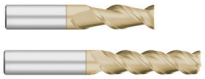
2 & 3-Flute High Performance Regular and Long Length Endmills, Square & Corner Radius, 45 Degree Helix, for Aluminum and Non-Ferrous Materials



- RedLine 2 & 3-Fute, 45 Degree Helix Endmills are designed for high speed machining in Aluminum, Brass and Bronze, and can be used for plunging, slotting and profiling in all non-ferrous materials.
- Aluminum, Brass, Bronze and other non-ferrous materials. These tools can be used for plunging, slotting and profiling.
- The ZrN coated tools allow for higher speeds, better tool life with a low affinity for Aluminum.
- These High Performance tools can be found on pages 14 & 17.

ZrN Coated for Aluminum & Non-Ferrous Tools Speeds & Feeds

Material	Grades	SFM Uncoated	SFM ZrN Coated	Feed by Endmill Diameter (IPT) 1/8 (.1250)	1/4 (.2500)	3/8 (.3750)	1/2 (.5000)	5/8 (.6250)	3/4 (.7500)	1 (1.000)
N - Non-Ferrous										
Aluminum Alloys	2014, 2024, 6061, 7075	500+	650+	.0010-.0020	.0012-.0018	.0015-.0020	.0020-.0040	.0050-.0080	.009-.0110	.0110-.0150
Aluminm High Silicon	A380, A390	500+	600+	.0010-.0013	.0010-.0015	.0015-.0020	.0020-.0040	.0050-.0080	.0090-.0110	.0110-.0150
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	300-400	390-520	.0007-.0015	.0010-.0015	.0015-.0020	.0020-.0025	.0025-.0040	.0040-.0080	.0070-.0100
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	250-1000	325-1300	.0007-.0015	.0010-.0015	.0015-.0020	.0020-.0035	.0035-.0050	.0050-.0070	.0070-.0100
Copper		400-500	520-650	.0007-.0015	.0010-.0015	.0015-.0020	.0020-.0025	.0025-.0040	.0040-.0080	.0070-.0100
Magnesium		500+	650+	.0007-.0015	.0010-.0015	.0015-.0020	.0020-.0035	.0035-.0050	.0050-.0070	.0070-.0100
S - High Temp Alloys										
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	500+	650+	.0007-.0015	.0010-.0015	.0015-.0020	.0020-.0025	.0025-.0030	.0030-.0040	.0040-.0050

NOTES: (1) Speeds and Feeds listed are estimated and will vary by application.
(2) Reduce Speeds by 20% when slotting.
(3) When exceeding 1/2 the end mill diameter while profiling, reduce feed rate by 25%.
(4) The use of Long and Extra Long Endmills require a reduction in feed by up to 50%.
(5) Optimum performance can be achieved when using coated & stub length tools.