Setting Up the Vacuum Line

1. Check to make sure the pressure-relief valve is open.

![Pressure-relief Valve](image)

2. Turn on vacuum pump using the red/white switch below the hood.

![Red/White Switch](image)

3. Close the pressure-relief valve.

4. Plug in the vacuum pressure gauge and wait for it to settle. The pressure should read < 0.100 with a decent vacuum. If it does not, check for leaks and adjust the vacuum line until it reads below 0.1 mm Hg.

![Vacuum Pressure Gauge](image)

(Note: This gauge should NEVER be on when the system is not under vacuum! Also, do not leave the gauge on overnight as this leads to unnecessary wear on the filament.)

5. Put up the dewar and add liquid N\textsubscript{2}.

(Note that the pressure gauge should go even lower when N\textsubscript{2} is added to the dewar.)
Your vacuum line is now ready to use!

(Note: For overnight runs, use the large dewar instead these smaller ones. The small dewars need to be re-filled every 6-8 hrs.)

**Shutting Down the Vacuum Line**

1. Unplug the vacuum pressure gauge.

2. Open the pressure-relief valve all the way and then **immediately** shut off the vacuum pump.

3. Lower the dewar and allow the trap to warm up (with the pressure-relief valve open). Empty out any collected solvent and clean out before next use.

[**WARNING!** If your line is not properly set up, the oxygen (from air) will condense in your trap giving a blue liquid/haze. If you notice a blue color when you are removing the dewar (see above) -- you should immediately close your hood sash and leave the area. Do not touch the vacuum trap as liquid O₂ can be shock-sensitive! Also, never leave the trap up with the vacuum pump off or you will condense O₂.]

**Pump Maintenance**

You should change your pump oil at least every 4 months with normal use. **However, if you accidentally pull a significant amount of solvent into the pump - change the pump oil ASAP!** Vacuum pumps are expensive so please take care of them!