

## CHEMICAL GAUGE GUARDS Series GGS

In the following text, the word “Instrument” refers to gauges, transducers, and sensors, used in conjunction with the gauge guard

### INSTALLATION & MAINTENANCE INSTRUCTIONS

#### A. IMPORTANT – BEFORE INSTALLING

Gauge guards will protect gauges and sensors from contact with chemicals, when properly installed and used within the recommended ranges of pressure, temperature, and chemical compatibility. The ultimate determination of material compatibility is previous successful use in the same application. Call our Technical Support for information about your application.

#### MAXIMUM GAUGE PRESSURE RATING (PSI) AT GIVEN FLUID LINE TEMPERATURES\* & VISUAL IDENTIFICATION OF BODY MATERIAL

LIQUID LINE TEMPERATURES**	77°F 22°C	104°F 40°C	140°F 60°C	158°F 70°C	185°F 85°C	212°F 100°C	239°F 115°C	284°F 140°C	PART# SUFFIX	COLOR
GEON PVC	0-250 PSI	0-177 PSI	0-57 PSI	N/R	N/R	N/R	N/R	N/R	-PV	Dark Gray
CORZAN® CPVC	0-250 PSI	0-200 PSI	0-140 PSI	0-95 PSI	0-60 PSI	N/R	N/R	N/R	-CP	Light Gray
NATURAL POLYPRO	0-160 PSI	0-130 PSI	0-80 PSI	0-65 PSI	0-40 PSI	N/R	N/R	N/R	-PP	Translucent White
GLASS-FILLED POLYPROPYLENE	0-160 PSI	0-160 PSI	0-160 PSI	0-100 PSI	0-60 PSI	N/R	N/R	N/R	-GP	Opaque White/Matte
KYNAR® PVDF	0-250 PSI	0-200 PSI	0-150 PSI	0-130 PSI	0-120 PSI	0-90 PSI	0-50 PSI	0-35 PSI	-PF	Opaque White/Gloss

\* Measurements conducted at a maximum ambient temperature of 80°F (26°C).

\*\* If actual fluid line temperature is in between listed ratings, use the next column to the right for maximum recommended gauge.

**Caution:** Plastic materials degrade in ultraviolet (UV) light or sunlight.

**Caution:** Instruments filled and installed at Plast-O-Matic are tested to the manufacturer's specified accuracy. Instrument accuracy is generally reduced by the guard, especially for low pressure range gauges.

**Caution:** Do not apply pressure unless an instrument is installed. Release process pressure before removing the instrument from the guard.

#### B. MAXIMUM PRESSURE RATING

Series GGS Gauge Guards are rated for the full pressure range of the instrument supplied **when the instrument is factory installed**. When supplied without an instrument, they are rated according to the pressure/temperature de-rating chart printed in the catalog also available at:

[www.plastomatic.com/ggscatalog.pdf](http://www.plastomatic.com/ggscatalog.pdf).

#### C. FILLING & INSTRUMENT INSTALLATION

**Fill Liquid** – Factory filled instruments are filled with an FDA approved Mineral Oil. Water can be used for room temperature applications. Guards that have an EPDM diaphragm must be filled with an EPDM compatible liquid such as Glycerin or DI water.

**Gauge** – Any threaded gauge, transducer, or pressure switch may be installed, although a user supplied device should be checked for leakage at the O-ring seal before assembly. **Do not use thread sealant or tape on the instrument; the instrument will seal on the O-ring.**

**Face Fill Liquid** – Factory filled gauges can be filled with an FDA approved mineral oil or USP Food/Pharma grade glycerin.

### FILL AND INSTRUMENT INSTALLATION PROCEDURE, ¼" NPT INSTRUMENTS

1. Install the small O-ring in the guard. Pour fill liquid into the guard to about the middle of the threads.
2. Tilt and tap the guard gently to remove as many bubbles as possible. (A small amount of trapped air is acceptable).
3. Fill the instrument as much as possible. Use a small wire or needle to get the bubbles out. If more complete filling is needed, use the vacuum or pressure fill procedure below.
- 3a. **Vacuum Instrument Fill Procedure** - (instrument must be rated for full vacuum). Connect the instrument at the bottom of a reservoir of fill liquid. Draw a vacuum on the top of the reservoir for about 10 seconds. Look for air bubbles coming out of the valve. Release the vacuum and remove the instrument. For a typical fill station description, contact Technical Support.
- 3b. **Pressure Fill Procedure** – As above, except use 10 to 15 PSI pressure, wait 15 seconds after releasing pressure, repeat several times.
4. Screw in the instrument finger tight. The instrument should compress the O-rings and then bottom out on the stainless steel insert that is molded into the guard body. Do not over tighten, a torque of 10 to 30 inch pounds (1 to 3 Nm) is adequate. **To align the instrument to face "Forward", tighten the process side.** If leakage occurs, contact factory Technical Support for advice.
5. Pressure Test – Apply pressure to the process end of the guard. Check for accurate readings at zero and the maximum instrument pressure.
6. If the instrument does not read zero after following the instrument installation procedure, remove the gauge guard from the process side and drain the process fluid. Loosen the instrument from the upper housing enough to release some of the oil through the ¼" NPT threads. Using a Q-tip or similar soft, blunt instrument, gently push up slightly on the diaphragm through the ½" NPT opening on the bottom of the gauge guard until a very small amount of oil comes out from the ¼" NPT threads. While applying the pressure on the diaphragm hand tighten the instrument to make the seal. If the instrument still does not read zero follow the same procedure and push the diaphragm slightly more. Reattach to the process line when the instrument reads zero.  
**Note: This adjustment requires very light pressures on the sensitive diaphragm and this adjustment should never be made with a sharp or hard object.**
7. Clean off residual fill liquid with alcohol.



### D. INSTALLATION – PROCESS SIDE

**Threaded Connections** – A suitable thread sealant (for example, PTFE tape) should be applied to male tapered threads to assure a “leak-tight” seal. The assembly need only be made “hand tight” followed by up to a quarter (1/4) turn with a strap wrench. Do not over tighten or use pipe wrenches on plastic pipe and components.

**Non-Threaded Connections** - For solvent cementing or heat fusion, follow instructions supplied with the cement or fusion equipment, or contact your distributor.

**Caution:** Connections should be made only to plastic fittings; metal pipe should only be installed with an intervening plastic nipple. Metal pipe and straight threaded pipe tend to cut, stretch, and distort the plastic bodies, which could result in cracking or leaking over time.

## E. MAINTENANCE

Plasto-O-Matic recommends keeping a spare diaphragm seal available for repairs. Seal life will vary in applications due to cycles, temperatures, pressures, chemicals, and concentration. Based on the application, a periodic inspection and maintenance plan should be established.

### Series GGS (GGTS/GGVS) Gauge Guards

#### Diaphragm Part Numbers:

PTFE: 1017-T  
 Viton: 1017-V  
 EPDM: 1017-EP

#### Body Materials:

PVC, PVDF, Glass-filled Polypropylene  
 CPVC, Natural Polypro

#### Connections:

½" NPT female process  
 ¼" NPT female gauge  
 Spigot & other process  
 connections optional

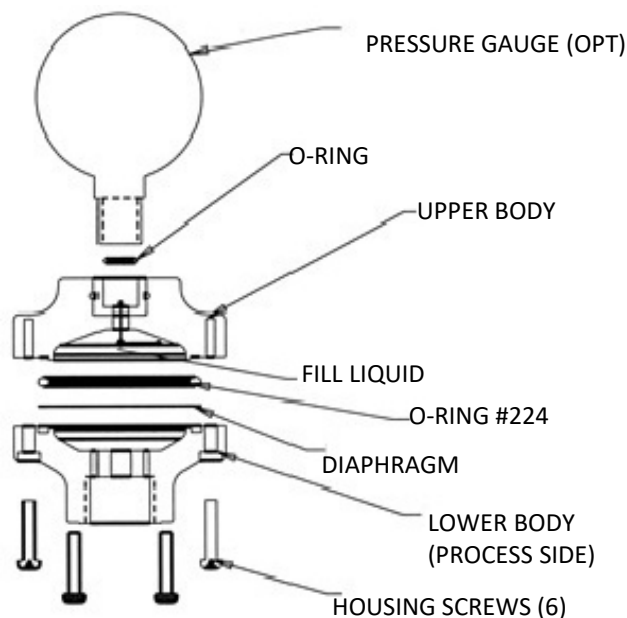
#### Options:

Lower Mount Gauge installed and filled  
 (standard option)  
 Center Back Mount Gauge installed and filled  
 (alternate)  
 Removable Housing  
 Acrylic Gauge Shield  
 ½" NPT female gauge connection

For other connections & materials, consult factory

### Premium Replacement Gauges

Range	Lower Mount Gauge	Center Back Mount Gauge
- 30 – 0" Hg	V30L-SS	N/A
0 – 15 PSI	P015L-SS	P015C-SS
0 - 30	P030L-SS	P030C-SS
0 - 60	P060L-SS	P060C-SS
0 - 100	P100L-SS	P100C-SS
0 - 160	P160L-SS	P160C-SS
0 - 200	P200L-SS	P200C-SS



This O-Ring, #011 is supplied for sealing the instrument to the Gauge Guard. See figure. Drop into instrument port before filling guard. Factory installed instruments already have the O-ring in place.

