



List 52200 - PHOENIX® PFR: SA

List 78320 - PHOENIX® PFR: SS

List 52605 - PHOENIX® PFR: ASF

List 78220 - PHOENIX® PFR: SF

Standard Milling

Work Material	Tensile Strength – Hardness	Milling Speed Vc (SFM)			Depth of Cut Aa (in)	Feed Per Tooth fz (in/t)			
		L/D = 2.5	L/D = 5	L/D = 8		Ø0.236-0.275 [6-7mm]	Ø0.312-0.375 [8-10mm]	Ø0.500-0.625 [12-16mm]	Ø0.750-1.250 [20-32mm]
P Mild Steels, Carbon Steels (1010, 1018) Carbon Steels, Alloy Steels (1050, 4140) Die Steels (H13, D2)	~180 HB	655 (490-820)	80%	60%	0.05Dc	0.0047	0.0079	0.0087	0.0098
	~280 HB	590 (495-820)			0.05Dc	0.0059	0.0071	0.0087	0.0098
	~280 HB	495 (395-655)			0.05Dc	0.0040	0.0059	0.0071	0.0079
M Stainless Steels (304SS, 420SS)	~250 HB	495 (330-655)			0.03Dc	0.0031	0.0047	0.0059	0.0071
K Cast Iron (FC250) Ductile Cast Iron (60-40-18)	~350 N/mm ²	655 (495-820)			0.05Dc	0.0059	0.0079	0.0098	0.0118
	~600 N/mm ²	495 (330-655)			0.05Dc	0.0047	0.0059	0.0079	0.0098
N Aluminum Alloys (6061, 7075) Graphite CFRP	~13% Si	985 (655-1310)			0.05Dc	0.0079	0.0098	0.0118	0.0138
	-	825 (500-1150)			0.10Dc	0.0098	0.0157	0.0197	0.0197
	-	650 (500-825)			0.50Dc	0.0020	0.0040	0.0059	0.0079
S Heat Resistant Alloys (Inconel 718) Titanium Alloy (Ti-6Al-4V)	-	100 (65-130)			0.02Dc	0.0016	0.0020	0.0031	0.0047
	-	165 (130-195)	0.02Dc	0.0020	0.0031	0.0040	0.0059		
H Pre-hardened Steel (P20, Stavax) Die Cast Steels (A2, S7) Hardened Steels (D2)	40 - 43 HRC	395 (330-495)	0.03Dc	0.0031	0.0040	0.0047	0.0071		
	43 - 48 HRC	260 (165-330)	0.025Dc	0.0020	0.0031	0.0040	0.0059		
	50 - 55 HRC	195 (130-260)	0.02Dc	0.0016	0.0020	0.0031	0.0040		





High-Speed Light Milling

Work Material	Tensile Strength – Hardness	Milling Speed Vc (SFM)			Depth of Cut Aa (in)	Feed Per Tooth fz (in/t)				
		Steel Shank	Carbide Shank Short	Carbide Shank Long		Ø0.236-0.312 [6-8mm]	Ø0.375-0.500 [10-12mm]	Ø0.625-0.750 [16-20mm]	Ø1.000-1.250 [25-32mm]	
P	Mild Steels, Carbon Steels (1010, 1018)	~180 HB	1475	1575	1180	0.02Dc	0.0040	0.0047	0.0055	0.0071
	Carbon Steels, Alloy Steels (1050, 4140)	~280 HB	1475	1575	1180	0.02Dc	0.0027	0.0040	0.0047	0.0055
	Die Steels (H13, D2)	~280 HB	1230	1310	985	0.02Dc	0.0027	0.0040	0.0047	0.0055
M	Stainless Steels (304SS, 420SS)	~250 HB	1230	1310	985	0.02Dc	0.0027	0.0047	0.0055	0.0067
K	Cast Iron (FC250)	~350 N/mm ²	1970	2100	1575	0.02Dc	0.0047	0.0055	0.0071	0.0087
	Ductile Cast Iron (60-40-18)	~600 N/mm ²	1475	1575	1180	0.02Dc	0.0040	0.0047	0.0055	0.0071
N	Aluminum Alloys (6061, 7075)	~13% Si	2460	2625	1970	0.03Dc	0.0047	0.0055	0.0071	0.0087
S	Heat Resistant Alloys (Inconel 718)	-	230	260	195	0.015Dc	0.0016	0.0020	0.0024	0.0051
	Titanium Alloy (Ti-6Al-4V)	-	395	470	360	0.02Dc	0.0024	0.0031	0.0043	0.0040
H	Pre-hardened Steel (P20, Stavax)	40 - 43 HRC	985	1050	790	0.015Dc	0.0024	0.0027	0.0031	0.0040
	Die Cast Steels (A2, S7)	43 - 48 HRC	885	940	720	0.015Dc	0.0020	0.0024	0.0027	0.0027
	Hardened Steels (D2)	50 - 55 HRC	720	790	590	0.01Dc	0.0020	0.0024	0.0027	0.0027

