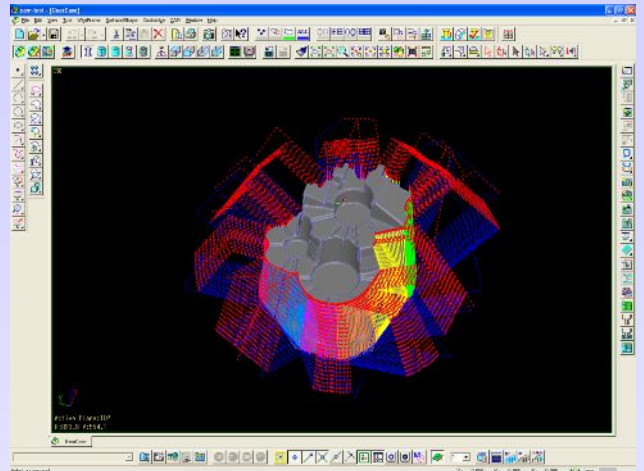


- Machine -
MITSUI SEIKI Vertex550-5X

- Material -
NAK80 (HRC40)



| No. | Process | Tool Type (mm) | Step (mm) | | Stock (mm) | Spindle Speed (rpm) | Feed Rate (mm/min) | Actual Machining Time |
|--------------|----------------------------|----------------|-----------|------|------------|---------------------|--------------------|-----------------------|
| | | | Over | Down | | | | |
| 1 | Roughing – Whole | D32R3 – RADIUS | 2.5 | 0.7 | 0.2 | 895 | 1500 | 9hr. |
| 2 | Roughing – Partial | D10R5 – BALL | 2 | 1 | 0.2 | 5700 | 3570 | 1hr. |
| 3 | | D12R2 – RADIUS | 3.2 | 0.3 | 0.2 | 2400 | 4928 | 13min. |
| 4 | Semi Finishing – Partial | D6R3 – BALL | 0.5 | 0 | 0.1 | 9500 | 3380 | 4min. |
| 5 | Semi Finishing – Flat Area | D12R2 – RADIUS | 2 | 0 | 0.15 | 2400 | 4928 | 30min. |
| 6 | Semi Finishing – Side Wall | D10R5 – BALL | 0.5 | 1 | 0.1 | 5700 | 3570 | 2hr. |
| 7 | Semi Finishing – Edge Area | D6R3 – BALL | 0.5 | 0.01 | 0.1 | 9500 | 3380 | 1hr. |
| 8 | Finishing – Flat Area | D12R2 – RADIUS | 2 | 0 | 0 | 2400 | 880 | 1hr. 20min. |
| 9 | Finishing – Inner Surface | D10R5 – BALL | 0.2 | 1 | 0 | 8300 | 3550 | 1hr. 40min. |
| 10 | Finishing – Outer Surface | D10R5 – BALL | 0.2 | 1 | 0 | 8300 | 3550 | 4hr. 26min. |
| 11 | Finishing – Edge Area | D6R3 – BALL | 0.15 | 1 | 0 | 8300 | 3550 | 50min. |
| 12 | | D4R2 – BALL | 0.08 | 1 | 0 | 13000 | 2210 | 3hr. |
| 13 | Finishing – Fillet Area | D4R2 – BALL | 0.08 | 1 | 0 | 13000 | 2210 | 3hr. 45min. |
| 14 | | D3R1.5 – BALL | 0.08 | 0.1 | 0 | 14000 | 1958 | 1hr. 50min. |
| Total | | | | | | | | 30hr. 38min. |