HPMT
High Precision Machining Tools

OL
OPTIMUM
LINE

OPTIMUM
LINE

The most versatile program for
multiple materials and applications

INDEX

SQUARE ENDMILLS

R-LIKE ENDMILLS

TORUS ENDMILLS

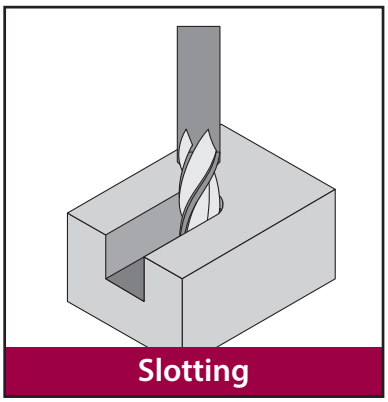
INTRODUCTION

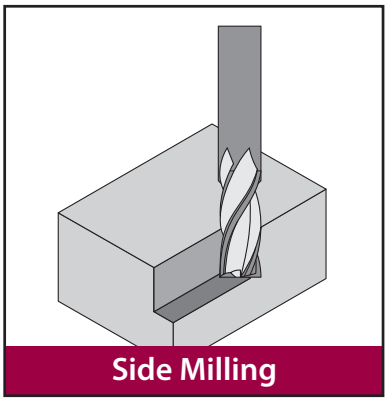
The Optimum Line is designed to bring versatility in a single tool for those seeking a one-stop solution to today's most common machining applications and materials.

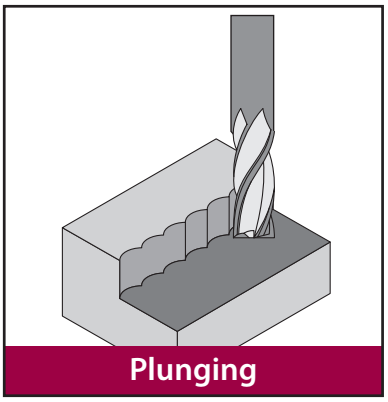
Suitable for multiple materials :

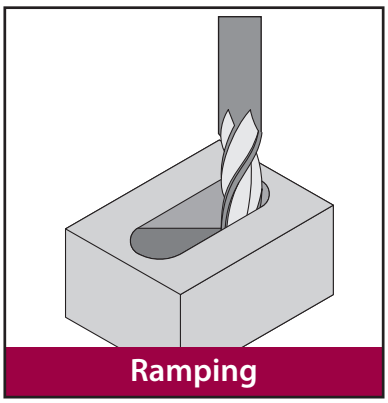
P M K N S

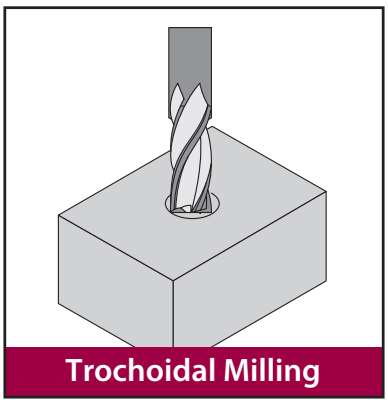
Suitable for multiple applications :


Slotting


Side Milling


Plunging


Ramping


Trochoidal Milling

SQUARE ENDMILLS

918 DP

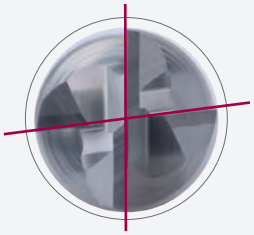
981 DP With Recess

HPMT OPTIMUM LINE

01

Differential Pitch (DP)

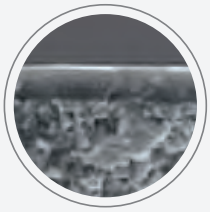
Reduces chatter to provide excellent surface finishing



02

Superior Coating

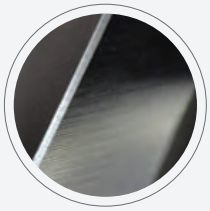
Enhances heat resistance to prolong tool life



03

Ideal Cutting Edge

Provides edge protection to prolong tool life

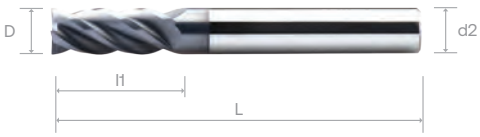


918 / 981

DP ENDMILLS, 4 FLUTES

HPMT

918



981 (with recess)

Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
918 0100 050 03	1	3		50	3	•
918 0100 050 04				50	4	•
918 0150 050 03	1.5	4.5		50	3	•
918 0150 050 04				50	4	•
918 0200 050 03	2	6.5		50	3	•
918 0200 050 04				50	4	•
918 0250 050 03	2.5			50	3	•
918 0250 050 04				50	4	•
918 0300 050 03	3	9		50	3	•
918 0300 050 04				50	4	•
918 0300 050 06				50	6	•
918 0400	4	12		50	4	•
918 0400 050 06				50	6	•
918 0500	5	15		50	5	•
918 0500 050 06 15				50	6	•
918 0600 050 16	6	16		50	6	•
918 0600 060		20		60	6	•
918 0800 22	8	22		64	8	•
918 1000 070 27	10	27		70	10	•
918 1000 075		22		75	10	•
918 1200 075 32	12	32		75	12	•
918 1200 075 24		24		75	12	○
918 1400	14	32		90	14	•
918 1600	16			90	16	•
918 1800	18	38		100	18	•
918 2000	20			100	20	•

Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
981 0300 050 03	3	9	14	50	3	○
981 0300 050 04			14	50	4	○
981 0300 050 06			14	50	6	•
981 0400 *	4	12	20	50	4	•
981 0500 *	5	15	22	50	5	•
981 0600 060 *	6	20	24	60	6	•
981 0800 22 *	8	22	28	64	8	•
981 1000 070 27	10	27	30	70	10	•
981 1000 075	10	22	30	75	10	•
981 1200 075 24 *	12	24	30	75	12	•
981 1400	14	32	42	90	14	○
981 1600 *	16		42	90	16	•
981 1800 *	18	38	50	100	18	○
981 2000 *	20		50	100	20	•

* - DIN 6535

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

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

Cutting Parameters

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

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

14 - 16

SQUARE ENDMILLS

918DH DP/DH

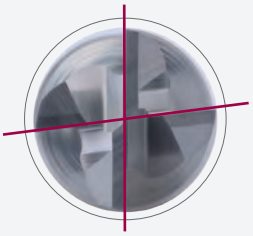
981DH DP/DH With Recess

986DH DP/DH With Recess and Weldon

01

Differential Pitch (DP)

Reduces chatter to provide excellent surface finishing



02

Differential Helix (DH)

Reduces the cutting force:

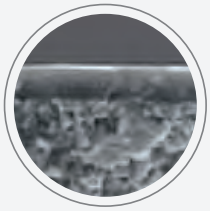
- Allows high speed machining, increasing productivity
- Improves surface finishing

α°≠ β°

03

Superior Coating

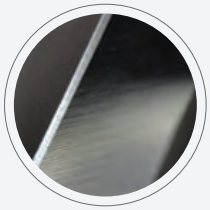
Enhances heat resistance to prolong tool life



04

Ideal Cutting Edge

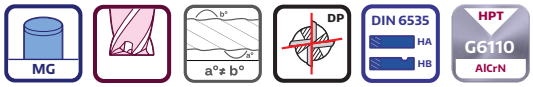
Provides edge protection to prolong tool life



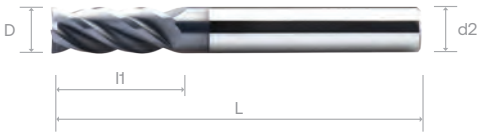
918DH / 981DH / 986DH NEW

DP/DH ENDMILLS, 4 FLUTES

HPMT



918DH



Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
918DH 0100 050 04	1	3		50	4	•
918DH 0150 050 04	1.5	4.5		50	4	•
918DH 0200 050 04	2	6.5		50	4	•
918DH 0250 050 04	2.5			50	4	•
918DH 0300 050 03	3	9		50	3	•
918DH 0300 050 04				50	4	•
918DH 0300 050 06				50	6	•
918DH 0400	4	12		50	4	•
918DH 0400 057 06				57	6	•
918DH 0500	5	15		50	5	•
918DH 0500 057 06				57	6	•
918DH 0600 060	6	20		60	6	•
918DH 0800 22	8	22		64	8	•
918DH 1000 072 27	10	27		72	10	•
918DH 1200 083	12	32		83	12	•
918DH 1400 083	14			83	14	•
918DH 1600 092	16			92	16	•
918DH 1800 092 32	18			92	18	•
918DH 2000	20	38		100	20	•

981DH (with recess)

Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
981DH 0300 050 03	3	9	14	50	3	•
981DH 0300 050 04			14	50	4	•
981DH 0300 050 06			14	50	6	•
981DH 0400	4	12	20	50	4	•
981DH 0400 057 06 *			20	57	6	•
981DH 0500	5	15	22	50	5	•
981DH 0500 057 06 *			20	57	6	•
981DH 0600 060 *	6	20	24	60	6	•
981DH 0800 22 *	8	22	28	64	8	•
981DH 1000 072	10		32	72	10	•
981DH 1200 083 26 *	12	26	37	83	12	•
981DH 1400 083 26	14		37	83	14	•
981DH 1600 092 *	16	32	42	92	16	•
981DH 1800 092 32 *	18		42	92	18	•
981DH 2000 *	20	38	50	100	20	•

* - DIN 6535

986DH (with recess and weldon)

Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
986DH 0300 050 06	3	9	14	50	6	•
986DH 0400 057 06	4	12	20	57	6	•
986DH 0500 057 06	5	15	20	57	6	•
986DH 0600 060	6	20	24	60	6	•
986DH 0800 22	8	22	28	64	8	•
986DH 1000 072	10		32	72	10	•
986DH 1200 083 26	12	26	37	83	12	•
986DH 1400 083 26	14		37	83	14	•
986DH 1600 092	16	32	42	92	16	•
986DH 1800 092 32	18		42	92	18	•
986DH 2000 100	20	38	50	100	20	•

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

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

Cutting Parameters

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

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

14 - 16

SQUARE ENDMILLS

K86 Short DP/DH

HPMT OPTIMUM LINE

01

Differential Pitch (DP)

Reduces chatter to provide excellent surface finishing

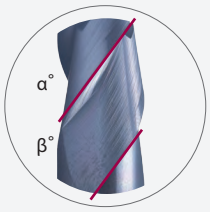
a° ≠ b° ≠ c°

02

Differential Helix (DH)

Reduces the cutting force:

- Allows high speed machining, increasing productivity
- Improves surface finishing

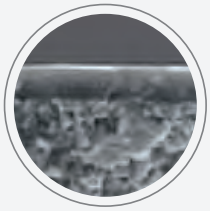


α° ≠ β°

03

Superior Coating

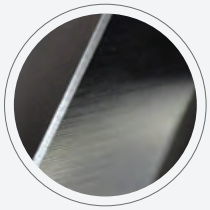
Enhances heat resistance to prolong tool life



04

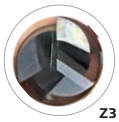
Ideal Cutting Edge

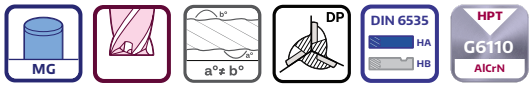
Provides edge protection to prolong tool life

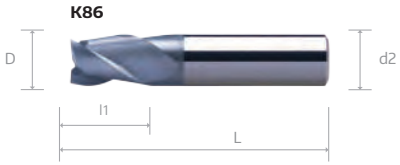


K86 NEW

SHORT DP/DH ENDMILLS, 3 FLUTES







Order Number	Dimension (mm)					Stock
	D	l1	l2	L	d2(h6)	
K86 0100 038 03	1	2		38	3	•
K86 0150 038 03	1.5			38	3	•
K86 0200 038 06	2	4		38	6	•
K86 0250 038 06	2.5	5		38	6	•
K86 0300 038 06	3			38	6	•
K86 0350 038 06	3.5	6		38	6	•
K86 0400 038 06	4	7		38	6	•
K86 0450 038 06	4.5	8		38	6	•
K86 0500 038 06	5			38	6	•
K86 0550 038 06	5.5			38	6	•
K86 0575 038 06	5.75			38	6	•
K86 0600 038 06	6			38	6	•
K86 0700 042 08	7	10		42	8	•
K86 0800 042 08	8	11		42	8	•
K86 0900 048 10	9			48	10	•
K86 1000 050 10	10	13		50	10	•
K86 1200 055 12	12	15		55	12	•

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

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

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

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

Cutting Parameters

17

R-LIKE ENDMILLS

K47DH DP/DH

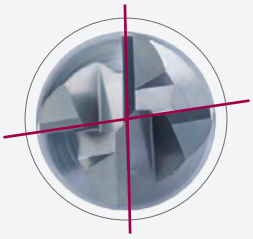
K52DH DP/DH with Recess

K53DH DP/DH with Recess and Weldon

01

Differential Pitch (DP)

Reduces chatter to provide excellent surface finishing

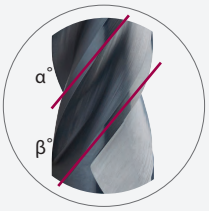


02

Differential Helix (DH)

Reduces the cutting force:

- Allows high speed machining, increasing productivity
- Improves surface finishing

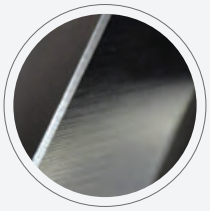


$\alpha^\circ \neq \beta^\circ$

03

Ideal Cutting Edge

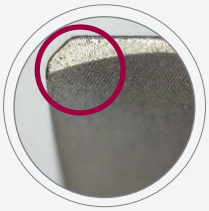
Provides edge protection to prolong tool life



04

R-Like

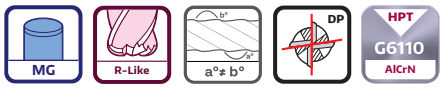
Enhances edge protection to prolong tool life



K47DH / K52DH / K53DH NEW

DP/DH R-LIKE ENDMILLS, 4 FLUTES

HPMT



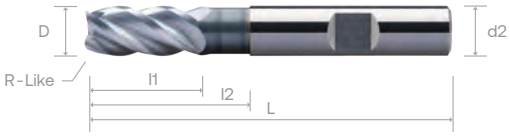
K47DH

Order Number	Dimension (mm)						Stock
	D	l1	l2	L	d2(h6)	R-Like	
K47DH 0100 050 04	1	3		50	4	0.02	•
K47DH 0150 050 04	1.5	4.5		50	4	0.05	•
K47DH 0200 050 04	2	6.5		50	4	0.05	•
K47DH 0250 050 04	2.5			50	4	0.05	•
K47DH 0300 050 03	3	9		50	3	0.1	•
K47DH 0300 050 06				50	6	0.1	•
K47DH 0400	4	12		50	4	0.1	•
K47DH 0400 057 06				57	6	0.1	•
K47DH 0500	5	15		50	5	0.1	•
K47DH 0500 057 06				57	6	0.1	•
K47DH 0600 060	6	20		60	6	0.1	•
K47DH 0800 22	8	22		64	8	0.2	•
K47DH 1000 072 27	10	27		72	10	0.2	•
K47DH 1200 083	12	32		83	12	0.2	•
K47DH 1400 083	14			83	14	0.2	•
K47DH 1600 092	16			92	16	0.2	•
K47DH 1800 092 32	18			92	18	0.2	•
K47DH 2000	20	38		100	20	0.2	•

K52DH (with recess)

Order Number	Dimension (mm)						Stock
	D	l1	l2	L	d2(h6)	R-Like	
K52DH 0300 050 03	3	9	14	50	3	0.1	•
K52DH 0300 050 06			14	50	6	0.1	•
K52DH 0400	4	12	20	50	4	0.1	•
K52DH 0400 057 06			20	57	6	0.1	•
K52DH 0500	5	15	22	50	5	0.1	•
K52DH 0500 057 06			20	57	6	0.1	•
K52DH 0600 060	6	20	24	60	6	0.1	•
K52DH 0800 22	8	22	28	64	8	0.2	•
K52DH 1000 072	10		32	72	10	0.2	•
K52DH 1200 083 26	12	26	37	83	12	0.2	•
K52DH 1400 083 26	14		37	83	14	0.2	•
K52DH 1600 092	16	32	42	92	16	0.2	•
K52DH 1800 092 32	18		42	92	18	0.2	•
K52DH 2000	20	38	50	100	20	0.2	•

K53DH (with recess and weldon)



Order Number	Dimension (mm)						Stock
	D	l1	l2	L	d2(h6)	R-Like	
K53DH 0300 050 06	3	9	14	50	6	0.1	•
K53DH 0400 057 06	4	12	20	57	6	0.1	•
K53DH 0500 057 06	5	15	20	57	6	0.1	•
K53DH 0600 060	6	20	24	60	6	0.1	•
K53DH 0800 22	8	22	28	64	8	0.2	•
K53DH 1000 072	10		32	72	10	0.2	•
K53DH 1200 083 26	12	26	37	83	12	0.2	•
K53DH 1400 083 26	14		37	83	14	0.2	•
K53DH 1600 092	16	32	42	92	16	0.2	•
K53DH 1800 092 32	18		42	92	18	0.2	•
K53DH 2000 100	20	38	50	100	20	0.2	•

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

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

Cutting Parameters

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

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

14 - 15

TORUS ENDMILLS

919 DP Torus

991 DP Torus With Recess

HPMT 01 OPTIMUM LINE

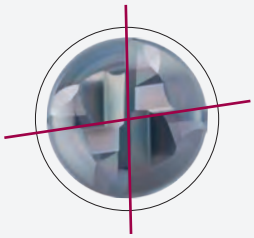
S-Gash

Smooth joint at radius

01

S-Gash (Unique Radius Design)

Smooth joining area at the radius to deliver tighter accuracy



02

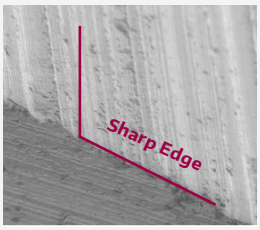
Differential Pitch (DP)

Reduces chatter to provide excellent surface finishing

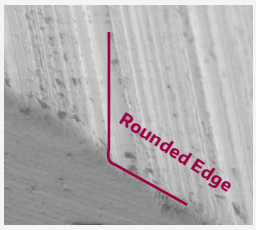
03

Cutting Edge Preparation

Better stress distribution on the cutting edge to prolong tool life



Before



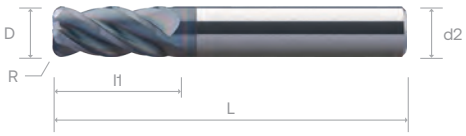
After

919 / 991

DP TORUS ENDMILLS, 4 FLUTES

HPMT

919



991 (with recess)

Order Number	Dimension (mm)						Stock
	D	l1	l2	L	d2(h6)	R	
919 0100 050 0300 010	1	3		50	3	0.1	○
919 0150 050 0300 020	1.5	4.5		50	3	0.2	○
919 0200 050 0300 020	2	6.5		50	3	0.2	○
919 0250 050 0300 030	2.5			50	3	0.3	○
919 0300 050 0300 030	3	9		50	3	0.3	○
919 0300 050 0300 050				50	3	0.5	●
919 0300 057 0600 030				57	6	0.3	●
919 0300 057 0600 050				57	6	0.5	●
919 0400 050 0400 030	4	12		50	4	0.3	●
919 0400 050 0400 050				50	4	0.5	●
919 0400 057 0600 030				57	6	0.3	○
919 0400 057 0600 050				57	6	0.5	○
919 0500 050 0500 030	5	15		50	5	0.3	○
919 0500 050 0500 050				50	5	0.5	○
919 0500 057 0600 030				57	6	0.3	○
919 0500 057 0600 050				57	6	0.5	●
919 0600 057 0600 030	6	16		57	6	0.3	●
919 0600 057 0600 050				57	6	0.5	●
919 0600 057 0600 100				57	6	1	●
919 0800 064 0800 030	8	20		64	8	0.3	●
919 0800 064 0800 050				64	8	0.5	●
919 0800 064 0800 100				64	8	1	●
919 0800 064 0800 200				64	8	2	●
919 1000 070 1000 050	10	22		70	10	0.5	●
919 1000 070 1000 100				70	10	1	●
919 1000 070 1000 200				70	10	2	●
919 1200 083 1200 050	12	25		83	12	0.5	●
919 1200 083 1200 100				83	12	1	●
919 1200 083 1200 200				83	12	2	●
919 1600 090 1600 050	16	32		90	16	0.5	○
919 1600 090 1600 100				90	16	1	○
919 1600 090 1600 200				90	16	2	○
919 1600 090 1600 300				90	16	3	○
919 2000 100 2000 050	20	38		100	20	0.5	○
919 2000 100 2000 100				100	20	1	○
919 2000 100 2000 200				100	20	2	○
919 2000 100 2000 300				100	20	3	○

Order Number DIN 6535	Dimension (mm)						Stock
	D	l1	l2	L	d2(h6)	R	
991 0300 050 0300 030 *	3	9		50	3	0.3	○
991 0300 050 0300 050 *				50	3	0.5	○
991 0300 057 0600 030				57	6	0.3	○
991 0300 057 0600 050				57	6	0.5	○
991 0400 050 0400 030 *	4	12		50	4	0.3	○
991 0400 050 0400 050 *				50	4	0.5	●
991 0400 057 0600 030				57	6	0.3	○
991 0400 057 0600 050				57	6	0.5	○
991 0500 050 0500 030 *	5	15		50	5	0.3	○
991 0500 050 0500 050 *				50	5	0.5	○
991 0500 057 0600 030				57	6	0.3	○
991 0500 057 0600 050				57	6	0.5	○
991 0600 057 0600 030	6	16		57	6	0.3	○
991 0600 057 0600 050				57	6	0.5	●
991 0600 057 0600 100				57	6	1	○
991 0800 064 0800 030 *	8	20		64	8	0.3	○
991 0800 064 0800 050 *				64	8	0.5	●
991 0800 064 0800 100 *				64	8	1	○
991 0800 064 0800 200 *				64	8	2	○
991 1000 070 1000 050 *	10	22		70	10	0.5	○
991 1000 070 1000 100 *				70	10	1	○
991 1000 070 1000 200 *				70	10	2	○
991 1200 083 1200 050	12	25		83	12	0.5	○
991 1200 083 1200 100				83	12	1	○
991 1200 083 1200 200				83	12	2	○
991 1600 090 1600 050 *	16	32		90	16	0.5	○
991 1600 090 1600 100 *				90	16	1	○
991 1600 090 1600 200 *				90	16	2	○
991 1600 090 1600 300 *				90	16	3	○
991 2000 100 2000 050 *	20	38		100	20	0.5	○
991 2000 100 2000 100 *				100	20	1	○
991 2000 100 2000 200 *				100	20	2	○
991 2000 100 2000 300 *				100	20	3	○

* - DIN 6535

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

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

Cutting Parameters

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

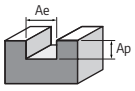
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
●	●	●	●	●	●	●	●	●	●	●	●	○				

15 - 17

DP/DH / DP Torus / R-Like Endmills, 4 Flutes – 918, 981, 918DH, 981DH, 986DH, 919, 991, K47DH, K52DH, K53DH

Ramp/ Helical	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Ramping Depth	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		3°		3°		2°		5°		3°		10°		10°		8°		2°		1°	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.002		0.002		0.002		0.002		0.002		0.002		0.002		0.004		0.003		0.003		0.003		0.003
2		0.005		0.005		0.005		0.005		0.006		0.005		0.005		0.005		0.005		0.005		0.007		0.007
3		0.007		0.007		0.007		0.008		0.009		0.007		0.007		0.010		0.008		0.008		0.011		0.011
4		0.010		0.010		0.010		0.011		0.013		0.010		0.010		0.013		0.012		0.012		0.015		0.015
5		0.013		0.013		0.013		0.014		0.016		0.013		0.014		0.017		0.016		0.016		0.019		0.019
6		0.015		0.015		0.015		0.018		0.020		0.015		0.017		0.021		0.021		0.021		0.024		0.024
8	150	0.021	120	0.021	110	0.021	90	0.024	60	0.027	130	0.021	80	0.022	250	0.030	220	0.029	210	0.030	45	0.032	20	0.032
10		0.026		0.027		0.026		0.030		0.035		0.026		0.028		0.038		0.038		0.040		0.041		0.041
12		0.033		0.033		0.033		0.038		0.043		0.033		0.034		0.048		0.049		0.050		0.050		0.050
14		0.038		0.038		0.038		0.043		0.050		0.038		0.039		0.054		0.056		0.057		0.058		0.058
16		0.043		0.042		0.043		0.049		0.055		0.043		0.044		0.060		0.062		0.064		0.064		0.064
18		0.048		0.046		0.048		0.054		0.061		0.048		0.049		0.066		0.064		0.070		0.070		0.070
20		0.053		0.051		0.053		0.058		0.066		0.053		0.054		0.072		0.069		0.077		0.077		0.077

DP/DH / DP Torus / R-Like Endmills, 4 Flutes – 918, 981, 918DH, 981DH, 986DH, 919, 991, K47DH, K52DH, K53DH



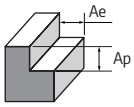
Slotting	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		0.80 × D		0.80 × D		0.40 × D		1.00 × D		0.80 × D		1.00 × D		1.00 × D		1.00 × D		0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.003		0.003		0.003		0.003		0.005		0.004		0.004		0.004		0.004
2		0.006		0.006		0.006		0.006		0.007		0.006		0.006		0.007		0.006		0.006		0.009		0.009
3		0.009		0.009		0.009		0.010		0.011		0.009		0.009		0.011		0.010		0.010		0.014		0.014
4		0.012		0.012		0.012		0.014		0.016		0.012		0.013		0.016		0.015		0.015		0.019		0.019
5		0.016		0.016		0.016		0.018		0.020		0.016		0.017		0.021		0.020		0.020		0.024		0.024
6		0.019		0.019		0.019		0.022		0.025		0.019		0.021		0.026		0.026		0.026		0.030		0.030
8	200	0.026	160	0.026	150	0.026	120	0.030	80	0.034	170	0.026	110	0.028	330	0.037	300	0.036	280	0.038	60	0.040	30	0.040
10		0.033		0.034		0.033		0.038		0.044		0.033		0.035		0.048		0.047		0.050		0.051		0.051
12		0.041		0.041		0.041		0.047		0.054		0.041		0.043		0.060		0.061		0.062		0.063		0.063
14		0.047		0.047		0.047		0.054		0.062		0.047		0.049		0.068		0.070		0.071		0.072		0.072
16		0.054		0.053		0.054		0.061		0.069		0.054		0.055		0.075		0.078		0.080		0.080		0.080
18		0.060		0.058		0.060		0.067		0.076		0.060		0.061		0.083		0.080		0.088		0.088		0.088
20		0.066		0.064		0.066		0.073		0.082		0.066		0.067		0.090		0.086		0.096		0.096		0.096

P M K N S | P K

Recommended Cutting Data

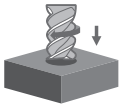
Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition.

DP/DH / DP Torus / R-Like Endmills, 4 Flutes – 918, 981, 918DH, 981DH, 986DH, 919, 991, K47DH, K52DH, K53DH



Side Milling	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		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		0.18 × D		0.15 × D		0.25 × D		0.18 × D		0.30 × D		0.30 × D		0.30 × 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)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.005		0.006		0.005		0.004		0.005		0.007		0.004		0.006		0.005		0.004		0.005		0.004
2		0.009		0.009		0.009		0.009		0.011		0.010		0.009		0.009		0.008		0.009		0.011		0.008
3		0.017		0.014		0.014		0.014		0.017		0.016		0.014		0.014		0.014		0.014		0.018		0.013
4		0.023		0.020		0.019		0.020		0.024		0.022		0.019		0.020		0.019		0.021		0.024		0.018
5		0.030		0.025		0.024		0.025		0.030		0.029		0.025		0.027		0.026		0.027		0.031		0.025
6		0.036		0.031		0.031		0.031		0.037		0.036		0.030		0.034		0.034		0.035		0.039		0.033
8	280	0.049	230	0.043	190	0.042	160	0.043	100	0.049	250	0.049	140	0.041	400	0.046	380	0.046	360	0.050	70	0.053	40	0.046
10		0.062		0.056		0.056		0.056		0.062		0.063		0.052		0.060		0.059		0.062		0.066		0.061
12		0.075		0.070		0.070		0.070		0.076		0.075		0.069		0.076		0.074		0.076		0.080		0.075
14		0.086		0.079		0.080		0.078		0.085		0.085		0.075		0.087		0.085		0.086		0.090		0.081
16		0.094		0.087		0.090		0.086		0.093		0.095		0.082		0.097		0.095		0.091		0.101		0.089
18		0.103		0.092		0.098		0.092		0.102		0.103		0.089		0.106		0.102		0.099		0.111		0.094
20		0.113		0.098		0.104		0.099		0.107		0.112		0.094		0.115		0.110		0.106		0.122		0.102

DP/DH / DP Torus / R-Like Endmills, 4 Flutes – 918, 981, 918DH, 981DH, 986DH, 919, 991, K47DH, K52DH, K53DH



Plunging	P01		P02		K01		N01		N02		N03	
Working Material	Carbon Steel		Alloy Steel		Grey Cast iron		Wrought Aluminium		Cast Aluminium		Copper Alloy	
Properties	-		520 < Rm < 1200		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	-		-		-		-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.007		0.008		0.007		0.009		0.009		0.008
2		0.018		0.016		0.018		0.018		0.018		0.017
3		0.028		0.024		0.028		0.028		0.028		0.027
4		0.038		0.033		0.038		0.038		0.037		0.036
5		0.048		0.042		0.048		0.048		0.047		0.046
6		0.059		0.052		0.059		0.058		0.057		0.056
8	120	0.080	110	0.070	120	0.080	150	0.078	140	0.077	130	0.075
10		0.101		0.090		0.101		0.099		0.098		0.097
12		0.126		0.113		0.126		0.121		0.121		0.120
14		0.144		0.129		0.144		0.140		0.139		0.138
16		0.162		0.144		0.162		0.158		0.157		0.156
18		0.179		0.158		0.179		0.176		0.174		0.173
20		0.196		0.170		0.196		0.193		0.191		0.189

P M K N S | P K

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

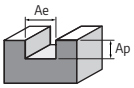
DP/DH / DP Torus / R-Like Endmills, 4 Flutes – 918, 981, 918DH, 981DH, 986DH, 919, 991

Trochoidal Milling	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D		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		1.50 × D		1.50 × D		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		0.08 × D		0.10 × D		0.08 × D		0.10 × D		0.10 × D		0.12 × D		0.12 × D		0.12 × D		0.10 × 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)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.017		0.013		0.012		0.010		0.008		0.015		0.010		0.020		0.019		0.018		0.006		0.003
2		0.018		0.015		0.016		0.017		0.017		0.016		0.018		0.021		0.020		0.019		0.014		0.008
3		0.026		0.024		0.025		0.027		0.027		0.025		0.029		0.024		0.024		0.025		0.024		0.013
4		0.035		0.033		0.035		0.037		0.038		0.034		0.040		0.032		0.032		0.034		0.034		0.020
5		0.044		0.043		0.045		0.048		0.050		0.043		0.052		0.041		0.041		0.043		0.045		0.027
6		0.054		0.053		0.055		0.060		0.063		0.053		0.065		0.050		0.050		0.053		0.057		0.036
8	350	0.075	290	0.073	250	0.078	200	0.084	120	0.091	320	0.073	170	0.092	450	0.070	420	0.070	380	0.074	100	0.084	45	0.054
10		0.098		0.096		0.102		0.112		0.122		0.095		0.122		0.091		0.092		0.096		0.116		0.079
12		0.121		0.120		0.128		0.142		0.157		0.118		0.155		0.113		0.114		0.119		0.151		0.105
14		0.138		0.136		0.144		0.158		0.174		0.133		0.174		0.128		0.130		0.135		0.165		0.110
16		0.153		0.149		0.158		0.173		0.188		0.147		0.189		0.142		0.144		0.149		0.176		0.111
18		0.167		0.162		0.171		0.186		0.200		0.160		0.202		0.155		0.156		0.162		0.184		0.109
20		0.180		0.174		0.182		0.197		0.209		0.172		0.212		0.168		0.168		0.174		0.189		0.104

P M K N S | P K

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

Short DP/DH Endmills, 3 Flutes - K86



Slotting	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		-		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		0.80 × D		0.80 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.002		0.001		0.001		0.001		0.001		0.002		0.001		0.005		0.005		0.003		0.001		0.001
2		0.006		0.004		0.002		0.003		0.004		0.006		0.002		0.008		0.008		0.008		0.002		0.002
3		0.011		0.007		0.004		0.006		0.007		0.011		0.003		0.014		0.013		0.013		0.004		0.004
4		0.016		0.010		0.007		0.009		0.010		0.017		0.007		0.019		0.019		0.018		0.007		0.007
5	135	0.022	120	0.014	95	0.010	100	0.013	44	0.014	110	0.023	209	0.009	220	0.025	200	0.024	165	0.024	66	0.010	110	0.010
6		0.028		0.018		0.013		0.017		0.017		0.029		0.011		0.031		0.030		0.030		0.013		0.013
8		0.041		0.028		0.019		0.026		0.024		0.043		0.016		0.045		0.042		0.043		0.019		0.019
10		0.056		0.040		0.025		0.038		0.030		0.061		0.021		0.060		0.056		0.058		0.025		0.025
12		0.074		0.054		0.030		0.052		0.036		0.081		0.026		0.077		0.070		0.074		0.030		0.030

P M K N | P K

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: Design and 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 2021-08-15 until 2024-08-14.
First certification 2005

2021-12-13

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

TÜVRheinland®
Precisely Right.

NOTE

HPMT

HPMT INDUSTRIES SDN BHD
5 Jalan Sungai Kayu Ara 32/39
Taman Berjaya, Seksyen 32
40460 Shah Alam,
Selangor Darul Ehsan, Malaysia
T + 603 5870 0098
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 5870 0098 (Selangor)
+ 607 351 9910 (Johor)
F + 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