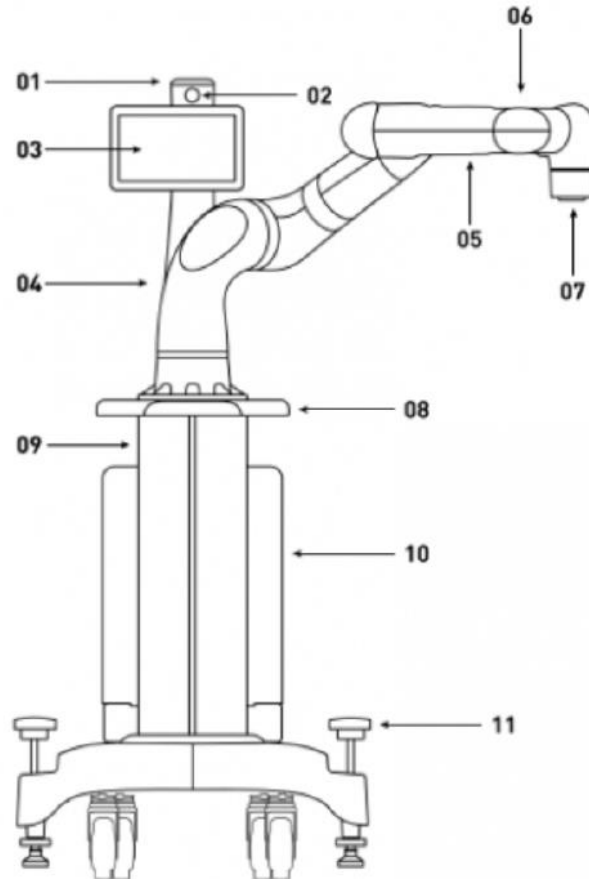




Sawyer Robot Instruction

Matheus Pereira

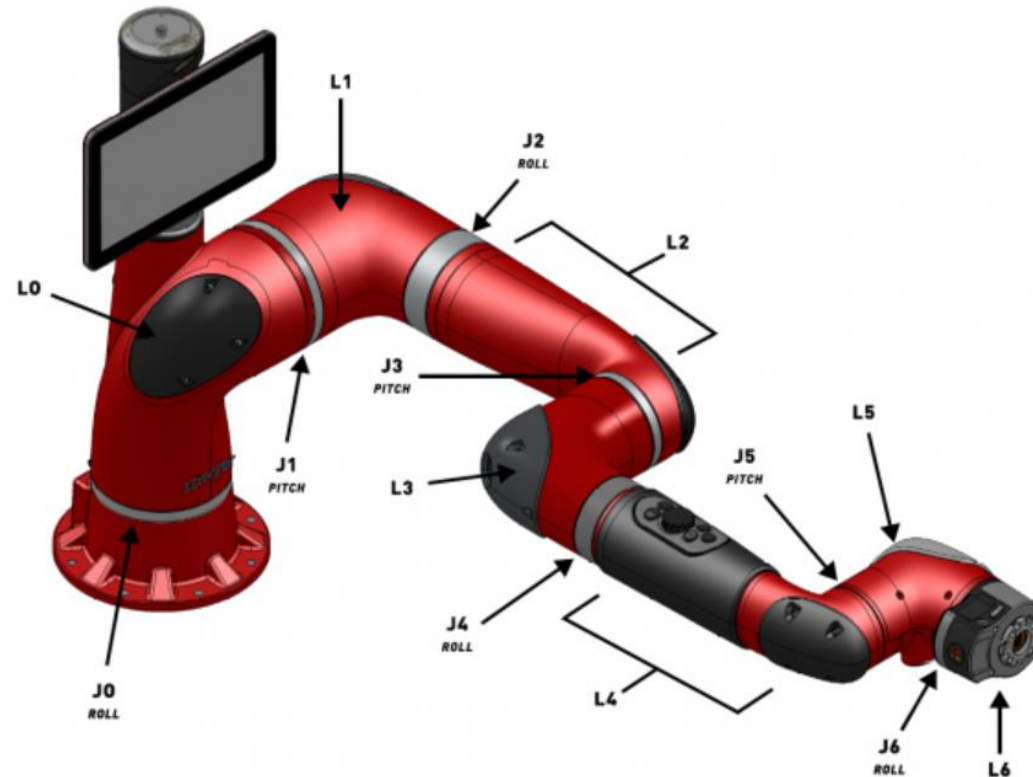
Sawyer Arm Components



- 01 Condition Light
- 02 Head Camera
- 03 Display
- 04 Navigator (Base)
- 05 Navigator (Arm)
- 06 Camera
- 07 Training Cuff with Light
- 08 Pedestal Handle
- 09 Pedestal
- 10 Controller
- 11 Leveling Feet

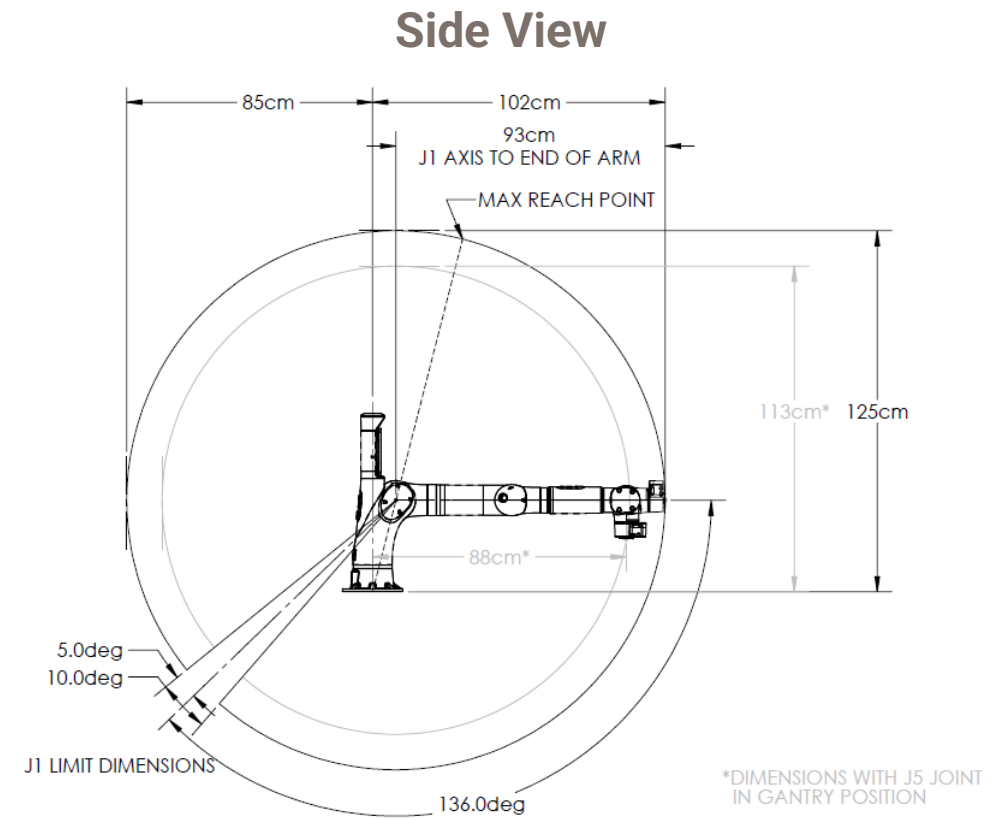
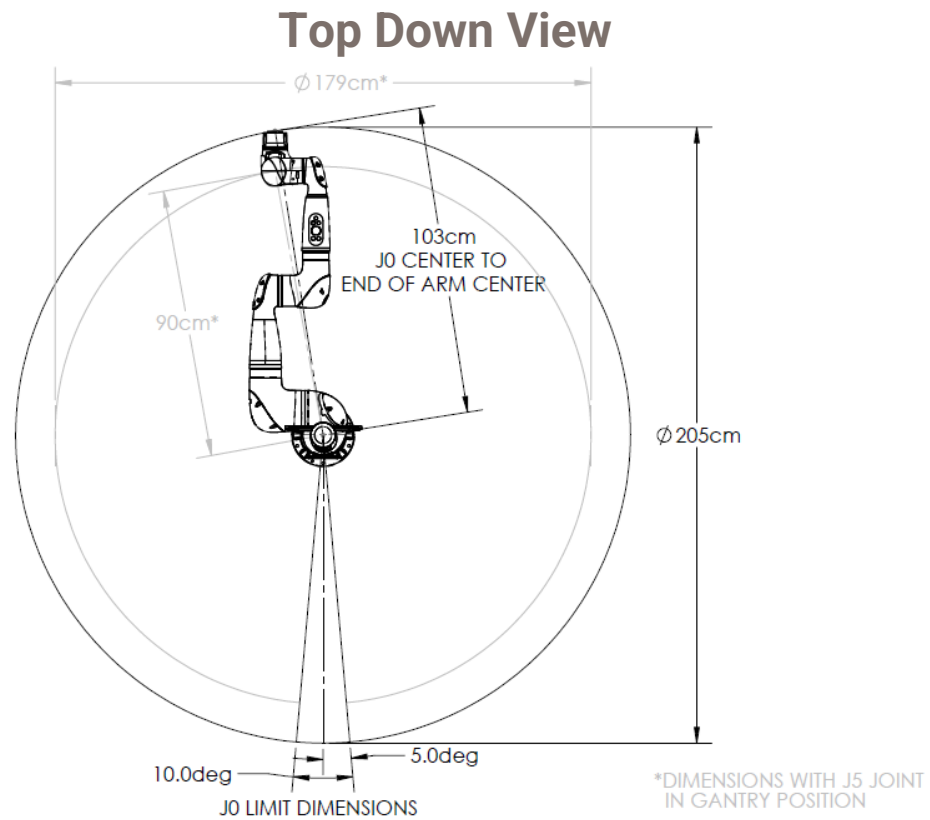
Sawyer Arm Specification

Link	Length [mm]
L0	81
L1	192.5
L2	400
L3	168.5
L4	400
L5	136.3
L6	133.75

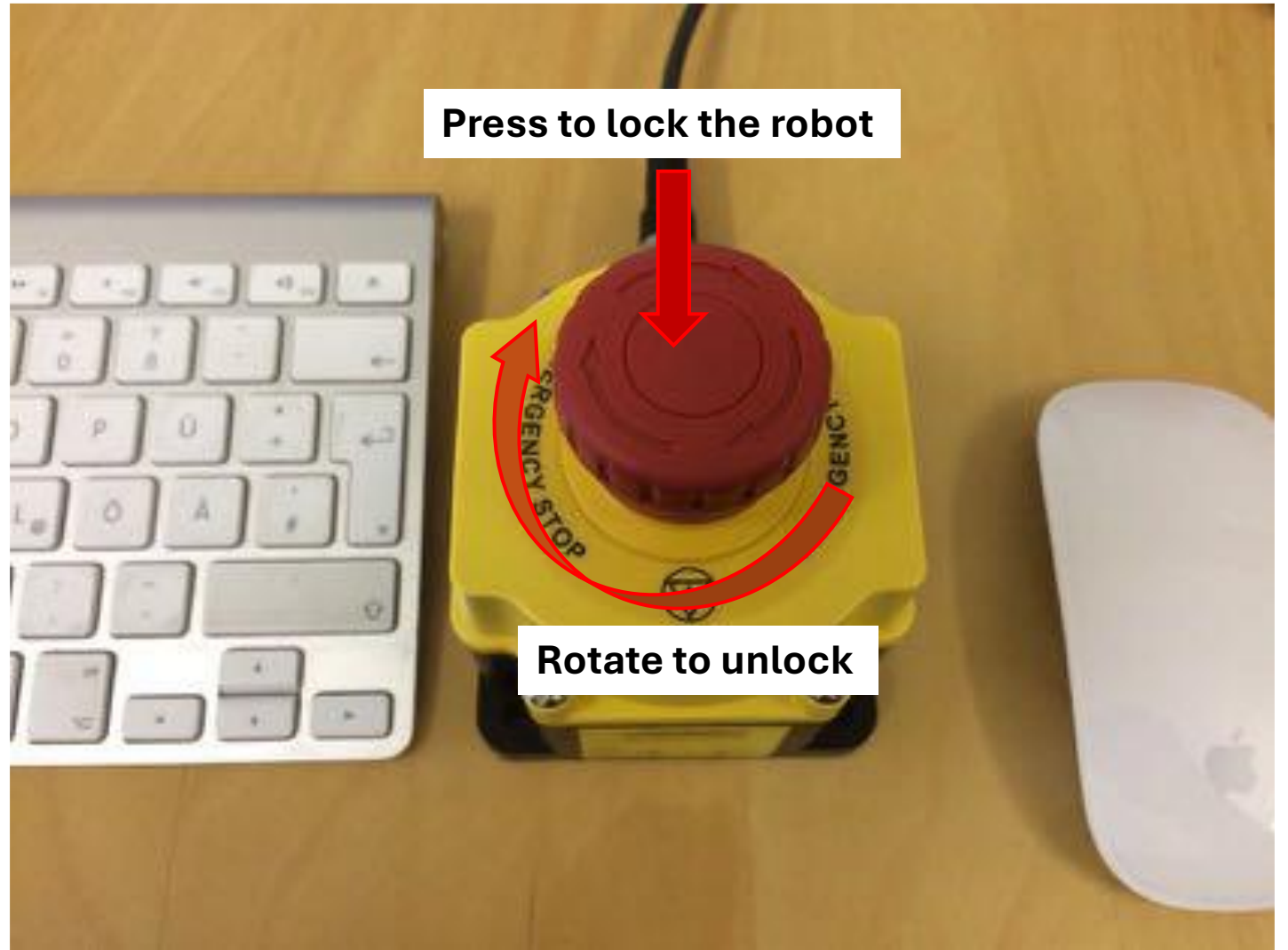


Joint	Range [°]	Pitch/Roll
J0	350	Roll
J1	350	Pitch
J2	350	Roll
J3	350	Pitch
J4	341	Roll
J5	341	Pitch
J6	540	Roll

Workspace Dimensions



ATTENTION
emergency stop



Navigator

(for direct input to robot)



Back button

Rethink button

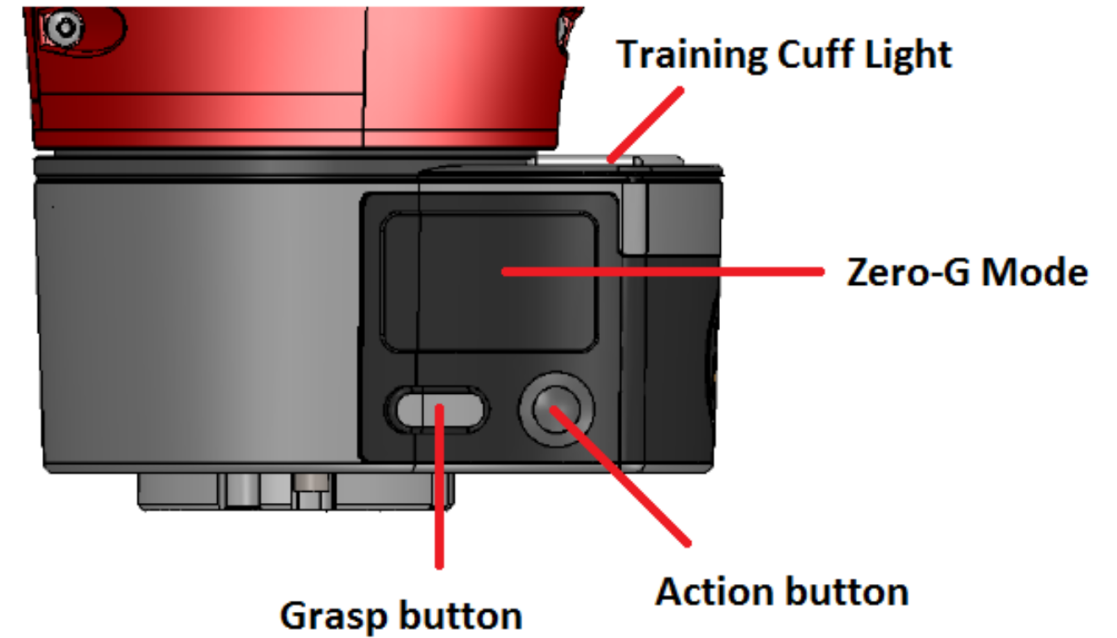
Selector knob

Zero-G mode

Square Button

X Button

Training Cuff



Sawyer Condition	Cuff LED Color
Arm Power On	Amber
Zero G Active	White
Jogging Arm	White
Insert Node / Update Pose	Flashing White
Joint Limit	Red
Collision Detected	Flashing Red
Wait / Wait Until Node Active	Flashing Green
E-Stop Engaged	No Color



Head LED Status

Sawyer Condition	Head LED Color
Working/Running	Solid Green
Error in Task	Flashing Yellow
Connected to Intera Studio	Solid Yellow
Not Connected to Intera Studio	Solid White
E-Stop Engaged	Flashing Red (SOS Pattern)
Hardware Issue	Flashing Red (SOS Pattern)
Boot Up	No Color

Power Switch

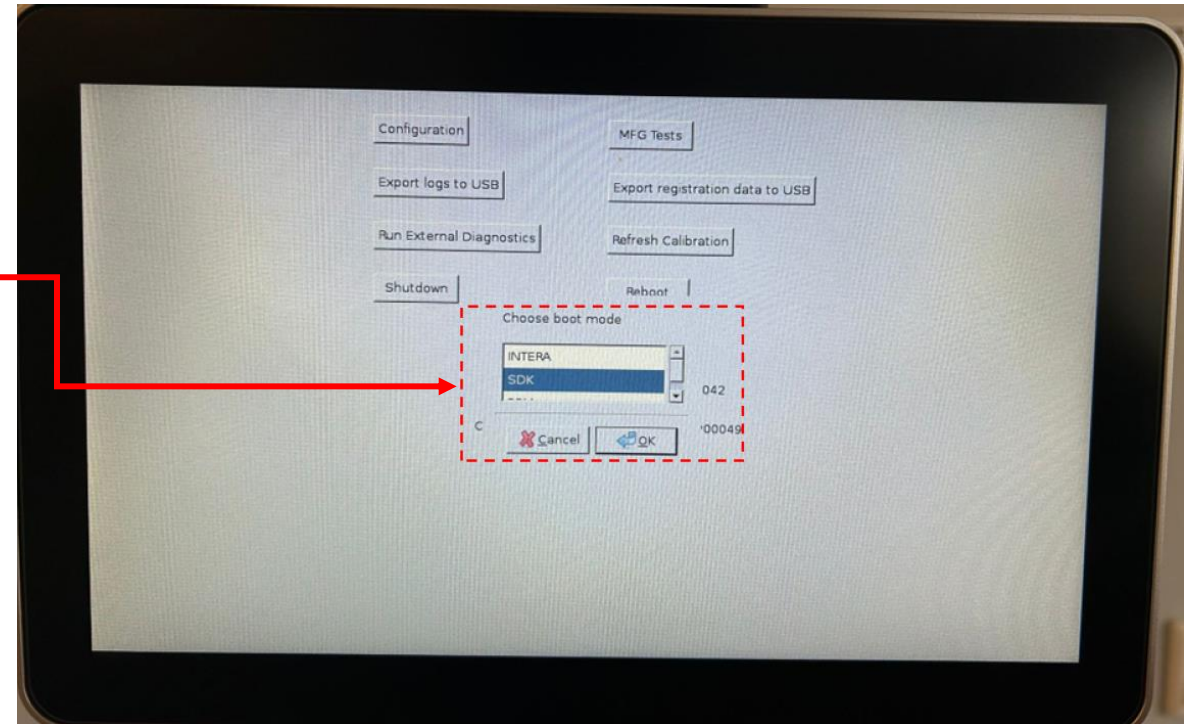
- Make sure that the robot arm is in a safe position for the robot and for you.
- Note that once you turn off Sawyer, you will no longer be able to move your arm.



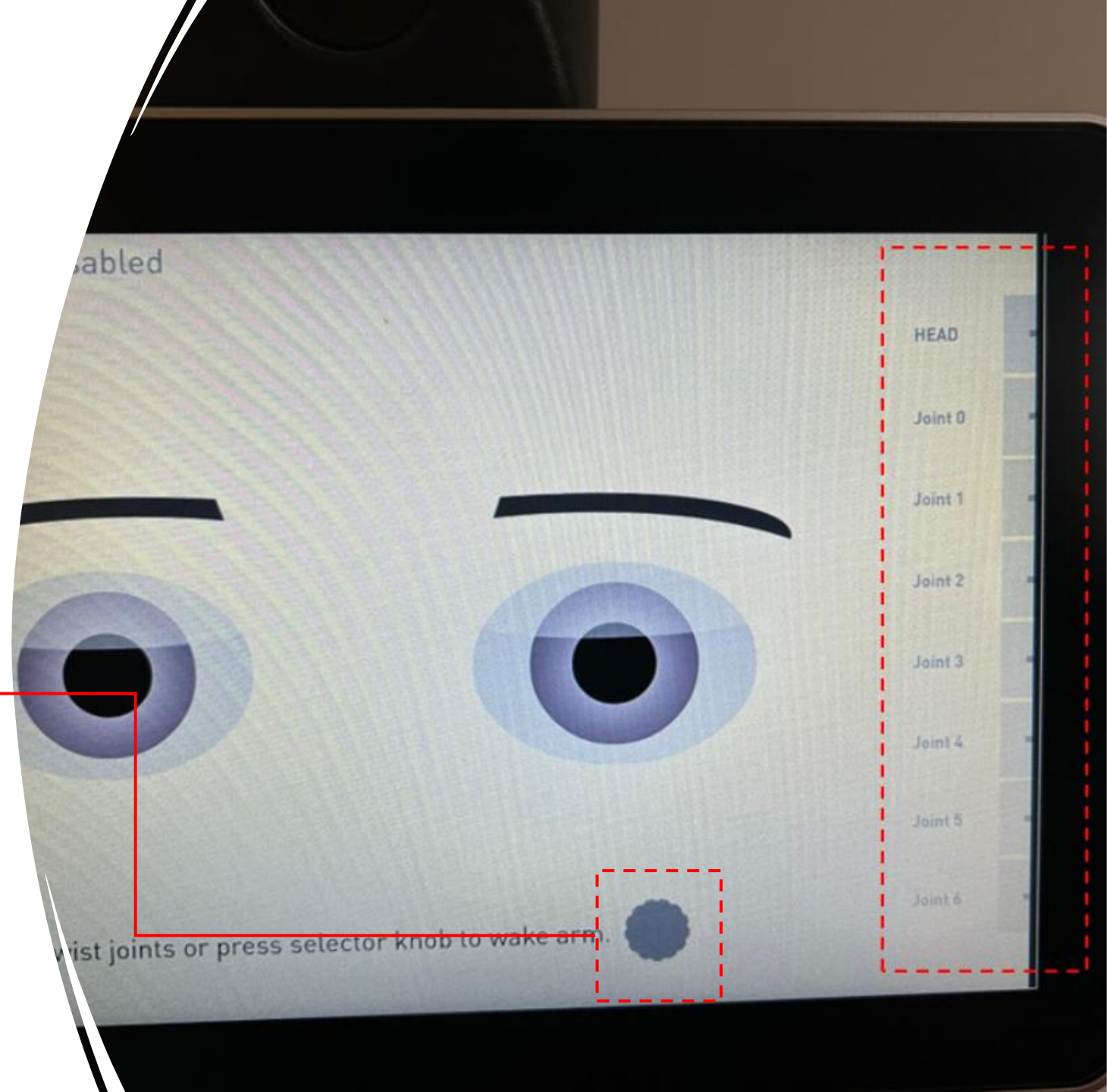
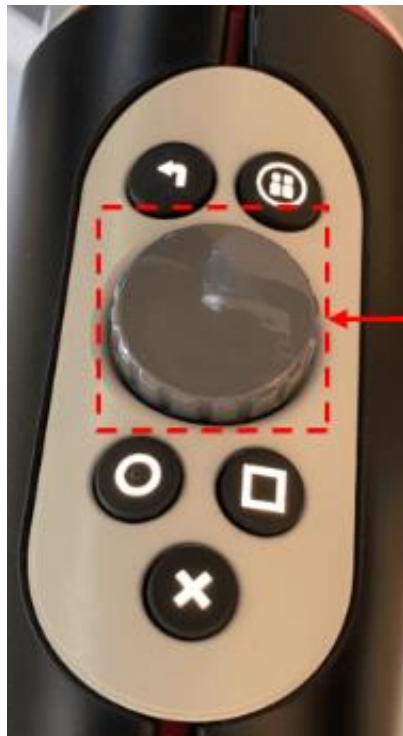
Boot mode configuration:

- Keep pressing **F** during the boot up until the Boot Screen appears.
- Choose the boot mode (**Intera** or **SDK**) you want to start the robot in.

Robot's keyboard

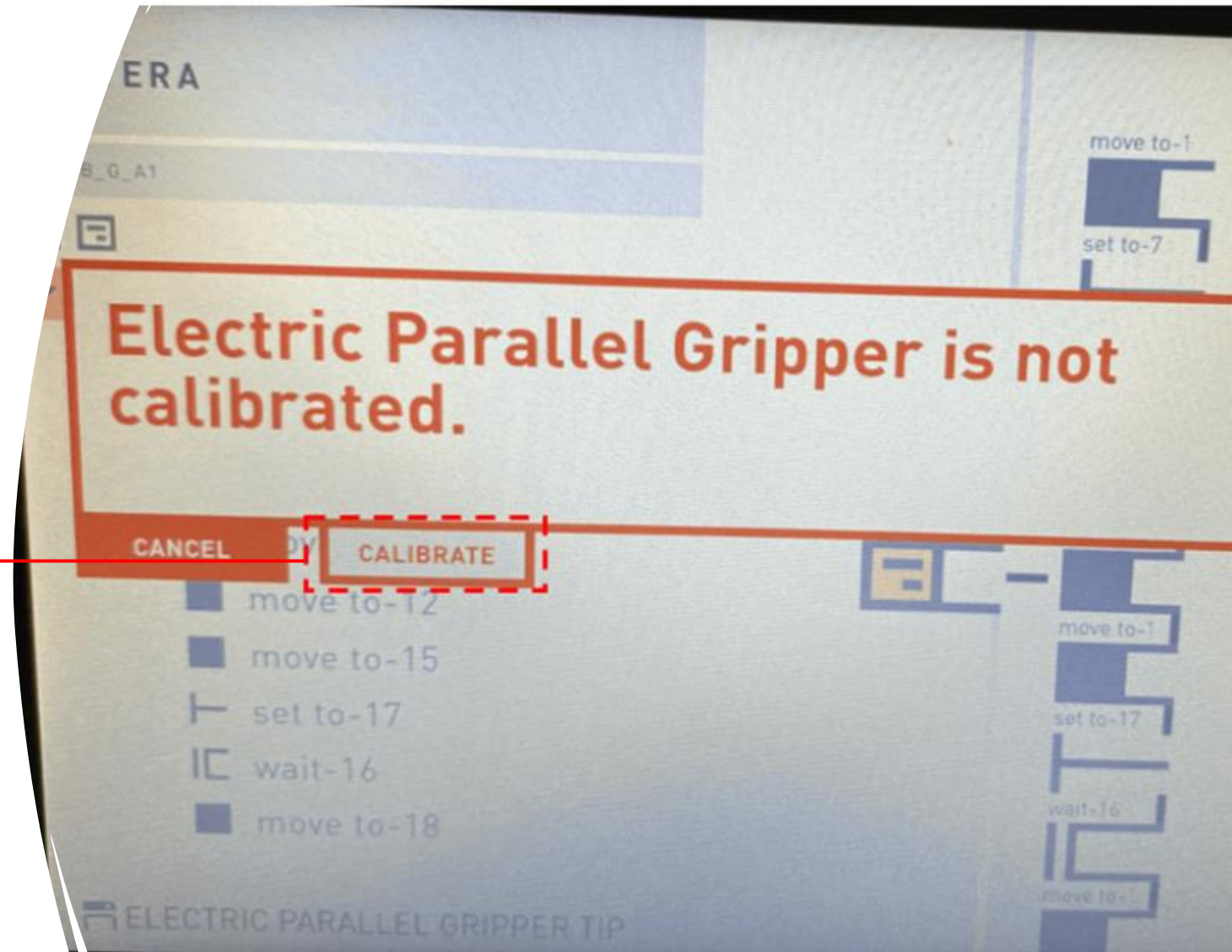


Calibration of Arm & Gripper

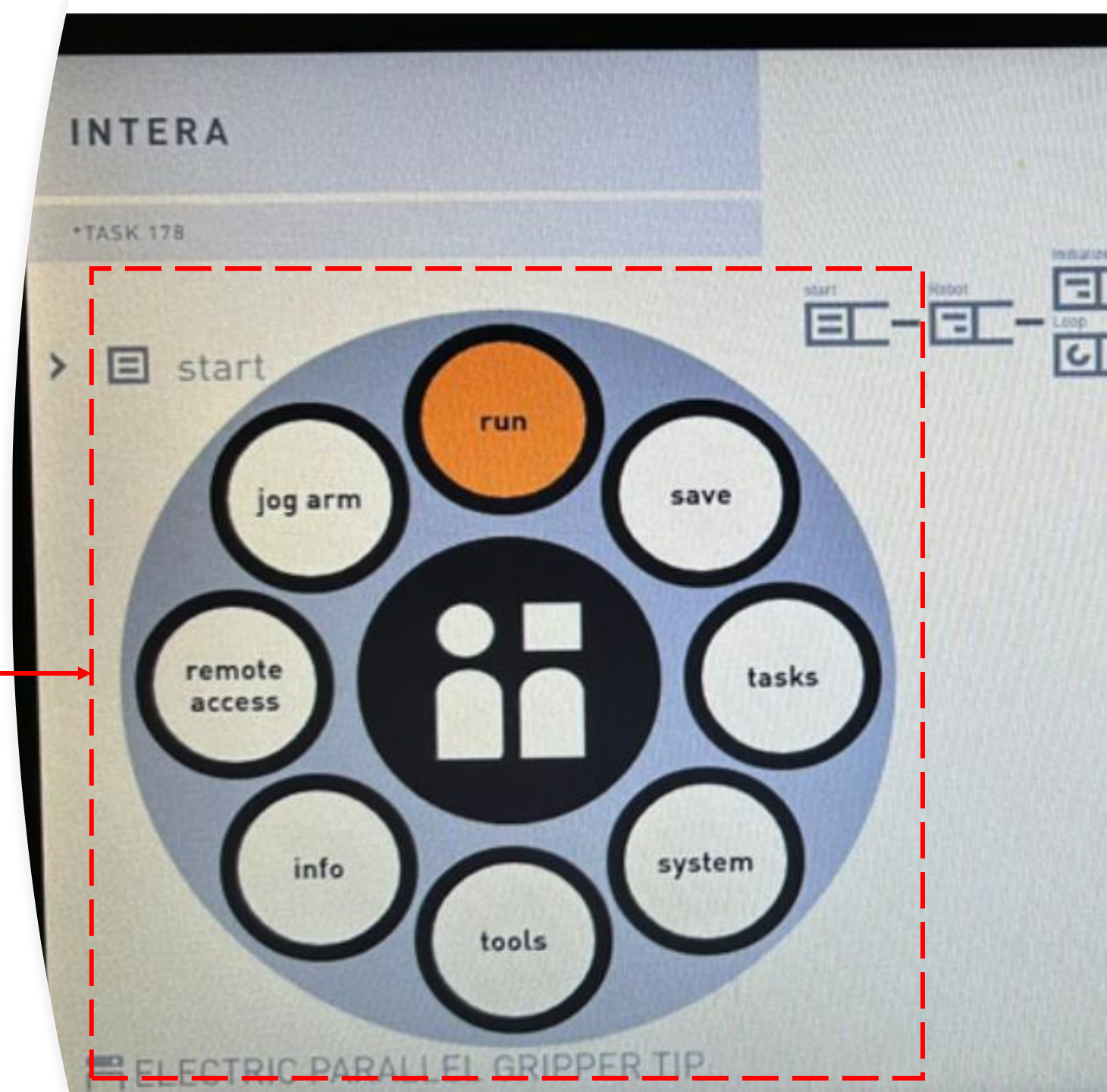
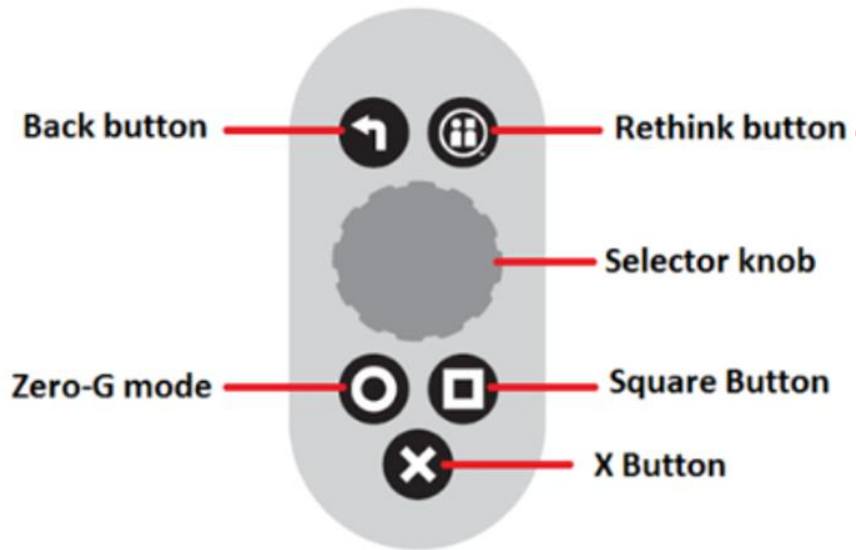


**Only in Intera Mode*

Calibration of Arm & Gripper



Rethink button



**Only in Intera Mode*

Connect to Intera Interface

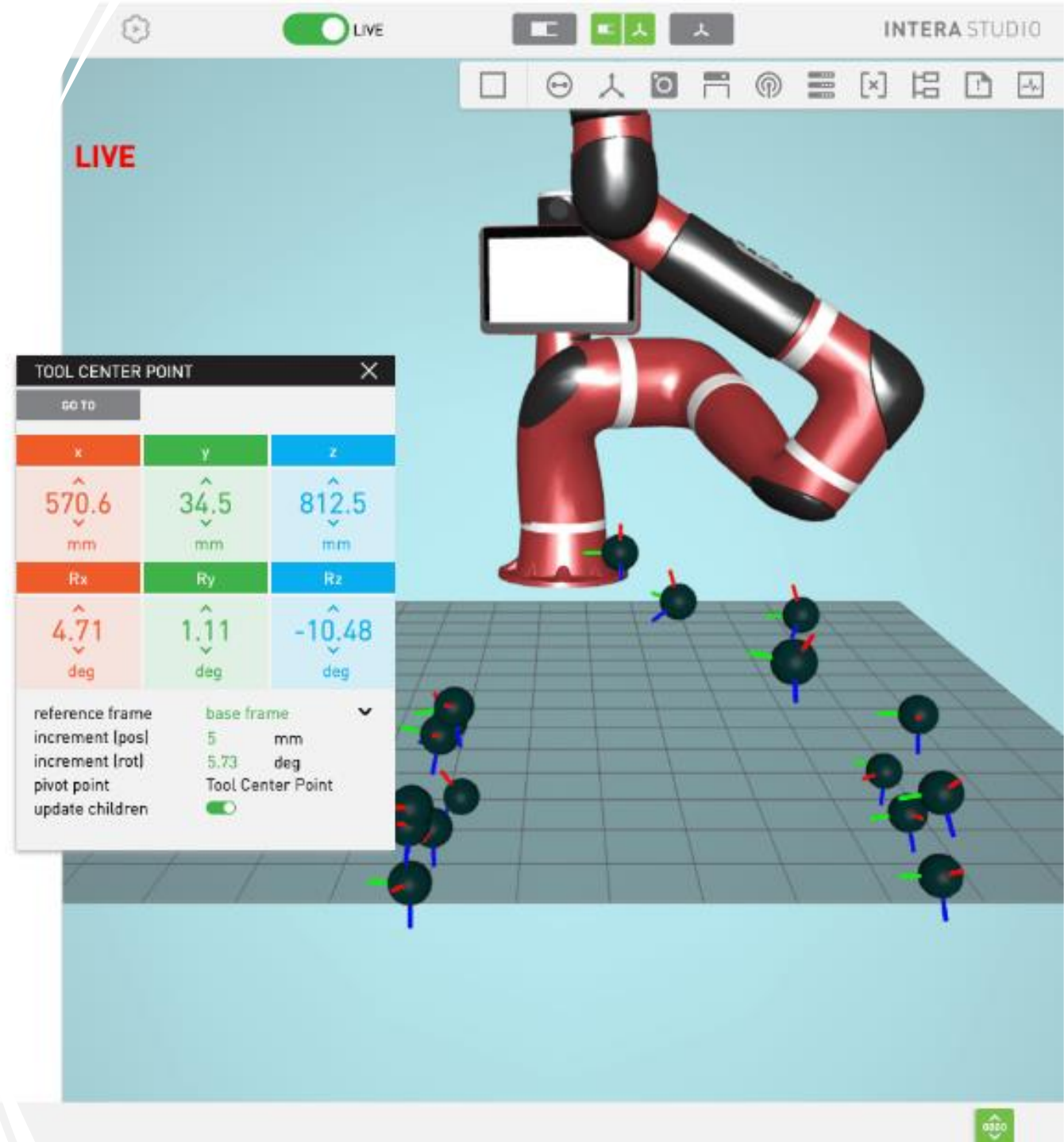
- Connect to the **hcr-lab** network



SSID: hcr-lab
PASS: 3AsKYcPSKrRjHsze

- Use your browser to access <http://sawyer.hcr-lab:3000>

**Only in Intera Mode*



Intera 5 Studio ('Web Mode')

Studio Menu

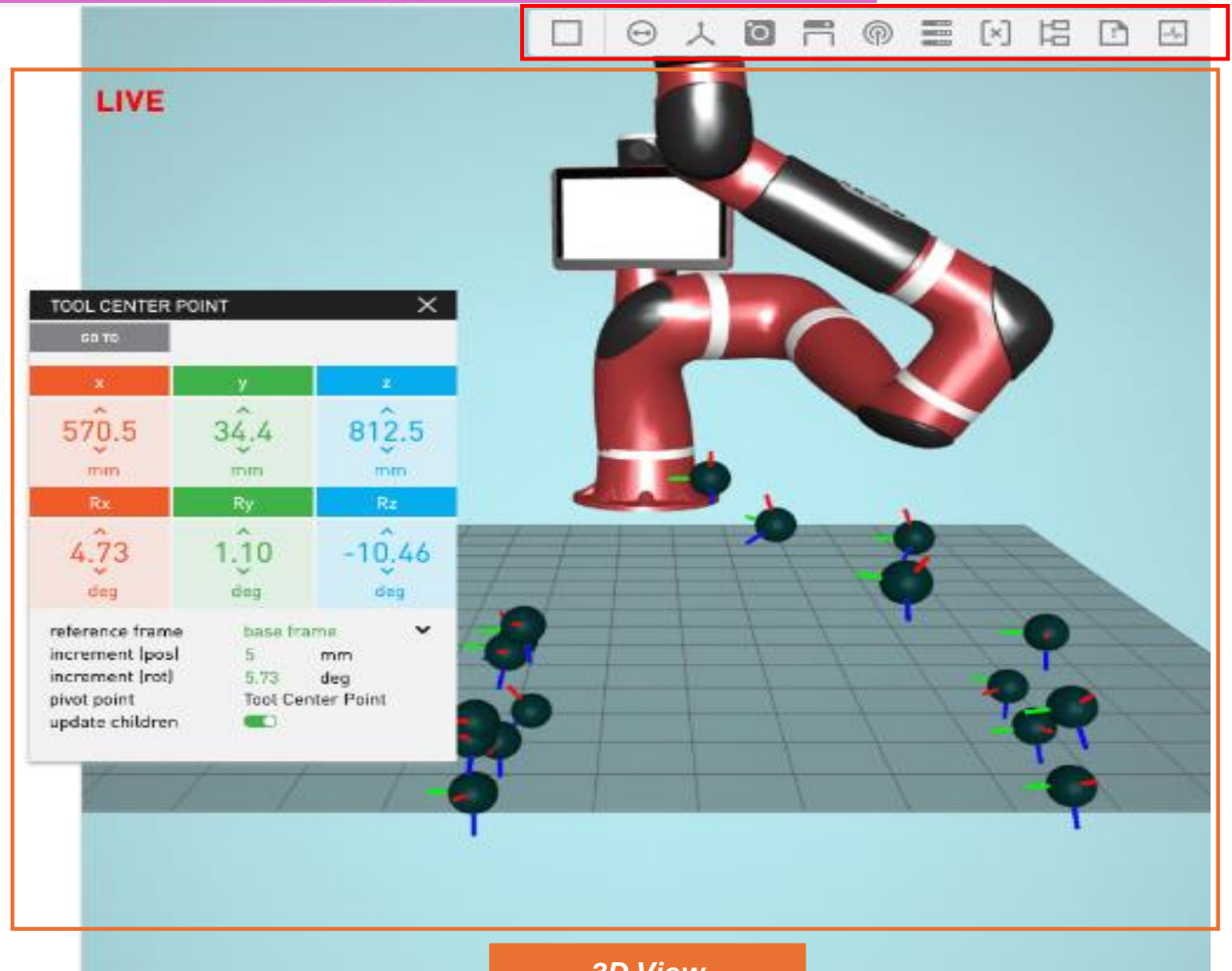
Top Bar

Task Menu

Node Palette

Behavior Editor

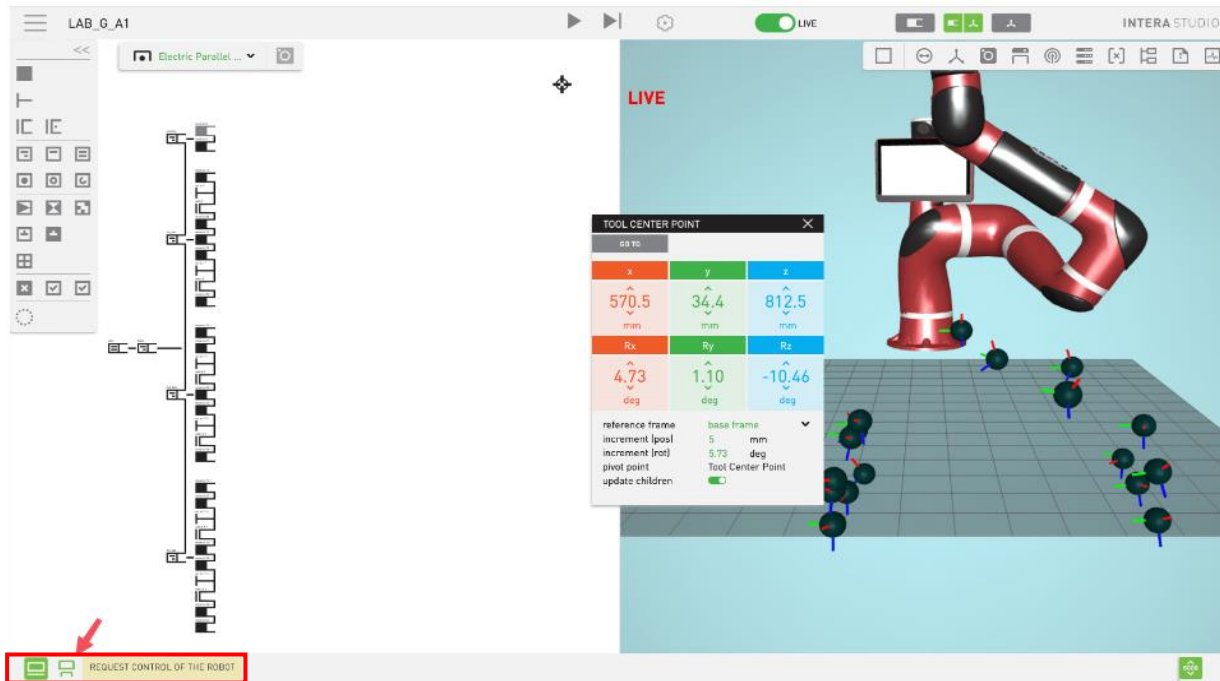
3D View



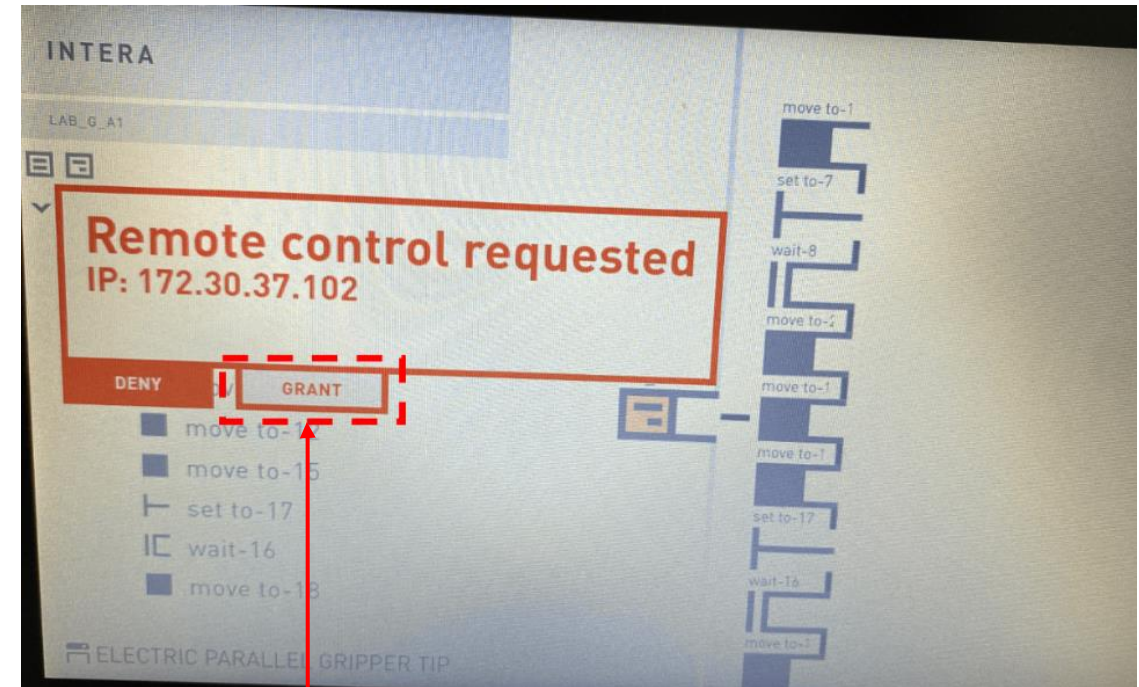
*Only in Intera Mode

Request Robot Control

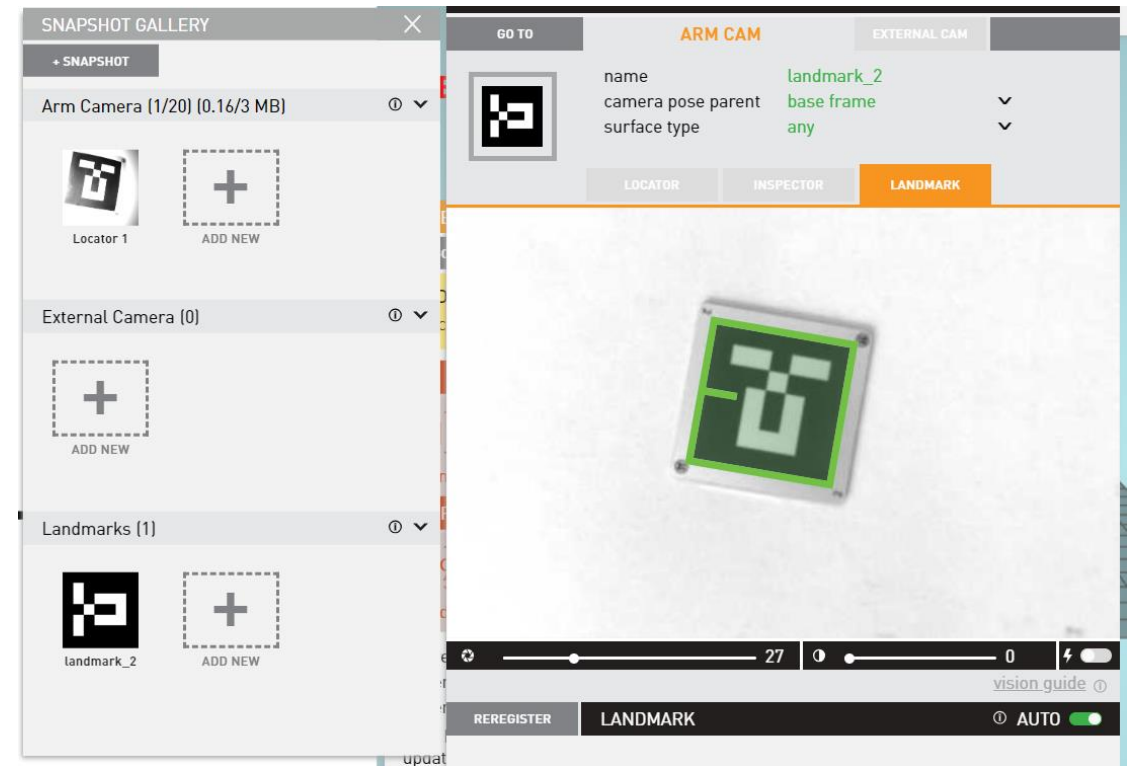
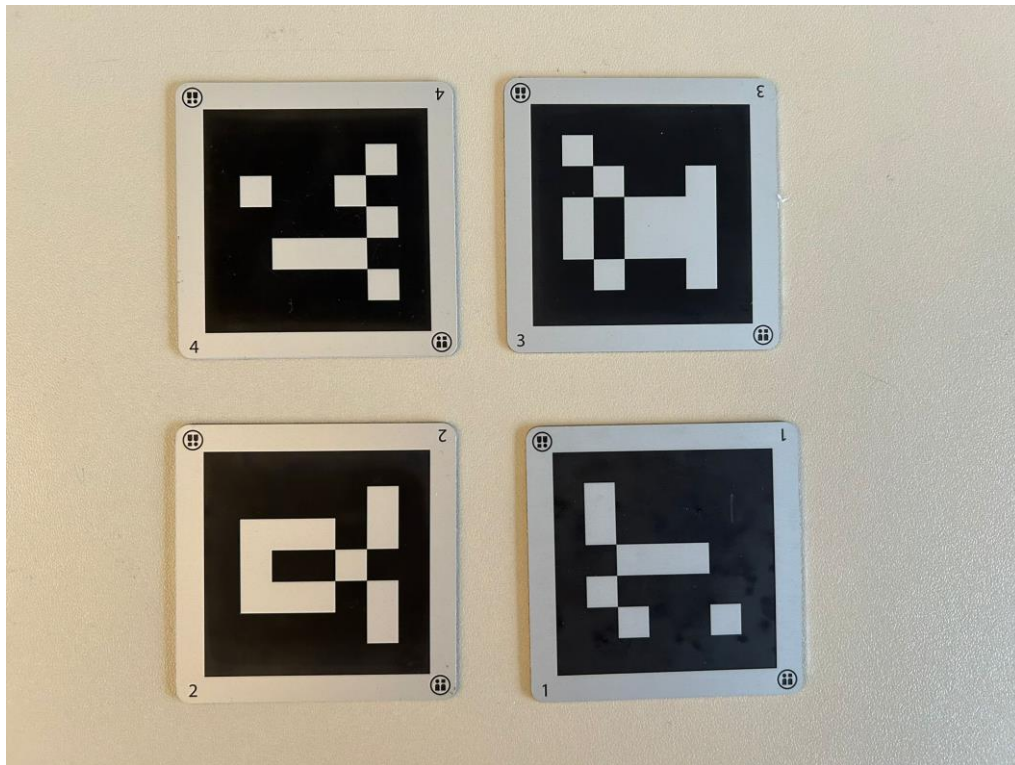
Intera IDE



Robot's screen



Landmarks





<

Today

Sep 26, 2024

>

To book Device,
 please register first

or simply
login here

Email address





Password

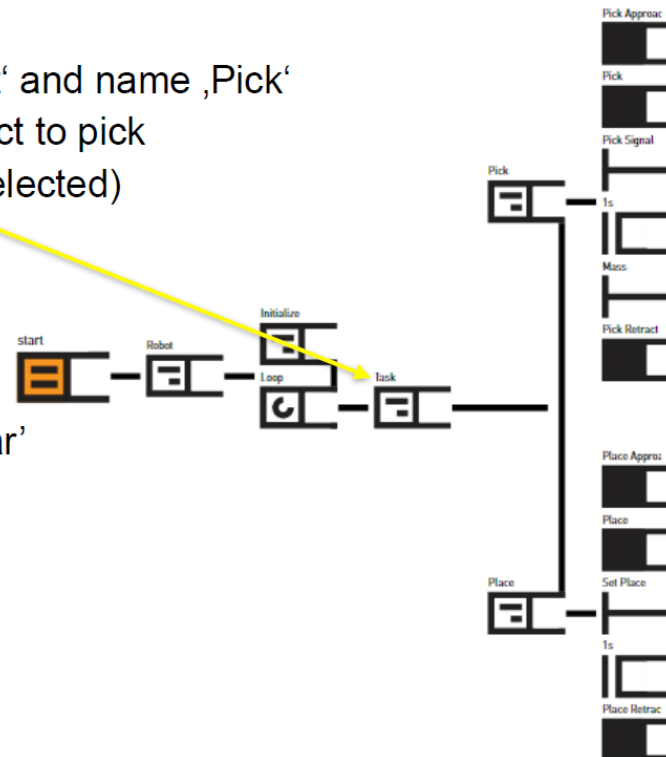
Login

?






Thursday September 26, 2024												Friday September 27, 2024											
Devices	Turtlebot [10x] (Raum 162)	Baxter Co-Bot (Raum 162)	Sawyer Co-Bot (Raum 162)	Pepper [Pepper Robot] (Raum 162)	Salt [Pepper Robot] (Raum 162)	Temi Robot (Raum 162)	Petoi Robot [10x] (Raum 162)	MakerBot 3D-FDM (Raum 215)	DarklyLabs Lasercutter (Raum 215)	Formlabs 3D-SLA (Raum 215)	Lötplatz (Raum 215)	Turtlebot [10x] (Raum 162)	Baxter Co-Bot (Raum 162)	Sawyer Co-Bot (Raum 162)	Pepper [Pepper Robot] (Raum 162)	Salt [Pepper Robot] (Raum 162)	Temi Robot (Raum 162)	Petoi Robot [10x] (Raum 162)	MakerBot 3D-FDM (Raum 215)	DarklyLabs Lasercutter (Raum 215)	Formlabs 3D-SLA (Raum 215)	Lötplatz (Raum 215)	
8:00 AM to 10:00 AM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
10:00 AM to 12:00 PM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
12:00 PM to 2:00 PM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
2:00 PM to 4:00 PM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
4:00 PM to 6:00 PM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
6:00 PM to 8:00 PM	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	
Devices	Turtlebot [10x] (Raum 162)	Baxter Co-Bot (Raum 162)	Sawyer Co-Bot (Raum 162)	Pepper [Pepper Robot] (Raum 162)	Salt [Pepper Robot] (Raum 162)	Temi Robot (Raum 162)	Petoi Robot [10x] (Raum 162)	MakerBot 3D-FDM (Raum 215)	DarklyLabs Lasercutter (Raum 215)	Formlabs 3D-SLA (Raum 215)	Lötplatz (Raum 215)	Turtlebot [10x] (Raum 162)	Baxter Co-Bot (Raum 162)	Sawyer Co-Bot (Raum 162)	Pepper [Pepper Robot] (Raum 162)	Salt [Pepper Robot] (Raum 162)	Temi Robot (Raum 162)	Petoi Robot [10x] (Raum 162)	MakerBot 3D-FDM (Raum 215)	DarklyLabs Lasercutter (Raum 215)	Formlabs 3D-SLA (Raum 215)	Lötplatz (Raum 215)	
Thursday September 26, 2024												Friday September 27, 2024											

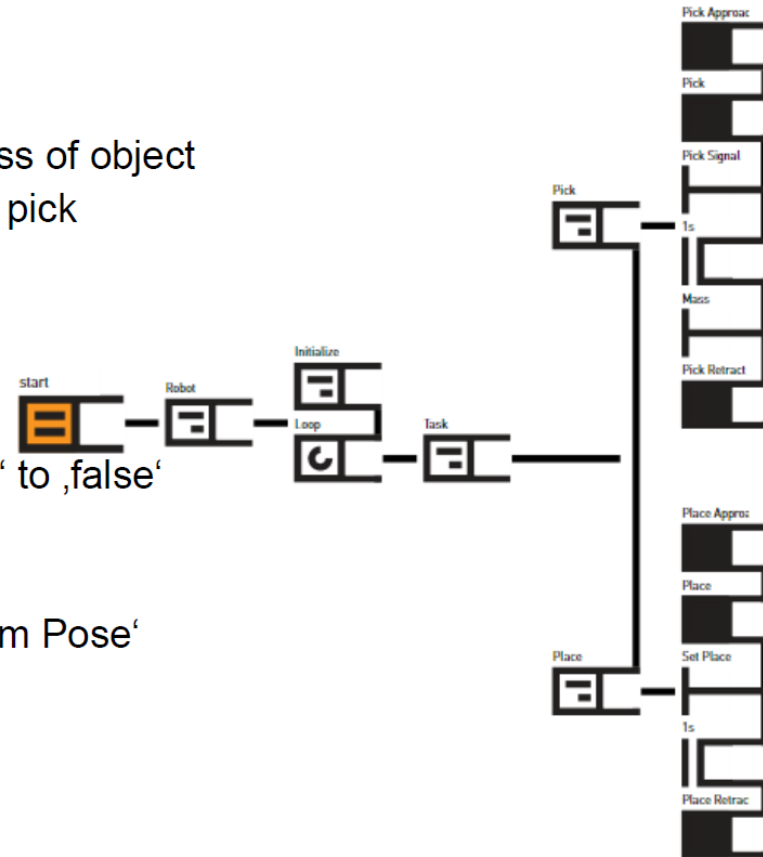
Basic Pick and Place Tutorial

1. Start ,new task' and connect to Sawyer*
2. Attach** and configure the gripper (end of arm tooling / tooling gallery)*
3. Select Node ,Task'
4. Add a ,Sequence' node  from the ,Node Pallet' and name ,Pick'
5. Manually move robot arm 10 - 20 cm above object to pick
6. Add a ,Move To' node  (make sure ,Pick' is selected)
7. Name ,Pick Approach'
8. Select ,*Arm Pose' to train position
9. Manually move robot to pick position
10. Add a ,Move To' node  and name ,Pick'
11. Select ,Movement' and set ,move type' to ,Linear'
12. Add a ,Set To' node  and name ,Pick Signal'
13. Select ,Set Variable' drop down list
14. Set Variable ,cmd_grip' to ,true'



Basic Pick and Place Tutorial

15. Add a ,Wait' node  set to 1 sec wait and name ,1s'
16. Add a ,Set To' node  and name ,Mass'
17. Select ,Set Variable' drop down list and configure mass of object
18. Manually move robot arm 10 - 20 cm above object to pick
19. Add a ,Move To' node  and name ,Pick Retract'
20. Select ,Task' node
21. Add a ,Sequence' Node  and name ,Place'
22. Copy ,Pick' sequence appropriately
23. Add a ,Set To' node , ,Set Place' and set ,grip cmd' to ,false'
24. Finish lower part
25. Save and run
26. Correct poses in ,Move To' nodes through ,Update Arm Pose'
27. Don't forget to export to your own PC (,Studio Menu')



Useful links and Resources for Intera Mode

- **Overview Intera 5.x:** <https://support.rethinkrobotics.com/support/solutions/articles/80000976891-overview-intera-5-x>
- **Head Screen Menu:** <https://support.rethinkrobotics.com/support/solutions/articles/80000977578-head-screen-menu>
- **Node-Palette:** <https://support.rethinkrobotics.com/support/solutions/articles/80000976891-overview-intera-5-x#Node-Palette>
- **Landmarks Node:** <https://support.rethinkrobotics.com/support/solutions/articles/80000977237-landmarks-node>
- **Task Bar:** <https://support.rethinkrobotics.com/support/solutions/articles/80000976891-overview-intera-5-x#Task-Bar>
- **Intera 5.x Dictionary:** <https://support.rethinkrobotics.com/support/solutions/articles/80000976882-intera-5-x-dictionary>