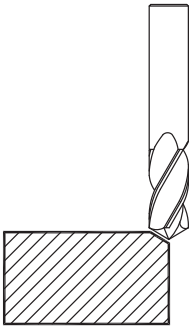
Speeds and Feeds for Drill Mills

Fractional

* Chamfering *

Type	Rc Hardness	SFM (Vc)		CHIPLOAD PER FLUTE (Fz)				
		154M, 154MA 152M, 152MA	1600 152D, 152DA	3/32" - 1/8"	1/8" - 1/4"	1/4" - 3/8"	3/8" - 1/2"	1/2" - 3/4"
COBALT BASE ALLOYS								
Powdered Metal, Stellite, Hs-21, Haynes 25/188, X-40, L-605	< 35 > 35	175 - 225 125 - 175	150 - 200 100 - 150	.0003" - .0008" .0002" - .0004"	.0005" - .0010" .0003" - .0005"	.0008" - .0020" .0005" - .0015"	.0010" - .0030" .0010" - .0020"	.0020" - .0040" .0010" - .0030"
NICKEL BASE ALLOYS								
Invar, Kovar, Inconel-625/718, Waspaloy, Rene, Hastelloy, A286	< 35 > 35	125 - 175 70 - 115	100 - 150 70 - 100	.0003" - .0008" .0002" - .0004"	.0005" - .0010" .0003" - .0005"	.0008" - .0020" .0005" - .0015"	.0010" - .0030" .0010" - .0020"	.0020" - .0040" .0010" - .0030"
TITANIUM ALLOYS								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-2SN-4Zr-2Mo-Si		200 - 300	125 - 250	.0005" - .0010"	.0007" - .0015"	.0010" - .0025"	.0015" - .0040"	.0030" - .0050"
5553 / Beta Titanium		175 - 225	150 - 200	.0003" - .0008"	.0005" - .0010"	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
STAINLESS STEELS								
13/8, 15/5, 17-4, pH Types	< 35 > 35	150 - 250 125 - 175	100 - 150 80 - 150	.0003" - .0008" .0002" - .0004"	.0005" - .0010" .0003" - .0005"	.0008" - .0020" .0005" - .0015"	.0010" - .0030" .0010" - .0020"	.0020" - .0040" .0010" - .0030"
Inox, 200 Series, 300 Series	< 35 > 35	200 - 250 150 - 200	125 - 175 100 - 150	.0003" - .0008" .0002" - .0004"	.0005" - .0010" .0003" - .0005"	.0008" - .0020" .0005" - .0015"	.0010" - .0030" .0010" - .0020"	.0020" - .0040" .0010" - .0030"
304L, 316L, Nitronic 50, Inox	< 35 > 35	90 - 125 75 - 110	80 - 120 60 - 90	.0003" - .0006" .0002" - .0004"	.0005" - .0008" .0003" - .0005"	.0008" - .0015" .0005" - .0010"	.0010" - .0020" .0010" - .0015"	.0020" - .0040" .0010" - .0030"
400 Series	< 35 > 35	150 - 250 125 - 175	100 - 150 80 - 150	.0003" - .0008" .0002" - .0004"	.0005" - .0010" .0003" - .0005"	.0008" - .0020" .0005" - .0015"	.0010" - .0030" .0010" - .0020"	.0020" - .0040" .0010" - .0030"
HIGH STRENGTH TOOL STEELS								
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	< 30	150 - 225	125 - 175	.0003" - .0008"	.0005" - .0010"	.0008" - .0020"	.0010" - .0030"	.0020" - .0040"
	30 - 38	90 - 125	80 - 120	.0002" - .0004"	.0003" - .0005"	.0005" - .0015"	.0010" - .0020"	.0010" - .0030"
	> 38	60 - 90	40 - 70	.0002" - .0003"	.0002" - .0004"	.0003" - .0006"	.0005" - .0010"	.0006" - .0020"
TOOL STEELS								
200, 250, 300, 8620, A36, 12L14, 1018, 1020	< 35 > 35	175 - 250 100 - 175	150 - 200 100 - 150	.0005" - .0010" .0003" - .0008"	.0007" - .0015" .0005" - .0010"	.0010" - .0025" .0008" - .0020"	.0015" - .0040" .0010" - .0030"	.0030" - .0050" .0020" - .0040"
CAST MATERIAL								
Steel, Iron		250 - 350	175 - 250	.0007" - .0015"	.0010" - .0020"	.0015" - .0030"	.0020" - .0040"	.0030" - .0060"
Aluminum		250 - 350	250 - 350	.0007" - .0015"	.0010" - .0020"	.0015" - .0030"	.0020" - .0040"	.0030" - .0060"
ALUMINUM								
Aircraft Grade (6061, 7075)		350 - 500	300 - 400	.0007" - .0015"	.0010" - .0020"	.0015" - .0030"	.0020" - .0040"	.0030" - .0060"
COPPER								
Copper Alloys		250 - 350	150 - 300	.0005" - .0010"	.0007" - .0015"	.0010" - .0025"	.0015" - .0035"	.0020" - .0050"
BRASS, BRONZE								
Brass, Aluminum/Bronze, Low Silicon Bronze		250 - 350	150 - 300	.0005" - .0010"	.0007" - .0015"	.0010" - .0025"	.0015" - .0035"	.0020" - .0050"
COMPOSITE MATERIAL								
Glass Epoxy, Fiberglass, Plastics		250 - 450	200 - 400	.0007" - .0015"	.0010" - .0020"	.0015" - .0030"	.0020" - .0040"	.0030" - .0060"
Graphite, G10, Carbon Fiber		300 - 500	250 - 450	.0007" - .0015"	.0010" - .0020"	.0015" - .0030"	.0020" - .0040"	.0030" - .0060"



Chamfering a corner

DRILL MILL USES:

Chamfering - for all metals, use general milling speeds and feeds. Depending on depth, use diameter at top of part to determine chipload. For example, if using 1/4" diameter, 90° point and depth is 1/8", calculate the chipload based on 1/8" diameter.

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