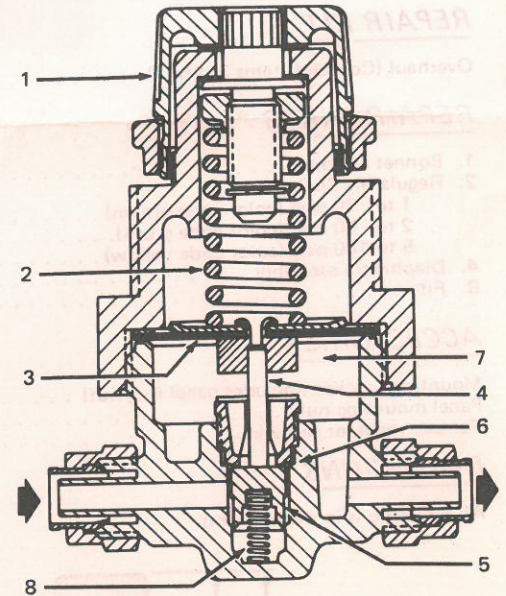


# MINIATURE REGULATOR

## FOR WATER AND COMPRESSED AIR SERVICE

### OPERATION

The working parts of the pressure regulator are the adjusting knob (1), regulating spring (2), diaphragm (3), valve pin (4) and valve (5). When the adjusting knob is rotated fully counterclockwise, no force is applied to the regulating spring, and the valve is held closed by the combined forces of the primary (inlet) pressure and valve spring (8). Clockwise rotation of the adjusting knob compresses the regulating spring, which applies a downward force on top of the diaphragm. The diaphragm and valve pin move downward, forcing valve off its seat (6), which allows fluid to flow thru the regulator to the downstream system. Secondary (outlet) pressure increases in the downstream system and in the sensing chamber (7), and applies an upward force on bottom of diaphragm. The valve, valve pin, and diaphragm move upward, compressing the regulating spring. Upward movement stops when the force exerted by secondary pressure on the lower side of the diaphragm balances the spring force on the upper side. When there is no downstream flow demand, the balance of forces occurs with the valve closed. When there is downstream flow demand, the balance of forces occurs when the valve opens sufficiently to compensate for demand, thus maintaining the desired secondary pressure.



### SPECIFICATIONS

#### RATED OPERATING CONDITIONS —

- INLET PRESSURE: 250 psig (17.2 bar) maximum
- TEMPERATURE RANGE —
- WATER SERVICE: 35 to 150°F (2 to 66°C)
- COMPRESSED AIR SERVICE: 0 to 150°F (-18 to 66°C) with dewpoint less than air temperature below 35°F (2°C)

TYPE: Nonrelieving diaphragm

MAIN PORTS: 1/4" Imperial Eastman Polyflow tubing connections.

AUXILIARY PORTS: None

#### OUTLET PRESSURE ADJUSTMENT RANGE\* —

- MODEL 11-044-001: 1 to 10 psig (.07 to .69 bar)
- MODEL 11-044-002: 2 to 50 psig (.14 to 3.45 bar)
- MODEL 11-044-003: 5 to 100 psig (.35 to 6.90 bar)

\*Outlet pressure adjustment ranges are not minimum or maximum pressure limits. Regulators can be adjusted to zero psig outlet pressure and, generally, to pressures in excess of those specified. The use of these regulators to control pressures outside of the specified ranges is not recommended.

### MATERIALS OF CONSTRUCTION

Body . . . . .	Noryl (Polyphenylene Oxide)
Bonnet, Valve Seat . . . . .	Acetal Plastic
Valve . . . . .	Stainless Steel with EPDM (ethylene-propylene-diene) Seal
Diaphragm Ass'y . . . . .	Stainless Steel and Buna-N

### WARNING

THESE REGULATORS ARE INTENDED FOR USE IN COMPRESSED AIR OR WATER SYSTEMS ONLY. THEY MUST NOT BE USED WHERE PRESSURE OR TEMPERATURE MAY EXCEED RATED OPERATING CONDITIONS. SEE SPECIFICATIONS.

BEFORE USING WITH FLUIDS OTHER THAN COMPRESSED AIR OR WATER, OR FOR USE WITH LIFE SUPPORT SYSTEMS, CONSULT C. A. NORNGREN CO. FOR APPROVAL.

USE A DOWNSTREAM PRESSURE RELIEF VALVE IN SYSTEMS THAT COULD BE DAMAGED OR FAIL IF REGULATOR OUTLET PRESSURE SHOULD APPROACH INLET PRESSURE.

### INSTALLATION

Install regulator in fluid line using 1/4" plastic tubing. System piping should be same size as regulator porting, and fluid flow must be in direction of arrow on regulator body. Regulator may be installed at any angle.

### ADJUSTMENTS

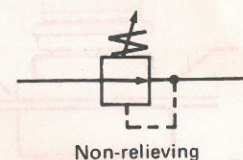
Before turning on system pressure, turn adjustment knob counterclockwise until all load is removed from regulating spring. Turn on system pressure and then turn adjustment knob clockwise until the desired outlet pressure is reached.

Turn the knob clockwise to increase, counterclockwise to decrease outlet pressure.

To avoid minor readjustment after making a change in regulator pressure setting, always approach the desired pressure from a lower pressure. When reducing from a higher to a lower setting, first reduce to some pressure less than that desired and then increase to the desired point. Make pressure reductions with some fluid flow in the system. If made under no flow (dead-end) conditions, the regulator will trap the over-pressure in the downstream line.

When the desired pressure setting is reached, push outer ring on adjusting knob downward to lock setting. To release, pull ring upward. Pressure setting can be made tamper resistant by installing a seal wire (see Accessories) in groove immediately above locking.

### GRAPHIC SYMBOL



**NORNGREN**  
 LITTLETON, COLORADO  
 © C. A. NORNGREN CO., 1978





## MAINTENANCE

Regulator can be disassembled without removal from fluid line. To disassemble, shut off fluid supply to regulator and reduce pressure at inlet and outlet ports to zero. Turn adjustment knob counterclockwise until all load is removed from regulating spring. Unscrew bonnet (1), then remove regulating spring (2), diaphragm slip ring (3) and diaphragm assembly (4). Unscrew valve seat (5) using a 3/8" socket, then remove valve (6) and valve spring (7).

Clean parts using warm water and soap. Inspect all parts carefully. Replace any damaged parts.

At reassembly, torque valve seat (5) to 2-to-3 inch-pounds and bonnet (1) to 40-to-50 inch pounds.

## REPAIR KIT

Overhaul (Contains items 3 thru 7) . . . . . 3407-59

## REPAIR PARTS

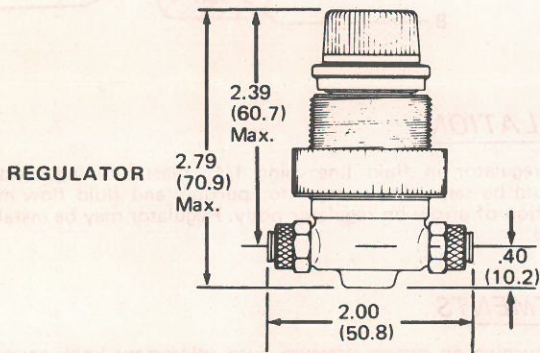
- 1. Bonnet assembly . . . . . 2950-54
- 2. Regulating Spring
  - 1 to 10 psig (color code brown) . . . . . 2069-02
  - 2 to 50 psig (color code green) . . . . . 613-03
  - 5 to 100 psig (color code yellow) . . . . . 2960-04
- 4. Diaphragm assembly . . . . . 3410-48
- 8. Fitting . . . . . 3303-01

## ACCESSORIES

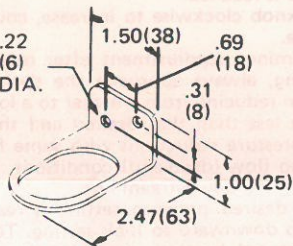
- Mounting bracket (includes panel mtg nut) . . . . . 18-025-003
- Panel mounting nut . . . . . 2692-01
- Tamper resistant seal wire . . . . . 2117-01

## DIMENSIONS

All dimensions in inches (mm).

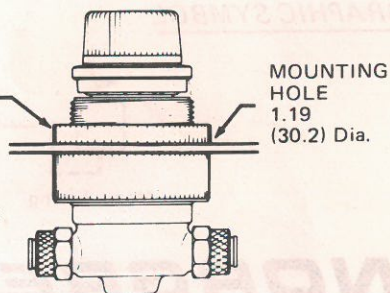


18-025-003 MOUNTING BRACKET ACCESSORY

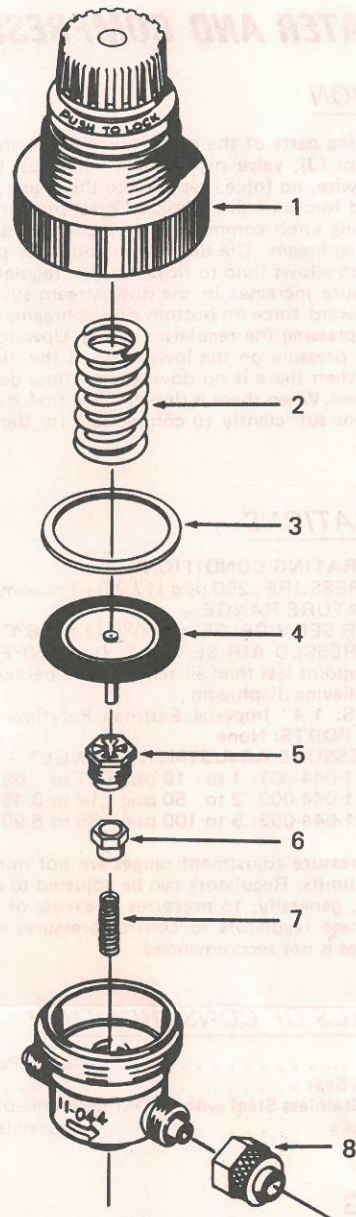


2692-01 PANEL MOUNTING NUT ACCESSORY

PANEL MOUNTING HOLE



# MINIATURE REGULATOR



**C. A. NORGREN CO.**

LITTLETON, COLORADO

80120 / 303-794-2611

Printed in U.S.A.