

MH-RO Multi-Flute Series

Technical Chart



The MH-RO series is a form relief design intended for peripheral roughing in carbon steels and cast iron. The multi-flute design allows for increased feed rates while not requiring massive amounts of horsepower. The tools are available from stock in stub and standard length with coatings for your ferrous machining applications.

Feeds and Speeds Chart with Chip-Load per/tooth

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
1.5 x Diameter
Radial width .2 x Diameter

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.

SSDH Four Flute

Technical Chart



The SSDH series achieves superior chip flow and evacuation through the introduction of chip-release flute form technology, and a unique inter-flute helical transition all within a patent pending design. A premium, rupture resistant substrate is the foundation to which these progressive geometries are applied. The end result is a brute of an end mill, capable of ultra aggressive metal removal rates in ferrous material ranging from low carbon steel to high nickel alloys. This all adds up to cycle time reductions and improved machine tool productivity.

Feeds and Speeds Chart with Chip-Load per/tooth

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/4"	S	0.0015	0.0014	0.0014	0.0014	0.0013	0.0013	0.0013	0.0010	0.0014	0.0013
	HP	0.0018	0.0018	0.0018	0.0018	0.0015	0.0015	0.0015	0.0013	0.0018	0.0015
	LP	0.0020	0.0019	0.0019	0.0019	0.0018	0.0018	0.0018	0.0015	0.0019	0.0018
5/16"	S	0.0018	0.0017	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0021	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0023	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0023	0.0021	0.0021	0.0021	0.0019	0.0019	0.0019	0.0015	0.0021	0.0019
	HP	0.0026	0.0026	0.0026	0.0026	0.0023	0.0023	0.0023	0.0019	0.0026	0.0023
	LP	0.0030	0.0029	0.0029	0.0029	0.0026	0.0026	0.0026	0.0023	0.0029	0.0026
1/2"	S	0.0030	0.0028	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0035	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0038	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0035	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0044	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0048	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0042	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0053	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0057	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0056	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0070	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0076	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
2.0 x Diameter
Radial width .15 x Diameter

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SSDH-C Four Flute

Technical Chart



SSDH-C series combines the aggressive roughing geometries of the SSDH series with a truncated knuckle O.D. form. This unique design allows for freer cutting and better chip control while maintaining the work piece surface finishes. These tools are stocked in stub and regular lengths and coated to match your particular application.

Feeds and Speeds Chart with Chip-Load per/tooth

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/4"	S	0.0015	0.0014	0.0014	0.0014	0.0013	0.0013	0.0013	0.0010	0.0014	0.0013
	HP	0.0018	0.0018	0.0018	0.0018	0.0015	0.0015	0.0015	0.0013	0.0018	0.0015
	LP	0.0020	0.0019	0.0019	0.0019	0.0018	0.0018	0.0018	0.0015	0.0019	0.0018
5/16"	S	0.0018	0.0017	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0021	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0023	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0023	0.0021	0.0021	0.0021	0.0019	0.0019	0.0019	0.0015	0.0021	0.0019
	HP	0.0026	0.0026	0.0026	0.0026	0.0023	0.0023	0.0023	0.0019	0.0026	0.0023
	LP	0.0030	0.0029	0.0029	0.0029	0.0026	0.0026	0.0026	0.0023	0.0029	0.0026
1/2"	S	0.0030	0.0028	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0035	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0038	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0035	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0044	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0048	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0042	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0053	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0057	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0056	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0070	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0076	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.0 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
1.5 x Diameter
Radial width .2 x Diameter

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SS-3, Three Flute

Technical Chart



The SS series 3 flute end mill remains the workhorse when roughing in ferrous alloy applications. A standard corner radius protects the tool corner and enhances tool life in aggressive roughing applications. The SS series is offered in stub, standard, medium length and reduced neck.

- Standard Corner Radius to Protect Corners
- Roughing and Finishing Capabilities
- Available in Stub, Standard, Medium and Reduced Neck
- Available Upon Request:
 - Radius Ends
 - Coolant Grooves
 - Additional Coatings

Feeds and Speeds Chart with Chip-Load per/tooth

Diameter	Description	Carbon Steels 10XX, 11XX, 13XX, 15XX	Alloy Steel 40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	Stainless Steel 300 Series 304, 304L, 316, 316L, 312	Stainless Steel 400 Series 420, 420F, 416, 440C	Precipitation Stainless Steels 15/5PH,16-6PH 17/4PH, AM-XX Series	Gray Cast Iron Gray	Ductile Cast Iron Ductile	High Temp Alloys Inconel 625/718, A286, Haynes	Titanium Pure Pure	Titanium Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING Axial Depth up to .5 x Diameter
HP = HEAVY PERIPHERAL Axial Depth up to Effective Length of Cut Radial width .5 x Diameter
LP = LIGHT PERIPHERAL Axial Depth up to Effective Length of Cut Radial width .15 x Diameter

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SS-C Three Flute

Technical Chart



When machining a material that is gummy in nature, the 3 flute SS-C is the tool of choice. SS-C combines the proven SS family geometries with a truncated knuckle form that aids in chip size and form. Stub and standard lengths are available from stock.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SS-BN-3 Three Flute Ball Nose

Technical Chart



The SS-BN series is a great choice if your application requires 3-D, radius or contour work but with the added challenge of deep reaching cuts. The tools have a precision ground full radius and are stock with stub, regular and reduced neck.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SS-BN-C Three Flute Ball Nose

Technical Chart



The SS-BN-C incorporates the chipbreaker design which allows you to take advantage of this advanced design in contour, modeling and 3-D work without jeopardizing work piece finish.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SS-4, Four Flute

Technical Chart



The SS 4 flute has the same proven geometries as the original, but with an additional flute for increased productivity. A standard corner radius protects the tool corner and enhances tool life in aggressive roughing applications. The SS series is offered in stub, standard, medium and reduced neck.

- Standard Corner Radius to Protect Corners
- Roughing and Finishing Capabilities
- Available in Stub, Standard, Medium and Reduced Neck
- Available Upon Request:
 - Radius Ends
 - Coolant Grooves
 - Additional Coatings

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING Axial Depth up to .5 x Diameter
HP = HEAVY PERIPHERAL Axial Depth up to Effective Length of Cut Radial width .5 x Diameter
LP = LIGHT PERIPHERAL Axial Depth up to Effective Length of Cut Radial width .15 x Diameter

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SS-C Four Flute

Technical Chart



The SS-C four flute enable a 25% increase in feed rates. SS-C four flute is the tool of choice when periphery machining tuff gummy material. The geometries of the SS style tool along with the truncated knuckle form helps control the chip form and is freer cutting than traditional roughers.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SS-BN-4 Four Flute Ball Mill

Technical Chart



Contour, radius and 3-D modeling in an extended reach application are a breeze with 4 flute SS-BN-RN series. Due to aggressive gash angles which allow for heavier chip loads as well as better chip evacuation when milling with the ball. This series is offered with stub, regular and extended neck.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought	
Diameter	Description	10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta	
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	100 - 250 80 - 200	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006	
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007	
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008	
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012	
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014	
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017	
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015	
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018	
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021	
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018	
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021	
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025	
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025	
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030	
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035	
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031	
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038	
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044	
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038	
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045	
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053	
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050	
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060	
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070	

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SS-BN-C Four Flute Ball Nose

Technical Chart



The 4 flute SS-BN-C series combines the ultra-effective design of the SS geometry with a truncated knuckle form. This design is best utilized in gummy material applications as it helps manage chip size and flow.

Feeds and Speeds Chart with Chip-Load per/tooth

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
		SFM < 32Rc SFM > 32Rc	200 - 450 150 - 300	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/8"	S	0.0007	0.0006	0.0007	0.0007	0.0006	0.0006	0.0006	0.0005	0.0007	0.0006
	HP	0.0008	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0006	0.0008	0.0007
	LP	0.0010	0.0008	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008
1/4"	S	0.0014	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0010	0.0013	0.0012
	HP	0.0017	0.0014	0.0017	0.0017	0.0014	0.0014	0.0014	0.0012	0.0017	0.0014
	LP	0.0019	0.0017	0.0018	0.0018	0.0017	0.0017	0.0017	0.0014	0.0018	0.0017
5/16"	S	0.0018	0.0015	0.0017	0.0017	0.0015	0.0015	0.0015	0.0012	0.0017	0.0015
	HP	0.0021	0.0018	0.0021	0.0021	0.0018	0.0018	0.0018	0.0015	0.0021	0.0018
	LP	0.0024	0.0021	0.0023	0.0023	0.0021	0.0021	0.0021	0.0018	0.0023	0.0021
3/8"	S	0.0021	0.0018	0.0020	0.0020	0.0018	0.0018	0.0018	0.0014	0.0020	0.0018
	HP	0.0025	0.0021	0.0025	0.0025	0.0021	0.0021	0.0021	0.0018	0.0025	0.0021
	LP	0.0029	0.0025	0.0027	0.0027	0.0025	0.0025	0.0025	0.0021	0.0027	0.0025
1/2"	S	0.0030	0.0025	0.0028	0.0028	0.0025	0.0025	0.0025	0.0020	0.0028	0.0025
	HP	0.0035	0.0030	0.0035	0.0035	0.0030	0.0030	0.0030	0.0025	0.0035	0.0030
	LP	0.0040	0.0035	0.0038	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0035
5/8"	S	0.0038	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
	HP	0.0044	0.0038	0.0044	0.0044	0.0038	0.0038	0.0038	0.0031	0.0044	0.0038
	LP	0.0050	0.0044	0.0048	0.0048	0.0044	0.0044	0.0044	0.0038	0.0048	0.0044
3/4"	S	0.0045	0.0038	0.0042	0.0042	0.0038	0.0038	0.0038	0.0030	0.0042	0.0038
	HP	0.0053	0.0045	0.0053	0.0053	0.0045	0.0045	0.0045	0.0038	0.0053	0.0045
	LP	0.0060	0.0053	0.0057	0.0057	0.0053	0.0053	0.0053	0.0045	0.0057	0.0053
1"	S	0.0060	0.0050	0.0056	0.0056	0.0050	0.0050	0.0050	0.0040	0.0056	0.0050
	HP	0.0070	0.0060	0.0070	0.0070	0.0060	0.0060	0.0060	0.0050	0.0070	0.0060
	LP	0.0080	0.0070	0.0076	0.0076	0.0070	0.0070	0.0070	0.0060	0.0076	0.0070

S = SLOTTING
Axial Depth up to
.5 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .15 x Diameter

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SSI-4 Four Flute, Inch

Technical Chart



The SSI-4 is the foundation on which our variably indexed family of ferrous rougher/finishers was built. The SSI-4 is a proven, performance driven, ferrous rougher that has the geometry to successfully venture into finishing territory as well. Now updated and expanded to over 70 stocked sizes, we hope that the SSI-4 will be the “go-to” tool for most of your ferrous alloy applications.

Feeds and Speeds Chart SSI-4 Flute

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc SFM > 32Rc	200 - 450 100 - 250	150 - 300 80 - 200	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 250 90 - 160
1/8"	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0028	0.0028
1/4"	S	0.0014	0.0013	0.0014	0.0014	0.0013	0.0013	0.0013	0.0009	0.0014	0.0013
	HP	0.0016	0.0015	0.0016	0.0016	0.0015	0.0015	0.0015	0.0012	0.0016	0.0015
	LP	0.0019	0.0017	0.0019	0.0019	0.0017	0.0017	0.0017	0.0014	0.0019	0.0017
	F	0.0035	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
5/16"	S	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0011	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
	F	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033
3/8"	S	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0015	0.0018	0.0018
	HP	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
	LP	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	F	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
1/2"	S	0.0028	0.0025	0.0025	0.0025	0.0024	0.0025	0.0025	0.0018	0.0028	0.0022
	HP	0.0033	0.0029	0.0029	0.0029	0.0027	0.0029	0.0029	0.0024	0.0033	0.0029
	LP	0.0037	0.0033	0.0033	0.0033	0.0030	0.0033	0.0033	0.0026	0.0037	0.0035
	F	0.0066	0.0059	0.0059	0.0059	0.0055	0.0059	0.0059	0.0047	0.0066	0.0063
5/8"	S	0.0030	0.0030	0.0030	0.0030	0.0028	0.0030	0.0030	0.0025	0.0030	0.0030
	HP	0.0051	0.0051	0.0051	0.0051	0.0047	0.0051	0.0051	0.0040	0.0051	0.0051
	LP	0.0079	0.0079	0.0079	0.0079	0.0065	0.0079	0.0079	0.0060	0.0079	0.0079
	F	0.0142	0.0142	0.0142	0.0142	0.0120	0.0142	0.0142	0.0108	0.0142	0.0142
3/4"	S	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0038	0.0028	0.0030	0.0035
	HP	0.0049	0.0045	0.0045	0.0045	0.0038	0.0045	0.0045	0.0036	0.0038	0.0045
	LP	0.0055	0.0050	0.0050	0.0050	0.0042	0.0050	0.0050	0.0050	0.0042	0.0050
	F	0.0086	0.0089	0.0089	0.0089	0.0081	0.0089	0.0086	0.0080	0.0081	0.0086
1"	S	0.0045	0.0042	0.0042	0.0042	0.0050	0.0050	0.0050	0.0035	0.0056	0.0050
	HP	0.0055	0.0052	0.0052	0.0052	0.0059	0.0059	0.0059	0.0043	0.0066	0.0059
	LP	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0053	0.0073	0.0065
	F	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0085	0.0117	0.0105

S = SLOTTING

Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL

Axial Depth up to
1.5 x Diameter
Radial width .5 x Diameter

LP = LIGHT PERIPHERAL

Axial Depth up to
2.0 x Diameter
Radial width .15 x Diameter

F = FINISH

Axial Depth up to Length Of Cut
2.5 X Diameter Reduce SFM by 20%
Radial width .015 x Diameter

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SSI-4 Four Flute, Metric

Technical Chart



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

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15/5PH, 16-6PH, 17/4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
3mm	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0028	0.0028
4mm	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0028	0.0028
5mm	S	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0009	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0014	0.0018	0.0018
	LP	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0016	0.0021	0.0021
	F	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0027	0.0036	0.0036
6mm	S	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0011	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
	F	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033
8mm	S	0.0014	0.0014	0.0014	0.0014	0.0013	0.0013	0.0013	0.0009	0.0014	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0015	0.0015	0.0015	0.0012	0.0016	0.0015
	LP	0.0019	0.0019	0.0019	0.0019	0.0017	0.0017	0.0017	0.0014	0.0019	0.0017
	F	0.0035	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
10mm	S	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0015	0.0018	0.0018
	HP	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
	LP	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	F	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
12mm and 14mm	S	0.0028	0.0025	0.0025	0.0025	0.0024	0.0025	0.0025	0.0018	0.0028	0.0022
	HP	0.0033	0.0029	0.0029	0.0029	0.0027	0.0029	0.0029	0.0024	0.0033	0.0029
	LP	0.0037	0.0033	0.0033	0.0033	0.0030	0.0033	0.0033	0.0026	0.0037	0.0035
	F	0.0066	0.0059	0.0059	0.0059	0.0056	0.0059	0.0059	0.0047	0.0066	0.0063
16mm and 18mm	S	0.0030	0.0030	0.0030	0.0030	0.0028	0.0030	0.0030	0.0025	0.0030	0.0030
	HP	0.0051	0.0051	0.0051	0.0051	0.0047	0.0051	0.0051	0.0040	0.0051	0.0051
	LP	0.0079	0.0079	0.0079	0.0079	0.0065	0.0079	0.0079	0.0060	0.0079	0.0079
	F	0.0142	0.0142	0.0142	0.0142	0.0120	0.0142	0.0142	0.0108	0.0142	0.0142
20mm	S	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0038	0.0028	0.0030	0.0035
	HP	0.0049	0.0045	0.0045	0.0045	0.0038	0.0045	0.0045	0.0036	0.0038	0.0045
	LP	0.0055	0.0050	0.0050	0.0050	0.0042	0.0050	0.0050	0.0050	0.0042	0.0050
	F	0.0086	0.0089	0.0089	0.0089	0.0081	0.0089	0.0086	0.0080	0.0081	0.0086
25mm	S	0.0045	0.0042	0.0042	0.0042	0.0050	0.0050	0.0045	0.0035	0.0056	0.0050
	HP	0.0055	0.0052	0.0052	0.0052	0.0059	0.0059	0.0059	0.0043	0.0066	0.0059
	LP	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0053	0.0073	0.0065
	F	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0085	0.0117	0.0105

S = SLOTTING
Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 x Diameter
Radial width 50% x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
2.0 x Diameter
Radial width 15% x Diameter

F = FINISH
Axial Depth up to Length of Cut
2.5 x Diameter Reduce SFM by 20%
Radial width 1% to 2% x Diameter

SSI-5 Five Flute, Inch

Technical Chart



The SSI-5 is the all terrain vehicle of our ferrous alloy series tools. It can "chew up the road" in most roughing applications and at the same time provide smooth, high speed cruising well into finishing range. The SSI-5 will appeal to those who demand high performance and seek to minimize tool changes in a wide range of operations. This series has the addition of a Radius Program from stock.

Feeds and Speeds Chart SSI-5 Flute

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/8"	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0006	0.0008	0.0007	0.0008	0.0010
	HP	0.0012	0.0011	0.0012	0.0012	0.0011	0.0008	0.0012	0.0011	0.0011	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0009	0.0013	0.0012	0.0013	0.0016
	F	0.0024	0.0023	0.0024	0.0024	0.0023	0.0017	0.0024	0.0021	0.0023	0.0028
1/4"	S	0.0014	0.0011	0.0014	0.0014	0.0011	0.0007	0.0013	0.0009	0.0011	0.0013
	HP	0.0016	0.0013	0.0016	0.0016	0.0013	0.0009	0.0015	0.0012	0.0013	0.0015
	LP	0.0019	0.0016	0.0019	0.0019	0.0016	0.0011	0.0017	0.0014	0.0016	0.0017
	F	0.0035	0.0028	0.0035	0.0035	0.0028	0.0020	0.0031	0.0025	0.0028	0.0031
5/16"	S	0.0013	0.0011	0.0013	0.0013	0.0011	0.0009	0.0013	0.0011	0.0011	0.0013
	HP	0.0016	0.0013	0.0016	0.0016	0.0013	0.0013	0.0016	0.0016	0.0013	0.0016
	LP	0.0019	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0019	0.0015	0.0019
	F	0.0033	0.0027	0.0033	0.0033	0.0027	0.0027	0.0033	0.0033	0.0027	0.0033
3/8"	S	0.0018	0.0015	0.0018	0.0018	0.0015	0.0012	0.0018	0.0015	0.0015	0.0018
	HP	0.0021	0.0017	0.0021	0.0021	0.0017	0.0017	0.0021	0.0021	0.0017	0.0021
	LP	0.0025	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0025	0.0020	0.0025
	F	0.0045	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0045	0.0036	0.0045
1/2"	S	0.0028	0.0022	0.0025	0.0025	0.0022	0.0014	0.0025	0.0018	0.0022	0.0022
	HP	0.0033	0.0026	0.0029	0.0029	0.0026	0.0019	0.0029	0.0024	0.0026	0.0029
	LP	0.0037	0.0029	0.0033	0.0033	0.0029	0.0021	0.0033	0.0026	0.0029	0.0035
	F	0.0066	0.0053	0.0059	0.0059	0.0053	0.0038	0.0059	0.0047	0.0053	0.0063
5/8"	S	0.0030	0.0024	0.0030	0.0030	0.0024	0.0020	0.0030	0.0025	0.0024	0.0030
	HP	0.0051	0.0041	0.0051	0.0051	0.0041	0.0032	0.0051	0.0040	0.0041	0.0051
	LP	0.0079	0.0063	0.0079	0.0079	0.0063	0.0048	0.0079	0.0060	0.0063	0.0079
	F	0.0142	0.0113	0.0142	0.0142	0.0113	0.0086	0.0142	0.0108	0.0113	0.0142
3/4"	S	0.0038	0.0024	0.0035	0.0035	0.0024	0.0022	0.0038	0.0028	0.0024	0.0035
	HP	0.0049	0.0030	0.0045	0.0045	0.0030	0.0029	0.0045	0.0036	0.0030	0.0045
	LP	0.0055	0.0034	0.0050	0.0050	0.0034	0.0040	0.0050	0.0050	0.0034	0.0050
	F	0.0086	0.0065	0.0089	0.0089	0.0065	0.0064	0.0086	0.0080	0.0065	0.0086
1"	S	0.0045	0.0045	0.0042	0.0042	0.0045	0.0028	0.0050	0.0035	0.0045	0.0050
	HP	0.0055	0.0053	0.0052	0.0052	0.0053	0.0034	0.0059	0.0043	0.0053	0.0059
	LP	0.0065	0.0059	0.0065	0.0065	0.0059	0.0042	0.0065	0.0053	0.0059	0.0065
	F	0.0105	0.0094	0.0105	0.0105	0.0094	0.0068	0.0105	0.0085	0.0094	0.0105

S = SLOTTING

Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL

Axial Depth up to
1.5 x Diameter
Radial width .25 x Diameter

LP = LIGHT PERIPHERAL

Axial Depth up to
2.0 x Diameter
Radial width .15 x Diameter

F = FINISH

Axial Depth up to Length Of Cut
2.5 X Diameter Reduce SFM by 20%
Radial width .015 x Diameter

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SSI-5 Five Flute, Metric

Technical Chart



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

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
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	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
3mm	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0027	0.0027
4mm	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0027	0.0027
5mm	S	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0009	0.0013	0.0013
	HP	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0014	0.0018	0.0018
	LP	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0015	0.0020	0.0020
	F	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0027	0.0036	0.0036
6mm	S	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0011	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
	F	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032
8mm	S	0.0014	0.0014	0.0014	0.0014	0.0013	0.0013	0.0013	0.0009	0.0014	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0015	0.0015	0.0015	0.0012	0.0016	0.0015
	LP	0.0019	0.0019	0.0019	0.0019	0.0017	0.0017	0.0017	0.0014	0.0019	0.0017
	F	0.0034	0.0030	0.0034	0.0034	0.0030	0.0030	0.0030	0.0025	0.0034	0.0030
10mm	S	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0015	0.0018	0.0018
	HP	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
	LP	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	F	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044
12mm and 14mm	S	0.0027	0.0025	0.0025	0.0025	0.0024	0.0025	0.0025	0.0018	0.0027	0.0022
	HP	0.0032	0.0028	0.0028	0.0028	0.0026	0.0028	0.0028	0.0024	0.0032	0.0028
	LP	0.0036	0.0032	0.0032	0.0032	0.0029	0.0032	0.0032	0.0025	0.0036	0.0034
	F	0.0065	0.0058	0.0058	0.0058	0.0055	0.0058	0.0058	0.0046	0.0065	0.0062
16mm and 18mm	S	0.0029	0.0029	0.0029	0.0029	0.0027	0.0029	0.0029	0.0025	0.0029	0.0029
	HP	0.0050	0.0050	0.0050	0.0050	0.0046	0.0050	0.0050	0.0039	0.0050	0.0050
	LP	0.0077	0.0077	0.0077	0.0077	0.0064	0.0077	0.0077	0.0059	0.0077	0.0077
	F	0.0139	0.0139	0.0139	0.0139	0.0118	0.0139	0.0139	0.0106	0.0139	0.0139
20mm	S	0.0037	0.0034	0.0034	0.0034	0.0029	0.0037	0.0037	0.0027	0.0029	0.0034
	HP	0.0048	0.0044	0.0044	0.0044	0.0037	0.0044	0.0044	0.0035	0.0037	0.0044
	LP	0.0054	0.0049	0.0049	0.0049	0.0041	0.0049	0.0049	0.0049	0.0041	0.0049
	F	0.0084	0.0087	0.0087	0.0087	0.0079	0.0087	0.0084	0.0078	0.0079	0.0084
25mm	S	0.0044	0.0041	0.0041	0.0041	0.0049	0.0049	0.0044	0.0034	0.0055	0.0049
	HP	0.0054	0.0051	0.0051	0.0051	0.0058	0.0058	0.0058	0.0042	0.0065	0.0058
	LP	0.0064	0.0064	0.0064	0.0064	0.0064	0.0064	0.0064	0.0052	0.0072	0.0064
	F	0.0103	0.0103	0.0103	0.0103	0.0103	0.0103	0.0103	0.0083	0.0115	0.0103

S = SLOTTING
Axial Depth up to
1.0 x Diameter

HP = HEAVY PERIPHERAL
Axial Depth up to
1.5 x Diameter
Radial width 50% x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
2.0 x Diameter
Radial width 15% x Diameter

F = FINISH
Axial Depth up to Length of Cut
2.5 x Diameter Reduce SFM by 20%
Radial width 1% to 2% x Diameter

SVI Five Flute

Technical Chart



The SVI is a patented, five flute tool with both variable indexing and variable helixes. These features combine to provide the highest levels of protection against unwanted chatter and harmonics. The SVI-5 is the perfect tool for ramping at up to 3 degrees and helical interpolation of up to 3 degrees.

Feeds and Speeds Chart with Chip-Load per/tooth

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/4"	S	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0009	0.0014	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0012	0.0016	0.0015
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0014	0.0019	0.0017
	F	0.0035	0.0035	0.0035	0.0035	0.0035	0.0035	0.0035	0.0025	0.0035	0.0031
5/16"	S	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0011	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
	F	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033
3/8"	S	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0015	0.0018	0.0018
	HP	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
	LP	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	F	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
1/2"	S	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0018	0.0028	0.0022
	HP	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0024	0.0033	0.0029
	LP	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0026	0.0037	0.0035
	F	0.0066	0.0066	0.0066	0.0066	0.0066	0.0066	0.0066	0.0047	0.0066	0.0063
5/8"	S	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0025	0.0030	0.0030
	HP	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0040	0.0051	0.0051
	LP	0.0079	0.0079	0.0079	0.0079	0.0079	0.0079	0.0079	0.0060	0.0079	0.0079
	F	0.0142	0.0142	0.0142	0.0142	0.0142	0.0142	0.0142	0.0108	0.0142	0.0142
3/4"	S	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0028	0.0030	0.0035
	HP	0.0049	0.0049	0.0049	0.0049	0.0049	0.0049	0.0049	0.0036	0.0038	0.0045
	LP	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0050	0.0042	0.0050
	F	0.0086	0.0086	0.0086	0.0086	0.0086	0.0086	0.0086	0.0080	0.0081	0.0086
1"	S	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0035	0.0056	0.0050
	HP	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0043	0.0066	0.0059
	LP	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0053	0.0073	0.0065
	F	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0085	0.0117	0.0105

S = SLOTTING
Axial Depth up to
1.0 x Diameter

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

LP = LIGHT PERIPHERAL
Axial Depth up to
2.0 x Diameter
Radial width .15 x Diameter

F = FINISH
Axial Depth up to Length Of Cut
2.5 X Diameter Reduce SFM by 20%
Radial width .015 x Diameter

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MH Multi-Flute

High Performance Carbide



Our MH series is the tool of choice for finishing and light profile roughing in ferrous materials. The odd number of flutes disrupts unwanted harmonics. Our medium helix provides an optimum shear angle to aid chip evacuation. We have a full offering of stub, standard, medium, long and extra long lengths of cut.

- High Performance Carbide
- Eccentric Primary
- 45 Degree Helix
- Available in Stub, Standard, Medium, Long and Extra Long
- Available Upon Request:
 - Additional Coatings
 - Haimer Safe-Lock
 - Coolant Grooves

Initial Speeds (SFM) and Feeds (Chip-Load per/tooth)

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 -140	40 - 90	90 - 160	90 - 160
1/8"	HP	0.0008	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0005	0.0007	0.0007
	LP	0.0011	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0007	0.0010	0.0010
	F	0.0014	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0010	0.0013	0.0013
1/4"	HP	0.0017	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0010	0.0014	0.0014
	LP	0.0021	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0014	0.0019	0.0019
	F	0.0028	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0020	0.0025	0.0025
5/16"	HP	0.0021	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0012	0.0018	0.0018
	LP	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
	F	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
3/8"	HP	0.0025	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0014	0.0021	0.0021
	LP	0.0032	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0021	0.0029	0.0029
	F	0.0041	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0030	0.0038	0.0038
1/2"	HP	0.0035	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0020	0.0030	0.0030
	LP	0.0045	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0030	0.0040	0.0040
	F	0.0055	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0040	0.0050	0.0050
5/8"	HP	0.0042	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0024	0.0036	0.0036
	LP	0.0053	0.0048	0.0048	0.0048	0.0048	0.0048	0.0048	0.0036	0.0048	0.0048
	F	0.0065	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0048	0.0059	0.0059
3/4"	HP	0.0050	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043	0.0029	0.0043	0.0043
	LP	0.0064	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	0.0043	0.0057	0.0057
	F	0.0078	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0057	0.0071	0.0071
1"	HP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	LP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	F	0.0110	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0080	0.0100	0.0100
1-1/4"	HP	0.0079	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0045	0.0068	0.0068
	LP	0.0101	0.0090	0.0090	0.0090	0.0090	0.0090	0.0090	0.0068	0.0090	0.0090
	F	0.0124	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0090	0.0113	0.0113

HP = HEAVY PERIPHERAL
Axial Depth up to
1.0 x Diameter
Radial width .2 x Diameter

LP = LIGHT PERIPHERAL
Axial Depth up to
Effective Length of Cut
Radial width .05 x Diameter

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

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MH-CR Multi-Flute

Technical Chart



The MHCR series features our MH series as the platform to which a precision ground corner radius is applied, in a wide array of diameters and lengths, radii range from .030-.187". All of the tools are available from stock, which means no waiting for an altered tool.

Initial Speeds (SFM) and Feeds (Chip-Load per/tooth)

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc SFM > 32Rc	200 - 450 100 - 250	150 - 300 80 - 200	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/4"	HP	0.0017	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0010	0.0014	0.0014
	LP	0.0021	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0014	0.0019	0.0019
	F	0.0028	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0020	0.0025	0.0025
5/16"	HP	0.0021	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0012	0.0018	0.0018
	LP	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
	F	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
3/8"	HP	0.0025	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0014	0.0021	0.0021
	LP	0.0032	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0021	0.0029	0.0029
	F	0.0041	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0030	0.0038	0.0038
1/2"	HP	0.0035	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0020	0.0030	0.0030
	LP	0.0045	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0030	0.0040	0.0040
	F	0.0055	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0040	0.0050	0.0050
5/8"	HP	0.0042	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0024	0.0036	0.0036
	LP	0.0053	0.0048	0.0048	0.0048	0.0048	0.0048	0.0048	0.0036	0.0048	0.0048
	F	0.0065	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0048	0.0059	0.0059
3/4"	HP	0.0050	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043	0.0029	0.0043	0.0043
	LP	0.0064	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	0.0043	0.0057	0.0057
	F	0.0078	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0057	0.0071	0.0071
1"	HP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	LP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	F	0.0110	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0080	0.0100	0.0100
1-1/4"	HP	0.0079	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0045	0.0068	0.0068
	LP	0.0101	0.0090	0.0090	0.0090	0.0090	0.0090	0.0090	0.0068	0.0090	0.0090
	F	0.0124	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0090	0.0113	0.0113

HP = HEAVY PERIPHERAL

Axial Depth up to
1.0 x Diameter
Radial width .2 x Diameter

LP = LIGHT PERIPHERAL

Axial Depth up to
Effective Length of Cut
Radial width .05 x Diameter

F = FINISH

Axial Depth up to
Effective Length Of Cut
Radial width .02 x Diameter

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The introduction of the TiW series was designed for thin wall machining of Titanium Aerospace Structures with walls 3 times or more the diameter in depth of wall. The TiW series has patented geometries which improve Process Dampening in machining thin wall structures.

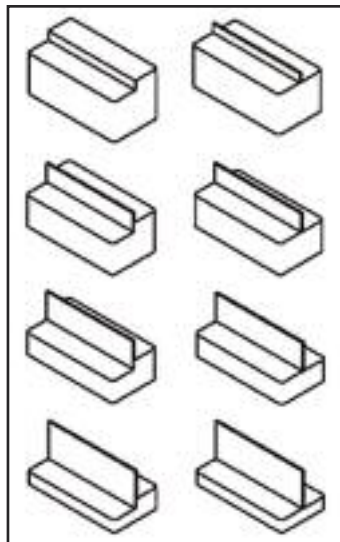
Feeds and Speeds Chart with Chip-Load per/tooth

Materials	Titanium		
	Pure	Cast/ Wrought	
		Titanium Cast/ Wrought	
		6AL4V, ASTM 1,2,3, Alpha - Beta	
Description	Pure	Cast/ Wrought	
LP	140 - 220	140 - 200	
F	300 - 400	300 - 400	
Diameter			
1/2"	LP	0.0037	0.0035
	F	0.0066	0.0063
5/8"	LP	0.0079	0.0079
	F	0.0142	0.0142
3/4"	LP	0.0042	0.0050
	F	0.0081	0.0086
1"	LP	0.0073	0.0065
	F	0.0117	0.0105

R = LIGHT PERIPHERAL
Axial Depth up to Length Of Cut
Radial Width .2 x Diameter

F = FINISH
Axial Depth up to Length Of Cut
Radial Width .02 x Diameter

Step-Cutting Rules of Thumb for Titanium

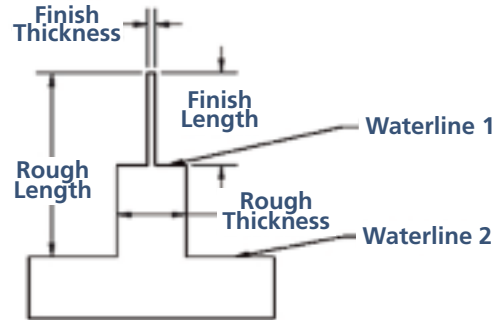


**Waterline
Machining Approach**

- Step-Cutting for Finishing Ribs
- Length (L) / Thickness (T)
- Rough (R), Finish (F)
- Maintain an 8/1 L/T Ratio

EXAMPLE:

1" LR / .130" TR = 7.7
.5" LF / .060" TF = 8.33



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Data Flute is pleased to introduce its all new MC Series. This is a 15 degree helix, multi-flute tool designed primarily for cobalt chrome and other similar materials used in medical implants. Our MC Series is intended to run at accelerated feeds and speeds with light radial depths of cut. The geometry is also excellent for finishing walls in a variety of materials <54RC.

High performance Carbide Feeds and Speeds Chart

Materials			Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steel	High Temp Alloys	Cobalt Chrome	
Description			10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Inconel 625/718, A286, Haynes	Cobalt Chrome	
SFM < 32Rc			200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	70 - 120	140 - 250	
SFM > 32Rc			100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	40 - 90	90 - 160	
Diameter	High Speed	SFM Finishing	400 - 900	300 - 600	300 - 600	400 - 450	160 - 500	140 - 300	250 - 500	
		Radial Chip Thickness	0.0004	0.0004	0.0005	0.0005	0.0006	0.0004	0.0006	
1/8"	LP	.008 Radial	Center Line Feed	0.0015	0.0015	0.0017	0.0017	0.002	0.0015	0.002
	F	.005 Radial	Center Line Feed	0.002	0.002	0.0025	0.0025	0.003	0.002	0.003
		Radial Chip Thickness	0.0005	0.0005	0.0006	0.0006	0.0007	0.0005	0.0007	
1/4"	LP	.010 Radial	Center Line Feed	0.0025	0.0025	0.0030	0.003	0.0035	0.0025	0.0035
	F	.005 Radial	Center Line Feed	0.0035	0.0035	0.0042	0.0042	0.0049	0.0035	0.0049
		Radial Chip Thickness	0.0005	0.0005	0.0006	0.0006	0.0007	0.0005	0.0007	
5/16"	LP	.010 Radial	Center Line Feed	0.0028	0.0028	0.0032	0.0032	0.0038	0.0028	0.0038
	F	.005 Radial	Center Line Feed	0.004	0.004	0.0047	0.0047	0.0055	0.004	0.0055
		Radial Chip Thickness	0.0005	0.0005	0.0006	0.0006	0.0007	0.0005	0.0007	
3/8"	LP	.010 Radial	Center Line Feed	0.003	0.003	0.0035	0.0035	0.0043	0.003	0.0043
	F	.005 Radial	Center Line Feed	0.0043	0.0043	0.005	0.005	0.006	0.0043	0.006
		Radial Chip Thickness	0.0005	0.0005	0.0006	0.0006	0.0007	0.0005	0.0007	
1/2"	LP	.010 Radial	Center Line Feed	0.0035	0.0035	0.0042	0.0042	0.0049	0.0035	0.0049
	F	.005 Radial	Center Line Feed	0.005	0.005	0.006	0.006	0.007	0.005	0.007
		Radial Chip Thickness	0.0005	0.0005	0.0006	0.0006	0.0007	0.0005	0.0007	
5/8"	LP	.012 Radial	Center Line Feed	0.0036	0.0036	0.0043	0.0043	0.0049	0.0036	0.0049
	F	.0062 Radial	Center Line Feed	0.005	0.005	0.006	0.006	0.007	0.005	0.007
		Radial Chip Thickness	0.0007	0.0007	0.0006	0.0006	0.0007	0.0005	0.0007	
3/4"	LP	.015 Radial	Center Line Feed	0.0048	0.0048	0.0042	0.0042	0.0048	0.0035	0.0048
	F	.0075 Radial	Center Line Feed	0.007	0.007	0.0060	0.006	0.007	0.005	0.007
		Radial Chip Thickness	0.0007	0.0007	0.0006	0.0006	0.0007	0.0005	0.0007	
1"	LP	.020 Radial	Center Line Feed	0.0048	0.0048	0.0042	0.0042	0.0048	0.0035	0.0048
	F	.010 Radial	Center Line Feed	0.007	0.007	0.0060	0.006	0.007	0.005	0.007

LP = LIGHT PERIPHERAL

Axial Depth up to < 2.0 x Diameter
Radial with .02 x Diameter

F = FINISH

Axial Depth up to Length Of Cut > 2.0 x Diameter
Radial with < .010 x Diameter

Example 1/2 Diameter .010 Radial @ 400 SFM = 3056 RPM, .0035 center line feed x 10 Flutes = 106 IPM

Chip Load Values based on Chip Thinning. Plus / Minus 15% Chip Thinning value based on Part, Finish, Fixture and Machine.



The AMA series is designed for outstanding performance in nickel and cobalt based high temperature alloys, as well as other difficult to machine materials. The corrosion and heat resistance of the nickel and cobalt based metals give rise to corresponding machining challenges. Examples of frequently encountered nickel based alloys include Waspalloy, Hastelloy, Inconel 718 and Inconel 625. Cobalt based alloys include, but are not limited to, Stellite, Haynes 188 and Haynes 230.

Carbide Feeds and Speeds Chart for High Temp Alloys

Materials		Iron Based	Iron-Nickel Based	Nickel-Iron Based	Cobalt Based
DESCRIPTION		A286, Discaloy, Incoloy 801, ASTM A297	Hastelloy X, N-155, Inconel 718	Inconel 600/625, Rene Alloys, Waspalloy, Monel, Invar	Stellite, Haynes 188, Haynes 230, AiResist 13
SFM < 32 Rc		70 - 120	70 - 120	60 - 110	60 - 110
SFM > 32 Rc		40 - 90	40 - 90	40 - 90	40 - 90
1/8	S	0.0006	0.0006	0.0005	0.0005
	HP	0.0008	0.0008	0.0007	0.0007
	LP	0.0010	0.0010	0.0008	0.0008
	F	0.0018	0.0018	0.0014	0.0014
3/16	S	0.0007	0.0007	0.0006	0.0006
	HP	0.0010	0.0010	0.0008	0.0008
	LP	0.0011	0.0011	0.0009	0.0009
	F	0.0020	0.0020	0.0016	0.0016
1/4"	S	0.0009	0.0009	0.0007	0.0007
	HP	0.0012	0.0012	0.0010	0.0010
	LP	0.0014	0.0014	0.0011	0.0011
	F	0.0025	0.0025	0.0020	0.0020
5/16"	S	0.0011	0.0011	0.0009	0.0009
	HP	0.0016	0.0016	0.0013	0.0013
	LP	0.0019	0.0019	0.0015	0.0015
	F	0.0033	0.0033	0.0026	0.0026
3/8"	S	0.0015	0.0015	0.0012	0.0012
	HP	0.0021	0.0021	0.0017	0.0017
	LP	0.0025	0.0025	0.0020	0.0020
	F	0.0045	0.0045	0.0036	0.0036
1/2"	S	0.0018	0.0018	0.0014	0.0014
	HP	0.0024	0.0024	0.0019	0.0019
	LP	0.0026	0.0026	0.0021	0.0021
	F	0.0047	0.0047	0.0038	0.0038
5/8"	S	0.0025	0.0025	0.0020	0.0020
	HP	0.0036	0.0036	0.0029	0.0029
	LP	0.0050	0.0050	0.0040	0.0040
	F	0.0080	0.0080	0.0064	0.0064
3/4"	S	0.0028	0.0028	0.0022	0.0022
	HP	0.0040	0.0040	0.0032	0.0032
	LP	0.0053	0.0053	0.0042	0.0042
	F	0.0085	0.0085	0.0068	0.0068
1"	S	0.0035	0.0035	0.0028	0.0028
	HP	0.0043	0.0043	0.0034	0.0034
	LP	0.0060	0.0060	0.0048	0.0048
	F	0.0108	0.0108	0.0086	0.0086

S = SLOTTING
Axial Depth up to
1.0 x Diameter

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

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

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