



Multi-Material (Non-Coolant Fed) Stub & Regular Length Drills Technical Information



- RedLine Hole Shot High Performance Drills are designed to give optimal performance in a wide range of materials. Our 142° point is designed to reduce thrust and our flute design stabilizes our drills for better positioning and for a more accurate hole.
- All shanks are manufactured to h6 tolerance, suitable for use in shrink-fit holders.
- Multi-Material, Non-Coolant Fed, High Performance Drills found on pages 234-238 & 252-256.

Multi-Material, Solid Carbide, Speeds & Feeds

Materials	Grades	SFM	Tool Diameter (IPR)					
			1/8	1/4	3/8	1/2	5/8	3/4
			(.1250)	(.2500)	(.3750)	(.5000)	(.6250)	(.7500)
P - Steels								
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, 01	170-200	.0014-.0030	.0035-.0060	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	265-390	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
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	260-330	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
M - Stainless Steels								
Austenitic	301-304L, 310, 316L, 321, 347	100-130	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Martensitic	403, 410, 416, 420, 430, 431, 440	200-300	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	100-130	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
K - Cast Irons								
Ductile	A536, J434, 60-40-18	190-280	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Gray	A48, A436, A319, Class 20, G4000	350-480	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Malleable	A220, A602, J158	190-280	.0030-.0050	.0055-.0080	.0070-.0100	.0080-.0110	.0100-.0140	.0110-.0150
Magnesium		N/A						
N - Non-Ferrous								
Aluminum Alloys	2014, 2024, 6061, 7075	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum High Silicon	A380, A390	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper		N/A	N/A	N/A	N/A	N/A	N/A	N/A
S - High Temp Alloys								
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	40	.0014	.0023	.0040	.0050	.0060	.0090
Iron Base	Incoloy 800-802, Multmet N-155, Timkin 16-25-6, Carpenter 22-b3	70	.0014	.0023	.0040	.0050	.0060	.0090
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoloy, Udimet 500 & 700	45-80	.0014	.0043	.0060	.0070	.0080	.0100
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	90-130	.0040	.0080	.0100	.0110	.0140	.0150

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

High Performance Drills Tolerances (Inch)		
Size	Drill ø (m7)	Shank ø (h6)
.0000-.1181	+0/-.00008	+0/-.00044
.1182-.2362	+0/-.00015	+0/-.00063
.2363-.3937	+0/-.00023	+0/-.00083
.3938-.7087	+0/-.00027	+0/-.00098
.7088-1.181	+0/-.00031	+0/-.00114

High Performance Drills Tolerances (mm)		
Size	Drill ø (m7)	Shank ø (h6)
.0000-3mm	+0/-.002mm	+0/-.012mm
3.01-6mm	+0/-.004mm	+0/-.016mm
6.01-10mm	+0/-.006mm	+0/-.021mm
10.01-18mm	+0/-.007mm	+0/-.025mm
18.01-20mm	+0/-.008mm	+0/-.029mm