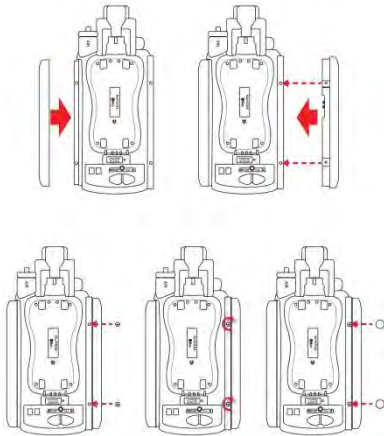


## Setup

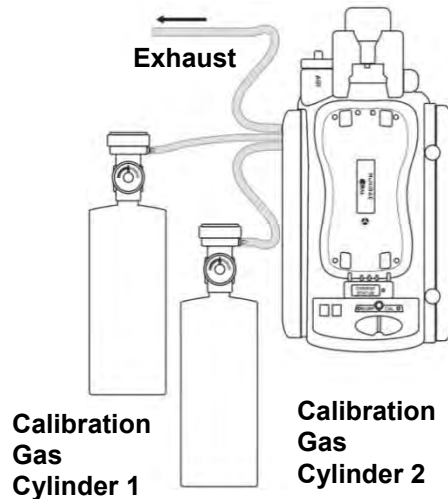
Before using the AutoRAE 2 Cradle to bump test or calibrate ToxiRAE Pro-family and/or QRAE 3 and/or MultiRAE-family (pumped versions) instruments, make sure the AutoRAE 2 Cradle and (if one is used) the AutoRAE 2 Controller is running latest firmware. Also, follow the instructions in the AutoRAE 2 User's Guide for programming the gas configurations. **Note:** Each calibration gas cylinder must have a demand-flow regulator.

## Connections

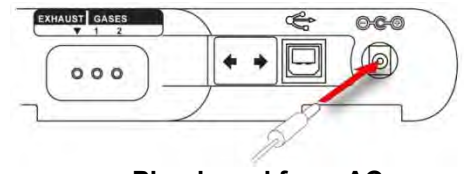
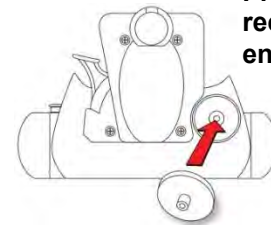
### Install left and right end caps



### Connect gas cylinders with gas inlets



Press filter onto receptacle at end of Cradle



Plug barrel from AC adapter into jack, then AC Adapter to AC power source

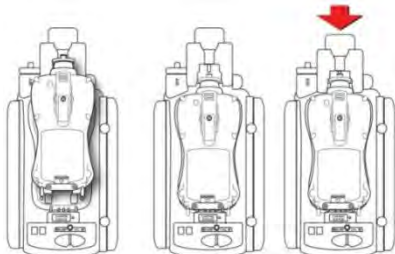
## IMPORTANT!

Always check that the gas configuration and the type/concentration of the calibration gases connected to the AutoRAE 2 Cradle match before you begin any bump test or calibration. Make sure there is enough gas in the cylinder(s). Set the RTC (real-time clock) date and time on the Cradle via ProRAE Studio II before first use.

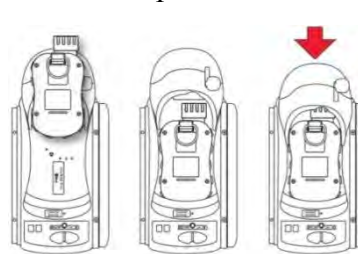
## Placing An Instrument In The Cradle

**Important!** If the Cradle is for a ToxiRAE Pro-family instrument, make sure the correct calibration adapter is in place.

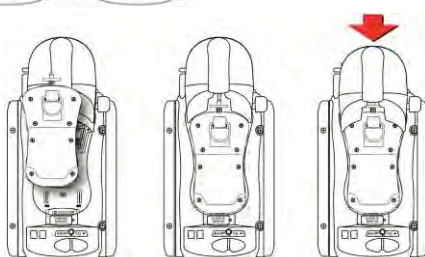
1. Make sure the filter on the instrument is not dirty or clogged.
2. Make sure the instrument is turned off or in AutoRAE 2 Mode.
3. Place the instrument into the cradle face-down, making check that it is aligned correctly with the contacts on the AutoRAE 2 Cradle's charging port.
4. Press in on the capture mechanism to lock the instrument in place.



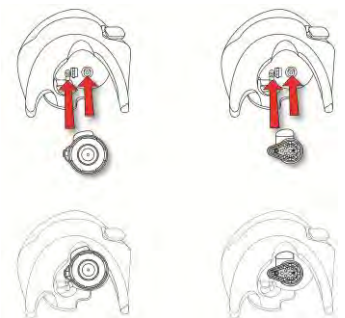
MultiRAE



ToxiRAE Pro



QRAE 3



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).

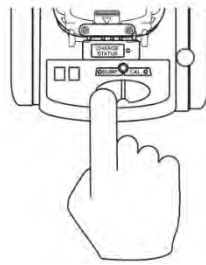
## Automatic Warm-Up Before Bump Testing Or Calibrating

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.

## Performing A Bump Test

1. Insert an instrument in the AutoRAE 2 Cradle.
2. Press “Bump.” If the instrument is warmed up (both LEDs are glowing green), the bump test begins.

Consult the Bump & Cal Error & Status chart for an explanation of the LED indications that tell you which operations are underway and which LED indications tell you of errors during calibration.

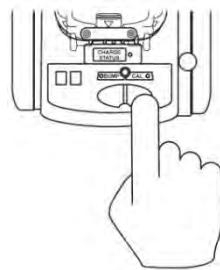


**Note:** If the instrument does not successfully pass a bump test, the AutoRAE 2 Cradle automatically begins a full calibration.

## Performing A Calibration

Always perform a full calibration after replacing a sensor, using a new ToxiRAE Pro, QRAE 3, or MultiRAE, or if the instrument has been unused for a long period of time. In addition, if the instrument has failed a bump test, perform a full calibration.

1. Make sure the span value in the monitor(s) and the AutoRAE 2 Controller match.
2. Make sure the correct Gas Configuration has been selected (use G8; G1 through G7 are not supported).
3. Insert a ToxiRAE Pro, QRAE 3, or MultiRAE monitor in the AutoRAE 2 Cradle.
4. Press “Cal.”



When the instrument is warmed up (both LEDs are glowing green), calibration begins.

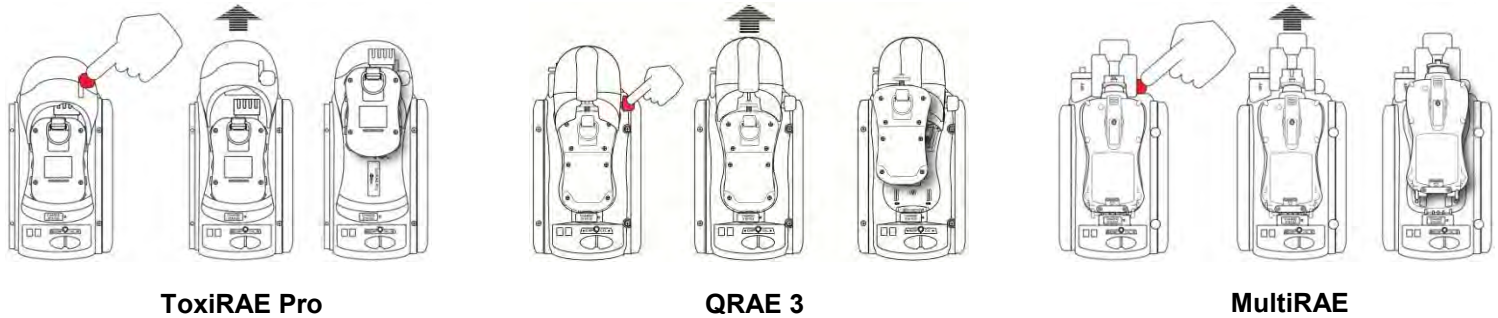
**Note:** For MultiRAE and QRAE 3 instruments, calibration order is important. Refer to cross-interference information in section 21.2 (Connecting Calibration Gas) in the AutoRAE 2 User’s Guide and RAE Systems Technical Note TN-114: Sensor Specifications And Cross-Sensitivities (available for free download from [www.raesystems.com](http://www.raesystems.com)).

## Bump And Cal Errors And Status Messages

Status	Bump LED	Cal LED	User Action
Warm-up in progress	Orange (blinking in alternation)		Do not remove the instrument from the cradle, or the warm-up process will be interrupted. Pressing keys has no effect.
Warm-up error	Red (blinking in alternation)		Remove the instrument from the cradle and take the action indicated on the instrument's display.
Warm-up completed successfully	Green	Green	Press Bump or Cal key to perform a bump test or calibration.
Bump test in progress	Green (blinking)	Off	Do not remove the instrument, or the process will be interrupted. Pressing keys has no effect.
Bump test completed successfully	Green	Off	The bump test result (pass) has been logged. You may remove the instrument from the Cradle for use or leave it on the Cradle for the next AutoRAE 2 operation or to charge its battery.
Bump test failed	Red (blinking slowly)	Off	The bump test result (fail) has been logged. The AutoRAE 2 will perform calibration on failed sensor(s) automatically.
Calibration in progress	Off	Green (blinking)	Do not remove the instrument, or the process will be interrupted. Pressing keys has no effect.
Calibration completed successfully	Off	Green	The result has been logged in the instrument. You may remove the instrument from the Cradle.
Calibration failed	Off	Red (blinking slowly)	The result has been logged in the instrument; you may remove it from the Cradle and read its display for an error code.
Sleep mode	Orange	Orange	Charging continues when in sleep mode. Press either key to wake up the instrument.
Monitor not connected / system idle	Off	Off	Check to make sure the monitor is properly installed in the cradle and the capture mechanism is fully engaged. Check to make sure the monitor is in AutoRAE 2 Communications Mode or turned off.
Cradle error	Red (blinking slowly)		Take the action indicated in the Controller's display. Otherwise, contact RAE Systems service.

## Removing An Instrument From The Cradle

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



ToxiRAE Pro

QRAE 3

MultiRAE

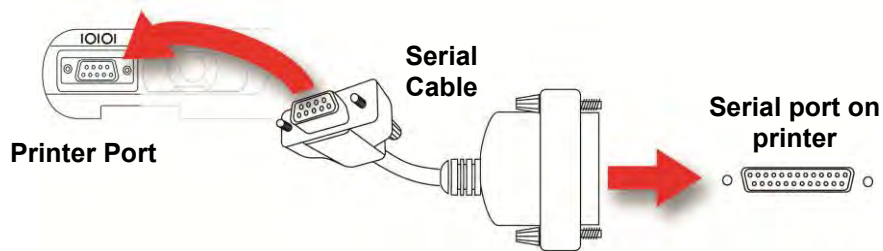
## Charging An Instrument's Battery

The AutoRAE 2 Cradle 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

The AutoRAE Cradle has a port for connecting to a serial printer (or you can use a serial-to-USB adapter to drive a compatible USB printer).

Connect the serial port of the AutoRAE Cradle to the serial port on a printer.



When you perform a bump test or calibration with a printer attached to an AutoRAE 2 Cradle, a full report is sent to the printer after the bump test or calibration concludes. If a bump test fails, the AutoRAE 2 Cradle sends the report to the printer and it initiates a full calibration. When the calibration is complete, the results are then also sent automatically to the printer.