

Operating the Varian 938-41

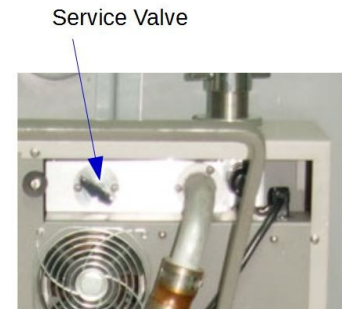


800-910-4356

Start-Up Procedure

COLD START

1. Put plug into test port.
2. MAIN and ELEC switches are both OFF (down)
DP Control knob is full counter clockwise (high power setting, small side of arc)
Service Valve on back of cabinet is OPEN (full clock wise, back out 1/8 turn)
Residual Background switch is in the RUN position
Select #1 filament
Turn operating handle to TEST position.
3. Turn on roughing pump, use breaker on back/bottom of cart.
4. Turn on MAIN Power switch.
All segments on bar-graphs should light momentarily, then go out. Random readings on bar-graph can be ignored.
5. WAIT 30 minutes for the Diffusion Pump (DP) to heat up to operating temperature.
6. Move ELECT switch to ON position. Look at Spec Tube Pressure gauge, if full scale, turn Elect Switch OFF, wait 5 more minutes and try again. Should be on-scale (off scale can draw a lot of current and burn up the xfrmr)
7. Check the Spec Tube Gauge, when below 0.2 mTorr (in the green band) flip the FIL (Filament) Switch to ON, and release. The Green FIL light on the front panel should go on and stay on. This might take a few tries as the Spec Tube outgasses. (If you try a couple more times without success, call Mass 4 Service.)
8. With SPEC TUBE gauge in the Green, FIL light Green, it's ready to go!



Clockwise to Open
Counter-clockwise to Close

TEST MODE

1. Turn the handle from Vent to Start, wait for test port pressure to fall below 100mTorr.

Never leave in the START position longer than 5 minutes.

(Doing so runs the risk of burning up your DP oil & damage the pump)

2. Then turn the T-handle to TEST.

STANDBY - Plug the test port, turn handle to VENT, leave FILament on.

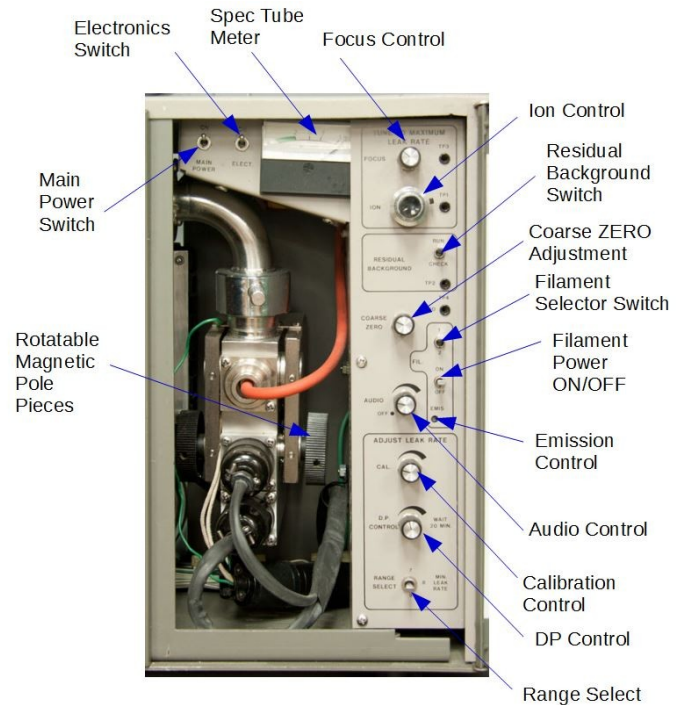
FULL SHUTDOWN - Turn handle to VENT, Flip MAIN power switch and ELECT switch OFF, Service Valve CLOSED, Remove Plug from test port, turn handle to START, Quickly turn off main breaker on back of lower cart, reinstall Test Port Plug.

For additional details on this Leak Detector, please see Varian Operator Manual 0981-6999-09-510

938-41 Tuning & Calibration Procedure

Initial Settings: (machine should be ON)

- Focus Control → 12 o'clock position
- Ion Control → 0, fully counter-clockwise
- Residual Background Switch → Run
- Zero Adjustment → on scale reading (Coarse Zero and/or Fine Zero)
- Calibration Control → fully Counter-clockwise
- DP Control → 12 o'clock position, determines sensitivity; arc is for sensitivity, small side is higher voltage to the DP and larger side is low voltage; should be positioned between.



Tuning & Calibration:

1. Install an external Calibrated Leak Standard in the Test Port, the valve should be Open.
2. Turn the T-Handle to START; wait for Test Port pressure to drop below 100mT.
3. Turn the T-Handle to Test; machine should see a fairly high signal that does not respond to helium; if it does not, either the pole pieces on the Spec Tube magnet are not touching the Spec Tube, or the magnet is weak.
4. Increase to Ion Voltage, the leak rate should drop off, then come back up to another peak. If the leak rate drops below Zero, keep it on-scale with the Zero and Range Controls.
5. Turn off the Leak Standard at it's valve, and the leak rate should drop. The amount isn't important, just make sure there is a deflection.
6. Re-open the Leak Standard.
7. Adjust the Focus control to find a peak.
8. Go back and find the peak on the Ion Control pot and Focus a couple of time to optimize the signal.
9. Turn off the Leak Standard.
10. Zero the Spec Tube Meter on the most sensitive scale.
11. Open the Leak Standard.
12. Adjust the Calibration Control pot to make the leak rate match the value of the Calibrated Leak Standard (on label).
13. Turn off the Leak Standard and check Zero
14. Open the Leak Standard and check the value. If it reads correctly, the machine is now tuned and calibrated.

