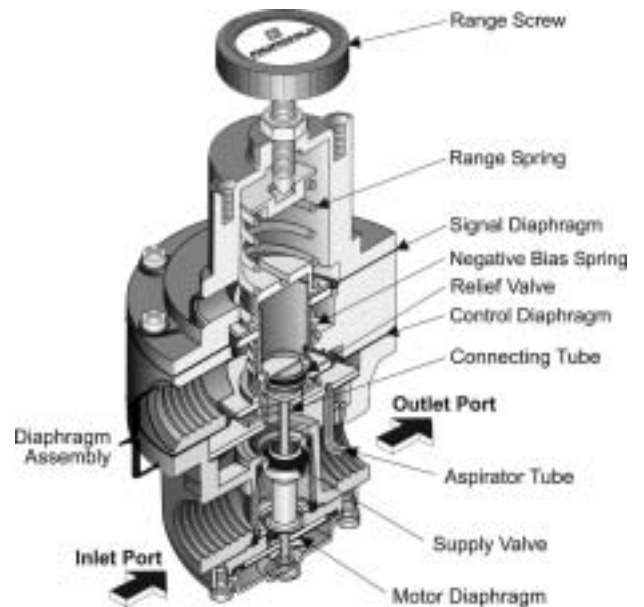
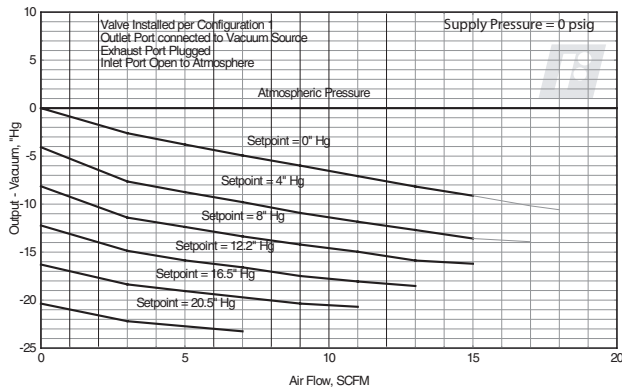


# Model 1600A

## Vacuum Regulator



Flow Characteristics  
Fairchild Model 1623 A



### Cross Section

#### Model 1600A Detail Drawing

### General Information

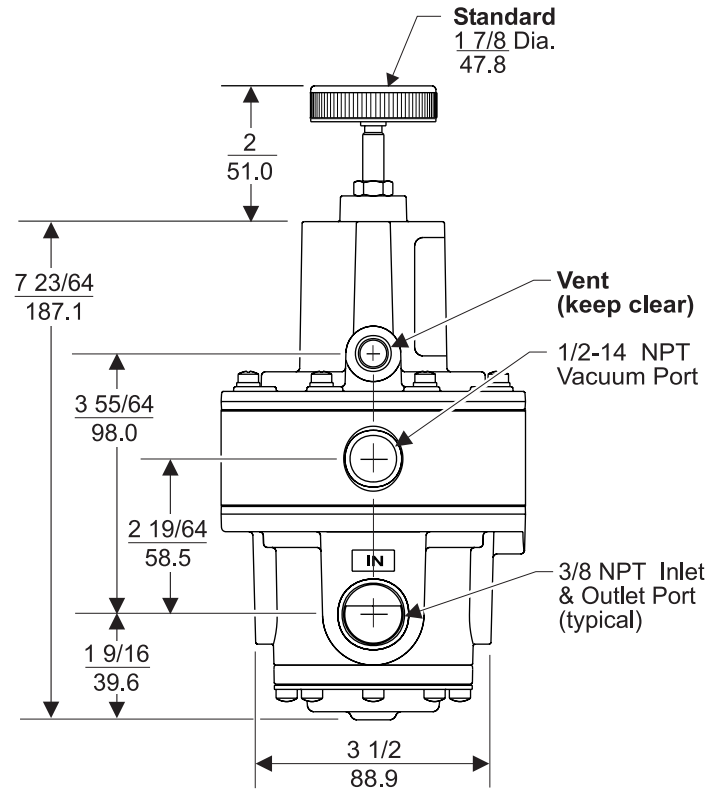
- The Model 1600A Vacuum Regulator controls pressure in high flow systems above and below atmospheric pressure.
- The single unit controls vacuum and positive pressure.
- Control sensitivity of 1" water column allows use in precision applications.
- Large Supply and Exhaust Valves provide high forward 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).

(continued on page 4)

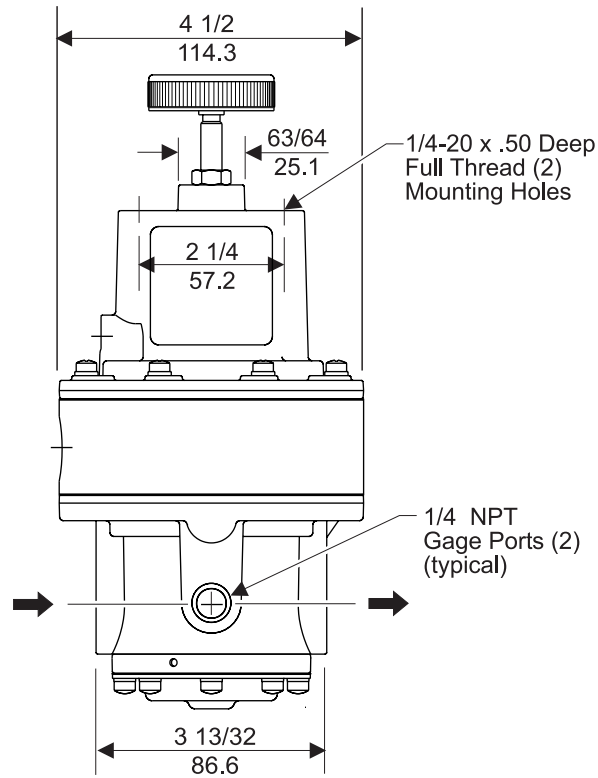
## Outline Dimensions



## Functional Specifications

Supply Pressure	250 psig, [17.0 BAR], (1700 kPa) Maximum
Flow (SCFM) Capacity	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
Ambient Temperature	-40°F to +200°F (-40°C to +93°C)

## Outline Dimensions

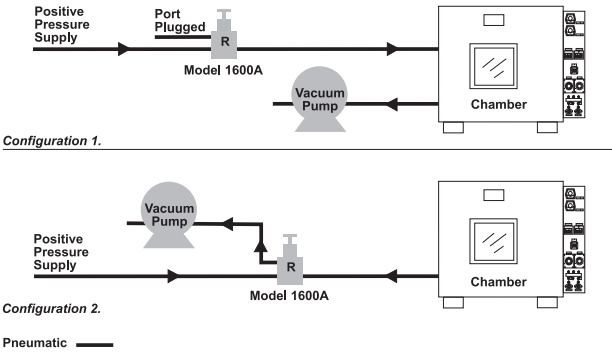


## Performance Specifications

<b>Sensitivity</b>	1" (2.54 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 ..... Zinc Plated Steel, Brass Diaphragms ..... Nitrile on Dacron

## 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.



## Installation

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

## Operating Principles

(continued from page 1)

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 cross sectional diagram.

## Catalog Information

### Catalog Number

16 -   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	<input type="text"/> 3
1/2" NPT	<input type="text"/> 4
3/4" NPT	<input type="text"/> 6

### Options

BSPP (Parallel) <sup>1</sup>	<input type="text"/> H
BSPT (Tapered)	<input type="text"/> U

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



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CS-1001600A Rev. B 03/05  
Litho in USA