

**Series 0i -MD Mate CNC
STANDARD FEATURES**

Axis Control

Digital Servo Function	
1 Controlled Path	
Simultaneously controlled axes: Up to maximum of 3	
Serial Encoder Interface	
Axis Name	Selected from X,Y,Z and U,V,W,A,B,C
Spindle	One Spindle
Least input increment	0.001mm, 0.001deg, 0.0001inch
Increment system 1/10	0.0001mm, 0.0001deg, 0.00001inch
Flexible feed gear	Optional DMR
Fine Acc & Dec control	
Inch/metric conversion	
Interlock	All axes/each axis/each direction/block start/cutting block start
Machine lock	All axes/each axis
Emergency stop	
Overtravel	
Stored stroke check 1	
Stored stroke check 2,3	
Stroke limit external setting	
Mirror image	Each axis
Follow-up	
Servo off	
Backlash compensation	
Backlash compensation for each rapid traverse and cutting feed	
Stored pitch error compensation	
Position switch	

Operation

Automatic Data Backup (R641)	
Automatic operation (memory)	
DNC operation	Reader/puncher interface is required
MDI operation	
Schedule function	
Program number search	
Sequence number search	
Sequence number comparison and stop	
Program restart	
Retraction for rigid tapping	
Buffer register	
Dry run	
Single block	
JOG feed	
Manual reference position return	
Reference position setting without DOG	
Reference position setting with mechanical stopper	
Reference position shift	
Manual handle feed	Max. 3 units (requires MPG - order from IOetc Sheet)
Manual handle feed rate	x 1, x 10, x m, x n m: 0~127, n: 0~1000
Manual handle interruption	
Incremental feed	x 1, x 10, x 100, x 1000
Jog and handle simultaneous mode	

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Interpolation

Positioning	G00 (Linear interpolation type positioning is possible)
Single direction positioning	G60
Exact stop mode	G61
Exact stop	G09
Linear interpolation	
Circular interpolation	Multi-quadrant is possible
Dwell	Dwell in seconds Dwell per revolution (synchronous cutting function is required.)
Helical interpolation	Circular interpolation plus max. 2 axes linear interpolation
Skip	G31
Reference position return	G28
Reference position return check	G27
2nd reference position return	
3rd/4th reference position return	

Nano Interpolation

Feed Function

Rapid traverse rate	Max. 240m/min (1 μ m) Max. 100m/min (0.1 μ m)
Rapid Traverse Feedrate Override	preset value, 25%, 50%, 100% settings
Feed per minute	
Feed per revolution	
Tangential speed constant control	
Cutting feedrate clamp	
Automatic acceleration/deceleration	Rapid traverse: linear; Cutting feed: exponential
Rapid traverse bell-shaped acceleration/deceleration	
Linear acceleration/deceleration after cutting feed interpolation	
Feedrate override	0~254%
Jog override	0~655.34%
Override cancel	
Cutting mode	
Tapping mode	
Rapid traverse block overlap	
External deceleration	
AI advanced preview control	

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Programming

Tape code	EIA RS244/ISO840
Label skip	
Parity check	Horizontal and vertical parity
Control in/out	
Optional block skip	9 Levels
Max. programmable dimension	±8-digit
Program number	O4-digit
External memory and sub program calling function	
Sequence number	N5-digit
Absolute/incremental programming	Combined use in the same block
Decimal point programming / pocket calculator type decimal point programming	
Input unit 10 time multiply	
Plane selection	G17, G18, G19
Polar coordinate command	
Coordinate system setting	
Automatic coordinate system setting	
Workpiece coordinate system	G52~G59
Workpiece coordinate system preset	
Addition of workpiece coordinate 48 pairs	
Direct input of workpiece origin offset value measured	
Manual absolute on and off	
Optional chamfering/corner R	
Programmable data input	G10
Sub program call	4 folds nested
Custom macro	
Addition of custom macro common variables	#100~#199, #500~#999
Canned cycles for drilling	
Circular interpolation by R programming	
Automatic corner override	
Automatic corner deceleration	
Scaling	
Coordinate system rotation	
Programmable mirror image	

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Auxiliary and Spindle Functions

Auxiliary function	M8-digit
Auxiliary function lock	
High-speed M/S/T/B interface	
Multiple command of auxiliary function	3
Spindle speed function	S5-digit, binary output
Spindle serial output	S5-digit, serial output
Constant surface speed control	
Spindle override	0~254%
1st spindle orientation	
1st spindle output switching function	

Rigid tapping

Tool Functions and Tool Compensation

Tool Function	T8 digits
Tool offset pairs	±6 digits 400
Tool offset memory C	Distinction between geometry and wear, or between cutter and tool length compensation.
Tool length compensation	
Tool offset	
Tool life management	
Extended tool life management	
Tool length measurement	

Part Program Storage & Editing

Part Program Storage	512KB
Number of registerable programs	400
Part program editing	
Program protect	
Background editing	
Extended part program editing	
Password function	

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Display

- Status display
- Clock function
- Current position display
- Program comment display Program name 31 characters
- Parameter setting and display
- Self-diagnosis function
- Alarm display
- Alarm history display
- Operator message history display
- Operation history display
- Help function
- Run hour and parts count display
- Actual cutting feedrate display
- Directory display of floppy cassette
- Directory display and punch for each group
- Servo setting screen
- Display of hardware and software configuration
- Periodic maintenance screen
- Maintenance information screen
- Trouble diagnosis
- Software operator's panel

- English Language Display, Multiple Languages Selectable Sp,Chi,Por,Rus,Tur,Hindi
- Data protection key 4 types
- Erase CRT screen display

Data Input/Output and Communications

- I/O Link Interface
- Punch Panel with 2m Cable A02B-0236-C192 in LCD Mount
- Reader/Punch Interface 1 (RS-232)

- External data input: External tool offset External message External machine zero point shift
- External key input
- External program input
- External workpiece number search 9999
- Expanded external workpiece number search
- External program number search 1~9999
- Memory card input/output for maintenance

- Embedded Ethernet

Other

- | | | |
|-----------------------------------|--------------------------------------|-----------------------------|
| CD-ROM containing Product Manuals | included in the BOM of the Root CNC. | |
| 24V Power Cable | 44C741911-001 | CBL +24V M3 TERM-AMP 5M USA |
| Spare Fuses | A02B-0236-K100 | FUSE, CONTROL UNIT |
| Cable Clamps | A02B-0124-K001 | CABLE CLAMPS |
| Grounding Bar | 44B295864-001 | GROUNDING BAR 11 SLOT |
| Miscellaneous Solder Connectors | A02B-0120-K324 | CONNECTOR AND PINS |

Series 0i-MD Mate CNC

SERIES 0i-MD Mate PACKAGE CHOICES

0i-MD Mate requires at least Version 5.7 of FANUC Ladder III	Package A	<p>This Form assumes the use of HRV2. If HRV3 servo control is required, please complete this form as close as possible to your desired configuration, then e-mail the form and your requested changes to: cnc_express@fanucamerica.com</p> <p>CNC Express will modify the form per your request and return the form to you.</p> <p>Automatic Data Back-up, 3 Sets of Back-up Data, SRAM + PPS</p> <p>USB Memory Input/Output is available on LCD Mount Controls.</p>
	Basic Func Pkg 5 3 axes, up to 5 supported A02B-0321-B530 LCD Mount with 0 Slots A02B-0319-H174#M 200x400mm 8.4" Color LCD/MDI USB Port Embedded Ethernet	
	R641 Auto Data Backup PMC/L for 0i-D 5K Steps Approx 1280m PPS HRV3 servo control	
	PACKAGE DEPENDENT OPTIONS	
	PMC/L for 0i-D 8K Steps PMC/L for 0i-D 24K Steps	
Shading indicates restrictions, see Package Options for details		

**Series 0i -MD Mate CNC
ORDER FORM**

Series 0i-MD Mate CNC Express Package A 8.4" Color LCD Mount

Package A Options -

PMC/L for 0i-D 8K Steps (R002#8K)
PMC/L for 0i-D 24K Steps (R006#24K)

Options Compatible with All Packages

4th Axis Control (R419#4 & R689) - 3 axes simultaneously. Includes Rotary Axis Designation & Rollover.
5th Axis Control (R419#5)
Simultaneously Controlled Axes Expansion (J803). Number of Simultaneous Axes expanded to 4.
Analog Spindle Interface (serial spindle interface is standard). See Drives Tab for Position Encoder.
Axis Control by PMC (J804)
Manual Handle Interface using Beta I/O Link (S722)
Multi Language PMC Message 128K (S977#128K)
Dynamic Graphic Display (J973)
(enhanced tool path plotting, solid model display, preview cutting path)
Grinding Func A (S682)(incl's multi-step skip, grinding canned cycles, continuous dress, infeed control)
Grinding Func B (S683) incl's Angular Axis Control in addition to the features in Grinding Func A.
Multi-step skip (J849)

Manual Guide 0i

Manual Guide 0i (S772)

Macro Executor Related Options - require Development Tools. (See Tools Page)

Macro Executor (J888) Requires Custom SW size. System SW reserves 96KB.
Macro Executor & C-lang Executor (J734) Req's >= 2MB Custom SW. System SW reserves 700KB.
FANUC PICTURE Executor (R644) Requires >=3MB Custom SW size. System SW reserves 2MB.
Custom SW size 512KB. (J738#512K) (J888)
Custom SW size 4MB. (J738#4M)

Flash Card

Compact Flash Card Kit 128MB 0

I/O unit for 0i

I/O unit for 0i-D This is compatible with the DI/DO I/F of I/O card of Series 0i-B. DI/DO : 96/64 pts.
See the IOetc page for the available I/O Link signal cables.

Analog Servo Interface

Analog Servo Interface for 3 axes Incl's Analog Inf Modules, Ribbon cbl, Conn's & Fuse - Req F/O cbl.
Analog Servo Interface for 4th axis Includes Connectors.
Analog Servo Inf for 5th axis Incl's Analog Inf Module, Conn's & Fuse - Req F/O cbl on 230V Drives
Required Fiber Optic Command Cable is ordered on the 230V Drives tab.
Enter Analog Quote Number: _____ See Sales Engineer for Quote Number.

Product Manuals

Series 0i-D, 0i-D Mate Description Manual,	B-64302EN	0
Series 0i-D, 0i-D Mate Conn H/W Manual,	B-64303EN	0
Series 0i-D, 0i-D Mate Conn Func Manual,	B-64303EN-1	0
Series 0i-D, 0i-D Mate Maintenance Manual *	B-64305EN	0
Series 0i-D, 0i-D Mate Parameter Manual *	B-64310EN	0
Series 0i-MD Mate Operator's Manuals *, Common and M specific,	B-64304EN & -2	0

*This Manual is NOT included on any CD. A complimentary copy is shipped with the CNC.
Extra hard-copy manuals, if required, may be ordered here.*

Series 0i-D Operation & Maintenance Handbook, B-64307EN 0

Check here if no I/O is needed.

Check here if I/O has already been purchased