

High Performance Solid Carbide Milling Guide

Fractional

Type	Rc Hardness	MILLING SFM (Vc)				CHIPLOAD PER TOOTH (Fz)		
		Aluminum Series		All Other High Performance Series		1/8" - 1/4"	1/4" - 1/2"	1/2" - 1"
		Uncoated	Coated	Uncoated	X.Ceed Coated			
COBALT BASE ALLOYS / Kobaltlegierungen / Aleaciones del cobalto / Alliages de cobalt / Leghe del cobalto / 钴基合金								
Powdered Metal, Stellite, Hs-21, Haynes 25/188, X-40, L-605	< 35	-	-	200 - 275	275 - 400	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	125 - 175	175 - 250	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
NICKEL BASE ALLOYS / Nickellegierungen / Aleaciones de níquel / Alliage de nickel / Leghe di nichel / 高镍基合金								
Invar, Kovar, Inconel-625/718, Waspalloy, Rene, Hastalloy, A286	< 35	-	-	150 - 200	200 - 300	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	90 - 125	125 - 200	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
IRON BASE ALLOYS / Eisenlegierungen / Aleaciones ferrosas / Alliages ferreux / Leghe ferrose / 铁基合金								
Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3	< 35	-	-	200 - 300	250 - 350	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	150 - 200	200 - 250	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
MONEL / 铜-镍合金								
Monel - 65% Nickel		-	-	200 - 300	275 - 400	.0010" - .0025"	.0015" - .0040"	.0030" - .0050"
TITANIUM ALLOYS / Titanlegierungen / Aleaciones de Titanio / Alliage de Titane / Leghe di Titanio / 钛合金								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		200 - 400	400 - 600	250 - 350	300 - 500	.0010" - .0025"	.0015" - .0040"	.0030" - .0050"
5553 / Beta Titanium		-	-	225 - 275	250 - 300	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
STAINLESS STEELS / Rostfreie Stähle / Acero Inoxidable / Acier Inoxydable / Acciaio Inox / 不锈钢合金								
13/8, 15/5, 17-4, pH Types	< 35	-	-	200 - 350	250 - 300	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	150 - 250	200 - 250	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
Inox, 200 Series, 300 Series	< 35	-	-	250 - 350	300 - 400	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	175 - 275	225 - 300	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
304L, 316L, Nitronic 50, Inox	< 35	-	-	125 - 200	250 - 300	.0008" - .0015"	.0010" - .0020"	.0020" - .0040"
	> 35	-	-	90 - 125	200 - 250	.0005" - .0010"	.0010" - .0015"	.0010" - .0030"
400 Series	< 35	-	-	200 - 350	250 - 300	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	> 35	-	-	150 - 250	200 - 250	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
HIGH STRENGTH TOOL STEELS / Hochfeste Werkzeugstähle / Herramienta aceros de alto dureza / Aciers à outils à haute résistance / Acciaio da utensili molto duro / 高强度工具钢								
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	< 30	-	-	225 - 300	250 - 350	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	30 - 38	-	-	125 - 200	150 - 250	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
	> 38	(SEE HIGH ROCKWELL CHART - PAGE 168)						
MEDIUM ALLOY TOOL STEELS / Mittel Legierte Werkzeugstähle / Aceros herramienta medios de la aleación / Aciers à outils alliés / Acciaio da utensili di media durezza / 中合金钢								
200, 250, 300	< 35	-	-	250 - 350	250 - 400	.0010" - .0025"	.0015" - .0040"	.0030" - .0050"
	> 35	-	-	150 - 200	150 - 300	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
CARBON STEELS / Kohlenstoffstahl / Acero de carbón / Acier du carbone / Acciaio al carbonio / 碳钢								
Platinum, A36, 1000's, 1100's, 1300's	< 35	-	-	250 - 350	300 - 500	.0010" - .0025"	.0015" - .0040"	.0030" - .0050"
	> 35	-	-	150 - 200	250 - 400	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
CAST MATERIAL / Gegossenes Material / Material bastidor vertidos / Matériaux fontes / Materiale fuso / 铸件								
Steel		-	-	175 - 250	250 - 400	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
Ductile Iron		-	-	200 - 300	350 - 500	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
Gray Iron		-	-	175 - 250	300 - 500	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
Aluminum		300 - 400	350 - 500	300 - 400	-	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
ALUMINUM / Aluminium / Aluminio / Aluminium / Alluminio / 铝								
Aircraft Grade (6061, 7075)	Standard Speed	300 - 500	400 - 700	300 - 500	400 - 600	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
	High Speed	(SEE HIGH SPEED ALUMINUM CHART - PAGE 172)						
MAGNESIUM / Magnesium / Magnesio / Magnésium / Magnesio / 镁								
		300 - 400	300 - 600	300 - 400	350 - 600	.0015" - .0040"	.0020" - .0060"	.0030" - .0100"
COPPER / Kupfer / Cobre / Cuivre / Rame / 铜								
Copper Alloys		300 - 400	400 - 600	200 - 400	350 - 600	.0010" - .0025"	.0015" - .0035"	.0020" - .0080"
BRASS, BRONZE / Messing, Bronze / Latón, Bronce / Laiton, Bronze / Ottone, Bronzo / 黄铜, 青铜								
Brass, Aluminum/Bronze, Low Silicon Bronze		300 - 400	400 - 600	200 - 400	300 - 500	.0010" - .0025"	.0015" - .0035"	.0020" - .0080"

Beryllium added to any material adds hardness and some nickel content. If tool displays chatter, increase feed (SFM) up to 30% and reduce speed (RPM) by 10%. More detailed information is available on succeeding pages regarding the following materials: Aluminum, High Rockwell Steels, Graphite, and VRX end mills

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.