

Twister[®] HPD Performance Drill

HPDSR / HPDCR Series Recommended Cutting Data - Inch 5xD, Solid and Coolant-Fed Drilling

Workpiece Material Group	Material Type	HPDSR			HPDCR			
		5xD - Solid			5xD - Through Coolant			
		Low	Mid	High	Low	Mid	High	
		Vc - SFM			Vc - SFM			
Steels	P	Low Carbon Steels ≤180HB	425	490	560	525	590	655
		Med Carbon / Alloy Steels 180-350HB	230	260	295	295	330	360
		Pre-Hardened Steels 35-45HRC	130	165	195	165	195	230
Stainless Steels	M	Martensitic Stainless - 400 Series	260	295	330	295	360	425
		Austenitic Stainless - 300 Series	130	165	195	165	195	230
Cast Irons	K	Grey Cast Iron	295	360	425	395	460	525
		Ductile Cast Iron	130	165	195	195	230	260
Special Alloys	S	High Temp Alloys		N/A		35	50	65
		Titanium Alloys		N/A		100	130	165

RPM Formula For Inch Drills Only - $RPM = SFM \times 3.82 \div \text{Drill } \varnothing D$

Workpiece Material Group	Material Type	Drill Diameter (inch)								
		1/8	5/32	3/16	1/4	5/16	3/8	1/2	5/8	
		Feed (in/rev)								
Steels	P	Low Carbon Steels ≤180HB								
		Med Carbon / Alloy Steels 180-350HB	.0057	.0071	.0071	.0089	.0112	.0143	.0143	.0178
		Pre-Hardened Steels 35-45HRC								
Stainless Steels	M	Martensitic Stainless - 400 Series	.0028	.0035	.0035	.0043	.0055	.0071	.0071	.0089
		Austenitic Stainless - 300 Series								
Cast Irons	K	Grey Cast Iron	.0061	.0076	.0085	.0120	.0120	.0152	.0171	.0209
		Ductile Cast Iron								
Special Alloys	S	High Temp Alloys	.0013	.0016	.0019	.0025	.0031	.0038	.0050	.0063
		Titanium Alloys								

Feedrate Formula For Inch Drills - $\text{Feed} = RPM \times \text{in/rev}$

HPDSR / HPDCR Series Recommended Cutting Data - Metric 5xD, Solid and Coolant-Fed Drilling

Workpiece Material Group	Material Type	HPDSR			HPDCR			
		5xD - Solid			5xD - Through Coolant			
		Low	Mid	High	Low	Mid	High	
		Vc-m/min			Vc-m/min			
Steels	P	Low Carbon Steels ≤180HB	130	150	170	160	180	200
		Med Carbon / Alloy Steels 180-350HB	70	80	90	90	100	110
		Pre-Hardened Steels 35-45HRC	40	50	60	50	60	70
Stainless Steels	M	Martensitic Stainless - 400 Series	80	90	100	90	110	130
		Austenitic Stainless - 300 Series	40	50	60	50	60	70
Cast Irons	K	Grey Cast Iron	90	110	130	120	140	160
		Ductile Cast Iron	40	50	60	60	70	80
Special Alloys	S	High Temp Alloys		N/A		10	15	20
		Titanium Alloys		N/A		30	40	50

RPM Formula For Metric Drills - $RPM = (Vc \times 318) / \text{Drill } \varnothing D$

Workpiece Material Group	Material Type	Drill Diameter (mm)								
		3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	
		Feed (mm/rev)								
Steels	P	Low Carbon Steels ≤180HB								
		Med Carbon / Alloy Steels 180-350HB	0.145	0.181	0.181	0.226	0.285	0.362	0.362	0.453
		Pre-Hardened Steels 35-45HRC								
Stainless Steels	M	Martensitic Stainless - 400 Series	0.07	0.09	0.09	0.11	0.14	0.18	0.18	0.225
		Austenitic Stainless - 300 Series								
Cast Irons	K	Grey Cast Iron	0.155	0.193	0.217	0.305	0.305	0.386	0.435	0.532
		Ductile Cast Iron								
Special Alloys	S	High Temp Alloys	0.030	0.040	0.050	0.060	0.080	0.100	0.120	0.160
		Titanium Alloys								

Feedrate Formula For Metric Drills - $\text{Feed} = RPM \times \text{mm/rev}$

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.