

# FEEDS & SPEEDS CHART FOR KEYSEATS - CARBIDE TIPPED

Feeds & speeds are a starting recommendation for catalog standards 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. (Series 3700, 3701, & 3703 Keyseat Cutters)

IPM is based on catalog standards only using the mid SFPM and a 0.002 IPT chip load as a starting point. For all other conditions use the following formulas to calculate RPM and IPM from the ranges listed in the material group and brinell hardness section as a starting point.

$$RPM = SFPM * 3.82 / \text{Cutter Diameter}$$

$$IPM = IPT * RPM * \#Teeth$$



CLASSIFICATION	MATERIAL	BRINELL	SPEED IN SFPM	FEED RATE IPT	KEYSEAT CUTTER DIAMETER									
					1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	
					IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM
<b>NON-FERROUS (SOFT)</b>	ALUMINUM ALLOY - WROUGHT	30-150*	1200+	.002-.010	110	88	73	63	73	65	59	53	49	
	MAGNESIUM ALLOY	50-90*	1000+	.002-.010	92	73	61	52	61	54	49	44	41	
	LEAD ALLOY	10-20*	-	-	-	-	-	-	-	-	-	-	-	
	NON-METAL AND PLASTIC	-	1500+	.002-.006	138	110	92	79	92	81	73	67	61	
	ZINC ALLOY - DIE CAST	80-100	750-1000	.002-.006	80	64	53	46	53	48	43	39	36	
<b>NON-FERROUS (HARD)</b>	ALUMINUM BRONZE	40-175	200-600	.002-.006	37	29	24	21	24	22	20	18	16	
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	400-550	.002-.006	44	35	29	25	29	26	23	21	19	
	NICKEL SILVER	10-100Rb	200-400	.002-.006	28	22	18	16	18	16	15	13	12	
	COPPER ALLOY - TOUGH	40-200*	200-500	.002-.006	32	26	21	18	21	19	17	16	14	
<b>CAST IRON</b>	DUCTILE CAST IRON - AUSTENITIC	120-275	75-150	.002-.004	10	8	7	6	7	6	6	5	5	
	DUCTILE CAST IRON - FERRITIC	140-270	200-400	.002-.007	28	22	18	16	18	16	15	13	12	
	DUCTILE CAST IRON - MARTENSITIC	270-440	150-350	.002-.007	23	18	15	13	15	14	12	11	10	
	GRAY - PEARLITIC	220-320	150-300	.002-.007	21	17	14	12	14	12	11	10	9	
	GRAY - FERRITIC	110-240	220-410	.002-.006	29	23	19	17	19	17	15	14	13	
	MALLEABLE CAST IRON - MARTENSITIC	200-320	130-300	.002-.004	20	16	13	11	13	12	11	10	9	
<b>LOW CARBON STEELS</b>	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	200-500	.001-.005	32	26	21	18	21	19	17	16	14	
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	200-400	.001-.005	28	22	18	16	18	16	15	13	12	
<b>MEDIUM STRENGTH STEELS</b>	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	200-400	.001-.005	28	22	18	16	18	16	15	13	12	
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	130-330	.001-.005	21	17	14	12	14	12	11	10	9	
	STAINLESS STEEL - 400 SERIES	135-325	35-375	.002-.005	24	19	16	14	16	14	13	12	11	
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	250-500	.002-.005	34	28	23	20	23	20	18	17	15	
<b>HIGH STRENGTH STEELS</b>	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	75-200	.001-.004	13	28	23	20	23	20	18	17	15	
<b>HIGH TEMP. ALLOYS</b>	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	50-150	.001-.004	9	7	6	5	6	5	5	4	4	
	STAINLESS STEEL - 300 SERIES	135-375	75-175	.001-.004	11	9	8	7	8	7	6	6	5	
	STAINLESS STEEL - PH SERIES	150-440	75-175	.001-.004	11	9	8	7	8	7	6	6	5	
	TITANIUM ALLOY	110-380	75-200	.002-.006	13	10	8	7	8	7	7	6	6	