

Thank you for purchasing a FANUC Robot

READ THIS FIRST Use this guide to unpack, install, turn on, and jog your new FANUC robot.

The appropriate level of safety for your application and installation can best be determined by safety system professionals. A qualified electrician should apply power. FANUC recommends that each customer consult with such professionals in order to provide a safe application, and take the necessary FANUC training course to operate the robot safely. Refer to your FANUC documentation provided with your robot for safety procedures.

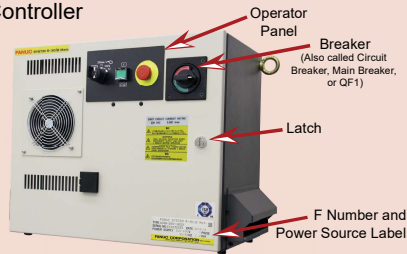
Required Tools

- Straight-head screwdriver
- Torque wrench
- Cross-head screwdriver
- Metric hex-head wrenches

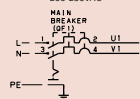
Required Items

- Properly rated transport equipment as specified
- Customer-supplied properly rated power source as specified on the Controller Power Source Label
- Customer-supplied properly rated input power cable; conductor size of AWG14 to AWG10; terminal size is M5
- Multimeter
- Rigid platform to hold robot
- 4-M10 x 35mm bolts
- Loctite#243
- 4-M10 flat washers

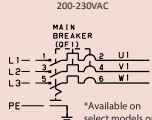
Controller



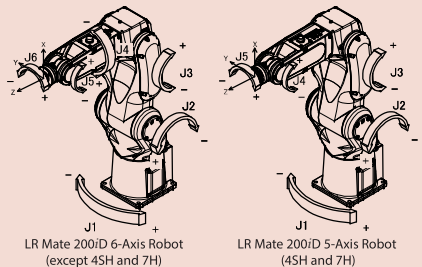
Single Phase
100-120VAC (with transformer option)
200-230VAC



Three Phase*
200-230VAC



Robot (mechanical unit) with joints indicated



All axes are 0° in this position

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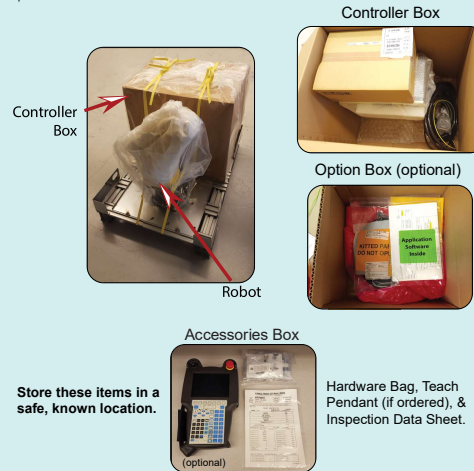
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A. Unpack and Install your Controller



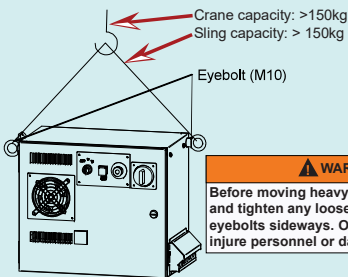
1. Open all of the boxes included in your shipment.

Shipment Contents



Store these items in a safe, known location.

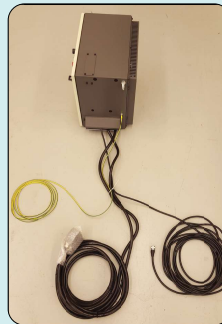
2. Use properly rated equipment to remove the controller from its box.



WARNING

Before moving heavy equipment, check and tighten any loose bolts. Do not pull eyebolts sideways. Otherwise, you will injure personnel or damage equipment.

3. Place the controller in a safe location where the grounding wire and RCC can reach the robot, and the controller is safely reachable from outside of the robot work area.

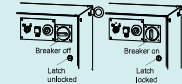


4. Find the power source needed for your controller on the door near the F Number. See the diagram to the left for the location. If a 120VAC side transformer is used, connect it to a 120VAC 20 amp circuit.

WARNING

Lethal voltage is present in the controller whenever it is connected to a power source. Be extremely careful to avoid electrical shock. Lock out and tag out the power source at the controller according to the policies of your plant.

5. Open the controller door by using a straight-head screwdriver to turn the latch counter-clockwise, then turn the Breaker counter-clockwise past its off position.



6. Route the power input cable through the side of the controller as shown in the diagram below.

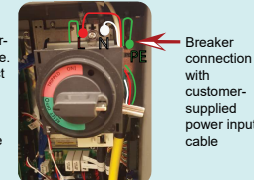


R-30iB Mate Controller - Inside View

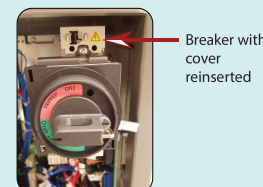
7. To connect power, remove the plastic cover from above the Breaker (see the diagram below.) To remove the cover, insert a straight-head screwdriver into the opening, and push the tab to the left allowing the cover to slide forward.



8. Connect power to the Breaker with the customer-supplied power input cable. For Single Phase, connect L to 1 and N to 3. For Three Phase, connect L1 to 1, L2 to 3, and L3 to 5. Connect the ground to the plate to the right of the Breaker.



9. After the power cable is connected, reinset the plastic cover.



10. Use a multimeter to verify the correct voltage is present.
11. Before you close the controller door, retrieve the set of keys from inside the door, and store them in a known location outside of the controller for use later in this guide.

Key location inside controller

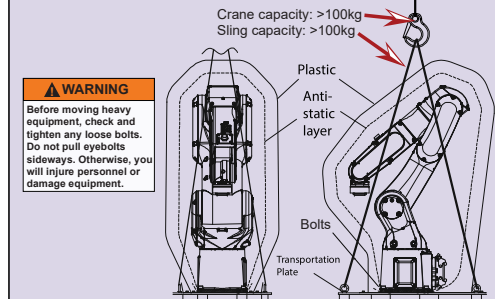


12. Close the controller door and use a straight-head screwdriver to turn the Latch on the outside of the controller counter-clockwise.

Controller installation is complete. DO NOT TURN ON THE CONTROLLER UNTIL YOU ARE INSTRUCTED TO DO SO. Go to B. Unpack and Install your Robot.

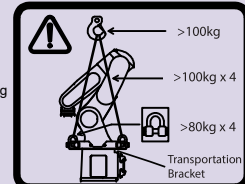
B. Unpack and Install your Robot

1. For 7C, 7LC, and 4SC robot variants: Take the special robot transportation plate with dual layer plastic bagging into the cleanroom area using properly rated equipment. Then, remove the inside anti-static layer. All other models, go to Step B2.



WARNING
Before moving heavy equipment, check and tighten any loose bolts. Do not pull eyebolts sideways. Otherwise, you will injure personnel or damage equipment.

2. Remove the plastic covering from the robot.
3. Remove the four bolts holding the robot to the skid.
4. For 7C, 7LC, and 4SC, go to Step B5. Otherwise, use properly rated equipment to move the robot to its new location.

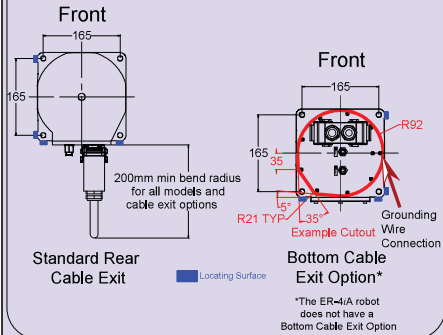


Go to Page 2

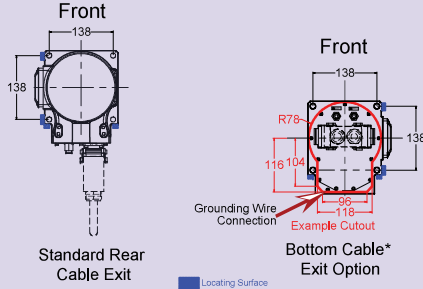
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5. Use (4) M10 bolts with washers to bolt the robot to a rigid platform or table that will prevent any motion of the robot base. See the diagram below for the LR Mate 200iD, ER-4iA and LR Mate 200iD/4S mounting patterns. Refer to the robot model-specific Operator's Manual for force and moment data, and mounting pattern information. **NOTE: Be careful to avoid interference with bolts or connections.**

LR Mate 200iD Series, ER-4iA



LR Mate 200iD/4S



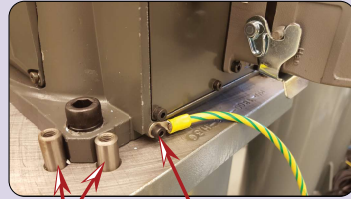
6. Secure the robot to the torque specified below. For all robots except 7C, 7LC, and 4SC, remove the transportation brackets.

Carbon Steel Grade Bolts M10	
Socket Head Cap Screws 12.9	Hex Head Screws 10.9
64 Nm	64 Nm

Stainless Steel Bolts (for 7C, 7LC, and 4SC models only)	
Socket Cap and Hex A2 Screws	
43.5 Nm	

Nm: Newton Meters
Note: Use Loctite #242 on all bolts.

7. Connect the ground wire from the controller to the robot base. The grounding location has unpainted/bare metal as shown below for rear cable exit. Refer to Step B5 for mounting locations.



Example Locator Pins

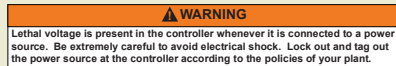
Grounding Location

8. Connect the RCC from the controller to the base of the robot, and connect the teach pendant to its cable. Completed connections are shown to the right.

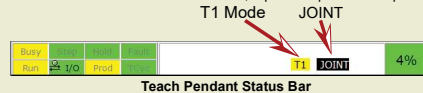


Robot installation is complete. You are now ready to go to **C. Turn on your Controller**.

C. Turn on your Controller



- Turn on the controller by rotating the Breaker clockwise to ON.
- Locate the Mode switch on the Controller Operator Panel. Use the key retrieved in Step A11 to switch to T1 mode. T1 mode limits the robot speed to 250mm/sec and requires robot control to be at the teach pendant only.
- Verify the controller is in T1 Mode by looking at the teach pendant screen. The mode indicator will be highlighted yellow and look similar to the status bar below. If it is not T1, repeat the previous step.



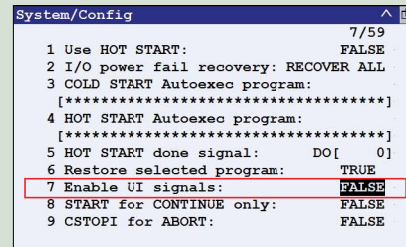
4. Press the COORD key on the teach pendant until JOINT is displayed similar to the status bar above.

You have turned on your controller. You are now ready to go to **D. Jog your Robot**.



D. Jog your Robot

- To jog the robot in JOINT mode, turn the Teach Pendant ON/OFF switch to the ON position.
- Ensure the Emergency Stop buttons on the teach pendant and controller are popped out. If not, twist the button clockwise to reset.
- Press MENU, select 0 (Next), and select (SYSTEM), and then select CONFIG.
 - Use the teach pendant arrow keys to move the cursor to the Enable UI signals option.
 - Use the teach pendant F5 key to set the option to FALSE.

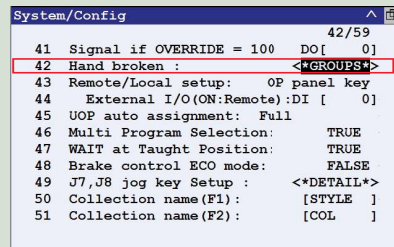


4. Use the teach pendant arrow keys to move the cursor to the Hand Broken option (around line 42) and press ENTER.

Hint: You can hold the SHIFT key and press the down arrow key to cursor through the list faster.

- Use the teach pendant F5 key to disable the hand broken error for each motion group.

NOTE: It might already be disabled on your system.



5. Press and hold a DEADMAN switch on the back of the teach pendant to its middle position. Press RESET on the teach pendant to reset alarms.

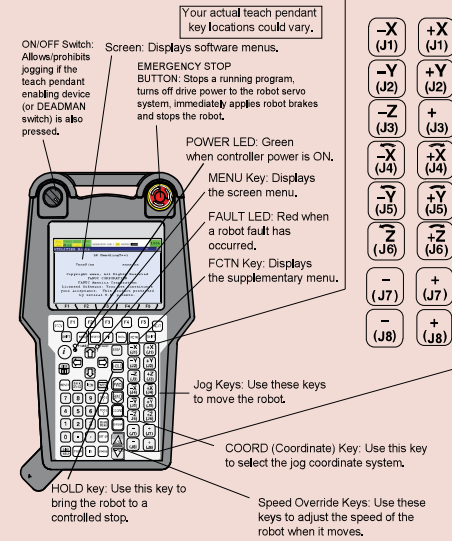
NOTE: To view alarms, press MENU, cursor to ALARM, and press ENTER. To toggle between alarm history and active alarms, press F3.

6. To move each joint axis of the robot (called "jogging the robot in JOINT mode"), press and hold SHIFT and press each jog key one at a time and watch the robot joint move. Refer to the **Robot (mechanical unit) with joints indicated** diagram on Page 1 of this guide.

Try jogging each joint of the robot.

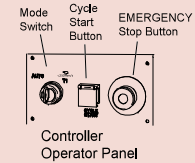
Turning on and Jogging the robot is complete. You are now ready to perform software installation, if necessary. Refer to the *Controller-specific Software Installation* manual.

Reference

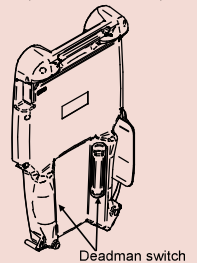


Refer to your *Application-Specific Setup and Operations Manual* for more information on each teach pendant key.

iPendant (Teach Pendant)



Controller Operator Panel



Deadman switch

For more information

To access controller, robot, or application-specific manuals, scan the **QR Code** to the right or go to <https://www.fanucamerica.com/>.



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