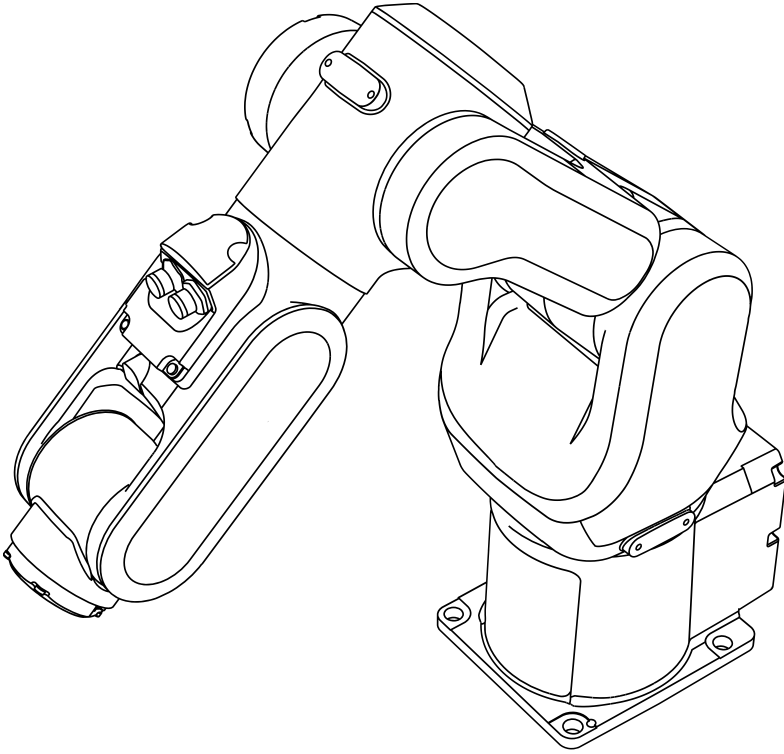




SWIFTI™ CRB 1100

Unboxing the cobot - Get Started Guide

Version 1.0

Before you start

Free online video tutorials

For a detailed video guide on how to get started, access our online tutorial here: <https://to.abb/K-TEQmUN>



Product manual

You can also access product manuals for further information. Please contact your local ABB sales team to set up account or obtain manuals in other languages. <https://to.abb/Eit6XNgF>

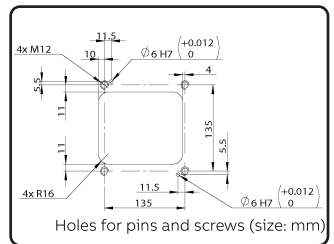
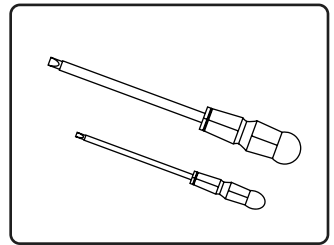
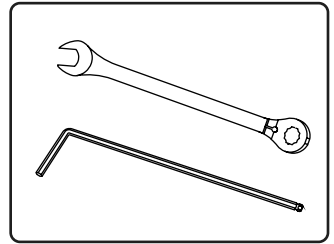
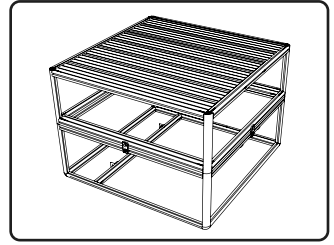
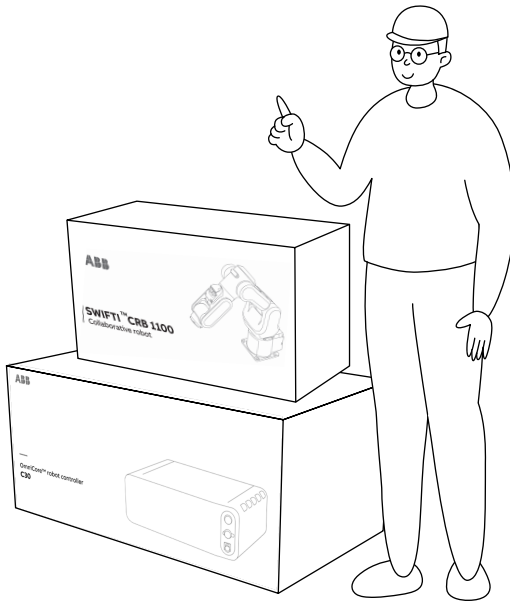


ABB Service

Get support for your region via chat, email or phone. <https://to.abb/KgwLVwp9>



Preparation



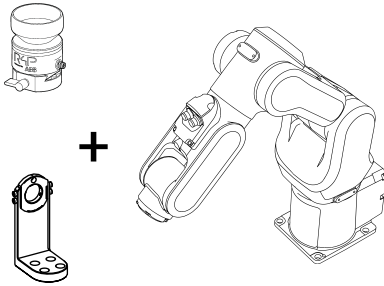
Things to know before getting started

IMPORTANT- The weight of the CRB 1100 robot is 21.1 kg. To ensure safe installation, we recommend that a trained person, with knowledge of mechanical and electrical installation/maintenance/repair work, assembles this cobot.

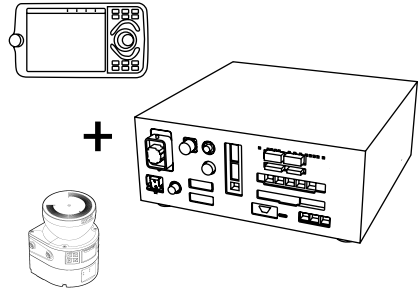
You also need:

- Wrenches or hex key fits for M3, M4 and M12 screws
- A 0.4mm (or smaller) and a 1.4mm slotted screw drivers
- A table with holes for fixing M12 screws and locating pins.

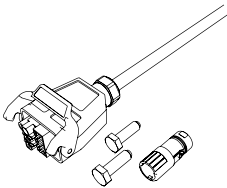
What's inside the boxes?



01 SWIFTI™ CRB 1100 Manipulator
Lead-through device



02 OmniCore™ C30 cobot controller
FlexPendant and laser scanner



03 Accessories, incl. screws, cables etc.



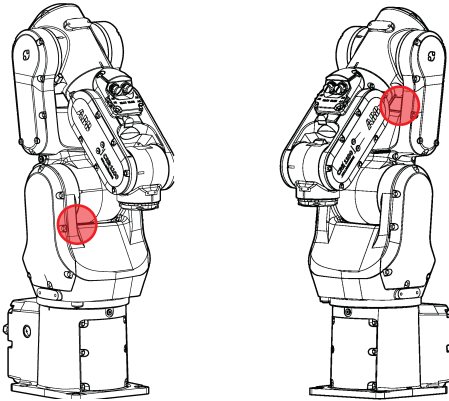
04 Documents and labels



Keep the printed documents and labels for further service.

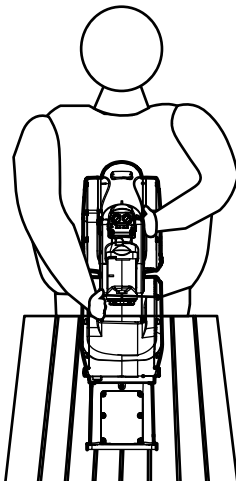
Mounting the cobot

Example: Table mounting



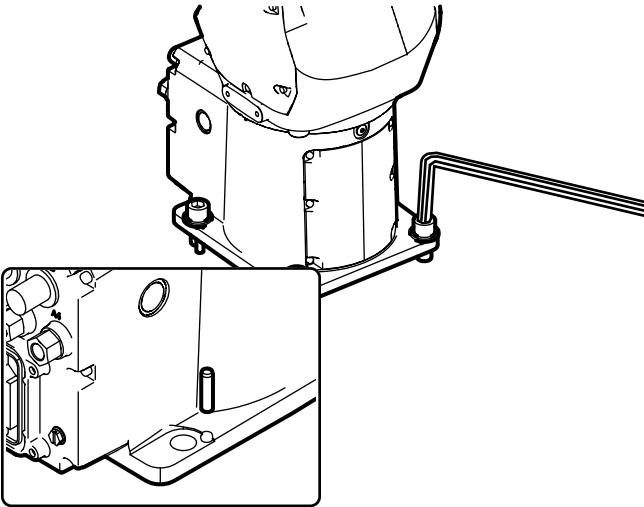
01 Lift the manipulator

IMPORTANT- When lifting the cobot from the packaging, grasp the cobot at the lower arm and swing, as shown in the image.



02 Transport the manipulator

Make sure the intended mounting platform or foundation is stable and flat.

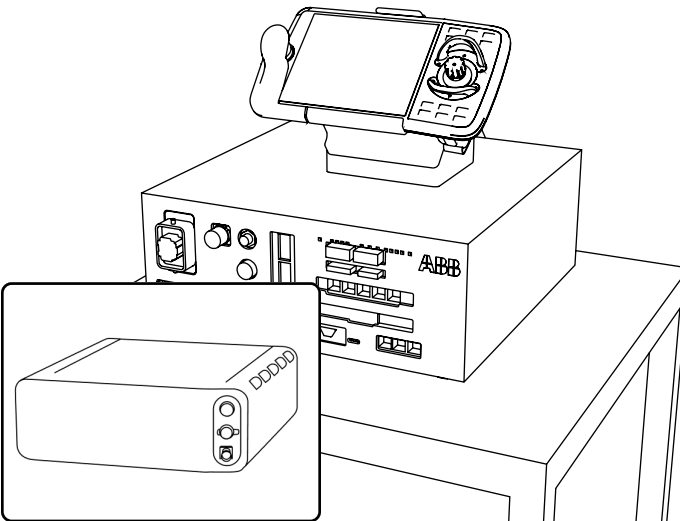


03 Tighten the screws

You can find four screws and two pins in the controller packaging box.

Use the pins to fix the cobot position.

Insert the four screws at the cobot base. Tighten each screw.



04 Place the controller

Lift the controller from C30 box and place it on an appropriate table.

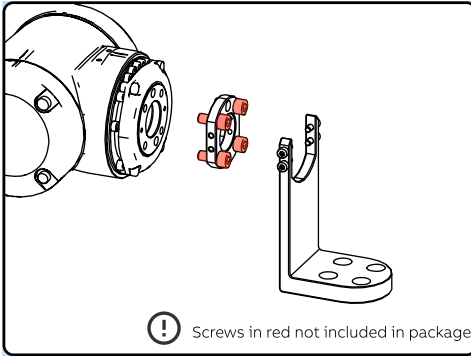
Ensure the height, weight and stability of the table.

Mount the covers if they are available. In this case, you also need to plug in the Ethernet, FlexPendant cable and power cable which are mounted on the covers.

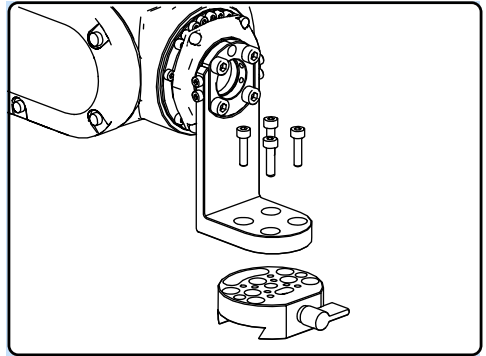
Insert the cable pins to a connector and attach it to X15 port. Connect the FlexPendant cable to X4 port.

Mounting the cobot

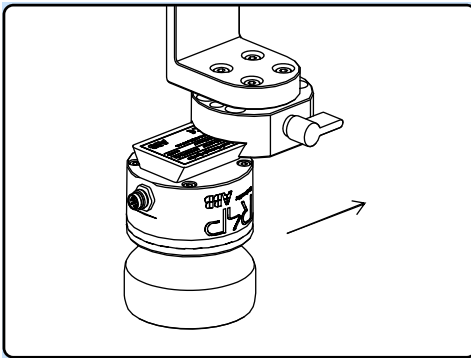
Lead-through device



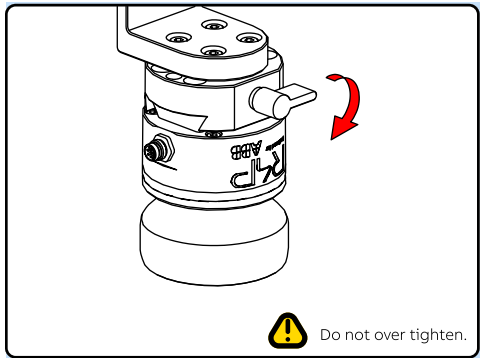
01 Mount the adapter



02 Mount the device base



03 Insert the lead-through device



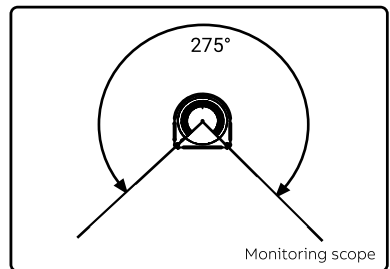
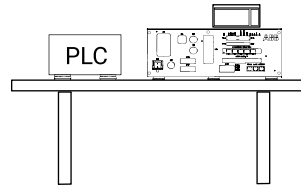
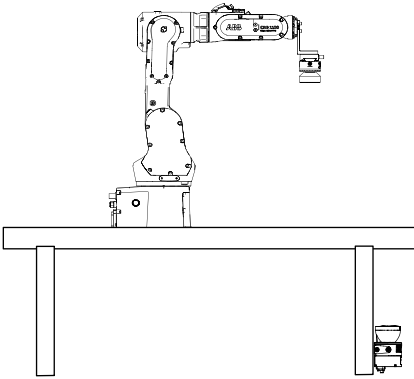
04 Lock the lead-through device



You can find the adapter in the packaging box or design an adapter based on requirement. See Cobot product manual for dimension details.

Mounting the cobot

Laser scanner



Mount the laser scanner and PLC

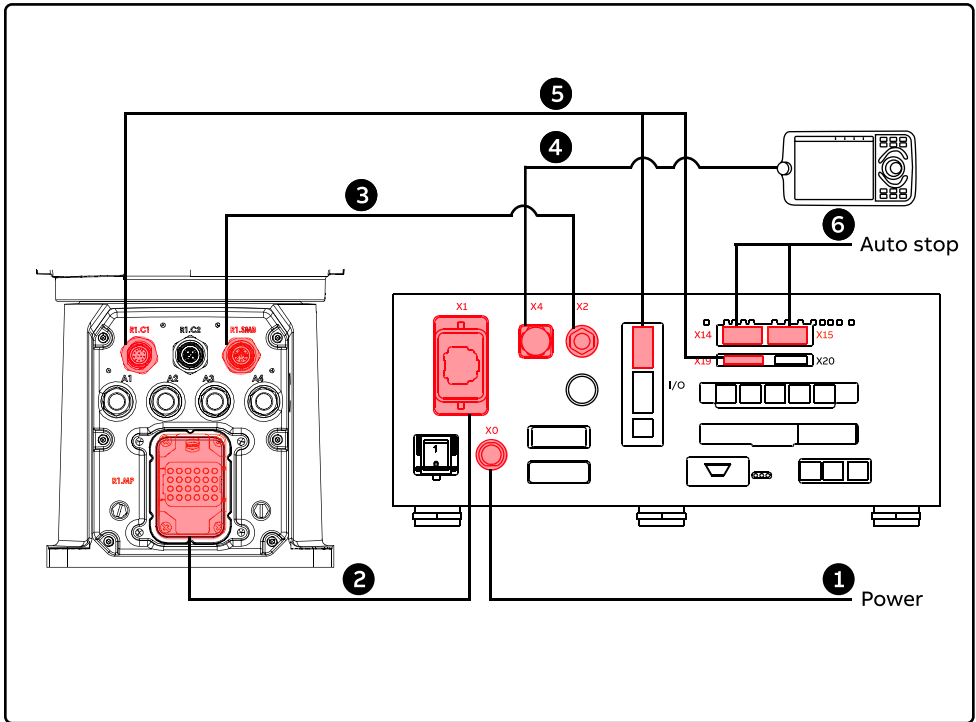
Scanner model: SICK® microScan3 Core

⚠ Refer to the SICK® microScan3 instruction manuals for detailed mounting instructions.

IMPORTANT- ABB does not provide PLC in the packaging box. Prepare your own PLC and ensure the PLC supports PROFIsafe and can act as a master.

Connect cables

Controller - manipulator



Cables

- | | |
|-------------------|----------------------|
| 1. 3HAC066153-001 | 4. FlexPendant cable |
| 2. 3HAC061139-00X | 5. 3HAC078069-00X |
| 3. 3HAC067446-00X | 6. Auto stop cable |



You can also connect X4 port from the front if covers are mounted.



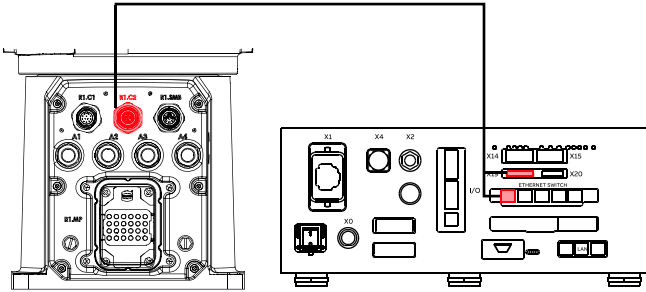
Connect pins 1 and 2 of the X19 port when connecting the CP/CS cable.



Connect pins 9 and 16 of the X14 port when connecting the Auto stop cable.

Connect cables

Lead-through device



01 Controller - Manipulator

Connect Ethernet floor cable to the R1.C2 port on the robot base, and to I/O and X19 ports on the controller.

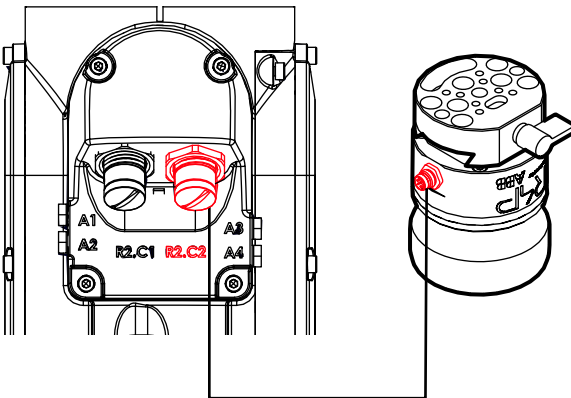
Ethernet floor cable
article number:
3HAC077020-001



You can also connect the LAN port if the Ethernet switch port is not available.



Connect pins 3 and 4 of the X19 port when connecting the Ethernet floor cable.



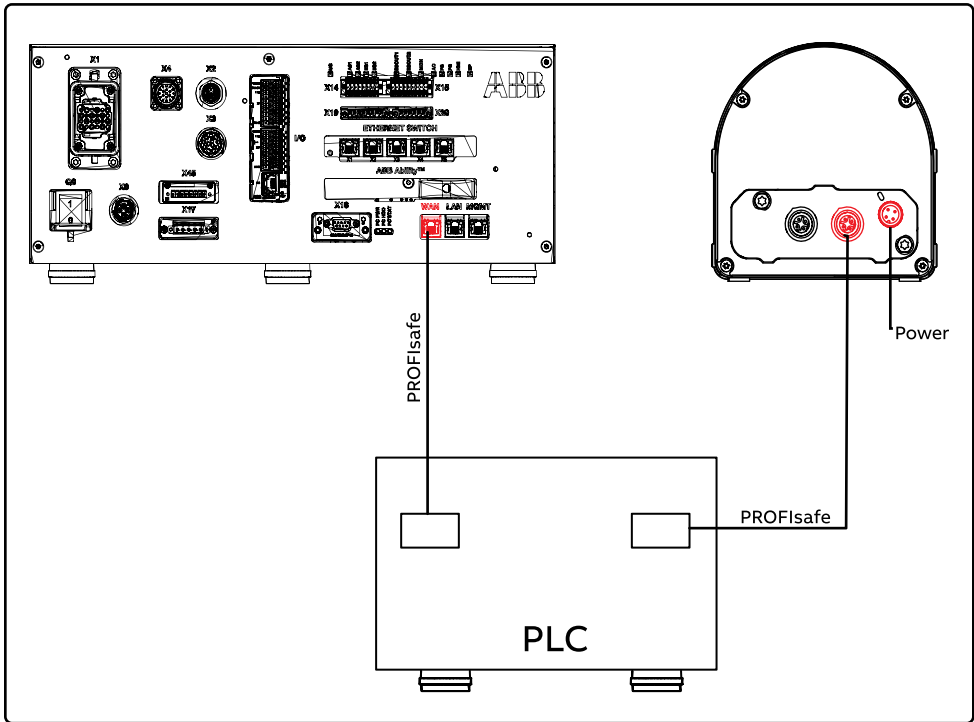
02 Lead-through device

Connect the cable to the lead-through device and to the R2.C2 port on the robot arm.

Cable article number:
3HAC077018-001
(connected to R2.C2)

Connect cables

Laser scanner



01 Controller

Connect corresponding cable to WAN port

02 PLC

Connect corresponding cable to the PLC as required.

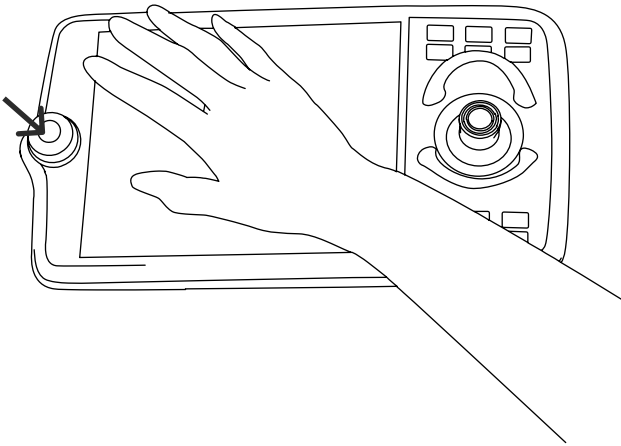
03 Laser scanner

Connect corresponding cables to ports XF1 and XD1.

IMPORTANT- ABB does not provide PLC in the package. Prepare your own PLC and ensure the PLC supports PROFIsafe and can act as a master.

Safety

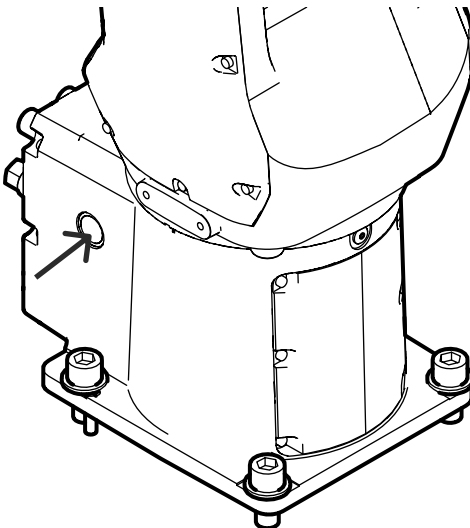
You need to know this before switching on the robot



01 Emergency stop button

Press the emergency stop button immediately if a person is at risk in the working area of the cobot, or if the cobot causes harm to equipment.

IMPORTANT- Emergency stop button should not be used for stopping the robot in normal use, as this can cause excessive wear on the brakes.

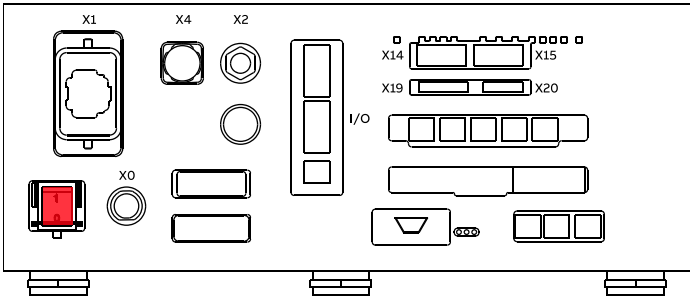


02 Brake release button

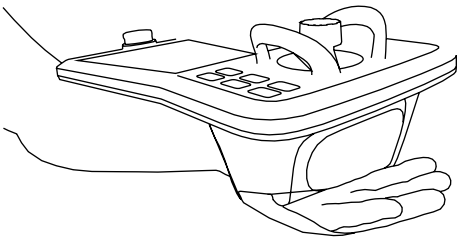
To release the brake, switch off motors, press the release button on the robot base.

IMPORTANT- When releasing the holding brakes, the robot axes may move very quickly and sometimes in unexpected ways. Make sure no personnel is near or beneath the robot.

Switch on the robot

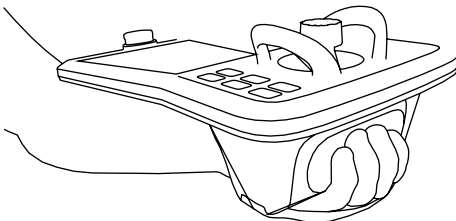


01 Press the button

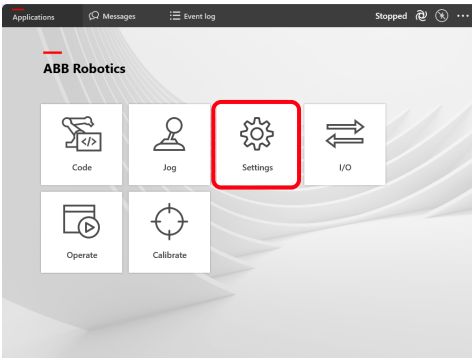


02 FlexPendant

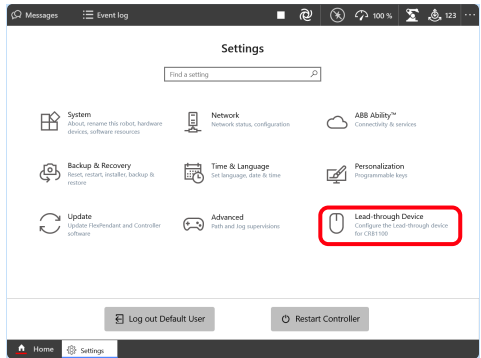
Follow the instruction on the FlexPendant screens, and press the enabling device to switch on the FlexPendant.



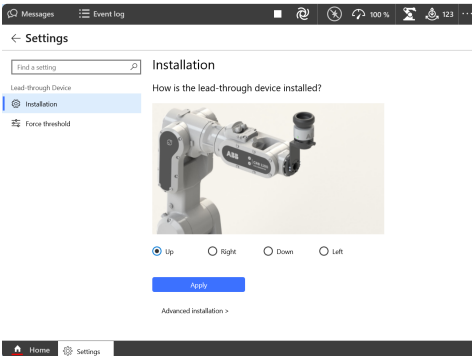
Configure Lead-through



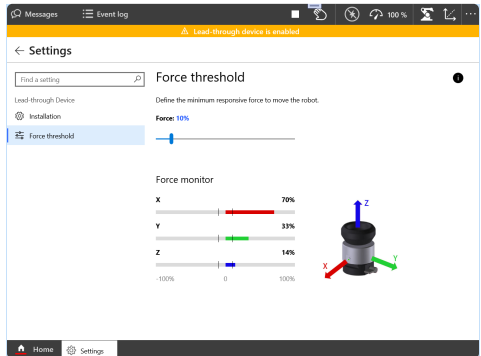
01 Using FlexPendant, tap Settings



02 Tap Lead-through Device



03 Select installation direction



04 Set force threshold (if required)



You can also define other installation directions by clicking Advanced installation in the Installation page.

Move the robot

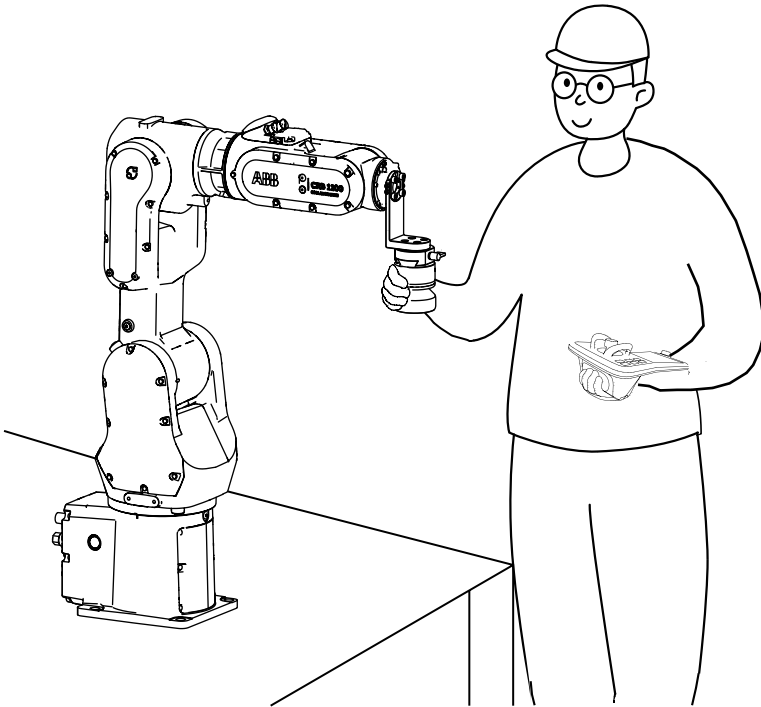
With Lead-through enabled



01 Check Lead-through

Use FlexPendant, click on the quick setting menu on the top right and open the jog interface.

Ensure the Lead-through button is On.



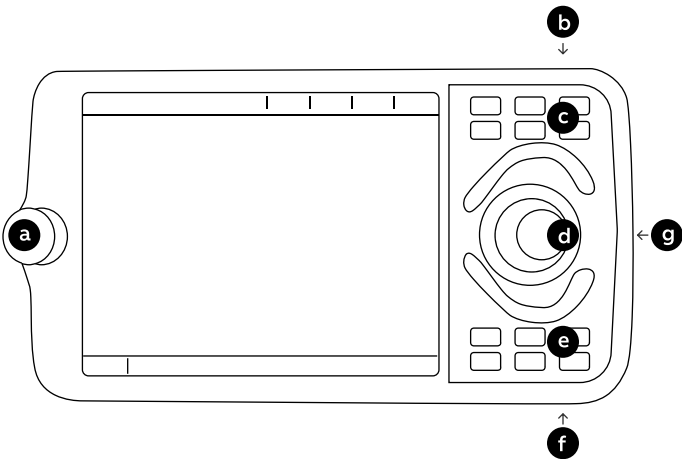
02 Move the cobot

Grab the lead-through device to move the robot arm to a suitable position.

You must press and hold the enabling device to move the cobot. The lead-through device works only when the cobot is in Manual mode.

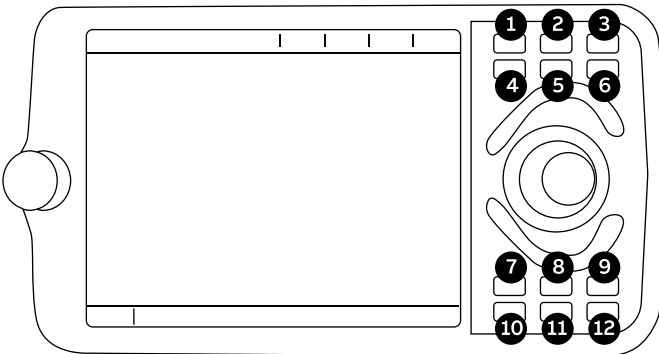
IMPORTANT: Switch off Lead-through after finished moving the cobot.

Get started with FlexPendant

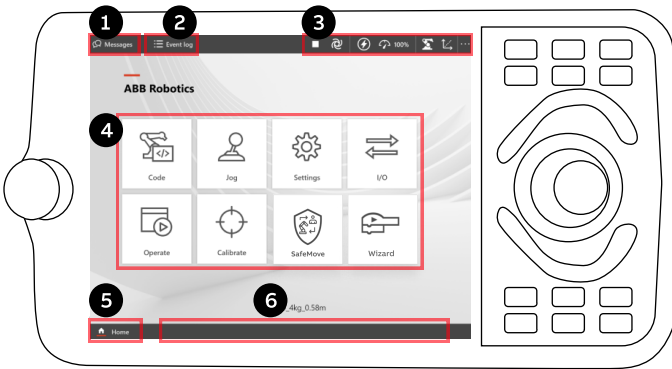


01 Hard buttons

- a - Emergency stop
- b - Thumb button (enable/disable lead-through)
- c - Shortcut buttons
- d - Joystick
- e - Shortcut buttons
- f - USB port and reset button.
- g - Enabling device

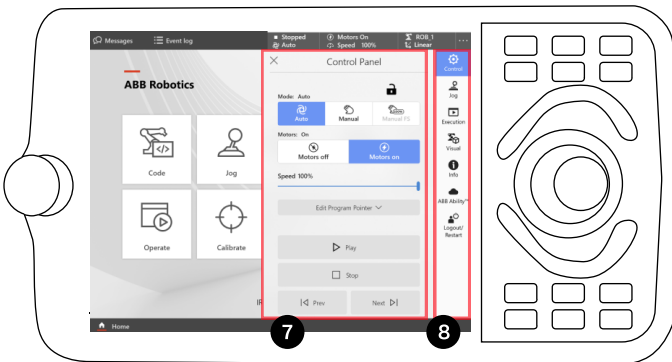


- 1 - Mechanical unit
- 2 - Linear / Reorient
- 3 - Axis 123 / Axis 456
- 4 - User shortcut #1
- 5 - Quick settings
- 6 - User shortcut #2
- 7 - User shortcut #3
- 8 - Start program
- 9 - User shortcut #4
- 10 - Step to previous
- 11 - Stop program
- 12 - Step to next



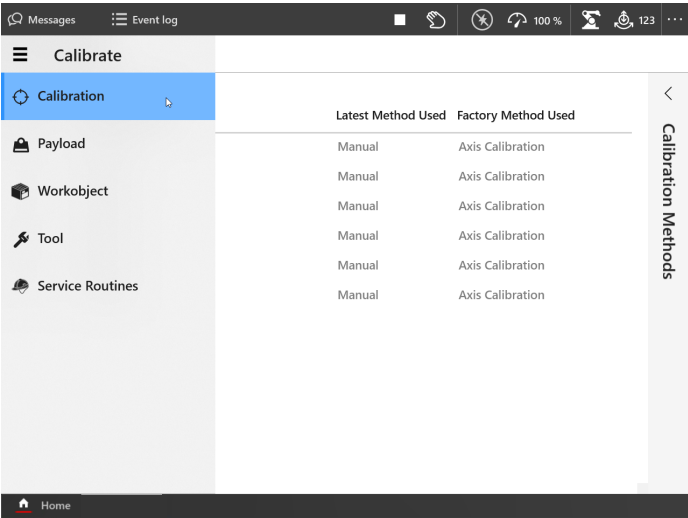
02 User interface

- 1 - Operator messages
- 2 - Event log
- 3 - Status & Quick settings
- 4 - Applications
- 5 - Home button
- 6 - Open applications



- 7 - Control panel
- 8 - Quick settings

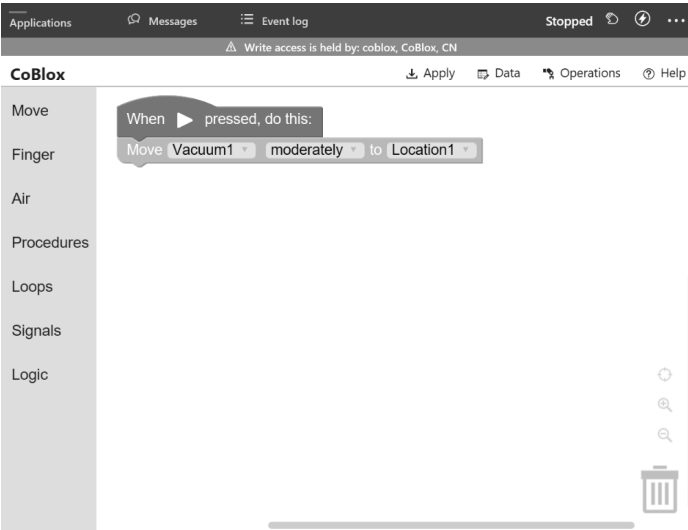
FlexPendant Apps



Calibration

The Calibration APP allows you to define your own tools and work objects.

You could also use the prepared files of a supplier to add a gripper.



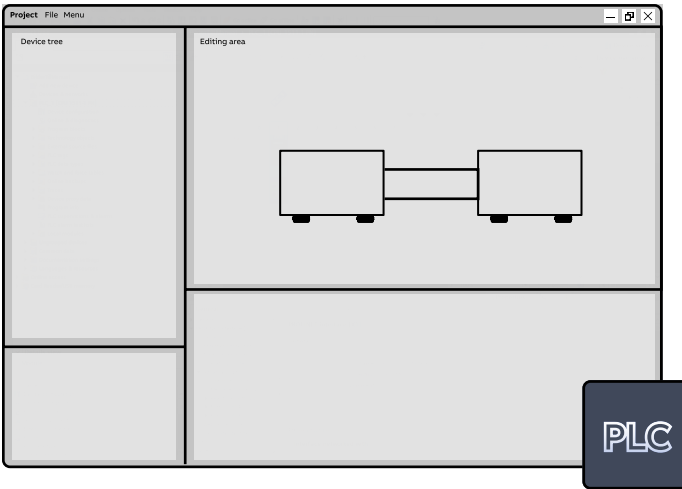
Wizard Easy Programming

You can program your application using Wizard.

The intuitive user interface enables you to program the cobot without prior knowledge or experience.



Configure collaborative safety

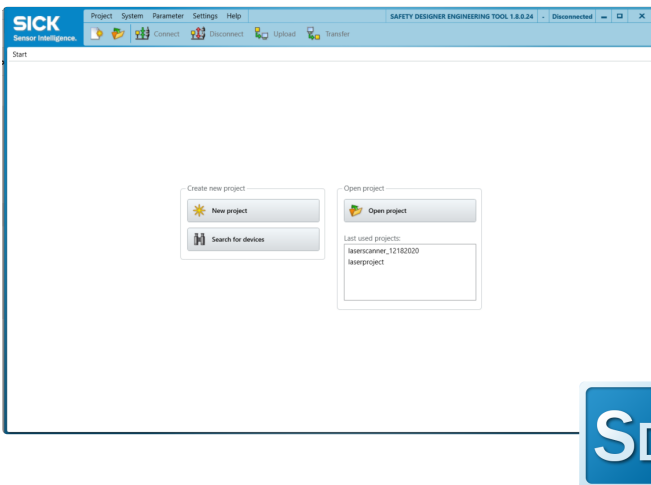


01 PLC

Open PLC configuration software and set up the communication among controller, PLC and laser scanner

IMPORTANT- The PLC must be configured in the 192.168.10.XXX segment and has been uploaded with the GSD files of the controller and laser scanner.

Refer to the OmniCore operating manual and PLC configuration manual.



02 Laser scanner

Download software Safety Designer® from SiCK® official website and open it.

Set up the communication among controller, PLC and laser scanner, and define protection fields.

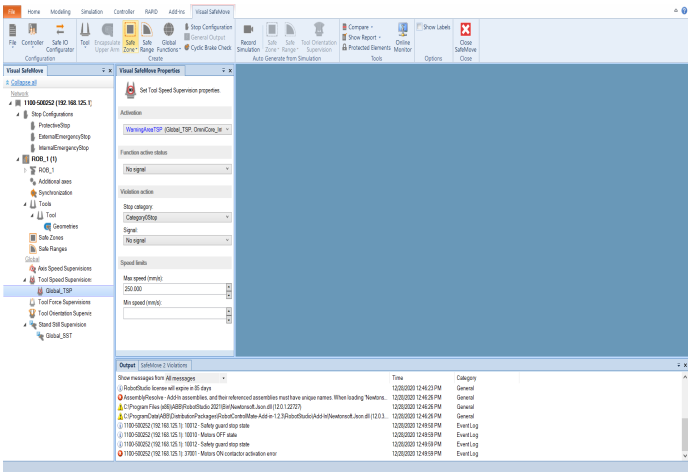
IMPORTANT- The laser scanner must be configured in the 192.168.10.XXX segment.

Refer to SICK® microScan3 instruction manuals.



Find more information in online tutorials.

Configure SafeMove

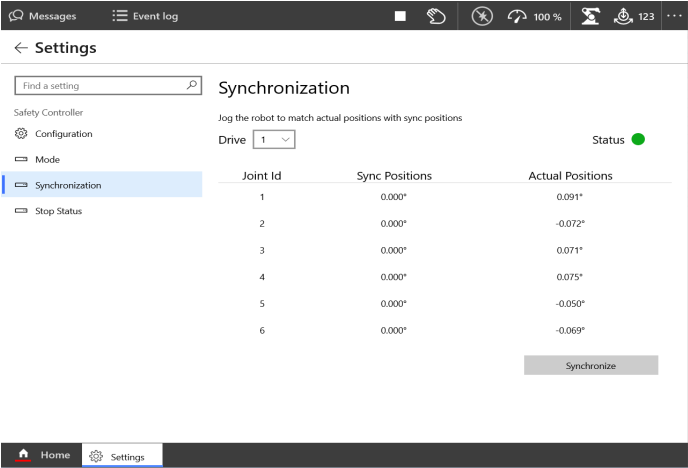


01 In RobotStudio®

Configure SafeMove in RobotStudio.

Make sure:

1. Safety user grants are set up.
2. Synchronization position is configured.
3. Supervision functions TSP and SST are configured.



02 In FlexPendant

Perform synchronization in FlexPendant.

Make sure the logged-in user has safety user grants.



Refer to Application manual - SafeMove (3HAC066559-001) for detailed configuration procedure.

More information

Learn more about ABB cobots

For the latest updates and information about our cobots, visit our website: <https://solutions.abb/cobots>



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