

P100 Series Installation Guide

This is important information. Read carefully prior to installation.



Installation Instructions

- 1) Inspect the flowmeter for damage that may have occurred during shipping. If container is damaged, report this to the freight carrier immediately.
- 2) Make sure your pressure, temperature, fluid and other requirements are compatible with the flowmeter and components including o-rings (on valve models). See Pressure/Temperature.
- 3) Select a suitable location for installation to prevent excess stress on the flowmeter which may result from:
 - a) Misaligned pipe.
 - b) The weight of related plumbing.
 - c) "Water Hammer" which is most likely to occur when flow is suddenly stopped as with quick closing solenoid operated valves. (If necessary, a surge chamber should be installed. This will also be useful in pressure start-up situations.)
- 4) Handle the flowmeter carefully during installation.
- 5) Install the flowmeter vertically with the inlet port at the bottom. No piping runs are required.
- 6) Flowmeters should not support the weight and/or vibration of the piping system.

Additionally:

- P100 Series flowmeters are designed for vertical installation only (inlet at bottom, outlet at top).
- Do not remove or adjust the screws on the side of the indicator housing. These screws were positioned during factory calibration and represent the zero adjustment. If these screws are loosened and the indicator housing is moved, the scale will be out of rated accuracy.

Cautions:

- **Zero is factory set when the flowmeter is calibrated. Do not loosen the screws that fasten the indicator housing to the flowmeter body. If the indicator housing is moved, the flowmeter will need recalibration.**
- **O-rings should be replaced if the flowmeter is disassembled after it has been in service.**
- **Serious property damage and great personal injury could occur as the result of a flowmeter used in an unsuitable application.**

Pressure/Temperature

Maximum Pressure	Maximum Temperature	
	O-Ring Material	Maximum Temperature
Standard flowmeters and valve models: 1500 PSIG	EPR	225°F
High Pressure (no valve): 4000 PSIG	Buna-N	275°F
	Viton®	350°F
	Zalak®	400°F
	Kalrez®	400°F

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Cleaning

Carefully remove the flowmeter from the piping system. Remove the threaded outlet plug and withdraw the float out from the top. All necessary instrument components are now fully accessible for cleaning with a bottle brush and appropriate mild soap solution*. Before the flowmeter is reassembled, inspect all parts for damage. O-rings should be replaced during flowmeter maintenance and cleaning (on valve models).

To reassemble, carefully guide the magnetic float back into the tube. Reinstall and tighten the top plug in the appropriate port. Reinstall the instrument into the plumbing system after removing the old PTFE tape (with a wire brush) and replacing with fresh tape.

*Do not use cleaning agents that will damage the float, tube or o-rings.

CAUTION: Do not loosen the screws that fasten the indicator housing to the flowmeter tube. If the relationship of the meter and housing are changed, the flowmeter must be recalibrated.

Repair

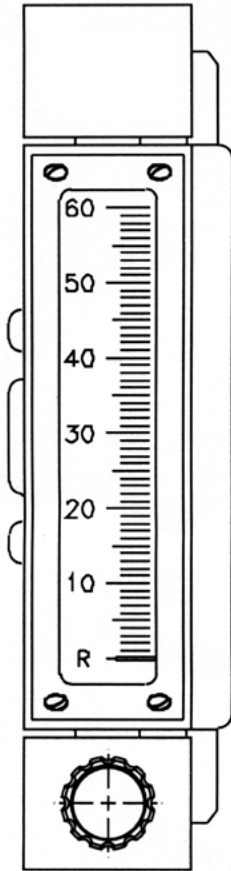
Repair and calibration services are available from the factory. Please contact us at 888-723-4002 (Ext. 2) for all service inquiries.

Flowmeters are not specifically recommended for service other than water or air. The user must determine flowmeter suitability for use with other fluids.

Warning

Pressure and temperature ratings are based on a study of the engineering data for particular materials used in construction and on the design of individual models. This information is supplemented by destructive test results. Flowmeters with stainless enclosures must never be operated without shields securely in place. Flowmeters exposed to difficult environments such as those created by certain chemicals, excessive vibration or other stress inducing factors could fail at or below the suggested maximums. Never operate flowmeters above pressure and temperature maximums. It is strongly recommended that all flowmeter installations utilize an appropriate pressure relief valve and/or rupture disc. The pressure settings and locations of these devices should be such that flowmeters cannot be overpressurized. Flowmeter failure could result in damage to equipment and serious personal injury. Always use suitable safety gear, including OSHA approved eye protection when working around flowmeters in service. We are happy to pass along chemical compatibility information that has been published by the manufactures of raw materials used in our products; however, this information should not be construed as a recommendation

Flowmeters for Gas Service



Flowmeters used in gas service may be susceptible to float bounce. (This is especially true in low density gas applications.) To reduce the possibility of float bounce, valves should be installed at both ends of the flowmeter. Make sure there is minimum piping between the valve and the flowmeter body.

During start up (with both valves closed) open the inlet 1/2 turn, then slowly open the outlet two turns. Return to the inlet and open another two turns. Now adjust a combination of the valves to achieve desired flow. Make sure to open the valves slowly. If the float begins to bounce, close the valves immediately and begin procedure again.

Both the inlet and outlet valves should be opened to the minimum required to achieve the desired flow. Follow this procedure during each start up.

A pressure gage installed between the outlet of the flowmeter and the downstream piping will show the operating pressure in the flowmeter and will allow the exact flow to be calculated using the formulae shown below.

$$\text{Pressure Correction Factor (PCF)} = \sqrt{\frac{14.7 + \text{Operating Pressure (PSIG)}}{14.7}}$$

$$\text{Temperature Correction Factor (TCF)} = \sqrt{\frac{530}{460 + \text{Operating Temp. } ^\circ\text{F}}}$$

$$\text{Specific Gravity Correction Factor (SGCF)} = \sqrt{\frac{1}{\text{Sp. Gr.}}}$$

$$\text{Actual Flow Rate (Gas @ Operating Conditions)} = \text{Indicated Flow (Air - STP)} \times \text{PCF} \times \text{TCF} \times \text{SGCF}$$

 **WARNING – USER RESPONSIBILITY**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Contact Information:

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Parker Hannifin Corporation
Porter Instrument Division
245 Township Line Road
Hatfield, PA 19440

phone 215 723 4000 • fax 215 723 2199
Industrial@parker.com • www.parker.com



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