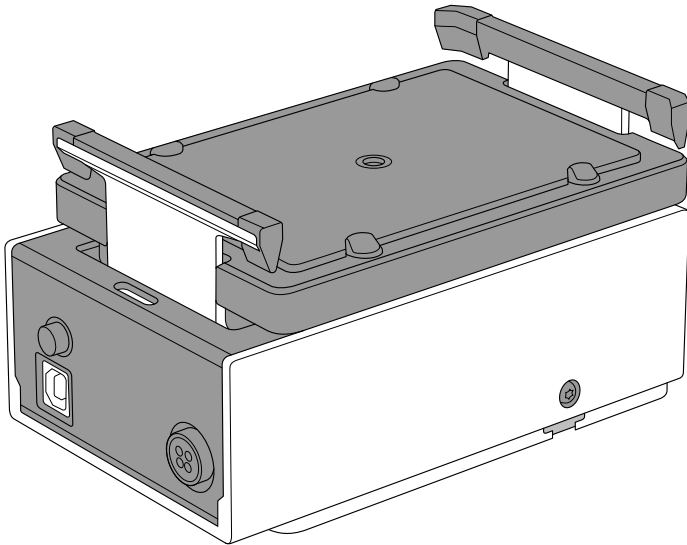opentrons

Heater-Shaker Module GEN1

Quickstart Guide

Opentrons Labworks Inc.

September 2023

Product Description

The Opentrons Heater-Shaker Module provides on-deck heating and orbital shaking. The module can be heated to 95 °C, and can shake samples from 200 to 3000 rpm. The Heater-Shaker is compatible with the Opentrons Flex and Opentrons OT-2 liquid handling robots.
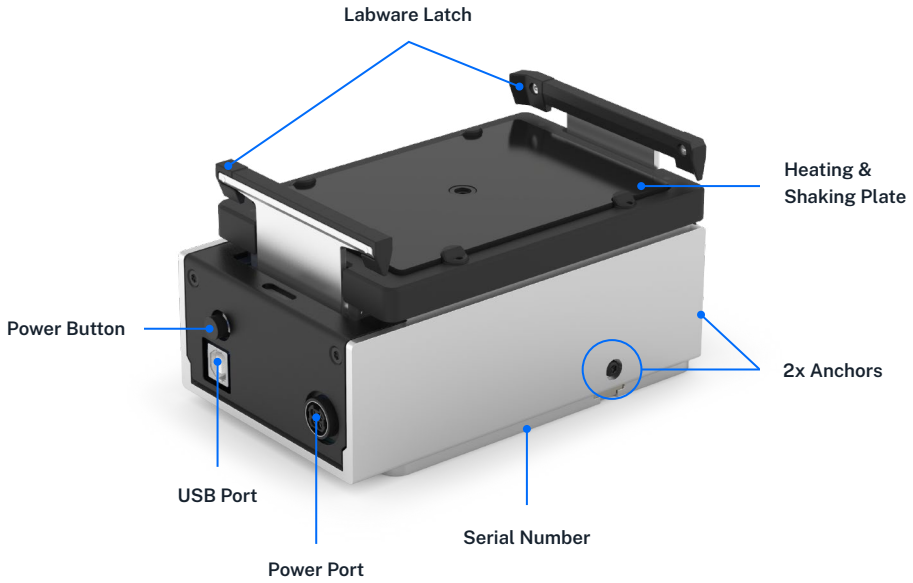
Post-sales service & contacting Opentrons
If you have any questions about the use of the system, abnormal phenomena, or special needs, please contact: support@opentrons.com. Also visit www.opentrons.com.
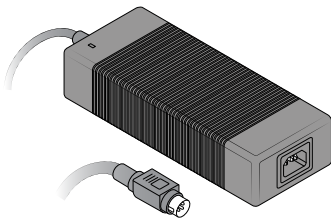
Table of Contents

Product Elements

Labware Latch

Heating & Shaking Plate

Power Button

USB Port

Power Port

Serial Number

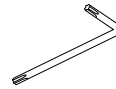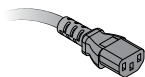2x Anchors

(1) Power Supply

(1) T10 Torx Screwdriver

(1) T10 Torx L Key

(1) Power Cable
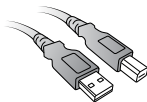
(1) USB Cable

(1) M3x7 Thermal Adapter Screw
(plus spares)

The Heater-Shaker requires a thermal adapter to hold your labware. You can purchase adapters directly from Opentrons at shop.opentrons.com.
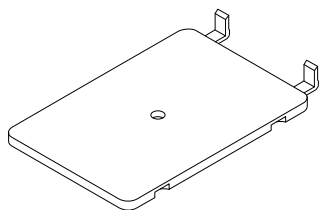
Universal Flat Adapter
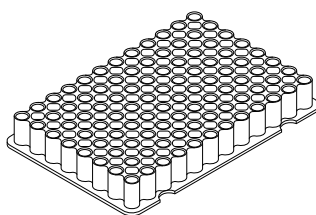
PCR Adapter
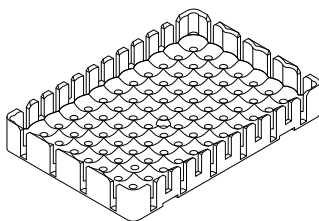
Deep Well Adapter
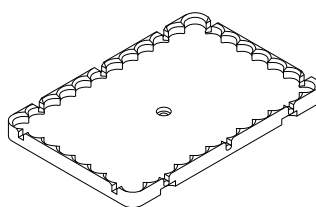
Flat Bottom Adapter

When used with a Flex robot, the Heater-Shaker fits into a caddy that occupies space below the deck. The caddy places your labware closer to the deck surface and allows for below-deck cable routing. See the Modules chapter in the Flex Instruction Manual for more information.

On/Off switch

Handle
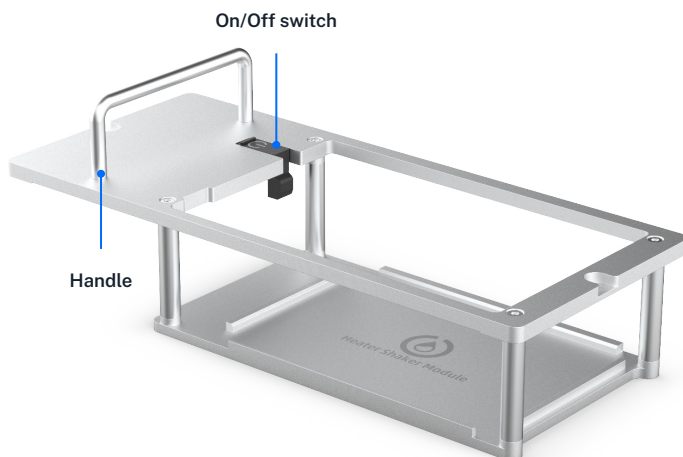
The OT-2 does not use caddies. Modules clip directly to the deck.

Module caddies are available for purchase at shop.opentrons.com.

Before You Begin

Review this section for important information about Heater-Shaker deck placement, alignment, and anchor adjustments before installing the module.

DECK PLACEMENT AND CABLE ALIGNMENT

The supported deck slot positions for the Heater-Shaker depend on the robot you're using.

Robot model	Deck placement
Flex	In any deck slot in column 1 or 3. The module can go in slot A3, but you need to move the trash bin first.
OT-2	In deck slot 1, 3, 4, 6, 7, or 10.
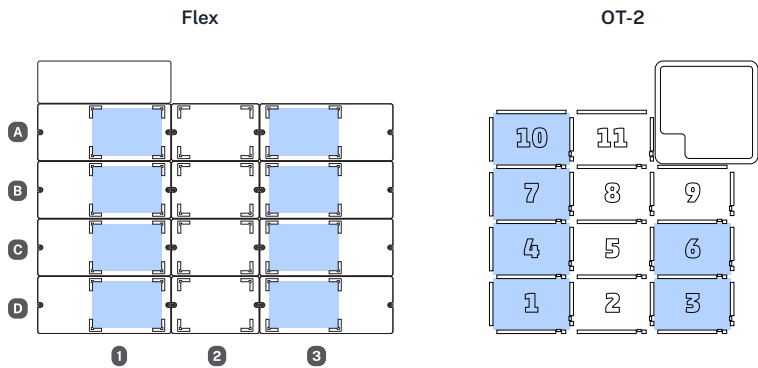
To properly align the Heater-Shaker relative to the robot, make sure the module's power and USB ports face outward, away from the center of the deck. This helps make cable routing and access easier.

Robot model	Power and USB alignment
Flex	- Facing left in column 1. - Facing right in column 3.
OT-2	- Facing left in slot 1, 4, 7, or 10. - Facing right in slot 3 or 6.

Do not install the Heater-Shaker with the ports facing in, towards the middle of the deck. This alignment makes cable routing and access difficult.

Anchors are screw-adjustable panels on the bottom of the Heater-Shaker. They provide the clamping force that secures the module to its caddy or deck slot and prevents it from vibrating loose. Use the T10 Torx screwdriver to adjust the anchors.

- To loosen/retract the anchors, turn the screws counter-clockwise.
- To tighten/extend the anchors, turn the screws clockwise.
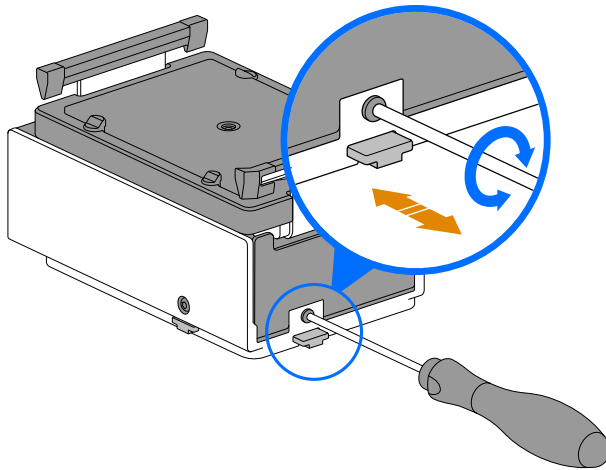
Before installation:

- Check the anchors to make sure they're level with the base of the Heater-Shaker.
- If the anchors interfere with installing the module, adjust them until there's enough clearance to seat the module and then tighten them to hold it in place.

Flex Attachment Steps

To attach the Heater-Shaker to your Flex:

1. Choose the supported slot you want to use for the module. Use the 2.5 mm screwdriver to remove the deck slot plate.

2. Insert the Heater-Shaker into its caddy by aligning the power button on the module with the on/off switch on the caddy.

> **Tip:** If you're trying to force a Heater-Shaker into a caddy, the module's power button is probably facing away from the caddy's on/off switch. Turn the module so the power button faces the on/off switch and try again.

3. Holding the module in the caddy, use the T10 Torx screwdriver to turn the anchor screws clockwise and extend the anchors. The module is secure when it doesn't move while gently pulling on it and rocking it from side to side.

4. Connect the power and USB cables to the module.

5. Insert the caddy into the deck slot and route the power and USB cables through the removable side covers of the Flex. *Do not* connect the power cable to a wall outlet yet.

6. Connect the other end of the USB cable to a USB port on the Flex.

7. Connect the power cable to a wall outlet. Gently press the on/off switch to turn the module on.

8. If you successfully connected the module, it will appear in the Pipettes and Modules section on your robot's device detail page in the Opentrons App. From there, you can control the module's labware latch or run a test shake.

OT-2 Attachment Steps

To attach the Heater-Shaker to your OT-2:

1. Choose the supported slot you want to use for the module and press it gently into place.

2. Holding the module flat against the deck, use the T10 Torx screwdriver to turn the anchor screws clockwise and extend the anchors. The module is secure when it doesn't move while gently pulling on it and rocking it from side to side.

> ⚠️ **Warning:** The shaking motion of the Heater-Shaker Module **requires additional anchoring** — more than simply clipping it into a deck slot — to ensure that it does not dislodge itself from the deck of your OT-2.

3. Connect the USB cable to the module and then connect the other end of the USB cable to a USB port on the OT-2. Use the cable holders on the side of the robot to keep the USB cable out of the way.

4. Connect the power cable to the module and then to a wall outlet. Gently press the on/off switch to turn the module on.

5. If you successfully connected the module, it will appear in the Pipettes and Modules section on your robot's device detail page in the Opentrons App. From there, you can control the module's labware latch or run a test shake.

Attaching the Thermal Adapter

You can attach a thermal adapter before or after installing the Heater-Shaker. The module latches must be open before installing the thermal adapter. You can open the latches via the module card for the Heater-Shaker in the Opentrons App.

To attach a thermal adapter to the module:

1. Use the T10 Torx screwdriver and thermal adapter screw to fasten your adapter to the module.

> ⚠️ **Warning:** Using a different screwdriver can strip the screw. Using a different screw can damage the module.
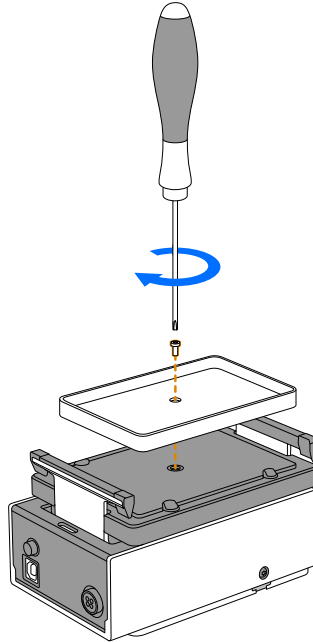
2. Check the alignment of the thermal adapter. The adapter sits evenly on the module when attached properly.

3. Check that the adapter is firmly attached by rocking it back and forth. It's secure if it doesn't move.

Additional Product Information

MAINTENANCE

The Heater-Shaker Module has been tested for 3 years of full-time operation without maintenance. Users should not attempt to service or repair the module themselves. If you have concerns about your module's performance or require maintenance, please contact Opentrons Support.

WARRANTY

All hardware purchased from Opentrons is covered under a 1-year standard warranty. Opentrons warrants to the end-user of the products that they will be free of manufacturing defects due to part quality issues or poor workmanship and also warrants that the products will materially conform to Opentrons' published specifications.

SUPPORT

Opentrons Support can help you with questions about our products and services. If you discover a defect, or believe your product is not functioning to published specifications, contact us at support@opentrons.com.

Please have the Heater-Shaker's serial number available when contacting support. You can find the serial number on the bottom of the module or in the Opentrons App. On the Heater-Shaker card in the Pipettes and Modules section of your robot's device detail page, click the three-dot menu (⋮) and then **About**.

APP DOWNLOAD

Control your liquid handling robot and module using the Opentrons App. Download the app for Windows, macOS, or Ubuntu at https://opentrons.com/ot-app/.

COMPLETED CERTIFICATIONS

IEC, FCC, RoHS

RECOMMENDED OPERATING CONDITIONS

Environmental temperature: 20–25 °C
Environmental humidity: 80% maximum

MANUFACTURER DESCRIPTION

Opentrons Labworks Inc
45-18 Ct Square W
Long Island City, NY 11101

For more information, download the complete
Opentrons Heater-Shaker Module GEN1 Instruction Manual
from the Opentrons Knowledge Hub.

opentrons