

FANUC Compatibility Guide

# SUPPORTED DEVICES

Here are compatible robots organized by each supported robot controller.

Controller	Robots
R-30iA	LR Mate 200iC, M-20iA, M-710iC/50, M-2000iA/900L, M-2000iA/1200, R-2000iB/100P, R-2000iB/125L, R-2000iB/150U, R-2000iB/165F, R-2000iB/165R, R-2000iB/210F, R-2000iB/220U, R-2000iC/210WE
R-30iB	ArcMate 100iC/8L, CR-7iA, CR-7iA/L, LR Mate 200iC, LR Mate 200iD, LR Mate 200iD/4S, LR Mate 200iD/7L, M-10iA/8L, M-10iA/10M, M-10iA/12, M-10iD/12, M-10iD/16S, M-20iA, M-20iA/20M, M-20iA/35M, M-20iB/25, M-710iC/45M, M-710iC/50, M-2000iA/900L, M-2000iA/1200, M-2000iA/1700L, M-2000iA/2300, R-1000iA/100F, R-2000iB/100P, R-2000iB/125L, R-2000iB/150U, R-2000iB/165F, R-2000iB/165R, R-2000iB/210F, R-2000iB/220U, R-2000iC/125L, R-2000iC/165R, R-2000iC/210F, R-2000iC/210L, R-2000iC/210R, R-2000iC/210WE, R-2000iC/270F
R-30iB Plus	ArcMate 100iC/8L, CR-7iA, CR-7iA/L, CR-14iA/L, CR-15iA, LR Mate 200iD, LR Mate 200iD/4S, LR Mate 200iD/7L, M-10iA/8L, M-10iA/10M, M-10iA/12, M-10iD/12, M-10iD/16S, M-20iA, M-20iA/20M, M-20iA/35M, M-20iB/25, M-20iB/35S, M-20iD/25, M-20iD/35, M-710iC/45M, M-710iC/50, M-2000iA/900L, M-2000iA/1200, M-2000iA/1700L, M-2000iA/2300, R-1000iA/100F, R-2000iC/125L, R-2000iC/165R, R-2000iC/210F, R-2000iC/210L, R-2000iC/210R, R-2000iC/210WE, R-2000iC/270F
R-30iB Mate	ArcMate 100iC/8L, CR-7iA, CR-7iA/L, ER-4iA, LR Mate 200iC, LR Mate 200iD, LR Mate 200iD/4S, LR Mate 200iD/7L, M-10iA/8L, M-10iA/10M, M-10iA/12, M-10iD/12, M-20iA, M-20iA/20M, M-20iA/35M, M-20iB/25, M-710iC/45M, M-710iC/50, R-1000iA/100F, R-2000iC/125L, R-2000iC/165R, R-2000iC/210F, R-2000iC/210R
R-30iB Mate Plus	ArcMate 100iC/8L, CR-7iA, CR-7iA/L, CR-14iA/L, CR-15iA, ER-4iA, LR Mate 200iD, LR Mate 200iD/4S, LR Mate 200iD/7L, M-10iA/8L, M-10iA/10M, M-10iA/12, M-10iD/12, M-10iD/16S, M-20iA, M-20iA/20M, M-20iA/35M, M-20iB/25, M-20iB/35S, M-20iD/25, M-20iD/35, M-710iC/45M, M-710iC/50, R-1000iA/100F, R-2000iC/125L, R-2000iC/165R, R-2000iC/210F, R-2000iC/210L, R-2000iC/210R, R-2000iC/210WE, R-2000iC/270F
R-30iB Mini Plus	CRX-10iA, CRX-10iA/L

## YOUR SAFETY SETUP OPTIONS

To control your FANUC robot with Forge/OS, you need FANUC's Dual Check Safety (DCS) options and compatible safety hardware. For some models, your safety hardware may be a Safety I/O Board kit from FANUC or a third-party safety PLC with CIP Safety.

Safety Hardware Option	R-30iA	R-30iB	R-30iB Plus	R-30iB Mate	R-30iB Mate Plus	R-30iB Mini Plus
FANUC Safety I/O Breakout Harness (installed internally)	Required					
FANUC Safety I/O Board Kit (installed internally)		Option 1	Option 1	Option 1	Option 1	
Third-Party Safety PLC with CIP Safety (installed externally)		Option 2	Option 2	Option 2	Option 2	
No DCS, no additional hardware (Forge/OS Software Safety)		Option 3	Option 3	Option 3	Option 3	Required

## WHICH OPTION SHOULD I CHOOSE?

Choose your safety hardware based on your needs and part availability.

FANUC Safety I/O Board Kit	<p>This FANUC add-on is the recommended option to integrate the READY pendant safety features and other safety devices.</p> <p><i>* Forge/OS requires the DCS option to safely jog the robot in <b>Teach mode</b>.</i></p>
Third-Party Safety PLC with CIP Safety	<p>Choose this if you are already using a CIP safety PLC in your workcell. A safety PLC gives you flexibility to create and make changes to complex safety systems (e.g., multiple robots and other machines).</p> <p><i>* Forge/OS requires the DCS option to safely jog the robot in <b>Teach mode</b>.</i></p>
No DCS, no hardware (Forge/OS Software Safety)	<p>This option requires no additional hardware, but you do not connect the READY pendant enabling switch or key switch to the robot. Speeds are limited by Forge/OS instead of by safety-rated hardware.</p> <p><i>* Without the DCS option, you must jog the robot from outside the safeguarded space using <b>Program mode</b>.</i></p>

# SOFTWARE REQUIREMENTS

READY does not sell these items. Please contact your local distributor or sales rep.

Required	Items that are always required (for FANUC Safety, CIP Safety, and No DCS Safety).
Required (FANUC)	Items you need for the FANUC Safety I/O hardware option.
Required (CIP)	Items you need for the CIP Safety hardware option.
Required (NO DCS)	Items you need for the Forge/OS-Only Safety option.

Requirement	Description	R-30iA	R-30iB	R-30iB Plus	R-30iB Mate	R-30iB Mate Plus	R-30iB Mini Plus
FANUC Version	Minimum software version supported by Forge/OS.	V7.70P/56 (04/2021)	V8.10P/30 (05/2018)	V9.10P/33 (02/2021)	V8.10P/30 (05/2018)	V9.10P/33 (02/2021)	V9.40P/17 (07/2021)
RTL-R632-HT KAREL	Required for Forge programs to run on the robot controller.	Required (FANUC)					
RTL-R648-HT User Socket Messaging		Required (FANUC)					
RTL-R735-HT DCS Pos./ Speed Pkg	Required to jog the robot with the READY pendant.	Required (FANUC)					
RTL-J568-HT DCS Safe I/O Connect		Required (FANUC)					
RTL-R632 KAREL	Required for Forge programs to run on the robot controller.		Required	Required	Required	Required	Required (NO DCS)
RTL-R648 User Socket Messaging			Required	Required	Required	Required	Required (NO DCS)

Requirement	Description	R-30iA	R-30iB	R-30iB Plus	R-30iB Mate	R-30iB Mate Plus	R-30iB Mini Plus
RTL-R859 Advanced DCS	Required to jog the robot with the READY pendant.		Required (FANUC)	Required (FANUC)	Required (FANUC)	Required (FANUC)	
			Required (CIP)	Required (CIP)	Required (CIP)	Required (CIP)	
RTL-R713 SIT Ethernet/IP Safety	Required to jog the robot with the READY pendant (CIP Safety only).		Required (CIP)	Required (CIP)	Required (CIP)	Required (CIP)	
RTL-R784 Ethernet/IP Adapter			Required (CIP)	Required (CIP)	Required (CIP)	Required (CIP)	

# HARDWARE REQUIREMENTS

READY does not sell these items. Please contact your local distributor or sales rep.

Required	Items that are always required for Forge/OS.
Required (FANUC)	Items you need for the FANUC Safety I/O hardware option.
Required (CIP)	Items you need for the CIP Safety hardware option.

## Non-Collaborative Robots:

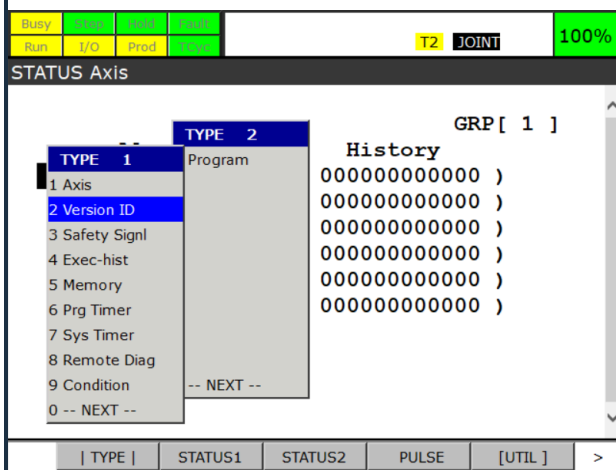
Requirement	Non-Collaborative Robot Models				
	R-30iA	R-30iB	R-30iB Plus	R-30iB Mate	R-30iB Mate Plus
FANUC Teach Pendant	Required	Required	Required	Required	Required
NE-2020-901-002 OPSFTY BREAKOUT HARNESS	Required (FANUC)				
MHIB-SAFETY-IO, Safe I/O PCB Kit A-Cab - Mini-slot. Includes: <ul style="list-style-type: none"> <li>Safety I/O PCB (A05B-2600-J131)</li> <li>Safety IO Cable (A05B-2602-J200)</li> <li>Conv Unit Cable (A05B-2602-J201)</li> <li>Conv Unit (A05B-2600-J132)</li> <li>Conv Unit Adapter (A05B-2605-J445)</li> </ul>		Required (FANUC)	Required (FANUC)		
MATE-SAFETY-IO, Safe I/O PCB Kit Mate Cabinet - Mini-slot. Includes: <ul style="list-style-type: none"> <li>Safety I/O PCB (A05B-2600-J131)</li> <li>Safety IO Cable (A05B-2650-J180)</li> <li>Conv Unit with mounting hardware and cable (A05B-2650-J132)</li> </ul>				Required (FANUC)	Required (FANUC)
Safety Controller with CIP Safety. Minimum Requirements: <ul style="list-style-type: none"> <li>4x dual channel safety inputs</li> <li>CIP over EtherNet/IP connection</li> <li>Basic Safety Logic configuration</li> </ul>		Required (CIP)	Required (CIP)	Required (CIP)	Required (CIP)

**Collaborative Robots:**

Requirement	Collaborative Robot Models				
	R-30iB	R-30iB Plus	R-30iB Mate	R-30iB Mate Plus	R-30iB Mini Plus
FANUC Teach Pendant	Required	Required	Required	Required	Tablet TP
MHIB-SAFETY-IOB, Safe I/O PCB Kit CR Robots - Mini-slot. Includes: <ul style="list-style-type: none"> <li>Safety I/O PCB (A05B-2600-J131)</li> <li>Safety IO Cable (A05B-2604-J200)</li> </ul> <b>Note: different from non-collaborative</b> <ul style="list-style-type: none"> <li>Conv Unit Cable (A05B-2602-J201)</li> <li>Conv Unit (A05B-2600-J132)</li> <li>Conv Unit Adapter (A05B-2605-J445)</li> </ul>	Required (FANUC)	Required (FANUC)			
MATE-SAFETY-IO, Safe I/O PCB Kit Mate Cabinet - Mini-slot. Includes: <ul style="list-style-type: none"> <li>Safety I/O PCB (A05B-2600-J131)</li> <li>Safety IO Cable (A05B-2650-J181)</li> </ul> <b>Note: different from non-collaborative</b> <ul style="list-style-type: none"> <li>Conv Unit with mounting hardware and cable (A05B-2650-J132)</li> </ul>			Required (FANUC)	Required (FANUC)	
<ul style="list-style-type: none"> <li>4x dual channel safety inputs</li> <li>CIP over EtherNet/IP connection</li> <li>Basic Safety Logic configuration</li> </ul>	Required (CIP)	Required (CIP)	Required (CIP)	Required (CIP)	

# CONFIRMING SOFTWARE REQUIREMENTS

- 1 Plug the FANUC controller into a power source. Follow FANUC instructions for powering the controller.
- 2 Turn the power switch on the FANUC controller clockwise to power the controller on. Wait for the controller to boot up.
- 3 On the FANUC teach pendant, press the **STATUS** button at the bottom of the keypad.
- 4 In the STATUS menu, press **TYPE (F1)**, then press **Version ID (2)**.



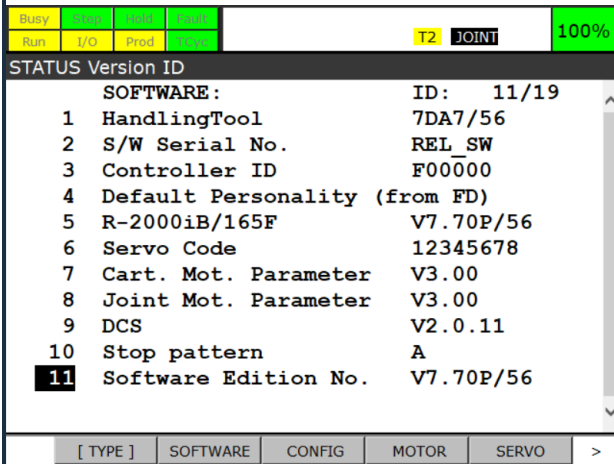
*R-30iA: Select Version ID*



*R-30iB: Select Version ID*



- 5 Look for **Software Edition No.** and note the version number next to it. If your system version is older than the requirement, contact your FANUC distributor to upgrade.

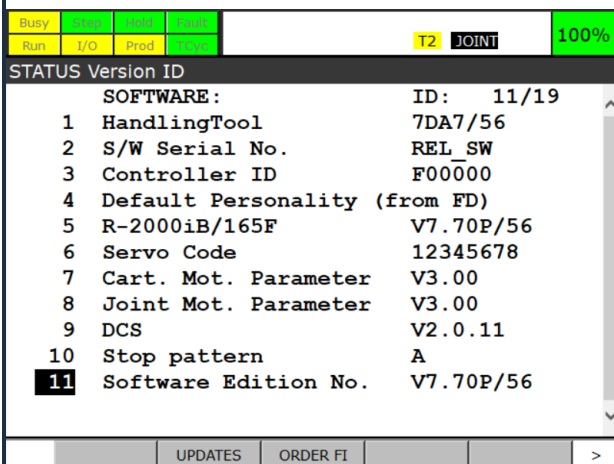


R-30iA: Find Software Edition



R-30iB: Find Software Edition

- 6 Press the right arrow on the touchscreen menu bar, then press **ORDER FI**. The installed options appear with their part numbers.

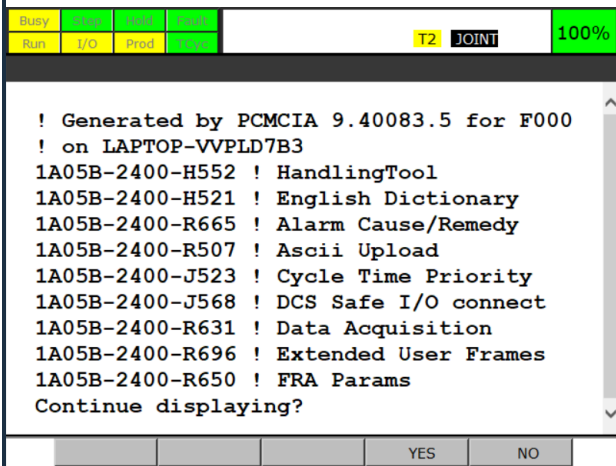


R-30iA: Press ORDER FI



R-30iB: Press ORDER FI

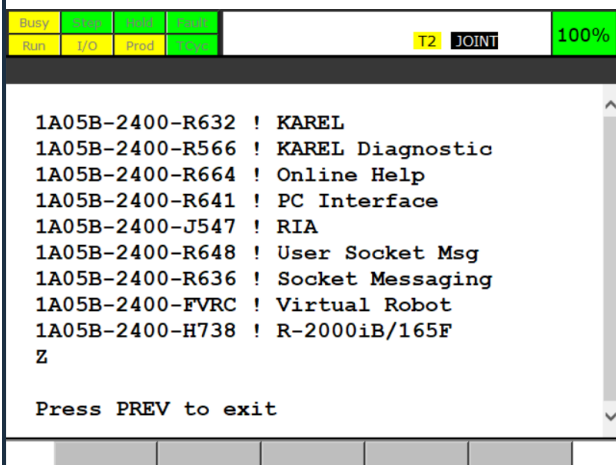
- 7 Look for the required options. Under "Continue displaying?", press **YES** to see more of the installed options. If any of your controller's required options are missing, contact your FANUC distributor to upgrade.



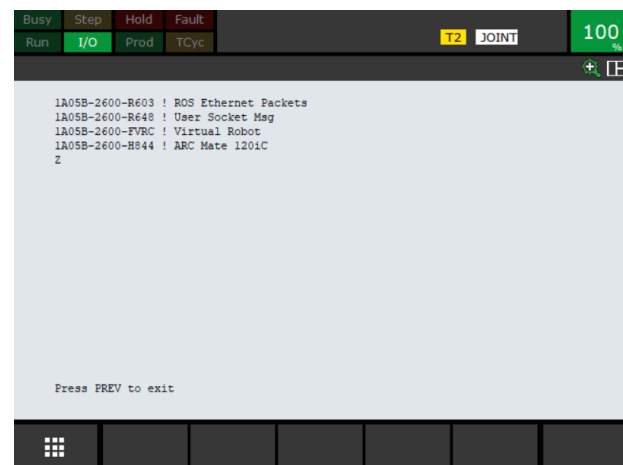
R-30iA: Find Options



R-30iB: Find Options



R-30iA: More Options



R-30iB: More Options