Pro Drill 3xD Non Coolant - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	101	101	101	101	101	101	101	101	101
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	vf	1,200.2	1,197.6	1,189.5	1,098.4	948.4	852	776.9	718.8	753.5
	n	10,716.4	8,037.3	6,429.9	5,358.2	4,018.7	3,214.9	2,679.1	2,296.4	2,009.3
Medium Carbon Steel	Vc	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	vf	1,186	1,177.8	1,166.3	1,076.2	934.8	833.5	763.2	677.7	739.2
	n	10,981.7	8,236.3	6,589	5,490.8	4,118.1	3,294.5	2,745.4	2,353.2	2,059.1
Tool Steel	Vc	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	382.7	378.7	360.4	348.2	299	269.5	245.9	226.7	248.2
	n	5,315.8	3,986.8	3,189.5	2,657.9	1,993.4	1,594.7	1,328.9	1,139.1	996.7
H-13	Vc	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
	vf	445.6	443.5	440.9	403.2	351.7	313.6	286.7	266.3	291.2
	n	5,973.6	4,480.2	3,584.2	2,986.8	2,240.1	1,792.1	1,493.4	1,280.1	1,120.1
P20HH 34-38 HRC	Vc	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
	vf	608.1	607.7	600.1	551.1	479.1	427	392.4	362.9	396.9
	n	7,299.9	5,474.9	4,379.9	3,650	2,737.5	2,190	1,825	1,564.3	1,368.7
P20	Vc	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
	vf	695.9	692.3	683.9	634.1	547.8	491.2	447.5	414.5	453
	n	8,026.7	6,020	4,816	4,013.4	3,010	2,408	2,006.7	1,720	1,505
Farritic & Martensitic Stainless Steel	Vc	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	vf	1,102.4	1,102.4	1,090.5	1,003.1	871.5	780.6	712.6	661.8	692.7
	n	9,931.3	7,448.5	5,958.8	4,965.6	3,724.2	2,979.4	2,482.8	2,128.1	1,862.1
Cast Iron	Vc	80.6	80.6	80.6	80.6	80.6	80.6	80.6	80.6	80.6
	f	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5
	vf	1,376.9	1,372.6	1,359.8	1,252.9	1,084	972.4	887.3	821	869.1
	n	8,551.9	6,413.9	5,131.2	4,276	3,207	2,565.6	2,138	1,832.6	1,603.5
Titanium	Vc	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	vf	179.4	181.2	177.9	164.7	142.8	128.5	116.2	108.2	112.6
	n	3,660.6	2,745.4	2,196.3	1,830.3	1,372.7	1,098.2	915.1	784.4	686.4
Hard Steel <52	Vc	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
	f	0	0	0	0	0.1	0.1	0.1	0.1	0.1
	vf	68.1	68.4	67.6	61.6	54.1	48	43.9	40.4	44.7
	n	2,620.8	1,965.6	1,572.5	1,310.4	982.8	786.2	655.2	561.6	491.4

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 3xD Coolant Through - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	142.1	142.1	142.1	142.1	142.1	142.1	142.1	142.1	142.1
	f	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
	vf	1,794.2	1,798	1,782.1	1,643.4	1,419.1	1,271	1,164.7	1,075.9	1,060.1
	n	15,077.3	11,308	9,046.4	7,538.6	5,654	4,523.2	3,769.3	3,230.8	2,827
Medium Carbon Steel	Vc	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5
	f	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	vf	1,481.7	1,491.5	1,466.1	1,358.3	1,174.7	1,052.8	958.6	888.5	874.9
	n	12,997.7	9,748.2	7,798.6	6,498.8	4,874.1	3,899.3	3,249.4	2,785.2	2,437.1
Tool Steel	Vc	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	524.7	528	522.1	481.5	418.5	372.6	342.1	316	310.1
	n	6,642.1	4,981.6	3,985.2	3,321	2,490.8	1,992.6	1,660.5	1,423.3	1,245.4
H-13	Vc	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
	vf	621.2	625	618.2	568.2	494.3	440.9	405.3	373.4	369.3
	n	7,575.8	5,681.8	4,545.5	3,787.9	2,840.9	2,272.7	1,893.9	1,623.4	1,420.5
P20HH 34-38 HRC	Vc	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
	vf	879.7	879.7	867.6	803.9	693.9	621.9	568.8	524.4	517.6
	n	10,111.6	7,583.7	6,067	5,055.8	3,791.9	3,033.5	2,527.9	2,166.8	1,895.9
P20	Vc	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
	vf	989.2	985.1	976.1	900.7	782	697.7	608.7	589.6	581.4
	n	10,918	8,188.5	6,550.8	5,459	4,094.3	3,275.4	2,729.5	2,339.6	2,047.1
Farritic & Martensitic Stainless Steel	Vc	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6
	f	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	vf	1,434.8	1,440.9	1,422.7	1,313.2	1,135.4	1,017.7	930.2	859.8	848.1
	n	12,159.4	9,119.6	7,295.7	6,079.7	4,559.8	3,647.8	3,039.9	2,605.6	2,279.9
Austenitic & Duplex Stainless Steel	Vc	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	vf	330.2	327.6	326	300.9	259.7	231.7	213.1	197.5	193.7
	n	5,326.4	3,994.8	3,195.8	2,663.2	1,997.4	1,597.9	1,331.6	1,141.4	998.7
Cast Iron	Vc	105.8	105.8	105.8	105.8	105.8	105.8	105.8	105.8	105.8
	f	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.6
	vf	1,953.3	1,953.3	1,933.1	1,784.9	1,544.9	1,384.1	1,260.1	1,169.1	1,225
	n	11,225.7	8,419.3	6,735.4	5,612.9	4,209.6	3,367.7	2,806.4	2,405.5	2,104.8
Aluminum	Vc	402.7	402.7	402.7	402.7	402.7	402.7	402.7	402.7	402.7
	f	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5
	vf	7,050.1	7,082.1	6,998.8	6,451.9	5,576	4,999.2	4,561.2	4,230.1	4,166
	n	42,727.8	32,045.8	25,636.7	21,363.9	16,022.9	12,818.3	10,681.9	9,156	8,011.5
Ni Based Superalloys	Vc	33	33	33	33	33	33	33	33	33
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	171.6	170.7	168.1	155.8	135.2	127.1	110.3	102	95.2
	n	3,501.4	2,626.1	2,100.8	1,750.7	1,313	1,050.4	875.4	750.3	656.5
Titanium	Vc	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	vf	348	345.2	343.5	317.1	273.6	244.2	224.5	208.1	204.2
	n	5,612.9	4,209.6	3,367.7	2,806.4	2,104.8	1,683.9	1,403.2	1,202.8	1,052.4
Hard Steel <52	Vc	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
	f	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	120.1	119.1	118.5	108.4	94.4	84.8	76.5	71.4	74.8
	n	3,872.8	2,904.6	2,323.7	1,936.4	1,452.3	1,161.8	968.2	829.9	726.1

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 5xD Non Coolant - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	101.7	101.7	101.7	101.7	101.7	101.7	101.7	101.7	101.7
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	1,011.1	1,007.6	1,046.9	1,020.3	884.2	824.8	753.5	695.5	652.3
	n	10,790.7	8,093	6,474.4	5,395.4	4,046.5	3,237.2	2,697.7	2,312.3	2,023.3
Medium Carbon Steel	Vc	104	104	104	104	104	104	104	104	104
	f	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	vf	989.8	989.8	1,024.9	1,000.3	863.6	807.7	737.9	681	638.7
	n	11,034.7	8,276.1	6,620.8	5,517.4	4,138	3,310.4	2,758.7	2,364.6	2,069
Tool Steel	Vc	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7
	f	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	vf	285.2	380.3	310	303.8	263.9	252.2	230.5	219.2	199.4
	n	5,167.2	5,167.2	3,100.3	2,583.6	1,937.7	1,550.2	1,291.8	1,107.3	968.9
H-13	Vc	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5
	f	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	vf	334.4	337.4	363.6	360.7	311.6	297.9	272.6	252.4	235.8
	n	5,835.7	4,416.6	3,533.2	2,944.4	2,208.3	1,766.6	1,472.2	1,261.9	1,104.1
P20HH 34-38 HRC	Vc	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	443.8	443.8	475.8	469.8	409.8	389.8	358.2	331.3	308.6
	n	6,663.3	4,997.5	3,998	3,331.6	2,498.7	1,999	1,665.8	1,427.8	1,249.4
P20	Vc	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
	vf	486.1	486.1	524.2	517.8	433.3	431.2	392.8	363.8	340.8
	n	7,045.3	5,283.9	4,227.2	3,522.6	2,642	2,113.6	1,761.3	1,509.7	1,321
Farritic & Martensitic Stainless Steel	Vc	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	918.7	916.9	948.6	926.6	804.1	748.1	684.1	634.3	593
	n	9,899.4	7,424.6	5,939.7	4,949.7	3,712.3	2,969.8	2,474.9	2,121.3	1,856.1
Cast Iron	Vc	77.7	77.7	77.7	77.7	77.7	77.7	77.7	77.7	77.7
	f	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5
	vf	1,049	1,050.9	1,110	1,094.8	945.1	901.8	821.9	761.8	712
	n	8,170	6,127.5	4,946.5	4,122.1	3,091.6	2,473.3	2,061.1	1,766.6	1,545.8
Titanium	Vc	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	142.9	142.9	150.8	145.9	126.4	120.2	108.9	101.5	94.7
	n	3,554.5	2,665.8	2,132.7	1,777.2	1,332.9	1,066.3	888.6	761.7	666.5
Hard Steel <52	Vc	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
	f	0	0	0	0	0	0.1	0.1	0.1	0.1
	vf	50.1	50.5	54.4	53.7	46	44.5	40.6	37.6	35.2
	n	2,504	1,878	1,502.4	1,252	939	751.2	626	536.6	469.5

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 5xD Coolant Through - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	142.8	142.8	142.8	142.8	142.8	142.8	142.8	142.8	142.8
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	1,740.3	1,647.7	1,663.6	1,568.2	1,363.6	1,227.3	1,125	1,039	974.4
	n	15,966	11,363.7	9,090.9	7,575.8	5,681.8	4,545.5	3,787.9	3,246.8	2,840.9
Medium Carbon Steel	Vc	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	1,350.6	1,353.9	1,371.4	1,292.2	1,115.3	1,009.1	922.1	851.6	798.7
	n	12,987	9,740.3	7,792.2	6,493.5	4,870.1	3,896.1	3,246.8	2,782.9	2,435.1
Tool Steel	Vc	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	518.1	485.5	488.5	460.5	400.4	360.4	330.4	306	285.3
	n	7,137	5,005.4	4,004.3	3,336.9	2,502.7	2,002.2	1,668.5	1,430.1	1,251.4
H-13	Vc	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	571.4	577.1	580.5	548.5	474.2	427.4	392.3	360.8	338.5
	n	7,618.2	5,713.7	4,570.9	3,809.1	2,856.8	2,285.5	1,904.6	1,632.5	1,428.4
P20HH 34-38 HRC	Vc	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
	vf	836	881.6	845.1	795.4	687.8	623.2	570	525.5	494
	n	10,132.9	7,599.6	6,079.7	5,066.4	3,799.8	3,039.9	2,533.2	2,171.3	1,899.9
P20	Vc	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
	vf	927.7	924.4	934.2	886.6	762.2	690.9	629.8	583.8	548
	n	10,811.9	8,108.9	6,487.2	5,406	4,054.5	3,243.6	2,703	2,316.8	2,027.2
Farritic & Martensitic Stainless Steel	Vc	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	1,309	1,321.2	1,335.9	1,254	1,087.3	983.6	899.2	831	777.6
	n	12,233.7	9,175.3	7,340.2	6,116.9	4,587.6	3,670.1	3,058.4	2,621.5	2,293.8
Austenitic & Duplex Stainless Steel	Vc	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	vf	300.1	301.4	305.4	289.3	249.2	225	206.3	190.6	177.8
	n	5,358.2	4,018.7	3,214.9	2,679.1	2,009.3	1,607.5	1,339.6	1,148.2	1,004.7
Cast Iron	Vc	112	112	112	112	112	112	112	112	112
	f	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5
	vf	1,746.9	1,755.8	1,796.8	1,729.1	1,492.9	1,408.2	1,283.4	1,189.2	1,111.9
	n	11,883.6	8,912.7	7,130.1	5,941.8	4,456.3	3,565.1	2,970.9	2,546.5	2,228.2
Aluminum	Vc	402	402	402	402	402	402	402	402	402
	f	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5
	vf	6,436.4	6,430	6,520.9	6,122.9	5,313.6	4,802.4	4,378.4	4,057.3	3,793.2
	n	42,653.5	31,990.1	25,592.1	21,326.8	15,995.1	12,796.1	10,663.4	9,140	7,997.5
Ni Based Superalloys	Vc	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	165.6	166.4	162.7	151.5	130.8	117.3	106.6	98.9	92.5
	n	3,522.6	2,642	2,113.6	1,761.3	1,321	1,056.8	880.7	754.8	660.5
Titanium	Vc	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	vf	289.4	290.7	294.5	279	240.3	217	198.9	183.8	171.5
	n	5,167.2	3,875.4	3,100.3	2,583.6	1,937.7	1,550.2	1,291.8	1,107.3	968.9
Hard Steel <52	Vc	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3
	f	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1
	vf	118.7	109.8	104.5	102.9	89	83.1	76.2	70.4	65.3
	n	3,957.7	2,968.2	2,374.6	1,978.8	1,484.1	1,187.3	989.4	848.1	742.1

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 8xD Coolant Through - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	136.6	136.6	136.6	136.6	136.6	136.6	136.6	136.6	136.6
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	1,492.9	1,537.5	1,487.1	1,442.1	1,246.3	1,116.2	1,019.3	900.7	844.1
	n	14,493.7	11,061.3	8,696.2	7,246.9	5,435.1	4,348.1	3,623.4	3,105.8	2,717.6
Medium Carbon Steel	Vc	117.3	117.3	117.3	117.3	117.3	117.3	117.3	117.3	117.3
	f	0.1	133	0.2	0.2	0.2	0.2	0.3	0.3	297
	vf	1,244.6	1,241.5	1,229.2	1,182.4	1,024.5	918.5	838.5	742.2	693.1
	n	12,445.9	9,334.4	7,467.6	6,223	4,667.2	3,733.8	3,111.5	2,667	2,333.6
Tool Steel	Vc	60	60	60	60	60	60	60	60	60
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	442.5	441.7	437.7	421.1	365	327.5	297.9	263.3	246.8
	n	6,366.2	4,774.6	3,819.7	3,183.1	2,387.3	1,909.9	1,591.5	1,364.2	1,193.7
H-13	Vc	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	215
	vf	550	524.1	518	499.3	434.4	387.4	354.8	313.5	292.9
	n	7,639.4	5,459	4,367.2	3,639.3	2,737.5	2,183.6	1,819.7	1,559.7	1,364.8
P20HH 34-38 HRC	Vc	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
	vf	882.4	755.3	748.2	724.2	625.9	561.1	510.8	452.2	420.8
	n	9,591.7	7,193.8	5,755	4,795.9	3,596.9	2,877.5	2,397.9	2,055.4	1,798.5
P20	Vc	94.9	94.9	94.9	94.9	94.9	94.9	94.9	94.9	94.9
	f	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
	vf	825.3	822.8	815.3	790.1	683.2	606.9	556.1	491.8	460.5
	n	10,065	7,548.7	6,039	5,032.5	3,774.4	3,019.5	2,516.2	2,156.8	1,887.2
Farritic & Martensitic Stainless Steel	Vc	110	110	110	110	110	110	110	110	110
	f	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	vf	805.3	1,199.2	1,194	1,149.6	995.3	888.7	812	718	673.4
	n	11,671.4	8,753.5	7,002.8	5,835.7	4,376.8	3,501.4	2,917.8	2,501	2,188.4
Austenitic & Duplex Stainless Steel	Vc	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
	f	0.1	0.1	0.1	0.1	119	0.1	0.1	0.2	0.2
	vf	276.7	276.4	273.7	263.9	227.9	204.9	187.1	164.7	154.4
	n	5,124.8	3,843.6	3,074.9	2,562.4	1,921.8	1,537.4	1,281.2	1,098.2	960.9
Cast Iron	Vc	109	109	109	109	109	109	109	109	109
	f	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4
	vf	1,820.8	1,517.9	1,510	1,558.4	1,347.1	1,207.4	1,102.2	910.8	332.5
	n	13,899.5	8,673.9	6,939.2	5,782.6	4,337	3,469.6	2,891.3	2,478.3	848.2
Aluminum	Vc	384	384	384	384	384	384	384	384	384
	f	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4
	vf	5,867.1	5,867.1	5,820.6	5,610.4	4,851	4,347.8	3,962.3	3,508	3,278.8
	n	40,743.7	30,557.7	24,446.2	20,371.8	15,278.9	12,223.1	10,185.9	8,730.8	7,639.4
Ni Based Superalloys	Vc	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	150.8	150.5	148.5	141.6	122.5	109.6	100.2	90.1	84.3
	n	3,299.8	2,474.9	1,979.9	1,649.9	1,237.4	989.9	825	707.1	618.7
Titanium	Vc	43.8	43.8	43.8	43.8	43.8	43.8	43.8	43.8	43.8
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	vf	251	250.6	248.2	239.1	206.7	185.8	169.6	149.4	140
	n	4,647.3	3,485.5	2,788.4	2,323.7	1,742.7	1,394.2	1,161.8	995.9	871.4

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 12xD Coolant Through - METRIC

Material Group		3	4	5	6	8	10	12	14	16
Low Carbon Steel	Vc	117	117	117	117	117	117	117	117	117
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
	vf	1,005.5	1,003.7	1,000.3	918.6	793.7	711.7	681.2	631	590.8
	n	12,414.1	9,310.6	7,448.5	6,207	4,655.3	3,724.2	3,103.5	2,660.2	2,327.6
Medium Carbon Steel	Vc	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5
	f	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	vf	949.2	948.4	939.3	867.8	748.7	671.2	639.9	595.7	556.7
	n	10,239	7,679.2	6,143.4	5,119.5	3,839.6	3,071.7	2,559.7	2,194.1	1,919.8
Tool Steel	Vc	50	50	50	50	50	50	50	50	50
	f	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	vf	342.7	342.2	340	311.9	271	241.8	232.6	215	200.8
	n	5,305.2	3,978.9	3,183.1	2,652.6	1,989.4	1,591.5	1,326.3	1,136.8	994.7
H-13	Vc	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	f	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	vf	476.3	507.2	502.5	463.4	400.3	358.1	342.9	317.7	297.5
	n	7,108.9	5,673.9	4,539.1	3,782.6	2,836.9	2,269.5	1,891.3	1,621.1	1,418.5
P20HH 34-38 HRC	Vc	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	622	619.8	618.6	566.6	495.2	439.6	423.9	392.5	365.8
	n	8,520.1	6,390.1	5,112.1	4,260	3,195	2,556	2,130	1,825.7	1,597.5
P20	Vc	86.9	86.9	86.9	86.9	86.9	86.9	86.9	86.9	86.9
	f	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
	vf	702.6	698.4	697.1	640.8	556.7	495.1	477.2	440.6	411.5
	n	9,220.4	6,915.3	5,532.2	4,610.2	3,457.6	2,766.1	2,305.1	1,975.8	1,728.8
Farritic & Martensitic Stainless Steel	Vc	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
	f	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	vf	615.1	612.9	611.1	562.5	485.6	435.6	416.4	386.6	360.8
	n	6,413.9	4,810.5	3,848.4	3,207	2,405.2	1,924.2	1,603.5	1,374.4	1,202.6
Austenitic & Duplex Stainless Steel	Vc	35	35	35	35	35	35	35	35	35
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.1	147	0.2
	vf	186.4	186.3	184.5	170.1	147.3	132.1	126.4	117	109.2
	n	3,713.6	2,785.2	2,228.2	1,856.8	1,392.6	1,114.1	928.4	795.8	696.3
Cast Iron	Vc	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6
	f	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
	vf	1,273.4	1,312.5	1,261.2	1,165.1	1,009.8	901	870	803.2	751.6
	n	10,567.9	7,925.9	6,340.7	5,283.9	3,963	3,170.4	2,642	2,264.5	1,981.5
Aluminum	Vc	352	352	352	352	352	352	352	352	352
	f	0.1	0.2	0.2	245	0.3	0.3	0.4	0.4	0.4
	vf	5,015.9	4,997.2	4,963.6	4,575.2	3,952.4	3,536.1	3,395	3,145.3	2,937
	n	37,348.4	28,011.3	22,409	18,674.2	14,005.6	11,204.5	9,337.1	8,003.2	7,002.8
Ni Based Superalloys	Vc	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
	f	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	vf	116.2	116.4	115.3	106.2	92	82.4	79.4	73.3	68.7
	n	2,748.1	2,061.1	1,648.8	1,374	1,030.5	824.4	687	588.9	515.3
Titanium	Vc	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4
	f	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	vf	188.6	188.5	186.6	172	149	133.6	127.9	118.3	110.4
	n	3,756.1	2,817	2,253.6	1,878	1,408.5	1,126.8	939	804.9	704.3

Vc - Cutting Speeds (m/min)
f - mm per Revolution
vf - Feed Rate (mm/min)
n - Spindle Speed

Pro Drill 3xD Non Coolant - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	331.3	331.3	331.3	331.3	331.3	331.3	331.3
	IPR	0	0	0	0	0	0	0
	FEED	47.6	46.6	42	37.7	34.4	29.6	29.6
	RPM	10,123.1	6,748.7	5,061.6	4,049.2	3,374.4	2,530.8	2,024.6
Medium Carbon Steel	SFM	339.5	339.5	339.5	339.5	339.5	339.5	339.5
	IPR	0	0	0	0	0	0	0
	FEED	46.7	46.3	41	36.9	33.5	28.8	29
	RPM	10,373.7	6,915.8	5,186.8	4,149.5	3,457.9	2,593.4	2,074.7
Tool Steel	SFM	164.3	164.3	164.3	164.3	164.3	164.3	164.3
	IPR	0	0	0	0	0	0	0
	FEED	15.1	14.4	13.3	11.9	10.9	9.4	9.7
	RPM	5,021.2	3,347.5	2,510.6	2,008.5	1,673.7	1,255.3	1,004.2
H-13	SFM	184.7	184.7	184.7	184.7	184.7	184.7	184.7
	IPR	0	0	0	0	0	0	0
	FEED	17.5	17.3	15.5	14	12.6	11	11.4
	RPM	5,642.8	3,761.8	2,821.4	2,257.1	1,880.9	1,410.7	1,128.6
P20HH 34-38 HRC	SFM	225.7	225.7	225.7	225.7	225.7	225.7	225.7
	IPR	0	0	0	0	0	0	0
	FEED	24.1	23.9	21	19	17.2	15	15.6
	RPM	6,895.6	4,597.1	3,447.8	2,758.3	2,298.5	1,723.9	1,379.1
P20	SFM	248.1	248.1	248.1	248.1	248.1	248.1	248.1
	IPR	0	0	0	0	0	0	0
	FEED	27.3	26.8	24.3	21.5	19.7	17.1	17.7
	RPM	7,582.3	5,054.8	3,791.1	3,032.9	2,527.4	1,895.6	1,516.5
Farritic & Martensitic Stainless Steel	SFM	307	307	307	307	307	307	307
	IPR	0	0	0	0	0	0	0
	FEED	43.2	43.2	38.5	34.5	31.6	27.2	27.2
	RPM	9,381.2	6,254.1	4,690.6	3,752.5	3,127.1	2,345.3	1,876.2
Cast Iron	SFM	264.4	264.4	264.4	264.4	264.4	264.4	264.4
	IPR	0	0	0	0	0	0	0
	FEED	54.1	53.9	47.7	43	39	33.9	34.1
	RPM	8,078.5	5,385.7	4,039.3	3,231.4	2,692.8	2,019.6	1,615.7
Titanium	SFM	113.1	113.1	113.1	113.1	113.1	113.1	113.1
	IPR	0	0	0	0	0	0	0
	FEED	6.9	6.9	6.2	5.7	5.2	4.5	4.4
	RPM	3,457	2,304.7	1,728.5	1,382.8	1,152.3	864.2	691.4
Hard Steel <52	SFM	81	81	81	81	81	81	81
	IPR	0	0	0	0	0	0	0
	FEED	2.7	2.6	2.4	2.2	1.9	1.7	1.7
	RPM	2,475.8	1,650.5	1,237.9	990.3	825.3	618.9	495.2

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed

Pro Drill 3xD Coolant Through - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	466.1	466.1	466.1	466.1	466.1	466.1	466.1
	IPR	0	0	0	0	0	0	0
	FEED	71.2	70.3	62.7	55.8	51.3	44.5	41.9
	RPM	14,242.3	9,494.9	7,121.1	5,696.9	4,747.4	3,560.6	2,848.5
Medium Carbon Steel	SFM	401.8	401.8	401.8	401.8	401.8	401.8	401.8
	IPR	0	0	0	0	0	0	0
	FEED	58.9	58.1	51.6	46.2	42.6	36.5	34.4
	RPM	12,278	8,185.4	6,139	4,911.2	4,092.7	3,069.5	2,455.6
Tool Steel	SFM	205.3	205.3	205.3	205.3	205.3	205.3	205.3
	IPR	0	0	0	0	0	0	0
	FEED	20.7	20.5	18.5	16.6	15.1	13	12.2
	RPM	6,274.4	4,182.9	3,137.2	2,509.8	2,091.5	1,568.6	1,254.9
H-13	SFM	182	182	182	182	182	182	182
	IPR	0	0	0	0	0	0	0
	FEED	18.9	18.9	17	15.1	13.9	12	11.3
	RPM	5,562.7	3,708.5	2,781.4	2,225.1	1,854.2	1,390.7	1,112.5
P20HH 34-38 HRC	SFM	234.2	234.2	234.2	234.2	234.2	234.2	234.2
	IPR	0	0	0	0	0	0	0
	FEED	25.8	25.8	22.9	20.6	18.8	16.3	15.3
	RPM	7,156.3	4,770.9	3,578.1	2,862.5	2,385.4	1,789.1	1,431.3
P20	SFM	312.6	312.6	312.6	312.6	312.6	312.6	312.6
	IPR	0	0	0	0	0	0	0
	FEED	36.3	35.7	32	28.7	26.1	22	21.2
	RPM	9,551.7	6,367.8	4,775.8	3,820.7	3,183.9	2,387.9	1,910.3
Farritic & Martensitic Stainless Steel	SFM	375.9	375.9	375.9	375.9	375.9	375.9	375.9
	IPR	0	0	0	0	0	0	0
	FEED	56.3	55.9	50	45	41	35.6	33.3
	RPM	11,486.3	7,657.5	5,743.1	4,594.5	3,828.8	2,871.6	2,297.3
Austenitic & Duplex Stainless Steel	SFM	164.7	164.7	164.7	164.7	164.7	164.7	164.7
	IPR	0	0	0	0	0	0	0.1
	FEED	13.1	12.7	11.6	10.3	9.4	8.2	76.5
	RPM	5,031.3	3,354.2	2,515.7	2,012.5	1,677.1	1,257.8	1,006.3
Cast Iron	SFM	347	347	347	347	347	347	347
	IPR	0	0	0	0	0	0	0
	FEED	77.4	76.3	68.4	61.1	55.8	48.2	48.1
	RPM	10,604.1	7,069.4	5,302	4,241.6	3,534.7	2,651	2,120.8
Aluminum	SFM	1,320.9	1,320.9	1,320.9	1,320.9	1,320.9	1,320.9	1,320.9
	IPR	0	0	0	0	0	0	0
	FEED	278.5	277.2	246.2	219.6	201.8	174.6	163.9
	RPM	40,362	26,908	20,181	16,144.8	13,454	10,090.5	8,072.4
Ni Based Superalloys	SFM	108.2	108.2	108.2	108.2	108.2	108.2	108.2
	IPR	0	0	0	0	0	0	0
	FEED	6.6	6.6	6	5.3	5.1	4.2	3.8
	RPM	3,307.6	2,205	1,653.8	1,323	1,102.5	826.9	661.5
Titanium	SFM	173.5	173.5	173.5	173.5	173.5	173.5	173.5
	IPR	0	0	0	0	0	0	0
	FEED	13.8	13.4	12.2	10.8	9.9	8.6	8.1
	RPM	5,302	3,534.7	2,651	2,120.8	1,767.3	1,325.5	1,060.4
Hard Steel <52	SFM	119.7	119.7	119.7	119.7	119.7	119.7	119.7
	IPR	0	0	0	0	0	0	0
	FEED	4.8	4.6	4.2	3.7	3.9	2.9	2.9
	RPM	3,658.4	2,438.9	1,829.2	1,463.3	1,219.5	914.6	731.7

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed

Pro Drill 5xD Non Coolant - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	333.6	333.6	333.6	333.6	333.6	333.6	333.6
	IPR	0	0	0	0	0	0	0
	FEED	39.8	40.8	38.7	35.1	33	28.8	25.7
	RPM	10,193.1	6,795.4	5,096.5	4,077.2	3,397.7	2,548.3	2,038.6
Medium Carbon Steel	SFM	341.1	341.1	341.1	341.1	341.1	341.1	341.1
	IPR	0	0	0	0	0	0	0
	FEED	38.6	40.3	38	34.2	32.3	28.1	25.2
	RPM	10,423.8	6,949.2	5,211.9	4,169.5	3,474.6	2,606	2,084.8
Tool Steel	SFM	159.7	159.7	159.7	159.7	159.7	159.7	159.7
	IPR	0	0	0	0	0	0	0
	FEED	11.2	12	11.7	10.3	10.1	8.9	7.9
	RPM	4,881	3,254	2,440.5	1,952.4	1,627	1,220.2	976.2
H-13	SFM	182	182	182	182	182	182	182
	IPR	0	0	0	0	0	0	0
	FEED	13.4	14.1	13.9	12.2	11.9	10.4	9.3
	RPM	5,562.7	3,708.5	2,781.4	2,225.1	1,854.2	1,390.7	1,112.5
P20HH 34-38 HRC	SFM	206	206	206	206	206	206	206
	IPR	0	0	0	0	0	0	0
	FEED	17.6	18.5	17.9	16.1	15.5	13.7	12.2
	RPM	6,294.3	4,196.2	3,147.1	2,517.7	2,098.1	1,573.6	1,258.9
P20	SFM	217.8	217.8	217.8	217.8	217.8	217.8	217.8
	IPR	0	0	0	0	0	0	0
	FEED	19.3	20.4	19.6	17	17.1	15	13.4
	RPM	6,655.2	4,436.8	3,327.6	2,662.1	2,218.4	1,663.8	1,331
Farritic & Martensitic Stainless Steel	SFM	306	306	306	306	306	306	306
	IPR	0	0	0	0	0	0	0
	FEED	36.5	36.8	35.5	31.8	29.9	26.4	23.4
	RPM	9,351.2	6,234.2	4,675.6	3,740.5	3,117.1	2,337.8	1,870.2
Cast Iron	SFM	254.9	254.9	254.9	254.9	254.9	254.9	254.9
	IPR	0	0	0	0	0	0	0
	FEED	42.1	43.1	41.7	37.4	35.8	31.3	28.2
	RPM	7,787.6	5,191.7	3,893.8	3,115	2,595.9	1,946.9	1,557.5
Titanium	SFM	109.9	109.9	109.9	109.9	109.9	109.9	109.9
	IPR	0	0	0	0	0	0	0
	FEED	5.7	5.8	5.5	5	4.8	4.2	1.9
	RPM	3,357.7	2,238.4	1,678.8	1,343.1	1,119.2	839.4	671.5
Hard Steel <52	SFM	77.4	77.4	77.4	77.4	77.4	77.4	77.4
	IPR	0	0	0	0	0	0	0
	FEED	1.9	2.1	2	1.8	1.7	1.5	1.4
	RPM	2,365.5	1,577	1,182.7	946.2	788.5	591.4	473.1

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed

Pro Drill 5xD Coolant Through - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	468.4	468.4	468.4	468.4	468.4	468.4	468.4
	IPR	0	0	0	0	0	0	0
	FEED	64.4	64.9	60.1	53.8	49.1	42.9	38.4
	RPM	14,312.6	9,541.7	7,156.3	5,725	4,770.9	3,578.1	2,862.5
Medium Carbon Steel	SFM	401.5	401.5	401.5	401.5	401.5	401.5	401.5
	IPR	0	0	0	0	0	0	0
	FEED	52.8	54	49.1	44.2	40.5	35.3	31.7
	RPM	12,268	8,178.6	6,134	4,907.2	4,089.3	3,067	2,453.6
Tool Steel	SFM	206.3	206.3	206.3	206.3	206.3	206.3	206.3
	IPR	0	0	0	0	0	0	0
	FEED	18.9	19.3	17.7	15.9	14.5	12.6	11.2
	RPM	6,304.3	4,202.9	3,152.2	2,521.7	2,101.4	1,576.1	1,260.9
H-13	SFM	235.5	235.5	235.5	235.5	235.5	235.5	235.5
	IPR	0	0	0	0	0	0	0
	FEED	22.3	23	20.9	18.7	17.3	14.9	13.4
	RPM	7,196.3	4,797.5	3,598.2	2,878.5	2,398.8	1,799.1	1,439.3
P20HH 34-38 HRC	SFM	313.2	313.2	313.2	313.2	313.2	313.2	313.2
	IPR	0	0	0	0	0	0	0
	FEED	33.5	33.8	30.2	27.2	24.9	21.8	19.5
	RPM	9,571.9	6,381.2	4,785.9	3,828.7	3,190.6	2,393	1,914.4
P20	SFM	334.2	334.2	334.2	334.2	334.2	334.2	334.2
	IPR	0	0	0	0	0	0	0
	FEED	36.8	36.8	33.7	30.2	27.9	24	21.7
	RPM	10,213.3	6,808.9	5,106.7	4,085.3	3,404.4	2,553.3	2,042.7
Farritic & Martensitic Stainless Steel	SFM	378.2	378.2	378.2	378.2	378.2	378.2	378.2
	IPR	0	0	0	0	0	0	0
	FEED	52	52.4	48	43	39.7	34.4	30.7
	RPM	11,556.3	7,704.2	5,778.1	4,622.5	3,852.1	2,889.1	2,311.3
Austenitic & Duplex Stainless Steel	SFM	165.6	165.6	165.6	165.6	165.6	165.6	165.6
	IPR	0	0	0	0	0	0	0
	FEED	11.6	12.1	11.1	9.9	9.1	7.8	7
	RPM	5,061.6	3,374.4	2,530.8	2,024.6	1,687.2	1,265.4	1,012.3
Cast Iron	SFM	367.4	367.4	367.4	367.4	367.4	367.4	367.4
	IPR	0	0	0	0	0	0	0
	FEED	68.5	70.3	66.2	58.8	56.1	49.1	44
	RPM	11,225.6	7,483.8	5,612.8	4,490.3	3,741.9	2,806.4	2,245.1
Aluminum	SFM	1,318.6	1,318.6	1,318.6	1,318.6	1,318.6	1,318.6	1,318.6
	IPR	0	0	0	0	0	0	0
	FEED	253.8	255.2	233.7	209.5	193.4	167.2	149.9
	RPM	40,292	26,861.4	20,146	16,116.8	13,430.7	10,073	8,058.4
Ni Based Superalloys	SFM	108.9	108.9	108.9	108.9	108.9	108.9	108.9
	IPR	0	0	0	0	0	0	0
	FEED	6.7	6.4	5.8	5.2	4.8	4.1	3.7
	RPM	3,327.4	2,218.3	1,663.7	1,331	1,109.1	831.9	665.5
Titanium	SFM	159.7	159.7	159.7	159.7	159.7	159.7	159.7
	IPR	0	0	0	0	0	0	0
	FEED	11.2	11.7	10.7	9.6	8.8	7.6	6.7
	RPM	4,881.3	3,254.2	2,440.6	1,952.5	1,627.1	1,220.3	976.3
Hard Steel <52	SFM	122.3	122.3	122.3	122.3	122.3	122.3	122.3
	IPR	0	0	0	0	0	0	0
	FEED	4.5	4.2	3.9	3.6	3.4	2.9	2.6
	RPM	3,738.4	2,492.3	1,869.2	1,495.4	1,246.1	934.6	747.7

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed

Pro Drill 8xD Coolant Through - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	448.1	448.1	448.1	448.1	448.1	448.1	448.1
	IPR	0	0	0	0	0	0	0
	FEED	58.9	58.4	54.8	49.3	45.2	38.3	33.4
	RPM	13,691.3	9,127.6	6,845.7	5,476.5	4,563.8	3,422.8	2,738.3
Medium Carbon Steel	SFM	384.7	384.7	384.7	384.7	384.7	384.7	384.7
	IPR	0	0	0	0	0	0	0
	FEED	49.4	48.6	45.3	40.4	36.8	31.4	27.3
	RPM	11,756.7	7,837.8	5,878.4	4,702.7	3,918.9	2,939.2	2,351.3
Tool Steel	SFM	196.8	196.8	196.8	196.8	196.8	196.8	196.8
	IPR	0	0	0	0	0	0	0
	FEED	17.4	17.2	16.2	14.4	13.2	11.3	9.7
	RPM	6,013.7	4,009.2	3,006.9	2,405.5	2,004.6	1,503.4	1,202.7
H-13	SFM	225	225	225	225	225	225	225
	IPR	0	0	0	0	0	0	0
	FEED	20.6	20.6	18.9	17.1	15.6	13.4	11.6
	RPM	6,875.8	4,583.8	3,437.9	2,750.3	2,291.9	1,718.9	1,375.2
P20HH 34-38 HRC	SFM	296.5	296.5	296.5	296.5	296.5	296.5	296.5
	IPR	0	0	0	0	0	0	0
	FEED	33.5	29.6	27.6	24.6	22.7	19.3	16.7
	RPM	9,060.6	6,040.4	4,530.3	3,624.3	3,020.2	2,265.2	1,812.1
P20	SFM	311.1	311.1	311.1	311.1	311.1	311.1	311.1
	IPR	0	0	0	0	0	0	0
	FEED	32.3	32.3	29.9	27	24.4	20.9	18.3
	RPM	9,507.7	6,338.5	4,753.9	3,803.1	3,169.2	2,376.9	1,901.5
Farritic & Martensitic Stainless Steel	SFM	360.8	360.8	360.8	360.8	360.8	360.8	360.8
	IPR	0	0	0	0	0	0	0
	FEED	35.3	47	44.1	39.2	35.6	30.6	26.7
	RPM	11,025.2	7,350.1	5,512.6	4,410.1	3,675.1	2,756.3	2,205
Austenitic & Duplex Stainless Steel	SFM	158.4	158.4	158.4	158.4	158.4	158.4	158.4
	IPR	0	0	0	0	0	0	0
	FEED	10.7	10.7	101.7	9.1	8.2	7	6.1
	RPM	4,840.9	3,227.3	2,420.5	1,936.4	1,613.6	1,210.2	968.2
Cast Iron	SFM	357.5	357.5	357.5	357.5	357.5	357.5	357.5
	IPR	0	0	0	0	0	0	0
	FEED	60.1	59.7	59.5	53.3	48.8	40.4	33.6
	RPM	10,925	7,283.3	5,462.5	4,370	3,641.7	2,731.2	2,185
Aluminum	SFM	1,259.5	1,259.5	1,259.5	1,259.5	1,259.5	1,259.5	1,259.5
	IPR	0	0	0	0	0	0	0
	FEED	230.9	228.4	213.6	190.9	174.5	149.1	129.3
	RPM	38,487.9	25,658.6	19,244	15,395.2	12,829.3	9,622	7,697.6
Ni Based Superalloys	SFM	102	102	102	102	102	102	102
	IPR	0	0	0	0	0	0	0
	FEED	5.9	5.8	5.5	4.9	4.4	3.8	3.3
	RPM	3,117.2	2,078.1	1,558.6	1,246.9	1,039.1	779.3	623.4
Titanium	SFM	143.7	143.7	143.7	143.7	143.7	143.7	143.7
	IPR	0	0	0	0	0	0	0
	FEED	9.7	9.7	9.2	8.1	7.5	6.4	5.5
	RPM	4,389.9	2,926.6	2,195	1,756	1,463.3	1,097.5	878

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed

Pro Drill 12xD Coolant Through - INCH

Material Group		0.125	0.1875	0.25	0.3125	0.375	0.5	0.625
Low Carbon Steel	SFM	383.8	383.8	383.8	383.8	383.8	383.8	383.8
	IPR	0	0	0	0	0	0	0
	FEED	39.9	39.1	35.2	31.4	28.5	26.1	23.5
	RPM	11,726.8	7,817.9	5,863.4	4,690.7	3,908.9	2,931.7	2,345.4
Medium Carbon Steel	SFM	316.5	316.5	316.5	316.5	316.5	316.5	316.5
	IPR	0	0	0	0	0	0	0
	FEED	37.7	36.8	32.9	29.4	27.1	24.4	22.1
	RPM	9,672.1	6,448.1	4,836	3,868.8	3,224	2,418	1,934.4
Tool Steel	SFM	164	164	164	164	164	164	164
	IPR	0	0	0	0	0	0	0
	FEED	13.5	13.4	12	10.6	9.7	8.9	7.9
	RPM	5,011.4	3,341	2,505.7	2,004.6	1,670.5	1,252.9	1,002.3
H-13	SFM	233.9	233.9	233.9	233.9	233.9	233.9	233.9
	IPR	0	0	0	0	0	0	0
	FEED	20	20	17.9	15.7	14.5	13	11.7
	RPM	7,146.2	4,764.1	3,573.1	2,858.5	2,382.1	1,786.6	1,429.2
P20HH 34-38 HRC	SFM	263.4	263.4	263.4	263.4	263.4	263.4	263.4
	IPR	0	0	0	0	0	0	0
	FEED	24.1	24.1	21.7	19.6	17.7	16.3	14.5
	RPM	8,048.3	5,365.5	4,024.1	3,219.3	2,682.8	2,012.1	1,609.7
P20	SFM	285	285	285	285	285	285	285
	IPR	0	0	0	0	0	0	0
	FEED	27.9	27.3	24.4	21.9	20	18.3	16.2
	RPM	8,709.9	5,806.6	4,354.9	3,484	2,903.3	2,177.5	1,742
Farritic & Martensitic Stainless Steel	SFM	198.3	198.3	198.3	198.3	198.3	198.3	198.3
	IPR	0	0	0	0	0	0	0
	FEED	24.2	24.2	21.5	19.1	17.6	15.9	14.3
	RPM	6,058.7	4,039.1	3,029.3	2,423.5	2,019.6	1,514.7	1,211.7
Austenitic & Duplex Stainless Steel	SFM	114.8	114.8	114.8	114.8	114.8	114.8	114.8
	IPR	0	0	0	0	0	0	0
	FEED	7.4	7.2	6.5	5.8	5.3	4.8	4.3
	RPM	3,508	2,338.7	1,754	1,403.2	1,169.3	877	701.6
Cast Iron	SFM	326.7	326.7	326.7	326.7	326.7	326.7	326.7
	IPR	0	0	0	0	0	0	0
	FEED	50.9	49.9	44.4	39.9	36.3	33.2	29.7
	RPM	9,982.9	6,655.2	4,991.4	3,993.1	3,327.6	2,495.7	1,996.6
Aluminum	SFM	1,154.6	1,154.6	1,154.6	1,154.6	1,154.6	1,154.6	1,154.6
	IPR	0	0	0	0	0	0	0
	FEED	211.7	209.3	195.8	175	159.9	136.7	118.5
	RPM	35,280.6	23,520.4	17,640.3	14,112.2	11,760.2	8,820.1	7,056.1
Ni Based Superalloys	SFM	85	85	85	85	85	85	85
	IPR	0	0	0	0	0	0	0
	FEED	4.7	4.5	4	3.6	3.3	3.1	2.7
	RPM	2,595.9	1,730.6	1,297.9	1,038.3	865.3	649	519.2
Titanium	SFM	116.1	116.1	116.1	116.1	116.1	116.1	116.1
	IPR	0	0	0	0	0	0	0
	FEED	7.5	7.3	6.6	5.8	5.3	4.9	4.3
	RPM	3,548	2,365.4	1,774	1,419.2	1,182.7	887	709.6

SFM - Surface Feet per Minute
IPR - Inches per Revolution
FEED - Feed Rate (in/min)
RPM - Spindle Speed