

## Solid Carbide Drills Speed & Feed Recommendations

All recommendations should be considered only as a starting point, with possible variations to achieve optimum results.

### Speeds & Feeds for 1/16" - 5/16" Tool Diameters

Material	SFM	CHIPLOAD PER TOOTH					
		1/16" (1.5mm)	3/32" (2.4mm)	1/8" (3mm)	3/16" (4mm)	1/4" (6mm)	5/16" (8mm)
Aluminum/Aluminum Alloys	250-650	0.0008"	0.0019"	0.0030"	0.0050"	0.0070"	0.0083"
Aluminum Alloyed > 10%	100-400	0.0008"	0.0014"	0.0020"	0.0040"	0.0060"	0.0070"
Brass	250-450	0.0007"	0.0014"	0.0020"	0.0025"	0.0030"	0.0033"
Bronze	150-250	0.0007"	0.0014"	0.0020"	0.0025"	0.0030"	0.0033"
Cast Iron (Soft)	150-300	0.0010"	0.0020"	0.0030"	0.0040"	0.0050"	0.0063"
Cast Iron (Medium)	125-250	0.0010"	0.0020"	0.0030"	0.0040"	0.0050"	0.0058"
Cast Iron (Ductile)	80-200	0.0005"	0.0013"	0.0020"	0.0030"	0.0040"	0.0045"
Cast Iron (Malleable)	65-200	0.0005"	0.0013"	0.0020"	0.0030"	0.0040"	0.0048"
Coppers/Copper Alloys	150-300	0.0010"	0.0020"	0.0030"	0.0050"	0.0070"	0.0083"
Magnesium/Magnesium Alloys	300-600	0.0010"	0.0020"	0.0030"	0.0050"	0.0070"	0.0083"
Monel/High Nickel Steel	75-200	0.0010"	0.0020"	0.0030"	0.0040"	0.0050"	0.0060"
Plastics	150-450	0.0010"	0.0015"	0.0020"	0.0030"	0.0040"	0.0043"
Stainless Steel (Soft)	80-300	0.0010"	0.0020"	0.0030"	0.0040"	0.0050"	0.0058"
Stainless Steel (Hard)	40-100	0.0005"	0.0013"	0.0020"	0.0030"	0.0040"	0.0045"
Steel (Low Carbon)	150-300	0.0010"	0.0015"	0.0020"	0.0030"	0.0040"	0.0048"
Steel (Medium Carbon)	100-200	0.0010"	0.0015"	0.0020"	0.0025"	0.0030"	0.0038"
Steel (High Tensile 35-40 Rc)	75-150	0.0010"	0.0015"	0.0020"	0.0025"	0.0030"	0.0033"
Steel (High Tensile 40-45 Rc)	50-100	0.0007"	0.0009"	0.0010"	0.0015"	0.0020"	0.0023"
Steel (High Tensile 46+ Rc)	25-75	0.0005"	0.0006"	0.0007"	0.0009"	0.0010"	0.0013"
Steel (Mold)	60-130	0.0005"	0.0008"	0.0010"	0.0020"	0.0030"	0.0035"
Steel (Tool)	40-100	0.0010"	0.0013"	0.0015"	0.0023"	0.0030"	0.0035"
Titanium (Soft)	80-350	0.0010"	0.0015"	0.0020"	0.0030"	0.0040"	0.0045"
Titanium (Hard)	40-100	0.0007"	0.0009"	0.0010"	0.0015"	0.0020"	0.0028"

### Speeds & Feeds for 3/8" - 3/4" Tool Diameters

Material	SFM	CHIPLOAD PER TOOTH				
		3/8" (9.5mm)	7/16" (11mm)	1/2" (12mm)	5/8" (16mm)	3/4" (20mm)
Aluminum/Aluminum Alloys	250-650	0.0095"	0.0108"	0.0120"	0.0144"	0.0169"
Aluminum Alloyed > 10%	100-400	0.0080"	0.0090"	0.0100"	0.0120"	0.0140"
Brass	250-450	0.0035"	0.0038"	0.0040"	0.0045"	0.0050"
Bronze	150-250	0.0035"	0.0038"	0.0040"	0.0045"	0.0050"
Cast Iron (Soft)	150-300	0.0075"	0.0088"	0.0100"	0.0125"	0.0150"
Cast Iron (Medium)	125-250	0.0065"	0.0073"	0.0080"	0.00950"	0.1100"
Cast Iron (Ductile)	80-200	0.0050"	0.0055"	0.0060"	0.0069"	0.0078"
Cast Iron (Malleable)	65-200	0.0055"	0.0063"	0.0070"	0.0079"	0.0085"
Coppers/Copper Alloys	150-300	0.0095"	0.0108"	0.0120"	0.0144"	0.0169"
Magnesium/Magnesium Alloys	300-600	0.0095"	0.0108"	0.0120"	0.0144"	0.0169"
Monel/High Nickel Steel	75-200	0.0070"	0.0080"	0.0090"	0.0110"	0.0130"
Plastics	150-450	0.0045"	0.0048"	0.0050"	0.0058"	0.0063"
Stainless Steel (Soft)	80-300	0.0065"	0.0073"	0.0080"	0.00950"	0.1100"
Stainless Steel (Hard)	40-100	0.0050"	0.0055"	0.0060"	0.0069"	0.0078"
Steel (Low Carbon)	150-300	0.0055"	0.0063"	0.0070"	0.0079"	0.0085"
Steel (Medium Carbon)	100-200	0.0045"	0.0053"	0.0060"	0.0061"	0.0068"
Steel (High Tensile 35-40 Rc)	75-150	0.0035"	0.0038"	0.0040"	0.0045"	0.0050"
Steel (High Tensile 40-45 Rc)	50-100	0.0025"	0.0028"	0.0030"	0.0035"	0.0040"
Steel (High Tensile 46+ Rc)	25-75	0.0015"	0.0018"	0.0020"	0.0025"	0.0029"
Steel (Mold)	60-130	0.0040"	0.0045"	0.0050"	0.0061"	0.0071"
Steel (Tool)	40-100	0.0040"	0.0045"	0.0050"	0.0061"	0.0071"
Titanium (Soft)	80-350	0.0050"	0.0055"	0.0060"	0.0069"	0.0078"
Titanium (Hard)	40-100	0.0035"	0.0043"	0.0050"	0.0064"	0.0078"