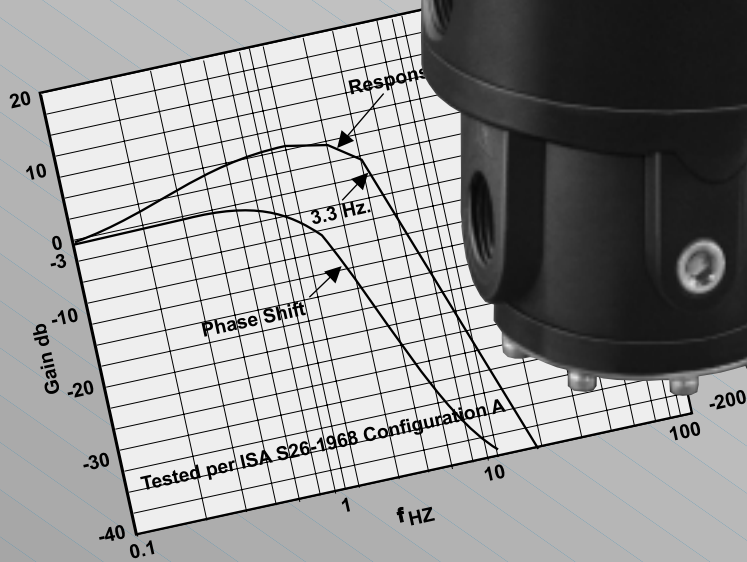
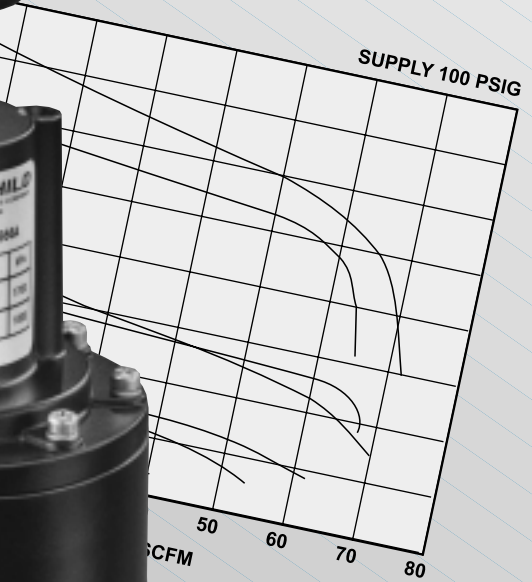
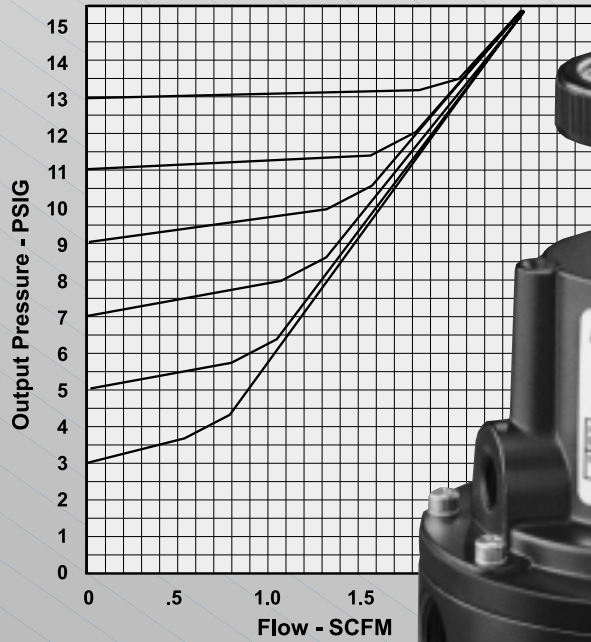


FAIRCHILD

VACUUM REGULATOR

Model 1600A



FAIRCHILD
INDUSTRIAL PRODUCTS COMPANY

CROSS SECTION

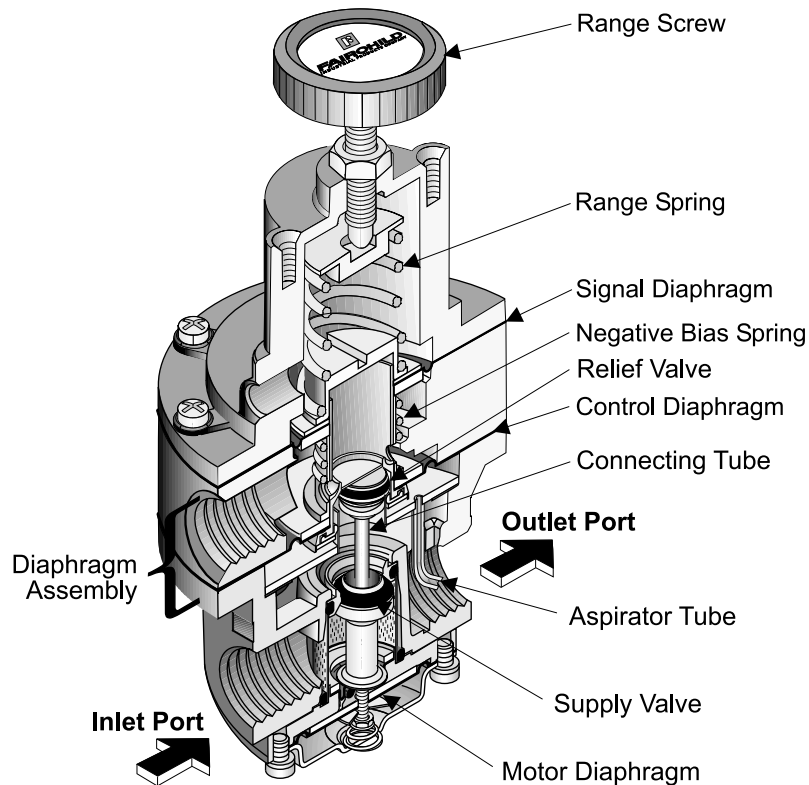


Figure 1. Model 1600A Detail Drawing

GENERAL INFORMATION

The Model 1600A Vacuum Regulator controls pressure in high flow systems above and below atmospheric pressure.

The Model 1600A has the following features:

- 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. For more information, see Figure 1.

INSTALLATION

For Installation Instructions, see the *Model 1600A Vacuum Regulator IOM, IS-1001600A*.

OUTLINE DIMENSIONS

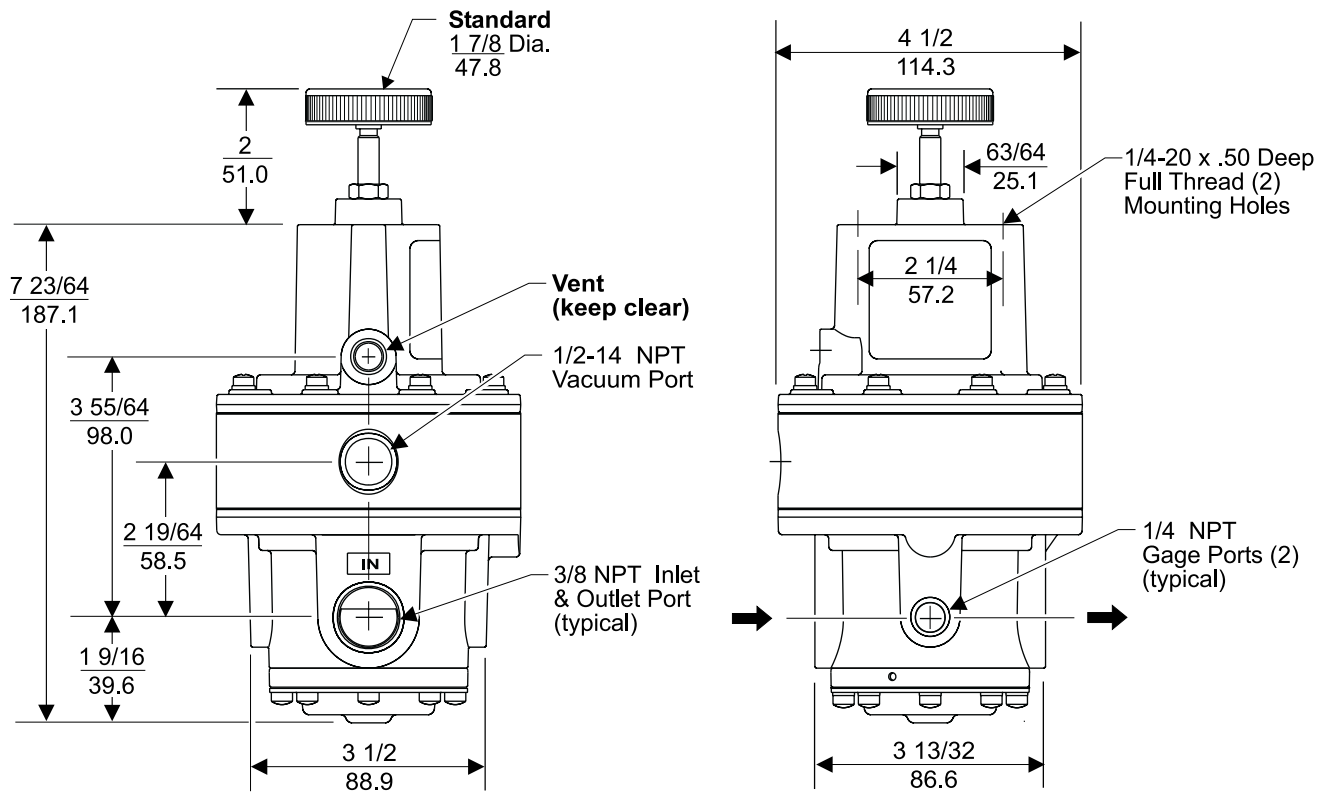


Figure 2. Model 1600A Outline Dimensions

SPECIFICATIONS

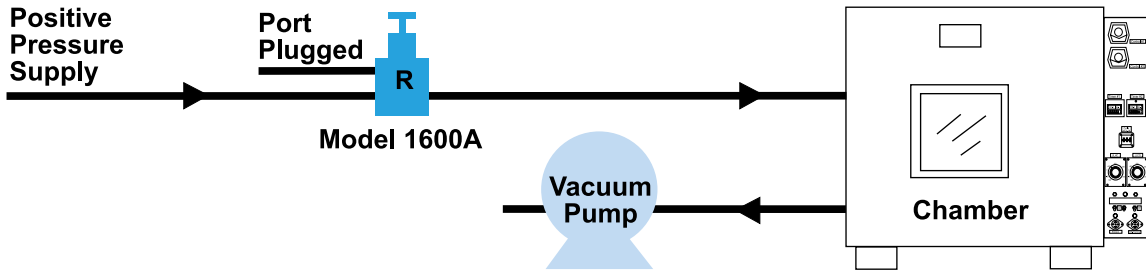
FUNCTIONAL SPECIFICATIONS

Supply Pressure	250 psig, [17.0 BAR] (1700 kPa) Maximum.
Flow Capacity (SCFM)	28 (48 m ³ /HR) @ 29" Hg vacuum with inlet port open to atmosphere. 150 (255 m ³ /HR) @ 100 psig, [7.0 BAR], (700 kPa) supply & 20 psig, [1.5 BAR], (150 kPa) setpoint.
Exhaust Capacity (SCFM)	20 (34 m ³ /HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5BAR], (150 kPa) setpoint.
Ambient Temperature	-40° F to +200° F (-40° C to +93° C)

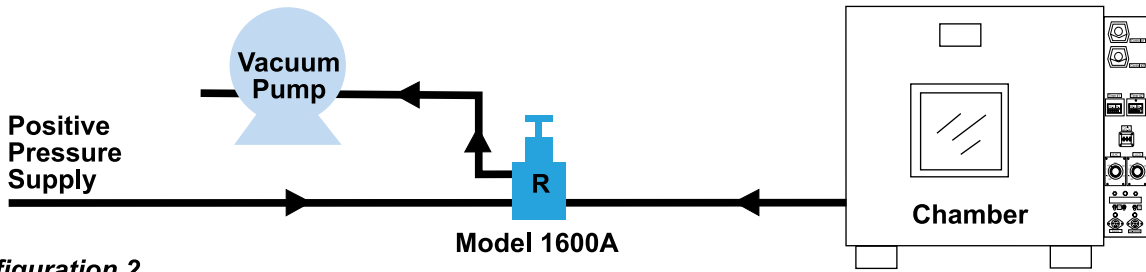
PERFORMANCE SPECIFICATIONS

Sensitivity	1" (2.54 cm) Water Column.
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.
Materials of Construction	Body and Housing Aluminum Trim Zinc Plated Steel, Brass Diaphragms Nitrile on Dacron

TYPICAL APPLICATION



Configuration 1.



Configuration 2.

Pneumatic

Figure 3. Model 1600A Pressure Control Application

TYPICAL APPLICATION

The Model 1600A Vacuum Regulator is ideally suited for applications that require the fast evacuation of a Chamber that must be controlled below atmospheric pressure. This regulator is also suited for applications that purge Chambers using positive pressure. There are two installation configurations for the Model 1600A.

Configuration 1 shows the connection for applications that require a high frequency system response or fast evacuation of a Chamber that must be controlled below atmospheric pressure. In this configuration, the response time and evacuation rate is dependent on the capacity of the vacuum pump.

Configuration 2 shows the connection for applications that can require control of system pressure above and below atmospheric pressure. In vacuum applications, you can leave the Supply Port open to atmosphere or pressurize with normal air supply for faster response. Air supply is required for positive pressure purging. For more information, see Figure 3.

ORDERING INFORMATION

Catalog Number 1 6 A

Pressure Range _____

psig	[BAR]	(kPa)	
Vacuum - 10	[Vacuum -0.7]	(Vacuum - 70)	(2)
Vacuum - 30	[Vacuum -2.0]	(Vacuum - 200)	(3)
Vacuum - 150	[Vacuum -10]	(Vacuum - 1000)	(6)

Pipe Size _____

3/8" NPT	(3)
1/2" NPT	(4)
3/4" NPT	(6)

Options _____

BSPT (Tapered) (U)

ISO 9002
Certified



FAIRCHILD
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