XV-1020A Vertical Machining Center

With MXP100*iB* Control

STANDARD FEATURES

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

	Travel	Positioning	Repeatability	Rapid Rate / Cutting Feed
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.**

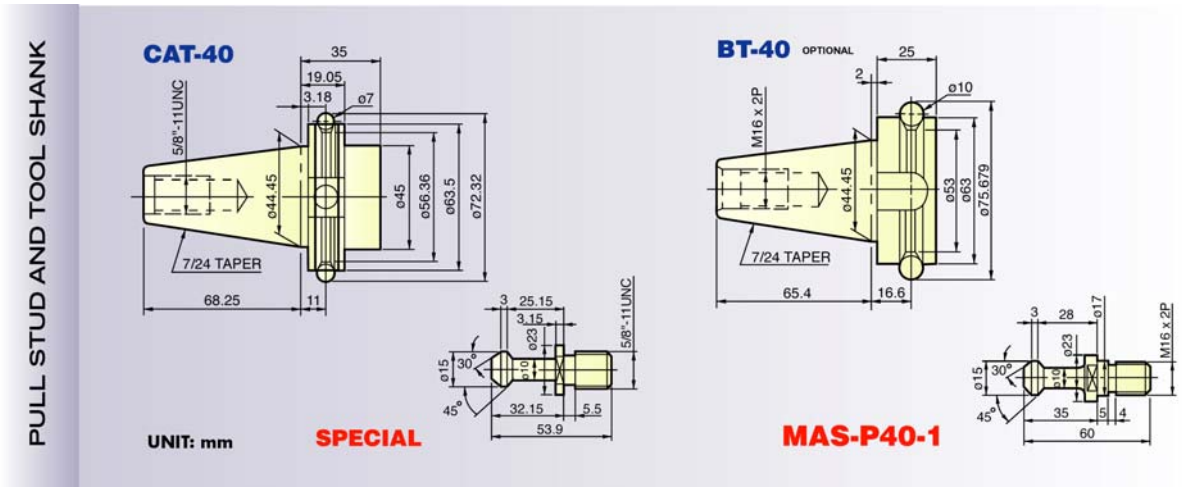
POWER REQUIREMENTS

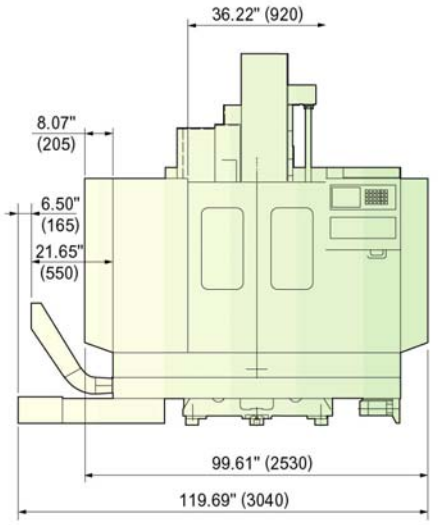
220 Volts / 3 Phase / 78 AMPS / 19 KVA

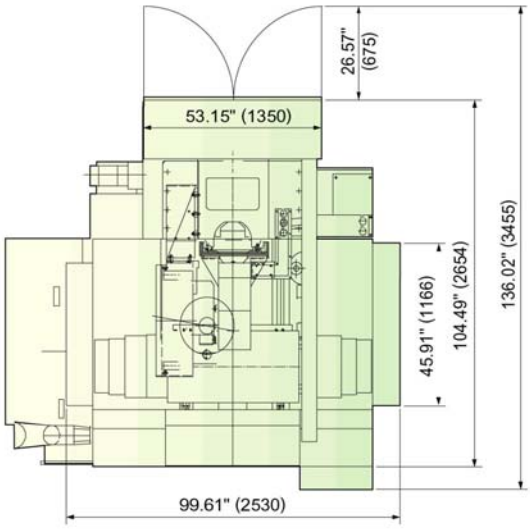
XV-1020A Vertical Machining Center

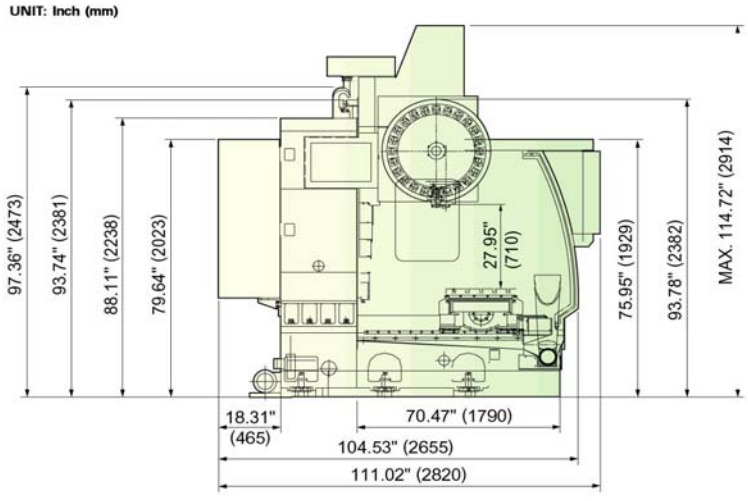
With MXP 100*iB* Control

MACHINE DIMENSIONS









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)

With MXP 100*iB* Control

- 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 Interpolatioin
- 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

With MXP 100*iB* 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)