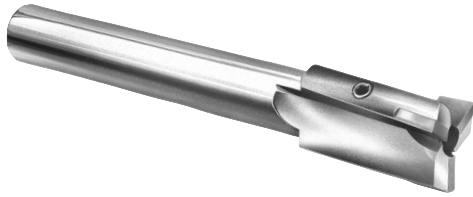


FEEDS & SPEEDS CHART FOR COUNTERBORES (CARBIDE TIPPED)



$$\text{RPM} = \text{SFPM} \times 3.82 / \text{CUTTER DIAM.}$$

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. **Rev. 091201**

CLASS OF MATERIAL	MATERIAL	COUNTERBORING		FEED RATE (INCHES PER REVOLUTION) FINISHED HOLE DIAMETER IN INCHES					
		BRINELL	S.F.P.M	1/4	1/2	3/4	1	1 1/2	2
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150 (500kg)	750-900	.006	.006	.007	.007	.009	.010
	MAGNESIUM ALLOY	50-90	875-1000	.006	.006	.007	.007	.009	.010
	NON-METAL AND PLASTIC	-	700-1200	.006	.006	.007	.007	.009	.010
	ZINC ALLOY - DIE CAST	80-100	700-850	.005	.005	.006	.006	.007	.009
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	700-850	.006	.006	.007	.007	.009	.010
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	850-1000	.006	.006	.007	.007	.009	.010
	CHROMIUM-NICKEL	10-100Rb	75-85	.003	.003	.003	.003	.004	.005
	COPPER ALLOY - TOUGH	40-200	275-350	.005	.005	.006	.006	.007	.009
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	85-110	.002	.002	.002	.002	.003	.004
	DUCTILE CAST IRON - FERRITIC	140-270	200-250	.006	.006	.007	.007	.009	.010
	DUCTILE CAST IRON - MARTENSITIC	270-400	75-95	.002	.002	.002	.002	.003	.004
	GRAY - PEARLITIC	220-320	125-200	.004	.004	.004	.005	.006	.007
	GRAY - FERRITIC	110-240	200-250	.004	.004	.004	.005	.006	.007
	MALLEABLE CAST IRON - MARTENSITIC	200-320	60-85	.004	.004	.004	.005	.006	.007
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	200-250	.006	.006	.007	.007	.009	.010
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	150-200	.006	.006	.007	.007	.009	.010
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	145-185	.004	.004	.004	.005	.006	.007
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	130-165	.004	.004	.004	.005	.006	.007
	STAINLESS STEEL - 400 SERIES	135-325	150-200	.003	.003	.003	.003	.004	.005
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	155-205	.003	.003	.003	.003	.004	.005
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	90-135	.002	.002	.002	.002	.003	.003
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	40-65	.002	.002	.002	.002	.003	.003
	STAINLESS STEEL - 300 SERIES	135-375	150-300	.003	.003	.003	.003	.004	.005
	STAINLESS STEEL - PH SERIES	150-440	115-175	.003	.003	.003	.003	.004	.005
	TITANIUM ALLOY	110-380	125-175	.002	.002	.002	.002	.003	.003