

<b>Port</b>	<b>Integral Pilot Regulator Type</b>	<b>Relief Type</b>	<b>Gauge</b>	<b>Spring (Outlet Pressure Range) *</b>	<b>Thread Form</b>
B....1-1/2"	05..R40 Conventional Pilot	R....Relieving	G...With	E...0.3 to 3,5 bar (5 to 50 psig)	A....PTF
C....2"	06..R41 Feedback Pilot **	N....Non relieving	N...Without	L...0.3 to 8,5 bar (5 to 125 psig)	B....ISO Rc taper
				S...0.7 to 17 bar (10 to 250 psig)	G....ISO G parallel

\* 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.  
 \*\* The use of the R41 feedback regulator requires a relieving diaphragm (R in 7th position) and a 17 bar (250 psig) spring (S in 9th position) e.g., R18-B06-RNSA.

**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 drop of 1 bar (15 psig) from set: 944 dm<sup>3</sup>/s (2000 scfm)

**Gauge 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

Maximum bleed rate: 0,12 dm<sup>3</sup>/s (0,25 scfm) at 3,5 bar (50 psig) outlet pressure.

**Materials:**

- Body: Aluminum
- Bonnet: Aluminum
- Bottom Plug: Aluminum
- Valve:

- R40 and R41 Integral Pilot Regulator: Teflon
- R18 Pressure Regulator: Aluminum
- Elastomers: Nitrile

**REPLACEMENT ITEMS**

R18 service kit (items circled on lower portion of exploded view)	5945-40
R40, R41 service kit (items circled in box at top of exploded view)	5945-41
Tamper resistant seal wire	2117-01
Exhaust muffler	
3/4 PTF	MB006A
R3/4	MB006B

**INSTALLATION**

1. Shut off air pressure. Install regulator in air line -
  - with air flow in direction of arrow on body,
  - upstream of lubricators and cycling valves,
  - as close as possible to the device being serviced.
  - at any angle.
2. Connect piping to proper ports using pipe thread sealant 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.
4. Install a Norgren general purpose filter upstream of the regulator.
5. Install a Norgren muffler (see **Replacement Parts**) in the exhaust port of relieving type regulators. 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.

**6. Special Instructions for the R41 Feedback Pilot:**

Make sure the R81 feedback line fittings are tight. The feedback line is attached to the port marked **FDBK** on the R41 and to a gauge port on the R18. To obtain maximum precision pressure regulation, remove the existing feedback line, plug the R18 gauge port, and make a new feedback line using 1/4" or 3/8" OD copper tube. Connect one end of the feedback line to the port marked **FDBK** on the R41. Connect the other end to the application point downstream of the R18. Keep the feedback line as short as possible and unrestricted.

**Warning**

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 R41 adjusting knob is turned clockwise.

**ADJUSTMENT**

1. Before applying inlet pressure to regulator, turn R40 or R41 knob adjustment counterclockwise to remove all force on regulating spring.
2. Apply inlet pressure, then turn adjustment clockwise to increase and counterclockwise to decrease pressure setting.
3. 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**

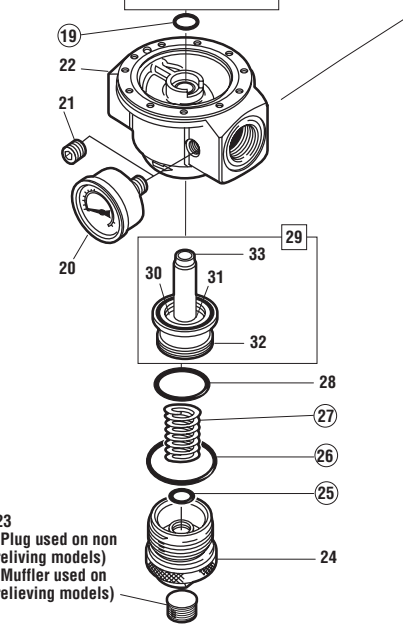
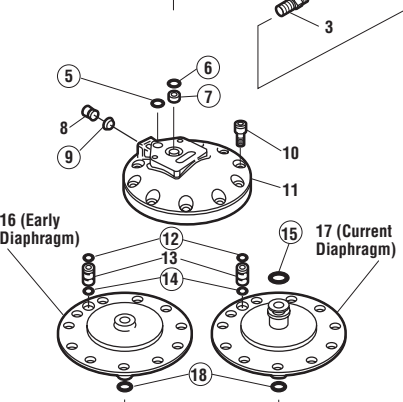
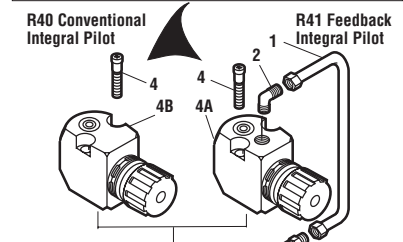
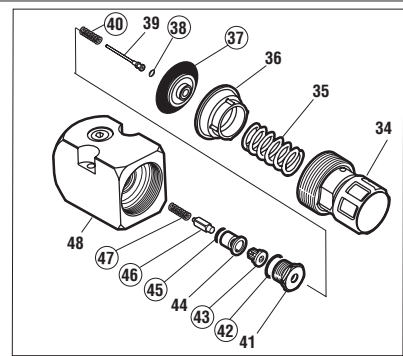
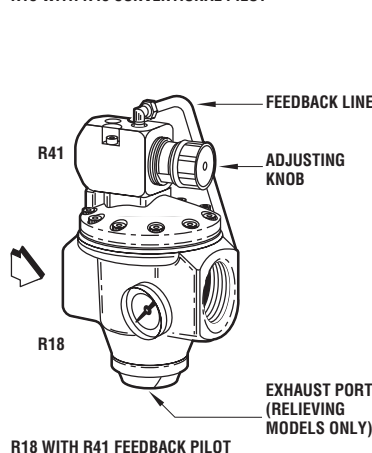
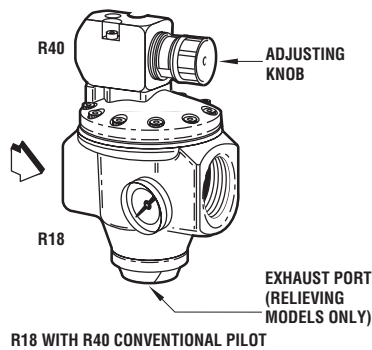
With non-relieving regulators, make pressure reductions with some air flow in the system. If made under no flow (dead-end) conditions, the regulator will trap the over-pressure in the downstream line.  
 4. Push locking on knob IN to lock pressure setting. Pull locking OUT to release. Install tamper resistant wire (see **Replacement Items**) to make setting tamper resistant.

**DISASSEMBLY**

1. Regulator can be disassembled without removal from air line.
2. Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.
3. Turn knob adjustment (34) fully counterclockwise to remove all force on regulating spring (35).
4. Disassemble in general accordance with the item numbers on exploded view. Use a 7/8" socket to remove guide plug (41). When items 34 thru 43 have been removed, cover bonnet bore in body (48) with a clean cloth, then direct a jet of air into the **IN** port to force out valve seat (44), o-ring (45), valve (46), and spring (47). Catch seat, o-ring, valve, and spring in cloth placed over bore in body.

**CLEANING**

1. Clean parts with warm water and soap. Do not submerge knob type bonnets (34) in solution, as lubricant will be removed.
2. Rinse and dry parts. Blow out internal passages in bodies (22, 48) with clean, dry compressed air.
3. Inspect parts. Replace those found to be damaged.



### ASSEMBLY (R40 AND R41 PILOT REGULATORS)

- Lubricate o-rings and outer surface of tube (39) with a light coat of good quality o-ring grease.
- Lubricate threads on bonnet (34) and guide plug (41) with a small amount of anti-seize compound.
- Assemble the unit as shown on the exploded view.
- Torque Table
 

Item	Torque
34 (Bonnet)	46 to 54 Nm (34 to 40 ft-lb)
41 (Guide plug)	3,4 to 5,6 Nm (30 to 50 in-lb)

### ASSEMBLY (R18 REGULATOR)

#### 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.
- Assemble the R40 or R41 pilot regulator to the R18 regulator. Tighten screws (4) to 8 to 10 Nm (70 to 90 inch-pounds). Install fittings (2, 3) using pipe thread sealant on male threads only. Do not allow sealant to enter interior of regulator.

### 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.

