



Badger Meter

VAM-QS-01769-EN-02 (October 2015)

Quick Start Guide

INSTALLATION

CAUTION

NOT FOLLOWING INSTRUCTIONS PROPERLY MAY IMPAIR SAFETY OF EQUIPMENT AND/OR PERSONNEL

The flow meter is a simple device to install. Follow these directions for reliable and trouble-free operation:

Piping (Plumbing)

Align piping with the meter inlet and outlet to minimize structural stress on the plastic meter body. Special attention should be given to this effort if higher operational pressures and/or temperatures are anticipated. Piping should be firmly supported by external mounting brackets, both upstream and downstream from the meter to avoid any pipe flexing that could reduce the life of the meter.

1. If the flow meter inlet or outlet are to be rigidly mounted, and the opposing port is to be connected to a flexible hose, the end connected to the flexible hose must be rigidly mounted.
2. This unique design does not require special plumbing or accessories to stabilize turbulent flow. Flow meters can be installed immediately adjacent to 90° elbows or other components, providing system design flexibility.
3. A 200 mesh (74 micron) or better filtration is required for reliable performance.

Flow Direction

These meters only accept flow in one direction. Make sure to align the *Flow Arrow*, located on the bottom of the meter's flow scale, in the same direction as the anticipated line flow. See *Figure 1*.

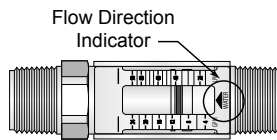


Figure 1: Flow direction

Mounting Orientation

The meter can be installed to operate in any position.

1 in. (25 mm) NPT Models

See *Figure 2*.

1. Apply a single layer of Teflon® tape to the male NPT threads of the flow meter.
2. Thread the flow meter inlet into a 1 in. (25 mm) NPT plastic, female pipe coupling.
3. Thread the flow meter and coupling onto the inlet pipe and hand tighten. Make sure the flow direction arrow on the flow meter corresponds with the system flow direction. See *Figure 1*.

Figure 1.

4. Place an open-end wrench on the flow meter body hex and place a pipe wrench on the metal mating pipe. Tighten until snug. Do not overtighten. Make sure the flow meter scale is oriented for convenient viewing. Do not back off/unscrew fittings to rotate scale for better viewing.
5. Thread a 1 in. (25 mm) NPT plastic pipe coupling to the outlet connection of the flow meter. Stack a pipe nipple and half of a pipe union onto the pipe coupling. Tighten the assembly as required.
6. Install the other half of the pipe union to the outlet pipe and connect the union halves together.
7. Piping should be supported and aligned properly to avoid placing stress on the flow meter body.
8. Slide the limit indicators to point to appropriate positions on the flow meter scale. To remove the limit indicators, slide them fully towards the flow meter outlet.

1 in. (25 mm), 1-1/2 in. (38 mm) and 2 in. (50 mm) PVC with Socket Weld Models

See *Figure 3*.

1. Remove the two end fittings from the flow meter. Lubricate the O-rings and install the fittings onto the flow meter.

CAUTION

LIQUID PIPE SEALANTS, PVC/CPVC PRIMERS AND PVC/CPVC CEMENTS CONTAIN SOLVENTS THAT ARE NOT COMPATIBLE WITH POLYSULFONE PLASTIC. ALLOWING LIQUID PIPE SEALANTS TO CONTACT THE PLASTIC FLOW METER WILL RESULT IN WEAKENING OF THE FLOW METER BODY AND POTENTIALLY CAUSE FRACTURING UNDER PRESSURE.

2. Prepare the flow meter PVC fittings and PVC pipe couplings with PVC cleaner/solvent.
3. Apply a thin layer of PVC glue to the PVC flow meter fittings. Orient the meter during curing so excessive glue does not run into or onto the flow meter. Connect all PVC glue joints by inserting the pipes fully into their mating components and twisting 1/8 turn to guarantee adhesion. Allow sufficient drying time.
4. Using the method outlined in steps 2 and 3, apply half of the PVC union to the flow meter outlet fitting.
5. Install the other half of the PVC pipe union to the outlet pipe.
6. Make sure the flow direction arrow on the flow meter corresponds with the system flow direction. See *Figure 1*. Lubricate the union O-ring and connect the union together.
7. Piping should be supported and aligned properly to avoid placing stress on the flow meter body.
8. Slide the limit indicators to point to appropriate positions on the flow meter scale. To remove the limit indicators, slide them fully towards the flow meter outlet.

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Legacy Document Number: 04-VAM-UM-00267

Brass Sweat Fitting Models

See *Figure 4*.

1. Remove both brass fittings from the flow meter inlet and outlet. Remove the two O-rings from the fittings.
2. Apply solder flux to the flow meter brass fittings and mating pipe surfaces.
3. Place the brass hex coupler onto the pipe with the thread facing the flow meter. Slide the brass sweat fitting onto the prepared pipe.
4. Sweat the fittings onto the pipe. Do not apply heat to the brass flow meter fitting with the plastic flow meter body or seals attached to the fitting.
5. Repeat steps 3 and 4 for the other flow meter fitting. Allow the fittings to cool.
6. Lubricate the two O-rings removed in step 1. Place the O-rings onto the brass fittings.
7. Place the flow meter in between the two installed brass fittings. Make sure the flow direction arrow on the flow meter corresponds with the system flow direction. See *Figure 1*. Thread the two brass hex couplers into the flow meter body.
8. Rotate the flow meter body so the scale can be conveniently viewed. Tighten the hex couplers. Typically, only hand tightening is required.
9. Piping should be supported and aligned properly to avoid placing stress on the flow meter body.
10. Slide the limit indicators to point to appropriate positions on the flow meter scale. To remove the limit indicators, slide them fully towards the flow meter outlet.

All Models with Male, Metal or PVC Threaded End Fittings

See *Figure 5*.

1. Remove both fittings from the flow meter inlet and outlet. Remove the two O-rings from the fittings.
2. Apply Teflon® tape to the male pipe thread connections.
3. Place the brass or stainless steel hex coupler onto the pipe with the threads facing the flow meter.
4. Thread the flow meter fittings onto the mating pipe.
5. Tighten the fittings by placing an open-end wrench onto the fitting and a pipe wrench onto the mating pipe.
6. Repeat steps 3...5 for the other flow meter fitting.
7. Lubricate the two O-rings removed in step 1. Place the O-rings onto the threaded fittings.

8. Place flow meter between the two installed fittings. Make sure the flow direction arrow on the flow meter corresponds with the system flow direction. See *Figure 1*. Thread the two hex couplers onto the flow meter body.
9. Rotate the flow meter body such that the scale can be conveniently viewed. Tighten hex couplers. Typically, only hand tightening is required.
10. Piping should be supported and aligned properly to avoid placing stress on the flow meter body.
11. Slide the limit indicators to point to appropriate positions on the flow meter scale. To remove the limit indicators, slide them fully towards the flow meter outlet.

All Models with Female, Metal Threaded End Fittings

See *Figure 6*.

1. Apply Teflon® tape to the male pipe thread connections.
2. Thread the inlet of the flow meter onto the appropriate pipe connection. Make sure the flow direction arrow on the flow meter corresponds with the system flow direction. See *Figure 1*.
3. Tighten flow meter connection by placing an open-end wrench on the flow meter metal connection adjacent to the pipe that is being attached. Tighten until snug. Make sure the flow meter scale is oriented for convenient viewing. Do not overtighten. Do not back off/unscrew to rotate scale for better viewing.
4. Install a union fitting at the outlet end of the flow meter.
5. Piping should be supported and aligned properly to avoid placing stress on the flow meter body.
6. Slide the limit indicators to point to appropriate positions on the flow meter scale. To remove the limit indicators, slide them fully towards the flow meter outlet.

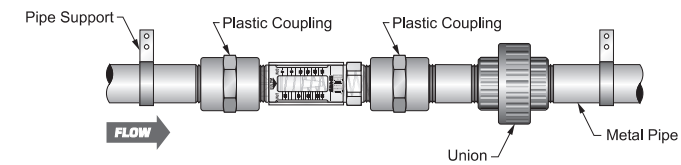


Figure 2: 1 in. (25 mm) NPT model installation

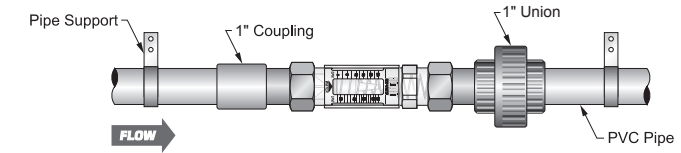


Figure 3: 1 in. (25 mm), 1-1/2 in. (38 mm) and 2 in. (50 mm) PVC socket weld models installation

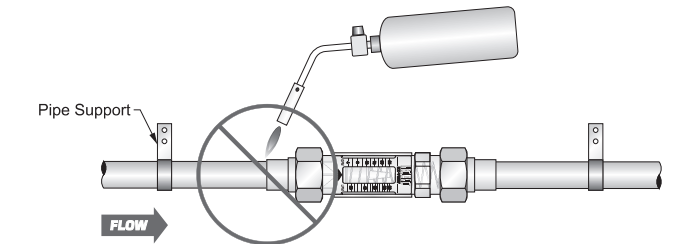


Figure 4: Brass sweat fitting model installation

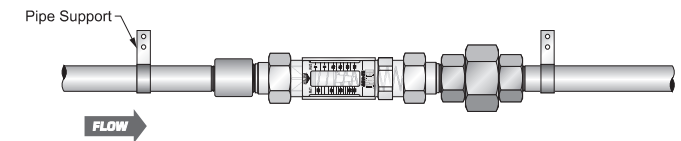


Figure 5: All models with male, metal or PVC threaded end fittings installation

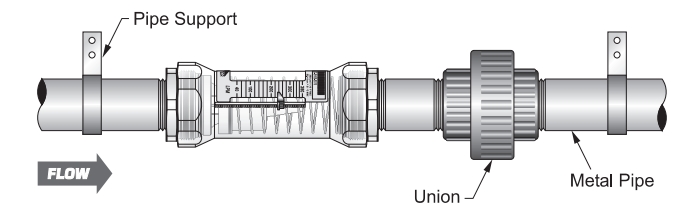


Figure 6: All models with female, metal threaded end fittings installation