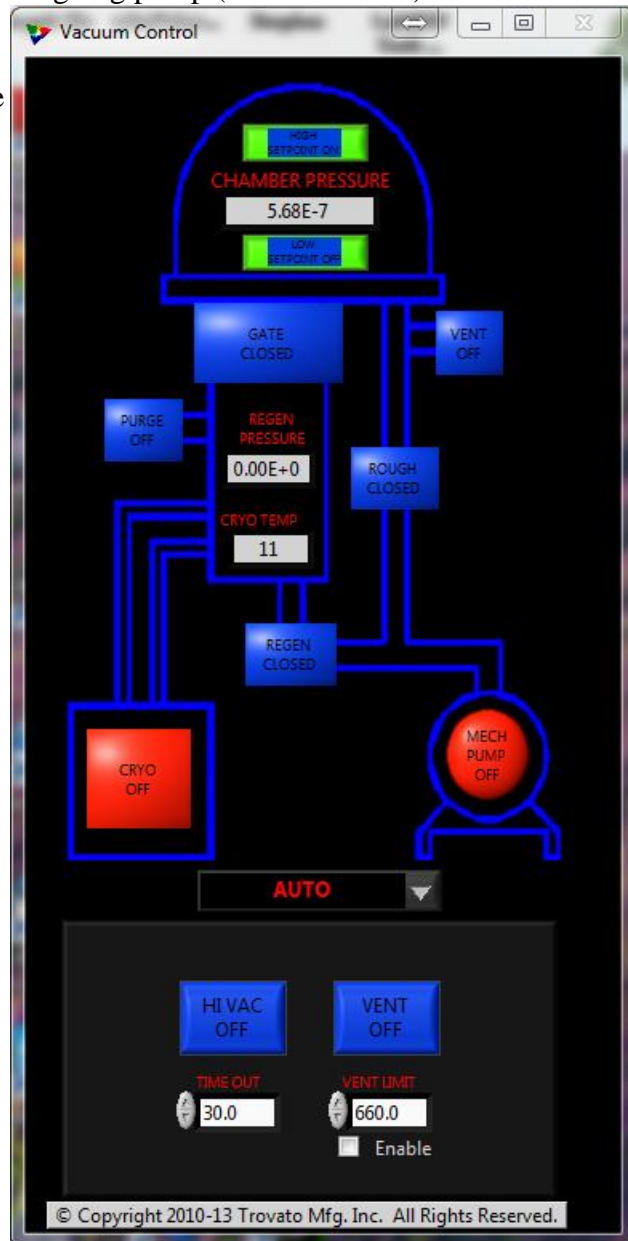


## Vacuum Control (Cryo-Pump)

Vacuum Control is used to sequence the pump stack components to put the chamber under vacuum or to vent the system to atmospheric pressure.

### AUTO Mode

- Start-up Sequence - The pump-down sequence is started by pressing the Hi Vac On/Off button. This will start the roughing pump (MECH PUMP). When the Time Out (30 Sec) has expired for evacuating the roughing line the Rough Valve will open to the chamber. The CHAMBER PRESSURE will begin to drop. When the chamber pressure drops below 300 mTorr the HIGH SETPOINT indicator will turn from Red to Green. When chamber pressure drops below 200 mTorr the LOW SEPOINT indicator will turn from Red to Green. At this time the Rough Valve will close, the Roughing Pump (MECH PUMP) will turn off, and the GATE VALVE is commanded to open. When the gate is fully open the GATE OPEN/CLOSED indicator will turn from Blue to Green. The Chamber is now exposed to the Cryo Pump and the pressure will continue dropping.

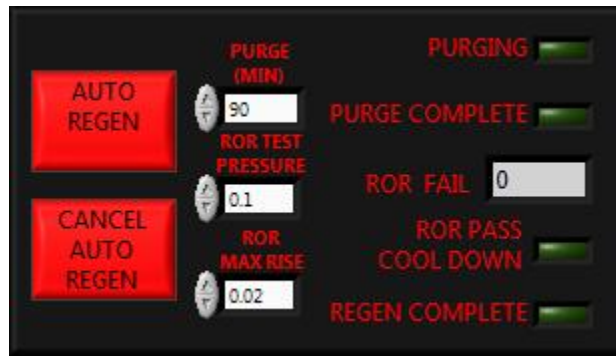


- Vent Sequence – To start the vent sequence, the Gate must be closed. Pressing the HI VAC ON/OFF button will cause the Gate Valve to close. When the Gate is fully closed the GATE OPEN/CLOSED indicator will turn from Green to Blue. At this time the VENT ON/OFF button will be enabled. Actuating the VENT ON/OFF button will start the vent sequence. If the Ion Gauge is on, a relay will open to turn off the filament and protect the Ion Gauge. After a brief delay, (~8 seconds) the Vent Valve is opened and vent gas is allowed to flow into the chamber. By setting a

VENT LIMIT to a pressure (in Torr) and selecting Enable the vent valve will automatically close upon reaching the final pressure. Be sure the VENT LIMIT value is less than atmosphere, as the vent gas will continue to be expelled because the chamber pressure will never rise much above atmosphere. If the VENT LIMIT is not enable the operator must select the VENT ON/OFF button again to stop the flow of the vent gas.

### REGEN Mode

The REGEN Mode panel is used to automatically regenerate the cryo vacuum. Pressing the AUTO REGEN button will start the regeneration sequence. The sequence may be stopped by pressing the CANCEL AUTO REGEN button. Values can be entered for the PURGE time, ROR TEST PRESSURE, and ROR MAX RISE. As steps in the sequence are completed Indicators on the panel will change from Dark Green to Bright Green.



### MANUAL Mode

Great care should be taken while in MANUAL Mode. Opening a valve at an inappropriate time can cause the cryo-pump to lose containment, which will then necessitate the regeneration of the cyro. This process can take several hours.

- GATE ON/OFF – Opens and closes the Gate Valve.
- REGEN ON/OFF – Opens and closes the Regen Valve on the cryo-pump.
- VENT ON/OFF – Opens and closes the Vent Valve on the chamber.
- ROUGH ON/OFF – Opens and closes the Roughing Valve on the chamber.
- PURGE ON/OFF – Opens and closes the Purge Valve on the cryo-pump.
- MECH PUMP ON/OFF – Turns the Mechanical Pump on or off.

