Using the RobotiQ gripper

RoboDK supports generating programs for Universal Robots that can operate RobotiQ grippers. You can operate the RobotiQ gripper by generating a program offline and by using the RoboDK driver for UR robots.

### Using the RobotiQ gripper offline

You can operate the RobotiQ gripper directly from the UR controller by generating programs offline using RoboDK.

To add support for RobotiQ grippers you should select the **Universal_Robots_RobotiQ** post processor:
1. Right click a program or your robot
2. Select Select Post Processor
3. Select Universal Robots RobotiQ

Tip: Changing the post processor linked to a program applies to all programs that use the same robot.

You can then generate program calls that can operate the RobotiQ gripper. For example: rq_move_and_wait(255) to open the gripper or rq_move_and_wait(0) to close the gripper.
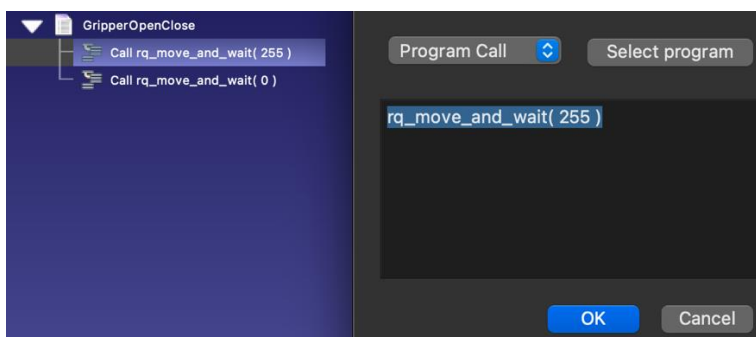
Once you have the program ready in RoboDK, you can run it on the robot using one of these 2 methods:
- Right click a program (such as the **GripperOpenClose)** and select **Send Program to Robot**
- Right click a program (such as the **GripperOpenClose)** and select **Generate Program** (this second option requires you to manually load the program on the robot).

This method of operation does not require using the driver.

Tip: Learn more about how to generate programs in the programs section.

Using the RobotiQ gripper with the driver

You can operate the RobotiQ gripper directly from RoboDK using the driver (Run on robot option). The RoboDK driver for UR and RobotiQ allows you to run programs step by step from RoboDK and see the pointer being run anytime from RoboDK.

It is important to make sure you can connect to the robot to use this feature. You may need administrator privileges on Windows and/or add a Windows Firewall rule to allow this communication (if you disable the Windows Firewall it may help troubleshoot if the issue is related to the Firewall).

Note: The options Generate Program F6 and **Send program to Robot** should still work without the need to setup the driver (Windows Firewall, antivirus, etc).

You should follow these steps to add support to moving the RobotiQ gripper directly from RoboDK:
1. Download the following script file:
   https://robodk.com/files/upload/progrobodk-rq.zip
2. Unzip the progrobodk.script file here:
   C:/RoboDK/bin/progrobodk.script
3. Make sure to restart the driver if it was running (double click Disconnect, then, Connect).
4. Select Tools-Options-Drivers
5. Uncheck the option: **Manage program calls with RoboDK when connected to a robot**.

Tip: Keep an eye on the UR logs to see if anything fails on the robot side.

To properly operate the gripper using the driver (for example, opening/closing the gripper), you should use the program call to rq_move_and_wait by passing a parameter within the range 0-255.

Example:
   rq_move_and_wait(0) # Fully close the gripper
   rq_move_and_wait(255) # Fully open the gripper

The number passed as an argument is required by the driver.

Circular vs Linear movements

UR robots support circular movements and linear movements, however, you may see errors on the teach pendant if you use the driver for UR robots.

You may see the following errors when you use the UR robot driver ("Run on robot" option) because the driver doesn't apply all the default filters you have in the UR post processor by default. These filters help clean the code so the UR controller can run the program without issues.

These errors include:
- Circular arc with infinite radius (CIRCULAR_ARC_WITH_INFINITE_RADIUS): you may see this error when you try to make a circular movement with a large radius. The post processor automatically converts these movements to linear movements.

- Circular arc with zero radius (CIRCULAR_ARC_WITH_ZERO_RADIUS): you may see this error with small circular movements. The post processor may remove these movements or convert them to linear moves.

You should not see these errors when you generate the program offline (right click a program and select Generate program, or F6) or automatically send them to the robot (right click a program and select Send program to robot, or Ctrl+F6). These two methods of generating the program use the post processor instead of the driver.

If you still experience errors generating the program offline (not using the driver), you can automatically convert arc moves to linear moves by following these steps:
1. Select Tools-Options-Program
2. Set Minimum arc size to 1 mm
3. Set Maximum arc size to 0.5 mm
4. Set Minimum step size to 0.5 mm: this will make sure you don't export points closer than 0.5 mm so the blend radius has some effect, you can increase it more to have less jerky movements.