



SLOTTING & PROFILING

RAMPING

PLUNGING

HIGH SPEED MILLING

ROUGHING & FINISHING





Radial end gashing enables drilling, steep ramping and aggressive helical entry.

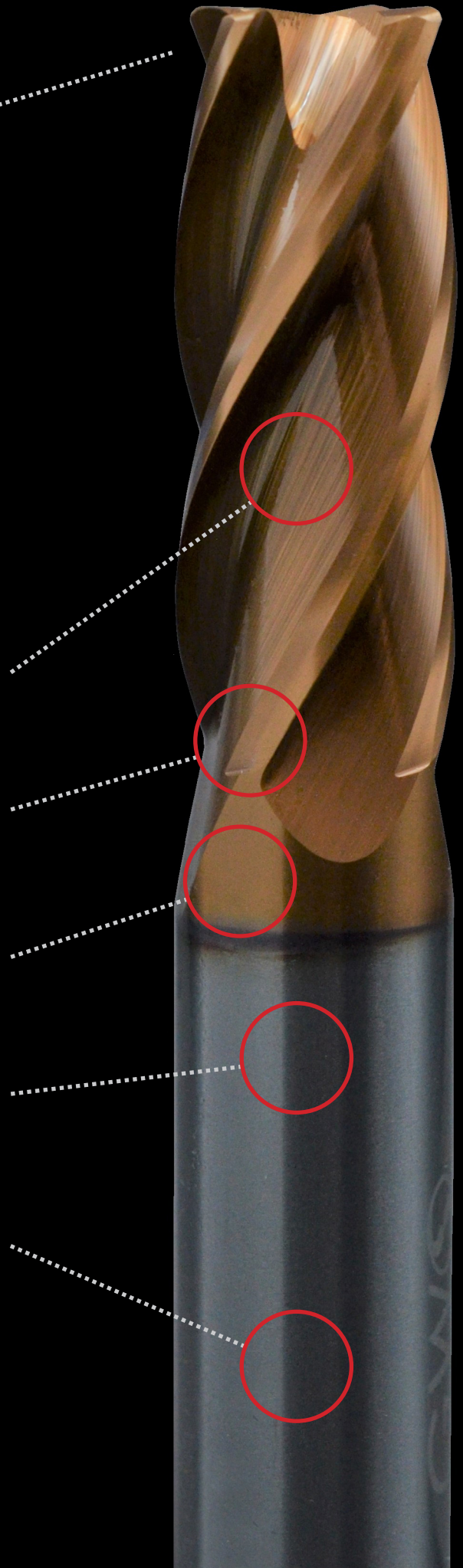
Variable helix design with unequal indexing reduces vibration.

Double-eccentric margin creates smooth cutting action at high and low speeds.

FX7 nano coating possesses extreme hardness and thermal stability in wet or dry environments for ultimate tool life.

New ultra-fine carbide grade with increased TRS ... the perfect blend of hardness and toughness.

Safe-Lock® shank available upon request.





# ALL-TERRAIN

AT equals all-terrain. An end mill designed to handle multiple materials, multiple milling strategies and multiple part entry methods. The next evolution in variable helix milling solutions.

## WORK MATERIALS

P1	Carbon & Mild Steels	1015, 1045, A36
P2	Alloy Steels	4140, 860
P3	Tool Steels	D2, A2, P20, S7
M1	Stainless Steels	303, 304
M2	PH Stainless Steels	17-4PH, 15-5PH, 316L
K1	Cast Iron	A48, A319, A159
K2	Ductile Cast Iron	A536, A436, A842 (CGI)
S1	Titanium Alloys	Ti6Al4V, B348
N1	Aluminum Alloys	6061, 7075
N2	Aluminum Castings	A356, A319

1

## Dynamic High Speed Machining

1410 SFM | 315 IPM | Aa: 1.2" Ar: 0.050"

2

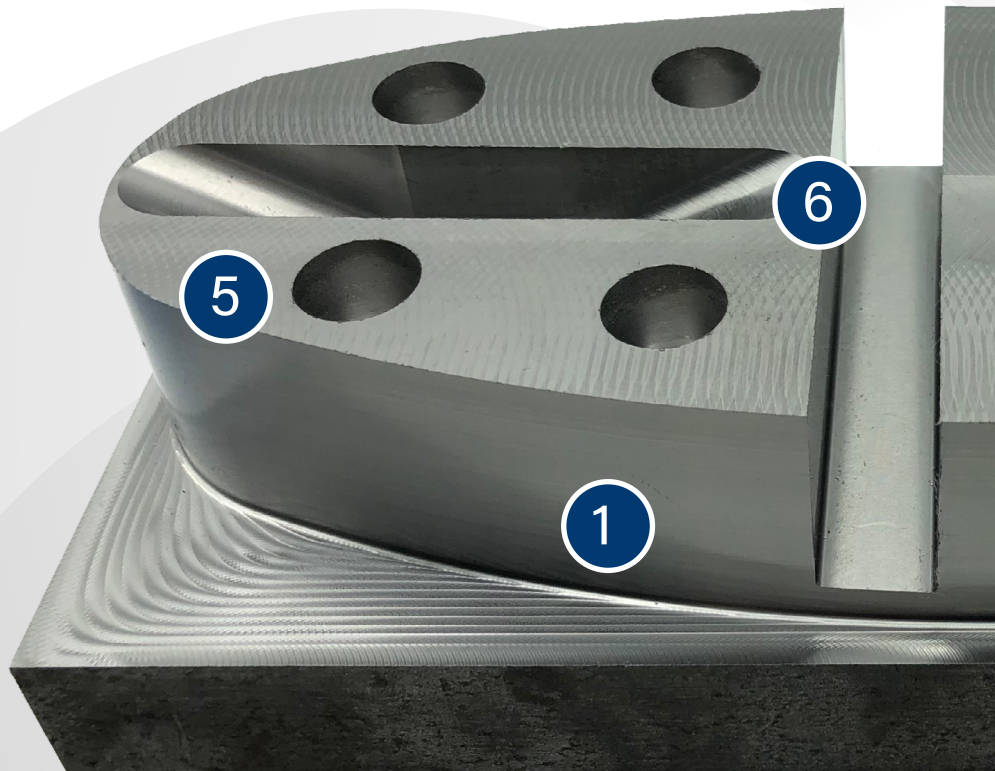
## Helical Interpolation

656 SFM | 22 IPM | Aa: 1.2" | 30° angle

3

## Pocketing

1410 SFM | 315 IPM | Aa: 1.2" Ar: 0.050"





# SLOTING & PROFILING | RAMPING | PLUNGING HIGH SPEED MILLING | ROUGHING & FINISHING

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## Slotting 2XD

656 SFM | 32 IPM | Aa: 1.0"

5

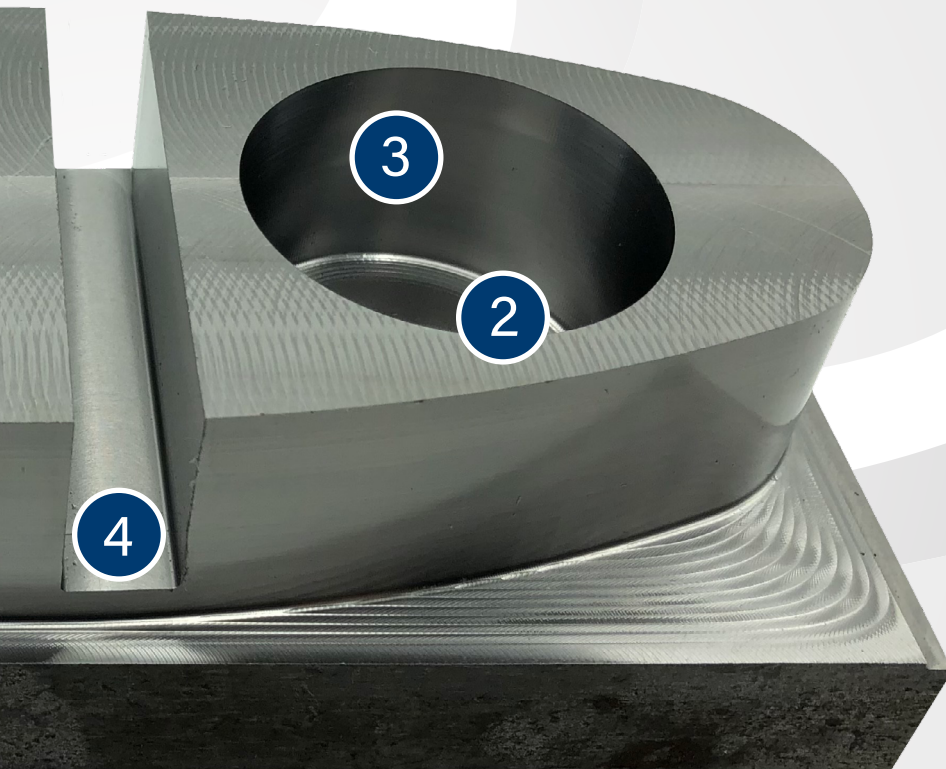
## Drilling

656 SFM | 22 IPM | Aa: 0.5"

6

## Ramping

656 SFM | 22 IPM | Aa: 0.5" | 30° angle



Scan for video

**Tool:** 1/2x1-1/4x3 R.030 AT4 | **Material:** A36 steel

# Hurrimill™ AT4 | All-Terrain

High performance all-terrain end mill for all applications



AT4   4FL   Multiple Length   Square & Radius   FX7					
Diameter	OAL	LOC	SHK	Radius	EDP
1/8	1-1/2	1/4	1/8	-	
1/8	1-1/2	1/4	1/8	0.005	
1/8	1-1/2	1/4	1/8	0.015	
1/8	1-1/2	1/4	1/8	0.030	
3/16	2	5/16	3/16	-	
3/16	2	5/16	3/16	0.005	
3/16	2	5/16	3/16	0.015	
3/16	2	5/16	3/16	0.030	
1/4	2	5/16	1/4	-	
1/4	2	5/16	1/4	0.015	
1/4	2	5/16	1/4	0.030	
1/4	2	5/16	1/4	0.060	
1/4	2	1/2	1/4	-	
1/4	2	1/2	1/4	0.015	
1/4	2	1/2	1/4	0.030	
1/4	2	1/2	1/4	0.060	
1/4	2-1/2	3/4	1/4	-	
1/4	2-1/2	3/4	1/4	0.015	
1/4	2-1/2	3/4	1/4	0.030	
1/4	2-1/2	3/4	1/4	0.060	
5/16	2	1/2	5/16	-	
5/16	2	1/2	5/16	0.015	
5/16	2	1/2	5/16	0.030	
5/16	2	1/2	5/16	0.060	
5/16	2-1/2	13/16	5/16	-	
5/16	2-1/2	13/16	5/16	0.015	
5/16	2-1/2	13/16	5/16	0.030	
5/16	2-1/2	13/16	5/16	0.060	

### Custom Options:

Modifications like radii, necks or flats as fast as 48-72hrs

Custom diameters, LOC or OAL as fast as 2 weeks

**SAFE-LOCK®**  
Shank available upon request



# Hurrimill™ AT4 | All-Terrain

High performance all-terrain end mill for all applications



AT4 | 4FL | Multiple Length | Square & Radius | FX7

Diameter	OAL	LOC	SHK	Radius	EDP	EDP <i>Weldon</i>
3/8	2	7/16	3/8	-	-	-
3/8	2	7/16	3/8	0.015	-	-
3/8	2	7/16	3/8	0.030	-	-
3/8	2	7/16	3/8	0.060	-	-
3/8	2	5/8	3/8	-	-	-
3/8	2	5/8	3/8	0.015	-	-
3/8	2	5/8	3/8	0.030	-	-
3/8	2	5/8	3/8	0.060	-	-
3/8	2-1/2	7/8	3/8	-	-	-
3/8	2-1/2	7/8	3/8	0.015	-	-
3/8	2-1/2	7/8	3/8	0.030	-	-
3/8	2-1/2	7/8	3/8	0.060	-	-
1/2	3	5/8	1/2	-	-	1034089
1/2	3	5/8	1/2	0.015	-	1034090
1/2	3	5/8	1/2	0.030	-	1034091
1/2	3	5/8	1/2	0.060	-	1034092
1/2	3	5/8	1/2	0.090	-	1034093
1/2	3	1	1/2	-	-	1034094
1/2	3	1	1/2	0.015	-	1034095
1/2	3	1	1/2	0.030	-	1034096
1/2	3	1	1/2	0.060	-	1034097
1/2	3	1	1/2	0.090	-	1034098
1/2	3-1/2	1-1/4	1/2	-	-	1034099
1/2	3-1/2	1-1/4	1/2	0.015	-	1034100
1/2	3-1/2	1-1/4	1/2	0.030	-	1034101
1/2	3-1/2	1-1/4	1/2	0.060	-	1034102
1/2	3-1/2	1-1/4	1/2	0.090	-	1034103
1/2	4	1-1/2	1/2	-	-	1034104
1/2	4	1-1/2	1/2	0.015	-	1034105
1/2	4	1-1/2	1/2	0.030	-	1034106
1/2	4	1-1/2	1/2	0.060	-	1034107
1/2	4	1-1/2	1/2	0.090	-	1034108

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High performance all-terrain end mill for all applications



AT4   4FL   Multiple Length   Square & Radius   FX7						
Diameter	OAL	LOC	SHK	Radius	EDP	EDP <i>Weldon</i>
5/8	3	3/4	5/8	-		1034109
5/8	3	3/4	5/8	0.030		1034110
5/8	3	3/4	5/8	0.060		1034111
5/8	3	3/4	5/8	0.090		1034112
5/8	3-1/2	1-1/4	5/8	-		1034113
5/8	3-1/2	1-1/4	5/8	0.030		1034114
5/8	3-1/2	1-1/4	5/8	0.060		1034115
5/8	3-1/2	1-1/4	5/8	0.090		1034116
3/4	3-1/2	7/8	3/4	-		1034117
3/4	3-1/2	7/8	3/4	0.030		1034118
3/4	3-1/2	7/8	3/4	0.060		1034119
3/4	3-1/2	7/8	3/4	0.090		1034120
3/4	3-1/2	7/8	3/4	0.120		1034121
3/4	4	1-1/2	3/4	-		1034122
3/4	4	1-1/2	3/4	0.030		1034123
3/4	4	1-1/2	3/4	0.060		1034124
3/4	4	1-1/2	3/4	0.090		1034125
3/4	4	1-1/2	3/4	0.120		1034126
1	4	1	1	-		1034127
1	4	1	1	0.030		1034128
1	4	1	1	0.060		1034129
1	4	1	1	0.090		1034130
1	4	1	1	0.120		1034131
1	4	1-1/2	1	-		1034132
1	4	1-1/2	1	0.030		1034133
1	4	1-1/2	1	0.060		1034134
1	4	1-1/2	1	0.090		1034135
1	4	1-1/2	1	0.120		1034136

### Custom Options:

Modifications like radii, necks or flats as fast as 48-72hrs

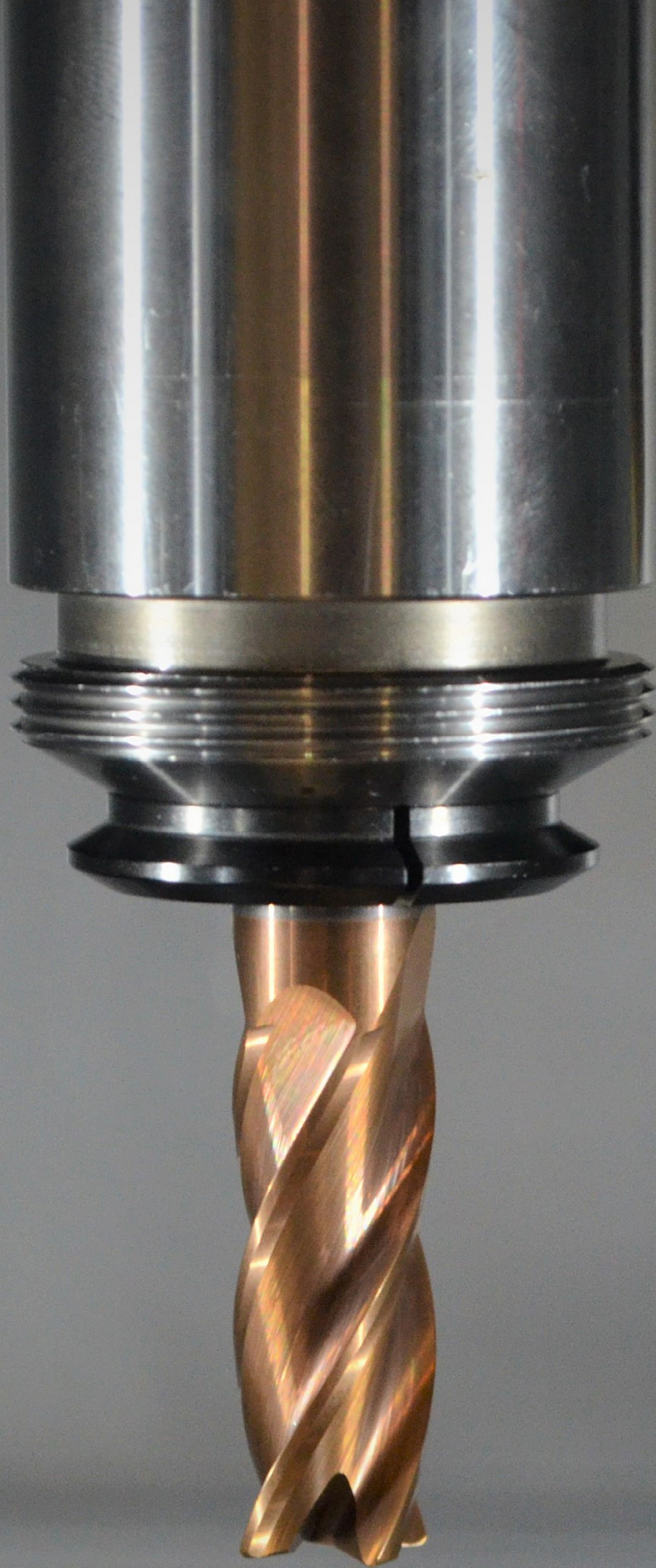
Custom diameters, LOC or OAL as fast as 2 weeks

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# Speed & Feed

Optimum Performance

## | SLOTTING & SIDE MILLING | SFM & IPT


Material Group		Slotting	Side Milling	High Speed Milling
		 Aa: 1.25xD	 Aa: Loc Ar: 20%D	 Aa: Loc Ar: 10%D
		SFM	SFM	SFM
P1	Carbon Steels (1018, 1050)	460 - 675	552 - 810	1050 - 1410
P2	Alloy Steels (4140, 8620)	430 - 615	520 - 740	900 - 1030
P3	Tool Steels (P20, S7, D2)	320 - 480	385 - 570	540 - 810
M1	Stainless Steels (303, 304)	260 - 350	360 - 420	470 - 600
M2	PH Stainless (17-4, 15-5)	200 - 280	250 - 310	320 - 430
K1	Cast Iron (A48, A319)	500 - 605	600 - 675	680 - 800
K2	Ductile Cast Iron (A536, CGI)	420 - 460	475 - 570	580 - 650
S1	Titanium (6Al4V, 5-38)	150 - 205	200 - 250	240 - 310
N1	Aluminum Alloy (6061, 7075)	1500 - 1600	1800 - 2100	2450 - 2710
N2	Cast Aluminum (A356, A319)	1100 - 1150	1250 - 1450	1500 - 1800

Inch per Tooth									
Diameter	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
Ar < 0.5D	0.0007	0.0011	0.0019	0.002	0.0025	0.0032	0.0041	0.0045	0.0052
Ar > 0.5D	0.0005	0.0009	0.0013	0.0015	0.0021	0.0023	0.0033	0.0035	0.0042


# Speed & Feed

Optimum Performance

## | PART ENTRY - DRILLING, RAMPING, HELICAL | IPT

Material Group		Part Entry - Drilling 								
		Inch Per Tooth								
		1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
P1	Carbon Steels (1018, 1050)	0.0004	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0022	0.0030
P2	Alloy Steels (4140, 8620)	0.0003	0.0005	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017	0.0023
P3	Tool Steels (P20, S7, D2)	0.0002	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0011	0.0015
K1	Cast Iron (A48, A319)	0.0004	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0022	0.0030
N1	Aluminum Alloy (6061, 7075)	0.0005	0.0007	0.0010	0.0013	0.0018	0.0020	0.0024	0.0026	0.0036
N2	Cast Aluminum (A356, A319)	0.0004	0.0005	0.0007	0.0010	0.0014	0.0015	0.0018	0.0020	0.0027

\* For drilling operations, reduce all SFM by 45%

Material Group		Ramp Angle	Part Entry - Ramping & Helical Interpolation 								
			Inch Per Tooth								
			1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
P1	Carbon Steels (1018, 1050)	45°	0.0004	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0022	0.0030
P2	Alloy Steels (4140, 8620)	30°	0.0004	0.0005	0.0007	0.0010	0.0014	0.0015	0.0018	0.0020	0.0027
P3	Tool Steels (P20, S7, D2)	30°	0.0003	0.0005	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017	0.0023
M1	Stainless Steels (303, 304)	8°	0.0002	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0011	0.0015
M2	PH Stainless (17-4, 15-5)	5°	0.0002	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0011	0.0015
K1	Cast Iron (A48, A319)	45°	0.0004	0.0007	0.0009	0.0012	0.0017	0.0019	0.0022	0.0024	0.0033
K2	Ductile Cast Iron (A536, CGI)	20°	0.0004	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0022	0.0030
S1	Titanium (6Al4V, 5-38)	10°	0.00024	0.00036	0.00048	0.00066	0.0009	0.00102	0.0012	0.00132	0.0018
N1	Aluminum Alloy (6061, 7075)	30°	0.0004	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0022	0.0030
N2	Cast Aluminum (A356, A319)	30°	0.0004	0.0005	0.0007	0.0010	0.0014	0.0015	0.0018	0.0020	0.0027

\* For M1, M2 reduce SFM by 45%. For K2 reduce SFM 15%.

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