

# 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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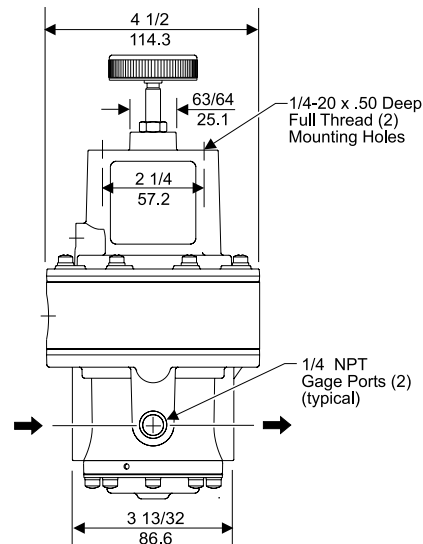
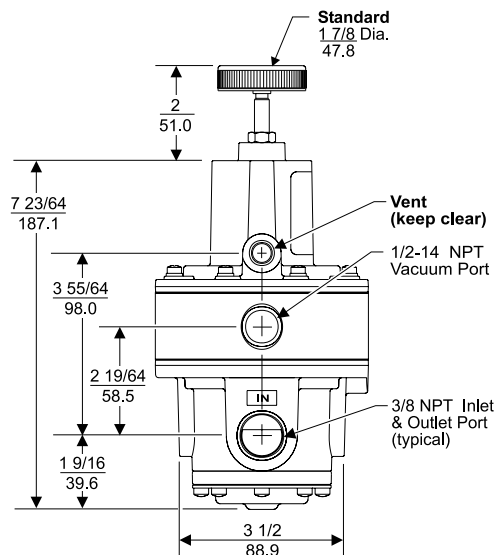
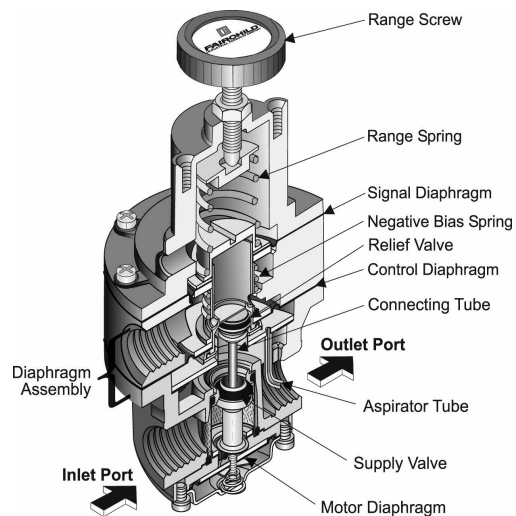
### Features

- The Model 1600A Vacuum Regulator controls pressure in high flow systems above and below atmospheric pressure.
- The single unit controls vacuum and positive pressure.
- Control sensitivity of 1" 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 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 1600 without removing it from the line.

### Operating Principles

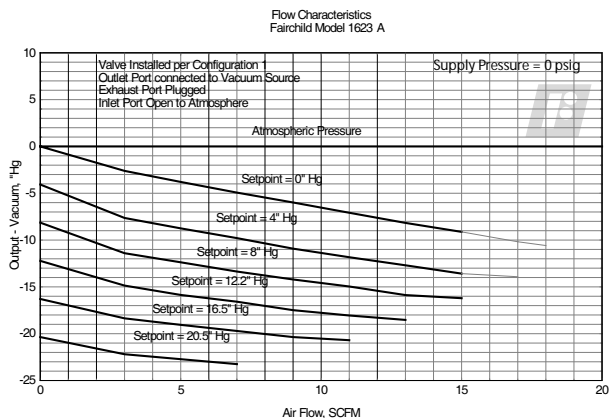
When you adjust the Range Screw to a specific setpoint, the Range Spring exerts a downward force on the top of the Signal Diaphragm. The Negative Bias Spring creates an upward force on the bottom of the Signal Diaphragm. The upward net force opens the Relief Valve (vacuum supply) to let Vacuum pressure flow through the Outlet Port and the Aspirator Tube to the Control Chamber. 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 pressure increases above the setpoint, the Diaphragm Assembly moves downward to open the Supply Valve (positive pressure) to maintain Output pressure.





**Technical Information**



**Specifications**

**Supply Pressure**

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

**Flow Capacity (SCFM)**

28 (48 m<sup>3</sup>/HR) @ 29" Hg vacuum with inlet port open to atmosphere.

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

**Exhaust Capacity**

20 (34 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" (2.54 cm) Water Column

**Ambient Temperature**

-40°F to +200°F, (-40°C to +93°C)

**Materials of Construction**

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

**Catalog Information**

**Catalog Number**

1 6   A

**Pressure Range**

psig	[BAR]	(kPa)
Vacuum - 10	[Vacuum -0.7]	(Vacuum - 70)...
Vacuum - 30	[Vacuum -2.0]	(Vacuum - 200)...
Vacuum - 150	[Vacuum - 10]	(Vacuum - 1000)...

2  
 3  
 6

**Pipe Size**

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

3  
 4  
 6

**Options**

BSPP (Parallel) <sup>1</sup> .....	H
Fluorcarbon .....	J
Tamper Proof .....	T
BSPT (Tapered) .....	U

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

**Installation**

For installation instructions, refer to the *Fairchild Model 1600A Vacuum Regulator Installation, Operation and Maintenance Instructions, IS-1001600A*.