



IOM

PROJECT: VA – Renovate Logistics – B1

LOCATION: Fayetteville, AR

ENGINEER: Harrell Design Group

**MECHANICAL
CONTRACTOR:** Comfort Systems

EQUIPMENT: Airflow Control Valves
Tagged: VV-LOG-1 and VV-LOG-2

DATE: June 12, 2026

Josh Davis
josh@airetechcorp.com
(479) 756-8600

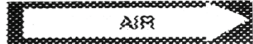
TSI VENTURI VALVE INSTALLATION INSTRUCTIONS

APPLICATION NOTE LC-130

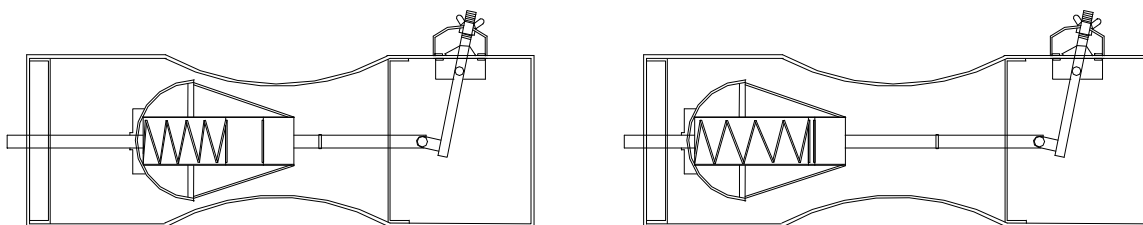
1. Carefully unpack the valve from the shipping container in the area where it will be mounted. Verify the size and flow range of the valve by comparing the data on the valve label to the specifications listed on the schedule or architectural drawings.

Notes: Do **not** carry the valve by the linkage, cone bracket, or any other control aspects that are mounted onto the valve body.

*The central cone shaft extends out of the valve body inlet opening when in full open position. Do **not** stand the Venturi Valve on inlet opening side when the Venturi Valve is in full open position.*

 500 CARDIGAN ROAD SHOREVIEW, MN. 55126-3996 Phone: 651-483-0900 Fax: 651-490-3824		HORIZONTAL INSTALLATION ONLY
		
MODEL NO. VVT108MHAXXZCX REF. : 4500017577 JOB: LV842D CFM : 60/500 LOC. : CORNELL TAG : CORNELL		
VARIABLE VOLUME		
0 V. (MIN)	60	CFM
2 V.	87	CFM
4 V.	145	CFM
6 V.	224	CFM
8 V.	352	CFM
10 V. (MAX)	500	CFM
CONSTANT VOLUME		
SET POINT		
CFM		
VERIFIED ☒		
INIT. 4.6.		
CODE: 26-25		

2. Verify the cone direction by checking the calibration data label mounted on the cone and comparing the arrow on the label to the direction of cone travel. The cone should move freely in the direction that the arrow is pointing.
3. Check the valve action by moving the cone by hand to ensure free travel in the orientation that the valve will be mounted in (vertical or horizontal).



Note: If the valve is configured and calibrated for horizontal or vertical operation, the valve must be level when mounted in the ductwork to operate precisely.



4. When mounting the valve in the ductwork, support the ductwork within 12 inches of the valve. Do **not** crimp or deform the valve ends. Make sure the actuator linkage rotates freely and does not interfere with any obstruction (the cone shaft extends out of the valve inlet opening in full open actuator position). It does not matter if the actuator and linkage is up, down or sideways. However, for future maintenance or adjustment, the linkage is best positioned facing down.

Note: Before mounting the valve to the ductwork, verify the direction of flow within the duct and align the valve accordingly.

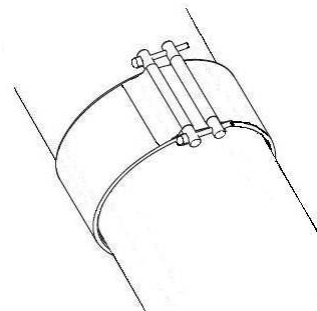
For Slip-In Valves

1. Connect the inlet side of the valve to the ductwork using industry accepted mounting or connection practices such as drawband or bolting.

Note: No ductwork should be mounted inside the valve. Ductwork extending into the valve could interfere with valve operation.

2. Connect the outlet side of the valve to the ductwork using industry accepted mounting or connection practices such as drawband or bolting.

Note: No ductwork should be mounted inside the valve. Ductwork extending into the valve could interfere with valve operation.

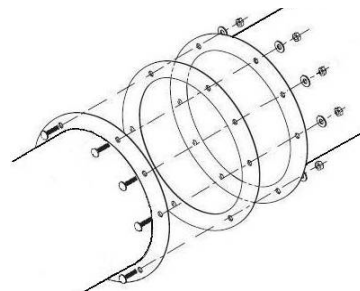


For Valves with Flanges

1. Connect the flange on the inlet side of the valve to the ductwork flange using industry standard mounting nuts, bolts, washers and gasket material.

Note: The Venturi Valve flange companion ring is provided by others.

2. Connect the flange on the outlet side of the valve to the ductwork flange using industry standard mounting nuts, bolts, washers and gasket material.
3. Seal all the ductwork connections and verify that no leaks are present.
4. Refer to the controller installation instructions for correct wiring information.



WARNING: TSI Venturi Valves are intended for indoor installation only.



UNDERSTANDING, ACCELERATED

TSI Incorporated – Visit our website www.tsi.com for more information.

USA	Tel: +1 800 874 2811	India	Tel: +91 80 67877200
UK	Tel: +44 149 4 459200	China	Tel: +86 10 8251 6588
France	Tel: +33 4 91 11 87 64	Singapore	Tel: +65 6595 6388
Germany	Tel: +49 241 523030		

OPERATION OF TSI[®] VENTURI VALVES

APPLICATION NOTE LC-128

Venturi valves can be an important component of critical environments control systems. Understanding how venturi valves operate is key to using them successfully.

At their heart, venturi valves can be considered pressure-independent flowmeters. They are able to mechanically correct for static pressure fluctuations without involving a controller. Instead, a spring-loaded cone responds to duct static pressure changes. As the static pressure inside the duct changes, the spring will compress or expand, moving the cone in or out of the valve body and adjusting the venturi valves resistance to flow. Air volume through the valve is maintained at setpoint, even as static pressure changes.

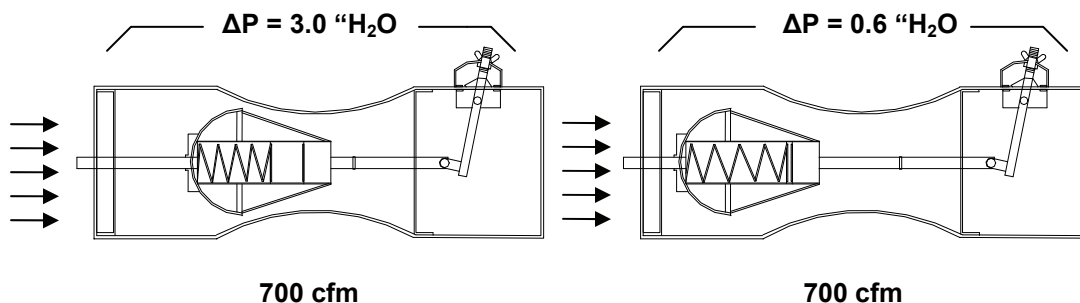


Fig.1: Constant Volume Valve with a spring range of 0.6 - 3.0 "H₂O

When a venturi valve is adjusted to achieve different air flow rates, the valve shaft is repositioned. Moving the shaft also moves the cone inside the valve body, allowing more or less flow through the valve. The cone will ride on its spring in order to maintain pressure-independent operation at any shaft position, meaning that the position of the valve shaft can be used as a flow measurement. TSI uses high-speed electric actuators to control the valve shaft position and flow rate.

To translate valve shaft position into usable flow rate information, the flow curve of the valve is field-programmed into a TSI controller by measuring and entering flow rates at specific valve positions. Field calibration compensates for duct leakage while serving as a check to ensure that the needed pressure drop is present.



In order for the cone and spring of a venturi valve to function as designed, venturi valves require a higher pressure drop than many flow stations, including pitot arrays and flow crosses. The high pressure drop, however, carries with it another advantage: the pressure drop conditions the flow, eliminating requirements for straight duct runs upstream or downstream of the valve. Venturi valves have been installed next to elbows, take-offs and ductwork transitions without compromising their reliability.



UNDERSTANDING, ACCELERATED

TSI Incorporated – Visit our website www.tsi.com for more information.

USA	Tel: +1 800 874 2811	India	Tel: +91 80 67877200
UK	Tel: +44 149 4 459200	China	Tel: +86 10 8251 6588
France	Tel: +33 4 91 11 87 64	Singapore	Tel: +65 6595 6388
Germany	Tel: +49 241 523030		