

Quick Guide for Installation

MOBILE FR3 DUO

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QUICK GUIDE FOR INSTALLATION

This booklet will guide you through the steps to get your Mobile FR3 Duo up and running.

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NOTICE

This Quick Guide for Installation is not the manual of your Franka Research 3 robot and does not replace it.



Before operating robots from Franka Robotics, all people working with them must read the corresponding manual carefully. Read or download the manual (translations available) here: www.franka.de/documents.



Don't hesitate to contact your sales partner or integrator if you need more detailed information. Alternatively, you can get in touch with us directly by sending an email to: support@franka.de.

NOTICE

Please carefully follow all instructions, warnings, and other notes in this document and the official manual. Any deviation from the steps prescribed in these documents constitutes a misuse (as described in the paragraph "Misuse" of the corresponding manual). Franka Robotics assumes no warranty or liability for any possible consequences.

 **DANGER**

Safety-related aspects must be considered when planning and designing the application and performing the hazard & risk assessment for completed machinery.

1 Introduction

This Quick Guide for Installation provides step-by-step instructions for assembling and connecting the Mobile FR3 Duo. It is intended to help users quickly set up the hardware and prepare it for initial operation.

NOTICE

This manual applies to prototype hardware and is not certified according to any safety standards or international norms. Use is intended only in controlled environments by qualified personnel.

2 Legal Disclaimer

Mobile FR3 Duo is an experimental development tool provided solely for testing and evaluation. They are not part of the certified product portfolio of Franka Robotics GmbH and are supplied 'as-is' without any express or implied warranties, including but not limited to warranties of merchantability, fitness for a particular purpose, or conformity. The Supplier does not provide any support, maintenance, or updates for these tools. Any liability for material or legal defects (Material-legal defects) is excluded, except in cases of willful misconduct or gross negligence. This clause shall not affect mandatory liability under applicable product liability laws or for injury to life, body, or health.

3 Operational Guidelines

- **Qualified Personnel:** Operate and maintain prototypes only by trained individuals familiar with robotic systems.
- **Controlled Environment:** Use prototypes exclusively in supervised, indoor environments with stable surfaces.
- **Personal Protective Equipment (PPE):** Wear safety gloves and protective eyewear during assembly, adjustment, or maintenance.
- **Keep Clear of Moving Parts:** Never place hands or objects near active joints, drives, or robotic arms during operation.
- **Disconnect Power Before Maintenance:** Always power down and unplug the system before performing any adjustments or repairs.
- **Wireless E-Stop:** Always use the wireless E-Stop during operation of the prototype.

⚠ WARNING

Due to the heavy dead weight of the equipment and, partly, to the geometric design, lifting and handling the equipment may cause physical injury. If the system or any of the components falls on a person, serious injury to fingers, hands, toes, and feet is possible.

- When transporting the equipment, always wear personal protective equipment (e.g., safety shoes, safety gloves).
- Always lift the equipment with the help of additional people.

- Follow the existing company regulations on lifting loads and personal protective equipment.

NOTICE

Always keep the original packaging in case of relocating the robot or its accessories.

Other User Devices

The risk assessment conducted does not cover additional interfaces/devices beyond those delivered with the system. Connecting additional user devices requires a renewed risk assessment to be performed by the user or system integrator.

Limitations, Constraints, and Misuse

Any application different from the intended use is a misuse and is not permitted. This includes, but is not limited to, the following uses:

Operational Misuse

- Transport of people or animals.
- Transport without original packaging.
- Use as climbing assistance.
- Leaning against the TMR.
- Handling of liquids.

Environmental Restrictions

- Use in potentially explosive areas.
- Use below ground or in confined spaces.
- Not designed for flammable/explosive environments.
- Use for the handling of radioactive objects.
- Use outdoors.
- Use in private environments, e.g., real homes.
- Use in the vicinity of children.

Safety And Compliance

- Use as a medical product.
- Use outside of the specified operating limits.

Expected Environment

- Location: Dry, indoor lab or industrial setting.
- Humidity: typically, non-condensing.
- Floor conditions: Clear paths; avoid uneven surfaces.
- Shared spaces: Allowed but require restricted access and monitoring.

Required Operator Skill Level

- Trained R&D or technical personnel only.
- Must complete safety briefing and understand:

- Emergency stop procedures
- Shared-space safety rules

4 Safety Guidelines

The following guidelines are essential for the safe operation and handling of prototype hardware. These instructions apply to Mobile FR3 Duo and all associated accessories.

The following notices are used throughout this manual to indicate the level of risk and importance of information:

DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

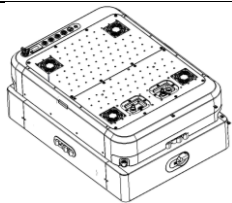
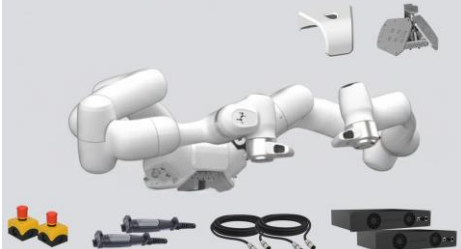
NOTICE

Indicates important information not related to personal safety, but essential for proper operation.

SAFETY-INSTRUCTIONS

Indicates processes or steps that must be strictly observed to ensure safe operation.

5 Scope of Delivery

ID	Component	Preview	Qty
S1	Tactile Mobile Robot		1
S2	Franka Research 3 Duo		1
	Franka Research 3		2
	FR3 Duo Mounting Kit v0.3		1

Tools Needed

- Torque Wrench
- T20 torx bit
- 6 mm Hex Bit
- 5 mm Hex Bit
- 3 mm Hex Bit
- Loctite 243
- Loctite 638

NOTICE

The tools listed above are not included in the scope of delivery.

6 Optional Accessories

- TMR Charging Station
- Franka Spine

See *Prototype Manual and Datasheets Mobile FR3 Duo* (Document number: [R04245](#))

- FR3 Duo Vision & Manipulation Kit

See *Quick Guide for Installation FR3 Duo* (Document number: [R04240](#))

7 Assembly Instructions Mobile FR3 Duo

NOTICE

The revision of the hardware received by the user might slightly differ from what is illustrated in this assembly instruction. The functionality, however, remains unchanged.

Step 1: Unpack the TMR from the euro palette.

Step 2: Use the Lifting Belts provided to transfer the TMR from the euro palette onto the floor.



SAFETY-INSTRUCTIONS

The rear underside of the TMR has a risk of clamping during manual handling and lifting.

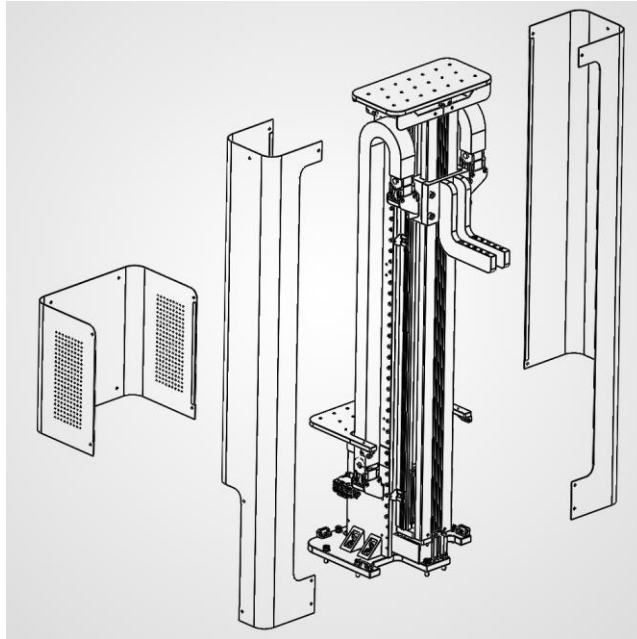
See the Chapter “Handling, Transport & Maintenance” in *Prototype Manual and Datasheets Mobile FR3 Duo* (Document number: [R04245](#))

Step 3: Unpack the Franka Spine from its transport box



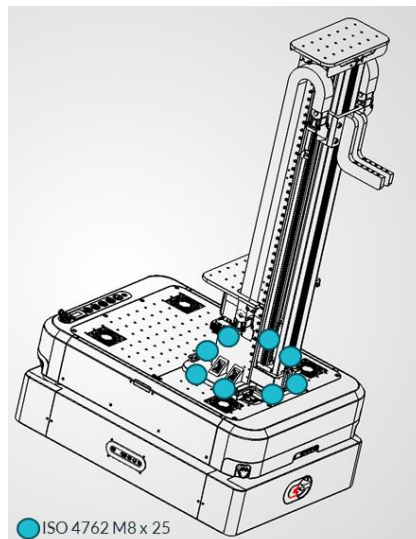
Step 4: Remove the three white external covers of the Franka Spine

Unscrew all the ISO 7380 M4x8 fasteners from the covers using a T20 Torx bit. This is necessary to expose the Spine-to-TMR adapter plate and cables. Keep aside the covers and the fasteners to be used later for reassembly. Use 2 Nm tightening torque.



Step 5: Connect Franka Spine to the TMR.

Carefully place the Franka Spine on the TMR and position the spine as shown below. Mount the Franka Spine on the Front Top Plate of the TMR by installing 8x DIN912 / ISO4762 M8x25 screws using a 6mm Hex bit. Use 20 Nm tightening torque.



Step 6: Cabling of Franka Spine to TMR

- Notice on the right and left side of the Franka Spine, 1x Robot Connection Cable (X1 cable) and 1x Emergency Stop Cable (X3 Cable) already mounted and routed through the cable drag chain.
- Notice on the rear side of the Franka Spine, the Spine Power Cable, and the Spine Ethernet Cable
- Connect the above-mentioned cables carefully to the respective ports of the Spine Connection Bays, Right and Left. See the figure below:

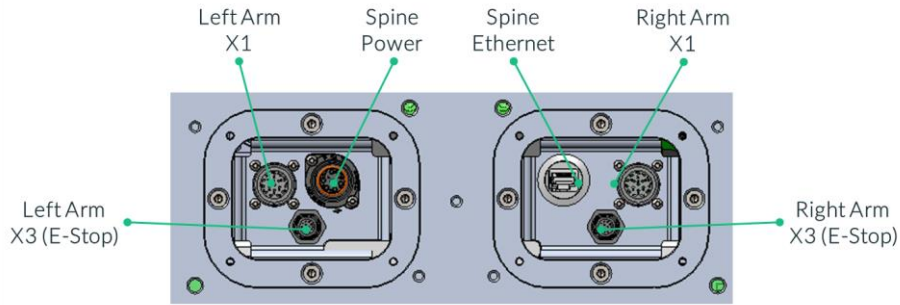


Figure 1: Spine Connection Bays, Left and Right-angle

Step 7: Install FR3 Duo onto the Franka Spine

For detailed instructions, see the Chapter “Assembly Instruction: FR3 Duo with Franka Spine” in **Quick Guide for Installation FR3 Duo (Document number: R04240)**

Step 8: Reinstall the covers from Step 4 onto the Franka Spine

Step 9: Charge the TMR using the TMR Charging Station

For detailed instructions, see the Chapter “TMR Charging Station” in **Prototype Manual and Datasheets Mobile FR3 Duo (Document number: R04245)**

Step 10: Turn on the TMR

For detailed instructions, see the Chapters “Turning on the TMR” and “Shutting Down the TMR” in **the Prototype Manual and Datasheets Mobile FR3 Duo (Document number: R04245)**

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