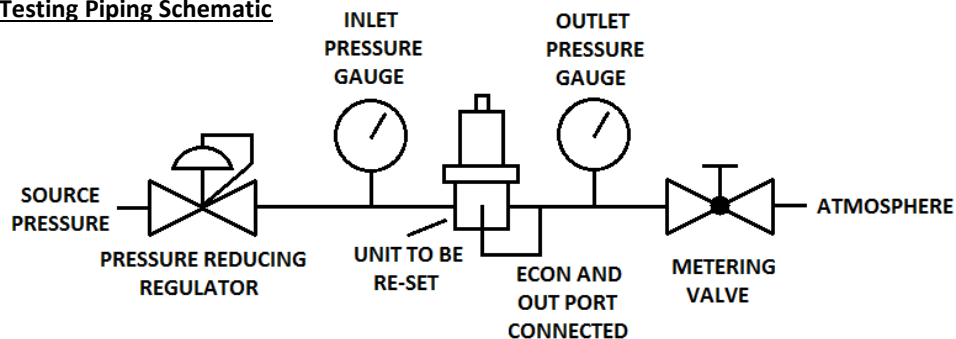


**Caution:** These instructions should be thoroughly read and understood before attempting any testing. Consult factory with any questions.

**Warning:** GEM Series regulators are supplied cleaned for use in Oxygen Service. Qualified personnel must perform maintenance work in a clean, dry area. Oil, grease or non-oxygen compatible materials must not be allowed to come in contact with any equipment used in oxygen service. Use extreme care to ensure hands, tools, clothing and work area are completely free of dirt, oils, and foreign matter to prevent contamination of component parts. Components used in the service with any other gas cannot be put into oxygen service. Regulators should be removed from the cylinder for repair. **Generant assumes no responsibility or liability for products repaired in the field.**

**Generant recommends regulators be reset to desired pressure on the cylinder, if possible. When re-setting regulators on a test bench, it is important that the ECON and OUTLET PORT are pneumatically connected. The following is a step by step guide for how to safely and effectively set a GEM Series combo regulator.**

### Recommended Bench Testing Piping Schematic



### Bench Re-Setting Instructions:

1. Ensure that regulator Adjustment Bolt is backed out.
2. Connect Inlet port to regulated source pressure. (See Recommended Piping Schematic)
3. Connect Outlet and Economizer ports together with a downstream metering valve to atmosphere. (See Schematic)
4. Increase inlet pressure to 10 PSI higher than desired regulator set point. (e.g. 135 PSI Inlet Pressure to set regulator at 125 PSI). If gauge configuration does not allow resolution required to do this, use standard inlet pressures listed below.
5. Tighten down Adjustment Bolt until the outlet pressure is at desired set pressure on the label is reached.
6. Open metering valve slightly so that small amount of flow is released on the outlet (you should barely be able to feel it).
7. Adjust inlet and outlet pressures, if necessary, so that regulator is at set pressure and inlet pressure is 5 PSI higher in this slightly flowing condition.
8. While securing Adjustment Bolt with a 7/16" wrench, tighten the locknut to lock the adjustment bolt in place.
9. Open and Close the downstream metering valve to confirm that regulator is closing at just above desired set pressure.

### Optional Standard Inlet Pressures:

The GEM Series regulator is a non-balanced type regulator. This means that set pressure will be affected by inlet pressure. When using too high of an inlet pressure to set the device, some lower setpoints will be difficult or impossible to accurately achieve.

If your gauge configuration does not allow you to accurately set inlet pressure at 10 PSI higher than desired outlet pressure (as described in Step 4 above), you can use the following Standard Inlet Pressures per spring range:

B Spring Range: 225 PSI

C Spring Range: 375 PSI

D Spring Range 525 PSI



# Series GEM Regulator User Instructions

### Scope:

These User Instructions are applicable for Generant Series GEM Regulators.

### Intended Use:

The intended use for Series GEM regulators is a combination pressure build - economizer regulator for cryogenic liquid cylinders.

### Technical Data:

Series GEM Regulators are 100% factory tested for leakage and factory pre-set. Every regulator is marked with Manufacturer, Part Number, Factory Set Pressure, Pressure Range, Date Code, and Maximum Inlet Pressure. Ports are also labeled (IN, OUT, and ECON). Customer may specify a set pressure in the range listed below or regulators will be factory pre-set to a default set pressure in the range.

Maximum Inlet Pressure: 600 PSIG (42 Bar)

Outlet Pressure Ranges:

“B” Spring: 50 – 200 PSIG

“C” Spring: 150 – 350 PSIG

“D” Spring: 300 – 500 PSIG

### **⚠ WARNING**

Generant Series GEM Regulators are supplied “Cleaned for Oxygen Service” standard in heat sealed in poly bags. Once removed from the bag, integrity of this cleaning has been compromised. Proper handling should be used to ensure the integrity and cleanliness of the system.

### Operating Instructions:

1. Ensure that the regulator is installed according to the port engraving on the regulator body and the labeled connections on the liquid cylinder.
2. For bench setting instructions, please refer to Generant document EN-FR-160. IMPORTANT: When setting regulators off the cylinders, outlet and economizer ports must be connection to avoid internal damage to the regulator.
3. To adjust regulator, refer to the table below to adjust to desired pressure build setpoint from Factory Pre-Set pressure. Turn regulator adjusting screw (7/16” hex) clockwise to increase pressure and counter-clockwise to decrease pressure.

\*NOTE: Values in the table are for reference only.

Actual pressure adjustments will vary slightly.

4. Once desired adjustment is made, the regulator can be locked by tightening the lock nut on the adjustment screw.

SPRING	RANGE (PSIG)	PSI/TURN (APPROX)
B	50 - 200	28
C	150 - 350	36
D	300 - 500	56

### **Safe Component Selection**

When selecting a component, the total system design must be considered to ensure safe, trouble free performance. Component function, materials compatibility, adequate ratings, proper installation, operation, cleanliness and maintenance are the responsibility of the system designer and user.