

Series 35i -B CNC
STANDARD FEATURES

Axis Control

Digital Servo Function
1 Controlled Path
Serial Encoder Interface
Axis Names Selected from X,Y,Z,U,V,W,A,B,C
Least Input Increment of 0.001mm, 0.0001", 0.001deg
Interlock per Axis
Machine Lock
Emergency Stop
Overtravel Signal
Stored Stroke Check 1
Follow-up Function
Servo Off
Mechanical Handle Feed
Backlash Compensation
Axis Control by PMC (in Basic Option 1)

Operation

Automatic Operation
DNC Operation
MDI Operation
Program Number Search
Sequence Number Search
Buffer Register
Dry Run Mode
Single Block Mode
Manual Feed Mode (Jog)
Manual Reference Point Return
Manual Handle Feed *(requires MPG)*
Incremental Feed

Interpolation

Positioning (G00)
Linear Interpolation
Circular Interpolation
Dwell (G04)

Skip Function (G31)
Torque-limit Skip
Automatic Reference Point Return (G28)
Reference Point Return Check (G27)
2nd Reference Point Return

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Feed Function

Rapid Traverse Feedrate 240m/min (100m/min @0.0001mm increment)
Rapid Traverse Feedrate Override (preset value, 25%, 50%, 100% settings)
Feed per Minute
Feed per Revolution
Tangential Speed Control
Cutting Feedrate Clamp
Automatic Acceleration/Deceleration (Rapid Traverse: Linear; Cutting Feed: Linear or Exponential)
Rapid Traverse Bell-Shaped Acceleration/Deceleration
Feedrate Override 0-254%
Jog Override 0-655.34 %
Override Cancel

Programming

EIA/ISO Automatic Identification
Label Skip
Parity Check
Control In/Out
Optional Block Skip
Maximum Programmable Value - 9 digits
Program File Name - 32 Characters
Sequence Number - N with 8 digits
Absolute or Incremental Command
Programmable Data Input (G10)
Decimal Point Input

Plane Selection (G17, G18, G19)
Rotary Axis Setting
Rotary Axis Rollover
Coordinate System Setting (G50)
Automatic Coordinate System Setting

Manual Absolute On/Off

Subprogram Calling

Specifying the Radius of an Arc

Auxiliary and Spindle Functions

Miscellaneous Function - M with 8 digits
Miscellaneous Function Lock
High Speed M/S/T Interface
Multiple Commands of Miscellaneous Functions (up to 5)
Spindle Function - S with 5 digits

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Tool Functions and Tool Compensation

Tool Function - T8 Digit
32 Tool Offsets

Part Program Storage & Editing

32Kbytes Part Program Storage
63 Stored Part Programs
Part Program Editing
Part Program Protection

Extended Part Program Editing

Display

Status Display
Clock Function
Current Position Display
Program Display
Parameter Setting Display
Self Diagnosis
Alarm Display
Alarm History Display
Help Function
Run Time/Part Count Display
Actual Cutting Speed Display
Actual Spindle Speed/T Code Display
Servo Adjustment Screen
System Configuration Display
English Language
Data Protection Key

Data Input/Output and Communications

I/O Link or I/O Link i Interface
Punch Panel with 2m Cable A02B-0236-C192 in LCD Mount, A02B-0120-C192 in Stand Alone.
Reader/Punch Interface (RS-232)
External Workpiece Number Search

Status Output Signal

Other

CD-ROM containing Product Manuals	included in the BOM of the Root CNC		
Operation and Maintenance Handbook	B-64527EN	FS35i-Model B Oper and Maint Handbook	
Miscellaneous Conn:	Qty 2 A02B-0120-K301	HONDA CONNECTOR	
	Qty 1 each A02B-0120-K323 & A02B-0120-K324	CONNECTOR AND PINS	
Spare Fuses	A02B-0236-K100 LCD	or	A02B-0265-K100 Stand Alone
Cable Clamps	A02B-0303-K001	8 CABLE CLAMPS	
Grounding Bar	44B295864-001	GROUNDING BAR 11 SLOT	

Series 35i -B CNC

SERIES 35i-B PACKAGE CHOICES

Package A	Package B	
1 Axis 2 Slot Rack LCD Mount Embedded Ethernet 10.4" LCD A Color PMC 24K Steps Basic Option 1 (R702) Axis Card B11 CPU Card A2 Basic Function G601 Sep Vert Type MDI	1 Axis 2 Slot Stand Alone HSSB Embedded Ethernet PMC 24K Steps Basic Option 1 (R702) Axis Card B11 CPU Card A2 Basic Function G601	<p>This Form assumes the use of HRV2. If HRV3 or additional servo motors are 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>G601 => Supports 4 Paths, up to 8 axes and 4 spindles. => A02B-0323-C128 or equivalent</p>
PACKAGE DEPENDENT OPTIONS		
PROFIBUS DP Master PROFIBUS DP Slave HSSB Fast Ethernet	PROFIBUS DP Master PROFIBUS DP Slave HSSB Fast Ethernet Remove HSSB 10.4" LCD A Color Tch 15.0" LCD Col w/ Tch CNC HSSB Card Sep MDI	Automatic Data Back-up, 3 Sets of Back-up Data, SRAM + PPS USB Memory I/O is available on LCD Mount CNCs & the LCD for S.A.
<p>Basic Option 1 contains the following: PMC function, PMC Ladder function 24,000 step, Axis control by PMC, Manual handle feed 1-unit, Custom macro, Addition of custom macro common variables, RS232C interface (for 1ch), Multi-language display Japanese</p> <p style="text-align: center;">shading indicates restrictions, see Package Options for details</p>		

**Series 35i -B CNC
ORDER FORM**

Series 35i-B CNC Express Package A - 10.4" LCD Mount w/o Touch Screen	Pick One
Series 35i-B CNC Express Package B - 2 Slot Stand Alone	Pick One
Package A Options	
PROFIBUS DP Master Board (J311, S731, J562#6552) Choose no more than two	
PROFIBUS DP Slave Board (J313, S732, J563#655C) Option Boards	
PROFIBUS APPLICATION SOFTWARE, J535#655B, required for all PROFIBUS	
HSSB Board (High Speed Serial Bus) (J202) (includes Extended D/L Function, 10m F/O cbl)	
1st Fast Ethernet Board (J147) Requires Communication Option Below:	
Fast Ethernet Function (S707) (Uses FOCAS Protocol)	
Ethernet/IP Adapter Function (R967)	
Ethernet/IP Scanner Function (R966)	
2nd Fast Ethernet Board (J147) (Additional Ethernet Port) Requires 2 of 3 (S707,R966,R967).	
Package B Options	
PROFIBUS DP Master Board (J311, S731, J562#6552) Choose no more than two	
PROFIBUS DP Slave Board (J313, S732, J563#655C) Option Boards	
PROFIBUS APPLICATION SOFTWARE, J535#655B, required for all PROFIBUS	
1st Fast Ethernet Board (J147) Requires Communication Option Below:	
Fast Ethernet Function (S707) (Uses FOCAS Protocol)	
Ethernet/IP Adapter Function (R967)	
Ethernet/IP Scanner Function (R966)	
2nd Fast Ethernet Board (J147) (Additional Ethernet Port) Requires 2 of 3 (S707,R966,R967).	
Do not use HSSB from Package B. (Removes A02B-0207-J900). For LCD or Ethernet Display.	
10.4" LCD A Color w/ Tch Scrn (C084)(290x220mm), R708, Pen & 10m F/O cbl, A02B-0120-K323, A02B-0120-K324, A02B-0319-K191	R708 is Touch Panel Control & FANUC Picture Function Order MDI Below
15.0" LCD Color w/ Tch Scrn (C092)(400x320mm), R708, Pen & 10m F/O cbl, A02B-0120-K323, A02B-0120-K324	
CNC Side HSSB Board (incl's A02B-0207-J900, 10m F/O cbl) Requires one Option Slot	
Without Standard CNC Display Unit - HSSB (J389) to Panel i or PC side HSSB, 10m F/O cbl.	
Without Standard CNC Display Unit - Embedded Ethernet (J390) connects to iPendant only	
Ethernet Display Function (R950 & J573#658N) Embedded Ethernet to PC, not for iPendant	
Sep Type MDI (Vert PC Type) (QWERTY) (290x160mm) A02B-0323-C128 or equivalent	
Sep Type MDI (QWERTY Type B)(400x145mm) No 10.4" LCD A02B-0303-C129 or equivalent	
Sep Type MDI (ONG Type) (Vertical) (290x220mm) A02B-0323-C126#M or equivalent	
Sep Type MDI (ONG Type) (Horizontal) (230x220mm) A02B-0323-C125#M or equivalent	
High Speed Serial Bus (HSSB) includes: Extended D/L Function J900 & 10m F/O Cable	

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The following options may be ordered for Package A

Basic Function		0
G611 Basic S/W for up to 4 paths, 16 controlled axes, 16 per path, and 4 spindles, 4 per path		
Number of Paths		
Two Control Paths	Minimum of 2 axes	
Three Control Paths	Minimum of 3 axes	
Four Control Paths	Minimum of 4 axes	
Axis Control: up to 16 axes and 4 spindles are possible.		
2nd Axis		
3rd Axis		
4th Axis		
5th Axis		
6th Axis		
7th Axis changes to B12 Servo Card, 1 FSSB Servo Line		
8th Axis		
9th Axis, requires G611 Basic Function		
10th Axis		
11th Axis		
12th Axis		
13th Axis changes to B13 Servo Card, 1 FSSB Servo Line		
14th Axis		
15th Axis		
16th Axis		
Number of Serial Spindles (default is one). >1 Spindle per path requires Multi Spindle Control.		
1 Spindle, includes Serial Spindle (A02B-0333-J850).		
2 Spindles		
3 Spindles		
4 Spindles		
Multi Spindle Control. Required if more than one spindle is used per path.		
Analog Spindle Control - only 1 allowed.		
1 Analog Spindle (J860)		
Basic Option		
Basic Option 2 (R703) replaces Basic Option 1 (R702)		
BASIC OPTION 2 includes the following:		
"BASIC OPTION 1", "Control axis detach", "Increment system C, 0.0001mm, 0.0001 deg, 0.00001 inch", "Inch/metric conversion", "Stroke limit external setting", "Position switch", "Reference point setting with mechanical stopper", "Handle interruption, Synchronous cutting", "Multi-step skip", "3rd/4th reference position return", "Bell-shaped acceleration/deceleration after cutting feed interpolation", "Stored pitch error compensation", "Optional block skip", "External data input (total 9)", "Tool offset pairs 99-pairs", "Run hour and parts count display", "Software operator's panel", "Software operator's panel general purpose switch", "Playback", "Multi part program editing", "RS232C interface 2", "External control of I/O device", "Pattern Data Input", "Rate feed", "Feed stop"		

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Axis Control Options

<input type="checkbox"/>	Simultaneously Controlled Axes Expansion (Max. 4 Axes per Path) (J803)	
<input type="checkbox"/>	Axis Synchronous Control (up to 8 pairs axes) (J843)	
<input type="checkbox"/>	Dual Position Feedback (J704)	
<input type="checkbox"/>	Stored Stroke Check 2/3 (J840)	
<input type="checkbox"/>	Straightness Compensation (J747) (4 points)	

Operation

<input type="checkbox"/>	Manual Handle Feed 2/3 Units (J836)	
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Interpolation

<input type="checkbox"/>	Polar Coordinate Interpolation (J815)	
<input type="checkbox"/>	Helical Interpolation (J819)	<i>(requires 3rd Axis)</i>
<input type="checkbox"/>	High Speed Skip (J848)	
<input type="checkbox"/>	Linear Scale I/F w/ absolute address reference mark (J670). Requires Separate Detector I/F.	
<input type="checkbox"/>	Unexpected Disturbance Torque Detection Function (J718)	
<input type="checkbox"/>	High Speed Position Switch for S35i (R704)	
<input type="checkbox"/>	Positioning by optimum acceleration (J693)	
<input type="checkbox"/>	External Deceleration (J842)	
<input type="checkbox"/>	Feed Rate Change Function (R716)	
<input type="checkbox"/>	Advanced Preview Control (R678)	
<input type="checkbox"/>	Programmable Rapid Traverse Overlap (R502)	
<input type="checkbox"/>	PMC Axis Control Acceleration/Deceleration Specification Feed (R640)	

Programming

<input type="checkbox"/>	Workpiece Coordinate System (G52-G59) (J894)	
<input type="checkbox"/>	Interrupt for Custom Macro (J874)	
<input type="checkbox"/>	Canned Cycles for Drilling (J890)	
<input type="checkbox"/>	Coordinate System Rotation (J893)	
<input type="checkbox"/>	Macro Executor (R705), includes 512K Custom S/W, 96K reserved for system s/w.	
<input type="checkbox"/>	Macro Executor + C-Lang Executor (R706), incl's Custom SW 2MB, Sys SW reserves 700K.	
<input type="checkbox"/>		FANUC Picture is
<input type="checkbox"/>	FANUC PICTURE Executor (R644) 2M Reserved for System S/W.	available w/ R705/R706.
<input type="checkbox"/>	Custom Software Size 2MB (J738#2M)	<i><= Not with R706/R644.</i>
<input type="checkbox"/>	Custom Software Size 4MB (J738#4M)	Choose only one Custom Software Size.
<input type="checkbox"/>	Custom Software Size 6MB (J738#6M)	
<input type="checkbox"/>	Custom Software Size 8MB (J738#8M)	
<input type="checkbox"/>	Custom Software Size 12MB (J738#12M)	<i><= Not with R644.</i>

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PMC Options

PMC with 32K Steps (H990#32K)		
PMC with 64K Steps (H990#64K)		
PMC with 100K Steps (H990#100K)	24,000 Steps Standard, choose only One upgrade.	
PMC with 300K Steps (H990#300K)		
Multi-path PMC function (3 paths) (R855#3)	One PMC Path Standard.	
Multi-path PMC function (5 paths) (R855#5)	Choose only one	
PMC symbol, comment, and message capacity expansion (512KB) (R856#512K)		
PMC symbol, comment, and message capacity expansion (1MB) (R856#1M)		
PMC symbol, comment, and message capacity expansion (2MB) (R856#2M)	Only one	
Function Block Function (R852)		
Nonvolatile PMC extra relay func(S984#10K) to change (E address area) to nonvolatile mem.		
Nonvolatile PMC data table area expansion (40KB) (S967#40K)		
Nonvolatile Memory Expansion 64K (J993#64K)	Choose only one	
Nonvolatile Memory Expansion 256K (J993#256K)		
I/O Link expansion 2nd Channel w/ A20B-1007-0680 and 1m cable.		
I/O Link expansion 2nd/3rd Channel w/ A20B-1008-0360 and 1m cable.		
Dual Check Safety (S661) Req's I/O Link i,I/O Link 3rd Channel or PROFIBUS Master.		1
I/O Link i will be used for Dual Check Safety.		Check here:

Auxiliary and Spindle Functions

1st Spindle Orientation (J853) (Applies to 1st Spindle per Path)	<i>(req's Serial Spindle)</i>	
Actual Spindle Speed Output (J856)	<i>(requires Spindle Encoder)</i>	
2nd Miscellaneous Function (B8-digit binary) (J920)		
Rigid Tapping for 35i (R707)	<i>(requires Canned Cycles (J890))</i>	
See Drives Tab for Spindle Separately Mounted Position Encoder.		

Tool Functions and Tool Compensation

200 Tool Offset Pairs (J927)	Assignable by parameter per path.	
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Part Program Storage & Editing Total PPS in the system, available to all paths.

64KB Part Program Storage (J943) (Approx 160m)		
128KB Part Program Storage (J944) (Approx 320m)		
256KB Part Program Storage (J945) (Approx 640m)	Choose only one	
512KB Part Program Storage (J946) (Approx 1280m)		
1MB Part Program Storage + 1000 Stored Part Programs (J947) (J953) (Approx 2560m)		
MDI Reset Key Invalidation Function (R549)		
Protection of Data at Eight Levels (S828)		

Ethernet or HSSB Options

Use Embedded Ethernet for BOP2 or Ladder Edit Function		
Basic Operation Package (BOP2) Function (J816) & CD	<i>(Also works w/ embedded Ethernet)</i>	
CNC Screen Display Function for 35i (R709)		
Application Disk for HSSB (K775)		
Application Disk for Ethernet (K776)		
Ladder Edit Function (J820)	<i>(Also works w/ embedded Ethernet)</i>	

Data Input/Output and Communications

Compact Flash Card 128MB, Card Adapter B	0	
Compact Flash Card 1GB, 2 Card Adapters A & B	0	

Display

Selection of Five Optional Language (R521)	
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Cables Optional: Replace 10m cable for LCD orderable with Package B with one of the following:				
	Fiber Optic Cable, CNC to LCD, 1m			
	Fiber Optic Cable, CNC to LCD, 5m			
	Fiber Optic Cable, CNC to LCD, 20m			
	Fiber Optic Cable, CNC to LCD, 30m			
	Fiber Optic Cable, CNC to LCD, 40m			
	Fiber Optic Cable, CNC to LCD, 50m			
Different MDI's				
	Separate Type MDI (ONG) (Vertical) A02B-0323-C126#M or equivalent 290x220mm	Replaces Vertical QWERTY in Pkg A (Do not order with Pkg B)		
	Separate Type MDI (ONG) (Horizontal) A02B-0323-C125#M or equivalent 230x220mm	Replaces Vertical QWERTY in Pkg A (Do not order with Pkg B)		
Product Manuals				
	Series 35i-B Descriptions	B-64522EN	0	
	Series 35i-Model B Connection Manual Hardware	B-64523EN	0	
	Series 35i-Model B Connection Manual (Function)	B-64523EN-1	0	
	Series 35i-Model B Maintenance Manual *	B-64525EN	0	
	Series 35i-Model B Parameter Manual *	B-64530EN	0	
	Series 35i-B User's Manual *	B-64524EN	0	
	Series 30i/31i/32i/35i FAST Ethernet/Data Server Operator's Manual	B-64014EN	0	
<i>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.</i>				
	Series 35i Model B Operation and Maintenance Handbook	B-64527EN	0	
Check here if no I/O is needed.				
	Check here if I/O has already been purchased			