Procedure Title C100 Cavity Evacuation Procedure

Procedure ID # CP-C100-CAV-EVAC

Procedure Description: This procedure describes the steps necessary to evacuate a seven cell cavity after it has been assembled in the clean room and installed in a test stand.

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Version	1.0		
Approval Date			
References	List and Hyperlink all documents related to this procedure.		

NOTE: The goal of this procedure is to evacuate the cavity utilizing a slow pump down rate to minimize particle migration within the cavity and the associated UHV pumping system. The pumping rate must not exceed 10 mbar/min. throughout this procedure.

Prior to initiating this procedure the following must be true:

- The UHV pumping system used for this procedure must be bled up (~1000 mbar)
- The cavity should be properly attached to the UHV pumping system.
- The UHV pumping system used for this procedure must be equipped with a gas ballast purge on the scroll pump. (This will prevent condensable vapors from becoming trapped inside the scroll pump head.)

Prepare UHV pumping system for evacuation:

Perform the following in the order as listed (see figs. 1 & 2)

1. Close the N2 bleed up valve.
2. Close the foreline right angle block valve.
3. Set the foreline throttle valve to .002" on the corresponding dial.
4. Open the leak rate valve.
5. Open the turbo isolation valve.
6. Open the cavity isolation valve.

Start the scroll pump and open its N2 ballast control valve. (This will prevent accumulation of condensable vapors (water) from forming inside the pump head.) The pressure on the gage will slowly rise and then come back down. Verify that the evacuation rate is ≤ 10 mbar per minute. As the pressure gets lower the evacuation rate will slowly decrease. Periodically check the evacuation rate and adjust the foreline throttle valve as necessary. **NOTE: Open the throttle valve in .0005" increments to keep the evacuation rate ≤ 10 mbar per minute. Small adjustments to the throttle valve will drastically change the pumping rate.** It will take between 1.5–3 hours until the pressure is in the 10-20 mbar range. When the pressure is ≤ 20 mbar, the foreline right angle block valve can slowly be opened. Close the foreline throttle valve. Start the turbo pump when the pressure is ≤ 2 mbar. Ensure the turbo pump is not in "standby" mode. Once the turbo pump has been established, the pressure should be below 1.0e-4 mbar. Consult with your supervisor or lead technician if the pressure does not come down as described or hangs unexpectedly.

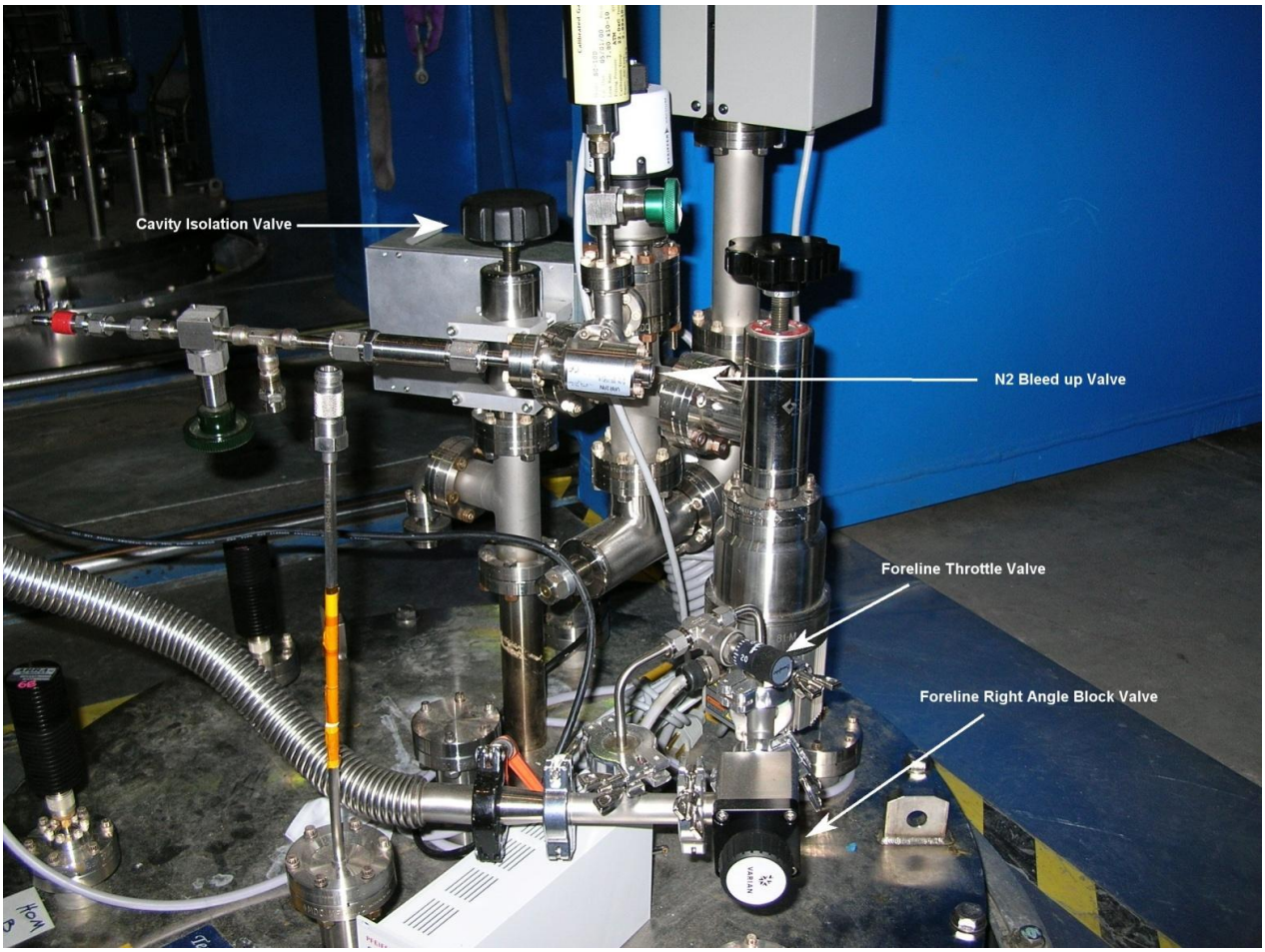

Figure 1

Typical UHV Pumping System

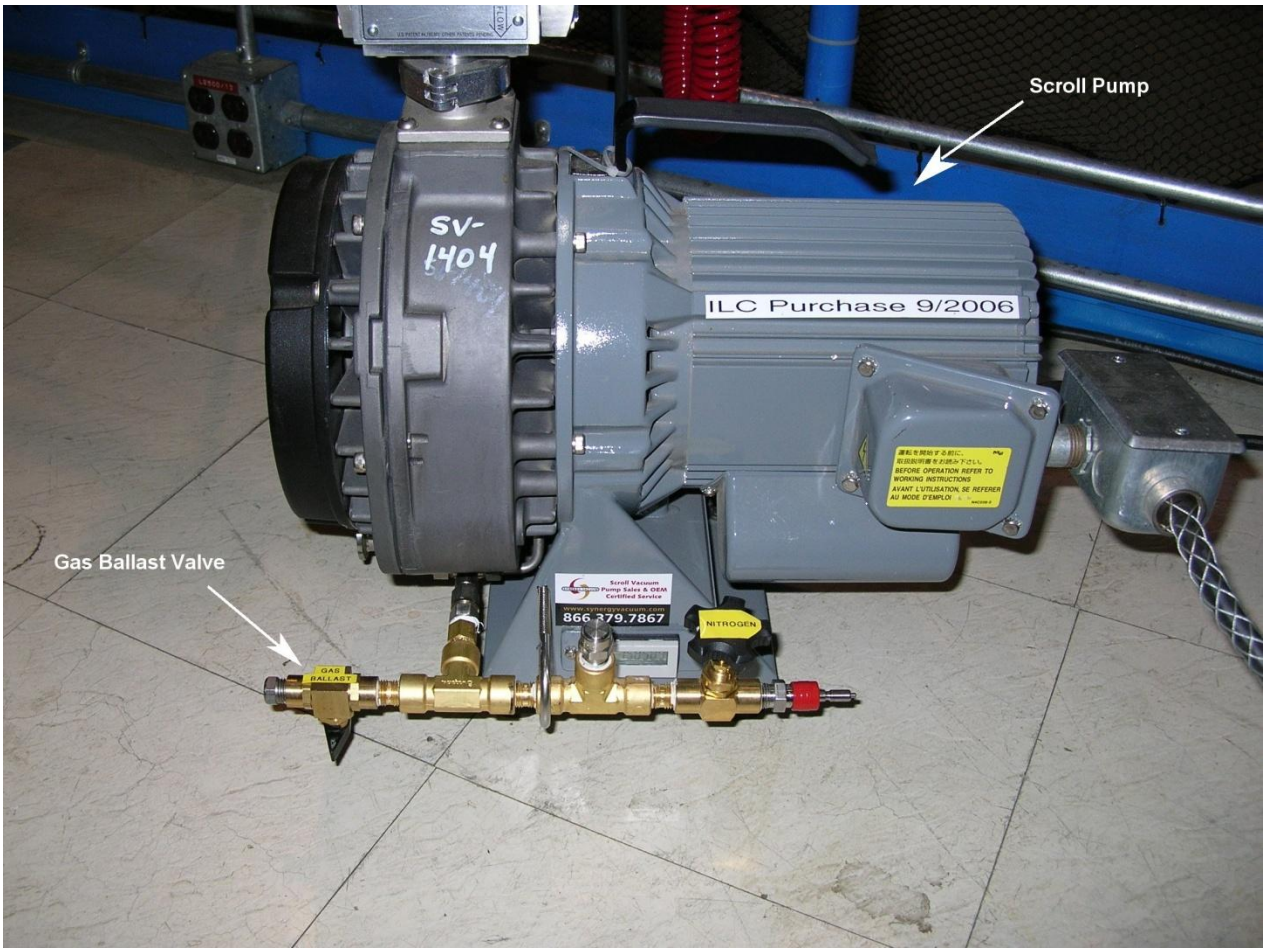

Figure 2

Scroll pump w/gas ballast manifold 1