

These instructions describe how to replace the IR Sensor in the H25-IR Infrared Gas Leak Detector.

It is assumed that the user is familiar with the operation and menu system of the H25-IR. If necessary, refer to Instruction 3015-4342 or 3015-5286 (dependent on generation of model) for detailed operation and maintenance information.

### Items Required:

- Replacement IR Sensor Kit:\*

Model	Bench Kit	Solo Bench (450 mW)**	Solo Bench (540 mW)**
CFC, HCFC, HFC & Halogen gases	3015-4501	3015-5086	-
R600	3015-4502	-	3015-5089
SF <sub>6</sub>	3015-4561	3015-5087	-
CO <sub>2</sub>	3015-4562	3015-5090	-

\*\* Not for individual sale. Used for ID purposes only. (i.e. To order replacement kit for your bench which is labeled model number 3015-5086, place order for kit number 3015-4501.)

- Medium Phillips head screwdriver
- Small flat blade screwdriver
- Wire cutter (for removing cable ties)
- Kit contains IR Sensor of gas being detected, cable ties (Qty. 2), and this instruction sheet

## Top Cover Removal

1. Remove both the front and rear bezels by first disengaging the plastic tabs on the right and left sides of the bezel, and then pulling the bezel straight out.
2. Remove the two top screws that secure the front panel.
3. Remove the four screws that secure the rear panel.
4. Remove all rear panel electrical connectors.
5. Drop down the rear panel far enough to allow the top cover to clear, being careful not to stress the cables attached to the panel.
6. Remove top cover by sliding it toward rear of instrument.

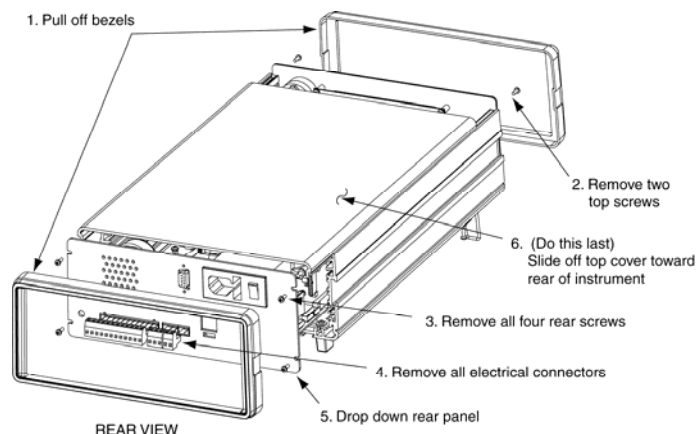


Figure 1.

## Installing the New IR Sensor

- Carefully remove tubing and electrical connectors from old IR sensor. See Figure 2.
- Cut off two cable ties that secure IR sensor to chassis, and remove sensor from instrument.
- Place new IR sensor inside chassis, positioning its 10-pin electrical connector toward the rear of the instrument. Rotate the sensor so that its gas inlet and outlet fittings and its electrical connectors are positioned as shown in Figure 2.
- Remove protective caps from the gas inlet and outlet fittings of the new IR sensor.
- Connect the 12-conductor ribbon cable from IR SOURCE connector J5 on main board to IR sensor emitter connector (front of instrument).
- Connect the 10-conductor ribbon cable from DET connector J6 on main board to IR sensor detector connector (rear of instrument).
- Using the two supplied cable ties, secure the IR sensor to the chassis by threading each cable ties through its cable-tie mount; around the foam insulation that surrounds the IR sensor; and around the 12-conductor ribbon cable. Cut off the cable-tie excess.
- Connect tubing from pump to the IR sensor gas inlet fitting, and connect the IR sensor gas outlet fitting to the instrument's exhaust port as shown below.

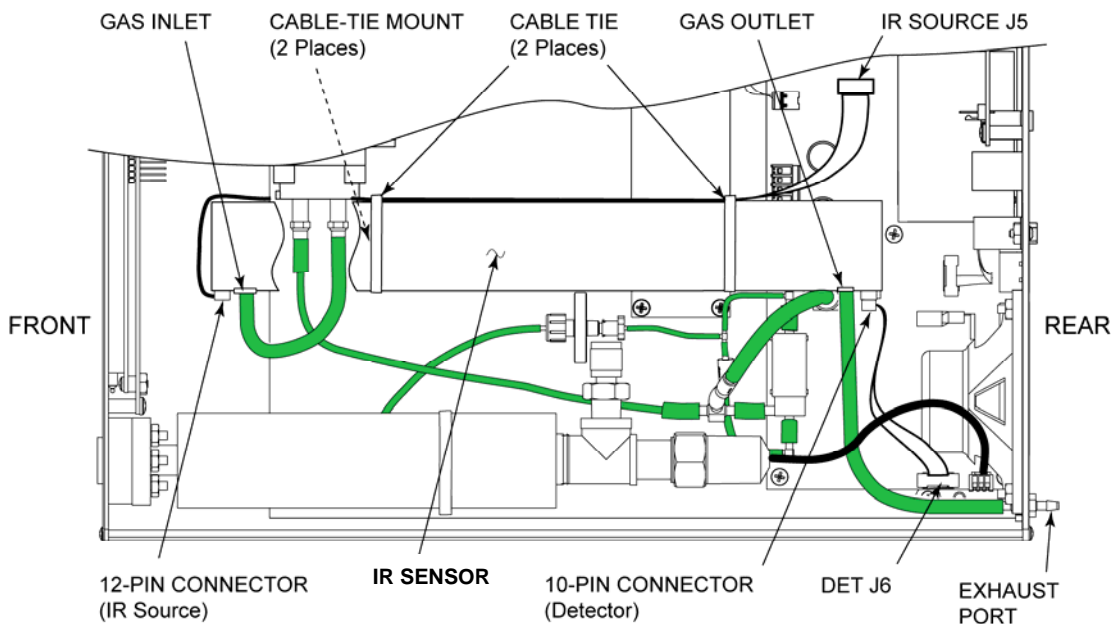


Figure 2.

## IR Emitter Adjustment

**WARNING! SHOCK HAZARD.** When performing the following step, be careful not to come in contact with AC voltages when working inside the instrument with the cover off and AC voltage applied.

15. Reconnect the AC power cord, and then turn the instrument ON while holding down the front panel **ENT** button to enable the Factory menu
16. Wait until the instrument warms up and the Data Display screen appears before proceeding.
17. Press the **ENT** and **ESC** buttons simultaneously to access the Main menu. From the Main menu, select DIAGNOSTICS > IR EMITTER to display the IR Emitter Parameters screen.
18. If the R37 potentiometer is present on your generation of the H25-IR, adjust it clockwise to a reading of **450 ±20 mW or 540 ±20 mW** (R600 model only), corresponding to the version of the part as seen in the items required section of this manual containing the part numbers. If your generation of the H25-IR does not have an R37 potentiometer, the IR Emitter power can be adjusted by pressing the VOL/RANGE (higher/lower adjustment in small increments) or SETUP/MODE (higher/lower adjustment in larger increments) buttons on the front of the unit.

IR EMITTER PARAMETERS VOLTS=5.7345 mA=77.5 OHMS=75.0 mW=450.0
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**NOTE:** Your readings for the other parameters on this screen may vary.

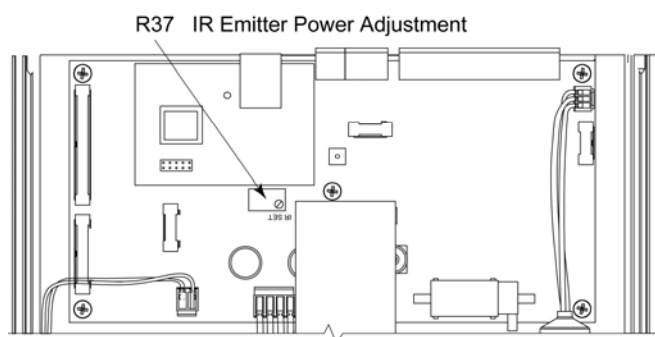


Figure 3.

## DIGIPOT Adjustment

19. Press **ESC** twice to return to the Main menu. From the Main menu, select FACTORY > DIGIPOT to display the DIGIPOT screen.

**IMPORTANT!** When performing the following Step, the instrument **must** be sampling fresh air (zero gas) when adjusting the DIGIPOT value.

20. Use the **Up** and **Down** buttons to adjust the DIGIPOT value until the IR VOLT reading is  $4.2000 \pm 0.0500$  volts. Press **ENT** to save the new DIGIPOT value.

**IMPORTANT!** If adjusting the DIGIPOT does not reach  $4.2000 \pm$ volts then return to step 18 to lower the IR Emitter setting. If the IR Emitter setting is  $450 \pm$ mW adjust the IR Emitter setting to  $375 \pm$ mW. Next, repeat the DIGIPOT adjustment.

DIGIPOT=220 IR VOLT=4.2000
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21. Turn OFF instrument and remove AC power cord.
22. Reassemble instrument.

## Factory Calibration

**NOTE:** *Factory calibration establishes the instrument's default calibration setting that is recalled when "RESTORE FACTORY CAL" is selected from the CAL DATA menu.*

23. With all covers in place, turn the instrument back ON while holding down the front panel **ENT** button to enable the Factory menu.

**IMPORTANT:** *Before calibrating, allow the instrument to warm up for at least 15 minutes.*

24. Perform an internal calibration as described in the H25-IR instruction manual, 3015-4342.
25. After the instrument has been calibrated, store the flow and pressure calculations of that calibration as the default factory calibration values as follows:
- Press the **ENT** and **ESC** buttons simultaneously to access the Main menu. From the Main menu, select **FACTORY > SENSOR CAL > FLOW RATE** to display the Flow Rate and Pressure screen:

S-Mpm/dP	M-Mpm/dP
INT 0.0177/-1.33	0.0100/-2.28
FAC 0.0177/-1.33	0.0100/-2.28
ENTER TO SAVE INT AS FACTORY	

- INT:** This line shows the flow rate in moles/minute for both the **S**earch and **M**easure modes after performing a calibration using the internal leak source, along with showing the manifold's pressure drop.

**FAC:** This line shows the flow rate and pressure drop values that are currently stored as the default factory calibration values. These values are used to validate calibrations performed by the user. A calibration error will occur if the user's calibration and factory values differ by more than 20%.

- Press **ENT** to store the internal calibration numbers as the default factory calibration values.
- Press **ESC** until the Data Display screen appears.

26. This completes replacing the IR Sensor.



Headquarters:  
621 Hunt Valley Circle, New Kensington, PA 15068  
Ph: 724-334-5000 • Fax: 724-334-5001 • Toll Free: 1-800-736-4666  
Website: [www.mybacharach.com](http://www.mybacharach.com) • E-mail: [help@mybacharach.com](mailto:help@mybacharach.com)

