



**Cutting tools for stationary applications**



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### Cutting tools for stationary applications

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### Universal solid tungsten carbide end mills

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■ Universal end mill with three flutes UC3	12
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■ Universal end mill with six/eight flutes UC6/8	18
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### Custom-made products

If you cannot find the solution for your particular application in our catalogue range, we are happy to produce milling tools to meet your wishes and requirements. Our sales representatives and technical advisers will be happy to assist you in analyzing your task.



#### Find your ideal tool solution in just three steps:

##### 1. Process analysis

Make an appointment with our experienced sales representatives and technical advisers. You can find our worldwide sales office addresses at [www.pferd.com](http://www.pferd.com).

##### 2. Production

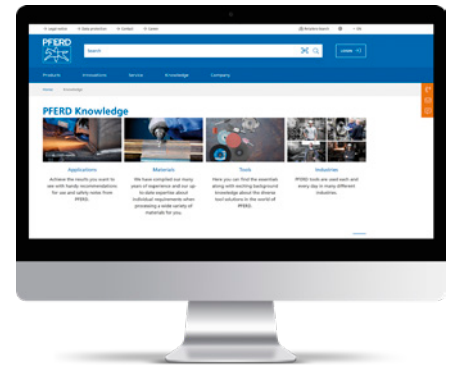
Our production teams subsequently create a technical drawing with which your made-to-order product will be produced.

##### 3. Use

See the quality, performance and economic value of PFERD tools for yourself!

### More expert information online

Scan the QR code to find out a wide range of tool and application knowledge relating to PFERD's high-quality tools and their huge variety of materials.



## General information

### Cutting tools for stationary applications from PFERD

PFERD's cutting tools for stationary applications incorporate the company's many years of experience in the development and production of milling tools and PFERD's latest and wide-ranging expertise. The cutting tools have been optimally designed for work on the most important materials and the most common stationary applications. PFERD manufactures solid tungsten carbide mills from tungsten carbide optimized for specific applications according to the very latest standards. Thanks to their precise micro and macro geometry in conjunction with cutting-edge coatings, the universal high-performance tools meet the most stringent quality standards. They are suitable for a wide range of milling operations on lathes and milling machines and in automated centres.

- The highest quality standards thanks to precise tool geometry and state-of-the-art coatings.
- High productivity due to optimum stock removal rate.



### Technical customer support

If you have any questions about optimizing your stock removal applications, our sales representatives and technical advisers will be happy to help or visit you. PFERD works alongside you to provide application engineering solutions for working with diverse materials.



Please do not hesitate to contact us for further information. You can find our worldwide sales office addresses at: [www.pferd.com](http://www.pferd.com).

### Resharpener

All PFERD cutting tools for stationary applications can be reground. Please contact us for further information.





# Cutting tools for stationary applications

## Material suitability overview



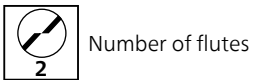
Material group			Universal full radius end mill UB	Universal deburring end mill UD	Universal end mill with two flutes UC2	Universal end mill with three flutes UC3	Universal end mill with four flutes UC4	Universal end mill with six/eight flutes UC6/8
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	●	●	●	●	●	●
M	Stainless steel	Ferritic and martensitic	●	●	●	●	●	●
		Austenitic	●	●	●	●	●	●
		High-temperature-resistant and ferritic-austenitic (duplex)	○	●	○	○	○	○
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	●	●	●	●	●	●
		Cast iron with nodular graphite (GJS, GGG)	●	●	●	●	●	●
N	Non-ferrous metals	Aluminium	○	●	○	○	○	○
		Copper, brass, bronze, red brass	●	●	○	○	○	○
S	Super and titanium alloys	Heat-resistant super alloys based on Fe, Ni and Co		○		○	○	●
		Pure titanium		○		○	○	●
		Titanium alloys		○		○	○	●
H	Hard steels and chilled castings	Heat-treated and hardened steels up to 50 HRC	●	○	○	○	○	○
		Hardened steels up to 58 HRC	○					
		Hardened steels over 58 HRC						
O	Other	Thermoplastics	○	○	○	○	○	○
		Duroplastics						
		GRP/CRP reinforced plastics, graphite						

● = highly suitable ○ = suitable

### Geometry – Type



### Geometry – Number of flutes



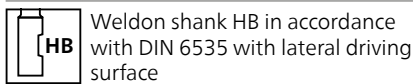
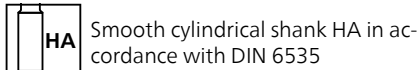
### Geometry – Torsion



### Norm



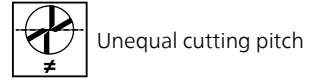
### Shank type



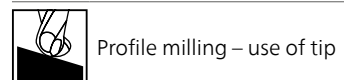
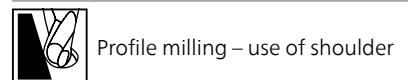
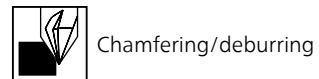
### Feed direction



### Unequal pitch



### Applications



## Formulae for cut data calculation

$$n = \frac{V_c \times 1.000}{DC \times \pi} \text{ min}^{-1}$$

Rotational speed

$$V_c = \frac{DC \times \pi \times n}{1.000} \text{ m/min}$$

Cutting speed

$$V_f = f_z \times Z \times n \text{ mm/min}$$

Feeding speed

### Explanation of the abbreviations

- $a_p$  = cutting depth
- $a_e$  = contact width
- DC = milling cutter diameter in [mm]
- $f_z$  = Feed per tooth in [mm/tooth]
- $n$  = spindle rotational speed in [rev/min]
- $V_c$  = Cutting speed in [m/min]
- $V_f$  = Feeding speed in [mm/min]
- ZEP = Effective no. of teeth



# Cutting tools for stationary applications

## Explanation of item designation



**SCM - UC4 - M100C - M72HB AL40**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑬ ⑭

### ① Tool group

SCM = Solid carbide mill

### ② Product line

U = Universal Line

### ③ Shape

B = Full radius end mill (ball nose)

D = Deburring end mill (deburring/chamfering)

C = Cylindrical end mill with centre cut

### ④ Number of cutting edges

### ⑤ Material group

ISO groups P, M, K, N, S, H.

Blank, unless specified.

### ⑥ Units

M = Metric

### ⑦ Cutting diameter

Metric: mm x 10

Example: D 10.5 mm = 105

### ⑧ Corner design

A = Angled

Example: A90°

C = Chamfer

R = radius with size

Example: R40 for 4.0 mm

S = Sharp

### ⑨ Cut length class

XS: APMX 3 x DC

S: APMX 1-2 x DC

M: APMX 2-2.5 x DC

L: APMX 2.5-3 x DC

XL: APMX >3 x DC

### ⑩ Total length

Metric: total length LF in mm.

Not specified for deburring end mills.

### ⑪ Shank type

HA = Cylindrical

HB = Weldon shank (in accordance with DIN 6535)

Additional shank diameter for design with

DC < 6 mm and DCON = 6 mm

⑫ \*

⑬ \*

### ⑭ Grade

\*Optional

## Explanation of short names in accordance with ISO 13399

APMX = Maximum cutting depth

CHW = Chamfer width

DC = Cutting diameter

DCON = Shank diameter

DN = Neck diameter

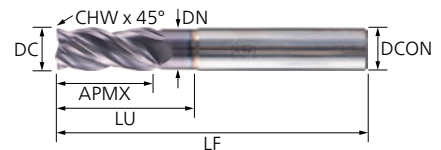
KAPR = Tool cutting edge angle

LF = Total length


LU = Working length

RE = Corner radius

ZEFP = No. of teeth



### Recommended cutting speeds [m/min]

Material group			Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$ ; $a_e = 1 \times DC$ 								
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]							
						4	5	6	8	10	12	16	20
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	90	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			500 to 700 N/mm <sup>2</sup>	•	85	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			700 to 1,000 N/mm <sup>2</sup>	•	80	0.02	0.02	0.02	0.03	0.04	0.045	0.055	0.07
			1,000 to 1,400 N/mm <sup>2</sup>	•	70	0.02	0.02	0.02	0.03	0.04	0.045	0.055	0.07
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	55	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			Austenitic	•	55	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			High-temperature-resistant and ferritic-austenitic (duplex)	○	45	0.018	0.018	0.02	0.025	0.03	0.04	0.05	0.065
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	80	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			Cast iron with nodular graphite (GJS, GGG)	•	65	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
N	Non-ferrous metals	Aluminium	Al up to 10% Si	○	135	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			Al > 10% Si	○	110	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
		Copper, brass, bronze and red brass	○	90	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co										
		Pure titanium											
		Titanium alloys											
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	60	0.02	0.02	0.02	0.03	0.04	0.055	0.06	0.07
			up to 58 HRC										
			> 58 HRC										
O	Other	Thermoplastics		○	90	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
		Duroplastics											
		GRP/CRP reinforced plastics, graphite											


• = highly suitable ○ = suitable

# Cutting tools for stationary applications

Universal end mill with two flutes UC2



## Recommended cutting speeds [m/min]

Material group			Specification/ example material	Suitability	Side milling $a_p = 1 \times DC$ ; $a_e = 0.1 \times DC$ 									
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]								
						4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	210	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			500 to 700 N/mm <sup>2</sup>	•	190	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			700 to 1,000 N/mm <sup>2</sup>	•	170	0.025	0.025	0.035	0.045	0.06	0.07	0.08	0.1	
			1,000 to 1,400 N/mm <sup>2</sup>	•	150	0.025	0.025	0.035	0.045	0.06	0.07	0.08	0.1	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	120	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			Austenitic	e.g. 1.4301, 1.4571	•	120	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2
			High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	◦	90	0.025	0.025	0.033	0.038	0.045	0.06	0.08	0.1
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	180	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	140	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2
N	Non-ferrous metals	Aluminium	Al up to 10% Si	◦	250	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			Al > 10% Si	◦	200	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
		Copper, brass, bronze and red brass		◦	200	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co											
		Pure titanium												
		Titanium alloys												
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	◦	75	0.025	0.025	0.035	0.045	0.06	0.07	0.08	0.1	
			up to 58 HRC											
			> 58 HRC											
O	Other	Thermoplastics		◦	200	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

• = highly suitable ◦ = suitable

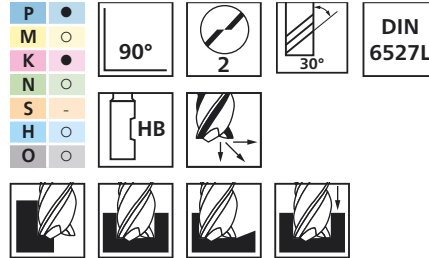








### Sharp corner design

End mills for full slot milling, drill slot milling and for roughing with high contact widths. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.



### Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Good chip removal due to very large chip space.

DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	ZEFP		Item no.	Designation	Price/unit EUR
<b>Long HB</b>				 <b>HB</b>				
4	6	8	57	2	1	23000124	SCM-UC2-M040S-S57HB6 AL40	-
5	6	10	57	2	1	23000125	SCM-UC2-M050S-S57HB6 AL40	-
6	6	10	57	2	1	23000126	SCM-UC2-M060S-S57HB AL40	-
8	8	16	63	2	1	23000127	SCM-UC2-M080S-S63HB AL40	-
10	10	19	72	2	1	23000128	SCM-UC2-M100S-S72HB AL40	-
12	12	22	83	2	1	23000129	SCM-UC2-M120S-S83HB AL40	-
16	16	26	92	2	1	23000130	SCM-UC2-M160S-S92HB AL40	-




# Cutting tools for stationary applications

## Universal end mill with three flutes UC3




### Recommended cutting speeds [m/min]

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$ ; $a_e = 1 \times DC$ 										
				Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]									
					3	4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	130	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
			500 to 700 N/mm <sup>2</sup>	•	120	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
			700 to 1,000 N/mm <sup>2</sup>	•	100	0.01	0.016	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			1,000 to 1,400 N/mm <sup>2</sup>	•	80	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	45	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
		Austenitic	e.g. 1.4301, 1.4571	•	50	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
		High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	◦	40	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	130	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	100	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
N	Non-ferrous metals	Aluminium	Al up to 10% Si	◦	200	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
			Al > 10% Si	◦	180	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
		Copper, brass, bronze and red brass		◦	200	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	◦	35	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
		Pure titanium		◦	100	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
		Titanium alloys		◦	50	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	◦	60	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			up to 58 HRC											
			> 58 HRC											
O	Other	Thermoplastics		◦	110	0.025	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

• = highly suitable ◦ = suitable

### Recommended cutting speeds [m/min]

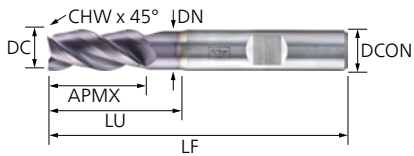
Material group			Specification/ example material	Suitability	Side milling $a_p = 1 \times DC$ ; $a_e = 0.4 \times DC$ 										
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]									
						3	4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	180	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			500 to 700 N/mm <sup>2</sup>	•	160	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			700 to 1,000 N/mm <sup>2</sup>	•	150	0.01	0.016	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			1,000 to 1,400 N/mm <sup>2</sup>	•	110	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105,1.4122	•	70	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			Austenitic	e.g. 1.4301,1.4571	•	75	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
			High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362,1.4462	○	60	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	180	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	140	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12
N	Non-ferrous metals	Aluminium	Al up to 10% Si	○	250	0.04	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
			Al > 10% Si	○	200	0.04	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
		Copper, brass, bronze and red brass		○	200	0.04	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	45	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			Pure titanium		○	110	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
			Titanium alloys		○	60	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	75	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			up to 58 HRC												
			> 58 HRC												
O	Other	Thermoplastics		○	200	0.04	0.05	0.05	0.065	0.075	0.09	0.12	0.16	0.2	
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

• = highly suitable ○ = suitable



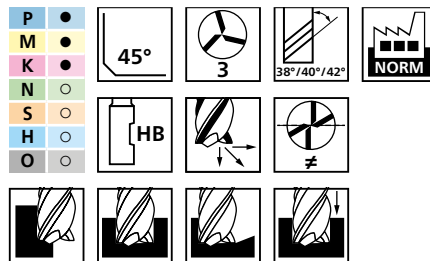
# Universal solid tungsten carbide end mills

Universal end mill with three flutes UC3



## Chamfer corner design

End mills for full slot milling, drill slot milling and for a wide range of roughing tasks. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.




### Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Design with neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEPF		Item no.	Designation	Price/unit EUR
<b>Long HB</b> HB											
3	6	2.8	8	57	11	0.1	3	1	23000131	SCM-UC3-M030C-M57HB6 AL40	-
4	6	3.7	11	57	16	0.1	3	1	23000132	SCM-UC3-M040C-M57HB6 AL40	-
5	6	4.7	13	57	18	0.15	3	1	23000133	SCM-UC3-M050C-M57HB6 AL40	-
6	6	5.6	13	57	18	0.2	3	1	23000134	SCM-UC3-M060C-M57HB AL40	-
8	8	7.5	19	63	26	0.2	3	1	23000135	SCM-UC3-M080C-M63HB AL40	-
10	10	9.5	22	72	32	0.2	3	1	23000136	SCM-UC3-M100C-M72HB AL40	-
12	12	11	26	83	36	0.3	3	1	23000137	SCM-UC3-M120C-M83HB AL40	-
16	16	15	32	92	42	0.3	3	1	23000138	SCM-UC3-M160C-M92HB AL40	-

### Recommended cutting speeds [m/min]

Material group			Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$ ; $a_e = 1 \times DC$ 									
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]								
						3	4	5	6	8	10	12	16	20
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	135	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
			500 to 700 N/mm <sup>2</sup>	•	130	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
			700 to 1,000 N/mm <sup>2</sup>	•	110	0.01	0.016	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			1,000 to 1,400 N/mm <sup>2</sup>	•	80	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105,1.4122	•	70	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			Austenitic	•	60	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			High-temperature-resistant and ferritic-austenitic (duplex)	○	50	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	130	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
			Cast iron with nodular graphite (GJS, GGG)	•	100	0.01	0.016	0.03	0.03	0.04	0.06	0.06	0.085	0.1
N	Non-ferrous metals	Aluminium	Al up to 10% Si	○	200	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.1	0.11
			Al > 10% Si	○	180	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.1	0.11
		Copper, brass, bronze and red brass	○	200	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.1	0.11	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	35	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			Pure titanium	○	100	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			Titanium alloys	○	50	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	60	0.01	0.012	0.02	0.02	0.03	0.045	0.045	0.06	0.07
			up to 58 HRC											
			> 58 HRC											
O	Other	Thermoplastics		○	180	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.1	0.11
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

• = highly suitable ○ = suitable






# Cutting tools for stationary applications

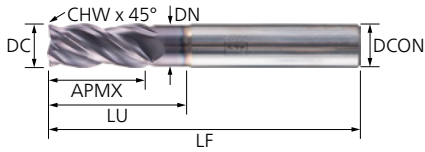
Universal end mill with four flutes UC4



## Recommended cutting speeds [m/min]

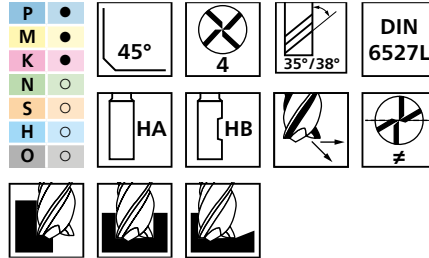
Material group			Specification/ example material	Suitability	Side milling $a_p = 2 \times DC$ ; $a_e = 0.4 \times DC$ 										
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]									
						3	4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	180	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			500 to 700 N/mm <sup>2</sup>	•	160	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			700 to 1,000 N/mm <sup>2</sup>	•	150	0.01	0.016	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			1,000 to 1,400 N/mm <sup>2</sup>	•	110	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105,1.4122	•	85	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			Austenitic	e.g. 1.4301,1.4571	•	75	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
			High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362,1.4462	◦	65	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	180	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	140	0.01	0.016	0.035	0.035	0.045	0.075	0.075	0.1	0.12
N	Non-ferrous metals	Aluminium	Al up to 10% Si	◦	230	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13	
			Al > 10% Si	◦	210	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13	
		Copper, brass, bronze and red brass		◦	230	0.03	0.035	0.035	0.04	0.05	0.06	0.08	0.1	0.13	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	◦	45	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			Pure titanium	◦	120	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			Titanium alloys	◦	70	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	◦	75	0.01	0.012	0.025	0.025	0.035	0.055	0.055	0.07	0.085	
			up to 58 HRC												
			> 58 HRC												
O	Other	Thermoplastics		◦	210	0.04	0.04	0.06	0.06	0.07	0.07	0.085	0.1	0.12	
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

• = highly suitable ◦ = suitable



### Chamfer corner design

End mills for various applications, from roughing through to finishing and ramping. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.



#### Special features:

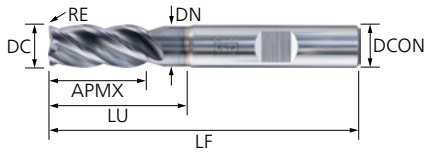
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Design with neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEP		Item no.	Designation	Price/unit EUR
<b>Long HA</b> HA											
3	6	2.8	8	57	18	0.13	4	1	23000148	SCM-UC4-M030C-M57HA6 AL40	-
4	6	3.6	11	57	21	0.13	4	1	23000149	SCM-UC4-M040C-M57HA6 AL40	-
5	6	4.6	13	57	21	0.2	4	1	23000150	SCM-UC4-M050C-M57HA6 AL40	-
6	6	5.5	13	57	21	0.2	4	1	23000151	SCM-UC4-M060C-M57HA AL40	-
8	8	7.5	19	63	27	0.2	4	1	23000152	SCM-UC4-M080C-M63HA AL40	-
10	10	9.5	22	72	32	0.2	4	1	23000153	SCM-UC4-M100C-M72HA AL40	-
12	12	11.5	26	83	38	0.3	4	1	23000154	SCM-UC4-M120C-M83HA AL40	-
16	16	15.5	32	92	44	0.3	4	1	23000155	SCM-UC4-M160C-M92HA AL40	-
20	20	19.5	38	104	54	0.4	4	1	23000156	SCM-UC4-M200C-M104HA AL40	-
<b>Long HB</b> HB											
3	6	2.8	8	57	18	0.13	4	1	23000139	SCM-UC4-M030C-M57HB6 AL40	-
4	6	3.6	11	57	21	0.13	4	1	23000140	SCM-UC4-M040C-M57HB6 AL40	-
5	6	4.6	13	57	21	0.2	4	1	23000141	SCM-UC4-M050C-M57HB6 AL40	-
6	6	5.5	13	57	21	0.2	4	1	23000142	SCM-UC4-M060C-M57HB AL40	-
8	8	7.5	19	63	27	0.2	4	1	23000143	SCM-UC4-M080C-M63HB AL40	-
10	10	9.5	22	72	32	0.2	4	1	23000144	SCM-UC4-M100C-M72HB AL40	-
12	12	11.5	26	83	38	0.3	4	1	23000145	SCM-UC4-M120C-M83HB AL40	-
16	16	15.5	32	92	44	0.3	4	1	23000146	SCM-UC4-M160C-M92HB AL40	-
20	20	19.5	38	104	54	0.4	4	1	23000147	SCM-UC4-M200C-M104HB AL40	-



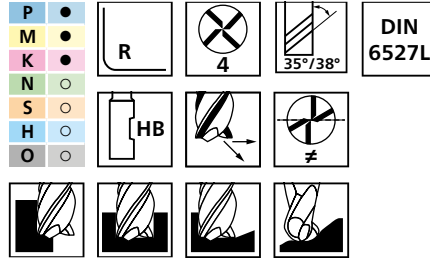
# Universal solid tungsten carbide end mills

Universal end mill with four flutes UC4



## Radius corner design

End mills for various applications, from roughing through to finishing. The radius design is also suitable for free-form profile cutting. The solid tungsten carbide end mills can be used universally on a large number of materials.




### Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Design with neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZFP	ZEFP	Item no.	Designation	Price/unit EUR
<b>Long HB</b> <b>HB</b>											
8	8	7.46	19	63	27	0.5	4	1	23000157	SCM-UC4-M080R05-M63HB AL40	-
						1	4	1	23000158	SCM-UC4-M080R10-M63HB AL40	-
						1.5	4	1	23000159	SCM-UC4-M080R15-M63HB AL40	-
						2	4	1	23000160	SCM-UC4-M080R20-M63HB AL40	-
10	10	9.5	22	72	32	0.5	4	1	23000161	SCM-UC4-M100R05-M72HB AL40	-
						1	4	1	23000162	SCM-UC4-M100R10-M72HB AL40	-
						1.5	4	1	23000163	SCM-UC4-M100R15-M72HB AL40	-
						2	4	1	23000164	SCM-UC4-M100R20-M72HB AL40	-
12	12	11.5	26	83	38	0.5	4	1	23000165	SCM-UC4-M120R05-M83HB AL40	-
						1	4	1	23000166	SCM-UC4-M120R10-M83HB AL40	-
						1.5	4	1	23000167	SCM-UC4-M120R15-M83HB AL40	-
						2	4	1	23000168	SCM-UC4-M120R20-M83HB AL40	-
16	16	15.5	32	92	44	1	4	1	23000169	SCM-UC4-M160R10-M92HB AL40	-
						1.5	4	1	23000170	SCM-UC4-M160R15-M92HB AL40	-
						2	4	1	23000171	SCM-UC4-M160R20-M92HB AL40	-
20	20	19.5	38	104	54	1	4	1	23000172	SCM-UC4-M200R10-M104HB AL40	-
						2	4	1	23000173	SCM-UC4-M200R20-M104HB AL40	-

### Recommended cutting speeds [m/min]

Material group			Specification/ example material	Suitability	Side milling $a_p = 1.5 \times DC$ ; $a_e = 0.05 \times DC$ 							
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]						
						6	8	10	12	16	20	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	200	0.035	0.04	0.055	0.065	0.08	0.1	
			500 to 700 N/mm <sup>2</sup>	•	160	0.035	0.04	0.055	0.065	0.08	0.1	
			700 to 1,000 N/mm <sup>2</sup>	•	120	0.035	0.04	0.055	0.065	0.08	0.1	
			1,000 to 1,400 N/mm <sup>2</sup>	•	100	0.025	0.03	0.04	0.05	0.065	0.08	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	100	0.025	0.025	0.04	0.05	0.065	0.08	
			Austenitic	e.g. 1.4301, 1.4571	•	80	0.025	0.03	0.04	0.05	0.065	0.08
			High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	◦	65	0.02	0.025	0.03	0.04	0.05	0.065
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	170	0.03	0.04	0.055	0.065	0.08	0.1	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	140	0.03	0.04	0.055	0.065	0.08	0.1
N	Non-ferrous metals	Aluminium	Al up to 10% Si	◦								
			Al > 10% Si	◦	300	0.03	0.04	0.055	0.065	0.08	0.1	
		Copper, brass, bronze and red brass		◦	340	0.03	0.04	0.055	0.065	0.08	0.1	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	•	40	0.02	0.025	0.03	0.035	0.045	0.065	
			Pure titanium	•	80	0.02	0.025	0.03	0.035	0.045	0.065	
			Titanium alloys	•	70	0.02	0.025	0.03	0.035	0.045	0.065	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	◦	60	0.025	0.03	0.03	0.035	0.045	0.065	
			up to 58 HRC									
			> 58 HRC									
O	Other	Thermoplastics		◦	300	0.03	0.04	0.055	0.065	0.08	0.1	
			Duroplastics									
			GRP/CRP reinforced plastics, graphite									

• = highly suitable ◦ = suitable

# Universal solid tungsten carbide end mills

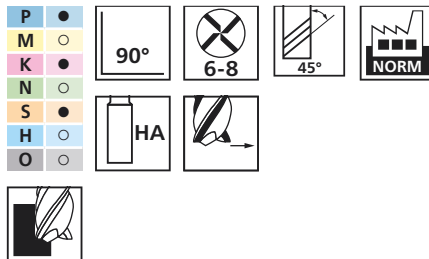
Universal end mill with six/eight flutes UC6/8

**PFERD**



## Sharp corner design

End mills for finishing and for trimming of workpiece contours. The low tool deflection allows very precise working. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.




### Special features:

- High surface quality.
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.

DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	ZEFP		Item no.	Designation	Price/unit EUR
<b>Long HA</b>								
6	6	13	57	6	1	23000174	SCM-UC6-M060S-M57HA AL40	-
8	8	19	63	6	1	23000175	SCM-UC6-M080S-M63HA AL40	-
10	10	22	72	6	1	23000176	SCM-UC6-M100S-M72HA AL40	-
12	12	26	83	6	1	23000177	SCM-UC6-M120S-M83HA AL40	-
16	16	32	92	6	1	23000178	SCM-UC6-M160S-S92HA AL40	-
20	20	38	104	8	1	23000179	SCM-UC8-M200S-S104HA AL40	-



### Recommended cutting speeds [m/min]

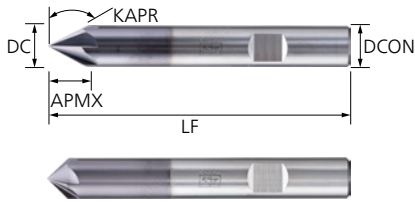
Material group			Specification/ example material	Suitability	Chamfering/deburring $a_p = 0.2 \times DC$ ; $a_e = 0.1 \times DC$ 				
					Cutting speed $v_c$ [m/min]	Tooth feed $f_z$ [mm/tooth] for cutting diameter DC [mm]			
						6	8	10	12
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	180	0.045	0.065	0.085	0.14
			500 to 700 N/mm <sup>2</sup>	•	160	0.045	0.065	0.085	0.14
			700 to 1,000 N/mm <sup>2</sup>	•	140	0.025	0.04	0.045	0.075
			1,000 to 1,400 N/mm <sup>2</sup>	•	120	0.025	0.04	0.045	0.075
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	100	0.025	0.04	0.045	0.075
		Austenitic	e.g. 1.4301, 1.4571	•	75	0.025	0.04	0.045	0.075
		High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	•	60	0.025	0.04	0.045	0.075
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	180	0.045	0.065	0.085	0.14
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	140	0.025	0.04	0.045	0.075
N	Non-ferrous metals	Aluminium	Al up to 10% Si	•	300	0.045	0.065	0.085	0.14
			Al > 10% Si	•	260	0.045	0.065	0.085	0.14
		Copper, brass, bronze and red brass	•	300	0.045	0.065	0.085	0.14	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	◦	50	0.025	0.04	0.045	0.075
		Pure titanium		◦	140	0.025	0.04	0.045	0.075
		Titanium alloys		◦	70	0.025	0.04	0.045	0.075
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	◦	70	0.025	0.04	0.045	0.075
			up to 58 HRC						
			> 58 HRC						
O	Other	Thermoplastics		◦	300	0.045	0.065	0.085	0.14
		Duroplastics							
		GRP/CRP reinforced plastics, graphite							

• = highly suitable ◦ = suitable



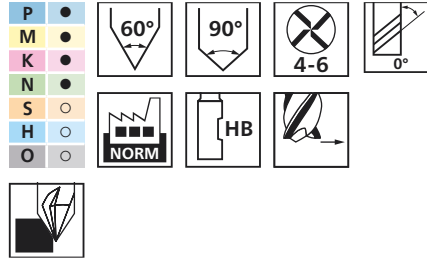
# Universal solid tungsten carbide end mills

## Universal deburring end mill UD



### Conical shape

End mills for deburring and chamfering. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.




#### Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.

DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	KAPR	ZEFP		Item no.	Designation	Price/unit EUR
<b>60° HB</b>					<b>HB</b>				
6	6	5.2	57	60	4	1	23000116	SCM-UD4-M060A60°-HB AL40	-
8	8	6.9	63	60	5	1	23000117	SCM-UD5-M080A60°-HB AL40	-
10	10	8.7	72	60	6	1	23000118	SCM-UD6-M100A60°-HB AL40	-
12	12	10.4	83	60	6	1	23000119	SCM-UD6-M120A60°-HB AL40	-
<b>90° HB</b>					<b>HB</b>				
6	6	3	57	45	4	1	23000120	SCM-UD4-M060A90°-HB AL40	-
8	8	4	63	45	5	1	23000121	SCM-UD5-M080A90°-HB AL40	-
10	10	5	72	45	6	1	23000122	SCM-UD6-M100A90°-HB AL40	-
12	12	6	83	45	6	1	23000123	SCM-UD6-M120A90°-HB AL40	-

### Recommended cutting speeds [m/min]

Material group			Specification/ example ma- terial	Suitability	Profile milling – use of tip 											
					a <sub>p</sub>	a <sub>e</sub>	Cutting speed v <sub>c</sub> [m/min]	Tooth feed f <sub>z</sub> [mm/tooth] for cutting diameter DC [mm]								
								3	4	5	6	8	10	12	16	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	•	up to 0.1 x D	up to 0.3 x D	900	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
			500 to 700 N/mm <sup>2</sup>	•	up to 0.1 x D	up to 0.3 x D	700	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
			700 to 1,000 N/mm <sup>2</sup>	•	up to 0.1 x D	up to 0.3 x D	550	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
			1,000 to 1,400 N/mm <sup>2</sup>	•	up to 0.06 x D	up to 0.3 x D	400	0.015	0.025	0.03	0.04	0.045	0.055	0.065	0.08	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	•	up to 0.06 x D	up to 0.3 x D	180	0.015	0.025	0.03	0.04	0.045	0.055	0.065	0.08	
		Austenitic	e.g. 1.4301, 1.4571	•	up to 0.06 x D	up to 0.3 x D	130	0.015	0.025	0.03	0.04	0.045	0.055	0.065	0.08	
		High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	○	up to 0.06 x D	up to 0.3 x D	100	0.01	0.018	0.02	0.03	0.04	0.05	0.06	0.07	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	•	up to 0.1 x D	up to 0.3 x D	800	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	•	up to 0.1 x D	up to 0.3 x D	750	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
N	Non-ferrous metals	Aluminium	Al up to 10% Si	○	up to 0.1 x D	up to 0.3 x D	1,200	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
			Al > 10% Si	•	up to 0.1 x D	up to 0.3 x D	850	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
		Copper, brass, bronze and red brass		•	up to 0.1 x D	up to 0.3 x D	1,100	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
		Pure titanium														
		Titanium alloys														
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	•	up to 0.06 x D	up to 0.3 x D	200	0.01	0.018	0.02	0.03	0.04	0.05	0.06	0.07	
			up to 58 HRC	○	up to 0.06 x D	up to 0.3 x D	150	0.01	0.018	0.02	0.03	0.04	0.05	0.06	0.07	
			> 58 HRC													
O	Other	Thermoplastics		○	up to 0.1 x D	up to 0.3 x D	1,200	0.025	0.04	0.055	0.065	0.075	0.08	0.09	0.12	
		Duroplastics														
		GRP/CRP reinforced plastics, graphite														

• = highly suitable ○ = suitable




# Cutting tools for stationary applications

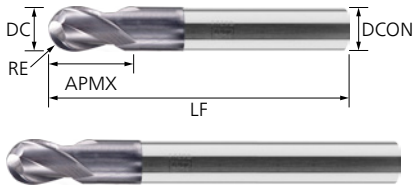
Universal full radius end mill UB



## Recommended cutting speeds [m/min]

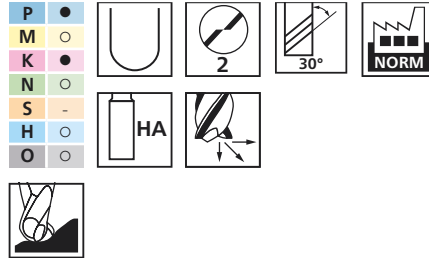
Material group			Specification/ example material	Suitability	Profile milling – use of shoulder 											
					a <sub>p</sub>	a <sub>e</sub>	Cutting speed v <sub>c</sub> [m/min]	Tooth feed f <sub>z</sub> [mm/tooth] for cutting diameter DC [mm]								
								3	4	5	6	8	10	12	16	
P	Steel	All types of steel and cast steel up to 1,400 N/mm <sup>2</sup>	up to 500 N/mm <sup>2</sup>	●	up to 0.1 x D	up to 0.45 x D	570	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			500 to 700 N/mm <sup>2</sup>	●	up to 0.1 x D	up to 0.45 x D	450	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			700 to 1,000 N/mm <sup>2</sup>	●	up to 0.1 x D	up to 0.45 x D	350	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			1,000 to 1,400 N/mm <sup>2</sup>	●	up to 0.1 x D	up to 0.45 x D	250	0.02	0.04	0.05	0.06	0.07	0.08	0.1	0.12	
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	●	up to 0.1 x D	up to 0.45 x D	130	0.02	0.04	0.05	0.06	0.07	0.08	0.1	0.12	
			Austenitic	e.g. 1.4301, 1.4571	●	up to 0.1 x D	up to 0.45 x D	80	0.02	0.04	0.05	0.06	0.07	0.08	0.1	0.12
			High-temperature-resistant and ferritic-austenitic (duplex)	e.g. 1.4362, 1.4462	○	up to 0.1 x D	up to 0.45 x D	60	0.015	0.03	0.04	0.05	0.06	0.07	0.08	0.1
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	up to 0.1 x D	up to 0.45 x D	550	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	up to 0.1 x D	up to 0.45 x D	500	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18
N	Non-ferrous metals	Aluminium	Al up to 10% Si	○	up to 0.1 x D	up to 0.45 x D	750	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			Al > 10% Si	●	up to 0.1 x D	up to 0.45 x D	600	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			Copper, brass, bronze and red brass		●	up to 0.1 x D	up to 0.45 x D	700	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
			Pure titanium alloys													
			Titanium alloys													
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	●	up to 0.1 x D	up to 0.45 x D	150	0.02	0.04	0.05	0.06	0.07	0.08	0.1	0.12	
			up to 58 HRC	○	up to 0.1 x D	up to 0.45 x D	110	0.02	0.04	0.05	0.06	0.07	0.08	0.1	0.12	
			> 58 HRC													
O	Other	Thermoplastics		○	up to 0.1 x D	up to 0.45 x D	750	0.04	0.06	0.08	0.1	0.11	0.12	0.14	0.18	
			Duroplastics													
			GRP/CRP reinforced plastics, graphite													

● = highly suitable ○ = suitable



### Full radius

End mills for free-form profile cutting. The solid tungsten carbide end mills are suitable for universal use on a variety of materials.



### Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.

D <sub>c</sub> [mm]	D <sub>CON</sub> [mm]	APMX [mm]	LF [mm]	RE [mm]	ZEFP		Item no.	Designation	Price/ unit EUR
<b>Long HA</b>									
3	6	5	54	1.5	2	1	23000100	SCM-UB2-M030R-S54HA6 AL40	-
4	6	8	54	2	2	1	23000101	SCM-UB2-M040R-S54HA6 AL40	-
5	6	9	54	2.5	2	1	23000102	SCM-UB2-M050R-S54HA6 AL40	-
6	6	10	54	3	2	1	23000103	SCM-UB2-M060R-S54HA AL40	-
8	8	12	58	4	2	1	23000104	SCM-UB2-M080R-S58HA AL40	-
10	10	14	66	5	2	1	23000105	SCM-UB2-M100R-S66HA AL40	-
12	12	16	73	6	2	1	23000106	SCM-UB2-M120R-S73HA AL40	-
16	16	22	82	8	2	1	23000107	SCM-UB2-M160R-S82HA AL40	-
<b>Extra long HA</b>									
3	6	5	80	1.5	2	1	23000108	SCM-UB2-M030R-S80HA6 AL40	-
4	6	8	80	2	2	1	23000109	SCM-UB2-M040R-S80HA6 AL40	-
5	6	9	100	2.5	2	1	23000110	SCM-UB2-M050R-S100HA6 AL40	-
6	6	10	100	3	2	1	23000111	SCM-UB2-M060R-S100HA AL40	-
8	8	12	100	4	2	1	23000112	SCM-UB2-M080R-S100HA AL40	-
10	10	14	100	5	2	1	23000113	SCM-UB2-M100R-S100HA AL40	-
12	12	16	100	6	2	1	23000114	SCM-UB2-M120R-S100HA AL40	-
16	16	22	150	8	2	1	23000115	SCM-UB2-M160R-S150HA AL40	-



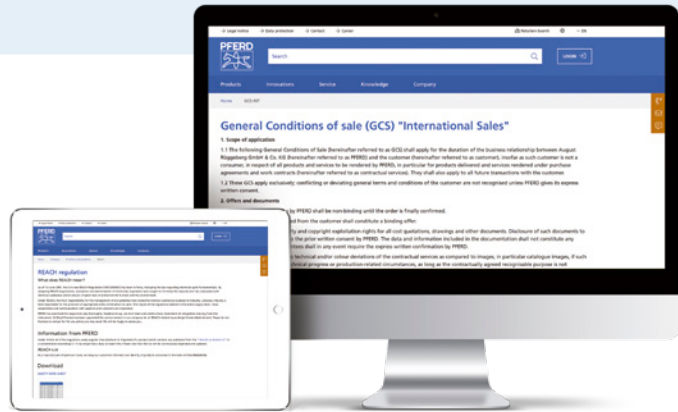


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## New in the PFERD product range

Our new products have **blue** item numbers in the Tool Manual. Discontinued products are in *italics* and identified accordingly in the corresponding product tables.



Stay up to date and discover our new products digitally and online.

## REACH Regulation (EC) No. 1907/2006

By adopting REACH (registration, evaluation and authorisation of chemicals), legislators have sought to minimize the hazards and risks associated with chemical substances and to ensure a higher level of protection for humans and the environment.



Information about PFERD tools in the context of the EC REACH Regulation can be found on our website [www.pferd.com/reach](http://www.pferd.com/reach).

## PFERD repair service

Our highly experienced team at our Marienheide plant in Germany ensures that repairs are carried out quickly and looks after the provision of spare parts. Please send any queries to: [pferd.power.tools@pferd.com](mailto:pferd.power.tools@pferd.com)