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NIRSPEC Cryomechanics Application Note 03.00
Procedure for Evacuating

C Attach Nirspec to Pump

Nirspec is equipped with a manual Varian vacuum valve located at the left/ rear rear corner of the lower plate. The inlet is a size NW40 quick flange type (KF, QF, etc.) (See Figure 1)

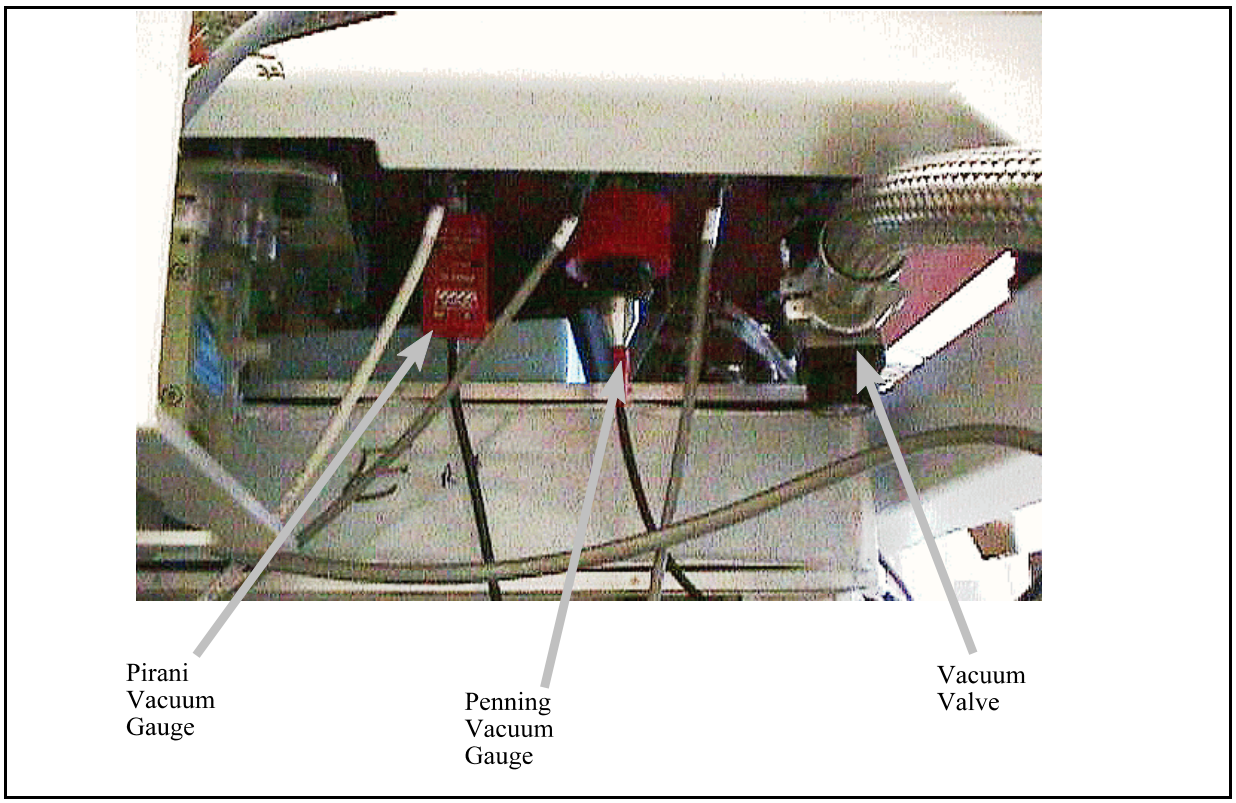

Figure 1; Vacuum Valve and Gauges

C Connect Pressure Gauges

Nirspec has a Pirani (roughing range) and Penning (high vac range) gauge. They are connected to an Edwards readout for the evacuation and cooldown. They are not necessary for standard operation of the instrument but only for periodic (monthly?) checks. (See Figure 1)

- Rough Nirspec

  Nirspec is a relatively large vacuum chamber. In the lab we have found it best to rough overnight. This should take it to the 100 millitorr or less range depending on the equipment.

- High Vac

  Once the Nirspec pressure is at the 100 millitorr or less range it should be opened to high vacuum (Diffusion or Turbo).

- Bake Getters

  Immediately after going to high vac the getters need to be baked. This requires a DC power supply that can provide up to 25V at 1 amp. There is a 2-position switch box located on the left/rear leg of the handling frame that has banana plug inputs for the power supply. One switch position is for the getters and the other is for internal heaters on select optics. The internal heaters are only used for instrument warmup. The getters are baked by providing 15-20 V for 30 minutes. (See Figure 2)

- Pumping Time

  The pumping time to evacuate Nirspec will vary depending on a few variables.

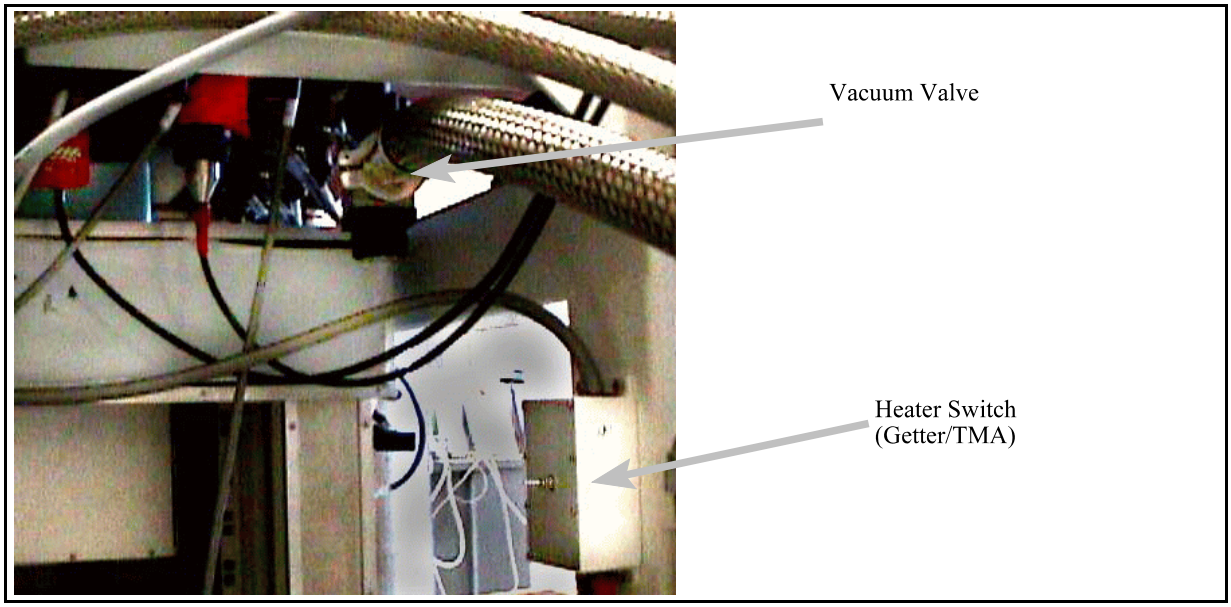

Figure 2; Internal Heater Switch

The capacity of the pump is one of course. Also, the length of time the instrument is open to atmosphere is important. As a preliminary rule of thumb, within two

days the instrument should be at a pressure of 25 millitorr or less and cooldown can commence.