KUKA

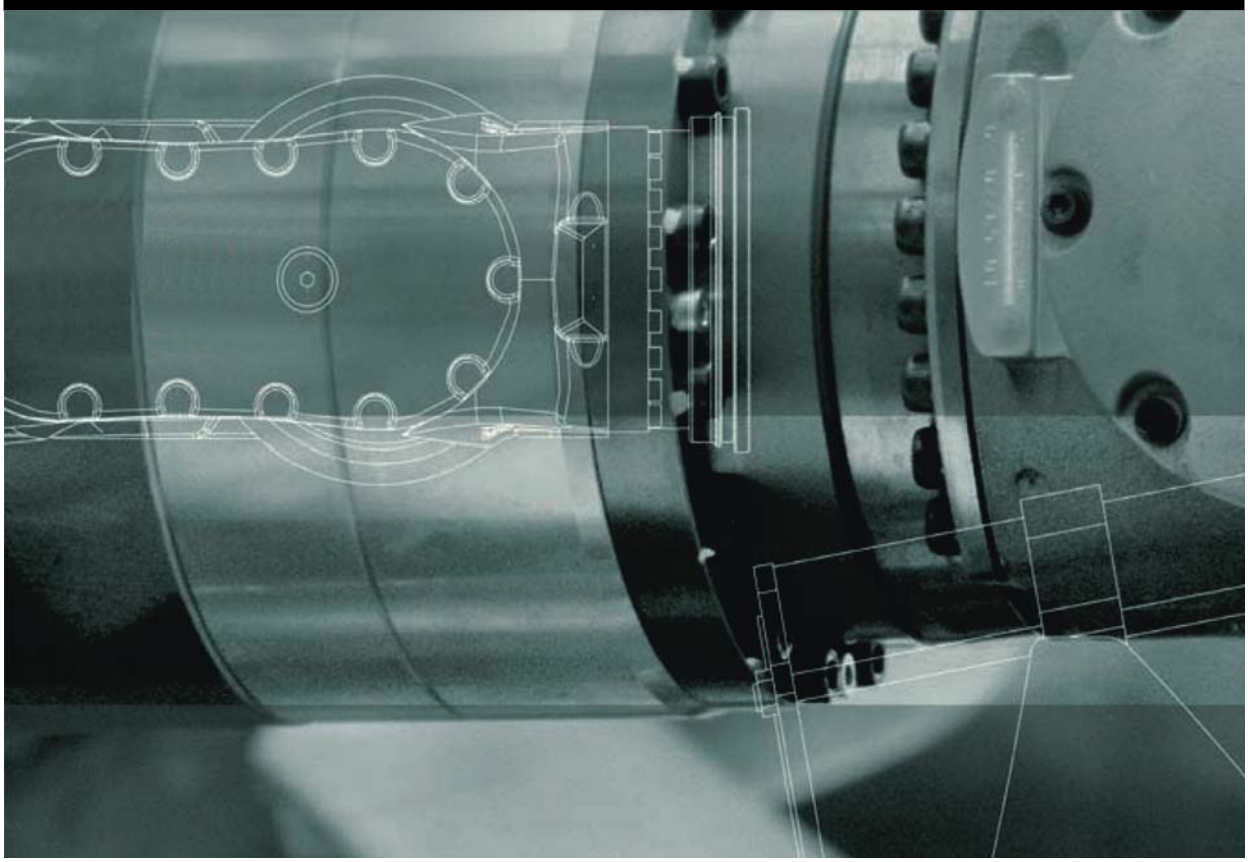
Controller Option

KUKA Roboter GmbH

KR C4

Technology Cabinet

Assembly and Operating Instructions



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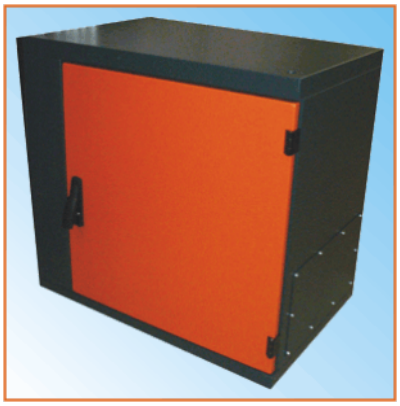

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Contents

1 Introduction

1.1 Industrial robot documentation

The industrial robot documentation consists of the following parts:

- Documentation for the manipulator
- Documentation for the robot controller
- Operating and programming instructions for the KUKA System Software
- Documentation relating to options and accessories
- Parts catalog on storage medium

Each of these sets of instructions is a separate document.

1.2 Representation of warnings and notes

Safety

These warnings are relevant to safety and **must** be observed.

DANGER	These warnings mean that it is certain or highly probable that death or severe physical injury **will** occur, if no precautions are taken.
WARNING	These warnings mean that death or severe physical injury **may** occur, if no precautions are taken.
CAUTION	These warnings mean that minor physical injuries **may** occur, if no precautions are taken.
NOTICE	These warnings mean that damage to property **may** occur, if no precautions are taken.
	These warnings contain references to safety-relevant information or general safety measures. These warnings do not refer to individual hazards or individual precautionary measures.

Hints

These hints serve to make your work easier or contain references to further information.

	Tip to make your work easier or reference to further information.

2 Purpose

2.1 Target group

This documentation is aimed at users with the following knowledge and skills:

- Advanced knowledge of electrical and electronic systems

For optimal use of our products, we recommend that our customers take part in a course of training at KUKA College. Information about the training program can be found at www.kuka.com or can be obtained directly from our subsidiaries.

2.2 Intended use

Use

The technology cabinet is designed as a top-mounted cabinet for the KR C4 robot controller.

Using it for any other or additional purpose is considered impermissible misuse. The manufacturer cannot be held liable for any damage resulting from such use. The risk lies entirely with the user.

Impermissible misuse

Any use or application deviating from the intended use is deemed to be impermissible misuse; examples of such misuse include:

- Operation outside the permissible operating parameters
- Use in potentially explosive environments

3 Product description

3.1 Overview of technology cabinet

Description

The technology cabinet is fastened on top of the KR C4 robot controller. On the inside of the rear panel of the technology cabinet is a removable mounting plate that can be used freely. On the outer right-hand panel is a mounting plate for installation of the connectors.

Fig. 3-1: Overview

1 Bolts for PE rail
2 Mounting plate for installed equipment
3 Mounting plate for connectors

4 Technical data

Basic data

Control cabinet type	Technology cabinet
Weight	approx. 40 kg
Protection classification	IP 54
Color	Configurable

Environmental conditions

The environmental conditions, such as the ambient temperature, altitude and humidity class, depend on the installed devices and are thus the sole responsibility of the user.

Vibration resistance

Type of loading	During transportation	During continuous operation
r.m.s. acceleration (sustained oscillation)	0.37 g	0.1 g
Frequency range (sustained oscillation)	4...120 Hz	
Acceleration (shock in X/Y/Z direction)	10 g	2.5 g
Waveform/duration (shock in X/Y/Z direction)	Half-sine/11 ms	

4.1 Dimensions

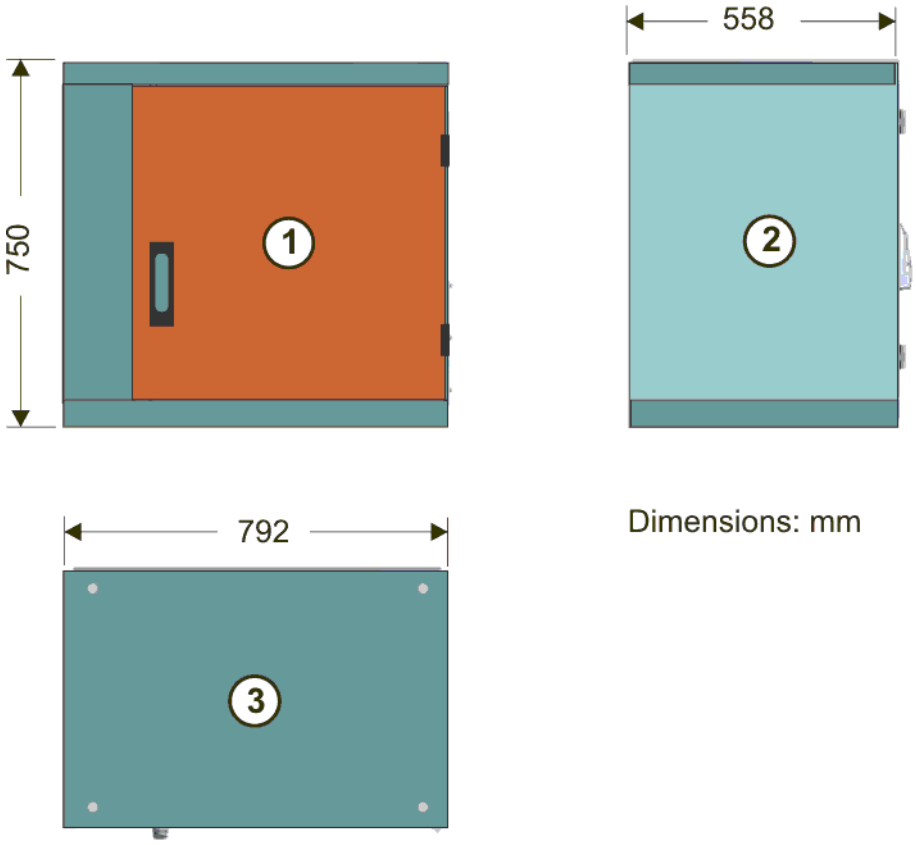

Fig. 4-1: Technology cabinet dimensions

1 Front view

2 Side view
3 Top view

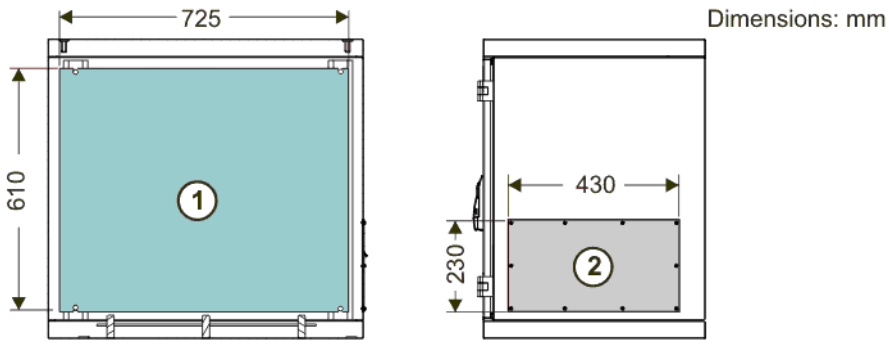

Fig. 4-2: Mounting plate dimensions

1 Mounting plate on rear panel
2 Mounting plate for connectors

4.2 Plates and labels

Depending on the configuration of the technology cabinet, corresponding plates and labels must be attached (Warning, Information, etc.).

5 Safety

This documentation contains safety instructions which refer specifically to the product described here. The fundamental safety information for the industrial robot can be found in the “Safety” chapter of the operating or assembly instructions for the robot controller.

⚠ WARNING The “Safety” chapter in the operating instructions or assembly instructions of the robot controller must be observed. Death to persons, severe physical injuries or considerable damage to property may otherwise result.

6 Transportation

6.1 Transportation using lifting tackle

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller and technology cabinet must be upright.

Necessary equipment

- Lifting tackle with or without lifting frame

Procedure

1. Attach the lifting tackle with or without a lifting frame to all 4 transport eyebolts on the top-mounted cabinet.

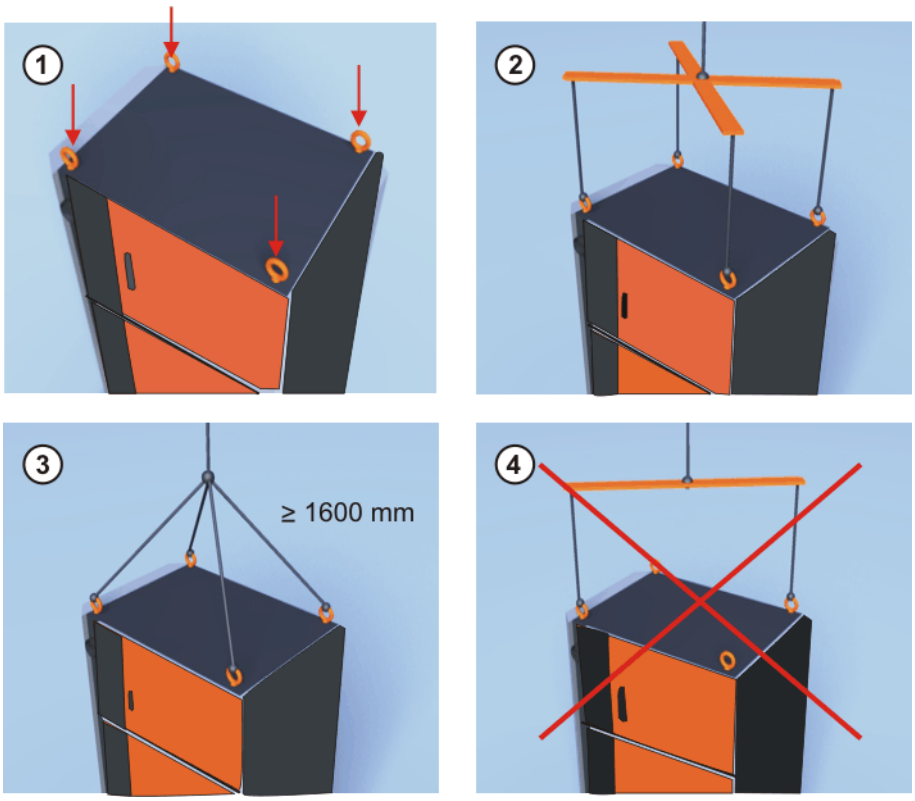

Fig. 6-1: Transportation using lifting tackle

1 Transport eyebolts on the technology cabinet
2 Correctly attached lifting tackle
3 Correctly attached lifting tackle
4 Incorrectly attached lifting tackle

2. Attach the lifting tackle to the crane.

⚠ WARNING If the suspended robot controller with technology cabinet is transported too quickly, it may swing and cause injury or damage. Transport the robot controller with technology cabinet slowly.

3. Slowly lift and transport the robot controller with technology cabinet.
4. Slowly lower the robot controller with technology cabinet at its destination.
5. Detach the lifting tackle from the technology cabinet.

6.2 Transportation by pallet truck

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller must be upright.
- The anti-toppling bracket must be fastened to the robot controller.

Procedure

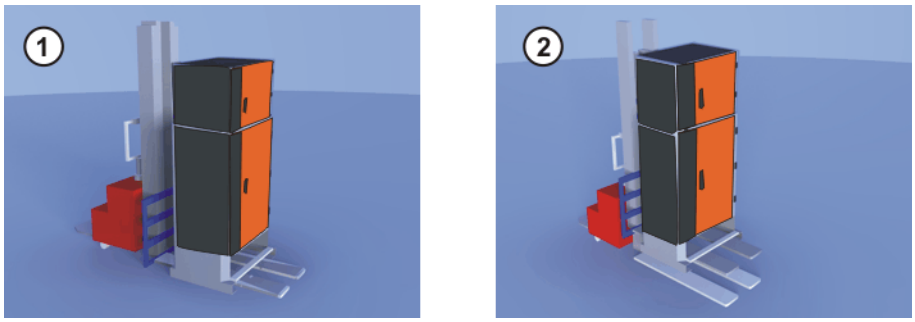

Fig. 6-2: Transportation by pallet truck

1 Robot controller with anti-toppling bracket and technology cabinet
2 Raised robot controller with technology cabinet

6.3 Transportation by fork lift truck

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller and technology cabinet must be upright.
- The anti-toppling bracket must be fastened to the robot controller.

Procedure

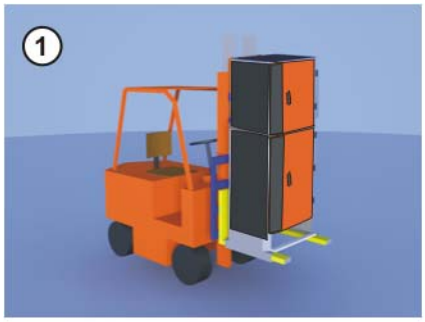

Fig. 6-3: Transportation by fork lift truck

1 Robot controller with fork slots

7 Start-up and recommissioning

7.1 Fastening on the robot controller

The technology cabinet is firmly screwed to the threaded holes of the transport eyebolts.

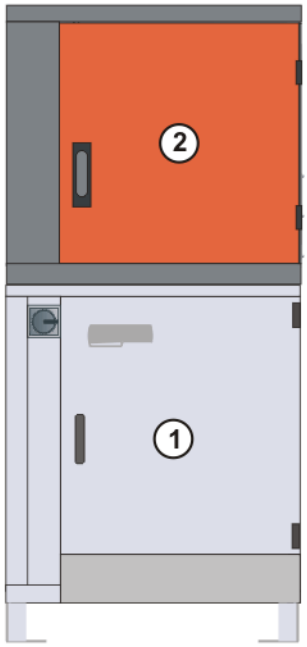

Fig. 7-1: Fastening on the KR C4 robot controller

1 KR C4 robot controller
2 Technology cabinet

8 Maintenance

The technology cabinet is maintenance-free.

8.1 Cleaning the technology cabinet

Preconditions

- The robot controller and technology cabinet must be switched off and secured to prevent unauthorized persons from switching them on again.
- Power supply lead disconnected.
- Observe the EMC guidelines.

Work regulations

- The manufacturer's instructions must be observed when using cleaning agents for cleaning work.
- It must be ensured that no cleaning agents enter electrical components.
- Do not use compressed air during cleaning work.
- Do not spray with water.

Procedure

1. Loosen and vacuum up any dust deposits.
2. Clean the technology cabinet with a cloth soaked with a mild cleaning agent.
3. Clean cables, plastic parts and hoses with a solvent-free cleaning agent.
4. Replace damaged, illegible or missing identifications, labels and plates.

9 Decommissioning, storage and disposal

The technology cabinet must be decommissioned, stored and disposed of in accordance with the applicable national laws, regulations and standards.

10 KUKA Service

10.1 Requesting support

Introduction

The KUKA Roboter GmbH documentation offers information on operation and provides assistance with troubleshooting. For further assistance, please contact your local KUKA subsidiary.

Information

The following information is required for processing a support request:

- Model and serial number of the robot
- Model and serial number of the controller
- Model and serial number of the linear unit (if applicable)
- Version of the KUKA System Software
- Optional software or modifications
- Archive of the software
- Application used
- Any external axes used
- Description of the problem, duration and frequency of the fault

10.2 KUKA Customer Support

Availability

KUKA Customer Support is available in many countries. Please do not hesitate to contact us if you have any questions.

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