FANUC R-30iB/R-30iB Mate *Software Installation Guide*

Thank you for purchasing a FANUC robot

READ THIS FIRST

Use this guide to install sofware on 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 documentaton provided with your robot for safety procedures.

Required Items

- A controller that has been unpacked, and installed, according to FANUC instructions. Refer to your robot-specific Mechanical Unit Opertor's Manual or the Startup Guide for more information.
- FANUC-supplied USB load media
- User-supplied USB for software backup
- Robot Packing Slip
- Inspection Data Sheet
- DCS code number. Only needed when reloading DCS sofware. Contact your safety administrator.

Timetable

Your loading timetable will vary depending on the load media being used and also the size of option content (larger devices might add to load time). You should plan on at least 20-30 minutes.

Conditions for Installation

- The mechanical unit is installed and secure.
- The robot has been connected to supply voltage.
- Internal controller connections have been made (Teach Pendant, robot connection cables, etc.)
- The controller is on.

For more information

Controller Hardware/Electrical:
Controller-specific Maintenance Manual
Software Installation:
Controller-specific Software Installation Manual
Robot Hardware Operations:
Robot model-specific Operator's Manual
Software Operations:
Application-specific Setup and Operations Manual
Alarm Recovery:
Controller-specific Error Code Manual

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www.fanucamerica.com

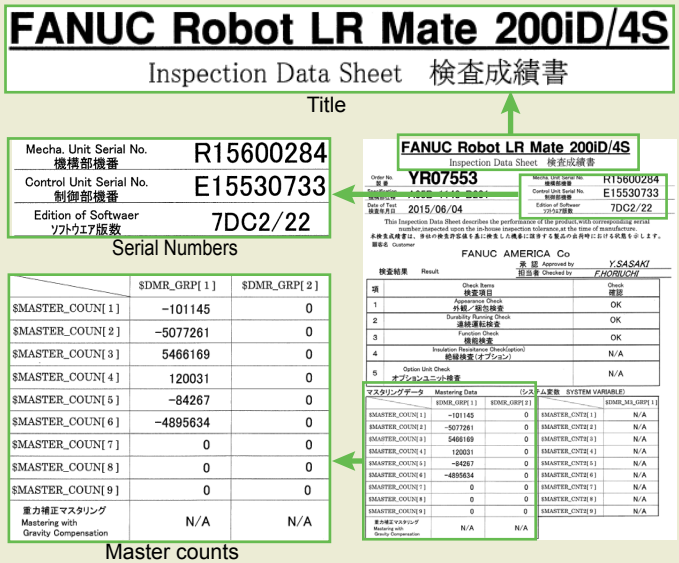
Start Here

1. Locate the FANUC-supplied USB Load Media and its attached Load Media Tag. This load media typically comes in a bag labeled **Application Software Inside**.
See an example tag below:

FANUC America
HandlingTool X.XX/PXX
Proj#876543 Ser#12345678
F#345678
Variant#123456 (c) xxxx

Load Media Tag

2. Locate the Inspection Data Sheet shipped with the robot. This sheet includes the master count for each axis.
Keep this sheet in a safe location. A sample is shown below.


FANUC Robot LR Mate 200iD/4S
Inspection Data Sheet 検査成績書

Title

Mecha. Unit Serial No. 機構部機番 R15600284
Control Unit Serial No. 制御部機番 E15530733
Edition of Software ソフトウエア版数 7DC2/22

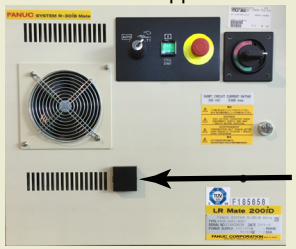
Serial Numbers

	$DMR_GRP[1]	$DMR_GRP[2]
$MASTER_COUN[1]	-101145	0
$MASTER_COUN[2]	-5077261	0
$MASTER_COUN[3]	5466169	0
$MASTER_COUN[4]	120031	0
$MASTER_COUN[5]	-84267	0
$MASTER_COUN[6]	-4895634	0
$MASTER_COUN[7]	0	0
$MASTER_COUN[8]	0	0
$MASTER_COUN[9]	0	0
重力補正マスタリング Mastering with Gravity Compensation	N/A	N/A

Master counts

3. Back up the controller (**image backup**) to the user-supplied USB:

a. Insert the user-supplied USB into the USB port on the controller.



USB Port

Note: Mate Controller is shown

⚠ WARNING
Do not use the FANUC-supplied USB for image backup.

b. Turn the Teach Pendant to ON.
c. Press MENU, select FILE, then press F5, [UTIL].
d. Choose Set Device and choose USB Disk (UD1:).
e. Choose F4 [BACKUP], then choose 0, NEXT, then **Image backup**.
f. Choose 1, Current Directory to save to the USB.
g. Press F4, OK to cycle power.
h. If you do not have a Mate controller, controller power will cycle automatically. For Mate controllers, turn the Breaker off and then back on. Backup will occur as the controller is powering up.
i. Press F4, OK, when the controller backup is successful.

4. Verify the software and robot match:
a. Compare the F# on the load media tag with the F# located on the robot controller and the F# on the base of the robot itself. All three should have the same F#.
b. If no F# appears on the load media tag, find the variant# on the tag and compare with the variant# on the Packing Slip (example below). If they match, find the F# nearby on the Packing Slip. This should be the same as that on the controller and robot.
c. If you cannot match your software to your robot, contact FANUC.

```
      10  PM71C70-BAA1A   Standard
          M-710iC/70 R30iB A HTTP
           ECCN Code: 2B345        Robots not controlled by 2B007
           Country of Origin:      JP  HTSUS Code: 8726543219
           Lot No(s): F345678   <- F#

      20  HM-587023-0001  Standard
Variant# -> V123456 HTL R30iB Rel:VX.XX
           Country of Origin: US HTSUS Code: 0000000000
           Lot No(s): X.XXP/XX
```

Packing Slip Excerpt

5. Turn the Breaker off, remove the user-supplied USB, and insert the FANUC-supplied USB load media. While pressing and holding the F1 and F5 keys on the teach pendant, turn the Breaker to ON. Continue holding the F1 and F5 keys until you see a screen similar to the following:

```
*** BOOT MONITOR ***                UD
Base Version VX.XXP/XX [Release X]
******* BMON MENU *******
  1. Configuration menu
  2. All software installation(MC:)
  3. INIT start
  4. Controller backup/restore
  5. Hardware diagnosis
  6. Maintenance
  7. All software installation(Ethernet)
  8. All software installation(USB)
  Select:
```

6. Press 8, All software installation (USB), and then press ENTER. You will see a screen similar to the following:

```
*** BOOT MONITOR ***                UD
Base Version VX.XXP/XX [Release X]
 S-Bus modules:
ASIC ID  Rev Bus Slot Name
 0 04    8     LIME
 1 03    5     ETCC
 2 01    4     IFSB
 5 0A    2     PHIS
 6 04    8     LIME

  Proceed? [Y=1/N=else]:
```

7. To continue installing software, press 1, and then press ENTER. You will see a screen similar to the following:

```
*** BOOT MONITOR ***                UD
Base Version VX.XXP/XX  [Release X]

  Proceed? [Y=1/N=else]:

**** All software installation ****

CAUTION: This operation ERASES ALL of
    FROM and SRAM

Insert USB device with system software

  Are you READY? [Y=1/N=else]
```

Go to Page 2

8. To continue installing software, press 1, and then press ENTER. You will see a screen similar to the following:

```
*** BOOT MONITOR ***                UD
Base Version VX.XXP/XX  [Release X]
Multiple load Personalities Exist
 0 Existing Personality
 1 LR Mate 200iD, LR HandlingTool




Select >
```

9. Select your robot mechanical unit, software.

Note: Multiple personalities might be on the FANUC-supplied USB load media. **Do not choose "Existing Personality."**

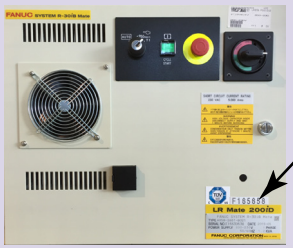
10. During the time the software is loading, depending on the robot and options, the system might pause to request additional information relating to the robot or any additional axes. For example, the system might ask for the mount angle of the robot, the J1 motion range, or the payload. Make the appropriate selections, and continue.

Note: It might take an additinal 3-5 minutes to complete the software load after the robot library questions are completed.

At the end of software loading, you will see a screen similar to the following:

```
                                  1/6
1 Robot No.:                    F345678
2 KAREL Prog in select menu:    Yes
3 Remote device:                UserPanel
4 intrinsically safe TP:        NO
```

11. In the Robot No. field, press ENTER and type your robot's F Number. The F number is found near the controller nameplate.
Note: To delete any existing characters in the field, hold the SHIFT key, and then press the right-arrow key.

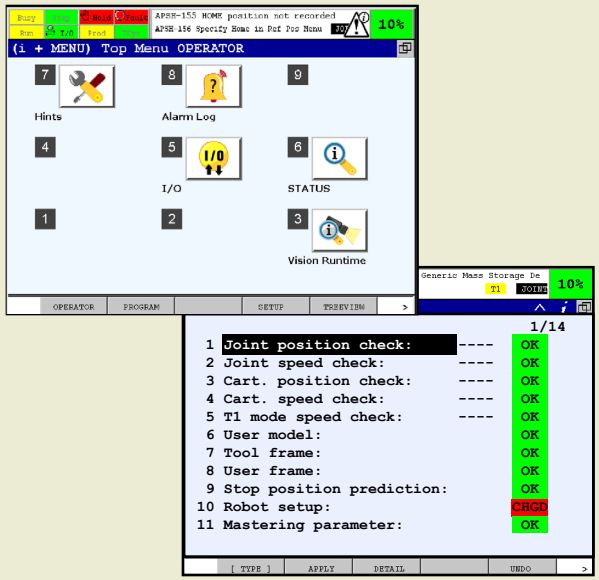


Note:
Mate Controller is shown

12. Press FCTN, select START (COLD), and press ENTER.

Note: *i*Pendant firmware may need to be updated when the Cold Start is initiated. If this occurs, do not power off while the firmware automatically updates.

13. When the Cold Start is complete, you will see a screen similar to one of the following two screens.



14. Enter the Mastering Counts. Locate the Factory Inspection Sheet you saved in step 2.

a. Press MENU, then choose 0, NEXT, and select SYSTEM. Press F1 [TYPE], and select Variables.
b. Move the cursor to $DMR_GRP.
(Hint: Shift-down arrow scrolls by page).
c. Press ENTER twice.
d. Move the cursor to $MASTER_COUN, and press ENTER.
e. Enter the master counts for all six robot axes as found on the Inspection Data Sheet.
f. Press the Prev key, and then cursor to $MASTER_DONE.
g. Press F4, TRUE, to set this variable to TRUE if it is not already.
h. Press F1, [TYPE], and select 3, Master/Cal.
i. Select CALIBRATE, and then press F4, YES.

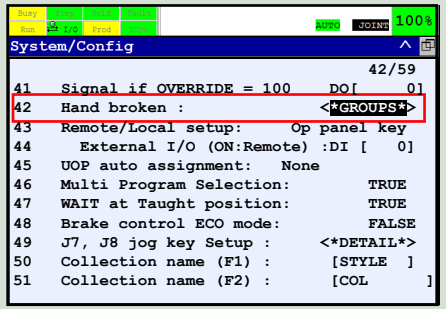
15. If your robot software includes DCS, you will need to apply the system changes as follows:

a. Press MENU, then choose 0, NEXT.
b. Select SYSTEM.
c. Press F1, [TYPE] and then select DCS.
d. Press F2, APPLY.
e. Enter the default DCS code number (1111) or, if reloading DCS software, use safety administrator-supplied number.
f. Press F4, OK.
g. Cycle power as prompted.

Note: Depending on your robot and cell configuration, some alarms may need to be reset before the robot can be used. Some of these alarms are addressed in Steps 16 and 17. For more information on how to reset these and other alarms, refer to the **For more information** section of this guide (Page 1).

16. If this is a new robot that is not using a hand broken device for the End of Arm Tooling (EOAT), you must disable the hand broken check (error **SRVO-006 Hand Broken**).
To do this:

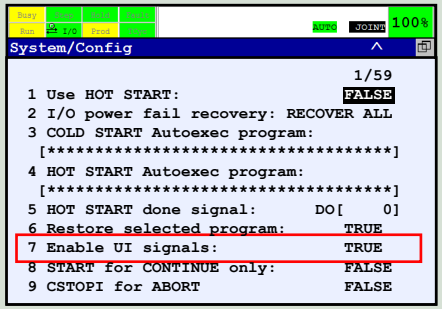
a. Press MENU, select 0, NEXT, select SYSTEM, then choose F1 [TYPE], and then select Config.
b. Use the teach pendant arrow keys to move the cursor to the Hand broken option, and press ENTER.
c. Press F5, DISABLE to disable the hand broken error.
d. Press the PREV key to return to the top-level menu.



e. Press RESET.

17. If a fault condition persists, the software might be looking for certain inputs. If this occurs you must either provide the necessary inputs, or disable User Operator Signals (UOPs). If you are not using UOPs, you can disable them as follows:

a. Press MENU, select 0, NEXT, select SYSTEM, and then select CONFIG.
b. Use the teach pendant arrow keys to move the cursor to the Enable UI signals option.



c. Press F5, FALSE, to set the option to FALSE.
d. Press RESET.

Software installation is now complete.
The system is ready for any setup, specific to your application, that might be required.