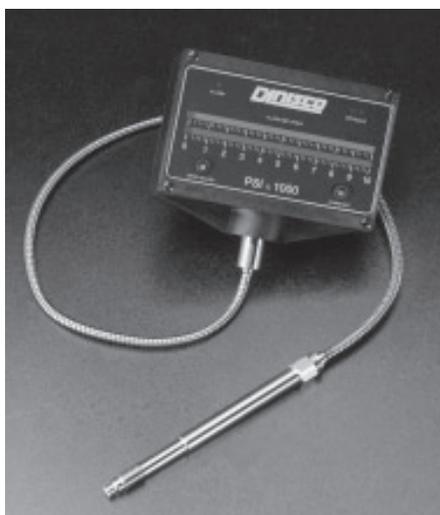




INSTRUCTIONS FOR PLASTIC MELT PRESSURE GAUGES



The following
models are
covered in this
manual:

PG541

PG542

PG551

PG 552

TPG543

TPG553

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1. INTRODUCTION

The Dynisco PG540/PG550 Series pressure gauges are highly engineered, electronic devices. With proper installation and handling these units will provide years of care-free service.

The tip of the gauge consists of a stainless steel diaphragm. Care must be taken to protect the diaphragm from severe abrasion, dents and gouges. During storage the protective cap supplied with the unit should be left in place.

1.1 Gauge Probe Mounting Hole

The gauge probe is machined to tight dimensional tolerances. To avoid damage on installation, the mounting hole should be carefully machined and checked for the correct dimensions.

A set of mounting hole machining tools is available (P/N 200925) to assist in preparation of the mounting hole.

The mounting hole should conform to the recommended dimensions shown in Figure 2, below.

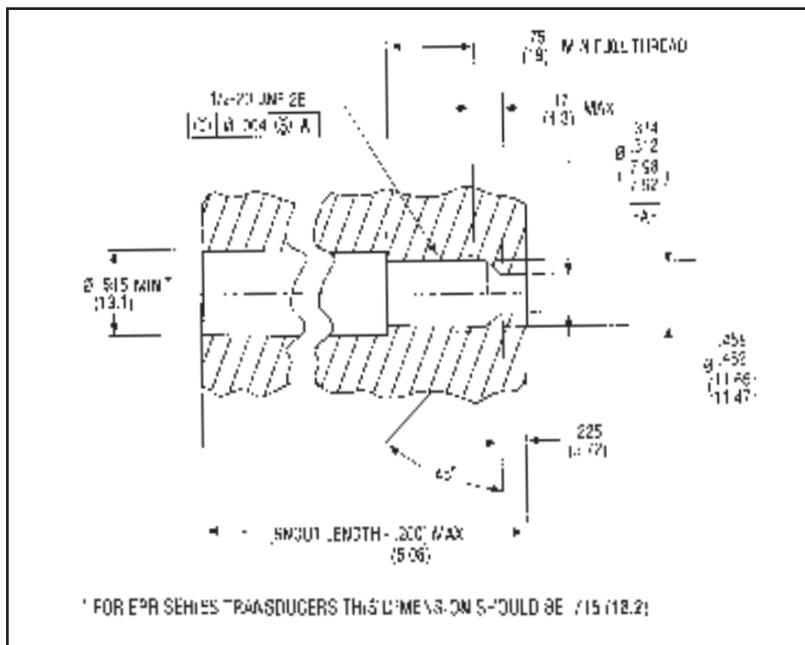


Fig. 2 Gauge Probe Mounting Hole

1.2 Mounting Hole Dimension Check

The proper fit between the pressure probe and mounting well must be maintained throughout the service life of the gauge and should be checked periodically. A gauge plug (P/N 200908 - Figure 3) is available which can be used to check the hole as follows:

1. Referring to Figure 4, paint the clean dry surfaces of the gauge plug as shown with machinists ink, such as Dykem steel blue (Note 1).
2. To prevent galling, lubricate the threads with a high temperature anti-seize compound.
3. Insert the plug and torque lightly until seated in the well.
4. Remove and carefully examine the plug. Except for the 45° chamfered surface, the Dykem should be intact. If marred, it is an indication of some type of mechanical interference which must be corrected before the transducer is installed.
5. Typical interference problems are:
 - Burrs or chips in the hole Remove
 - Undersized dimension Remachine
 - Eccentric threads/hole Remachine
 - Poor surface finish Remachine
 - Frozen plastic on seating surfaces Remove
 - Frozen plastic in hole Remove

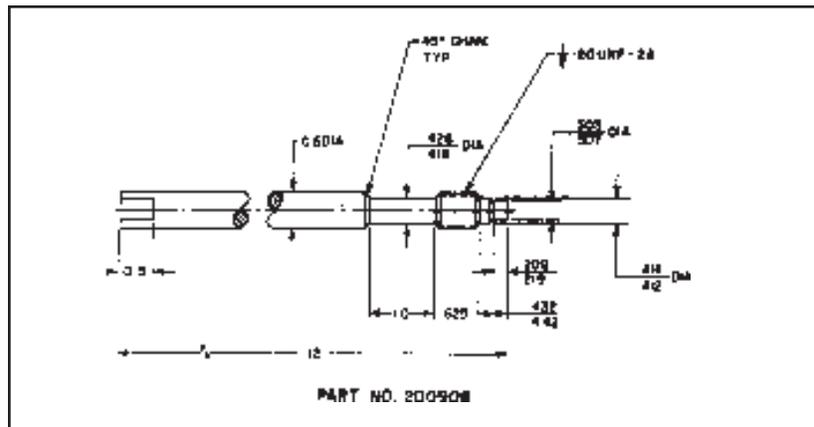


Fig. 3

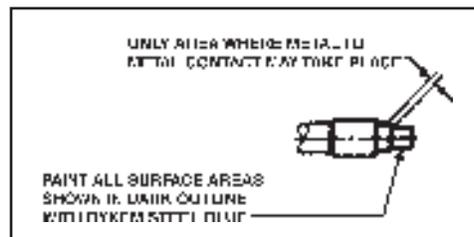


Fig. 4

2. INSTALLATION

After lubricating the probe thread as described, install the probe in the mounting hole with the hex nut provided at the top of the probe.

- DO NOT ATTEMPT TO SCREW UNIT IN BY TWISTING GAUGE ENCLOSURE.

A mounting torque of 100 inch lbs. should provide an adequate seal, although the stem will withstand up to 500 inch lbs.

*A mounting hole which has become damaged, distorted or partially filled with plastic can render a gauge inoperative as easily as one which is not properly machined.

*A cleaning tool kit (Dynisco P/N 200100) is available which is designed to remove excess plastic from the 0.312 diameter hole, the 45° seat, the 0.451 diameter and the threads. A gauge plug is included in this kit.

2.1 Gauge Enclosure Rotation

Once installation has been completed, the gauge enclosure can be swiveled 310° to provide optimum visibility. To do this, rotate the enclosure to the desired position. Do not attempt to force enclosure rotation beyond the built-in mechanical stops.

2.2 Stem Up - Stem Down Modification

All PG500 Series gauges are shipped from the factory in a stem down configuration (Figure 5). For those installations which require a stem up configuration, (mounting on bottom of extruder barrel) merely remove the four corner screws on the gauge face and gently lift the face plate off (Figure 5). Reinstall face plate upside down and re-tighten corner screws.

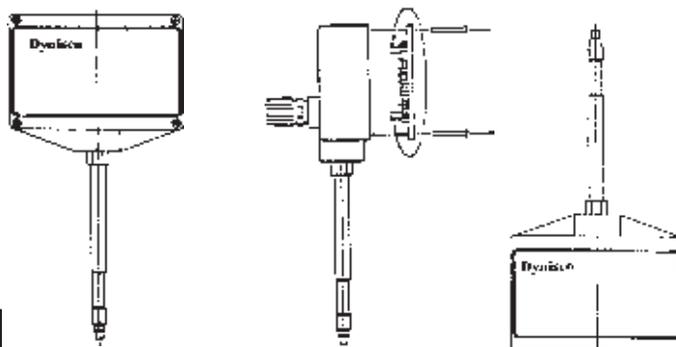


Fig. 5

2.3 Wiring (all models)

Wiring for all models is accomplished at rear of the gauge enclosure. A separate kit included with gauge contains different size strain reliefs to facilitate use with various gauge wire. Insert wire through correct relief fitting and assemble strain relief as shown in Figure 6. Attach strain relief assembly to gauge enclosure using four screws provided in kit, as shown in Figure 7.

NOTE: This device operates on 12 VDC not 120 VAC

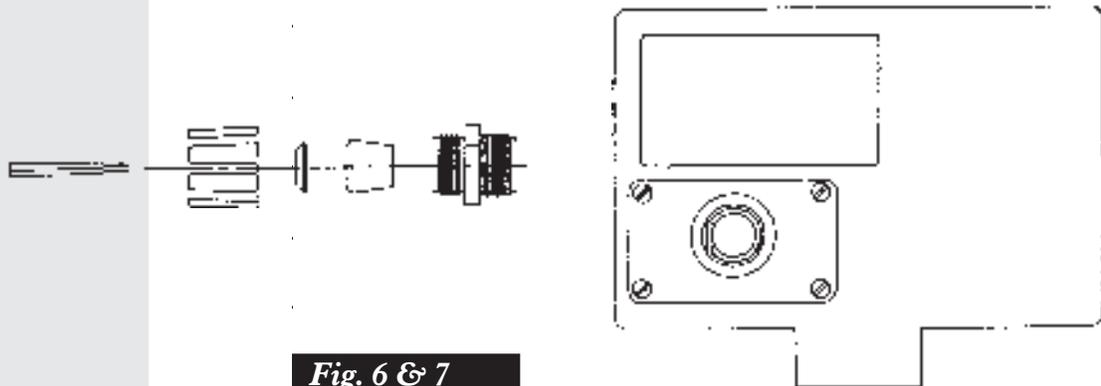


Fig. 6 & 7

2.4 Terminal Connections

5 Position Terminal Block - Alarm Versions Only

- 1 Relay Contact (N.C.)
- 2 Common
- 3 Relay Contact (N.O.)
- 4 Reset
- 5 Automatic/Manual

(2 Position Terminal Block - All Models)

- 1 12V Supply (-) (BLK)
- 2 12V Supply (+) (Red)

(Power Supply Terminal Block -GI 15 Option)

- 1 Neutral (WHT)
- 2 115 or 230 (BLK)

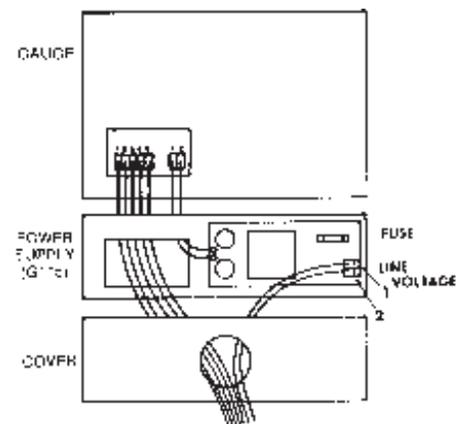


Fig. 8

NOTE: Power supply (G115 option) can be operated with either 115 VAC or 230 VAC. Units shipped from the factor are preset to be used with 115 VAC. To modify the input voltage to 230 VAC, refer to the component layout in Figure 9.

115 VAC Remove JU-3
 Install JU-2 and JU-1

230 VAC Remove JU-2 and JU-1
 Install JU-3

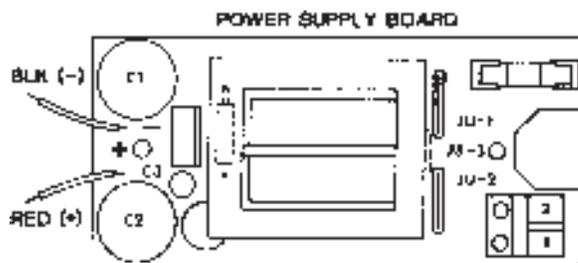


FIG. 9

2.5 Alarm Manual/Automatic Reset Option

Units incorporating alarms are shipped set for automatic alarm: i.e., the alarm relay resets automatically when the pressure drops back below the setpoint.

If manual reset is desired, remove the factory installed jumper between terminals 4 and 5 (Reset) on the terminal block. Replace jumper with a normally open pushbutton between the two terminals.

2.6 Alarm Hi/Low Modification (alarm units only)

Units equipped with alarms are adjustable to provide either a Hi or Low alarm setting. Units shipped from the factory are set for “Hi” alarm, i.e., alarm relay trips upon ascending pressure. To modify unit for a low alarm, remove gauge face per Figure 5. Remove Jumper on signal conditioning board and reinstall per Figure 10.

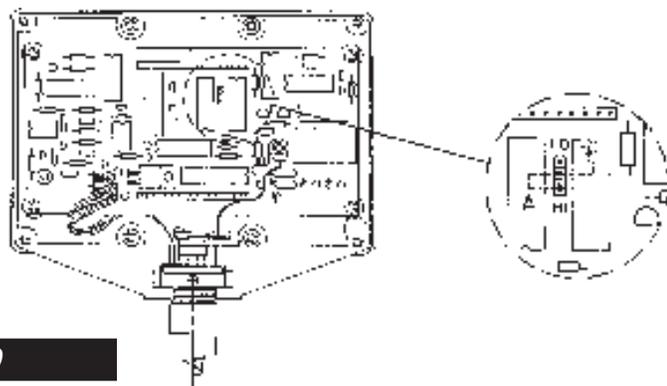


FIG. 10

2.7 Alarm Relay Ratings

The alarm relay is rated at 5 amperes at 115 VAC, 230 VAC and 30 VDC. Relay rating is 0.6 amperes at 110 VDC.

2.8 Power Supply Requirements

The PG500 Series pressure gauge operates on 12 VDC +/- 5% with a typical current draw of 25 mA for the non-alarm version and 60 mA for the alarm model (50 and 100 mA maximum). Any 12 VDC supply meeting the requirements may be used.

3. OPERATION

3.1 Zero Adjustment (all models)

After wiring and mounting have been completed, calibration of the instrument will be necessary. (Ideally this will be done with the extruder barrel heated to normal operating temperature). With the gauge under zero load, zero the unit using the zero adjust screw located on the front panel. Turn the screw counter-clockwise until the off scale indicator illuminates, then clockwise slowly until this indication ceases. The unit will now be calibrated.

3.2 Alarm Adjustment (PG551-PG552)

Units equipped with an alarm are adjusted via the front panel using the alarm set screw. Rotation of this screw controls the relay contact closure setpoint. The visual yellow bar graph indicates the setpoint position. Relay will trigger when pressure exceeds alarm setpoint.

3.3 Thermocouple Removal & Installation (TPG543 & TPG553)

Units designated with the prefix TPG contain an integral thermocouple. To remove the thermocouple, loosen the set screw on the side of the probe as shown in Figure 11. Without twisting, pull the thermocouple probe stem carefully out of the probe.

To install the thermocouple, align the slot on the probe stem with the pressure capillary tube and press into the probe until the thermocouple shoulders against the probe. Lock the thermocouple in place by tightening the set screw.

4. INTEGRAL POWER SUPPLY (P/N 496309 OR OPTION G115)

If your gauge is already equipped with the 12 VDC power supply (Option G115), the wiring is done as follows:

1. Remove the power supply cover and install strain relief.
2. Connect the 115 or 230 VAC power supply leads to Terminals 1 and 2 on the terminals 1 and 2 on the terminal block at the end of the power supply printed circuit board and feed these through the strain relief. (See Fig. 6)
3. If the gauge is equipped with an alarm, attach the appropriate leads to the five terminals on the terminal strip on the gauge printed circuit board and feed these through the strain relief.
4. Replace the power supply cover and adjust the wires for service loop. (See Fig.8).

If you are adding a power supply to an existing gauge, the wiring is done as follows:

1. Remove from the gauge body the plate holding the strain relief assembly by removing four screws. Detach the two 12 VDC leads going to the terminals on the short terminal block on the gauge printed circuit board and remove them from the strain relief assembly. 2. Remove power supply cover from base and install strain relief.
3. Attach the power supply base to the gauge body using the four tapped inserts and the four screws supplied.
4. Install a black (-) wire from the power supply assembly to Terminal 1 on the short terminal block on the gauge printed circuit board. Install a red (+) wire from the power supply board to Terminal 2 on the gauge printed circuit board. (Figs. 8 & 9)
5. If the gauge is equipped with an alarm, attach the appropriate leads to the five terminals on the terminal strip on the gauge printed circuit board and feed these through the strain relief.
6. Connect the 115 or 230 VAC power supply leads to Terminal 1 and 2 on the terminal block at the end of the power supply printed circuit board and feed these through the strain relief. (Figs. 8 & 9)
7. Replace the power supply cover, adjust the wire for service loop. (Fig. 8)
8. Replacement fuse Dynisco P/N 927017, Littlefuse P/N 217.063 or equivalent.

5. REMOVAL

Because the gauge incorporates a sensitive lower sensing diaphragm, removal of the instrument from the mounting hole should be attempted only with the extruder barrel hot. Failure to do could cause damage due to frozen polymer in the mounting hole adhering to the diaphragm.

6. CLEANING

Once the unit is removed from the mounting hole, the stem can be wiped clean with a dry cloth. *Do not attempt to clean the sensing diaphragm with a wire brush, screwdriver, etc.

7. WARRANTY AND SERVICE

This equipment is sold subject to the mutual agreement that it is free from defects of material and construction. Our liability in connection with it shall be limited to the replacement or repair, without charge at our factory, of any material or construction defect that becomes apparent within two years from the date that the products are shipped. We are not liable for damages of any kind arising from the installation or use of our products or both.

Damaged transducers should be returned to:

DYNISCO INSTRUMENTS

38 Forge Parkway

Franklin, MA 02038

Attn: Repair Dept. RA # _____

Please call for a Return Authorization Number before returning product to Dynisco.

Questions concerning warranty, repair cost, and delivery should be directed to the Dynisco Repair Department, telephone number 508-541-9400 or E-mail: repair@dynisco.com



For
technical
assistance,
call:
800-221-2201

DYNISCO INSTRUMENTS

38 Forge Parkway

Franklin, MA 02038

Tel.: 508-541-9400

Fax: 508-541-9436