

TIB SERIES

Multi-Function Paddle Wheel Flow Meter



Quick Start

TIB Series Battery Flow Meter



Corrosion-Free
Instrumentation Equipment

CORROSION

Safety Information

Flow Meters are not to be subject to water hammer or pressure spikes!

⚠ WARNING!

Before installation be certain the appropriate gauge has been selected considering operating pressure / full scale pressure / proof pressure, wetted material requirements, media compatibility, operating temperature, vibration, pulsation, desired accuracy and any other flow meter component related to the service application.

This includes the potential need for protective attachments and/or special installation requirements.

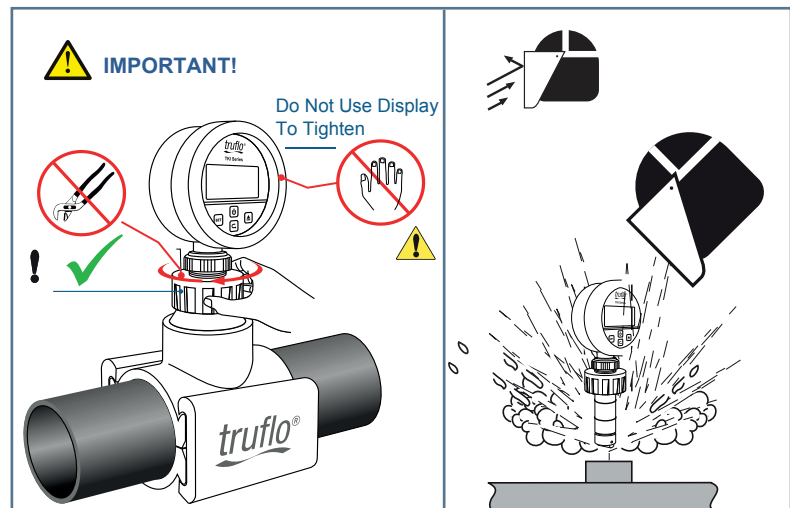
Failure to do so could result in equipment damage, sensor failure and/or personal injury. Only qualified personnel should be permitted to install and maintain the pressure sensors

Installation

⚠ IMPORTANT!

When installing the sensor into the application, use the retainer nut to thread in and tighten the flow meter. Do not use the flow meter display to install the sensor.

The flow meter connection must be compatible with the mating connection and must be assembled appropriately. If the mating parts do not seal completely, a sealing material may be considered.



Pressurize System Warning

⚠ IMPORTANT!

The flow sensor may be under pressure, it is very important to ensure that the system has been vented prior to removal.

Failure to do so may result in equipment damage and/or serious personal injury. ,

The flow meter connection must be compatible with the mating connection and must be assembled appropriately. If the mating parts do not seal completely, a sealing material may be considered.

Personal Protective Equipment (PPE)

Always utilize the most appropriate PPE during installation and service of Truflo products.



Read the User's Manual Carefully. Manufacturer Reserves the Right to Implement Changes Without Prior Notice.



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Battery Operated Paddle Wheel Flow Meter



Safety Information

1. De-pressurize and Vent System Prior to Installation or Removal.
2. Confirm Chemical Compatibility Before Use.
3. DO NOT Exceed Maximum Temperature or Pressure Specifications.
4. ALWAYS Wear Safety Goggles or Face-Shield During Installation and/or Service.
5. DO NOT Alter Product Construction.



Warning | Caution | Danger

Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, injury, or death



Hand Tighten Only

Overtightening may permanently damage product threads and lead to failure of the retaining nut.



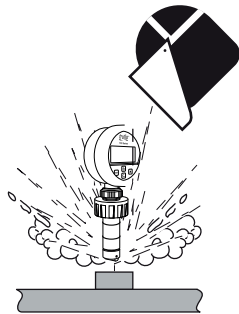
Note | Technical Notes

Highlights additional information or detailed procedure.



Do Not Use Tools

Use of tool(s) may damage product beyond repair and potentially void product warranty.



Personal Protective Equipment (PPE)

Always utilize the most appropriate PPE during installation and service of TruFlo products.



Pressurized System Warning

Sensor may be under pressure, take caution to vent system prior to installation or removal. Failure to do so may result in equipment damage and/or serious injury.

General Information

Specification	Description
Operating Voltage	3 - 3.6VDC
Flow Rate GPM LPM	0.0 - 999.9
Fluid	H ₂ O Liquid Chemicals
Accuracy	± 0.5% of F.S. @ 25°C
Response Frequency	5K Hz
Max Flow Rate	10m/s 33ft/s
Min Flow Rate	0.1m/s 0.3ft/s
Materials of Construction	Paddle Tefzel® Rotor Busings Zirconium Ceramic Sensor Body PVC PP PVDF
O-Ring Material	Viton (std) EPDM*
Operating Temperature	PVC < 60°C PP < 80°C PF < 100°C
Protection Class	NEMA 4X IP 67
Approval	CE RoHS
Battery Type	LisoCl2 High Capacity Lithium TIB H- 5000mAh 4 Yrs TIB-V 9000mAh 7 Yrs

*Optional

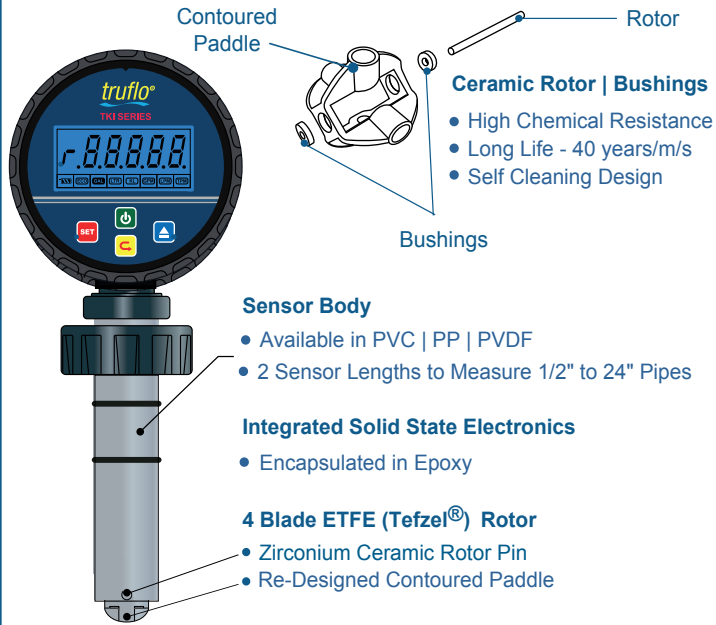
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Battery Operated Paddle Wheel Flow Meter



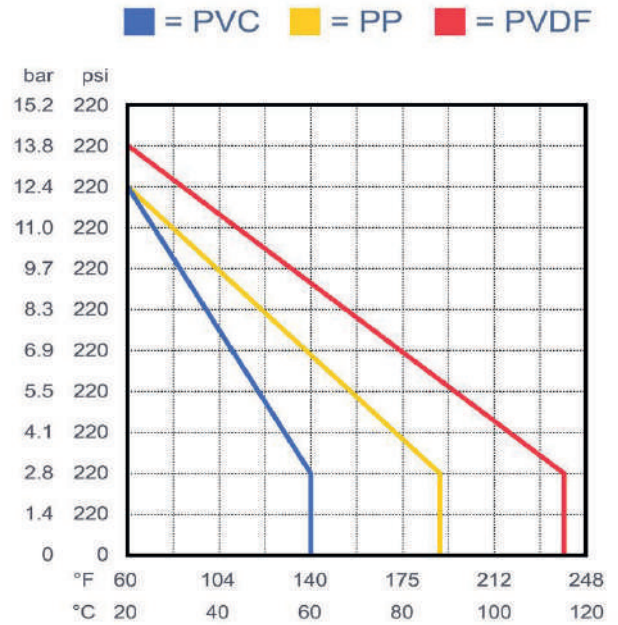
Long Service Life

The TI Series is equipped with a Zirconium Ceramic Rotor Pin and 2 Bushings. The TI Series also incorporates a contoured, 'Low Drag' Paddle Wheel leading to reduced drag, longer wear and a higher accuracy.



Pressure vs. Temperature

Note: During system design the specifications of all components must be considered. | Non-Shock



Display Functions

r = Flow Rate

3 Secs to change display from Flow Rate to Flow Total

3 Secs to view 6 Digits while in Totalizer Screen

Mode of Operation (Eco) = Extended Battery Life

Highlighted to Indicated Programmed Unit of Measurement

Battery Life | **Flow Rate** | **Flow Rate**

Programming

Press for Increase Value & Press for Decrease Value

Press Save Value

Press to Change Digits

STEPS	DISPLAY	RANGE	OPERATION
1 Home Screen Press & Hold & 3 sec			Current Flow Rate Total
2 Screen Lock Press Key		0-1	Programming Lock Out Feature LCK= '0' Unlocked : Factory Default LCK= '1' Locked
3 K Factor Press		0.1-9999	Enter K Factor Value See Chart on Page 5 for K-Factor Value
4 Display Mode Press		non Eco	dSP.non - LED Back Light Default is set to 5 secs. dSP-Eco - Back Light Function is not Active Extended Battery Life
5 Back Light Timer Press		1-9999	Time on for Back Light Secs *Longer Time = Shorter Battery Life
6 Flow Alarm Delay Press		1-9999	Time Delay for Visual Alarm
7 Reset Totalizer Press		0-1	rESEt.0 - Flow Totalizer Reset Disabled rESEt.1 } Default - Flow Totalizer Reset Enabled

Programming Display Units

STEPS	DISPLAY	RANGE	OPERATION
1 Display Units Press & Hold 3 sec			Press to Select & Press To Confirm Flow Rate - GPM LPM TPM Flow Total - GAL LTR KL

1. Totalizer Reset → Press Both & Together for 3 Seconds



2. Sleep Mode → Press for 3 Seconds to Reduce Power Consumption



3. Alarm Setup → Press Both & Together for 3 Seconds



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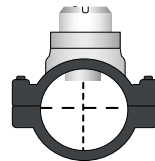
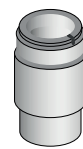
Battery Operated Paddle Wheel Flow Meter



Min | Max Flow Rates

Pipe Size	LPM GPM	LPM GPM
	0.3m/s min.	10m/s max.
2" DN50	40.0 10.5	357.0 1350.0
2 ½" DN60	60.0 16.0	1850 357
3" DN80	90.0 24.0	2800 739
4" DN100	125.0 33.0	4350 1149
6" DN150	230.0 60.0	7590 1997
8" DN200	315.0 80.0	10395 2735

K Factors

TEE FITTINGS					CLAMP-ON SADDLES					CPVC SOCKET WELD-ON ADAPTERS							
																	
Tee Fitting (Unit:inch)			K-Factor		Sensor Length	Clamp Saddles			K-Factor		Sensor Length	Tee Fitting (Unit:inch)			K-Factor		Sensor Length
Size	DN	Id	CPVC SCH80			Size	DN	Id	CPVC SCH80			Size	DN	Id	CPVC SCH80		
½"	15	0.55	1013.04		S	2"	50	1.9	81.65		S	2"	50	1.9	81.65		S
¾"	20	0.74	604.80		S	2-½"	65	2.3	54.43		S	2-½"	65	2.3	54.43		S
1"	25	0.96	408.24		S	3"	80	2.9	34.96		S	3"	80	2.9	34.96		S
1-¼"	32	1.30	250.40		S	4"	100	3.8	19.80		S	4"	100	3.8	19.80		S
1-½"	40	1.50	139.86		S	6"	150	5.7	9.18		L	6"	150	5.7	9.18		L
2"	50	1.90	81.65		S	8"	200	7.0	5.21		L	8"	200	7.0	5.21		L
2-½"	65	2.30	54.43		S	10"	250	9.5	3.43		L	10"	250	9.5	3.43		L
3"	80	2.90	34.96		S	12"	300	11.3	2.45		L	12"	300	11.3	2.45		L
4"	100	3.83	19.80		S	14"	350	12.4	1.77		L	14"	350	12.4	1.77		L
						16"	400	15.1	1.36		L	16"	400	15.1	1.36		L
												20"	500	19.0	0.86		L
												24"	600	21.0	0.60		L

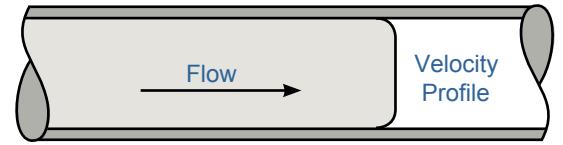
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Battery Operated Paddle Wheel Flow Meter



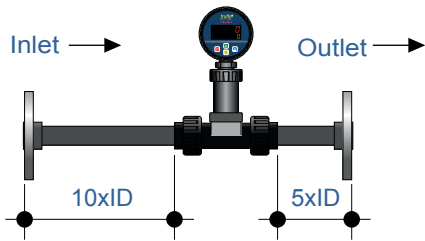
Correction Sensor Installation Position

TI Series Flow Meters measure liquid media only. There should be no air bubbles and the pipe must always remain full. To ensure accurate flow measurement the placement of the flow meters needs to be adhered. This requires a straight run pipe with a minimum number of pipe diameters distance upstream and downstream of the flow sensor.

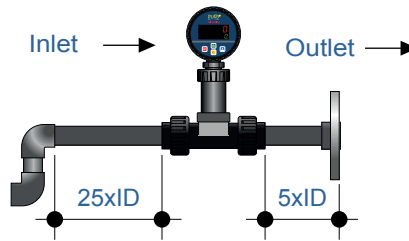


Developed Turbulent Flow

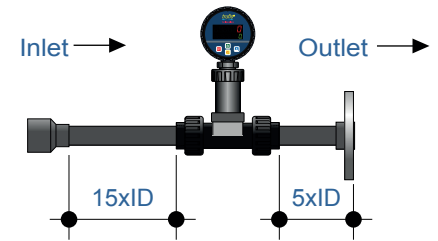
Flange



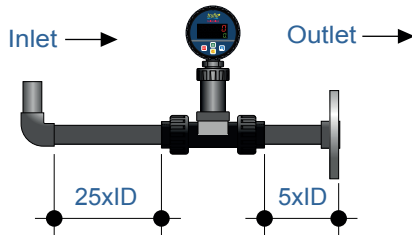
2x 90 Elbow



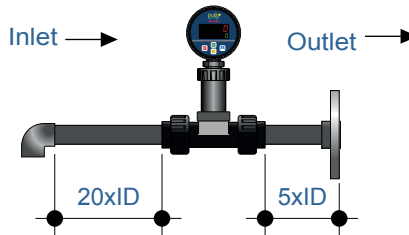
Reducer



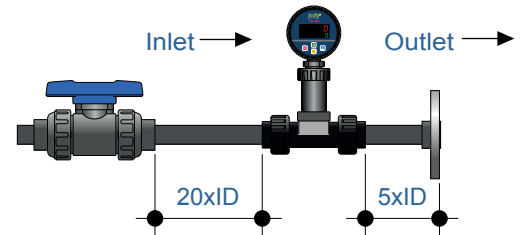
90 Elbow Downward Flow



90 Elbow Downward Flow Upward

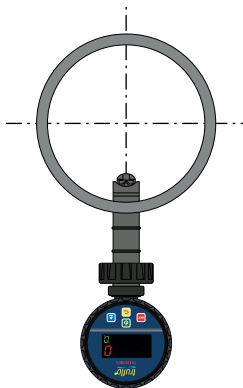


Ball Valve



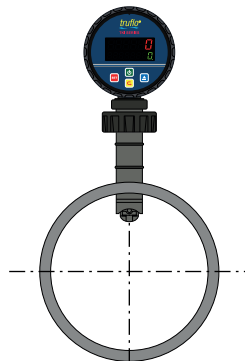
Installation Positions

Figure 1



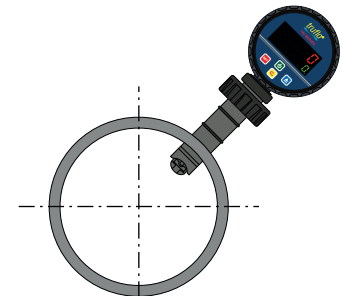
Good if No Sediment Present

Figure 2



Good if No Air Bubbles Present

Figure 3



Preferred Installation if Sediment* or Air Bubbles may be Present

* Maximum % Solids: 10% with particle size not exceeding 0.5 mm cross section or length.

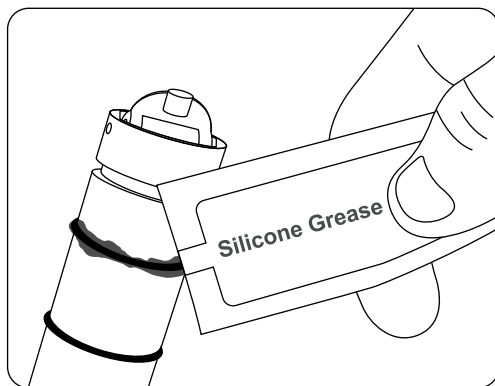
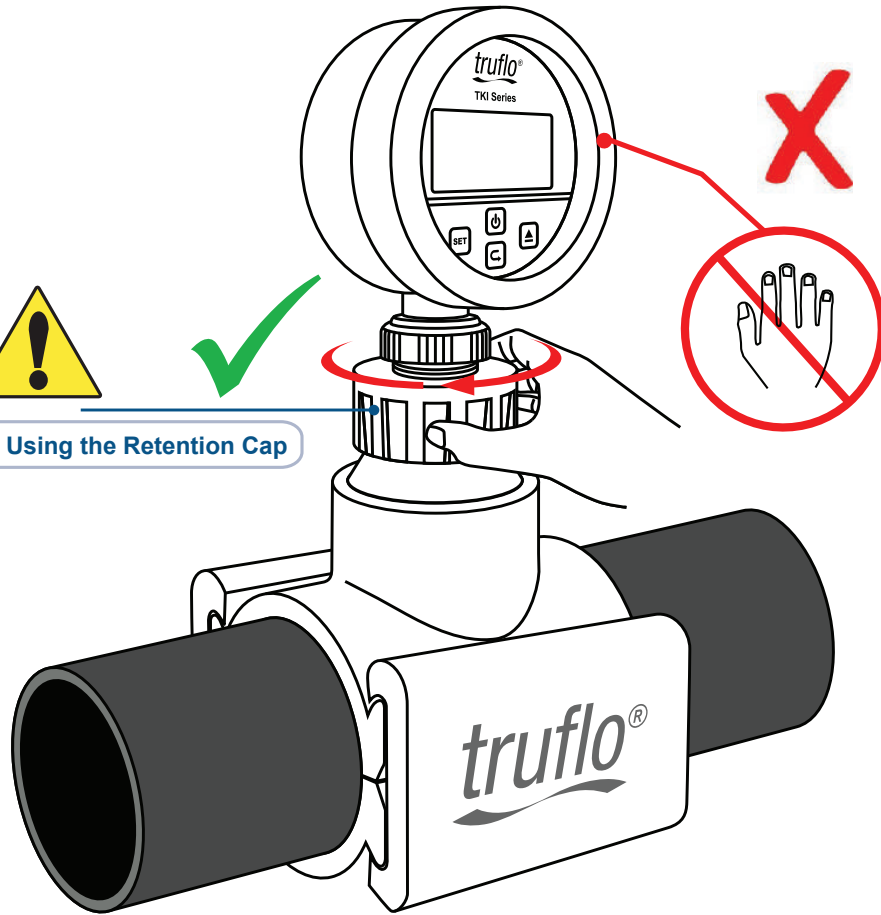
CORROSION



Do Not Use Display to Tighten



Hand Tighten Using the Retention Cap



Ensure Silicone Grease* is Applied to O-Rings Prior to Insertion into Fitting

*Ensure Silicone Grease is Suitable for Application

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Battery Operated Paddle Wheel Flow Meter



Installation



Very Important

- ❑ Lubricate O-rings with a Viscous Lubricant Compatible with the Materials of Construction.
- ❑ Using an Alternating | Twisting Motion Carefully Lower the Sensor into the Fitting. | Do Not Force | Fig 5
- ❑ Ensure Tab | Notch are Parallel to Flow Direction | Fig-2



Hand Tighten the Sensor Cap. **DO NOT** use any tools on the sensor cap or the cap threads or fitting threads may be damaged. | Fig-5

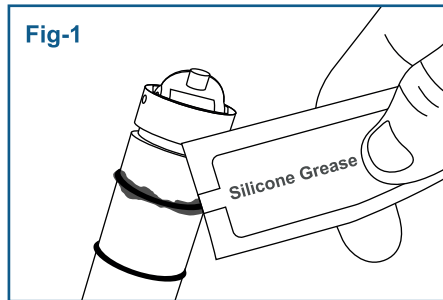


Fig-1

Ensure Amble Silicon Grease (Supplied) is Applied Prior to Insertion

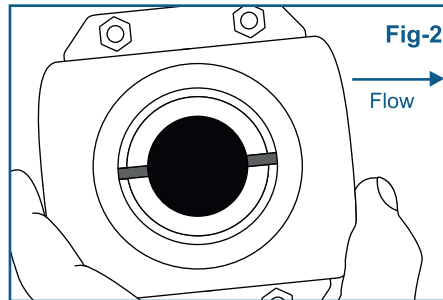


Fig-2

Ensure Location Tabs Are Parallel to Direction of Flow

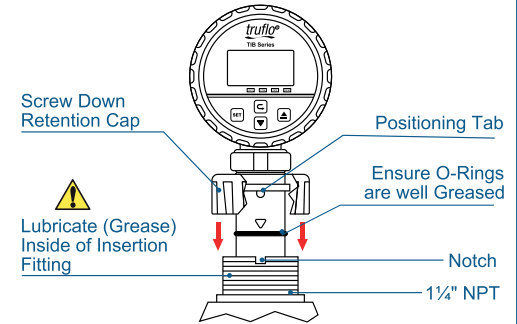


Fig-3

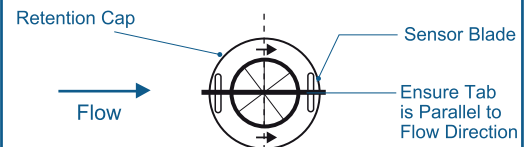


Fig-4

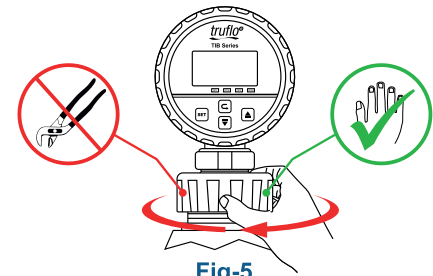
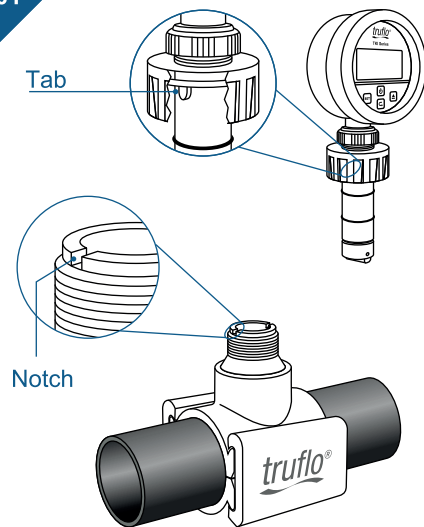


Fig-5

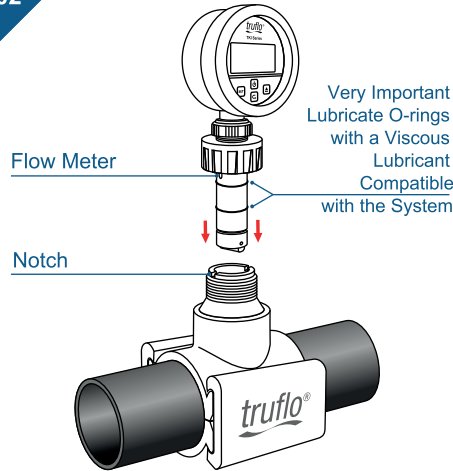
Correction Sensor Position

01



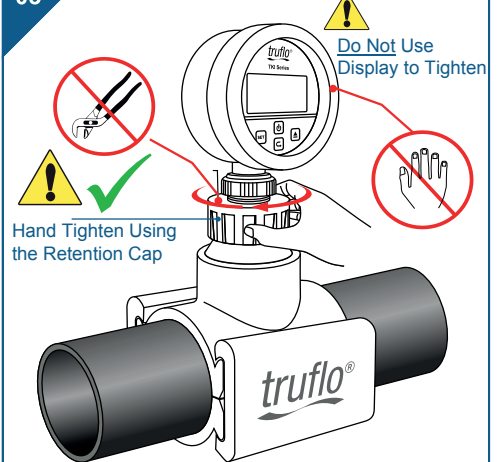
Flow Meter Positioning Tab and Clamp Saddle Notch

02



Engage one Thread of the Sensor Cap then turn the Sensor until the Alignment Tab is Seated in the Fitting Notch, Ensure Tab is Parallel to Flow Direction.


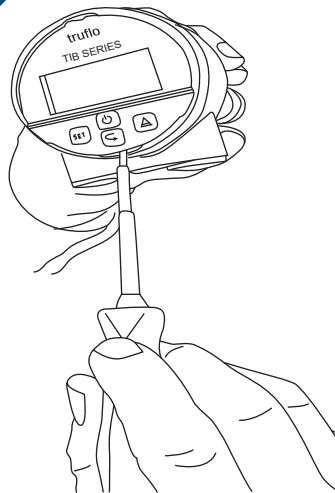
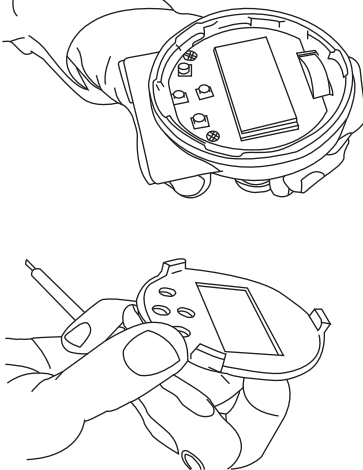
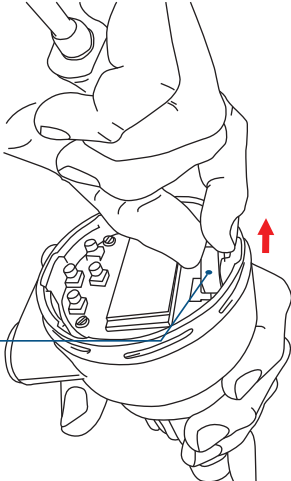
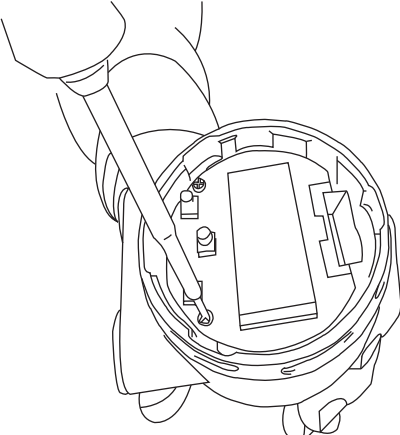
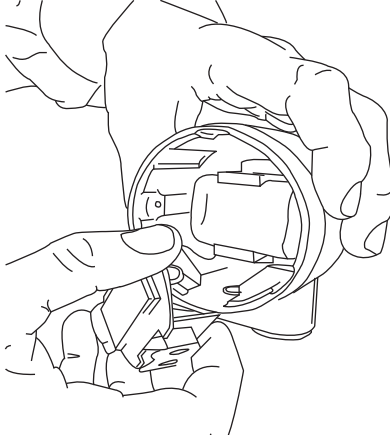
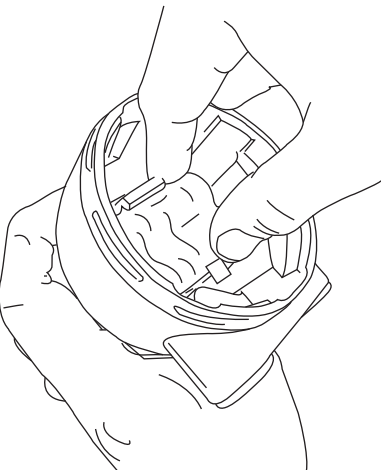
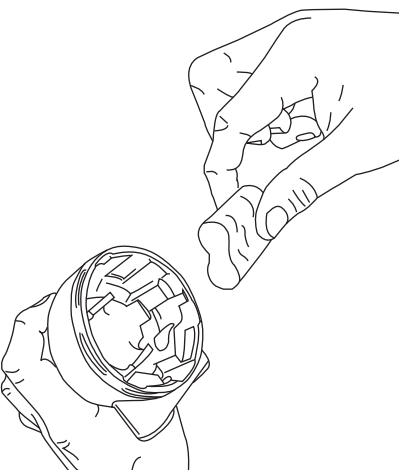
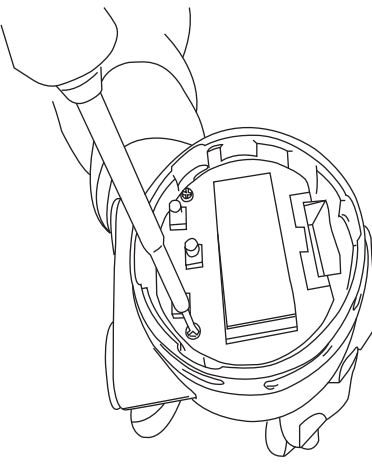
03



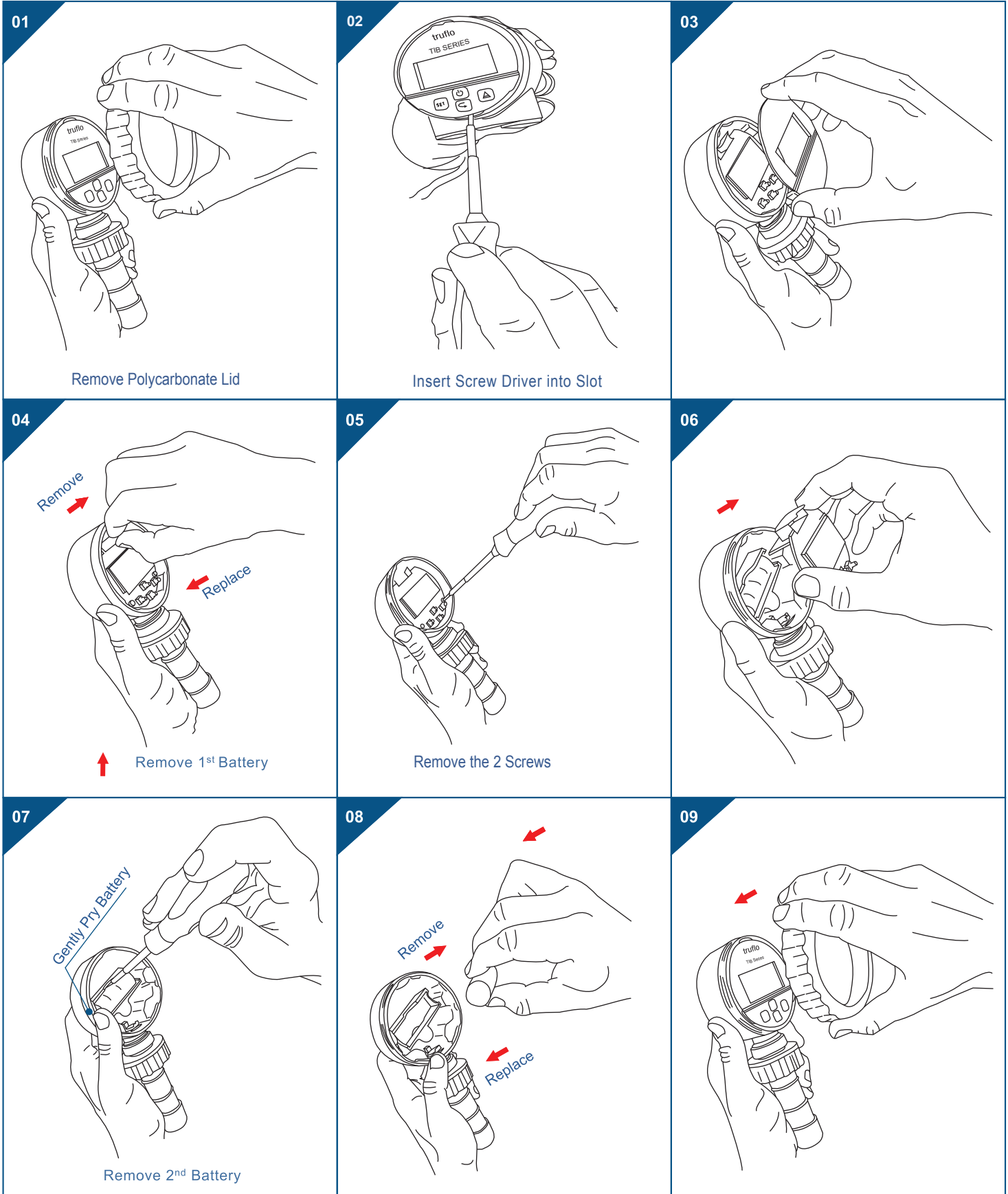
• Hand Tighten Retention Cap } Do Not Use Display

Display Rotates 330 Degrees Do Not Use Display to Tighten

Battery Replacement | V Series

<p>01</p>  <p>Remove Polycarbonate Lid</p>	<p>02</p>  <p>Insert Screw Driver into Slot</p>	<p>03</p>  <p>Remove Cover</p>
<p>04</p>  <p>Battery</p> <p>↑ Remove 1st Battery</p>	<p>05</p>  <p>Remove Screws</p>	<p>06</p>  <p>Carefully Remove Display Module</p>
<p>07</p>  <p>Remove Battery Pack</p>	<p>08</p>  <p>Replace Battery Pack</p>	<p>09</p>  <p>Reassemble</p>

Battery Replacement | H Series

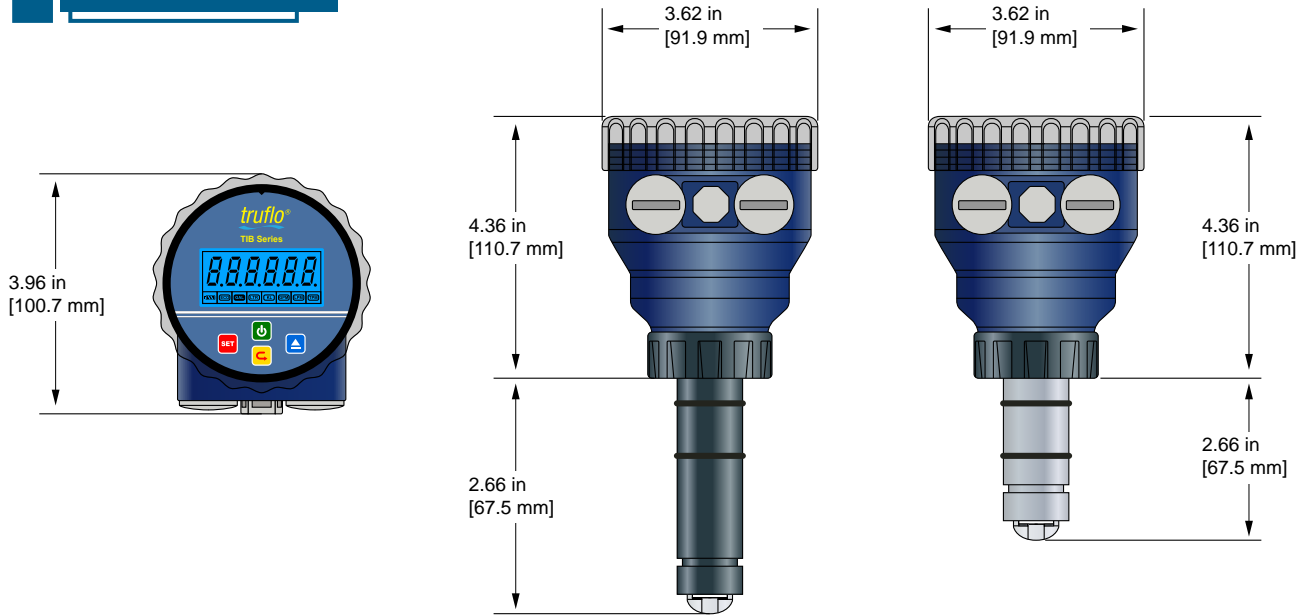


Rotor Pin | Paddle Replacement

<p>01</p> <p>Line up Pin with Rotor Hole</p> <p>Small Pin</p> <p>Rotor Hole</p>	<p>02</p> <p>GENTLY tap pin with Mallet or Hammer</p>	<p>03</p> <p>Tap until Rotor is 50% out</p>
<p>04</p> <p>Pull out Rotor Pin</p>	<p>05</p> <p>Paddle</p> <p>Pull Out Rotor Pin Entire Way Until Paddle Wheel is loose</p>	<p>06</p> <p>Insert New Paddle in Flow Meter</p>
<p>07</p> <p>Push in Rotor Pin approx. 50%</p>	<p>08</p> <p>GENTLY tap Rotor Pin with Mallet or Hammer</p> <p>Ensure Holes are Aligned</p>	<p>09</p> <p>Congratulations! Replacement Procedure Complete!</p>

Dimensions

V Series



H Series



Warranty, Returns and Limitations

Warranty

Icon Process Controls Ltd warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service in accordance with instructions furnished by **Icon Process Controls Ltd** for a period of one year from the date of sale of such products. **Icon Process Controls Ltd** obligation under this warranty is solely and exclusively limited to the repair or replacement, at **Icon Process Controls Ltd** option, of the products or components, which **Icon Process Controls Ltd** examination determines to its satisfaction to be defective in material or workmanship within the warranty period. **Icon Process Controls Ltd** must be notified pursuant to the instructions below of any claim under this warranty within thirty (30) days of any claimed lack of conformity of the product. Any product repaired under this warranty will be warranted only for the remainder of the original warranty period. Any product provided as a replacement under this warranty will be warranted for the one year from the date of replacement.

Returns

Products cannot be returned to **Icon Process Controls Ltd** without prior authorization. To return a product that is thought to be defective, go to www.iconprocon.com, and submit a customer return (MRA) request form and follow the instructions therein. All warranty and non-warranty product returns to **Icon Process Controls Ltd** must be shipped prepaid and insured. **Icon Process Controls Ltd** will not be responsible for any products lost or damaged in shipment.

Limitations

This warranty does not apply to products which: 1) are beyond the warranty period or are products for which the original purchaser does not follow the warranty procedures outlined above; 2) have been subjected to electrical, mechanical or chemical damage due to improper, accidental or negligent use; 3) have been modified or altered; 4) anyone other than service personnel authorized by **Icon Process Controls Ltd** have attempted to repair; 5) have been involved in accidents or natural disasters; or 6) are damaged during return shipment to **Icon Process Controls Ltd** reserves the right to unilaterally waive this warranty and dispose of any product returned to **Icon Process Controls Ltd** where: 1) there is evidence of a potentially hazardous material present with the product; or 2) the product has remained unclaimed at **Icon Process Controls Ltd** for more than 30 days after **Icon Process Controls Ltd** has dutifully requested disposition. This warranty contains the sole express warranty made by **Icon Process Controls Ltd** in connection with its products. **ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED.** The remedies of repair or replacement as stated above are the exclusive remedies for the breach of this warranty. **IN NO EVENT SHALL Icon Process Controls Ltd BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING PERSONAL OR REAL PROPERTY OR FOR INJURY TO ANY PERSON. THIS WARRANTY CONSTITUTES THE FINAL, COMPLETE AND EXCLUSIVE STATEMENT OF WARRANTY TERMS AND NO PERSON IS AUTHORIZED TO MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS ON BEHALF OF Icon Process Controls Ltd.** This warranty will be interpreted pursuant to the laws of the province of Ontario, Canada.

If any portion of this warranty is held to be invalid or unenforceable for any reason, such finding will not invalidate any other provision of this warranty.

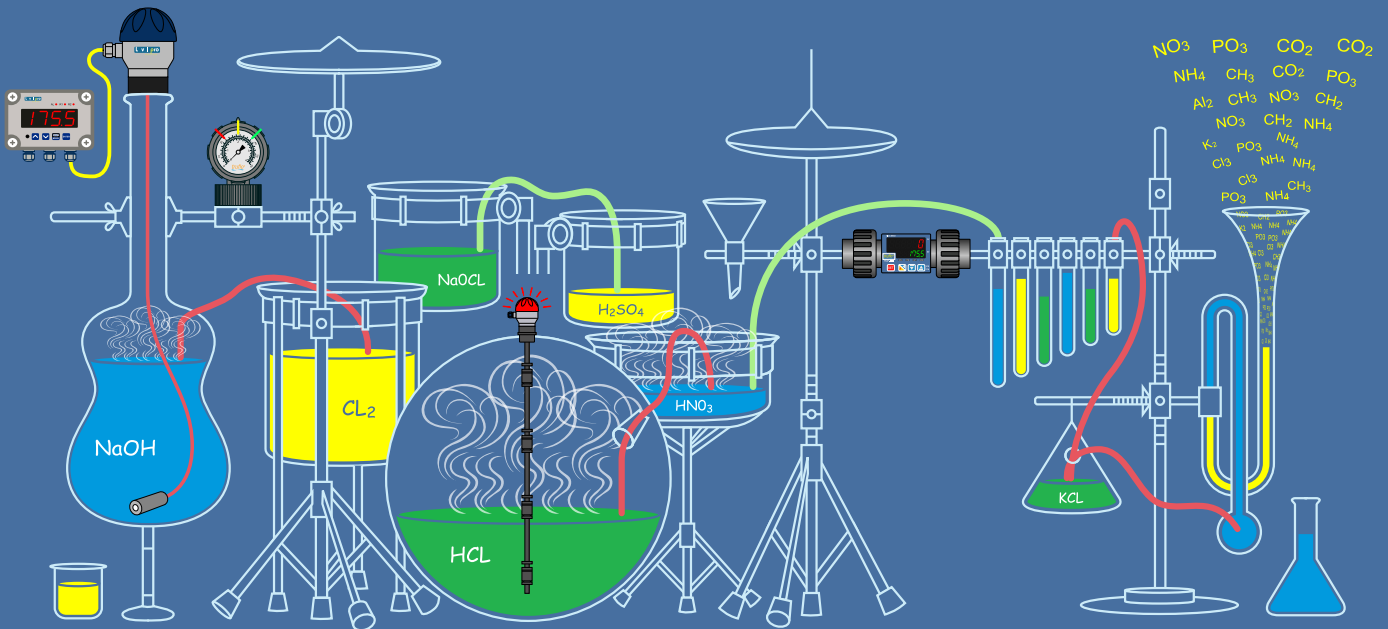
For additional product documentation and technical support visit www.iconprocon.com | e-mail: sales@iconprocon.com support@iconprocon.com | Ph: 905.469.9283

CORROSION



Corrosion-Free
Instrumentation Equipment

CORROSION



We Measure & Control
All Kinds of Corrosive Liquid S#*%

Industry's Most Extensive Line of
Corrosion-Free Instrumentation Equipment



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