



CAMPRO PV-5221

DOUBLE COLUMN BRIDGE MILL

PV-5221

STANDARD FEATURES:

- * Fanuc Oi-MF Plus Control
- * AI APC Contour Control
- * 6,000 RPM Spindle (Gear Head)
- * Spindle Oil Chiller
- * Powerful 30 HP high torque spindle motor
- * High Column 39.3" Spindle Nose To Table
- * Cartridge Spindle Design
- * CAT50 Big Plus Spindle
- * 1000 PSI CTS Prep
- * 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
- * X & Y Heavy Duty Linear Guides (Rroller)
- * 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: Parts w/o Labor
- * Two-year NC Control Warranty: Parts and Labor by Fanuc

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)
Distance Between Columns	86.6" (2200MM)

SPINDLE:

Spindle nose to table surface	7.84" – 39.3"
Spindle speed	6,000 RPM
Spindle Power Output	30HP
Spindle torque (max 30 min)	746 FT-LBS (1011 Nm.)
Spindle Driving Method	Gear Type

AUTOMATIC TOOL CHANGER:

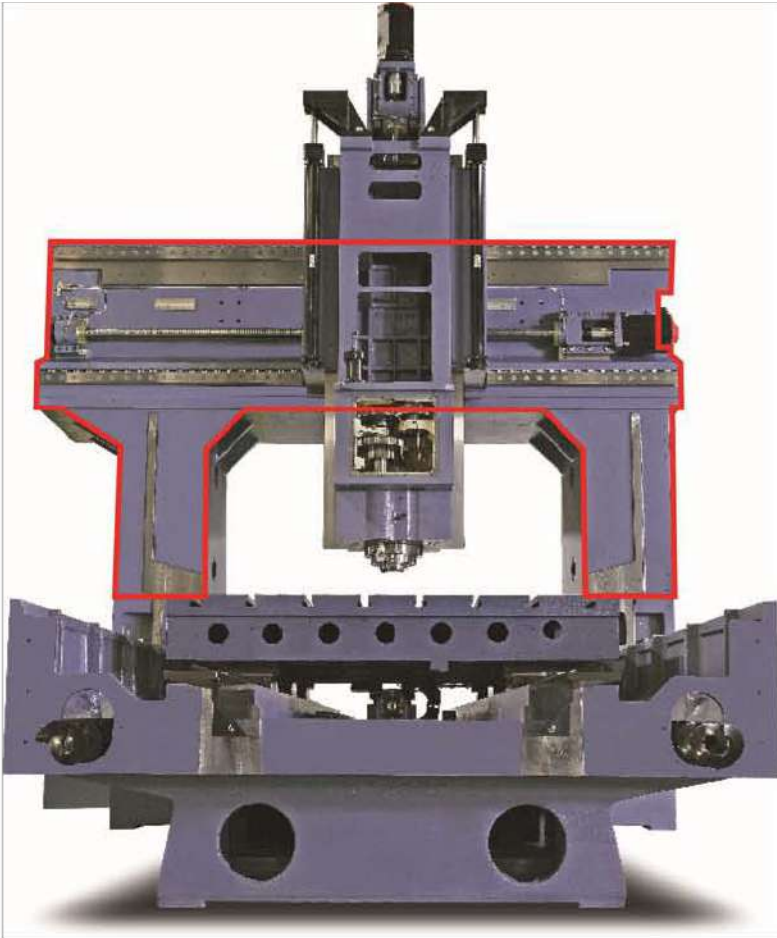
ATC Type	Twin Arm Type
Number of Tools	32
Tool Shank	CAT 50 BIG PLUS
Max. Tool Dia.	4.92" (125 MM)
Max. Tool Length	13.7" (350MM)
Max. Tool Weight	44 lbs. (20 KG)
Tool Selection Method	Random Bi-Directional
Tool Change Time TOOL-TOOL	3.5 sec
Tool Change Time CHIP-CHIP	7 sec

MOTION:

Rapid Traverse X, Y, Z	393.7 / 472.44 / 472.44ipm
Cutting feed rate	314.96 IPM
Slide Type	X Y Roller Guide, Box on Z
Least command increment	.001mm
Positioning accuracy	+/- .00020" (full stroke)
Repeatability	+/- .00008"

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.

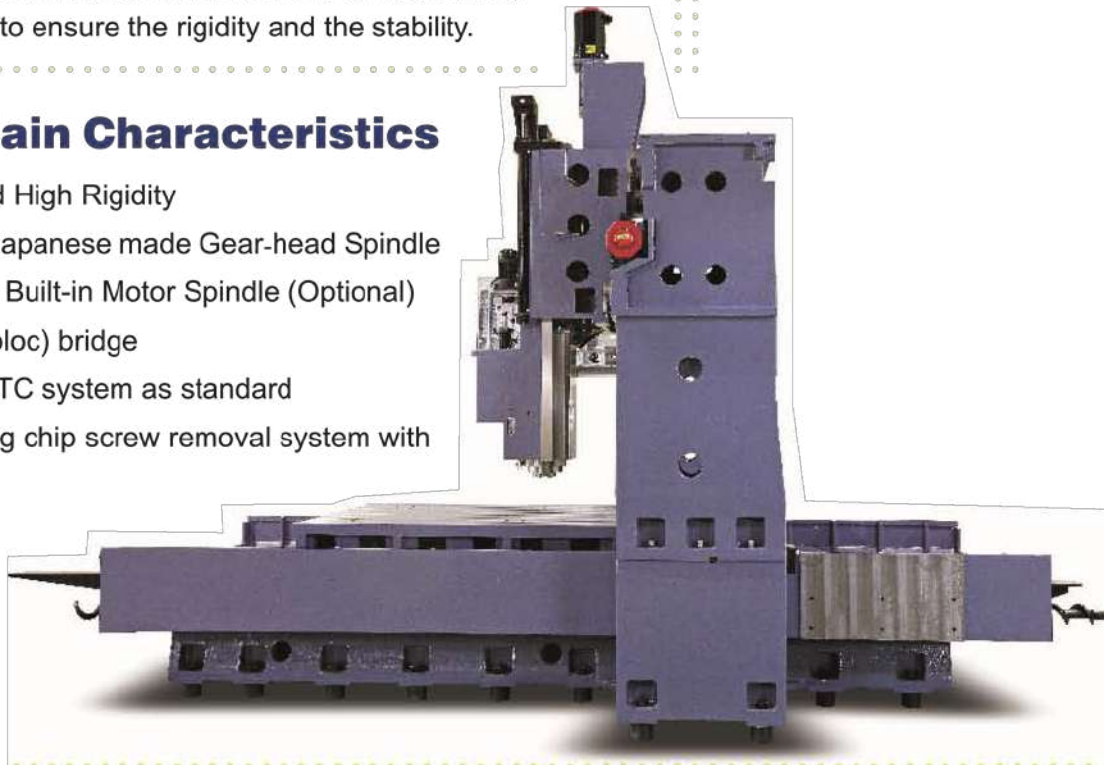
Automatic Tool Change Capacity



- 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



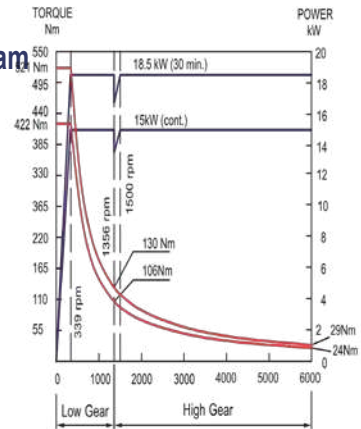
FANUC 25HP



High reliability and high power double column machine

- DT-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
- DT-50 34 HP 10,000 rpm built-in motor spindle for robust performance and unsurpassed reliability (Optional)

Spindle Diagram



Spindle System

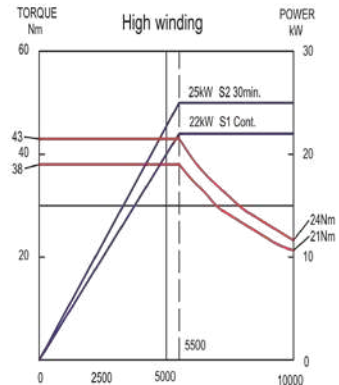
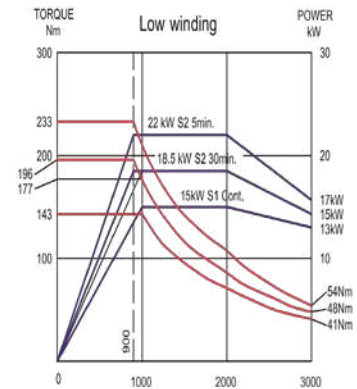
• 2-stage variable gear-head spindle

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

Buil-in Spindle Motor (Optional)



Optional Accessories

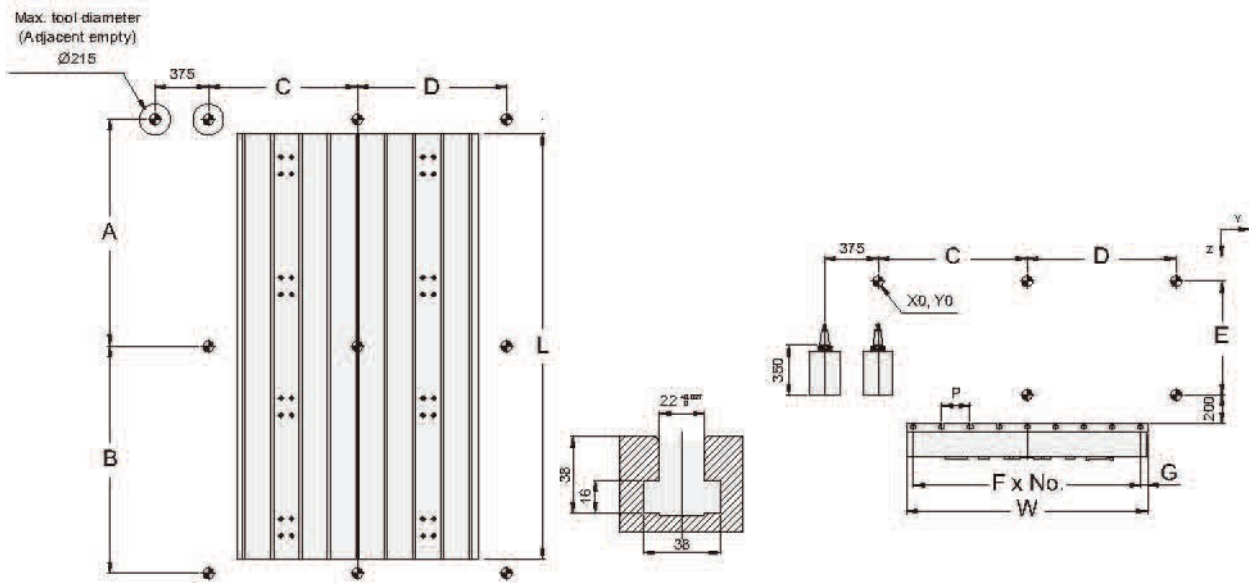


Hydraulic-clamped 90° Angular Milling Head with four positions at 0°, 90°, 180°, and 270°.

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



3,000 rpm manual Universal Milling Head



Unit: mm

Model	A	B	C	D	E	F	NO.	G	L	W
						(F x No.) + (G x 2) = W				
PV-2216	1,100	1,100	800	800	750	180	7	95	2,300	1,450
PV-3216	1,600	1,600	800	800	750	180	7	95	3,300	1,450
PV-4216	2,100	2,100	800	800	750	180	7	95	4,300	1,450
PV-3221	1,600	1,600	1,050	1,050	800(1,000)	200	8	50	3,000	1,700
PV-4221	2,100	2,100	1,050	1,050	800(1,000)	200	8	50	4,000	1,700
PV-5221	2,600	2,600	1,050	1,050	800(1,000)	200	8	50	5,000	1,700
PV-3226	1,600	1,600	1,300	1,300	800(1,000)	200	10	100	3,000	2,200
PV-4226	2,100	2,100	1,300	1,300	800(1,000)	200	10	100	4,000	2,200
PV-5226	2,600	2,600	1,300	1,300	800(1,000)	200	10	100	5,000	2,200
PV-4231	2,100	2,100	1,550	1,550	800(1,000)	200	13	50	4,000	2,700
PV-5231	2,600	2,600	1,550	1,550	800(1,000)	200	13	50	5,000	2,700

Control Specifications - Fanuc 0i-MF PLUS

10.4" Color LCD Screen

MANUAL GUIDE i

2 MB Program Storage Size

1000 Part Program Storage

AICC2+

Fine Surface Machining:

- 200 Block Look-Ahead
- Smooth Tolerance Control
- Jerk Control
- Machining Quality Level Adjustment

Machine Condition Selecting (Programmable, G05.1 R1-10 sets accuracy level)

USB Reader

RS-232 Interface

PCMCIA Memory Card

Embedded Ethernet

Back Ground Editing

Extended Part Program Editing (Copy, Move, Change of NC Program)

Set-up Guidance

Dynamic Graphic Display

Skip Signal

Multi-Step Skip Signal

Multi-language Display

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)

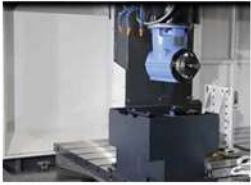

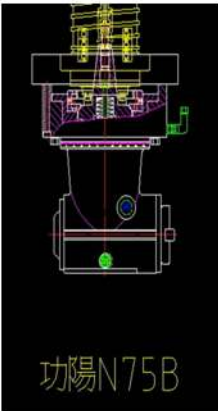
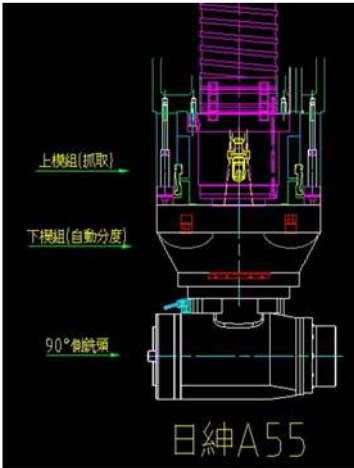
Dwell (G04)

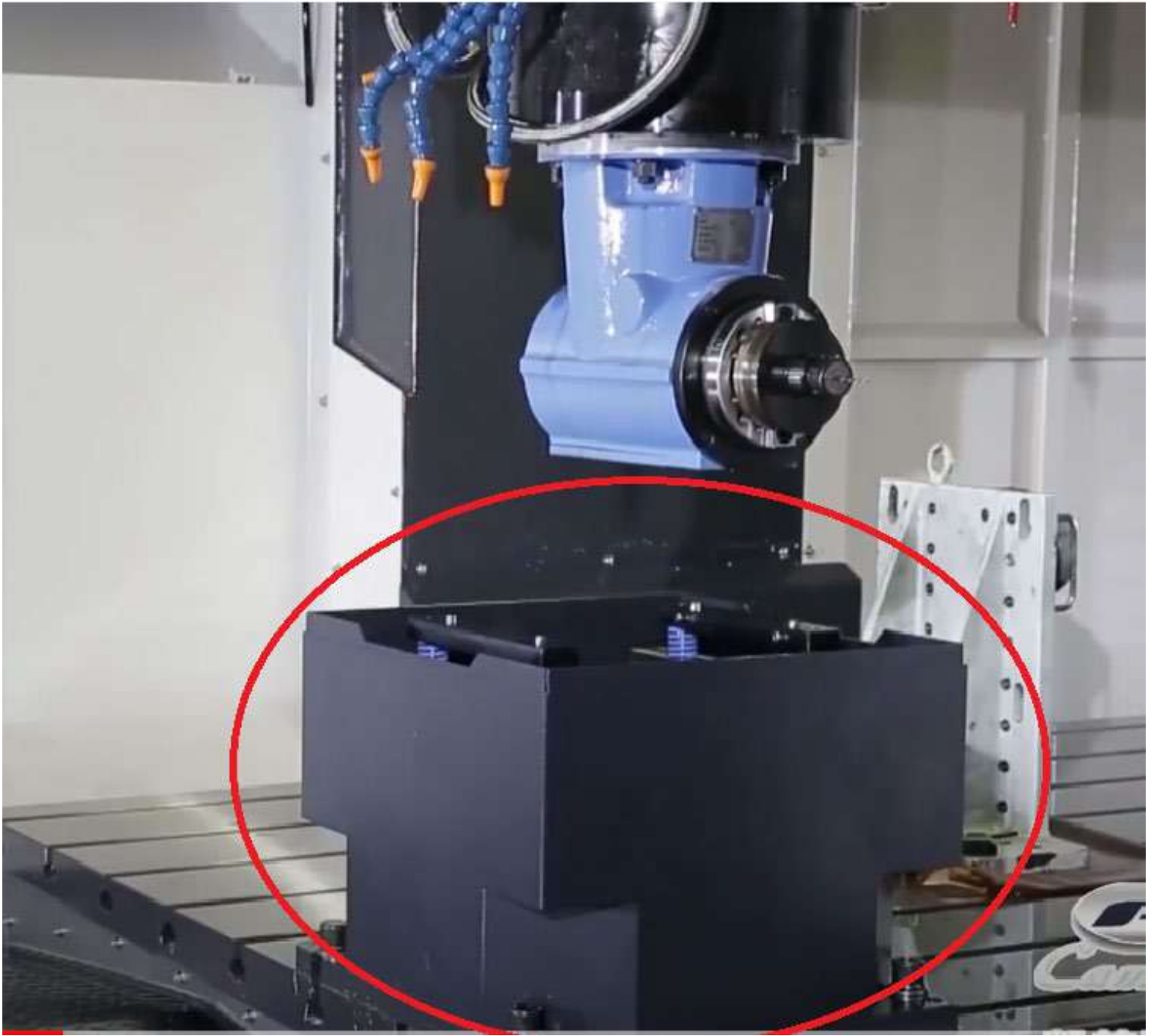
Control Specifications - Fanuc 0i-MF PLUS CONT'D:

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 program 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)
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
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
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 Feed Rate Display
Spindle / Servo Setting Screen

Control Specifications - Fanuc 0i-MF PLUS CONT'D:

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
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

ITEM	Semi- automatic 90 °milling head	Fully automatic 90 °degree milling head
		
The angle head Change way	Manual	Automatic
C-axis rotation mode	Automatic rotation angle (5 degrees divided)	Automatic rotation angle (5 degrees divided)
Additional Head Tool change	Manual locking and retracting	Automatic locking and retracting (oil pressure)(Hydraulic system)
Maximum speed of additional head	2000rpm	3500rpm
Spindle type (Interface seat can not be shared because of the length of the nose)	Gear type short nose spindle 6000rpm	Gear type long nose end spindle 6000rpm
	 <p>功陽N75B</p>	 <p>上模組(抓取) 下模組(自動分度) 90°旋轉頭</p> <p>日紳A55</p>



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