

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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Features

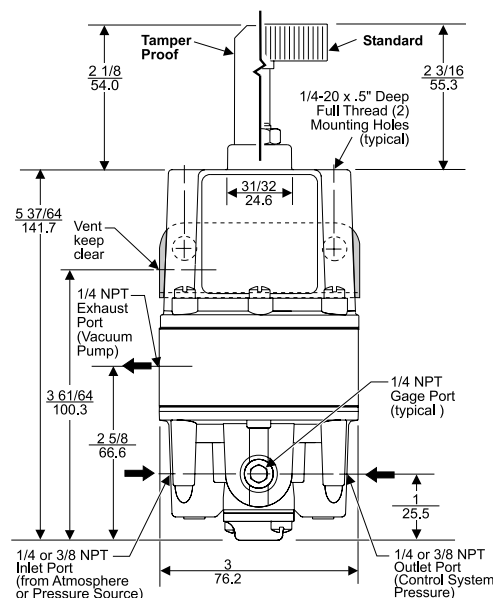
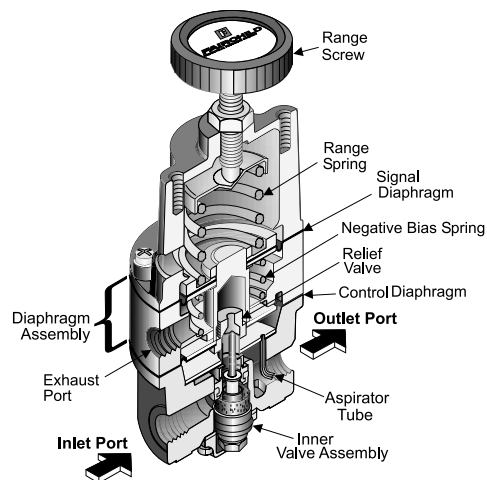
- The Model 16 Vacuum Regulator is designed for systems that require system pressure control above and below atmospheric pressure.
- Control sensitivity of 1/2" water column allows use in precision applications.
- A balanced Supply Valve minimizes the effects of supply pressure variation.
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- An Aspirator Tube compensates downstream pressure droop 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 16 without removing it from the line.
- Mounting Bracket is available.
- Canadian Registration Number (CRN) Certification for all territories and provinces

Operating Principles

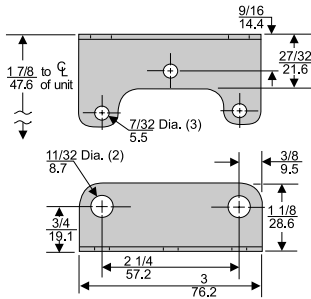
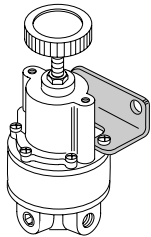
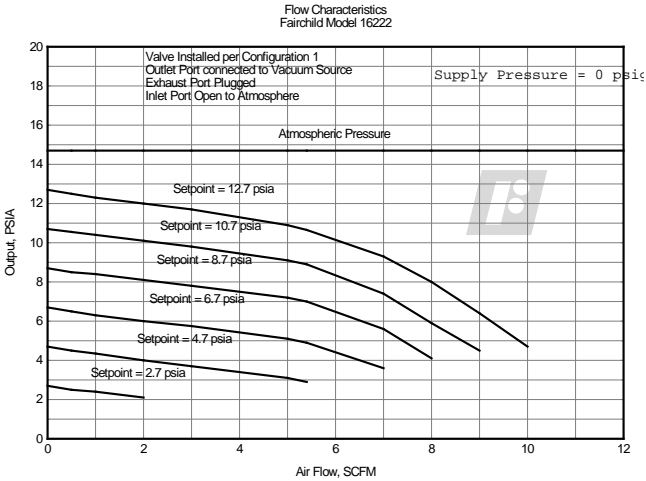
When you adjust the Range Screw to a specific setpoint, the Range Spring exerts a downward force on the top of the Signal Diaphragm. The Negative Bias Spring creates an upward force on the bottom of the Signal Diaphragm. The upward net force opens the Relief Valve (vacuum supply) to let Vacuum flow from the Outlet Port to the Exhaust Port. As the setpoint is reached, the decrease in pressure lets the Diaphragm Assembly move downward to close the Relief Valve (vacuum supply).

When the Vacuum increases above the setpoint, the Diaphragm Assembly moves downward to open the Supply Valve that adds positive pressure to the system to maintain Output pressure. For more information, see cross sectional diagram.

Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.



Technical Information



Model 16 Regulator Kits & Accessories

Mounting Bracket Kit09921 (sold separately)

Specifications

Supply Pressure

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

Positive Flow Capacity (SCFM)

40 (65.2 m³/HR) @ 100 psig, [7.0 BAR] supply, (700 kPa) supply & 20 psig, [1.5 BAR], (150 kPa) setpoint

Vacuum Flow Capacity (SCFM)

2.5 (4 m³/HR) @ 29" Hg VAC with pump connected to exhaust port
40 (65.2 m³/HR) @ 100 psig supply connected to inlet port

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 +93.3°C)

Materials of Construction

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

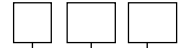
Hazardous Locations

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

Catalog Information

Catalog Number

1 6



Pressure Range

psig	[BAR]	(kPa)
Vacuum - 2	[Vacuum -0.15]	(Vacuum - 15)
Vacuum - 10	[Vacuum -0.7]	(Vacuum - 70)
Vacuum - 30	[Vacuum -2.0]	(Vacuum - 200)
Vacuum - 100	[Vacuum -7.0]	(Vacuum - 700)
Vacuum - 150	[Vacuum - 10]	(Vacuum - 1000)

21
22
23
25
26

Pipe Size

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

2
3
4

Options

Silicone Elastomers¹
BSPP (Parallel)²
Tamper Proof
Fluorocarbon (Viton) Elastomers
Increased Sensitivity
BSPT (Tapered)

A
H
T
J
L
U

¹ Maximum Supply Pressure - 75 psig, [5.0 BAR], (500 kPa)

² BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.

Installation

For installation instructions, refer to the *Fairchild Model 16 Vacuum Regulator Installation, Operation and Maintenance Instructions*, IS-1000016.