

Valve Positioners and Volume Boosters

Series 61 Booster Relays

Introduction

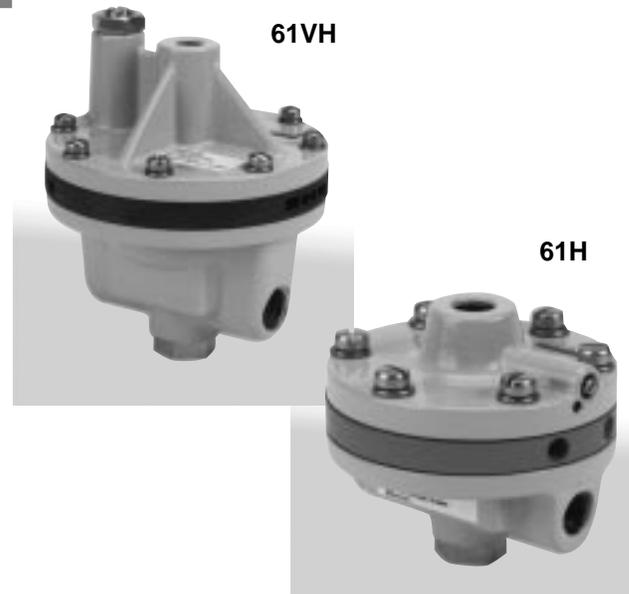
Features & Benefits

- ▶ Positioning resolution of 1 part in 1000 full scale, high sensitivity, and fast response provide DDC-compatible control
- ▶ High flow capacity improves valve stroking speed
- ▶ Built-in adjustable bypass needle valve optimizes dynamic response
- ▶ Low weight and small size provide application versatility
- ▶ Negligible dead band provides fast, accurate volume boosting

Description

The Series 61 Booster Relays include the Model 61H and the Model 61VH. The 61H is a high-capacity booster relay designed to improve the stroking speed of large diaphragm valves, while the 61VH is a high-capacity volume booster designed for use on control valve actuators that require very fast stroking speeds.

Both feature a stabilizing bypass needle valve between the input and output, which eliminates the need for an externally piped bypass. Input pressure, acting upon the effective area of the upper diaphragm, produces a force that is opposed by the output pressure exerted upon the effective area of the lower diaphragm. The opposing forces are in a direct 1:1 ratio. Thus, any increase in the input pressure will depress the diaphragm assembly, thereby opening the pilot valve to admit a sufficient supply of air to the output and re-balancing the input pressure. A decrease in input pressure will cause the diaphragm assembly to lift off the exhaust port, which reduces the output and re-balances the input.



Specifications – Model 61H

Normal Input & Output Pressure

3-15 psig

Maximum Input Pressure

100 psig (7 bar)

Maximum Supply Pressure

100 psig (7 bar)

Overload Protection to any Connection

150 psig

Accuracy of 1:1 Ratio

5%

Repeatability¹

0.1%

Linearity¹

0.4%

Ambient Temperature Limits

-40 to 180°F (-40 to 82°C)

Flow Capacity²

10.5 scfm

Approximate Weight

3 lbs. (1.36 kg)

Materials of Construction

Aluminum, brass, SS, Neoprene, Teflon, Buna-N

1) Based on a 3-15 psi input.

2) Flow to cause output to droop 1 psi @ 9 psi output and 20 psi supply

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Technical data

Specifications - Model 61VH

Supply Pressure

150 psig max. (10.3 bar, not to exceed actuator rating)

Input

150 psig max. (10.3 bar)

Max. Flow Coefficients

	Cv	Cg
Supply	2.1	72
Exhaust	1.9	68

Input/Output Ratio

1:1 ±5%

Dead band

Less than 0.15 psi

Temperature Limits

-40 to +180°F (-40 to 82°C)

Approximate Weight

3 lbs. (1.36 kg)

Materials of Construction

Aluminum, brass, SS, Neoprene, Teflon

Nominal Flow Capacity (with 80 psig supply & 60 psig load)

Supply 120 scfm (3398 dm³)

Exhaust 110 scfm (3115 dm³)

Actuator Data

Area: 201 in²

Stroke: 8"

Supply pressure: 60 psig (4.1 bar)

Balance pressure: 30 psig (2.1 bar)

Tare volume:

Above piston: 67 in³

Below piston: 1676 in³

Stroking speed:

	Increasing Input	Decreasing Input
With 61 VH Booster	2.85 in/sec	2.80 in/sec
Without Booster	0.60 in/sec	0.50 in/sec

Stroking speed tests performed on a double-acting actuator equipped with the Model 750P Valve Positioner.

Leakage Rate: .067 scfm

Conditions: 150 psig supply
130 psig output

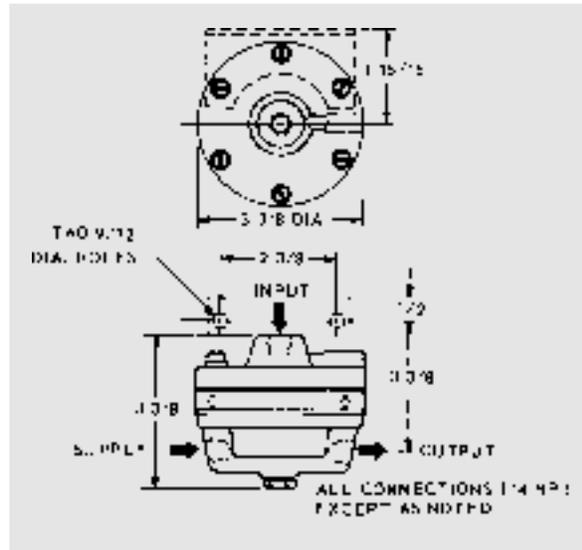
Life Test: 8.8 Million cycles

Conditions: 100 psi reversal end-to-end

Accessories

► P/N 1145-34 Mounting Bracket

Mounting Dimensions – Model 61H



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Mounting Dimensions – 61VH

