

RECOMMENDED SPEEDS AND FEEDS



MATERIAL	MATERIAL HARDNESS (BHN)	SFM	FEED (IPR)				
			.531"-.688"	.688"-1"	1"-1.25"	1.25"-2"	2"-2.5"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	200	.010	.013	.016	.020	.025
	150-200	180	.010	.013	.016	.020	.025
	200-250	160	.010	.013	.016	.020	.025
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	170	.009	.012	.015	.020	.025
	125-175	160	.009	.012	.015	.020	.025
	175-225	150	.008	.010	.014	.018	.022
	225-275	140	.008	.010	.014	.018	.022
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	160	.009	.012	.015	.020	.025
	175-225	150	.008	.010	.014	.018	.022
	225-275	140	.008	.010	.014	.018	.022
	*275-325	130	.007	.009	.012	.016	.020
Alloy Steel 4140, 5140, 8640, etc.	125-175	150	.008	.010	.014	.017	.020
	175-225	140	.008	.010	.014	.017	.020
	225-275	130	.007	.010	.014	.017	.020
	*275-325	120	.006	.009	.012	.015	.018
	*325-375	110	.006	.009	.012	.015	.018
High Strength Alloy 4340, 4330V, 300M, etc.	*225-300	80	.007	.009	.010	.014	.018
	*300-350	60	.007	.009	.010	.014	.018
	*350-400	50	.006	.008	.009	.012	.016
Structural Steel A36, A285, A516, etc.	100-150	140	.010	.012	.014	.018	.022
	150-250	120	.009	.010	.012	.016	.020
	*250-350	100	.008	.009	.010	.014	.017
High Temp. Alloy Hastelloy B, Inconel 600, etc.	*140-220	30	.007	.008	.010	.012	.015
	*220-310	25	.006	.007	.008	.010	.012
Stainless Steel 310, 316, 330, 17-4 PH, etc.	135-185	75	.008	.009	.011	.014	.016
	185-275	60	.007	.008	.010	.012	.014
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150-200	80	.006	.008	.010	.012	.015
	200-250	60	.006	.008	.010	.012	.015
Aluminum	30	600	.013	.016	.022	.030	.035
	180	300	.013	.016	.022	.030	.035
Cast Iron (TiN Coated HSS Tools)	120-150	170	.012	.016	.020	.024	.028
	150-200	150	.011	.014	.018	.022	.026
	200-220	130	.009	.012	.016	.018	.022
	*220-260	110	.007	.009	.012	.014	.017
	*260-320	90	.006	.007	.009	.011	.014

* SC Grade Recommended

Reductions in speed may be required due to excessive tool wear. Always use an ample supply of coolant through the tool.

Formulas:

$$IPM = (RPM)(IPR)$$

$$SFM = \frac{(RPM)(DIA)}{3.82}$$

$$RPM = \frac{SFM \times 3.82}{(DIA)}$$

The speeds and feeds listed above are only a starting point! Contact our Engineering Department if you require assistance. Please have item number, hole diameter, depth, material grade, BHN hardness and coolant pressure information available when you call. Additional information such as part and machine rigidity, horsepower and thrust limits, vertical or horizontal spindle, revolving or stationary tool, flood or through holder coolant are also very helpful to our Application Engineers when you require their best recommendation.

The above recommendations are based on adequate coolant flow, machine rigidity, horsepower and thrust capability.

Wear protective eyeglasses and use machine protective shields.