

Port
B....1-1/2"
C....2"

Relief Type
R....Relieving
N....Non relieving *

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

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

* Do not use a feedback type pilot regulator with a non relieving R18 regulator.

TECHNICAL DATA

Fluid: Compressed air
Inlet pressure range: 0,7 bar (10 psig) minimum to 31 bar (450 psig) maximum
Operating temperature: -34° to +80°C (-30° to +175°F). Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).
Typical flow with 0,7 bar (100 psig) inlet pressure, 6,3 bar (90 psig) set pressure, and a droop of 1 bar (15 psig) from set: 944 dm³/s (2000 scfm)
Gauge and pilot ports:
1/4" PTF with PTF main ports
G1/4 with ISO G main ports
R1/4 with ISO Rc main ports
Exhaust port:
3/4" PTF with PTF main ports
G3/4 with ISO G main ports
R3/4 with ISO Rc main ports
Materials:
Body, Bonnet, Bottom Plug, Valve: Aluminum
Elastomers: Nitrile

REPLACEMENT ITEMS

R18 service kit (items circled exploded view).....5945-40
Exhaust muffler
3/4 PTFMB006A
R3/4MB006B

INSTALLATION

- Shut off air pressure. Install regulators in air line -
 - upstream of lubricators and cycling valves.
 - at any angle.
 - install the R18 pilot operated regulator as close as possible to the device being serviced.
 - install the pilot regulator at any convenient, accessible location.
- Use pipe thread sealant on male threads only when making the following pipe connections. Do not allow sealant to enter interior of regulators.
 - Connect inlet and outlet air lines to R18 main ports with air flow in direction of arrow on body.
 - Connect inlet and outlet air lines to pilot regulator main ports. The inlet port of the R40 and R41 is marked **IN**, and the outlet port is marked **OUT**. The direction of air flow thru the 11-104 pilot is indicated by an arrow on the bottom of the body. If desired, inlet air for the pilot regulator may be tapped from the R18 regulator at the R18 port marked **PRI**. When the **PRI** port is used to supply air to the pilot regulator, inlet pressure to the R18 must not exceed the maximum rated pressure of the pilot regulator.
 - Connect the outlet of the pilot regulator to the port marked **PILOT** on the R18 regulator. This is the pilot pressure line.
- Special Instructions for a Feedback Pilot Regulator:**
Connect one end of the feedback line to the feedback port on the pilot regulator. The feedback port on the R41 is marked **FDBK**. The 11-104 has two 1/8" PTF feedback ports. Plug the unused feedback port. Connect the other end of the feedback line to a gauge port on the R18 or, if maximum precision pressure regulation is desired, to the application point downstream of the R18. Keep the feedback line as short as possible and unrestricted. Use 1/4" or 3/8" OD copper tube for the feedback line. Plug unused gauge ports.

Warning - Feedback Pilot Regulators

Norgren manufactures two feedback pilot regulator types (the R41 and the 11-104). Use the R41, the 11-104-002, or the 11-104-003 feedback pilot regulator to control outlet pressures greater than 100 psig (7 bar). Use the Norgren 11-104-001 feedback pilot regulator to control outlet pressures at or less than 100 psig (7 bar).

The feedback line must sense R18 outlet pressure and must be connected before turning on air pressure. If the feedback line is not connected, R18 outlet pressure will rapidly increase to inlet pressure when the feedback pilot adjusting knob is turned clockwise.

- Install a pressure gauge in a gauge port on the R18, or to the application point downstream of the R18. Do not connect the gauge to the pilot pressure line, as this pressure is not the same as the R18 outlet pressure. Locate the gauge next to the pilot regulator. Plug unused gauge ports.
- Install a general purpose filter upstream of the regulator.

- Install a Norgren muffler (see **Replacement Parts**) in the exhaust port of the R18 regulator. Installation of a muffler will reduce work area noise and protect R18 internal parts from contamination.

Warning

Do not plug exhaust port of relieving type regulators. Relief feature will fail if exhaust port is plugged.

ADJUSTMENT

- Before applying inlet pressure to regulator, turn pilot regulator adjustment counterclockwise to remove all force on regulating spring.
- Apply inlet pressure, then turn pilot regulator adjustment clockwise to increase and counterclockwise to decrease 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, then bring up to the desired pressure.

NOTE

With non-relieving regulators, make pressure reductions with some air flow in the system. If made under no flow (dead-end) conditions, the regulator will trap the over-pressure in the downstream line.

DISASSEMBLY

- Regulator can be disassembled without removal from air line.
- Shut off inlet pressure to pilot regulator and to the R18. Reduce pressure in inlet and outlet lines to zero.
- Turn pilot regulator adjustment counterclockwise to remove all force on regulating spring.
- Disassemble the R18 in general accordance with the item numbers on exploded view.

CLEANING

- Clean parts with warm water and soap
- Rinse and dry parts. Blow out internal passages in body (22) with clean, dry compressed air.
- Inspect parts. Replace those found to be damaged.

ASSEMBLY

Note

Early and current diaphragms (16, 17) are not interchangeable. When replacing a diaphragm, make sure the new one is identical to the used one. In addition, the bonnet (11) used with the current diaphragm (17) has a hole drilled on the inside to accept the upper piston on the diaphragm.

- Lubricate o-rings and surfaces in contact with o-rings with a light coat of good quality o-ring grease.
- Lubricate threads on bottom plug (24) with a small amount of anti-seize compound.
- Assemble the unit as shown on the exploded view. Hold diaphragm (16, 17) against upper travel limit, then apply increasing torque to the 10 bonnet screws in a crisscross pattern. Apply final torque of 13,6 to 14,7 Nm (120 to 130 inch-pounds). Tighten bottom plug (24) hand tight.

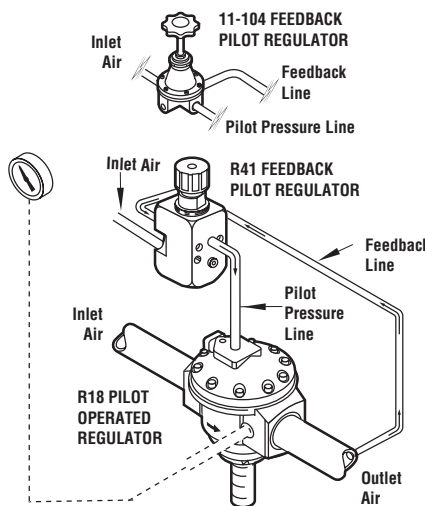
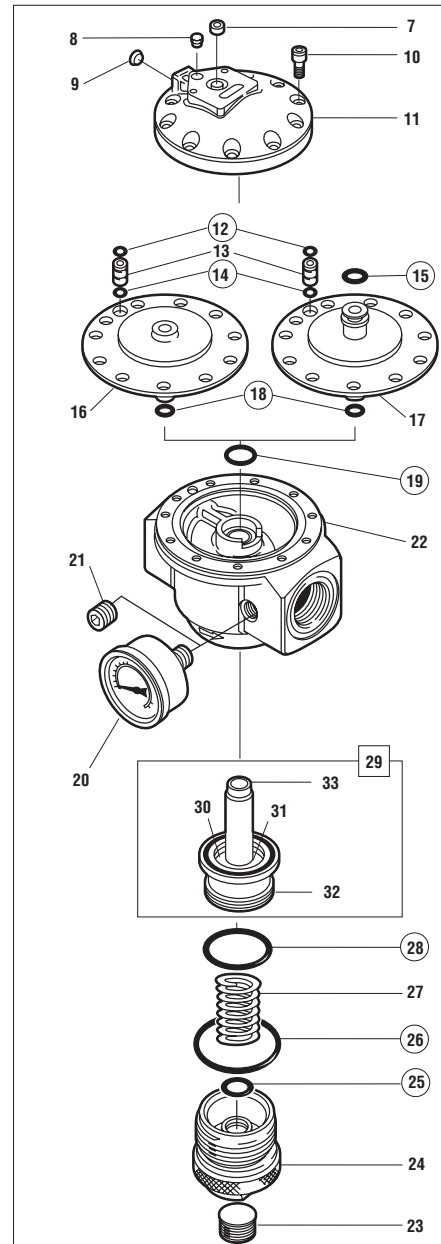


Figure 1. Feedback Pilot Installation

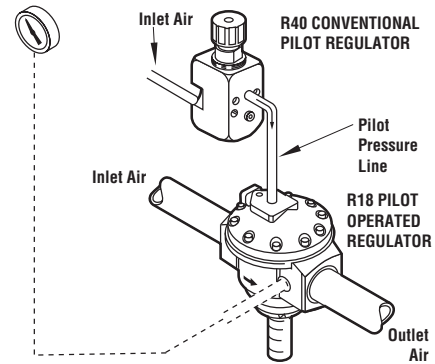


Figure 2. Conventional Pilot Installation

WARNING

These products are intended for use in industrial compressed air systems only. 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, for non industrial applications, or for life-support systems consult Norgren.