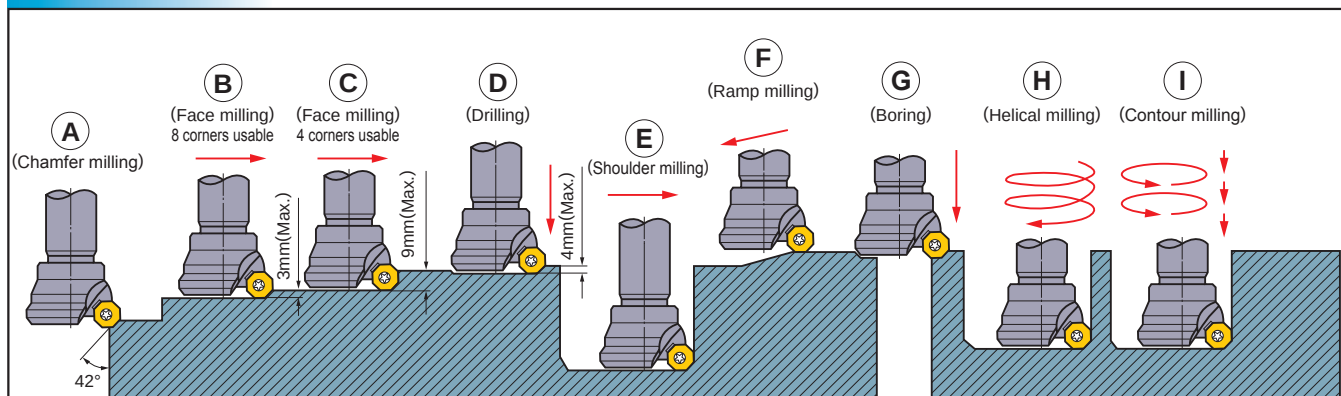


ROTATING TOOLS

RECOMMENDED CUTTING CONDITIONS



(Note) These are recommended cutting conditions when cutter diameter is less than 80. For cutters with diameter $\geq \phi 80\text{mm}$ increase cutting speed by 10%. Above sizes are for OEMX1705 $\odot\odot\odot\odot$.

	Work Material	Hardness	Grade	Cutting Speed (m/min)	Cutting Mode	Feed per Tooth (mm/tooth)
P	Mild Steel	$\leq 180\text{HB}$	F7030	240 (180–300)	A	0.2 (0.15–0.25)
			VP15TF	180 (100–250)	B	0.2 (0.15–0.25)
	Carbon Steel Alloy Steel	180–280HB	F7030	200 (140–240)	C,E,F	0.2 (0.15–0.25)
			VP15TF	180 (100–250)	D,G,H,I	0.075 (0.05–0.1)
					A	0.2 (0.15–0.25)
		280–380HB	F7030	150 (100–170)	B	0.2 (0.15–0.25)
			VP15TF	120 (80–160)	C,E,F	0.2 (0.15–0.25)
					D,G,H,I	0.075 (0.05–0.1)
	Pre-Hardened Steel	35–45HRC	F7030	130 (90–160)	A	0.15 (0.1–0.2)
			VP15TF	120 (80–160)	B	0.15 (0.1–0.2)
	High Alloy Steel	$\leq 300\text{HB}$	F7030	150 (100–170)	C,E,F	0.1 (0.05–0.15)
			VP15TF	120 (80–160)	D,G,H,I	0.05 (0.025–0.075)
					A	0.15 (0.1–0.2)
M	Stainless Steel	$\leq 270\text{HB}$	F7030	200 (140–240)	B	0.15 (0.1–0.2)
			VP15TF	150 (100–200)	C,E,F	0.1 (0.05–0.15)
K	Cast Iron	Tensile Strength $\leq 350\text{MPa}$	VP15TF	160 (100–220)	D,G,H,I	0.075 (0.05–0.1)
					A	0.3 (0.25–0.35)
					B	0.25 (0.2–0.3)
					C,E,F	0.15 (0.1–0.2)
	Ductile Cast Iron	Tensile Strength 360–500MPa	VP15TF	160 (100–220)	D,G,H,I	0.05 (0.025–0.075)
					A	0.25 (0.2–0.3)
					B	0.2 (0.15–0.25)
					C,E,F	0.1 (0.05–0.15)
		Tensile Strength 500–800MPa	VP15TF	140 (90–190)	D,G,H,I	0.05 (0.025–0.075)
					A	0.25 (0.2–0.3)
					B	0.2 (0.15–0.25)
					C,E,F	0.1 (0.05–0.15)
H	Heat-Treated Steel	45–60HRC	VP15TF	80 (50–100)	D,G,H,I	0.05 (0.025–0.06)
					A	0.15 (0.1–0.2)
					B	0.15 (0.1–0.2)
					C,E,F	0.1 (0.05–0.12)

● Revolution (min^{-1}) = $(1000 \times \text{Cutting Speed}) \div (3.14 \times \phi D_1)$

● Table Feed (mm/min) = Feed per Tooth $\times$ Number of Teeth $\times$ Cutter Revolution

(Note 1) This list of recommended cutting conditions is for flank wear of 0.3mm in 30min. cutting time.

(Note 2) More than 50mm shank length should be clamped in the milling chuck.

(Note 3) Use pick feed when drilling. (0.5mm step is recommended)

(Note 4) When chattering occurs, reduce cutting speed by 20–30%.

(Note 5) When using round inserts, make sure that the flat portion of the flank surface is secure against the insert seat wall.