

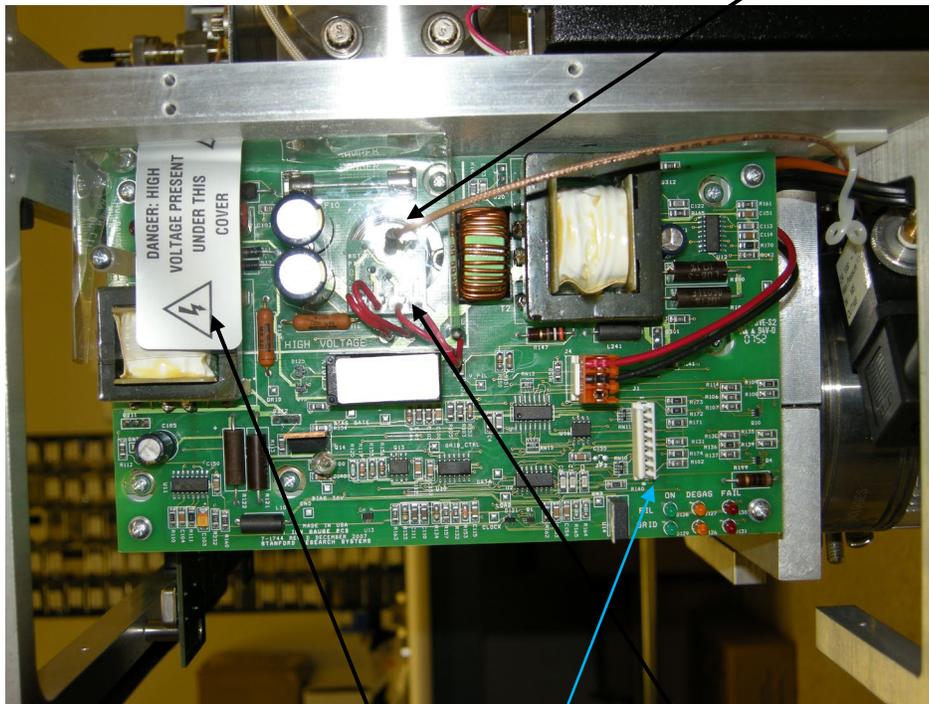
Turbo pump change in the field

The service information in this instruction is intended for the use of Qualified Service Personnel. Read and understand the warnings on the following pages. Read the procedure carefully and prepare by having proper tools available.

Procedures

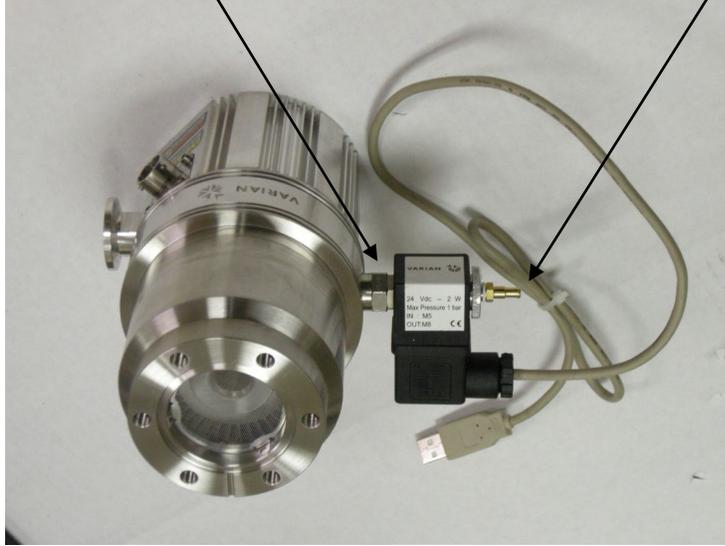
I. Ion gauge controller removing

- a. Turn off the UGA and take off all the wires and cables. If TP was running, wait till TP is stopped completely. For the Hydrogen TP (Opt. #3), it will take more than 20 min. without the venting valve option (Opt #2).
- b. Set the UGA as the bottom side is faced up.
- c. Take out the bottom cover.
- d. Address the ion gauge controller part. There pull out the ion signal cable.



- e. Take off the 'high voltage protector vinyl cover'.
- f. Pull out the ion gauge power connector. This is a 5-pin connector. Just wiggle the connector to loosen it first. Do not force it; the pin connector would be broken.
- g. Unplug the power cable and the data cable (this one is not shown in the picture.). Do remember the orientation of the data cable.
- h. Take out the ion gauge controller PCB with the supporting plate by releasing two bolts at the back of the plate.

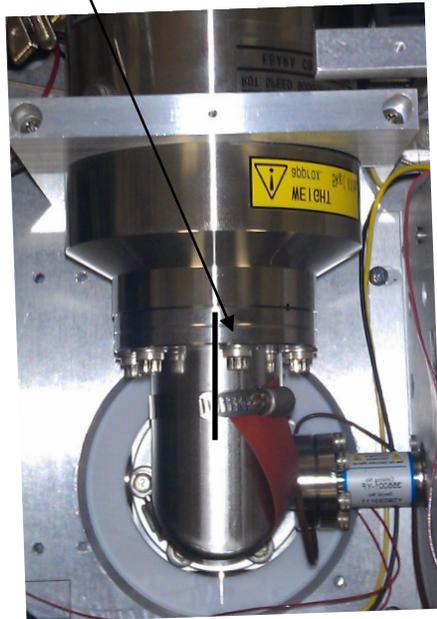
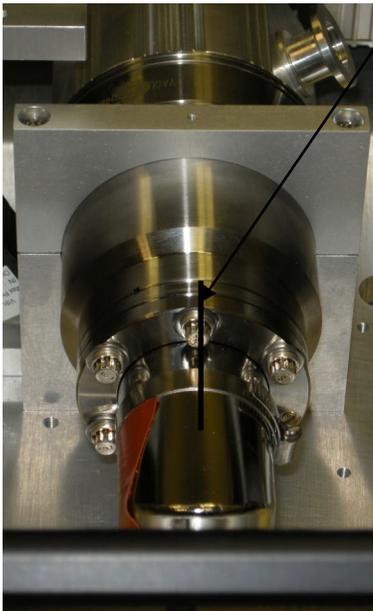
- II. Vent valve removing for the normal pump (if the option was purchased; if not, skip it)
- Take out the vinyl tubing by just pulling out firmly at the connector.
 - Unplug the connecting screw using a proper wrench.



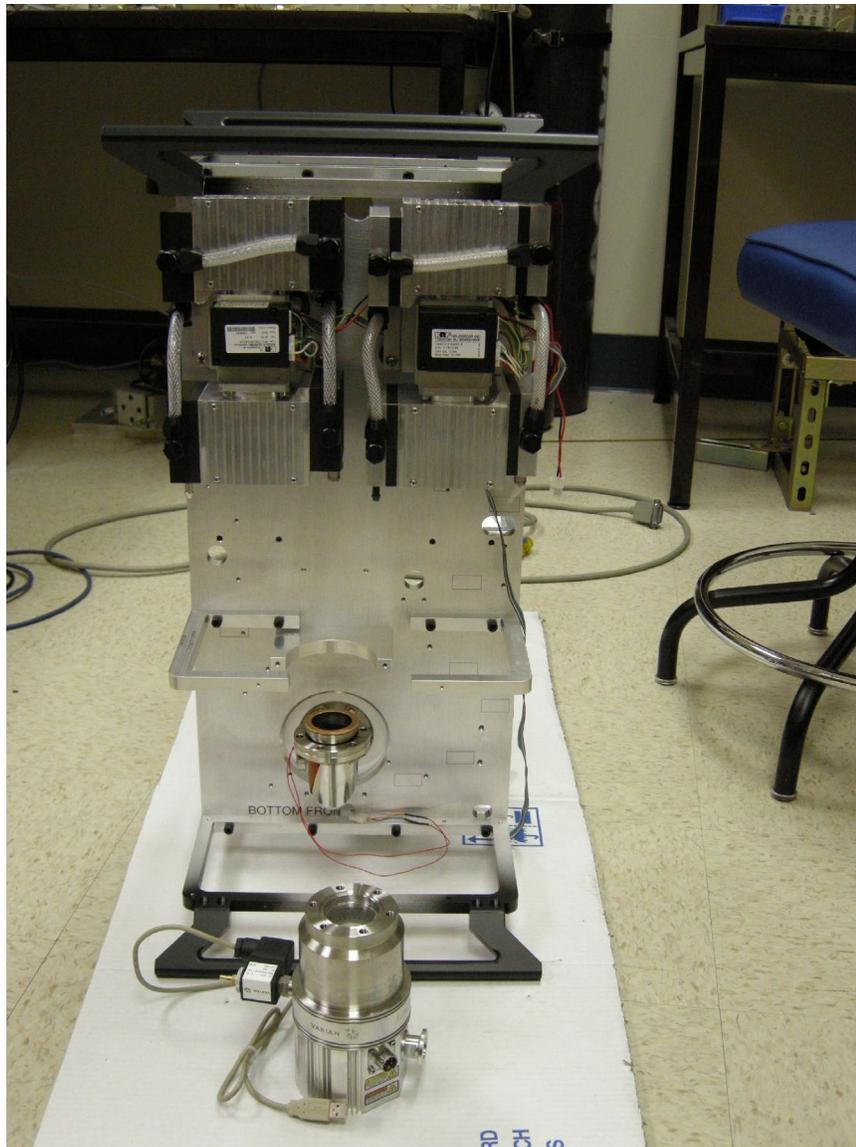
*** For TP of Opt. #3, the above step should be skipped. ***

III. TP removing

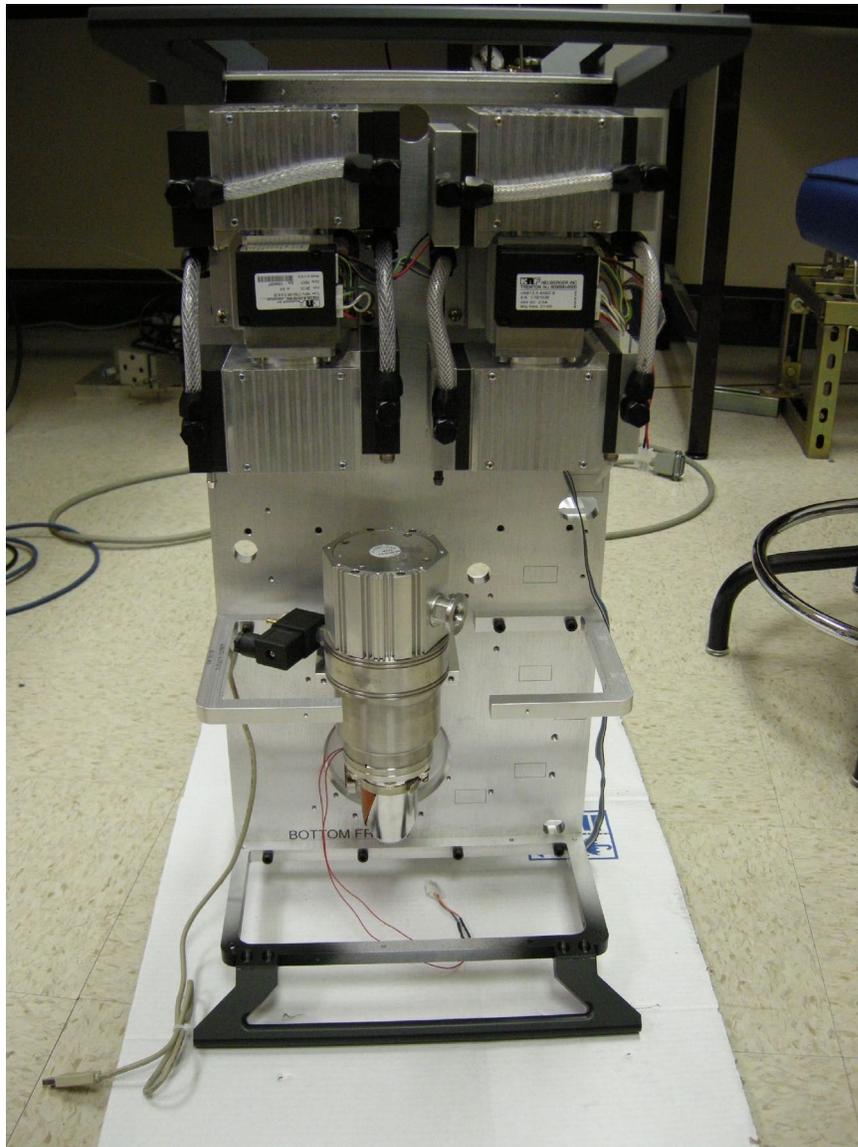
- Check the orientation of TP. The top bolt is at the center for the normal TP, while that of TP of Opt. #3 is a little off the center. It is better to mark the center line of the elbow adapter of TP on the flange.



- Take off the roughing line and the control cable.
- Take out the insulating box by removing 4 screws.



- b. Connect the TP to the elbow as shown in the next picture. Tighten the bolts by hand. Keep the orientation as shown. One of the bolts should be along the center line of the elbow.



- c. Lay down the UGA with the bottom face up.
- d. If the option 2 (vent valve) was purchased, attach the vent valve and tighten up the connector screw completely for the normal TP. If needed, rotate the TP slightly and connect the vent tubing. After installing the vent valve, go back to the proper orientation. (TP of Opt. #3 does not need this step.)
- e. Put back the roughing line and the control cable.
- f. Tighten the bolts firmly using $\frac{1}{4}$ " 12-pts wrench.
- g. Put back the TP clamp block.
- h. Put back the insulating box.

After this, put back the ion gauge controller. The orientation of the data cable should be correct. The 5-pin connector should be sit on properly (do not miss the pins.) when you push in the connector.