



MORSE
CUTTING TOOLS



HIGH SPEED HIGH PERFORMANCE CARBIDE END MILLS for ALUMINUM

- 2-Flute & 3-Flute
- Square End & Ball Nose
- Extended Reach
- Center Cutting
- Micrograin Carbide
- Uncoated & DLC Coated



Spindle Speeds
up to 30,000 RPM
when used in
High Speed
Machining Centers
with
Shrink Fit Tooling Only

For High Speed High Performance Milling of Aluminum Alloys, Copper
& Copper Alloys in High Speed Machining Centers with Shrink Fit Tooling.

Phone: 800.255.1701 Fax: 800.338.4857
www.morsecuttingtools.com
customerservices@morsecuttingtools.com



High Speed High Performance 2-Flute Carbide End Mills for Aluminum

Micrograin Carbide — 35° Helix Angle
Center Cutting — Extended Reach

High Speed High Performance Milling of Aluminum Alloys,
Copper & Copper Alloys. Balanced for high spindle speeds
and reduced chatter. Polished flutes for enhanced chip flow,
surface finish and accuracy.

DLC - Amorphous Diamond-Like Carbon coating is
recommended for Aluminum and Non-Ferrous Materials.

**NOTE: For use in High Speed Machining Centers with
Shrink Fit Tooling Only.**

TOLERANCES

Diameter +.000 / -.002
Shank Dia. +.0001 / -.0004

2-Flute Square End

List No. 5903 Uncoated - List No. 5903E DLC Coated

DIA.	SHANK DIA.	LOC	LENGTH BELOW SHANK	OAL	5903	5903E
					UNCOATED EDP #	DLC COATED EDP #
3/8	3/8	1/2	1-1/8	3	53560	93150
3/8	3/8	1/2	2-1/8	4	53561	93151
1/2	1/2	5/8	1-3/8	3	53562	93152
1/2	1/2	5/8	2-1/8	4	53563	93153
1/2	1/2	5/8	3-3/8	6	53564	93154
5/8	5/8	3/4	1-5/8	4	53565	93155
5/8	5/8	3/4	2-3/8	5	53566	93156
5/8	5/8	3/4	3-3/8	6	53567	93157
3/4	3/4	1	2	4	53568	93158
3/4	3/4	1	2-1/2	5	53569	93159
3/4	3/4	1	3-3/8	6	53570	93160
1	1	1-1/4	2-5/8	5	53571	93161
1	1	1-1/4	3-3/8	6	53572	93162
1	1	1-1/4	4-3/8	7	53573	93163

2-Flute Ball Nose

List No. 5926 Uncoated - List No. 5926E DLC Coated

DIA.	SHANK DIA.	LOC	LENGTH BELOW SHANK	OAL	5926	5926E
					UNCOATED EDP #	DLC COATED EDP #
3/8	3/8	1/2	1-1/8	3	53574	93164
3/8	3/8	1/2	2-1/8	4	53575	93165
1/2	1/2	5/8	1-3/8	3	53576	93166
1/2	1/2	5/8	2-1/8	4	53577	93167
1/2	1/2	5/8	3-3/8	6	53578	93168
5/8	5/8	3/4	1-5/8	4	53579	93169
5/8	5/8	3/4	2-3/8	5	53580	93170
5/8	5/8	3/4	3-3/8	6	53581	93171
3/4	3/4	1	2	4	53582	93172
3/4	3/4	1	2-1/2	5	53583	93173
3/4	3/4	1	3-3/8	6	53584	93174
1	1	1-1/4	2-5/8	5	53585	93175
1	1	1-1/4	3-3/8	6	53586	93176
1	1	1-1/4	4-3/8	7	53587	93177



List No. 5903 2-Flute Square Uncoated
List No. 5903E 2-Flute Square DLC Coated



List No. 5926 2-Flute Ball Nose Uncoated
List No. 5926E 2-Flute Ball Nose DLC Coated

2-Flute end mills provide increased chip capacity
and are recommended for slotting applications.

SPEEDS & FEEDS: Page 4



High Speed High Performance 3-Flute Carbide End Mills for Aluminum

Micrograin Carbide — 37° Helix Angle
Center Cutting — Extended Reach

High Speed High Performance Milling of Aluminum Alloys,
Copper & Copper Alloys. Balanced for high spindle speeds
and reduced chatter. Polished flutes for enhanced chip flow,
surface finish and accuracy.

DLC - Amorphous Diamond-Like Carbon coating is
recommended for Aluminum and Non-Ferrous Materials.

**NOTE: For use in High Speed Machining Centers with
Shrink Fit Tooling Only.**

TOLERANCES

Diameter +.000 / -.002
Shank Dia. +.0001 / -.0004

3-Flute Square End

List No. 5904 Uncoated - List No. 5904E DLC Coated

DIA.	SHANK DIA.	LOC	LENGTH BELOW SHANK	OAL	5904	5904E
					UNCOATED EDP #	DLC COATED EDP #
3/8	3/8	1/2	1-1/8	3	53590	93180
3/8	3/8	1/2	2-1/8	4	53591	93181
1/2	1/2	5/8	1-3/8	3	53592	93182
1/2	1/2	5/8	2-1/8	4	53593	93183
1/2	1/2	5/8	3-3/8	6	53594	93184
5/8	5/8	3/4	1-5/8	4	53595	93185
5/8	5/8	3/4	2-3/8	5	53596	93186
5/8	5/8	3/4	3-3/8	6	53597	93187
3/4	3/4	1	2	4	53598	93188
3/4	3/4	1	2-1/2	5	53599	93189
3/4	3/4	1	3-3/8	6	53600	93190
1	1	1-1/4	2-5/8	5	53601	93191
1	1	1-1/4	3-3/8	6	53602	93192
1	1	1-1/4	4-3/8	7	53603	93193

3-Flute Ball Nose

List No. 5930 Uncoated - List No. 5930E DLC Coated

DIA.	SHANK DIA.	LOC	LENGTH BELOW SHANK	OAL	5930	5930E
					UNCOATED EDP #	DLC COATED EDP #
3/8	3/8	1/2	1-1/8	3	53604	93194
3/8	3/8	1/2	2-1/8	4	53605	93195
1/2	1/2	5/8	1-3/8	3	53606	93196
1/2	1/2	5/8	2-1/8	4	53607	93197
1/2	1/2	5/8	3-3/8	6	53608	93198
5/8	5/8	3/4	1-5/8	4	53609	93199
5/8	5/8	3/4	2-3/8	5	53610	93200
5/8	5/8	3/4	3-3/8	6	53611	93201
3/4	3/4	1	2	4	53612	93202
3/4	3/4	1	2-1/2	5	53613	93203
3/4	3/4	1	3-3/8	6	53614	93204
1	1	1-1/4	2-5/8	5	53615	93205
1	1	1-1/4	3-3/8	6	53616	93206
1	1	1-1/4	4-3/8	7	53617	93207



List No. 5904 3-Flute Square Uncoated
List No. 5904E 3-Flute Square DLC Coated



List No. 5930 3-Flute Ball Nose Uncoated
List No. 5930E 3-Flute Ball Nose DLC Coated

3-Flute end mills offer higher feed rates than 2-flute
mills while still offering high chip capacity and are
recommended for profiling applications.

SPEEDS & FEEDS: Page 4



High Speed High Performance Carbide End Mills for Aluminum Speed and Feed Recommendations

2-Flute • List Nos. 5903, 5903E, 5926, 5926E

Material	Type of Cut	Surface Speed (SFM)	Feed Per Tooth by End Mill Diameter					Depth of Cut	
			3/8"	1/2"	5/8"	3/4"	1"	Axial	Radial
Wrought Aluminum Alloys	Slotting	1540 - 1760	.0054	.0063	.0072	.0081	.0108	1xD	—
	Heavy Peripheral		.0081	.0095	.0108	.0117	.0144	1xD	.5xD
	Light Peripheral		.0036	.0045	.0054	.0063	.0090	2xD	.05xD
Low Silicon Aluminum Alloys < 12%	Slotting	1650 - MAX	.0036	.0045	.0054	.0063	.0090	1xD	—
	Heavy Peripheral		.0072	.0083	.0099	.0108	.0126	1xD	.5xD
	Light Peripheral		.0027	.0036	.0045	.0054	.0071	2xD	.05xD
High Silicon Aluminum Alloys > 12%	Slotting	1650 - MAX	.0023	.0025	.0027	.0036	.0059	1xD	—
	Heavy Peripheral		.0050	.0063	.0072	.0081	.0099	1xD	.5xD
	Light Peripheral		.0023	.0027	.0036	.0045	.0063	2xD	.05xD
Copper & Copper Alloys	Slotting	550 - 935	.0027	.0032	.0036	.0045	.0063	1xD	—
	Heavy Peripheral		.0063	.0077	.0081	.0090	.0117	1xD	.5xD
	Light Peripheral		.0032	.0041	.0045	.0059	.0076	2xD	.05xD

3-Flute • List Nos. 5904, 5904E, 5930, 5930E

Material	Type of Cut	Surface Speed (SFM)	Feed Per Tooth by End Mill Diameter					Depth of Cut	
			3/8"	1/2"	5/8"	3/4"	1"	Axial	Radial
Wrought Aluminum Alloys	Slotting	1650 - 2000	.0059	.0069	.0079	.0089	.0120	1xD	—
	Heavy Peripheral		.0089	.0104	.0119	.0129	.0158	1xD	.5xD
	Light Peripheral		.0040	.0049	.0059	.0069	.0100	2xD	.05xD
Low Silicon Aluminum Alloys < 12%	Slotting	2000 - MAX	.0040	.0049	.0059	.0069	.0099	1xD	—
	Heavy Peripheral		.0079	.0091	.0109	.0119	.0138	1xD	.5xD
	Light Peripheral		.0030	.0040	.0049	.0059	.0079	2xD	.05xD
High Silicon Aluminum Alloys > 12%	Slotting	2000 - MAX	.0025	.0028	.0030	.0040	.0064	1xD	—
	Heavy Peripheral		.0054	.0069	.0079	.0089	.0109	1xD	.5xD
	Light Peripheral		.0025	.0030	.0040	.0049	.0070	2xD	.05xD
Copper & Copper Alloys	Slotting	600 - 1020	.0030	.0035	.0040	.0049	.0069	1xD	—
	Heavy Peripheral		.0069	.0084	.0089	.0099	.0129	1xD	.5xD
	Light Peripheral		.0035	.0045	.0049	.0064	.0085	2xD	.05xD

Speeds and Feeds are suggested starting points and may be increased or decreased depending on actual material and machining conditions.

NOTE: Information in this chart is for reference only. We will not be held liable for any consequential damages or economic loss due to the use of information contained within this chart.

