NORGREN

# R91

## Installation & Maintenance Instructions

## Pressure Regulator
## R91★ - ★★★ - ★★★

**Application**
G....Industrial air, non-potable water
W... Potable water, deionized water

**Port**
2.....1/4"

**Thread Form**
A ..PTF
B ..ISO Rc taper
G ..ISO G parallel

**Adjustment**
K ..Knob

**Diaphragm**
N ..Non-relieving
R ..Relieving†

**Spring (Outlet Pressure Range) ***
E.....5 to 50 psig (0.3 to 3.5 bar)
L.....5 to 125 psig (0.3 to 8.6 bar)

**Gauge**
G ....With**
N ....Without

* Outlet pressure can be adjusted to pressures in excess of, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.
** Gauge with NSF approved materials for use with the R91W not available.
† Relieving diaphragm not available with the R91W regulator.

### TECHNICAL DATA

Fluid:
R91G: Compressed air and non-potable water
R91W: Potable water, deionized water
Maximum pressure: 150 psig (10 bar)
Operating temperature:
Water service: +35° to +125°F (+2° to + 52°C)
Air service: 0° to +125°F (-20° to + 52°C) *
* When used in air service, air supply must be dry enough to avoid ice formation at temperatures below +35°F (+2°C).
Typical flow:
Compressed air service: 24 scfm (11 $dm^3/s$) at 145 psig (10 bar) inlet pressure, 90 psig (6.3 bar) set pressure and a droop of 15 psig (1 bar) from set.
Water service: 1.75 gpm (6.6 liters per minute) at 100 psig (7 bar) inlet pressure, 60 psig (4 bar) set pressure and a droop of 15 psig (1 bar) from set.
Gauge Ports:
1/8" PTF with PTF main ports
R1/8 with ISO Rc main ports
R1/8 with ISO G main ports
Materials:
Body and bonnet: Acetal
Valve:
R91G: Brass/nitrile
R91W: Stainless steel/food grade EPDM
Valve seat: Acetal
Valve seat o-ring:
R91G: Nitrile
R91W: Food grade EPDM
Diaphragm:
R91G: Acetal/nylon inserted nitrile
R91W: Acetal/nylon inserted nitrile, food grade
Gauge port plugs: Polypropylene (furnished only with PTF-ported units)

### REPLACEMENT ITEMS

Service Kit (contains items circled on exploded view)
R91G, Relieving .....3407-95
R91G, Non-relieving.....3407-94
R91W, Non-relieving .....3407-93
Tamper resistant knob and screw .....18-001-091

### PANEL MOUNTING DIMENSIONS

Panel mounting hole diameter: 1.19" (30 mm)
Panel thickness: 0.06" to 0.25" (2 to 6 mm)

### INSTALLATION

1. Install regulator in line at any angle -
   - upstream of cycling valves,
   - with fluid flow in direction of arrow on body,
   - as close as possible to the device being serviced.
2. Connect piping to proper ports using inert pipe thread sealant such as Teflon tape on male threads only. Do not allow sealant to enter interior of regulator.
3. Install a pressure gauge or plug the gauge ports. Gauge ports can also be used as additional outlets for regulated air or water.
4. Install a Norgren general purpose filter upstream of the regulator when used in air service.

### ADJUSTMENT

1. Turn adjustment (1) clockwise to increase and counterclockwise to decrease pressure setting.
2. 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, then bring up to the desired pressure.

**NOTE**

**With non-relieving regulators, 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.**

3. Push knob down to lock pressure setting. Pull knob up to release. Install tamper resistant knob and screw (see ***Replacement Items***) to make setting tamper resistant.

### DISASSEMBLY

1. Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.
2. Turn adjustment (1) fully counterclockwise.
3. Unit can be disassembled without removal from fluid line.
4. Disassemble in general accordance with the item numbers on exploded view.

### CLEANING

1. Clean parts with warm water and soap.
2. Rinse and dry parts. Blow out internal passages in body with clean, dry compressed air.
3. Inspect parts. Replace those found to be damaged.

### ASSEMBLY

1. Wet o-ring (9) with clean water before tightening seat.
2. Assemble the unit as shown on the exploded view.
3. Torque Table

| Item | Torque in Pounds-Inch (Nm) |
|---|---|
| 8 (valve seat) | 3 to 5 (0.3 to 0.6)** |
| 2 (bonnet) | 65 to 75 (7 to 8) |

** Diaphragm valve pin (7) musts slide freely through the valve seat after seat is torqued into body.

### WARNING

These products are intended for use with water or in industrial compressed air systems. Do not use these products where pressures and temperatures can exceed those listed under ***Technical Data***.

If outlet pressure in excess of the regulator pressure setting could cause downstream equipment to rupture or malfunction, install a pressure relief device downstream of the regulator. The relief pressure and flow capacity of the relief device must satisfy system requirements.

The accuracy of the indication of pressure gauges can change, both during shipment (despite care in packaging) and during the service life. If a pressure gauge is to be used with these products and if inaccurate indications may be hazardous to personnel or property, the gauge should be calibrated before initial installation and at regular intervals during use.

Before using these products with fluids other than air or water, or for life-support systems, consult Norgren.