



CAMPRO CPV-1050B HIGH PERFORMANCE VERTICAL MACHINING CENTER

MACHINE FEATURES

- Constructed with high quality meehanite cast iron and heat treated to relieve stress thereby assuring maximum rigidity and accuracy.
- Box ways on all 3 axes greatly upgrades stability and dampening capability.
- Automatic lubrication unit with intelligent pressure failure detection function provides reliable supply for saving cost and for environmental protection.
- Oil-coolant separation design which meets the environment protection requirements allows centralized collection for all way oil.

STANDARD FEATURES:

- * Fanuc 0i-MF PLUS Control
- * AI APC Contour Control
- * 12,000 RPM Spindle (Belt Drive)
- * Powerful 25 hp high torque spindle motor
- * High Column (20.9" + 9.8")
- * Cartridge Spindle Design
- * CAT40 Big Plus Spindle
- * 290 PSI CTS
- * Spindle Air Blow
- * Rigid tapping

STANDARD FEATURES (CONT'D):

- * Custom Macro B (User Definable)
- * Twin Arm 24 Tool ATC
- * Portable Manual pulse generator
- * Massive One-piece Meehanite cast iron bed
- * Chip Auger
- * Low friction Turcite mating way surfaces
- * Double Anchored, Pre-tensioned Ballscrews
- * Fast 1,181 IPM Rapid Traverse rate
- * Full enclosure splash guard
- * Flood coolant with large coolant tank
- * Work light
- * Operator call lamp (red, yellow, green)
- * Spindle load meter
- * Assembly and operation tools
- * Auto Power Off
- * Heat exchanger for Electrical Cabinet
- * Instruction manual, parts list, and electrical diagram
- * Fanuc operator and maintenance manuals
- * WARRANTY-MACHINE: One-Year
- * WARRANTY-CONTROL: Two-Years

SPECIFICATIONS

CAPACITY:

X axis travel	42"
Y axis travel	20.9"
Z axis travel	30.7"
Table loading area	41.3" x 20.9"
Allowable table load	2200 pounds
Table T Slots - width x slot spacing	.708" x 3.937" – (5)

SPINDLE:

Spindle nose to table top	3.9" – 34.6"
Spindle Bearing Diameter	2.8"
Column to spindle center	23.2"
Spindle taper	CAT 40 Big Plus
Spindle speed	12,000 RPM
A.C. spindle motor	25 HP
Spindle torque	132 ft-lbs.
Spindle Driving Method	Belt Drive

SPECIFICATIONS (Continued)

AUTOMATIC TOOL CHANGER:

ATC Type	Twin Arm Type
Number of Tools	24
Tool Shank	CAT 40
Max. Tool Dia.	3.1"
Max tool Diameter (No Adjacent Tool)	5.9"
Max. Tool Length	9.8"
Max. Tool Weight	15.4 lbs.
Tool Selection	Random Bi-Directional

MOTION:

X and Y axis rapid traverse rate	1,181 IPM
Z axis rapid traverse rate	1,181 IPM
Cutting feed rate	393 IPM
Slide Type	Box Ways
Least command increment	.001mm,
Positioning accuracy	+/- .00020" (full stroke)
Repeatability	+/- .00008"

GENERAL:

Floor Space Required (W x D X H)	125" x 96" X 120"
Machine Weight	14,770 lbs.
Standard Power Source Requirement - Fanuc	205-235 Volts / 3 Phase/60HZ
Power Capacity	53 Amps Minimum
Air Source Requirement	85 – 115 PSI

CONSTRUCTION:

- Balanced 12,000 RPM Spindle with 6000 BTU spindle oil cooler for High Speed Machining.
- Hardened and Ground C3 Double Nut Ballscrews (Ø40 mm) are pre-tensioned to minimize backlash, provide high precision movement, and reduce heat deformation on all axes.
- All solid ways are coated with high grade Turcite-B. Hardened and ground slideways give an extra 40% wear resistance.
- 2 Solid Box Ways are on a one-piece base instead of two supporting ways connected to the main base, which provides more rigidity under heavy machining.
- Main frame is made of Meehanite casting for superior rigidity

BED, COLUMN, AND SADDLE:

The bed is a rigid one-piece casting with heavy ribbing to prevent deformation during heavy cutting. Fine grain Meehanite cast iron is used for its excellent dampening characteristics. Extra wide boxways provide excellent support for the saddle, regardless of the load distribution on the table. The table is fully supported by the saddle in all positions. There is no table overhang. The rigid box type column casting is heavily ribbed to prevent twisting or distortion.

SPINDLE, HEADSTOCK, AND COLUMN

The high speed, 12,000 RPM, 40 taper spindle is a true cartridge type unit supported by precision class bearings that are permanently grease lubricated. The spindle is driven by a high torque 25 HP A.C. motor delivering an impressive 132 ft/lbs. Power is transferred through a heavy-duty cogged drive belt eliminating slippage, promoting thermal stability, and minimizing vibration. An encoder is attached to the spindle to allow rigid tapping.

CONSTRUCTION (Continued)

GUIDEWAYS

Wide Box ways are used for unsurpassed long-term rigidity and accuracy. Each guideway is induction hardened and precision ground. Turcite is bonded to the mating way surfaces and then hand scraped to ensure perfect fit and tolerances. The Turcite resin with forced way lubrication provides a low friction surface and virtually eliminates guideway wear. All guideways are fully protected from chips and damage.

OIL JACKET SPINDLE CHILLER (STANDARD)

Machine accuracy is maintained by using a refrigeration system that circulates cooled oil around the spindle reducing the thermal effects of any heat generated.

AUTOMATIC TOOL CHANGER

The high quality 24-position tool changer uses a fast random bi-directional twin arm with 2.5 second tool-to-tool change time, and 6 seconds chip to chip.

BALL SCREWS AND AXIS DRIVES

Each axis is driven by a high precision double-nut ballscrew. The ballscrews are centered between the guideways. The ballscrews are supported on both ends by angular contact thrust bearings. This double anchored pretension design provides outstanding positioning repeatability with virtually no thermal growth. All axes have large diameter 40 mm ball screws that are connected directly to oversize AC servo drive motors without gears or belts, to eliminate backlash. Each axis has a flexible coupling to protect the ball screw in the event of a sudden impact. These couplings can be quickly reset.

PORTABLE MANUAL PULSE GENERATOR

The hand held "Manual Pulse Generator" lets each axis move in increments of 0.0001", 0.0010" or 0.0100" making fixture or part alignment quick and easy. The 10-foot cord gives full access to the machine.

290 PSI (20 BAR) THROUGH-SPINDLE-COOLANT SYSTEM

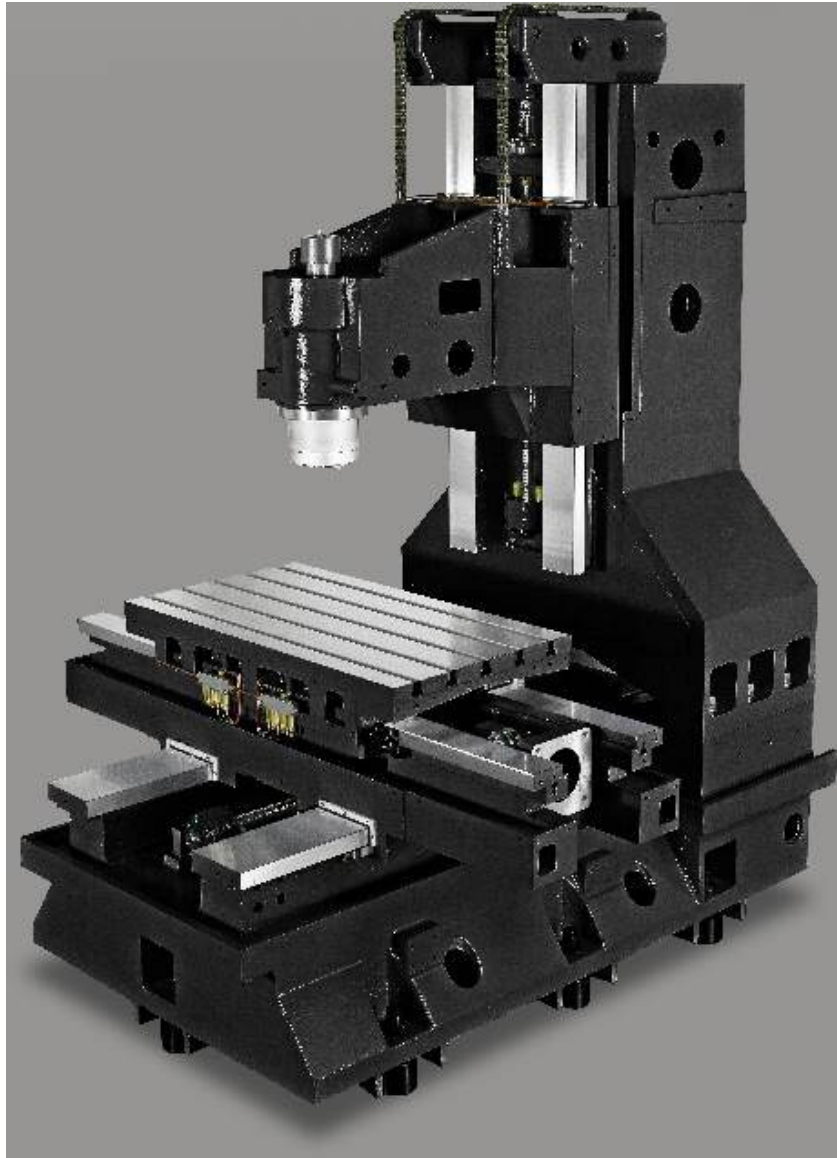
A dedicated 290-PSI positive displacement pump delivers the coolant directly to the tool tip. The immediate benefit is more aggressive feeds and speeds can be maintained throughout the cutting process. There is also no need to stop and adjust coolant nozzles increasing the in-cut time and operator safety. Protecting the spindle and the vital rotary union from contamination is a canister filter with a replaceable 10-micron element.

FULLY ENCLOSED GUARDING

The fully enclosed guarding, including cut-out for filter mist, is made of heavy gauge sheet metal to contain both chips, coolant and coolant mist. The large dual sliding doors open to provide unrestricted overhead access for ease of lifting heavy fixtures or work pieces.

CHIP DISPOSAL AND COOLANT SYSTEM

High volume coolant system washes chips down into the front of sheet metal enclosure for chip auger evacuation and provides flood coolant through adjustable head mounted nozzles along with four flushing nozzles mounted directly to spindle nose.



CAMPRO CPV-1050B

Control Specifications - Fanuc 0i-MF PLUS Control

10.4" color LCD screen
Color Graphics
Graphic User Interface (GUI)
Part Program Storage 2 MB
Registerable Programs 1,000
AICC-2
 AI Contour Control
 Fine Surface Machining
 Jerk Control
 200 Block Look Ahead
Setup Guidance Function
Dynamic Graphic Display
Fanuc Manual Guide i conversational programming
Multi Step Skip
Manual Handle Retrace
Quick Program Restart
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
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)
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 Feedrate Direct
Command) Feedrate 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

Control Specifications (CONT'D.):

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
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
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
AI 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)
Memory Lock
Back Ground Editing

Control Specifications (CONT'D.):

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)
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

*** Geometric accuracies are guaranteed only if machine is installed on foundation meeting the minimum requirements of the machine and local building codes.**