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 Supply
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 Screws x6
20. M5 Screws x6
ORA Physical Boundary Extents

Top View
- Height: 880 mm
- Width: 440 mm

Side View
- Height: 683.5 mm
- Width: 440 mm
- Depth: 165 mm

Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>7.2 kg</td>
</tr>
<tr>
<td>Reach</td>
<td>440 mm</td>
</tr>
<tr>
<td>DoF</td>
<td>6</td>
</tr>
<tr>
<td>Maximum Tool Speed</td>
<td>500 mm/s</td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/- 0.5mm</td>
</tr>
<tr>
<td>Payload</td>
<td>600 g</td>
</tr>
<tr>
<td>Motor Type</td>
<td>DC Brushless</td>
</tr>
<tr>
<td>Control Box</td>
<td>Built-in</td>
</tr>
<tr>
<td>Power In</td>
<td>100–120 V ~ 8A</td>
</tr>
</tbody>
</table>
**ORA Joints**

**Technical Specifications**

<table>
<thead>
<tr>
<th>Maximum Joint Speed</th>
<th>180 deg/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint 1</td>
<td>+/- 360 deg</td>
</tr>
<tr>
<td>Joint 2</td>
<td>+/- 150 deg</td>
</tr>
<tr>
<td>Joint 3</td>
<td>-3.5 deg ~ 300 deg</td>
</tr>
<tr>
<td>Joint 4</td>
<td>+/- 360 deg</td>
</tr>
<tr>
<td>Joint 5</td>
<td>+/- 124 deg</td>
</tr>
<tr>
<td>Joint 6</td>
<td>+/- 360 deg</td>
</tr>
</tbody>
</table>
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.
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.

**Materials Needed**

- End Tool: Gripper
- Calibration 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.

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**Next Steps: Create An Ozobot Classroom Account**

Head to [classroom.ozobot.com](https://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](mailto:support@ozobot.com) or visit [ozobot.com/ora](https://ozobot.com/ora) to explore FAQs.