



by Ultra-Dex



ISO	MATERIAL	HARDNESS	GRADE	Vc (SFM)*	INDEXABLE DRILL DIAMETER (INCH)		
					0.5620"-0.7499"	0.7500" - 1.4999"	1.5000" - 2.2500"
Fz = IPR (INCH PER REVOLUTION)*							
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 BHN or ≤ 28 HRC	HP 600	350-900	.0015-.0060	.0020-.0075	.0030-.0120
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 17-4 PH	≤ 375 BHN or ≤ 40 HRC		260-750	.0020-.0070	.0020-.0085	.0030-.0095
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 BHN or ≤ 28 HRC	HP 600	230-700	.0018-.0040	.0030-.0065	.0030-.0085
	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 BHN or ≤ 28 HRC		260-750	.0018-.0040	.0030-.0065	.0030-.0085
K	GRAY IRONS Class 20, 30, 40 ,50, 60, G3000, G3500	≤ 220 BHN or ≤ 19 HRC	HK 356	285-1000	.0025-.0055	.0035-.0070	.0040-.0085
	DUCTILE IRONS D&M series, 250, 300, 350, 400, 60-40-18, 65-45-12	≤ 260 BHN or ≤ 26 HRC		230-740	.0020-.0050	.0028-.0065	.0030-.0070
N	NON-FERROUS Aluminum, Aluminum cast, Brass, Copper, Bronze, Non Metallic	≤ 271 BHN or ≤ 28 HRC	HN 300	600-1150	.0020-.0075	.0030-.0090	.0045-.0115
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2"	≤ 375 BHN or ≤ 55 HRC	HP 600	80-275	.0018-.0065	.0020-.0075	.0030-.0080
S	HR SUPER ALLOYS Inconel 718, Waspaloy, Hastelloy, Inconel 625, Stellite 31, Haynes 25, Rene 41	≤ 275 BHN or ≤ 28 HRC	HP 600	55-270	.0016-.0032	.0020-.0055	.0025-.0060
	TITANIUM 6AL-4V, ASTM 1, 2, 3, 6AL-2S	≤ 275 BHN or ≤ 28 HRC		95-460	.0019-.0055	.0020-.0065	.0025-.008

Recommendations

Productivity and tooling performance is not only influenced by grade and geometry, but also by clamping the tool securely and accurately as possible.

- It is recommended to use precision holders i.e. hydraulic, shrink fit
- It is recommended to use internal coolant – minimum recommended pressure 145 psi

*Speeds & feeds are starting recommendations only. Factors such as machine type, fixture, tooling rigidity, available horsepower, coolant delivery method and others will affect the performance significantly.