

# FEEDS & SPEEDS FOR MILLS & SAWS - CARBIDE TIPPED

Feeds & speeds are a starting recommendation only. Factors such as machine, fixture and tooling rigidity, horsepower available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations.

$$\text{RPM} = \text{SFPM} * 3.82 / \text{CUTTER DIAMETER}$$

$$\text{IPM} = \text{IPT} * \text{RPM} * \# \text{TEETH}$$

IPT = Inches Per Tooth  
 IPM = Inches Per Minute  
 RPM = Rotations Per Minute  
 SFPM = Surface Feet Per Minute  
 Cutter Diameter = Diameter of the cutter in inches



CLASS OF MATERIALS	MATERIAL	APPLICATION - MILLS AND SAWS		
		BRINELL	SURFACE FEET PER MINUTE (SFPM)	INCHES PER TOOTH (IPT)
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150* (500kg)	1000-2000	.004-.008
	MAGNESIUM ALLOY	50-90*	750-1500	.004-.008
	LEAD ALLOY	10-20*	300-1000	.004-.008
	NON-METAL AND PLASTIC	-	1500-3000	.004-.008
	ZINC ALLOY - DIE CAST	80-100	750-1500	.005-.010
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	200-600	.003-.006
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	400-800	.004-.008
	NICKEL SILVER	10-100Rb	200-400	.003-.006
	COPPER ALLOY - TOUGH	40-200*	200-500	.004-.008
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	75-150	.002-.004
	DUCTILE CAST IRON - FERRITIC	140-270	250-400	.003-.006
	DUCTILE CAST IRON - MARTENSITIC	270-400	200-300	.003-.006
	GRAY - PEARLITIC	220-320	120-300	.002-.004
	GRAY - FERRITIC	110-240	250-425	.003-.006
	MALLEABLE CAST IRON - MARTENSITIC	200-320	130-225	.002-.004
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-240	250-500	.003-.006
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	200-400	.002-.004
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	200-400	.002-.004
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	150-300	.002-.005
	STAINLESS STEEL - 400 SERIES	135-325	200-400	.003-.006
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	250-500	.003-.006
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	75-150	.002-.004
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	50-150	.002-.004
	STAINLESS STEEL - 300 SERIES	135-375	75-150	.002-.004
	STAINLESS STEEL - PH SERIES	150-440	75-150	.002-.004
	TITANIUM ALLOY	110-380	100-200	.002-.004

