"Case Study for Tool Disc on MCV-400 SS"

Customer name : **M/s. , Bangalore.**

Case Study No. : TSG-CS-019/TR-006. **(Conducted at customer end.)**

Machine Details : MCV-400SS, Fanuc Oi-Mate MD System

Main Features : Spindle-HSK-A63, 4800 rpm, LM Guide ways for all 3 Axes, Traverse (X, Y& Z) - 600 / 450 / 500 mm, Spindle Power 11/7.5 kw.

Component Name : 1) VDI Tool Disc. 2) Slotted Tool Disc.

Component Material : **EN 18 – Toughened, 20 to 23 HRC**

Output

MCV-400SS

Slotted Tool Disc.

<u>Example of Cutting operations & its Cycle time</u>: (Few opn.only).

Actual cutting parameters and cycle time depends on Component material, Tools, Tool holders and Fixture concept.

Sl. No.	Operation	Tool	Spindle speed (rpm)	Feed (mm/min)	Axial DOC (mm)	Radial DOC (mm)	Cutting Time (min.)
1	Rough Face Milling	Ø 80 Face Milling Cutter	400	200	0.3	80%	2.9
2	Finish Face Milling	Ø 80 Finish Mill - Cermet Insert	1200	240	0.1	80%	2.0
3	Rough Boring	Ø 39.5 Insert Type Boring Bar	1000	130	-	0.5	0.8
4	Semi Finish Boring	Ø 39.8 S.F Boring Bar	1000	100	-	0.1	0.7
5	Finish Boring Bar	Ø 40.0 Fine Boring bar	800	50	-	0.1	0.9

Achievements:

1. Time taken on machine for complete profile machining is 7.3 min. @ 7.1 min.(Cam Time)
2. Customer is satisfied with Machine performance, Accuracy, Surface finish & Cycle time.
3. Surface finish is very good within permissible limits, Approx. 0.2 to 0.3 Ra.
4. The cycle time of Finish machining approximately matches the time calculated by Cam software.
5. Finish comp. Centre bore tol. Of Ø40±0.010 mm, Ovality, Perpend (⊥) & Surface finish maintaining are as per dwg.

The objective of the case study is to show the Machine performance, Capability, Quality & Surface finish.