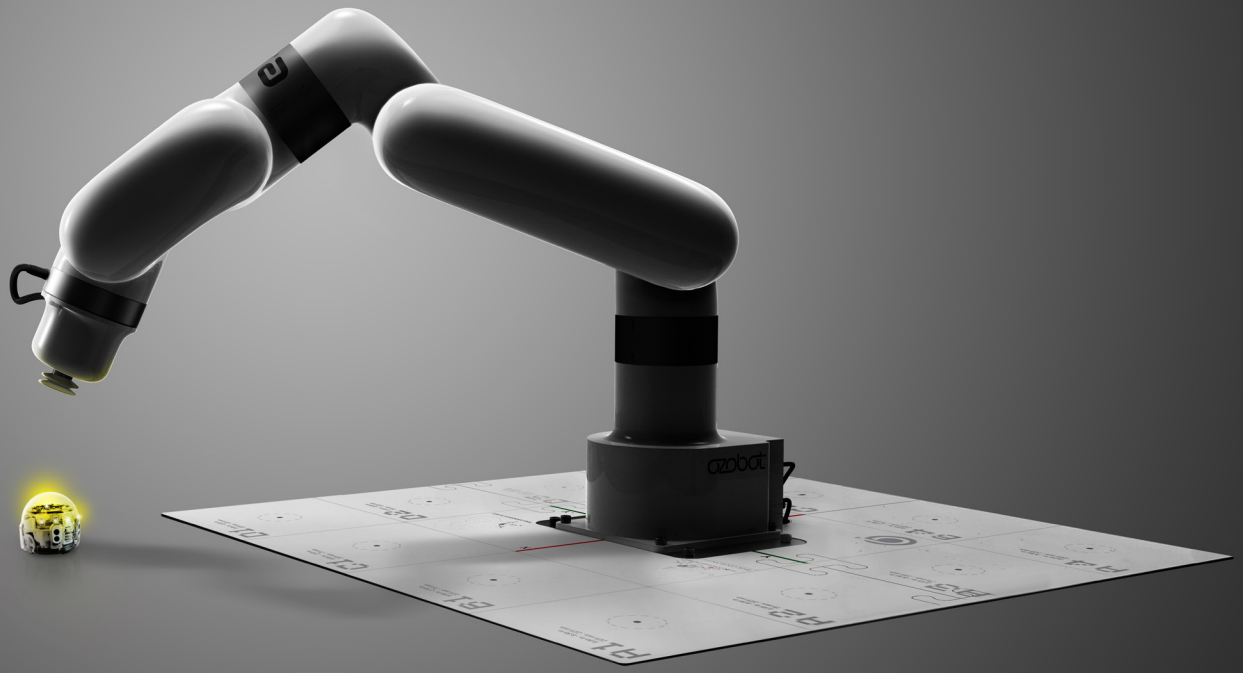
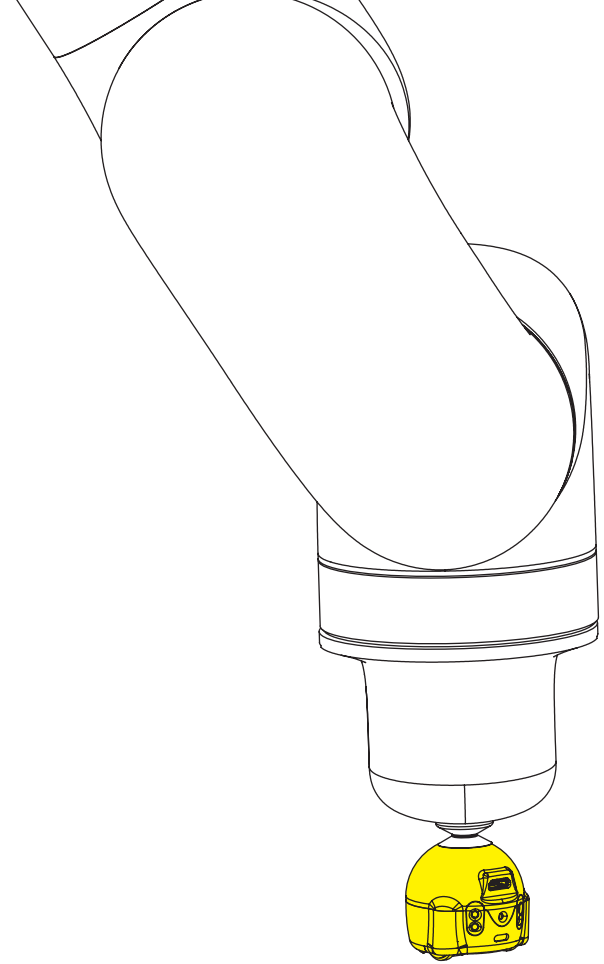
ozobot



ora

Quick Start Guide



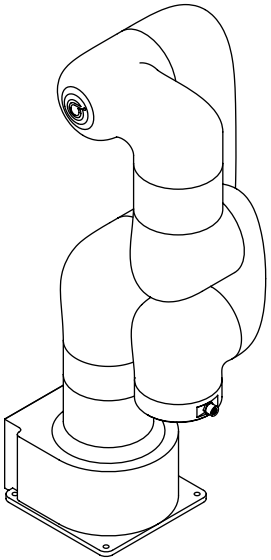
Your ORA Username & Password

Locate your unique ORA username and password on page 3 in your manual.

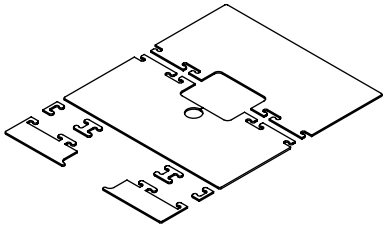
Do NOT discard this manual to avoid losing your username and password. If you need assistance, please contact **support@ozobot.com** and we'd be happy to help.

Materials

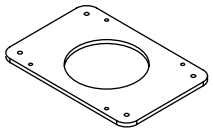
Unpack your ORA ensuring that all pieces are included in your package.



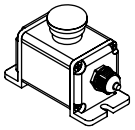
1 Arm



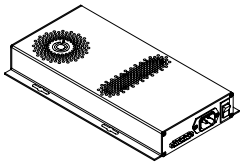
2 Quadrant Mat



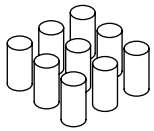
3 Mounting Plate



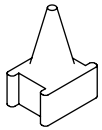
4 Emergency Stop Button



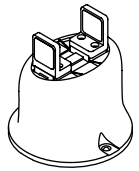
5 24V Power Suppply



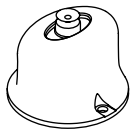
6 ORA Accessories



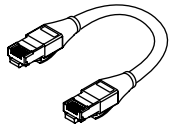
7 Calibration Tool



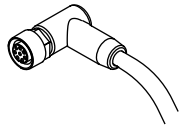
8 End Tool: Gripper



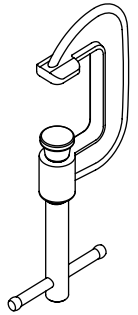
9 End Tool: Vacuum Gripper



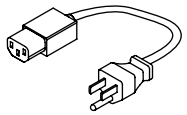
10 Ethernet Data Cable



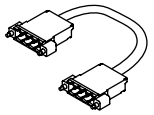
11 End Tool Adapter Cable



12 C–Clamp x2



13 Power Cable



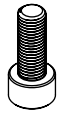
14 Power Supply Cable

15 Vacuum Cups

16 Lock Washer x6

17 M6 Hex L–Key

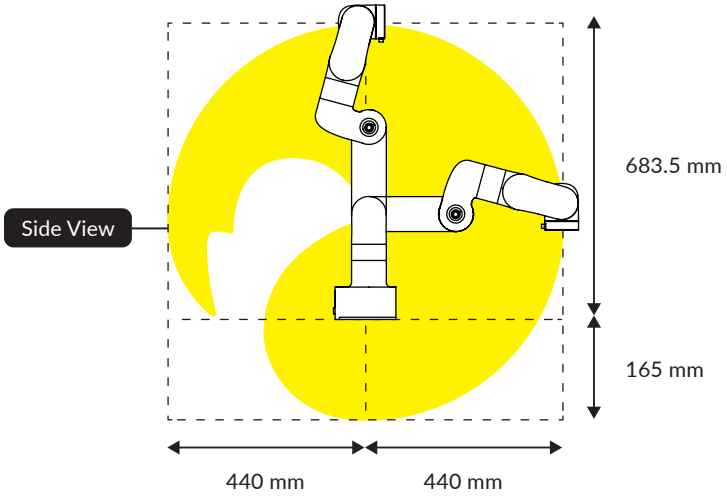
18 M5 Hex L–Key

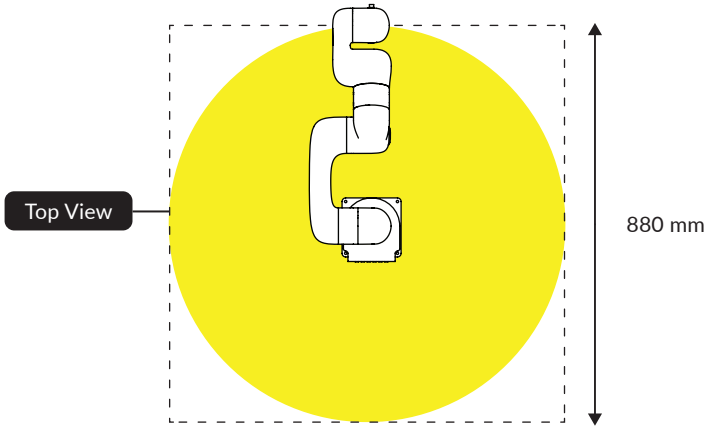


19 M6 Scews x6

20 M5 Scews x6

ORA Physical Boundary Extents

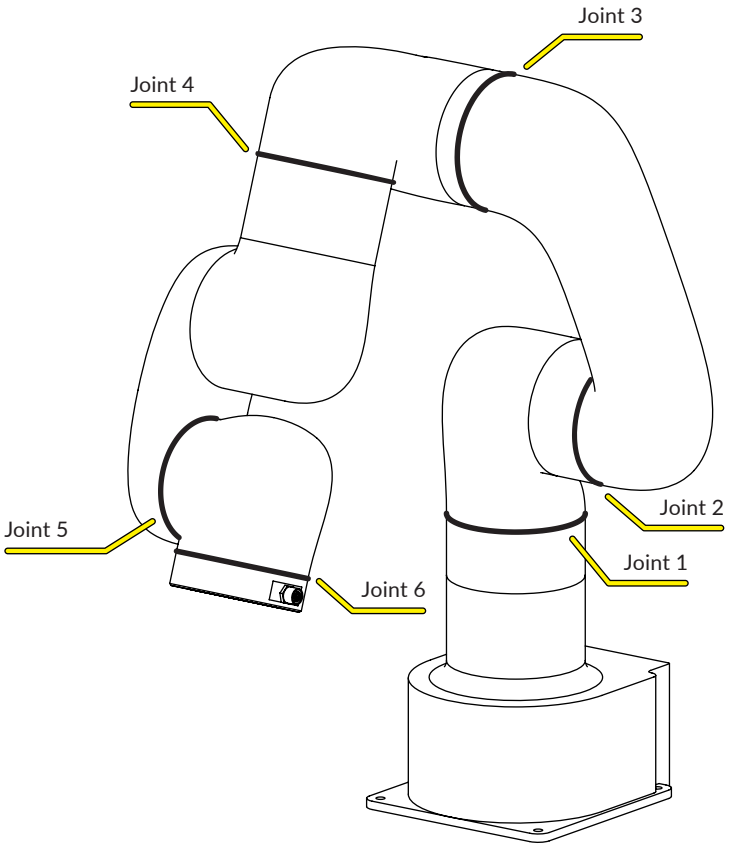




Technical Specifications

Weight	7.2 kg
Reach	440 mm
DoF	6
Maximum Tool Speed	500 mm/s
Repeatability	+/– 0.5mm
Payload	600 g
Motor Type	DC Brushless
Control Box	Built–in
Power In	100–120 V ~ 8A

ORA Joints

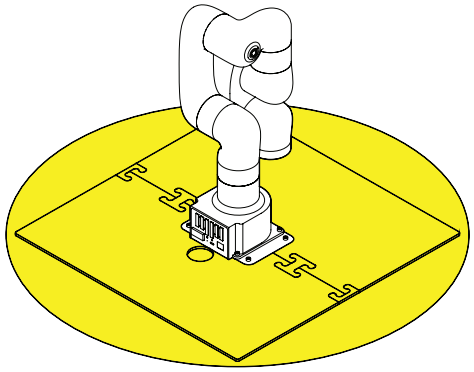


Technical Specifications

Maximum Joint Speed	180 deg/s
Joint 1	+/– 360 deg
Joint 2	+/– 150 deg
Joint 3	–3.5 deg ~ 300 deg
Joint 4	+/– 360 deg
Joint 5	+/– 124 deg
Joint 6	+/– 360 deg

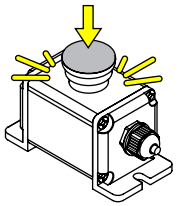
Safety & Emergency Power

Before operating the arm, ensure the space around your ORA is clear of objects and people. Check that the correct movement speed has been set before running a program.



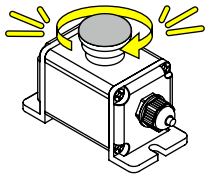
In the case of an emergency, press the **Emergency Stop Button** to instantly terminate all motion of the arm and cancel any commands. Ensure the button is within reach while your ORA is in motion.

To Turn OFF



Press the button to shut **OFF** power to the arm.

To Turn ON

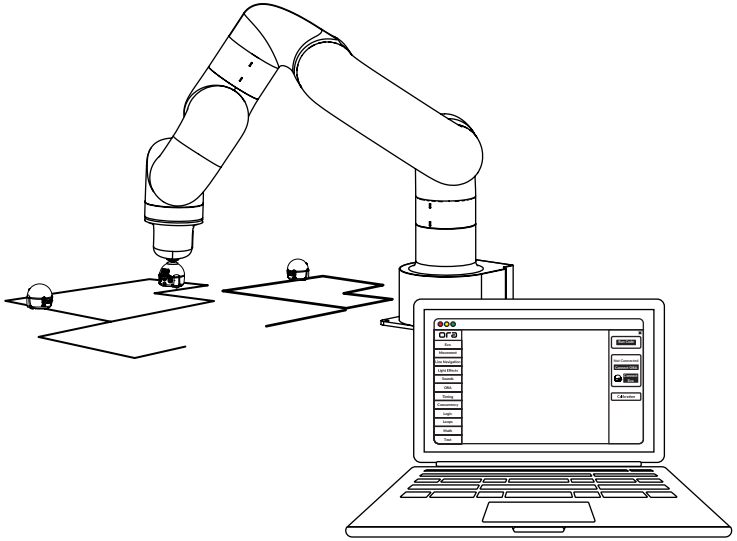


Twist the button to turn power **ON** to the arm.

How–To Video

Scan the QR code to watch a step–by–step ORA setup video.

Scan to Watch

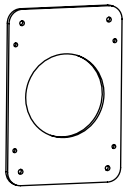


Setting Up ORA

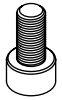
Step 1 Secure ORA to the Mounting Plate

Using (4) of the smaller **M5 Screws**, mount your ORA to the metal **Mounting Plate** and tighten with the **M5 Hex Key**. ORA can be securely mounted to the edge or middle of a stable surface.

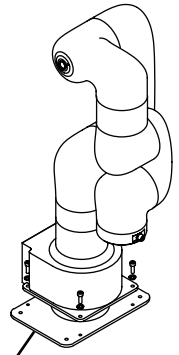
Materials Needed

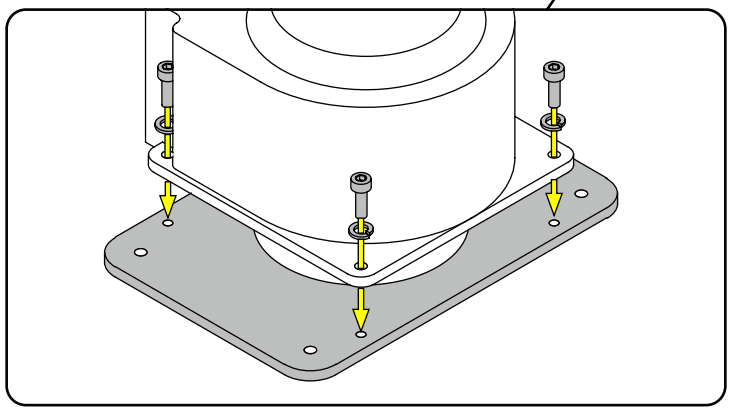

Mounting Plate


M5 Hex L–Key


M5 Screws x4


Lock Washer x4



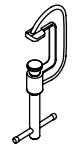


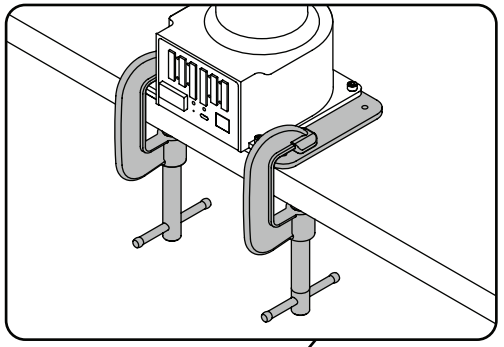
Step 2A Fasten ORA to an Edge of a Surface

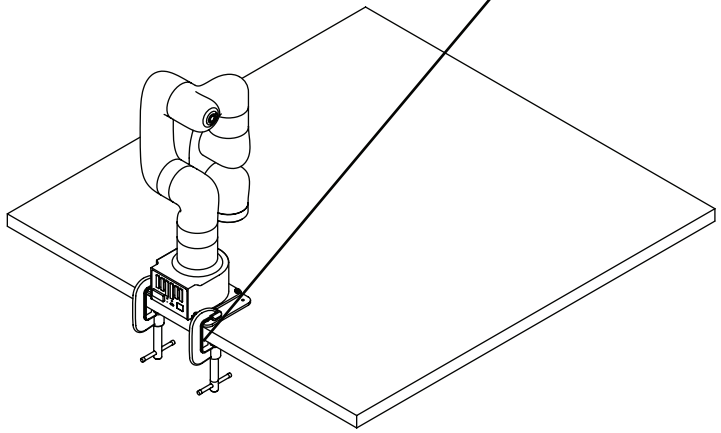
For edge mounting your ORA, use the included **C–Clamps** to securely fasten the **Baseplate** to the surface.

For attaching to an **edge of a surface**, please refer below:

Materials Needed for Edge of Surface

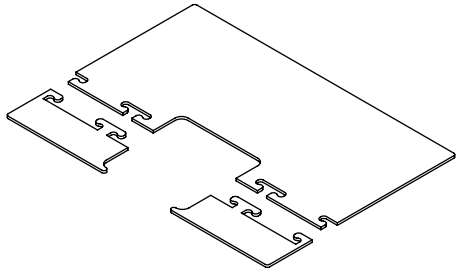

C–Clamp x2



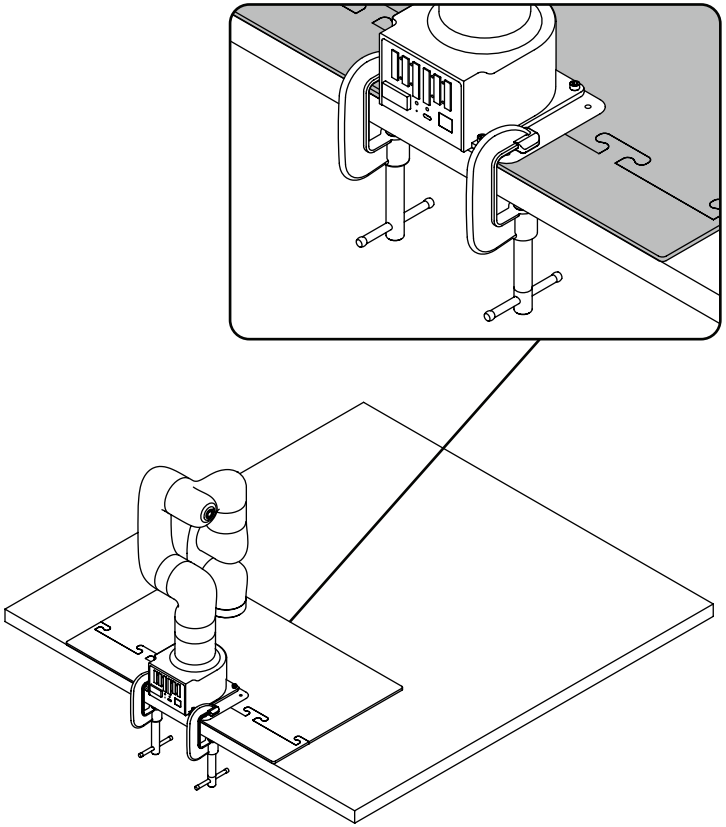


For attaching to an **edge of a surface — with half the quadrant mat:** connect the top half of the **ORA Quadrant Mat** together around the base of your ORA, using the two half mat end pieces.

Materials Needed for Edge of Surface with half the Quadrant Mat

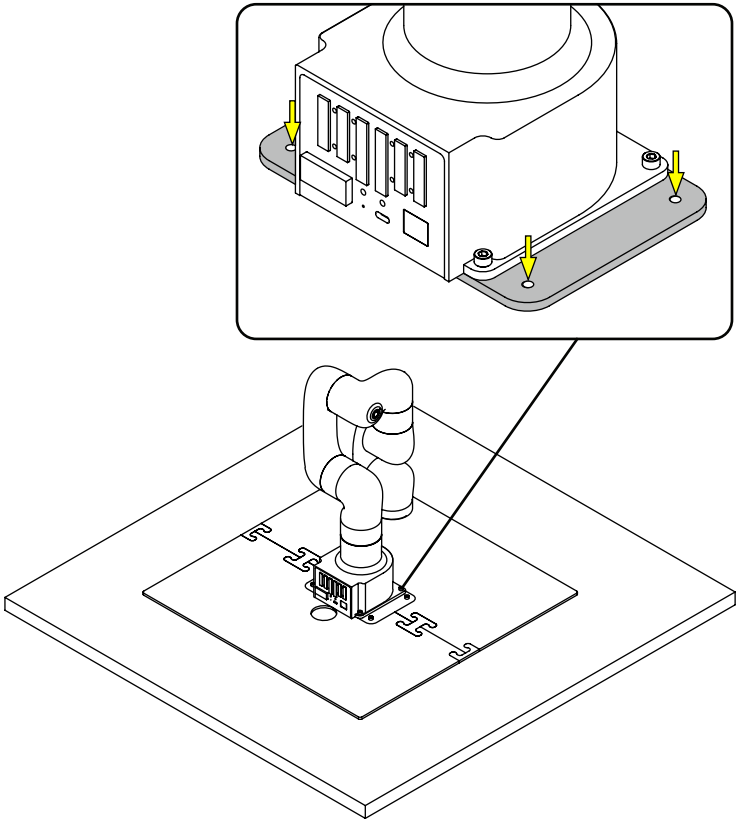


Quadrant Mat Pieces



Step 2B Fasten ORA to the Center of a Surface

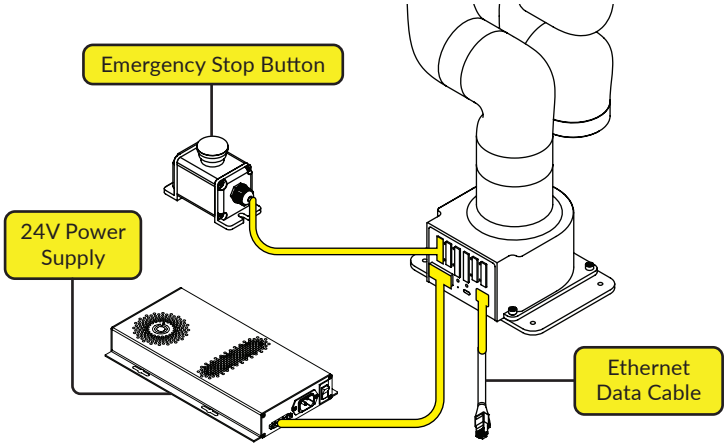
To mount your ORA away from the edge of the mounting surface, use **5 mm diameter hardware (4)** to fasten the baseplate to the surface. This hardware is not included, as it will vary depending on the mounting surface type and thickness. An optional hole may be drilled through the surface directly behind your ORA for routing cables.

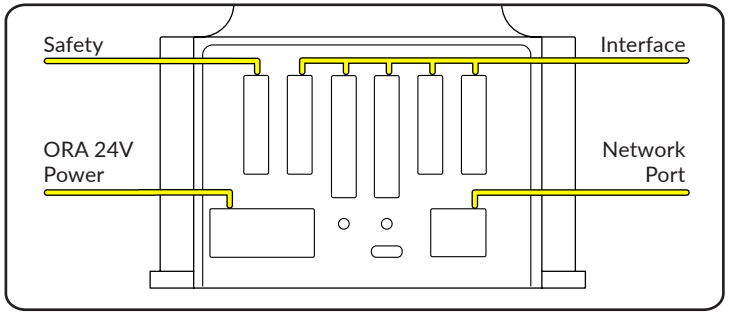


Step 3 Connect the cables and accessories

Next, connect the **Emergency Stop Button**, **Ethernet Cable**, and **Power Supply Cables** to the rear interface as shown.

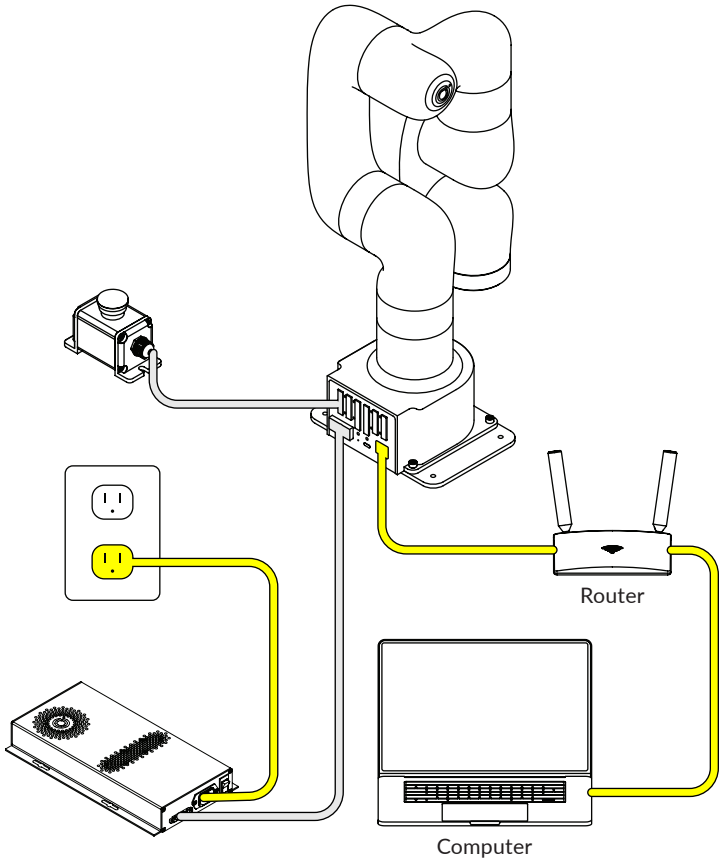
Note: Interface plugs are direction specific and will only fit in the socket one way. Do not apply excessive force to the plug when connecting, as this can damage the connectors.





Finally, connect the **Power Supply** and **Ethernet Cable** to their data and power sources. See the figure below for an overview diagram of hardware connection.

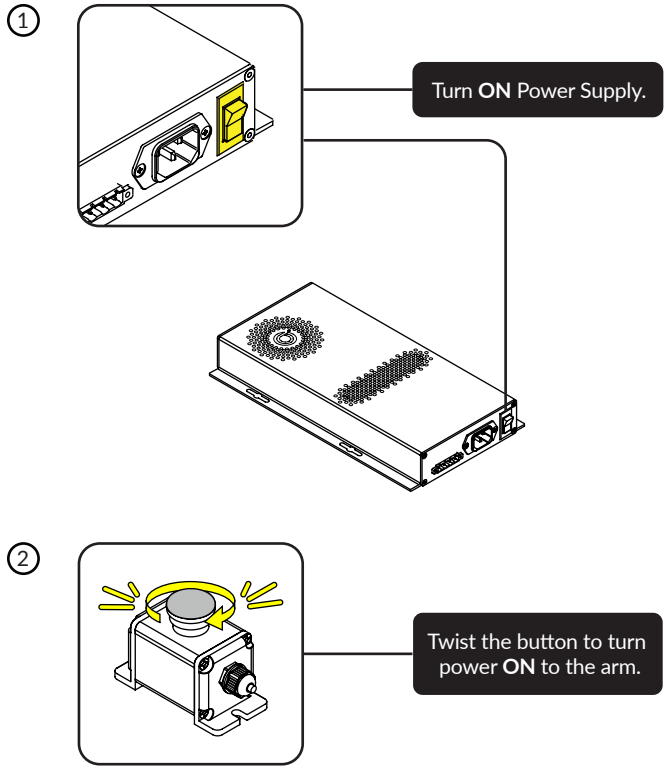
Note: Connect your ORA via **Ethernet Cable** to your local area network (LAN). It is recommended to connect you control computer via **Ethernet Cable**, as connecting over Wi-Fi may result in delayed responses from the arm.



Connecting Blockly

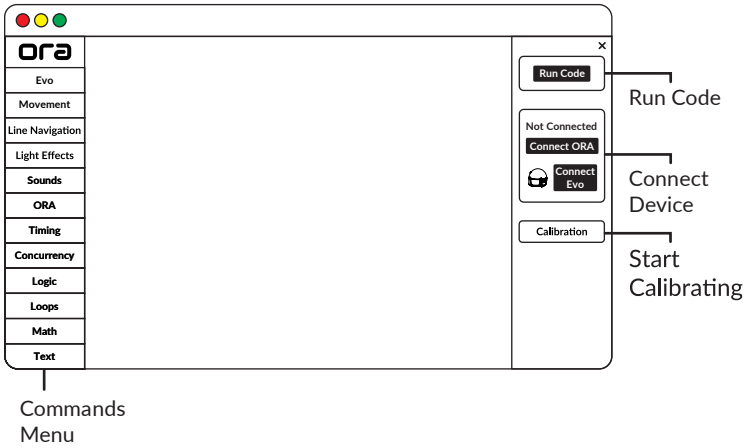
Step 1 Power on ORA

Enable power to your ORA by switching **ON** the **Power Supply**, and then twisting the **Emergency Stop Button** to the right (until it clicks).

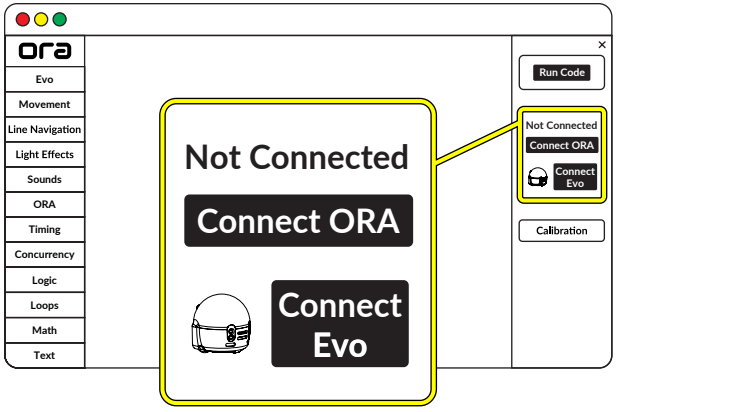


Step 2 Go to (ORA Editor)

Using either **Google Chrome** or **Microsoft Edge** browsers, navigate to **editor.ozobot.com**

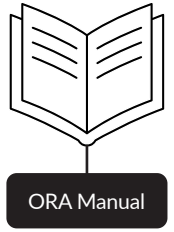


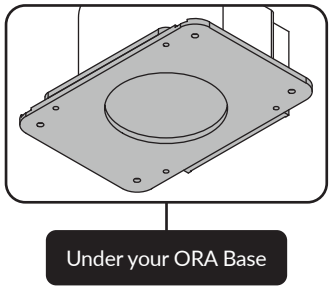
From the right side panel, please select the button labeled **“Connect ORA”**.



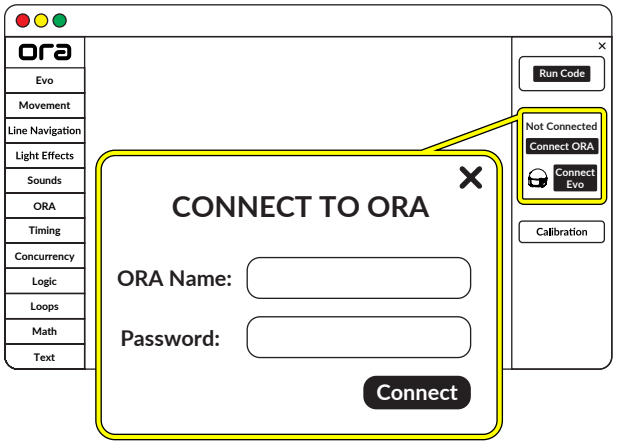
Step 3 Locate your login credentials and connect ORA

Locate your **ORA name** and **password** at the beginning of this manual, on page 3. Name and password can also be found on the bottom of your ORA base.

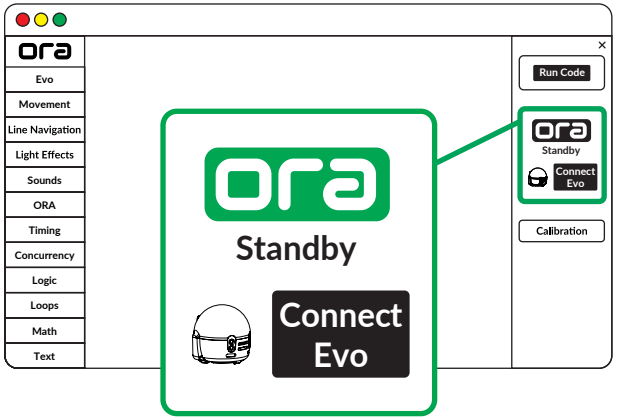




Enter into the pop-up and press **“Connect”**.

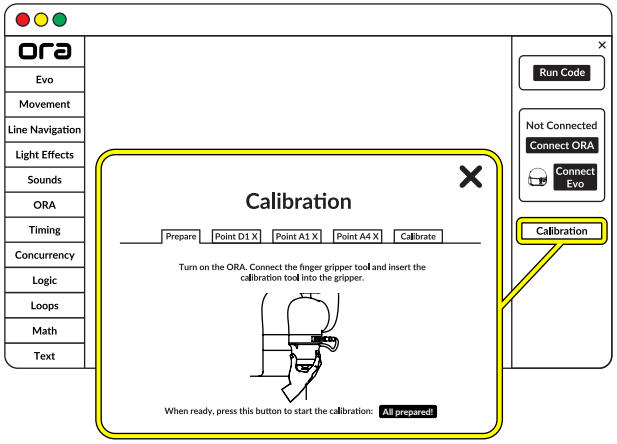


ORA Status should now read **“Standby”**.

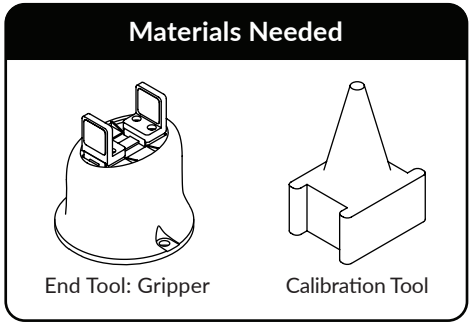


Calibration

Once connected, select the “**Calibration**” button and follow the on-screen instructions.



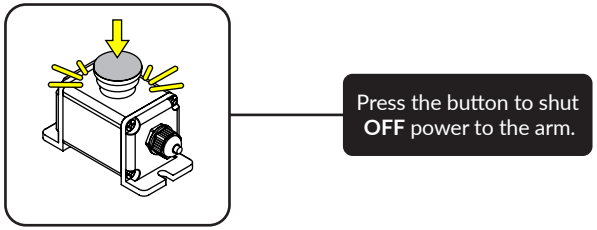
For calibration, you will need the **End Tool**: **Gripper** and **Calibration** tool. See page 24 for connecting an end tool.



Connecting End Tool

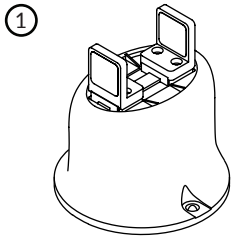
Step 1 Power off ORA

Before mounting or unmounting an **End Tool**, press the **Emergency Stop Button** to shut off power to ORA.

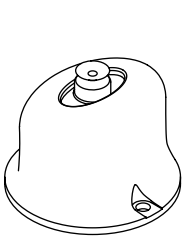


Step 2 Select and install your End Tool

Select the desired **End Tool** and install it onto the end of the arm; there are (2) types.



1 End Tool: Gripper



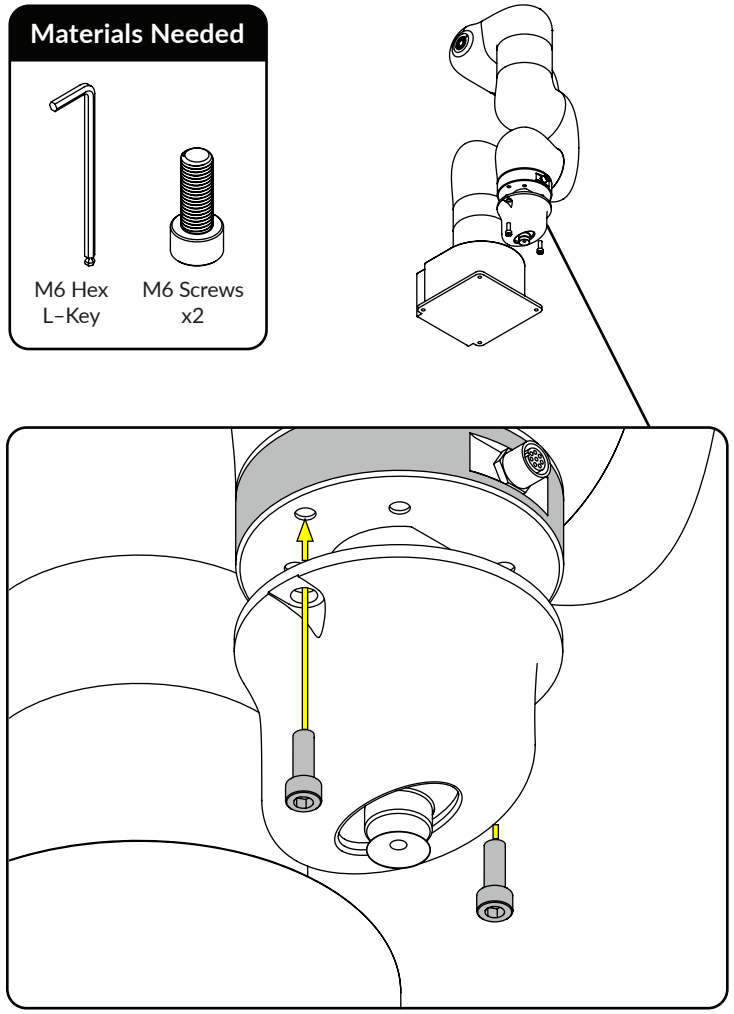
2 End Tool: Vacuum Gripper

Ensuring the **End Tool Cable** is next to the **Interface Port** on Joint 6, use (2) of the larger **M6 Screws** to secure the end tool onto Joint 6.

Materials Needed

M6 Hex L–Key

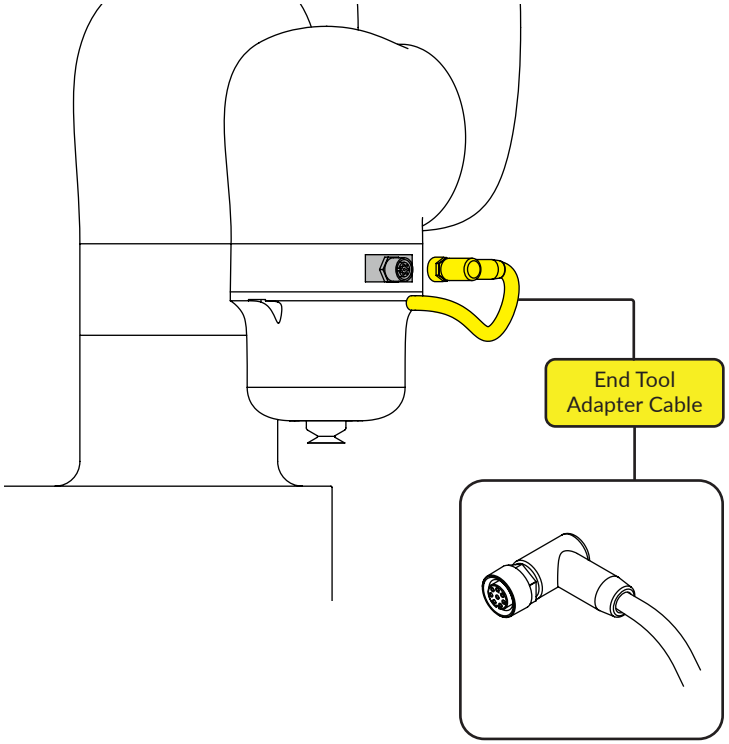
M6 Screws x2



Step 3 Connect the End Tool's cable to ORA

Plug the **End Tool's Cable** into the **Interface Port**, and finger tighten the plug to prevent the cable from coming loose while in use.

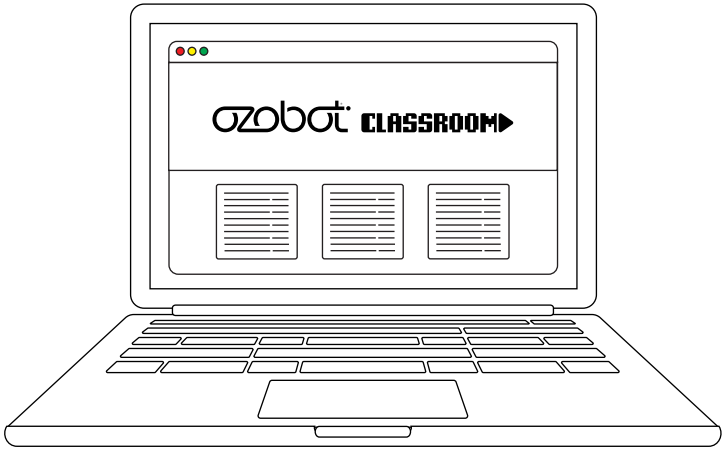
Note: The **Interface Port** is direction specific and will only fit the plug in one direction. Do not apply excessive force to the plug when connecting, as this can damage the connectors.



Next Steps: Create An Ozobot Classroom Account

Head to **classroom.ozobot.com** or scan the QR code and sign up to create a free Ozobot Classroom account.

This is where you can access ORA lesson content, including *Meet ORA*, *Meet the ORA Editor* and more.



Your ORA setup is now complete. For troubleshooting or additional support, please contact **support@ozobot.com** or visit **ozobot.com/ora** to explore FAQs.