

## Start Up/Shutdown

### Start Up

1. Plug the leak detector power cord into an appropriate 20 A mains supply receptacle.
2. Move the power switch on the rear power control panel to the **1** position. The *SYSTEM READY* indication appears on the lower left of the *Home* screen in the status line after about 3.5 minutes.

Refer to the *VS Series Helium Mass Spectrometer Leak Detector Operation Manual* for instructions to accurately read in the E-9 to E-11 range.

### Verify Sensitivity/Calibration

1. Press the **TEST** button.
2. Press **CONTROL PANEL** on the *Home* screen.
3. Press **STD LEAK** to open internal calibrated leak.
4. Verify that the leak reads the same as the leak value found on *MENU/CALIBRATION SET-UP* screen.

If the unit does not accurately read the value of the STD LEAK (+/- 2 minor divisions), calibrate the unit.

5. Press the **X** button to close the internal leak.

### Execute Calibration

1. Press **TEST** button to place the system in test mode.
2. Press **CONTROL PANEL** on the *Home* screen and the *Control Panel* appears.
3. Press **CALIBRATE**. The system performs an automated calibration of the system to the internal standard leak in approximately 3 minutes. After calibration, the unit returns to Test mode.

For information on calibrating to an external standard leak, see the *VS Series Helium Mass Spectrometer Leak Detector Operation Manual*.

### Shutdown

- Move the power switch on the rear power control panel to the **0** position.

The system can be in any mode when shut down. When the system is shut down, all valves in the system close. If the system is not in Vent mode, the test port remains under vacuum and may be difficult to open.

### Test/Vent Controls

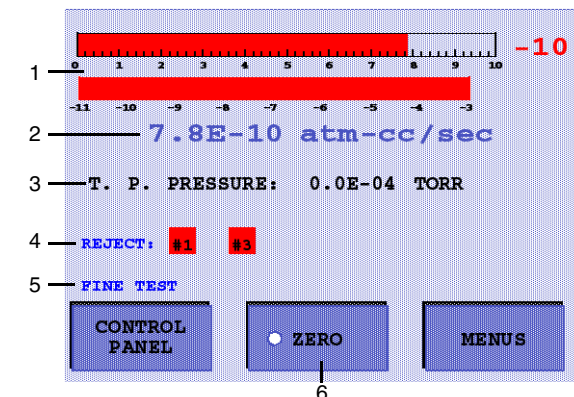


- **Test** - When the system is in the Vent state, press **TEST** to automatically advance the leak detector through roughing, and into test
- **Vent** - Advances the unit to the vented state; press and hold **VENT** for one second.

Custom tests cycles, including the rough time, test time, and leak rate reject levels are activated from the *MENU/REJECT & AUDIO SET POINTS* and *AUTO SEQUENCER* screens.

### Home Screen

This screen is generally active during leak detector use and contains information that is needed for everyday operations.

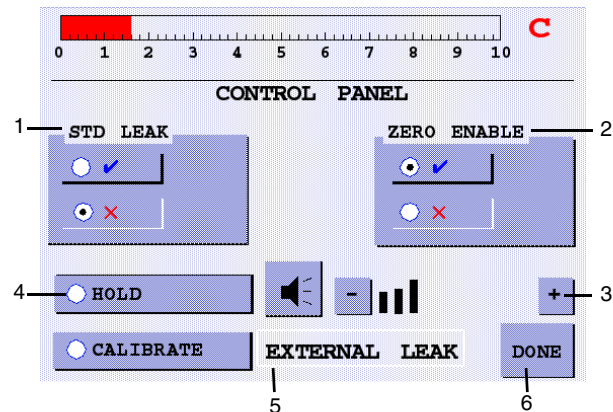


- (1) Linear and/or Log Leak Rate Bar Graph - Displays real-time helium readings.
- (2) Digital Leak Rate - Correlates directly with the bar graph leak rate display. The units of measurements are selected on the *Units Set-Up* screen.
- (3) Test Port Pressure - Displays the test port pressure as measured by a thermocouple device mounted just below the test port. The test port pressure appears in black text when OK and red when above maximum test pressure, 10 Torr.
- (4) Reject Status Indicator - Indicates when any of the four independent set points are enabled and activated.
- (5) Status - Displays the current leak detector operating state or condition.
- (6) Zero - Used to negate the presence of background helium. It is only visible on the *Home* screen when activated from the *CONTROL PANEL* screen.  
  
Gross Test - Replaces *Zero* when *Gross Test* is activated (*ADVANCED PARAMETER* screen). Opens the *Gross Test* screen to locate leaks in roughing mode.

## Control Panel Screen

This screen accesses frequently used functions.

- Press **Control Panel** on the *Home* screen and the screen appears.

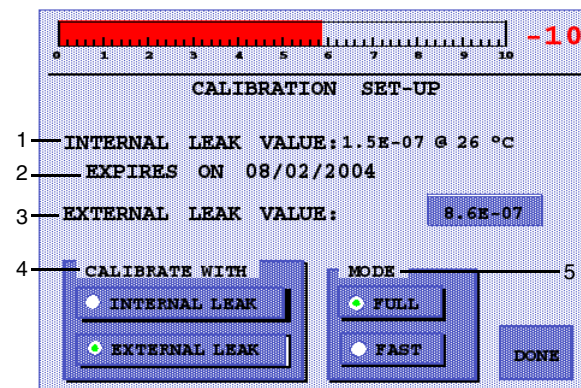


- STD LEAK** - Introduces helium from the internal standard leak into the system, and is only functional while the leak detector is in fine test mode. It allows for verification of the system sensitivity and calibration. When active, **STD LEAK** appears on the *Home* screen status line.
- ZERO ENABLE** - Activates the Zero function on the *Home* screen, allowing an operator to exclude the background helium signal from the leak rate display.
- Audio Controls** - The audio signal is a unique pitch/frequency signature at every leak rate so that the relative size of the leak can be gauged by ear.
  - Volume Adjust** - Press **-** or **+** to decrease/increase the volume of the audio signal.
  - Volume On/Off** - Press to toggle audio signal on/off. The volume level is restored at the same level as when shut off.

- HOLD** - Places the system in Hold and isolates the vacuum system from the test port, but does not vent the test port. This only functions while in Test mode.
- CALIBRATE** - Press **CALIBRATE** and an automated calibration is performed. *Internal* or *External Leak* appears to indicate which leak the system uses to calibrate. This parameter is set on the *Calibration Set-Up* screen.
- DONE** - Returns unit to *Home* screen.

## Calibration Set-Up

This screen indicates the current leak rate of the internal standard leak, and accesses the following functions:



- INTERNAL LEAK VALUE** - Displays the leak rate of the internal Std Leak, compensated for the unit's internal temperature.
- EXPIRES ON** - Displays the date one year after the installation of the internal Std Leak.
- EXTERNAL LEAK VALUE** - Change the value of the leak that you installed by pressing on this text and entering your leak value.
- CALIBRATE WITH** - Sets which leak is used during the calibration routine.

- Mode** - Sets the calibration mode:

- FULL** calibration optimizes all of the appropriate parameters in approximately three and a half minutes.
- FAST** calibration adjusts only the gain parameter and takes approximately one minute.

If the gain goes above a predetermined limit, the unit switches from Fast to the Full mode.

## Screen Flow

