CAMPRO PV-5221

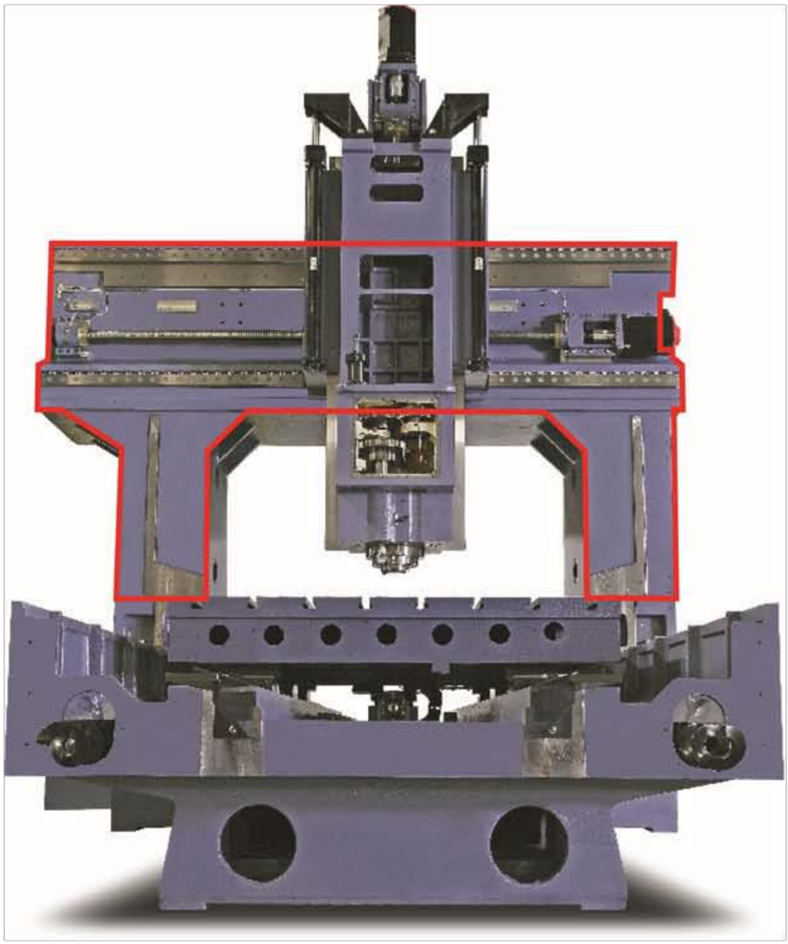
DOUBLE COLUMN BRIDGE MILL

STANDARD FEATURES:

* Fanuc Oi-MF Control (Package B)
* AI APC Contour Control
* 6000 RPM Spindle (Gear Head)
* Spindle Oil Chiller
* Powerful 18.5KW (30 min) high torque spindle motor
* High Column (20.9" + 9.8")
* Cartridge Spindle Design
* CAT50 Big Plus Spindle
* 1000 PSI CTS Prep Only
* Spindle Air Blow
* Rigid tapping
* Twin Arm 32 Tool ATC
* Tool Change Time (Tool-To-Tool) 3.5 sec.
* Tool Change Time (Chip to Chip) 7.0 sec.
* Portable Manual pulse generator
* Program and data protection key switch
* Massive One-piece Meehanite cast iron bed
* X & Y Heavy Duty Linear Guides
* Z axis box way
* Chip Auger
* Chip Conveyor (W/ Bucket)
* Double Anchored, Pre-tensioned Ballscrews
* Fast X & Y - 787, Z - 630 IPM Rapid Traverse rate
* Flood coolant with large coolant tank
* Work light
* Heat exchanger for Electrical Cabinet
* Automatic Lubrication Unit
* Instruction manual, parts list, and electrical diagram
* Fanuc operator and maintenance manuals
* One-year Parts warranty: <u>Parts w/o Labor</u>
* Two-year NC Control Warranty: <u>Parts and Labor by control builder</u>

SPECIFICATIONS

CAPACITY:	
X axis travel	204.72” (5200MM) xx
Y axis travel	82.68” (2100MM)
Z axis travel	31.49” (1000MM)
Table loading area	196.85 x 66.93” (5000x1700MM)
Allowable table load	26,455 lbs (12,000kg)
Table T Slots – (W x # slots)	22 x 9 (0.86X9MM)
SPINDLE:	
Spindle nose to table surface	9.84” – 49.21”
Distance between Columns	68.89” (1,750 MM)
Spindle speed	6,000 RPM
Spindle Power Output (cont/max.) (max 30 min.)	25HP (15 /1 8.5)
Spindle torque (max 30 min)	384 FT-LBS (521 Nm.)
Spindle Driving Method	Gear Type
AUTOMATIC TOOL CHANGER:	
ATC Type	Twin Arm Type
Number of Tools	32
Tool Shank	CAT 50 BIG PLUS
Max. Tool Dia.	4.92” (125 MM)
Max. Tool Length	17.38” (350MM)
Max. Tool Weight	44 lbs. (20 KG)
Tool Selection Method	Random Bi-Directional
Tool Change Time TOOL-TOOL	3.5 sec
Tool Change Time CHIP-CHIP	7 sec
MOTION:	
Rapid Traverse X, Y, Z	10 / 12 / 12 (393.7 / 472.44 / 472.44ipm)
Cutting feed rate	314.96 ipm
Slide Type	X Y LM Guide, Box on Z
Least command increment	.001mm
Positioning accuracy	+/- .00020" (full stroke)
Repeatability	+/- .00008"
TANK CAPACITY:	
Coolant Tank	Gallons
Lubricating Tank	Gallons
Hydraulic Tank	Gallons
GENERAL:	
Floor Space Required (L X W)	503.94 x 196.85” (12,800x5000MM)
Height	165.35” (4200MM)
Machine Weight	92,594 lbs (42,000 kg)
Standard Power Source Requirement – Fanuc	205-235 V / 3 Phase/60HZ
Power Capacity	105 AMPS (40 KVA)
Minimum Air Supply	85 – 115 PSI (3/8 ID Air Hose)



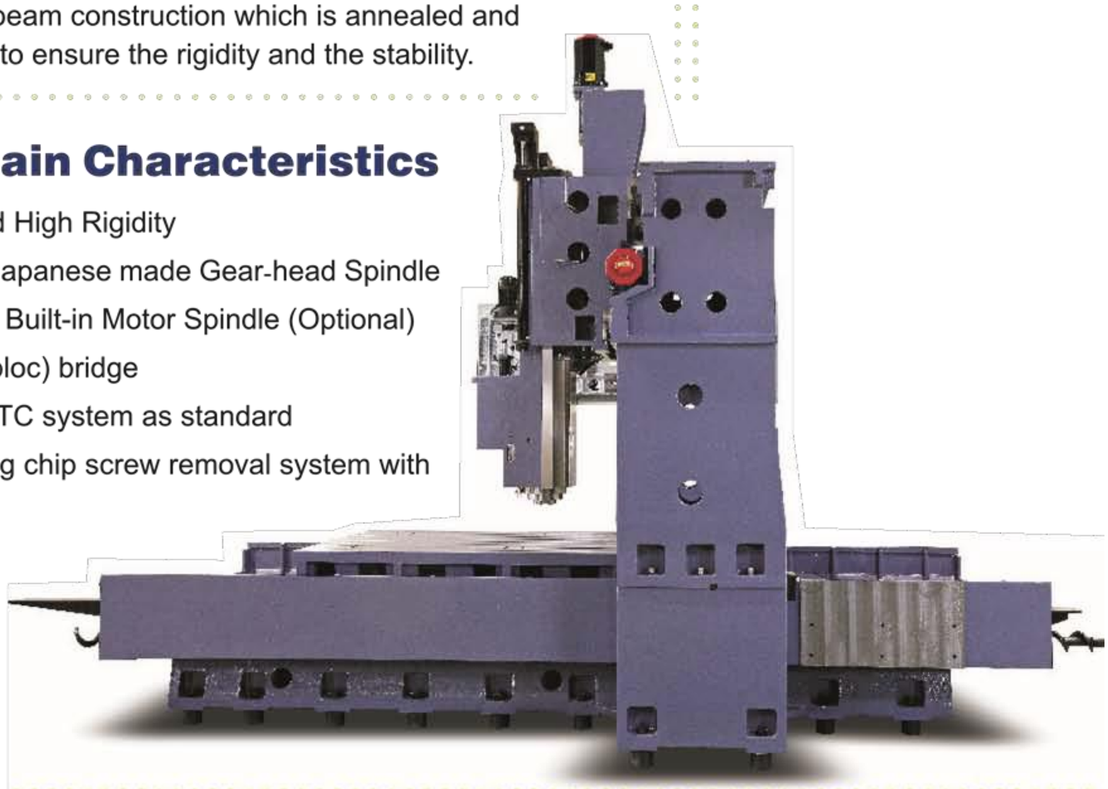
The single unit (monobloc) oversized bridge is made from one piece box type beam construction which is annealed and stress released to ensure the rigidity and the stability.

Automatic Tool Change Capacity

- 32-tool B CAT 50 Chain Type tooling system
- Maximum tool diameter 125 mm, tool length 300 mm and tool weight 15 kg
- Dual arm ATC system to ensure the no system with user-friendly design

PV Series Main Characteristics

- High Accuracy and High Rigidity
- 25 hp, 6,000 rpm Japanese made Gear-head Spindle
- 34 hp, 10,000 rpm Built-in Motor Spindle (Optional)
- Single unit (monobloc) bridge
- Largest 32-tools ATC system as standard
- Dual built-in casting chip screw removal system with chip conveyor
- Roller type linear guideways on X-axes and Y-axes



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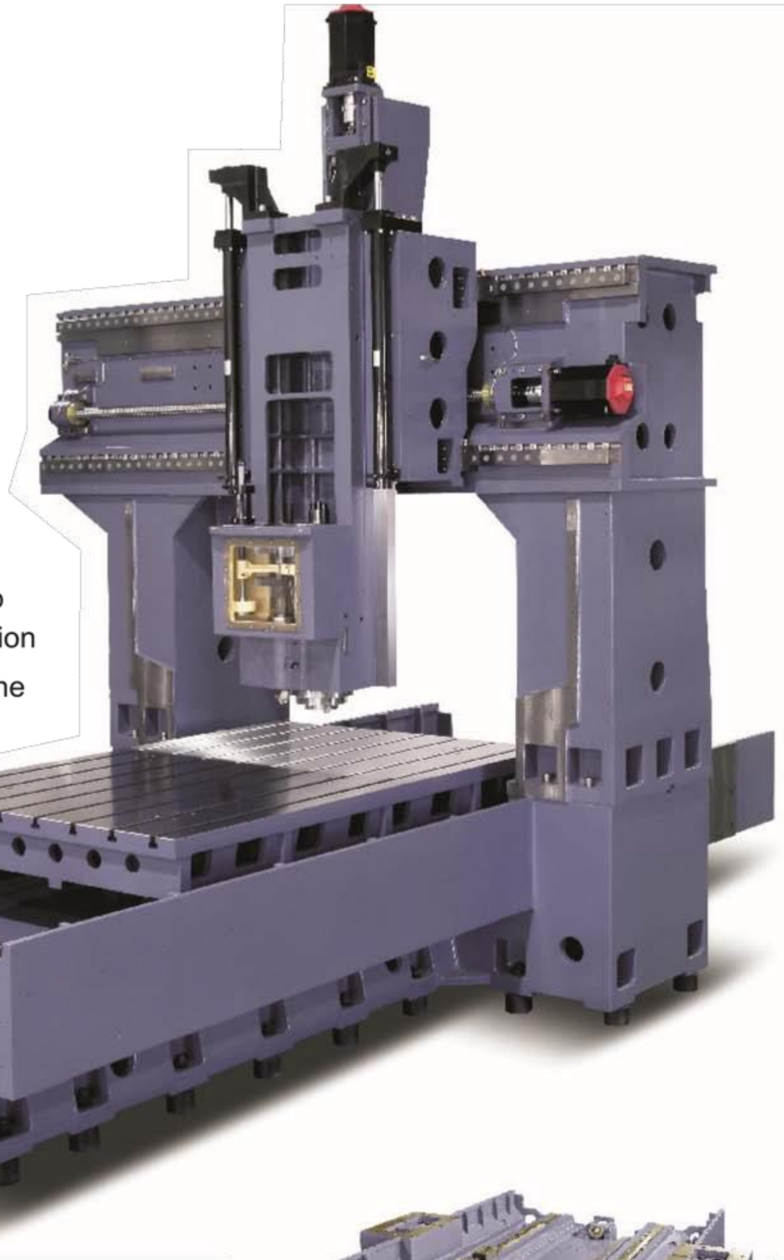
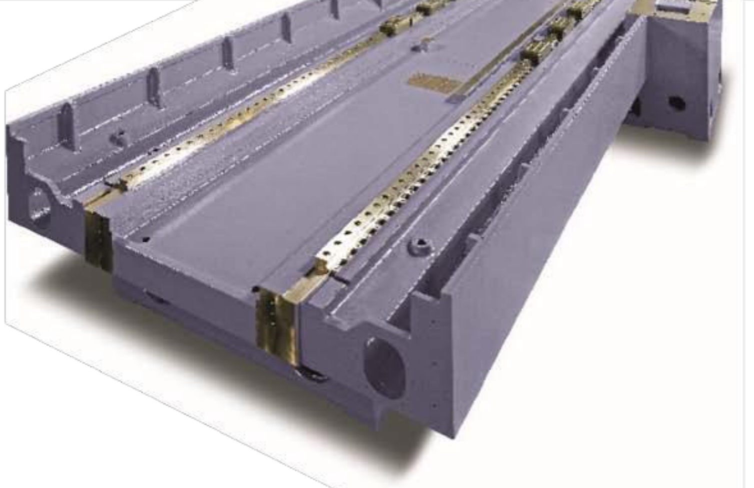
Environmental Design Concept

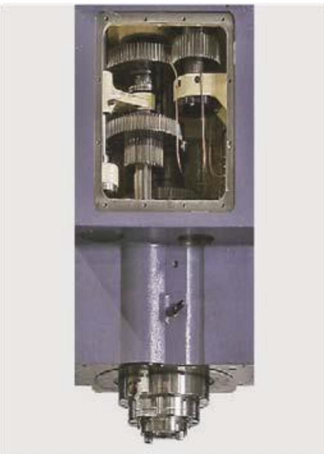
- Automatic lubrication unit with intelligent pressure failure detection function provides reliable lubricator supply for cost saving
- Big coolant tank with high pressure pump provide the most efficient coolant circulation
- All axis lubrication oil is kept away from the coolant which can extending coolant oil life for environmental protection



Base Structure

- Extra heavy load recirculating roller linear guideway on X-axis and Y-axis
  Fast rapid feedrate on X-axis and Y-axis are 20 m/min, and Z-axis is 16 m/min
  Automatic lubrication to the sliding points
  Final laser inspection and ball bar testing ensure repeatability and positioning accuracy. Linear scales for high precision feedback system (Optional)





High reliability and high power double column machine

- BT-50 25 HP spindle motor 6,000 rpm Japanese made two steps variable gear-head for heavy cutting
- Output torque is 521 Nm, provide wide range of cutting capacity for heavy cutting at low speed and fine cutting at high speed
- BT-50 34 HP 10,000 rpm built-in motor spindle for robust performance and unsurpassed reliability (Optional)

Spindle System

- **2-stage variable gear-head spindle**

  Power : 15 / 18.5 kW
  Torque : 521 Nm
  Speed : 50~6,000 rpm
  Spindle taper : 7/24 Taper No. 50
  Tooling : BT CAT 50

- **Built-in motor spindle**

  Power : 22 / 25 kW
  Torque : 233 Nm
  Speed : 10,000 rpm
  Spindle taper : 7/24 Taper No. 50
  Tooling : BT / HSK CAT 50

Optional Accessories

Hydraulic-clamped 90° Angular Milling Head with four positions at 0°, 90°, 180°, and 270°.

- Manual • 2,000 rpm
- Automatic • 3,500 rpm

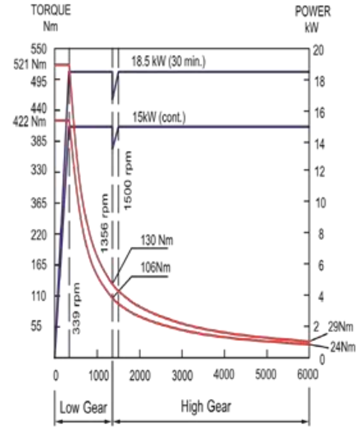
3,000 rpm manual Universal Milling Head

3,500 rpm, 300 mm leJthened Extended Head with tool clamp/unclamp

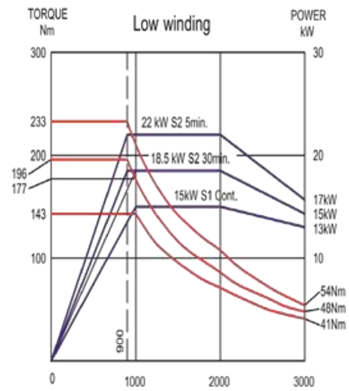
30° / 45°Angular Milling Head

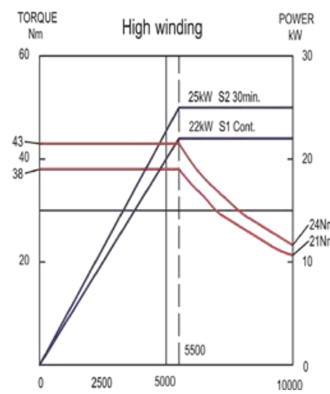
Spindle Diagram

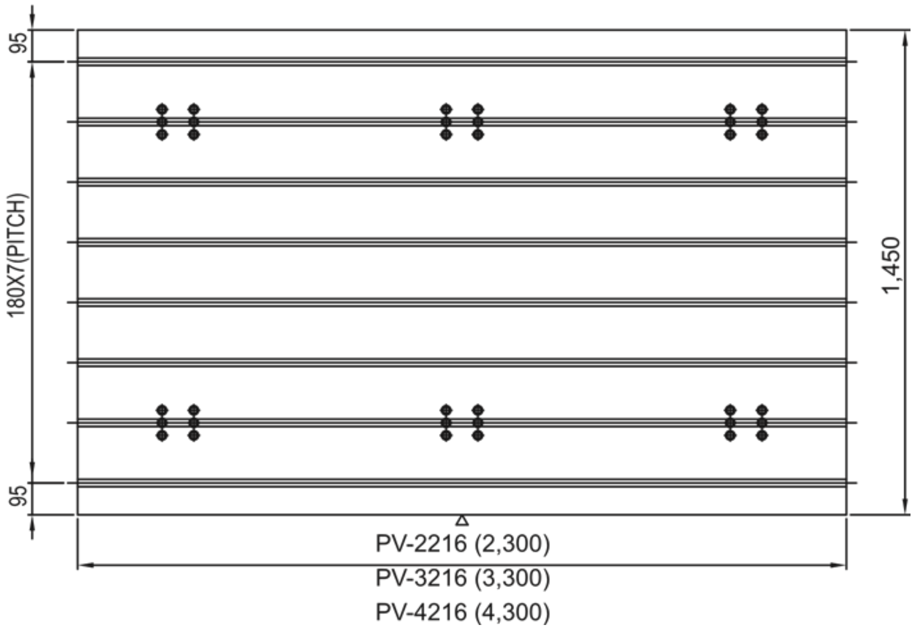
FANUC 25HP



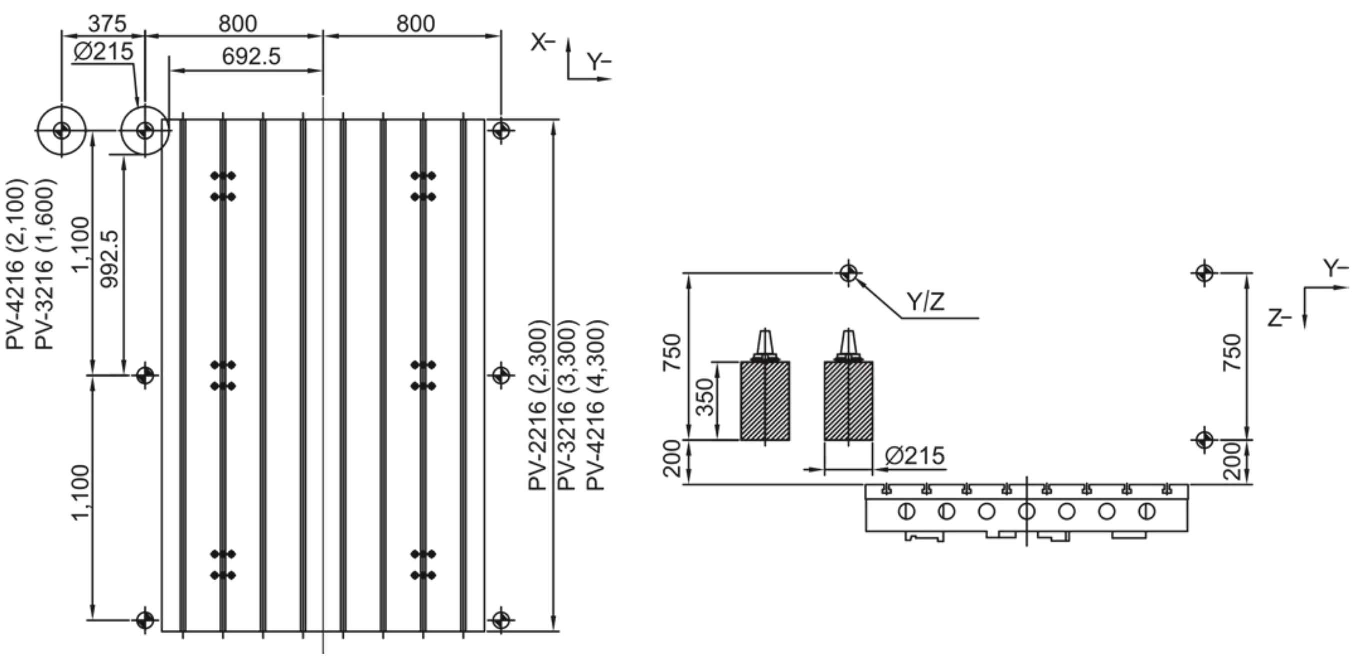
Buil-in Spindle Motor (Optional)







95
180X7(PITCH)
95
1,450
PV-2216 (2,300)
PV-3216 (3,300)
PV-4216 (4,300)



375
800
800
Ø215
692.5
X–
Y–
PV-4216 (2,100)
PV-3216 (1,600)
1,100
992.5
1,100
PV-2216 (2,300)
PV-3216 (3,300)
PV-4216 (4,300)
Y/Z
Y–
Z–
750
350
200
Ø215
750
200

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Control Specifications - Fanuc OiM-F Control

8.4” color LCD screen
Color graphics
Simultaneous Controlled Axis
Least input Increment on X, Y, and Z is .001 mm
Least command increment on X, Y, and Z is .001mm
Inch/Metric Conversion (G20/G21)
Interlock on All Axes
Machine Lock on All Axes
Emergency Stop
Stored Stroke Check 1, 2, 3,
Mirror Image
Backlash Compensation
Unexpected disturbance torque detection
Stored pitch compensation
Automatic Operation (Memory)
MDI Operation
Search Function (Sequence, Program)
Program restart
Dry Run
Single Block
Buffer Register
Manual Handle Interrupt
Manual Jog Feed (Rapid, Jog, Handle)
Manual Handle Feed Rate (x1, x10, x100)
Feed Command (F Code feed rate Direct Command)
Feed rate Override 0-200% (10% Unit)
Jog feed 0-5,000 mm/min (197 ipm)
Rapid traverse override (F0, F25%, F50%, F100%)
Override Cancel
Rapid Traverse Bell-Shaped Acceleration/Deceleration
Block Skip
Exact Stop Mode / Exact Stop (G61/G09)
Dwell (G04)
Helical Interpolation
Threading/Synchronous Feed
Manual Reference Point Return
1st Reference Point Return G28
Reference Point Return Check G27
2nd Reference Point Return G30
3rd and 4th Reference Point Return
Program stop, optional stop, end of pgm M00, M01, M02, M30
Tape Code EIA RS-244/ISO 840 (Automatic Recognition)
Optional Block Skip (9 ea)
Maximum Programmable Dimensions +/- 9999.9999” (+/- 8 digits)
Program Number O4 Digit
Absolute and Incremental Command G90/G91
Decimal Point Input
Plane Selection G17. G18. G19
Work Coordinate System Setting (G52 – G59)
Work Coordinate Preset
Additional Work Coordinate System 48 pairs
Manual Absolute “On” fixed
Programmable Data Input G10
Sub Program Call 4 Levels of Nesting Custom Macro #100 to #199

Control Specifications - Fanuc OiM-F Control (CONT'D.)

Addition to Custom Macro Common Variables #500 to #999
Circular Interpolation by radius R
Canned Cycle (G73,G74, G76, G80 ~ G89)
Optional Chamfering / Corner R
Skip Function (G31)
Automatic Coordinate System Setting
Coordinate System Rotation
Programmable Mirror Image
Single direction positioning (G60)
External Data Input (Tool Offset, message, machine zero point shift)
Cylindrical interpolation
A1 Advance Preview Control (G5.1)
Polar Coordinate Command
Miscellaneous Function (M3 digits)
Miscellaneous Function Lock
Spindle Speed Command (S5 Digits, binary output)
Spindle Speed Override (50% ~ 120%) 10% Unit
Rigid Tapping
Cutter Compensation C (G40-G42)
Tool Length Measurement
Tool Length Compensation (G43, G44, G49)
Tool Offset Amount (+/- 6 Digits)
Tool Offset Pairs (400 Pairs)
Tool Life Management
Reader/Puncher Interface RS232C
Memory Card input/output
Embedded Ethernet (100 Mbps)
Part Program Storage Length: 320M
Registered Programs 400 ea
Memory Lock
Back Ground Editing
Extended Part Program Editing (Copy, Move, Change of NC Program)
Self Diagnosis Function
History Display of Alarm and Operator Message
Help Function
Run Hour / Parts Count Display
Actual Cutting Feedrate Display
Spindle / Servo Setting Screen
Multi-language display (Selection of 5 Optional Language)
Erase CRT Screen Display (Screen Saver)
Bi-Direction Pitch Error Compensation
Tool Management Function
Protection of Data at 8-Levels
Tool Monitoring Function (HWTM – Built-on Fanuc Type)
Fanuc Manual Guide i conversational programming
Alpha i AC digital servo system with 1,000,000 pulse encoders
Full MDI keyboard
PCMCIA data card slot on left side of LCD for program input / output – up to 2GB storage
Advanced Preview Control (Look ahead of multi-blocks – 20 blocks look ahead)
Automatic Acceleration / deceleration with Bell Shaped rapid acc / dec
3 axes simultaneous control std. (4 axis opt.)
Scaling
Custom Macro B
High speed skip signal

PRICE FOR MACHINE AS DESCRIBED ABOVE:

FOB: POE / Newark, NJ