

# FINE CONTROLS (UK) LTD



Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product range representing leading technologies & brands:

**Flow:** Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

**Temperature:** Temperature Probes & Thermowells, Temperature transmitters, Temperature Regulators & Temperature Displays

**Level:** Level Transmitters & Switches

**Pressure:** Pressure Gauges & Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

**Precision Pneumatics:** Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

**Valves:** Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

**Services:** Repair, Calibration, Panel Build, System Design & Commissioning

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Model  
4000A

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

## Features

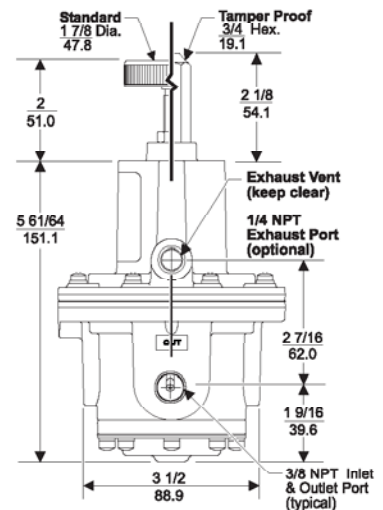
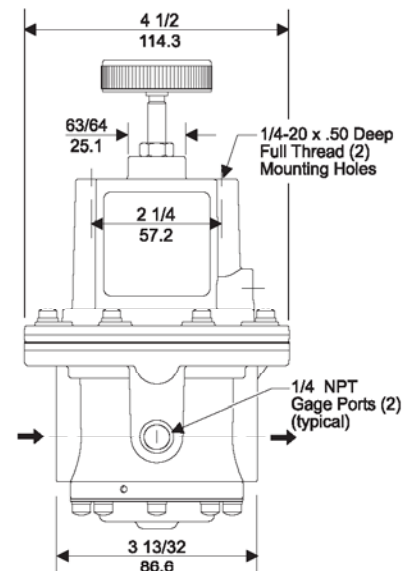
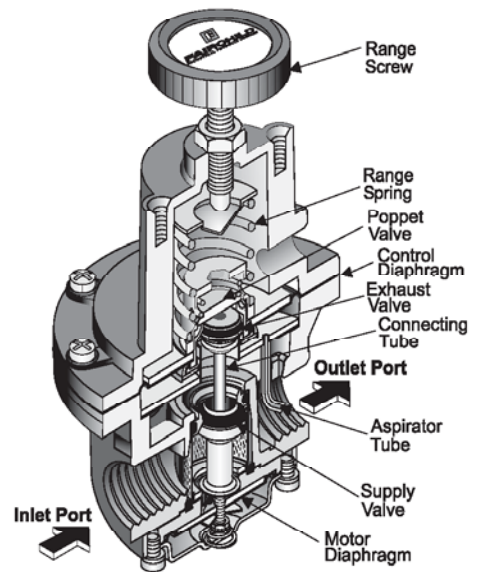
- Control sensitivity of 1/2" water column allows use in precision applications.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- Soft Supply and Exhaust Valve seats minimize air consumption.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An 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

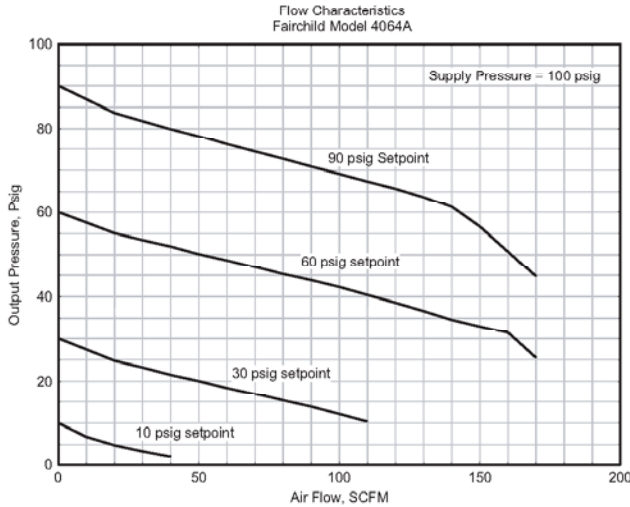
When you adjust the Range Screw to a specific setpoint, the Range Spring exerts a downward force against the top of the Control Diaphragm. This downward force opens the Supply Valve. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber where it creates an upward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



**Technical Information**



**Specifications**

**Supply Pressure**

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

**Flow Capacity**

150 SCFM (255 m<sup>3</sup>/HR) @ 100 psig, [7.0 BAR], (700 kPa) supply and 20 psig, [1.5 BAR], (150 kPa) setpoint

**Exhaust Capacity**

40 SCFM (65 m<sup>3</sup>/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**

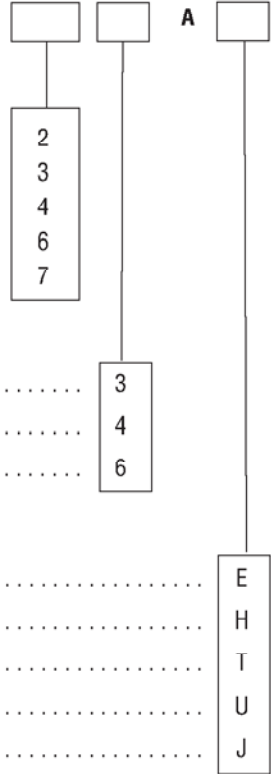
Body and Housing ..... Aluminum  
Diaphragms ..... Nitrile on Dacron  
Trim ..... Zinc Plated Steel, Brass

**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) . . . . .



**Pipe Size**

3/8" NPT . . . . .	3
1/2" NPT . . . . .	4
3/4" NPT . . . . .	6

**Options**

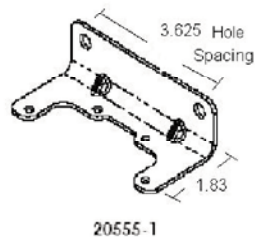
Tapped Exhaust . . . . .	E
BSPP (Parallel) <sup>1</sup> . . . . .	H
Tamper Proof . . . . .	T
BSPT (Tapered) . . . . .	U
Viton Elastomers <sup>2</sup> . . . . .	J

<sup>1</sup> BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.

<sup>2</sup> 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*.



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