



# Installation, Operation, and Maintenance Instructions

## Type 850/860 Air or Water Miniature Pressure Regulator

### INSTALLATION

1. System piping should be the same pipe size as regulator ports. Locate regulator as close as possible to the device using regulated air/water. If cycling devices and/or lubricators are used in the piping system, install the regulator upstream of these devices. A filter installed upstream of the regulator is recommended to maximize service life.
2. The arrow on the regulator body indicates direction of air flow. Connect piping to proper ports using pipe sealant on male threads only. Do not allow sealant to enter interior of regulator. Regulator can be installed at any angle.
3. Two 1/8" NPT gauge ports are provided to allow for the connection of an outlet pressure gauge or as additional outlets for regulated air. Plug unused gauge ports. Panel-mounted units require a 1 - 3/16" diameter hole with a maximum panel thickness of 1/4".

### ADJUSTMENT

1. Before turning on system pressure, turn regulator knob counter-clockwise just until knob stops. Pull knob outward to unlock and adjust pressure setting. Turn on system pressure. Turn regulator knob clockwise until outlet pressure reaches desired setting.
2. When changing pressure setting, always approach the desired pressure from a lower setting. For example, lowering the outlet pressure from 80 psi to 60 psi is best accomplished by dropping the outlet pressure to 50 psi, then adjusting up to 60 psi.
3. Push knob inward to lock pressure setting.

**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.

### MAINTENANCE

#### **WARNING: SUPPLY PRESSURE MUST BE SHUT OFF BEFORE ATTEMPTING TO INSTALL OR DISASSEMBLE REGULATOR FOR SERVICING.**

1. If supply is kept clean, regulator should provide long periods of uninterrupted service. If erratic performance occurs, it is likely that parts in the regulator need to be cleaned or replaced. See **Repair Kits** for the part number of repair kits that can be ordered from ControlAir.
2. **TO DISASSEMBLE: Reduce pressure in inlet and outlet lines to zero. Regulator can be serviced without removal from line.** Pull knob out to disengage lock, and turn knob counter-clockwise until it stops. This will remove any load on the range spring. Unscrew bonnet. Adjusting screw and nut are not retained, and may fall out. Remove range spring and diaphragm assembly. Unscrew supply seal (hex socket size is 9/16"), and remove pintle and pintle spring.
3. **CLEANING:** Clean parts in warm water and soap, then dry. Replace any damaged parts. Blow out the body passages using clean, dry compressed air.
4. **TO REASSEMBLE:** Use exploded view on back page as a guide for the orientation and assembly of parts. Lubricate O-ring on supply seat with quality O-ring grease. Tighten supply seat into body. Make sure pintle slides up and down freely after tightening supply seat. Tighten bonnet onto body. **Do not over-tighten, as it could strip bonnet threads.**

### SPECIFICATIONS

Fluid: 850 - Compressed Air  
860 - Water  
Maximum Inlet Pressure: 250 psig  
Temperature Range: 0 to 150° F  
Gauge Ports: (2) 1/8" NPT

### REPAIR KITS

Relieving Regulators: . . . . . 449-871-028  
Non-relieving Regulators: . . . 449-871-029

### ACCESSORIES

Panel Mounting Nut . . . . . 442-734-040  
Mounting Bracket . . . . . 446-707-034

**WARNING**

1. These products are intended for use with water and compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under Specifications.
2. In relieving-type regulator, excess pressure is vented out of the regulator when there is an increase in downstream pressure above the pressure setting. However, relief capacity is limited. If a sudden increase in downstream pressure could rupture or malfunction downstream equipment, install a pressure-relief device downstream of the regulator. The capacity of the relief device must satisfy the system requirements.
3. In non-relieving regulators, downstream pressure above the pressure setting does not relieve to atmosphere. Another means of relieving must be provided, if necessary.
4. 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.
5. Before using these products with fluids other than air, for non-industrial applications, life-support systems, or other applications not within published specifications, consult ControlAir, Inc.

Range PSIG (BAR)	Port Size NPT	Air Model #	Water Model #
0-5 (0-0.4)	1/8	850-AE	860-AEN
	1/4	850-BE	860-BEN
0-15 (0-1)	1/8	850-AA	860-AAN
	1/4	850-BA	860-BAN
0-30 (0-2)	1/8	850-AB	860-ABN
	1/4	850-BB	860-BBN
0-60 (0-4)	1/8	850-AC	860-ACN
	1/4	850-BC	860-BCN
0-100 (0-7)	1/8	850-AD	860-AND
	1/4	850-BD	860-BDN

**MATERIALS OF CONSTRUCTION**

No.	Part Description	Material
1	Knob	Acetal
2	Bonnet	Acetal
3	Adjusting Screw	Zinc-plated Steel
4	Adjusting Nut	Zinc-plated Steel
5	Range Spring	Zinc-plated Steel
6	Diaphragm Assembly*	Acetal/Nitrile
7	Supply Seat*	Acetal
8	Supply Seat O-Ring*	Nitrile
9	Pintle*	Aluminum/Nitrile
10	Pintle Spring*	300 Stainless Steel
11	Body	Zinc Alloy
12	Pipe Plugs	Steel

Items marked with an asterisk (\*) are included in the repair kit.

**LIMITED WARRANTY & DISCLAIMER**

ControlAir, Inc. products are warranted to be free from defects in materials and workmanship for a period of eighteen months from the date of sale, provided said products are used according to ControlAir, Inc. recommended usages. ControlAir, Inc.'s liability is limited to repair, purchase price refund, or replacement in kind, at ControlAir, Inc.'s sole option, of any products proved defective. ControlAir, Inc. reserves the right to discontinue manufacture of any product or change product materials, design or specifications without notice. Note: ControlAir does not assume responsibility for the selection, use, or maintenance of any product. Responsibility for the proper selection, use, and maintenance of any ControlAir product remains solely with the purchaser and end user.

