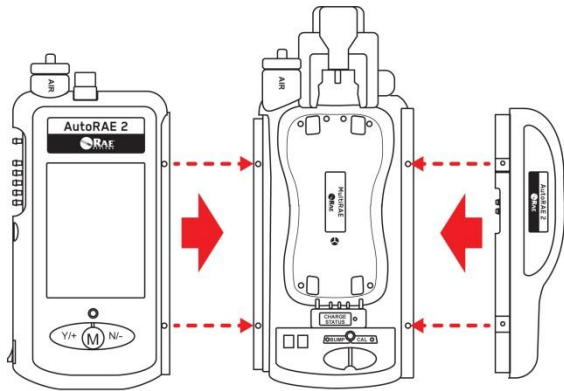


## Setup

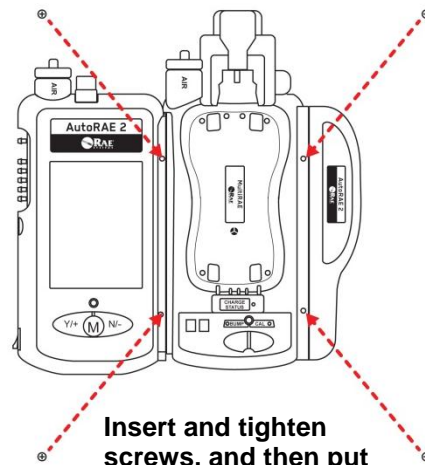
Before using the AutoRAE 2 Controller and AutoRAE 2 Cradle(s) to bump test or calibrate ToxiRAE Pro-family and/or QRAE 3 and/or MultiRAE-family (pumped versions) instruments, follow the instructions in the AutoRAE 2 User's Guide for programming the gas configurations. The steps to follow for assembly and gas configuration, as well as functionality, are the same for all cradles.

## Connections

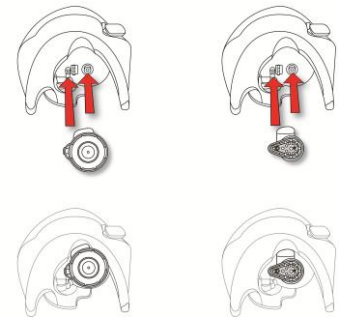
Assemble the system. Connect the AutoRAE 2 Controller to any Cradles, and then connect the Terminator. For ToxiRAE Pro Cradles, insert the appropriate adapter.



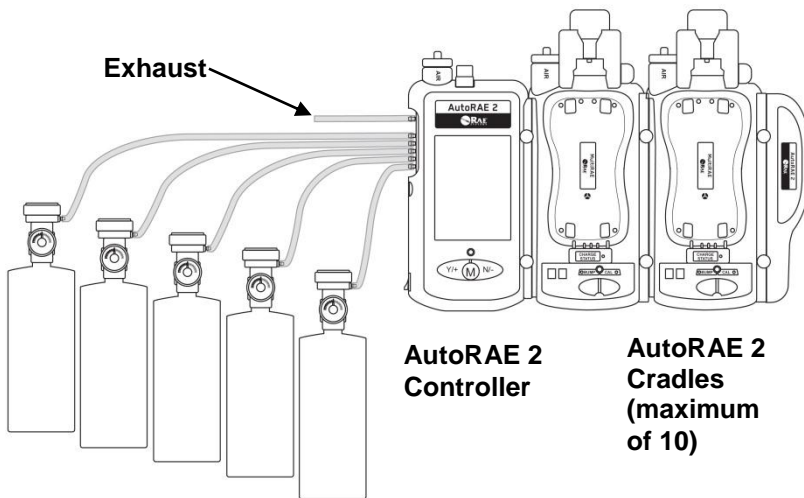
Attach Controller to Cradle(s) and then attach Terminal Adapter to last Cradle.



Insert and tighten screws, and then put caps over screws.



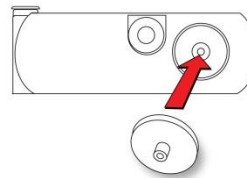
The ToxiRAE Pro Cradle requires an adapter to be inserted in the capture mechanism. ToxiRAE Pro and ToxiRAE Pro LEL (L) and ToxiRAE Pro PID (R).



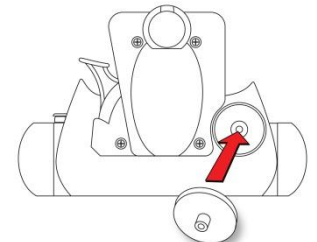
Calibration gas cylinders (each must have a demand-flow regulator)

AutoRAE 2 Controller

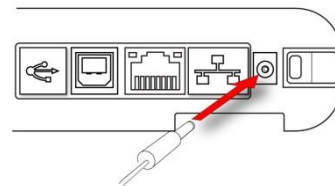
AutoRAE 2 Cradles (maximum of 10)



Press filter onto receptacle at end of Controller



Press filter onto receptacle at end of Cradle



Plug the barrel from AC adapter into jack. Then plug its cord into the transformer, and the transformer into AC power source.

**Important!** Make sure an SD card is installed in the AutoRAE 2 Controller. The system cannot operate if an SD card is not installed. For installation instructions, consult the AutoRAE 2 User's Guide. Make sure the AutoRAE 2 Controller's RTC (real-time clock) has been set in ProRAE Studio II before its first use.

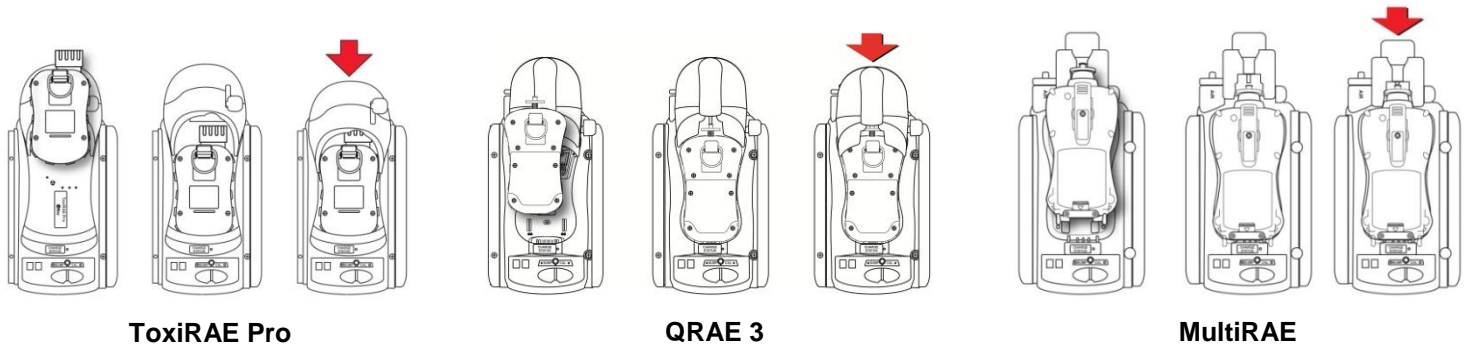
## Turning The System On

Toggle the switch on the side of the AutoRAE 2 Controller. The display and power LED glow, and the LEDs on attached cradles light up. The AutoRAE 2's internal pump and the valves in the system are tested. If self-checkout is successful, the system is ready to use. The display provides a list of the AutoRAE 2 Cradles, and if there are instruments in them, the names of the instruments (ToxiRAE Pro, QRAE 3, MultiRAE, MultiRAE Pro, etc.) are included in this list.

Make sure calibration gases match the configurations created in ProRAE Studio II and transferred to the AutoRAE 2 Controller. Also make sure the gas cylinders have sufficient gas in them and that they are attached properly.

## Place An Instrument In The Cradle

1. Make sure the filter on the instrument is not dirty or clogged.
2. Make sure the instrument is in AutoRAE 2 Mode or turned off.
3. Place the instrument into the cradle face-down, making check that it is aligned correctly with the contacts on the AutoRAE 2 Cradle's charging port. There are two alignment points on one side and one alignment point on the other side, designed to mate with matching points on the bottom of the instrument.
4. Press in on the capture mechanism to lock the instrument in place.



## Automatic Warm-Up Before Bump Testing Or Calibrating

When you place an instrument in the cradle and lock the capture mechanism, the instrument begins charging and is automatically warmed up. Warm-up time depends on the sensors installed in the instrument and their individual warm-up requirements.

## Display Color Coding

The AutoRAE 2 Controller has a color display, so colors are used to indicate status in different categories of information.

| Status  | Color  | Explanation   |
|---------|--------|---|
| Pass    | Green  | <ol style="list-style-type: none"> <li>1. All sensors and alarms passed bump test.</li> <li>2. All sensors and alarms passed calibration.</li> </ol>  |
| Pass?   | Green  | <ol style="list-style-type: none"> <li>1. All sensors that were tested passed bump test. Some sensors were not tested.</li> <li>2. All sensors that were calibrated passed calibration. Some sensors were not calibrated.</li> </ol>                              |
| Fail    | Red    | <ol style="list-style-type: none"> <li>1. One or more sensors or alarms failed bump test.</li> <li>2. One or more sensors or alarms failed calibration.</li> <li>3. Monitor not detected after 30 minutes.</li> <li>4. Monitor warm-up or other error.</li> </ol> |
| Warning | Yellow | Sensor does not match the gas.  |
| Warm-up | None   | Instrument warm-up.   |
| Ready   | None   | Instrument ready to bump test or calibrate.   |

## Bump Testing

You can bump test all or individually selected instruments that are seated in the system's cradles.

From the main screen, enter Bump Test by pressing [Y/+] twice ("Function" and then "Select").

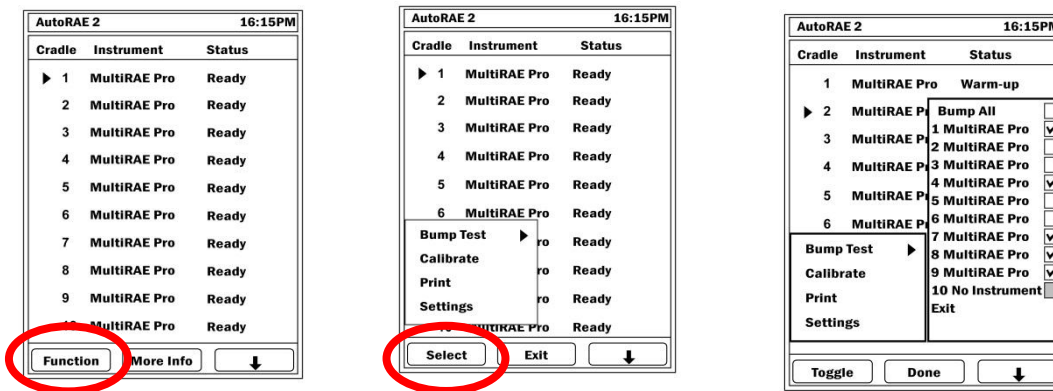
**Note:** Any cradle that does not have an instrument in it is shown with a gray checkbox. You cannot check/uncheck this box.

To select all instruments in cradles to bump test:

1. Press [Y/+]. When you check "Bump All," the "Bump All" checkbox and all of the other checkboxes for cradled instruments are automatically checked.
2. Press [MODE] for "Done."
3. Press [Y/+] to start.

To select specific instruments to bump test:

1. Press [N/-] to scroll down the list to an instrument you want to select for bump testing.
2. Press [Y/+] to toggle the selection between unchecked and checked.
3. Press [MODE] for "Done."
4. Press [N/-] to select "Exit," and then press [Y/+] to exit.



If you did not press [Y/+] to start the process, then a countdown begins. When the countdown reaches zero, then the instruments are bump tested.

**To abort a bump test:** Press [N/-]. You will be asked if you want to abort the process. Press [Y/+] for "Yes" and [N/-] for "No."

## IMPORTANT!

If an instrument does not pass a bump test, a full calibration is automatically started.

## Calibration

You can calibrate all or individually selected instruments that are seated in the system's cradles.

From the main screen, enter Calibrate by pressing [Y/+] ("Function"), and then [N/-] until "Calibrate" is highlighted. Then press [Y/+] to select it.

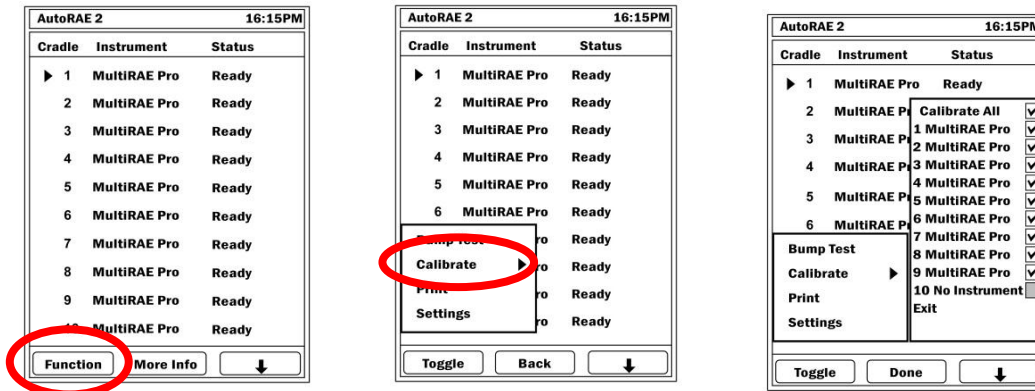
**Note:** Any cradle that does not have an instrument in it is shown with a gray checkbox. You cannot check/uncheck this box.

To select all instruments to calibrate:

1. Press [Y/+]. When you check "Calibrate All," the "Calibrate All" checkbox and all of the other checkboxes for cradled instruments are checked.
2. Press [MODE] for "Done."
3. Press [Y/+] to start.

To select specific instruments to calibrate:

1. Press [N/-] to scroll down the list to an instrument you want to select for calibration.
2. Press [Y/+] to toggle the selection between unchecked and checked.
3. Press [MODE] for "Done."
4. Press [N/-] to select "Exit," and then press [Y/+] to exit.

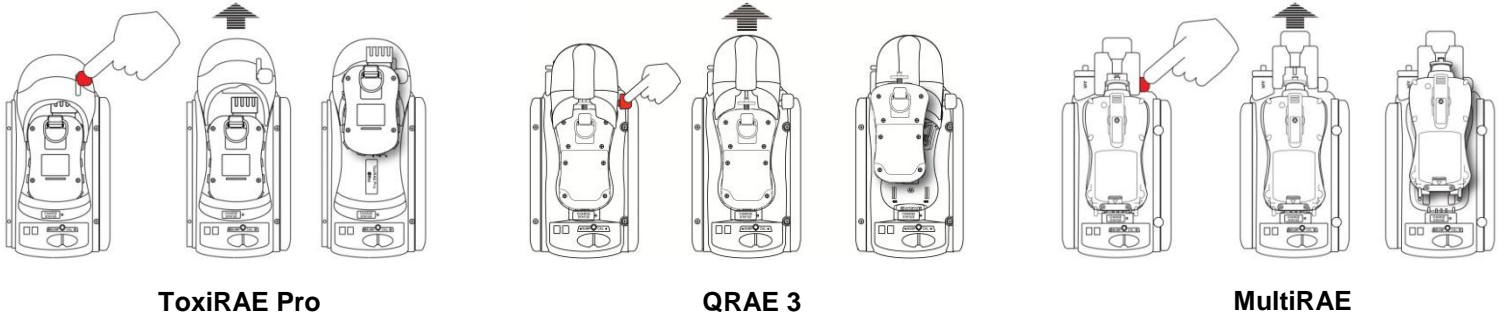


If you did not press [Y/+] to start the process, then a countdown begins. When the countdown reaches zero, then the instruments are calibrated.

**To abort calibration:** Press [N/-]. You will be asked if you want to abort the process. Press [Y/+] for "Yes" and [N/-] for "No."

## Removing An Instrument From A Cradle

To remove an instrument from a cradle, press the button to release the capture mechanism. Then lift the instrument from its inlet end.



## Charging An Instrument's Battery

Each AutoRAE 2 Cradle attached to an AutoRAE 2 Controller automatically charges an instrument's battery when it is docked. The Charge Status LED glows red to indicate that charging is taking place. When the instrument's battery is fully charged, the LED glows green.

## Printing Bump/Calibration Reports

Connect a USB cable is connected to a printer and to the USB A port on the side of the AutoRAE 2 Controller and to the USB port on your printer. Make sure the printer is turned on.

From the main screen, enter Print by pressing [Y/+] ("Function"), and then [N/-] (the cursor arrow) until "Print" is highlighted. Then press [Y/+] to select it.

Navigate down the list by pressing [N/-], and check/uncheck boxes by pressing [Y/:]. If you select "Print All," then "Print All" and all of the other instruments are marked with a check in their checkbox.

If you select specific instruments, then only those will be checked.

After you have made your selections, select [MODE] for "Done." If a printer is connected, then there is an automatic countdown, and all selected instrument data is printed.

If you want to stop printing, press [N/-], which aborts printing. You will be asked to confirm that you intend to abort printing.

- Press [Y/+] to abort printing.
- Press [N/-] to allow printing to continue.



# AutoRAE 2 System QuickStart



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