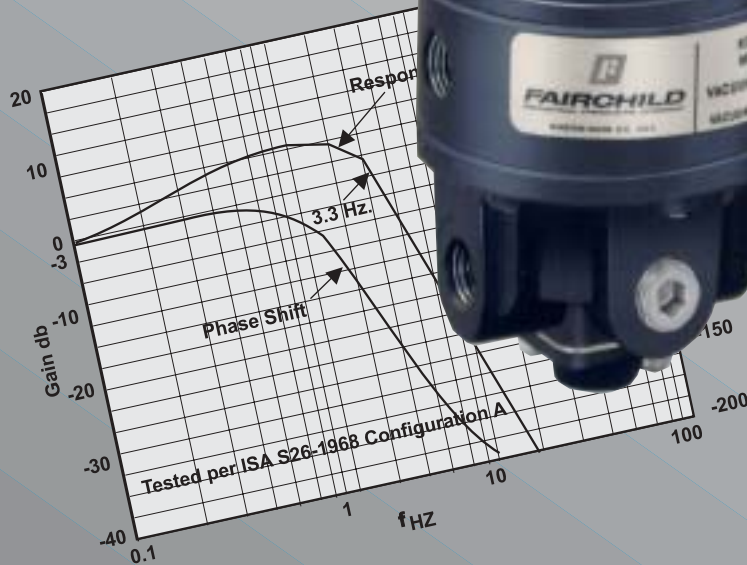
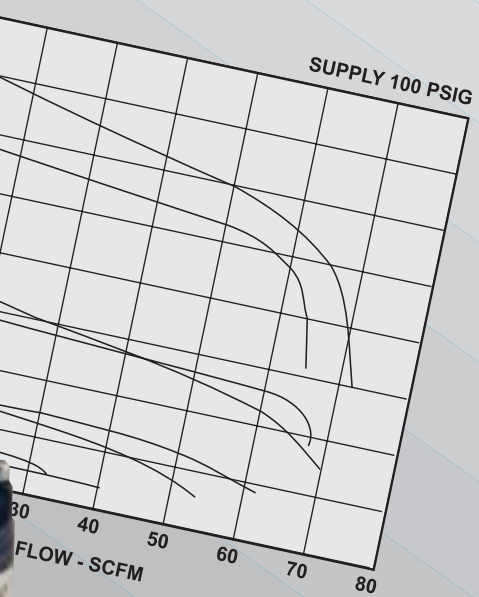
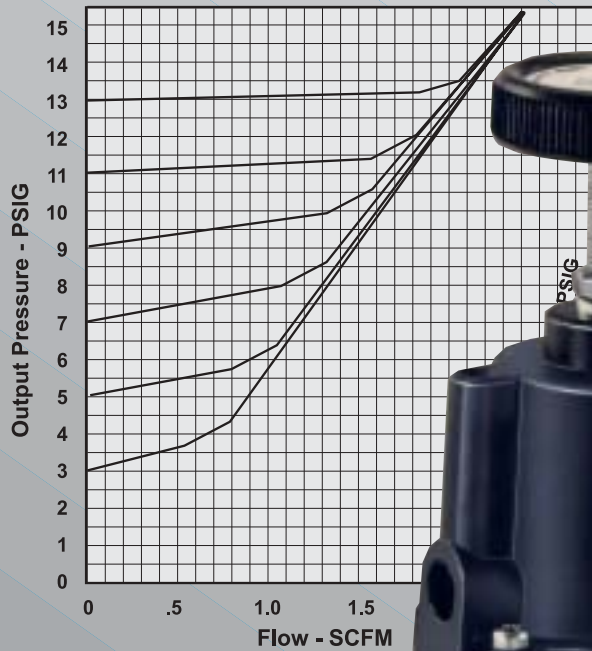


# FAIRCHILD

## VACUUM REGULATOR

Model 16



**FAIRCHILD**  
INDUSTRIAL PRODUCTS COMPANY

## CROSS SECTION

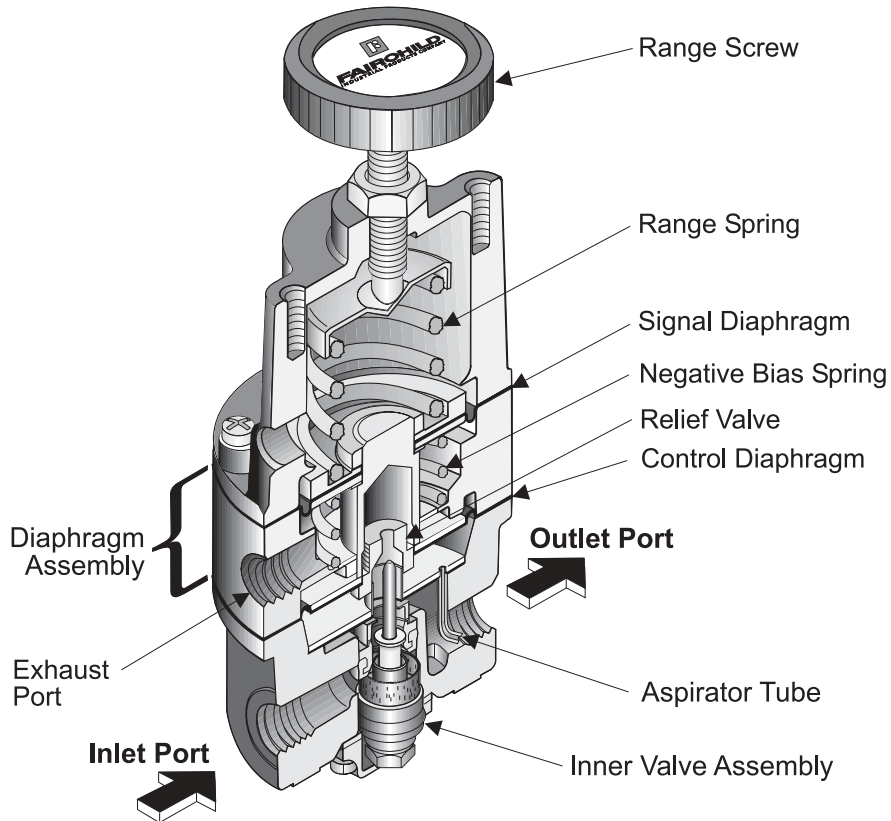


Figure 1. Model 16 Detail Drawing

## GENERAL INFORMATION

The Model 16 Vacuum Regulator is designed for systems that require system pressure control above and below atmospheric pressure.

The Model 16 has the following features:

- Control sensitivity of 1/2" water column allows use in precision applications.
- A balanced Supply Valve minimizes the effects 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 16 without removing it from the line.
- A Mounting Bracket is available.

## 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 Figure 1.

## OUTLINE DIMENSIONS

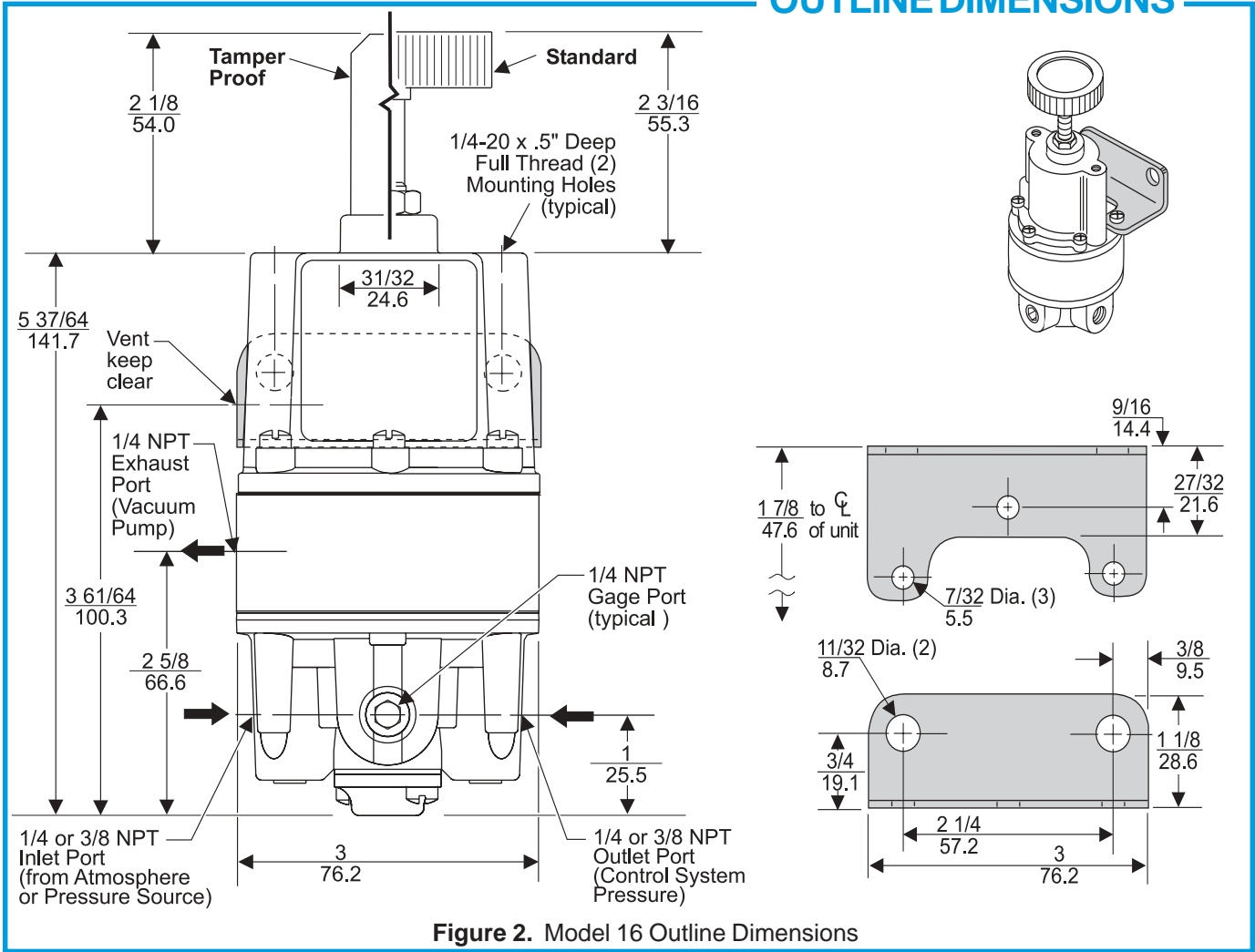


Figure 2. Model 16 Outline Dimensions

## SPECIFICATIONS

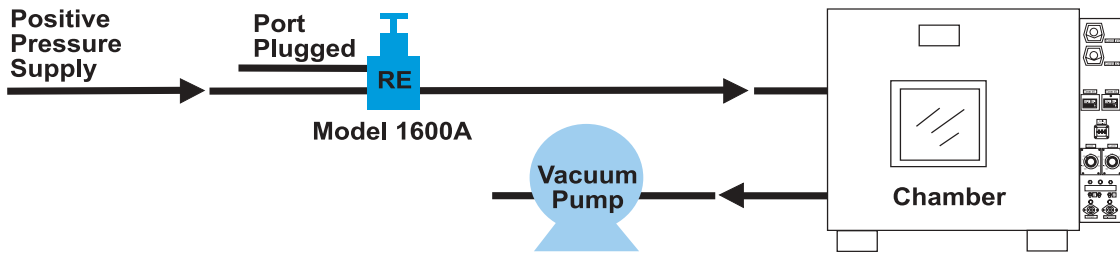
### FUNCTIONAL SPECIFICATIONS

<b>Supply Pressure</b>	250 psig, [17.0 BAR] (1700 kPa) Maximum.
<b>Positive Flow Capacity (SCFM)</b>	40 (65.2 m <sup>3</sup> /HR) @ 100 psig, [7.0 BAR], (700 kPa) supply & 20 psig, [1.5 BAR], (150 kPa) setpoint.
<b>Vacuum Flow Capacity (SCFM)</b>	2.5 (4 m <sup>3</sup> /HR) @ 29" Hg VAC with pump connected to exhaust port 40 (65.2m <sup>3</sup> /HR) @ 100 psig supply connected to inlet port
<b>Ambient Temperature</b>	-40° F to +200° F (-40° C to +93° C)

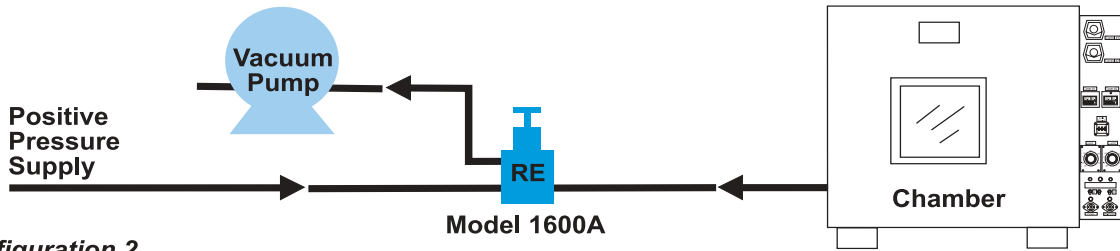
### PERFORMANCE SPECIFICATIONS

<b>Sensitivity</b>	1/2" (1.27 cm) Water Column.
<b>Supply Pressure Effect</b>	Less than 0.1 psig, [.007 BAR], (0.7 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure.
<b>Materials of Construction</b>	Body and Housing ..... Aluminum Trim ..... Stainless steel, Brass, and Zinc Plated Steel Diaphragms ..... Nitrile on Dacron

## TYPICAL APPLICATION



Configuration 1.



Configuration 2.

Pneumatic

Figure 3. Model 16 Pressure Control Application

## TYPICAL APPLICATION

The Model 16 Vacuum Regulator is ideally suited for applications that require the fast evacuation of a vessel 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 16.

Configuration 1 shows the connection for applications that require a high frequency system response or fast evacuation of a vessel 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 and, in most applications, is not restricted by the relief capacity of the regulator.

Configuration 2 shows the connection for applications that require control of a system that needs positive pressure and vacuum. In vacuum applications, you can leave the Inlet 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.

## INSTALLATION

For installation instructions, see the *Model 16 Vacuum Regulator IOM, IS-10000016*.

## ORDERING INFORMATION

<b>Catalog Number</b>	<b>1 6</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pressure Range</b>				
<b>psig</b>	<b>[BAR]</b>	<b>(kPa)</b>		
Vacuum - 2	[Vacuum-0.15]	(Vacuum - 15)	<b>(21)</b>	
Vacuum - 10	[Vacuum-0.7]	(Vacuum - 70)	<b>(22)</b>	
Vacuum - 30	[Vacuum-2.0]	(Vacuum - 200)	<b>(23)</b>	
Vacuum - 100	[Vacuum-7.0]	(Vacuum - 700)	<b>(25)</b>	
Vacuum - 150	[Vacuum - 10]	(Vacuum - 1000)	<b>(26)</b>	
<b>Pipe Size</b>				
1/4" NPT			<b>(2)</b>	
3/8" NPT			<b>(3)</b>	
<b>Options</b>				
Tamper Proof				<b>(T)</b>
Increased Sensitivity				<b>(L)</b>
Silicone Elastomers <sup>1</sup>				<b>(A)</b>
Viton Elastomers				<b>(J)</b>
BSPT (Tapered)				<b>(U)</b>
BSPP (Parallel) <sup>2</sup>				<b>(H)</b>

<sup>1</sup> Maximum Supply Pressure - 75 psig, [5.0 BAR], (500 kPa)  
<sup>2</sup> BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.

