Assembly instruction C-GUIDE

Assembly instruction media routing C-Guide for Universal Robots

Read and observe the Assembly instruction
Keep this document near the Robot

The German manual is the original.
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1. INCLUDED ITEMS

The C-Guide for the UR5 & UR10 consists of following parts.

1. Fixed Holder with pressure interception
2. Fixed Holder
3. Media hose
4. Rotation bracket
5. Hose clamp

Image1: Scope of supply C-Guide UR5/UR10
2. PRODUCT DESCRIPTION

By bringing in a media feed C-Guide, FAUDE has the option of supplying electrical and pneumatic lines via the robot to the end effector.

The innovative and robust design of the C-Guide guides lines to the robot safely and flexibly. The design allows a long lifetime without kinks or injuries at the lines and hoses in every robot position.

3. INSTALLATION ON THE ROBOT

The following chapter describes the assembly of the FAUDE C-Guides at the Universal Robot UR5 & UR10.

The UR must be built up and be able to work before you can start with the assembly of the C-Guide. The following illustration shows a robot construction that allows easy assembly of the C-Guide.

Image 2: Possible position for the assembly
The C-Guide of the UR5 and UR10 is kept safely on the robot arm by the three included holders. The holders are one fixed holder with pressure interception one fixed holder without pressure interception and a rotatable holder. These holders are preassembled at delivery like in Image 1. Before mounting the holders you have to disassemble them first by unscrewing the three Hexagon head screws M4x20 (size 3) on each holder.

![Image 3: Explosion view of the C-Guide holders](image)

The two rigid brackets are attached to the forearm and the rotary holder is attached to the upper arm of the robot. It has to be taken care at the assembly of the rigid holder that the comb which serves for the cable clamp of the tubes and lines, points in the direction of the robot tool. This is attached to the front part of the forearm and without interception at the rear part of the forearm. The exact position can be found in Image 4. There isn't any predefined orientation for the rotatable holder. Moreover, it has to be taken care at the attachment of the C-Guide that the surface of both robot arms are free from oil and dust. If this is not the case all robots from the Company Universal Robot can be cleaned with a customary industry cleaner. The care notes of the operator’s manual have to be taken into account.
The hose clamp listed under position 5 in the description of included parts is used to attach the media hose to the system part, the table plate etc. on which the robot is mounted. This is to be mounted individually as a result of the requirements.
3.1 ASSEMBLY RIGID HOLDER

After opening the three M4x20 screws the rigid holder can be pulled apart. The comb for the cable clamping as well as the tube holder remain on one side of the C-Guide holder each.

Then one side of the holder is placed on the forearm.

Image 5: Forearm with one part of the holder

When this is done, the second side of the holder is put on. Afterwards the three Hexagon head screws M4x20 (size 3) have to be tightened. Please ensure that all screws are tightened evenly.

Image 6: Forearm with both parts of the holder

At the last step of the assembly of the rigid C-Guide holder, the media hose will be clipped into the holder. The mounting of the rigid holder is identical to the working steps.
3.2 ASSEMBLY ROTATABLE HOLDER

After opening the three screws (M4x20) the rotatable holder can be pulled apart. The ball bearing, including the hose holder, remains on one side of the C-guide holder. After that, one side of the holder has to be put on the robot arm.

When this is done, the second side of the holder is put on. Afterwards the three Hexagon head screws M4x20 (size 3) have to be tightened. Please ensure that all screws are tightened evenly.

At the last step of the assembly of the rotatable C-Guide holder, the media hose will be clipped into the holder.
3.3 IMAGESDIRECTORY

Image 1: Scope of supply C-Guide UR5/UR10 .......................................................... 3
Image 2: Possible robot positions for the assembly...... Fehler! Textmarke nicht definiert.
Image 5: Forearm with one part of the holder ............. Fehler! Textmarke nicht definiert.
Image 6: Forearm with both parts of the holder .......... Fehler! Textmarke nicht definiert.
Image 7: Upper arm with one part of the holder .......... Fehler! Textmarke nicht definiert.
Image 8: Upper arm with mounted rotating holder ...... Fehler! Textmarke nicht definiert.
3.4 FURTHER ACCESSORIES FOR THE UR

PROLIGHT

When implementing HRC applications, special requirements must be met.

In particular, the standards and guidelines for the components must be observed, so that injuries to employees cannot occur. This also includes the connection socket of axis 6 on the UR3 and UR5 robots. This must be additionally secured. Furthermore, operators are obligated to show that the robot is active by a corresponding visualization.

FAUDE offers the ProLight lighting protection ring for this purpose. This is used to meet the safety requirements of industrial robots for safe “human - robot collaborations”.

Order number: PROLIGHT: FAP17101

SACA- SAFETY- CASE

The requirements of an enabled device according to DIN EN ISO 10218-1 are fulfilled with the retrofit of the UR teach panels with the SaCa safety case, including the 3-level enabling switch.

Single-handed ergonomic operation permits additional actuation of the button for freedrive mode. This means one hand is free for manual guidance of the robot. It is suitable for both left and right handed operation.

With the 3-point set down the operating panel is available at any time for safe and comfortable programming.

Order number: SACA- SAFETY- CASE: FAP16610
SAFETY- BUNDLE

According to the professional association and the standards for robots, whether it is a lightweight robot or an HRC robot, the current robot standard DIN EN ISO 10218-1 must be fulfilled.

It is stated there that each robot requires a mode selector and an enabling switch. The safety system from FAUDE fulfills this with consideration of the two-channel and adaptation of the user interface.

The FAUDE safety bundle expands the UR robots with additional functions to increase the safety and fulfillment of safety specifications on industrial robots (DIN EN ISO 10218-1).

The specified operating mode selection is ensured by the Electronic Key System (EKS). The EKS is used to manage access and control of the system using an electronic key with different authorisation levels. Using a 3-level enabling switch on the FAUDE safety case, the requirement for an enabling device for set up mode is fulfilled.

While the operator (black) can only start and stop the system, the programmer (green) can adjust the teach points in a specific area. The maintenance person, on the contrary, has with the access authorization all possibilities to put the robot into operation or to reorient it.

Using the Siemens S7 safety controls other external devices via PROFINET or PROFIsafe can be connected.

Order number: SAFETY- BUNDLE: FAP16610