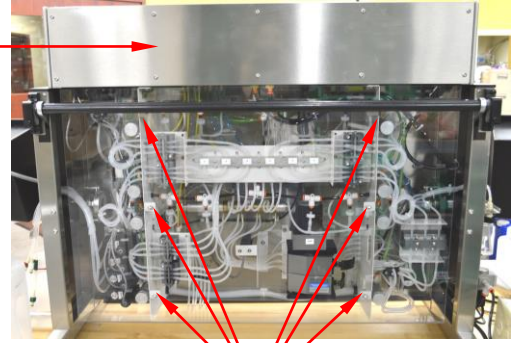


**1. Remove panels.**

- a. Unscrew the six acorn nuts on the back of the instrument and remove the clear back panel.
- b. Unscrew the eight screws on the back of the electrical enclosure and remove the back of the enclosure.

**Note:** Using an Allen wrench, you may also remove the top panel of the instrument to improve visibility if necessary.

Panel to electrical enclosure



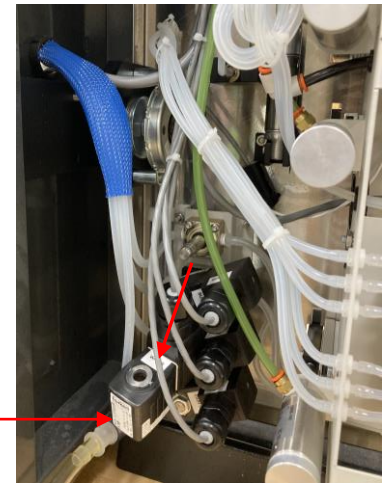
Acorn Nuts (the top two are behind the black bar)

- 2. Optional:** If extra space is needed to access the vacuum sensor cable tube, you may remove the water valve by using a 9/16 wrench to remove the top nut and a 3/8 socket to remove the nut located on the PIM. The PIM is located on the upper right corner of the bracket supporting the valve cluster. Discard the hose clip. Leave the 3/8" nut off until you mount the new sensor.

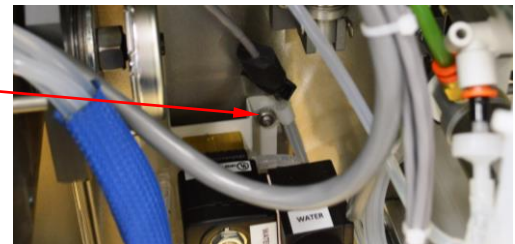
Hose Clip



Water Valve



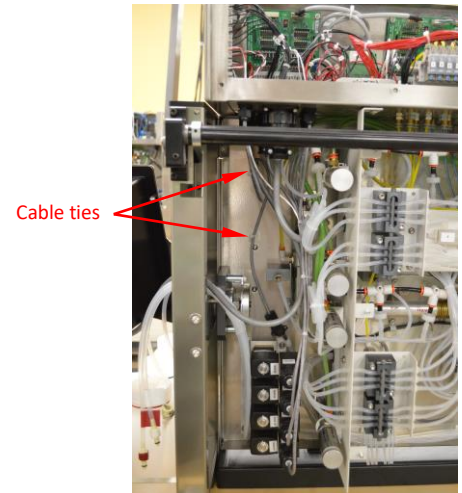
Nut



**3. Remove the vacuum sensor.**

a. Cut off the cable ties that secure the vacuum sensor cable found on the left side inside the instrument.

- Remove the two service access screws on the front of the instrument (right and left side).
- Gently tilt the instrument forward by pulling the top of the electrical enclosure forward and down. The instrument will pivot at its center. This is done to allow for easier access to the barbed fitting.
- Detach the vacuum sensor 1/4" tube from the barbed T-fitting that comes off the EtOH78 supply valve. This is the barbed fitting that points upward when the instrument is in its upright position.



Cable ties

b. Gently pull the vacuum sensor out of the plastic 1/4" cable holder.

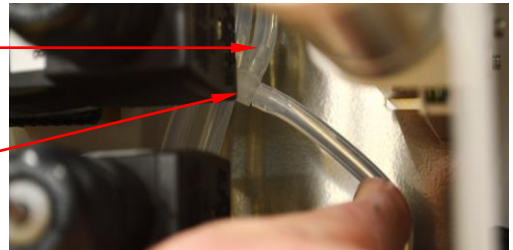
c. Disconnect the three-pin white connector J9 that is second from the bottom on the MUX-P circuit board in the electrical enclosure. The MUX-P circuit board is found on the left side panel of the electrical enclosure, closest to the front of the instrument. Set the white connector aside for later use.

Service access screws

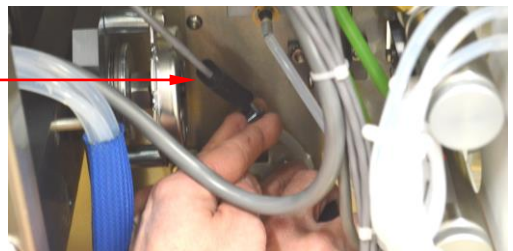


Vacuum sensor 1/4" tube

T-fitting



Vacuum Sensor

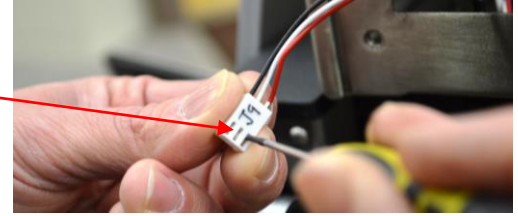


Three-pin white connector J9

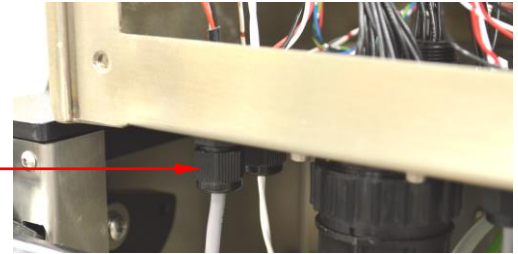


- d. Use a small flathead screwdriver to push the tabs down to remove each wire terminal.
- e. Loosen the explosion proof fitting by hand.
- f. Gently pull each wire terminal through the fitting one at a time to ensure they do not get stuck in the fitting.

Three-pin white connector



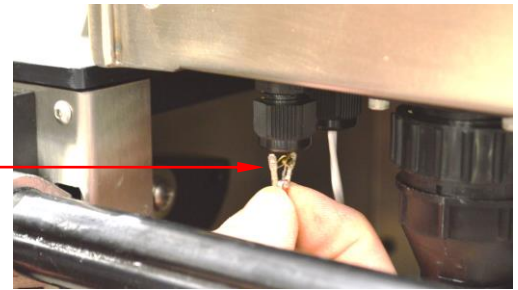
Explosion proof fitting



**4. Install the new TDF69 Vacuum Sensor Assembly.**

- a. Feed the wire terminals at the end of the vacuum sensor cable through the explosion proof fitting so that the heat shrink at the end of the gray cable jacket is showing.
- b. Hand-tighten the explosion proof fitting.
- c. Give a light tug on the cable to ensure that the cable is unable to pull back through.

Wire terminals



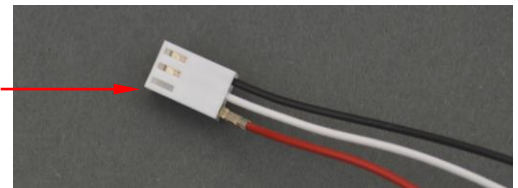
Heat shrink



- d. Attach the wire terminals to the white connector.

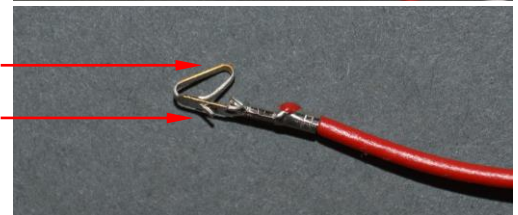
- As shown in the picture to the right, hold the white connector so the slotted side is on the left and facing you. Insert the wire terminals with the spring facing away from you and the barb facing towards you. Insert the black wire in the top, the white wire in the middle and the red wire at the bottom.
- Lightly tug on each wire to ensure that the barb is working, and the wires do not pull out.

White connector



Spring

Barb

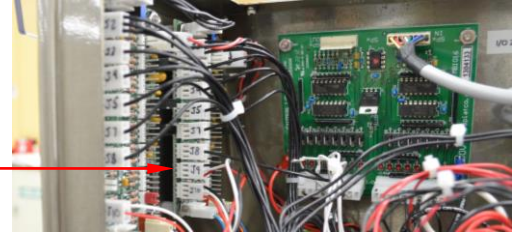


- e. Plug the J9 white connector back into the spot that is second from the bottom.
- f. Feed the vacuum sensor tube through the 1/4" cable holder.

**Note:** This may be difficult and require you to first remove the cable holder.

- g. Mount the sensor over the stud left from Step 2. Tighten the nut. Be sure to hold the new sensor when tightening to ensure that it does not rotate.
- h. Connect the vacuum sensor 1/4" silicone tube to the barbed T-fitting that is connected to the EtOH78 supply valve.

White Connector



Nut

Mounting hole



Vacuum sensor 1/4" tube



**5. Secure the cable.**

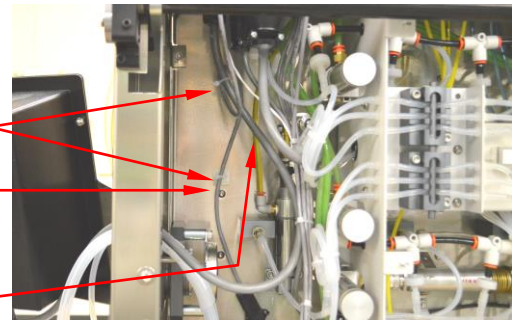
- a. Secure the cable by sliding a cable tie behind the cable tie holder and tightening the tie to the cable.
- b. Cable tie the vacuum sensor cable to the thick control panel cable.
- c. Cut off the excess cable ties.

**Optional:** If you removed the water valve in Step 2, follow Step 2 instructions in reverse to re-install water valve.

Cable ties

Cable tie holder

Control panel cable



**6. Re-Install the panels.**

- a. Reattach the back panel of the electrical enclosure.
- a. Reattach the clear back panel of the instrument using the six acorn nuts.

