Suggested Maximum Cutting Speeds for CJ18A Minilathe

Material	HSS								Carbide							
	OD (mm)								*OD (mm)*							
	5	***10***	***15***	***20***	***30***	***40***	***50***	***80***	***5***	***10***	***15***	***20***	***30***	***40***	***50***	***80***
	Speed (RPM)								*Speed (RPM)*							
Free machining plain carbon steels (resulfurized)	*-max-*	*-max-*	1800	1400	910	680	540	340	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2300	1800	1100
Free machining plain carbon steels < 0.3% C	*-max-*	2200	1500	1100	730	550	440	270	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2300	1800	1200
Free machining plain carbon steels > 0.3% C	*-max-*	1400	920	690	460	350	280	170	*-max-*	*-max-*	*-max-*	*-max-*	2400	1800	1400	890
Free machining plain carbon steels (Leaded)	*-max-*	2200	1500	1100	740	560	450	280	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2000	1600	980
Plain carbon steels < 0.25% C	*-max-*	1600	1100	820	550	410	330	210	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2000	1600	1000
Plain carbon steels > 0.25% C	2300	1100	760	570	380	280	230	140	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2000	1600	990
Free machining alloy steels (resulfurized)	*-max-*	1300	870	650	440	330	260	160	*-max-*	*-max-*	*-max-*	*-max-*	1800	1400	1100	680
Water hardening tool steel	*-max-*	1700	1200	870	580	440	350	220	*-max-*	*-max-*	*-max-*	*-max-*	1900	1400	1100	720
Cold work, oil hardening tool steel	2400	1200	810	610	400	300	240	150	*-max-*	*-max-*	*-max-*	*-max-*	1900	1400	1100	720
Cold work, air hardening tool steel	2000	990	660	500	330	250	200	120	*-max-*	*-max-*	2300	1700	1200	870	700	440
Stainless steels (Austenitic)	2400	1200	810	610	400	300	240	150	*-max-*	*-max-*	*-max-*	*-max-*	1800	1400	1100	690
Cast Iron	*-max-*	1700	1200	870	580	440	350	220	*-max-*	*-max-*	*-max-*	2000	1300	990	800	500
Brass	*-max-*	*-max-*	2100	1600	1100	790	630	390	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	2300	1400
Bronze	*-max-*	2200	1500	1100	730	550	440	270	*-max-*	*-max-*	*-max-*	*-max-*	2300	1700	1400	870
Wrought aluminum	*-max-*	*-max-*	*-max-*	*-max-*	1800	1300	1100	670	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*
Cast aluminum	*-max-*	*-max-*	*-max-*	*-max-*	2200	1600	1300	820	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*	*-max-*

The max. speeds above are only appropriate if the motor isn't labouring. It may be desirable to stay in low gear for more torque, or reduce speed for control.

N.B. The CJ18A max. spindle speed is 2500 *RPM in high gear,* 800 *RPM in low gear.*

Ian.M Nov. 2023