

Robotiq Adaptive Grippers on Polyscope X - User Guide

Original instructions (en)

© 2025 Robotiq Inc.

START PRODUCTION FASTER

Table Of Contents

Revisions.....	3
Known Issues (beta version UCX-3.24.0).....	4
1. Product Compatibility on Polyscope X.....	5
Current feature set for Adaptive Grippers.....	5
2. Main differences between Polyscope 5 & Polyscope X.....	6
a. Tool I/O: Manual scan to detect gripper.....	6
Step 1. From Application, select Robotiq.....	6
Step 2. Check the box 'Gripper is connected to wrist'.....	7
Step 3. Power on the robot.....	7
Step 4. Press the 'Scan' button.....	8
Step 5. Three Options to Activate the Gripper:.....	8
b. 1 application = 1 program.....	8
c. Start program - No confirmation step.....	8
d. Other differences are minor and relate to user interface interactions.....	8
3. Adding a Node.....	9
4. Gripper Activate Node.....	10
a. Simple Activation.....	10
b. Reset and Activation.....	10
5. Gripper Grip Check Node.....	11
a. When you select Configure, the Configure Grip Check window will appear.....	12
b. Adjust the parameters.....	12
Gripper ID: If more than one gripper is present, you can select which gripper ID to use for the grip check.....	12
Dimension of object:.....	12
6. Gripper Move Node.....	13
a. Configure Gripper Move.....	13
b. Edit Gripper Action.....	13

Revisions

Robotiq may modify this product without notice, when necessary, due to product improvements, modifications or changes in specifications. If such modification is made, the manual will also be revised, see revision information.

2025/05/13

[BREAKING CHANGE] Update to support Polyscope X version 10.8.0 (SGRIP-686)

[NEW] Added the capability to jog multiple grippers from the new Robotiq Sidebar. (SGRIP-552)

2025/04/23

[NEW] Add the If and Else nodes as child nodes to the Gripper Grip Check node to properly handle object detection. (SGRIP-641)

[NEW] French translation is now available (SGRIP-691)

[NEW] Multiple grippers can be operated simultaneously in the gripper move node. (SGRIP-543)

[NEW] Added the capability to see the gripper information in the Adaptive grippers page. (SGRIP-637)

[NEW] Added the capability to update the firmware of the Grippers (SGRIP-662)

[BUGFIX] Fixed a bug where object detection status could be wrong in the Edit Gripper Action page. (SGRIP-678)

2025/03/17

[BUGFIX] Fixed an issue when the Gripper ID 1 is used with the Grip Check node to validate a dimension.

2025/03/05

[IMPROVEMENT] Renamed URCapX file to match other Robotiq URCaps' naming pattern.

[BUGFIX] Fixed graphical glitch where the keyboard would hide the text fields when configuring dimension validation in Grip Check.

[BUGFIX] Fixed bug where dimension validation in Grip Check could be configured even when "Not detected" was selected.

[BUGFIX] Fixed bug where Gripper Move's "Go to position" button would not be enabled at the right moments.

[BUGFIX] Removed non-functional Smart Skill.

2025/03/04

Initial release

Known Issues (beta version UCX-3.28.0)

- [KNOWN ISSUE] Re-installing the URCapX may cause the gripper to lose communication. A manual restart (Shutdown -> Restart) of the robot after the URCapX change fixes that.

1. Product Compatibility on Polyscope X

Product	Current status
Hand-E, Hand-E C10, 2F-85, 2F-140	✓ (beta)
EPick, PowerPick	Not supported
Other Plug & Play components	Not supported
Palletizing Solution	Not supported

Current feature set for Adaptive Grippers

Feature	Polyscope X (Feb 2025)	Polyscope 5
Gripper activation	✓	✓
Gripper open/close/move	✓	✓
Grip check	✓	✓
Script programming	✓	✓
Multi-Grippers		✓
Toolbar		✓
Stroke calibration		✓
Robot compliance		✓

2. Main differences between Polyscope 5 & Polyscope X

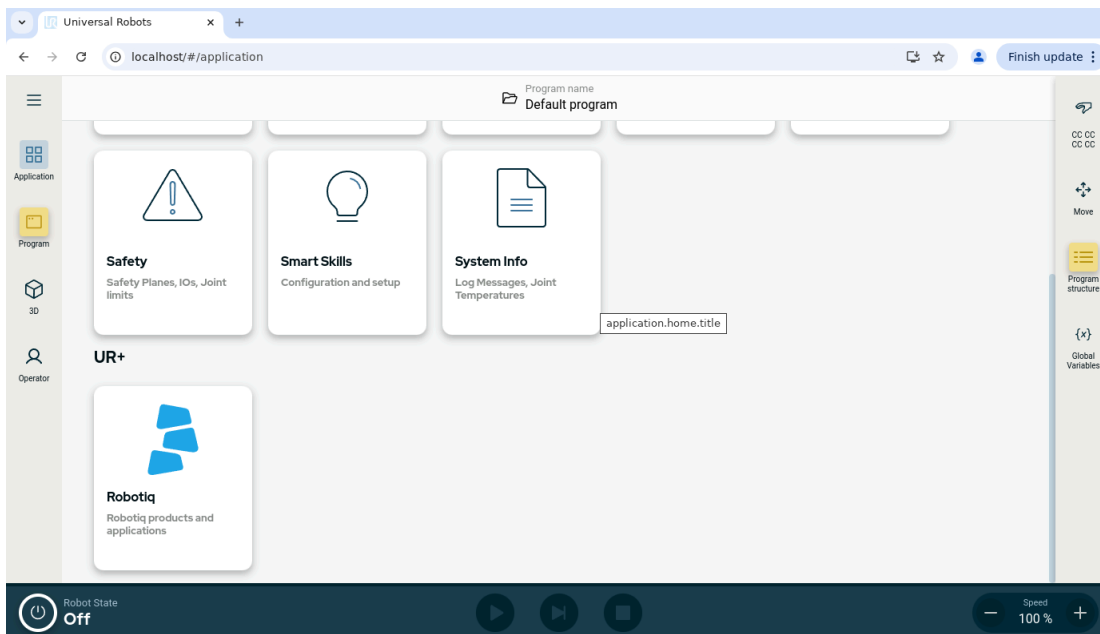
a. Tool I/O: Manual scan to detect gripper

With Polyscope X, when the gripper is connected to the robot's wrist tool port, you must manually scan for the gripper presence through the user interface.

Note: If the gripper is connected to a USB port, this step can be skipped.

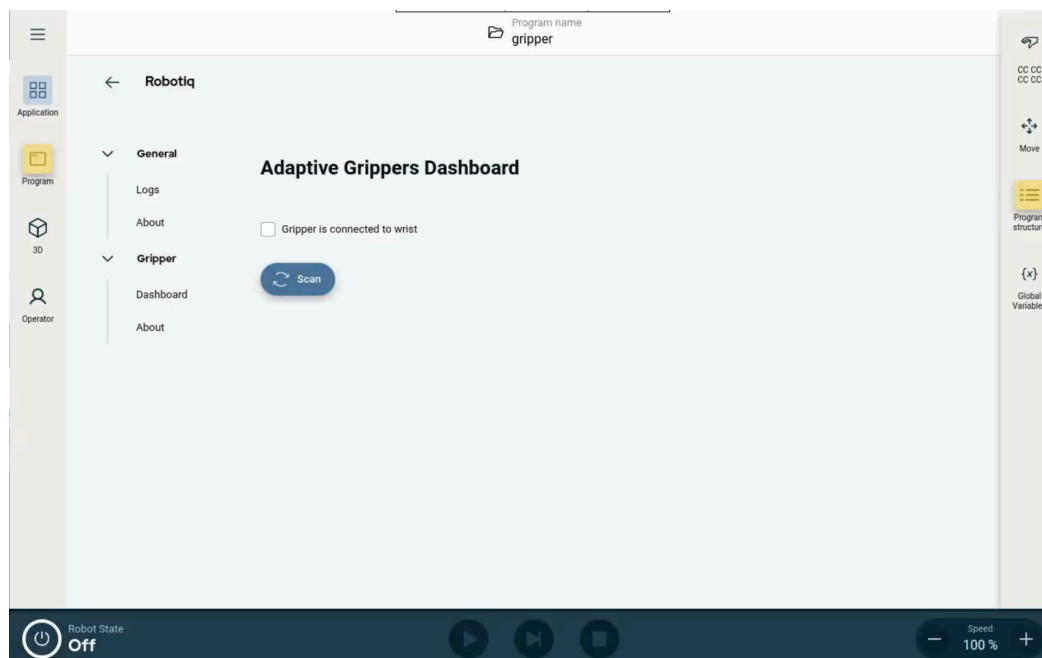
During the scan, 24 volts will be sent to the gripper to configure communication parameters. When starting the robot with the gripper connected to the wrist, you must manually initiate a scan to establish communication between the software and the gripper. Auto-scanning is avoided to prevent hardware damage if a different tool is connected instead of the Robotiq gripper. The robot must be activated for this process, and the gripper will display once communication is established.

Step 1. From Application, select Robotiq



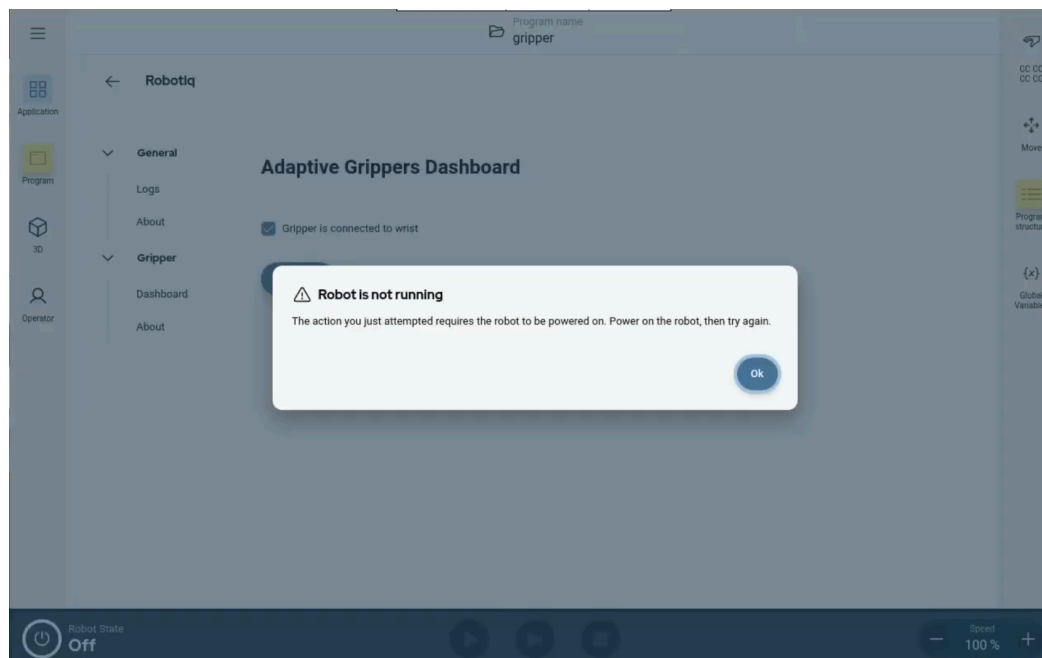
Application_V2

Step 2. Check the box 'Gripper is connected to wrist'



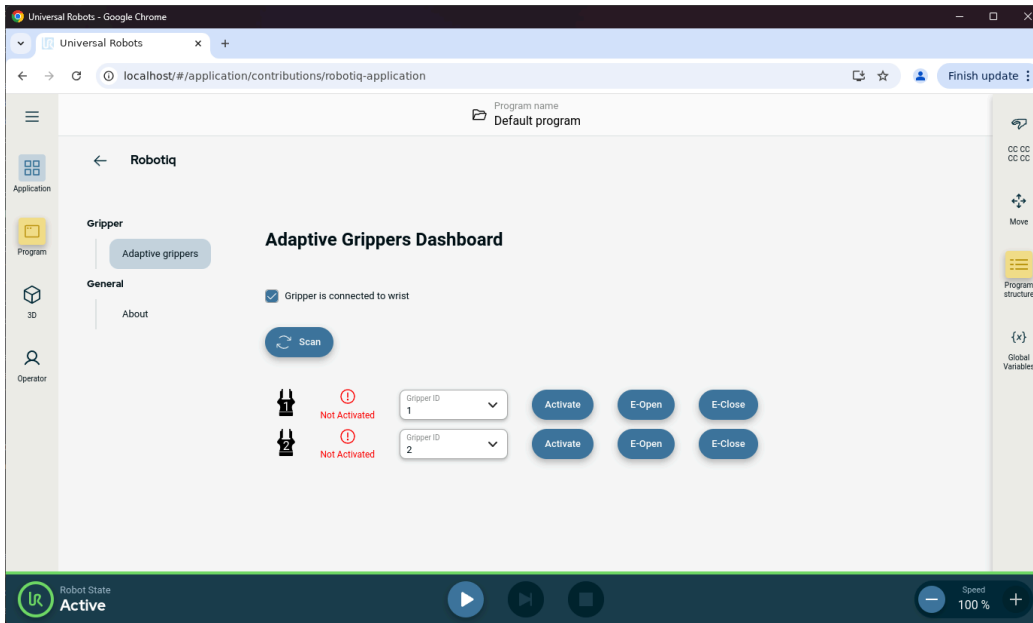
Adaptive Grippers Dashboard_V2

Step 3. Power on the robot



Robot is not running Window_V2

Step 4. Press the 'Scan' button



Adaptive Grippers Dashboard - Gripper is connected to wrist_V2

Step 5. Three Options to Activate the Gripper:

- Option 1. Use the activate button next to the gripper entry in the gripper list.
- Option 2. Click the "Activate" button in the "Gripper Activate" program node.
- Option 3. Start a program with a "Gripper Activate" program node.

b. 1 application = 1 program


One program corresponds to one application. When a new program is created, it generates a new installation node with its own parameters.

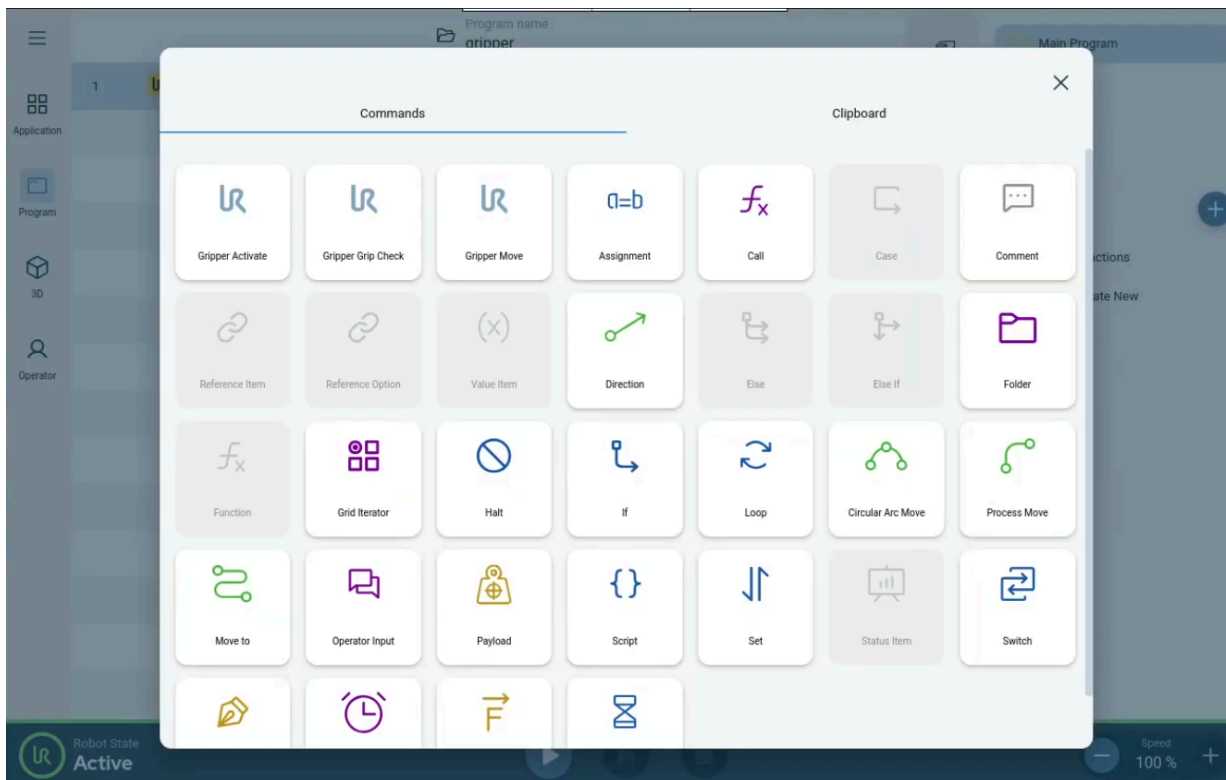
c. Start program - No confirmation step

Important: Polyscope X starts programs immediately without any confirmation prompts. It doesn't ask where to start the program or if you want to move the robot to the start position. Unlike Polyscope 5, Polyscope X skips this additional confirmation step for security, so be sure to keep this difference in mind.

d. Other differences are minor and relate to user interface interactions.

3. Adding a Node

- a. Click the  button to add a node.
- b. A window will appear, showing a list of available node types.
- c. The URCap nodes include:
 - i. Gripper Activate
 - ii. Gripper Grip Check
 - iii. Gripper Move



Nodes List_V2

4. Gripper Activate Node

When you select the Gripper Activate Node, the Configure Gripper Activate window will appear with two options:

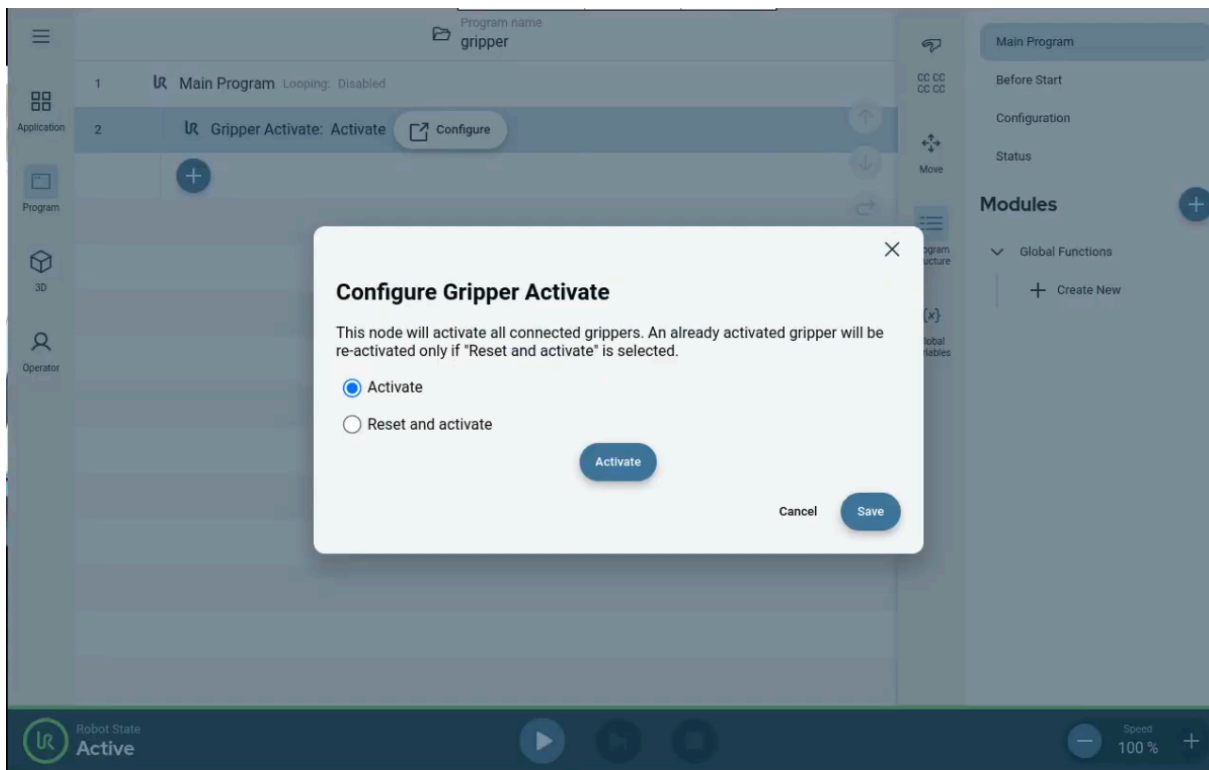
a. Simple Activation

Functions the same as in Polyscope 5. If the gripper is already activated, the system will not reactivate it, and the program will proceed to the next line. If the gripper is not activated, the system will activate it.

b. Reset and Activation

Restarts a complete gripper activation sequence, removing any errors.

This node works exactly the same as the Polyscope 5 'Gripper Activate' program node.



Configure Gripper Activate Window_V2

5. Gripper Grip Check Node

1	UR Main Program	Looping: Disabled	
2	▼	UR Gripper Grip Check: If object not detected	↑
3		<div> <div>⌚ Wait Type</div> <div>Time</div> <div>1 s</div> <div>✎</div> </div>	↓
		+	↺
			↻

Gripper Grip Check Node - If object not detected_V2

1	UR Main Program	Looping: Disabled	
2	▼	UR Gripper Grip Check: If object not detected Configure	
		+	
3		⌚ Wait: 1.00 s	
		+	

Gripper Grip Check Node - If object not detected_V2

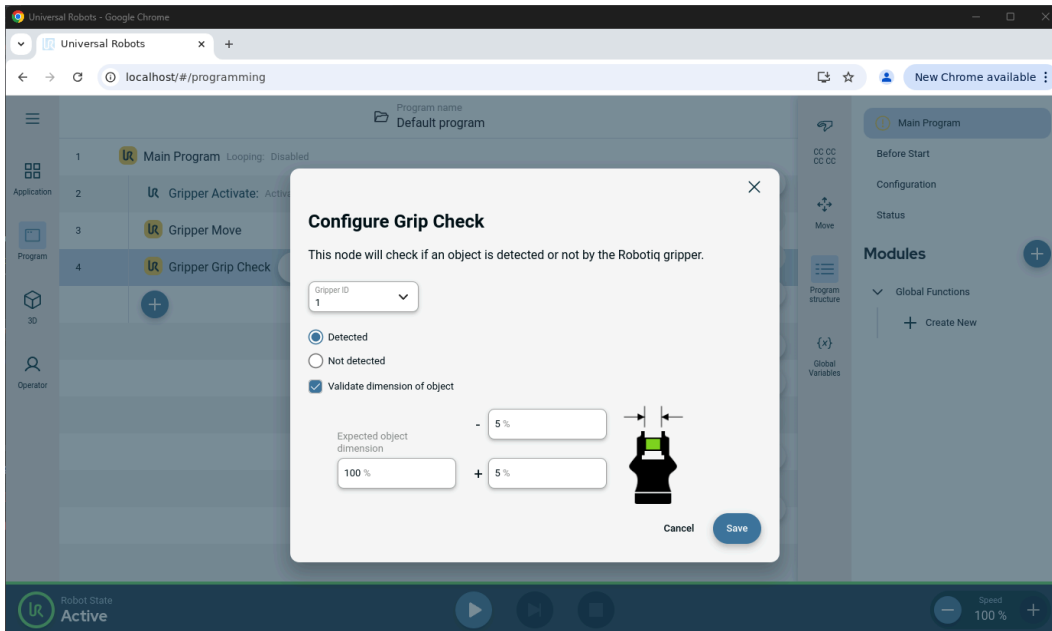
1	UR Main Program	Looping: Disabled	
2	▼	UR Gripper Grip Check: If object detected	↑
3		<div> <div>⌚ Wait Type</div> <div>Time</div> <div>1 s</div> <div>✎</div> </div>	↓
		+	↺
			↻

Gripper Grip Check Node - If object detected_V2

1	UR Main Program	Looping: Disabled	
2	▼	UR Gripper Grip Check: If object detected Configure	
		+	
3		⌚ Wait: 1.00 s	
		+	

Gripper Grip Check Node - If object detected_V2

a. When you select Configure, the Configure Grip Check window will appear.



Configure Grip Check Window_V2

b. Adjust the parameters

Gripper ID: If more than one gripper is present, you can select which gripper ID to use for the grip check.

Dimension of object:

- i. Gripper dimension is measured as a percentage of closure. 0% indicates fully open, while 100% indicates fully closed.
- ii. Calibration of dimension (specifying units in mm or inches as in Polyscope 5) is not yet available.

Notes: Child nodes of the grip check node are only executed if the condition is met. The node works as it does in Polyscope 5.

6. Gripper Move Node



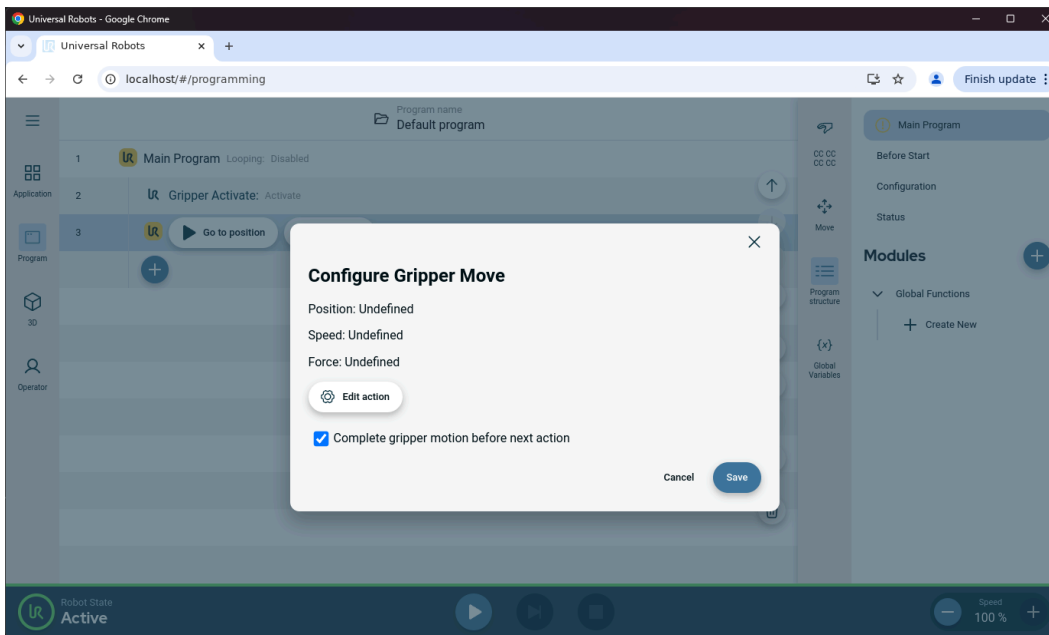
Gripper Move test & Configuration

a. Configure Gripper Move

When you select the node, the **Configure Gripper Move** window will appear, asking you to specify the position, speed, and force.

b. Edit Gripper Action

Click **Edit Action** to open the **Edit Gripper Action** window, where you can adjust the position, speed, and force.



Configure Gripper Move Window_V2

Notes:

- Currently, only a single gripper is supported. If multiple grippers are present, the first activated gripper in the list will be used.
- The "Go to Position" button moves the gripper to the taught position.
- The "Configure" button opens a popup with details about the current node configuration.
- The "Edit Action" button is used to teach the gripper's position. The "Edit Action" window works the same way as in Polyscope 5.
- Compliance mode is not available in the PSX URCapX.