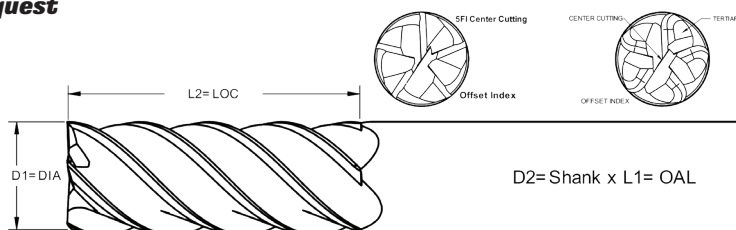


EF-5 TORNADO

45000 Series

- 5 Flute, 45° Helix with Variable Index
- High Performance when Peripheral and Finish Milling
- High Helix for Vertical Shear Action and Chip Evacuation
- Ground with Flat Clearance for Extreme Cutting Edge Strength and Improved Surface Finishes
- Heavy Core for Increased Stability and Minimum Tool Deflection
- Reduced Neck & Weldon Flats Available Upon Request



EF-5 Square & Radius End

5FL - Square End & Corner Radius - Stub, Standard, Long Length Sizes

DIA	SHK	LOC	OAL	SQUARE	.015"	.030"	.060"	.090"
1/8"	1/8"	1/4"	1-1/2"	45001	CR45001.015	CR45001.030	-	-
1/8"	1/8"	1/2"	1-1/2"	45002	CR45002.015	CR45002.030	-	-
5/32"	3/16"	5/16"	2"	45003	-	-	-	-
5/32"	3/16"	9/16"	2"	45004	-	-	-	-
3/16"	3/16"	5/16"	2"	45005	CR45005.015	CR45005.030	-	-
3/16"	3/16"	9/16"	2"	45006	CR45006.015	CR45006.030	-	-
7/32"	1/4"	3/8"	2"	45007	-	-	-	-
7/32"	1/4"	3/4"	2-1/2"	45008	-	-	-	-
1/4"	1/4"	3/8"	2"	45009	CR45009.015	CR45009.030	-	-
1/4"	1/4"	3/4"	2-1/2"	45010	CR45010.015	CR45010.030	-	-
1/4"	1/4"	1-1/4"	4"	45011	CR45011.015	CR45011.030	-	-
9/32"	5/16"	7/16"	2"	45012	-	-	-	-
9/32"	5/16"	13/16"	2-1/2"	45013	-	-	-	-
5/16"	5/16"	7/16"	2"	45014	CR45014.015	CR45014.030	CR45014.060	-
5/16"	5/16"	13/16"	2-1/2"	45015	CR45015.015	CR45015.030	CR45015.060	-
5/16"	5/16"	1-1/4"	4"	45016	CR45016.015	CR45016.030	CR45016.060	-
5/16"	5/16"	2-1/8"	4"	45017	CR45017.015	CR45017.030	-	-
11/32"	3/8"	1/2"	2"	45018	-	-	-	-
11/32"	3/8"	1"	2-1/2"	45019	-	-	-	-
3/8"	3/8"	1/2"	2"	45020	CR45020.015	CR45020.030	CR45020.060	CR45020.090
3/8"	3/8"	1"	2-1/2"	45021	CR45021.015	CR45021.030	CR45021.060	CR45021.090
3/8"	3/8"	1-1/2"	4"	45022	CR45022.015	CR45022.030	CR45022.060	-
3/8"	3/8"	2-1/2"	6"	45023	CR45023.015	CR45023.030	CR45023.060	-
13/32"	7/16"	9/16"	2-1/2"	45024	-	-	-	-
13/32"	7/16"	1"	3"	45025	-	-	-	-
7/16"	7/16"	9/16"	2-1/2"	45026	-	-	-	-
7/16"	7/16"	1"	3"	45027	CR45027.015	CR45027.030	CR45027.060	-
7/16"	7/16"	2"	4"	45028	-	-	-	-
15/32"	1/2"	5/8"	2-1/2"	45029	-	-	-	-
15/32"	1/2"	1-1/4"	3"	45030	-	-	-	-
1/2"	1/2"	5/8"	2-1/2"	45031	CR45031.015	CR45031.030	CR45031.060	CR45031.090
1/2"	1/2"	1-1/4"	3"	45032	CR45032.015	CR45032.030	CR45032.060	CR45032.090
1/2"	1/2"	2"	4"	45033	CR45033.015	CR45033.030	CR45033.060	CR45033.090
1/2"	1/2"	3-1/8"	6"	45034	CR45034.015	CR45034.030	CR45034.060	CR45034.090
9/16"	9/16"	1-1/2"	3-1/2"	45035	-	-	-	-
5/8"	5/8"	3/4"	3"	45036	CR45036.015	CR45036.030	CR45036.060	CR45036.090
5/8"	5/8"	1-5/8"	3-1/2"	45037	CR45037.015	CR45037.030	CR45037.060	CR45037.090
5/8"	5/8"	2-1/2"	5"	45038	CR45038.015	CR45038.030	CR45038.060	CR45038.090
5/8"	5/8"	4"	6"	45039	CR45039.015	CR45039.030	CR45039.060	CR45039.090
3/4"	3/4"	1"	3"	45040	CR45040.015	CR45040.030	CR45040.060	CR45040.090
3/4"	3/4"	1-5/8"	4"	45041	CR45041.015	CR45041.030	CR45041.060	CR45041.090
3/4"	3/4"	2-1/4"	5"	45042	CR45042.015	CR45042.030	CR45042.060	CR45042.090
3/4"	3/4"	3-1/4"	6"	45043	CR45043.015	CR45043.030	CR45043.060	CR45043.090
3/4"	3/4"	4"	6"	45044	CR45044.015	CR45044.030	CR45044.060	CR45044.090
1"	1"	1-1/4"	3"	45045	CR45045.015	CR45045.030	CR45045.060	CR45045.090
1"	1"	2"	4"	45046	CR45046.015	CR45046.030	CR45046.060	CR45046.090
1"	1"	2-5/8"	6"	45047	CR45047.015	CR45047.030	CR45047.060	CR45047.090
1"	1"	3-1/4"	6"	45048	CR45048.015	CR45048.030	CR45048.060	CR45048.090
1"	1"	4-1/8"	7"	45049	CR45049.015	CR45049.030	CR45049.060	CR45049.090

Special Sizes, Lengths and Radii Available Upon Quote Request

ALTiN Coated tools:
Add "ALTiN"
After Each Part #

AICrN & Other Coatings Available Upon Request

Cutting Diameter Tolerances +.000"/-.002" Shank Diameter Tolerances +.000"/-.0005"

