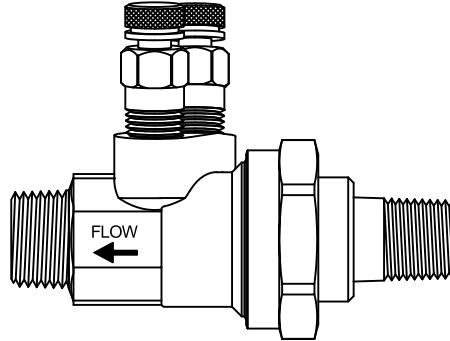




VU Series Installation and Operations Manual Venturi/Union x MPT



PRODUCT DESCRIPTION: The VU is a brass venturi that provides highly accurate flow measurement capabilities with minimal permanent pressure loss due to the 15° regain cone. The venturi has a union inlet allowing for multiple connections. When the same size tail piece or any male reducing tail piece is used, no upstream pipe diameters are required to sustain accurate readings. The union side incorporates an o-ring seal for maximum sealing protection.

PRO Hydronic Specialties (*PROHS*) assumes no responsibility for injuries or damages that result from the nonobservance or noncompliance with installation and operational procedures. It is the responsibility of each link in the supply chain between the factory and the ultimate installation to assure each subsequent party has a copy of this document and understands the proper installation and cautions concerning this product. Upon receipt of shipment, the product should be thoroughly inspected for any damage. Once installed, the product should be checked under pressure for leaks and thereafter at least annually.

Limited Warranty: *PROHS*'s liability is limited to the repair or replacement of the defective component. By purchasing and/or installing *PROHS* products, it is understood the purchaser/installer contractually agrees with the warranty terms as stated here and elaborated in the full warranty statement found at www.prohydronicsspecialties.com. *PROHS* makes no general claim of usability of this product unless *PROHS* is directly advised of the specific use and installation of this product and responds in writing.

CAUTION

CAREFULLY FOLLOW THESE INSTRUCTIONS. FAILURE TO DO SO MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PROPERTY DAMAGE.

DO NOT use pipe dope or sealant on union threads, o-rings, or in o-ring grooves. Doing so can result in leaks.

DO NOT use silver solder for sweat end models.

DO NOT use an excessive amount of flux or solder.

DO NOT over tighten the union nut. Tool marks on the union nut indicate over tightening.

DO NOT adjust factory installed and tested fittings.

ALWAYS use a heat sink when soldering. Do not overheat product.

ALWAYS use properly engineered pipe supports and avoid placing excessive loads on the product.

ALWAYS perform no less than annual inspections on components. These products are dynamic in nature and due to varying system conditions there are no representations as to the duration of useful life for these products in excess of the warranty.

ALWAYS pressure test the components once installed to assure no leaks exist. If a leak or defect is found, immediately isolate from pressure and contact the factory for repair or replacement under warranty.

ALWAYS isolate the product from pressure when leaks or damage are detected to avoid property damage and contact the factory immediately to determine appropriate actions. The factory is not responsible for damages as the result of any repairs performed on the products while under pressure.

Failure to follow these cautions, not following standard industry practices, and/or using non-trained/unqualified installers could result in catastrophic failure.

Installation Procedures

General:

PRO Hydronic Specialties manual balancing valves are directional. Observe flow arrow for proper orientation.

Threaded End Valves:

- Inspect pipe threads on valve and piping to ensure they are clean and free of burs or other foreign material.
- The union nut should be hand tightened or snugged with a wrench to seal sufficiently.
- If a wrench is used to tighten the union nut, use a back-up wrench to prevent the valve from turning.
- If a drip occurs, check the o-ring and ensure the surface is clean.

Sweat End Valves:

- Clean the valve and tube ends with a wire brush before soldering.
- Wrap the valve with a heat sink.
- The ball valve must be either fully open or fully closed when soldering so as to not damage the Teflon seat.
- Direct the flame away from the center of the valve body and remove excess flux and solder.

Measuring Flow with a VU:

1. Identify the VU model (including Beta for the ½" and ¾").
2. Properly attach the differential meter/gauge to the venturi (use arrows or by default, the high pressure side is near the union.)
3. Using either the flow equation or table, determine the inches of water column that matches the desired flow rate for the proper venturi size and Beta. If the GPM is specified, the tag will have the inches of water column factor.
4. Remove differential meter/gauge and replace the PT caps.

NOTE: Any valve in the same flow section as the venturi can be used to throttle flow.

Troubleshooting Guide

(General guide is not inclusive of all situations)

Symptom	Possible Cause	Solution
No differential reading	Hi/Lo pressure lines switched on the gauge	Make sure the high pressure is obtained upstream. The low pressure is taken down.
	Probe not inserted fully	Make sure the pressure lines to the differential gauge have pressure.
	Air entrapment in pressure lines or gauge	Make sure the lines and/or gauge are bled of air.
	Valves are shut off	Make sure supply and return valves are open. Make sure the control valve is open.
	Insufficient flow	Very low flow conditions may not create sufficient differential pressure across the venturi.
Differential "pegs" out	Air entrapment in pressure lines or gauge	Make sure the lines and/or gauge are bled of air.
	Too much flow	High flow creates differential higher than the differential gauge can measure.
Estimated flow does not match measured flow	Venturi in backwards	Verify that the flow arrow on the venturi matches the flow direction.
	Actual flow is not as estimated	Assure proper Beta venturi is selected and chart is read correctly.