

# RECOMMENDED CUTTING CONDITIONS

## Recommended Cutting Conditions - External Turning (Negative Insert) [D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (r)	Lower Limit - Recommendation - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate (ipr)
M	Stainless Steel	HB 120	Finishing (Gloss Oriented)	Continuous Interruption	PQ	TN620	1/32	390 - 520 - 660	0.020 - 0.039 - 0.059	0.003 - 0.006 - 0.008
			Finishing	Continuous Interruption	MQ	CA6515 CA6525	1/64	390 - 590 - 790	0.020 - 0.039 - 0.059	0.003 - 0.006 - 0.008
			Medium-Roughing (Chip Control Oriented)	Continuous Interruption	MS	CA6515 CA6525	1/64	390 - 520 - 660	0.039 - 0.079 - 0.118	0.004 - 0.008 - 0.012
			Medium-Roughing (Sharpness Oriented)	Continuous Interruption	MU	CA6515 CA6525	1/64	390 - 520 - 660	0.039 - 0.079 - 0.118	0.006 - 0.010 - 0.014
			Roughing	Continuous Interruption	Standard	CA6515 CA6525	1/32	260 - 460 - 590	0.039 - 0.079 - 0.157	0.008 - 0.012 - 0.016
	Stainless Steel	HB 300	Finishing (Gloss Oriented)	Continuous Interruption	PQ	TN620	1/32	330 - 390 - 490	0.020 - 0.039 - 0.059	0.002 - 0.004 - 0.006
			Finishing	Continuous Interruption	MQ	CA6515 CA6525	1/64	330 - 390 - 490	0.020 - 0.039 - 0.059	0.003 - 0.006 - 0.008
			Medium-Roughing (Chip Control Oriented)	Continuous Interruption	MS	CA6515 CA6525	1/64	330 - 390 - 490	0.039 - 0.059 - 0.079	0.004 - 0.006 - 0.010
			Medium-Roughing (Sharpness Oriented)	Continuous Interruption	MU	CA6515 CA6525	1/64	330 - 390 - 490	0.039 - 0.059 - 0.079	0.004 - 0.006 - 0.010
			Roughing	Continuous Interruption	Standard	CA6515 CA6525	1/32	260 - 330 - 390	0.039 - 0.079 - 0.118	0.004 - 0.006 - 0.008
K	Gray Cast Iron	HB 250	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN475 KBN900 KBN900	1/32	1310 - 2620 - 3940	0.002 - 0.008 - 0.020	0.004 - 0.008 - 0.012
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 PV720	1/32	980 - 1150 - 1310	0.020 - 0.039 - 0.059	0.004 - 0.008 - 0.012
			Finishing (Ceramic)	Continuous Interruption	Without Chipbreaker	KA30 PT600M	3/64	980 - 1640 - 2300	0.012 - 0.020 - 0.039	0.004 - 0.008 - 0.012
			Medium (Ceramic)	Continuous Interruption	Without Chipbreaker	CS7050 KS6050	3/64	980 - 1480 - 1800	0.039 - 0.079 - 0.118	0.006 - 0.010 - 0.014
			Medium	Continuous Interruption	Standard	CA4505 CA4515	1/32	660 - 820 - 980	0.020 - 0.079 - 0.098	0.004 - 0.008 - 0.012
	Nodular Cast Iron	HB 270	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN60M PT600M	1/64	660 - 980 - 1310	0.004 - 0.012 - 0.020	0.004 - 0.006 - 0.008
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 PV720	1/32	490 - 820 - 980	0.020 - 0.039 - 0.059	0.003 - 0.006 - 0.008
			Medium	Continuous Interruption	Standard	CA4505 CA4515	1/32	490 - 660 - 820	0.020 - 0.079 - 0.098	0.004 - 0.008 - 0.012
			Medium	Continuous Interruption	Standard	CA4505 CA4515	3/64	390 - 590 - 720	0.020 - 0.079 - 0.098	0.003 - 0.006 - 0.008
			Roughing	Continuous Interruption	ZS	CA4505 CA4515	1/32	490 - 660 - 820	0.039 - 0.079 - 0.157	0.008 - 0.012 - 0.016
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB 100	High Speed Machining (Rainbow Surface Gross)	Continuous Interruption	Without Chipbreaker	KPD001	1/64	980 - 2620 - 6560	0.002 - 0.020 - 0.039	0.002 - 0.004 - 0.006
			Finishing (Long Tool Life)	Continuous Interruption	A3	PDL025	1/64	1310 - 1640 - 2300	0.020 - 0.039 - 0.079	0.004 - 0.008 - 0.010
			Finishing	Continuous Interruption	A3	KW10	1/32	1310 - 1640 - 2300	0.020 - 0.039 - 0.079	0.004 - 0.008 - 0.010
			Medium	Continuous Interruption	AH	KW10	1/32	660 - 980 - 1640	0.039 - 0.079 - 0.138	0.004 - 0.012 - 0.016
S	Titanium Alloys	HB 400	Precision Finishing (Rainbow Surface Gross)	Continuous Interruption	Without Chipbreaker	KPD001	1/64	330 - 490 - 590	0.002 - 0.012 - 0.020	0.001 - 0.004 - 0.006
			Finishing	Continuous Interruption	MQ	SW05	1/64	130 - 230 - 330	0.008 - 0.020 - 0.039	0.002 - 0.008 - 0.012
	Heat-resistant Alloys	HB 350	Finishing	Continuous Interruption	MQ	PR1310	1/64	130 - 200 - 260	0.008 - 0.020 - 0.059	0.001 - 0.003 - 0.005
			Medium	Continuous Interruption	MS	PR1310	1/32	130 - 200 - 260	0.020 - 0.039 - 0.079	0.002 - 0.004 - 0.006
H	Hardened Steel Hard Materials	40-50 HRC	Finishing	Continuous Interruption	PQ Standard	CA515	1/32	200 - 330 - 390	0.004 - 0.012 - 0.020	0.002 - 0.003 - 0.004
			Finishing	Continuous Interruption	Without Chipbreaker	PT600M	1/32	200 - 260 - 330	0.008 - 0.020 - 0.028	0.002 - 0.004 - 0.006
		50-65 HRC	Finishing	Continuous Interruption	ME MET	KBN05M	1/32	330 - 490 - 660	0.002 - 0.012 - 0.020	0.002 - 0.003 - 0.004
			Medium	Continuous Interruption	Without Chipbreaker	KBN900	3/64	300 - 460 - 590	0.002 - 0.012 - 0.020	0.002 - 0.003 - 0.004
		50-68 HRC	Finishing	Continuous Interruption	Without Chipbreaker	KBN900	3/64	260 - 330 - 390	0.020 - 0.039 - 0.079	0.002 - 0.004 - 0.008
			Medium	Continuous Interruption	Without Chipbreaker	KBN900	Radius	230 - 300 - 360	0.012 - 0.028 - 0.039	0.002 - 0.004 - 0.006