

HIGH-FLOW DURA-METER™

QUICK ASSEMBLY INSTRUCTIONS

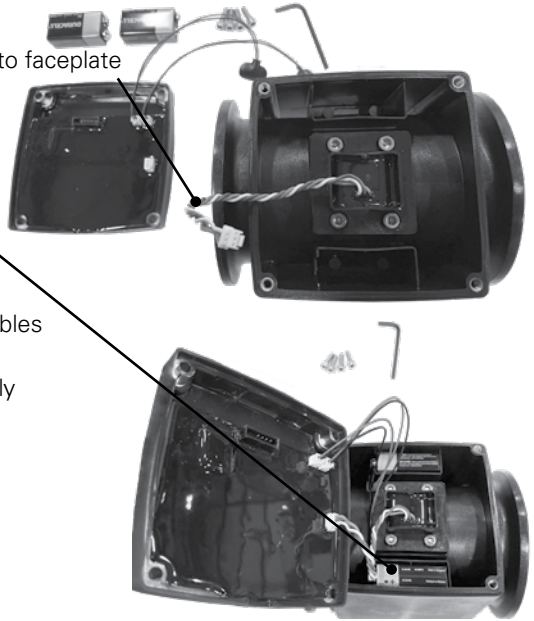
① Connect paddle wheel circuit wire to faceplate

② Connect the (2) 9V batteries

③ Install 9V batteries into meter body

④ Secure face plate to meter body and ensure you do not pinch any cables

⑤ Install the (4) 10-32 bolts and slightly snug to tightness



HFM_Assembly_Installation_102025

INSTALLATION GUIDELINES

The following are principles of operation for the Dura High-Flow Meter, intended to guide installation, and not to be construed as a complete troubleshooting guide.

Good results can be assured by following these five principles.

① **THE FLOW RATE OF THE SYSTEM MUST BE WITHIN THE RECOMMENDED RANGE FOR THE METER.** All flow meters have a minimum flow rate they will measure for their nominal size. No flow meter reads down to 0. This lower limit is a result of the flow velocity not containing enough momentum to keep the paddle wheel spinning. Below a certain flow rate the paddle no longer spins linearly with respect to the flow rate. This is the lowest flow rate the meter can accurately measure. The meter may indicate flow rates below this value but will contain a large inaccuracy. At some point the flow velocity becomes too low and the meter will indicate 0, even though there is still flow. The bottom line – if you don't have an adequate flow rate, you won't get satisfactory results.

② THE SYSTEM MUST BE FULL OF FLUID AT ALL TIMES. The meter and plumbing must be completely full of liquid! Flow should ALWAYS be horizontal or upward. Downward flow will not provide consistent movement of liquid across the paddlewheel. Consistent flow across the paddlewheel is essential for accuracy and consistency. To encourage this, in a horizontal installation, the paddlewheel should be at “10 o’clock” or “2 o’clock” position when viewed from the end of the flow meter. It should NOT be at “12 o’clock” or “6 o’clock”!

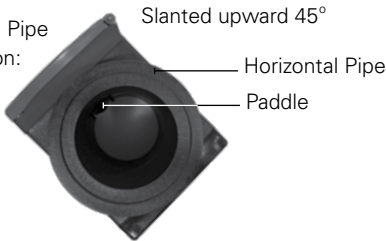
③ THERE MUST BE A SUFFICIENT LENGTH OF STRAIGHT PIPE BEFORE AND AFTER THE METER. To develop a uniform flow profile in the pipe, a straight length of smooth pipe must be both upstream and downstream of the meter. The meter should be installed away from sources of turbulence, such as pumps, strainers, elbows, etc. The diagram is a general idea of lengths of pipe needed to develop uniform flow and get accurate results from the flow meter. If an adequate run of straight pipe isn’t possible, a reduction in accuracy may result. Typically, the error is uniform (linear) across the flow range. If the flow profile is consistent, the flow meter can be adjusted for it by manual calibration. The instruction manual illustrates the manual calibration method. Installation of meter with horizontal OR vertical pipe



④ INSTALLATION OF METER WITH HORIZONTAL OR VERTICAL PIPE. Install the meter in the plumbing system where the meter and pipe will always be full of liquid. Again, the installation should be designed with the goal of the flow across the paddlewheel being constant and consistent. It is also important for accuracy that the meter sees the same flow profile in use as it saw during calibration.

Install flow meter at the location where the pipe is filled with liquid.

A. Horizontal Pipe
optimal option:



B. Vertical pipe
optimal option:



⑤ THE FLUID ENTERING THE METER MUST BE FREE OF DEBRIS. A strainer should be installed before the flow meter to lengthen service life and improve measurement accuracy. The strainer will remove impurities or foreign objects from the fluid that can interfere with the mechanical components. Be aware that the strainer will cause turbulence, and for that reason should be installed as far away from the meter as is practical.

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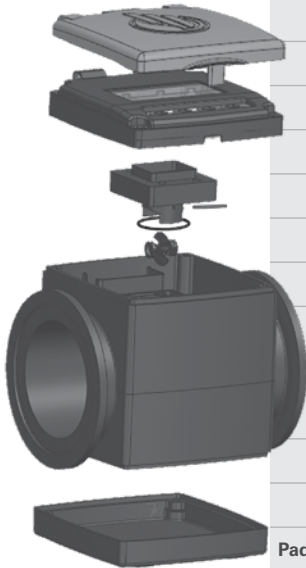
The meter will turn ON with any button press or when fluid passes through the meter. It will turn OFF when not in use.

Use buttons to navigate the four main menus; **Reset**, **Program**, **Calibration**, **Info**. The buttons correspond to the on screen indicators.

(2) 9 Volt batteries provide about 35 hours of use with the backlight turned ON. Battery life is extended with the backlight OFF.



TECHNICAL SPECIFICATIONS



Nominal Size	1"	2"	3"
Model	DP-HFM1	DP-HFM2	DP-HFM3
Connection	M100 flange	M220 flange	M300 flange
Meter Accuracy	+/- 0.5%*	+/- 0.5%*	+/- 0.5%*
Non-conductive Fluids	Yes	Yes	Yes
Fluid Flow Initiates Measurement	Yes	Yes	Yes
Battery Size/Voltage	(2) 9 Volt	(2) 9 Volt	(2) 9 Volt
Battery Life Indicator	Yes	Yes	Yes
Backlit Display	Yes	Yes	Yes
Maximum Pressure	150 PSI	150 PSI	150 PSI
Minimum GPM	10	40	80
Maximum GPM	100	300	700
Minimum Temp	+ 32 °F	+ 32 °F	+ 32 °F
Maximum Temp	+ 140 °F	+ 140 °F	+ 140 °F
Meter Type/Style	Paddlewheel	Paddlewheel	Paddlewheel
Body Construction Material	GF Polypropylene	GF Polypropylene	GF Polypropylene
Paddle Bearing Construction Material	Sapphire	Sapphire	Sapphire
Electrodes Construction Material	No	No	No
Minimum Straight Inlet	5X diameter	5X diameter	5X diameter
Minimum Straight Outlet	10X diameter	10X diameter	10X diameter
Field Calibration Capability *	Yes *	Yes *	Yes *

*With manual calibration

CALIBRATION

NOTE: Use a primed system. Verify your calibration. Fluid viscosity changes with temperature.

PREFERRED METHOD

MANUAL CALIBRATION

QUICK CALIBRATION

- Great for fleet use

- Most accurate
- Usually only takes one attempt
- Adjustable to compensate for different measurement containers

Calibration

Select a calibration reference from the "Quick" list or choose "Calibr" for manual calibration.

Home Help Quick Calibr

Thin Product names for reference only!

17 Water 66°F

Thick Reference #17

Cancel Dn↓ Up↑ Select

Select a viscosity reference number using water as the baseline.



Check

Dispense approximately 100 gallons and verify accuracy.

Thin Product names for reference only!

17 Water 66°F

Thick Reference #17

Cancel Dn↓ Up↑ Select

Adjust

Each viscosity reference number represents 1% change. (i.e.) If the meter reads high, lower the viscosity reference number. Adjust the value Up or Down Repeat as needed.

Calibration

Select a calibration reference from the "Quick" list or choose "Calibr" for manual calibration.

Home Help Quick Calibr



Fill a calibrated container

Press "Cont" when done

Cancel Help Reset Cont

Method 1: With a Calibrated Container

Fill a calibrated container.

Method 2: Without a Calibrated Container

Fill a container that can be weighed with approximately 100 gallons. Divide the weight by fluid density to determine gallons dispensed.

Thin Product names for reference only!

17 Water 66°F

Thick Reference #17

Cancel Dn↓ Up↑ Select

Adjust

Adjust the default value Up or Down to match the volume dispensed.

Enter the amount measured

Press SAVE when done

102.3 GALLONS

Cancel Dn↓ Up↑ Save

Press **Save** as fluid #1 - #5 and **Verify!**



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