

Positive Displacement Flow Meter

Series 900



PDM-UM-00275-EN-03 (May 2021)

User Manual

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SCOPE OF THIS MANUAL

This manual is intended to help you get the Model 900 positive displacement flow meter up and running quickly.

IMPORTANT

Read this manual carefully before attempting any installation or operation. Keep the manual accessible for future reference.

UNPACKING AND INSPECTION

Upon opening the shipping container, visually inspect the product and applicable accessories for any physical damage such as scratches, loose or broken parts, or any other sign of damage that may have occurred during shipment.

NOTE: If damage is found, request an inspection by the carrier's agent within 48 hours of delivery and file a claim with the carrier. A claim for equipment damage in transit is the sole responsibility of the purchaser.

SAFETY

Terminology and Symbols



Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing death or serious personal injury.



Indicates a hazardous situation, which, if not avoided, could result in severe personal injury or death.



Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing minor or moderate personal injury or damage to property.

Considerations

The installation of the Model 900 meter must comply with all applicable federal, state, and local rules, regulations, and codes.



EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.



RISQUE D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CEMATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2.



DO NOT CONNECT OR DISCONNECT EITHER POWER OR OUTPUTS UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS.



RISQUE D'EXPLOSION. NE PAS DÉBRANCHER TANT QUE LE CIRCUIT EST SOUSTENSION, À MOINS QU'LL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.

IMPORTANT

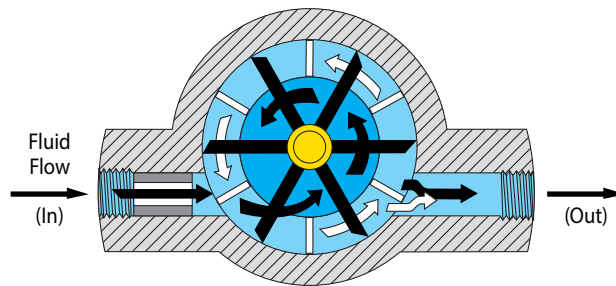
Not following instructions properly may impair safety of equipment and/or personnel.

INTRODUCTION

The Blancett Model 900 positive displacement flow meter is an economically priced, high pressure flow meter for low viscosity liquids. The Model 900 meter was designed for water flood and oil field service, but can be used wherever totalization is necessary. The meter is designed with wear-resistant parts for trouble-free operation and long service life. The meter housing is made from stainless steel. The internal parts are constructed of stainless alloys and high strength engineering polymers for chemical and abrasion resistance. Maintenance kits are available for quick and easy in-line repair.

OPERATING PRINCIPLE

The liquid enters the measuring chamber through a precision inlet insert and separates into two equal streams. The streams cause the impeller assembly to rotate at a rate directly proportional to the flow rate. Both liquid streams are then combined at the meter outlet.



INSTALLATION INSTRUCTIONS

Before installation, check the flow meter internally for foreign material, and make sure that the impeller spins freely. Purge flow lines of all debris.

Install the flow meter with the flow indication arrow, which is cast on the meter body, pointing in the correct direction of flow. Install the meter in horizontal piping with the register facing upward.

The liquid being measured must be free of any large particles that may obstruct the rotation of the impeller. If particles are present, install a mesh strainer upstream of the meter before operation. Some sand and small particles are permissible. Use a 30 × 30 mesh strainer (0.020 opening).

Install a bypass line to accommodate meter inspection and repair without interrupting flow. If a bypass line cannot be used, all control valves or restrictions that may cause the liquid to flash must be installed downstream of the flow meter.

See [Figure 1](#) and [Figure 2](#).

CAUTION

OPEN VALVES SLOWLY TO MAKE SURE THAT ENTRAPPED AIR DOES NOT CAUSE METER TO ROTATE AT AN EXCESSIVE SPEED. DAMAGE CAN BE CAUSED BY STRIKING AN EMPTY METER WITH A HIGH VELOCITY FLOW OF GAS OR LIQUID.

If necessary, install air eliminators to make sure that the meter is not incorrectly measuring entrained air or gas. Do not install the flow meter close to a pump. Severe pulsation may negatively effect accuracy and the life of the flow meter.

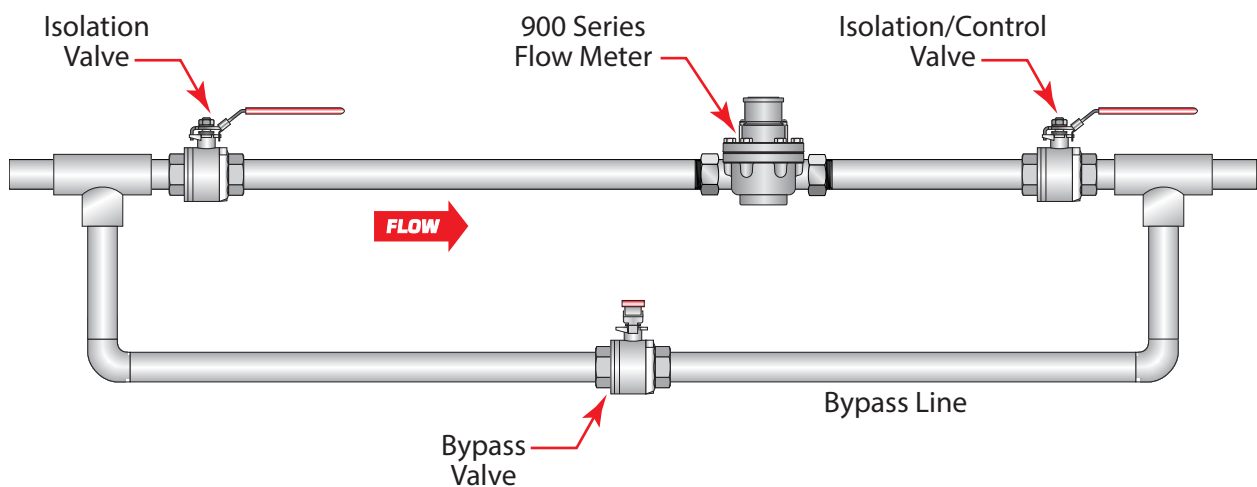


Figure 1: Meter installation using a bypass line

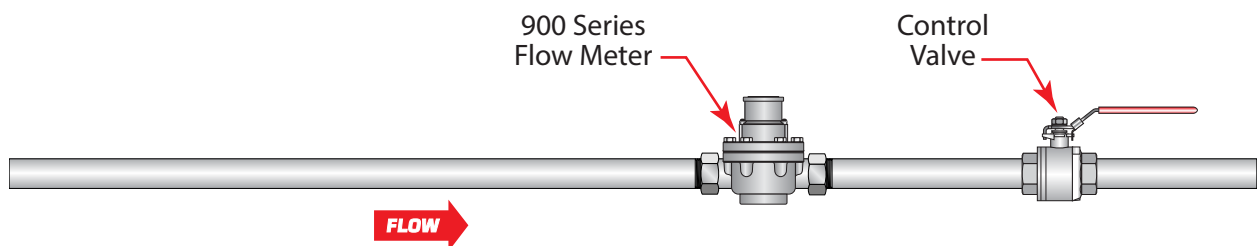


Figure 2: Meter installation without using a bypass line

OPERATIONAL STARTUP

Follow these steps when installing and starting the meter:

⚠ WARNING

MAKE SURE THAT FLUID FLOW HAS BEEN SHUT OFF AND PRESSURE IN THE LINE RELEASED BEFORE ATTEMPTING TO INSTALL THE METER IN AN EXISTING SYSTEM.

1. After installing the meter, close the isolation valves and open the bypass valve.
2. Flow liquid through the bypass valve for a sufficient amount time to eliminate any air or gas in the flow line.

⚠ CAUTION

DAMAGE CAN BE CAUSED BY STRIKING AN EMPTY METER WITH A HIGH VELOCITY FLOW STREAM.

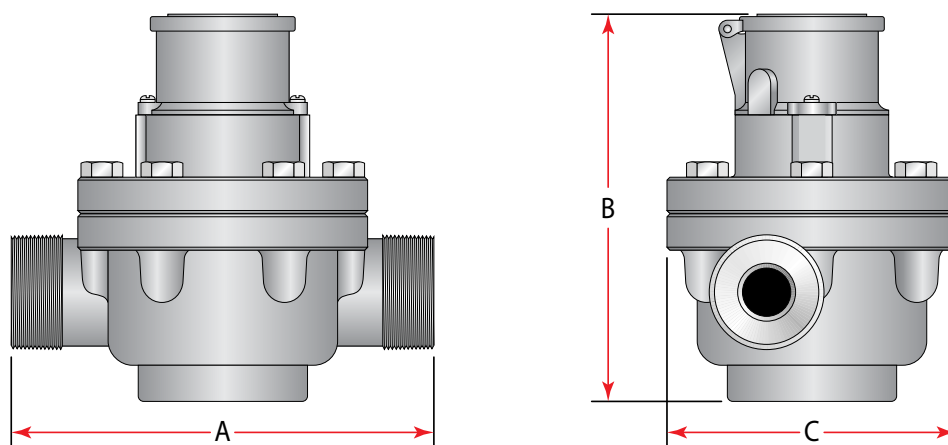
3. Open the upstream isolating valve slowly to eliminate hydraulic shock while charging the meter with the liquid.
4. Open the valve to the fully open position.
5. Open the downstream isolating/control valve to permit operation.
6. Close the bypass valve to a fully closed position.
7. Adjust the downstream valve to provide the required flow rate through the meter.

NOTE: The downstream valve may be used as a control valve.

SPECIFICATIONS

Flow Ranges	Low range	68...172 bpd (2...5 gpm)
	Mid range	172...1543 bpd (5...45 gpm)
	High range	1543...3086 bpd (45...90 gpm)
Materials of Construction	Body	Stainless steel body
	Internal components	Stainless steel alloys and high tech polymers for high chemical/abrasion resistance
	Connections	One inch NPT female and two inch NPT male
Operating Parameters	Temperature	30...200° F (–1...93° C) Not to be used in temperatures below the freezing point of liquid being measured
	Pressure	5000 psi maximum
	Accuracy	±2.0% of reading
	Repeatability	±0.1%
	Corrosion	Consult the factory to determine if the operating liquid is compatible with materials of construction; incompatible fluids can deteriorate internal parts and cause the meter to read inaccurately
	Pulsation and vibration	Severe pulsation and mechanical vibration affect accuracy and shorten the life of the meter
	Filtration	Install a strainer capable of removing particles 0.020 in. (0.50 mm) upstream of the meter

DIMENSIONS



A	B	C
8.80 in. (223.5 mm)	8.00 in. (203.2 mm)	6.10 in. (154.9 mm)

TROUBLESHOOTING GUIDE

Issue	Possible Cause	Remedy
No indication on register	<ul style="list-style-type: none"> Debris in measuring chamber Broken magnet in magnetic drive Broken teeth on drive or driven gear Broken gears or shaft in register assembly 	<ul style="list-style-type: none"> Disassemble meter, clean out debris and inspect for worn parts Replace magnetic drive Replace gear(s) Replace register
Low flow indication	<ul style="list-style-type: none"> Flow rate is too low Bypass valves are leaking 	<ul style="list-style-type: none"> Increase flow above minimum rated gpm Close valves completely, repair or replace
High flow indication	<ul style="list-style-type: none"> Gas in liquid Debris covering a portion of the meter inlet Liquid is leaking around the inlet insert 	<ul style="list-style-type: none"> Install gas eliminator ahead of meter Remove meter from line and clean out debris Remove meter from line, remove insert and reset with RTV

REPAIR KIT INFORMATION

Part Number	Repair Kit Description
B250-921	Complete Repair Kit; 42 Gallon Barrel; Low Range
B250-925	Complete Repair Kit; 42 Gallon Barrel; Mid Range
B250-923	Complete Repair Kit; 42 Gallon Barrel; High Range
B250-927	Complete Repair Kit; US Gallons
B250-931	Complete Repair Kit; Cubic Meters
B250-922	Repair Kit less Register; 42 Gallon Barrel; Low Range
B250-926	Repair Kit less Register; 42 Gallon Barrels; Mid Range
B250-924	Repair Kit less Register; 42 Gallon Barrels; High Range
B250-932	Repair Kit less Register; US Gallons
B250-928	Repair Kit less Register; Cubic Meters

Control. Manage. Optimize.

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