

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

Axis Control

Digital Servo Function	
1 Controlled Path	
Simultaneously controlled axes: Up to maximum of 4; 3 if Contouring Spindle Configured	
PMC Axis Control	
Simple synchronous control	
Tandem control	
Serial Encoder Interface	
Axis Name	Selected from X,Y,Z and U,V,W,A,B,C
Spindle	Up to two Spindles
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	
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	
Unexpected disturbance torque detection function	

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	
Manual intervention and return	
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 <i>(requires MPG - order from IOetc Sheet)</i>
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.)
Cylindrical interpolation	
Helical interpolation	Circular interpolation plus max. 2 axes linear interpolation
Skip	G31
High-speed skip	Input signal is 1 point
Reference position return	G28
Reference position return check	G27
2nd reference position return	
3rd/4th reference position return	
Normal direction control	
Index table indexing	
General purpose retract	
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%
One-digit F code feed	
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
Rotary axis designation	
Rotary axis roll-over	
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 B	
Addition of custom macro common variables	#100~#199, #500~#999
Pattern data input	
Interruption type custom macro	
Canned cycles for drilling	
Small-hole peck drilling cycle	
Circular interpolation by R programming	
Automatic corner override	
Automatic corner deceleration	
Feedrate clamp based on arc radius	
Scaling	
Coordinate system rotation	
Programmable mirror image	
Tape format for FANUC Series 10/11	

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Auxiliary and Spindle Functions

Auxiliary function	M8-digit
2nd auxiliary function	B8-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	
2nd spindle orientation	
2nd spindle output switching function	
Spindle synchronous control	
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	
Cutter compensation C	
Tool life management	
Extended tool life management	
Tool length measurement	
Automatic 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	
Playback	
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	
Software operator's panel general purpose switch	
English Language Display, Multiple Languages Selectable	Jap, Ger, Fr, Sp, It, Chi, Kor, Por, Dut, Swe, Hun, Cz, Pol, Rus, Tur
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, A02B-0120-C192 in Stand Alone.	
Reader/Punch Interface 1 (RS-232)		2nd Channel may be activated	
External I/O device control			
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	
Power Mate CNC manager			
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, LCD Mount CNC	A02B-0319-K100	FUSE, Stand Alone CNC
Cable Clamps		A02B-0124-K001	CABLE CLAMPS
Grounding Bar		44B295864-001	GROUNDING BAR 11 SLOT
Miscellaneous Items:	A02B-0319-K191 Screw Caps for LCD Mount.	A02B-0120-K324	CONNECTOR AND PINS

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SERIES 0i-MD PACKAGE CHOICES

0i-MD requires at least Version 5.7 of FANUC Ladder III	Package A	Package B	<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>
	Basic Func Pkg 1 4 Axes, up to 7 supported A02B-0319-B502 LCD Mount with 2 Slots A02B-0319-H160 220x290mm 10.4" Color LCD A02B-0319-C125 Horizontal MDI 220x230mm Embedded Ethernet	Basic Func Pkg 1 4 Axes, up to 7 supported A02B-0319-B802 Stand Alone 2 Slots No LCD Available R641 Auto Data Backup HSSB 10m F/O cable J800 Drivers & Libraries Embedded Ethernet	
	R641 Auto Data Backup PMC for 0i-D 24K Steps Approx 1280m PPS HRV3 servo control	K775 Screen Disp Disk PMC for 0i-D 24K Steps Approx 1280m PPS HRV3 servo control	Automatic Data Back-up, 3 Sets of Back-up Data, SRAM + PPS USB Memory I/O is available on LCD Mount CNCs.
	PACKAGE DEPENDENT OPTIONS		
	AI Contour Control AI Contour Control II Manual Guide <i>i</i> I/O Link 2nd Channel I/O Link 3rd Channel Dual Check Safety PMC for 0i-D 32K Steps Approx 5120m PPS	AI Contour Control AI Contour Control II Manual Guide <i>i</i> I/O Link 2nd Channel I/O Link 3rd Channel Dual Check Safety PMC for 0i-D 32K Steps Approx 5120m PPS	
Shading indicates restrictions, see Package Options for details			

Basic Function Package 1 is the full featured 0i-MD version, containing the largest PMC steps and PPS.

Series 0i-MD CNC

ORDER FORM

<input type="checkbox"/>	Series 0i-MD CNC Express Package A	10.4" Color LCD Mount	Must choose only one.	Pick One
<input type="checkbox"/>	Series 0i-MD CNC Express Package B	2 Slot Stand Alone w/ HSSB connection.		Pick One
Package A MDI Options				
<input type="checkbox"/>	Separate Type MDI (Standard key) (Vertical)	A02B-0319-C126 or equivalent		
Package A or B Options				
<input type="checkbox"/>	Manual Guide i (S790) (includes Manuals) Cannot order J973, S772			
<input type="checkbox"/>	AI Contour Control (J665)			
<input type="checkbox"/>	AI Contour Control II (S808)			
<input type="checkbox"/>	Jerk Control (S678)		Requires AI Contour Control II	
<input type="checkbox"/>	Nano Smoothing (S687)		Requires AI Contour Control II	
<input type="checkbox"/>	Bell-Shaped Acc/Dec Before Interpolation (J977)		Requires AI Contour Control or AICC II	
<input type="checkbox"/>	Machining Condition Selecting Function (S637)			
<input type="checkbox"/>	I/O Link expansion 2nd Channel (S981) w/ A20B-1007-0680 and 1m cable.			
<input type="checkbox"/>	Dual Check Safety (S661) Req's I/O 3rd Channel (S985) or PROFIBUS Master. No Analog Spindle.			
<input type="checkbox"/>	I/O Link expansion 3rd Channel (S985) w/ A20B-1008-0360 and 1m cable. Req's (S661)			
<input type="checkbox"/>	I/O Link expansion 2nd Channel (S981) for use with (S985).			
<input type="checkbox"/>	PMC for 0i-D 32K Steps (R006#32K)			
<input type="checkbox"/>	Part Program Storage Size 2MB (J948) Approximately 5120m			

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Package A or B Options - Continued.

<input type="checkbox"/>	5th Axis Control - Only four axes can be controlled simultaneously. If using HRV3, 2 FSSB Links for CNC to Servo Amps are required. Without HRV3, all axes are on one FSSB link.	
<input type="checkbox"/>	6th Axis Control - includes Controllable Axes Expansion (R689)	
<input type="checkbox"/>	7th Axis Control - changes to A4 Axis Card	
<input type="checkbox"/>	Analog Spindle Interface (serial spindle interface is standard)	
<input type="checkbox"/>	See Drives Tab for Spindle Separately Mounted Position Encoder.	
<input type="checkbox"/>	Dual Position Feedback (J704)	
<input type="checkbox"/>	Linear Scale I/F w/ absolute address reference mark (J670). Requires Separate Detector I/F.	
<input type="checkbox"/>	Bi-Directional Pitch Error Compensation (S656)	
<input type="checkbox"/>	Retrace (J730)	
<input type="checkbox"/>	Manual Handle Retrace (J998)	
<input type="checkbox"/>	Manual Handle Interface using Beta I/O Link (S722)	
<input type="checkbox"/>	Extended PMC ladder instruction function (R851)	
<input type="checkbox"/>	Function Block function (R852)	
<input type="checkbox"/>	Multi Language PMC Message 128K (S977#128K)	
<input type="checkbox"/>	Dynamic Graphic Display (J973) Not with Manual Guide i. (enhanced tool path plotting, solid model display, preview cutting path)	
<input type="checkbox"/>	Grinding Func A (S682)(incl's multi-step skip,grinding canned cycles,continuous dress,infeed control)	
<input type="checkbox"/>	Grinding Func B (S683) incl's Angular Axis Control in addition to the features in Grinding Func A.	
<input type="checkbox"/>	Multi-step skip (J849)	

Option Boards

<input type="checkbox"/>	PROFIBUS DP Master	Includes PROFIBUS DP Master Board	<i>uses one option slot</i>
<input type="checkbox"/>	PROFIBUS DP Slave	Includes PROFIBUS DP Slave Board	<i>uses one option slot</i>
<input type="checkbox"/>	Ethernet without Data Server (Uses FOCAS2 Protocol)		<i>uses one option slot</i>
<input type="checkbox"/>	Data Server Function (req's ATA Flash Card) (Uses FTP for data transfer)		<i>uses one option slot</i>
<input type="checkbox"/>	Compact Flash Card Kit 1GB for use with Data Server		0
<input type="checkbox"/>	Data Server Editing/Operation (R643) Provides Operation similar to 3xi Family CNC's		
<input type="checkbox"/>	Ethernet (Requires Data Server Function) (Uses FOCAS2 Protocol)		

Ethernet or HSSB Options

<input type="checkbox"/>	Basic Operation Package (BOP2) Function (J814) Requires Pkg B or Ethernet	
<input type="checkbox"/>	Dual CNC Screen Disp (S884) (CNC Screen Disp and Enlarged Screen Disp 1024x768, are Basic.)	
<input type="checkbox"/>	K776 Disk for CNC Screen Display - Ethernet. Req'd for CNC Screen Disp or Dual CNC Screen Disp.	
<input type="checkbox"/>	Machining Status Monitor Package Function (J870)	
<input type="checkbox"/>	Application Disk for Ethernet (A02B-0207-K783)	
<input type="checkbox"/>	Application Disk for HSSB (A02B-0207-K781)	
<input type="checkbox"/>	Ladder Edit Package Function (J820)	

Manual Guide 0i

<input type="checkbox"/>	Manual Guide 0i (S772) Not available with Manual Guide i.	
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Macro Executor Related Options - require Development Tools. (See Tools Page)

<input type="checkbox"/>	Macro Executor (J888) Requires Custom SW size. System SW reserves 96KB.	Choose Only One.
<input type="checkbox"/>	Macro Executor & C-lang Executor (J734) Req's >= 2MB Custom SW. System SW reserves 700KB.	
<input type="checkbox"/>	FANUC Picture Executor (R644) Req's >= J738#4M. Sys SW reserves 2MB.	Available w/ J888/J734.
<input type="checkbox"/>	Custom SW size 512KB. (J738#512K)	
<input type="checkbox"/>	Custom SW size 2MB. (J738#2M)	Choose the appropriate Custom SW size to support the ordered Macro Executor.
<input type="checkbox"/>	Custom SW size 4MB. (J738#4M)	
<input type="checkbox"/>	Custom SW size 6MB. (J738#6M)	

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Parallel Axis Tracking

<input type="checkbox"/>	Parallel Axis Tracking (S895) is the tracking of the W/Z Zero position when W and Z axis are parallel axes. Activated by G-Code. Applicable to popular Horizontal Boring Machines. Requires J888, J738#512K & at least 4 axes. Includes DVD and Manual.		
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<input type="checkbox"/>	i AdaptS	Check to override required DVD.	
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<input type="checkbox"/>	<i>i</i> AdaptS (S898) maintains a constant load during part processing by modifying the feedrate override. This allows for the fastest possible cycle time based on the condition of the tool, part geometry and material variation. By maintaining the manufacturer's recommended load on the tool, tool life can also be extended. <i>i</i> AdaptS works on the first serial spindle in the first path only. Req's J738#2M,J734.		
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<input type="checkbox"/>	<i>i</i> AdaptS S/W DVD D75F-0102-PB00	Each MTB/Retrofitter must purchase a DVD once.	
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Flash Card

<input type="checkbox"/>	Compact Flash Card Kit 128MB	0	
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I/O unit for 0i

<input type="checkbox"/>	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.		
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Analog Servo Interface

<input type="checkbox"/>	Analog Servo Inf for 1 axis	Includes Analog Inf Module, Connectors & Fuse - Req's F/O cmd cbl.	
<input type="checkbox"/>	Analog Servo Interface for 2 axes	Includes Connectors.	
<input type="checkbox"/>	Analog Servo Interface for 3 axes	Includes Analog Inf Module, Ribbon Cbl & Connectors	
<input type="checkbox"/>	Analog Servo Interface for 4 axes	Includes Connectors.	
<input type="checkbox"/>	Analog Servo Inf for 5 axes	Includes Analog Inf Module, Connectors & Fuse - Req's F/O cmd cbl.	
<input type="checkbox"/>	Analog Servo Interface for 6 axes	Includes Connectors.	
<input type="checkbox"/>	Analog Servo Interface for 7 axes	Includes Analog Inf Module, Ribbon Cbl & Connectors	

Required Fiber Optic Command Cable is ordered on the 230V Drives tab.

Enter Analog Quote Number: _____ See Sales Engineer for Quote Number.

Product Manuals

<input type="checkbox"/>	Series 0i-D, 0i-D Mate Description Manual,	B-64302EN	0	
<input type="checkbox"/>	Series 0i-D, 0i-D Mate Conn H/W Manual,	B-64303EN	0	
<input type="checkbox"/>	Series 0i-D, 0i-D Mate Conn Func Manual,	B-64303EN-1	0	
<input type="checkbox"/>	Series 0i-D, 0i-D Mate Maintenance Manual *,	B-64305EN	0	
<input type="checkbox"/>	Series 0i-D, 0i-D Mate Parameter Manual *	B-64310EN	0	
<input type="checkbox"/>	Series 0i-MD Mate Operator's Manuals *, Common and MD specific,	B-64304EN & -2	0	
<input type="checkbox"/>	Oper Manual - Fast Ethernet/Data Server,	B-64414EN	0	
<input type="checkbox"/>	Manual Guide i Operator's Manuals & Setup Guide,	B-63874EN, -1 & -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.

<input type="checkbox"/>	Series 0i-D Operation & Maintenance Handbook, B-64307EN	0	
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Check here if no I/O is needed.

<input type="checkbox"/>	Check here if I/O has already been purchased		
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