Recommended Cutting Conditions

	Work Material	Hardness	Insert Grade	Insert Breaker	Cutting Dia. (mm)	Number of Teeth	Cutting Speed (m/min.)	Feed per Tooth (mm/tooth)	Width of Cut (mm)	Pick Feed (mm)
P	Carbon Steel Alloy Steel (JIS S55C etc.)	≤180HB	VP15TF	FT	ø40	3	250 (200–300)	–0.6	–1.5	–6
					ø32	3	200 (150–220)	–0.55	–1.2	–5
					ø25	2	200 (150–220)	–0.55	–1.0	–5
	Air Cooled Flame Hardening Tool Steel for Cold Work Dies	≤300HB	VP15TF	FT	ø40	3	250 (200–300)	–0.55	–1.5	–5
					ø32	3	180 (150–200)	–0.5	–1.2	–3
					ø25	2	180 (150–200)	–0.5	–1.0	–3
	Alloy Tool Steel (JIS SKD11 etc.)	≤300HB	VP15TF	FT	ø40	3	200 (100–300)	–0.55	–1.5	–5
					ø32	3	150 (80–200)	–0.5	–1.2	–3
					ø25	2	150 (80–200)	–0.5	–1.0	–3
K	Cast Iron (JIS FC300 etc.)	Tensile Strength ≤350MPa	VP15TF	FT	ø40	3	250 (200–300)	–0.6	–1.5	–6
					ø32	3	200 (150–220)	–0.55	–1.2	–5
					ø25	2	200 (150–220)	–0.55	–1.0	–5
	Ductile Cast Iron (JIS FCD750 etc.)	Tensile Strength ≤800MPa	VP15TF	FT	ø40	3	250 (200–300)	–0.6	–1.5	–6
					ø32	3	200 (150–220)	–0.55	–1.2	–5
					ø25	2	200 (150–220)	–0.55	–1.0	–5

- Revolution (min^{-1}) = (1000 × Cutting speed) ÷ (3.14 × Cutting diameter)
- Table feed (mm/min) = Feed per tooth × Number of teeth × Cutter revolution

(Note 1) The above cutting conditions are general guide lines. Adjustments maybe necessary depending on machine rigidity, workpiece geometry and clamping.
(Note 2) The carbide shank arbor is recommended for preventing vibrations.

Using the PMC cutter

Application: Sheet press D&M (trim relief face)

Conventional process

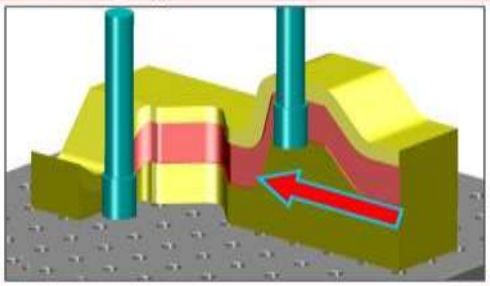
Tool

HSS/Brazed special end mills

Indexable end mills

Machine process

- XY 2 D machining, manual set for Z axis.
- Operator needs to watch while machining.



New process

Tool

PMC screw in head & carbide screw in shank

Machine process

- 3D machining possible with vertical plunging.
- Automated machining possible