

Model
4000A



The Model 4000A Pneumatic Precision Regulator is a no bleed design regulator that precisely controls a set pressure.

Features

- Control sensitivity of 1/2" water column allows use in precision applications.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- Soft Supply and Exhaust Valve seats minimize air consumption.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An Aspirator Tube compensates downstream pressure drop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the Model 4000A without removing it from the line.
- Canadian Registration Number (CRN) certification for all territories and provinces.

Operating Principles

When you adjust the Range Screw to a specific setpoint, the Range Spring exerts a downward force against the top of the Control Diaphragm. This downward force opens the Supply Valve. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber where it creates an upward force on the bottom of the Control Diaphragm.

When the setpoint is reached, the force of the Range Spring that acts on the top of the Control Diaphragm balances with the force of output pressure that acts on the bottom of the Control Diaphragm and closes the Supply Valve.

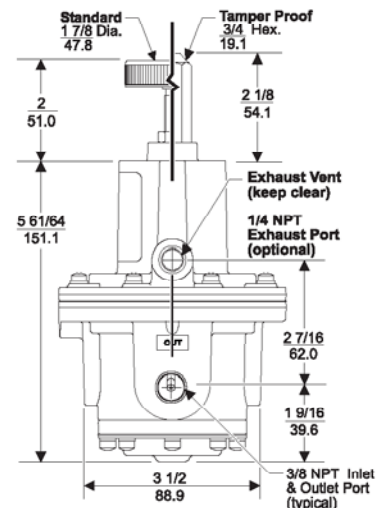
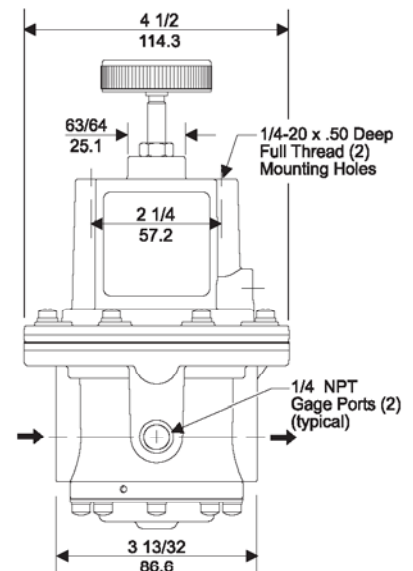
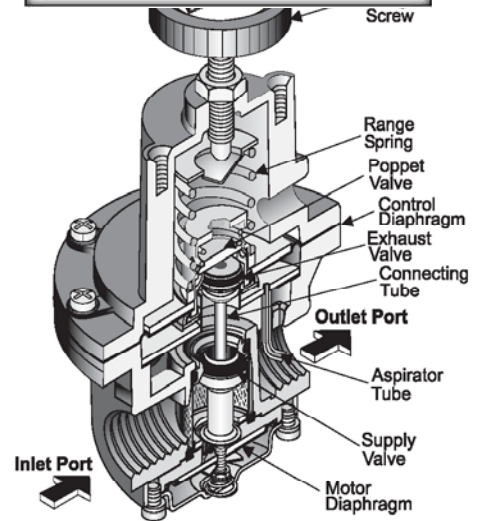
When the output pressure increases above the setpoint, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and output pressure exhausts through the Vent on the side of the unit until it reaches the setpoint.

INSTRUMENTS • CONTROLS • VALVES

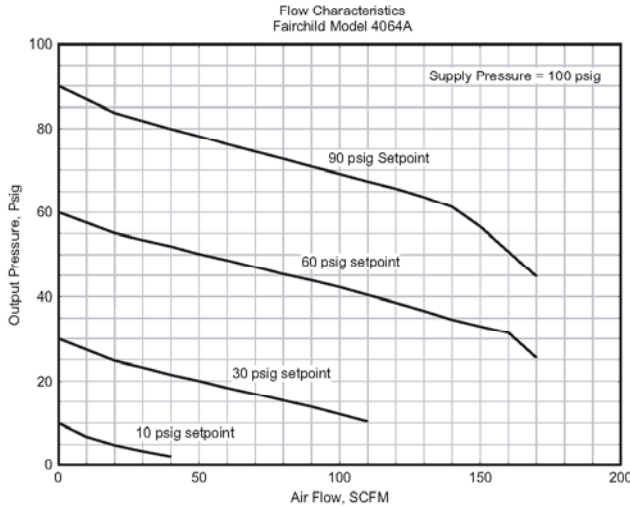
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ARCO 3317 Gilmore Industrial Blvd.
Louisville, KY 40213

Engineering, Inc. Ph: (502) 966-3134
SINCE 1954 Fx: (502) 966-3135
www.arcoengineering.com



Technical Information



Specifications

Supply Pressure

250 psig, [17.0 BAR], (1700 kPa) Maximum

Flow Capacity

150 SCFM (255 m³/HR) @ 100 psig, [7.0 BAR], (700 kPa) supply and 20 psig, [1.5 BAR], (150 kPa) setpoint

Exhaust Capacity

40 SCFM (65 m³/HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpoint

Supply Pressure Effect

Less than 0.1 psig, [.007 BAR], (0.7 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure

Sensitivity

1/2" (1.27 cm) Water Column

Ambient Temperature

-40°F to +200°F, (-40°C to +93°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body and Housing Aluminum
Diaphragms Nitrile on Dacron
Trim Zinc Plated Steel, Brass

Catalog Information

Catalog Number

4 0 [] [] A []

Pressure Range

psig	[BAR]	(kPa)
0.5-10	[0.035-0.7]	(3.5-70)
0.5-30	[0.035-2]	(3.5-200)
1-60	[0.07-4]	(7-400)
2-150	[0.15-10]	(15-1000)
5-250	[0.35-17]	(35-1700)

2
3
4
6
7

Pipe Size

3/8" NPT
1/2" NPT
3/4" NPT

3
4
6

Options

Tapped Exhaust
BSPP (Parallel)¹
Tamper Proof
BSPT (Tapered)
Viton Elastomers²

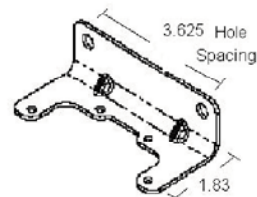
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¹ BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.

² Viton Available on Ranges through 2-150 psig Only.

Installation

For installations instructions, refer to the *Fairchild Model 4000A Pneumatic Precision Regulator Instruction, Operation and Maintenance Instructions, IS-1004000A*.



20555-1

Model 4000A Mounting Bracket Kit
P/N 20555-1 zinc plated (sold separately)