



Niagara Cutter

NEW HSCO Endmills for Stainless Steel & Titanium Applications

- Material: M42 Cobalt
- Polished Flute Face
- Center Cutting End Teeth
- Corner chamfer for strength
- Standard Weldon Flat
- Uncoated Standard, coatings available upon request
- Radius modification possible up to .090" on all sizes through JIF program
- Optimal chip formation and evacuation

VFP435

VFP635



Price Code B

Flute Diameter	Shank Diameter	LOC	OAL	#F	45° Chamfer Width	Uncoated EDP #	List Price
3/4	3/4	1 5/8	3 7/8	4	0.030	68948	\$71.40
3/4	3/4	2 1/4	4 1/2	4	0.030	68949	\$87.61
3/4	3/4	3	5 1/4	4	0.030	68950	\$95.15
3/4	3/4	4	6 1/4	4	0.030	68951	\$113.27
1	1	2	4 1/2	4	0.030	68952	\$106.40
1	1	2	4 1/2	6	0.030	68953	\$106.40
1	1	3	5 1/2	4	0.030	68954	\$136.47
1	1	3	5 1/2	6	0.030	68955	\$136.47
1	1	4	6 1/2	4	0.030	68956	\$150.73
1	1	4	6 1/2	6	0.030	68957	\$150.73
1 1/4	1 1/4	2	4 1/2	4	0.040	68958	\$154.21
1 1/4	1 1/4	2	4 1/2	6	0.040	68959	\$154.21
1 1/4	1 1/4	3	5 1/2	4	0.040	68960	\$194.60
1 1/4	1 1/4	3	5 1/2	6	0.040	68961	\$194.60
1 1/4	1 1/4	4	6 1/2	4	0.040	68962	\$219.58
1 1/4	1 1/4	4	6 1/2	6	0.040	68963	\$219.58
1 1/4	1 1/4	6	8 1/2	6	0.040	68964	\$287.14
1 1/2	1 1/4	2	4 1/2	6	0.040	68965	\$203.28
1 1/2	1 1/4	3	5 1/2	6	0.040	68966	\$240.84
1 1/2	1 1/4	4	6 1/2	6	0.040	68967	\$278.39
1 1/2	1 1/4	6	8 1/2	6	0.040	68968	\$364.05
2	2	2	5 3/4	6	0.040	68969	\$339.97
2	2	3	6 3/4	6	0.040	68970	\$399.09
2	2	4	7 3/4	6	0.040	68971	\$451.31
2	2	6	9 3/4	6	0.040	68972	\$534.10
2	2	8	11 3/4	6	0.040	68973	\$661.50

VFP635 Recommended Starting Point Speed and Feeds (Slotting)

Material	SFPM	Diameter = 3/4			Diameter = 1			Diameter = 1 1/4			Diameter = 1 1/2			Diameter = 2			Axial Depth Max
		RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	
Titanium 6AL4V																	
< 350 Bhn (38 Rc)	60	306	0.0032	3.9	229	0.0036	5.0	183	0.0042	4.6	153	0.0052	4.8	115	0.0058	4.0	1xD
> 350 Bhn (38 Rc)	40	204	0.0025	2.0	153	0.0026	2.4	122	0.0033	2.4	102	0.0040	2.4	76	0.0044	2.0	0.75xD
Stainless Steel																	
< 350 Bhn (38 Rc)	100	509	0.0032	6.5	382	0.0036	8.3	306	0.0045	8.3	255	0.0052	7.9	191	0.0058	6.6	1xD
> 350 Bhn (38 Rc)	60	509	0.0027	5.5	229	0.0030	4.1	183	0.0035	3.9	153	0.0045	4.1	115	0.0050	3.4	0.75xD

Speeds and Feeds are based upon: ADOC = 1 x Diameter

VFP635 Recommended Starting Point Speed and Feeds (Profiling)

Material	SFPM	Diameter = 3/4			Diameter = 1			Diameter = 1 1/4			Diameter = 1 1/2			Diameter = 2			Radial Depth Max	Axial Depth Max
		RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM		
Titanium 6AL4V																		
< 350 Bhn (38 Rc)	60	306	0.0038	4.7	229	0.0043	5.9	183	0.0050	5.5	153	0.0062	5.7	115	0.0070	4.8	0.4xD	1.5xD
> 350 Bhn (38 Rc)	40	204	0.0030	2.4	153	0.0032	2.9	122	0.0040	2.9	102	0.0048	2.9	76	0.0053	2.4	0.25xD	1xD
Stainless Steel																		
< 350 Bhn (38 Rc)	100	509	0.0038	7.8	382	0.0043	9.9	306	0.0054	9.9	255	0.0062	9.5	191	0.0070	8.0	0.5xD	1.5xD
> 350 Bhn (38 Rc)	60	306	0.0032	4.0	229	0.0036	5.0	183	0.0042	4.6	153	0.0054	5.0	115	0.0060	4.1	0.25xD	1xD

Speeds and Feeds are based upon: ADOC = 1.5 x Diameter, RDOC = 0.25 x Diameter

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- Material: M42 Cobalt
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- Center Cutting End Teeth
- Corner chamfer for strength
- Standard Weldon Flat
- Uncoated Standard, coatings available upon request
- Radius modification possible up to .090" on all sizes through JIF program
- Optimal chip formation and evacuation
- VFP² is ideal for less rigid setups

VFP²435

VFP²635



Price Code B

Flute Diameter	Shank Diameter	LOC	OAL	#F	45° Chamfer Width	Uncoated EDP #	List Price
3/4	3/4	1 5/8	3 7/8	4	0.030	68974	\$71.40
3/4	3/4	2 1/4	4 1/2	4	0.030	68975	\$87.61
3/4	3/4	3	5 1/4	4	0.030	68976	\$95.15
3/4	3/4	4	6 1/4	4	0.030	68977	\$113.27
1	1	2	4 1/2	4	0.030	68978	\$106.40
1	1	2	4 1/2	6	0.030	68979	\$106.40
1	1	3	5 1/2	4	0.030	68980	\$136.47
1	1	3	5 1/2	6	0.030	68981	\$136.47
1	1	4	6 1/2	4	0.030	68982	\$150.73
1	1	4	6 1/2	6	0.030	68983	\$150.73
1 1/4	1 1/4	2	4 1/2	4	0.040	68984	\$154.21
1 1/4	1 1/4	2	4 1/2	6	0.040	68985	\$154.21
1 1/4	1 1/4	3	5 1/2	4	0.040	68986	\$194.60
1 1/4	1 1/4	3	5 1/2	6	0.040	68987	\$194.60
1 1/4	1 1/4	4	6 1/2	4	0.040	68988	\$219.58
1 1/4	1 1/4	4	6 1/2	6	0.040	68989	\$219.58
1 1/4	1 1/4	6	8 1/2	6	0.040	68990	\$287.14
1 1/2	1 1/4	2	4 1/2	6	0.040	68991	\$203.28
1 1/2	1 1/4	3	5 1/2	6	0.040	68992	\$240.84
1 1/2	1 1/4	4	6 1/2	6	0.040	68993	\$278.39
1 1/2	1 1/4	6	8 1/2	6	0.040	68994	\$364.05
2	2	2	5 3/4	6	0.040	68995	\$339.97
2	2	3	6 3/4	6	0.040	68996	\$399.09
2	2	4	7 3/4	6	0.040	68997	\$451.31
2	2	6	9 3/4	6	0.040	68998	\$534.10
2	2	8	11 3/4	6	0.040	68999	\$661.50

VFP²635 Recommended Starting Point Speed and Feeds (Slotting)

Material	SFPM	Diameter = 3/4			Diameter = 1			Diameter = 1 1/4			Diameter = 1 1/2			Diameter = 2			Axial Depth Max
		RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	
Titanium 6AL4V																	
< 350 Bhn (38 Rc)	60	306	0.0034	4.1	229	0.0038	5.2	183	0.0044	4.9	153	0.0055	5.0	115	0.0061	4.2	1xD
> 350 Bhn (38 Rc)	40	204	0.0026	2.1	153	0.0027	2.5	122	0.0035	2.5	102	0.0042	2.6	76	0.0046	2.1	0.75xD
Stainless Steel																	
< 350 Bhn (38 Rc)	100	509	0.0034	6.8	382	0.0038	8.7	306	0.0047	8.7	255	0.0055	8.3	191	0.0061	7.0	1xD
> 350 Bhn (38 Rc)	60	306	0.0028	3.5	229	0.0032	4.3	183	0.0037	4.0	153	0.0047	4.3	115	0.0053	3.6	0.75xD

Speeds and Feeds are based upon: ADOC = 1 x Diameter

VFP²635 Recommended Starting Point Speed and Feeds (Profiling)

Material	SFPM	Diameter = 3/4			Diameter = 1			Diameter = 1 1/4			Diameter = 1 1/2			Diameter = 2			Radial Depth Max	Axial Depth Max
		RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM	RPM	CPT	IPM		
Titanium 6AL4V																		
< 350 Bhn (38 Rc)	60	306	0.0040	4.9	229	0.0045	6.2	183	0.0053	5.8	153	0.0066	6.0	115	0.0073	5.0	0.4xD	1.5xD
> 350 Bhn (38 Rc)	40	204	0.0032	2.6	153	0.0034	3.1	122	0.0042	3.0	102	0.0050	3.1	76	0.0055	2.5	0.25xD	1xD
Stainless Steel																		
< 350 Bhn (38 Rc)	100	509	0.0040	8.2	382	0.0045	10.4	306	0.0057	10.4	255	0.0066	10.0	191	0.0073	8.4	0.5xD	1.5xD
> 350 Bhn (38 Rc)	60	306	0.0034	4.2	229	0.0038	5.2	183	0.0044	4.9	153	0.0057	5.2	115	0.0063	4.3	0.25xD	1xD

Speeds and Feeds are based upon: ADOC = 1.5 x Diameter, RDOC = 0.25 x Diameter

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