

HIGH PERFORMANCE SOLID CARBIDE ENDMILL

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Kwan Fung Precision Tools



□ About Kwan Fung Precision

Kwan Fung Precision is a Solid Carbide Endmill manufacturer dedicated to the highest quality of products at competitive prices. We are based in Hong Kong and manufacture in China. Our professional staff will personally work with you throughout the order process with our goal being to offer custom design, fast turnaround and total customer satisfaction. The Kwan Fung supply team works with one mission; To produce the best high-performance carbide endmills in the market.



■ Latest Technology

We are constantly upgrading our equipment and software to be sure that we are always using the cutting edge technology.

■ Modern factory

We believe great companies are built by great staff therefore we try to provide a comfortable and supportive environment to our staff.



■ World Class Research and Development team

Our products are designed by our R&D team while working with the best solid carbide tool designers. Our R&D team have a top of the line CNC milling center allowing for in-house testing as well as rapid trouble shooting and solutions.



■ ISO 9001:2008

Kwan Fung Precision is also committed to continuing to meet the requirements of ISO 9001:2008. KFT has been registered to the ISO standards since 1995 and remains so today.

This assures our customers that KFT Quality Management System is in place and striving for the highest quality and reliable products.



Titan Series

End Mill for harden steel 50 to 60 HRC

New flute desgin

Create vacuum effect that provide excellent chip disposability



Double Rake & Core Design

Excellent chip disposability and provides excellent stability



High Helix

Reduce cutting force and increase tool life

Master series

End Mill for difficult-to-cut materials

Unequal index

Prevent vibration and provide chatter free machining achieves superior surface finishes



High rigidity core

Excellent chip disposability and provides excellent stability.



Enables high efficiency slotting up to 1D~1.5D

Aurora Series

High Performace end mill for Aluminium

Unique Composites Neck Design

Improve breakage resist and suppress deflection. Deflection suppression effect is high even under the same load.Enable machining with even higher accuracy

New edge treatment

Reduced cutting resistance and improve chip discharge.



Titan Series

Ball nose for harden steel 50 to 60 HRC

New Gash design

Optimizes chip formation for smooth cutting and increased resistance to chipping, heat and excessive wear.



Low Helix angle design enables high efficiency machine

Strong core design

Provide stable machining and suppress deflection.



Flash Series High Feed Cutter

Unique cutting edge design

Create thin chips and a long cutting edge combine to provide both high performance and long tool life



High efficiency machining of high hardened steels over 60 HRC can achieved.



Design for high efficiency roughing to semi-finishing operations of 3D surfaces.

Tornado Series Acrylic Taper end mill

Unique flute geometry and helix design for excellent chip disposal

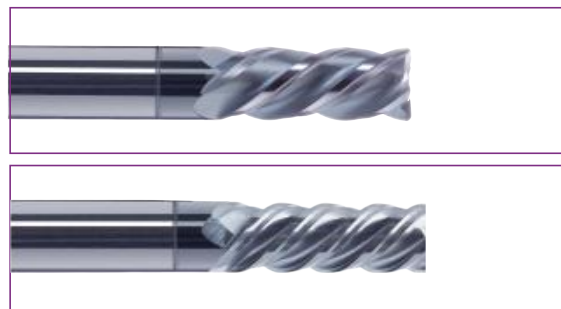
Unique edge treatment is offering excellent surface finish on acrylic, as the result polishing treatment can be removed to save cost.



Achieve unprecedented high precision and high efficiency

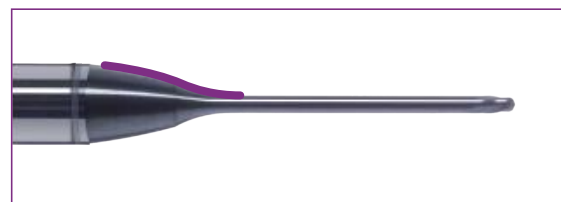
High Performance Endmill

- High Helix — reduce cutting force and increase tool life
- Unequal index — prevent vibration and provide chatter free machining achieves superior surface finishes
- Double Rake & Core Design — excellent chip disposability and provides excellent stability



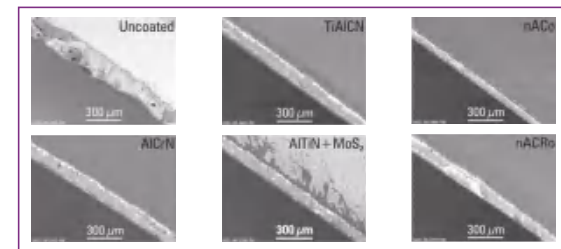
Unique Composites Neck Design

- Improve breakage resist and suppress deflection.
- Deflection suppression effect is high even under the same load.
- Enable machining with even higher accuracy.



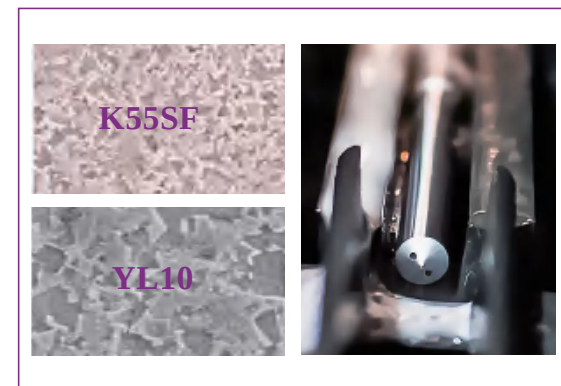
nACo,Nanocomposite coating

- For improved performance over AlTiN in steel and steel alloys under 56HRC, harder stainless such as 17-4ph and 400 series.
- Increases in tool life can be seen in some high nickel alloys and applications where dry milling is needed.



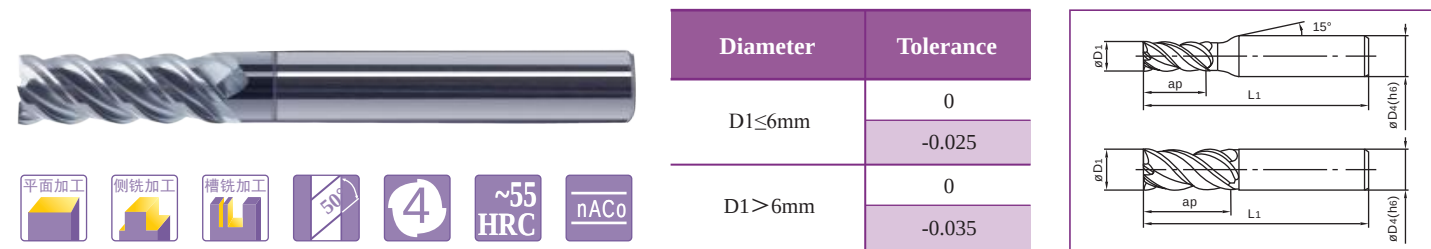
Micron Grain Carbide K55SF

- K55SF grade offers an excellent combination of strength and toughness. In addition, a special additive maximize corrosion resistance without loss of toughness. Grades with binder content in the range of 9 wt % and grain size 0.20 – 0.40 um have the highest hardness and compressive strengths, combined with exceptionally high wear resistance and high reliability against breakage.



Titan Series 4 Flute Square Endmill

· Design to machining the harden steel over 50 HRC to 60 HRC



Order Number	Diamete D1	Length of cut ap	Overall Length L1	Shank Diameter D4	No. of Flute N
H-nA4T010	1	2.5	50	4	4
H-nA4T015	1.5	4	50	4	4
H-nA4T025	2	6	50	4	4
H-nA4T030	3	8	50	4	4
H-nA4T040	4	11	50	4	4
H-nA4T050	5	13	50	6	4
H-nA4T060	6	15	50	6	4
H-nA4T080	8	18	60	8	4
H-nA4T0100	10	22	75	10	4
H-nA4T0120	12	26	80	12	4
H-nA4T0160	16	35	90	16	4

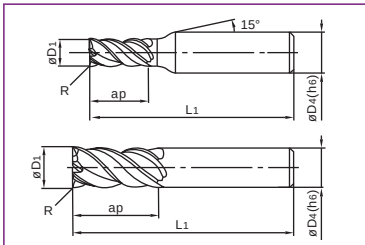
Titan Series

4 Flute Corner Radius Endmill

· Design to machining the harden steel over 50 HRC to 60 HRC



Diameter	Tolerance
D1≤6mm	0 -0.025
D>16mm	0 -0.035
Radius	Tolerance
R	+0.005 -0.005



Order Number	Diamete D1	Length of cut ap	Overall Length L1	Shank Diameter D4	No. of Flute N	Corner R
H-nA4T030R05	3	8	50	4	4	0.5
H-nA4T040R05	4	11	50	4	4	0.5
H-nA4T060R05	6	15	50	6	4	0.5
H-nA4T060R10						1
H-nA4T080R05	8	18	60	8	4	0.5
H-nA4T080R10						1
H-nA4T100R05	10	22	75	10	4	0.5
H-nA4T100R10						1
H-nA4T120R05	12	26	80	12	4	0.5
H-nA4T120R10						1

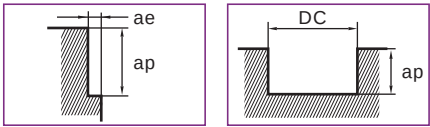
Titan Series

4 Flute Square/Corner Radius Endmill

RECOMMENDED CUTTING CONDITIONS

Shoulder milling

Depth of cut



Work Materials		Steel(35-45HRC)				Hardened Steels(45-55HRC)			
Dia D1(mm)	Mschining Method	RPM (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	RPM (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)
1	High Speed	21337	512	1.5	0.005	19745	394	1.5	0.02
	Performance	14968	359	1.5	0.5	13690	328	1.5	0.5
1.5	High Speed	18046	794	2.3	0.075	16985	679	2.3	0.03
	Performance	13800	441	2.3	0.75	12738	407	2.3	0.75
2	High Speed	15923	1146	3	0.1	14330	917	3	0.04
	Performance	12738	662	3	1	11150	579	3	1
3	High Speed	12000	1320	4.5	0.15	11000	1032	4.5	0.06
	Performance	11677	840	4.5	1.5	10615	764	4.5	1.5
4	High Speed	8800	1320	6	0.2	8000	1080	6	0.08
	Performance	10350	955	6	2	9555	880	6	2
5	High Speed	7000	1440	7.5	0.25	6400	1188	7.5	0.1
	Performance	8280	990	7.5	2.5	7643	917	7.5	2.5
6	High Speed	5800	1560	9	0.3	5300	1248	9	0.12
	Performance	6900	1000	9	3	6370	924	9	3
8	High Speed	4400	1680	12	0.4	4000	1344	12	0.16
	Performance	5175	1025	12	4	4777	945	12	4
10	High Speed	3500	1560	15	0.5	3200	1236	15	0.2
	Performance	4140	980	15	5	3820	910	15	5
12	High Speed	2920	1412	18	0.6	2653	1125	18	0.24
	Performance	3450	940	18	6	3184	868	18	6
16	High Speed	2190	1173	24	0.8	1990	939	24	0.32
	Performance	2590	880	24	8	2388	810	24	8

Slotting

Work Materials		Steel(35-45HRC)			Hardened Steels(45-55HRC)		
Dia D1(mm)		RPM (min-1)	Feed Rate (mm/min)	Ap (mm)	RPM (min-1)	Feed Rate (mm/min)	Ap (mm)
1		16560	370	0.75	15286	293	0.75
1.5		15923	407	1.12	14862	428	1.12
2		14331	504	1.5	13535	433	1.5
3		12738	570	2.2	11677	485	2.2
4		9554	642	3	8758	588	3
5		7643	660	3.7	7006	605	3.7
6		6369	672	4.5	5838	616	4.5
8		4777	687	6	4378	630	6
10		3821	660	7.5	3503	605	7.5
12		3184	631	9	2919	579	9
16		2388	588	12	2189	539	12

1. Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
2. Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
3. Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on diameters greater than 12mm.
4. For Steels 52-55 HRC possible to use coolant.
5. For Steels till 52 HRC air and MQL coolant choose #1 standard coolant recommends.

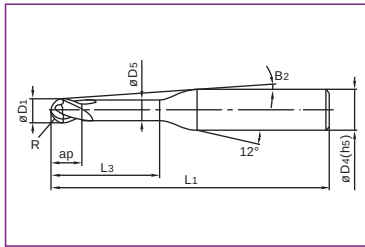
Titan Series

2 Flute Ballnose Endmill with Neck

· Design to machining the harden steel over 50 HRC to 60 HRC



Diameter	Tolerance
D1≤6mm	0
	-0.025
Radius of Ball Nose	Tolerance
R	+0.005
	-0.005



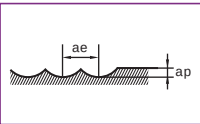
Radius of Ball Nose R	Diameter D1	Length of cut ap	Neck Length L3	Overall Length L1	Shank Diameter D4	No. of Flute N
0.25	0.5	0.35	4	50	4	2
0.25	0.5	0.35	6	50	4	2
0.3	0.6	0.4	4	50	4	2
0.3	0.6	0.4	8	50	4	2
0.5	1	0.8	3	50	4	2
0.5	1	0.8	4	50	4	2
0.5	1	0.8	6	50	4	2
0.5	1	0.8	8	50	4	2
0.5	1	0.8	10	50	4	2
0.5	1	0.8	12	50	4	2
0.5	1	0.8	16	50	4	2
0.5	1	0.8	20	50	4	2
0.75	1.5	1.35	8	50	4	2
0.75	1.5	1.35	12	50	4	2
0.75	1.5	1.5	20	50	4	2
1	2	1.7	6	50	4	2
1	2	1.7	8	50	4	2
1	2	1.7	10	50	4	2
1	2	1.7	12	50	4	2
1	2	1.7	16	50	4	2
1	2	1.7	20	50	4	2
1.5	3	2.5	10	50	4	2
2	4	3	16	50	4	2

Titan Series

2 Flute Ballnose Endmill with Neck

RECOMMENDED CUTTING CONDITIONS

Depth of cut



Work Materials		Steel(35-45HRC)				Hardened Steels(45-55HRC)			
Radius of Ball Nose R	Neck Length	RPM (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	RPM (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)
0.25	4	40000	700	0.016	0.048	29000	450	0.013	0.039
0.25	6	31000	550	0.01	0.031	29000	450	0.018	0.025
0.3	4	33000	690	0.019	0.058	24000	440	0.016	0.047
0.3	8	26000	540	0.012	0.036	24000	440	0.001	0.029
0.5	3	22000	770	0.08	0.24	16000	490	0.065	0.195
0.5	4	22000	770	0.056	0.168	16000	490	0.046	0.137
0.5	6	20000	710	0.032	0.096	14000	430	0.026	0.078
0.5	8	20000	710	0.032	0.096	14000	430	0.026	0.078
0.5	10	16000	560	0.02	0.06	14000	430	0.016	0.049
0.5	12	16000	560	0.02	0.06	14000	430	0.016	0.049
0.5	16	16000	570	0.012	0.036	14000	430	0.01	0.029
0.5	20	16000	570	0.008	0.024	14000	430	0.007	0.02
0.75	8	13000	690	0.048	0.144	9600	440	0.039	0.117
0.75	12	13000	690	0.048	0.144	9600	440	0.039	0.117
0.75	20	10000	530	0.03	0.091	9600	440	0.025	0.074
1	6	11000	750	0.16	0.48	8000	480	0.13	0.39
1	8	11000	750	0.112	0.336	8000	480	0.091	0.273
1	10	11000	750	0.112	0.336	8000	480	0.091	0.273
1	12	10000	690	0.064	0.192	7200	430	0.052	0.156
1	16	10000	690	0.064	0.192	7200	430	0.052	0.156
1	20	7800	540	0.04	0.12	7200	430	0.033	0.098
1.5	10	7400	950	0.168	0.504	5300	590	0.137	0.41
2	16	5600	900	0.224	0.672	4000	560	0.182	0.546

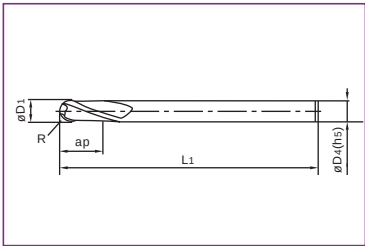
1. If the depth of cut is shallow, the RPM and feed rate can be increased.
2. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the RPM and feed Rate proportionately, or reduce the depth of cut.
3. Air blow or oil mist is strongly recommended for good chip evacuation.
4. For Steels 52-55 HRC possible to use coolant.
5. For Steels till 52 HRC air and MQL coolant choose #1 standard coolant recommends.

Titan Series 2 Flute Ballnose Endmill

· Design to machining the harden steel over 50 HRC to 60 HRC



Diameter	Tolerance
D1≤6mm	0 -0.025
D1>6mm	0 -0.035
Radius of Ball Nose	Tolerance
R	+0.005 -0.005

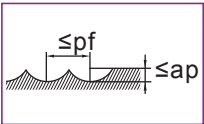


Order Number	Radius of Ball Nose R	Diamete D1	Length of cut ap	Overall Length L1	Shank Diameter D4	No. of Flute N
H-nA2BR015	1.5	3	4	50	3	2
H-nA2BR020	2	4	5	50	4	2
H-nA2BR030	3	6	7	50	6	2
H-nA2BR040	4	8	9	60	8	2
H-nA2BR050	5	10	11	75	10	2

Titan Series 2 Flute Ballnose Endmill

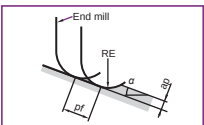
RECOMMENDED CUTTING CONDITIONS

Depth of cut



Work Materials		Steel(35-45HRC)				Hardened Steels(45-55HRC)			
Radius of Ball Nose R	Inclination angle	RPM (min-1)	Feed Rate (mm/min)	Depth of cut Ap(mm)	Pick feed Pf (mm)	RPM (min-1)	Feed Rate (mm/min)	Depth of cut Ap(mm)	Pick feed Pf (mm)
1.5	$\alpha \leq 15^\circ$	40000	7500	0.13	0.3	32000	6000	0.13	0.3
	$\alpha > 15^\circ$	27000	4300	0.13	0.3	22000	3400	0.13	0.3
2	$\alpha \leq 15^\circ$	32000	7500	0.15	0.4	25000	6000	0.15	0.4
	$\alpha > 15^\circ$	20000	3600	0.15	0.4	16000	2700	0.15	0.4
3	$\alpha \leq 15^\circ$	21000	5800	0.25	0.6	17000	4700	0.25	0.6
	$\alpha > 15^\circ$	13000	2600	0.25	0.6	10000	2000	0.25	0.6
4	$\alpha \leq 15^\circ$	16000	4500	0.3	0.8	13000	3600	0.3	0.8
	$\alpha > 15^\circ$	10000	2000	0.3	0.8	8000	1500	0.3	0.8
5	$\alpha \leq 15^\circ$	13000	3600	0.5	1	10000	2900	0.5	1
	$\alpha > 15^\circ$	8000	1700	0.5	1	6400	1200	0.5	1

1. α is the inclination angle of the machined surface
2. If the depth of cut is shallow, the RPM and feed rate can be increased.
3. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the RPM and feed Rate proportionately, or reduce the depth of cut.
4. Air blow or oil mist is strongly recommended for good chip evacuation.
5. For Steels 52-55 HRC possible to use coolant.
6. For Steels till 52 HRC air and MQL coolant choose #1 standard coolant recommends.



Tornado Series Acrylic Taper Endmills

· Design to machining Acrylic and plastic



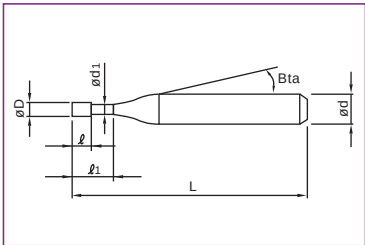
Diamete D1	Length of cut ap	Overall Length L1	Shank Diameter D4	No. of Flute N	Degree of Taper
1	20	60	12	2	30
1	23	75	14	2	30
1.5	23	60	12	2	28
1.5	26	75	14	2	28

Aurora Series Aluminium Endmill

· Design to machining Aluminium



Diameter	Tolerance
D1≤6mm	0
	-0.025
D1>6mm	0
	-0.035



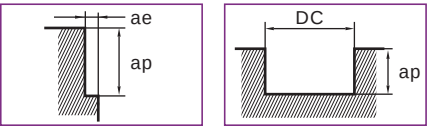
Diameter D	Length of cut L	Neck Length L1	Overall Length L	Shank Diameter d	No. of Flute N
1	2	3	50	4	2
1	2	5	50	4	2
1.5	3	4.5	50	4	2
2	4	6	50	4	3
2	4	10	50	4	3
2.5	5	7.5	50	4	3
3	6	9	50	4	3
3	6	15	50	4	3
3.5	7	10.5	50	4	3
4	8	12	50	4	3
4	8	20	60	4	3
4.5	9	13.5	50	6	3
5	10	15	50	6	3
5	10	25	60	6	3
6	12	18	60	6	3
6	12	30	80	6	3
8	16	24	80	8	3
8	16	40	80	8	3
10	20	30	90	10	3
10	20	50	90	10	3
12	24	36	80	12	3
12	24	60	110	12	3

Aurora Series Aluminium Endmill

RECOMMENDED CUTTING CONDITIONS

High Efficient Milling

Depth of cut



Work Materials		Aluminium(A5052)				Aluminium(A7075)			
Diameter D	Neck Length	RPM (min-1)	Feed Rate			RPM (min-1)	Feed Rate		
			Vertical (mm/min)	Slotting (mm/min)	Side milling (mm/min)		Vertical (mm/min)	Slotting (mm/min)	Side milling (mm/min)
1	3	30000	150	900	1100	30000	150	540	860
1	5	22500	100	600	800	22500	100	400	600
1.5	4.5	30000	180	1350	1630	30000	180	820	1200
2	6	30000	225	1800	2150	30000	225	1100	1600
2	10	22500	150	1300	1500	22500	150	800	1100
2.5	7.5	25000	225	1900	2300	23400	220	1070	1550
3	9	21600	225	2000	2400	20200	225	1100	1600
3	15	16200	150	1400	1700	15200	150	800	1100
3.5	10.5	18500	270	2000	2400	17300	270	1100	1600
4	12	16200	300	2000	2400	15200	300	1100	1600
4	20	12200	200	1400	1700	11400	200	800	1100
4.5	13.5	14400	300	2000	2400	13500	300	1100	1600
5	15	12960	300	2000	2400	12200	300	1100	1600
5	25	9700	200	1400	1700	9200	200	800	1100
6	18	10800	300	2000	2400	10100	300	1100	1600
6	30	8100	200	1400	1700	7600	200	800	1100
8	24	11400	300	2200	2600	12000	250	1800	2400
8	40	8600	200	1500	1800	9000	160	1300	1700
10	30	9100	250	2200	2600	9600	250	1800	2400
10	50	6800	160	1500	1800	7200	160	1300	1700
12	36	7600	200	2200	2600	8000	250	1800	2400
12	60	5700	130	1500	1800	6000	160	1300	1700
			Ap=0.75D	Ap=0.75D	Ap=0.75D Ae=0.3D		Ap=0.75D	Ap=0.75D	Ap=0.75D Ae=0.3D

Low Efficient Milling

Work Materials		Aluminium(A5052)				Aluminium(A7075)			
Diameter D	Neck Length	RPM (min-1)	Feed Rate			RPM (min-1)	Feed Rate		
			Vertical (mm/min)	Slotting (mm/min)	Side milling (mm/min)		Vertical (mm/min)	Slotting (mm/min)	Side milling (mm/min)
1	3	10000	50	400	900	10000	50	400	750
1.5	4.5	10000	80	600	1250	10000	80	600	1130
2	6	10000	100	800	1600	10000	100	800	1500
2.5	7.5	10000	130	1000	2050	10000	130	1000	1880
3	9	10000	150	1200	2500	10000	150	1200	2250
3.5	10.5	10000	180	1400	2600	10000	180	1400	2380
4	12	10000	200	1600	2700	10000	200	1600	2500
4.5	13.5	10000	230	1800	3050	10000	230	1800	2750
5	15	10000	250	2000	3400	9600	250	2000	3000
6	18	10000	300	2400	4000	8000	250	2000	3000
8	24	8100	300	3000	4800	10000	200	2400	4100
10	30	6480	250	3000	4800	8100	200	2400	4200
12	36	5400	200	3000	4800	6800	200	2400	4200
			Ap=0.3D	Ap=0.3D	Ap=1D		Ap=0.3D	Ap=0.3D	Ap=1D

1. Recommend using a non-contact measuring device to avoid damaging the sharp bottom corner
2. Decrease both spindle speed and feed rate proportionally in case of chatting
3. Reduce the milling amount and feed rate in accordance with required milling precision
4. For Aluminium first choice is coolant.
5. For Al EM without coating coolant required.

Master Series

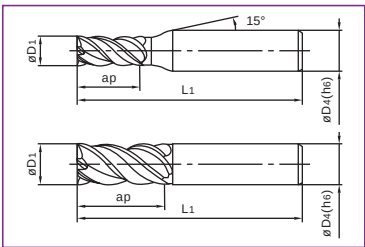
4 Flute Square Endmill

· Design to machining difficult-to-cut materials





Diameter	Tolerance
D1≤6mm	0
	-0.025
D1>6mm	0
	-0.035



Order Number	Diameter D1	Length of cut ap	Overall Length L1	Shank Diameter D4	No. of Flute N
S-nA4T005	0.5	1	50	4	2
S-nA4T006	0.6	1.5	50	4	2
S-nA4T008	0.8	2	50	4	2
S-nA4T010	1	2.5	50	4	4
S-nA4T015	1.5	4	50	4	4
S-nA4T025	2	6	50	4	4
S-nA4T030	3	8	50	4	4
S-nA4T040	4	11	50	4	4
S-nA4T050	5	13	50	6	4
S-nA4T060	6	15	50	6	4
S-nA4T080	8	18	60	8	4
S-nA4T0100	10	22	75	10	4
S-nA4T0120	12	26	80	12	4
S-nA4T0160	16	35	90	16	4

Master Series

4 Flute Corner Radius Endmill

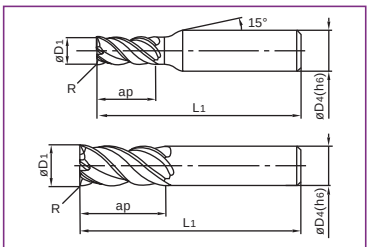
· Design to machining difficult-to-cut materials





Diameter	Tolerance
D1≤6mm	0 -0.025
D1>6mm	0 -0.035

Corner	Tolerance
R	+0.005 -0.005



Order Number	Diameter D1	Length of cut ap	Overall Length L1	Overall Length L1	No. of Flute N	Corner R
S-nA4T030R05	3	8	50	4	4	0.5
S-nA4T040R05	4	11	50	4	4	0.5
S-nA4T060R05	6	15	50	6	4	0.5
S-nA4T060R10						1
S-nA4T080R05	8	18	60	8	4	0.5
S-nA4T080R10						1
S-nA4T100R05	10	22	75	10	4	0.5
S-nA4T100R10						1
S-nA4T120R05	12	26	75	12	4	0.5
S-nA4T120R10						1

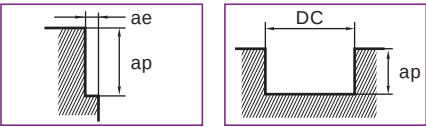
Master Series

4 Flute Square/Corner Radius Endmill

RECOMMENDED CUTTING CONDITIONS

■ Shoulder mill

Depth of cut



Work Materials	Alloy Steels(25-35HRC)				Pre-Hardened Steels(35-45HRC)				Hardened Steels(45-55HRC)			
Dia (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)
1	16880	540	1.5	0.5	14968	359	1.5	0.5	13690	328	1.5	0.5
1.5	14862	594	2.3	0.8	13800	441	2.3	0.75	12738	407	2.3	0.75
2	13535	812	3	1	12738	662	3	1	11150	579	3	1
3	12738	1019	4.5	1.5	11677	840	4.5	1.5	10615	764	4.5	1.5
4	11940	1200	6	2	10350	955	6	2	9555	880	6	2
6	7960	1260	9	3	6900	1000	9	3	6370	924	9	3
8	5970	1313	12	4	5175	1025	12	4	4777	945	12	4
10	4777	1280	15	5	4140	980	15	5	3820	910	15	5
12	3980	1226	18	6	3450	940	18	6	3184	868	18	6
16	2985	1140	24	8	2590	880	24	8	2388	810	24	8

Work Materials	Austenitic Steel				High Austenitic Steel and Cast steel				Titanium Alloys			
Dia (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Ae (mm)
1	7090	98	1.5	0.5	6287	65	1.5	0.5	5750	59	1.5	0.5
1.5	6242	107	2.25	0.75	5796	79	2.25	0.75	5350	73	2.25	0.75
2	5685	146	3	1	5350	119	3	1	4680	104	3	1
3	5350	183	4.5	1.5	4904	151	4.5	1.5	4458	138	4.5	1.5
4	5127	226	6	2	4761	256	6	2	4027	150	6	2
6	3417	230	9	3	3174	267	9	3	2685	162	9	3
8	2563	238	12	4	2380	271	12	4	2013	173	12	4
10	2050	229	15	5	1904	256	15	5	1610	168	15	5
12	1708	222	18	6	1587	251	18	6	1342	162	18	6
16	1281	209	24	8	1189	228	24	8	1006	150	24	8

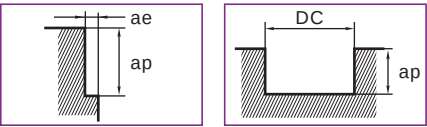
Master Series

4 Flute Square/Corner Radius Endmill

RECOMMENDED CUTTING CONDITIONS

■ Slotting

Depth of cut



Work Materials	Alloy Steels(<35HRC)			Pre-Hardened Steels(35-48HRC)			Hardened Steels(48-55HRC)		
Dia (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)
1	17515	392	1	16560	370	0.75	15286	293	0.75
1.5	16560	476	1.5	15923	407	1.12	14862	428	1.12
2	15127	532	2	14331	504	1.5	13535	433	1.5
3	13800	662	3	12738	570	2.2	11677	485	2.2
4	11150	820	4	9554	642	3	8758	588	3
6	7430	856	6	6369	672	4.5	5838	616	4.5
8	5573	892	8	4777	687	6	4378	630	6
10	4458	870	10	3821	660	7.5	3503	605	7.5
12	3715	832	12	3184	631	9	2919	579	9
16	2786	775	16	2388	588	12	2189	539	12

Work Materials	Austenitic Steel			High Austenitic Steel and Cast steel			Titanium Alloys		
Dia (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)	Revolution (min-1)	Feed Rate (mm/min)	Ap (mm)
1	8757	157	1	8280	148	1	7643	117	1
1.5	8280	190	1.5	7961	163	1.5	7431	171	1.5
2	7563	213	2	7165	202	2	6767	173	2
3	6900	265	3	6369	228	3	5838	194	3
4	5573	338	4	5175	264	4	4378	224	4
6	3715	344	6	3450	276	6	2919	242	6
8	2786	356	8	2587	280	8	2189	259	8
10	2229	342	10	2070	264	10	1751	252	10
12	1857	332	12	1725	259	12	1459	242	12
16	1393	312	16	1293	236	16	1094	224	16

1. Recommended cutting conditions are based on ideal conditions. For smaller taper machining centers, Please adjust parameters accordingly
2. When contour milling, cutting conditions can very greatly due to the geometry of workpiece or the cutting method. Please reduce the feed rate especially at corners.
3. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated,please reduce the RPM and feed Rate proportionately, or reduce the depth of cut.
4. For stainless steel, Titanium and High temperaturealloys must to use coolant.
5. For Steels till 52 HRC air and MQL coolant choose #1 standard coolant recommends.