

# Wet Tap Sensor Installation Manual



# Critical Safety Information

## NOTICE

The manufacturer is not responsible for any damages due to misapplication or misuse of this product including, without limitation, direct, incidental, and consequential damages, and disclaims such damages to the full extent permitted under applicable law. The user is solely responsible to identify critical application risks and install appropriate mechanisms to protect processes during a possible equipment malfunction.

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger and caution statements. Failure to do so could result in serious injury to the operator and/or damage to the equipment.

Make sure that the protection provided by this equipment is not impaired. Do not use or install this equipment in any manner other than that specified in this manual.

### Use of hazard information



## DANGER

Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury



## WARNING

Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.



## CAUTION

Indicates a potentially hazardous situation that may result in minor or moderate injury.

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# Product Description

The Sensor consists of the sensor probe, and a drinking water mounting system. It is designed to be mounted using a Ford 2" MIP X MIP Wet Tap Valve (or equivalent). The sensor can be connected by either:

1. Using a Display/Transmitter powered with 24VDC
2. To a SCADA system using Modbus RTU protocol and 24VDC

## 1 Features

- Measures chlorine in samples having pH as high as 9.0
- Requires very little maintenance
- Replaceable wear parts for minimal down time
- No membranes or electrolyte replacement required
- No waste stream or flow control needed
- Direct pipe insertion
- Self-cleaning
- 316 stainless steel sensor housing

### 1.1 Specifications

#### Sensor Sample Requirements

Sample Pressure	-0.7 to 10 Bar
Sample Temperature	1 to 50° C
Sample pH	pH 5-10
Suspended Solids	Up to 3,000 ppm
Sample Flowrate	Variable from 0 to 5 m/Second
Sample Conductivity	400 to 55,000 $\mu$ S at 0 to 25°C

## 2 Sensor Installation



### **DANGER**

Multiple hazards. Only qualified personnel must conduct the tasks described in this section of the document.

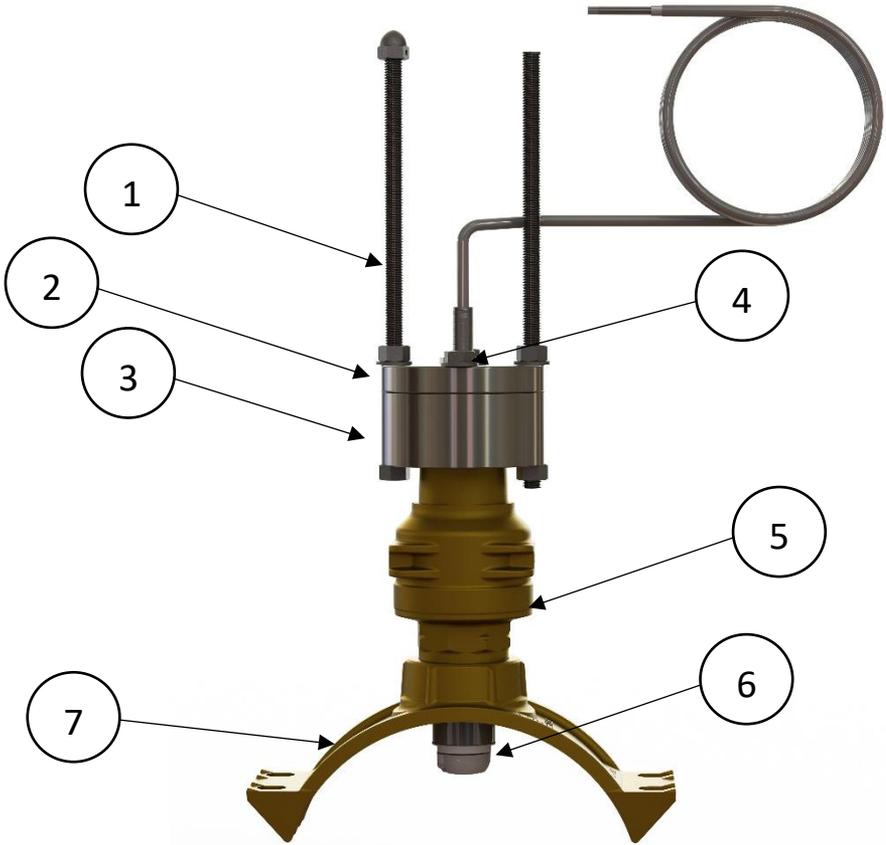
The sensor is not affected by changes in flow rates. Flow velocities from zero to 15 feet per second result in a negligible change in signal.

### Location of Components

#### TRO Sensor

1. Located in a straight length of pipe at least 1.5 times the pipe diameter.
2. The tip of the sensor should protrude into the pipe a minimum of 30mm.

## 2.1 Component Labels



**Figure 1. Drinking Water unit installed in pipe and detail of installation components.**

No.	Part Description
1	Threaded Rod
2	Wet Tap Mater
3	Wet Tap Cap
4	Hex Bolt and Washer
5	2" MIP X MIP Corp Stop Valve (not included)
6	Sensor End
7	2" FIP Pipe Saddle (not included)

The Drinking water Assembly is designed to be installed in a 2" MIP X MIP Corp Stop Valve (or equivalent). These instructions assume a 2" Wet Tap Valve such as Mueller PN B-2969N and the appropriate saddle have been successfully installed.

## 2.2 Initial Installation

Step 1: Assemble Remover parts onto valve.

This installation assumes that a Corp Stop valve and saddle have been installed in the desired location in the pipeline. Any 2" Corp Stop valve and appropriate saddle may be used (2" MIP AWWA thread X 2" MIP threads). One valve example is Mueller B-2969N.

1. Remove blue tape from wet tap cap.



Figure 2. Blue tape location on cap

2. Install Wet Tap Cap onto 2" Corp Stop Valve.
3. Install the two all-thread rods into cap until protruding from the other side by about  $\frac{1}{2}$  inch. Thread hex nuts onto protruding threads.



Figure 3. Valve-side of cap showing  $\frac{1}{2}$  inch protrusion of all-thread rod.

- Slide sensor/mater assembly into cap using all thread rods as guide. Ensure sensor sleeve is pushed passed the two O-rings located inside mater.

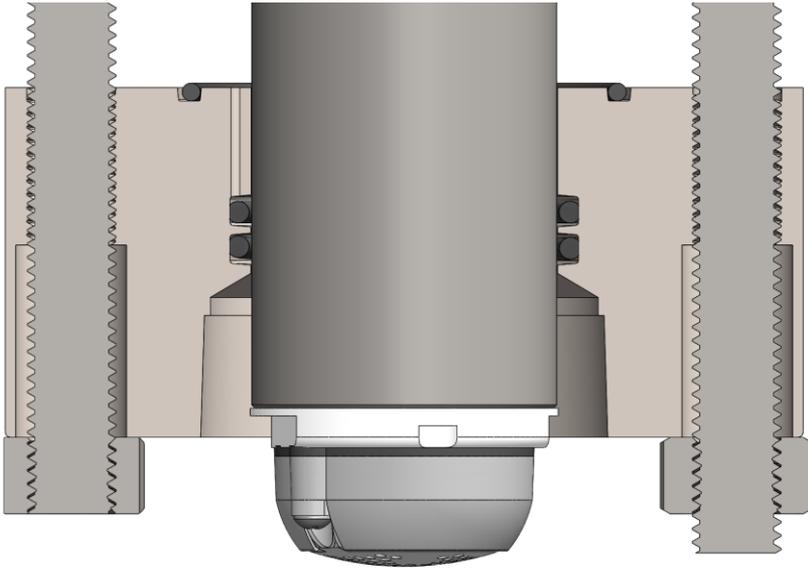


Figure 4. Cross-Section of Cap with sensor end pushed passed both internal O-rings.

5. While valve is still closed, place the washers and nuts onto the all-thread rods until they are flush with mater.



Figure 5. Wet tap assembly prior to opening valve.

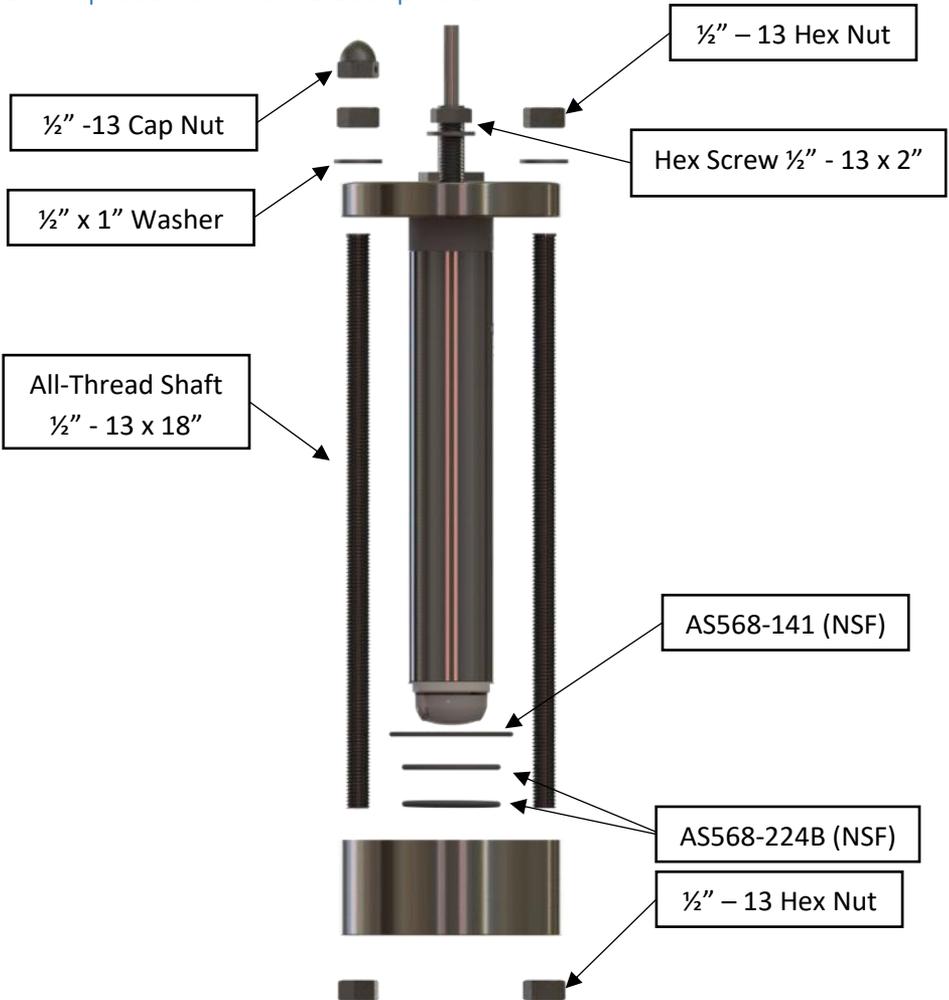
6. Rotate sensor so that the orientation sticker on the cable is facing perpendicular to the flow direction.



Figure 6. Orientation arrow depicting location of ejection port on sensor end. Line up perpendicular to flow direction.

7. Open wet tap valve and insert sensor mater assembly completely into process stream. Mater should be completely flush with cap (as in figure 1).
8. Secure the cap and mater using the two hex nuts and washers. Tighten hex nuts all the way to mater wrench tight.
9. Add locking cap nut to one threaded rod. This serves to prevent accidentally removing the retaining nuts completely.

### 3 Replacement Part Descriptions



## 4 Limited Warranty

Halogen Systems warrants its products against material workmanship defects for a period of one (1) year from the date of shipment.

In the event that a defect is discovered during the warranty period, Halogen Systems agrees, at its option, to repair or replace the defective product. Any product repaired or replaced under this warranty will be warranted only for the remainder of the original product warranty period.

Products may not be returned without authorization from Halogen Systems. To obtain authorization, please call Halogen Systems for a return material authorization number.

Limitations:

This warranty does not cover:

- 1) Damage caused by misuse, neglect (lack of appropriate maintenance), alteration, accident, or improper application or installation.
- 2) Damage caused by any repair or attempted repair not authorized by Halogen Systems.
- 3) Any product not used in accordance with the instructions furnished by Halogen Systems.
- 4) Damage caused by acts of God, natural disaster, acts of war (declared or undeclared), acts of terrorism, work actions, or acts of any governmental jurisdiction.
- 5) Freight charges to return merchandise to Halogen Systems.
- 6) Travel fees associated with on-site warranty repair.

This warranty is the sole expressed warranty made by Halogen Systems in connection with its product. All other warranties, whether expresses or implied, including without limitation, the warranties of merchantability and fitness for a particular purpose, are expressly disclaimed.

The liability of Halogen Systems shall be limited to the cost of the item giving rise to the claim. In no event shall Halogen Systems be liable for incidental or consequential damages.

This warranty is the sole and complete warranty for Halogen Systems. No person is authorized to make any warranties or representations on behalf of Halogen Systems.

Halogen Systems reserves the right to change or modify this warranty at any time.