

Product : Gear Case
 Stock Size : 267mm x 175mm x 118mm
 Machine Tool : MITSUI SEIKI Vertex550-5X
 Material : Aluminum (7075)
 Process Time : approx. 20 hours



- CAM Condition Setting approx. 3 hr. 10 min.

- CAM Calculation approx. 2 hr. 15 min.

- Machining
 Cavity Side 6 hr. 32 min.
 Core Side 7 hr. 17 min.
 Holes 23 min.

Cavity Side

Process	Cutting Mode	Tool Type (mm)	Step Over (mm)	Step Down (mm)	R max (μm)	Stock (mm)	Spindle Speed (rpm)	Feed Rate (mm/min)
Roughing (Whole)	Z-level Roughing	D20R1.5 - INDEXABLE	10	0.5	-	0.2	12,000	8,000
Semi Roughing (1)	Z-level Roughing	D12R1 - INDEXABLE	2	0.3	-	0.2	12,000	3,000
Semi Roughing (2)	Z-level Roughing	D6R3 - BALL	0.3	0.6	-	0.2	12,000	3,000
Semi Finishing	Z-level Finishing	D12R1 - RADIUS	-	-	0.6	0.05	16,000	4,000
Finishing (1)	Z-level Finishing	D12R0.4 - RADIUS	-	-	0.3	0	16,000	1,500
Finishing (2)	Z-level Finishing	D8R4 - BALL	0.15	0.15	-	0	16,000	2,400
Finishing (3)	Scanning-line	D12R1 - INDEXABLE	6	0	-	0	16,000	2,400
Slotting	Contour Cutting	D1.8 - FLAT	0.08	-	-	0	20,000	1,200
Drilling *	Canned Cycle	D14 - DRILL / D14.8 - BORE	-	6	-	-	900 / 2,200	108 / 52
Tapping	Canned Cycle	D6.8 - DRILL / D8 - TAP	-	3 / -	-	-	3,000 / -	450 / -
Chamfering	Chamfering	D10 × 90°	-	-	-	-	1,600	112

Core Side

Process	Cutting Mode	Tool Type (mm)	Step Over (mm)	Step Down (mm)	R max (μm)	Stock (mm)	Spindle Speed (rpm)	Feed Rate (mm/min)
Roughing (Whole)	Z-level Roughing	D20R1.5 - INDEXABLE	10	0.5	-	0.2	12,000	8,000
Semi Roughing (1) *	Z-level Roughing	D12R1 - INDEXABLE	6	0.5	-	0.2	12,000	3,000
Semi Roughing (2)	Z-level Roughing	D8R4 - BALL	0.2	0.4	-	0.05	16,000	2,400
Finishing (1)	Z-level Finishing	D12R0.4 - RADIUS	-	-	0.2	0	16,000	4,000
Finishing (2) *	Surface Finishing	D8R4 - BALL	-	-	0.2	0	16,000	2,400
Finishing (3)	Scanning-line	D12R1 - INDEXABLE	6	-	-	0	16,000	2,400
Reaming *	Canned Cycle	D5 - DRILL / D6 - REAMER	-	2 / 3	-	-	5,000 / 4,200	750 / 750
Chamfering *	Chamfering	D10 × 90°	-	-	-	-	4,200	750

*... 5-Axis Positional Machining