DRILL-FIX DFT

DFT Applications

workpiece material group	hardness/ type	starting recommendations for feed (ipr) based on insert size										
		geometry	grade	sfm	DFT03..	DFT05..	DFT06..	DFT07..	DFT09..	geometry	grade	DFT11..
low-carbon steel (<.25% C)	(<220 HB)	DFT-HP	KC7140	500 **900** 1100	.0020 **.0030** .0040	.0020 **.0035** .0045	.0025 **.0040** .0055	.0030 **.0055** .0070	.0040 **.0075** .0100	DFT-HD	KC7215	.0050 **.0090** .0120
free-machining steel	(<275 HB)	DFT-MD	KC7935	450 **830** 1000	.0020 **.0030** .0040	.0020 **.0035** .0045	.0025 **.0040** .0055	.0030 **.0055** .0070	.0040 **.0075** .0100	DFT-HD	KC7935	.0050 **.0090** .0120
medium and high plain-carbon, alloy, and tool steels	(≤330 HB)	DFT-MD	KC7935	420 **750** 900	.0020 **.0030** .0040	.0020 **.0035** .0045	.0025 **.0040** .0055	.0030 **.0055** .0070	.0040 **.0075** .0100	DFT-HD	KC7936	.0050 **.0090** .0120
medium and high plain-carbon, alloy, and tool steels	(340-450 HB)	DFT-MD	KC7935	340 **500** 620	.0020 **.0030** .0040	.0020 **.0035** .0045	.0025 **.0040** .0055	.0030 **.0055** .0070	.0040 **.0075** .0100	DFT-HD	KC7937	.0050 **.0090** .0120
ferritic, martensitic, and PH stainless steels	(<375 HB)	DFT-LD	KC720	325 **550** 700	.0010 **.0020** .0035	.0010 **.0020** .0035	.0020 **.0035** .0050	.0025 **.0040** .0065	.0030 **.0045** .0070	DFT-HD	KC720	.0035 **.0050** .0080
austenitic stainless steel	(135-275 HB)	DFT-HP	KC7140	325 **520** 620	.0015 **.0020** .0035	.0025 **.0040** .0050	.0025 **.0045** .0060	.0030 **.0050** .0070	.0035 **.0060** .0080	DFT-HD	KC720	.0035 **.0050** .0080
ductile (nodular) and malleable cast irons	(120-320 HB)	DFT-GD	KC7935	350 **550** 750	.0015 **.0020** .0035	.0020 **.0040** .0055	.0035 **.0050** .0070	.0040 **.0060** .0080	.0040 **.0080** .0100	DFT-HD	KC7215	.0080 **.0100** .0150
gray cast irons	(120-320 HB)	DFT-GD	KC7935	400 **600** 800	.0015 **.0020** .0035	.0020 **.0040** .0055	.0035 **.0050** .0070	.0040 **.0060** .0080	.0040 **.0080** .0100	DFT-HD	KC7215	.0080 **.0100** .0150
free-machining and low-silicon aluminum alloys	hypoeutectic (<12.2% Si)	DFT-HP	KC7215	1,300 **1,600** 2,300	.0020 **.0020** .0030	.0025 **.0030** .0035	.0030 **.0040** .0055	.0040 **.0050** .0065	.0050 **.0060** .0075	DFT-HD	KC7215	.0050 **.0070** .0100
miscellaneous non-ferrous workpiece materials	—	DFT-HP	KC7215	550 **900** 1200	.0020 **.0020** .0030	.0025 **.0030** .0035	.0030 **.0040** .0055	.0040 **.0050** .0065	.0050 **.0060** .0075	DFT-HD	KC7215	.0050 **.0070** .0100
iron-base, heat-resistant alloys	(135-320 HB)	DFT-GD	KC720	80 **100** 120	.0020 **.0020** .0035	.0020 **.0020** .0035	.0020 **.0030** .0040	.0020 **.0030** .0040	.0020 **.0040** .0050	DFT-HD	KC7215	.0020 **.0040** .0050
cobalt-base, heat-resistant alloys	(150-425 HB)	DFT-GD	KC720	75 **95** 110	.0020 **.0020** .0035	.0020 **.0020** .0035	.0020 **.0030** .0040	.0020 **.0030** .0040	.0020 **.0040** .0050	DFT-HD	KC7215	.0020 **.0040** .0050
nickel-base, heat-resistant alloys	(150-475 HB)	DFT-GD	KC720	75 **95** 110	.0020 **.0020** .0035	.0020 **.0020** .0035	.0020 **.0030** .0040	.0020 **.0030** .0040	.0020 **.0040** .0050	DFT-HD	KC7215	.0020 **.0040** .0050
titanium and titanium alloys	(110-450 HB)	DFT-HP	KC7215	100 **130** 180	.0020 **.0020** .0035	.0020 **.0020** .0035	.0020 **.0030** .0040	.0020 **.0030** .0040	.0020 **.0030** .0040	DFT-HD	KC7215	.0020 **.0030** .0040

NOTES: These are starting condition guidelines only.
The machine tool, fixturing, toolholding, part configuration, and coolant capability may significantly influence specific applications.
*The **bold font** represents recommended starting parameters. The regular font represents the range of cutting parameters.*
Use proper and safe machining practices. Make the setup as rigid as possible.
Decrease sfm as material hardness increases.
Typically, larger diameter drills require lower sfm than the recommended starting speed.
Calculate sfm from the cutting diameter of the drill.