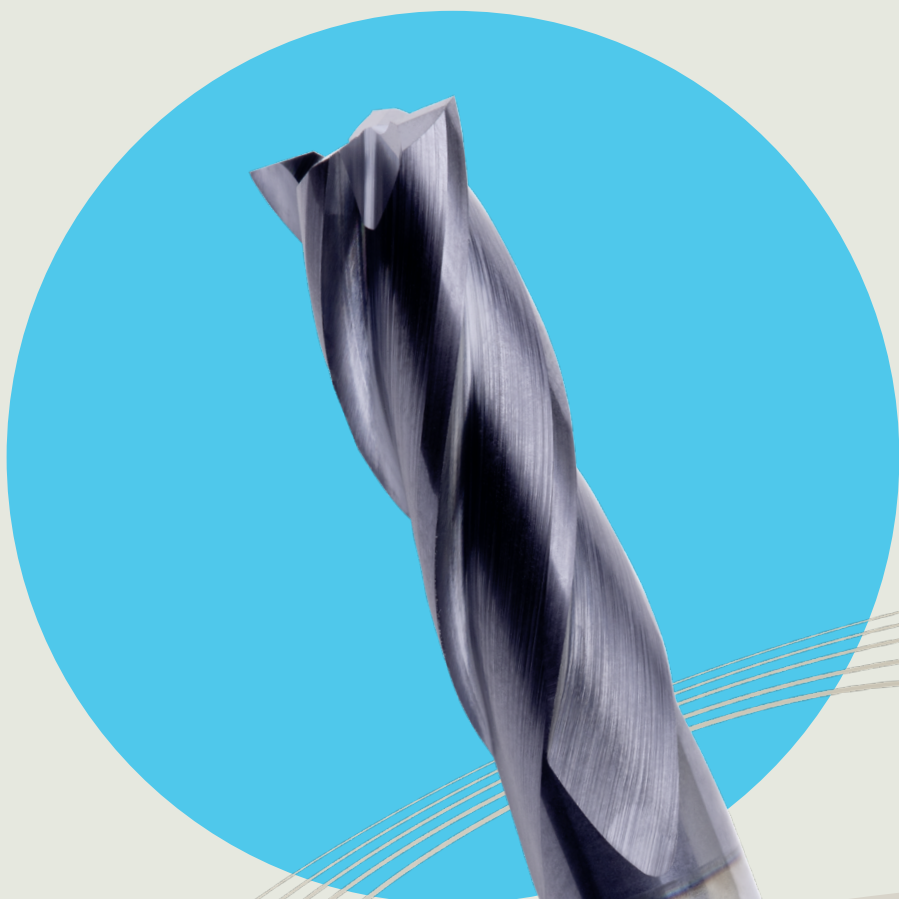




S9xx

---

# Expanded solid carbide end mill range



**Certainty  
at every turn™**





S9xx

---

## Expanded solid carbide end mill range

---

# Precision and durability for steels, stainless steels and cast iron machining



The expanded S9xx solid carbide end mill range introduces two new end mill types square, corner radius, multiple length index in metric and inch assortment. Designed for steel, stainless steel, cast iron, and optionally for non-ferrous materials, it ensures precision and durability across a variety of applications, such as side milling, slotting, contouring and ramping.

With 204 new items, the S9xx series delivers versatile, reliable performance and excellent value for automotive subcontractors and general engineering.



## Related products

### 2-flute square medium length



1/16 – 1 inch

### 4-flute square medium length



2 – 20 mm

1/16 – 1 inch

### 6-flute square medium length



6 – 20 mm

1/4 – 1 inch

### 4-flute chamfer



1/16 – 1 inch

### 2-flute corner radius



3 – 18 mm

### 4-flute corner radius



3 – 18 mm

1/8 – 1 inch

### 2-flute square long length



2 – 20 mm

### 4-flute square long length



2 – 20 mm

1/16 – 1 inch

### 6-flute square long length



6 – 20 mm

1/4 – 1 inch



S9xx

## Features & benefits

---

TiAlN coating for outstanding wear resistance and increased tool life.

→ **Extended tool life**  
significantly increases productivity and reduces cost per component.

Versatile cutter geometries including square, corner radius and chamfer options and assorted designs with 2-, 4-, and 6-flute cutters in metric and imperial sizes.

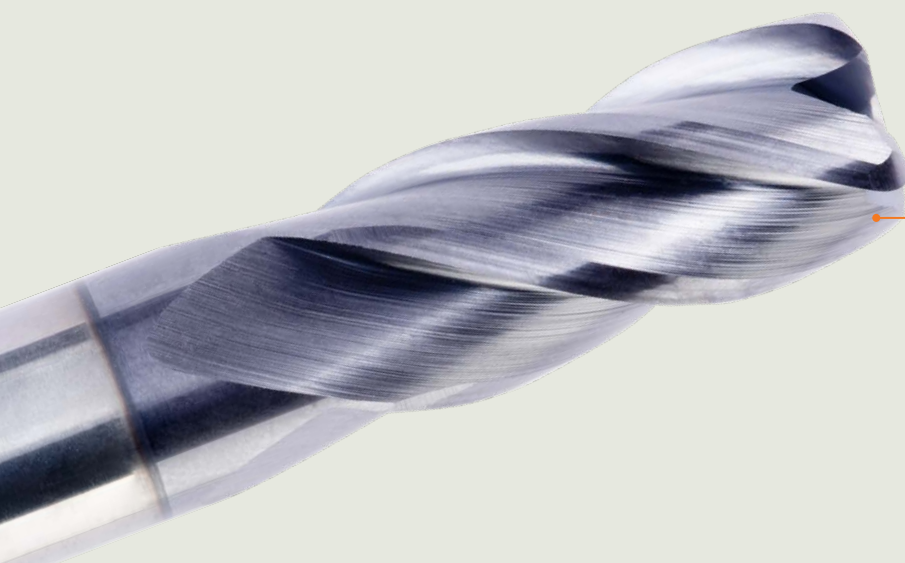
→ **Operational versatility**  
enables a wide range of applications including side milling, slotting, contouring and ramping.

Multi-material capability:  
Suitable for steel, stainless steel, cast iron and optionally non-ferrous materials (stainless steel, expanding usability).

→ **Versatility**  
enabling consistent performance across diverse machining tasks or delivering reliable results across a wide range of machining operations.

Optimized flute geometry and robust design with square, chamfer and corner radius designs on end teeth reduce chipping.

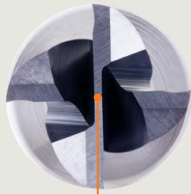
→ **Improved process reliability**  
reduces downtime and ensures consistent high-quality results.



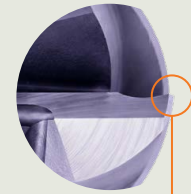
4 Flute



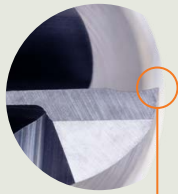
## Technical information



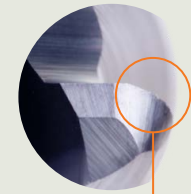
Center cut



Chamfer



Square



Corner radius



2 Flute



4 Flute



6 Flute





## Success stories

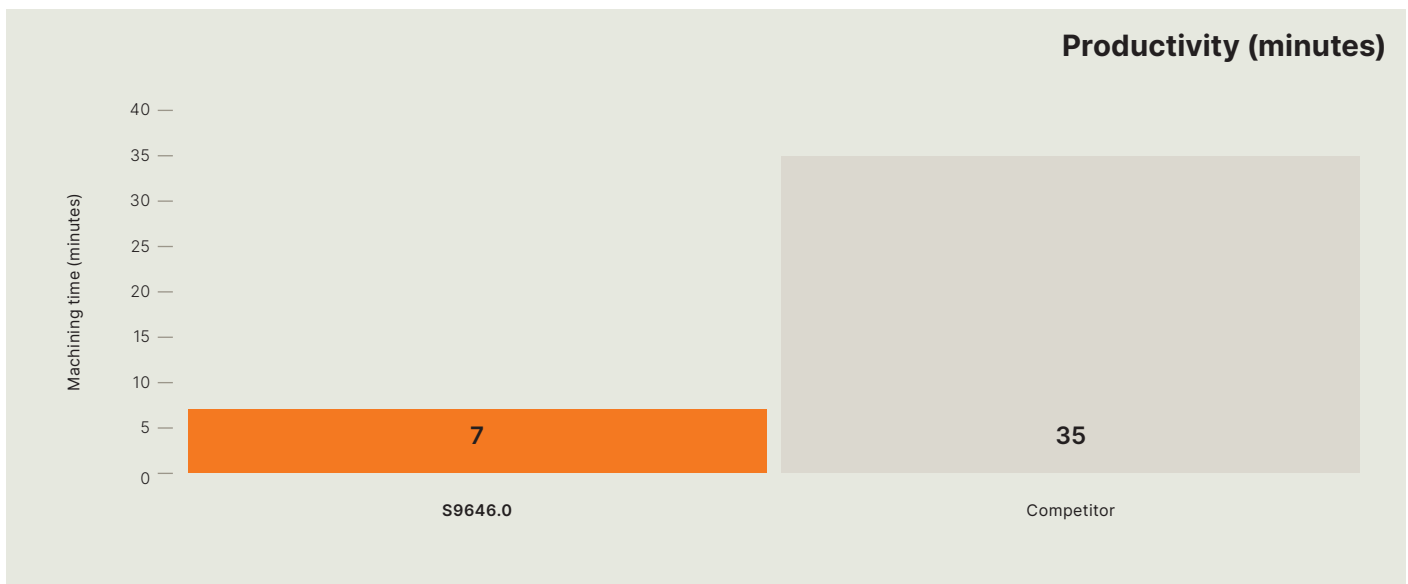
# Reduce machining time by 80% in slotting

The S964 solid carbide end mill demonstrated outstanding performance in slotting operations on 304 stainless steel. The machining time was reduced from 35 minutes to just 7 minutes per operation, delivering a productivity boost of 400% compared to the competitor.

Segment	Application	Material	Coolant	Dormer Pramet solution
Medical	Slotting	304 Stainless Steel	Yes	S9646.0

Machining data	Competitor	S9646.0
Depth of cut $a_p$ (mm)	0.5	2.0
Width of cut $a_e$ (mm)	6.0	6.0
Cutting speed $v_c$ (m/min)	55	70
Feed per tooth $f_z$ (mm/tooth)	0.022	0.01
Feed rate $v_f$ (m/min)	257	210

M3.1





## Machining examples

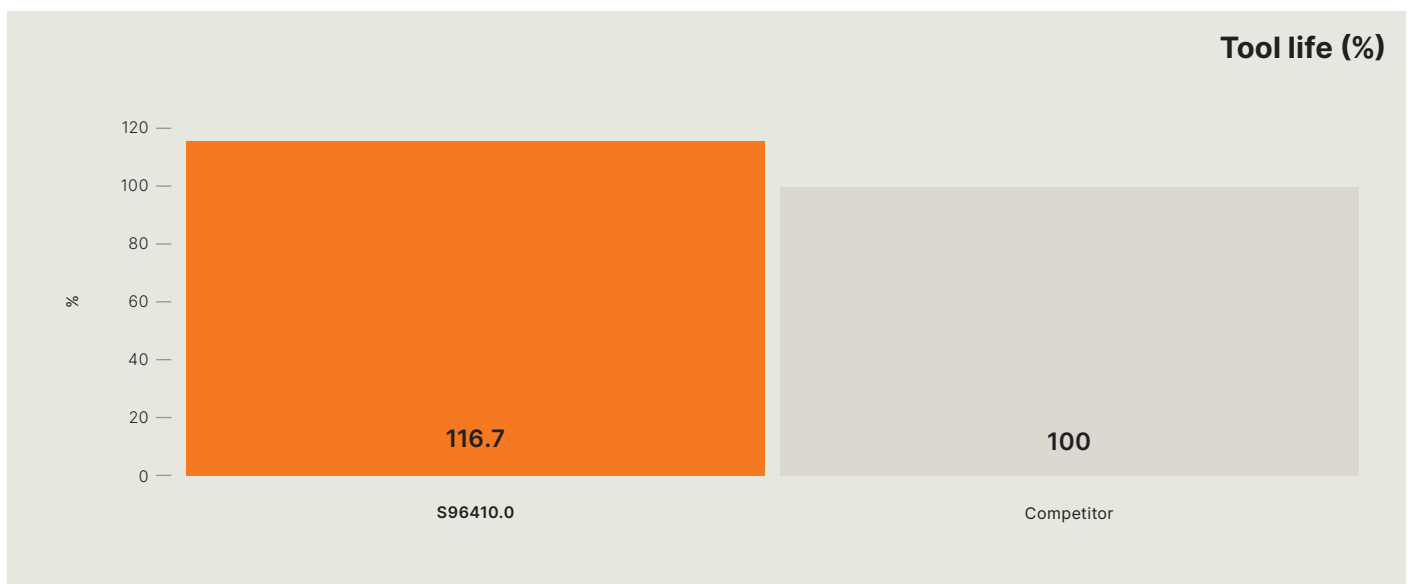
# Enhance tool life by **16.7%** in demanding milling applications

S96410.0 outperformed the competition by achieving 14 linear meters compared to 12 linear meters, extending tool life by 16.7%. The endmill demonstrated superior durability in ramping and slotting operations on SAE 1045 material with coolant, offering better durability and cost savings compared to the competitor's solution.

Segment	Application	Material	Coolant	Dormer Pramet solution
General engineering	Ramping and slotting	SAE 1045	Yes	S96410.0

Machining data	Competitor	S96410.0
Depth of cut $a_p$ (mm)	10.0	10.0
Width of cut $a_e$ (mm)	10.0	10.0
Cutting speed $v_c$ (m/min)	120	120
Feed $f_z$ (mm/tooth)	0.048	0.048
Feed $v_f$ (m/min)	733	733

P2.2





## Machining examples

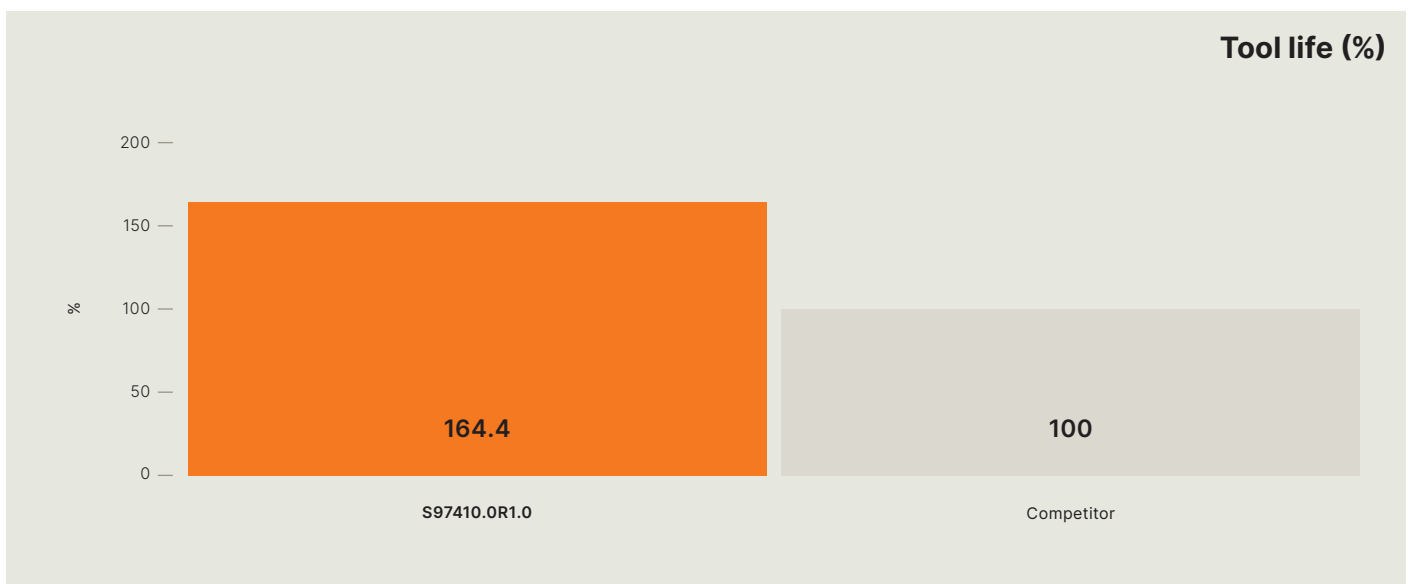
# Achieve **64.4%** longer tool life in stainless steel

The S97410.0R1.0 extended tool life by 64.4% compared to the competition in side milling operations on stainless steel. Our endmill achieved 14.8 linear meters without even reaching end of tool life compared to 9 linear meters with the competitor's endmill.

Segment	Application	Material	Coolant	Dormer Pramet solution
General engineering	Side milling	316L Stainless Steel	Yes	S97410.0R1.0

Machining data	Competitor	S97410.0R1.0
Depth of cut $a_p$ (mm)	5.0	5.0
Width of cut $a_e$ (mm)	10.0	10.0
Cutting speed $v_c$ (m/min)	35	35
Feed $f_z$ (mm/tooth)	0.042	0.042
Feed $v_f$ (m/min)	187	187

M3.1





		HM	HM	HM	HM	HM	HM	HM	HM				
Material code (BMC)		HM	HM	HM	HM	HM	HM	HM	HM				
Mill Profile		N	N	N	N	N	N	N	N				
Number of flutes (NOF)		NOF 4	NOF 2	NOF 4	NOF 2	NOF 4	NOF 6	NOF 2	NOF 4	NOF 6			
Cut length													
Flute Helix (FHA)		λ 34°	λ 28°	λ 34°	λ 28°	λ 34°	λ 45°	λ 28°	λ 34°	λ 45°			
Radial rake angle (GAMF)		γ 9°	γ 9°	γ 9°	γ 9°	γ 9°	γ 9°	γ 9°	γ 9°	γ 9°			
Shank													
Coating		TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN			
Cutting diameter tolerance class (TDC)		DC h10	DC h10	DC h10	DC h10	DC h10	DC h10	DC h10	DC h10	DC h10			
Direction													
Basic standard group (BSG)		WORK NORM	WORK NORM	WORK NORM	WORK NORM	WORK NORM	WORK NORM	WORK NORM	WORK NORM	WORK NORM			
Cutting Edge Shape		CHW	RE	RE									
Product Family Code		S954	S972	S974	S962	S964	S966	S982	S984	S986			
PSF cutting diameters range		1/16" - 1"	3.00 - 18.00	3.00 - 18.00 1/8" - 1"	1/16" - 1"	2.00 - 20.00 1/16" - 1"	6.00 - 20.00 1/4" - 1"	2.00 - 20.00	2.00 - 20.00 1/16" - 1"	6.00 - 20.00 1/4" - 1"			
P	P1	■	■	■	■	■	■	■	■	■			
	P2	■	■	■	■	■	■	■	■	■			
	P3	■	■	■	■	■	■	■	■	■			
	P4	■	■	■	■	■	■	■	■	■			
M	M1	■	■	■	■	■	■	■	■	■			
	M2	■	■	■	■	■	■	■	■	■			
	M3	■	■	■	■	■	■	■	■	■			
	M4												
K	K1	■	■	■	■	■	■	■	■	■			
	K2	■	■	■	■	■	■	■	■	■			
	K3	■	■	■	■	■	■	■	■	■			
	K4	■	■	■	■	■	■	■	■	■			
	K5	■	■	■	■	■	■	■	■	■			
N	N1	▣	▣	▣	▣	▣	▣	▣	▣	▣			
	N2	■	■	■	■	■	■	■	■	■			
	N3	▣	▣	▣	▣	▣	▣	▣	▣	▣			
	N4	▣	▣	▣	▣	▣	▣	▣	▣	▣			
	N5	▣	▣	▣	▣	▣	▣	▣	▣	▣			
S	S1												
	S2												
	S3												
	S4												
H	H1												
	H2												
	H3												
	H4												

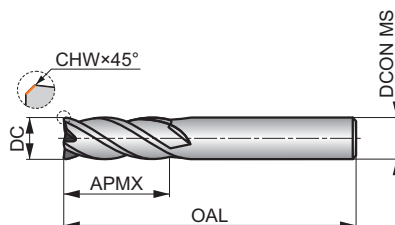


S954



### 4-Flute Solid Carbide Chamfered End Mill

Medium cut length, 4-flute design with 34° helix provides high rigidity for general profile and plunge milling applications. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 4
	λ 34°	γ 9°
	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 I	<b>P1.2</b> ■ 177 I	<b>P1.3</b> ■ 183 I	<b>P2.1</b> ■ 135 I	<b>P2.2</b> ■ 120 I	<b>P2.3</b> ■ 105 G	<b>P3.1</b> ■ 117 I	<b>P3.2</b> ■ 95 G	<b>P3.3</b> ■ 80 G	<b>P4.1</b> ■ 70 G	<b>P4.2</b> ■ 60 G	<b>P4.3</b> ■ 49 G	<b>M1.1</b> ■ 35 I	<b>M1.2</b> ■ 29 I
<b>M2.1</b> ■ 30 I	<b>M2.2</b> ■ 26 I	<b>M3.1</b> ■ 28 I	<b>M3.2</b> ■ 24 I	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 I	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 I	<b>K4.1</b> ■ 105 I
<b>K4.2</b> ■ 80 I	<b>K4.3</b> ■ 58 I	<b>K4.4</b> ■ 50 I	<b>K4.5</b> ■ 42 I	<b>K5.1</b> ■ 120 I	<b>K5.2</b> ■ 90 I	<b>K5.3</b> ■ 69 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC	DC	DC	CHW	DCON MS	APMX	OAL	NOF
	(inch)	(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
S9541/16	1/16	1.59	0.0630	0.003	0.125	0.250	1.500	4
S9543/32	3/32	2.38	0.0940	0.002	0.125	0.375	1.500	4
S9541/8	1/8	3.18	0.1250	0.004	0.125	0.500	1.500	4
S9545/32	5/32	3.97	0.1560	0.005	0.188	0.563	2.000	4
S9543/16	3/16	4.76	0.1880	0.005	0.188	0.625	2.000	4
S9547/32	7/32	5.56	0.2190	0.005	0.250	0.625	2.500	4
S9541/4	1/4	6.35	0.2500	0.005	0.250	0.750	2.500	4
S9545/16	5/16	7.94	0.3130	0.005	0.313	0.875	2.500	4
S9543/8	3/8	9.53	0.3750	0.006	0.375	0.875	2.500	4
S9547/16	7/16	11.11	0.4380	0.008	0.438	1.000	2.500	4
S9541/2	1/2	12.70	0.5000	0.008	0.500	1.000	3.000	4
S9549/16	9/16	14.29	0.5630	0.008	0.563	1.250	3.500	4
S9545/8	5/8	15.88	0.6250	0.008	0.625	1.250	3.500	4
S9543/4	3/4	19.05	0.7500	0.012	0.750	1.500	4.000	4
S9547/8	7/8	22.23	0.8750	0.008	0.875	1.500	4.000	4
S9541	1	25.40	1.0000	0.012	1.000	1.500	4.000	4

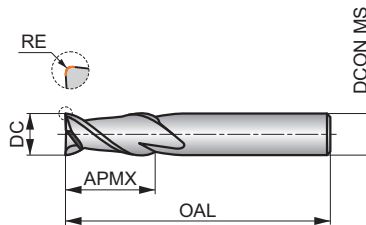


# S972



## 2-Flute Solid Carbide Corner Radius End Mill

Medium cut length, 2-flute design with different corner radius available, 28° helix provides improved rigidity for milling standard slots. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 2
	λ 28°	γ 9°
DIN 6535HA	TIAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 J	<b>P1.2</b> ■ 177 J	<b>P1.3</b> ■ 183 J	<b>P2.1</b> ■ 135 J	<b>P2.2</b> ■ 120 J	<b>P2.3</b> ■ 105 I	<b>P3.1</b> ■ 117 J	<b>P3.2</b> ■ 95 I	<b>P3.3</b> ■ 80 I	<b>P4.1</b> ■ 70 I	<b>P4.2</b> ■ 60 I	<b>P4.3</b> ■ 49 I	<b>M1.1</b> ■ 55 I	<b>M1.2</b> ■ 45 I
<b>M2.1</b> ■ 47 I	<b>M2.2</b> ■ 41 I	<b>M3.1</b> ■ 44 I	<b>M3.2</b> ■ 38 I	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 I	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 I	<b>K4.1</b> ■ 105 I
<b>K4.2</b> ■ 80 I	<b>K4.3</b> ■ 58 I	<b>K4.4</b> ■ 50 I	<b>K4.5</b> ■ 42 I	<b>K5.1</b> ■ 120 I	<b>K5.2</b> ■ 90 I	<b>K5.3</b> ■ 69 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC (mm)	DC (inch)	RE (mm)	DCON MS (mm)	APMX (mm)	OAL (mm)	NOF
S9723.0XR0.3	3.00	0.1180	0.30	3.00	12.00	38.0	2
S9724.0XR0.3	4.00	0.1570	0.30	4.00	14.00	50.0	2
S9724.0XR0.5	4.00	0.1570	0.50	4.00	14.00	50.0	2
S9725.0XR0.3	5.00	0.1970	0.30	5.00	16.00	50.0	2
S9725.0XR0.5	5.00	0.1970	0.50	5.00	16.00	50.0	2
S9726.0XR0.5	6.00	0.2360	0.50	6.00	19.00	57.0	2
S9726.0XR1.0	6.00	0.2360	1.00	6.00	19.00	57.0	2
S9728.0XR0.5	8.00	0.3150	0.50	8.00	19.00	63.0	2
S9728.0XR1.0	8.00	0.3150	1.00	8.00	19.00	63.0	2
S97210.0XR0.5	10.00	0.3940	0.50	10.00	22.00	72.0	2
S97210.0XR1.0	10.00	0.3940	1.00	10.00	22.00	72.0	2
S97210.0XR2.0	10.00	0.3940	2.00	10.00	22.00	72.0	2
S97212.0XR1.0	12.00	0.4720	1.00	12.00	25.00	73.0	2
S97212.0XR2.0	12.00	0.4720	2.00	12.00	25.00	73.0	2
S97212.0XR3.0	12.00	0.4720	3.00	12.00	25.00	73.0	2
S97216.0XR1.0	16.00	0.6300	1.00	16.00	32.00	92.0	2
S97216.0XR2.0	16.00	0.6300	2.00	16.00	32.00	92.0	2
S97216.0XR3.0	16.00	0.6300	3.00	16.00	32.00	92.0	2
S97218.0XR2.0	18.00	0.7090	2.00	18.00	32.00	92.0	2

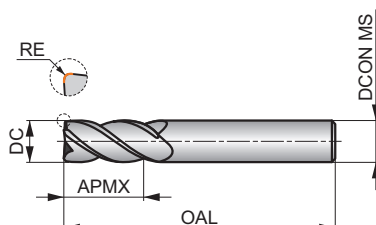


# S974



## 4-Flute Solid Carbide Corner Radius End Mill

Medium cut length, 4-flute design with different corner radius available, 34° helix provides improved surface finish, when milling contours where a corner radius is requires. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 4
	34°	9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 J	<b>P1.2</b> ■ 177 J	<b>P1.3</b> ■ 183 J	<b>P2.1</b> ■ 135 J	<b>P2.2</b> ■ 120 J	<b>P2.3</b> ■ 105 I	<b>P3.1</b> ■ 117 J	<b>P3.2</b> ■ 95 I	<b>P3.3</b> ■ 80 I	<b>P4.1</b> ■ 70 I	<b>P4.2</b> ■ 60 I	<b>P4.3</b> ■ 49 I	<b>M1.1</b> ■ 55 I	<b>M1.2</b> ■ 45 I
<b>M2.1</b> ■ 47 I	<b>M2.2</b> ■ 41 I	<b>M3.1</b> ■ 44 I	<b>M3.2</b> ■ 38 I	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 I	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 I	<b>K4.1</b> ■ 105 I
<b>K4.2</b> ■ 80 I	<b>K4.3</b> ■ 58 I	<b>K4.4</b> ■ 50 I	<b>K4.5</b> ■ 42 I	<b>K5.1</b> ■ 120 I	<b>K5.2</b> ■ 90 I	<b>K5.3</b> ■ 69 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC	DC	DC	RE	RE	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	
S9743.0XR0.3	—	3.00	0.1180	0.30	0.0120	3.00	0.118	12.00	0.472	38.0	1.496	4
S9741/8XR.015 <sup>1)</sup>	1/8	3.18	0.1250	0.38	0.0150	3.18	0.125	12.70	0.500	38.1	1.500	4
S9741/8XR.030 <sup>1)</sup>	1/8	3.18	0.1250	0.76	0.0300	3.18	0.125	12.70	0.500	38.1	1.500	4
S9744.0XR0.3	—	4.00	0.1570	0.30	0.0120	4.00	0.157	14.00	0.551	50.0	1.969	4
S9744.0XR0.5	—	4.00	0.1570	0.50	0.0200	4.00	0.157	14.00	0.551	50.0	1.969	4
S9743/16XR.015 <sup>1)</sup>	3/16	4.76	0.1880	0.38	0.0150	4.76	0.188	15.88	0.625	50.8	2.000	4
S9743/16XR.030 <sup>1)</sup>	3/16	4.76	0.1880	0.76	0.0300	4.76	0.188	15.88	0.625	50.8	2.000	4
S9745.0XR0.3	—	5.00	0.1970	0.30	0.0120	5.00	0.197	16.00	0.630	50.0	1.969	4
S9745.0XR0.5	—	5.00	0.1970	0.50	0.0200	5.00	0.197	16.00	0.630	50.0	1.969	4
S9746.0XR0.5	—	6.00	0.2360	0.50	0.0200	6.00	0.236	19.00	0.748	57.0	2.244	4
S9746.0XR1.0	—	6.00	0.2360	1.00	0.0390	6.00	0.236	19.00	0.748	57.0	2.244	4
S9741/4XR.015 <sup>1)</sup>	1/4	6.35	0.2500	0.38	0.0150	6.35	0.250	19.05	0.750	63.5	2.500	4
S9741/4XR.030 <sup>1)</sup>	1/4	6.35	0.2500	0.76	0.0300	6.35	0.250	19.05	0.750	63.5	2.500	4
S9745/16XR.015 <sup>1)</sup>	5/16	7.94	0.3130	0.38	0.0150	7.94	0.313	22.23	0.875	63.5	2.500	4
S9745/16XR.030 <sup>1)</sup>	5/16	7.94	0.3130	0.76	0.0300	7.94	0.313	22.23	0.875	63.5	2.500	4
S9748.0XR0.5	—	8.00	0.3150	0.50	0.0200	8.00	0.315	19.00	0.748	63.0	2.480	4
S9748.0XR1.0	—	8.00	0.3150	1.00	0.0390	8.00	0.315	19.00	0.748	63.0	2.480	4
S9743/8XR.015 <sup>1)</sup>	3/8	9.53	0.3750	0.38	0.0150	9.53	0.375	22.23	0.875	63.5	2.500	4
S9743/8XR.030 <sup>1)</sup>	3/8	9.53	0.3750	0.76	0.0300	9.53	0.375	22.23	0.875	63.5	2.500	4
S97410.0XR0.5	—	10.00	0.3940	0.50	0.0200	10.00	0.394	22.00	0.866	72.0	2.835	4
S97410.0XR1.0	—	10.00	0.3940	1.00	0.0390	10.00	0.394	22.00	0.866	72.0	2.835	4
S97410.0XR2.0	—	10.00	0.3940	2.00	0.0790	10.00	0.394	22.00	0.866	72.0	2.835	4
S9747/16XR.020 <sup>1)</sup>	7/16	11.11	0.4380	0.51	0.0200	11.11	0.438	25.40	1.000	63.5	2.500	4
S9747/16XR.045 <sup>1)</sup>	7/16	11.11	0.4380	1.14	0.0450	11.11	0.438	25.40	1.000	63.5	2.500	4
S97412.0XR1.0	—	12.00	0.4720	1.00	0.0390	12.00	0.472	25.00	0.984	73.0	2.874	4



Product	DC	DC	DC	RE	RE	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	
<b>S97412.0XR2.0</b>	–	12.00	0.4720	2.00	0.0790	12.00	0.472	25.00	0.984	73.0	2.874	4
<b>S97412.0XR3.0</b>	–	12.00	0.4720	3.00	0.1180	12.00	0.472	25.00	0.984	73.0	2.874	4
<b>S9741/2XR.030</b> <sup>1)</sup>	1/2	12.70	0.5000	0.76	0.0300	12.70	0.500	25.40	1.000	76.2	3.000	4
<b>S9741/2XR.060</b> <sup>1)</sup>	1/2	12.70	0.5000	1.52	0.0600	12.70	0.500	25.40	1.000	76.2	3.000	4
<b>S9749/16XR.045</b> <sup>1)</sup>	9/16	14.29	0.5630	1.14	0.0450	14.29	0.563	31.75	1.250	88.9	3.500	4
<b>S9749/16XR.060</b> <sup>1)</sup>	9/16	14.29	0.5630	1.52	0.0600	14.29	0.563	31.75	1.250	88.9	3.500	4
<b>S9745/8XR.060</b> <sup>1)</sup>	5/8	15.88	0.6250	1.52	0.0600	15.88	0.625	31.75	1.250	88.9	3.500	4
<b>S9745/8XR.090</b> <sup>1)</sup>	5/8	15.88	0.6250	2.29	0.0900	15.88	0.625	31.75	1.250	88.9	3.500	4
<b>S97416.0XR1.0</b>	–	16.00	0.6300	1.00	0.0390	16.00	0.630	32.00	1.260	92.0	3.622	4
<b>S97416.0XR2.0</b>	–	16.00	0.6300	2.00	0.0790	16.00	0.630	32.00	1.260	92.0	3.622	4
<b>S97416.0XR3.0</b>	–	16.00	0.6300	3.00	0.1180	16.00	0.630	32.00	1.260	92.0	3.622	4
<b>S97418.0XR2.0</b>	–	18.00	0.7090	2.00	0.0790	18.00	0.709	32.00	1.260	92.0	3.622	4
<b>S9743/4XR.030</b> <sup>1)</sup>	3/4	19.05	0.7500	0.76	0.0300	19.05	0.750	38.10	1.500	101.6	4.000	4
<b>S9743/4XR.060</b> <sup>1)</sup>	3/4	19.05	0.7500	1.52	0.0600	19.05	0.750	38.10	1.500	101.6	4.000	4
<b>S9741XR.030</b> <sup>1)</sup>	1	25.40	1.0000	0.76	0.0300	25.40	1.000	38.10	1.500	101.6	4.000	4

<sup>1)</sup> Cylindrical shank.

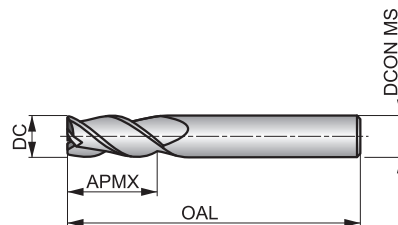


# S962



## 2-Flute Solid Carbide End Mill

Medium cut length, 2-flute design with 28° helix provides higher rigidity for milling standard slots. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 2
	λ 28°	γ 9°
	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 I	<b>P1.2</b> ■ 177 I	<b>P1.3</b> ■ 183 I	<b>P2.1</b> ■ 135 I	<b>P2.2</b> ■ 120 I	<b>P2.3</b> ■ 105 G	<b>P3.1</b> ■ 117 I	<b>P3.2</b> ■ 95 G	<b>P3.3</b> ■ 80 G	<b>P4.1</b> ■ 70 G	<b>P4.2</b> ■ 60 G	<b>P4.3</b> ■ 49 G	<b>M1.1</b> ■ 35 I	<b>M1.2</b> ■ 29 I
<b>M2.1</b> ■ 30 I	<b>M2.2</b> ■ 26 I	<b>M3.1</b> ■ 28 I	<b>M3.2</b> ■ 24 I	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 I	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 I	<b>K4.1</b> ■ 105 I
<b>K4.2</b> ■ 80 I	<b>K4.3</b> ■ 58 I	<b>K4.4</b> ■ 50 I	<b>K4.5</b> ■ 42 I	<b>K5.1</b> ■ 120 I	<b>K5.2</b> ■ 90 I	<b>K5.3</b> ■ 69 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC (inch)	DC (mm)	DC (inch)	DCON MS (inch)	APMX (inch)	OAL (inch)	NOF
S9621/16	1/16	1.59	0.0630	0.125	0.250	1.500	2
S9623/32	3/32	2.38	0.0940	0.125	0.375	1.500	2
S9621/8	1/8	3.18	0.1250	0.125	0.500	1.500	2
S9625/32	5/32	3.97	0.1560	0.188	0.563	2.000	2
S9623/16	3/16	4.76	0.1880	0.188	0.625	2.000	2
S9627/32	7/32	5.56	0.2190	0.250	0.625	2.500	2
S9621/4	1/4	6.35	0.2500	0.250	0.750	2.500	2
S9625/16	5/16	7.94	0.3130	0.313	0.875	2.500	2
S9623/8	3/8	9.53	0.3750	0.375	0.875	2.500	2
S9627/16	7/16	11.11	0.4380	0.438	1.000	2.500	2
S9621/2	1/2	12.70	0.5000	0.500	1.000	3.000	2
S9629/16	9/16	14.29	0.5630	0.563	1.250	3.500	2
S9625/8	5/8	15.88	0.6250	0.625	1.250	3.500	2
S96211/16	11/16	17.46	0.6880	0.750	1.500	2.000	2
S9623/4	3/4	19.05	0.7500	0.750	1.500	4.000	2
S9627/8	7/8	22.23	0.8750	0.875	1.500	4.000	2
S9621	1	25.40	1.0000	1.000	1.500	4.000	2

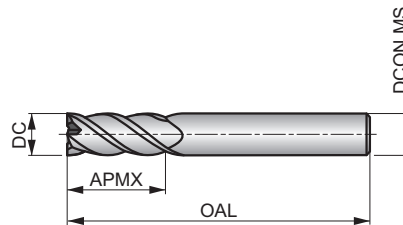


# S964



## 4-Flute Solid Carbide End Mill

Medium cut length, 4-flute design with 34° helix provides high rigidity for profile milling. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 4
	λ 34°	γ 9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 l	<b>P1.2</b> ■ 177 l	<b>P1.3</b> ■ 183 l	<b>P2.1</b> ■ 135 l	<b>P2.2</b> ■ 120 l	<b>P2.3</b> ■ 105 G	<b>P3.1</b> ■ 117 l	<b>P3.2</b> ■ 95 G	<b>P3.3</b> ■ 80 G	<b>P4.1</b> ■ 70 G	<b>P4.2</b> ■ 60 G	<b>P4.3</b> ■ 49 G	<b>M1.1</b> ■ 35 l	<b>M1.2</b> ■ 29 l
<b>M2.1</b> ■ 30 l	<b>M2.2</b> ■ 26 l	<b>M3.1</b> ■ 28 l	<b>M3.2</b> ■ 24 l	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 l	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 l	<b>K4.1</b> ■ 105 l
<b>K4.2</b> ■ 80 l	<b>K4.3</b> ■ 58 l	<b>K4.4</b> ■ 50 l	<b>K4.5</b> ■ 42 l	<b>K5.1</b> ■ 120 l	<b>K5.2</b> ■ 90 l	<b>K5.3</b> ■ 69 l	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC	DC	DC	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	
S9641/16 <sup>1)</sup>	1/16	1.59	0.0630	0.125	3.18	0.250	6.35	1.500	38.1	4
S9642.0	–	2.00	0.0790	0.118	3.00	0.236	6.00	1.496	38.0	4
S9643/32 <sup>1)</sup>	3/32	2.38	0.0940	0.125	3.18	0.375	9.53	1.500	38.1	4
S9642.5	–	2.50	0.0980	0.118	3.00	0.354	9.00	1.496	38.0	4
S9643.0	–	3.00	0.1180	0.118	3.00	0.472	12.00	1.496	38.0	4
S9641/8 <sup>1)</sup>	1/8	3.18	0.1250	0.125	3.18	0.500	12.70	1.500	38.1	4
S9645/32 <sup>1)</sup>	5/32	3.97	0.1560	0.188	4.76	0.563	14.29	2.000	50.8	4
S9644.0	–	4.00	0.1570	0.157	4.00	0.551	14.00	1.969	50.0	4
S9643/16 <sup>1)</sup>	3/16	4.76	0.1880	0.188	4.76	0.625	15.88	2.000	50.8	4
S9645.0	–	5.00	0.1970	0.197	5.00	0.630	16.00	1.969	50.0	4
S9647/32 <sup>1)</sup>	7/32	5.56	0.2190	0.250	6.35	0.625	15.88	2.500	63.5	4
S9646.0	–	6.00	0.2360	0.236	6.00	0.748	19.00	2.244	57.0	4
S9641/4 <sup>1)</sup>	1/4	6.35	0.2500	0.250	6.35	0.750	19.05	2.500	63.5	4
S9647.0	–	7.00	0.2760	0.315	8.00	0.748	19.00	2.480	63.0	4
S9645/16 <sup>1)</sup>	5/16	7.94	0.3130	0.313	7.94	0.875	22.23	2.500	63.5	4
S9648.0	–	8.00	0.3150	0.315	8.00	0.748	19.00	2.480	63.0	4
S9649.0	–	9.00	0.3540	0.394	10.00	0.827	21.00	2.835	72.0	4
S9643/8 <sup>1)</sup>	3/8	9.53	0.3750	0.375	9.53	0.875	22.23	2.500	63.5	4
S96410.0	–	10.00	0.3940	0.394	10.00	0.866	22.00	2.835	72.0	4
S9647/16 <sup>1)</sup>	7/16	11.11	0.4380	0.438	11.11	1.000	25.40	2.500	63.5	4
S96412.0	–	12.00	0.4720	0.472	12.00	0.984	25.00	2.874	73.0	4
S9641/2 <sup>1)</sup>	1/2	12.70	0.5000	0.500	12.70	1.000	25.40	3.000	76.2	4
S96414.0	–	14.00	0.5510	0.551	14.00	1.181	30.00	3.268	83.0	4
S9649/16 <sup>1)</sup>	9/16	14.29	0.5630	0.563	14.29	1.250	31.75	3.500	88.9	4
S9645/8 <sup>1)</sup>	5/8	15.88	0.6250	0.625	15.88	1.250	31.75	3.500	88.9	4



Product	DC	DC	DC	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	
<b>S96416.0</b>	–	16.00	0.6300	0.630	16.00	1.260	32.00	3.622	92.0	4
<b>S96418.0</b>	–	18.00	0.7090	0.709	18.00	1.260	32.00	3.622	92.0	4
<b>S9643/4</b> <sup>1)</sup>	3/4	19.05	0.7500	0.750	19.05	1.500	38.10	4.000	101.6	4
<b>S96420.0</b>	–	20.00	0.7870	0.787	20.00	1.496	38.00	4.094	104.0	4
<b>S9647/8</b> <sup>1)</sup>	7/8	22.23	0.8750	0.875	22.23	1.500	38.10	4.000	101.6	4
<b>S9641</b> <sup>1)</sup>	1	25.40	1.0000	1.000	25.40	1.500	38.10	4.000	101.6	4

<sup>1)</sup> Cylindrical shank.

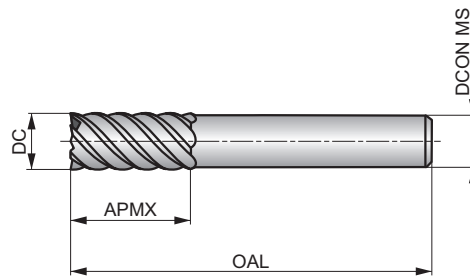


# S966



## 6-Flute Solid Carbide End Mill

Medium cut length, 6-flute design with 45° helix provides high rigidity for profile finishing. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 6
	45°	9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 85 F	<b>P1.2</b> ■ 96 F	<b>P1.3</b> ■ 99 F	<b>P2.1</b> ■ 73 F	<b>P2.2</b> ■ 65 F	<b>P2.3</b> ■ 57 F	<b>P3.1</b> ■ 63 F	<b>P3.2</b> ■ 51 F	<b>P3.3</b> ■ 43 F	<b>P4.1</b> ■ 38 F	<b>P4.2</b> ■ 32 F	<b>P4.3</b> ■ 27 F	<b>M1.1</b> ■ 35 I	<b>M1.2</b> ■ 29 I
<b>M2.1</b> ■ 30 I	<b>M2.2</b> ■ 26 I	<b>M3.1</b> ■ 28 I	<b>M3.2</b> ■ 24 I	<b>K1.1</b> ■ 65 J	<b>K1.2</b> ■ 48 J	<b>K1.3</b> ■ 36 J	<b>K2.1</b> ■ 69 J	<b>K2.2</b> ■ 56 J	<b>K2.3</b> ■ 45 I	<b>K3.1</b> ■ 62 J	<b>K3.2</b> ■ 46 J	<b>K3.3</b> ■ 38 I	<b>K4.1</b> ■ 57 I
<b>K4.2</b> ■ 43 I	<b>K4.3</b> ■ 31 I	<b>K4.4</b> ■ 27 I	<b>K4.5</b> ■ 23 I	<b>K5.1</b> ■ 65 I	<b>K5.2</b> ■ 49 I	<b>K5.3</b> ■ 37 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC (inch)	DC (mm)	DC (inch)	DCON MS (inch)	DCON MS (mm)	APMX (inch)	APMX (mm)	OAL (inch)	OAL (mm)	NOF
S9666.0	–	6.00	0.2360	0.236	6.00	0.748	19.00	2.244	57.0	6
S9661/4 <sup>1)</sup>	1/4	6.35	0.2500	0.250	6.35	0.750	19.05	2.500	63.5	6
S9665/16 <sup>1)</sup>	5/16	7.94	0.3130	0.313	7.94	0.875	22.23	2.500	63.5	6
S9668.0	–	8.00	0.3150	0.315	8.00	0.748	19.00	2.480	63.0	6
S9663/8 <sup>1)</sup>	3/8	9.53	0.3750	0.375	9.53	0.875	22.23	2.500	63.5	6
S96610.0	–	10.00	0.3940	0.394	10.00	0.866	22.00	2.835	72.0	6
S9667/16 <sup>1)</sup>	7/16	11.11	0.4380	0.438	11.11	1.000	25.40	2.500	63.5	6
S96612.0	–	12.00	0.4720	0.472	12.00	1.024	26.00	3.268	83.0	6
S9661/2 <sup>1)</sup>	1/2	12.70	0.5000	0.500	12.70	1.000	25.40	3.000	76.2	6
S9669/16 <sup>1)</sup>	9/16	14.29	0.5630	0.563	14.29	1.250	31.75	3.500	88.9	6
S9665/8 <sup>1)</sup>	5/8	15.88	0.6250	0.625	15.88	1.250	31.75	3.500	88.9	6
S96616.0	–	16.00	0.6300	0.630	16.00	1.260	32.00	3.622	92.0	6
S96611/16 <sup>1)</sup>	11/16	17.46	0.6880	0.750	19.05	1.500	38.10	4.000	101.6	6
S9663/4 <sup>1)</sup>	3/4	19.05	0.7500	0.750	19.05	1.500	38.10	4.000	101.6	6
S96620.0	–	20.00	0.7870	0.787	20.00	1.496	38.00	4.094	104.0	6
S9667/8 <sup>1)</sup>	7/8	22.23	0.8750	0.875	22.23	1.500	38.10	4.000	101.6	6
S9661 <sup>1)</sup>	1	25.40	1.0000	1.000	25.40	1.500	38.10	4.000	101.6	6

<sup>1)</sup> Cylindrical shank.

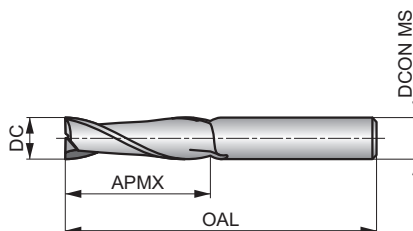


# S982



## 2-Flute Solid Carbide End Mill

Long cut length, 2-flute design with 28° helix provides higher rigidity for milling deep slots. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 2
	λ 28°	γ 9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 I	<b>P1.2</b> ■ 177 I	<b>P1.3</b> ■ 183 I	<b>P2.1</b> ■ 135 I	<b>P2.2</b> ■ 120 I	<b>P2.3</b> ■ 105 G	<b>P3.1</b> ■ 117 I	<b>P3.2</b> ■ 95 G	<b>P3.3</b> ■ 80 G	<b>P4.1</b> ■ 70 G	<b>P4.2</b> ■ 60 G	<b>P4.3</b> ■ 49 G	<b>M1.1</b> ■ 35 I	<b>M1.2</b> ■ 29 I
<b>M2.1</b> ■ 30 I	<b>M2.2</b> ■ 26 I	<b>M3.1</b> ■ 28 I	<b>M3.2</b> ■ 24 I	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 I	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 I	<b>K4.1</b> ■ 105 I
<b>K4.2</b> ■ 80 I	<b>K4.3</b> ■ 58 I	<b>K4.4</b> ■ 50 I	<b>K4.5</b> ■ 42 I	<b>K5.1</b> ■ 120 I	<b>K5.2</b> ■ 90 I	<b>K5.3</b> ■ 69 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC	DC	DCON MS	APMX	OAL	NOF
	(mm)	(inch)	(mm)	(mm)	(mm)	
S9822.0	2.00	0.0790	3.00	19.00	60.0	2
S9822.5	2.50	0.0980	3.00	19.00	60.0	2
S9823.0	3.00	0.1180	3.00	19.00	60.0	2
S9824.0	4.00	0.1570	4.00	19.00	60.0	2
S9825.0	5.00	0.1970	5.00	19.00	60.0	2
S9826.0	6.00	0.2360	6.00	31.00	75.0	2
S9827.0	7.00	0.2760	8.00	31.00	75.0	2
S9828.0	8.00	0.3150	8.00	31.00	75.0	2
S9829.0	9.00	0.3540	10.00	31.00	75.0	2
S98210.0	10.00	0.3940	10.00	31.00	75.0	2
S98212.0	12.00	0.4720	12.00	50.00	100.0	2
S98214.0	14.00	0.5510	14.00	57.00	125.0	2
S98216.0	16.00	0.6300	16.00	57.00	125.0	2
S98218.0	18.00	0.7090	18.00	57.00	125.0	2
S98220.0	20.00	0.7870	20.00	57.00	125.0	2



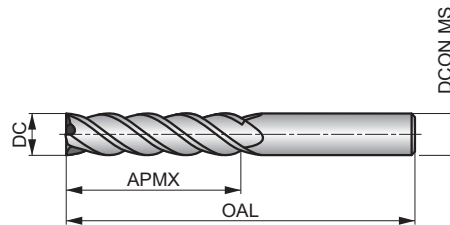
# S984



## 4-Flute Solid Carbide End Mill

Long cut length, 4-flute design with 34° helix provides high rigidity for milling deep walls. TiAlN coating improves performance and extends the tool life.

HM	N	NOF 4
	34°	9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 158 l	<b>P1.2</b> ■ 177 l	<b>P1.3</b> ■ 183 l	<b>P2.1</b> ■ 135 l	<b>P2.2</b> ■ 120 l	<b>P2.3</b> ■ 105 G	<b>P3.1</b> ■ 117 l	<b>P3.2</b> ■ 95 G	<b>P3.3</b> ■ 80 G	<b>P4.1</b> ■ 70 G	<b>P4.2</b> ■ 60 G	<b>P4.3</b> ■ 49 G	<b>M1.1</b> ■ 35 l	<b>M1.2</b> ■ 29 l
<b>M2.1</b> ■ 30 l	<b>M2.2</b> ■ 26 l	<b>M3.1</b> ■ 28 l	<b>M3.2</b> ■ 24 l	<b>K1.1</b> ■ 120 J	<b>K1.2</b> ■ 88 J	<b>K1.3</b> ■ 67 J	<b>K2.1</b> ■ 128 J	<b>K2.2</b> ■ 104 J	<b>K2.3</b> ■ 84 l	<b>K3.1</b> ■ 114 J	<b>K3.2</b> ■ 86 J	<b>K3.3</b> ■ 70 l	<b>K4.1</b> ■ 105 l
<b>K4.2</b> ■ 80 l	<b>K4.3</b> ■ 58 l	<b>K4.4</b> ■ 50 l	<b>K4.5</b> ■ 42 l	<b>K5.1</b> ■ 120 l	<b>K5.2</b> ■ 90 l	<b>K5.3</b> ■ 69 l	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

DCON MS tolerance h6.

Product	DC	DC	DC	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	
S9841/16 <sup>1)</sup>	1/16	1.59	0.0630	3.18	0.125	19.05	0.750	50.8	2.000	4
S9842.0	–	2.00	0.0790	3.00	0.118	19.00	0.748	60.0	2.362	4
S9843/32 <sup>1)</sup>	3/32	2.38	0.0940	3.18	0.125	19.05	0.750	50.8	2.000	4
S9842.5	–	2.50	0.0980	3.00	0.118	19.00	0.748	60.0	2.362	4
S9843.0	–	3.00	0.1180	3.00	0.118	19.00	0.748	60.0	2.362	4
S9841/8 <sup>1)</sup>	1/8	3.18	0.1250	3.18	0.125	19.05	0.750	50.8	2.000	4
S9845/32 <sup>1)</sup>	5/32	3.97	0.1560	4.76	0.188	19.05	0.750	63.5	2.500	4
S9844.0	–	4.00	0.1570	4.00	0.157	19.00	0.748	60.0	2.362	4
S9843/16 <sup>1)</sup>	3/16	4.76	0.1880	4.76	0.188	19.05	0.750	63.5	2.500	4
S9845.0	–	5.00	0.1970	5.00	0.197	19.00	0.748	60.0	2.362	4
S9847/32 <sup>1)</sup>	7/32	5.56	0.2190	6.35	0.250	28.57	1.125	76.2	3.000	4
S9846.0	–	6.00	0.2360	6.00	0.236	31.00	1.220	75.0	2.953	4
S9841/4 <sup>1)</sup>	1/4	6.35	0.2500	6.35	0.250	28.57	1.125	76.2	3.000	4
S9847.0	–	7.00	0.2760	8.00	0.315	31.00	1.220	75.0	2.953	4
S9845/16 <sup>1)</sup>	5/16	7.94	0.3130	7.94	0.313	28.57	1.125	76.2	3.000	4
S9848.0	–	8.00	0.3150	8.00	0.315	31.00	1.220	75.0	2.953	4
S9849.0	–	9.00	0.3540	10.00	0.394	31.00	1.220	75.0	2.953	4
S9843/8 <sup>1)</sup>	3/8	9.53	0.3750	9.53	0.375	28.57	1.125	76.2	3.000	4
S98410.0	–	10.00	0.3940	10.00	0.394	31.00	1.220	100.0	3.937	4
S9847/16 <sup>1)</sup>	7/16	11.11	0.4380	11.11	0.438	50.80	2.000	101.6	4.000	4
S98412.0	–	12.00	0.4720	12.00	0.472	50.00	1.969	100.0	3.937	4
S9841/2 <sup>1)</sup>	1/2	12.70	0.5000	12.70	0.500	57.15	2.250	127.0	5.000	4
S98414.0	–	14.00	0.5510	14.00	0.551	57.00	2.244	125.0	4.921	4
S9849/16 <sup>1)</sup>	9/16	14.29	0.5630	14.29	0.563	50.80	2.000	101.6	4.000	4
S9845/8 <sup>1)</sup>	5/8	15.88	0.6250	15.88	0.625	57.15	2.250	127.0	5.000	4



Product	DC	DC	DC	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	
<b>S98416.0</b>	–	16.00	0.6300	16.00	0.630	57.00	2.244	125.0	4.921	4
<b>S98418.0</b>	–	18.00	0.7090	18.00	0.709	57.00	2.244	125.0	4.921	4
<b>S9843/4</b> <sup>1)</sup>	3/4	19.05	0.7500	19.05	0.750	57.15	2.250	127.0	5.000	4
<b>S98420.0</b>	–	20.00	0.7870	20.00	0.787	57.00	2.244	125.0	4.921	4
<b>S9847/8</b> <sup>1)</sup>	7/8	22.23	0.8750	22.23	0.875	50.80	2.000	101.6	4.000	4
<b>S9841</b> <sup>1)</sup>	1	25.40	1.0000	25.40	1.000	57.15	2.250	127.0	5.000	4

<sup>1)</sup> Cylindrical shank.

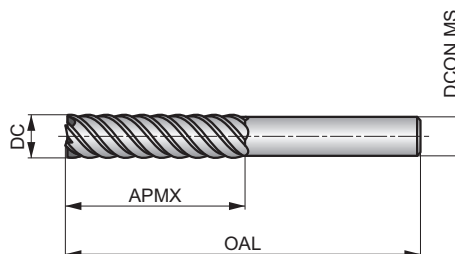


# S986

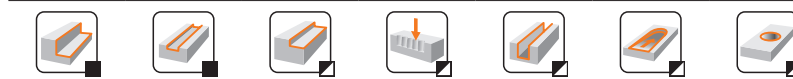


## 6-Flute Solid Carbide End Mill

Long cut length, 6-flute design with 45° helix provides high rigidity for finishing of deep walls. TiAlN coating for higher temperature resistance and longer tool life.



HM	N	NOF 6
	45°	9°
DIN 6535HA	TiAlN	DC h10
	WORK NORM	



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 22.

<b>P1.1</b> ■ 85 F	<b>P1.2</b> ■ 96 F	<b>P1.3</b> ■ 99 F	<b>P2.1</b> ■ 73 F	<b>P2.2</b> ■ 65 F	<b>P2.3</b> ■ 57 F	<b>P3.1</b> ■ 63 F	<b>P3.2</b> ■ 51 F	<b>P3.3</b> ■ 43 F	<b>P4.1</b> ■ 38 F	<b>P4.2</b> ■ 32 F	<b>P4.3</b> ■ 27 F	<b>M1.1</b> ■ 35 I	<b>M1.2</b> ■ 29 I
<b>M2.1</b> ■ 30 I	<b>M2.2</b> ■ 26 I	<b>M3.1</b> ■ 28 I	<b>M3.2</b> ■ 24 I	<b>K1.1</b> ■ 65 J	<b>K1.2</b> ■ 48 J	<b>K1.3</b> ■ 36 J	<b>K2.1</b> ■ 69 J	<b>K2.2</b> ■ 56 J	<b>K2.3</b> ■ 45 I	<b>K3.1</b> ■ 62 J	<b>K3.2</b> ■ 46 J	<b>K3.3</b> ■ 38 I	<b>K4.1</b> ■ 57 I
<b>K4.2</b> ■ 43 I	<b>K4.3</b> ■ 31 I	<b>K4.4</b> ■ 27 I	<b>K4.5</b> ■ 23 I	<b>K5.1</b> ■ 65 I	<b>K5.2</b> ■ 49 I	<b>K5.3</b> ■ 37 I	<b>N1.1</b> ■ 296 J	<b>N1.2</b> ■ 222 J	<b>N1.3</b> ■ 149 J	<b>N2.1</b> ■ 149 J	<b>N2.2</b> ■ 133 J	<b>N2.3</b> ■ 96 J	<b>N3.1</b> ■ 156 J
<b>N3.2</b> ■ 91 J	<b>N3.3</b> ■ 47 J	<b>N4.1</b> ■ 156 J	<b>N4.2</b> ■ 60 J	<b>N4.3</b> ■ 64 J									

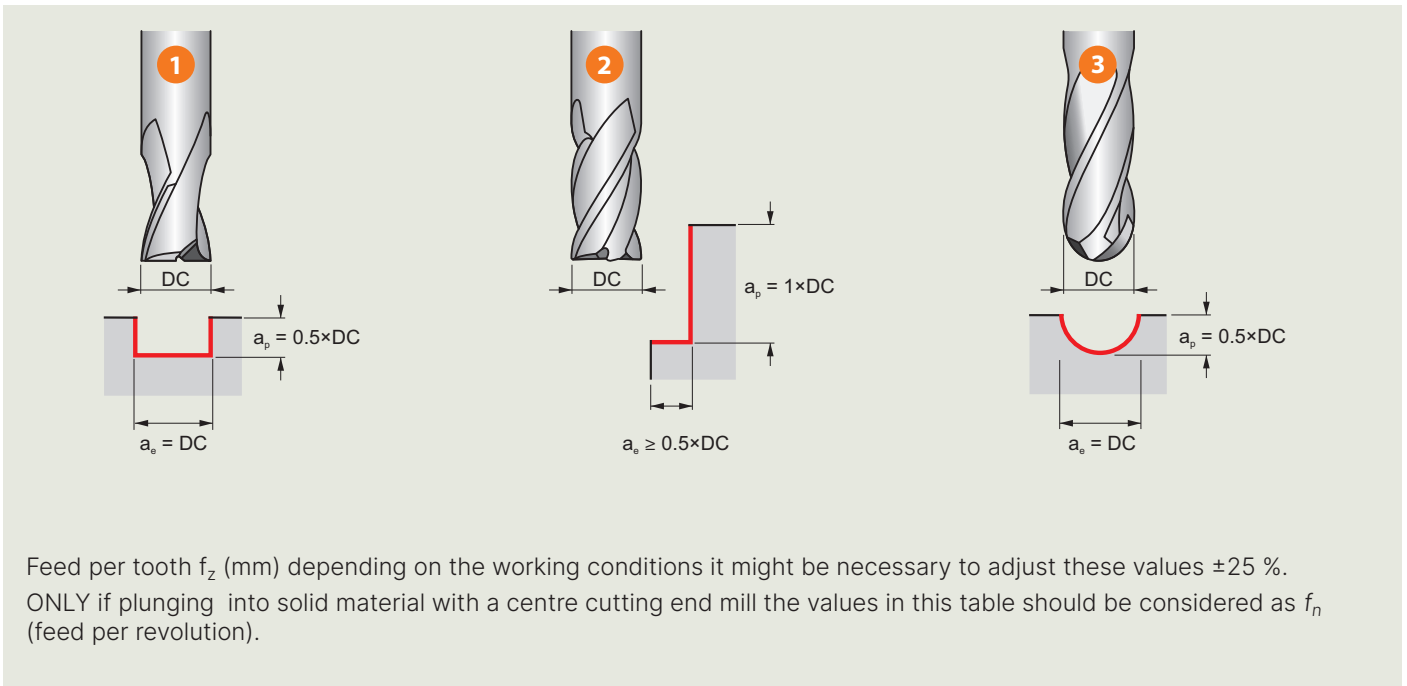
DCON MS tolerance h6.

Product	DC	DC	DC	DCON MS	DCON MS	APMX	APMX	OAL	OAL	NOF
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	
S9866.0	–	6.00	0.2360	6.00	0.236	31.00	1.220	75.0	2.953	6
S9861/4 <sup>1)</sup>	1/4	6.35	0.2500	6.35	0.250	28.57	1.125	76.2	3.000	6
S9865/16 <sup>1)</sup>	5/16	7.94	0.3130	7.94	0.313	28.57	1.125	76.2	3.000	6
S9868.0	–	8.00	0.3150	8.00	0.315	31.00	1.220	75.0	2.953	6
S9863/8 <sup>1)</sup>	3/8	9.53	0.3750	9.53	0.375	28.57	1.125	76.2	3.000	6
S98610.0	–	10.00	0.3940	10.00	0.394	31.00	1.220	100.0	3.937	6
S9867/16 <sup>1)</sup>	7/16	11.11	0.4380	11.11	0.438	50.80	2.000	101.6	4.000	6
S98612.0	–	12.00	0.4720	12.00	0.472	50.00	1.969	100.0	3.937	6
S9861/2 <sup>1)</sup>	1/2	12.70	0.5000	12.70	0.500	50.80	2.000	101.6	4.000	6
S98614.0	–	14.00	0.5510	14.00	0.551	57.00	2.244	125.0	4.921	6
S9869/16 <sup>1)</sup>	9/16	14.29	0.5630	14.29	0.563	50.80	2.000	101.6	4.000	6
S9865/8 <sup>1)</sup>	5/8	15.88	0.6250	15.88	0.625	57.15	2.250	127.0	5.000	6
S98616.0	–	16.00	0.6300	16.00	0.630	57.00	2.244	125.0	4.921	6
S98618.0	–	18.00	0.7090	18.00	0.709	57.00	2.244	125.0	4.921	6
S9863/4 <sup>1)</sup>	3/4	19.05	0.7500	19.05	0.750	57.15	2.250	127.0	5.000	6
S98620.0	–	20.00	0.7870	20.00	0.787	57.00	2.244	125.0	4.921	6
S9867/8 <sup>1)</sup>	7/8	22.23	0.8750	22.23	0.875	57.15	2.250	101.6	4.000	6
S9861 <sup>1)</sup>	1	25.40	1.0000	25.40	1.000	57.15	2.250	127.0	5.000	6

<sup>1)</sup> Cylindrical shank.



## Solid carbide mills – Feed rate chart (Metric)



Feed per tooth  $f_z$  (mm) depending on the working conditions it might be necessary to adjust these values  $\pm 25\%$ .  
 ONLY if plunging into solid material with a centre cutting end mill the values in this table should be considered as  $f_n$  (feed per revolution).

### How to use this table to find the feed per tooth $f_z$ :

1. Find your Alpha Code on the product page (example: 199K, "K" is the Alpha Code).
2. Find the closest diameter for your cutting application in the top row of the table.
3. Find your Alpha Code in the left column of the table.
4. The intersection (cell) of the Diameter and Alpha Code is the feed per tooth  $f_z$ .

**FOR SOLID  
CARBIDE  
MILLING  
CUTTERS ONLY**

		$\varnothing$ DC (mm)																
		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0
Feed rates (mm/tooth)	A	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.014	0.015	0.017	0.019	0.021	0.025	0.028
	B	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.014	0.015	0.017	0.019	0.021	0.025	0.028
	C	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.014	0.015	0.017	0.019	0.021	0.025	0.028
	D	0.002	0.003	0.004	0.005	0.007	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.017	0.019	0.021	0.025	0.028
	E	0.002	0.003	0.004	0.008	0.009	0.012	0.013	0.014	0.015	0.016	0.019	0.021	0.024	0.026	0.028	0.030	0.034
	F	0.002	0.003	0.006	0.010	0.013	0.016	0.017	0.019	0.021	0.022	0.026	0.029	0.032	0.035	0.039	0.042	0.047
	G	0.002	0.005	0.008	0.014	0.018	0.022	0.024	0.026	0.028	0.031	0.035	0.040	0.044	0.048	0.053	0.057	0.064
	I	0.003	0.006	0.011	0.019	0.024	0.030	0.032	0.036	0.039	0.042	0.049	0.054	0.061	0.066	0.073	0.079	0.088
	J	0.004	0.009	0.014	0.026	0.033	0.041	0.044	0.048	0.053	0.057	0.066	0.074	0.083	0.090	0.099	0.107	0.120
	K	0.006	0.012	0.019	0.035	0.044	0.054	0.059	0.064	0.070	0.076	0.088	0.098	0.110	0.120	0.132	0.142	0.160
	N	0.008	0.016	0.025	0.047	0.058	0.072	0.078	0.086	0.094	0.101	0.117	0.131	0.146	0.160	0.175	0.189	0.212
	O	0.010	0.021	0.034	0.062	0.078	0.096	0.104	0.114	0.124	0.135	0.156	0.174	0.195	0.213	0.233	0.252	0.283
	P	0.014	0.028	0.045	0.083	0.104	0.128	0.138	0.152	0.166	0.180	0.207	0.231	0.259	0.283	0.311	0.335	0.376
	R	0.018	0.037	0.060	0.110	0.138	0.170	0.184	0.202	0.221	0.239	0.276	0.308	0.345	0.377	0.414	0.446	0.501
	S	0.024	0.049	0.080	0.147	0.183	0.226	0.245	0.269	0.294	0.318	0.367	0.410	0.459	0.502	0.550	0.593	0.667



ISO group	WMG (Work Material Group)		Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)		
P	P1	P1.1	Sulfurized	< 240 HB	≤ 830	
		P1.2	Free machining steel (carbon steels with increased machinability)	Sulfurized and phosphorized	< 180 HB	≤ 620
		P1.3		Sulfurized/phosphorized and leaded	< 180 HB	≤ 620
	P2	P2.1	Plain carbon steel (steels comprised of mainly iron and carbon)	Containing <0.25 % C	< 180 HB	≤ 620
		P2.2		Containing <0.55 % C	< 240 HB	≤ 830
		P2.3		Containing >0.55 % C	< 300 HB	≤ 1030
	P3	P3.1	Alloy steel (carbon steels with an alloying content ≤ 10%)	Annealed	< 180 HB	≤ 620
		P3.2		Hardened and tempered	180 – 260 HB	> 620 ≤ 900
		P3.3			260 – 360 HB	> 900 ≤ 1240
	P4	P4.1	Tool steel (special alloy steel for tools, dies and molds)	Annealed	< 26 HRC	≤ 900
P4.2		Hardened and tempered		26 – 39 HRC	> 900 ≤ 1240	
P4.3				39 – 45 HRC	> 1240 ≤ 1450	
M	M1	M1.1	Ferritic stainless steel (straight chromium non-hardenable alloys)	< 160 HB	≤ 520	
		M1.2		160 – 220 HB	> 520 ≤ 700	
	M2	M2.1	Martensitic stainless steel (straight chromium hardenable alloys)	Annealed	< 200 HB	≤ 670
		M2.2		Quenched and tempered	200 – 280 HB	> 670 ≤ 950
		M2.3		Precipitation-hardened	280 – 380 HB	> 950 ≤ 1300
	M3	M3.1	Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys)	< 200 HB	≤ 750	
		M3.2		200 – 260 HB	> 750 ≤ 870	
		M3.3		260 – 300 HB	> 870 ≤ 1040	
	M4	M4.1	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel	< 300 HB	≤ 990	
		M4.2	Precipitation hardening austenitic stainless steel	300 – 380 HB	≤ 1320	
K	K1	K1.1	Gray iron or Automotive Gray iron (GG) (iron-carbon castings with a lamellar graphite microstructure)	Ferritic or ferritic-pearlitic	< 180 HB	≤ 190
		K1.2		Ferritic-pearlitic or pearlitic	180 – 240 HB	> 190 ≤ 310
		K1.3		Pearlitic	240 – 280 HB	> 310 ≤ 390
	K2	K2.1	Malleable iron (GTS/GTW) (iron-carbon castings with a graphite-free microstructure)	Ferritic	< 160 HB	≤ 400
		K2.2		Ferritic or pearlitic	160 – 200 HB	> 400 ≤ 550
		K2.3		Pearlitic	200 – 240 HB	> 550 ≤ 660
	K3	K3.1	Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure)	Ferritic	< 180 HB	≤ 560
		K3.2		Ferritic or pearlitic	180 – 220 HB	> 560 ≤ 680
		K3.3		Pearlitic	220 – 260 HB	> 680 ≤ 800
	K4	K4.1	Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure)	< 180 HB	≤ 190	
K4.2		Austenitic ductile iron (ASTM A439 or ASTM A571) (iron-carbon alloy castings with an austenitic nodular graphite microstructure)	< 240 HB	≤ 740		
K4.3		Austempered ductile iron (ASTM A897) (iron-carbon alloy castings with an ausferrite microstructure)	< 280 HB	> 840 ≤ 980		
K4.4			280 – 320 HB	> 980 ≤ 1130		
K4.5			320 – 360 HB	> 1130 ≤ 1280		
K5	K5.1	Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure)	Ferritic	< 180 HB	≤ 400	
	K5.2		Ferritic-pearlitic	180 – 220 HB	> 400 ≤ 450	
	K5.3		Pearlitic	220 – 260 HB	> 450 ≤ 500	
N	N1	N1.1	Commercially pure wrought aluminium	< 60 HB	≤ 240	
		N1.2		Half hard tempered	60 – 100 HB	> 240 ≤ 400
		N1.3		Full hard tempered	100 – 150 HB	> 400 ≤ 590
	N2	N2.1	Cast aluminium alloys	< 75 HB	≤ 240	
		N2.2		75 – 90 HB	> 240 ≤ 270	
		N2.3		90 – 140 HB	> 270 ≤ 440	
	N3	N3.1	Free-cutting copper-alloys materials with excellent machining properties	–	–	
		N3.2	Short-chip copper-alloys with good to moderate machining properties	–	–	
		N3.3	Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties	–	–	
	N4	N4.1	Thermoplastic polymers	–	–	
N4.2		Thermosetting polymers	–	–		
N4.3		Reinforced polymers or composites	–	–		
N5	N5.1	Graphite	–	–		
S	S1	S1.1	Titanium or titanium alloys	< 200 HB	≤ 660	
		S1.2		200 – 280 HB	> 660 ≤ 950	
		S1.3		280 – 360 HB	> 950 ≤ 1200	
	S2	S2.1	Fe-based high-temperature alloys	< 200 HB	≤ 690	
		S2.2		200 – 280 HB	> 690 ≤ 970	
	S3	S3.1	Ni-based high-temperature alloys	< 280 HB	≤ 940	
		S3.2		280 – 360 HB	> 940 ≤ 1200	
	S4	S4.1	Co-based high-temperature alloys	< 240 HB	≤ 800	
S4.2		240 – 320 HB		> 800 ≤ 1070		
H	H1	H1.1	Chilled cast iron	< 440 HB	–	
		H1.2		Hardened cast iron	< 55 HRC	–
	H2	H2.1	Hardened cast iron	> 55 HRC	–	
		H2.2		–	–	
	H3	H3.1	Hardened steel < 55 HRC	< 51 HRC	–	
		H3.2		51 – 55 HRC	–	
H4	H4.1	Hardened steel > 55 HRC	55 – 59 HRC	–		
	H4.2		> 59 HRC	–		

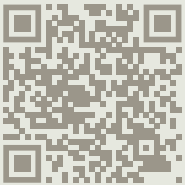


## Certainty at every turn

---

Together we will keep our world turning, now and into the future. We want to help our community feel confident they can get the job done with simplified access to the right advice, tools and training whenever and wherever they need it. Delivering certainty to help our customers achieve their goals today – and be ready for tomorrow.

**Need some help?  
Contact sales support.**



**Certainty  
at every turn™**

**Download our apps**



Library  
app



Calculator  
app