



ENDMILLS

SE 60X

Suitable for high speed milling

For material application between 40 HRC to 60 HRC

Index - SE 60X, For 40 - 60 HRC

 Suitable for Material Groups
  Adapté pour les matériaux
  适用于材料
 Geeignet für die Materialgruppen
  Adatto per il materiale

P

H

EDP Number	Type	No. Z	Helix Angle	Coating	Performance	Page Number
G78 	SE 60X Fin-Mill Torus	4/6	25°	B0909	P	272
G80 	SE 60X Fin-Mill Torus, Recess	4/6	25°	B0909	P	272
G82 	SE 60X Fin-Mill Torus Long	4/6	25°	B0909	P	273
G84 	SE 60X Fin-Mill Torus Long, Recess	4/6	25°	B0909	P	273
A4G 	SE 60X Fin-Mill Torus Miniature Long Neck	2/4	25°	B0909	P	274
A4F 	SE 60X Fin-Mill Taper Neck	4	25°	B0909	P	278
815 	SE 60X	4	25°	G6110	P	280
A98 	SE 60X, Recess	4	25°	B0909	P	280
G86 	SE 60X Sweep-Mill	4/6	3°	B0909	P	283

G - General P - Performance

FEATURES & BENEFITS

SE 60X Fin-Mill



Top View

1 4/6 Flutes

2x to 3x feed rate in comparison with conventional 2 flutes cutter

2 Tough PVD Silicon Based Coating

- Prolong the tool life
- Enables higher cutting speeds
- Increases hardness and higher abrasive wear resistance
- Smoother chips evacuation

3 Suitable for Material Groups





1. 4/6 Schneiden
zwei- bzw. dreifacher Vorschub gegenüber Fräsen
mit 2 Schneiden
 2. PVD-Silizium-Hartbeschichtung
verlängert die Lebensdauer des Werkzeugs
ermöglicht höhere Schnittgeschwindigkeiten
erhöht die Hitzebeständigkeit, deshalb sehr gut
geeignet für Trockenbearbeitung
 3. Geeignet für Materialgruppe P, H
-



1. 4/6 刃
与常规的 2 刃刀具相比, 进给速率提高 2 倍或 3 倍。
 2. 耐用的 PVD 硅基涂层
延长刀具寿命。
实现更高的切屑速度。
增加耐热性, 因此非常适合干式切削。
 3. 适用高硬度材料 P、H
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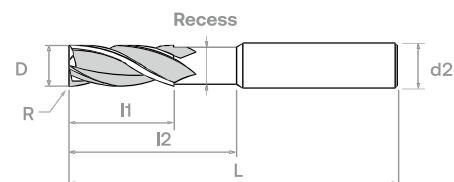
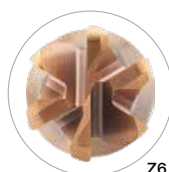
1. 4/6 scanalature
velocità di avanzamento 2 o 3 volte maggiore rispetto
a cutter tradizionali a 2 scanalature
2. Rivestimento in silicone PVD resistente
prolunga la vita dello strumento
consente maggiori velocità di taglio
aumenta la resistenza al calore ed è quindi adatto per
la lavorazione a secco
3. Adatto per Materiale P, H



1. 4/6 goujures
Débit 2 à 3 fois plus élevé que les dispositifs de coupe
conventionnels à 2 goujures
2. Revêtement à base de silicium sous forme de dépôt
en phase vapeur résistant
prolonge la durée de vie de l'outil
permet des vitesses de coupe supérieures
augmente la résistance à la chaleur, donc parfaitement
adapté à l'usinage à sec
3. Adapté au matériaux P, H

SE 60X FIN-MILL TORUS ENDMILLS / WITH RECESS, 4 - 6 FLUTES

- 🇩🇪 VHM SE 60X Fin-mill Standard Torusfräser, 4 / 6 Zähne
- 🇮🇹 Frese ad alto avanzamento toroidali SE 60X, 4 - 6 taglienti
- 🇫🇷 Fraises 2 tailles SE 60X Fin-mill toriques - Standard, 4 - 6 dents
- 🇨🇳 整体硬质合金 SE60X Fin-mill 系列 4/6刃圆鼻铣刀



Order Number	Dimension (mm)							B0909	Order Number	Dimension (mm)							B0909
	D	I1	I2	L	d2 (h6)	R	Z			D	I1	I2	L	d2 (h6)	R	Z	
G78 0200 060 0600 030	2	2		60	6	0.3	4	•	G80 0200 060 0600 030	2	2	10	60	6	0.3	4	•
G78 0200 060 0600 050				60	6	0.5	4	•	G80 0200 060 0600 050			20	60	6	0.5	4	◦
G78 0300 060 0600 030	3	3		60	6	0.3	4	•	G80 0300 060 0600 030	3	3	21	60	6	0.3	4	◦
G78 0300 060 0600 050				60	6	0.5	4	•	G80 0300 060 0600 050			21	60	6	0.5	4	•
G78 0400 060 0600 030	4	4		60	6	0.3	4	◦	G80 0400 060 0600 030	4	4	12	60	6	0.3	4	◦
G78 0400 060 0600 050				60	6	0.5	4	◦	G80 0400 060 0600 050			12	60	6	0.5	4	•
G78 0600 060 0600 030	6	6		60	6	0.3	4	•	G80 0600 060 0600 030	6	6	20	60	6	0.3	4	•
G78 0600 060 0600 050				60	6	0.5	4	◦	G80 0600 060 0600 050			20	60	6	0.5	4	•
G78 0600 060 0600 100				60	6	1	4	•	G80 0600 060 0600 100			20	60	6	1	4	•
G78 0800 064 0800 030	8	8		64	8	0.3	6	•	G80 0800 064 0800 030	8	8	24	64	8	0.3	6	◦
G78 0800 064 0800 050				64	8	0.5	6	•	G80 0800 064 0800 050			24	64	8	0.5	6	◦
G78 0800 064 0800 100				64	8	1	6	◦	G80 0800 064 0800 100			24	64	8	1	6	•
G78 0800 064 0800 200				64	8	2	6	•	G80 0800 064 0800 200			24	64	8	2	6	◦
G78 1000 075 1000 030	10	10		75	10	0.3	6	•	G80 1000 075 1000 030	10	10	30	75	10	0.3	6	◦
G78 1000 075 1000 050				75	10	0.5	6	•	G80 1000 075 1000 050			30	75	10	0.5	6	◦
G78 1000 075 1000 100				75	10	1	6	◦	G80 1000 075 1000 100			30	75	10	1	6	•
G78 1000 075 1000 200				75	10	2	6	•	G80 1000 075 1000 200			30	75	10	2	6	◦
G78 1200 075 1200 030	12	12		75	12	0.3	6	•	G80 1200 075 1200 030	12	12	30	75	12	0.3	6	◦
G78 1200 075 1200 050				75	12	0.5	6	•	G80 1200 075 1200 050			30	75	12	0.5	6	◦
G78 1200 075 1200 100				75	12	1	6	•◦	G80 1200 075 1200 100			30	75	12	1	6	◦
G7 1200 075 1200 200				75	12	2	6	•	G80 1200 075 1200 200			30	75	12	2	6	•

CNC Repeatability

Ø1 - Ø3 within 10µm

Ø4 - Ø8 within 15µm

≥ Ø10 within 20µm

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

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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SE 60X FIN-MILL TORUS LONG ENDMILLS / WITH RECESS, 4 - 6 FLUTES

- VHM SE 60X Fin-mill Torusfräser, lang, 4 / 6 Zähne
- Frese ad alto avanzamento toroidali lunghe SE 60X, 4 - 6 taglienti
- Fraises 2 tailles SE 60X Fin-mill toriques longues, 4 - 6 dents
- 整体硬质合金 SE60X Fin-mill 系列 4/6刃长型圆鼻铣刀



Order Number	Dimension (mm)								B0909
	D	I1	I2	L	d2 (h6)	R	Z		
G82 0200 075 0600 030	2	2		75	6	0.3	4	•	
G82 0200 075 0600 050				75	6	0.5	4	◦	
G82 0300 075 0600 030	3	3		75	6	0.3	4	◦	
G82 0300 075 0600 050				75	6	0.5	4	◦	
G82 0400 075 0600 030	4	4		75	6	0.3	4	◦	
G82 0400 075 0600 050				75	6	0.5	4	◦	
G82 0600 075 0600 030	6	6		75	6	0.3	4	◦	
G82 0600 075 0600 050				75	6	0.5	4	◦	
G82 0600 075 0600 100				75	6	1	4	•	
G82 0800 100 0800 030	8	8		100	8	0.3	6	◦	
G82 0800 100 0800 050				100	8	0.5	6	•	
G82 0800 100 0800 100				100	8	1	6	◦	
G82 0800 100 0800 200				100	8	2	6	◦	
G82 1000 100 1000 030	10	10		100	10	0.3	6	◦	
G82 1000 100 1000 050				100	10	0.5	6	•	
G82 1000 100 1000 100				100	10	1	6	◦	
G82 1000 100 1000 200				100	10	2	6	•	
G82 1200 100 1200 030	12	12		100	12	0.3	6	◦	
G82 1200 100 1200 050				100	12	0.5	6	◦	
G82 1200 100 1200 100				100	12	1	6	◦	
G82 1200 100 1200 200				100	12	2	6	•	

Order Number	Dimension (mm)								B0909
	D	I1	I2	L	d2 (h6)	R	Z		
G84 0200 075 0600 030	2	2	35	75	6	0.3	4	◦	
G84 0200 075 0600 050			35	75	6	0.5	4	◦	
G84 0300 075 0600 030	3	3	30	75	6	0.3	4	◦	
G84 0300 075 0600 050			30	75	6	0.5	4	◦	
G84 0400 075 0600 030	4	4	32	75	6	0.3	4	◦	
G84 0400 075 0600 050			32	75	6	0.5	4	•	
G84 0600 075 0600 030	6	6	40	75	6	0.3	4	◦	
G84 0600 075 0600 050			40	75	6	0.5	4	◦	
G84 0600 075 0600 100			40	75	6	1	4	◦	
G84 0800 100 0800 030	8	8	60	100	8	0.3	6	◦	
G84 0800 100 0800 050			60	100	8	0.5	6	◦	
G84 0800 100 0800 100			60	100	8	1	6	◦	
G84 0800 100 0800 200			60	100	8	2	6	◦	
G84 1000 100 1000 030	10	10	60	100	10	0.3	6	◦	
G84 1000 100 1000 050			60	100	10	0.5	6	◦	
G84 1000 100 1000 100			60	100	10	1	6	◦	
G84 1000 100 1000 200			60	100	10	2	6	◦	
G84 1200 100 1200 030	12	12	60	100	12	0.3	6	◦	
G84 1200 100 1200 050			60	100	12	0.5	6	◦	
G84 1200 100 1200 100			60	100	12	1	6	◦	
G84 1200 100 1200 200			60	100	12	2	6	◦	

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

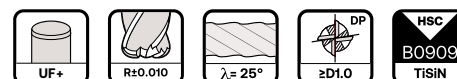
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	284
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SE 60X FIN-MILL TORUS ENDMILLS WITH LONG NECK, 2 - 4 FLUTES

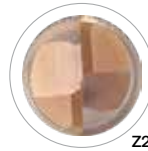
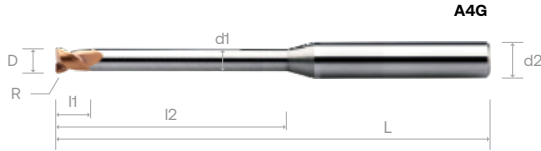
- VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne
- Micro-frese ad alto avanzamento toroidali SE 60X, con collo conico, 2 - 4 taglienti
- Micro-fraises SE 60X Fin-Mill 2 - 4 tailles toriques avec cou long, 2 dents
- 整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刀 立铣刀 2/4 刃



Order Number	Dimension (mm)								B0909	Order Number	Dimension (mm)								B0909										
	D	I1	I2	L	d1	R	d2 (h6)	Z			D	I1	I2	L	d1	R	d2 (h6)	Z											
A4G 0020 050 0400 R005	0.2	0.2	-	50	-	0.05	4	2	•	A4G 0100 060 0400 R030	1	1	-	60	-	0.3	4	4	•	A4G 0100 060 0400 200 R030	1.5	1.5	20	60	0.9	0.3	4	4	•
A4G 0020 050 0400 005 R005			0.5	50	0.17	0.05	4	2	•	A4G 0150 050 0400 R010			-	50	-	0.1	4	4	•	A4G 0150 050 0400 060 R010			6	50	1.4	0.1	4	4	•
A4G 0020 050 0400 010 R005			1	50	0.17	0.05	4	2	•	A4G 0150 050 0400 080 R010			8.0	50	1.4	0.1	4	4	•	A4G 0150 050 0400 120 R010			12	50	1.4	0.1	4	4	•
A4G 0020 050 0400 015 R005			1.5	50	0.17	0.05	4	2	•	A4G 0150 050 0400 160 R010			16	50	1.4	0.1	4	4	•	A4G 0150 060 0400 R010			-	60	-	0.1	4	4	•
A4G 0030 050 0400 R005	0.3	0.3	2	50	0.17	0.05	4	2	•	A4G 0150 060 0400 200 R010	1.5	1.5	20	60	1.4	0.1	4	4	•	A4G 0150 050 0400 R020	2.5	2.5	-	50	-	0.2	4	4	•
A4G 0030 050 0400 R005			-	50	-	0.05	4	2	•	A4G 0150 050 0400 060 R020			6.0	50	1.4	0.2	4	4	•	A4G 0150 050 0400 080 R020			8.0	50	1.4	0.2	4	4	•
A4G 0030 050 0400 010 R005			1	50	0.27	0.05	4	2	•	A4G 0150 050 0400 100 R020			10	50	1.4	0.2	4	4	•	A4G 0150 050 0400 120 R020			12	50	1.4	0.2	4	4	•
A4G 0030 050 0400 015 R005			1.5	50	0.27	0.05	4	2	•	A4G 0150 050 0400 140 R020			14	50	1.4	0.2	4	4	•	A4G 0150 050 0400 160 R020			16	50	1.4	0.2	4	4	•
A4G 0030 050 0400 020 R005	0.4	0.4	2	50	0.27	0.05	4	2	•	A4G 0150 060 0400 R020	2	2	-	60	-	0.2	4	4	•	A4G 0150 060 0400 180 R020	2.5	2.5	18	60	1.4	0.2	4	4	•
A4G 0030 050 0400 020 R005			2.5	50	0.27	0.05	4	2	•	A4G 0150 060 0400 200 R020			20	60	1.4	0.2	4	4	•	A4G 0150 050 0400 R030			-	50	-	0.3	4	4	•
A4G 0030 050 0400 025 R005			3	50	0.27	0.05	4	2	•	A4G 0150 050 0400 080 R030			8.0	50	1.4	0.3	4	4	•	A4G 0150 050 0400 160 R030			16	50	1.4	0.3	4	4	•
A4G 0030 050 0400 030 R005			3.5	50	0.27	0.05	4	2	•	A4G 0150 060 0400 R030			-	60	-	0.2	4	4	•	A4G 0200 050 0400 R020			6	50	1.9	0.2	4	4	•
A4G 0040 050 0400 035 R005	0.5	0.5	3.5	50	0.37	0.05	4	2	•	A4G 0200 050 0400 060 R020	2	2	8	50	1.9	0.2	4	4	•	A4G 0200 050 0400 080 R020	2.5	2.5	10	50	1.9	0.2	4	4	•
A4G 0040 050 0400 040 R005			4	50	0.37	0.05	4	2	•	A4G 0200 050 0400 100 R020			12	50	1.9	0.2	4	4	•	A4G 0200 050 0400 120 R020			14	50	1.9	0.2	4	4	•
A4G 0050 050 0400 R005			-	50	-	0.05	4	2	•	A4G 0200 050 0400 140 R020			16	50	1.9	0.2	4	4	•	A4G 0200 050 0400 160 R020			18	60	1.9	0.2	4	4	•
A4G 0050 050 0400 010 R005			1	50	0.45	0.05	4	2	•	A4G 0200 060 0400 R020			-	60	-	0.2	4	4	•	A4G 0200 060 0400 180 R020			20	60	1.9	0.2	4	4	•
A4G 0050 050 0400 020 R005	0.6	0.6	2	50	0.45	0.05	4	2	•	A4G 0200 060 0400 200 R020	2	2	-	75	-	0.2	4	4	•	A4G 0200 075 0400 R020	2.5	2.5	-	75	-	0.2	4	4	•
A4G 0050 050 0400 030 R005			3	50	0.45	0.05	4	2	•	A4G 0200 075 0400 250 R020			25	75	1.9	0.2	4	4	•	A4G 0200 075 0400 300 R020			30	75	1.9	0.2	4	4	•
A4G 0050 050 0400 040 R005			4	50	0.45	0.05	4	2	•	A4G 0200 075 0400 300 R020			-	50	-	0.3	4	4	•	A4G 0200 050 0400 R030			8	50	1.9	0.3	4	4	•
A4G 0050 050 0400 050 R005			5	50	0.45	0.05	4	2	•	A4G 0200 050 0400 080 R030			16	50	1.9	0.3	4	4	•	A4G 0200 050 0400 160 R030			-	60	-	0.3	4	4	•
A4G 0050 050 0400 060 R005	0.8	0.8	6	50	0.45	0.05	4	2	•	A4G 0200 060 0400 R030	2.5	2.5	20	60	1.9	0.3	4	4	•	A4G 0200 060 0400 200 R030	2.5	2.5	-	60	-	0.5	4	4	•
A4G 0060 050 0400 R010			-	50	-	0.1	4	2	•	A4G 0200 060 0400 180 R030			18	60	1.9	0.3	4	4	•	A4G 0200 050 0400 080 R050			8	50	1.9	0.5	4	4	•
A4G 0060 050 0400 020 R010			2	50	0.55	0.1	4	2	•	A4G 0200 060 0400 160 R030			16	50	1.9	0.5	4	4	•	A4G 0200 050 0400 120 R050			12	50	1.9	0.5	4	4	•
A4G 0060 050 0400 040 R010			4	50	0.55	0.1	4	2	•	A4G 0200 060 0400 140 R030			14	50	1.9	0.5	4	4	•	A4G 0200 050 0400 100 R050			10	50	1.9	0.5	4	4	•
A4G 0060 050 0400 060 R010	1	1	6	50	0.55	0.1	4	2	•	A4G 0200 060 0400 120 R030	2.5	2.5	25	75	1.9	0.5	4	4	•	A4G 0200 060 0400 100 R050	2.5	2.5	-	50	-	0.3	4	4	•
A4G 0060 050 0400 080 R010			8	50	0.55	0.1	4	2	•	A4G 0200 060 0400 100 R030			10	50	1.9	0.3	4	4	•	A4G 0200 060 0400 080 R050			8	50	1.9	0.3	4	4	•
A4G 0060 050 0400 080 R010			10	50	0.55	0.1	4	2	•	A4G 0200 060 0400 080 R030			8	50	1.9	0.3	4	4	•	A4G 0200 060 0400 060 R050			6	50	1.9	0.3	4	4	•
A4G 0060 050 0400 100 R010			12	50	0.55	0.1	4	2	•	A4G 0200 060 0400 060 R030			6	50	1.9	0.3	4	4	•	A4G 0200 060 0400 040 R050			4	50	1.9	0.3	4	4	•
A4G 0080 050 0400 R010	1	1	-	50	-	0.1	4	2	•	A4G 0200 060 0400 040 R030	2.5	2.5	-	50	-	0.5	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	60	-	0.2	4	4	•
A4G 0080 050 0400 040 R010			4	50	0.75	0.1	4	2	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0080 050 0400 060 R010			6	50	0.75	0.1	4	2	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0080 050 0400 080 R010			8	50	0.75	0.1	4	2	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0080 050 0400 120 R010	1	1	12	50	0.75	0.1	4	2	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.3	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.3	4	4	•
A4G 0100 050 0400 R010			-	50	-	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 040 R010			4	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 060 R010			6	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 080 R010	1	1	8	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	60	-	0.3	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	60	-	0.3	4	4	•
A4G 0100 050 0400 100 R010			10	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 120 R010			12	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 140 R010			14	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 160 R010	1	1	16	50	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.5	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.5	4	4	•
A4G 0100 075 0400 R010			-	75	-	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 075 0400 200 R010			20	75	0.9	0.1	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 R020			-	50	-	0.2	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.3	4	4	•
A4G 0100 050 0400 040 R020	1	1	4	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	20	60	1.9	0.5	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	60	-	0.5	4	4	•
A4G 0100 050 0400 060 R020			6	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•
A4G 0100 050 0400 080 R020			8	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•
A4G 0100 050 0400 100 R020			10	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5	4	4	•
A4G 0100 050 0400 120 R020	1	1	12	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.3	4	4	•	A4G 0200 060 0400 020 R030	2.5	2.5	-	50	-	0.3	4	4	•
A4G 0100 050 0400 140 R020			14	50	0.9	0.2	4	4	•	A4G 0200 060 0400 020 R030			4	50	1.9	0.5													

SE 60X FIN-MILL TORUS ENDMILLS WITH LONG NECK, 2 - 4 FLUTES

-  VHM SE 60X Fin-Mill Torus-Kleinstfräser mit langem Hals, 2/4 Zähne
-  Micro-frese ad alto avanzamento toroidali SE 60X, con collo conico, 2 - 4 taglienti
-  Micro-fraises SE 60X Fin-Mill 2 - 4 tailles toriques avec cou long, 2 dents
-  整体硬质合金 SE 60X Fin-Mill 系列 圆鼻长颈短刃 立铣刀 2/4 刃



Order Number	Dimension (mm)								B0909
	D	I1	I2	L	d1	R	d2 (H6)	Z	
A4G 0250 060 0400 250 R030	2.5	2.5	25	60	2.4	0.3	4	4	•
A4G 0250 075 0400 R030			-	75	-	0.3	4	4	•
A4G 0250 075 0400 300 R030			30	75	2.4	0.3	4	4	•
A4G 0250 050 0400 R050			-	50	-	0.5	4	4	•
A4G 0250 050 0400 080 R050			8	50	2.4	0.5	4	4	•
A4G 0250 050 0400 120 R050			12	50	2.4	0.5	4	4	•
A4G 0250 050 0400 160 R050			16	50	2.4	0.5	4	4	•
A4G 0250 060 0400 R050			-	60	-	0.5	4	4	•
A4G 0250 060 0400 200 R050			20	60	2.4	0.5	4	4	•
A4G 0250 060 0400 250 R050			25	60	2.4	0.5	4	4	•
A4G 0250 075 0400 R050			-	75	-	0.5	4	4	•
A4G 0250 075 0400 300 R050			30	75	2.4	0.5	4	4	•
A4G 0300 050 0600 R020	3	3	-	50	-	0.2	6	4	•
A4G 0300 050 0600 080 R020			8	50	2.8	0.2	6	4	•
A4G 0300 050 0600 100 R020			10	50	2.8	0.2	6	4	•
A4G 0300 050 0600 120 R020			12	50	2.8	0.2	6	4	•
A4G 0300 050 0600 140 R020			14	50	2.8	0.2	6	4	•
A4G 0300 060 0600 R020			-	60	-	0.2	6	4	•
A4G 0300 060 0600 160 R020			16	60	2.8	0.2	6	4	•
A4G 0300 060 0600 180 R020			18	60	2.8	0.2	6	4	•
A4G 0300 060 0600 200 R020			20	60	2.8	0.2	6	4	•
A4G 0300 075 0600 R020			-	75	-	0.2	6	4	•
A4G 0300 075 0600 250 R020			25	75	2.8	0.2	6	4	•
A4G 0300 050 0600 R030			-	50	-	0.3	6	4	•
A4G 0300 050 0600 080 R030	4	4	8	50	2.8	0.3	6	4	•
A4G 0300 050 0600 100 R030			10	50	2.8	0.3	6	4	•
A4G 0300 050 0600 120 R030			12	50	2.8	0.3	6	4	•
A4G 0300 050 0600 140 R030			14	50	2.8	0.3	6	4	•
A4G 0300 060 0600 R030			-	60	-	0.3	6	4	•
A4G 0300 060 0600 160 R030			16	60	2.8	0.3	6	4	•
A4G 0300 060 0600 180 R030			18	60	2.8	0.3	6	4	•
A4G 0300 060 0600 200 R030			20	60	2.8	0.3	6	4	•
A4G 0300 075 0600 R030			-	75	-	0.3	6	4	•
A4G 0300 075 0600 300 R030			30	75	2.8	0.3	6	4	•
A4G 0300 050 0600 R050			-	50	-	0.5	6	4	•
A4G 0300 050 0600 080 R050	4	4	8	50	2.8	0.5	6	4	•
A4G 0300 050 0600 100 R050			10	50	2.8	0.5	6	4	•
A4G 0300 050 0600 120 R050			12	50	2.8	0.5	6	4	•
A4G 0300 050 0600 140 R050			14	50	2.8	0.5	6	4	•
A4G 0300 060 0600 R050			-	60	-	0.5	6	4	•
A4G 0300 060 0600 160 R050			16	60	2.8	0.5	6	4	•
A4G 0300 060 0600 180 R050			18	60	2.8	0.5	6	4	•
A4G 0300 060 0600 200 R050			20	60	2.8	0.5	6	4	•
A4G 0300 075 0600 R050			-	75	-	0.5	6	4	•
A4G 0300 075 0600 300 R050			30	75	2.8	0.5	6	4	•
A4G 0400 060 0600 R030	4	4	-	60	-	0.3	6	4	•
A4G 0400 060 0600 100 R030			10	60	3.7	0.3	6	4	•
A4G 0400 060 0600 150 R030			15	60	3.7	0.3	6	4	•
A4G 0400 060 0600 200 R030			20	60	3.7	0.3	6	4	•
A4G 0400 075 0600 R030			-	75	-	0.3	6	4	•
A4G 0400 075 0600 250 R030			25	75	3.7	0.3	6	4	•
A4G 0400 075 0600 320 R030			32	75	3.7	0.3	6	4	•
A4G 0400 075 0600 400 R030			40	75	3.7	0.3	6	4	•
A4G 0400 060 0600 R050			-	60	-	0.5	6	4	•
A4G 0400 060 0600 100 R050			10	60	3.7	0.5	6	4	•
A4G 0400 060 0600 150 R050			15	60	3.7	0.5	6	4	•
A4G 0400 060 0600 200 R050			20	60	3.7	0.5	6	4	•
A4G 0400 075 0600 R050	4	4	-	75	-	0.5	6	4	•
A4G 0400 075 0600 250 R050			25	75	3.7	0.5	6	4	•
A4G 0400 075 0600 320 R050			32	75	3.7	0.5	6	4	•
A4G 0400 075 0600 400 R050			40	75	3.7	0.5	6	4	•

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

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	286 - 287
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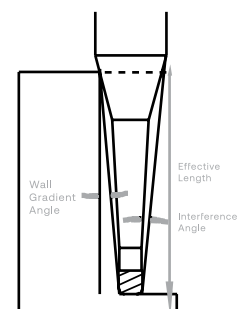
SE 60X FIN-MILL TORUS ENDMILLS WITH TAPER NECK, 4 FLUTES

- VHM SE 60X Fin-mill Standard Torusfräser, 4 Zähne
- Frese ad alto avanzamento toroidali SE6 0X, con collo conico, 4 taglienti
- Fraises 2 tailles SE 60X Fin-mill toriques - Standard, cou conique 4 dents
- 整体硬质合金 SE 60X Fin-mill 系列 圆鼻 立铣刀 4 刃 - 标准长度



Order Number	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle			B0909
	D	I1	I2	I3	d1	L	d2 (h6)	y	R		1°	2°	3°	
A4F 0100 015 06 010 R010	1.0	1.0	2.0	15	1.35	60	6	1°	0.1	8.31°	15.08	15.35	15.61	°
A4F 0100 020 06 010 R010			2.0	20	1.53	60	6	1°	0.1	6.47°	20.08	20.43	20.78	°
A4F 0100 025 06 010 R010			2.0	25	1.70	60	6	1°	0.1	5.30°	25.08	25.52	25.96	°
A4F 0100 030 06 010 R010			2.0	30	1.88	75	6	1°	0.1	4.49°	30.08	30.61	31.13	°
A4F 0100 035 06 010 R010			2.0	35	2.05	75	6	1°	0.1	3.89°	35.08	35.70	36.31	°
A4F 0100 006 06 030 R010			2.0	6	1.32	60	6	3°	0.1	17.07°	-	6.04	6.15	°
A4F 0100 010 06 030 R010			2.0	10	1.74	60	6	3°	0.1	11.83°	-	-	10.14	°
A4F 0100 020 06 010 R020			2.0	20	1.53	60	6	1°	0.2	6.50°	20.08	20.43	20.78	°
A4F 0100 025 06 010 R020			2.0	25	1.70	60	6	1°	0.2	5.32°	25.08	25.52	25.95	°
A4F 0100 030 06 010 R020			2.0	30	1.88	75	6	1°	0.2	4.50°	30.08	30.60	31.13	°
A4F 0100 035 06 010 R020			2.0	35	2.05	75	6	1°	0.2	3.90°	35.08	35.69	36.30	°
A4F 0100 006 06 030 R020			2.0	6	1.32	60	6	3°	0.2	17.27°	-	6.04	6.14	°
A4F 0100 010 06 030 R020			2.0	10	1.74	60	6	3°	0.2	11.93°	-	-	10.13	°
A4F 0150 015 06 010 R020	1.5	1.5	3.0	15	1.82	60	6	1°	0.2	7.59°	15.10	15.36	15.62	°
A4F 0150 020 06 010 R020			3.0	20	1.99	60	6	1°	0.2	5.89°	20.10	20.45	20.80	°
A4F 0150 025 06 010 R020			3.0	25	2.17	60	6	1°	0.2	4.81°	25.10	25.54	25.97	°
A4F 0150 030 06 010 R020			3.0	30	2.34	75	6	1°	0.2	4.07°	30.10	30.62	31.15	°
A4F 0150 010 06 030 R020			3.0	10	2.13	60	6	1°	0.2	10.86°	-	10.02	10.19	°
A4F 0150 015 06 030 R020			3.0	15	2.66	60	6	3°	0.2	7.78°	-	-	15.18	°
A4F 0150 015 06 010 R030			3.0	15	1.82	60	6	3°	0.3	1.63°	15.10	15.36	15.62	°
A4F 0150 020 06 010 R030			3.0	20	1.99	60	6	1°	0.3	5.92°	21.10	20.44	20.79	°
A4F 0150 025 06 010 R030			3.0	25	2.17	60	6	1°	0.3	4.83°	25.10	25.53	25.97	°
A4F 0150 030 06 010 R030			3.0	30	2.34	75	6	1°	0.3	4.08°	30.10	30.62	31.14	°
A4F 0150 010 06 030 R030			3.0	10	2.13	60	6	3°	0.3	10.95°	-	10.02	10.18	°
A4F 0150 015 06 030 R030			3.0	15	2.66	60	6	3°	0.3	7.83°	-	-	15.17	°
A4F 0200 015 06 010 R020	2.0	2.0	4.0	15	2.28	60	6	1°	0.2	6.85°	15.12	15.38	15.64	°
A4F 0200 020 06 010 R020			4.0	20	2.46	60	6	1°	0.2	5.30°	20.12	20.47	20.81	°
A4F 0200 025 06 010 R020			4.0	25	2.63	60	6	1°	0.2	4.32°	25.12	25.55	25.99	°
A4F 0200 040 06 010 R020			4.0	30	2.81	75	6	1°	0.2	3.46°	30.12	30.64	31.16	°
A4F 0200 040 06 010 R020			4.0	40	3.61	75	6	1°	0.2	2.78°	40.12	40.82	41.51	°
A4F 0200 050 06 010 R020			4.0	50	3.51	100	6	1°	0.2	2.24°	50.12	50.99	51.86	°
A4F 0200 015 06 030 R020			4.0	15	3.05	60	6	3°	0.2	7.01°	-	-	15.24	°

cont'd ▶



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

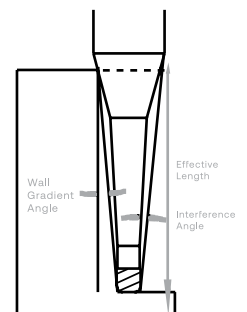
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	288
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SE 60X FIN-MILL TORUS ENDMILLS WITH TAPER NECK, 4 FLUTES

-  VHM SE 60X Fin-mill Standard Torusfräser, 4 Zähne
-  Frese ad alto avanzamento toroidali SE6 0X, con collo conico, 4 taglienti
-  Fraises 2 tailles SE 60X Fin-mill toriques - Standard, cou conique 4 dents
-  整体硬质合金 SE 60X Fin-mill 系列 圆鼻 立铣刀 4 刃 - 标准长度



Order Number	Dimension (mm)									Interference Angle	Effective Wall Gradient Angle			B0909
	D	I1	I2	I3	d1	L	d2 (h6)	y	R		1°	2°	3°	
A4F 0200 020 06 030 R020	2.0	2.0	4.0	20	3.58	60	6	3°	0.2	5.44°	-	-	20.23	°
A4F 0200 015 06 010 R030			4.0	15	2.28	60	6	1°	0.3	6.89°	15.12	15.38	15.63	°
A4F 0200 020 06 010 R030			4.0	20	2.46	60	6	1°	0.3	5.32°	20.12	20.46	20.81	°
A4F 0200 025 06 010 R030			4.0	25	2.63	60	6	1°	0.3	4.34°	25.12	25.55	25.98	°
A4F 0200 030 06 010 R030			4.0	30	2.81	75	6	1°	0.3	3.66°	30.12	30.64	31.16	°
A4F 0200 040 06 010 R030			4.0	40	3.16	75	6	1°	0.3	2.78°	40.12	40.81	41.51	°
A4F 0200 050 06 010 R030			4.0	50	3.51	100	6	1°	0.3	2.25°	50.12	50.99	51.86	°
A4F 0200 015 06 030 R030			4.0	15	3.05	60	6	3°	0.3	7.05°	-	-	15.23	°
A4F 0200 020 06 030 R030			4.0	20	3.58	60	6	3°	0.3	5.46°	-	-	20.22	°
A4F 0200 015 06 010 R050			4.0	15	2.28	60	6	1°	0.5	6.97°	15.11	15.37	15.62	°
A4F 0200 020 06 010 R050			4.0	20	2.46	60	6	1°	0.5	5.37°	20.11	20.46	20.80	°
A4F 0200 025 06 010 R050			4.0	25	2.63	60	6	1°	0.5	4.37°	25.11	25.54	25.97	°
A4F 0200 030 06 010 R050			4.0	30	2.81	75	6	1°	0.5	3.68°	30.11	30.63	31.15	°
A4F 0200 040 06 010 R050			4.0	40	3.16	75	6	1°	0.5	2.80°	40.11	40.80	41.50	°
A4F 0200 050 06 010 R050			4.0	50	3.51	100	6	1°	0.5	2.26°	50.11	50.98	51.85	°
A4F 0200 015 06 030 R050			4.0	15	3.05	60	6	3°	0.5	7.14°	-	-	15.22	°
A4F 0200 020 06 030 R050			4.0	20	3.58	60	6	3°	0.5	5.52°	-	-	20.21	°
A4F 0300 015 06 010 R020	3.0	3.0	4.0	15	3.18	60	6	1°	0.2	5.29°	15.17	15.43	15.69	°
A4F 0300 020 06 010 R020			6.0	20	3.29	60	6	1°	0.2	4.06°	20.20	20.55	20.90	°
A4F 0300 030 06 010 R020			6.0	30	3.64	75	6	1°	0.2	2.77°	30.20	30.73	31.25	°
A4F 0300 040 06 010 R020			6.0	40	3.99	75	6	1°	0.2	2.11°	40.20	40.90	41.60	°
A4F 0300 050 06 010 R020			6.0	50	4.34	100	6	1°	0.2	1.70°	50.20	51.08	51.95	°
A4F 0300 060 06 010 R020			6.0	60	4.69	100	6	1°	0.2	1.42°	60.20	61.25	62.30	°
A4F 0300 015 06 010 R050			4.0	15	3.18	60	6	1°	0.5	5.39°	15.16	15.42	15.68	°
A4F 0300 020 06 010 R050			6.0	20	3.29	60	6	1°	0.5	4.11°	20.20	20.54	20.89	°
A4F 0300 030 06 010 R050			6.0	30	3.64	75	6	1°	0.5	2.80°	30.20	30.72	31.24	°
A4F 0300 040 06 010 R050			6.0	40	3.99	75	6	1°	0.5	2.12°	40.20	40.89	41.59	°
A4F 0300 050 06 010 R050			6.0	50	4.34	100	6	1°	0.5	1.71°	50.20	51.07	51.94	°
A4F 0300 060 06 010 R050			6.0	60	4.69	100	6	1°	0.5	1.43°	60.20	61.24	62.29	°
A4F 0400 020 06 010 R050	4.0	4.0	8.0	20	4.12	75	6	1°	0.5	2.80°	20.29	20.63	20.98	°
A4F 0400 040 06 010 R050			8.0	40	4.82	75	6	1°	0.5	1.43°	40.29	40.98	41.68	°
A4F 0400 050 08 010 R050			6.0	50	6.97	100	6	1°	1.0	1.16°	50.38	51.24	52.10	°



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	288
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FEATURES & BENEFITS

SE 60X Double R



Top View

1 Very Large Radius with Center Cutting

- Increase stock removal rate
- Enables higher cutting feed

2 Short Flutes with Corner Radius

- Short flute to increase toughness
- Prolong tool life with reinforce large corner radius



3 Tough PVD Silicon Based Coating

- Prolong the tool life
- Enables higher cutting speeds
- Increases hardness and higher abrasive wear resistance
- Smoother chips evacuation

4 Suitable for Material Groups





1. Sehr großer Radius mit Zentrumschnitt
Erhöhung des Spanvolumens
ermöglicht eine höhere Schnittgeschwindigkeit
2. Kurze Schneiden mit Eckradius
Erhöhung der Zähigkeit durch kurze Schneiden
verlängert die Werkzeuglebensdauer durch
verstärkten großen Eckradius
3. PVD-Silizium-Hartbeschichtung
verlängert die Lebensdauer des Werkzeugs
ermöglicht höhere Schnittgeschwindigkeiten
erhöht die Hitzebeständigkeit, deshalb sehr gut
geeignet für Trockenbearbeitung
4. Geeignet für Materialgruppe P, H



1. 非常大的半径与中心切割
增加材料去屑率。
实现更高的切削进给。
2. 带圆角的短刃
通过短刃提高韧性。
加强大圆角半径, 延长刀具寿命。
3. 耐用的 PVD 硅基涂层
延长刀具寿命。
实现更高的切屑速度。
增加耐热性, 因此非常适合干式切削。
4. 适用高硬度材料 P、H



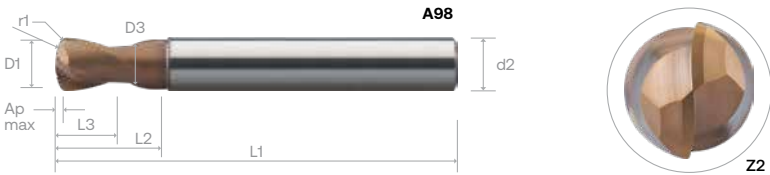
1. Raggio molto largo con taglio centrale
Aumenta il tasso di asportazione
Consente avanzamento di taglio superiore
2. Scanalature corte con raggio d'angolo
Aumenta la resistenza grazie alle scanalature corte
Prolunga la vita dello strumento con raggio d'angolo
ampio e rinforzato
3. Rivestimento in silicone PVD resistente
prolunga la vita dello strumento
consente maggiori velocità di taglio
aumenta la resistenza al calore ed è quindi adatto per
la lavorazione a secco
4. Adatto per Materiale P, H



1. Rayon très large avec coupe au centre
augmente le taux d'évacuation du matériau
2. Augmente la résistance grâce aux goujures courtes
Prolonge la durée de vie de l'outil grâce double rayon
3. Revêtement à base de silicium sous forme de dépôt
en phase vapeur résistant
prolonge la durée de vie de l'outil
permet des vitesses de coupe supérieures
augmente la résistance à la chaleur, donc parfaitement
adapté à l'usinage à sec
4. Adapté au matériaux P, H

SE 60X DOUBLE R BALLNOSE CUTTERS, 2 FLUTES

-  VHM SE 60X Double R Radiusfräser, 2 Zähne
-  Frese sferiche SE 60X Double R, 4 taglienti
-  Fraises SE 60X Double R, à bout hémisphérique
-  整体硬质合金 SE 60X Double R 系列 球头 立铣刀 2 刃 - 标准长度



Order Number	Dimension (mm)										G6t10
	D1	D3	L1	L2	L3	r1	r2	Ap max	d2 (h6)		
815 0400	4	3.90	50	9	4	0.5	4	0.8	6	°	
815 0500	5	4.90		11	5	0.6	5	1	6	°	
815 0600	6	5.90		13	6	0.8	6	1.2	6	°	
815 0800	8	7.90	64	19	8	1	8	1.6	8	°	
815 1000	10	9.90	75	21	10	1.5	10	2.2	10	°	
815 1200	12	11.90		25	12	2	12	2.8	12	°	
815 1600	16	15.90	90	33	16	2.5	16	3.6	16	°	

Order Number	Dimension (mm)										B0909
	D1	D3	L1	L2	L3	r1	r2	Ap max	d2 (h6)		
A98 0400	4	3.90	50	9	4	0.5	4	0.8	6	•	
A98 0500	5	4.90		11	5	0.6	5	1	6	°	
A98 0600	6	5.90		13	6	0.8	6	1.2	6	•	
A98 0800	8	7.90	64	19	8	1	8	1.6	8	°	
A98 1000	10	9.90	75	21	10	1.5	10	2.2	10	°	
A98 1200	12	11.90		25	12	2	12	2.8	12	•	
A98 1600	16	15.90	90	33	16	2.5	16	3.6	16	°	

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

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	Cutting Parameter
																	285 - 286

Ø mm	HPMT Standard
0.1 - 3.0	-10 / -25
3.0 - 6.0	-10 / -38
6.0 - 10.0	-10 / -50
10.0 - 12.0	-10 / -50

FEATURES & BENEFITS

SE 60X Sweep-Mill



Top View

1 4/6 Flutes

- 2x to 3x feed rate in comparison with conventional 2 flutes cutter
- Short flute to increase toughness
- Prolongs tool life by having more flutes

2 Very Large Radius

- Increases stock removal rate
- Enables higher cutting feed

3 Tough PVD Silicon Based Coating

- Prolong the tool life
- Enables higher cutting speeds
- Increases hardness and higher abrasive wear resistance
- Smoother chips evacuation

4 Suitable for Material Groups





1. 4/6 Schneiden
zwei- bzw. dreifacher Vorschub gegenüber Fräsern mit 2 Schneiden
höhere Belastbarkeit durch kurze Schneiden
verlängerte Werkzeuglebensdauer durch mehr Schneiden
 2. Sehr großer Radius
höheres Spanvolumen
ermöglicht höhere Schnittgeschwindigkeit
 3. PVD-Silizium-Hartbeschichtung
verlängert die Lebensdauer des Werkzeugs
ermöglicht höhere Schnittgeschwindigkeiten
erhöht die Hitzebeständigkeit, deshalb sehr gut geeignet für Trockenbearbeitung
 4. Geeignet für Materialgruppe P, H
-



1. 4/6 刃
与常规的 2 刃刀具相比, 进给速率提高 2 倍或 3 倍。
通过短刃设计增加刀具韧性。
通过更多的刀刃数延长刀具寿命。
 2. 较大的圆角
增加铁料去除能力。
实现更高的切削进给。
 3. 耐用的 PVD 硅基涂层
延长刀具寿命。
实现更高的切屑速度。
增加耐热性, 因此非常适合干式切削。
 4. 适用高硬度材料 P、H
-



1. 4/6 scanalature
velocità di avanzamento 2 o 3 volte maggiore rispetto a cutter tradizionali a 2 scanalature
aumenta la resistenza grazie ad una scanalatura corta
Prolunga la vita dello strumento grazie a più scanalature
 2. Raggio molto grande
Aumenta il tasso di asportazione
Consente avanzamento di taglio superiore
 3. Rivestimento in silicone PVD resistente
prolunga la vita dello strumento
consente maggiori velocità di taglio
aumenta la resistenza al calore ed è quindi adatto per la lavorazione a secco
 4. Adatto per Materiale P, H
-



1. 4/6 goujures
Débit 2 à 3 fois plus élevé que les dispositifs de coupe conventionnels à 2 goujures
augmente la résistance grâce aux goujures courtes
2. Rayons extrêmement larges
augmente le taux d'évacuation du matériau
permet un débit copeaux optimum
3. Revêtement à base de silicium sous forme de dépôt en phase vapeur résistant
prolonge la durée de vie de l'outil
permet des vitesses de coupe supérieures
augmente la résistance à la chaleur, donc parfaitement adapté à l'usinage à sec
4. Adapté au matériaux P, H

SE 60X SWEEP-MILL TORUS ENDMILLS, 4 - 6 FLUTES

- VHM SE 60X Sweep-Mill Torusfräser, 4/6 Schneiden
- Frese ad alto avanzamento toroidali per finitura SE 60X, 4 - 6 taglienti
- Fraises 2 tailles toriques SE 60X Sweep-Mill, 4 - 6 dents, pour opération d'ébauche
- 整体硬质合金 SE 60X Sweep-Mill 系列 圆鼻立铣刀4/6刃



Order Number	Dimension (mm)							B0909
	D	I 1	I 2	L	d2 (h6)	R (theo)	Z	
G86 0300 057 0600 060	3	1.5	6	57	6	0.3	4	•
G86 0300 057 0600 120			12	57	6	0.3	4	◦
G86 0400 057 0600 080	4	1.5	8	57	6	0.4	4	•
G86 0400 057 0600 150			15	57	6	0.4	4	•
G86 0500 057 0600 100	5	2	10	57	6	0.5	4	•
G86 0500 057 0600 210			22	57	6	0.5	4	◦
G86 0600 057 0600 120	6	2.5	12	57	6	0.6	4	•
G86 0600 057 0600 260			26	57	6	0.6	4	•
G86 0800 063 0800 160	8	3	16	63	8	0.8	6	•
G86 0800 063 0800 310			32	63	8	0.8	6	•
G86 1000 072 1000 200	10	3.5	20	72	10	1	6	•
G86 1000 072 1000 360			36	72	10	1	6	◦
G86 1200 083 1200 240	12	4	24	83	12	1.2	6	•
G86 1200 083 1200 410			43	83	12	1.2	6	◦

Ø mm	HPMT Standard
0.1 ~ 3.0	-10 / -25
3.0 ~ 6.0	-10 / -38
6.0 ~ 10.0	-10 / -50
10.0 ~ 12.0	-10 / -50

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	285
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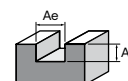
Recommended Cutting Data



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

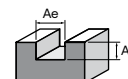


SE 60X Fin-Mill Torus Endmills, 4 Flutes - G78, G80



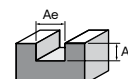
Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, ae	0.40 × D		0.35 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
2	150	0.021	130	0.019	110	0.018
3		0.037		0.033		0.031
4		0.060		0.055		0.052
6		0.092		0.085		0.082

SE 60X Fin-Mill Torus Endmills, 6 Flutes - G78, G80



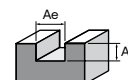
Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, ae	0.40 × D		0.35 × D		0.30 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
8	150	0.096	130	0.088	110	0.085
10		0.125		0.114		0.110
12		0.155		0.145		0.140

SE 60X Fin-Mill Torus Long Endmills, 4 Flutes - G82, G84



Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, ae	0.35 × D		0.30 × D		0.25 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
2	135	0.019	115	0.017	100	0.016
3		0.033		0.031		0.029
4		0.055		0.051		0.048
6		0.086		0.080		0.076

SE 60X Fin-Mill Torus Long Endmills, 6 Flutes - G82, G84



Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, ae	0.35 × D		0.30 × D		0.25 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
8	135	0.090	115	0.084	100	0.080
10		0.120		0.110		0.105
12		0.150		0.140		0.135

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
 NITCo 30
 OPTIMUM
 SE 45
 SE 45X
 NITCo 45
 SE 60
 SE 60X
 DM70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

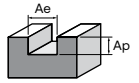
Recommended Cutting Data



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

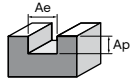


SE 60X Sweep-Mill Torus Endmill, 4 Flutes - G86



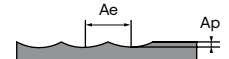
Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.04 × D		0.03 × D	
Cutting Width, ae	0.40 × D		0.35 × D		0.30 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
3	160	0.062	140	0.060	120	0.060
4		0.087		0.085		0.083
5		0.114		0.112		0.110
6		0.142		0.140		0.138

SE 60X Sweep-Mill Torus Endmill, 6 Flutes - G86



Face Milling	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.04 × D		0.03 × D	
Cutting Width, ae	0.40 × D		0.35 × D		0.30 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
8	160	0.144	140	0.142	120	0.140
10		0.184		0.182		0.180
12		0.227		0.225		0.220

SE 60X Double R Ballnose Cutter, 2 Flutes - 815, A98



Roughing	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.03 × D		0.03 × D		0.03 × D	
Cutting Width, ae	0.40 × D		0.35 × D		0.30 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
4	180	0.041	130	0.038	100	0.036
5		0.055		0.052		0.049
6		0.070		0.067		0.064
8		0.097		0.092		0.087
10		0.124		0.117		0.110
12		0.157		0.145		0.140
16		0.200		0.190		0.180

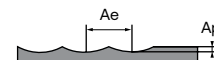
Recommended Cutting Data



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

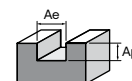


SE 60X Double R Ballnose Cutter, 2 Flutes - 815, A98



Finishing	P		H			
Working Material	Prehardened steel		Hardened steel		Hardened steel	
Properties	35 ≤ HRC < 45		45 ≤ HRC < 52		52 ≤ HRC < 68	
Cutting depth, ap	0.05 × D		0.05 × D		0.05 × D	
Cutting Width, ae	0.05 × D		0.05 × D		0.05 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz
4	200	0.034	150	0.029	120	0.025
5		0.045		0.040		0.034
6		0.058		0.052		0.045
8		0.081		0.071		0.062
10		0.104		0.091		0.078
12		0.132		0.113		0.100
16		0.170		0.148		0.130

SE 60X Fin-Mill Torus Endmills With Miniature Long Neck, 2 Flutes - A4G



Slotting		H					
Working Material		Hardened steel			Hardened steel		
Properties		45 ≤ HRC < 52			52 ≤ HRC < 68		
D	Effective Length	Ap	N	Fz	Ap	N	Fz
0.2	0.5	0.016	41000	0.004		37000	0.004
	1.0	0.013	40000	0.004	0.012	36000	0.004
	1.5	0.010	38200	0.004	0.009	35000	0.004
	2.0	0.004	38200	0.003	0.004	31800	0.003
0.3	1.0	0.010	33900	0.005	0.009	33900	0.005
	1.5	0.011	32000	0.005	0.010	31000	0.005
	2.0	0.006	30800	0.005	0.005	27600	0.005
	2.5	0.005	28500	0.004	0.005	26500	0.004
	3.0	0.004	27600	0.004	0.004	25500	0.004
0.4	1.0	0.016	25500	0.007	0.014	23900	0.007
	1.5	0.013	24300	0.006	0.012	23900	0.006
	2.0	0.010	23100	0.006	0.009	23900	0.006
	2.5	0.009	22100	0.005	0.008	21000	0.005
	3.0	0.009	21500	0.005	0.008	19900	0.005
	3.5	0.007	20500	0.004	0.007	18500	0.004
	4.0	0.005	19900	0.004	0.005	16700	0.004
0.5	1.0	0.020	25500	0.008	0.018	24200	0.008
	2.0	0.015	24200	0.007	0.014	22900	0.007
	3.0	0.011	22900	0.007	0.010	21600	0.007
	4.0	0.011	22300	0.006	0.010	19100	0.006
	5.0	0.007	22300	0.006	0.006	17200	0.006
	6.0	0.005	20400	0.005	0.005	15300	0.005
	2.0	0.023	25500	0.010	0.021	24400	0.010
0.6	4.0	0.016	23300	0.009	0.014	21700	0.009
	6.0	0.010	22300	0.008	0.009	17000	0.008
	8.0	0.008	21200	0.007	0.007	15900	0.007
	10.0	0.006	20200	0.006	0.005	15400	0.006
0.8	4.0	0.021	25900	0.011	0.019	24700	0.011
	6.0	0.012	23900	0.009	0.011	21500	0.009
	8.0	0.010	22300	0.008	0.009	17100	0.008
	12.0	0.008	19900	0.007	0.007	15500	0.007

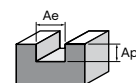
Recommended Cutting Data



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



SE 60X Fin-Mill Torus Endmills With Miniature Long Neck, 4 Flutes - A4G



Slotting		H					
Working Material		Hardened steel			Hardened steel		
Properties		45 ≤ HRC < 52			52 ≤ HRC < 68		
D	Effective Length	Ap	N	Fz	Ap	N	Fz
1.0	4.0	0.025	22000	0.013	0.023	21300	0.013
	6.0	0.016	20700	0.011	0.014	20400	0.011
	8.0	0.016	19700	0.011	0.014	19100	0.011
	10.0	0.010	19700	0.009	0.009	19100	0.009
	12.0	0.010	19100	0.009	0.009	18500	0.009
	14.0	0.008	18800	0.008	0.007	18100	0.008
	16.0	0.006	18500	0.008	0.005	17800	0.008
	20.0	0.004	17500	0.008	0.004	17200	0.008
1.5	6.0	0.042	17000	0.017	0.038	18500	0.017
	8.0	0.039	17000	0.017	0.035	17600	0.017
	10.0	0.039	15900	0.017	0.035	14900	0.017
	12.0	0.039	15900	0.017	0.035	14000	0.017
	14.0	0.029	15900	0.015	0.026	13200	0.015
	16.0	0.029	14900	0.015	0.026	12500	0.015
	18.0	0.025	14900	0.013	0.023	11700	0.013
	20.0	0.020	13800	0.013	0.018	11000	0.013
2.0	6.0	0.052	16200	0.018	0.047	12700	0.018
	8.0	0.046	14600	0.018	0.041	12700	0.018
	10.0	0.036	13400	0.018	0.032	12700	0.018
	12.0	0.026	11900	0.017	0.023	11900	0.017
	14.0	0.026	11900	0.017	0.023	11100	0.017
	16.0	0.026	11300	0.017	0.023	10700	0.017
	18.0	0.025	10700	0.016	0.023	9900	0.016
	20.0	0.023	9900	0.016	0.021	9200	0.016
2.5	25.0	0.016	9900	0.015	0.014	9200	0.015
	30.0	0.011	9400	0.015	0.010	8800	0.015
	8.0	0.062	13200	0.021	0.056	12300	0.021
	10.0	0.059	12900	0.021	0.053	11800	0.021
	12.0	0.055	12200	0.021	0.050	11500	0.021
	14.0	0.051	11600	0.020	0.046	10800	0.020
	16.0	0.047	11100	0.020	0.042	10300	0.020
	18.0	0.043	10400	0.019	0.039	9800	0.019
3.0	20.0	0.039	9900	0.018	0.035	9300	0.018
	25.0	0.029	9700	0.018	0.026	9000	0.018
	30.0	0.020	9400	0.017	0.018	8800	0.017
	8.0	0.059	10600	0.024	0.053	10100	0.024
	10.0	0.052	10600	0.024	0.047	10100	0.024
	12.0	0.046	10100	0.024	0.041	9500	0.024
	14.0	0.039	10100	0.022	0.035	9500	0.022
	16.0	0.033	9500	0.022	0.030	9000	0.022
4.0	18.0	0.033	9500	0.020	0.030	9000	0.020
	20.0	0.033	9000	0.020	0.030	8500	0.020
	25.0	0.029	8500	0.018	0.026	8000	0.018
	30.0	0.026	7600	0.018	0.023	7100	0.018
	10.0	0.150	8000	0.028	0.135	7600	0.028
	15.0	0.133	7600	0.026	0.120	7200	0.026
	20.0	0.117	7300	0.026	0.105	6900	0.026
	25.0	0.111	7200	0.024	0.100	6800	0.024
Thread Mill	32.0	0.098	6800	0.022	0.088	6400	0.022
	40.0	0.085	6400	0.022	0.077	6000	0.022

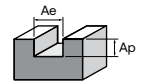
Recommended Cutting Data



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



SE 60X Fin-Mill Torus Endmills With Miniature Taper Neck, 2 Flutes - A4F



Slotting		H					
Working Material		Hardened steel			Hardened steel		
Properties		45 ≤ HRC < 52			52 ≤ HRC < 68		
D	Effective Length	Ap	N	Fz	Ap	N	Fz
1.0	6	0.020	20700	0.018	0.018	18800	0.015
	10	0.013	20100	0.016	0.012	15900	0.014
	15	0.008	20100	0.015	0.007	14300	0.013
	20	0.008	18500	0.014	0.007	14300	0.012
	25	0.006	16500	0.013	0.005	12700	0.011
	30	0.006	14300	0.012	0.005	11800	0.010
	35	0.004	13400	0.011	0.003	11100	0.009
1.5	10	0.034	15900	0.019	0.020	14900	0.017
	15	0.026	14900	0.017	0.015	14400	0.015
	20	0.017	13800	0.016	0.010	12700	0.014
	25	0.014	12700	0.015	0.009	11700	0.013
	30	0.011	11700	0.014	0.007	10600	0.012
2.0	15	0.040	12100	0.022	0.024	11800	0.020
	20	0.030	12100	0.021	0.018	11800	0.019
	25	0.024	11100	0.018	0.014	10800	0.016
	30	0.020	11100	0.017	0.012	10800	0.015
	40	0.015	10300	0.015	0.009	10000	0.013
3.0	50	0.012	10300	0.013	0.007	10000	0.011
	15	0.117	8500	0.030	0.084	8000	0.028
	20	0.068	8500	0.028	0.041	8000	0.026
	30	0.045	8000	0.026	0.027	7400	0.024
	40	0.034	7400	0.024	0.020	6900	0.022
	50	0.027	6900	0.022	0.016	6400	0.020
4.0	60	0.023	6400	0.020	0.014	5800	0.018
	20	0.118	6800	0.035	0.069	6400	0.033
	40	0.061	6000	0.030	0.035	5600	0.028
6.0	50	0.108	4500	0.028	0.066	4200	0.026

AU LINE
EZ LINE -
ENDMILL
SE 30
NITCo 30
OPTIMUM
SE 45
SE 45X
NITCo 45
SE 60
SE 60X
DM70 -
SE 70
SE GR
TE 45
PLUNGE
-MILL
THREAD
MILL