



For more information on end mills, see page 2277.

See page 2292 for more information on corner-radius end mills.



WXL Finish
2 Flutes
35AW82



**Miniature High-Performance
Roughing/Finishing Carbide
Corner-Radius End Mills**

Milling Dia.	Length of Cut	Overall Length	Neck Length	Corner Radius	Brand	Item No.
Bright (Uncoated) Finish						
2 Flutes						
0.50 mm	0.30 mm	45.00 mm	1.50mm	0.05mm	OSG	35CD18
0.50 mm	0.30 mm	45.00 mm	2.50mm	0.10mm	OSG	35CD30
1/64 in	1/64 in	1 1/2 in	3/32 in	0.002 in	Micro 100	54ET83
1/32 in	1/32 in	1 1/2 in	5/64 in	0.01 in	Micro 100	54EU06
1/16 in	1/16 in	1 1/2 in	5/64 in	0.01 in	Micro 100	54EU22
1/32 in	1/32 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EU38
1/32 in	1/64 in	1 1/2 in	3/64 in	0.005 in	Micro 100	54EU48
1/32 in	1/64 in	1 1/2 in	7/64 in	0.01 in	Micro 100	54EU54
1/32 in	1/16 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EU70
1/64 in	1/16 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EV03
1/64 in	1/64 in	1 1/2 in	1/4 in	0.005 in	Micro 100	54EV09
1/64 in	1/64 in	2 in	2/32 in	0.005 in	Micro 100	54EV29
1/16 in	1/64 in	1 1/2 in	9/32 in	0.005 in	Micro 100	54EV69
1/16 in	1/64 in	2 in	2/32 in	0.005 in	Micro 100	54EV89
1/64 in	1/8 in	1 1/2 in	3/8 in	0.005 in	Micro 100	54EW32
1/64 in	1/8 in	2 in	3/4 in	0.005 in	Micro 100	54EW54
1/32 in	1/8 in	1 1/2 in	1/4 in	0.01 in	Micro 100	54EW64
1/32 in	1/8 in	2 in	3/8 in	0.005 in	Micro 100	54EW80
1/8 in	1/8 in	2 in	1/4 in	0.01 in	Micro 100	54EX09
1.00 mm	0.60 mm	45.00 mm	5.00mm	0.30mm	OSG	35CD33
1.50 mm	0.90 mm	50.00 mm	7.50mm	0.30mm	OSG	35CD36
2.00 mm	1.20 mm	50.00 mm	10.00mm	0.20mm	OSG	35CD38
3.00 mm	1.80 mm	50.00 mm	6.00mm	0.30mm	OSG	35CD27
EXO Finish						
3 Flutes						
2.00 mm	4.00 mm	60.00 mm	6.00mm	0.50mm	OSG	34ZW84
3.00 mm	6.00 mm	70.00 mm	9.00mm	0.80mm	OSG	34ZW85
nAcRo Finish						
2 Flutes						
1/64 in	1/64 in	1 1/2 in	3/32 in	0.002 in	Micro 100	54ET84
1/64 in	1/32 in	1 1/2 in	3/16 in	0.003 in	Micro 100	54ET90
1/64 in	1/32 in	1 1/2 in	1/8 in	0.01 in	Micro 100	54EU03
1/32 in	1/64 in	1 1/2 in	5/64 in	0.01 in	Micro 100	54EU23
1/32 in	1/64 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EU39
1/32 in	1/64 in	1 1/2 in	3/64 in	0.01 in	Micro 100	54EU51
1/32 in	1/16 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EU71
1/64 in	1/16 in	1 1/2 in	1/32 in	0.01 in	Micro 100	54EV04
1/64 in	1/64 in	1 1/2 in	1/4 in	0.01 in	Micro 100	54EV26
1/64 in	1/64 in	2 in	2/32 in	0.01 in	Micro 100	54EV34
1/16 in	1/64 in	1 1/2 in	9/32 in	0.005 in	Micro 100	54EV66
1/32 in	1/8 in	2 in	5/8 in	0.005 in	Micro 100	54EW81
1/8 in	1/8 in	2 in	7/8 in	0.005 in	Micro 100	54EW87
TIAlN Finish						
4 Flutes						
3.00 mm	4.50 mm	60.00 mm	14.00mm	0.20mm	OSG	35CM97
WXL Finish						
2 Flutes						
0.60 mm	0.90 mm	50.00 mm	2.00mm	0.10mm	OSG	35AW82
0.80 mm	1.20 mm	50.00 mm	2.60mm	0.10mm	OSG	35AW83
1.40 mm	2.10 mm	50.00 mm	3.70mm	0.10mm	OSG	35AW86
1.50 mm	2.30 mm	50.00 mm	4.00mm	0.10mm	OSG	35AW87
2.00 mm	3.00 mm	50.00 mm	5.20mm	0.10mm	OSG	35AW90
2.50 mm	3.70 mm	50.00 mm	5.20mm	0.10mm	OSG	35AW91
WXS Finish						
2 Flutes						
0.50 mm	0.40 mm	50.00 mm	5.00mm	0.05mm	OSG	35AY89
0.60 mm	0.48 mm	50.00 mm	4.00mm	0.10mm	OSG	35AY97
0.80 mm	0.65 mm	50.00 mm	4.00mm	0.20mm	OSG	35AY99
1.00 mm	0.80 mm	50.00 mm	8.00mm	0.30mm	OSG	35AZ22
1.20 mm	1.00 mm	50.00 mm	10.00mm	0.20mm	OSG	35AZ27
1.50 mm	1.20 mm	50.00 mm	8.00mm	0.30mm	OSG	35AZ33
2.00 mm	1.60 mm	50.00 mm	10.00mm	0.30mm	OSG	35AZ48
2.00 mm	1.60 mm	70.00 mm	25.00mm	0.50mm	OSG	35AZ58
2.50 mm	2.20 mm	50.00 mm	10.00mm	0.20mm	OSG	35AZ59
3.00 mm	2.50 mm	60.00 mm	12.00mm	0.20mm	OSG	35AZ66
3.00 mm	2.50 mm	60.00 mm	16.00mm	0.20mm	OSG	35AZ67
3 Flutes						
2.00 mm	0.80 mm	60.00 mm	5.00mm	0.50mm	OSG	35AY77
3.00 mm	4.50 mm	80.00 mm	20.00mm	0.80mm	OSG	34ZW24
4 Flutes						
0.80 mm	50.00 mm	50.00 mm	4.00mm	0.10mm	OSG	34ZV53
1.00 mm	50.00 mm	50.00 mm	10.00mm	0.10mm	OSG	34ZV59
1.50 mm	50.00 mm	50.00 mm	6.00mm	0.20mm	OSG	34ZV72
2.00 mm	50.00 mm	50.00 mm	8.00mm	0.30mm	OSG	34ZV78
3.00 mm	5.00 mm	60.00 mm	9.00mm	0.50mm	OSG	35AY46



TIAlN
4 Flutes
48JC99

WIDIA HANITA

**High-Performance Roughing/
Finishing Carbide Corner-
Chamfer End Mills**

High-performance roughing/finishing carbide corner-chamfer end mills are used in production milling. They each have a square nose with slightly angled corners that help distribute cutting forces evenly to prevent damage to the end mill and extend its life. They create a flat-bottomed groove with slightly chamfered inside corners in milling applications that do not require a specific radius size. Roughing/finishing end mills remove large amounts of material and create a smooth finish on the workpiece at the same time.

Milling Dia.	Length of Cut	Overall Length	Shank Dia.	Chamfer Width	Brand	Item No.
TIAlN						
4 Flutes						
1/8 in	1/2 in	1 1/2 in	1/8 in	0.0100 in	Micro 100	30M178
	3/8 in	1 1/2 in	1/8 in	0.0100 in	Micro 100	30M179
	5/8 in	2 1/4 in	3/16 in	0.0100 in	Micro 100	30M181
3/16 in	5/8 in	2 in	3/16 in	0.0100 in	Micro 100	30M180
	3/4 in	2 1/2 in	1/4 in	0.0160 in	Micro 100	30M183
1/4 in	3/8 in	2 in	1/4 in	0.0160 in	Micro 100	30M182
	1/2 in	2 in	3/8 in	0.0200 in	Micro 100	30M186
3/8 in	7/8 in	2 1/2 in	3/8 in	0.0200 in	Micro 100	30M187
	1 1/2 in	4 in	1/2 in	0.0200 in	Micro 100	30M193
1/2 in	1 in	3 in	1/2 in	0.0200 in	Micro 100	30M191
	3/4 in	2 1/2 in	1/2 in	0.0200 in	Micro 100	30M190
5/8 in	1 1/4 in	3 1/2 in	5/8 in	0.0200 in	Micro 100	30M195
	3/4 in	3 in	5/8 in	0.0200 in	Micro 100	30M194
	1 1/2 in	4 in	3/4 in	0.0200 in	Micro 100	30M198
3/4 in	1 1/8 in	4 in	3/4 in	0.0200 in	Micro 100	30M199
	3 in	6 in	3/4 in	0.0200 in	Micro 100	48JC99
	7/8 in	3 1/2 in	3/4 in	0.0200 in	Micro 100	30M197
1 in	1 1/2 in	4 in	1 in	0.0200 in	Micro 100	30M175
	2 in	5 in	1 in	0.0200 in	Micro 100	30M176



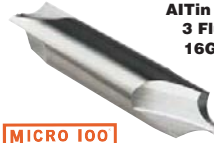
TIAlN
4 Flutes
45RM91

WIDIA HANITA

**General Purpose
Finishing Carbide Corner-
Chamfer End Mills**

General purpose finishing carbide corner-chamfer end mills are intended for milling a wide variety of common materials. They each have a square nose with slightly angled corners that help distribute cutting forces evenly to prevent damage to the end mill and extend its life. They create a flat-bottomed groove with slightly chamfered inside corners in milling applications that do not require a specific radius size. Finishing end mills create a finer finish on the workpiece than roughing and roughing/finishing end mills.

Milling Dia.	Length of Cut	Overall Length	Shank Dia.	Chamfer Width	Brand	Item No.
TIAlN						
3 Flutes						
1/8 in	1/4 in	2 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ40
	3/8 in	1 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ38
	5/8 in	1 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ36
4 Flutes						
1/8 in	1/4 in	2 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ89
	3/8 in	1 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ85
	5/8 in	1 1/2 in	1/8 in	0.0030 in	Micro 100	55HJ83
1/2 in	1/2 in	2 in	3/8 in	0.0200 in	Widia Hanita	45RM91
3/4 in	1 1/2 in	4 in	1/2 in	0.0200 in	Widia Hanita	45RM92
	1 in	3 in	1/2 in	0.0200 in	Widia Hanita	45RM86
7 Flutes						
10.00 mm	50.00 mm	100.00 mm	10.00 mm	0.50 mm	Widia Hanita	48KA58
	26.00 mm	83.00 mm	12.00 mm	0.50 mm	Widia Hanita	48KA74
12.00 mm	60.00 mm	125.00 mm	12.00 mm	0.50 mm	Widia Hanita	48KA60
	32.00 mm	100.00 mm	16.00 mm	0.50 mm	Widia Hanita	48KA76
16.00 mm	80.00 mm	141.00 mm	16.00 mm	0.50 mm	Widia Hanita	48KA64
	60.00 mm	125.00 mm	20.00 mm	0.50 mm	Widia Hanita	48KA56
20.00 mm	100.00 mm	166.00 mm	20.00 mm	0.50 mm	Widia Hanita	48KA68



AITin Finish
3 Flutes
16G087



**Double-End
Straight-Shank
Corner-Rounding
End Mills**

Double-end corner-rounding end mills have a straight shank with concave cutting edges on both ends. They create rounded outside edges on a workpiece in milling tasks and can accomplish more milling tasks than single-end end mills before they need to be replaced.

Milling Dia.	Corner Radius	Overall Length	Shank Dia.	Item No.
AITin Finish				
3 flutes				
3/64 in	0.0100 in	2 in	3/64 in	16G027
1/64 in	1/64 in	2 1/2 in	1/64 in	16G071
1/64 in	1/16 in	2 in	3/16 in	16G053
1/64 in	1/16 in	2 1/2 in	1/4 in	16G055
1/64 in	1/16 in	2 1/2 in	1/4 in	16G057
1/64 in	1/32 in	2 in	3/16 in	16G037
1/64 in	1/32 in	2 in	3/16 in	16G041
1/64 in	1/32 in	2 in	3/16 in	16G039
1/64 in	1/32 in	2 in	3/16 in	16G043
1/64 in	1/64 in	2 in	3/8 in	16G031
1/64 in	1/64 in	2 in	3/8 in	16G035
1/64 in	1/64 in	2 in	3/8 in	16G033
1/64 in	1/32 in	2 1/2 in	1/4 in	16G065
1/64 in	1/32 in	2 1/2 in	3/8 in	16G067
1/64 in	1/64 in	2 in	3/16 in	16G051
1/64 in	1/64 in	2 in	3/16 in	16G045
1/64 in	1/64 in	2 in	3/16 in	16G047
1/64 in	1/64 in	2 in	3/16 in	16G049
1/64 in	1/32 in	2 1/2 in	3/8 in	16G075
1/64 in	1/64 in	2 1/2 in	1/4 in	16G059
1/64 in	1/64 in	2 1/2 in	1/4 in	16G061
1/64 in	1/64 in	2 1/2 in	1/4 in	16G063
1/64 in	1/64 in	2 1/2 in	3/16 in	16G069
1/64 in	1/64 in	2 1/2 in	3/16 in	16G073
1/64 in	1/64 in	3 1/2 in	3/16 in	16G081
1/64 in	1/64 in	3 1/2 in	3/16 in	16G083
1/64 in	1/64 in	3 1/2 in	3/16 in	16G085
1/64 in	1/4 in	3 1/2 in	3/8 in	16G087
1/64 in	3/8 in	4 in	1 in	16G023
1/64 in	3/16 in	3 in	1/2 in	16G079
1/64 in	3/16 in	4 in	3/4 in	