.55	50	4	•
0060 050 0400 080	0.6	0.30	0.5	8	0.55	50	4	•

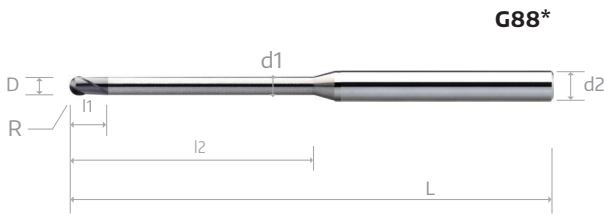
cont'd ►

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

Cutting Parameter



67 - 72



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							G88*
	D	R	l1	l2	d1	L	d2 (h6)	Normal
0080 050 0400	0.8	0.4	0.6	-	0.75	50	4	•
0080 050 0400 020	0.8	0.4	0.6	2	0.75	50	4	•
0080 050 0400 040	0.8	0.4	0.6	4	0.75	50	4	•
0080 050 0400 050	0.8	0.4	0.6	5	0.75	50	4	•
0080 050 0400 060	0.8	0.4	0.6	6	0.75	50	4	•
0080 050 0400 070	0.8	0.4	0.6	7	0.75	50	4	•
0080 050 0400 080	0.8	0.4	0.6	8	0.75	50	4	•
0080 050 0400 100	0.8	0.4	0.6	10	0.75	50	4	•
0100 050 0400	1	0.5	0.8	-	0.9	50	4	•
0100 050 0400 030	1	0.5	0.8	3	0.9	50	4	•
0100 050 0400 040	1	0.5	0.8	4	0.9	50	4	•
0100 050 0400 050	1	0.5	0.8	5	0.9	50	4	•
0100 050 0400 060	1	0.5	0.8	6	0.9	50	4	•
0100 050 0400 070	1	0.5	0.8	7	0.9	50	4	•
0100 050 0400 080	1	0.5	0.8	8	0.9	50	4	•
0100 050 0400 090	1	0.5	0.8	9	0.9	50	4	•
0100 050 0400 100	1	0.5	0.8	10	0.9	50	4	•
0100 050 0400 120	1	0.5	0.8	12	0.9	50	4	•
0100 050 0400 140	1	0.5	0.8	14	0.9	50	4	•
0100 060 0400	1	0.5	0.8	-	0.9	60	4	•
0100 060 0400 200	1	0.5	0.8	20	0.9	60	4	•
0120 050 0400	1.2	0.6	1.0	-	1.1	50	4	•
0120 050 0400 060	1.2	0.6	1.0	6	1.1	50	4	•
0120 050 0400 080	1.2	0.6	1.0	8	1.1	50	4	•
0120 050 0400 100	1.2	0.6	1.0	10	1.1	50	4	•
0120 050 0400 120	1.2	0.6	1.0	12	1.1	50	4	•
0140 050 0400	1.4	0.7	1.1	-	1.3	50	4	•
0140 050 0400 080	1.4	0.7	1.1	8	1.3	50	4	•

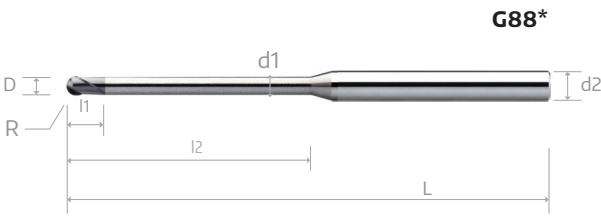
cont'd ►

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
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

67 - 72

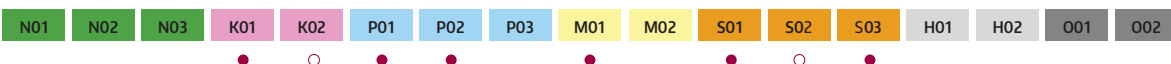


EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							G88*
	D	R	l1	l2	d1	L	d2 (h6)	Normal
= * + Ø data								
0140 050 0400 120	1.4	0.7	1.1	12	1.3	50	4	•
0140 050 0400 160	1.4	0.7	1.1	16	1.3	50	4	•
0150 050 0400	1.5	0.75	1.2	-	-	50	4	•
0150 050 0400 080	1.5	0.75	1.2	8	1.4	50	4	•
0150 050 0400 120	1.5	0.75	1.2	12	1.4	50	4	•
0150 050 0400 160	1.5	0.75	1.2	16	1.4	50	4	•
0150 060 0400	1.5	0.75	1.2	-	-	60	4	•
0150 060 0400 180	1.6	0.8	1.3	18	1.5	60	4	•
0160 050 0400	1.6	0.8	1.3	-	-	50	4	•
0160 050 0400 080	1.6	0.8	1.3	8	1.5	50	4	•
0160 050 0400 120	1.6	0.8	1.3	12	1.5	50	4	•
0160 050 0400 160	1.6	0.8	1.3	16	1.5	50	4	•
0160 060 0400	1.6	0.8	1.3	-	-	60	4	•
0160 060 0400 200	1.6	0.8	1.3	20	1.5	60	4	•
0180 050 0400	1.8	0.9	1.4	-	-	50	4	•
0180 050 0400 080	1.8	0.9	1.4	8	1.7	50	4	•
0180 050 0400 120	1.8	0.9	1.4	12	1.7	50	4	•
0180 050 0400 160	1.8	0.9	1.4	16	1.7	50	4	•
0180 060 0400	1.8	0.9	1.4	-	1.7	60	4	•
0180 060 0400 200	1.8	0.9	1.4	20	1.7	60	4	•
0200 050 0400	2	1	1.6	-	-	50	4	•
0200 050 0400 040	2	1	1.6	4	1.9	50	4	•
0200 050 0400 060	2	1	1.6	6	1.9	50	4	•
0200 050 0400 080	2	1	1.6	8	1.9	50	4	•
0200 050 0400 100	2	1	1.6	10	1.9	50	4	•
0200 050 0400 120	2	1	1.6	12	1.9	50	4	•
0200 050 0400 140	2	1	1.6	14	1.9	50	4	•
0200 050 0400 160	2	1	1.6	16	1.9	50	4	•
0200 060 0400	2	1	1.6	-	-	60	4	•

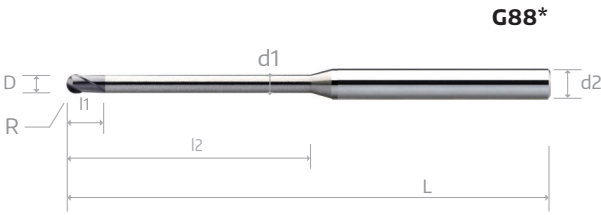
cont'd ►

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

Cutting Parameter



67 - 72



EDP No. / EDV-Nr / CODE usine / Codice EDP	Dimension (mm)							G88*
	D	R	l1	l2	d1	L	d2 (h6)	Normal
= * + Ø data								
0200 060 0400 180	2	1	1.6	18	1.9	60	4	•
0200 060 0400 200	2	1	1.6	20	1.9	60	4	•
0200 060 0400 220	2	1	1.6	22	1.9	60	4	•
0200 075 0400	2	1	1.6	-	1.9	75	4	•
0200 075 0400 250	2	1	1.6	25	1.9	75	4	•
0200 075 0400 300	2	1	1.6	30	1.9	75	4	•
0300 050 0600	3	2	2.4	-	2.8	50	6	•
0300 050 0600 080	3	2	2.4	8	2.8	50	6	•
0300 050 0600 100	3	2	2.4	10	2.8	50	6	•
0300 060 0600	3	2	2.4	-	2.8	60	6	•
0300 060 0600 160	3	2	2.4	16	2.8	60	6	•
0300 060 0600 200	3	2	2.4	20	2.8	60	6	•
0300 075 0600	3	2	2.4	-	2.8	75	6	•
0300 075 0600 250	3	2	2.4	25	2.8	75	6	•
0300 075 0600 300	3	2	2.4	30	2.8	75	6	•
0300 075 0600 350	3	2	2.4	35	2.8	75	6	•
0400 050 0600	4	2	3.2	-	3.7	50	6	•
0400 050 0600 100	4	2	3.2	10	3.7	50	6	•
0400 060 0600	4	2	3.2	-	3.7	60	6	•
0400 060 0600 160	4	2	3.2	16	3.7	60	6	•
0400 060 0600 200	4	2	3.2	20	3.7	60	6	•
0400 075 0600	4	2	3.2	-	3.7	75	6	•
0400 075 0600 250	4	2	3.2	25	3.7	75	6	•
0400 075 0600 300	4	2	3.2	30	3.7	75	6	•
0400 075 0600 350	4	2	3.2	35	3.7	75	6	•
0400 100 0600	4	2	3.2	-	3.7	100	6	•
0400 100 0600 400	4	2	3.2	40	3.7	100	6	•
0400 100 0600 450	4	2	3.2	45	3.7	100	6	•
0400 100 0600 500	4	2	3.2	50	3.7	100	6	•

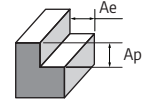
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

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

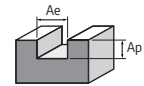
67 - 72

Standard Endmills, 2 Flute - C30, C42



Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
1	135	0.005	110	0.004	90	0.003	115	0.005	90	0.003
2		0.011		0.009		0.008		0.012		0.008
3		0.018		0.015		0.013		0.019		0.016
4		0.024		0.021		0.019		0.026		0.024
5		0.032		0.028		0.025		0.034		0.032
6		0.040		0.035		0.032		0.043		0.042
8		0.058		0.051		0.048		0.061		0.066
10		0.078		0.068		0.066		0.082		0.094
12		0.101		0.087		0.086		0.105		0.126
14		0.113		0.095		0.096		0.118		0.138
16		0.124		0.104		0.104		0.129		0.147
18		0.134		0.111		0.111		0.140		0.153
20		0.143		0.117		0.117		0.149		0.157

Standard Endmills, 2 Flute - C30, C42

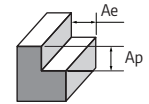


Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.40 × D		0.50 × D		0.35 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	115	0.004	100	0.002	80	0.002	90	0.004	35	0.002
2		0.009		0.005		0.005		0.009		0.005
3		0.014		0.008		0.008		0.016		0.011
4		0.020		0.012		0.012		0.023		0.016
5		0.027		0.016		0.016		0.030		0.022
6		0.034		0.021		0.020		0.039		0.029
8		0.049		0.031		0.031		0.057		0.045
10		0.067		0.043		0.043		0.078		0.066
12		0.087		0.057		0.057		0.101		0.091
14		0.098		0.063		0.063		0.113		0.097
16		0.107		0.067		0.068		0.124		0.105
18		0.116		0.070		0.072		0.134		0.101
20		0.123		0.072		0.075		0.143		0.099



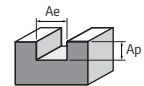
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Standard Endmills, 3 Flute - C31, C43

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
1	150	0.004	120	0.003	100	0.002	130	0.004	55	0.002
2		0.008		0.007		0.006		0.008		0.006
3		0.013		0.012		0.010		0.014		0.012
4		0.019		0.017		0.014		0.019		0.017
5		0.024		0.022		0.020		0.025		0.024
6		0.030		0.027		0.025		0.031		0.032
8		0.044		0.038		0.037		0.045		0.050
10		0.059		0.050		0.050		0.060		0.070
12		0.075		0.065		0.064		0.077		0.096
14		0.085		0.072		0.072		0.088		0.105
16	0.094	0.080	0.078	0.096	0.111					
18	0.102	0.085	0.083	0.104	0.115					
20	0.107	0.089	0.088	0.110	0.117					



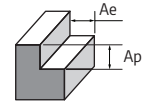
Standard Endmills, 3 Flute - C31, C43

Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	0.50 × D		0.50 × D		0.40 × D		0.50 × D		0.35 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	125	0.003	110	0.001	90	0.001	100	0.003	40	0.001
2		0.007		0.003		0.003		0.008		0.004
3		0.011		0.006		0.006		0.013		0.007
4		0.016		0.009		0.009		0.018		0.010
5		0.020		0.012		0.011		0.023		0.015
6		0.026		0.015		0.015		0.030		0.020
8		0.038		0.023		0.022		0.043		0.033
10		0.052		0.032		0.031		0.059		0.049
12		0.067		0.042		0.042		0.075		0.067
14		0.075		0.046		0.047		0.086		0.070
16	0.083	0.050	0.050	0.093	0.070					
18	0.089	0.053	0.052	0.100	0.071					
20	0.093	0.056	0.053	0.106	0.073					



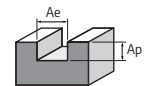
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Standard Endmills, 4 Flute - C32, C43

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
1	150	0.003	120	0.003	100	0.003	130	0.003	55	0.003
2		0.008		0.007		0.007		0.008		
3		0.013		0.011		0.012		0.013		
4		0.018		0.016		0.017		0.018		
5		0.023		0.020		0.022		0.024		
6		0.030		0.025		0.027		0.030		
8		0.041		0.034		0.037		0.042		
10		0.055		0.045		0.047		0.056		
12		0.070		0.056		0.059		0.071		
14		0.077		0.064		0.067		0.079		
16	0.084	0.072	0.076	0.086						
18	0.090	0.079	0.082	0.092						
20	0.094	0.085	0.088	0.097						



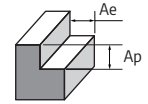
Standard Endmills, 4 Flute - C32, C43

Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		0.65 × D		0.80 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	125	0.003	110	0.002	90	0.002	100	0.004	40	0.003
2		0.007		0.004		0.004		0.008		
3		0.011		0.007		0.007		0.013		
4		0.015		0.010		0.010		0.017		
5		0.019		0.012		0.013		0.022		
6		0.024		0.015		0.016		0.028		
8		0.033		0.021		0.023		0.039		
10		0.044		0.028		0.030		0.051		
12		0.055		0.035		0.038		0.064		
14		0.061		0.039		0.043		0.073		
16	0.068	0.042	0.047	0.080						
18	0.075	0.045	0.051	0.088						
20	0.080	0.047	0.053	0.095						



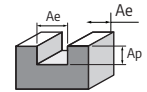
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DP / DP Torus Endmills, 4 Flute - 951, 972, C46, C52, K79

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
1	280	0.008	230	0.006	160	0.004	250	0.007	85	0.006
2		0.010		0.009		0.010		0.010		0.012
3		0.016		0.014		0.015		0.016		0.019
4		0.022		0.019		0.021		0.021		0.026
5		0.028		0.025		0.027		0.027		0.033
6		0.034		0.030		0.034		0.033		0.040
8		0.047		0.043		0.046		0.046		0.057
10		0.060		0.056		0.059		0.060		0.075
12		0.074		0.069		0.074		0.075		0.094
14		0.086		0.080		0.084		0.086		0.105
16	0.097	0.090	0.095	0.097	0.115					
18	0.107	0.099	0.103	0.106	0.123					
20	0.117	0.107	0.110	0.114	0.130					



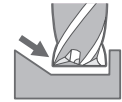
DP / DP Torus Endmills, 4 Flute - 951, 972, C46, C52, K79

Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.003	160	0.002	120	0.003	170	0.003	60	0.004
2		0.005		0.005		0.006		0.005		0.008
3		0.008		0.008		0.009		0.008		0.013
4		0.011		0.011		0.012		0.011		0.017
5		0.015		0.014		0.016		0.015		0.023
6		0.018		0.018		0.020		0.018		0.027
8		0.025		0.025		0.028		0.025		0.039
10		0.033		0.033		0.037		0.033		0.052
12		0.042		0.041		0.048		0.041		0.064
14		0.047		0.047		0.054		0.048		0.074
16	0.053	0.053	0.060	0.054	0.081					
18	0.058	0.058	0.065	0.058	0.086					
20	0.063	0.063	0.069	0.063	0.093					



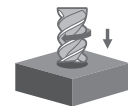
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DP / DP Torus Endmills, 4 Flute - 951, 972, C46, C52, K79

Ramp/ Helical	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		3°		5°		2°	
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)
1	200	-	140	-	70	-	200	-	50	-
2		-		-		-		-		-
3		0.007		0.006		0.006		0.007		0.004
4		0.010		0.009		0.010		0.010		0.006
5		0.014		0.013		0.014		0.013		0.010
6		0.017		0.016		0.019		0.016		0.013
8		0.024		0.023		0.028		0.023		0.021
10		0.032		0.031		0.038		0.030		0.030
12		0.040		0.039		0.051		0.038		0.038
14		0.046		0.045		0.058		0.043		0.042
16	0.051	0.049	0.063	0.048	0.045					
18	0.056	0.053	0.064	0.051	0.047					
20	0.059	0.055	0.063	0.054	0.047					



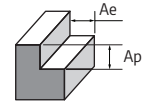
DP / DH Standard Endmills, 4 Flute - 949, A1T, A1R, C48, C49, C50, K78

Plunging	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	-		-		-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	120	0.028	110	0.024	80	0.025	110	0.026	40	0.018
4		0.038		0.033		0.035		0.035		0.024
5		0.048		0.042		0.044		0.044		0.031
6		0.058		0.051		0.054		0.054		0.038
8		0.080		0.070		0.074		0.074		0.052
10		0.102		0.091		0.095		0.095		0.067
12		0.126		0.113		0.118		0.116		0.083
14		0.144		0.129		0.136		0.134		0.095
16		0.162		0.144		0.154		0.150		0.107
18		0.180		0.159		0.172		0.167		0.120
20	0.196	0.171	0.189	0.182	0.131					



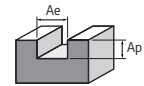
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DP / DH Standard Endmills, 4 Flute - 949, A1T, A1R, C48, C49, C50, K78

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.50 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
1	250	0.008	200	0.006	130	0.006	220	0.007	60	0.006
2		0.010		0.010		0.012		0.010		0.012
3		0.016		0.015		0.018		0.016		0.018
4		0.022		0.021		0.025		0.022		0.024
5		0.029		0.027		0.031		0.029		0.031
6		0.035		0.033		0.038		0.035		0.038
8		0.050		0.047		0.052		0.050		0.052
10		0.066		0.061		0.067		0.066		0.068
12		0.083		0.077		0.082		0.083		0.084
14		0.095		0.088		0.093		0.095		0.093
16	0.107	0.099	0.103	0.106	0.101					
18	0.118	0.109	0.112	0.116	0.109					
20	0.129	0.118	0.121	0.126	0.115					



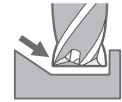
DP / DH Standard Endmills, 4 Flute - 949, A1T, A1R, C48, C49, C50, K78

Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.005	160	0.003	120	0.003	160	0.004	60	0.003
2		0.008		0.007		0.007		0.008		0.005
3		0.012		0.011		0.011		0.012		0.008
4		0.016		0.015		0.015		0.016		0.011
5		0.020		0.019		0.019		0.021		0.014
6		0.025		0.024		0.023		0.026		0.017
8		0.036		0.033		0.033		0.036		0.024
10		0.047		0.044		0.044		0.048		0.032
12		0.060		0.056		0.056		0.060		0.040
14		0.068		0.063		0.063		0.068		0.046
16	0.076	0.071	0.069	0.076	0.050					
18	0.083	0.077	0.074	0.083	0.055					
20	0.089	0.083	0.080	0.089	0.058					



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DP / DH Standard Endmills, 4 Flute - 949, A1T, A1R, C48, C49, C50, K78

Ramp/ Helical	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		3°		5°		2°	
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)
1	200	-	140	-	80	-	190	-	50	-
2		-		-		-		-		-
3		0.015		0.014		0.012		0.009		
4		0.020		0.019		0.017		0.014		
5		0.027		0.024		0.021		0.020		
6		0.033		0.031		0.027		0.025		
8		0.047		0.045		0.038		0.037		
10		0.062		0.058		0.050		0.055		
12		0.076		0.074		0.063		0.072		
14		0.086		0.084		0.071		0.081		
16		0.095		0.092		0.078		0.086		
18		0.101		0.099		0.084		0.091		
20	0.108	0.106	0.090	0.093						

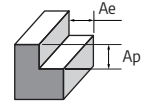
DP / DH Standard Endmills, 4 Flute - 949, C49, K78

Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.10 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	350	0.026	290	0.024	200	0.027	320	0.025	100	0.024
4		0.035		0.033		0.037		0.034		0.034
5		0.044		0.043		0.048		0.043		0.045
6		0.054		0.053		0.060		0.053		0.057
8		0.075		0.073		0.084		0.073		0.084
10		0.098		0.096		0.112		0.095		0.116
12		0.121		0.120		0.142		0.118		0.151
14		0.138		0.136		0.158		0.133		0.165
16		0.153		0.149		0.173		0.147		0.176
18		0.167		0.162		0.186		0.160		0.184
20		0.180		0.174		0.197		0.172		0.189



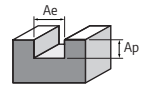
Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DP/DH With OH Endmills, 4 Flute - K70

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
4	310	0.023	260	0.018	180	0.023	280	0.020	100	0.025
5		0.030		0.025		0.031		0.027		0.033
6		0.037		0.032		0.038		0.034		0.041
8		0.051		0.047		0.053		0.049		0.057
10		0.068		0.063		0.070		0.065		0.072
12		0.087		0.083		0.089		0.084		0.099
16		0.109		0.105		0.113		0.107		0.118
20		0.127		0.121		0.131		0.123		0.137



DP/DH With OH Endmills, 4 Flute - K70

Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	230	0.015	190	0.014	140	0.016	200	0.015	75	0.020
5		0.019		0.018		0.020		0.019		0.026
6		0.024		0.022		0.024		0.023		0.032
8		0.032		0.030		0.033		0.031		0.043
10		0.040		0.038		0.041		0.040		0.055
12		0.049		0.047		0.052		0.049		0.069
16		0.065		0.062		0.067		0.064		0.091
20		0.080		0.077		0.080		0.079		0.111

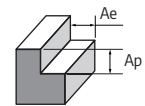


Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

DP/DH With OH Endmills, 4 Flute - K70

Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Maximum Slot Width (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.15 × D		0.15 × D		0.10 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	360	0.023	300	0.019	220	0.024	330	0.021	130	0.024
5		0.029		0.025		0.030		0.027		0.031
6		0.037		0.032		0.037		0.034		0.039
8		0.051		0.047		0.051		0.049		0.055
10		0.067		0.063		0.067		0.065		0.074
12		0.089		0.085		0.090		0.087		0.101
16		0.102		0.095		0.100		0.098		0.111
20		0.114		0.106		0.116		0.110		0.126



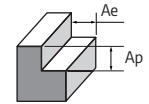
DP/DH Long Endmills, 4 Flute - J97, J98, H38, H39

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.20 × D		0.15 × D		0.13 × D		0.20 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	250	0.021	200	0.018	140	0.020	220	0.020	70	0.026
5		0.027		0.023		0.026		0.026		0.033
6		0.032		0.029		0.031		0.033		0.041
8		0.044		0.040		0.041		0.044		0.056
10		0.056		0.051		0.053		0.057		0.072
12		0.067		0.065		0.066		0.069		0.089
16		0.084		0.080		0.081		0.086		0.113
20		0.102		0.090		0.093		0.102		0.135



Recommended Cutting Data

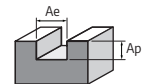
Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Roughing Endmills, 4 Flute - C47, C64

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
4	310	0.037	255	0.034	175	0.036	275	0.035	95	0.043
5		0.050		0.046		0.048		0.048		0.059
6		0.063		0.059		0.061		0.060		0.075
8		0.076		0.072		0.075		0.075		0.093
10		0.087		0.084		0.086		0.086		0.106
12		0.096		0.093		0.095		0.095		0.119
16		0.105		0.102		0.103		0.103		0.131
20		0.116		0.111		0.113		0.113		0.141

Roughing Endmills, 4 Flute - C47, C64

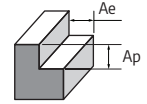


Slotting	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	220	0.020	175	0.020	130	0.022	190	0.020	65	0.032
5		0.027		0.027		0.030		0.027		0.042
6		0.035		0.035		0.039		0.035		0.054
8		0.043		0.042		0.048		0.043		0.067
10		0.050		0.048		0.055		0.049		0.076
12		0.057		0.054		0.062		0.056		0.085
16		0.063		0.060		0.068		0.062		0.093
20		0.069		0.066		0.075		0.069		0.102



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Standard Endmills, 5 Flute - J89, J90

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
4	280	0.020	230	0.018	160	0.018	250	0.019	85	0.024
5		0.026		0.022		0.023		0.025		0.030
6		0.032		0.027		0.028		0.032		0.037
8		0.043		0.038		0.039		0.043		0.051
10		0.054		0.049		0.050		0.054		0.065
12		0.066		0.062		0.063		0.066		0.081
16		0.085		0.076		0.077		0.086		0.103
20		0.100		0.086		0.088		0.099		0.122

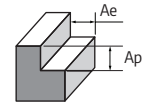
Standard Endmills, 5 Flute - J89, J90

Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Maximum Slot Width (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.15 × D		0.12 × D		0.10 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	330	0.018	280	0.016	200	0.017	300	0.017	110	0.024
5		0.024		0.022		0.023		0.023		0.031
6		0.033		0.030		0.031		0.031		0.038
8		0.046		0.043		0.044		0.044		0.054
10		0.061		0.058		0.059		0.060		0.071
12		0.080		0.078		0.079		0.080		0.092
16		0.098		0.095		0.096		0.097		0.115
20		0.110		0.108		0.109		0.109		0.135



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Long Endmills, 5 Flute - J92, J93

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.15 × D		0.12 × D		0.10 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	260	0.019	210	0.016	140	0.017	230	0.018	75	0.023
5		0.024		0.020		0.021		0.023		0.029
6		0.029		0.025		0.027		0.029		0.036
8		0.039		0.035		0.037		0.039		0.049
10		0.050		0.046		0.048		0.049		0.063
12		0.060		0.057		0.060		0.061		0.078
16		0.078		0.071		0.074		0.079		0.099
20		0.091		0.080		0.085		0.092		0.119

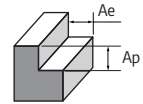
Long Endmills, 5 Flute - J92, J93

Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Maximum Slot Width (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting Depth, Ap (mm)	2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D	
Cutting Width, Ae (mm)	0.12 × D		0.10 × D		0.08 × D		0.12 × D		0.08 × 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)
4	300	0.016	260	0.014	170	0.016	270	0.017	95	0.021
5		0.023		0.020		0.022		0.022		0.027
6		0.030		0.027		0.029		0.030		0.035
8		0.043		0.040		0.042		0.042		0.049
10		0.058		0.054		0.056		0.057		0.065
12		0.076		0.070		0.071		0.075		0.083
16		0.094		0.089		0.090		0.093		0.106
20		0.109		0.101		0.103		0.107		0.126



Recommended Cutting Data

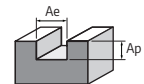
Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DH Standard Endmill with Chipbreaker and Coolant Hole, 5 Flute - K65

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.25 × D		0.15 × 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)
4	310	0.021	250	0.019	180	0.021	280	0.020	100	0.025
5		0.027		0.025		0.027		0.026		0.032
6		0.033		0.031		0.033		0.032		0.039
8		0.045		0.043		0.045		0.044		0.054
10		0.058		0.055		0.057		0.057		0.069
12		0.071		0.069		0.071		0.070		0.087
16		0.090		0.087		0.089		0.089		0.108
20		0.110		0.107		0.109		0.105		0.128

DH Standard Endmill with Chipbreaker and Coolant Hole, 5 Flute - K65

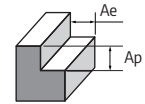


Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Maximum Slot Width (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.15 × D		0.12 × D		0.10 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	360	0.020	300	0.017	220	0.019	330	0.019	130	0.025
5		0.026		0.023		0.025		0.025		0.032
6		0.034		0.031		0.033		0.033		0.040
8		0.047		0.044		0.046		0.046		0.055
10		0.062		0.059		0.061		0.061		0.072
12		0.080		0.078		0.080		0.079		0.096
16		0.099		0.097		0.099		0.098		0.117
20		0.112		0.110		0.112		0.111		0.138



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



DH Long Endmill with Chipbreaker and Coolant Hole, 5 Flute - K67

Side Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, Ae (mm)	0.15 × D		0.12 × D		0.10 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
4	280	0.018	230	0.018	160	0.020	250	0.018	85	0.020
5		0.024		0.023		0.025		0.023		0.027
6		0.030		0.029		0.031		0.029		0.035
8		0.040		0.039		0.041		0.039		0.050
10		0.052		0.050		0.052		0.050		0.066
12		0.067		0.063		0.065		0.066		0.084
16		0.086		0.082		0.084		0.085		0.107
20		0.103		0.099		0.101		0.101		0.126

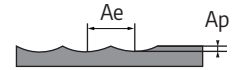
DH Long Endmill with Chipbreaker and Coolant Hole, 5 Flute - K67

Trochoidal Milling	P01		P02		M01		K01		S01	
Working Material	Carbon Steel		Alloy steel		Stainless Steel		Grey Cast Iron		Titanium	
Properties	-		520 < Rm < 1200		High Machinability		-		-	
Maximum Slot Width (mm)	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting Depth, Ap (mm)	2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D	
Cutting Width, Ae (mm)	0.12 × D		0.10 × D		0.08 × D		0.12 × D		0.08 × 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)
4	330	0.018	280	0.014	200	0.016	300	0.016	115	0.021
5		0.024		0.021		0.023		0.023		0.028
6		0.031		0.028		0.030		0.030		0.035
8		0.043		0.040		0.042		0.042		0.049
10		0.058		0.055		0.057		0.057		0.066
12		0.075		0.072		0.074		0.074		0.089
16		0.093		0.088		0.090		0.090		0.107
20		0.103		0.099		0.101		0.101		0.123



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Endmills, 2 Flute - G87, H56

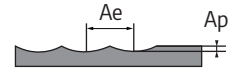
Slotting		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
0.2	0.5									
	1	0.014	28	640	0.014	26	540	0.013	25	570
	1.5									
0.3	1	0.021	38	640	0.021	35	540	0.019	34	580
	2	0.012	34	470	0.012	31	400	0.011	31	420
	3	0.008	34	470	0.008	31	400	0.007	31	420
0.4	2	0.028	40	710	0.028	37	600	0.025	36	640
	3	0.016	36	580	0.016	33	490	0.014	33	520
	4	0.010	36	580	0.010	33	490	0.009	33	520
0.5	5	0.010	32	450	0.010	30	380	0.009	29	410
	2	0.035	50	710	0.035	46	600	0.032	45	640
	4	0.020	45	580	0.020	42	490	0.018	41	530
0.6	6	0.013	40	450	0.013	37	380	0.012	36	410
	8	0.008	40	390	0.008	37	330	0.007	36	350
	2	0.042	60	1010	0.042	56	850	0.038	54	910
0.7	4	0.024	54	830	0.024	50	700	0.022	49	750
	6	0.015	54	830	0.015	50	700	0.014	49	750
	8	0.015	48	650	0.015	44	550	0.014	43	580
0.8	10	0.009	48	650	0.009	44	550	0.008	43	580
	2	0.070	70	1010	0.070	65	850	0.063	63	910
	4	0.049	63	830	0.049	58	700	0.044	57	750
0.9	6	0.018	63	830	0.018	58	700	0.016	57	750
	8	0.018	56	650	0.018	52	550	0.016	51	580
	10	0.018	56	650	0.018	52	550	0.016	51	580
1.0	4	0.080	80	1010	0.080	74	850	0.072	72	910
	6	0.056	80	830	0.056	74	700	0.050	65	750
	8	0.032	72	830	0.032	67	700	0.029	65	750
1.2	10	0.020	64	650	0.020	59	550	0.018	58	580
	12	0.012	64	650	0.012	59	550	0.011	58	580
	6	0.036	81	990	0.036	75	840	0.032	73	900
1.0	8	0.023	81	910	0.023	75	770	0.021	73	820
	10	0.023	72	650	0.023	67	550	0.021	65	580
	15	0.018	71	500	0.018	65	420	0.015	64	450
1.0	6	0.040	81	1050	0.040	75	890	0.036	73	1000
	8	0.040	81	950	0.040	75	800	0.036	73	850
	10	0.025	79	750	0.025	72	630	0.023	72	690
1.2	12	0.025	72	870	0.025	67	740	0.023	65	780
	14	0.025	72	870	0.025	67	740	0.023	65	780
	16	0.015	72	600	0.015	67	510	0.014	65	580
1.2	6	0.084	97	1100	0.084	89	930	0.076	87	1060
	8	0.048	87	1000	0.048	80	840	0.043	78	900
	10	0.030	87	1000	0.030	80	840	0.027	78	900
1.2	12	0.030	87	870	0.030	80	740	0.027	78	790

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Endmills, 2 Flute - G87, H56

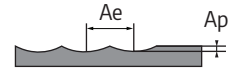
Slotting		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
1.4	6	0.100	99	1150	0.100	91	970	0.090	89	1100
	8	0.060	97	1050	0.060	89	890	0.054	97	960
	10	0.050	91	1050	0.050	84	890	0.040	82	950
	12	0.035	89	870	0.035	82	740	0.032	80	790
	14	0.035	95	870	0.035	87	740	0.033	85	780
	16	0.027	84	650	0.027	77	550	0.026	75	590
1.5	6	0.110	106	1160	0.110	97	980	0.099	95	1120
	8	0.080	95	1100	0.080	87	930	0.072	85	1020
	10	0.060	95	1050	0.060	87	890	0.054	85	950
	12	0.060	95	870	0.060	87	740	0.054	85	790
	14	0.038	95	870	0.038	87	740	0.034	85	780
	16	0.038	84	680	0.038	78	580	0.034	76	610
	18	0.038	84	680	0.038	78	580	0.034	76	610
	20	0.038	84	680	0.038	78	580	0.034	76	610
1.6	6	0.110	105	1180	0.110	96	1000	0.099	94	1130
	8	0.110	105	1150	0.110	96	970	0.099	94	1070
	10	0.085	91	1080	0.085	84	910	0.075	82	970
	12	0.080	93	900	0.080	86	760	0.060	84	850
	14	0.060	97	920	0.060	89	780	0.050	87	820
	16	0.050	85	700	0.050	79	590	0.045	78	680
	18	0.045	85	700	0.045	78	590	0.045	78	680
	20	0.045	85	700	0.045	78	590	0.040	78	680
1.8	6	0.130	118	1190	0.130	108	1010	0.117	106	1180
	8	0.130	118	1150	0.130	108	970	0.117	106	1080
	10	0.120	105	1080	0.120	96	910	0.118	94	970
	12	0.080	99	900	0.080	91	760	0.075	89	850
	14	0.045	96	880	0.045	88	740	0.040	89	800
	16	0.063	93	770	0.063	85	650	0.060	80	750
	18	0.055	90	750	0.055	83	630	0.050	80	750
	20	0.048	88	690	0.048	81	580	0.043	79	740
2.0	6	0.200	106	1120	0.200	97	950	0.180	95	1190
	8	0.140	106	1180	0.140	97	990	0.126	95	1100
	10	0.140	106	1180	0.140	97	990	0.126	95	1050
	12	0.100	101	960	0.100	93	810	0.090	86	860
	14	0.080	101	960	0.080	93	810	0.072	86	860
	16	0.080	95	920	0.080	87	770	0.072	86	860
	18	0.050	95	920	0.050	87	770	0.045	86	860
	20	0.050	95	870	0.050	87	740	0.045	86	790
	25	0.050	84	670	0.050	78	570	0.045	76	610
	30	0.030	84	670	0.030	78	570	0.027	76	610

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



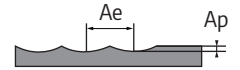
Miniature Long Neck Endmills, 2 Flute - G87, H56

Slotting		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
2.5	8	0.180	113	1350	0.180	104	1140	0.162	102	1150
	10	0.145	127	1300	0.145	117	1100	0.140	115	1170
	12	0.180	113	1250	0.180	104	1060	0.162	102	1120
	14	0.095	116	1150	0.095	107	970	0.080	105	870
	16	0.100	102	1070	0.100	94	910	0.090	92	970
	18	0.100	102	980	0.100	94	830	0.090	92	920
	20	0.100	102	930	0.100	94	790	0.090	92	840
	25	0.065	94	750	0.065	87	630	0.058	86	760
3.0	30	0.060	90	730	0.060	83	610	0.054	81	650
	8	0.300	121	1240	0.300	111	1050	0.270	109	1190
	10	0.155	151	1500	0.155	139	1270	0.150	136	1350
	12	0.210	121	1110	0.210	111	940	0.189	109	1000
	14	0.100	132	980	0.100	121	830	0.095	100	900
	16	0.150	109	970	0.150	100	820	0.135	98	870
	18	0.135	109	930	0.135	100	790	0.120	98	850
	20	0.120	109	910	0.120	100	770	0.108	98	820
4.0	25	0.080	109	910	0.080	100	770	0.072	98	820
	10	0.160	197	1880	0.160	181	1590	0.155	178	1520
	15	0.160	163	1700	0.160	150	1440	0.155	151	1400
	20	0.280	106	1690	0.280	98	1430	0.252	96	1370
	25	0.160	106	1530	0.160	98	1290	0.144	96	1230
	30	0.160	106	1520	0.160	98	1290	0.144	96	1230
40	0.100	96	1370	0.100	88	1160	0.090	86	1110	



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Endmills, 2 Flute - G87, H56

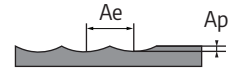
Slotting		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
0.2	0.5						
	1	0.013	27	580	0.013	25	310
	1.5						
0.3	1	0.020	36	580	0.019	33	310
	2	0.011	32	420	0.011	30	230
	3	0.008	32	420	0.007	30	230
0.4	2	0.027	38	640	0.025	35	340
	3	0.015	34	520	0.014	32	280
	4	0.010	34	520	0.009	32	280
0.5	5	0.010	31	410	0.009	28	220
	2	0.033	48	640	0.032	44	340
	4	0.019	43	520	0.018	40	280
0.6	6	0.012	38	410	0.012	35	220
	8	0.008	38	350	0.007	35	190
	2	0.040	57	910	0.038	53	490
0.7	4	0.023	52	750	0.022	48	400
	6	0.014	52	750	0.014	48	400
	8	0.014	46	580	0.014	42	310
0.8	10	0.009	46	580	0.008	42	310
	2	0.067	67	910	0.063	62	490
	4	0.047	60	750	0.044	56	400
0.9	6	0.017	60	750	0.016	56	400
	8	0.017	53	580	0.016	50	310
	10	0.017	53	580	0.016	50	310
1.0	4	0.076	76	910	0.072	71	490
	6	0.053	76	750	0.050	71	400
	8	0.030	69	750	0.029	64	400
1.2	10	0.019	61	580	0.018	57	310
	12	0.011	61	580	0.011	57	310
	6	0.034	77	890	0.032	72	480
1.0	8	0.022	77	820	0.021	72	440
	10	0.022	69	580	0.021	64	310
	15	0.017	67	450	0.015	62	240
1.0	6	0.038	77	950	0.036	72	510
	8	0.038	77	860	0.036	72	460
	10	0.024	75	680	0.023	69	360
1.2	12	0.024	69	790	0.023	64	420
	14	0.024	69	790	0.023	64	420
	16	0.014	69	540	0.014	64	290
1.2	6	0.080	92	990	0.076	85	530
	8	0.046	83	900	0.043	76	480
	10	0.029	83	900	0.027	76	480
	12	0.029	83	790	0.027	76	420

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Endmills, 2 Flute - G87, H56

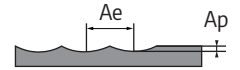
Slotting		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
1.4	6	0.095	94	1040	0.090	87	560
	8	0.057	92	950	0.054	85	510
	10	0.048	87	950	0.040	80	510
	12	0.033	84	790	0.032	78	420
	14	0.033	90	790	0.033	83	420
	16	0.026	79	590	0.026	74	310
1.5	6	0.105	100	1050	0.099	93	560
	8	0.076	90	990	0.072	84	530
	10	0.057	90	950	0.054	84	510
	12	0.057	90	790	0.054	84	420
	14	0.036	90	790	0.034	84	420
	16	0.036	80	610	0.034	74	330
	18	0.036	80	610	0.034	74	330
	20	0.036	80	610	0.034	74	330
1.6	6	0.105	99	1060	0.099	92	570
	8	0.105	99	1040	0.099	92	560
	10	0.081	87	970	0.075	80	520
	12	0.076	88	810	0.060	82	440
	14	0.057	92	830	0.050	85	450
	16	0.048	81	630	0.045	75	340
	18	0.043	81	630	0.045	75	340
	20	0.043	80	630	0.040	75	340
1.8	6	0.124	112	1070	0.117	103	580
	8	0.124	112	1040	0.117	103	560
	10	0.114	99	970	0.118	92	520
	12	0.076	94	810	0.075	87	440
	14	0.043	91	790	0.040	85	430
	16	0.060	88	690	0.060	82	370
	18	0.052	85	680	0.050	79	360
	20	0.046	83	620	0.043	77	330
2.0	6	0.190	100	1010	0.180	93	540
	8	0.133	100	1060	0.126	93	570
	10	0.133	100	1060	0.126	93	570
	12	0.095	96	870	0.090	89	460
	14	0.076	96	870	0.072	89	460
	16	0.076	90	830	0.072	84	440
	18	0.048	90	830	0.045	84	440
	20	0.048	90	780	0.045	84	420
	25	0.048	80	600	0.045	74	320
	30	0.029	80	600	0.027	74	320

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



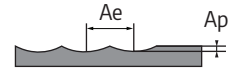
Miniature Long Neck Endmills, 2 Flute - G87, H56

Slotting		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
2.5	8	0.171	107	1220	0.162	100	650
	10	0.138	121	1170	0.140	112	630
	12	0.171	107	1130	0.162	100	600
	14	0.090	110	1040	0.080	102	560
	16	0.095	97	970	0.090	90	520
	18	0.095	97	880	0.090	90	470
	20	0.095	97	840	0.090	90	450
	25	0.062	90	680	0.058	83	360
	30	0.057	86	650	0.054	80	350
3.0	8	0.285	115	1120	0.270	106	600
	10	0.147	143	1350	0.150	133	730
	12	0.200	115	1000	0.189	106	540
	14	0.095	125	880	0.095	116	470
	16	0.143	103	880	0.135	96	470
	18	0.128	103	840	0.120	96	450
	20	0.114	103	820	0.108	96	440
	25	0.076	103	820	0.072	96	440
	30	0.076	103	820	0.072	96	440
4.0	10	0.152	188	1700	0.155	174	910
	15	0.152	155	1530	0.155	144	820
	20	0.266	101	1530	0.252	94	820
	25	0.152	101	1380	0.144	94	740
	30	0.152	101	1370	0.144	94	740
	40	0.095	91	1240	0.090	84	660



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Ballnose Cutters, 2 Flute - G88

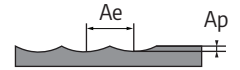
Profiling		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
0.2	0.5									
	1	0.014	31	350	0.014	29	300	0.013	31	350
	1.5	0.008	31	320	0.008	29	270	0.007	31	310
0.3	1	0.021	47	500	0.021	43	420	0.019	47	500
	2	0.012	47	450	0.012	43	380	0.011	47	440
	3	0.008	46	450	0.008	42	380	0.007	46	440
0.4	1	0.040	63	840	0.040	58	710	0.036	63	840
	2	0.028	63	600	0.028	58	510	0.025	63	600
	3	0.016	63	470	0.016	58	400	0.014	59	450
	4	0.010	59	470	0.010	54	400	0.009	57	410
	5	0.016	59	450	0.016	54	380	0.014	53	390
0.5	2	0.035	79	1200	0.035	72	1020	0.032	79	1120
	3	0.030	74	840	0.030	68	710	0.027	68	760
	4	0.020	74	650	0.020	68	550	0.018	66	580
	5	0.018	68	650	0.018	62	550	0.016	51	580
	6	0.018	61	540	0.018	56	460	0.012	55	490
	8	0.008	61	540	0.008	56	460	0.007	55	490
0.6	2	0.063	94	2250	0.063	87	1900	0.057	92	2250
	3	0.041	88	1800	0.041	81	1520	0.037	81	1800
	4	0.026	81	1710	0.026	75	1450	0.023	79	1710
	5	0.020	81	1260	0.020	75	1070	0.018	73	1140
	6	0.015	71	900	0.015	65	760	0.014	64	890
	8	0.015	71	820	0.015	65	690	0.014	64	730
0.8	2	0.120	126	2700	0.120	116	2290	0.108	122	2700
	4	0.078	109	2700	0.078	100	2290	0.070	103	2700
	5	0.059	105	2430	0.059	96	2060	0.053	94	2430
	6	0.042	98	1980	0.042	90	1680	0.038	88	1870
	7	0.035	91	1530	0.035	84	1300	0.250	82	1450
	8	0.020	87	1350	0.020	80	1140	0.018	78	1210
	10	0.020	84	980	0.020	78	830	0.018	78	880
1.0	3	0.200	136	3750	0.200	125	3170	0.180	102	3500
	4	0.140	132	3750	0.140	122	3170	0.126	102	3650
	5	0.090	122	3280	0.090	112	2770	0.081	110	3640
	6	0.060	106	2140	0.060	98	1810	0.054	97	2950
	7	0.060	102	1750	0.060	94	1480	0.054	95	1570
	8	0.060	101	1750	0.060	93	1480	0.054	94	1570
	9	0.045	101	1750	0.045	93	1480	0.041	94	1570
	10	0.038	101	1750	0.038	93	1480	0.034	90	1570
	12	0.025	90	1220	0.025	83	1040	0.023	81	1100
	14	0.020	90	1220	0.020	83	1040	0.018	81	1100
	16	0.015	90	1220	0.015	83	1040	0.014	81	1100
20	0.010	71	860	0.010	66	730	0.009	64	780	

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



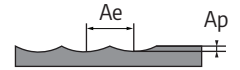
Miniature Long Neck Ballnose Cutters, 2 Flute - G88

Profiling		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
1.2	6	0.110	130	2650	0.110	120	2240	0.099	117	2500
	8	0.060	121	2140	0.060	111	1810	0.054	107	2100
	10	0.053	124	1710	0.053	114	1450	0.048	111	1460
	12	0.045	117	1620	0.045	108	1370	0.041	107	1460
1.4	8	0.110	144	2360	0.110	133	2000	0.099	130	2120
	12	0.053	133	1630	0.053	122	1380	0.048	120	1470
	16	0.035	124	1140	0.035	114	970	0.032	111	1030
1.5	8	0.090	151	2630	0.090	139	2220	0.081	136	2100
	12	0.090	143	1800	0.090	131	1520	0.081	128	1620
	16	0.038	132	1260	0.038	122	1060	0.034	119	1130
	18	0.038	107	1260	0.038	98	1060	0.034	96	1130
1.6	8	0.220	161	3060	0.220	148	2590	0.198	145	2750
	12	0.098	165	2890	0.098	152	2450	0.088	148	2600
	16	0.060	124	1770	0.060	114	1500	0.054	111	1590
	20	0.040	109	1240	0.040	100	1050	0.036	98	1110
1.8	8	0.260	178	3250	0.260	164	2750	0.234	163	2920
	12	0.105	159	2020	0.105	146	1710	0.095	143	1820
	16	0.068	127	2020	0.068	117	1710	0.061	114	1820
	20	0.045	118	1410	0.045	108	1200	0.041	106	1270
2.0	4	0.400	195	4730	0.400	179	4000	0.360	178	4250
	6	0.400	198	4250	0.400	182	3600	0.360	178	3830
	8	0.280	198	4250	0.280	182	3600	0.252	178	3830
	10	0.210	185	3530	0.210	170	2990	0.189	166	3180
	12	0.120	166	3180	0.120	153	2690	0.108	150	2860
	14	0.120	166	2750	0.120	153	2330	0.108	150	2480
	16	0.120	141	1770	0.120	130	1500	0.108	127	1590
	18	0.090	141	1630	0.090	130	1380	0.081	126	1470
	20	0.075	131	1630	0.075	120	1380	0.068	118	1470
	22	0.050	112	1210	0.050	103	1030	0.045	101	1090
	25	0.050	118	1140	0.050	108	970	0.045	106	1030
	30	0.030	109	1140	0.030	100	970	0.027	98	1030

cont' d ►



Recommended Cutting Data
 Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



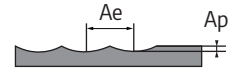
Miniature Long Neck Ballnose Cutters, 2 Flute - G88

Profiling		P01			P03			M01		
Working Material		Carbon Steel			Prehardened Steel			Stainless Steel		
Properties		-			35 ≤ HRC < 45			High Machinability		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
3.0	8	0.600	226	5400	0.600	208	4570	0.540	204	4860
	10	0.420	226	5400	0.420	208	4570	0.378	204	4860
	16	0.315	211	3630	0.315	194	3070	0.284	190	3270
	20	0.180	176	2530	0.180	162	2140	0.162	159	2280
	25	0.120	158	2530	0.120	146	2140	0.108	143	2280
	30	0.120	158	2330	0.120	146	1980	0.108	143	2100
	35	0.080	121	1630	0.080	111	1380	0.072	109	1470
4.0	10	0.600	217	5180	0.600	199	4380	0.540	195	4660
	16	0.420	217	5180	0.420	199	4380	0.378	195	4660
	20	0.420	188	3590	0.420	173	3040	0.378	169	3230
	25	0.240	169	2910	0.240	156	2460	0.216	152	2620
	30	0.160	156	2240	0.160	144	1890	0.144	141	2010
	35	0.100	156	2240	0.100	144	1890	0.090	141	2010
	40	0.100	156	2240	0.100	144	1890	0.090	141	2010
	45	0.100	116	1560	0.100	106	1320	0.090	104	1410
	50	0.100	116	1560	0.100	106	1320	0.090	104	1410



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Ballnose Cutters, 2 Flute - G88

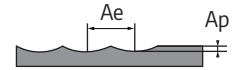
Profiling		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
0.2	0.5						
	1	0.013	30	320	0.013	28	170
	1.5	0.008	30	280	0.007	28	150
0.3	1	0.020	45	450	0.019	41	240
	2	0.011	45	410	0.011	41	210
	3	0.008	44	410	0.007	40	210
0.4	1	0.038	60	760	0.036	55	410
	2	0.027	60	540	0.025	55	290
	3	0.015	60	420	0.014	52	220
	4	0.010	56	420	0.009	50	200
	5	0.015	56	410	0.014	47	190
0.5	2	0.033	75	1080	0.032	69	540
	3	0.029	70	760	0.027	60	370
	4	0.019	70	580	0.018	58	280
	5	0.017	64	580	0.016	45	280
	6	0.017	58	490	0.012	48	240
	8	0.008	58	490	0.007	48	240
0.6	2	0.060	90	2030	0.057	81	1090
	3	0.039	84	1620	0.037	72	870
	4	0.025	77	1540	0.023	70	830
	5	0.019	77	1140	0.018	64	550
	6	0.014	67	810	0.014	56	430
	8	0.014	67	740	0.014	56	360
0.8	2	0.114	119	2440	0.108	108	1310
	4	0.074	103	2440	0.070	90	1310
	5	0.056	99	2190	0.053	83	1180
	6	0.040	93	1790	0.038	77	900
	7	0.033	87	1380	0.250	72	700
	8	0.019	83	1220	0.018	69	590
	10	0.019	80	880	0.018	69	430
1.0	3	0.190	129	3380	0.180	90	1690
	4	0.133	126	3380	0.126	90	1760
	5	0.086	116	2960	0.081	97	1760
	6	0.057	101	1930	0.054	86	1430
	7	0.057	97	1580	0.054	84	760
	8	0.057	96	1580	0.054	83	760
	9	0.043	96	1580	0.041	83	760
	10	0.036	96	1580	0.034	80	760
	12	0.024	86	1100	0.023	72	530
	14	0.019	86	1100	0.018	72	530
	16	0.014	86	1100	0.014	72	530
20	0.010	68	780	0.009	56	380	

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Ballnose Cutters, 2 Flute - G88

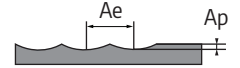
Profiling		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
1.2	6	0.105	124	2390	0.099	103	1210
	8	0.057	115	1930	0.054	94	1020
	10	0.050	117	1540	0.048	98	700
	12	0.043	111	1460	0.041	94	700
1.4	8	0.105	137	2130	0.099	114	1030
	12	0.050	126	1470	0.048	105	710
	16	0.033	117	1030	0.032	98	500
1.5	8	0.086	143	2370	0.081	119	1020
	12	0.086	135	1620	0.081	113	780
	16	0.036	126	1130	0.034	105	550
	18	0.036	102	1130	0.034	85	550
1.6	8	0.209	153	2760	0.198	127	1330
	12	0.093	156	2610	0.088	130	1260
	16	0.057	117	1600	0.054	98	770
	20	0.038	103	1120	0.036	86	540
1.8	8	0.247	169	2930	0.234	143	1410
	12	0.100	151	1830	0.095	126	880
	16	0.065	120	1820	0.061	100	880
	20	0.043	112	1280	0.041	93	620
2.0	4	0.380	185	4260	0.360	157	2060
	6	0.380	188	3840	0.360	157	1850
	8	0.266	188	3840	0.252	157	1850
	10	0.200	176	3180	0.189	146	1540
	12	0.114	158	2870	0.108	132	1380
	14	0.114	158	2480	0.108	132	1200
	16	0.114	134	1600	0.108	111	770
	18	0.086	134	1470	0.081	111	710
	20	0.071	124	1470	0.068	103	710
	22	0.048	107	1100	0.045	89	530
	25	0.048	112	1030	0.045	93	500
	30	0.029	103	1030	0.027	86	500

cont' d ►



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



Miniature Long Neck Ballnose Cutters, 2 Flute - G88

Profiling		K01			S01		
Working Material		Grey Cast Iron			Titanium		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	Vc (m/min)	Vf (mm/min)	Ap (mm)	Vc (m/min)	Vf (mm/min)
3.0	8	0.570	215	4870	0.540	179	2350
	10	0.399	215	4870	0.378	179	2350
	16	0.299	201	3280	0.284	167	1580
	20	0.171	168	2280	0.162	140	1100
	25	0.114	150	2280	0.108	125	1100
	30	0.114	150	2110	0.108	125	1020
	35	0.076	115	1470	0.072	96	710
	10	0.570	206	4670	0.540	172	2250
4.0	16	0.399	206	4670	0.378	172	2250
	20	0.399	178	3240	0.378	149	1560
	25	0.228	161	2620	0.216	134	1270
	30	0.152	148	2020	0.144	124	970
	35	0.095	148	2020	0.090	124	970
	40	0.095	148	2020	0.090	124	970
	45	0.095	110	1410	0.090	92	680
	50	0.095	110	1410	0.090	92	680



Recommended Cutting Data
 Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 053515**

Certificate Holder:



HPMT Industries Sdn. Bhd.
No. 5, Jalan Sungai Kayu Ara 32/39, Taman Berjaya,
Seksyen 32, Shah Alam, Selangor Darul Ehsan, Malaysia

Scope:

Manufacturing of Standard and Custom-made Metal Removing
Cutting Tools

Proof has been furnished by means of an audit that the
requirements of ISO 9001:2015 are met.

Validity:

The certificate is valid from 2018-09-04 until 2021-08-14.

2018-09-14

A handwritten signature in blue ink, appearing to read 'K. Jeger', positioned above a horizontal line.

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



THE FUTURE OF PRECISION MACHINING

HPMT INDUSTRIES SDN BHD

5 Jalan Sungai Kayu Ara 32/39
Taman Berjaya, Seksyen 32
40460 Shah Alam,
Selangor Darul Ehsan, Malaysia

T + 603 5740 2218
F + 603 5740 2238
E info@hpmt-industries.com
W www.hpmt-industries.com

HERROZ SDN BHD

5 Jalan Sungai Kayu Ara 32/39
Taman Berjaya, Seksyen 32
40460 Shah Alam,
Selangor Darul Ehsan, Malaysia

T + 603 5740 2838 (Selangor)
+ 607 351 9910 (Johor)
F + 603 5740 2822 (Selangor)
+ 603 5740 2823 (Selangor)
+ 607 355 2461 (Johor)
E info@herroz.com
W www.herroz.com

MTC TOOLING SYSTEMS LTD

204-5 Fook Hong Ind Bldg
19 Shueng Yuet Road
Kowloon Bay, Hong Kong

T 00852 2305 4838
F 00852 2798 8789
E info@mtc-tools.com

HPMT (SHEN ZHEN) LTD

1223, Kerry Centre
2008 Renminnan Road
ShenZhen China

T +86-755 2518 1722
F +86-755 2518 1728
E info@hpmt-industries.com.cn
W www.hpmt-industries.com.cn

HPMT DEUTSCHLAND GMBH

Vorkamp 6, D-23879 Mölln

T + 49 (0) 45 42 / 84 21 10
F + 49 (0) 45 42 / 84 21 08
E info@hpmt-deutschland.de
W www.hpmt-deutschland.de



ZIBTRPRO
tehnologija obdelave · vpenjalni sistemi