

Recommended cutting parameters for general turning

ISO	Materials		Hardness HB	CVD Coating						PVD Coating			Cermet	Coated cermet
				YBC151	YBC251	YBC152	YBC252	YBC351	YBC352	YBG102	YBG202	YBG205	YNG151	YNG151C
				Feed rate (inch/rev)										
				0.004-0.024	0.004-0.031	0.004-0.024	0.004-0.031	0.008-0.039	0.008-0.039	0.008-0.016	0.004-0.024	0.002-0.031	0.002-0.008	0.002-0.008
				Cutting speed (SFPM)										
P	Carbon steel	C=0.15%	125	1400-650	1400-600	1650-900	1600-800	1200-550	1400-700	1500-700	1200-600	1200-500	1800-1100	1900-1100
		C=0.35%	150	1200-600	1300-600	1500-800	1500-750	1000-500	1100-650	1400-700	1000-550	1000-550	1600-1000	1700-1000
		C=0.60%	200	1000-500	1200-500	1300-700	1300-650	850-400	1000-600	1200-600	850-500	900-550	1500-850	1600-850
	Alloy steel	Anneal	180	1100-550	1200-500	1300-600	1300-650	650-300	800-500	1200-600	650-400	700-450	1300-800	1400-800
		Hardened	275	750-300	700-300	900-500	850-450	450-230	650-400	800-400	450-300	500-300	1000-600	1000-600
		Hardened	300	700-300	600-230	850-500	800-400	400-200	600-350	700-300	400-260	450-300	800-560	900-550
		Hardened	350	600-260	550-230	750-400	700-400	350-200	500-300	650-300	360-240	400-260	800-500	800-500
	High alloy steel	Anneal	200	1000-500	850-400	1200-600	1000-550	550-260	700-400	1000-500	600-300	600-300	1100-650	1200-650
		Hardene	325	450-300	300-160	600-400	500-300	300-130	450-300	400-260	300-200	300-200	550-360	600-360
	Cast steel	Non-Alloy	180	800-400	650-300	900-500	800-450	450-240	600-400	750-400	450-300	450-300	850-560	1000-550
		Low alloy	200	750-230	550-200	900-350	700-350	400-260	550-400	650-300	400-300	400-350	850-560	1000-550
		High alloy	225	500-230	450-160	700-350	600-300	300-180	500-350	550-260	300-180	300-200	850-300	900-300

ISO	Materials		Hardness HB	CVD Coating			PVD Coating			Cermet	Coated cermet
				YBM151	YBM251	YBM253	YBM215	YBG202	YBG205	YNG151	YNG151C
				Feed rate (inch/rev)							
				0.008-0.024	0.008-0.024	0.008-0.024	0.008-0.016	0.004-0.016	0.008-0.016	0.004-0.012	0.004-0.012
				Cutting speed (SFPM)							
M	Stainless steel	Ferrite	180	900-600	800-450	850-450	1000-650	1000-600	1000-650	1100-700	1100-700
		Austenite	260	800-500	650-360	700-360	900-550	800-500	900-550	800-500	900-450
		Martensite	330	650-450	700-400	750-400	850-500	850-550	850-500	900-550	1000-500

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				YBD052	YBD151	YBD102	YBD152	YBD252	YNG151	YNG151C	
					Feed rate(inch/rev)						
				0.004-0.016	0.004-0.024	0.004-0.016	0.004-0.020	0.004-0.031	0.004-0.016	0.004-0.016	
					Cutting speed(SFPM)						
K	Malleable cast iron	Ferrite	130	1150-750	1000-700	1000-700	1050-350	800-550	1000-500	1000-600	
		Pearlite	230	800-350	700-300	750-300	750-300	600-250	700-400	800-500	
	Low cast iron		180	1700-650	1500-600	1500-650	1600-600	1250-500	1300-800	1400-900	
	High cast iron		260	750-400	700-350	700-400	700-300	550-300	1200-800	1200-850	
	Nodular Cast iron	Ferrite	160	1000-500	1000-450	1000-500	950-450	700-350	1100-600	1200-700	
		Pearlite	250	750-350	700-300	700-350	700-300	550-300	1000-650	1100-700	

ISO	Materials			Hardness HB	PVD Coating					Cemented carbide	
					YBG102	YBG105	YBG202	YBS103	YBG212	YD101	
					Feed rate (inch/rev)						
					0.002-0.006					0.002-0.014	
					Cutting speed (SFPM)						
N	Al alloy		No heat treatment	60						5700-2600	
			Heat treatment	100						1700-800	
	Cast aluminum alloy		No heat treatment	75						1500-600	
			Heat treatment	90						1000-360	
	Copper alloy		Lead alloy	110						2000-650	
			Copper,pure copper	90						1000-650	
Copper,nonleaded Copper,electrolytic copper			100						700-400		
S	Ni-base alloy		Ni-base alloy		40	300-100	300-130	300-100	300-70	300-100	230-70

ISO	Materials	Hardness	Feed rate (inch/rev)	Grade			
				YCB012	YCB011	YZB221	YCD011
				Cutting speed (SFPM)			
H	Hard steel	45HRC	0.004-0.008	500-820		500-820	
			0.004-0.008				
			0.004-0.012				
	Super hard steel	50-60HRC	0.004-0.008	500-656		500-656	
			0.004-0.008				
			0.004-0.02				
Chilled cast iron	500	0.004-0.02		590-390			
K	Grey cast iron	170-220HB	0.004-0.02		1300-4900		
			0.004-0.02				
			0.02-0.04		1300-4900		
			0.02-0.04				
	Ductile cast iron	170-230HB	0.004-0.008		320-980		
			0.004-0.008				
			0.012-0.059		320-1600		
			0.012-0.059				
	Chilled cast iron	500HB	0.004-0.02		160-490		
			0.004-0.02				
			0.02-0.059		65-160		
			0.02-0.059				
N	Aluminum silicon alloy(≤12%Si)	75-90	0.004-0.016				2950-16400
	Aluminum silicon alloy(>12%Si)	80-110	0.004-0.016				980-2950
	Copper alloy	90-110HB	0.004-0.012				1300-3900
	Reinforced plastics		0.004-0.02				650-3200