Triple Threat™ Three Flute Rougher/Finisher, Inch

High Performance Carbide

The Triple Threat™ tool is a multi-patented three flute high performance carbide end mill designed to finish and rough in aluminum and non-ferrous metals. The high shear, 45 degree helix and improved inter-flute geometries enhanced chip evacuation and permit increased chip loads as well as aggressive feed rates.

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	HP	0.0032	0.0030	0.0026	0.0026	0.0026	0.0026
	LP	0.0041	0.0041	0.0036	0.0036	0.0036	0.0036
	FINISH	0.0049	0.0055	0.0045	0.0045	0.0045	0.0045
5/16"	HP	0.0038	0.0035	0.0030	0.0030	0.0030	0.0030
	LP	0.0048	0.0047	0.0041	0.0041	0.0041	0.0041
	FINISH	0.0059	0.0062	0.0056	0.0056	0.0056	0.0056
3/8"	HP	0.0048	0.0045	0.0039	0.0039	0.0039	0.0036
	LP	0.0061	0.0061	0.0055	0.0055	0.0055	0.0055
	FINISH	0.0074	0.0082	0.0068	0.0068	0.0068	0.0068
1/2"	HP	0.0075	0.0075	0.0065	0.0065	0.0065	0.0065
	LP	0.0095	0.0095	0.0085	0.0085	0.0085	0.0085
	FINISH	0.0115	0.0115	0.0095	0.0095	0.0095	0.0095
5/8"	HP	0.0080	0.0076	0.0066	0.0066	0.0066	0.0066
	LP	0.0102	0.0102	0.0091	0.0091	0.0091	0.0086
	FINISH	0.0102	0.0102	0.0091	0.0091	0.0091	0.0091
3/4"	HP	0.0085	0.0080	0.0070	0.0070	0.0070	0.0070
	LP	0.0115	0.0115	0.0103	0.0103	0.0103	0.0103
	FINISH	0.0140	0.0155	0.0128	0.0128	0.0128	0.0128
1"	HP	0.0135	0.0128	0.0111	0.0111	0.0111	0.0111
	LP	0.0171	0.0171	0.0153	0.0153	0.0153	0.0153
	FINISH	0.0207	0.0230	0.0190	0.0190	0.0190	0.0190

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .3 x Diameter

FINISH = FINISH OPERATION
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

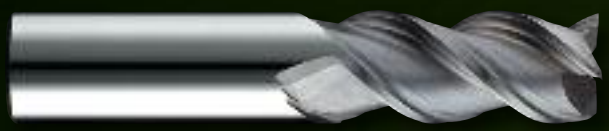
LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .01 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

Triple Threat™ Three Flute Rougher/Finisher, Metric

High Preformance Carbide



The Triple Threat™ tool is a multi-patented three flute high performance carbide end mill designed to finish and rough in aluminum and non-ferrous metals. The high shear, 45 degree helix and improved inter-flute geometries enhanced chip evacuation and permit increased chip loads as well as aggressive feed rates.

Feeds and Speeds Chart with Chip-Load per/tooth in Inches

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10%Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
6	HP	0.003	0.003	0.003	0.003	0.003	0.003
	LP	0.004	0.004	0.004	0.004	0.004	0.004
	Finish	0.005	0.006	0.005	0.005	0.005	0.005
8	HP	0.004	0.004	0.003	0.003	0.003	0.003
	LP	0.005	0.005	0.004	0.004	0.004	0.004
	Finish	0.006	0.006	0.006	0.006	0.006	0.006
10	HP	0.005	0.005	0.004	0.004	0.004	0.004
	LP	0.006	0.006	0.006	0.006	0.006	0.006
	Finish	0.007	0.008	0.007	0.007	0.007	0.007
12	HP	0.008	0.008	0.007	0.007	0.007	0.007
	LP	0.010	0.010	0.009	0.009	0.009	0.009
	Finish	0.012	0.012	0.010	0.010	0.010	0.010
16	HP	0.008	0.008	0.007	0.007	0.007	0.007
	LP	0.010	0.010	0.009	0.009	0.009	0.009
	Finish	0.010	0.010	0.009	0.009	0.009	0.009
18	HP	0.009	0.008	0.007	0.007	0.007	0.007
	LP	0.012	0.012	0.010	0.010	0.010	0.010
	Finish	0.014	0.016	0.013	0.013	0.013	0.013
20	HP	0.009	0.008	0.007	0.007	0.007	0.007
	LP	0.012	0.012	0.011	0.011	0.011	0.011
	Finish	0.015	0.016	0.014	0.014	0.014	0.014
25	HP	0.014	0.013	0.011	0.011	0.011	0.011
	LP	0.017	0.017	0.015	0.015	0.015	0.015
	Finish	0.021	0.023	0.019	0.019	0.019	0.019

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .3 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .01 x Diameter

FINISH = FINISH OPERATION
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

Triple Threat™ Three Flute Rougher/Finisher, With Chip Breakers, Inch

High Performance Carbide

The Triple Threat™ tool is a multi-patented three flute high performance carbide end mill designed to finish and rough in aluminum and non-ferrous metals. The high shear, 45 degree helix and improved inter-flute geometries enhanced chip evacuation and permit increased chip loads as well as aggressive feed rates.

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10%Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass	Cast, Wrought
	SFM	**800 - Max**	**250 - 600**	**600 - 1000**	**700 - 1000**	**500 - 900**	**500 - 900**
1/4"	HP	0.0037	0.0035	0.0030	0.0030	0.0030	0.0030
	LP	0.0047	0.0047	0.0041	0.0041	0.0041	0.0041
	Finish	0.0056	0.0063	0.0052	0.0052	0.0052	0.0052
5/16"	HP	0.0044	0.0040	0.0035	0.0035	0.0035	0.0035
	LP	0.0055	0.0054	0.0047	0.0047	0.0047	0.0047
	Finish	0.0068	0.0071	0.0064	0.0064	0.0064	0.0064
3/8"	HP	0.0055	0.0052	0.0045	0.0045	0.0045	0.0041
	LP	0.0070	0.0070	0.0063	0.0063	0.0063	0.0063
	Finish	0.0085	0.0094	0.0078	0.0078	0.0078	0.0078
1/2"	HP	0.0086	0.0086	0.0075	0.0075	0.0075	0.0075
	LP	0.0109	0.0109	0.0098	0.0098	0.0098	0.0098
	Finish	0.0132	0.0132	0.0109	0.0109	0.0109	0.0109
5/8"	HP	0.0092	0.0087	0.0076	0.0076	0.0076	0.0076
	LP	0.0117	0.0117	0.0105	0.0105	0.0105	0.0099
	Finish	0.0117	0.0117	0.0105	0.0105	0.0105	0.0105
3/4"	HP	0.0098	0.0092	0.0081	0.0081	0.0081	0.0081
	LP	0.0132	0.0132	0.0118	0.0118	0.0118	0.0118
	Finish	0.0161	0.0178	0.0147	0.0147	0.0147	0.0147
1"	HP	0.0155	0.0147	0.0128	0.0128	0.0128	0.0128
	LP	0.0197	0.0197	0.0176	0.0176	0.0176	0.0176
	Finish	0.0238	0.0265	0.0219	0.0219	0.0219	0.0219

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .3 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .01 x Diameter

FINISH = FINISH OPERATION
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

Triple Threat™ Three Flute Rougher/Finisher, With Chip Breakers, Metric

High Performance Carbide

The Triple Threat™ tool is a multi-patented three flute high performance carbide end mill designed to finish and rough in aluminum and non-ferrous metals. The high shear, 45 degree helix and improved inter-flute geometries enhanced chip evacuation and permit increased chip loads as well as aggressive feed rates.

- 45 Degree Helix for Enhanced Chip Evacuation
- Plain Cylindrical Shank
- Three Flutes Permit High Machine Productivity
- Stocked Stub, Regular and Reduced Neck
- Available Upon Request:
  - Coolant Grooves
  - Additional Coatings
  - Additional Radius

Feeds and Speeds Chart with Chip-Load per/tooth in Inches

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10%Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
6	HP	0.004	0.003	0.003	0.003	0.003	0.003
	LP	0.005	0.005	0.004	0.004	0.004	0.004
	Finish	0.006	0.006	0.005	0.005	0.005	0.005
8	HP	0.004	0.004	0.003	0.003	0.003	0.003
	LP	0.006	0.005	0.005	0.005	0.005	0.005
	Finish	0.007	0.007	0.006	0.006	0.006	0.006
10	HP	0.006	0.005	0.004	0.004	0.004	0.004
	LP	0.007	0.007	0.006	0.006	0.006	0.006
	Finish	0.009	0.009	0.008	0.008	0.008	0.008
12	HP	0.009	0.009	0.007	0.007	0.007	0.007
	LP	0.011	0.011	0.010	0.010	0.010	0.010
	Finish	0.013	0.013	0.011	0.011	0.011	0.011
16	HP	0.009	0.009	0.008	0.008	0.008	0.008
	LP	0.012	0.012	0.010	0.010	0.010	0.010
	Finish	0.012	0.012	0.010	0.010	0.010	0.010
18	HP	0.010	0.009	0.008	0.008	0.008	0.008
	LP	0.013	0.013	0.012	0.012	0.012	0.012
	Finish	0.016	0.018	0.015	0.015	0.015	0.015
20	HP	0.010	0.010	0.009	0.009	0.009	0.009
	LP	0.014	0.014	0.013	0.013	0.013	0.013
	Finish	0.017	0.019	0.016	0.016	0.016	0.016
25	HP	0.016	0.015	0.013	0.013	0.013	0.013
	LP	0.020	0.020	0.018	0.018	0.018	0.018
	Finish	0.024	0.026	0.022	0.022	0.022	0.022

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .3 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .01 x Diameter

FINISH = FINISH OPERATION
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

ALDH Three Flute

Technical Chart

The ALDH is the rougher of choice when optimum material removal rates are the objective. The combination of progressive geometries result in a cutting tool intended for full engagement cuts at increased feed rates. Slotting cuts of 1x the diameter or more are normally recommended. 50% greater IPM versus competitors 2 flute design is a conservative starting point.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

ALDH Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

ALDH-C Three Flute

Technical Chart

ALDH-C series combines the performance of the ALDH series with a truncated knuckle form to manage chips and Horse Power. It is designed for freer cutting without sacrificing work piece surface finishes. This unique O.D. form also aids in chip control and management in gummy, non-ferrous materials. The tools are available from stock in stub and standard lengths with coatings to match your particular applications.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

ALDH-C Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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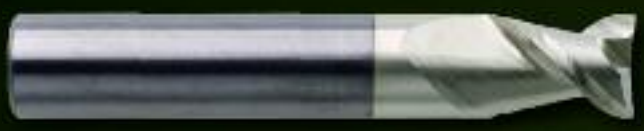
DATA FLUTE™

ARF Two Flute Series

High Performance Carbide



- Rough and Finish
- Higher Helix Aids in Chip Removal
- High Performance Carbide

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

The ARF Series is a time-honored workhorse in our aluminum cutting tool family. Designed as a 2 flute, rougher/finisher, this tool can pull "double duty" in your aluminum and non-ferrous applications. The high helix angle provides exceptional shearing action and chip removal. Available in lengths ranging from stub for aggressive roughing, to extended lengths for tall side milling cuts.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

ARF Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/8"	S	0.0022	0.0020	0.0018	0.0018	0.0018	0.0018
	HP	0.0029	0.0029	0.0026	0.0026	0.0026	0.0026
	LP	0.0035	0.0038	0.0032	0.0032	0.0032	0.0032
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
5/16"	S	0.0038	0.0036	0.0031	0.0031	0.0031	0.0031
	HP	0.0050	0.0050	0.0045	0.0045	0.0045	0.0045
	LP	0.0061	0.0067	0.0056	0.0056	0.0056	0.0056
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
7/16"	S	0.0061	0.0058	0.0050	0.0050	0.0050	0.0050
	HP	0.0076	0.0076	0.0069	0.0069	0.0069	0.0069
	LP	0.0091	0.0102	0.0085	0.0085	0.0085	0.0085
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .25 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .015 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horseower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

DATA FLUTE™

HSM Two Flute, Reduced Neck

Technical Chart

The HSM is a 2 flute rougher/finisher that uses the geometries of the ARF series and couples them with an extended reach design. The stub flute length, in conjunction with a wide range of reach lengths, makes the HSM series a great choice for roughing in aluminum and other non-ferrous materials in hard to reach depths of cuts.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

HSM Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .015 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .25 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

HVM-2, Two Flute

Technical Chart

The High Velocity Machining Series (HVM) is designed to perform at the level that its name suggests. By using shallow depths of cut, at very high speeds, this extended reach design will rough in non-ferrous applications from peripheral cuts to deep pockets. This tool is ideal for the machine tool that has ample RPM and feed rate capabilities, but may have some horsepower or torque restrictions.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

HVM-2 Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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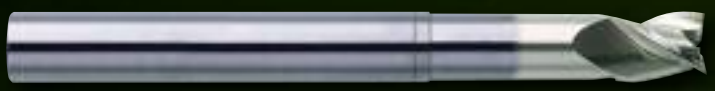
DATA FLUTE™

HVM-3, Three Flute with Reduced Neck and Radius

Technical Chart



Our High Velocity Machining-3 Series (HVM-3) builds on the successes of our HVM-2 tools. The HVM-3 can really shine in applications where the machines may not achieve the high RPMs for which the HVM-2 was designed, but have the torque and horsepower to take advantage of the 50% increase in tooth passage (3:2) of our HVM-3. The HVM-3 is available in a number of stocked radii.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

HVM-3 Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

HVMag-3
Three Flute, Inch and Metric High Performance Carbide

Our HVMag-3 is a 3 flute tool, with field tested, patented geometries designed specifically for the newer generation of high speed machining centers. We have produced an exceptionally well-balanced tool, with superior chip flow. This tool is best used for speeds up to 20,000 rpm and feed rates of up to 1,000 inches per minute. Best performance is achieved in spindles designed for high speed, three flute tools and machining.

HVMag-3 Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Note: Vibration analysis for high speed machining is recommended.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

ARF-BN, Two Flute Ball Mill

Technical Chart

The ARF-BN combines the proven geometry of our ARF two flute series with a precision ground, full, ball-nose radius. The high helix and high clearance angles provide a freer cutting ball with superior shearing properties. The ball nose is also ground with a vibration protection margin. When your non-ferrous applications require contour or 3-D work, the ARF-BN should be your tool of choice.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

ARF-BN Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0026	0.0024	0.0020	0.0020	0.0020	0.0020
	HP	0.0034	0.0034	0.0030	0.0030	0.0030	0.0030
	LP	0.0043	0.0048	0.0043	0.0043	0.0043	0.0043
5/16"	S	0.0028	0.0027	0.0022	0.0022	0.0022	0.0022
	HP	0.0040	0.0040	0.0035	0.0035	0.0035	0.0035
	LP	0.0050	0.0056	0.0050	0.0050	0.0050	0.0050
3/8"	S	0.0038	0.0036	0.0030	0.0030	0.0030	0.0030
	HP	0.0051	0.0051	0.0045	0.0045	0.0045	0.0045
	LP	0.0064	0.0071	0.0064	0.0064	0.0064	0.0064
7/16"	S	0.0046	0.0043	0.0036	0.0036	0.0036	0.0036
	HP	0.0061	0.0061	0.0053	0.0053	0.0053	0.0053
	LP	0.0076	0.0085	0.0076	0.0076	0.0076	0.0076
1/2"	S	0.0060	0.0060	0.0050	0.0050	0.0050	0.0050
	HP	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	LP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
5/8"	S	0.0064	0.0061	0.0050	0.0050	0.0050	0.0050
	HP	0.0086	0.0086	0.0075	0.0075	0.0075	0.0075
	LP	0.0107	0.0119	0.0107	0.0107	0.0107	0.0107
3/4"	S	0.0068	0.0064	0.0054	0.0054	0.0054	0.0054
	HP	0.0097	0.0097	0.0085	0.0085	0.0085	0.0085
	LP	0.0122	0.0135	0.0122	0.0122	0.0122	0.0122
1"	S	0.0108	0.0102	0.0085	0.0085	0.0085	0.0085
	HP	0.0144	0.0144	0.0126	0.0126	0.0126	0.0126
	LP	0.0180	0.0200	0.0180	0.0180	0.0180	0.0180

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .25 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .015 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

HSM-BN, Two Flute Ball Mill

Technical Chart

The HSM-BN is a two flute rougher/finisher that couples ARF geometries with an extended reach design. The tool provides all the advantages of the ARF's high helix, high clearance and anti-vibration margin, in a necked tool with a stub length of cut. This is your "go to" tool for extended reach, aluminum applications that call for a ball nose.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

HSM-BN Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .015 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .25 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

HVM-BN Two Flute
Ball Mill with Reduced Neck

Technical Chart

This is a new series that provides HVM geometry in a 2 flute, precision ground, ball nose configuration. The HVM has a slower helix than our HSM. This helix angle can be more appropriate in applications where operators are seeking to limit or control vertical cutting forces in the Z direction.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

HVM-BN Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .3 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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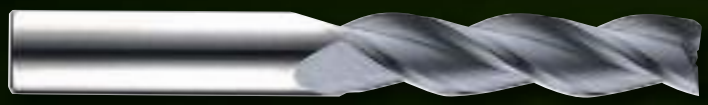
DATA FLUTE™

AFI Three Flute

Technical Chart



The AFI 3 flute Aluminum mill is the perfect choice for your finishing applications. The polished O.D. cylindrical margin along with material specific geometries generates an excellent surface finish. The addition of a Wiper Flat brings this series of tool to the perfect choice. The AFI series is available in stub, standard, medium, long and extra long length of cut.

Carbide Feeds and Speeds Chart for Non-Ferrous Materials

AFI Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0026	0.0026	0.0021	0.0021	0.0021	0.0021
	HP	0.0034	0.0034	0.0030	0.0030	0.0030	0.0030
	LP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
3/8"	S	0.0038	0.0038	0.0032	0.0032	0.0032	0.0032
	HP	0.0051	0.0051	0.0045	0.0045	0.0045	0.0045
	LP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
1/2"	S	0.0060	0.0060	0.0050	0.0050	0.0050	0.0050
	HP	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	LP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
5/8"	S	0.0064	0.0064	0.0053	0.0053	0.0053	0.0053
	HP	0.0086	0.0086	0.0075	0.0075	0.0075	0.0075
	LP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
3/4"	S	0.0068	0.0073	0.0061	0.0061	0.0061	0.0061
	HP	0.0097	0.0097	0.0085	0.0085	0.0085	0.0085
	LP	0.0122	0.0128	0.0115	0.0115	0.0115	0.0115
1"	S	0.0108	0.0108	0.0090	0.0090	0.0090	0.0090
	HP	0.0144	0.0144	0.0126	0.0126	0.0126	0.0126
	LP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162

S = SLOTTING
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 – 2.0 x Diameter
Radial width .25 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .015 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™

AMF, Multi-Flute

Technical Chart

The Aluminum Multi-Flute Series (AMF) features patented geometries with a flute form that reduces unwanted harmonics. The AMF provides unparalleled surface finishes at superior feed rates in aluminum and other non-ferrous materials. This tool can also profile in some peripheral roughing applications. With its special geometry for process dampening, the AMF is a perfect choice for straight wall finishing.

AMF Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900
1/4"	HP	0.0026	0.0026	0.0021	0.0021	0.0021
	LP	0.0034	0.0034	0.0030	0.0030	0.0030
	F	0.0043	0.0043	0.0038	0.0038	0.0038
3/8"	HP	0.0038	0.0038	0.0032	0.0032	0.0032
	LP	0.0051	0.0051	0.0045	0.0045	0.0045
	F	0.0064	0.0064	0.0058	0.0058	0.0058
1/2"	HP	0.0060	0.0060	0.0050	0.0050	0.0050
	LP	0.0080	0.0080	0.0070	0.0070	0.0070
	F	0.0100	0.0100	0.0090	0.0090	0.0090
5/8"	HP	0.0064	0.0064	0.0053	0.0053	0.0053
	LP	0.0086	0.0086	0.0075	0.0075	0.0075
	F	0.0107	0.0107	0.0096	0.0096	0.0096
3/4"	HP	0.0073	0.0073	0.0061	0.0061	0.0061
	LP	0.0097	0.0097	0.0085	0.0085	0.0085
	F	0.0128	0.0128	0.0115	0.0115	0.0115
1"	HP	0.0108	0.0108	0.0090	0.0090	0.0090
	LP	0.0144	0.0144	0.0126	0.0126	0.0126
	F	0.0180	0.0180	0.0162	0.0162	0.0162

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .2 x Diameter

F = FINISH
Axial Depth up to
Effective Length of Cut
Radial width .02 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .1 x Diameter

Note! Horsepower will be the limiting factor with larger diameter end mills.

Horsepower = IPM x RDC x ADC x PC
IPM = Inches Per Minute
RDC = Radial Depth of Cut (Width)
ADC = Axial Depth of Cut (Depth)
PC = Power Constants (Aluminum = (0.25))
Example Slotting = 3/4 diameter x 3/8 @ 150 IPM
HP = 150 IPM x .750 RDC x .375 ADC x PC of 0.25
HP = 10.8 @ cutter/80%Efficiency = 12.8 @ Spindle Motor

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DATA FLUTE™