

XV-1020A Vertical Machining Center

With MXP100iB Control

STANDARD FEATURES

POWERFUL 30 HP IDD (direct drive) SPINDLE	HIGH SPEED 24 TOOL SWING-ARM ATC SYSTEM
AC DIGITAL SERVO & SPINDLE DRIVES	RANDOM ACCESS & BI-DIRECTIONAL TOOL MAGAZINE
10,000 RPM MAXIMUM SPINDLE SPEED	THK® NR TYPE LINEAR GUIDE ON X, Y & Z
HIGH PRECISION CONTOURING FUNCTION (AICC)	SERVO MOTORS DIRECT COUPLE TO BALLSCREWS
SERVO MOTORS WITH ABSOLUTE ENCODER	PRE-TENSIONED HARDENED & GROUND BALLSCREWS
HIGH SPEED RIGID TAPPING	SPINDLE AIR CURTAIN
HELICAL INTERPOLATION & 640 METERS MEMORY	SPIRAL TYPE CHIP CONVEYOR
CUSTOM MACRO B	CUTTING AIR BLAST
TOOL PATH GRAPHICS	AUTOMATIC CENTRAL LUBRICATION SYSTEM
8.4" TFT COLOR DISPLAY	OIL SKIMMER
PCMCIA SLOT FOR MEMORY EXPANSION & MODEM	HANDHELD COOLANT GUN & AIR NOZZLE
RS 232C INTERFACE	HEAT EXCHANGER FOR ELECTRICAL CABINET
FULL ALPHANUMERIC KEYBOARD	FULL CHIP & COOLANT GUARDS
RUGGED MEEHANITE® CASTINGS	WAY COVER IN ALL THREE AXES
	ADDITIONAL WORK & TOOL OFFSETS

BASIC SPECIFICATIONS

HEADSTOCK

Motor	FANUC AC Digital Spindle Motor
Horse Power	30 HP (10 Min.)
Maximum Speed	10,000 rpm
Spindle Drive	IDD Direct Drive
Spindle Nose to Table	6.7" ~ 27.9"
Spindle Center to Z-axis Way Cover	22.8"

TABLE

Size	44.0" x 20.4"
T-Slots	0.70" x 5 x 3.93"
Maximum Load	1,100 lbs.
Table height	33.7"

ATC SYSTEM

Tool Type	CAT-40 (optional BT-40)
Tool Selection	Bi-directional, Random Access
Maximum Tool Weight	13.2 lbs.
Maximum Tool Length	11.81"
Maximum Tool Diameter	3.15" / 4.92 (when adjacent pocket is empty)
Magazine Tool Capacity	24
Tool Change Time (Approx.)	2.5 sec. (T-T) / 4 sec. (C-C)

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AXES SPECIFICATIONS

	<u>Travel</u>	<u>Positioning</u>	<u>Repeatability</u>	<u>Rapid Rate / Cutting Feed</u>
X Axis	40.0"	± 0.00016"	± 0.00008"	1491 ipm / 394 ipm
Y Axis	20.4"	± 0.00016"	± 0.00008"	1491 ipm / 394 ipm
Z Axis	21.2"	± 0.00016"	± 0.00008"	995 ipm / 394 ipm

GENERAL

Machine Net Weight	11,850 lbs.
Shipping Weight	12,826 lbs.
Power Consumption	19 kVA
Floor Spacing (W x D x H)	120" x 112" x 115"
Shipping Dimensions (W x D x H)	90" x 120" x 102"

DETAILED SPECIFICATIONS

HEADSTOCK

Spindle Motor	FANUC α8 AC Digital Spindle Motor
Horsepower	30 HP (10 min.)
Spindle Drive	Isolated Direct Drive Motor (patent pending)
RPM Range	45 ~ 10,000 rpm
Spindle Bearing Type	Angular Contact Ceramic Bearings
Bearing Class	ABEC Class 7 (P4)
Spindle Taper Hardness / Material	HRC62 ± 1.5° / SCM21
Spindle Draw Bar Type	Collet Style
Retention System	Belleville Disc Spring
Holding Force	1,760 ~ 2,200 lbs.
Counter Balance	Electronics
Spindle Orientation	Built-in Positioning Encoder
Spindle Nose to Table	6.7" ~ 27.9"
Spindle Center to Z-axis Way Cover	22.8"

TABLE

Dimensions:	
Length	44"
Width	20"
T-Slots	0.70" x 5 x 3.93"
Maximum Table Load	1,100 lbs.
Height from Floor	33.7"

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AUTOMATIC TOOL CHANGER

Changer	Dual Swing Arm Type
Tool Change Time	2.5 Seconds (tool to tool) 4 seconds (chip to chip)
Maximum Tool Weight	13.2 lbs.
Maximum ATC Weight	264 lbs.
Maximum Tool Length	11.8"
Magazine Tool Selection	Bi-directional, Random Access
Maximum Diameter of Tools	
Adjacent Pocket Tooled	3.15"
Adjacent Pocket Empty	4.92"
Maximum Number of Tools	24
Tool Shank	CAT-40 (BT-40 optional)
Air Requirements	85 psi Minimum

X AXIS

Ballscrew:	Diameter	1.575"
	Class	JIS C3
	Pitch	0.787"
Feed Rate:	Rapid Traverse	1491 ipm
	Cutting Feed Rate	0.04 ~ 393 ipm
Travel:		40"
Accuracy:	Linear Positioning	± 0.00016" (JIS 6338)
	Repeatability	± 0.00008" (JIS 6338)
Thrust Force:	Rated	759 lbs.
	Maximum	1,742 lbs.

Y AXIS

Ballscrew:	Diameter	1.575"
	Class	JIS C3
	Pitch	0.787"
Feed Rate:	Rapid Traverse	1491 ipm
	Cutting Feed Rate	0.04 ~ 393 ipm
Travel:		20.4"
Accuracy:	Linear Positioning	± 0.00016" (JIS 6338)
	Repeatability	± 0.00008" (JIS 6338)
Thrust Force:	Rated	759 lbs.
	Maximum	1,742 lbs.

Z AXIS

Ballscrew:	Diameter	1.575"
	Class	JIS C3
	Pitch	0.472"
Feed Rate:	Rapid Traverse	945 ipm
	Cutting Feed Rate	0.04 ~ 393 ipm
Travel:		21.2"
Accuracy:	Linear Positioning	± 0.00016" (JIS 6338)
	Repeatability	± 0.00008" (JIS 6338)
Thrust Force:	Rated	1,586 lbs.
	Maximum	3,570 lbs.

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DIMENSIONS

Floor Spacing (W x D x H)	120" x 112" x 115"
Shipping (W x D x H)	90" x 120" x 102"

WEIGHT

Net	11,850 lbs.
Shipping	12,826 lbs.

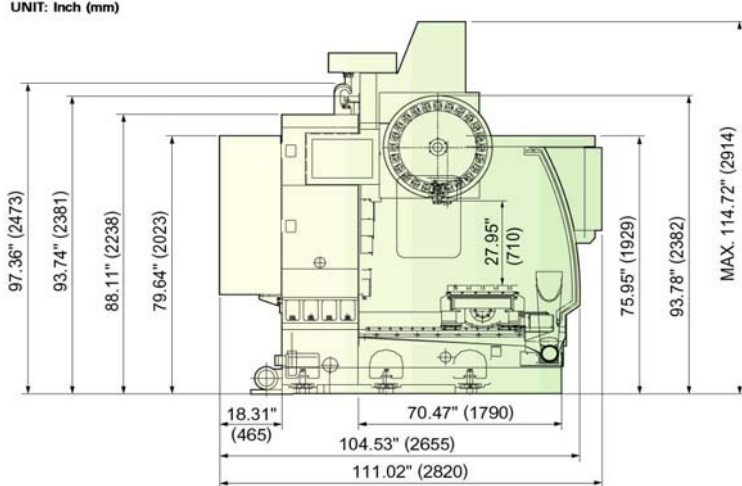
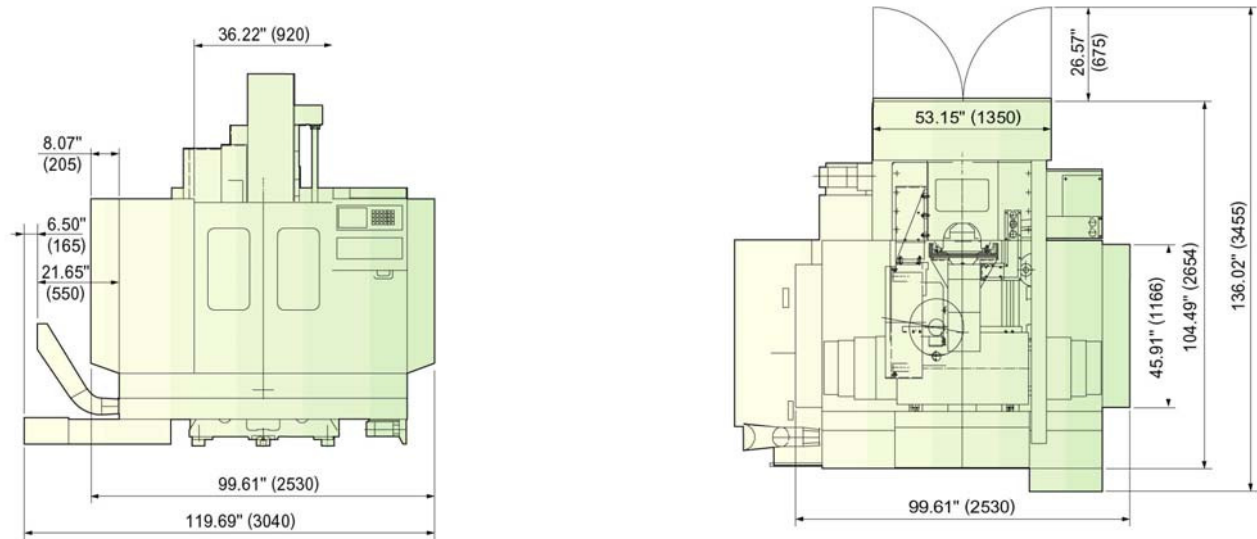
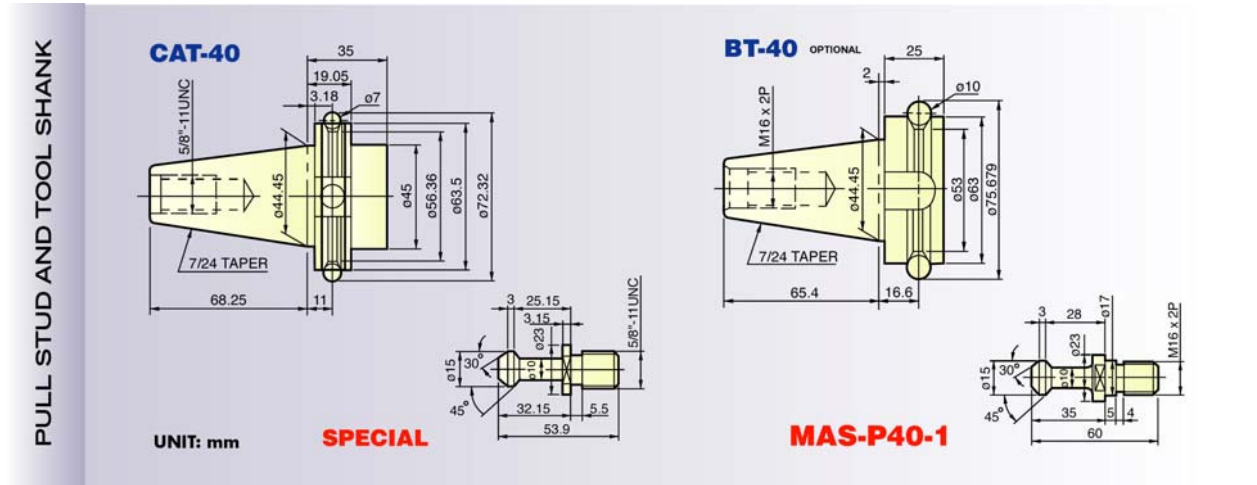
POWER REQUIREMENTS

220 Volts / 3 Phase / 78 AMPS / 19 KVA

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MACHINE DIMENSIONS



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FANUC MXP100iB STANDARD CONTROL FEATURES

- Controlled Axis, 3 Axes
- Controlled Axis Expansion, 4 Axes
- Simultaneously Controlled Axis, 4 Axes
- Simultaneously Controlled Axis Expansion, 4 Axes
- Axis Name
- Inch/Metric Conversion (G20, G21)
- Least Input Increment, 0.001mm/0.0001"/0.001°
- Fine Acc & Dec Control
- HRV Control
- Follow-up
- Interlock
- Machine Lock
- Z Axis Neglect
- Emergency Stop
- Overtravel
- Stored Stroke Check 1
- Position Switch
- Backlash Compensation
- Stored Pitch Error Compensation
- M-Code Mirror Image (M94, M95, M96)
- Automatic Operation
- DNC Operation
- Dry Run
- Buffer Register
- Single Block
- MDI Operation
- JOG Feed
- Manual Reference Position Return
- Manual Intervention and Return
- Manual Handle Feed (1 unit/each path)
- Manual Handle Feed Rate
- Manual Handle Interruption
- Program Number Search
- Sequence Number Search
- Sequence Number Comparison and Stop
- Program Restart
- Positioning (G00)
- Exact Stop (G09)
- Exact Stop Mode (G61)
- Dwell (G04)
- Linear Interpolation (G01)
- Circular Interpolation (G02, G03)
- Cylindrical Interpolation
- Helical Interpolation
- Thread, Synchronous Cutting (G33)
- Skip Function (G31)
- Reference Position Return (G28)

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- Reference Position Return Check (G27)
- 2nd Reference Position Return
- 3rd/4th Reference Position Return (G30)
- Rapid Traverse Rate
- Rapid Traverse Override
- Feed Per Minute
- Feedrate Override 0 ~ 200%
- JOG Override 0 – 200%
- Feed Per Revolution (G95)
- Feed Stop
- Tangential Speed Constant Control
- Cutting Feedrate Clamp
- Automatic Acceleration/Deceleration
- Rapid Traverse Bell-Shaped Acceleration/Deceleration
- Linear Acceleration/Deceleration after Cutting Feed Interpolation
- Bell-Shaped Acceleration/Deceleration before Cutting Feed Interpolation
- High Speed High Accuracy Machining Mode (AI Nano CC)
- Jerk Control
- EIA/ISO Automatic Recognition
- Label Skip
- Parity Check
- Control In/Out
- Optional Block Skip (hardware necessary)
- Max. Programmable Dimension ± 8 – digit
- Program Number O4 – digit
- Sequence Number N5 – digit
- Absolute/Incremental Programming
- Decimal Point Programming/Pocket Calculator Type Decimal Point Programming
- Input Unit 10 Time Multiply
- Plane Selection (G17, G18, G19)
- Rotary Axis Designation
- Rotary Axis Roll-Over Function
- Sub Program Call
- Manual Absolute On and Off
- Program Stop/Program End (M00/M01/M02/M30)
- Reset
- Canned Cycles for Drilling (G80~G89)
- Polar Coordinate Command (G15, G16)
- Automatic Coordinate System Setting
- Workpiece Coordinate System Preset
- Workpiece Coordinate System (G52/G53/G54~G59)
- Addition of Workpiece Coordinate System, 48 pairs
- Coordinate System Rotation (G68, G69)
- Optional Chamfering/Corner R
- Circular Interpolation by R Programming
- Automatic Corner Override (G62)
- Programmable Data Input (G10)
- Custom Macro B
- Addition of Custom Macro Common Variables
- Macro Executer
- Scaling
- Peak Rigid Tapping Cycle

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With MXP 100iB Control

- Auxiliary Function (M3 digit)
- High Speed M/S/T Interface
- Spindle Speed Function
- Spindle Override 50~200%
- Tool Function
- 1st Spindle Orientation (M19)
- Rigid Tapping (M29)
- Cutting Air Blast (M14/M15)
- Tool Offset Pairs, 200 pairs
- Tool Length Compensation (G43/G44/G49)
- Cutting Compensation C (G40~G42)
- Tool Length Measurement
- Tool Offset Memory C
- Part Program Storage, 1280M
- Number of Registerable Programs, 200
- Part Program Editing
- Extended Part Program Editing
- Background Editing
- Program Protect
- Status Display
- Current Position Display
- Program Display
- Parameter Setting and Display
- Alarm/Alarm History Display
- Operation History Display
- Operation Message History Display
- Run Hour & Parts Count Display
- Actual Cutting Feedrate Display
- Display of Spindle Speed and T Code at all screens
- Display of Hardware and Software Configuration
- Multi-Language Display
- Graphic Function
- Dynamic Graphic Display
- Help Function
- Clock Function
- Data Protection Key
- Erase CRT Screen Display
- Servo Setting Screen
- Periodic Maintenance Screen
- Maintenance Information Screen
- Reader/Puncher Interface
- Memory Card Interface
- External Message
- Status Output Signal
- Connectable Servo Motor
- Connectable Servo AMP
- Connectable Spindle Motor
- Connectable Spindle AMP
- 8.4" Color LCD / MDI (Full Key)