

# INSTRUCTIONS FORGED BODY FLOWMETERS

## Description

The Porter Series F65 and F150 Flowmeters are variable area, low flow rate indicators for metering liquids or gases. The meter consists of a one-piece forged aluminum body with a tapered, fluted glass metering tube and a ball float. A wrap around window shield allows 180° visibility of the metering tube and scale. The flowmeter may be supplied with or without a control valve and is available with stainless steel or brass inserts (wetted parts) when the meter is used for corrosive service.

## Specifications

**Warning:** Do not operate this flowmeter in excess of maximum pressure and temperature limits. Exceeding these limits may result in serious personal injury.

### Maximum Pressure Limits

200 psig

### Maximum Temperature Limits

160°F (71°C) w/Neoprene Packing and Buna-N O-rings.

200°F (94°C) w/Viton Packing and Viton O-rings

### Accuracy

Series F65: +/-10% Full Scale

Series F150: +/-5% Full Scale

### Repeatability

Series F65: +/-0.5% Full Scale

Series F150: +/-0.25% Full Scale

### Scale

Series F65: 0-65 mm (Direct reading scales optional)

Series F150: 0-150 mm (Direct reading scales optional)

### Connections

1/8" Female NPT threaded adaptor with panel mounting nuts. Other process connections available (consult factory).

### Control Valve (Optional)

Standard Cartridge Valve (SC)

High Resolution Control Valve (HR)

## Installation

The flowmeter may be panel mounted and secured with the mounting nuts provided on the inlet and outlet connection fittings. The meter must be mounted in a vertical position to assure accuracy. To panel mount Series F65 meters, drill two 9/16" holes on 4-1/2" centers. For Series F150, drill two 9/16" holes on 8-13/16" centers.

Connections are horizontal, 1/8" female NPT. Connect the upstream supply line to the inlet (bottom) connection on the meter, and connect the downstream line to the outlet (top) connection. Make certain connections are clean and tight, but do not over tighten. Leak check prior to use.

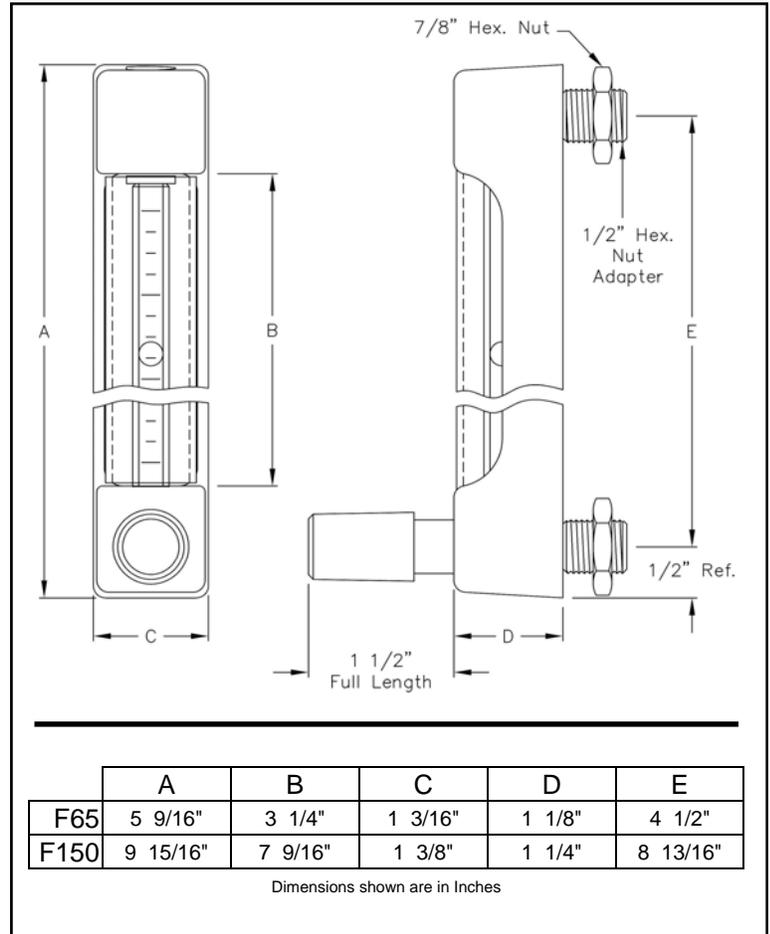
If the metered fluid contains contaminants, it is highly recommended an in-line filter be installed upstream of the meter to assure proper operation and accuracy.

## Operation

Slowly open the flow control valve until the desired flow rate is indicated on the flowmeter. If equipped with integral control valve, turn counterclockwise to open. The center of the ball float is used as the reference mark when reading the scale.

## Return Shipments

If a flowmeter is to be returned to the manufacturer for any reason, contact Porter for a return authorization number. This number must be referenced on the return shipment. Items returned must be properly packaged and shipped prepaid. Units exposed to hazardous gases or liquids must be accompanied by a Declaration of Contamination Form (FM-768).



## Disassembly and Cleaning

The flowmeter may easily be disassembled for cleaning or parts replacement without removing it from the line. If the inside of the metering tube requires cleaning, the tube may be removed and flushed or swabbed with a suitable cleaning agent.

- Turn off the flow to the flowmeter.
- Squeeze sides of plastic front shield and remove.
- While supporting the glass tube, use a 5/32" Allen wrench and turn counterclockwise to back out the seal spindle. Carefully remove tube and float assembly. Remove tube seat packings if necessary.
- On all aluminum body meters, seal spindle may be removed by turning counterclockwise. On meters with stainless steel or brass wetted parts, turn seal spindle clockwise to remove through tube portion of meter.
- If necessary, remove control valve by turning counterclockwise with an open-end wrench. Depending upon the width of the wrench, it may be necessary to remove the knob.

## Reassembly

- Make certain all parts are clean.
- When installing tube seat packings, stainless steel guide should protrude approximately 1/16" above the surface of the packing.
- Install tube assembly and carefully tighten seal spindle by turning clockwise. On flowmeters with brass and stainless steel wetted parts, carefully tighten seal spindle by turning counterclockwise. When tightening, check to make sure metering tube is properly seated on packing and not contacting any metal part of the meter body or seal spindle.
- Replace control valve and front shield. Leak check before resuming

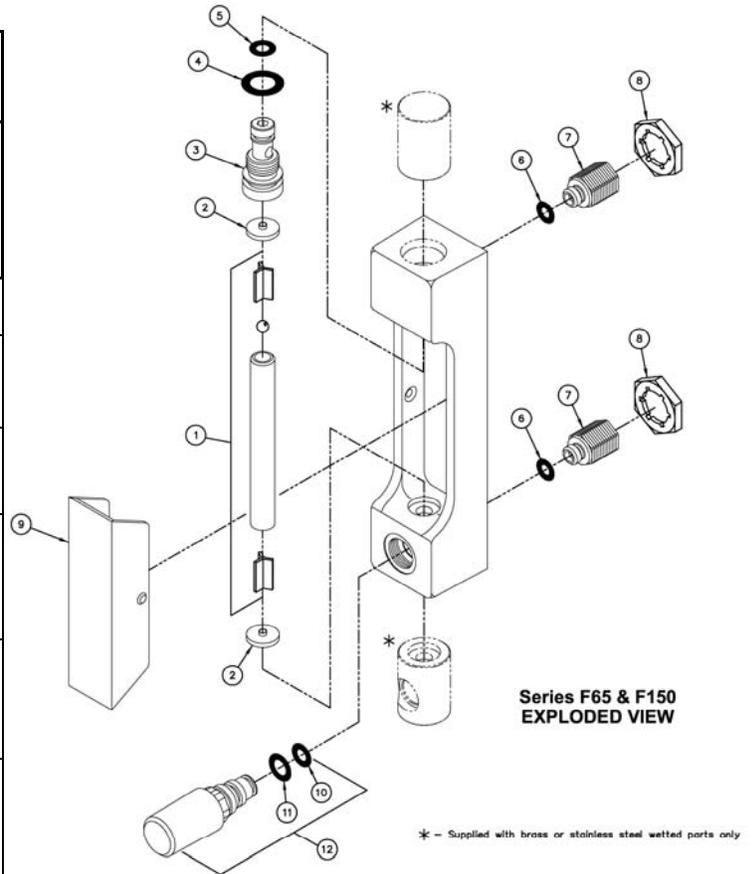


**PORTER**

Parker Hannifin Corporation  
Porter Instrument Division  
245 Township Line Rd.  
P.O. Box 907  
Hatfield, PA 19440-0907 USA  
(215) 723-4000 / fax (215) 723-2199

# Replacement Parts

Forged Body Flowmeters Series F65 and F150				
Ref.	Description	Aluminum Series F65, F150	Brass & Stainless Steel Series F65 & F150	Material
1	Tube and Float Assembly	As Required	As Required	
2	Tube Seat Packing w/ Guide	As Required	As Required	
3	Seal Spindle	A-174-AL2 N/A N/A	N/A A-823-BR1 A-823-SS1	Aluminum Plated Brass St. Stl.
4	O-ring (lower) 013 111 111	PB-102-8-BN N/A N/A	N/A PB-102-9-BN PB-102-39-VT	Buna N Buna N Viton®
5	O-ring (upper) 111 010 010	PB-102-9-BN N/A N/A	N/A PB-102-6-BN PB-102-23-VT	Buna N Buna N Viton®
6	O-ring 009 010 010	PB-102-5-BN N/A N/A	N/A PB-102-6-BN PB-102-23-VT	Buna N Buna N Viton®
7	Connector Adaptor	A-808-001 N/A N/A	N/A A-1120-BR1 A-1120-SS1	Aluminum Plated Brass St. Stl.
8	Panel Mounting Nut	PA-267-1-ST2	PA-267-1-ST2	Steel
9	Window Shield Series F65 Series F150	PB-146-01LX PB-146-02LX	PB-146-01LX PB-146-02LX	Lexan Lexan
10	O-ring 010	PB-102-6-BN N/A	PB-102-6-BN PB-102-23-VT	Buna-N Viton®
11	O-ring 011	PB-102-7-BN N/A	PB-102-7-BN PB-102-24-VT	Buna-N Viton®
12	Control Valve Assembly	See Valve List	See Valve List	



Standard Cartridge Valve			
Needle Size	Aluminum with Buna N	Brass with Buna N	Stainless Steel with Viton®
1	SC-1-A	SC-1-B	SC-1-S
2	SC-2-A	SC-2-B	SC-2-S
3	SC-3-A	SC-3-B	SC-3-S

"HR" High Resolution Control Valve		
Needle Size	Brass with Buna N	Stainless Steel with Viton®
0	HR-0-B	HR-0-S
1	HR-1-B	HR-1-S
2	HR-2-B	HR-2-S
3	HR-3-B	HR-3-S
4	HR-4-B	HR-4-S
5	HR-5-B	HR-5-S
6	HR-6-B	HR-6-S



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

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.