

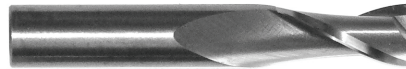
Premium Solid Carbide End mill Promotion

General Purpose Premium Carbide Features Include:

- *All tools made from high performance sub-micrograin carbide
- *All tools meet or exceed aerospace specifications
- *All tools ground to an exceptionally high finish which results in sharper cutting edge, longer tool life and superior finish
- *Center Cutting
- *30 degree Helix
- *Right hand cutting
- *Right hand Sprial

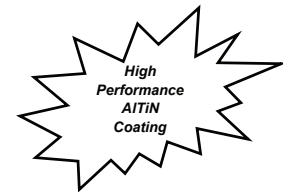


Made in USA



Standard Length, Square End

Cutter Dia	Shank Dia	Flute Length	Overall Length	Uncoated			ALTiN Coated		
				2 Flute Item No.	4 Flute Item No.	Sale Price	2 Flute Item No.	4 Flute Item No.	Sale Price
1/8	1/8	1/2	1-1/2	NC42008	NC44008	\$6.25	NC42008A	NC44008A	\$7.95
3/16	3/16	5/8	2	NC42012	NC44012	\$8.05	NC42012A	NC44012A	\$10.45
1/4	1/4	3/4	2-1/2	NC42016	NC44016	\$9.90	NC42016A	NC44016A	\$14.85
5/16	5/16	7/8	2-1/2	NC42020	NC44020	\$13.90	NC42020A	NC44020A	\$20.95
3/8	3/8	7/8	2-1/2	NC42024	NC44024	\$17.30	NC42024A	NC44024A	\$24.65
1/2	1/2	1	3	NC42032	NC44032	\$27.95	NC42032A	NC44032A	\$38.35
5/8	5/8	1-1/4	3-1/2	NC42034	NC44034	\$56.95	NC42034A	NC44034A	\$69.50
3/4	3/4	1-1/2	4	NC42036	NC44036	\$81.75	NC42036A	NC44036A	\$97.90



Standard Length, Ball Nose

Cutter Dia	Shank Dia	Flute Length	Overall Length	Uncoated			ALTiN Coated		
				2 Flute Item No.	4 Flute Item No.	Sale Price	2 Flute Item No.	4 Flute Item No.	Sale Price
1/8	1/8	1/2	1-1/2	NC62008	NC64008	\$8.25	NC62008A	NC64008A	\$11.25
3/16	3/16	5/8	2	NC62012	NC64012	\$9.65	NC62012A	NC64012A	\$12.00
1/4	1/4	3/4	2-1/2	NC62016	NC64016	\$12.30	NC62016A	NC64016A	\$17.30
5/16	5/16	7/8	2-1/2	NC62020	NC64020	\$16.10	NC62020A	NC64020A	\$23.20
3/8	3/8	7/8	2-1/2	NC62024	NC64024	\$19.70	NC62024A	NC64024A	\$27.00
1/2	1/2	1	3	NC62032	NC64032	\$38.35	NC62032A	NC64032A	\$47.80
5/8	5/8	1-1/4	3-1/2	NC62034	NC64034	\$61.95	NC62034A	NC64034A	\$75.75
3/4	3/4	1-1/2	4	NC62036	NC64036	\$91.25	NC62036A	NC64036A	\$107.00

Distributed by:

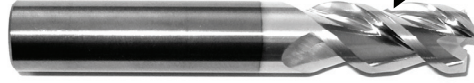


Made in USA

New Solid Carbide High Performance Features Include:

- *Reduce Cycle Time - one tool for roughing, finishing, slot and profile cuts
- *Promotes dynamic chip movement at high velocity
- *Specifically Designed for Aluminum
- *High Performance Zirconium Nitride (ZrN) coating
- *3 Flute, variable helix angle, center cutting
- *Available in stub, regular and long lengths

New High Performance ZrN coating



Save Time...Save Money!



Ensure adequate coolant is applied for maximum tool life

Reduce feed rate by 20% when using long length tools

High Performance ZrN coating!

Stub, Standard & Long Length

Cutter Dia	Shank Dia	Flute Length	Overall Length	Item #	Sale Price
1/8	1/8	1/4	1-1/2	NC43S50	\$12.10
1/8	1/8	1/2	1-1/2	NC43050	\$12.10
3/16	3/16	5/16	2	NC43S58	\$16.35
3/16	3/16	5/8	2	NC43058	\$19.10
1/4	1/4	1/2	2	NC43S66	\$21.85
1/4	1/4	3/4	2-1/2	NC43066	\$24.75
1/4	1/4	1-1/4	3	NC43L66	\$37.90
5/16	5/16	13/16	2-1/2	NC43070	\$35.65
3/8	3/8	1/2	2	NC43S74	\$34.50
3/8	3/8	1	2-1/2	NC43074	\$40.25
3/8	3/8	1-1/2	3-1/2	NC43L74	\$58.25
7/16	7/16	1	2-3/4	NC43078	\$49.90
1/2	1/2	5/8	2-1/2	NC43S82	\$54.10
1/2	1/2	1	3	NC43082	\$57.75
1/2	1/2	2	4	NC43L82	\$78.80
9/16	9/16	1-1/4	3	NC43083	\$79.90
5/8	5/8	7/8	3	NC43S84	\$97.00
5/8	5/8	1-1/4	3-1/2	NC43084	\$104.25
5/8	5/8	2-1/2	6	NC43L84	\$150.95
3/4	3/4	1	3-1/2	NC43S86	\$141.40
3/4	3/4	1-1/2	4	NC43086	\$148.80
3/4	3/4	3	6	NC43L86	\$231.50
1	1	1	3-1/2	NC43S90	\$238.00
1	1	1-1/2	4	NC43090	\$250.55
1	1	3	6	NC43L90	\$389.65

**MULTI-MILL[®] High Performance
Variable Helix End Mills**



Made in USA



New Solid Carbide High Performance Features Include:

- *Reduce Cycle Time - one tool for roughing, finishing, slot and profile cuts
- *Increased Metal Removal Rates due to Heavier Chip Loads
- *Ideal for Stainless, Cast Iron, Carbon Steels, Titanium, Inconel and High Temp Alloys
- *New High Performance AlTiN coating
- *Ideal for Wet or Dry Machining
- *Achieve superior surface finishes at high feed rates

Four Flute - Corner Radius

Cutter Dia	Shank Dia	Flute Length	Overall Length	Corner Radius	No Flat		Weldon Flat		Cutter Dia	Shank Dia	Flute Length	Overall Length	Corner Radius	No Flat		Weldon Flat	
					Item #	Price	Item #	Price						Item #	Price	Item #	Price
1/8	1/8	1/4	1-1/2	.008-.010	NCM1010	\$ 13.55	-	-	1/2	1/2	2	4	.030-.035	NCM4123	\$ 71.95	NCM4123W	\$ 74.45
1/8	1/8	1/2	2	.008-.010	NCM4102	\$ 14.05	-	-	1/2	1/2	3	6	.030-.035	NCM4124	\$ 106.30	NCM4124W	\$ 108.80
3/16	3/16	1/4	2	.008-.010	NCM1012	\$ 18.95	-	-	5/8	5/8	3/4	3	.030-.035	NCM1034	\$ 84.40	-	-
3/16	3/16	9/16	2	.008-.010	NCM4104	\$ 19.55	-	-	5/8	5/8	1-5/8	3-1/2	.030-.035	NCM4129	\$ 92.20	NCM4129W	\$ 94.95
1/4	1/4	3/8	2	.015-.020	NCM1016	\$ 22.30	-	-	5/8	5/8	3	6	.030-.035	NCM4130	\$ 156.20	NCM4130W	\$ 158.90
1/4	1/4	3/4	2-1/2	.015-.020	NCM4108	\$ 24.85	-	-	3/4	3/4	3/4	3	.030-.035	NCM1036	\$ 127.05	-	-
5/16	5/16	7/16	2	.015-.020	NCM1020	\$ 28.45	-	-	3/4	3/4	7/8	3	.030-.035	NCM1037	\$ 127.05	-	-
5/16	5/16	13/16	2-1/2	.015-.020	NCM4112	\$ 31.20	-	-	3/4	3/4	1-5/8	4	.030-.035	NCM4135	\$ 140.55	NCM4135W	\$ 143.70
3/8	3/8	1/2	2	.015-.020	NCM1024	\$ 34.75	-	-	3/4	3/4	3	6	.030-.035	NCM4136	\$ 189.65	NCM4136W	\$ 192.80
3/8	3/8	1	2-1/2	.015-.020	NCM4116	\$ 37.55	NCM4116W	\$ 40.00	3/4	3/4	4	7	.030-.035	NCM4137	\$ 277.50	NCM4137W	\$ 280.65
3/8	3/8	2	4	.015-.020	NCM4117	\$ 52.15	NCM4117W	\$ 54.60	1	1	1-1/4	3	.030-.035	NCM1040	\$ 206.35	-	-
3/8	3/8	3	6	.015-.020	NCM4175	\$ 71.75	NCM4175W	\$ 74.45	1	1	1-1/2	4	.030-.035	NCM1041	\$ 249.50	-	-
7/16	7/16	9/16	2-1/2	.015-.020	NCM1028	\$ 44.00	-	-	1	1	2	4	.030-.035	NCM4143	\$ 232.40	NCM4143W	\$ 236.40
7/16	7/16	1	2-3/4	.015-.020	NCM4118	\$ 47.25	NCM4118W	\$ 49.75	1	1	2	5	.030-.035	NCM4148	\$ 232.40	NCM4148W	\$ 275.55
1/2	1/2	5/8	2-1/2	.030-.035	NCM1032	\$ 53.50	-	-	1	1	2-1/2	5	.030-.035	NCM4146	\$ 301.00	NCM4146W	\$ 304.70
1/2	1/2	1	3	.030-.035	NCM4120	\$ 58.35	NCM4120W	\$ 60.85	1	1	3	6	.030-.035	NCM4144	\$ 337.25	NCM4144W	\$ 340.85
1/2	1/2	1-1/4	3	.030-.035	NCM4122	\$ 58.30	NCM4122W	\$ 60.85	1	1	4	7	.030-.035	NCM4145	\$ 382.65	NCM4145W	\$ 386.30

*see our catalogue for complete listing including metric and 5 flute designs and speeds & feeds.