

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)		
P	Low Carbon Steel Low Carbon Alloy	HB 130	Finishing (Small D.O.C.)	Continuous Interruption	XF	PV710 PV720	1/64 1/32	820 - 1150 - 1710 790 - 1050 - 1570	0.002 - 0.005 - 0.024 0.002 - 0.006 - 0.024	0.001 - 0.004 - 0.009 0.016 - 0.005 - 0.010		
			Finishing (Gloss Oriented)	Continuous Interruption	XP	TN610 TN620	1/64 1/32	820 - 1050 - 1310 790 - 1020 - 1210	0.008 - 0.020 - 0.028 0.008 - 0.020 - 0.028	0.003 - 0.005 - 0.008 0.003 - 0.005 - 0.008		
			Finishing (Tool Life Oriented)	Continuous Interruption	XP	PV710 PV720	1/64 1/32	820 - 980 - 1210 790 - 950 - 1120	0.008 - 0.020 - 0.028 0.008 - 0.020 - 0.028	0.003 - 0.005 - 0.008 0.003 - 0.005 - 0.008		
			Finishing-Medium (Gloss Oriented)	Continuous Interruption	XQ	TN620 TN620	1/64 1/32	820 - 1050 - 1310 790 - 920 - 1120	0.020 - 0.039 - 0.059 0.020 - 0.039 - 0.059	0.007 - 0.010 - 0.012 0.007 - 0.010 - 0.012		
			Finishing-Medium (Tool Life Oriented)	Continuous Interruption	XQ	PV710 PV720	1/32 1/32	820 - 980 - 1210 790 - 920 - 1120	0.020 - 0.039 - 0.059 0.020 - 0.039 - 0.059	0.007 - 0.010 - 0.012 0.007 - 0.010 - 0.012		
			Medium-Roughing	Continuous Interruption	XS	PV720 CA515	1/32 1/32	720 - 850 - 1050 520 - 690 - 850	0.031 - 0.059 - 0.079 0.031 - 0.059 - 0.079	0.010 - 0.012 - 0.016 0.010 - 0.012 - 0.016		
			Roughing	Continuous Interruption	PG	CA515 CA525	1/32 3/64	590 - 720 - 850 490 - 660 - 790	0.039 - 0.098 - 0.138 0.039 - 0.098 - 0.138	0.008 - 0.012 - 0.016 0.008 - 0.012 - 0.016		
			Medium-Roughing High Feed Rate	Continuous Interruption	PT	CA515 CA525	1/32 3/64	490 - 660 - 790 390 - 590 - 720	0.059 - 0.118 - 0.177 0.059 - 0.118 - 0.177	0.010 - 0.014 - 0.018 0.010 - 0.014 - 0.018		
			Roughing High Feed Rate	Continuous Interruption	PH	CA515 CA525	3/64 1/16	490 - 660 - 790 390 - 590 - 720	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		
			Roughing (Low Cutting Force)	Continuous Interruption	PX (Single Side)	CA515 CA525	3/64 1/16	490 - 660 - 790 390 - 590 - 720	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		
			Finishing (Time Oriented)	Continuous Interruption	WP (Wiper)	PV710 CA515	1/32 1/32	660 - 820 - 1050 520 - 720 - 920	0.012 - 0.020 - 0.039 0.012 - 0.020 - 0.039	0.008 - 0.012 - 0.016 0.008 - 0.012 - 0.016		
			Medium Carbon Steel Medium Carbon Alloy	HB 130	Finishing-Medium (Time Oriented)	Continuous Interruption	WQ (Wiper)	PV710 CA525	1/32 1/32	590 - 720 - 920 430 - 590 - 790	0.039 - 0.079 - 0.118 0.039 - 0.079 - 0.118	0.008 - 0.012 - 0.016 0.008 - 0.012 - 0.016
	Finishing (Gloss Oriented)	Continuous Interruption			PP	TN610	1/64 1/32	660 - 820 - 1050 590 - 750 - 980	0.008 - 0.020 - 0.059 0.008 - 0.020 - 0.059	0.002 - 0.006 - 0.011 0.002 - 0.008 - 0.014		
	Finishing (Tool Life Oriented)	Continuous Interruption			PP	PV710 PV720	1/64 1/32	660 - 820 - 1050 660 - 790 - 950	0.008 - 0.020 - 0.059 0.008 - 0.020 - 0.059	0.002 - 0.006 - 0.011 0.002 - 0.008 - 0.014		
	Finishing-Medium (Gloss Oriented)	Continuous Interruption			PQ	TN610 TN620	1/32 3/64	590 - 750 - 980 520 - 720 - 850	0.020 - 0.059 - 0.098 0.020 - 0.059 - 0.098	0.004 - 0.008 - 0.012 0.004 - 0.007 - 0.010		
	Finishing-Medium (Tool Life Oriented)	Continuous Interruption			PQ	PV710 CA525	1/32 1/32	520 - 690 - 920 460 - 660 - 790	0.020 - 0.059 - 0.098 0.020 - 0.059 - 0.098	0.004 - 0.008 - 0.012 0.004 - 0.007 - 0.010		
	Medium-Roughing	Continuous Interruption			PG	CA515 CA525	1/32 3/64	490 - 660 - 790 390 - 520 - 660	0.039 - 0.098 - 0.138 0.039 - 0.098 - 0.138	0.008 - 0.012 - 0.016 0.008 - 0.012 - 0.016		
	Medium-Roughing High Feed Rate	Continuous Interruption			PT	CA515 CA525	1/32 3/64	390 - 590 - 750 330 - 490 - 660	0.059 - 0.118 - 0.177 0.059 - 0.118 - 0.177	0.010 - 0.014 - 0.018 0.010 - 0.014 - 0.018		
	Roughing High Feed Rate	Continuous Interruption			PH	CA515 CA525	3/64 1/16	390 - 590 - 750 330 - 490 - 660	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		
	Roughing (Low Cutting Force)	Continuous Interruption			PX (Single Side)	CA515 CA525	3/64 1/16	390 - 590 - 750 330 - 490 - 660	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		
	High Carbon Alloy	HB 280			Finishing (Gloss Oriented)	Continuous Interruption	PP	TN610 TN620	1/64 1/32	490 - 660 - 920 460 - 590 - 790	0.008 - 0.020 - 0.059 0.008 - 0.020 - 0.059	0.002 - 0.006 - 0.011 0.002 - 0.008 - 0.014
					Finishing (Tool Life Oriented)	Continuous Interruption	PP	PV710 CA515	1/64 1/32	390 - 590 - 850 330 - 490 - 660	0.008 - 0.020 - 0.059 0.008 - 0.020 - 0.059	0.002 - 0.006 - 0.011 0.002 - 0.008 - 0.014
					Finishing-Medium	Continuous Interruption	PQ	CA515 CA525	1/32 1/32	390 - 520 - 720 330 - 460 - 590	0.020 - 0.059 - 0.098 0.020 - 0.059 - 0.098	0.006 - 0.010 - 0.012 0.006 - 0.008 - 0.010
			Medium-Roughing	Continuous Interruption	PG	CA515 CA525	1/32 1/32	390 - 490 - 660 330 - 430 - 590	0.039 - 0.079 - 0.118 0.039 - 0.079 - 0.118	0.008 - 0.012 - 0.020 0.006 - 0.008 - 0.012		
			Medium-Roughing High Feed Rate	Continuous Interruption	PT	CA515 CA525	1/32 3/64	330 - 460 - 590 260 - 390 - 520	0.059 - 0.118 - 0.177 0.059 - 0.118 - 0.177	0.010 - 0.014 - 0.018 0.010 - 0.014 - 0.018		
			Roughing High Feed Rate	Continuous Interruption	PH	CA515 CA525	3/64 1/16	330 - 460 - 590 260 - 390 - 520	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		
			Roughing (Low Cutting Force)	Continuous Interruption	PX (Single Side)	CA515 CA525	3/64 1/16	330 - 460 - 590 260 - 390 - 520	0.079 - 0.197 - 0.315 0.079 - 0.197 - 0.315	0.016 - 0.024 - 0.031 0.012 - 0.020 - 0.028		

GRADES	A
INSERTS	B
CBN & PCD	C
TOOLHOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
HSK TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T