INSTALLATION, CALIBRATION, AND OPERATING INSTRUCTIONS

VARIAN 801 THERMOCOUPLE GAUGE CONTROL

Part No. F2739-301 - 115-Volt, Torr Scale
Part No. F2739-302 - 220-Volt, Torr Scale
Part No. F2739-305 - 220-Volt, Millibar Scale

The Varian 801 Thermocouple Gauge Control is a compact, self-contained instrument designed primarily for panel mounting. It is supplied with a 6-foot line cord and a 10-foot thermocouple gauge cable. The instrument is line voltage-regulated, and a temperature-sensitive element to compensate for temperature drift in thermocouple gauges is built into the thermocouple gauge socket. The indicator dial, which covers the pressure range from 1 to 200 milliTorr (1 milliTorr is 1/1000 of 1 mm of mercury, or 1/1000 of 1 Torr), is calibrated for a Varian 531 thermocouple gauge in dry air. The mechanical zero adjustment is located on the front of the instrument. The pressure calibration can be reached through a hole in the rear cover (Figures 1a and 1d). The meter voltage (0 to 11 mv) is available at two solder terminals at the rear for operating remote indicators whose input resistance should be 200 ohms or more.

INSTALLATION

A panel cutout (Figure 1a) is required for the installation of the Varian 801 Thermocouple Gauge Control. The instrument is mounted from the front and secured with three nuts supplied (Figures 1b and 1c).

CALIBRATION

1. With the line power disconnected, adjust the mechanical meter zero until the needle reads OFF.
2. Connect a Varian 531 Thermocouple Gauge to a vacuum system capable of maintaining a pressure of less than 1.0 micron.
3. Pump down the system to less than 1.0 micron.
4. Connect the thermocouple cable of the Varian 801 Control to the Varian 531 Thermocouple Gauge.
5. Plug the line cord into a 115-V, 50/60-Hz supply (P/N F2739-301 only). Plug the line cord into a 220-V, 50/60-Hz supply (P/N F2739-302 and -305 only).
6. Turn the calibration control in the rear of the instrument until the meter registers zero milliTorr.
7. Allow the system to stabilize for approximately 15 minutes, and readjust the zero if necessary.

Note: If so desired, the gauge can be calibrated against a McLeod gauge.
MAINTENANCE

Due to aging and/or contamination of the thermocouple gauge, recalibration may be necessary from time to time. The preceding Calibration procedures should then be followed. Because the temperature compensation for the TC gauge is built into the TC cord socket, do not cut the plug off the TC cord to shorten the cord. If the cable is too long, it should be coiled.

DISASSEMBLY

The 801 should give years of trouble-free service, but if repairs are necessary, the following disassembly procedure should be followed.

1. Unplug the line cord.
2. Remove the two screws that hold the rear cover and terminals.
3. Remove the plastic cover.
4. Remove the printed circuit board from the meter.

Note: If, after assembly, the meter runs backwards, turn the printed circuit board one-half turn.

Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>Transformer, T1</td>
<td>0881-6581-00-125</td>
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<tr>
<td>Thermistor</td>
<td>0881-6542-08-005</td>
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<tr>
<td>Meter</td>
<td>0881-6522-08-275</td>
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<td>TC Board</td>
<td>0881-F2737-301 (used on P/N F2739-301 only)</td>
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<tr>
<td>TC Gauge Tube</td>
<td>0881-F2737-302 (used on P/N F2739-302 and -305 only)</td>
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<td>053-F0472-301</td>
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