

FRANKA RESEARCH 3

Packaging Instructions

TRANSLATION FROM ORIGINAL PACKAGING INSTRUCTIONS

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1 INTRODUCTION

This document is intended to describe how to safely package your devices.

The following sections provide instructions on how to pack your devices, as well as important and useful information.

You can view the complete manuals here. LINK

2 TRANSPORT POSITION

2.1 Description of application



Heavy equipment

Due to the dead weight and geometric design, lifting and handling the equipment may cause back injury, and, if it falls, serious injury to fingers, hands, toes, and feet.

- Always wear personal protective equipment (e.g., safety shoes) when transporting, mounting, or demounting the equipment.
- The equipment must be placed on even surfaces to prevent it from tilting or sliding.
- Follow the company regulations on lifting loads and personal protective equipment.

NOTICE

Material damage to Arm, end effectors, and objects in the maximum workspace

Sensitive electromechanical components in the Arm and end effectors may be damaged if end effectors are connected to the Arm while bringing it into transport position.

- Dismount any end effector before bringing the Arm into transport position.
- Do not leave loose objects in the maximum workspace.

Handling and lifting

Always lift the Arm in the positions intended for lifting (see graphic below) to not overstress the Arm joints during handling and lifting. In particular, the Arm may never be carried in the extended position with one person holding each end of the Arm.

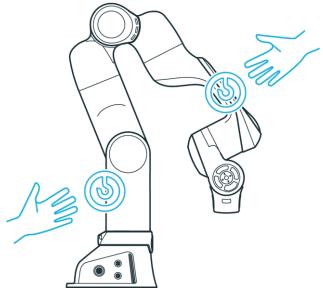


Fig. Lifting positions

2.2 Option "Move to PackPose"

To bring Franka Research 3 into transport mode, use the Move to pack pose function in Settings in Franka UI. Precondition

- The end effector and attachments must be removed from the Arm.
- The robot needs to move freely without being encumbered by obstacles to adopt the transport pose. In case of obstacles in the robot cell, consider moving the robot closer to the transport pose via hand-guiding.



To remove the end effectors from the Arm, see the instructions in the product manual of the end effector.

Procedure

- 1. Log onto at the user interface in Franka UI.
- 2. Click on Settings.
- 3. Navigate to System.
- 4. Click and hold the "Move to pack pose" button.

The Arm will automatically move to the transport pose while the button is pressed. If the robot is in Programming mode, pressing the enabling device is also necessary to move the robot.

NOTICE

The system monitors the connection of the Franka UI hold-to-run control with a maximum timeout of 1s. If a connection loss is detected while a hold-to-run control is pressed, the system is stopped.

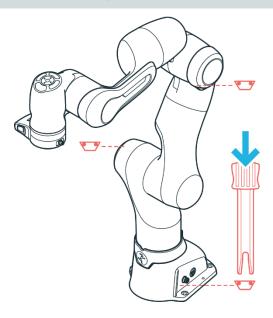
2.3 Option "Emergency unlock"

SAFETY-INSTRUCTION

- 1. Press the Emergency Stop Device to stop the robot from operating.
- 2. Take the unlocking tool from the Pilot's base.
- 3. Hold the Arm's segments.
- 4. Insert the unlocking tool in the respective trapezoidal openings and unlock one or more joints one after another.

The openings are marked with the "Emergency Unlock" label.

5. The Arm segment can now be moved manually.



NOTICE

Be aware that as soon as the unlocking tool is inserted, the Arm segment towards the wrist of the Arm can fall down with gravity.

- The integrator needs to make sure that the unlocking tool is stored in a holder at the base of the robot.
- Do not remove the unlocking tool unless in an emergency.
- The unlocking tool must always be within reach.
- Only use the original unlocking tool.
- The unlocking tool should only be used in case of emergency.

Pushing away manually





3 PACKAGING

3.1 Re-packing the Arm with Original packaging

MARNING

Heavy equipment

Due to the dead weight and partly due to the geometric design, lifting and handling the equipment may cause back injury and, if it falls, serious injury to fingers, hands, toes, and feet.

- Always wear personal protective equipment (e.g., safety shoes), when transporting, mounting, or demounting the equipment.
- Always lift the equipment with the help of a second person.
- The equipment must be placed on even surfaces to prevent it from tilting or sliding.
- Follow the existing company regulations on lifting loads and personal protective equipment.

Precondition

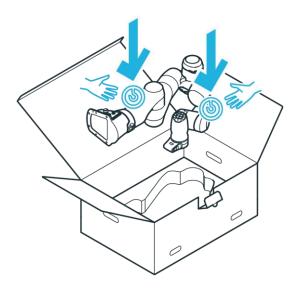
• The robot needs to be in the transport pose.

Procedure

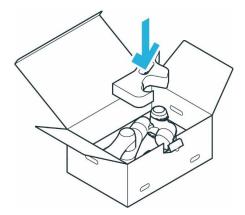
1. Open the box and place the ziplock bag in the middle of the box, then you can place the inlay into the ziplock bag.



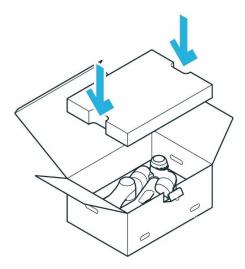
2. Grasp the Arm at the indicated lifting positions in twos and carefully put it inside the bottom protective layer.



3. Insert the middle protective layer.



4. Insert the top protective layer.



5. Close the foil coating.



- 6. Close the box by sealing it with adhesive strips
- 7. Then secure the box with tensioning straps on a half pallet





3.2 Re-packing the Arm without Original packaging

NOTICE

Please make sure, that the components are packed securely. For this we strongly recommend to use the original packaging including the cardboard box. Please strap the box(es) on a pallet. Damages caused by improper packaging will be invoiced to the customer.

NOTICE

For secure packaging, use a sturdy and robust box. Fill it with foam or a similar material. Place the arm or controller in the Center of the box and fill the rest of the box with foam or a similar material. We recommend using a self-adjusting foam insert in this case. Examples of this can be found online under the term "instant packaging foam."









SAFETY-INSTRUCTION

The arm must always be mounted on a half pallet before shipping. This also applies to the complete system, (Arm+Controller).

3.3 Re-packing the Arm with Original packing whitout PackPose

NOTICE

If the arm cannot be moved into the PackPose, you must use the emergency release to try to manually move the arm into the PackPose as far as possible.

NOTICE

Use the original packaging. Use a utility knife to adjust the plastic inlay so that the arm rests in a firm, secure position.

3.4 Re-packing the Control

NOTICE

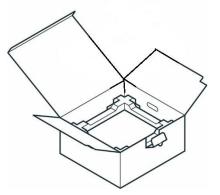
Material damage to Control

Mechanical shock may cause damage or loss of calibration of sensitive electromechanical components in the Arm and Control. Avoid shock.

- Do not set down the devices roughly.
- Always store and transport the devices in their original packing, even inside buildings.

Procedure

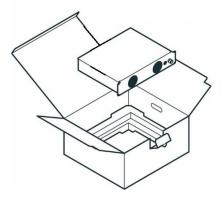
- 1. Open the box
- 2. Insert the lower protective layer (inlay).



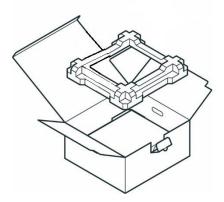
3. Pack the controller in the ESD bag (antistatic ziplock bag)



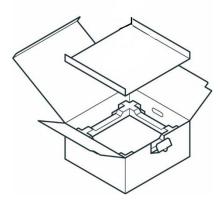
4. Place the controller in the bottom protective layer.



5. Place the upper protective layer (inlay) on the controller



6. Place the cardboard inlay on top of the plastic inlay.



7. Close the box.







4 TRANSPORT PREPARATION

4.1 Arm

NOTICE

The arm must be placed in the outer carton and secured on a pallet.



4.2 Arm and Control

NOTICE

The arm and controller must be placed in the outer carton and secured on a pallet.





4.3 Control

NOTICE

The controller must be packed in the outer carton. A pallet is not required but recommended.





5 FURTHER INFORMATION

5.1 Original Packaging material

5.1.1 Packaging material Arm

- 1. Cardboard Package Arm
 - article number 10070483



- 2. VCI Foil Package Arm
 - article number 10070488



- 3. Inlay Arm Bottom
 - article number 10070484



- 4. Inlay Arm Top
 - article number 10070485



- 5. Inlay Arm Filling Piece
 - article number 10070486



- 6. half pallet type F64 800x600
 - article number 10070583



5.1.2 Packaging material Control

- 1. Cardboard Package Control
 - article number 10070489



- 2. ESD-Foil Package Control
 - article number 10070567



- 3. 2x Inlay Package Control
 - article number 10070490



- 4. Inlay Seperator Package Control
 - article number 10070491



5.1.3 Packaging material Set

- 1. Cardboard Package Cover Bottom
 - article number 10070480



- 2. Cardboard Package Cover Top
 - article number 10070481



- 3. Cardboard Package Cover Filling Pieces
 - article number 10070482



5.2 Maximum permissible stacking

NOTICE

When shipping multiple devices, the maximum pallet load must be observed.

5.2.1 max. 4x complete Sets (Arm+Controller) on a full pallet



| Option | Without Pallet | On Half- Pallet 800x 600 | On Euro- Palett 800x1200 | with Cardboard | Pack dimension [mm] | Weight [kg] | Volume weight [kg] |
|--------------------|-------------------|--------------------------------|--------------------------------|-------------------|---------------------------|----------------|--------------------------|
| 1x complete System | | х | | × | 800x600x760 | 45 | 60,8 |
| 2x complete System | | | х | х | 1200x800x760 | 88 | 121,6 |
| 3x complete System | | | х | × | 1200x800x760 | 127 | 121,6 |
| 4x complete System | | | × | × | 1200x800x1390 | 167 | 222,4 |

5.2.2 max. 6x Arms on a full pallet



| Option | Without Pallet | On Half- Pallet 800x 600 | On Euro- Palett 800x1200 | with Cardboard | Pack dimension [mm] | Weight [kg] | Volume weight [kg] |
|--------|-------------------|--------------------------------|--------------------------------|-------------------|---------------------------|----------------|--------------------------|
| 1x Arm | | х | | х | 800x600x370 | 26 | 29,6 |
| 2x Arm | | | × | х | 1200x800x520 | 63 | 83,2 |
| 3x Arm | | | х | х | 1200x800x890 | 88 | 142,2 |
| 4x Arm | | | х | х | 1200x800x890 | 114 | 142,2 |
| 5x Arm | | | х | х | 1200x800x1250 | 140 | 200,0 |
| 6x Arm | | | х | × | 1200x800x1250 | 166 | 200,0 |

5.2.3 max. 4x Controllers on a full pallet





| Option | Without Pallet | On Half- Pallet 800x 600 | On Euro- Palett 800x1200 | with Cardboard | Pack dimension [mm] | Weight [kg] | Volume weight [kg] |
|---------------|-------------------|--------------------------------|--------------------------------|-------------------|---------------------------|----------------|--------------------------|
| 1x Controller | х | | | × | 800x600x370 | 12 | 29,6 |
| 2x Controller | х | | | × | 800x600x560 | 22 | 44,8 |
| 3x Controller | | | х | х | 1200x800x700 | 45 | 112,0 |
| 4x Controller | | | х | × | 1200x800x700 | 54 | 112,0 |

Franka Robotics GmbH Frei-Otto-Strasse 20 80797 Munich Germany