

# Inline Regulators

## MINIATURE Series, Flow to 40



**Thank You!** You have just purchased a premium-quality ROSS® Air Preparation product. With care in its installation and maintenance, you can expect it to have a long and economical service life. Before you go any further, please take a few minutes to look over this information, then save it for future reference and for the useful service information it contains.

### OPERATION

When adjusting pressure setting, always reset from a pressure lower than the final desired setting. For example, lowering pressure from 100 psi to 50 psi should be done by decreasing pressure to 30 psi then increasing to 50 psi.

**To increase pressure:** Pull out on Adjusting Knob (#9), turn clockwise.

**To lower pressure:** Pull out on Adjusting Knob (#9), turn counter-clockwise.

Push in on Adjusting Knob (#9) to lock in place.



### INSTALLATION

**Please read and make sure you understand all installation instructions before proceeding with the installation.**

If you have any questions about installation or servicing your product, please contact ROSS or your authorized ROSS distributor, see contact information listed at the back of this document, or visit [www.rosscontrols.com](http://www.rosscontrols.com) to find your distributor.

1. Depressurize and lock-out air pressure.
2. Upstream pipes must be free of excessive dirt and liquids.
3. Filters should be installed immediately ahead of Regulators to insure a clean supply of air.
4. Install the Regulator in airline as near as possible to the device it is to serve.
5. Install the Regulator so air flows in same direction as arrow on Regulator head.
6. Regulator should be installed before any Lubricators or Valves in airline.
7. The Regulator has gauge ports on both sides of the head. It is necessary to install pressure gauge or pipe plugs into each port before operating.
8. The Regulator can be installed with Dome up, down, or any rotation.

### SERVICE

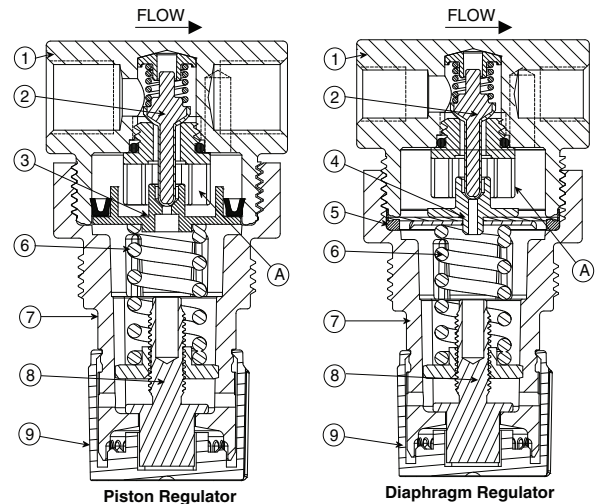
If you need to service your product, turn off any electrical power to the system, shut off the air supply, exhaust the air in the system, and lock-out all power sources before beginning any disassembly operation.

#### TO CLEAN OR REPAIR:

Depressurize and lockout air pressure. Reduce spring load to zero by turning Adjusting Knob (#9) counter-clockwise. Remove Dome (#7) by turning counter-clockwise. The Piston (#3) or Diaphragm Assembly (#4) can now be removed. Visually inspect Piston (#3) or Diaphragm Assembly (#4) for defects, if necessary replace. Unscrew Valve Seat (A). Remove Valve Assembly (#2) including poppet, guide, O-ring and spring. Visually inspect Valve Assembly (#2) for defects, if necessary replace. Re-assemble, correctly locating all seals, starting with Valve Assembly (#2). Torque Valve Seat (A) to 3-5 in-lbs., do not over tighten. Insert U-cup and Piston Assembly (#3) into Head (#1) or follow instructions for Diaphragm Assembly (#4, figure 1). Torque Dome (#7) to 90-100 in-lbs.

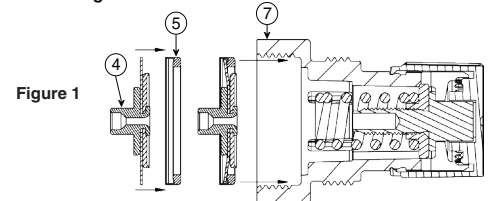
If the Regulator cannot be repaired by cleaning with soap and water, the parts should be replaced.

If the air supply is kept clean, the Regulator should provide long periods of uninterrupted service.



Piston Regulator

Diaphragm Regulator



Insert Diaphragm Assembly (#4) into Spacer (#5) then insert into Dome (#7) as shown above.

KEY	DESCRIPTION
1	Head
2	Valve Assembly
3	Piston Assembly
4	Diaphragm Assembly
5	Spacer
6	Main Spring
7	Dome
8	Adjusting Screw Assembly
9	Adjusting Knob
A	Valve Seat

### STANDARD SPECIFICATIONS

**Construction:** Piston or diaphragm.

Self-relieving, for non-relieving option consult ROSS.

**Ambient/Media Temperature:** 40° to 125°F (4° to 52°C).

**Fluid Media:** Compressed air.

**Inlet Pressure:** 300 psig (21 bar) maximum.

**Outlet Pressure:** Adjustable up to 100 psig (7 bar).

**Pressure Gauge:** 0 to 160 psig (0 to 11 bar); 1/8 NPT gauge ports front and rear.

**Panel Mounting:** 1-3/16 inch (30 mm) hole required.

**Body:** Aluminum.

**Dome and Knob:** Acetal.

**Seals:** Nitrile.

**IMPORTANT NOTE:** Please read carefully and thoroughly all the **CAUTIONS** and **WARNINGS** on page 2.

## REPLACEMENT PARTS



Assembly Kits	Part Number
Valve Assembly Kit (Poppet Valve, Valve Spring, Valve Guide & O-ring)	R-A33-533
Piston Assembly Kit (Piston and U-cup)	R-A33-544
Diaphragm Assembly Kit (Diaphragm, Support, Retainer and Spacer)	R-A10R-56
Adjusting Screw Assembly Kit (Spring Rest and Adjusting Screw)	R-A33-75

Mounting Accessories	Part Number
Panel Mount Nut & Bracket	873K77
Panel Mount Nut	874K77

## LUBRICANTS, POLYCARBONATE BOWL CAUTIONS

### COMPATIBLE LUBRICANTS

Although air line lubrication is not required for most ROSS valves, other mechanisms in the system may need such lubrication. When a lubricator is used, it should be supplied only with oils which are compatible with the materials used in the valves for seals and poppets. Generally speaking, these are petroleum base oils with oxidation inhibitors, and aniline point between 180°F (82°C) and 220°F (104°C) and an ISO 32, or lighter, viscosity. Oils with phosphate type additives, such as zinc dithiophosphate, must be avoided because they can harm polyurethane valve components. The best oils to use in pneumatic systems are those specifically compounded for air line lubricator service.

### CAUTIONS ON THE USE OF POLYCARBONATE BOWLS

**Use Only with Compressed Air.** Filters and lubricators with polycarbonate bowls are specifically designed for compressed air service, and their use with any other fluid (liquid or gas) is a misapplication. The use with or injection of certain hazardous fluids in the system (e.g., alcohol or liquefied petroleum gas) could be harmful to the polycarbonate bowl or result in a combustible condition or hazardous leakage. Before using with a fluid other than air, or for nonindustrial applications, or for life support systems, consult ROSS.

**Use Metal Bowl Guard When Supplied.** A metal bowl guard is supplied with all but the smallest bowls, and must always be used to minimize danger from fragmentation in the event of failure of a polycarbonate bowl.

**Avoid Harmful Substances.** Some compressor oils, chemical cleaners, solvents, paints, and fumes will attack polycarbonate bowls and can cause bowl failure. Do not use with or near these materials. When a bowl becomes dirty, replace the bowl or wipe it with a clean dry cloth. Immediately replace any polycarbonate bowl which is crazed, cracked, or deteriorated.

### SUBSTANCES HARMFUL TO POLYCARBONATE BOWLS

Acetaldehyde	Benzyl alcohol	Cresol	Ethylene dichloride	Milk of lime (CaOH)	Sodium sulfide
Acetic acid	Brake fluids	Cyclohexanol	Ethylene glycol	Nitric acid	Styrene
Acetone	Bromobenzene	Cyclohexanone	Formic acid	Nitrobenzene	Sulfuric acid
Acrylonitrile	Butyric acid	Cyclohexene	Freon (refrigerant & propellant)	Nitrocellulose lacquer	Sulfural chloride
Ammonia	Carbolic acid	Dimethyl formamide	Gasoline (high aromatic)	Perchlorethylene	Tetrahydronaphthalene
Ammonium fluoride	Carbon disulfide	Dioxane	Hydrazine	Phenol	Thiophene
Ammonium sulfide	Carbon tetrachloride	Ethane tetrachloride	Hydrochloric acid	Phosphorous hydroxyl chloride	Toluene
Anaerobic adhesives & sealants	Caustic potash solution	Ethyl acetate	Lacquer thinner	Phosphorous trichloride	Turpentine
Antifreeze	Caustic soda solution	Ethyl ether	Methyl alcohol	Propionic acid	Xylene
Benzene	Chlorobenzene	Ethylamine	Methylene chloride	Pyridine	
Benzoic acid	Chloroform	Ethylene chlorohydrin	Methylene salicylate	Sodium hydroxide	

### TRADE NAMES OF SUBSTANCES HARMFUL TO POLYCARBONATE BOWLS

- Atlas Perma-Guard • Buna N • Cellulube #150 & #220 • Crylex #5 cement • Eastman 910 • Garlock 98403 (polyurethane) • Haskel 568-023
- Hilgard Company's hil phene • Houghton & Co. oil 1120, 1130, 1055 • Houtosafe 1000 • Kano Kroil • Keystone penetrating oil #2
- Loctite 271, 290, 601 • Loctite Teflon sealant • Marvel Mystery Oil • Minn. Rubber 366Y • National Compound N11 Nylock VC-3
- Parco 1306 Neoprene • Permabond 910 • Petron PD287 • Prestone • Pydraul AC • Sears Regular Motor Oil • Sinclair oil "Lily White"
- Stauffer Chemical FYRQUEL 150 • Stillman SR 269-75 (polyurethane) • Stillman SR 513-70 (neoprene) • Tannergas • Telar
- Tenneco anderol 495 & 500 oils • Titan • Vibra-tite • Zerec

### STANDARD WARRANTY

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation

under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

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