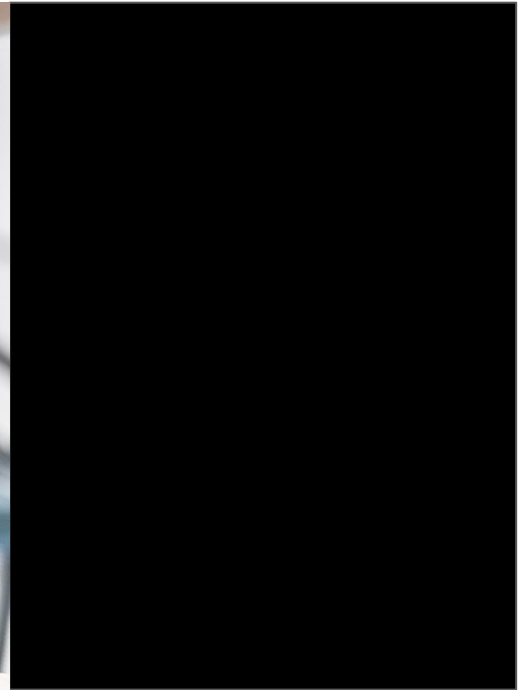


Learning KIT

Sanding KIT



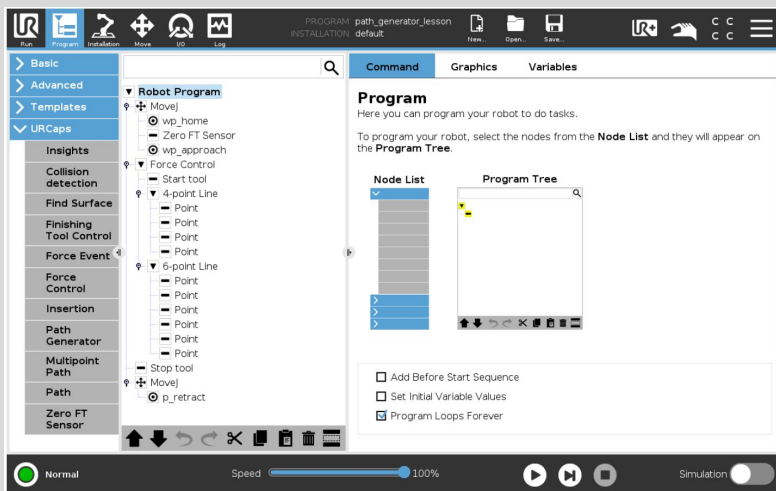
PROGRAM TEMPLATE USING FINISHING COPILOT





Description

Use this document to help you program your application using the template for the Sanding Kit. You can learn more about the steps on how to program the Sanding Kit for a first application using the available video for this course. Visit support.robotiq.com for more details.



What you will need

- Robotiq Sanding Kit
- Latest URcap - Finishing Copilot
- Universal Robot UR5 or UR10
- Curved surface
- Program Template: path.generator.lesson.urp



Force Control

Feature: ☐ Zero Sensor

Enable control		Force/Torque	Stiffness	Deviation range	
x	<input type="checkbox"/>	Fx <input type="text" value="0"/> N	<input type="text" value="100"/> %	<input type="text" value="-100"/> mm	<input type="text" value="100"/> mm
y	<input type="checkbox"/>	Fy <input type="text" value="0"/> N	<input type="text" value="100"/> %	<input type="text" value="-100"/> mm	<input type="text" value="100"/> mm
z	<input checked="" type="checkbox"/>	Fz <input type="text" value="10"/> N	<input type="text" value="10"/> %	<input type="text" value="-100"/> mm	<input type="text" value="100"/> mm
Rx	<input type="checkbox"/>	Mx <input type="text" value="0"/> Nm	<input type="text" value="100"/> %	<input type="text" value="-20"/> °	<input type="text" value="20"/> °
Ry	<input type="checkbox"/>	My <input type="text" value="0"/> Nm	<input type="text" value="100"/> %	<input type="text" value="-20"/> °	<input type="text" value="20"/> °
Rz	<input type="checkbox"/>	Mz <input type="text" value="0"/> Nm	<input type="text" value="100"/> %	<input type="text" value="-20"/> °	<input type="text" value="20"/> °

☒ Enable adaptive stiffness

Apply force based on: ☒ Targeted position ☐ Current position

LEAN ROBOTICS ROBOTIQ

1 Approach Point
Locate at the top of the surface.

2 Force Control Node
Select the feature to control the force (Base, Tool, Motion).
Enter the force/moments values in the direction of the process for the sanding application



The screenshot displays the Robotiq software interface with three tabs: 'Command', 'Graphics', and 'Variables'. The 'Command' tab is active, showing a 'Finishing Tool Control' configuration. On the left, a tree view under 'Robot Program' includes 'MoveJ', 'wp_home', 'Zero FT Sensor', 'wp_approach', 'Force Control', '4-point Line', '6-point Line', 'Stop tool', and 'MoveJ'. A circled '3' points to the '4-point Line' sub-item. The main area on the right is titled 'Finishing Tool Control' and contains two radio buttons: 'Start tool' (selected) and 'Stop tool'. Below these is an information icon with the text: 'Put the finishing tool in contact with the surface before starting it. Stop the finishing tool after it leaves the surface.' The bottom of the interface features a toolbar with icons for navigation and editing, and logos for 'LEAN ROBOTICS' and 'ROBOTIQ'.

3 Finishing Tool Control

Define here the action to **Start** the tool.

You can define the **Configurable Output** to start here:
Installation/URCaps/Copilot/Tool



Robot Program

MoveJ

wp_home

Zero FT Sensor

wp_approach

Force Control

Start tool

4-point Line

Point

Point

Point

Point

6-point Line

Point

Point

Point

Point

Point

Point

Stop tool

MoveJ

p_retract

4

Command

Graphics

Variables

Path Generator

Hold to test

Tool Speed

60

mm/s

Spacing (A) ~

40

mm

End path on:

☒ Point 4

☐ Point 2

4

3

2

1

A

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4 Path Generator

Select here to **4 Point Line**.

Enter the **Tool Speed** for the motion of the cobot.

Enter the **Spacing** between each of the lines.



Robot Program

- MoveJ
 - wp_home
 - Zero FT Sensor
 - wp_approach
- Force Control
 - Start tool
 - 4-point Line
 - Point
 - Point
 - Point
 - Point
 - 6-point Line
 - Point
 - Point
 - Point
 - Point
 - Point
 - Point
 - Stop tool
- MoveJ
 - p_retract

Path Generator

Tool Speed mm/s

Spacing (A) ~ mm

End path on:
☒ Point 6
☐ Point 4

☐ Linear passes
☒ Curved passes

Hold to test

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ROBOTIQ

6 Path Generator

Select here to **6 Point Line** and select **Curved Passes**. Enter the **Tool Speed** for the motion of the cobot. Enter the **Spacing** between each of the lines.

7 Finishing Tool Control

Define here the action to **Stop** the tool.

You can define the **Configurable Output** here:
Installation/URCaps/Copilot/Tool