

# SAMSUNG Machine Tools

## MCV 400

Inc.

October 24, 2016



**SMT SAMSUNG  
Machine Tools**

*Samsung MCV 400 October 10, 2016*

*Prices and specifications are subject to change without notice.  
Pictures and graphics are representative and may not be from the actual machine.*

## **MACHINE SPECIFICATIONS**

### **CAPACITY**

X axis travel	30.31"
Y axis travel	16.92"
Z axis travel	20.08"
Table size	18.11" x 36.22"
Table loading capacity	1,102 lbs.
Table T-slot spacing x width	(3) - 4.92" x 0.71"

### **SPINDLE**

Distance from table top to spindle nose	5.91" - 25.98"
Distance from column to spindle center	18.75"
Spindle taper	CAT40 (Big Plus)
Spindle speed	12,000 rpm
AC spindle motor	25 / 20 / 15 hp
Maximum spindle torque	86.8 ft.-lbs.

### **AUTO TOOL CHANGER**

Magazine capacity	30
Tool shank	CAT40
Pull stud type	45° type
Maximum tool diameter [adjacent empty]	3.15" [4.92"]
Maximum tool length	11.81"
Maximum tool weight	17.6 lbs.
Tool selection method	Random
Tool changing time (T-T)	1.3 seconds

### **FEED RATE**

Rapid traverse (X / Y / Z)	1,417 ipm / 1,417 ipm / 1,181 ipm
Cutting Feedrate ipm	590 ipm

### **SERVO DRIVE SYSTEM**

Feed motor (X / Y / Z)	2.4 hp / 2.4 hp / 4.0 hp
Ballscrew diameter (X / Y / Z)	1.26" / 1.26" / 1.57"
Axis feed thrust (X / Y / Z)	1,384 lbs. / 1,340 lbs. / 3,225 lbs.
Slide ways (X / Y / Z)	Cross Roller
Slide way span (X / Y / Z)	10.8" / 20.9" / 13.0"
Slide way width (X / Y / Z)	1.10" / 1.34" / 1.77"

### **GENERAL**

Floor space (L x W)	127.1" x 117.6" (93.3" x 117.6")
Machine weight	12,100 lbs.
Power required	32 kVA
Voltage	220V $\pm$ 10% / 3 Phase
CNC system	Fanuc 0i-MF

## **MACHINE CONSTRUCTION & FEATURES**

- Fine grain one-piece **Meehanite** cast iron bed
- Rigid triangular rib body structure for minimizing vibration and deformation under heavy machining
- Anti-heat displacement spindle and headstock design
- Ultra precision and high rigidity spindle bearings
- Wide and heavy duty cross roller guide ways
- High precision pre-tensioned large diameter ball screws (1.26") for X & Y axes, (1.57") for Z axis
- Powerful and reliable Fanuc motors and drives system
- Automatic lubrication through metered piston distributor
- Way lube separation system

## **STANDARD EQUIPMENT**

- 30 Tools double arm ATC
- Built-in dual (internal) screw conveyors
- Coolant bed flush
- Thru the spindle coolant at 290 psi
- 1,000 psi coolant prep
- Spindle air blow
- Oil skimmer
- Coolant gun
- 4<sup>th</sup> Axis interface prep kit
- Renishaw probe ready kit (OMI-2T)
- Rigid tapping
- Programmable and data protection key switch
- Machine work light: fluorescent lamp
- 3 Color status light
- Coolant system with separate coolant tank (tank capacity: 86 gal.)
- Telescopic way covers
- Full enclosure splash guard
- Spindle load meter
- Lubrication system
- Portable manual pulse generator
- Leveling tools
- Transportation parts
- Machine Manuals: one (1) each (Electric Diagram, Maintenance, Parts List, Operation /Maintenance)
- Fanuc Manuals: one (1) each (Manual Guide i, Operations, Parameter, Maintenance, Operators volumes 1 and 2)

# **FANUC 0i-MF CONTROL SPECIFICATIONS**

## **TYPE OF CONTROL**

- 32-Bit Multi-Processor Continuous-Path Control

## **HARDWARE COMPONENTS**

- 10.4" Color TFT LCD Screen
- PCMCIA Flash Memory Card Interface
- USB Port
- Ethernet Port
- RS232 Interface
- 110V AC outlet

## **SCREEN DISPLAY**

- Window Oriented Operator Interface
- Display of Current Block and Position Check Screen During Program Execution
- Screen Texts: English (24 additional languages available)
- Machine, Absolute, Relative, and Distance to Go Position Display
- Spindle Speed / Feed Rate Display
- Spindle / Servo Load Monitor
- Current Alarm / Alarm History Display

## **OPERATION**

- Program Protection on Machine Control Panel
- 512Kbyte Part Program Storage
- 400 Part Programs Storage
- Built In Run Hour / Parts Counter / Cycle Time Display
- Tool Life Management
- Tool Measurement Compensation (with Optional Tool Setter)
- Background Editing
- Help Function
- Graphic Display
- 1 Position Spindle Orientation
- Optional Block Skip
- Program Restart
- Offset Guard Function
- Rigid Tapping

## **MODES**

- Automatic
- Control of Automatic Mode by:
  - Feed Hold / Cycle Stop
  - Block Skip
  - Single Block
  - Optional Stop
  - Dry Run
  - Machine Lock
  - Z Axis Cancel
  - M.S.T. Lock
  - Auto Power Off (Option)
- Jog
- MDI (Manual Data Input)
- Edit
- Handle (Portable MPG Unit)

### **MACHINE CONFIGURATION FOR AXES**

- Inch or Metric Programming
- Switching Between Metric and Inch for Input and Offsets, Display, and Programmed Path
- Feedrate and Rapid Traverse: Minimum Input Feedrate in Inches / min = .0001 inches / min
- Revolution Feedrate: Minimum Input Feedrate in Inches / Rev = .0001 inches / rev

### **OVERRIDES, OFFSETS AND COMPENSATIONS**

- Feedrate Override 0% to 200%
- Rapid Override 0%, 25%, 50%, and 100% (0% is user adjustable)
- Spindle Speed Override 50% to 150%
- 400 Pair Tool Offsets
- Work Offsets (G54-G59)
- Extended Work Offsets (48 Additional)
- Tool Length Geometry and Wear Compensation
- Tool Diameter Geometry and Wear Compensation
- Backlash Compensation

### **CNC PROGRAMMING**

- Diameter / Radius Tool Geometry Compensation
- Insert, Alter, Delete
- Character, Program & Sequence Number Search
- Cut, Copy, and Paste Function
- Corner Chamfer / Corner Radius Programming
- Stored Stroke Check / 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Reference Return Positions
- Absolute (G90) / Incremental Programming (G91)
- Programmable Mirror Image (G51.1)
- Skip Function (G31)
- Sub-Program Call (10 Level Nest)
- Canned Drilling Cycles (G73-G89)
- Scaling (G51)
- Coordinate System Rotation (G68)
- Circular & Helical Interpolation by R, I, J, K
- Feed Per Minute (G94) / Feed Per Revolution (G95)
- AI Advanced Preview Control 20 Block Look Ahead (G5.1 Q1)
- Programmable Data / Parameter Input
- Custom Macro B / 600 User Variables

### **SAFETY AND DIAGNOSTIC FUNCTIONS**

- Safety Routines Permanently Active for Measuring Circuits, Over Temperature, Battery, Voltage, Memory, Limiting Switches, Hydraulic System, and Cooling Systems
- Self-Diagnostics
- Servo Monitoring
- Spindle Monitoring

## **INVESTMENT**

<b>SAMSUNG MCV 400 BASE PRICE:</b>		<b>\$85,950.00</b>
MV1884801B	Lift Up Chip Conveyor	\$ 5,950.00
MV6940802A	BT 40 ATC Arm	\$ 1,600.00
A02B-0320-J948	Fanuc 2MB program memory storage	\$ 1,850.00
Fanuc High Speed Machining Software Package includes :		\$ 3,350.00
A02B-0320-S808	Fanuc AICC Contour Control (200 block)	
A02B-0320-J977	Fanuc Bell Shaped Accel/Decel control	
A02B-0320-S678	Fanuc Jerk Control	
A02B-0320-S637	Fanuc Machining Condition Selection Function	
Cross Country Freight and Local Rigging		\$ 7,436.00
Total :		\$ 106,076.00

### ***SAMSUNG Standard Features include:***

- 12,000 rpm with Spindle Cooling Unit
- 30 Tools Double Arm ATC
- 290 psi Through-Spindle Coolant System
- Spindle Air Blow
- Oil Skimmer
- Coolant Gun
- Full Enclosed Splash Guard
- Built-in Dual (Internal) Screw Conveyors
- Coolant Bed Flush
- Rigid Tapping
- 4<sup>th</sup> Axis Prep Kit (wiring for connector box for cable only; no amplifier)
- Renishaw Probe Ready Kit (OMI-2T)
- Big Plus Spindle
- Manual Guide i

## **OPTIONAL EQUIPMENT**

FANUC-4 <sup>th</sup> IF	4 <sup>th</sup> Axis Interface, Alpha Drive up to 250mm Table	\$ 4,950.00
RENISHAW-PR	Renishaw OMP40 (1/2AA) Spindle Probe	\$ 4,377.00
RENISHAW-TS	Renishaw OTS (1/2AA) Tool Setter	\$ 2,271.00

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