

HSS & Carbide Reamers Speeds & Feeds

Material	Grades	SFM		Tool Diameter (IPR)					
				1/8	1/4	3/8	1/2	3/4	1
		HSS	Carbide	(.1250)	(.2500)	(.3750)	(.5000)	(.7500)	(1.000)
P - Steels									
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, 01	10-25	50-100	.0020	.0040	.0050	.0060	.0080	.0160
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	50-80	250-300	.0060	.0100	.0120	.0140	.0200	.0400
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	30-50	125-225	.0040	.0060	.0080	.0090	.0110	.0160
M - Stainless Steels									
Austenitic	301-304L, 310, 316L, 321, 347	20-30	150-225	.0040	.0060	.0070	.0080	.0120	.0180
Martensitic	403, 410, 416, 420, 430, 431, 440	15-25	60-110	.0040	.0060	.0070	.0080	.0120	.0180
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	15-25	60-90	.0030	.0040	.0050	.0060	.0100	.0150
K - Cast Irons									
Ductile	A536, J434. 60-40-18	25-40	100-175	.0040	.0060	.0080	.0090	.0120	.0180
Gray	A48, A436, A319, Class 20, G4000	40-65	125-200	.0050	.0070	.0090	.0110	.0150	.0300
Malleable	A220, A602, J158	50-100	150-250	.0050	.0070	.0090	.0110	.0150	.0300
N - Non-Ferrous									
Aluminum Alloys	2014, 2024, 6061, 7075	125-325	450-1000	.0040	.0060	.0080	.0100	.0200	.0400
High Silicon	A380, A390	105-275	380-850	.0040	.0060	.0080	.0100	.0200	.0400
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	125-200	225-400	.0040	.0050	.0060	.0070	.0150	.0300
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	75-100	550-900	.0020	.0050	.0070	.0080	.0150	.0300
Copper		50-75	100-175	.0040	.0060	.0080	.0100	.0120	.0150
Magnesium		50-75	100-175	.0040	.0060	.0080	.0100	.0120	.0150
S - High Temp Alloys									
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	10-15	30-50	.0020	.0040	.0050	.0060	.0080	.0160
Iron Base	Incoloy 800-802, Multmet N-155, Timkin 16-25-6, Carpenter 22-b3	15-25	50-75	.0020	.0040	.0050	.0060	.0080	.0160
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoly, Udimet 500 & 700	10-20	45-70	.0020	.0040	.0050	.0060	.0080	.0160
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	35-100	45-125	.0030	.0050	.0060	.0070	.0090	.0180

NOTE: Speeds and Feeds listed are estimated and will vary by application. These tools can be found on pages 467-494.

Total Stock Allowance by Reamer Diameter

Material	Grades	≤1/64	1/32	1/16	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1+
		(.0156)	(.0312)	(.0625)	(.1250)	(.2500)	(.3750)	(.5000)	(.6250)	(.7500)	(.875)	(1.000)+
P - Steels												
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, O1	.0010	.0020	.0040	.0070	.0080	.0100	.0110	.0130	.0140	.0150	.0160
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	.0010	.0030	.0060	.0100	.0110	.0130	.0140	.0160	.0170	.0180	.0190
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	.0010	.0030	.0050	.0090	.0100	.0120	.0130	.0150	.0170	.0180	.0190
M - Stainless Steels												
Austenitic	301-304L, 310, 316L, 321, 347	.0010	.0020	.0050	.0090	.0100	.0120	.0130	.0150	.0160	.0170	.0180
Martensitic	403, 410, 416, 420, 430, 431, 440	.0010	.0020	.0050	.0090	.0100	.0120	.0130	.0150	.0160	.0170	.0180
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	.0010	.0020	.0050	.0090	.0100	.0120	.0130	.0150	.0160	.0170	.0180
K - Cast Irons												
Ductile	A536, J434, 60-40-18	.0020	.0060	.0100	.0110	.0130	.0140	.0150	.0150	.0170	.0180	.0190
Gray	A48, A436, A319, Class 20, G4000	.0010-.0015	.0015-.0025	.0020-.0030	.0025-.0040	.0060-.0080	.0080-.0100	.0100-.0140	.0120-.0180	.0150-.0200	.0160-.0220	.0200-.0300
Malleable	A220, A602, J158	.0020	.0030	.0060	.0100	.0110	.0130	.0140	.0160	.0180	.0190	.0200
N - Non-Ferrous												
Aluminum Alloys	2014, 2024, 6061, 7075	.0010	.0030	.0060	.0110	.0120	.0150	.0160	.0180	.0200	.0210	.0220
Aluminum High Silicon	A380, A390	.0010-.0020	.0040	.0050	.0050-.0060	.0060-.0100	.0080-.0140	.0120-.0180	.0140-.0200	.0160-.0220	.0160-.0220	.0180-.0280
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	.0010	.0030	.0060	.0110	.0120	.0130	.0150	.0160	.0180	.0190	.0200
Composites	Plastics	.0020	.0020-.0030	.0030-.0050	.0040-.0070	.0050-.0100	.0070-.0150	.0100-.0200	.0120-.0220	.0140-.0240	.0160-.0260	.0180-.0300
Magnesium		.0010	.0020	.0030	.0040	.0080-.0100	.0100-.0120	.0140-.0180	.0150-.0200	.0160-.0220	.0180-.0280	.0200-.0300
S - High Temp Alloys												
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	<.0010	.0010	.0015	.0010-.0020	.0040-.0060	.0050-.0070	.0080-.0100	.0090-.0120	.0100-.0150	.0110-.0170	.0120-.0200
Iron Base	Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3	.0010	.0030	.0050	.0100	.0110	.0130	.0140	.0150	.0160	.0170	.0180
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoloy, Udimet 500 & 700	.0010	.0030	.0050	.0100	.0110	.0130	.0140	.0150	.0160	.0170	.0180
Titanium	Commercially Pure, 6Al-4V ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	.0010	.0030	.0050	.0100	.0110	.0130	.0140	.0150	.0160	.0170	.0180

NOTE: Speeds and Feeds listed are estimated and will vary by application.