



# SE 45


- For general machining
- Cost efficiency

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For material application between  
36 HRC to 52 HRC

is up to 25 HRC.  
carbon steel. For material application  
material such as medium alloy steel and  
T15 steel is designed for machining


## SE 45 Endmills - Standard

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


## SE 45 Endmills - Long

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

## SE 45 Endmills - Extra-Long

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

## SE 45R Torus Endmills - Standard

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

## SE 45 Short Flutes Endmills

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

## SE 45 Endmills - Standard

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

## SE 45 Endmills - Long

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

## SE 45 Endmills - Extra-Long

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

## SE 45 Short-Flutes LONG REACH Endmills Long

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

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

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

## SE 45 MultiFlute Endmills

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

## SE 45 MultiFlute Endmills - Long

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

## SE 45 MultiFlute Endmills - Extra-Long

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

## SE 45R Torus Endmills with Taper Neck

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

## SE 45 Miniature Endmills

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

## SE 45 Miniature Endmills with Long Neck

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

## SE 45R Miniature Torus Endmills with Long Neck

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

## SE 45R Torus Endmills Standard

SE 45R Standard Torusfräser Frese SE 45R toroidali Standard Fraises toriques SE 45R Standard SE 45R 系列 圆鼻 立铣刀		EDP	∅	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
		311	1-20	4	40°	•								211
		904				◦							211	
		A26					•							231

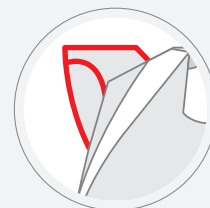
## SE 45R Short Flutes LONG REACH Torus Endmills, Long

SE 45R LONG REACH lange Torusfräser mit kurzen Nuten Frese toroidali SE 45R LONG REACH lunghe con gole corte Fraises toriques SE 45R LONG REACH longues avec goujures SE 45R 系列 圆鼻短刀 立铣刀 - 中长		EDP	∅	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
		906	3-20	2	40°	•								215
		786				•		√					215	
		A28					•						215	
		A99					◦	√					215	
		907				•							216	
		813				•		√					216	
		A29					•						216	
		A1B					◦	√					216	

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

SE 45R LONG REACH extra-langge Torusfräser mit kurzen Nuten Frese toroidali SE 45R LONG REACH extra-lunghe con gole corte Fraises toriques SE 45R LONG REACH extra-longues avec SE 45R 系列 圆鼻短刀 立铣刀 - 加长		EDP	∅	N° Z	Helix Angle	B0819	G6110	B0909	RC	Weldon	Operation			Page
		908	3-20	2	40°	•								218
		B32				•		√					218	
		A30					•						218	
		A31					◦	√					218	
		909				•							219	
		B33				•		√					219	
		A32					•						219	
		A33					◦	√					219	

# SE 45



01

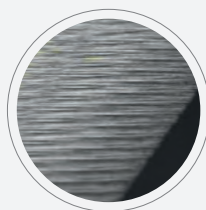
## GASH LAND DESIGN

Significantly improves strength and provide great chipping resistance

02

## ECCENTRIC GRINDING

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

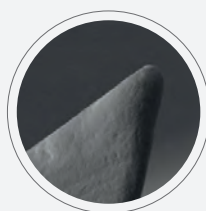


03

## CUTTING EDGE PREPARATION

### Enhances Tool Life

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



04

## SUPERIOR COATING TO REDUCE FRICTION

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



05

## SUITABLE FOR MATERIAL GROUPS





DEUTSCH

- 01 **STIRNSCHLIFF DESIGN**  
Verbessert die Leistung deutlich und bietet Schutz gegen Ausbrüche
- 02 **EXZENTRISCHER SCHLIFF**  
Optimaler exzentrischer Schliff zur Reduzierung der Reibung unter Beibehaltung der maximalen Schneidenstabilität
- 03 **SCHNEIDKANTENBEHANDLUNG**  
**Verbessert die Werkzeuglebensdauer**
  - Weniger Materialanhaftungen an der Schneide
  - Für stabile Bearbeitung
- 04 **AUSGEZEICHNETE BESCHICHTUNG ZUR VERRINGERUNG DER REIBUNG**
  - Erhöht die Härte und bietet bessere Verschleißfestigkeit
  - Höhere Temperaturbeständigkeit
  - Glatte Oberfläche für besseren Spänefluß
- 05 **GEEIGNET FÜR DIE MATERIALIGRUPPEN P, M, S, H**



FRANÇAIS

- 01 **CONCEPTION DE FRAISE POUR L'USINAGE GENERAL**  
Améliore considérablement la solidité et apporte
- 02 **MEULAGE EXCENTRIQUE**  
Meulage optimal diminuant le coefficient de friction tout en maintenant une bonne acuité de l'arête de coupe
- 03 **PRÉPARATION DES ARÊTES DE COUPES**  
**Améliore la durée de vie de l'outil**
  - Moins de matériau adhère à l'arête tranchante
  - Pour un usinage stable
- 04 **REVÊTEMENT SUPÉRIEUR POUR RÉDUIRE LA FRICTION**
  - Augmente la dureté et la résistance à l'abrasion
  - Résistance thermique supérieure
  - Évacuation des copeaux plus fluide
- 05 **ADAPTÉ AUX MATÉRIAUX P, M, S, H**



ITALIANO

- 01 **STRUTTURA AREA SGROSSATURA**  
Migliora notevolmente la potenza e offre un'eccellente resistenza alle scheggiature
- 02 **LEVIGATURA ORBITALE**  
Levigatura orbitale ottimale per evitare sfregatura, garantendo la massima resistenza dello strumento di taglio
- 03 **PREPARAZIONE DELL'ANGOLO DI taglio**  
**Migliora la durata dello strumento**
  - Meno materiale che aderisce sull'angolo di taglio
  - Per una lavorazione stabile
- 04 **RIVESTIMENTO SUPERIORE PER RIDURRE LA FRIZIONE**
  - Aumenta la durezza e una maggiore resistenza all'usura abrasiva
  - Resistenza termica superiore
  - Evacuazione dei trucioli più semplice
- 05 **ADATTO PER IL MATERIALE P, M, S, H**



中文

- 01 **刀具底刃的设计**  
强化刀具, 并降低崩刃的几率
- 02 **偏心研磨**  
最佳偏心研磨, 可避免加工时摩擦, 同时保持刀具的最高刚性
- 03 **刃部钝化处理**
  - 提高刀具寿命和切削过程的稳定性
- 04 **卓越的涂层**
  - 强化刀具的硬度和抗热性
  - 降低积屑瘤并拥有更顺畅的排屑
- 05 **近零度前角的设计**
  - 适合加工铸钢, 超合金和硬化钢的材料 P, M, S, H

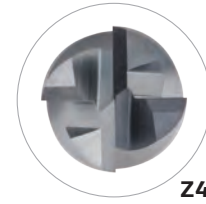
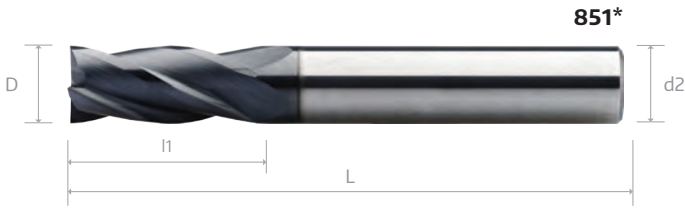


# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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

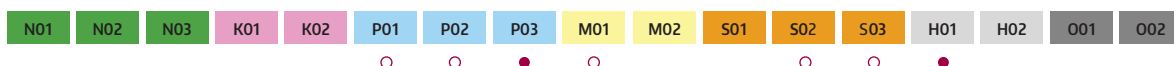


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					851 *
	D	L1	L2	L	d2 ( h6 )	B0819
= * + Ø data						
0100 040 03	1	3		40	3	•
0100 040 04	1	3		40	4	•
0150 040 03	1.5	4.5		40	3	•
0150 040 04	1.5	4.5		40	4	•
0200 040 03	2	6.5		40	3	•
0200 040 04	2	6.5		40	4	•
0250 040 03	2.5	6.5		40	3	•
0250 040 04	2.5	6.5		40	4	•
0300	3	9		40	3	•
0300 050 06	3	9		50	6	•
0400	4	12		50	4	•
0400 050 06	4	12		50	6	•
0500	5	15		50	5	•
0500 050 06	5	15		50	6	•
0600 050	6	16		50	6	•
0600 060	6	20		60	6	•
0800	8	20		64	8	•
1000 070	10	22		70	10	•
1000 075	10	22		75	10	•
1200	12	25		75	12	•
1400	14	32		90	14	•
1600	16	32		90	16	•
1800	18	38		100	18	•
2000	20	38		100	20	•
2200	22	40		100	22	•
2500	25	40		100	25	•

SE 45

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

Cutting Parameter



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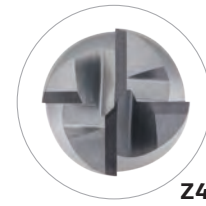
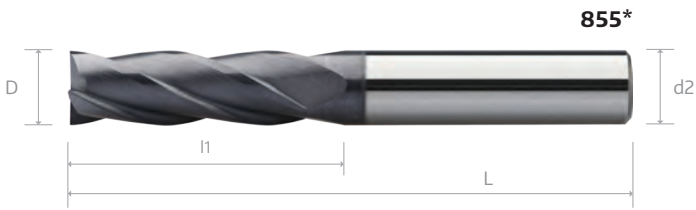
# SE 45

## ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					855 *
	D	L1	L2	L	d2 ( h6 )	B0819
= * + Ø data						
0300	3	19		60	3	•
0300 075 06	3	19		75	6	•
0400	4	19		60	4	•
0400 075 06	4	19		75	6	•
0500	5	19		60	5	•
0500 075 06	5	19		75	6	•
0600	6	31		75	6	•
0800	8	31		75	8	•
1000 075	10	31		75	10	•
1000 100	10	50		100	10	•
1200	12	50		100	12	•
1400	14	57		125	14	•
1600	16	57		125	16	•
1800	18	57		125	18	•
2000	20	57		125	20	•

SE 45

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

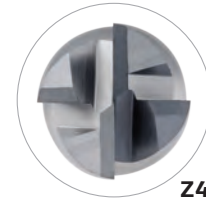
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# SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					859 *
	D	L1	L2	L	d2 ( h6 )	B0819
0300	3	25		100	3	•
0300 100 06	3	25		100	6	•
0400	4	31		100	4	•
0400 100 06	4	31		100	6	•
0500	5	31		100	5	•
0500 100 06	5	31		100	6	•
0600	6	38		100	6	•
0800	8	41		100	8	•
1000	10	57		125	10	•
1200	12	75		150	12	•
1400	14	75		150	14	•
1600	16	75		150	16	•
1800	18	75		150	18	•
2000	20	75		150	20	•

SE 45

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
					○	○	●	○			○	○	●			

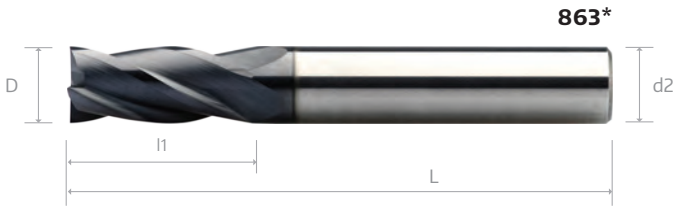
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# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					862*	863 *
	D	l1	l2	L	d2 ( h6 )	G6110	B0819
= * + Ø data							
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	9		40	3	•	•
0300 050 04	3	9		50	4	•	•
0300 050 06	3	9		50	6	•	•
0400	4	12		50	4	•	•
0400 050 06	4	12		50	6	•	•
0500	5	15		50	5	•	•
0500 050 06	5	15		50	6	•	•
0600 050	6	16		50	6	•	•
0600 060	6	20		60	6	•	•
0800	8	20		64	8	•	•
1000 070	10	22		70	10	•	•
1000 075	10	22		75	10	•	•
1200	12	25		75	12	•	•
1400	14	32		90	14	•	•
1600	16	32		90	16	•	•
1800	18	38		100	18	•	•
2000	20	38		100	20	•	•
2200	22	40		100	22	•	•
2500	25	40		100	25	•	•

SE 45

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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Modifiche Tecniche possibili senza preavviso

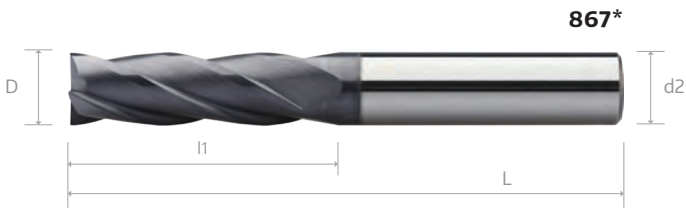
# SE 45

## ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					866 *	867 *
	D	L1	L2	L	d2 ( h6 )	G6110	B0819
0300	3	19		60	3	•	•
0300 075 06	3	19		75	6	•	•
0400	4	19		60	4	•	•
0400 075 06	4	19		75	6	•	•
0500	5	19		60	5	•	•
0500 075 06	5	19		75	6	•	•
0600	6	31		75	6	•	•
0800	8	31		75	8	•	•
1000 075	10	31		75	10	•	•
1000 100	10	50		100	10	•	•
1200	12	50		100	12	•	•
1400	14	57		125	14	•	•
1600	16	57		125	16	•	•
1800	18	57		125	18	•	•
2000	20	57		125	20	•	•

SE 45

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

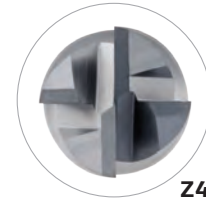
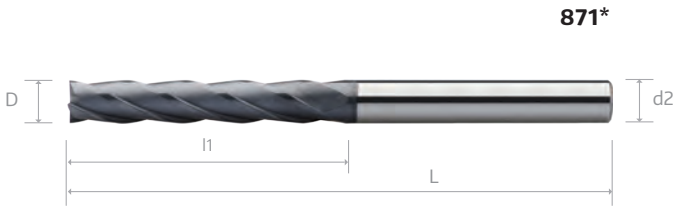
232

# SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					870 *	871 *
	D	l1	l2	L	d2 ( h6 )	G6110	B0819
0300	3	25		100	3	•	•
0300 100 06	3	25		100	6	•	•
0400	4	31		100	4	•	•
0400 100 06	4	31		100	6	•	•
0500	5	31		100	5	•	•
0500 100 06	5	31		100	6	•	•
0600	6	38		100	6	•	•
0800	8	41		100	8	•	•
1000	10	57		125	10	•	•
1200	12	75		150	12	•	•
1400	14	75		150	14	•	•
1600	16	75		150	16	•	•
1800	18	75		150	18	•	•
2000	20	75		150	20	•	•

SE 45

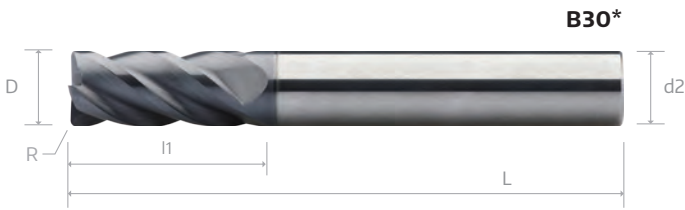
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

233

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



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

cont'd ►

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

Cutting Parameter

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

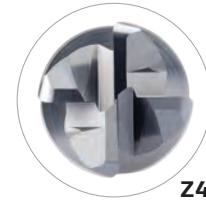
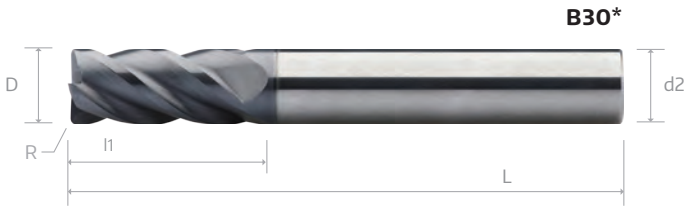
226

# SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



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

cont'd ▶

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

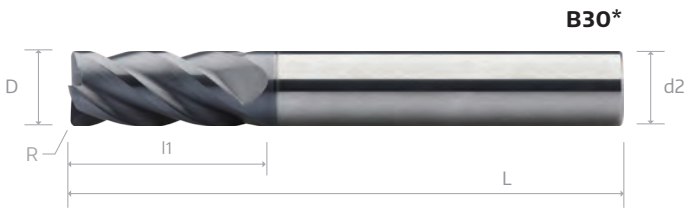
Cutting Parameter

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

226



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						B59*	B30 *
	D	l1	l2	L	d2 ( h6 )	R	G6110	B0819
1000 075 1000 100	10	22		75	10	1	•	•
1000 075 1000 150	10	22		75	10	1.5	•	•
1000 075 1000 200	10	22		75	10	2	•	•
1200 075 1200 030	12	25		75	12	0.3	•	•
1200 075 1200 050	12	25		75	12	0.5	•	•
1200 075 1200 100	12	25		75	12	1	•	•
1200 075 1200 150	12	25		75	12	1.5	•	•
1200 075 1200 200	12	25		75	12	2	•	•
1200 075 1200 300	12	25		75	12	3	•	•
1400 090 1400 050	14	32		90	14	0.5	•	•
1400 090 1400 100	14	32		90	14	1	•	•
1400 090 1400 150	14	32		90	14	1.5	•	•
1400 090 1400 200	14	32		90	14	2	•	•
1400 090 1400 300	14	32		90	14	3	•	•
1600 090 1600 050	16	32		90	16	0.5	•	•
1600 090 1600 100	16	32		90	16	1	•	•
1600 090 1600 150	16	32		90	16	1.5	•	•
1600 090 1600 200	16	32		90	16	2	•	•
1600 090 1600 300	16	32		90	16	3	•	•
1800 100 1800 050	18	38		100	18	0.5	○	○
1800 100 1800 100	18	38		100	18	1	○	○
1800 100 1800 150	18	38		100	18	1.5	○	○
1800 100 1800 200	18	38		100	18	2	○	○
1800 100 1800 300	18	38		100	18	3	○	○
2000 100 2000 050	20	38		100	20	0.5	•	•
2000 100 2000 100	20	38		100	20	1	•	•
2000 100 2000 150	20	38		100	20	1.5	•	•
2000 100 2000 200	20	38		100	20	2	•	•
2000 100 2000 300	20	38		100	20	3	•	•

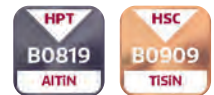
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

226

VHM SE 45 Kleinstfräser, 2 Zähne	Micro-Fraises 2 tailles SE 45 en carbure monobloc, 2 dents
Micro-frese SE 45 in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45 系列 微型 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					883 *	A01*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
0010 03	0.1	0.2		40	3	•	•
0010 04	0.1	0.2		40	4	•	•
0020 03	0.2	0.4		40	3	•	•
0020 04	0.2	0.4		40	4	•	•
0030 03	0.3	0.6		40	3	•	•
0030 04	0.3	0.6		40	4	•	•
0040 03	0.4	0.8		40	3	•	•
0040 04	0.4	0.8		40	4	•	•
0050 03	0.5	1.0		40	3	•	•
0050 04	0.5	1.0		40	4	•	•
0060 03	0.6	1.2		40	3	•	•
0060 04	0.6	1.2		40	4	•	•
0070 03	0.7	1.4		40	3	•	•
0070 04	0.7	1.4		40	4	•	•
0080 03	0.8	1.6		40	3	•	•
0080 04	0.8	1.6		40	4	•	•
0090 03	0.9	1.8		40	3	•	•
0090 04	0.9	1.8		40	4	•	•
0100 03	1.0	2		40	3	•	•
0110 03	1.1	2.2		40	3	•	•
0120 03	1.2	2.4		40	3	•	•
0130 03	1.3	2.6		40	3	•	•
0140 03	1.4	2.8		40	3	•	•
0150 03	1.5	3		40	3	•	•
0160 03	1.6	3.2		40	3	•	•
0170 03	1.7	3.4		40	3	•	•
0180 03	1.8	3.6		40	3	•	•
0190 03	1.9	3.8		40	3	•	•
0200 03	2.0	4		40	3	•	•

SE 45

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

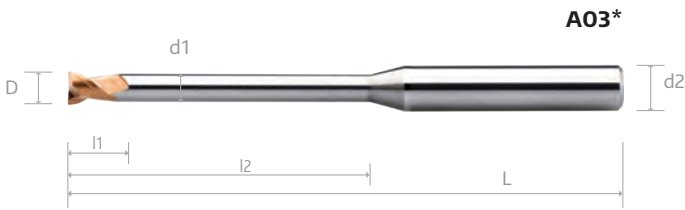
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

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

Cutting Parameter

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VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						885 *	A03*
	D	l1	l2	L	d1	d2 ( h6 )	B0819	B0909
0020 050 0400	0.2	0.3	-	50	-	4	•	•
0020 050 0400 005	0.2	0.3	0.5	50	0.17	4	•	•
0020 050 0400 010	0.2	0.3	1	50	0.17	4	•	•
0020 050 0400 015	0.2	0.3	1.5	50	0.17	4	•	•
0030 050 0400	0.3	0.4	-	50	-	4	•	•
0030 050 0400 010	0.3	0.4	1	50	0.27	4	•	•
0030 050 0400 020	0.3	0.4	2	50	0.27	4	•	•
0030 050 0400 030	0.3	0.4	3	50	0.27	4	•	•
0040 050 0400	0.4	0.6	-	50	-	4	•	•
0040 050 0400 020	0.4	0.6	2	50	0.37	4	•	•
0040 050 0400 030	0.4	0.6	3	50	0.37	4	•	•
0040 050 0400 040	0.4	0.6	4	50	0.37	4	•	•
0040 050 0400 050	0.4	0.6	5	50	0.37	4	•	•
0050 050 0400	0.5	0.7	-	50	-	4	•	•
0050 050 0400 020	0.5	0.7	2	50	0.45	4	•	•
0050 050 0400 040	0.5	0.7	4	50	0.45	4	•	•
0050 050 0400 060	0.5	0.7	6	50	0.45	4	•	•
0050 050 0400 080	0.5	0.7	8	50	0.45	4	•	•
0060 050 0400	0.6	0.9	-	50	-	4	•	•
0060 050 0400 020	0.6	0.9	2	50	0.55	4	•	•
0060 050 0400 040	0.6	0.9	4	50	0.55	4	•	•
0060 050 0400 060	0.6	0.9	6	50	0.55	4	•	•
0060 050 0400 080	0.6	0.9	8	50	0.55	4	•	•
0060 050 0400 100	0.6	0.9	10	50	0.55	4	•	•
0070 050 0400	0.7	1.0	-	50	-	4	•	•
0070 050 0400 020	0.7	1.0	2	50	0.65	4	•	•
0070 050 0400 040	0.7	1.0	4	50	0.65	4	•	•
0070 050 0400 060	0.7	1.0	6	50	0.65	4	•	•

cont'd ►

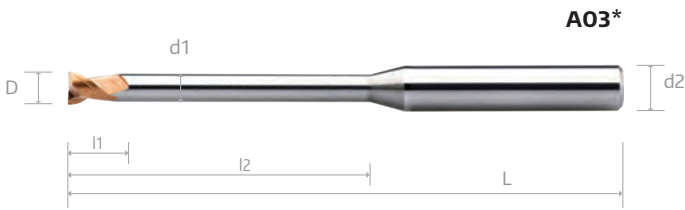
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

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

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VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						885 *	A03*
	D	l1	l2	L	d1	d2 ( h6 )	B0819	B0909
0070 050 0400 080	0.7	1.0	8	50	0.65	4	•	•
0070 050 0400 100	0.7	1.0	10	50	0.65	4	•	•
0080 050 0400	0.8	1.2	-	50	-	4	•	•
0080 050 0400 040	0.8	1.2	4	50	0.75	4	•	•
0080 050 0400 060	0.8	1.2	6	50	0.75	4	•	•
0080 050 0400 080	0.8	1.2	8	50	0.75	4	•	•
0080 050 0400 100	0.8	1.2	10	50	0.75	4	•	•
0080 050 0400 120	0.8	1.2	12	50	0.75	4	•	•
0090 050 0400	0.9	1.4	-	50	-	4	•	•
0090 050 0400 060	0.9	1.4	6	50	0.85	4	•	•
0090 050 0400 080	0.9	1.4	8.0	50	0.85	4	•	•
0090 050 0400 100	0.9	1.4	10	50	0.85	4	•	•
0090 050 0400 150	0.9	1.4	15	50	0.85	4	•	•
0100 050 0400	1	1.5	-	50	-	4	•	•
0100 050 0400 060	1	1.5	6	50	0.9	4	•	•
0100 050 0400 080	1	1.5	8	50	0.9	4	•	•
0100 050 0400 100	1	1.5	10	50	0.9	4	•	•
0100 050 0400 120	1	1.5	12	50	0.9	4	•	•
0100 050 0400 140	1	1.5	14	50	0.9	4	•	•
0100 050 0400 160	1	1.5	16	50	0.9	4	•	•
0120 050 0400	1.2	1.8	-	50	-	4	•	•
0120 050 0400 060	1.2	1.8	6	50	1.1	4	•	•
0120 050 0400 080	1.2	1.8	8	50	1.1	4	•	•
0120 050 0400 100	1.2	1.8	10	50	1.1	4	•	•
0120 050 0400 120	1.2	1.8	12	50	1.1	4	•	•
0140 050 0400	1.4	2.1	-	50	-	4	•	•
0140 050 0400 060	1.4	2.1	6	50	1.3	4	•	•
0140 050 0400 080	1.4	2.1	8	50	1.3	4	•	•

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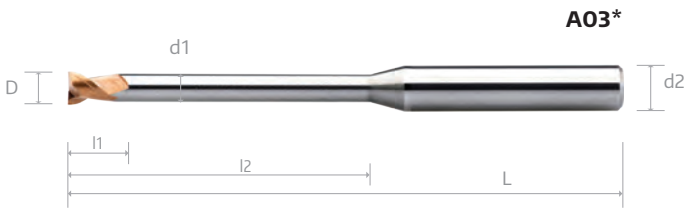
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

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

236

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						885 *	A03*
	D	l1	l2	L	d1	d2 ( h6 )	B0819	B0909
0140 050 0400 100	1.4	2.1	10	50	1.3	4	•	•
0140 050 0400 120	1.4	2.1	12	50	1.3	4	•	•
0140 050 0400 140	1.4	2.1	14	50	1.3	4	•	•
0140 050 0400 160	1.4	2.1	16	50	1.3	4	•	•
0150 050 0400	1.5	2.3	-	50	-	4	•	•
0150 050 0400 060	1.5	2.3	6	50	1.4	4	•	•
0150 050 0400 080	1.5	2.3	8	50	1.4	4	•	•
0150 050 0400 100	1.5	2.3	10	50	1.4	4	•	•
0150 050 0400 120	1.5	2.3	12	50	1.4	4	•	•
0150 050 0400 140	1.5	2.3	14	50	1.4	4	•	•
0150 050 0400 160	1.5	2.3	16	50	1.4	4	•	•
0150 060 0400	1.5	2.3	-	60	-	4	•	•
0150 060 0400 180	1.5	2.3	18	60	1.4	4	•	•
0150 060 0400 200	1.5	2.3	20	60	1.4	4	•	•
0160 050 0400	1.6	2.4	-	50	-	4	•	•
0160 050 0400 060	1.6	2.4	6	50	1.5	4	•	•
0160 050 0400 080	1.6	2.4	8	50	1.5	4	•	•
0160 050 0400 100	1.6	2.4	10	50	1.5	4	•	•
0160 050 0400 120	1.6	2.4	12	50	1.5	4	•	•
0160 050 0400 140	1.6	2.4	14	50	1.5	4	•	•
0160 050 0400 160	1.6	2.4	16	50	1.5	4	•	•
0160 060 0400	1.6	2.4	-	60	-	4	•	•
0160 060 0400 180	1.6	2.4	18	60	1.5	4	•	•
0160 060 0400 200	1.6	2.4	20	60	1.5	4	•	•
0180 050 0400	1.8	2.7	-	50	-	4	•	•
0180 050 0400 060	1.8	2.7	6	50	1.7	4	•	•
0180 050 0400 080	1.8	2.7	8	50	1.7	4	•	•
0180 050 0400 100	1.8	2.7	10	50	1.7	4	•	•

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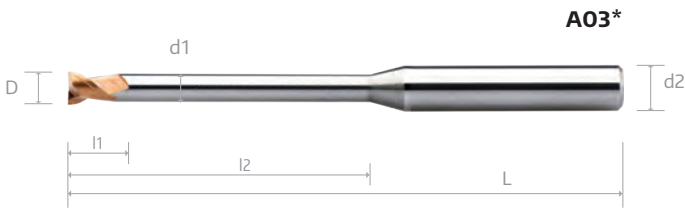
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

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

236

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						885 *	A03*
	D	l1	l2	L	d1	d2 ( h6 )	B0819	B0909
0180 050 0400 120	1.8	2.7	12	50	1.7	4	•	•
0180 050 0400 140	1.8	2.7	14	50	1.7	4	•	•
0180 050 0400 160	1.8	2.7	16	50	1.7	4	•	•
0180 060 0400	1.8	2.7	-	60	-	4	•	•
0180 060 0400 180	1.8	2.7	18	60	1.7	4	•	•
0180 060 0400 200	1.8	2.7	20	60	1.7	4	•	•
0200 050 0400	2	3	-	50	-	4	•	•
0200 050 0400 060	2	3	6	50	1.9	4	•	•
0200 050 0400 080	2	3	8	50	1.9	4	•	•
0200 050 0400 100	2	3	10	50	1.9	4	•	•
0200 050 0400 120	2	3	12	50	1.9	4	•	•
0200 050 0400 140	2	3	14	50	1.9	4	•	•
0200 050 0400 160	2	3	16	50	1.9	4	•	•
0200 060 0400	2	3	-	60	-	4	•	•
0200 060 0400 180	2	3	18	60	1.9	4	•	•
0200 060 0400 200	2	3	20	60	1.9	4	•	•
0200 075 0400	2	3	-	75	-	4	•	•
0200 075 0400 250	2	3	25	75	1.9	4	•	•
0200 075 0400 300	2	3	30	75	1.9	4	•	•
0250 050 0400	2.5	3.7	-	50	-	4	•	•
0250 050 0400 080	2.5	3.7	8	50	2.4	4	•	•
0250 050 0400 100	2.5	3.7	10	50	2.4	4	•	•
0250 050 0400 120	2.5	3.7	12	50	2.4	4	•	•
0250 050 0400 140	2.5	3.7	14	50	2.4	4	•	•
0250 050 0400 160	2.5	3.7	16	50	2.4	4	•	•
0250 060 0400	2.5	3.7	-	60	-	4	•	•
0250 060 0400 180	2.5	3.7	18	60	2.4	4	•	•
0250 060 0400 200	2.5	3.7	20	60	2.4	4	•	•

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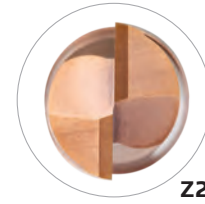
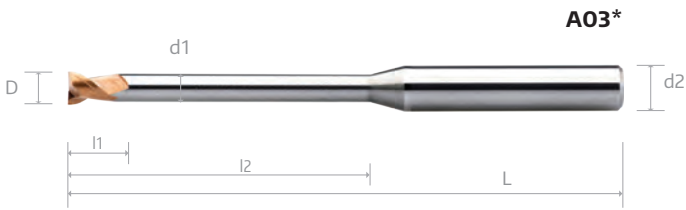
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

236

VHM SE 45 Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45 2 tailles en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45 in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						885 *	A03*
	D	l1	l2	L	d1	d2 ( h6 )	B0819	B0909
0250 060 0400 250	2.5	3.7	25	60	2.4	4	•	•
0250 075 0400	2.5	3.7	-	75	-	4	•	•
0250 075 0400 300	2.5	3.7	30	75	2.4	4	•	•
0300 050 0600	3	4.5	-	50	-	6	•	•
0300 050 0600 080	3	4.5	8	50	2.8	6	•	•
0300 050 0600 100	3	4.5	10	50	2.8	6	•	•
0300 050 0600 120	3	4.5	12	50	2.8	6	•	•
0300 050 0600 140	3	4.5	14	50	2.8	6	•	•
0300 060 0600	3	4.5	-	60	-	6	•	•
0300 060 0600 160	3	4.5	16	60	2.8	6	•	•
0300 060 0600 180	3	4.5	18	60	2.8	6	•	•
0300 060 0600 200	3	4.5	20	60	2.8	6	•	•
0300 075 0600	3	4.5	-	75	-	6	•	•
0300 075 0600 250	3	4.5	25	75	2.8	6	•	•
0400 060 0600	4	4.5	-	60	-	6	•	•
0400 060 0600 100	4	4.5	10	60	3.7	6	•	•
0400 060 0600 150	4	4.5	15	60	3.7	6	•	•
0400 060 0600 200	4	4.5	20	60	3.7	6	•	•
0400 075 0600	4	4.5	-	75	-	6	•	•
0400 075 0600 250	4	4.5	25	75	3.7	6	•	•
0400 075 0600 300	4	4.5	30	75	3.7	6	•	•
0400 075 0600 400	4	4.5	40	75	3.7	6	•	•

SE 45

D mm	Tol. μm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

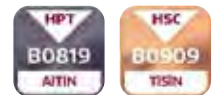
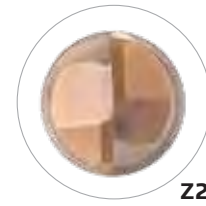
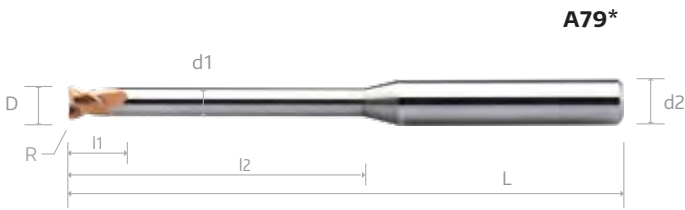
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

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

Cutting Parameter

236
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VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0020 050 0400 R005	0.2	0.3	-	50	017	4	0.05	•	•
0020 050 0400 005 R005	0.2	0.3	0.5	50	017	4	0.05	•	•
0020 050 0400 010 R005	0.2	0.3	1.0	50	017	4	0.05	•	•
0020 050 0400 015 R005	0.2	0.3	1.5	50	017	4	0.05	•	•
0020 050 0400 020 R005	0.2	0.3	2.0	50	017	4	0.05	•	•
0020 050 0400 R005	0.3	0.4	-	50	027	4	0.05	•	•
0030 050 0400 010 R005	0.3	0.4	1.0	50	027	4	0.05	•	•
0030 050 0400 015 R005	0.3	0.4	1.5	50	027	4	0.05	•	•
0030 050 0400 020 R005	0.3	0.4	2.0	50	027	4	0.05	•	•
0030 050 0400 025 R005	0.3	0.4	2.5	50	027	4	0.05	•	•
0030 050 0400 030 R005	0.3	0.4	3.0	50	027	4	0.05	•	•
0030 050 0400 R010	0.3	0.4	-	50	027	4	0.1	•	•
0030 050 0400 010 R010	0.3	0.4	1.0	50	027	4	0.1	•	•
0030 050 0400 015 R010	0.3	0.4	1.5	50	027	4	0.1	•	•
0030 050 0400 020 R010	0.3	0.4	2.0	50	027	4	0.1	•	•
0030 050 0400 025 R010	0.3	0.4	2.5	50	027	4	0.1	•	•
0030 050 0400 030 R010	0.3	0.4	3.0	50	027	4	0.1	•	•
0040 050 0400 R005	0.4	0.6	-	50	037	4	0.05	•	•
0040 050 0400 010 R005	0.4	0.6	1.0	50	037	4	0.05	•	•
0040 050 0400 015 R005	0.4	0.6	1.5	50	037	4	0.05	•	•
0040 050 0400 020 R005	0.4	0.6	2.0	50	037	4	0.05	•	•
0040 050 0400 025 R005	0.4	0.6	2.5	50	037	4	0.05	•	•
0040 050 0400 030 R005	0.4	0.6	3.0	50	037	4	0.05	•	•
0040 050 0400 035 R005	0.4	0.6	3.5	50	037	4	0.05	•	•
0040 050 0400 040 R005	0.4	0.6	4.0	50	037	4	0.05	•	•
0040 050 0400 R010	0.4	0.6	-	50	037	4	0.1	•	•
0040 050 0400 010 R010	0.4	0.6	1.0	50	037	4	0.1	•	•
0040 050 0400 015 R010	0.4	0.6	1.5	50	037	4	0.1	•	•
0040 050 0400 020 R010	0.4	0.6	2.0	50	037	4	0.1	•	•
0040 050 0400 025 R010	0.4	0.6	2.5	50	037	4	0.1	•	•

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

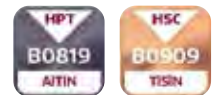
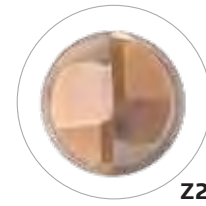
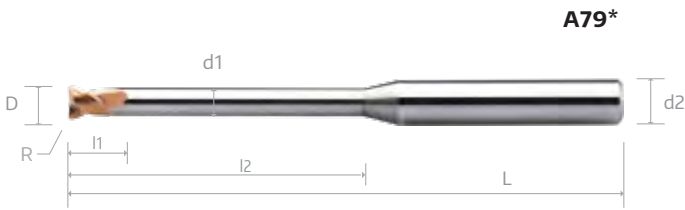
Cutting Parameter

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

236
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VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0040 050 0400 030 R010	0.4	0.6	3.0	50	0.37	4	0.1	•	•
0040 050 0400 035 R010	0.4	0.6	3.5	50	0.37	4	0.1	•	•
0040 050 0400 040 R010	0.4	0.6	4.0	50	0.37	4	0.1	•	•
0050 050 0400 R005	0.5	0.7	-	50	0.45	4	0.05	•	•
0050 050 0400 020 R005	0.5	0.7	2.0	50	0.45	4	0.05	•	•
0050 050 0400 040 R005	0.5	0.7	4	50	0.45	4	0.05	•	•
0050 050 0400 060 R005	0.5	0.7	6	50	0.45	4	0.05	•	•
0050 050 0400 080 R005	0.5	0.7	8.0	50	0.45	4	0.05	•	•
0050 050 0400 R010	0.5	0.7	-	50	0.45	4	0.1	•	•
0050 050 0400 020 R010	0.5	0.7	2.0	50	0.45	4	0.1	•	•
0050 050 0400 040 R010	0.5	0.7	4.0	50	0.45	4	0.1	•	•
0050 050 0400 060 R010	0.5	0.7	6.0	50	0.45	4	0.1	•	•
0050 050 0400 080 R010	0.5	0.7	8.0	50	0.45	4	0.1	•	•
0060 050 0400 R010	0.6	0.9	-	50	0.55	4	0.1	•	•
0060 050 0400 020 R010	0.6	0.9	2.0	50	0.55	4	0.1	•	•
0060 050 0400 040 R010	0.6	0.9	4.0	50	0.55	4	0.1	•	•
0060 050 0400 060 R010	0.6	0.9	6.0	50	0.55	4	0.1	•	•
0060 050 0400 080 R010	0.6	0.9	8.0	50	0.55	4	0.1	•	•
0060 050 0400 100 R010	0.6	0.9	10.0	50	0.55	4	0.1	•	•
0070 050 0400 R010	0.7	1.0	-	50	0.65	4	0.1	•	•
0070 050 0400 020 R010	0.7	1.0	2.0	50	0.65	4	0.1	•	•
0070 050 0400 040 R010	0.7	1.0	4.0	50	0.65	4	0.1	•	•
0070 050 0400 060 R010	0.7	1.0	6.0	50	0.65	4	0.1	•	•
0070 050 0400 080 R010	0.7	1.0	8.0	50	0.65	4	0.1	•	•
0070 050 0400 100 R010	0.7	1.0	10.0	50	0.65	4	0.1	•	•
0080 050 0400 R005	0.8	1.2	-	50	0.75	4	0.05	•	•
0080 050 0400 040 R005	0.8	1.2	4.0	50	0.75	4	0.05	•	•
0080 050 0400 060 R005	0.8	1.2	6.0	50	0.75	4	0.05	•	•
0080 050 0400 080 R005	0.8	1.2	8.0	50	0.75	4	0.05	•	•
0080 050 0400 100 R005	0.8	1.2	10.0	50	0.75	4	0.05	•	•

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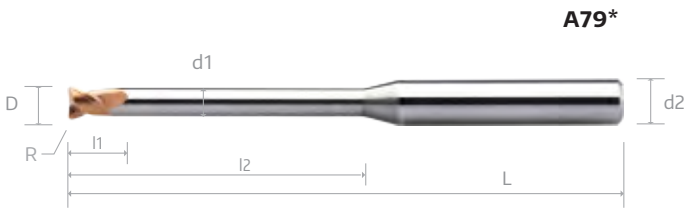
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

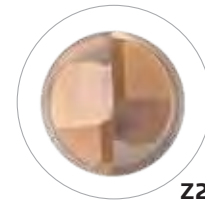
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

236

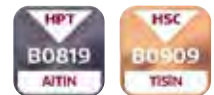
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglianti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



A79\*



Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0080 050 0400 120 R005	0.8	1.2	12.0	50	0.75	4	0.05	•	•
0080 050 0400 R010	0.8	1.2	-	50	0.75	4	0.1	•	•
0080 050 0400 040 R010	0.8	1.2	4.0	50	0.75	4	0.1	•	•
0080 050 0400 060 R010	0.8	1.2	6.0	50	0.75	4	0.1	•	•
0080 050 0400 080 R010	0.8	1.2	8.0	50	0.75	4	0.1	•	•
0080 050 0400 100 R010	0.8	1.2	10.0	50	0.75	4	0.1	•	•
0080 050 0400 120 R010	0.8	1.2	12.0	50	0.75	4	0.1	•	•
0090 050 0400 R010	0.9	1.4	-	50	0.85	4	0.1	•	•
0090 050 0400 060 R010	0.9	1.4	6.0	50	0.85	4	0.1	•	•
0090 050 0400 080 R010	0.9	1.4	8.0	50	0.85	4	0.1	•	•
0090 050 0400 100 R010	0.9	1.4	10.0	50	0.85	4	0.1	•	•
0090 050 0400 150 R010	0.9	1.4	15.0	50	0.85	4	0.1	•	•
0100 050 0400 R010	1	1.5	-	50	0.9	4	0.1	•	•
0100 050 0400 040 R010	1	1.5	4.0	50	0.9	4	0.1	•	•
0100 050 0400 060 R010	1	1.5	6.0	50	0.9	4	0.1	•	•
0100 050 0400 080 R010	1	1.5	8.0	50	0.9	4	0.1	•	•
0100 050 0400 100 R010	1	1.5	10.0	50	0.9	4	0.1	•	•
0100 050 0400 120 R010	1	1.5	12.0	50	0.9	4	0.1	•	•
0100 050 0400 140 R010	1	1.5	14.0	50	0.9	4	0.1	•	•
0100 050 0400 160 R010	1	1.5	16.0	50	0.9	4	0.1	•	•
0100 060 0400 R010	1	1.5	-	60	0.9	4	0.1	•	•
0100 060 0400 200 R010	1	1.5	20.0	60	0.9	4	0.1	•	•
0100 050 0400 R020	1	1.5	-	50	0.9	4	0.2	•	•
0100 050 0400 040 R020	1	1.5	4.0	50	0.9	4	0.2	•	•
0100 050 0400 060 R020	1	1.5	6.0	50	0.9	4	0.2	•	•
0100 050 0400 080 R020	1	1.5	8.0	50	0.9	4	0.2	•	•
0100 050 0400 100 R020	1	1.5	10.0	50	0.9	4	0.2	•	•
0100 050 0400 120 R020	1	1.5	12.0	50	0.9	4	0.2	•	•
0100 050 0400 140 R020	1	1.5	14.0	50	0.9	4	0.2	•	•
0100 050 0400 160 R020	1	1.5	16.0	50	0.9	4	0.2	•	•

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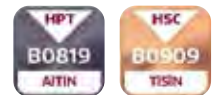
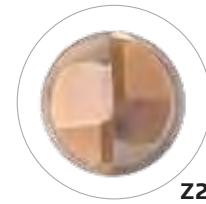
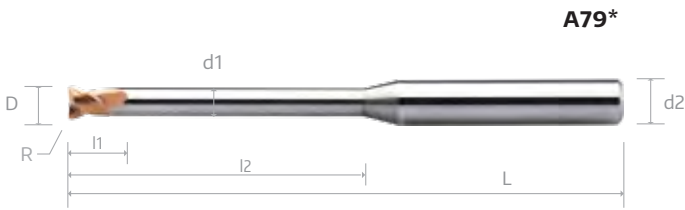
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

236
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VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0100 060 0400 R020	1	1.5	-	50	0.9	4	0.2	•	•
0100 060 0400 200 R020	1	1.5	20.0	50	0.9	4	0.2	•	•
0100 050 0400 R030	1	1.5	-	50	0.9	4	0.3	•	•
0100 050 0400 060 R030	1	1.5	6.0	50	0.9	4	0.3	•	•
0100 050 0400 100 R030	1	1.5	10.0	50	0.9	4	0.3	•	•
0100 050 0400 160 R030	1	1.5	16.0	50	0.9	4	0.3	•	•
0100 060 0400 R030	1	1.5	-	60	0.9	4	0.3	•	•
0100 060 0400 200 R030	1	1.5	20.0	60	0.9	4	0.3	•	•
0120 050 0400 R010	1.2	1.8	-	50	1.1	4	0.1	•	•
0120 050 0400 060 R010	1.2	1.8	6.0	50	1.1	4	0.1	•	•
0120 050 0400 080 R010	1.2	1.8	8.0	50	1.1	4	0.1	•	•
0120 050 0400 100 R010	1.2	1.8	10.0	50	1.1	4	0.1	•	•
0120 050 0400 120 R010	1.2	1.8	12.0	50	1.1	4	0.1	•	•
0140 050 0400 R010	1.4	2.1	-	50	1.3	4	0.1	•	•
0140 050 0400 060 R010	1.4	2.1	6.0	50	1.3	4	0.1	•	•
0140 050 0400 080 R010	1.4	2.1	8.0	50	1.3	4	0.1	•	•
0140 050 0400 100 R010	1.4	2.1	10.0	50	1.3	4	0.1	•	•
0140 050 0400 120 R010	1.4	2.1	12.0	50	1.3	4	0.1	•	•
0140 050 0400 140 R010	1.4	2.1	14.0	50	1.3	4	0.1	•	•
0140 050 0400 160 R010	1.4	2.1	16.0	50	1.3	4	0.1	•	•
0150 050 0400 R010	1.5	2.3	-	50	1.4	4	0.1	•	•
0150 050 0400 060 R010	1.5	2.3	6.0	50	1.4	4	0.1	•	•
0150 050 0400 080 R010	1.5	2.3	8.0	50	1.4	4	0.1	•	•
0150 050 0400 120 R010	1.5	2.3	12.0	50	1.4	4	0.1	•	•
0150 050 0400 160 R010	1.5	2.3	16.0	50	1.4	4	0.1	•	•
0150 060 0400 R010	1.5	2.3	-	60	1.4	4	0.1	•	•
0150 060 0400 200 R010	1.5	2.3	20.0	60	1.4	4	0.1	•	•
0150 050 0400 R020	1.5	2.3	-	50	1.4	4	0.2	•	•
0150 050 0400 060 R020	1.5	2.3	6.0	50	1.4	4	0.2	•	•
0150 050 0400 080 R020	1.5	2.3	8.0	50	1.4	4	0.2	•	•

cont'd ▶

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

Cutting Parameter

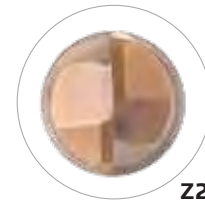
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

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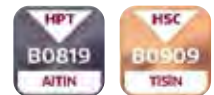
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglianti	整体硬质合金 SE 45R 系列长颈短刃立铣刀 2 刃



A79\*



Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0150 050 0400 100 R020	1.5	2.3	10.0	50	1.4	4	0.2	•	•
0150 050 0400 120 R020	1.5	2.3	12.0	50	1.4	4	0.2	•	•
0150 050 0400 140 R020	1.5	2.3	14.0	50	1.4	4	0.2	•	•
0150 050 0400 160 R020	1.5	2.3	16.0	50	1.4	4	0.2	•	•
0150 060 0400 R020	1.5	2.3	-	60	1.4	4	0.2	•	•
0150 060 0400 180 R020	1.5	2.3	18.0	60	1.4	4	0.2	•	•
0150 060 0400 R020	1.5	2.3	-	60	1.4	4	0.2	•	•
0150 060 0400 200 R020	1.5	2.3	20.0	60	1.4	4	0.2	•	•
0150 050 0400 R030	1.5	2.3	-	50	1.4	4	0.3	•	•
0150 050 0400 080 R030	1.5	2.3	8.0	50	1.4	4	0.3	•	•
0150 050 0400 160 R030	1.5	2.3	16.0	50	1.4	4	0.3	•	•
0150 060 0400 R030	1.5	2.3	-	60	1.4	4	0.3	•	•
0150 060 0400 200 R030	1.5	2.3	20.0	60	1.4	4	0.3	•	•
0160 050 0400 R010	1.6	2.4	-	50	1.5	4	0.1	•	•
0160 050 0400 060 R010	1.6	2.4	6.0	50	1.5	4	0.1	•	•
0160 050 0400 080 R010	1.6	2.4	8.0	50	1.5	4	0.1	•	•
0160 050 0400 100 R010	1.6	2.4	10.0	50	1.5	4	0.1	•	•
0160 050 0400 120 R010	1.6	2.4	12.0	50	1.5	4	0.1	•	•
0160 050 0400 140 R010	1.6	2.4	14.0	50	1.5	4	0.1	•	•
0160 050 0400 160 R010	1.6	2.4	16.0	50	1.5	4	0.1	•	•
0160 060 0400 R010	1.6	2.4	-	60	1.5	4	0.1	•	•
0160 060 0400 180 R010	1.6	2.4	18.0	60	1.5	4	0.1	•	•
0160 060 0400 R010	1.6	2.4	-	60	1.5	4	0.1	•	•
0160 060 0400 200 R010	1.6	2.4	20.0	60	1.5	4	0.1	•	•
0180 050 0400 R020	1.8	2.7	-	50	1.7	4	0.2	•	•
0180 050 0400 060 R020	1.8	2.7	6.0	50	1.7	4	0.2	•	•
0180 050 0400 080 R020	1.8	2.7	8.0	50	1.7	4	0.2	•	•
0180 050 0400 100 R020	1.8	2.7	10.0	50	1.7	4	0.2	•	•
0180 050 0400 120 R020	1.8	2.7	12.0	50	1.7	4	0.2	•	•
0180 050 0400 140 R020	1.8	2.7	14.0	50	1.7	4	0.2	•	•

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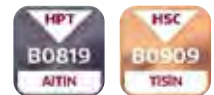
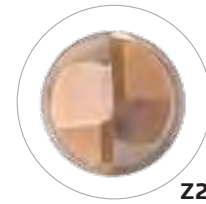
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

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VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglianti	整体硬质合金 SE 45R 系列长颈短刃立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0180 050 0400 160 R020	1.8	2.7	16.0	50	1.7	4	0.2	•	•
0180 060 0400 R020	1.8	2.7	-	60	1.7	4	0.2	•	•
0180 060 0400 180 R020	1.8	2.7	18.0	60	1.7	4	0.2	•	•
0180 060 0400 200 R020	1.8	2.7	20.0	60	1.7	4	0.2	•	•
0200 050 0400 R020	2	3	-	50	1.9	4	0.2	•	•
0200 050 0400 060 R020	2	3	6.0	50	1.9	4	0.2	•	•
0200 050 0400 080 R020	2	3	8.0	50	1.9	4	0.2	•	•
0200 050 0400 100 R020	2	3	10.0	50	1.9	4	0.2	•	•
0200 050 0400 120 R020	2	3	12.0	50	1.9	4	0.2	•	•
0200 050 0400 140 R020	2	3	14.0	50	1.9	4	0.2	•	•
0200 050 0400 160 R020	2	3	16.0	50	1.9	4	0.2	•	•
0200 060 0400 R020	2	3	-	60	1.9	4	0.2	•	•
0200 060 0400 180 R020	2	3	18.0	60	1.9	4	0.2	•	•
0200 060 0400 200 R020	2	3	20.0	60	1.9	4	0.2	•	•
0200 075 0400 R020	2	3	-	75	1.9	4	0.2	•	•
0200 075 0400 250 R020	2	3	25.0	75	1.9	4	0.2	•	•
0200 075 0400 300 R020	2	3	30.0	75	1.9	4	0.2	•	•
0200 050 0400 R030	2	3	-	50	1.9	4	0.3	•	•
0200 050 0400 080 R030	2	3	8.0	50	1.9	4	0.3	•	•
0200 050 0400 160 R030	2	3	16.0	50	1.9	4	0.3	•	•
0200 060 0400 R030	2	3	-	60	1.9	4	0.3	•	•
0200 060 0400 200 R030	2	3	20.0	60	1.9	4	0.3	•	•
0200 050 0400 R050	2	3	-	50	1.9	4	0.5	•	•
0200 050 0400 060 R050	2	3	6.0	50	1.9	4	0.5	•	•
0200 050 0400 080 R050	2	3	8.0	50	1.9	4	0.5	•	•
0200 050 0400 120 R050	2	3	12.0	50	1.9	4	0.5	•	•
0200 050 0400 160 R050	2	3	16.0	50	1.9	4	0.5	•	•
0200 060 0400 R050	2	3	-	60	1.9	4	0.5	•	•
0200 060 0400 200 R050	2	3	20.0	60	1.9	4	0.5	•	•
0200 075 0400 R050	2	3	-	60	1.9	4	0.5	•	•

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

Cutting Parameter

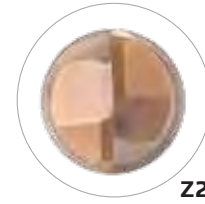
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

236
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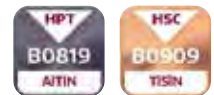
VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglianti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



A79\*



Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0200 075 0400 250 R050	2	3	25.0	75	1.9	4	0.5	•	•
0200 075 0400 300 R050	2	3	30.0	75	1.9	4	0.5	•	•
0250 050 0400 R030	2.5	3.7	-	50	2.4	4	0.3	•	•
0250 050 0400 080 R030	2.5	3.7	8.0	50	2.4	4	0.3	•	•
0250 050 0400 100 R030	2.5	3.7	10.0	50	2.4	4	0.3	•	•
0250 050 0400 120 R030	2.5	3.7	12.0	50	2.4	4	0.3	•	•
0250 050 0400 140 R030	2.5	3.7	14.0	50	2.4	4	0.3	•	•
0250 050 0400 160 R030	2.5	3.7	16.0	50	2.4	4	0.3	•	•
0250 060 0400 R030	2.5	3.7	-	60	2.4	4	0.3	•	•
0250 060 0400 180 R030	2.5	3.7	18.0	60	2.4	4	0.3	•	•
0250 060 0400 200 R030	2.5	3.7	20.0	60	2.4	4	0.3	•	•
0250 060 0400 250 R030	2.5	3.7	25.0	60	2.4	4	0.3	•	•
0250 075 0400 R030	2.5	3.7	-	75	2.4	4	0.3	•	•
0250 075 0400 300 R030	2.5	3.7	30.0	75	2.4	4	0.3	•	•
0250 050 0400 R050	2.5	3.7	-	50	2.4	4	0.5	•	•
0250 050 0400 080 R050	2.5	3.7	8.0	50	2.4	4	0.5	•	•
0250 050 0400 120 R050	2.5	3.7	12.0	50	2.4	4	0.5	•	•
0250 050 0400 160 R050	2.5	3.7	16.0	50	2.4	4	0.5	•	•
0250 060 0400 R050	2.5	3.7	-	60	2.4	4	0.5	•	•
0250 060 0400 200 R050	2.5	3.7	20.0	60	2.4	4	0.5	•	•
0250 060 0400 250 R050	2.5	3.7	25.0	60	2.4	4	0.5	•	•
0250 075 0400 R050	2.5	3.7	-	75	2.4	4	0.5	•	•
0250 075 0400 300 R050	2.5	3.7	30.0	75	2.4	4	0.5	•	•
0300 050 0600 R020	3	4.5	-	50	2.8	6	0.2	•	•
0300 050 0600 080 R020	3	4.5	8.0	50	2.8	6	0.2	•	•
0300 050 0600 100 R020	3	4.5	10.0	50	2.8	6	0.2	•	•
0300 050 0600 120 R020	3	4.5	12.0	50	2.8	6	0.2	•	•
0300 050 0600 140 R020	3	4.5	14.0	50	2.8	6	0.2	•	•
0300 060 0600 R020	3	4.5	-	60	2.8	6	0.2	•	•
0300 060 0600 160 R020	3	4.5	16.0	60	2.8	6	0.2	•	•

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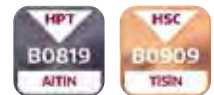
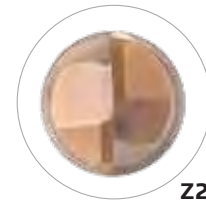
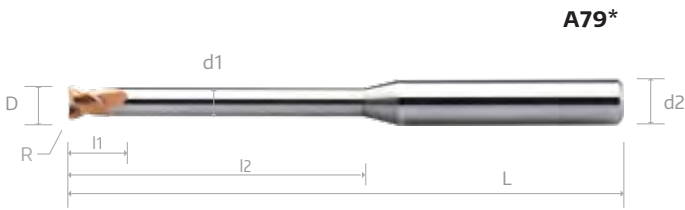
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

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

236
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VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglianti	整体硬质合金 SE 45R 系列 长颈短刃 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0300 060 0600 180 R020	3	4.5	18.0	60	2.8	6	0.2	•	•
0300 060 0600 200 R020	3	4.5	20.0	60	2.8	6	0.2	•	•
0300 075 0600 R020	3	4.5	-	75	2.8	6	0.2	•	•
0300 075 0600 250 R020	3	4.5	25.0	75	2.8	6	0.2	•	•
0300 050 0600 R030	3	4.5	-	50	2.8	6	0.3	•	•
0300 050 0600 080 R030	3	4.5	8.0	50	2.8	6	0.3	•	•
0300 050 0600 100 R030	3	4.5	10.0	50	2.8	6	0.3	•	•
0300 050 0600 120 R030	3	4.5	12.0	50	2.8	6	0.3	•	•
0300 050 0600 140 R030	3	4.5	14.0	50	2.8	6	0.3	•	•
0300 060 0600 R030	3	4.5	-	60	2.8	6	0.3	•	•
0300 060 0600 160 R030	3	4.5	16.0	60	2.8	6	0.3	•	•
0300 060 0600 180 R030	3	4.5	18.0	60	2.8	6	0.3	•	•
0300 060 0600 200 R030	3	4.5	20.0	60	2.8	6	0.3	•	•
0300 075 0600 R030	3	4.5	-	75	2.8	6	0.3	•	•
0300 075 0600 250 R030	3	4.5	25.0	75	2.8	6	0.3	•	•
0300 050 0600 R050	3	4.5	-	50	2.8	6	0.5	•	•
0300 050 0600 080 R050	3	4.5	8.0	50	2.8	6	0.5	•	•
0300 050 0600 100 R050	3	4.5	10.0	50	2.8	6	0.5	•	•
0300 050 0600 120 R050	3	4.5	12.0	50	2.8	6	0.5	•	•
0300 050 0600 140 R050	3	4.5	14.0	50	2.8	6	0.5	•	•
0300 060 0600 R050	3	4.5	-	60	2.8	6	0.5	•	•
0300 060 0600 160 R050	3	4.5	16.0	60	2.8	6	0.5	•	•
0300 060 0600 180 R050	3	4.5	18.0	60	2.8	6	0.5	•	•
0300 060 0600 200 R050	3	4.5	20.0	60	2.8	6	0.5	•	•
0300 075 0600 R050	3	4.5	-	75	2.8	6	0.5	•	•
0300 075 0600 250 R050	3	4.5	25.0	75	2.8	6	0.5	•	•
0400 060 0600 R030	4	4.5	-	60	3.7	6	0.3	•	•
0400 060 0600 100 R030	4	4.5	10.0	60	3.7	6	0.3	•	•
0400 060 0600 150 R030	4	4.5	15.0	60	3.7	6	0.3	•	•
0400 060 0600 200 R030	4	4.5	20.0	60	3.7	6	0.3	•	•

cont'd ▶

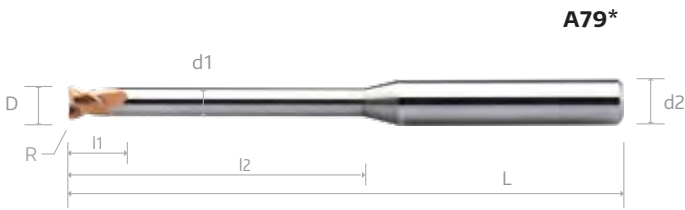
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

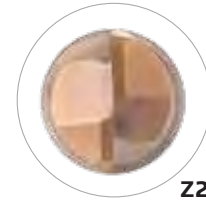
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

236

VHM SE 45R Torus-Kleinstfräser mit langem Hals, 2 Zähne	Micro-fraises SE 45R 2 tailles toriques en carbure monobloc avec cou long, 2 dents
Micro-frese SE 45R toroidali in metallo duro integrale con collo lungo, 2 taglienti	整体硬合金 SE 45R 系列 短刃 立铣刀 2 刃



A79\*



Z2



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)							B66*	A79*
	D	l1	l2	L	d1	d2 (h6)	R	B0819	B0909
= * + Ø data									
0400 075 0600 R030	4	4.5	-	75	3.7	6	0.3	•	•
0400 075 0600 250 R030	4	4.5	25.0	75	3.7	6	0.3	•	•
0400 075 0600 300 R030	4	4.5	30.0	75	3.7	6	0.3	•	•
0400 075 0600 400 R030	4	4.5	40	75	3.7	6	0.3	•	•
0400 075 0600 R050	4	4.5	-	60	3.7	6	0.5	•	•
0400 060 0600 100 R050	4	4.5	10	60	3.7	6	0.5	•	•
0400 060 0600 150 R050	4	4.5	15	60	3.7	6	0.5	•	•
0400 060 0600 200 R050	4	4.5	20	60	3.7	6	0.5	•	•
0400 075 0600 R050	4	4.5	-	75	3.7	6	0.5	•	•
0400 075 0600 250 R050	4	4.5	25	75	3.7	6	0.5	•	•
0400 075 0600 300 R050	4	4.5	30	75	3.7	6	0.5	•	•
0400 075 0600 400 R050	4	4.5	40	75	3.7	6	0.5	•	•

SE 45

D mm	Tol. µm
0.1 ~ 0.7	0 / - 12
0.7 ~ 4.0	0 / - 20

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

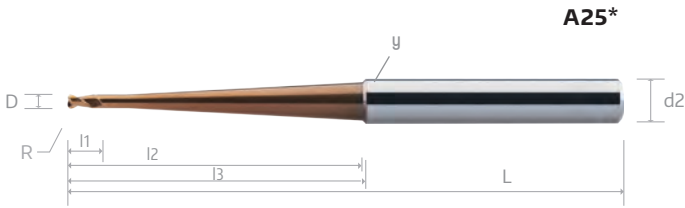
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
					○	○	●	○		○	○		●			

Cutting Parameter

236
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VHM SE 45R Torusfräser mit konischem Hals, 2 Zähne	Fraises 2 tailles SE 45R toriques avec cou conique en carbure monobloc, 2 dents
Frese toroidali SE 45R con collo conico in metallo duro integrale, 2 taglienti	整体硬质合金 SE 45R 系列 圆鼻锥颈位 立铣刀 2 刃



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )								A25*
	D	l1	l2	l3	L	d2 ( h6 )	γ	R	B0909
0100 020 06 080	1	1.5	4	20	60	6	8°	0.5	•
0100 040 06 040	1	1.5	4	40	75	6	4.0°	0.5	•
0150 020 06 070	1.5	2.3	7.5	20	60	6	7°	0.75	•
0150 040 06 035	1.5	2.3	7.5	40	75	6	3.5°	0.75	•
0200 020 06 057	2	3	8	20	60	6	5.7°	0.5	•
0200 040 06 029	2	3	8	40	75	6	2.9°	0.5	•
0200 040 06 010	2	3	8	40	75	6	1°	0.5	•
0300 020 06 043	3	3.5	10	20	60	6	4.3°	0.5	•
0300 040 06 021	3	3.5	12	40	75	6	2.1°	0.5	•
0300 045 06 010	3	3.5	12	45	75	6	1°	0.5	•
0400 020 06 029	4	4	12	20	60	6	2.9°	1	•
0400 040 06 014	4	4	20	40	75	6	1.4°	1	•
0400 060 06 010	4	4	20	60	100	6	1°	0.5	•
0600 020 06 000	6	6	20	20	60	6	-	2	•
0600 040 06 000	6	6	40	40	75	6	-	1	•
0600 060 08 010	6	6	25	60	100	8	1°	2	•
0600 080 08 010	6	6	25	80	125	8	1°	1	•
0800 025 08 000	8	7	25	25	64	8	-	2	•
0800 060 08 000	8	7	60	60	100	8	-	2	•
0800 075 10 008	8	7	30	75	125	10	0.8°	1	•
0800 105 10 006	8	7	20	105	150	10	0.6°	1	•
1000 030 10 000	10	8	30	30	75	10	-	3	•
1000 075 10 000	10	8	75	75	125	10	-	3	•
1000 070 12 008	10	8	30	70	125	12	0.8°	3	•
1200 035 12 000	12	10	35	35	100	12	-	4	•
1200 070 12 000	12	10	70	70	125	12	-	4	•
1200 100 16 012	12	10	35	100	150	16	1.2°	4	•

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

Cutting Parameter

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

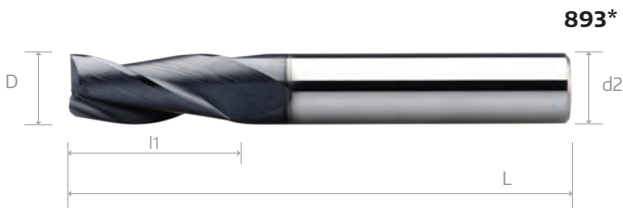
239

# SE 45 STANDARD ENDMILLS, SHORT FLUTE

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM SE 45 Standard Fräser mit kleezen Nuten, 3 Zähne	Fraises 2 tailles SE 45 Standard à hélices courtes en carbure monobloc, 3 dents
Frese SE 45 Standard con gole corte in metallo duro integrale, 3 taglienti	整体硬质合金 SE 45 系列 立铣刀 3 刃 - 标准长度-短刃



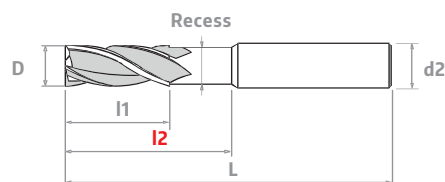
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					893 *	A14 *
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	7	15	40	3	•	•
0300 050 06	3	7	15	50	6	•	•
0350 050 04	3.5	8	20	50	4	•	•
0400	4	8	20	50	4	•	•
0400 050 06	4	8	20	50	6	•	•
0450 050 05	4.5	10	20	50	5	•	•
0500	5	10	20	50	5	•	•
0500 050 06	5	10	20	50	6	•	•
0550 050 06	5.5	10	20	50	6	•	•
0600 050	6	10	20	50	6	•	•
0600 060	6	13	30	60	6	•	•
0700 064 08	7	16	30	64	8	•	•
0800	8	16	30	64	8	•	•
0900 070 10	9	19	32	70	10	•	•
1000 070	10	19	32	70	10	•	•
1000 075	10	19	32	75	10	•	•

630\* A15\*

cont'd ▶

### Tools with recess upon request

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



### 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

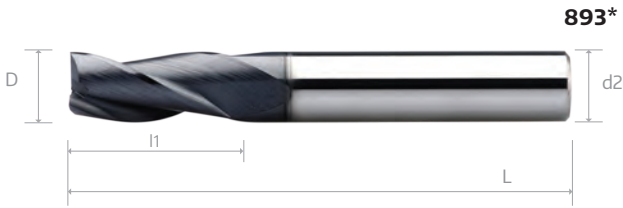
230

# SE 45 STANDARD ENDMILLS, SHORT FLUTE

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM SE 45 Standard Fräser mit kleezen Nuten, 3 Zähne	Fraises 2 tailles SE 45 Standard à hélices courtes en carbure monobloc, 3 dents
Frese SE 45 Standard con gole corte in metallo duro integrale, 3 taglienti	整体硬质合金 SE 45 系列 立铣刀 3 刃 - 标准长度-短刃



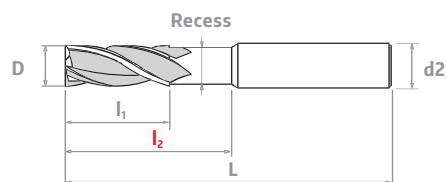
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					893 *	A14 *
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
1100 075 12	11	22	37	75	12	•	•
1200	12	22	37	75	12	•	•
1400	14	22	44	90	14	•	•
1600	16	26	46	90	16	•	•
1800	18	26	53	100	18	•	•
2000	20	32	58	100	20	•	•
2200	22	32	58	100	22	•	•
2500	25	36	58	100	25	•	•

630\* A15\*

SE 45

### Tools with recess upon request

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



### 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

230

# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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

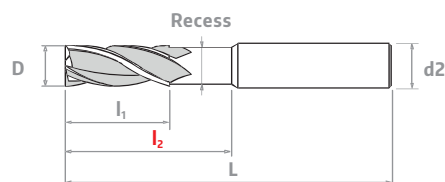


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					886 *	A04 *
	D	L1	L2	L	d2 ( h6 )	B0819	B0909
0100 040 03	1	3		40	3	•	•
0100 040 04	1	3		40	4	•	•
0150 040 03	1.5	4.5		40	3	•	•
0150 040 04	1.5	4.5		40	4	•	•
0200 040 03	2	6.5		40	3	•	•
0200 040 04	2	6.5		40	4	•	•
0250 040 03	2.5	6.5		40	3	•	•
0250 040 04	2.5	6.5		40	4	•	•
0300	3	9	15	40	3	•	•
0300 050 06	3	9	15	50	6	•	•
0350 050 04	3.5	12	20	50	4	•	•
0400	4	12	20	50	4	•	•
0400 050 06	4	12	20	50	6	•	•
0450 050 05	4.5	15	20	50	5	•	•
0500	5	15	20	50	5	•	•
0500 050 06	5	15	20	50	6	•	•
0550 050 06	5.5	15	20	50	6	•	•
0600 050	6	16	20	50	6	•	•
0600 060	6	20	30	60	6	•	•
0700 064 08	7	20	30	64	8	•	•
0800	8	20	30	64	8	•	•
0900 070 10	9	22	32	70	10	•	•
1000 070	10	22	32	70	10	•	•
1000 075	10	22	32	75	10	•	•

B31\* A05\*

### Tools with recess upon request

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



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

Cutting Parameter

224

# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



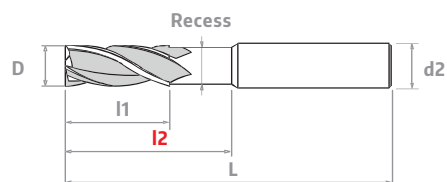
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					886 *	A04 *
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
1100 075 12	11	25	37	75	12	•	•
1200	12	25	37	75	12	•	•
1400	14	32	44	90	14	•	•
1600	16	32	46	90	16	•	•
1800	18	38	53	100	18	•	•
2000	20	38	58	100	20	•	•
2200	22	40	58	100	22	•	•
2500	25	40	58	100	25	•	•

B31\* A05\*

SE 45

## Tools with recess upon request

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



## 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

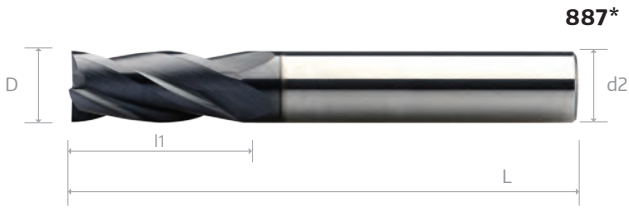
224

# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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

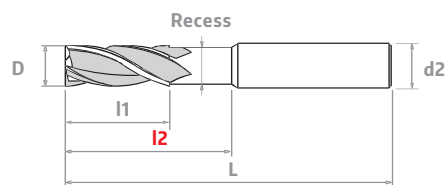


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					543	887 *	A06 *
	D	l1	l2	L	d2 ( h6 )	G6110	B0819	B0909
= * + Ø data								
0100 040 03	1	3		40	3	○	●	●
0100 050 04	1	3		50	4	○	●	●
0150 040 03	1.5	4.5		40	3	○	●	●
0150 050 04	1.5	4.5		50	4	○	●	●
0200 040 03	2	6.5		40	3	○	●	●
0200 050 04	2	6.5		50	4	○	●	●
0250 040 03	2.5	6.5		40	3	○	●	●
0250 050 04	2.5	6.5		50	4	○	●	●
0300	3	9	15	40	3	○	●	●
0300 050 06	3	9	15	50	6	○	●	●
0350 050 04	3.5	12	20	50	4	○	●	●
0400	4	12	20	50	4	○	●	●
0400 050 06	4	12	20	50	6	○	●	●
0450 050 05	4.5	15	20	50	5	○	●	●
0500	5	15	20	50	5	○	●	●
0500 050 06	5	15	20	50	6	○	●	●
0550 050 06	5.5	15	20	50	6	○	●	●
0600 050	6	16	20	50	6	○	●	●
0600 060	6	20	30	60	6	○	●	●
0700 064 08	7	20	30	64	8	○	●	●
0800	8	20	30	64	8	○	●	●
0900 070 10	9	22	32	70	10	○	●	●
1000 070	10	22	32	70	10	○	●	●
1000 075	10	22	32	75	10	○	●	●

635\* A07\*

### Tools with recess upon request

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



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

Cutting Parameter

226

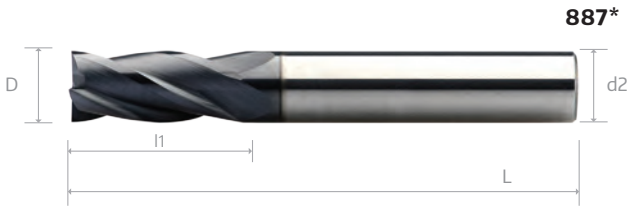
若有技术规格变更, 恕不事先通知

# SE 45 STANDARD ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



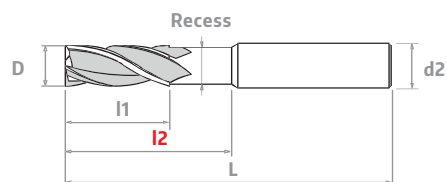
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					543	887 *	A06 *
	D	l1	l2	L	d2 ( h6 )	G6110	B0819	B0909
1100 075 12	11	25	37	75	12	○	●	●
1200	12	25	37	75	12	○	●	●
1400	14	32	44	90	14	○	●	●
1600	16	32	46	90	16	○	●	●
1800	18	38	53	100	18	○	●	●
2000	20	38	58	100	20	○	●	●
2200	22	40	58	100	22	○	●	●
2500	25	40	58	100	25	○	●	●

635\* A07\*

SE 45

### Tools with recess upon request

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



### 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
					○	○	●	○			○	○	●			

226

# SE 45

## ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					186 *	889 *	A09 *
	D	l 1	l 2	L	d2 ( h6 )	G6110	B0819	B0909
0300	3	19		60	3	○	●	●
0300 075 06	3	19		75	6	○	●	●
0400	4	19		60	4	○	●	●
0400 075 06	4	19		75	6	○	●	●
0500	5	19		60	5	○	●	●
0500 075 06	5	19		75	6	○	●	●
0600	6	31		75	6	○	●	●
0800	8	31		75	8	○	●	●
1000 075	10	31		75	10	○	●	●
1000 100	10	50		100	10	○	●	●
1200	12	50		100	12	○	●	●
1400	14	57		125	14	○	●	●
1600	16	57		125	16	○	●	●
1800	18	57		125	18	○	●	●
2000	20	57		125	20	○	●	●

SE 45

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

232

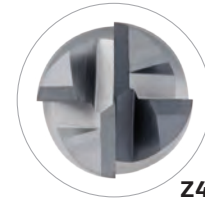
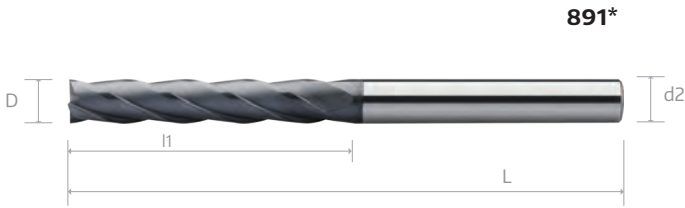


# SE 45 ENDMILLS - Extra-Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					202 *	891 *	A11 *
	D	l1	l2	L	d2 ( h6 )	G6110	B0819	B0819
0300	3	25		100	3	○	●	●
0300 100 06	3	25		100	6	○	●	●
0400	4	31		100	4	○	●	●
0400 100 06	4	31		100	6	○	●	●
0500	5	31		100	5	○	●	●
0500 100 06	5	31		100	6	○	●	●
0600	6	38		100	6	○	●	●
0800	8	41		100	8	○	●	●
1000	10	57		125	10	○	●	●
1200	12	75		150	12	○	●	●
1400	14	75		150	14	○	●	●
1600	16	75		150	16	○	●	●
1800	18	75		150	18	○	●	●
2000	20	75		150	20	○	●	●

SE 45

Material Group | Material-Gruppe | Groupe 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
					○	○	●	○		○	○	●				

233

VHM SE 45 lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne	Fraises 2 tailles SE 45 LONG REACH longues à hélices courtes en carbure monobloc, 4 dents
Frese SE 45 LONG REACH lunghe in metallo duro integrale, con gole corte, 4 taglienti	整体硬质合金 SE 45 系列 短刃 立铣刀 4 刃 - 中长

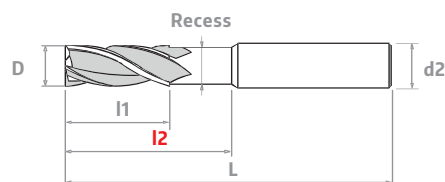


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					895 *	A18 *
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
0300	3	5	30	60	3	•	•
0300 075 06	3	5	30	75	6	•	•
0400	4	8	32	60	4	•	•
0400 075 06	4	8	32	75	6	•	•
0500	5	9	32	60	5	•	•
0500 075 06	5	9	32	75	6	•	•
0600	6	10	40	75	6	•	•
0800	8	12	40	75	8	•	•
1000 075	10	14	40	75	10	•	•
1000 100	10	14	60	100	10	•	•
1200	12	16	60	100	12	•	•
1400	14	22	85	125	14	•	•
1600	16	22	85	125	16	•	•
1800	18	26	85	125	18	•	•
2000	20	26	85	125	20	•	•

897 \* A19 \*

### Tools with recess upon request

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



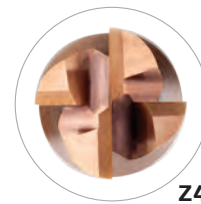
### Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

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

Cutting Parameter

229

VHM SE 45 extra-lange LONG REACH Fräser mit kurzen Nuten, 4 Zähne	Fraises 2 tailles SE 45 LONG REACH extra-longues à hélices courtes en carbure monobloc, 4 dents
Frese SE 45 LONG REACH extra-lunghe in metallo duro integrale, con gole corte, 4 taglienti	整体硬质合金 SE 45 系列 短刃 立铣刀 4 刃 - 加长

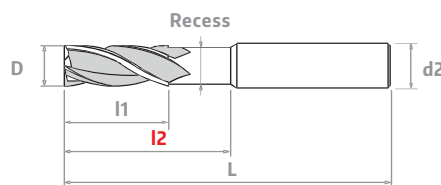


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					899 *	A22 *
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
0300	3	5	60	100	3	•	•
0300 100 06	3	5	60	100	6	•	•
0400	4	8	60	100	4	•	•
0400 100 06	4	8	60	100	6	•	•
0500	5	9	60	100	5	•	•
0500 100 06	5	9	60	100	6	•	•
0600	6	10	60	100	6	•	•
0800	8	12	60	100	8	•	•
1000	10	14	85	125	10	•	•
1200	12	16	110	150	12	•	•
1400	14	22	110	150	14	•	•
1600	16	22	110	150	16	•	•
1800	18	26	110	150	18	•	•
2000	20	26	110	150	20	•	•

901 \* A23 \*

### Tools with recess upon request

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



### 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

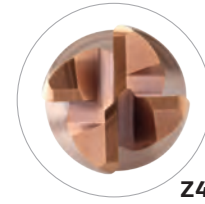
229

# SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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

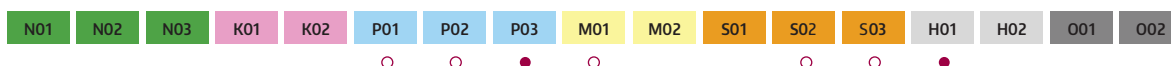


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						311 *	904 *	A26*
	D	l1	l2	L	d2 ( h6 )	R	G6110	B0819	B0909
0100 050 0400 020	1	3		50	4	0.2	•	•	•
0100 050 0600 020	1	3		50	6	0.2	•	•	•
0150 050 0400 020	1.5	4.5		50	4	0.2	•	•	•
0150 050 0600 020	1.5	4.5		50	6	0.2	•	•	•
0200 050 0400 020	2	6.5		50	4	0.2	•	•	•
0200 050 0400 030	2	6.5		50	4	0.3	•	•	•
0200 050 0600 020	2	6.5		50	6	0.2	•	•	•
0200 050 0600 030	2	6.5		50	6	0.3	•	•	•
0250 050 0400 020	2.5	6.5		50	4	0.2	•	•	•
0250 050 0400 030	2.5	6.5		50	4	0.3	•	•	•
0250 050 0400 050	2.5	6.5		50	4	0.5	•	•	•
0250 050 0600 020	2.5	6.5		50	6	0.2	•	•	•
0250 050 0600 030	2.5	6.5		50	6	0.3	•	•	•
0250 050 0600 050	2.5	6.5		50	6	0.5	•	•	•
0300 040 0300 020	3	9		40	3	0.2	•	•	•
0300 040 0300 030	3	9		40	3	0.3	•	•	•
0300 040 0300 050	3	9		40	3	0.5	•	•	•
0300 050 0400 020	3	9		50	4	0.2	•	•	•
0300 050 0400 030	3	9		50	4	0.3	•	•	•
0300 050 0400 050	3	9		50	4	0.5	•	•	•
0300 050 0600 020	3	9		50	6	0.2	•	•	•
0300 050 0600 030	3	9		50	6	0.3	•	•	•
0300 050 0600 050	3	9		50	6	0.5	•	•	•
0300 060 0600 020	3	9		60	6	0.2	•	•	•
0300 060 0600 030	3	9		60	6	0.3	•	•	•
0300 060 0600 050	3	9		60	6	0.5	•	•	•
0400 050 0400 020	4	12		50	4	0.2	•	•	•
0400 050 0400 030	4	12		50	4	0.3	•	•	•

cont'd ►

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

Cutting Parameter



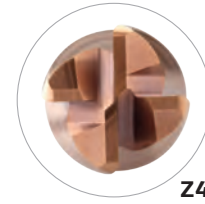
226

# SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						311 *	904 *	A26*
	D	l1	l2	L	d2 ( h6 )	R	G6110	B0819	B0909
0400 050 0400 050	4	12		50	4	0.5	•	•	•
0400 050 0400 100	4	12		50	4	1	•	•	•
0400 050 0600 020	4	12		50	6	0.2	•	•	•
0400 050 0600 030	4	12		50	6	0.3	•	•	•
0400 050 0600 050	4	12		50	6	0.5	•	•	•
0400 050 0600 100	4	12		50	6	1	•	•	•
0400 060 0600 020	4	12		60	6	0.2	•	•	•
0400 060 0600 030	4	12		60	6	0.3	•	•	•
0400 060 0600 050	4	12		60	6	0.5	•	•	•
0400 060 0600 100	4	12		60	6	1	•	•	•
0500 050 0500 020	5	15		50	5	0.2	•	•	•
0500 050 0500 030	5	15		50	5	0.3	•	•	•
0500 050 0500 050	5	15		50	5	0.5	•	•	•
0500 050 0500 100	5	15		50	5	1	•	•	•
0500 050 0600 020	5	15		50	6	0.2	•	•	•
0500 050 0600 030	5	15		50	6	0.3	•	•	•
0500 050 0600 050	5	15		50	6	0.5	•	•	•
0500 050 0600 100	5	15		50	6	1	•	•	•
0500 060 0600 020	5	15		60	6	0.2	•	•	•
0500 060 0600 030	5	15		60	6	0.3	•	•	•
0500 060 0600 050	5	15		60	6	0.5	•	•	•
0500 060 0600 100	5	15		60	6	1	•	•	•
0600 050 0600 020	6	16		50	6	0.2	•	•	•
0600 050 0600 030	6	16		50	6	0.3	•	•	•
0600 050 0600 050	6	16		50	6	0.5	•	•	•
0600 050 0600 100	6	16		50	6	1	•	•	•
0600 060 0600 020	6	20		60	6	0.2	•	•	•
0600 060 0600 030	6	20		60	6	0.3	•	•	•

cont'd ►

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
					○	○	●	○			○	○	●			

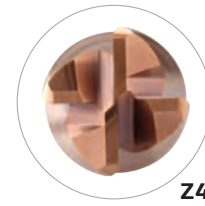
226

# SE 45R STANDARD TORUS ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						311 *	904 *	A26*
	D	l1	l2	L	d2 ( h6 )	R	G6110	B0819	B0909
= * + Ø data									
0600 060 0600 050	6	20		60	6	0.5	•	•	•
0600 060 0600 100	6	20		60	6	1	•	•	•
0800 064 0800 020	8	20		64	8	0.2	•	•	•
0800 064 0800 030	8	20		64	8	0.3	•	•	•
0800 064 0800 050	8	20		64	8	0.5	•	•	•
0800 064 0800 100	8	20		64	8	1	•	•	•
0800 064 0800 150	8	20		64	8	1.5	•	•	•
0800 064 0800 200	8	20		64	8	2	•	•	•
1000 070 1000 020	10	22		70	10	0.2	•	•	•
1000 070 1000 030	10	22		70	10	0.3	•	•	•
1000 070 1000 050	10	22		70	10	0.5	•	•	•
1000 070 1000 100	10	22		70	10	1	•	•	•
1000 070 1000 150	10	22		70	10	1.5	•	•	•
1000 070 1000 200	10	22		70	10	2	•	•	•
1000 075 1000 020	10	22		75	10	0.2	•	•	•
1000 075 1000 030	10	22		75	10	0.3	•	•	•
1000 075 1000 050	10	22		75	10	0.5	•	•	•
1000 075 1000 100	10	22		75	10	1	•	•	•
1000 075 1000 150	10	22		75	10	1.5	•	•	•
1000 075 1000 200	10	22		75	10	2	•	•	•
1200 075 1200 020	12	25		75	12	0.2	•	•	•
1200 075 1200 030	12	25		75	12	0.3	•	•	•
1200 075 1200 050	12	25		75	12	0.5	•	•	•
1200 075 1200 100	12	25		75	12	1	•	•	•
1200 075 1200 150	12	25		75	12	1.5	•	•	•
1200 075 1200 200	12	25		75	12	2	•	•	•
1200 075 1200 300	12	25		75	12	3	•	•	•
1400 090 1400 030	14	32		90	14	0.3	•	•	•

cont'd ►

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

Cutting Parameter



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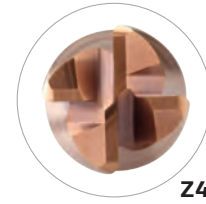
Spécifications techniques sujettes à changement sans avis préalable

# SE 45 STANDARD TORUS ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



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



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						311 *	904 *	A26*
	D	l1	l2	L	d2 ( h6 )	R	G6110	B0819	B0909
1400 090 1400 050	14	32		90	14	0.5	•	•	•
1400 090 1400 100	14	32		90	14	1	•	•	•
1400 090 1400 150	14	32		90	14	1.5	•	•	•
1400 090 1400 200	14	32		90	14	2	•	•	•
1400 090 1400 300	14	32		90	14	3	•	•	•
1600 090 1600 030	16	32		90	16	0.3	•	•	•
1600 090 1600 050	16	32		90	16	0.5	•	•	•
1600 090 1600 100	16	32		90	16	1	•	•	•
1600 090 1600 150	16	32		90	16	1.5	•	•	•
1600 090 1600 200	16	32		90	16	2	•	•	•
1600 090 1600 300	16	32		90	16	3	•	•	•
1800 100 1800 030	18	38		100	18	0.3	○	○	○
1800 100 1800 050	18	38		100	18	0.5	○	○	○
1800 100 1800 100	18	38		100	18	1	○	○	○
1800 100 1800 150	18	38		100	18	1.5	○	○	○
1800 100 1800 200	18	38		100	18	2	○	○	○
1800 100 1800 300	18	38		100	18	3	○	○	○
2000 100 2000 030	20	38		100	20	0.3	•	•	•
2000 100 2000 050	20	38		100	20	0.5	•	•	•
2000 100 2000 100	20	38		100	20	1	•	•	•
2000 100 2000 150	20	38		100	20	1.5	•	•	•
2000 100 2000 200	20	38		100	20	2	•	•	•
2000 100 2000 300	20	38		100	20	3	•	•	•

SE 45

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

Cutting Parameter

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

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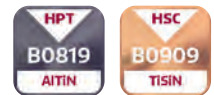
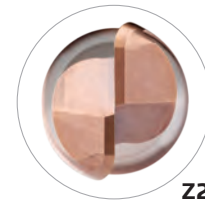
# SE 45R

## SHORT FLUTES LONG REACH TORUS ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



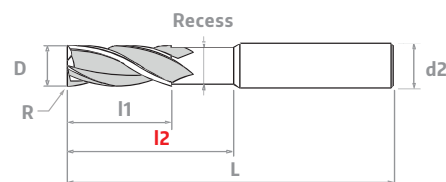
VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 2 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 2 dents
Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 2 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 2 刃 - 中长



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						906 *	A28 *
	D	l1	l2	L	d2 (h6)	R	B0819	B0909
= * + Ø data								
0200 075 0600 030	2	4	30	75	6	0.3	•	•
0300 075 0600 030	3	5	30	75	6	0.3	•	•
0300 075 0600 050	3	5	30	75	6	0.5	•	•
0400 075 0600 030	4	8	32	75	6	0.3	•	•
0400 075 0600 050	4	8	32	75	6	0.5	•	•
0500 075 0600 030	5	9	32	75	6	0.3	•	•
0500 075 0600 050	5	9	32	75	6	0.5	•	•
0600 075 0600 030	6	10	40	75	6	0.3	•	•
0600 075 0600 050	6	10	40	75	6	0.5	•	•
0600 075 0600 100	6	10	40	75	6	1	•	•
0800 075 0800 030	8	12	40	75	8	0.3	•	•
0800 075 0800 050	8	12	40	75	8	0.5	•	•
0800 075 0800 100	8	12	40	75	8	1	•	•
1000 075 1000 050	10	14	40	75	10	0.5	•	•
1000 075 1000 100	10	14	40	75	10	1	•	•
1000 075 1000 200	10	14	40	75	10	2	•	•
1000 100 1000 050	10	14	60	100	10	0.5	•	•
1000 100 1000 100	10	14	60	100	10	1	•	•
1000 100 1000 200	10	14	60	100	10	2	•	•
1200 100 1200 050	12	16	60	100	12	0.5	•	•
1200 100 1200 100	12	16	60	100	12	1	•	•
1200 100 1200 200	12	16	60	100	12	2	•	•
1600 125 1600 050	16	22	85	125	16	0.5	•	•
1600 125 1600 100	16	22	85	125	16	1	•	•
1600 125 1600 200	16	22	85	125	16	2	•	•
1600 125 1600 300	16	22	85	125	16	3	•	•

### Tools with recess upon request

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



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

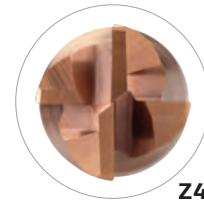
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02

Cutting Parameter

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VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 4 dents
Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刀 立铣刀 4 刃 - 中长



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						907 *	A29 *
	D	l1	l2	L	d2 ( h6 )	R	B0819	B0909
0200 075 0600 020	2	4	30	75	6	0.2	•	•
0200 075 0600 030	2	4	30	75	6	0.3	•	•
0300 075 0600 020	3	5	30	75	6	0.2	•	•
0300 075 0600 030	3	5	30	75	6	0.3	•	•
0300 075 0600 050	3	5	30	75	6	0.5	•	•
0400 075 0600 020	4	8	32	75	6	0.2	•	•
0400 075 0600 030	4	8	32	75	6	0.3	•	•
0400 075 0600 050	4	8	32	75	6	0.5	•	•
0500 075 0600 020	5	9	32	75	6	0.2	•	•
0500 075 0600 030	5	9	32	75	6	0.3	•	•
0500 075 0600 050	5	9	32	75	6	0.5	•	•
0600 075 0600 020	6	10	40	75	6	0.2	•	•
0600 075 0600 030	6	10	40	75	6	0.3	•	•
0600 075 0600 050	6	10	40	75	6	0.5	•	•
0600 075 0600 100	6	10	40	75	6	1	•	•
0800 075 0800 020	8	12	40	75	8	0.2	•	•
0800 075 0800 030	8	12	40	75	8	0.3	•	•
0800 075 0800 050	8	12	40	75	8	0.5	•	•
0800 075 0800 100	8	12	40	75	8	1	•	•
1000 075 1000 020	10	14	40	75	10	0.2	•	•
1000 075 1000 030	10	14	40	75	10	0.3	•	•
1000 075 1000 050	10	14	40	75	10	0.5	•	•
1000 075 1000 100	10	14	40	75	10	1	•	•
1000 075 1000 200	10	14	40	75	10	2	•	•
1000 100 1000 020	10	14	60	100	10	0.2	•	•
1000 100 1000 030	10	14	60	100	10	0.3	•	•

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cont'd ►

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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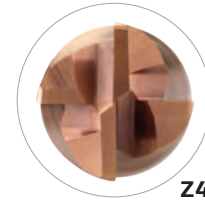
# SE 45R

## SHORT FLUTES LONG REACH ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM SE 45R lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques longues, goujures courtes, 4 dents
Frese toroidali SE 45R LONG REACH lunghe in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刀 立铣刀 4 刃 - 中长

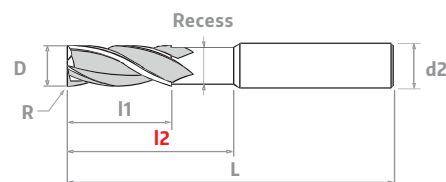


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						907 *	A29 *
	D	l1	l2	L	d2 ( h6 )	R	B0819	B0909
1000 100 1000 050	10	14	60	100	10	0.5	•	•
1000 100 1000 100	10	14	60	100	10	1	•	•
1000 100 1000 200	10	14	60	100	10	2	•	•
1200 100 1200 020	12	16	60	100	12	0.2	•	•
1200 100 1200 030	12	16	60	100	12	0.3	•	•
1200 100 1200 050	12	16	60	100	12	0.5	•	-
1200 100 1200 100	12	16	60	100	12	1	•	-
1200 100 1200 200	12	16	60	100	12	2	•	-
1600 125 1600 030	16	22	85	125	16	0.3	•	-
1600 125 1600 050	16	22	85	125	16	0.5	•	-
1600 125 1600 100	16	22	85	125	16	1	•	-
1600 125 1600 200	16	22	85	125	16	2	•	-
1600 125 1600 300	16	22	85	125	16	3	•	-

813 A1B

### Tools with recess upon request

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



### 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

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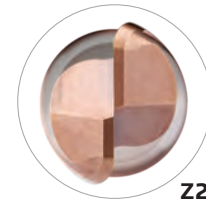
# SE 45R

## SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 2 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 2 dents
Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 2 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 2 刃 - 加长

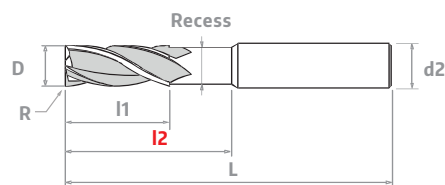


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						908 *	A30 *
	D	l1	l2	L	d2 ( h6 )	R	B0819	B0909
0200 100 0600 030	2	4	60	100	6	0.3	•	•
0300 100 0600 030	3	5	60	100	6	0.3	•	•
0300 100 0600 050	3	5	60	100	6	0.5	•	•
0400 100 0600 030	4	8	60	100	6	0.3	•	•
0400 100 0600 050	4	8	60	100	6	0.5	•	•
0500 100 0600 030	5	9	60	100	6	0.3	•	•
0500 100 0600 050	5	9	60	100	6	0.5	•	•
0600 100 0600 030	6	10	60	100	6	0.3	•	•
0600 100 0600 050	6	10	60	100	6	0.5	•	•
0600 100 0600 100	6	10	60	100	6	1	•	•
0800 100 0800 030	8	12	60	100	8	0.3	•	•
0800 100 0800 050	8	12	60	100	8	0.5	•	•
0800 100 0800 100	8	12	60	100	8	1	•	•
1000 125 1000 050	10	14	85	125	10	0.5	•	•
1000 125 1000 100	10	14	85	125	10	1	•	•
1000 125 1000 200	10	14	85	125	10	2	•	•
1200 150 1200 050	12	16	110	150	12	0.5	•	•
1200 150 1200 100	12	16	110	150	12	1	•	•
1200 150 1200 200	12	16	110	150	12	2	•	•
1600 150 1600 050	16	22	110	150	16	0.5	•	•
1600 150 1600 100	16	22	110	150	16	1	•	•
1600 150 1600 200	16	22	110	150	16	2	•	•
1600 150 1600 300	16	22	110	150	16	3	•	•

B32 \* A31 \*

### Tools with recess upon request

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



### 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 45R

## SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

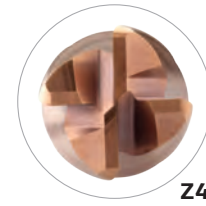
≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 4 dents
Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 加长



A32\*



Z4



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						909 *	A32 *
	D	l1	l2	L	d2 ( h6 )	R	B0819	B0909
0200 100 0600 020	2	4	60	100	6	0.2	•	•
0200 100 0600 030	2	4	60	100	6	0.3	•	•
0300 100 0600 020	3	5	60	100	6	0.2	•	•
0300 100 0600 030	3	5	60	100	6	0.3	•	•
0300 100 0600 050	3	5	60	100	6	0.5	•	•
0300 100 0600 100	3	5	60	100	6	1	•	•
0400 100 0600 020	4	8	60	100	6	0.2	•	•
0400 100 0600 030	4	8	60	100	6	0.3	•	•
0400 100 0600 050	4	8	60	100	6	0.5	•	•
0400 100 0600 100	4	8	60	100	6	1	•	•
0500 100 0600 020	5	9	60	100	6	0.2	•	•
0500 100 0600 030	5	9	60	100	6	0.3	•	•
0500 100 0600 050	5	9	60	100	6	0.5	•	•
0500 100 0600 100	5	9	60	100	6	1	•	•
0600 100 0600 020	6	10	60	100	6	0.2	•	•
0600 100 0600 030	6	10	60	100	6	0.3	•	•
0600 100 0600 050	6	10	60	100	6	0.5	•	•
0600 100 0600 100	6	10	60	100	6	1	•	•
0600 125 0600 020	6	10	60	125	6	0.2	•	•
0600 125 0600 030	6	10	60	125	6	0.3	•	•
0600 125 0600 050	6	10	60	125	6	0.5	•	•
0600 125 0600 100	6	10	60	125	6	1	•	•
0800 100 0800 020	8	12	60	100	8	0.2	•	•
0800 100 0800 030	8	12	60	100	8	0.3	•	•
0800 100 0800 050	8	12	60	100	8	0.5	•	•
0800 100 0800 100	8	12	60	100	8	1	•	•
0800 100 0800 200	8	12	60	100	8	2	•	•
0800 125 0800 020	8	12	60	125	8	0.2	•	•

B33\* A33\*

cont'd ►

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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Modifiche Tecniche possibili senza preavviso

# SE 45R

## SHORT FLUTES LONG REACH TORUS ENDMILLS - Extra-Long

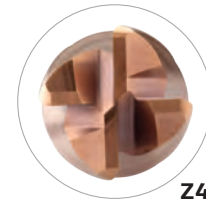
≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



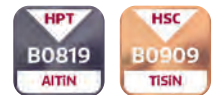
VHM SE 45R extra-lange LONG REACH Torusfräser, kurze Nuten, 4 Zähne	Fraises 2 tailles SE 45R LONG REACH toriques extra-longues, goujures courtes, 4 dents
Frese toroidali SE 45R LONG REACH extra-lunghe in metallo duro integrale, gole corte, 4 taglienti	整体硬质合金 SE 45R 系列 圆鼻短刃 立铣刀 4 刃 - 加长



A32\*



Z4

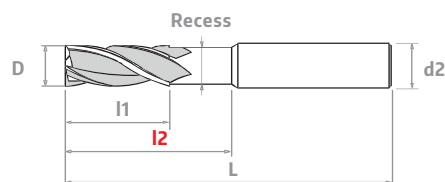


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )						909 *	A32 *
	D	l1	l2	L	d2 ( h6 )	R	B0819	B0909
0800 125 0800 030	8	12	60	125	8	0.3	•	•
0800 125 0800 050	8	12	85	125	8	0.5	•	•
0800 125 0800 100	8	12	85	125	8	1	•	•
0800 125 0800 200	8	12	85	125	8	2	•	•
1000 125 1000 020	10	14	85	125	10	0.2	•	•
1000 125 1000 030	10	14	85	125	10	0.3	•	•
1000 125 1000 050	10	14	85	125	10	0.5	•	•
1000 125 1000 100	10	14	85	125	10	1	•	•
1000 125 1000 200	10	14	85	125	10	2	•	•
1000 150 1000 020	10	14	85	150	10	0.2	•	•
1000 150 1000 030	10	14	85	150	10	0.3	•	•
1000 150 1000 050	10	14	85	150	10	0.5	•	•
1000 150 1000 100	10	14	85	150	10	1	•	•
1000 150 1000 200	10	14	85	150	10	2	•	•
1200 150 1200 020	12	16	110	150	12	0.2	•	•
1200 150 1200 030	12	16	110	150	12	0.3	•	•
1200 150 1200 050	12	16	110	150	12	0.5	•	•
1200 150 1200 100	12	16	110	150	12	1	•	•
1200 150 1200 200	12	16	110	150	12	2	•	•
1600 150 1600 030	16	22	110	150	16	0.3	•	•
1600 150 1600 050	16	22	110	150	16	0.5	•	•
1600 150 1600 100	16	22	110	150	16	1	•	•
1600 150 1600 200	16	22	110	150	16	2	•	•
1600 150 1600 300	16	22	110	150	16	3	•	•

B33\* A33\*

### Tools with recess upon request

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



### 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
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

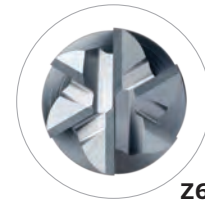
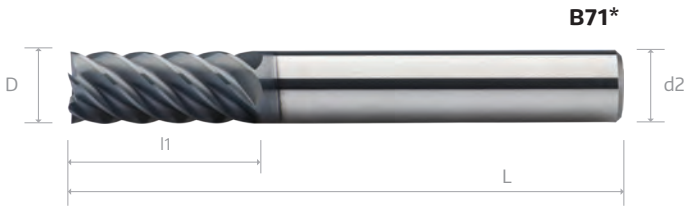
229

# SE 45 MULTIFLUTE ENDMILLS

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM Mehrzahnfräser SE 45 - 6 bzw. 8 Zähne	Fraises 2 tailles Multidentés SE 45 en carbure monobloc, 6 respectivement 8 dents
Frese multi-taglienti SE 45 in metallo duro integrale, 6 rispettivamente 8 taglienti	整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 标准长度



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B71*	A89*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
0300 050 06	3	8	20	50	6	•	•
0400 050 06	4	11	20	50	6	•	•
0500 050 06	5	13	20	50	6	•	•
0600 050	6	15	20	50	6	•	•
0600 060	6	20	30	60	6	•	•
0800	8	20	30	64	8	•	•
1000	10	22	32	70	10	•	•
1200	12	25	37	75	12	•	•
1400	14	30	44	90	14	•	•

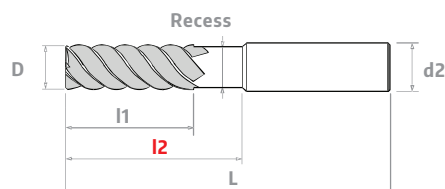


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B71*	A89*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
1600	16	30	46	90	16	•	•
1800	18	35	53	100	18	•	•
2000	20	38	58	100	20	•	•

C14 \* A94 \*

### Tools with recess upon request

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



### 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

234

# SE 45 MULTIFLUTE ENDMILLS - Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM lange Mehrzahnfräser SE 45 -6 bzw. 8 Zähne	Fraises 2 tailles Multidentés SE 45 longues en carbure monobloc, 6 respectivement 8 dents
Frese multi-taglienti SE 45 lunghe in metallo duro integrale, 6 rispettivamente 8 taglienti	整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 中长



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B73*	A90*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
0300 075 06	3	19	30	75	6	•	•
0400 075 06	4	19	32	75	6	•	•
0500 075 06	5	19	32	75	6	•	•
0600	6	31	40	75	6	•	•
0800	8	31	40	75	8	•	•
1000	10	45	60	100	10	•	•
1200	12	50	60	100	12	•	•
1400	14	57	85	125	14	•	•

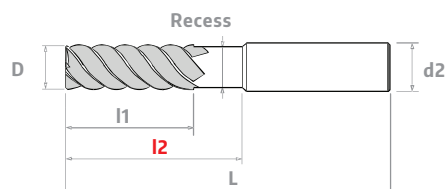


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B73*	A90*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
1600	16	57	85	125	16	•	•
1800	18	57	85	125	18	•	•
2000	20	57	85	125	20	•	•

C15 \* A95 \*

### Tools with recess upon request

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



### 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

234

# SE 45 MULTIFLUTE ENDMILLS - Extra-Long

≤ 1.300 N/mm<sup>2</sup> + B0819 ≤ 36 - 52 HRC



VHM extra-lange Mehrzahnfräser SE 45 -6 bzw. 8 Zähne	Fraises 2 tailles Multidentés SE 45 extra-longues en carbure monobloc, 6 respectivement 8 dents
Frese multi-taglienti SE 45 extra-lunghe in metallo duro integrale, 6 rispettivamente 8 taglienti	整体硬质合金 SE 45 系列 密齿 立铣刀 6 - 8 刃 - 加长

B78\*



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B78*	A91*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
0300 100 06	3	25	60	100	6	•	•
0400 100 06	4	31	60	100	6	•	•
0500 100 06	5	31	60	100	6	•	•
0600	6	38	60	100	6	•	•
0800	8	41	60	100	8	•	•
1000	10	57	85	125	10	•	•
1200	12	75	110	150	12	•	•
1400	14	75	110	150	14	•	•

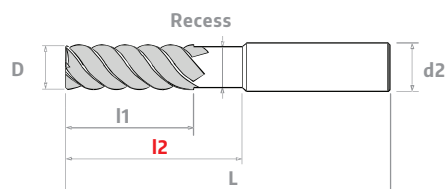


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension ( mm )					B78*	A91*
	D	l1	l2	L	d2 ( h6 )	B0819	B0909
= * + Ø data							
1600	16	75	110	150	16	•	•
1800	18	75	110	150	18	•	•
2000	20	75	110	150	20	•	•

C16 \* A96 \*

Tools with recess upon request

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



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

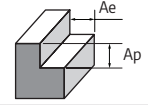
Cutting Parameter

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

235

Spécifications techniques sujettes à changement sans avis préalable





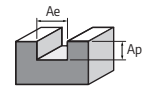
## Standard Endmills 2 Flutes

Side Milling	P				M		S				H			
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.80 × D		0.80 × D		0.80 × D		1.00 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.40 × D		0.40 × D		0.40 × D		0.60 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	140	0.005	120	0.007	110	0.006	70	0.007	50	0.007	65	0.007	60	0.007
2		0.012		0.015		0.013		0.015		0.015		0.015		0.015
3		0.020		0.025		0.023		0.025		0.025		0.025		0.025
4		0.029		0.035		0.032		0.035		0.035		0.035		0.035
5		0.037		0.045		0.041		0.045		0.045		0.045		0.045
6		0.047		0.058		0.052		0.057		0.057		0.057		0.057
8		0.063		0.078		0.070		0.078		0.078		0.078		0.078
10		0.082		0.101		0.091		0.100		0.100		0.100		0.100
12		0.105		0.130		0.117		0.135		0.135		0.135		0.135
14		0.129		0.159		0.143		0.164		0.164		0.164		0.164
16		0.147		0.181		0.163		0.180		0.180		0.180		0.180
18		0.174		0.214		0.193		0.211		0.211		0.211		0.211
20		0.200		0.247		0.223		0.244		0.244		0.244		0.244
22		0.226		0.279		0.251		0.286		0.286		0.286		0.286
25		0.259		0.320		0.288		0.333		0.333		0.333		0.333



Recommended Cutting Data

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



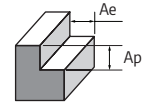
## Standard Endmills 2 Flutes

Slotting	P						M		S				H						
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel						
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52						
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.00 × D		0.30 × D		0.30 × D		0.30 × D		0.50 × D						
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D						
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)					
1	130	0.006	110	0.007	100	0.006	65	0.007	40	0.007	60	0.007	50	0.007					
2		0.014		0.015		0.015		0.015		0.015		0.015		0.015	0.015	0.015	0.015	0.015	0.015
3		0.023		0.025		0.025		0.025		0.025		0.025		0.025	0.025	0.025	0.025	0.025	0.025
4		0.032		0.035		0.035		0.035		0.035		0.035		0.035	0.035	0.035	0.035	0.035	0.035
5		0.040		0.045		0.045		0.045		0.045		0.045		0.045	0.045	0.045	0.045	0.045	0.045
6		0.053		0.059		0.059		0.059		0.059		0.059		0.059	0.059	0.059	0.059	0.059	0.059
8		0.071		0.078		0.078		0.078		0.078		0.078		0.078	0.078	0.078	0.078	0.078	0.078
10		0.090		0.101		0.101		0.101		0.101		0.101		0.101	0.101	0.101	0.101	0.101	0.101
12		0.115		0.131		0.131		0.131		0.131		0.131		0.131	0.131	0.131	0.131	0.131	0.131
14		0.141		0.158		0.158		0.158		0.158		0.158		0.158	0.158	0.158	0.158	0.158	0.158
16		0.162		0.182		0.182		0.182		0.182		0.182		0.182	0.182	0.182	0.182	0.182	0.182
18		0.188		0.218		0.218		0.218		0.218		0.218		0.218	0.218	0.218	0.218	0.218	0.218
20		0.219		0.239		0.239		0.239		0.239		0.239		0.239	0.239	0.239	0.239	0.239	0.239
22		0.257		0.275		0.275		0.275		0.275		0.275		0.275	0.275	0.275	0.275	0.275	0.275
25		0.277		0.314		0.314		0.314		0.314		0.314		0.314	0.314	0.314	0.314	0.314	0.314

SE 45



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



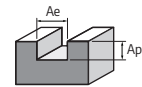
## Standard Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.40 × D		0.40 × D		0.40 × D		0.40 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	130	0.004	120	0.005	110	0.004	70	0.005	50	0.005	65	0.005	60	0.005
2		0.009		0.010		0.009		0.011		0.011				
3		0.014		0.016		0.014		0.017		0.017				
4		0.019		0.022		0.019		0.024		0.024				
5		0.026		0.028		0.026		0.032		0.032				
6		0.032		0.034		0.032		0.039		0.039				
8		0.043		0.046		0.043		0.056		0.056				
10		0.061		0.059		0.061		0.075		0.075				
12		0.078		0.071		0.078		0.092		0.092				
14		0.091		0.088		0.091		0.116		0.116				
16		0.102		0.099		0.102		0.133		0.133				
18		0.124		0.113		0.124		0.158		0.158				
20		0.144		0.129		0.144		0.181		0.181				
22		0.177		0.146		0.177		0.211		0.211				
25		0.211		0.165		0.211		0.258		0.258				

SE 45



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



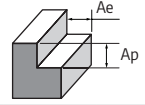
## Standard Endmills 4 Flutes

Slotting	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.00 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.005		0.004		0.005		0.005		0.005		0.005
2		0.007		0.010		0.008		0.011		0.011		0.011		0.011
3		0.011		0.015		0.012		0.016		0.016		0.016		0.016
4		0.015		0.020		0.017		0.024		0.024		0.024		0.024
5		0.020		0.026		0.022		0.032		0.032		0.032		0.031
6		0.025		0.032		0.027		0.039		0.039		0.039		0.039
8		0.033		0.044		0.036		0.061		0.061		0.061		0.061
10	120	0.042	110	0.059	100	0.047	65	0.079	40	0.079	60	0.079	50	0.081
12		0.051		0.071		0.056		0.098		0.098		0.098		0.101
14		0.061		0.084		0.067		0.131		0.131		0.131		0.129
16		0.075		0.101		0.084		0.159		0.159		0.159		0.160
18		0.086		0.118		0.096		0.189		0.189		0.189		0.187
20		0.100		0.128		0.111		0.238		0.238		0.238		0.224
22		0.122		0.145		0.136		0.242		0.242		0.242		0.251
25		0.149		0.171		0.165		0.295		0.295		0.295		0.290

SE 45



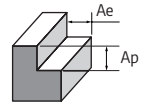
Recommended Cutting Data  
 Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



## Short Flute Long Endmills 2 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.00 × D		1.00 × D		1.00 × D		1.20 × D	
Cutting Width, Ae (mm)	0.70 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
2	120	0.008	110	0.010	100	0.009	60	0.013	40	0.013	55	0.013	50	0.012
3		0.013		0.015		0.014		0.019		0.019		0.019		
4		0.017		0.021		0.019		0.027		0.027		0.027		
5		0.022		0.026		0.024		0.035		0.035		0.035		
6		0.027		0.032		0.030		0.045		0.045		0.045		
8		0.041		0.043		0.046		0.064		0.064		0.064		
10		0.054		0.055		0.060		0.081		0.081		0.081		
12		0.067		0.069		0.074		0.101		0.101		0.101		
16		0.086		0.093		0.096		0.141		0.141		0.141		

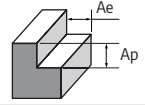
## Short Flute Extra-Long Endmills 2 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		1.00 × D		1.00 × D		1.20 × D		1.20 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	120	0.007	110	0.009	100	0.008	60	0.011	40	0.011	55	0.011	50	0.011
		0.011		0.014		0.013		0.017		0.017		0.017		
4		0.015		0.019		0.017		0.025		0.025		0.025		
5		0.019		0.023		0.021		0.032		0.032		0.032		
6		0.023		0.029		0.026		0.040		0.040		0.040		
8		0.032		0.039		0.035		0.058		0.058		0.058		
10		0.040		0.049		0.044		0.072		0.072		0.072		
12		0.050		0.062		0.056		0.091		0.091		0.091		
16		0.067		0.083		0.075		0.127		0.127		0.127		

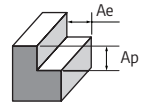


Recommended Cutting Data  
 Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



## Short Flute Long Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	130	0.012	120	0.014	110	0.012	70	0.015	50	0.015	65	0.015	60	0.015
4		0.016		0.019		0.016		0.021		0.021		0.021		
5		0.022		0.024		0.022		0.027		0.027		0.027		
6		0.027		0.029		0.027		0.033		0.033		0.033		
8		0.036		0.039		0.036		0.048		0.048		0.048		
10		0.052		0.050		0.052		0.064		0.064		0.064		
12		0.066		0.060		0.066		0.079		0.079		0.079		
14		0.078		0.075		0.078		0.098		0.098		0.098		
16		0.086		0.084		0.086		0.113		0.113		0.113		
18		0.105		0.096		0.105		0.133		0.133		0.133		
20	0.124	0.111	0.124	0.153	0.153	0.153								



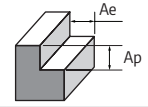
## Short Flute Extra-Long Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	130	0.011	120	0.012	110	0.011	70	0.014	50	0.014	65	0.014	60	0.014
4		0.015		0.017		0.015		0.019		0.019		0.019		
5		0.02		0.021		0.02		0.025		0.025		0.025		
6		0.024		0.026		0.024		0.031		0.031		0.031		
8		0.033		0.035		0.033		0.043		0.043		0.043		
10		0.047		0.045		0.047		0.058		0.058		0.058		
12		0.059		0.054		0.059		0.07		0.07		0.07		
14		0.07		0.067		0.07		0.085		0.085		0.085		
16		0.078		0.076		0.078		0.102		0.102		0.102		
18		0.093		0.086		0.093		0.122		0.122		0.122		
20	0.114	0.099	0.114	0.139	0.139	0.139								



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

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## Short Flute Endmills 3 Flutes

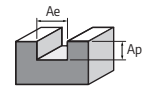
Side Milling	P				M		S				H			
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.70 × D		0.70 × D		0.60 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	130	0.006	120	0.010	110	0.007	70	0.008	50	0.008	65	0.008	60	0.008
2		0.013		0.021		0.015		0.016		0.016		0.016		
3		0.020		0.033		0.022		0.026		0.026		0.026		
4		0.033		0.051		0.036		0.038		0.038		0.038		
5		0.046		0.067		0.051		0.055		0.055		0.055		
6		0.055		0.083		0.061		0.066		0.066		0.066		
7		0.068		0.099		0.075		0.084		0.084		0.084		
8		0.079		0.116		0.088		0.096		0.096		0.096		
9		0.092		0.127		0.103		0.110		0.110		0.110		
10		0.104		0.134		0.116		0.123		0.123		0.123		
11		0.120		0.153		0.133		0.142		0.142		0.142		
12		0.133		0.169		0.148		0.162		0.162		0.162		
14		0.160		0.206		0.178		0.194		0.194		0.194		
16		0.184		0.244		0.205		0.231		0.231		0.231		
18		0.218		0.300		0.242		0.260		0.260		0.260		
20		0.233		0.347		0.258		0.302		0.302		0.302		
22		0.293		0.397		0.325		0.339		0.339		0.339		
25		0.373		0.460		0.414		0.408		0.408		0.408		

SE 45



Recommended Cutting Data

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



## Short Flute Endmills 3 Flutes

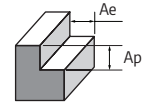
Slotting	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		0.20 × D		0.20 × D		0.20 × D		0.20 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	120	0.006	110	0.014	100	0.007	60	0.009	40	0.009	55	0.009	50	0.009
2		0.013		0.029		0.014		0.020		0.020		0.020		0.020
3		0.022		0.044		0.025		0.032		0.032		0.032		0.032
4		0.029		0.066		0.033		0.047		0.047		0.047		0.047
5		0.042		0.087		0.047		0.062		0.062		0.062		0.062
6		0.053		0.109		0.059		0.074		0.074		0.074		0.074
7		0.068		0.127		0.076		0.089		0.089		0.089		0.089
8		0.081		0.150		0.090		0.106		0.106		0.106		0.106
9		0.093		0.164		0.103		0.129		0.129		0.129		0.129
10		0.105		0.193		0.116		0.150		0.150		0.150		0.150
11		0.121		0.213		0.135		0.167		0.167		0.167		0.167
12		0.134		0.226		0.149		0.182		0.182		0.182		0.182
14		0.156		0.272		0.174		0.228		0.228		0.228		0.228
16		0.181		0.314		0.201		0.263		0.263		0.263		0.263
18		0.206		0.342		0.229		0.307		0.307		0.307		0.307
20		0.232		0.414		0.258		0.358		0.358		0.358		0.358
22		0.255		0.455		0.283		0.392		0.392		0.392		0.392
25		0.293		0.522		0.326		0.480		0.480		0.480		0.480

SE 45



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





## Long Endmills 4 Flutes

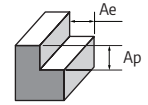
Side Milling	P				M		S				H			
Working Material	Carbon steel	Alloy Steel		Prehardened steel	Stainless steel		Nickel Alloy	Cobalt Alloy		Hardened steel				
Properties	-	520 < Rm < 1200		35 ≤ HRC < 45	Low Machinability		-	-		45 ≤ HRC < 52				
Cutting Depth, Ap (mm)	1.20 × D	1.20 × D		1.20 × D	0.50 × D		0.50 × D	0.50 × D		0.50 × D				
Cutting Width, Ae (mm)	0.70 × D	0.70 × D		0.60 × D	0.10 × D		0.10 × D	0.10 × D		0.10 × D				
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	130	0.003	120	0.004	110	0.003	70	0.004	50	0.004	65	0.004	60	0.004
2		0.007		0.008		0.007		0.009		0.009		0.009		
3		0.011		0.013		0.011		0.014		0.014		0.014		
4		0.016		0.018		0.016		0.020		0.020		0.020		
5		0.021		0.022		0.021		0.026		0.026		0.026		
6		0.025		0.027		0.025		0.032		0.032		0.032		
8		0.034		0.037		0.034		0.045		0.045		0.045		
10		0.049		0.047		0.049		0.060		0.060		0.060		
12		0.062		0.057		0.062		0.072		0.072		0.072		
14		0.073		0.070		0.073		0.090		0.090		0.090		
16		0.082		0.080		0.082		0.107		0.107		0.107		
18		0.097		0.090		0.097		0.129		0.129		0.129		
20		0.119		0.103		0.119		0.146		0.146		0.146		
22		0.142		0.114		0.142		0.163		0.163		0.163		
25		0.169		0.130		0.169		0.195		0.195		0.195		
20		0.233		0.347		0.258		0.302		0.302		0.302		
22		0.293		0.397		0.325		0.339		0.339		0.339		
25		0.373		0.460		0.414		0.408		0.408		0.408		

SE 45



Recommended Cutting Data

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



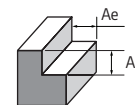
## Extra-Long Endmills 4 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.50 × D		1.50 × D		1.50 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.10 × D		0.10 × D		0.10 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	130	0.003	120	0.004	110	0.003	70	0.004	50	0.004	65	0.004	60	0.004
2		0.006		0.007		0.006		0.008						
3		0.010		0.011		0.010		0.012						
4		0.014		0.015		0.014		0.017						
5		0.018		0.019		0.018		0.023						
6		0.022		0.024		0.022		0.028						
8		0.030		0.032		0.030		0.040						
10		0.043		0.041		0.043		0.053						
12		0.055		0.050		0.055		0.063						
14		0.064		0.061		0.064		0.079						
16		0.072		0.070		0.072		0.093						
18		0.085		0.078		0.085		0.113						
20		0.104		0.090		0.104		0.128						
22		0.124		0.100		0.124		0.143						
25		0.147		0.113		0.147		0.170						
20		0.233		0.347		0.258		0.302						
22		0.293		0.397		0.325		0.339						
25		0.373		0.460		0.414		0.408						

SE 45



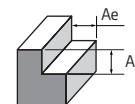
Recommended Cutting Data  
 Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



## Multiflute Endmills 6/8 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	130	0.015	120	0.015	110	0.015	70	0.019	50	0.019	65	0.019	60	0.019
4		0.021		0.021		0.021		0.027		0.027		0.027		
5		0.028		0.029		0.028		0.035		0.035		0.035		
6		0.035		0.036		0.035		0.044		0.044		0.044		
8		0.049		0.048		0.049		0.061		0.061		0.061		
10		0.064		0.064		0.064		0.078		0.078		0.078		
12		0.080		0.077		0.080		0.102		0.102		0.102		
14		0.094		0.093		0.094		0.125		0.125		0.125		
16		0.110		0.109		0.110		0.150		0.150		0.150		
18		0.130		0.133		0.130		0.186		0.186		0.186		
20	0.139	0.164	0.139	0.222	0.222	0.222								

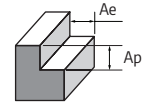
## Multiflute Long Endmills 6/8 Flutes



Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	130	0.008	120	0.008	110	0.008	70	0.010	50	0.010	65	0.010	60	0.010
4		0.011		0.011		0.011		0.014		0.014		0.014		
5		0.015		0.015		0.015		0.019		0.019		0.019		
6		0.019		0.019		0.019		0.024		0.024		0.024		
8		0.026		0.026		0.026		0.033		0.033		0.033		
10		0.034		0.034		0.034		0.042		0.042		0.042		
12		0.043		0.041		0.043		0.053		0.053		0.053		
14		0.050		0.049		0.050		0.065		0.065		0.065		
16		0.044		0.044		0.044		0.060		0.060		0.060		
18		0.051		0.053		0.051		0.076		0.076		0.076		
20	0.057	0.065	0.057	0.089	0.089	0.089								



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



## Multiflute Extra-Long Endmills 6/8 Flutes

Side Milling	P						M		S				H	
Working Material	Carbon steel		Alloy Steel		Prehardened steel		Stainless steel		Nickel Alloy		Cobalt Alloy		Hardened steel	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		Low Machinability		-		-		45 ≤ HRC < 52	
Cutting Depth, Ap (mm)	1.20 × D		1.20 × D		1.20 × D		0.50 × D		0.50 × D		0.50 × D		0.50 × D	
Cutting Width, Ae (mm)	0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D		0.03 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
3	130	0.007	120	0.007	110	0.007	70	0.009	50	0.009	65	0.009	60	0.009
4		0.010		0.010		0.010		0.013		0.013		0.013		
5		0.013		0.013		0.013		0.016		0.016		0.016		
6		0.016		0.017		0.016		0.021		0.021		0.021		
8		0.023		0.023		0.023		0.029		0.029		0.029		
10		0.030		0.030		0.030		0.037		0.037		0.037		
12		0.037		0.036		0.037		0.047		0.047		0.047		
14		0.044		0.043		0.044		0.056		0.056		0.056		
16		0.039		0.038		0.039		0.053		0.053		0.053		
18		0.045		0.046		0.045		0.066		0.066		0.066		
20	0.050	0.057	0.050	0.078	0.078	0.078								

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

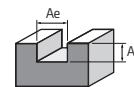












## Miniature Endmills 2 Flutes

Slotting	P									M			S						H		
Working material	Carbon Steel			Alloy Steel			Pre-hardened Steel			Stainless Steel			Nickel Alloy			Cobalt Alloy			Hardened Steel		
Properties	520 < Rm < 1200			520 < Rm < 1200			35 ≤ HRC < 45			Low Machinability			-			-			45 ≤ HRC < 52		
D (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)	Ap (mm)	Vc (m/min)	Fz (mm)
0.1	0.030	13	0.004	0.030	13	0.004	0.020	12	0.003	0.012	9.600	0.002	0.010	8	0.002	0.013	10.4	0.003	0.011	8.8	0.002
0.2	0.060	25	0.005	0.060	25	0.005	0.040	19	0.004	0.024	15.600	0.004	0.020	13	0.003	0.026	16.9	0.004	0.022	14.3	0.003
0.3	0.090	34	0.006	0.090	34	0.006	0.060	25	0.005	0.036	19.200	0.004	0.030	16	0.003	0.039	20.8	0.004	0.033	17.6	0.003
0.4	0.120	41	0.006	0.120	41	0.006	0.080	30	0.006	0.048	22.800	0.005	0.040	19	0.004	0.052	24.7	0.005	0.044	20.9	0.004
0.5	0.150	48	0.007	0.150	48	0.007	0.100	35	0.006	0.060	26.400	0.005	0.050	22	0.004	0.065	28.6	0.005	0.055	24.2	0.004
0.6	0.180	55	0.008	0.180	55	0.008	0.120	40	0.007	0.072	28.800	0.006	0.060	24	0.005	0.078	31.2	0.007	0.066	26.4	0.006
0.7	0.210	61	0.008	0.210	61	0.008	0.140	44	0.007	0.084	31.200	0.006	0.070	26	0.005	0.091	33.8	0.007	0.077	28.6	0.006
0.8	0.240	67	0.009	0.240	67	0.009	0.160	48	0.008	0.096	34.800	0.007	0.080	29	0.006	0.104	37.7	0.008	0.088	31.9	0.007
0.9	0.270	73	0.009	0.270	73	0.009	0.180	52	0.008	0.108	37.200	0.007	0.090	31	0.006	0.117	40.3	0.008	0.099	34.1	0.007
1.0	0.300	79	0.010	0.300	79	0.010	0.200	56	0.009	0.120	39.600	0.008	0.100	33	0.007	0.130	42.9	0.009	0.110	36.3	0.008
1.1	0.330	85	0.010	0.330	85	0.010	0.220	60	0.009	0.132	42.000	0.010	0.110	35	0.008	0.143	45.5	0.010	0.121	38.5	0.009
1.2	0.360	90	0.010	0.360	90	0.010	0.240	63	0.010	0.144	43.200	0.010	0.120	36	0.008	0.156	46.8	0.010	0.132	39.6	0.009
1.3	0.390	95	0.011	0.390	95	0.011	0.260	67	0.010	0.156	45.600	0.011	0.130	38	0.009	0.169	49.4	0.012	0.143	41.8	0.010
1.4	0.420	100	0.011	0.420	100	0.011	0.280	70	0.011	0.168	48.000	0.011	0.140	40	0.009	0.182	52	0.012	0.154	44	0.010
1.5	0.450	106	0.012	0.450	106	0.012	0.300	74	0.011	0.180	49.200	0.012	0.150	41	0.010	0.195	53.3	0.013	0.165	45.1	0.011
1.6	0.480	111	0.013	0.480	111	0.013	0.320	77	0.012	0.192	51.600	0.012	0.160	43	0.010	0.208	55.9	0.013	0.176	47.3	0.011
1.7	0.510	115	0.013	0.510	115	0.013	0.340	80	0.012	0.204	54.000	0.013	0.170	45	0.011	0.221	58.5	0.014	0.187	49.5	0.012
1.8	0.540	120	0.013	0.540	120	0.013	0.360	84	0.013	0.216	55.200	0.013	0.180	46	0.011	0.234	59.8	0.014	0.198	50.6	0.012
1.9	0.570	125	0.014	0.570	125	0.014	0.380	87	0.013	0.228	57.600	0.014	0.190	48	0.012	0.247	62.4	0.016	0.209	52.8	0.013
2.0	0.600	129	0.014	0.600	129	0.014	0.400	90	0.014	0.240	58.800	0.014	0.200	49	0.012	0.260	63.7	0.016	0.220	53.9	0.013



Recommended Cutting Data

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