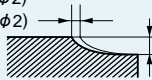
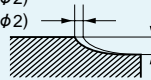


RECOMMENDED CUTTING CONDITIONS

Work material		Alloy steel, Tool steel, Pre-hardened steel		Hardened steel (45–55HRC)		Hardened steel (55–62HRC)	
		X40CrMoV51		X40CrMoV51		X210Cr12	
Dia. (mm)	Neck length (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)
0.6	2	48000	200– 600	40000	160– 500	22000	80– 250
	4	48000	160– 500	40000	100– 300	22000	50– 150
0.8	4	48000	240– 750	32000	160– 500	19000	80– 250
	6	38000	190– 600	26000	130– 400	16000	70– 200
	8	29000	150– 450	19000	100– 300	12000	50– 150
1	4	48000	270– 900	32000	180– 600	19000	90– 300
	6	38000	220– 720	26000	150– 480	16000	70– 240
	10	29000	160– 540	19000	110– 360	12000	60– 180
1.2	6	48000	300– 900	32000	200– 600	19000	100– 300
	10	38000	240– 720	26000	160– 480	15000	80– 240
	15	29000	180– 540	19000	120– 360	12000	60– 180
1.5	4	41000	300– 900	27000	200– 600	16000	100– 300
	6	32000	240– 720	22000	160– 480	13000	80– 240
	10	24000	180– 540	16000	120– 360	10000	60– 180
2	6	36000	600–2000	24000	400–1300	14000	200– 650
	10	29000	480–1600	19000	320–1000	12000	160– 520
	15	22000	360–1200	14000	240– 780	9000	120– 390
2.5	8	33000	750–2400	22000	500–1600	13000	250– 800
	15	20000	450–1400	13000	300– 960	8000	150– 480
3	10	30000	900–3000	20000	600–2000	12000	300–1000
	15	24000	720–2400	16000	480–1600	10000	240– 800
	20	18000	540–1800	12000	360–1200	7000	180– 600
4	12	26000	1200–4500	17000	800–3000	10000	400–1500
	20	20000	960–2000	14000	640–2000	8000	320–2000
	30	15000	720–1000	10000	480–1000	6000	240–1000
5	15	20000	1200–4800	13000	780–3120	10000	520–2000
	30	12000	720–1900	8000	480–1600	7000	360–1120
6	18	20000	1600–7500	13000	1100–5000	8000	550–2500
	41	15000	900–2400	12000	720–1600	10000	600–1200
	50	10000	600–1200	8000	480– 800	6000	360– 530
8	24	15000	1900–7500	10000	1300–5000	6000	650–2500
	50	10000	1300–2400	8000	1000–2200	3000	320– 600
10	30	12000	1600–7500	8000	1100–5000	5000	550–2500
	50	10000	1300–3200	7000	950–2200	2500	280– 600
12	36	10000	1500–7500	7000	1000–5000	4000	500–2500
Depth of cut		$\leq 0.2R$ ($D \leq \phi 2$) $\leq 0.4R$ ($D > \phi 2$) 			$\leq 0.1R$ ($D \leq \phi 2$) $\leq 0.2R$ ($D > \phi 2$) 		
		$\leq 0.1\text{mm}$ ($D \leq \phi 5$) $\leq 0.2\text{mm}$ ($D \leq \phi 5$) $\leq 0.5\text{mm}$ ($D \geq \phi 6$)			$\leq 0.05\text{mm}$ ($D \leq \phi 1.5$) $\leq 0.1\text{mm}$ ($D \leq \phi 5$) $\leq 0.3\text{mm}$ ($D \geq \phi 6$)		

D:Dia.

- 1) The cutting conditions above are a guide only to machining with cutting edges with a corner radius. When machining with peripheral cutting edges, use the minimum feed rate as a guide.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) For profile machining such as moulds, machining conditions may differ considerably depending on the workpiece geometry, machining methods and depth of cut. Reduce the feed rate especially when machining the corner sections of a workpiece.
- 4) If the rigidity of the machine or the work materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately.