VOYAGER PUMP DOWN PROCEDURE (BENCH-TOP MODELS)

SAFETY: JBI Scientific is not responsible for any injury to any person involved in following this procedure. Lifting of heavy objects is required and electric shock is possible.

TOOLS:

1. Flat and Phillips head screw drivers
2. ½ and 9/16 inch socket wrench
3. wire cutters
3. Fork lift or dolly lift (500 lbs minimum capacity)

REFERENCE:

1. Please read the Applied Biosystems' site prep document for the Voyager.
2. Click/use the following link for a video supplement to the JBI Scientific Voyager DE Pump Down Procedure (video details what to do if the mechanical pump does not start): http://gallery.me.com/jbisci#100043

PROCEDURE:

1. Inspect shipment: Check the crate for any signs of damage during shipping. **NOTE ANY DAMAGE WHEN SIGNING FOR SHIPMENT, check SHOCK INDICATORS.**
2. Uncrate the Voyager: (**Carefully remove the panels, accessories are packed in the top of the Voyager crate**).
   a. If the crate is held together by clips a screw driver is necessary to pry off the front panel clips. If the crate has lag bolts on the bottom use a ½" socket wrench to remove the lag bolts from the bottom panels of the crate.
   b. If the crate is held together by screws and lag bolts use the appropriate screw driver bit and wrenches to remove the screws and bolts. Remove the top first and remove accessories prior to removing the sides.
3. Remove the shipping plastic wrap. Do not cut with any blade except scissors.
4. A heavy duty lift capable of lifting at least 500 lbs can be used to lift the Voyager onto a bench-top (**BENCH MUST HAVE AT LEAST 40CM OF CLEARANCE OVERHEAD**). If a mechanical lift is not available the Voyager can be lifted by four people. The Voyager DE workstation weighs approximately 300-350 pounds, the DE PRO is 490 pounds . You will need four people to lift the instrument onto a suitable workbench. Only lift the Voyager from the bottom of the main frame. Do not lift from the grey metal extension on the rear of the Voyager. **Follow proper lifting techniques. Everyone who participates in lifting the instrument should be trained in proper techniques for lifting**

heavy objects. Do not lift the Voyager if you have any back pain or problems. You are responsible for insuring that everyone who is helping with the Voyager reads this warning. JBI Scientific Services is not responsible for any injury to any person involved in following this procedure.

5. Remove the right side cover screws and pull the cover off.

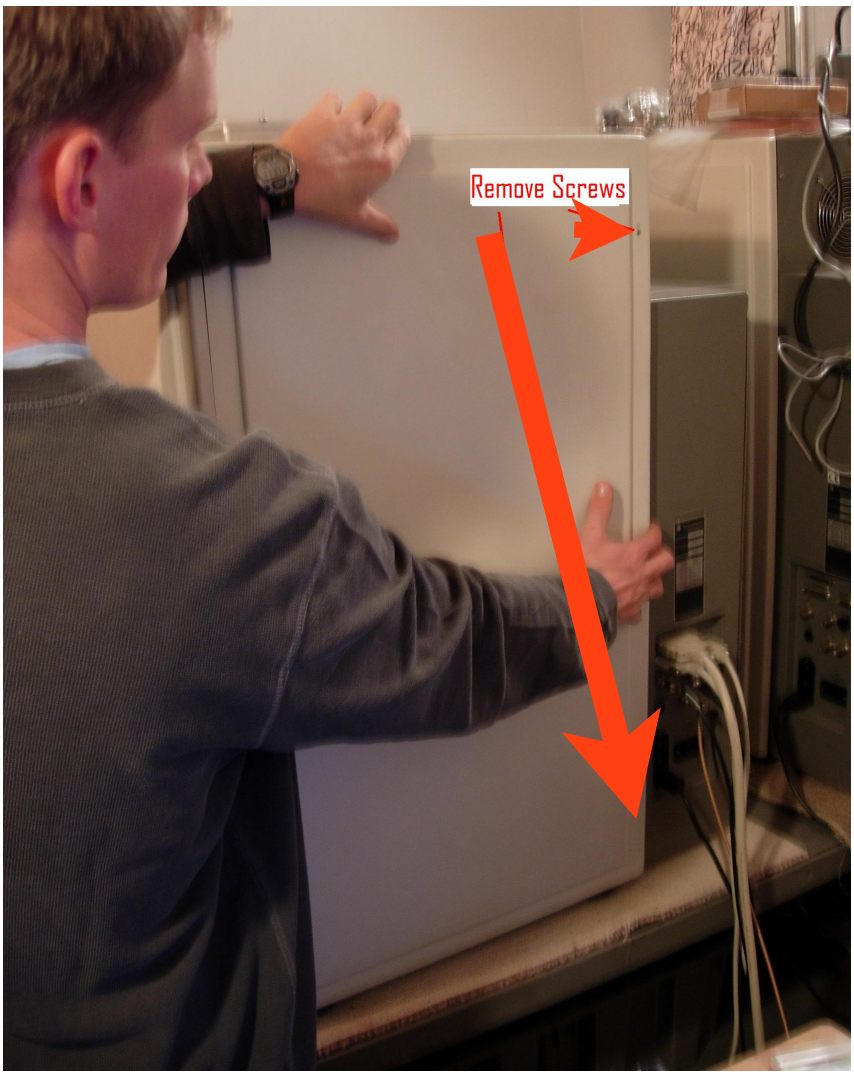

FIGURE 1

6. In the USA, The Voyager workstation will require it's own dedicated 15 amp circuit breaker and outlet. A UPS is recommended. For other countries please refer to the AB Site Prep Document for electrical requirements.

7. Remove the pump shipping bracket that secured the vacuum pump during shipping (located bottom right of the right side).

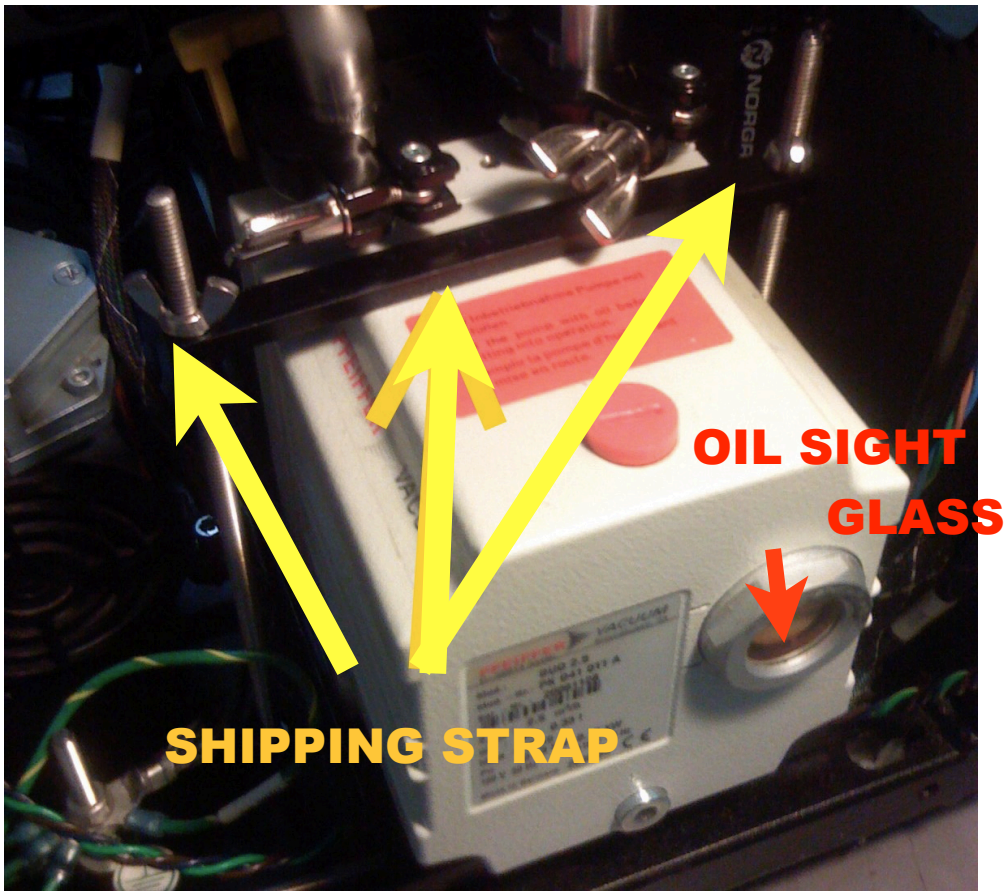

FIGURE 2

8. Plug the voyager power cord into the Voyager.

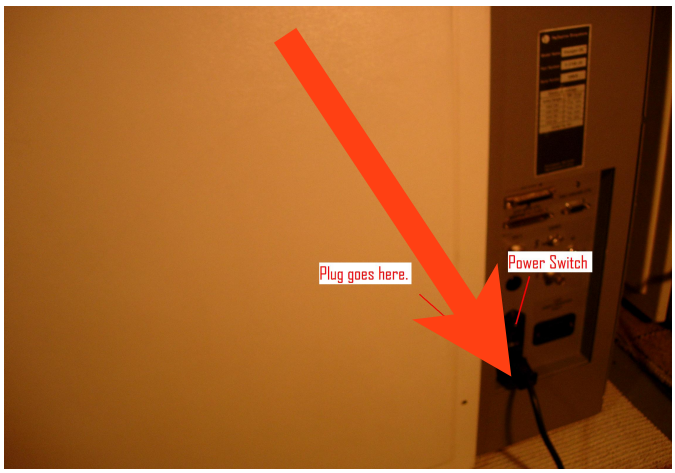

FIGURE 5

9. Plug the Voyager power cord into the outlet. Turn the power on by using the main power switch located above the power cord for the instrument. The mechanical vacuum pump should start. If it does not start the fuse is probably blown (replace fuse as shown in supplemental video). Allow the pump to run for about 1 minute (check oil level in the check window SIGHT GLASS shown in FIGURE 2).
10. Use the channel button (CHAN) located on the BA gauge controller toggle to the TC2 display.

FIGURE 4

11. When the TC 2 pressure reaches 8 E-02 TORR connect the foreline 1 connection. The TC 2 pressure may rise. If the pressure does not drop back down place firm pressure on flap door 2 to help the pressure drop down. Foreline 1 connection is accessible from the front or sometimes the right side of the Voyager. The foreline valve electrical connection is marked with fluorescent labels when shipped from JBI.

12. After the TC 2 pressure reaches 8 E-02 TORR connect foreline 2 electrical connections. The foreline 2 connection is accessible from the front of the Voyager. The foreline valve electrical connection is marked with fluorescent labels when shipped from JBI.

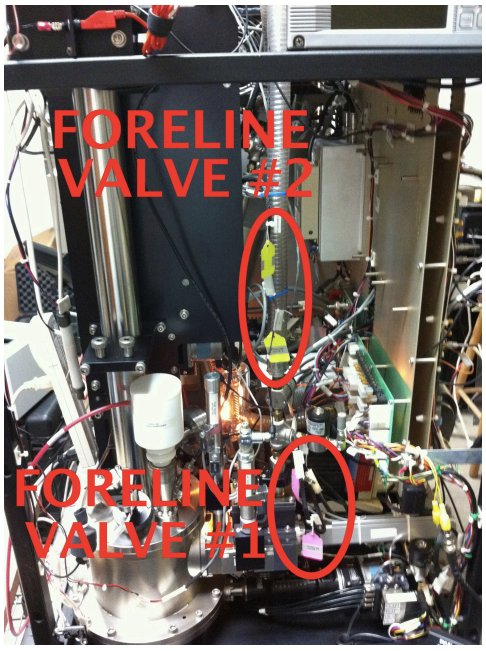

FIGURE 5

14. When the reading reaches 5 X 10 –2 TORR or lower plug the Turbo pump into the AC distribution board (**J2**). The AC distribution board is accessible from the right side of the Voyager. If you are installing a DE PRO or RP there is a second turbo pump power (J3) for the mirror. Install this after J2 is plugged into the AC PCA.

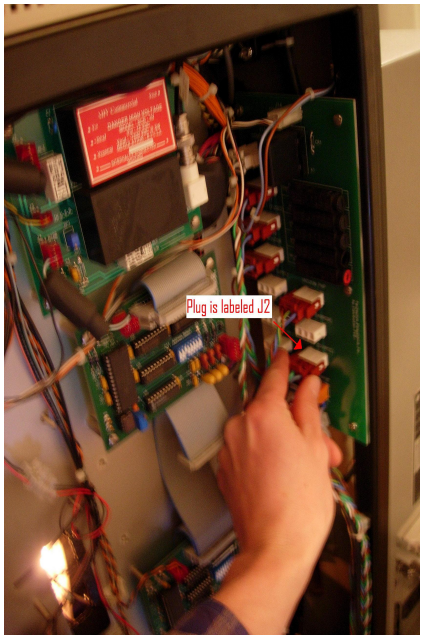

FIGURE 6

15. On the multi-gauge controller toggle from TC2 to BA1 display using the channel button.

FIGURE 7

16. The display should read OFF. Initialize the ion gauge by pressing EMIS button on the controller.

FIGURE 8

17. After you press the EMIS button the controller should display a pressure reading.

FIGURE 9

18. Replace the Voyager front cover, and then the right side cover. Monitor BA1 (source) pressure and BA2 (mirror) pressure if applicable. Record the displayed pressure every 15 minutes for the first hour. After that take readings 2-3 times a day until the BA1 vacuum reading reaches <2.0 E–6 TORR. If applicable the pressure for BA2 should reach <5.0E-7 TORR. If the vacuum rises or does not reach the listed pressure call Jason at +1-713-882-3179.