How to Top Off the Zymatic Glycol Loop

Picobrew Zymatic TroubleShooting

USE EXTREME CAUTION WHEN FOLLOWING THIS PROCEDURE (OR DO NOT PERFORM THEM IF YOU DON'T FEEL COMFORTABLE). USE THIS PROCEDURE AT YOUR OWN RISK. DAMAGE TO YOUR ZYMATIC CAN OCCUR. THERE IS RISK OF ELECTRICAL SHOCK THAT COULD RESULT IN DEATH. THIS PROCEDURE IS FOR REFERENCE ONLY.

Disassemble the Zymatic

Remove Back and Upper Panels

1. Unplug Zymatic and remove the Ethernet cable (if connected)
2. Place on a flat working platform that gives you easy access to all sides.
3. Remove 12 screws from back panel with a #2 Phillips Head screwdriver.
    a. There is no need to remove the screws holding in the cooling fan, or the 6 screws near the power, USB and Ethernet ports.
4. Unplug the fan from the Fan 1 connector on the Main board.
5. Set the back panel aside.

Figure 1

6. There are 4 nuts that hold on the top cover, you will need the following in order to access these nuts.
    a. 9 mm socket
    b. Socket wrench and 15-inch extension.
    c. Flashlight
7. Remove the two nuts inside of and on the upper rear of both side panels. See Figure 2.

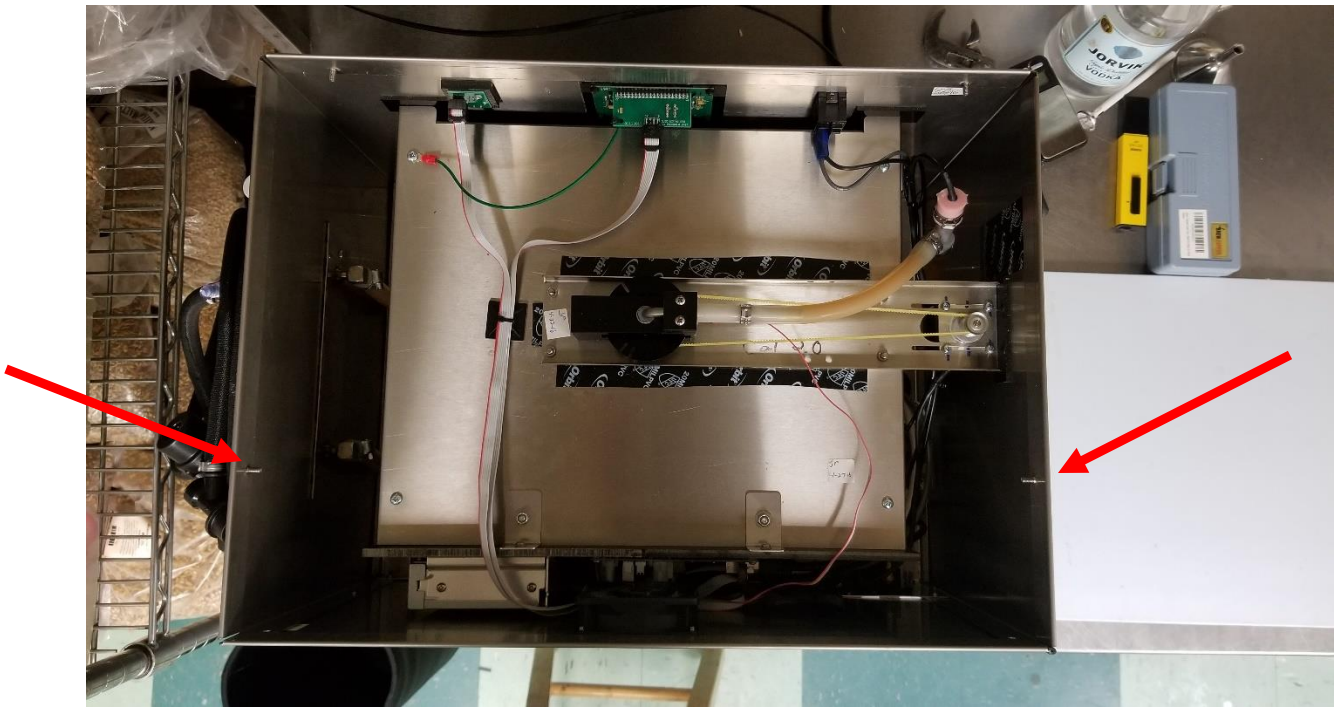

Figure 2

8. Using a flashlight, look into the Zymatic below the upper panel to view the two nuts attached to the front panel. See Figure 3.

Figure 3

9. Attach the socket extension and remove these two nuts.
10. The upper panel is slotted, so to remove, gently slide the upper panel back so it is off the front panel studs and rotate up and out of the way. See Figure 4.
11. Remove the upper panel and set aside.

Figure 4

Remove Outer Shell

Remove front panel connections

1. Disconnect the On/Off switch, two wires. See Figure 5.

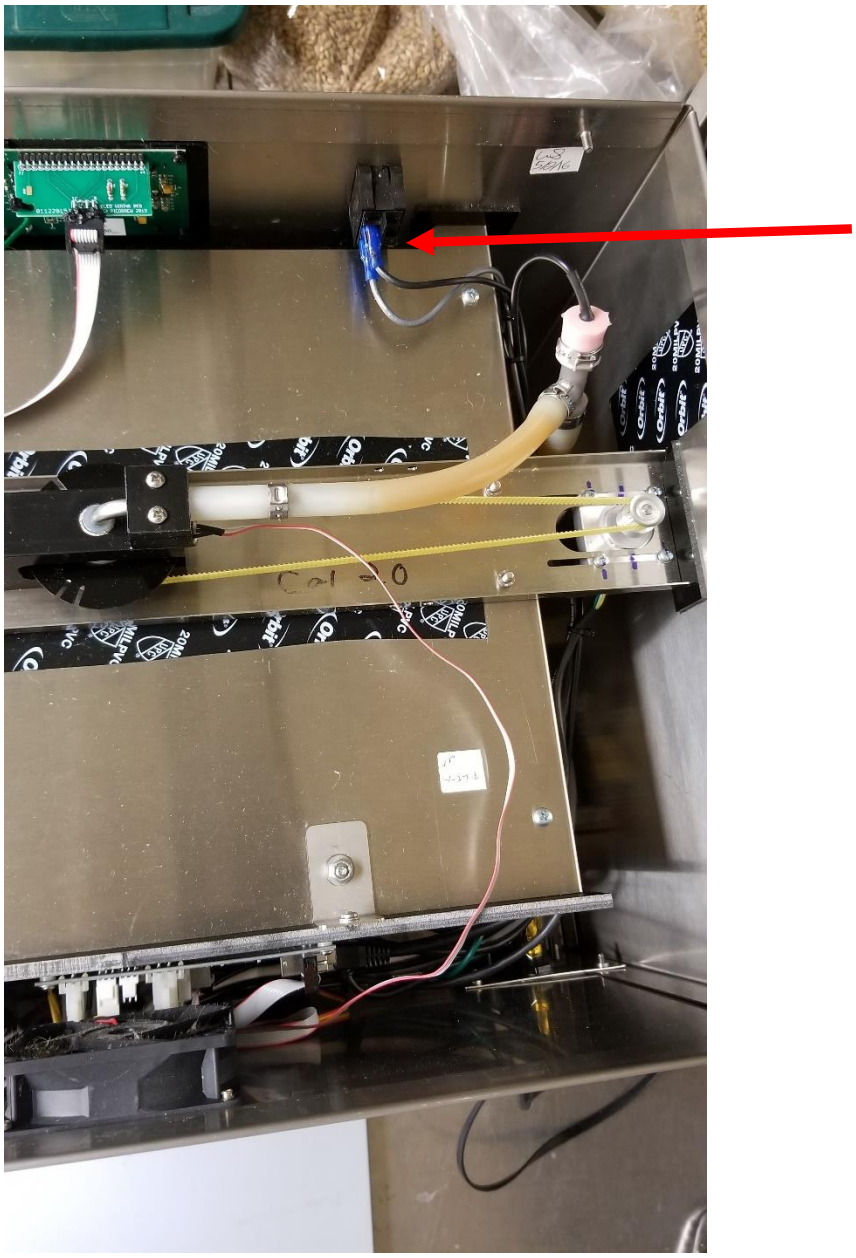

Figure 5

2. Disconnect the Rotary Switch, one connector on Main Board labeled Encoder. See Figure 6.
3. Disconnect the Display panel, one connector on Main Board labeled Display. See Figure 6.
4. Both the Rotary switch and the Display panel wires are connected to the Step Filter housing with a small zip tie. This will need cut in order to remove the shell.

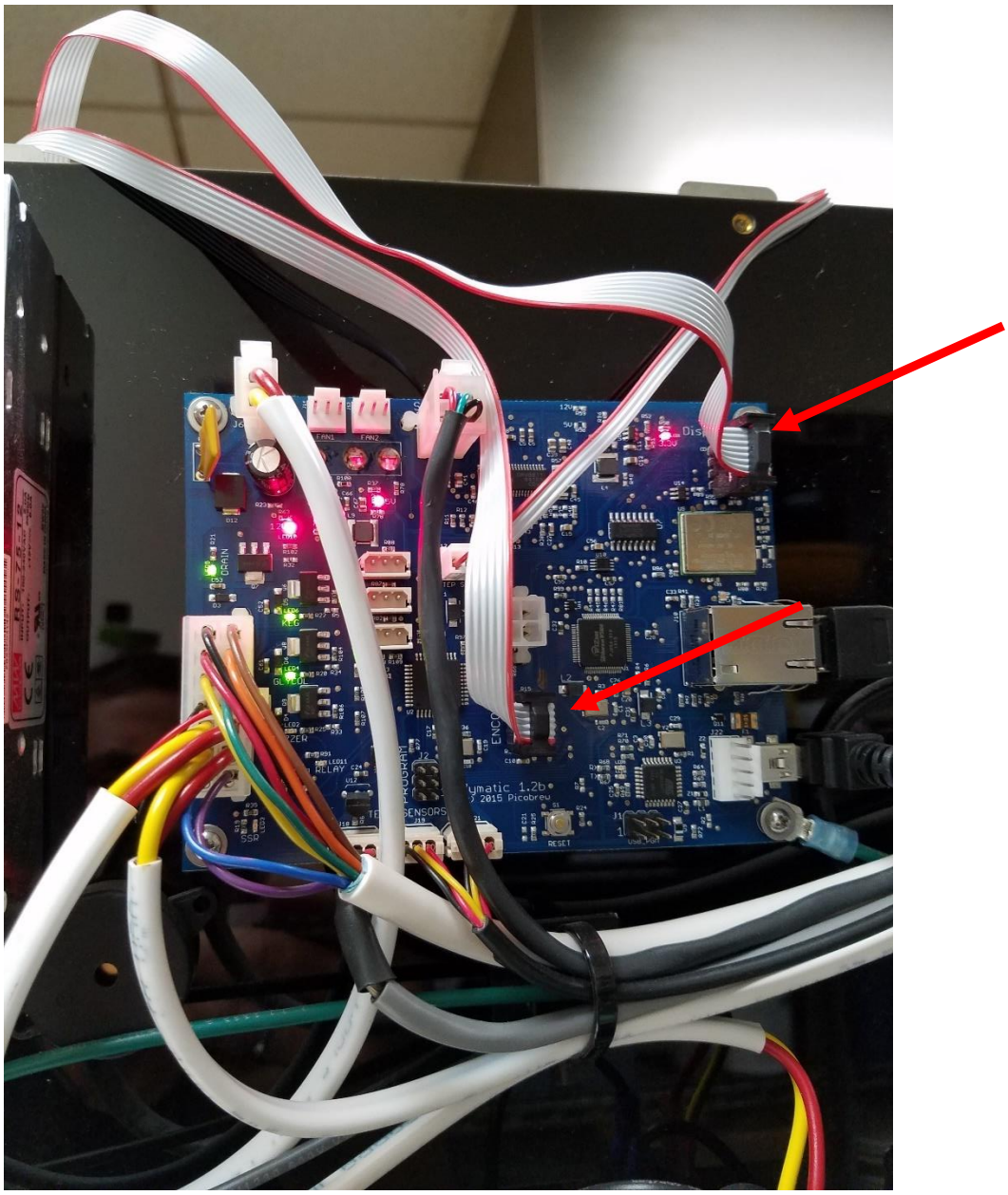

Figure 6

5. Loosen grounding screw on top of Step Filter housing and remove ground wire. See Figure 7.

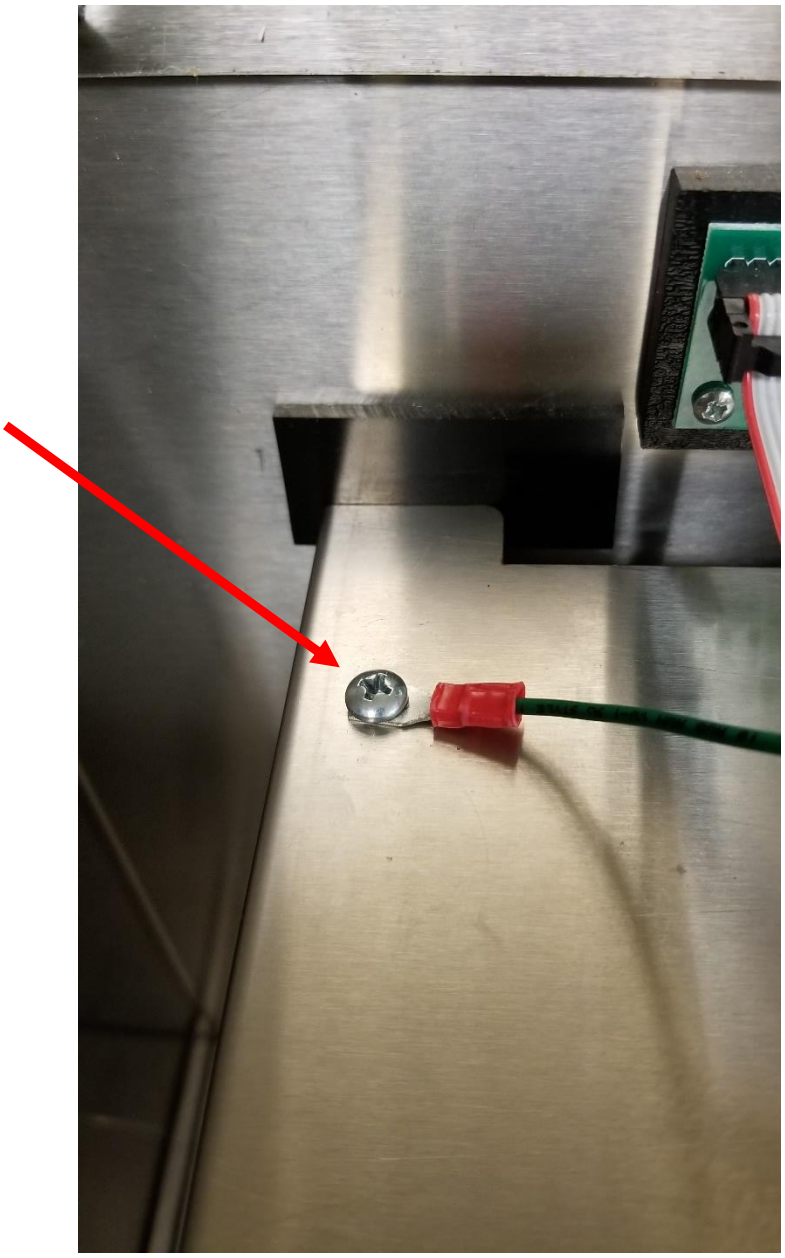

Figure 7

Remove Drip Tray

1. Remove Stainless Steel mesh from drip tray. See Figure 8.
2. Using a 3/32 Allen Wrench, remove 2 screws and gently pry off the drip tray.
    a. It may or may not be attached by silicone so it's possible you'll need to cut it loose.

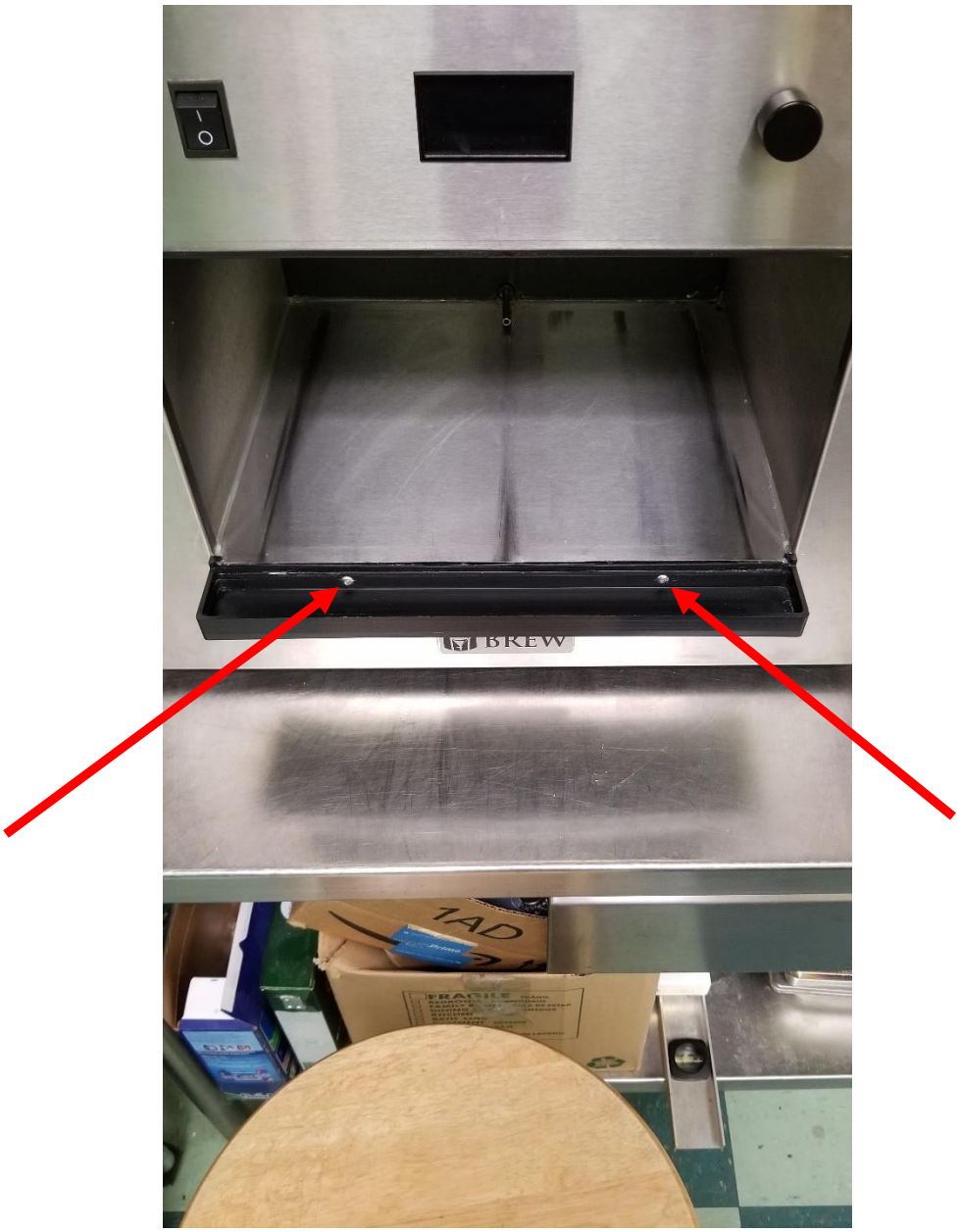

Figure 8

3. Remove 1/8th inch Allen screw that is exposed after you remove the drip tray. See Figure 9.

Figure 9

Remove Drain and Supply Connections

1. The Zymatic supply line and the drain line are connected by PEX (17.0 Oetiker) crimp connectors. They can be a pain to get loose and require a special tool, but there are several other options if you do not have it.
    a. It might be possible to just pull the silicone tubing off of the barb connectors and then remove the PEX clamps.
    b. Or, it might be possible to pry the clamp apart with a flat head screwdriver and a pair of needle nose pliers.
    c. Either way, be careful how you get the clamps off and just go slow. Once you pry them apart enough you can slide the tubing off and remove the clamps. Later you can replace these with screw type hose clamps to make it easier in the future.

Remove Outer Shell

1. The outside shell is attached by silicone at the front of the unit so gently cut/pry the front lip of the outer shell and separate it from the silicone.

Gain Access to the HEX Loop

Remove Step Filter Drain Connection

1. There isn't a great need to remove the PEX clamp at this point as you can just slide it off the tube, since it is not a barb fitting. See Figure 10.
2. Replace the clamp with a Screw-Type clamp when you put your Zymatic back together.

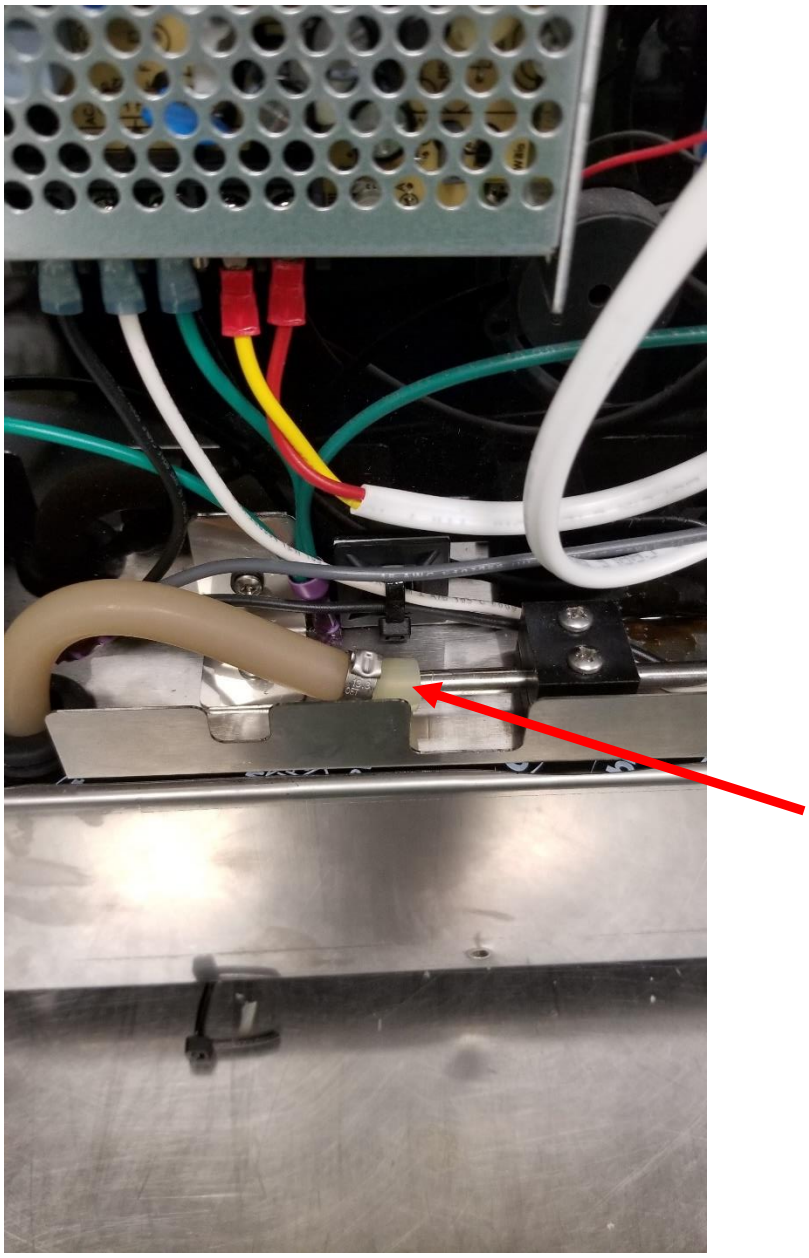

Figure 10

Remove the 4 screws at each corner of the Base

1. Two screws at the rear of the Zymatic have grounding wires connected to them and the two screws at the front of the unit do not. See Figures 11 and 12.
    a. You do not need to remove any of the screws that hold on the Step Filter housing.

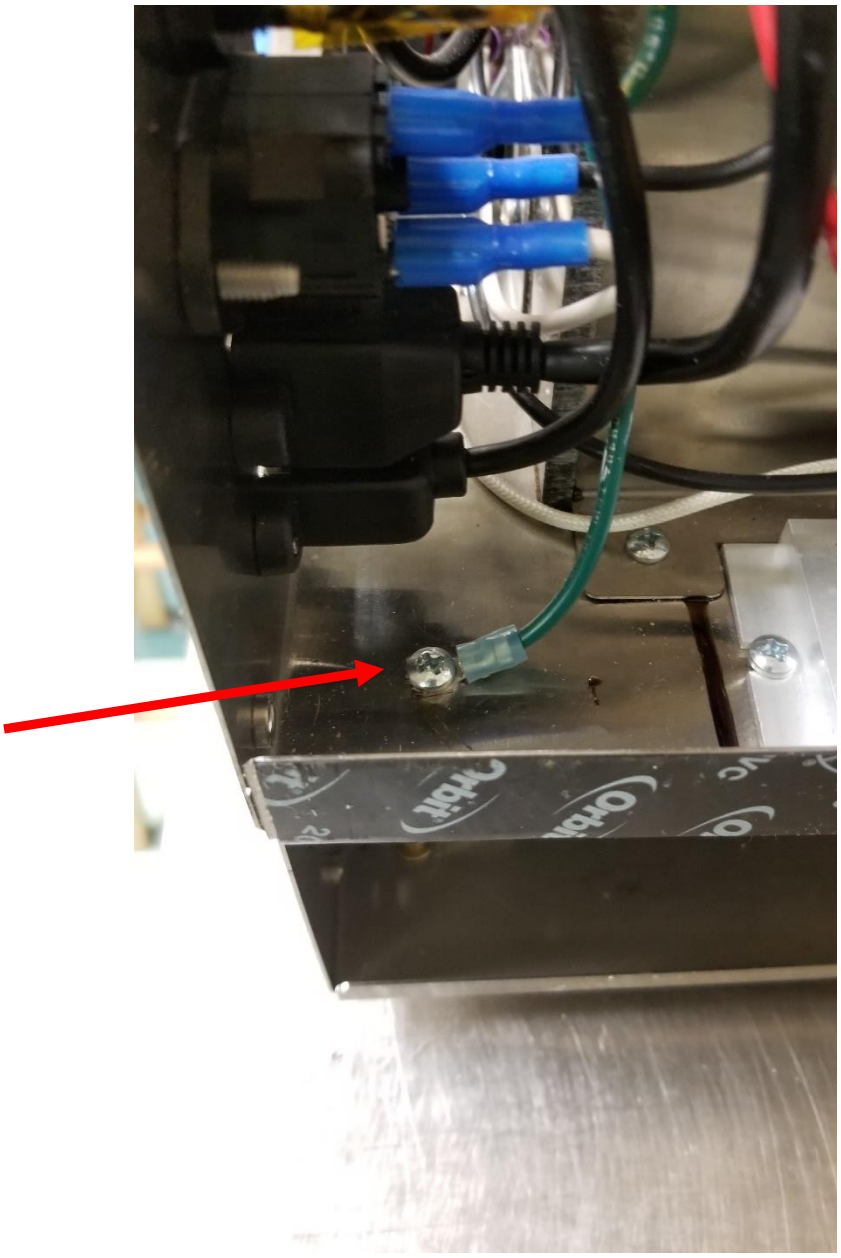

Figure 11

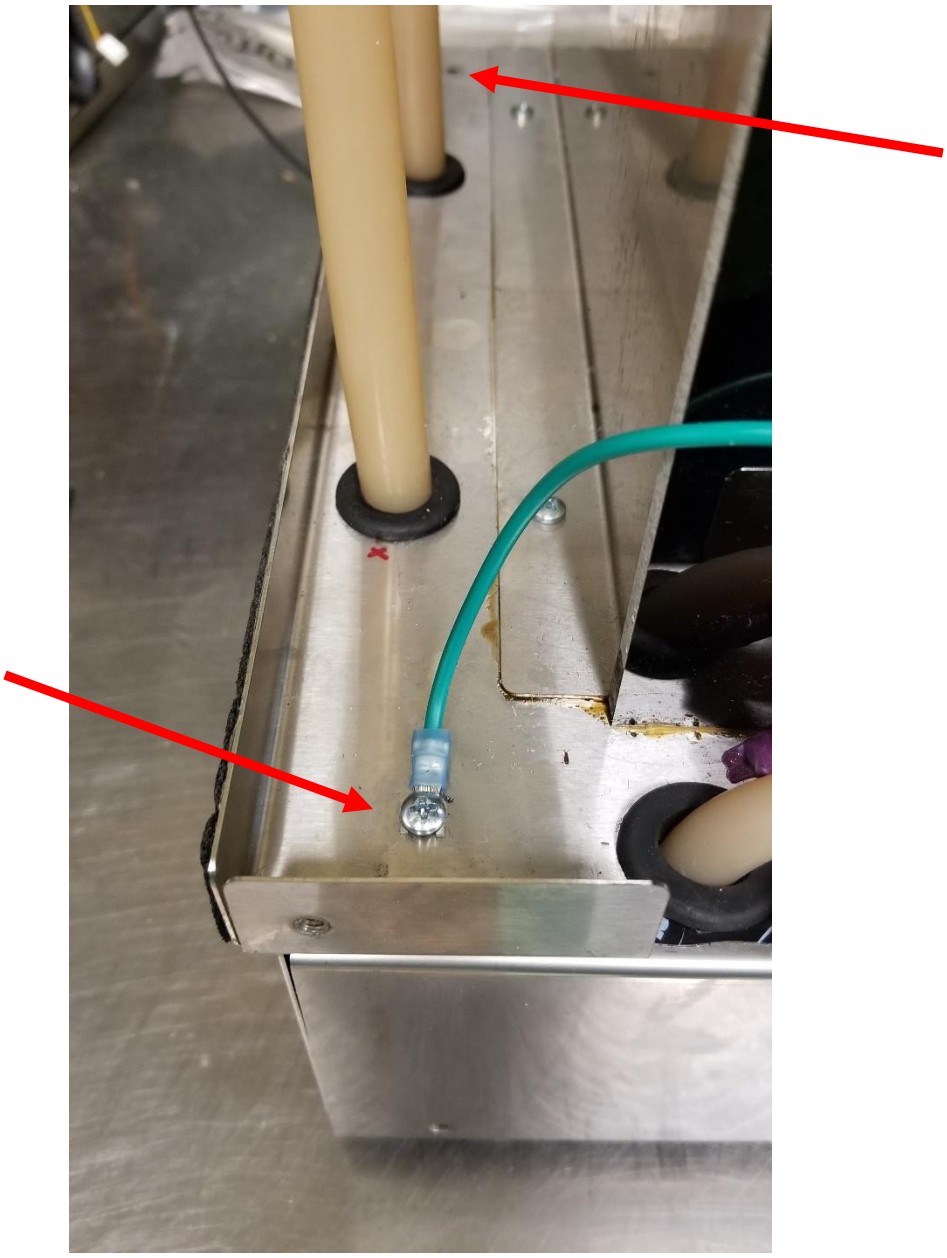

Figure 12

Separate Step Filter Module from Base

1. The base may be sealed with silicone, so it could be necessary to cut this free in order to separate the halves.
2. Once it is separated, gently rotate the upper part of the Zymatic counter-clockwise (as you are facing the front) and lay the top half on its side right next to the base. See Figure 13.
    a. Feed the Drain and Supply hoses through the rubber grommets on the upper half of the unit as you rotate it.

b. The Step Filter drain hose and grommet can be slid to the rear to release it from the upper half.

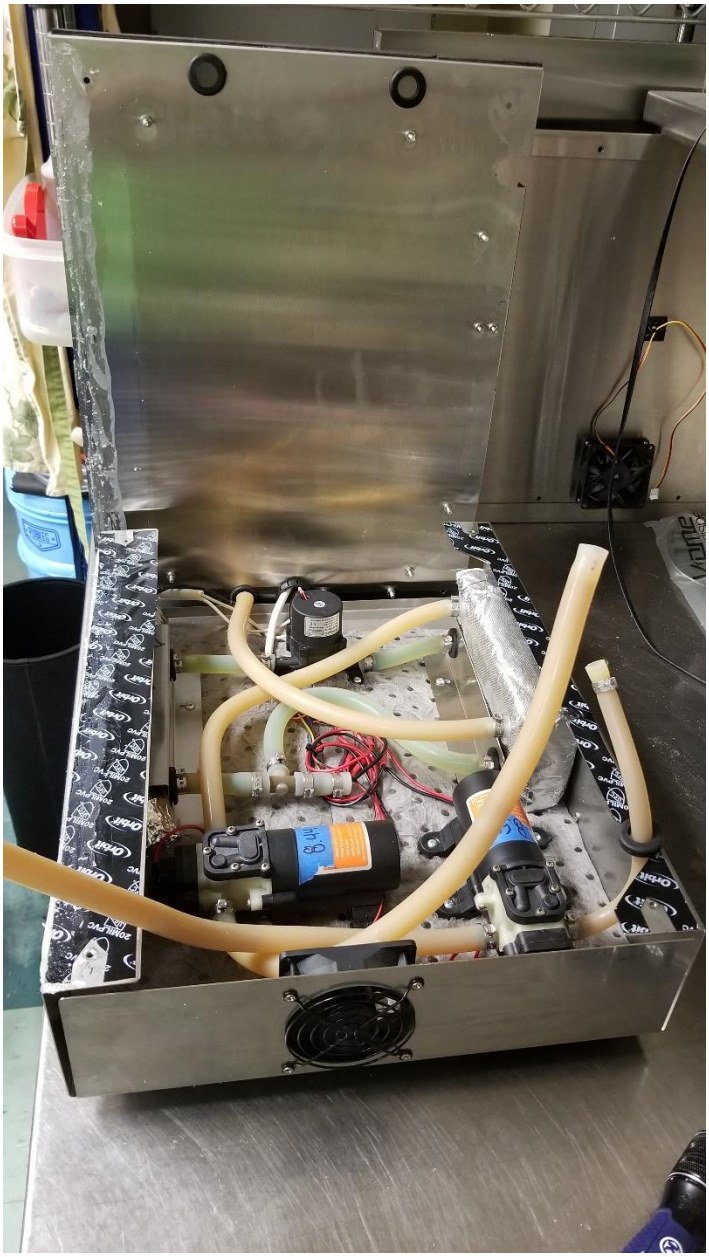

Figure 13

Top Off the HEX Loop

Remove Air

1. Gently raise the Zymatic base unit and support it on the right side so it rests at 45 degrees. See Figure 14.

Figure 14

2. Gently massage the HEX loop glycol lines so that all of the air is moved out of both the heating unit and the heat exchanger and is visible at the HEX temperature sensor. See Figure 15.
    a. This will require some time and effort as you massage each part of the loop. Alternate from the lower line to the upper lines until all of the air is moved.

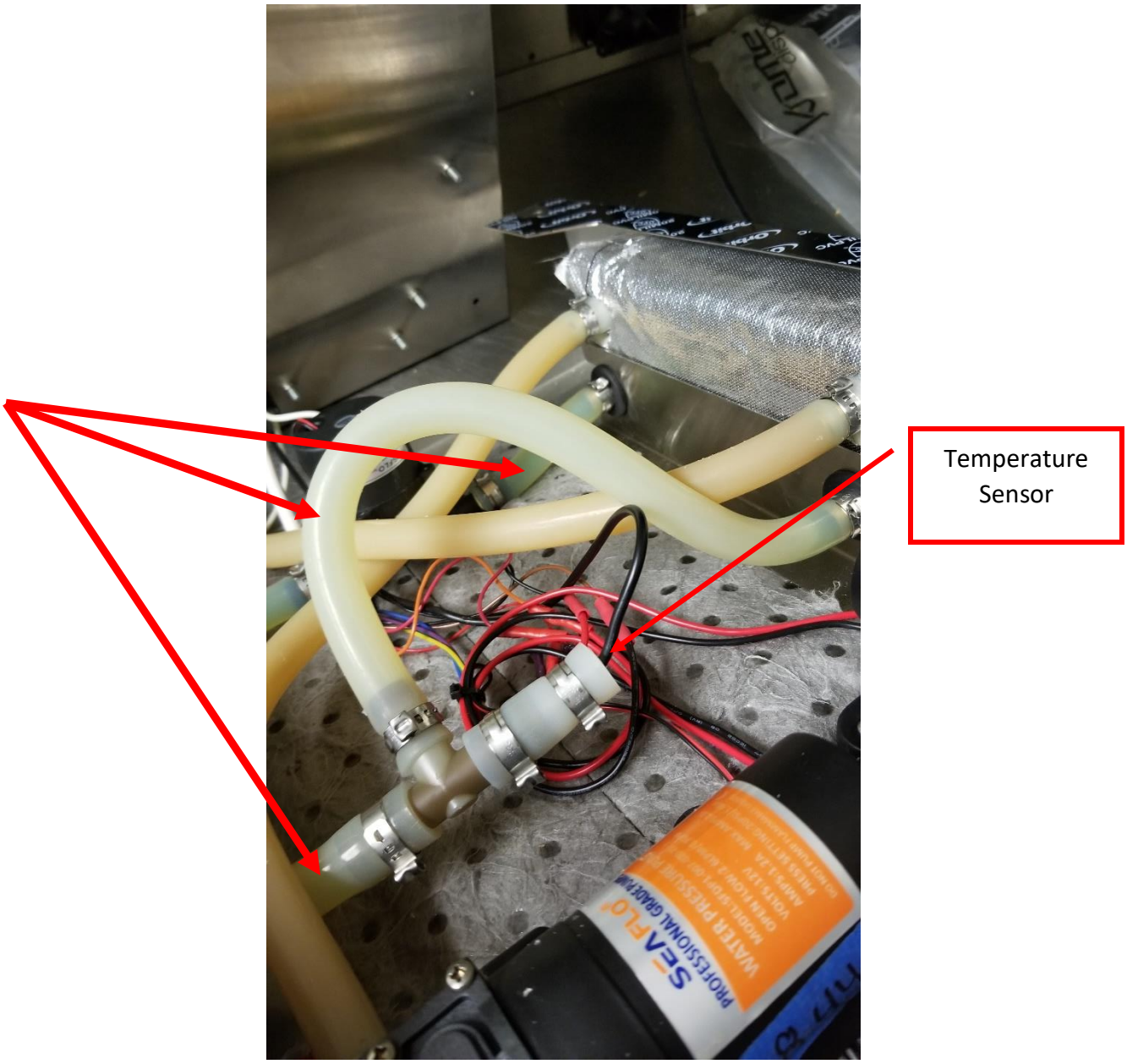

Figure 15

3. Once you think you have all of the trapped air moved to the highest point, loosen the clamp at the Temperature Sensor and remove the sensor from the 3-way T connector. See Figure 16.

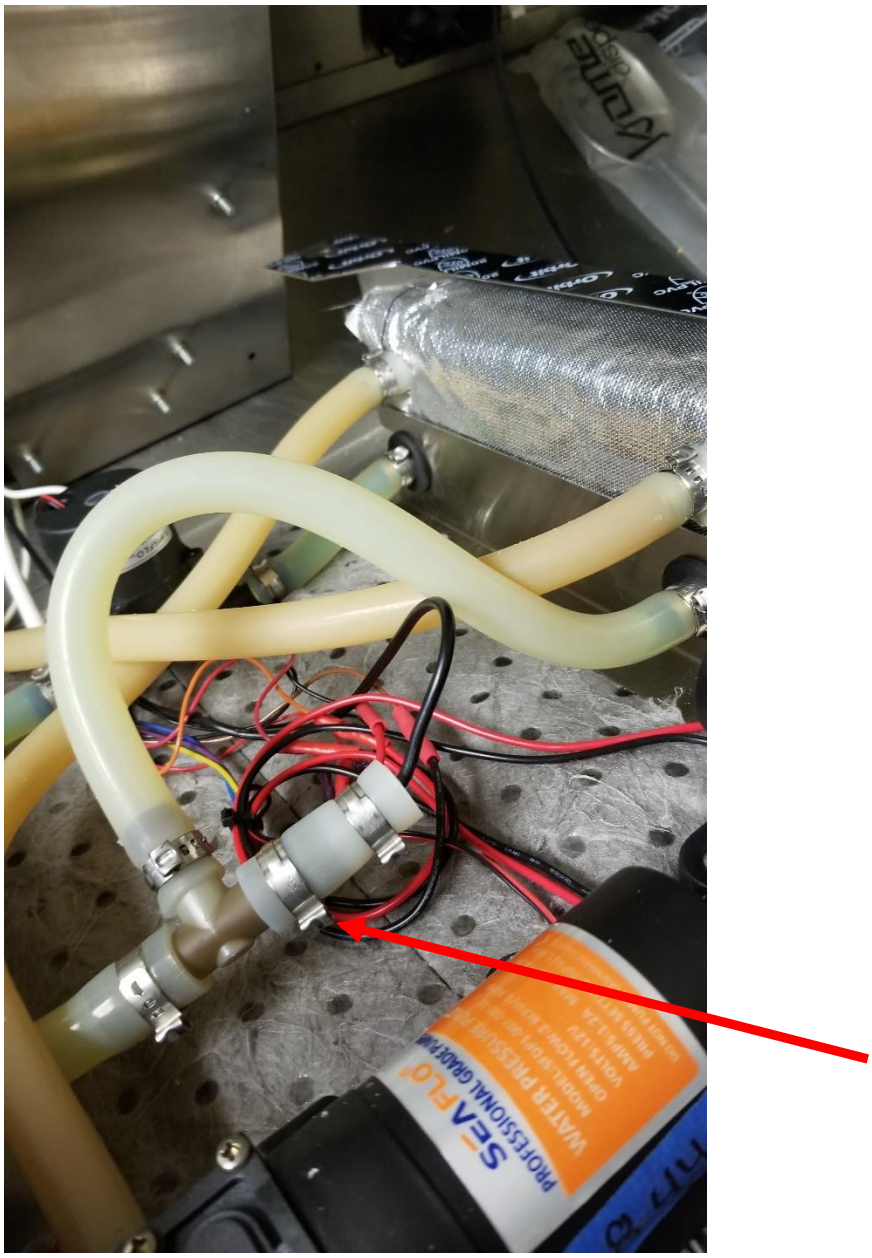

Figure 16

4. Insert a small funnel into the 3-way connector and begin filling with a 33% mixture of food-safe Propylene Glycol (1/3) and RO/Distilled water (2/3). See Figure 17.

Figure 17

5. It will be necessary to repeat steps 2, 3 and 4 until no more air is visible and no more of the glycol solution can be added.
    a. It's a bit tricky to make sure the air does not go back into the HEX or the Heating Unit, so be patient and continue to massage the lines and add glycol as needed.
6. When you have gotten all the air out that you can, re-insert the Temperature sensor and secure the clamp.
    a. At this point you can replace the PEX clamp with a screw-type clamp to make performing this procedure easier in the future.

b. I was not able to get all of the air out of the loop due to the addition of the Temperature Sensor connection, but you can get enough out that the Zymatic won't error. (Note: adding a reservoir in this line would help, or at least a fill/bleed port).
c. I also had to temporarily assemble the unit and power up the Zymatic to push more of the trapped air around and then repeat steps 2, 3 and 4. **CAUTION**: Risk of electrical shock or damage to your Zymatic can occur.

Reassemble Zymatic

1. Reverse this procedure to reassemble your Zymatic.
2. It is your choice, if you desire, to apply silicone to the upper unit and the base of the unit. Skipping that step will make it easier to disassemble later.
3. It is also your choice to reinstall the hex nuts, on the front of the unit that hold on the top cover.
    a. I leave these two nuts off, so it is easier to remove the top cover and check on the stepper arm and just make disassembly quicker.

Switch Out Overly Long Screw

1. Upon disassembly I noticed that one of the screws in the upper portion of the Zymatic was too long and protruded down into the Heat Exchanger, leaving a hole in the outer heat shield and could possibly cause damage to the HEX itself. See Figure 18, 19 and 20.

Figure 18

Figure 19

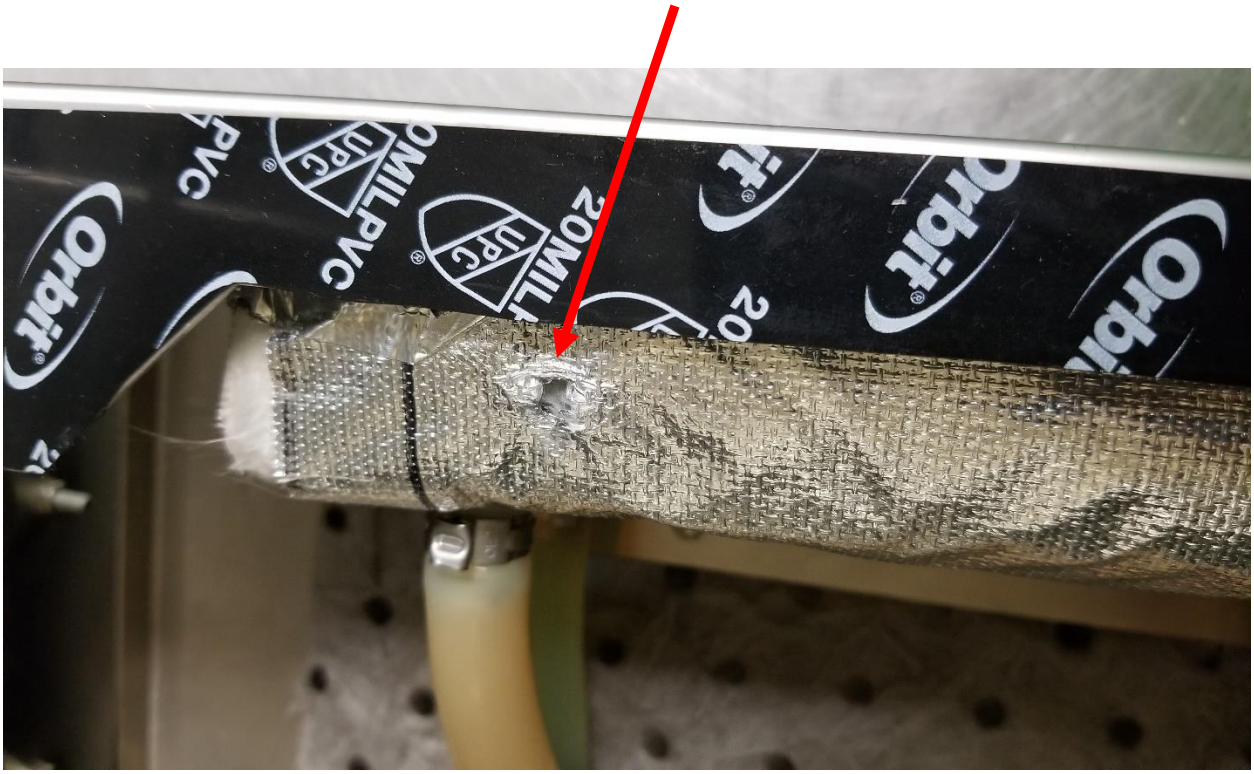

Figure 20

2. I swapped out this screw with a shorter one from the back panel to avoid future damage.

Switch out PEX clamps for Screw-Type clamps

1. Any PEX clamp that was removed can be replaced by screw-type clamps to make performing this procedure easier in the future. See Figure 21 and 22.
2. Just make sure you keep an eye out for leaks and don't overtighten the clamps.

Figure 21

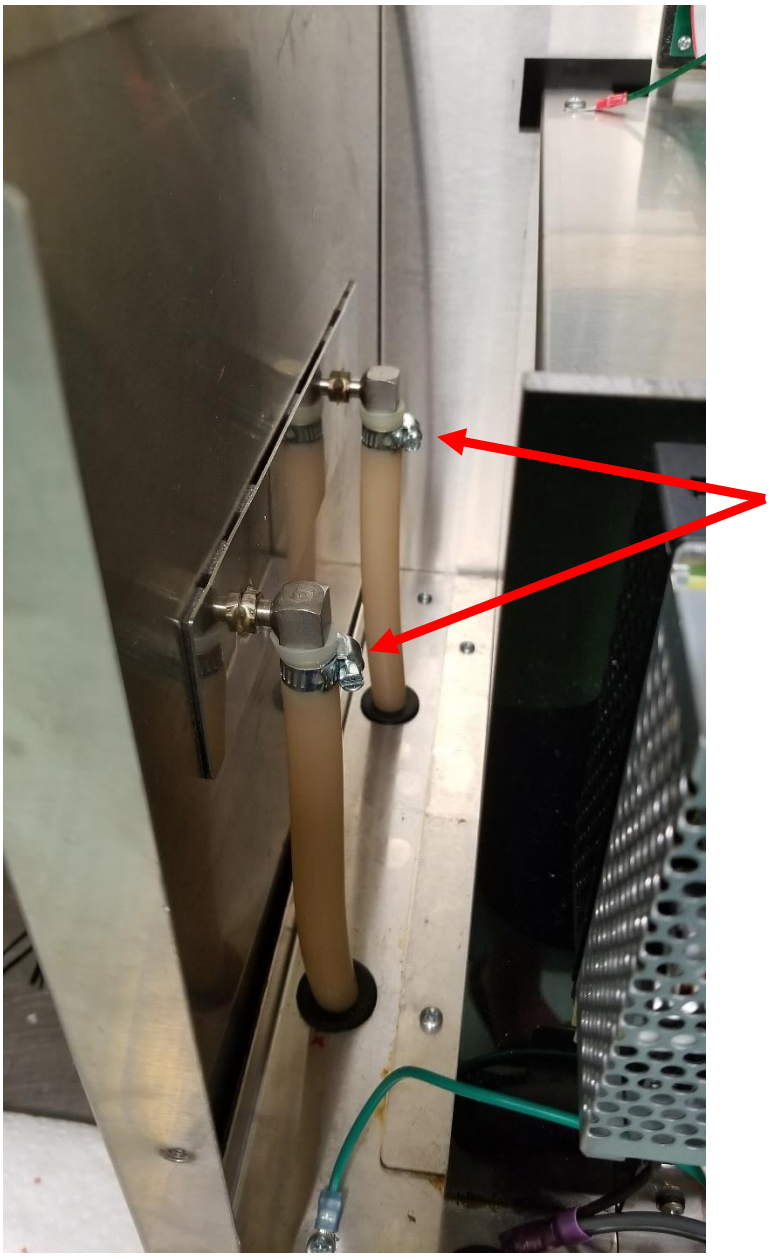

Figure 22