

Recommended Cutting Data Series HPDSS & HPDCS 3xD - Inch

Workpiece Material Group	Material Type	HPDSS			HPDCS			
		3xD - Solid			3xD - Through Coolant			
		Low	Mid	High	Low	Mid	High	
		Vc - SFM			Vc - SFM			
Steels	P	Low Carbon Steels ≤180HB	460	525	590	560	625	690
		Med Carbon / Alloy Steels 180-350HB	260	295	330	295	360	425
		Pre-Hardened Steels 35-45HRC	130	165	195	195	230	260
Stainless Steels	M	Martensitic Stainless - 400 Series	295	330	360	330	395	460
		Austenitic Stainless - 300 Series	130	165	195	195	230	260
Cast Irons	K	Grey Cast Iron	330	395	460	425	490	560
		Ductile Cast Iron	165	195	230	230	260	295
Special Alloys	S	High Temp Alloys	-	N/A	-	35	65	100
		Titanium Alloys	-	N/A	-	130	165	195

RPM Formula For Inch Drills Only - $RPM = SFM \times 3.82 \div \text{Drill } \varnothing D^1$

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 - $\text{Feed} = RPM \times \text{in/rev}$

Recommended Cutting Data Series HPDSS & HPDCS 3xD - Metric

Workpiece Material Group	Material Type	HPDSS			HPDCS			
		3xD - Solid			3xD - Through Coolant			
		Low	Mid	High	Low	Mid	High	
		Vc-m/min			Vc-m/min			
Steels	P	Low Carbon Steels ≤180HB	140	160	180	170	190	210
		Med Carbon / Alloy Steels 180-350HB	80	90	100	90	110	130
		Pre-Hardened Steels 35-45HRC	40	50	60	60	70	80
Stainless Steels	M	Martensitic Stainless - 400 Series	90	100	110	100	120	140
		Austenitic Stainless - 300 Series	40	50	60	60	70	80
Cast Irons	K	Grey Cast Iron	100	120	140	130	150	170
		Ductile Cast Iron	50	60	70	70	80	90
Special Alloys	S	High Temp Alloys	-	N/A	-	10	20	30
		Titanium Alloys	-	N/A	-	40	50	60

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	0.453
		Pre-Hardened Steels 35-45HRC							
Stainless Steels	M	Martensitic Stainless - 400 Series	0.070	0.090	0.090	0.110	0.140	0.180	0.225
		Austenitic Stainless - 300 Series							
Cast Irons	K	Grey Cast Iron	0.155	0.193	0.217	0.305	0.305	0.386	0.532
		Ductile Cast Iron							
Special Alloys	S	High Temp Alloys	0.030	0.040	0.050	0.060	0.080	0.100	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.