Fume Hood & Room Pressure Control

VV Series Venturi Air Valve

Overview

The TRIATEK Venturi valve is pressure independent. The variable volume valve maintains a set air volume independently over a range of 0.6 to 3 inches of water gauge static pressure across the valve. As the static pressure increases, the internal spring compresses to maintain a constant volume of air. Likewise, as the static pressure decreases, the internal spring expands and moves the cone to increase the annular area, thus maintaining a constant volume.

The Venturi Valve will control air flow for both supply and return or exhaust ducts based on CFM of flow set by the actuator. This valve in its normal operating mode is pressure independent so that flow is constant based on specific actuator positions. Flow control using the Venturi is linear over most of its control range.

TRIATEK's V V Series Venturi Valve is available in aluminum and stainless steel materials. Where corrosion resistance is required, specify stainless steel model. They come in several standard sizes from 6 inches to 12 inches in diameter. Where more flow is required than can be furnished through a single 12-inch valve, multiple Venturi valves can be paralleled to provide the additional flow.

Where flow control is required under high pressure conditions, TRIATEK has a model available with sound attenuation. Specify sound attenuation when required.

Features & Benefits

- Fully pressure independent over 0.6" - 3.0" wc (150-750 Pa) drop across the valve
- Volume control accurate to ±5% of airflow command signal
- No main air consumption
- Factory calibrated flow
- Field Adjustable
- Pneumatic or electric actuator
- Compact design for easy installation
- Aluminum Standard
- Stainless Steel Available
- Constant Flow Control
- Linear Control
- Sound Attenuator Models Available For High Pressure Control

Applications

- Laboratories
- Clean Rooms
- Hospital Isolation Rooms
- Fume Hoods
- Biological Safety Cabinets
- Flow Control
- Pressure Control

Related Products

- FMS-1630 Isolation Room Monitor
- HMS-1630 Fume Hood Monitor.
- ACT-FA-8001 Electronic Actuator

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Specifications

Construction

- Spun Aluminum or Stainless Steel valve body with continuous welded seam
  Aluminum Thickness: 0.060"
  Stainless Steel Thickness: .040"[23]
- Valve bodies available as uncoated aluminum, 316 Stainless Steel or with corrosion-resistant baked Phenolic coatings
- Composite Teflon® shaft bearings
- Spring grade stainless steel spring
- Supply valves* insulated with 3/8" (9.5 mm) flexible closed-cell polyethylene. Flame/smoke rating 25/50. Density is 2.0 lb/ft3 (32.0 kg/m3)

Weight

6" ..... 10 lbs.
8" ..... 11 lbs.
10" ..... 13 lbs.
12" ..... 14 lbs.

Operating Range

- 32-125° F (0-50° C) ambient
- 10-90% non-condensing RH
- Valve Stroke Range approximately 35°

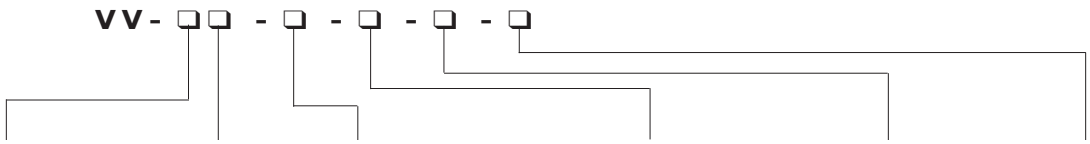
Sound

Designed for low sound power levels to meet or exceed ASHRAE noise guidelines.

Performance

- Pressure independent over a 0.6"-3.0" wc (150-750 Pa) drop across the valve
- Volume control accurate to ±5% of airflow command signal
- No additional straight duct runs needed before or after valve
- Response time to change in command signal: <1 second
- Response time to change in duct static pressure: <1 second

Ordering Instructions



Number of Valves		Diameter	Material	Sound Attenuation	Actuator	Range
# Valves	**Code**					
Single=	0	06 = 6"	A = Aluminum	N = No Attenuation	P = Pneumatic	PC = Partially Close
2 valves =	2	08 = 8"	SS316 = Stainless Steel [123]	I = Sound Insulated	FA = Electronic, Fast Acting	
3 valves =	3	10 = 10"	H = Heresite Coat [1]		CV =No Actuator	
4 valves =	4	12 = 12"				

1 Sound Attenuation not available for these materials
2 Not available for Vertical Applications
3 The Stainless Valve comes with a Teflon or Heresite Coated Cone.

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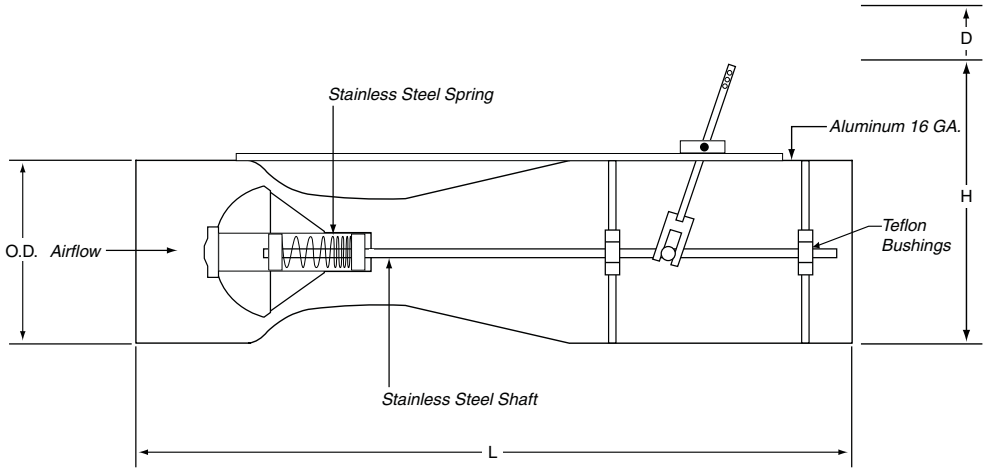

Partially Closed Valve Dimensions

Unit Size	Airflow Range		Inlet Size	Dimensions (inches)			Inlet (mm)	Dimensions (mm)		
	CFM	L/S		OD	L	H		OD	L	H
6	30 - 250	14 - 117	6	5.89	19.50	10.89	152	150	495	277
8	35 - 700	17 - 329	8	7.875	23.0	12.875	203	200	584	327
10	50 - 1000	24 - 472	10	9.88	26.0	14.88	254	251	660	378
12	90 - 1500	42 - 705	12	11.875	27.12	16.875	305	302	688	429

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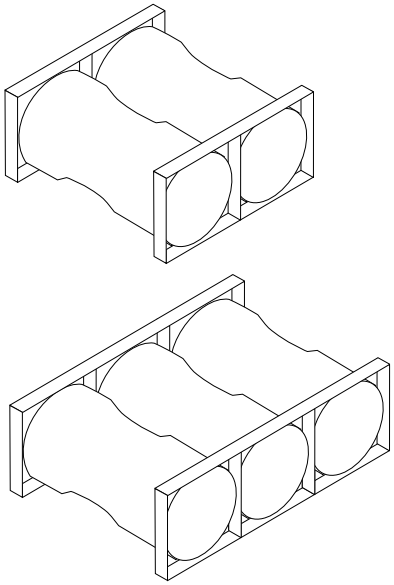

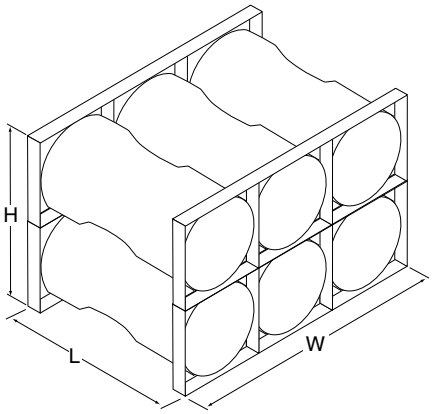

Partially Closed Ganged Valve Dimensions

Unit Size	Number of Modules	Airflow Range		Dimensions (inches)			Inlet (mm)	Dimensions (mm)		
		CFM	L/S	L	W	H		L	W	H
10	2	100 - 2000	47 - 944	30.00	22.625	11.50	254	762	575	292
	3	150 - 3000	71 - 1416	30.00	33.75	11.50		762	857	292
	4	200 - 4000	94 - 1888	30.00	22.625	23.0		762	575	584
	6	300 - 6000	141 - 2832	30.00	33.75	23.0		762	857	584

Unit Size	Number of Modules	Airflow Range		Dimensions (inches)			Inlet (mm)	Dimensions (mm)		
		CFM	L/S	L	W	H		L	W	H
12	2	180 - 3000	85 -1410	31.12	26.75	13.50	305	791	680	343
	3	270 - 4500	127 - 2115	31.12	40.0	13.50		791	1016	343
	4	360 - 6000	170 - 2820	31.12	26.75	27.12		791	680	689
	6	540 - 9000	254 - 4230	31.12	40.0	27.12		791	1016	689

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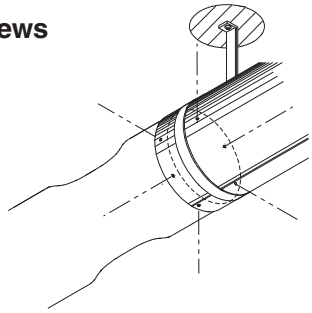
Procedure for Physical Installation of Triatek Valves

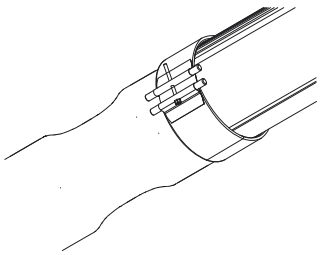
1. Read all instructions completely prior to installing valves.
2. Check that tag number on valve label matches Valve schedule.
3. Verify correct airflow direction and orientation of the valve ductwork (e.g., horizontal). NOTE: Valves mounted out of horizontal or vertical position (as determined by a level) will affect performance.
4. Allow a minimum of 14 in. (356 mm) of free unobstructed around the valve for access. In general, the valve may be installed in a 360º rotation. However, single body horizontal hood valves should be installed so that the pivot arm located between 8 and 4 o'clock (not within 4 to 8 o'clock).
5. Allow 5.75" (146 mm) of unobstructed space in the duct on valve's inlet side for the shaft to reach the maximum flow position.
6. Use duct sealant on all valve / duct connections (or flange gaskets for circular flanges).
7. Install a hanger stock to support the ductwork within 12 in. (305 mm) of the valve connection. Install valve into duct after hanger stock is in place.
8. Follow the appropriate installation diagram.

NOTE:
Screws, fasteners, duct sealant, hanger stocks, companion flanges, and gaskets are not provided by Triatek.

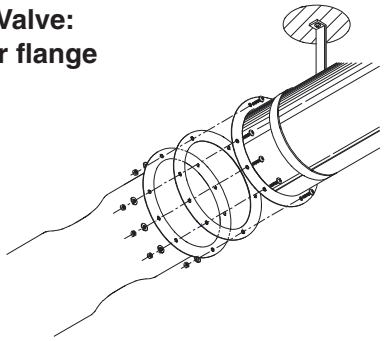
Single Valve: Sheetmetal screws



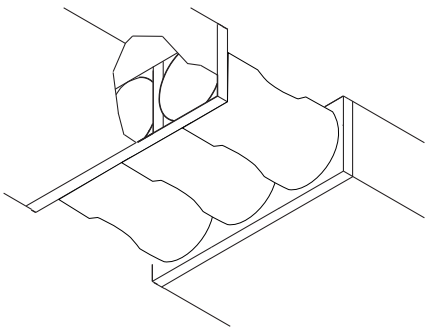
Single Valve: Drawband**



Single Valve: Circular flange



Multiple Valve Body: Slip-type flange



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