



**Franklin Electric**  
**FUELING SYSTEMS**

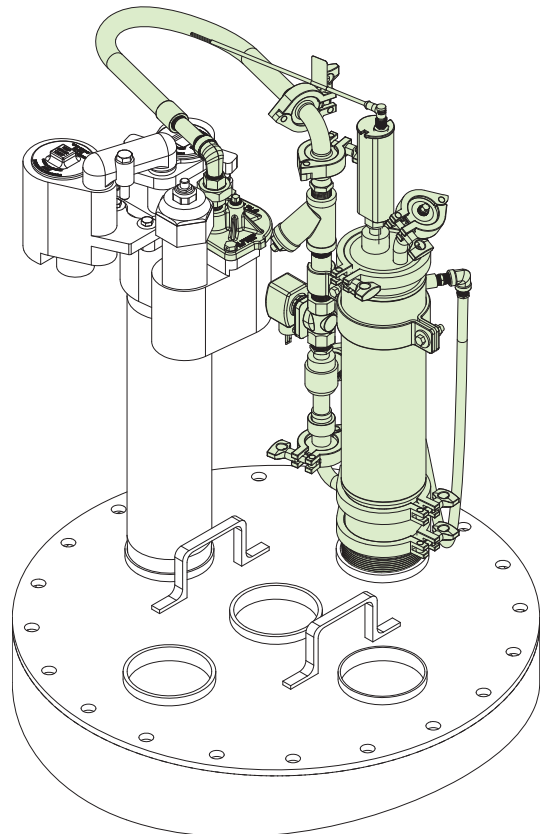
# **CORROSION CONTROL™ WATER SEPARATOR**

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## **INSTALL GUIDE**

10000018090 r1

**CORROSION CONTROL™ KIT**  
407985903



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## **CONVENTIONS USED IN THIS DOCUMENT**

This document includes safety precautions and other important information presented in the following format:

**NOTE:** This provides helpful supplementary information.

**IMPORTANT:** This provides important supplementary information and instructions to avoid damaging hardware or a potential hazard.

**▲ CAUTION:** This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

**▲ WARNING:** This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

**▲ DANGER:** This indicates an imminently hazardous situation that will result in death if not avoided.

## **OPERATING PRECAUTIONS**

Franklin Electric equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this document. Before working with or installing the equipment covered in this document, or any related equipment, read this entire document, particularly the following precautions:

**IMPORTANT:** To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

**▲ CAUTION:** Use only original Franklin Electric parts. Substituting non-Franklin Electric parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

**▲ WARNING:** Follow all codes that govern the installation and service of this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while installing or servicing this product. Refer to this document (and documentation for related equipment) for complete installation and safety information.

**▲ WARNING:** Before entering a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors may cause dizziness/unconsciousness, and if ignited, can explode causing serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while work is in process. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before resuming work. Always have another person standing by for assistance.

**▲ WARNING:** Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

**▲ WARNING:** Always secure the work area from moving vehicles. The equipment in this document is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck or other vehicle to block access to the work area.

**▲ DANGER:** Inspect the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If any potential ignition sources are identified, implement proper safety measures.

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# 1 Introduction

The Corrosion Control™ Water Separator provides proactive in-tank corrosion control by removing tank bottom corrosion contributors including water and acid. As part of the fully integrated Corrosion Control™ System, in-tank and in-sump corrosion prevention is provided by proactively removing water from the tanks with the Corrosion Control™ Water Separator. The Corrosion Control™ System is driven by the EVO™ 600/6000 Series console to automate the system and monitor for the presence of corrosive environments.

## 1.1 Documentation

- This document is intended for qualified and certified installation persons.
- Instructions of this document are in English. All other language versions are translations of this original document.
- Illustrations in this document show a typical setup and are for instruction and description purposes only.
- Information given in this document is given as a guide only. It is the installer's responsibility to ensure that correct and safe procedures are followed at all times.
- This document and related documents are available from Franklin Electric at [www.franklinfueling.com](http://www.franklinfueling.com).

### 1.1.1 Symbol Legend

- |                                                                                                                                                      |                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|  Wear Protective Headwear                                         |  Wear Eye Protection                     |
|  Wear Protective Clothing                                         |  Wear High-Visibility Clothing           |
|  Wear Protective Gloves                                           |  Wear Safety Footwear                    |
|  Refer to instruction guide                                       |  Ventilate Before & During Entering      |
|  Ensure Continuous Ventilation                                    |  Connect an earth terminal to the ground |
|  Lockout/Tagout Electrical Equipment                              |                                                                                                                             |
|  Disconnect main plug from electrical outlet                      |                                                                                                                             |
|  Disconnect before carrying out maintenance or repair             |                                                                                                                             |
|  General Warning                                                  |  Warning: Electricity                    |
|  Warning: Flammable Material                                      |                                                                                                                             |
|  No open flame; Fire, open ignition source and smoking prohibited |                                                                                                                             |

# 2 Safety/Security

## 2.1 General Safety Information

- Procedures in this document are only to be performed by people qualified and certified to perform them.
- Personnel working on or with energized equipment must be authorized by relevant regulatory bodies to carry out such work and must have the appropriate training. Check with your employer and relevant regulatory body's rules for working with energized equipment.
- Obey all local laws, rules, regulations, and instructions in this document. In case of inconsistency or contradiction between information contained in this document and any laws, rules and regulations, obey the stricter of the two.
- Keep unqualified personnel at a safe distance during installation.
- If it is necessary to remove safety/security devices, immediately reinstall the safety/security devices after completing the work.

## 2.2 Documentation Availability

### 2.2.1 Station Owner or Operator

Save this guide for future use, and make sure to provide it to anyone who services this equipment.

### 2.2.2 Miscellaneous

Always reference the guide(s) that came with the equipment for the most current and complete list of installation and safety precautions.

## 2.3 Hazard Assessment

Prior to beginning work and prior to recommencing work after leaving and returning to the worksite, a worksite, *pre-job hazard assessment* must be performed to identify safety and environmental needs. At a minimum, this hazard assessment should:

- Identify possible hazards and risks.
- Identify the safety needs of the job.
- Identify the correct procedures, practices and equipment.
- Eliminate unsafe conditions and actions from the worksite.
- Identify the need for personal protective equipment.
- Inspect equipment before use.
- Confirm sheaths of all cables are secured and undamaged.
- Confirm plugs and connectors are properly connected and serviceable.
- Perform ongoing risk assessment during the project.

## 2.4 Required Personal Protective Equipment (PPEs)

These PPEs are required during all phases of installation.



Wear Protective Clothing



Wear Eye Protection



Wear High-Visibility Clothing



Wear Protective Gloves



Wear Protective Headwear



Wear Safety Footwear

## 2.5 Cyber Security

This product is designed to be connected to and to communicate information and data via a network interface. It is solely the owner's responsibility to provide and continuously ensure a secure connection between the product and the Owner's network or any other network (as the case may be).

The Owner shall establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc.) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ***The Owner shall also ensure that the device and/or any connecting devices have the latest firmware version available to ensure device security features are up to date.***

The manufacturer, Franklin Electric, and its affiliates are not liable for damages and/or losses related to such security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

## 3 Pre-Installation Overview

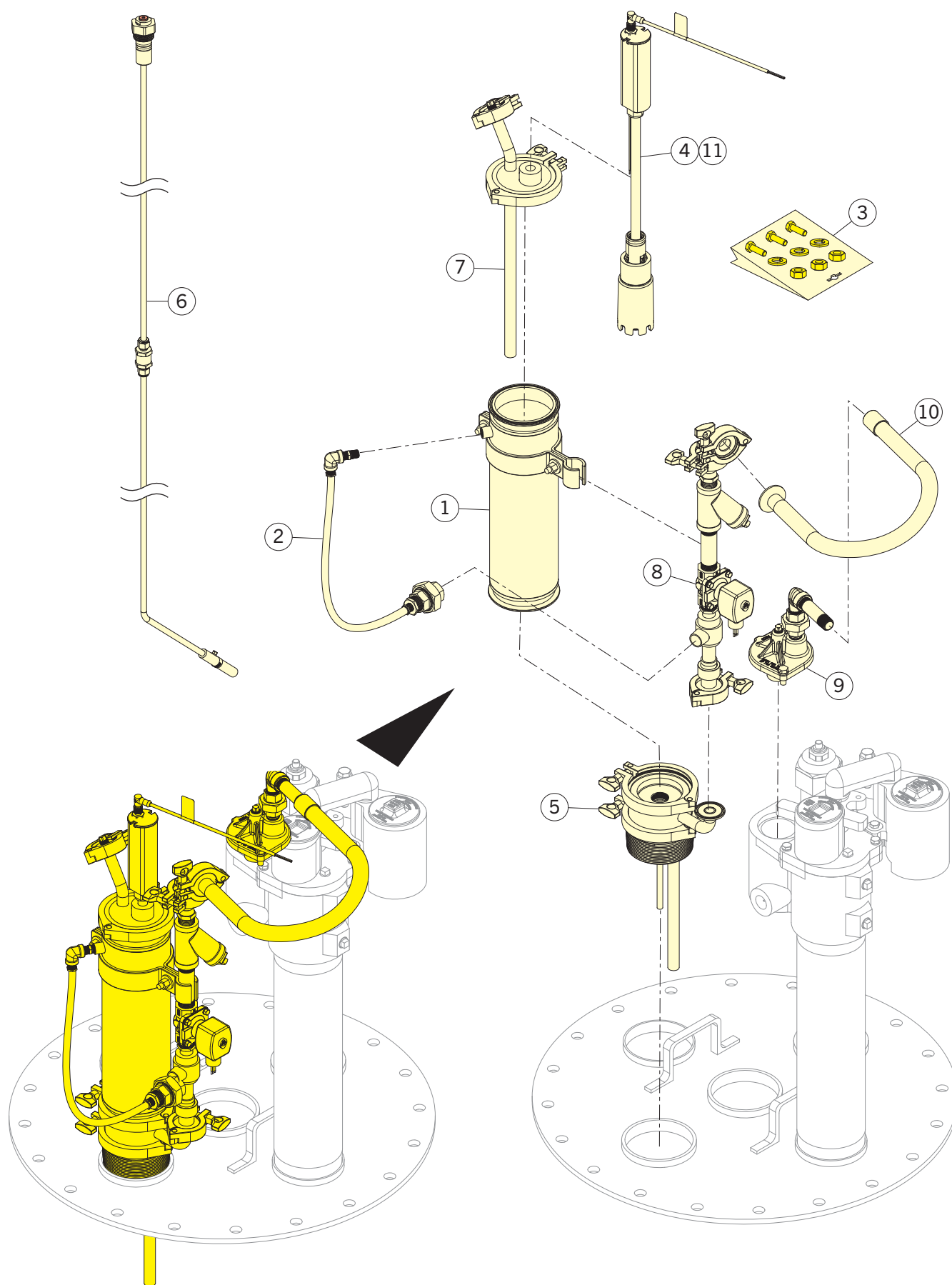
### 3.1 Upon Receipt of Item(s)

- Verify all items are in accordance with the order.
- Check all items for damage.
- If any item shows damage or is not in accordance with the order, inform Franklin Electric *immediately*.
- Remove the packaging material.
  - Follow all local laws, rules and regulations regarding disposal of discarded parts, packaging material or items and any subsequent components.

### 3.2 Install Kit Identification

| Reference # | Part #        | Description                                      |
|-------------|---------------|--------------------------------------------------|
| 1           | 407945914     | Separator Vessel Kit*                            |
| 2           | 407945917     | Separator to Eductor Kit*                        |
| 3           | 407945918     | Installation Hardware                            |
| 4           | 407945919     | Separator Float Kit                              |
| 5           | 407945921     | Separator Suction Adapter Kit*                   |
| 6           | 407945922     | Separator Suction Tube Kit                       |
| 7           | 407945925     | Separator Vessel Cover Kit*                      |
| 8           | 407945926     | Eductor Manifold Kit*                            |
| 9           | 407945928     | STP to Eductor Kit                               |
| 10          | FF07X24EZ05F  | .75" x 24" Long Flex Connector (EZ FIT x Female) |
| 11          | FMP-LL3-16-WS | 16" LL3 Mag Probe Kit                            |

**NOTE:** \*See § 7.1 for kit breakdowns and individually available replacement components.



## 3.3 Site Survey

Prior to beginning any installation of the Corrosion Control™ Water Separator (WS), a site survey of the sump should be conducted to ensure the following:

- Verify there is an unused 4" bung in the tank manway with an unobstructed cylindrical space approximately 11" diameter by 30" high centered on the bung (see the drawing below).

**NOTE:** Installation of a WS will allow rotation of most components to multiple positions, which may reduce the diameter of the cylindrical requirements.

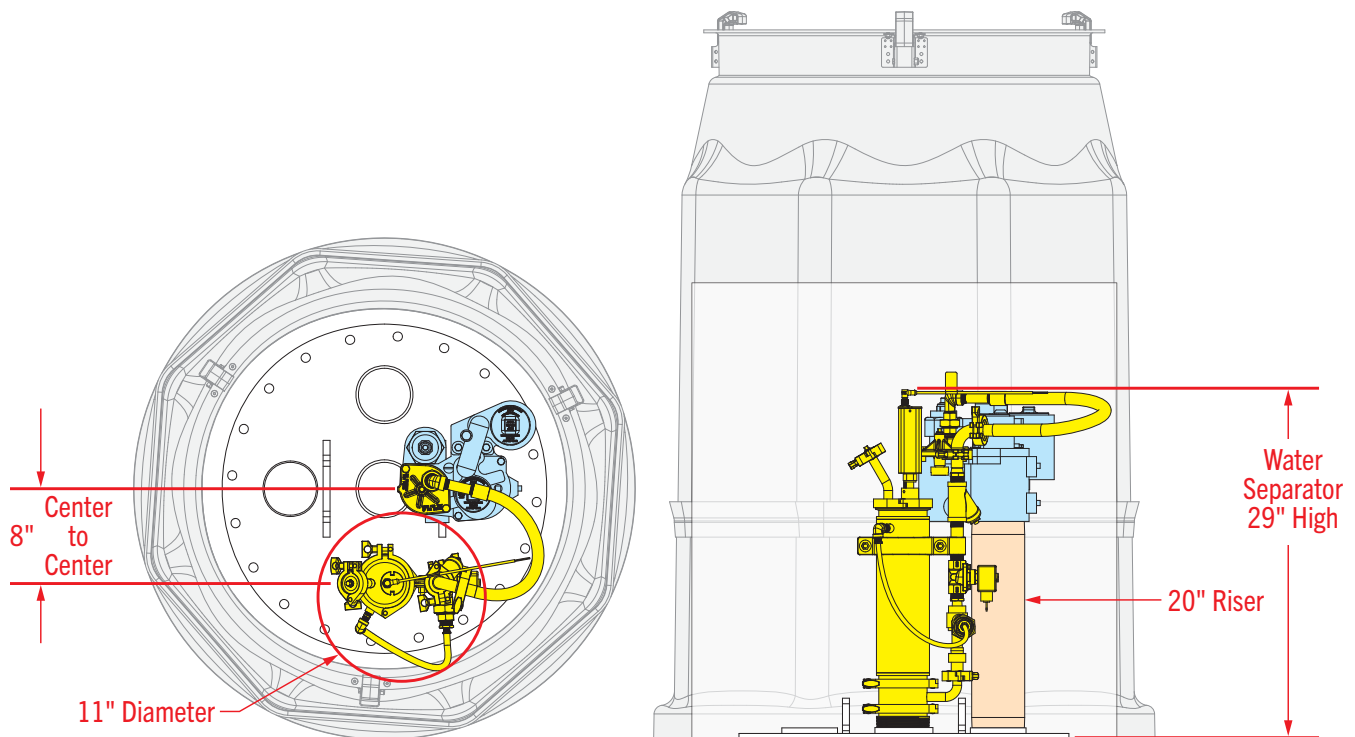
- Verify the EVO™ 600/6000 console has the latest firmware version.
- Verify the EVO™ 600/6000 console has one available relay channel on either a Power Supply Module, Relay Module, or 10A Relay Module to control the WS solenoid.

**NOTE:** Installation of a WS requires 110 V supply, neutral, and ground high voltage conductors from the EVO™ 600/6000 normally open relay channel to WS solenoid in the diesel tank sump. *Verify high voltage conduit availability.*

- Verify the EVO™ 600/6000 console has one available probe channel on either a Multiplexing Sensor Hub™ (MSH), UDP Module, or Probe Module to monitor the WS vessel probe.

**NOTE:**

- Installation of WS requires an intrinsically safe (IS) cable from the EVO™ 600/6000 probe channel to the WS probe in the diesel tank sump when using a UDP Module or Probe Module. *Verify IS cable/conduit availability or review application for use of Multiplexing Sensor Hub™ to connect WS with existing IS cable.*



# 4

## Installation



### ⚠ WARNING:

- NPT threaded joints require proper thread engagement per ASTM B1.201, and proper fuel resistant thread sealing compound.\*
- EZ Fit flange connections require:
  - Proper alignment of the gasket between the mating faces.
  - The thumb screw to be tightened to 25 in-lbs (*do not over tighten*).
  - The thumbscrew to be secured with the provided cable (zip) tie.

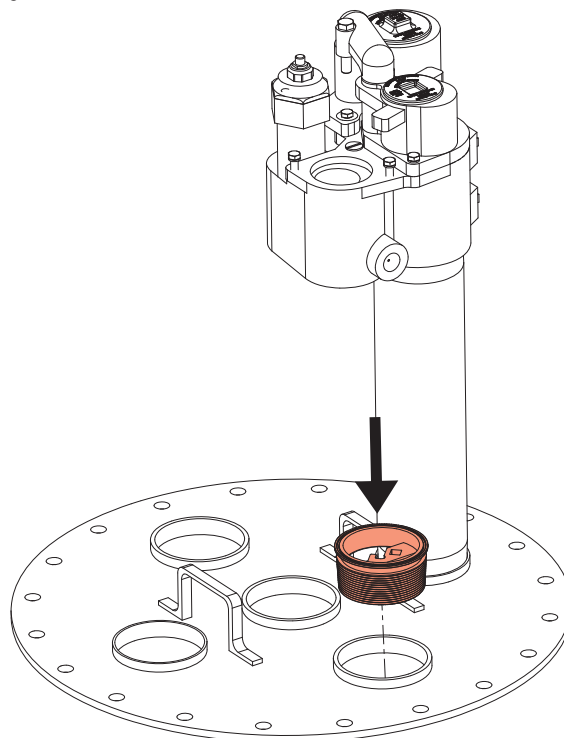
**IMPORTANT:** \*Failure to follow EZ Fit Flange instructions may result in fuel leaking into the environment and/or the containment sump.

**NOTE:** When the installation is complete, make sure this guide is left with the station owner or operator.

## 4.1 Component Install Instructions

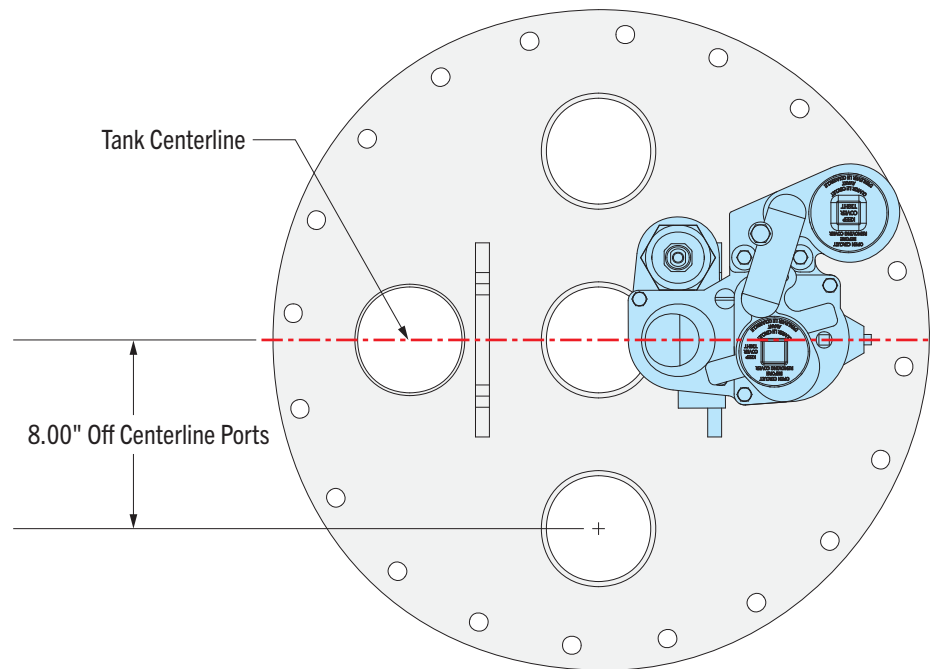
1. Apply UL-classified non-hardening, non-toxic pipe thread sealant to the 4" NPT threads and then install the **4" NPT X 4" EZ Fit Suction Adapter** into open tank bung (using a ½" square drive pipe plug socket).

**IMPORTANT:** Ensure there is an *unobstructed cylindrical space* of about 11" diameter by 30" high, centered above the tank bung. *Orient the Suction Adapter cross-bar away from the general direction that the Eductor Manifold will be positioned (see §3.3).*

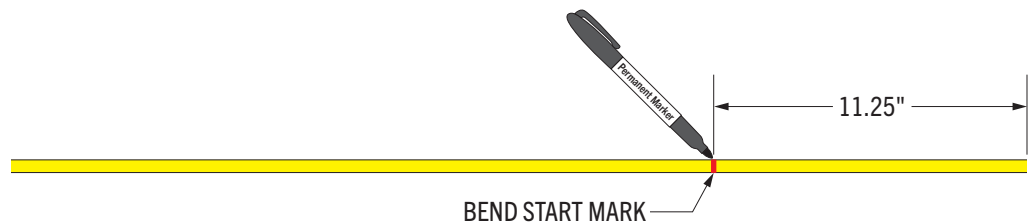


2. Install the Suction Tube. A bend will be required in one of the two 6' long pieces of tubing to position the pick-up tube at the low point of the tank. *To make this bend, follow the instructions below.*

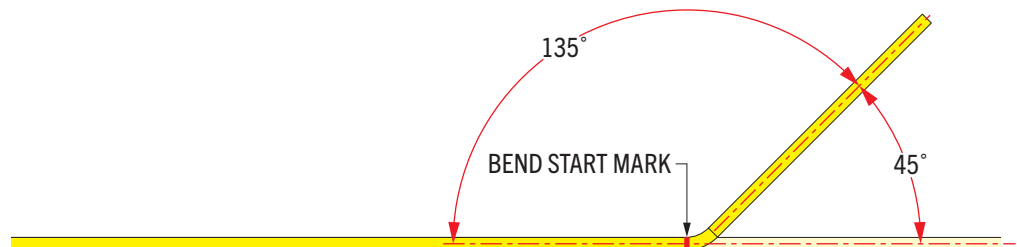
**NOTE:** For tanks where the off centerline ports are 8" of the centerline of the tank use the following guidelines for the bend:



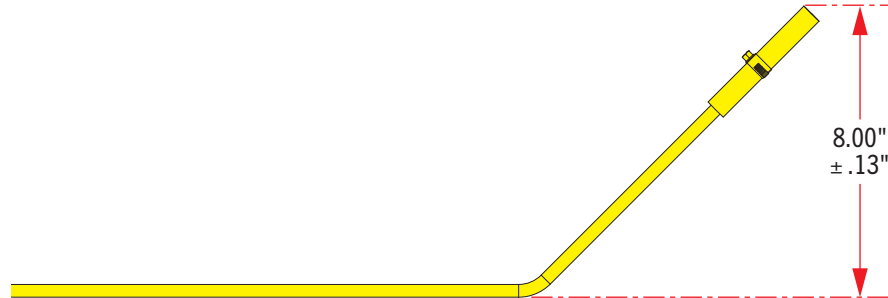
- a. Make a mark 11.25" from one end of the  $\varnothing .375$ " x 12' long Suction Tube (This will be where the bend starts).



- b. Using a manual hand bending tool, construct a bend that is  $45^\circ$  up from horizontal (or creates a  $135^\circ$  angle with the straight portion of the tubing).

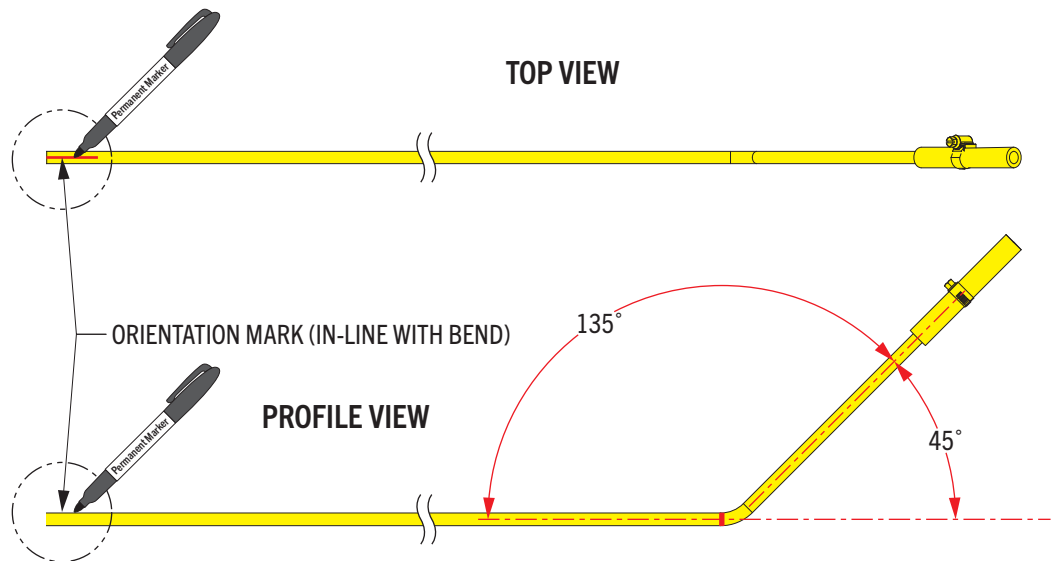


- c. Install the  $\frac{3}{8}$ " ID x  $\frac{5}{8}$ " OD x 4" large viton hose over the bent end of the Suction Tube targeting the installed dimension range shown in the image below. Clamp in place using the provided hose clamp. Use the unbent tube section as a straight edge, and confirm that the distance to the top end of the bend is 8". If necessary, you can remove the small section of tubing at the end of the bend.

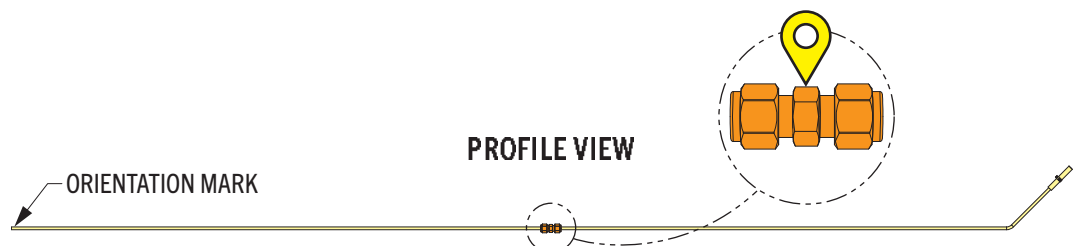


**IMPORTANT:** Make sure the rubber foot extends past the metal tube to protect the tank bottom. The rubber foot should not extend more than  $\frac{1}{2}$ " past the end of the metal tube.

3. Make an orientation mark on the end of the tube opposite the bend, but in-line with the bend (for use as an orientation reference in aiming the bent end at the target pick up point).

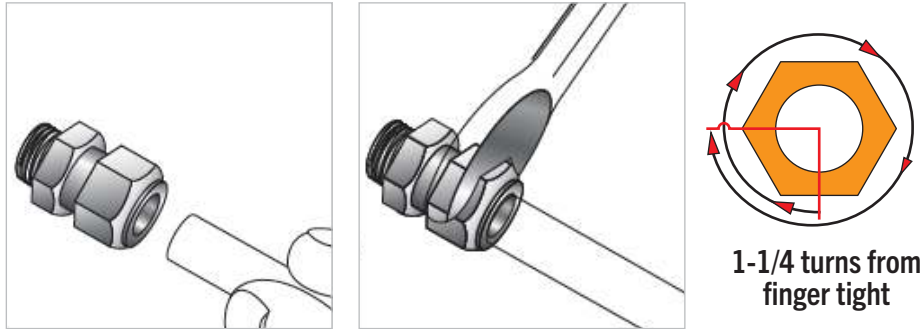


4. Assemble the two 6" pieces of  $\frac{3}{8}$ " OD tubing using the provided tubing union (📍). After assembly, remark orientation on upper tube as described in Step 3.



5. Perform the compression fitting tightening procedure:

**NOTE:** Compression fitting may be fixtured in either direction.



6. For maximum number of remakes, mark the fitting and nut before disassembly. Before retightening, make sure the assembly has been inserted into the fitting until the ferrule seats in the fitting. Retighten the nut by hand. Rotate the nut with a wrench to the original position as indicated by the previous marks lining up. *A noticeable increase in mechanical resistance will be felt indicating the ferrule is being re-sprung into sealing position.*

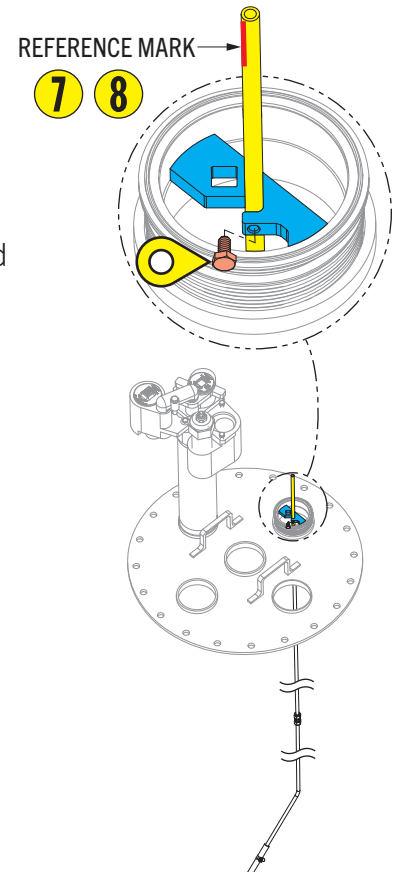
**NOTE:** Only after several remakes will it become necessary to advance the nut slightly past the original position. This advance (indicated by “B”) need only be 10°–20° (less than 1/3 of a hex flat).



**IMPORTANT:** DO NOT apply any downward force on the Suction Tube. Doing so could permanently bend or kink the Suction Tube.

7. Insert the assembled Suction Tube into the Suction Adapter opening. The Suction Tube should be inserted on the side of the cross bar with the set screw (the set screw should not be tightened to Suction Tube, yet).
8. Using the orientation reference mark applied previously, and making sure this reference mark is aimed toward the centerline of the tank, *carefully raise and lower the Suction Tube feeling for the depth at which the rubber tube just touches the bottom of the tank. (DO NOT FORCE. The SS tube could damage the bottom of the tank.)* Once the final depth and orientation have been verified, lock the Suction Tube in place by tightening the set screw (🔧) in the crossbar of the Suction Adapter using a 7/16" or adjustable wrench.

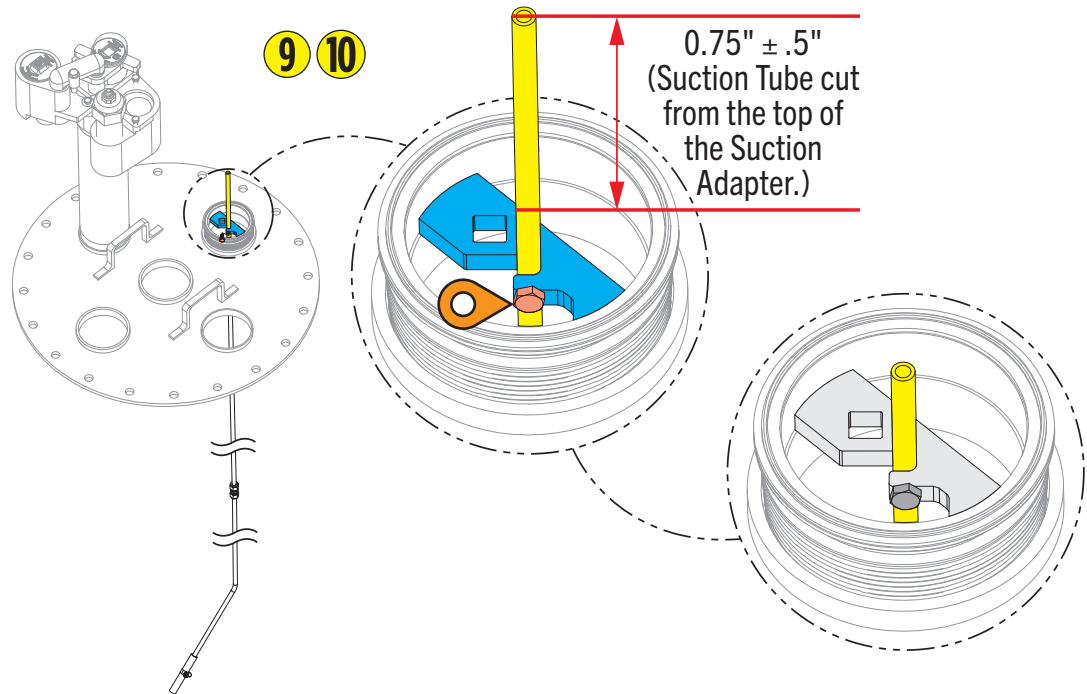
**IMPORTANT:** After tightening, verify orientation and remark Suction Tube at Suction Adapter height before proceeding.



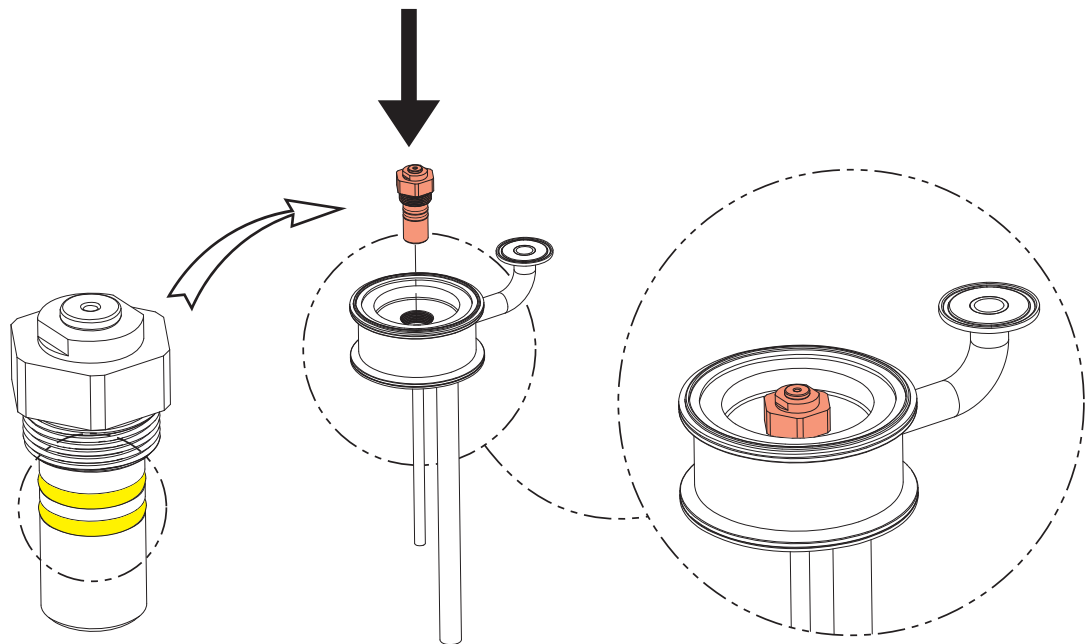
9. Using a roller style tubing cutter, remove any tubing extending more than  $0.75" \pm .5"$  above the sealing surface of the Suction Adapter.

**NOTE:** The cut end of Suction Tube above Suction Adapter needs to be free of burrs and sharp edges to avoid damage to O-rings in the check valve. After deburring, coat tube remaining above Suction Adapter with O-Ring lubricant.

10. Tighten set screw to lock Suction Tube in place (📍).

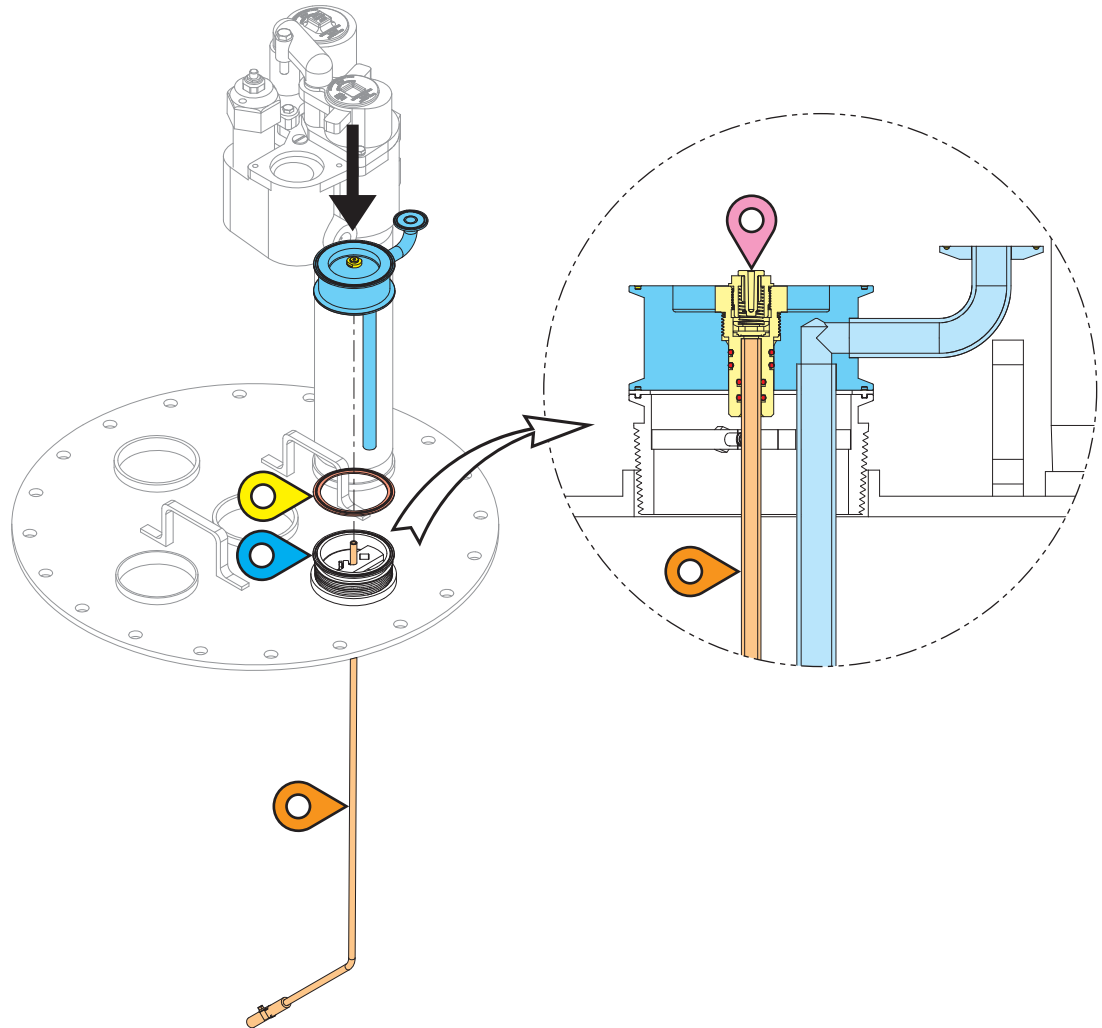


11. Verify the check valve has two O-rings (📍) installed on the OD and thread into the Suction Adapter, torquing to 5–10 ft-lbs.

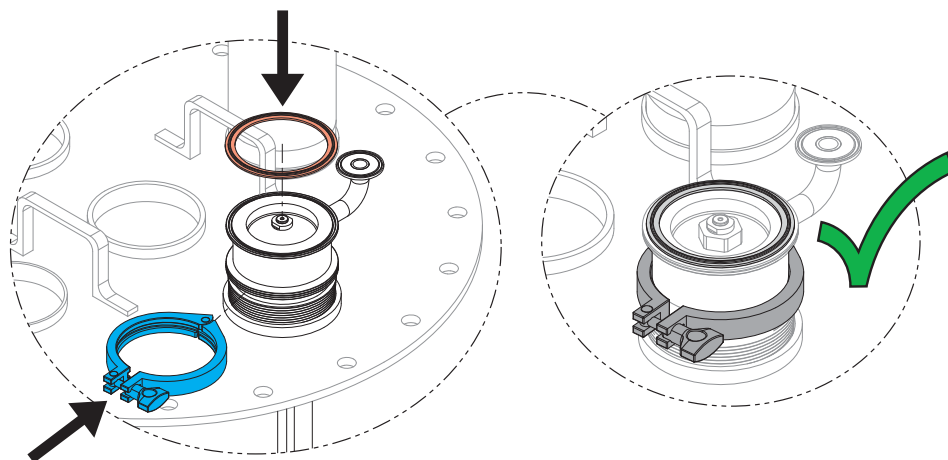


12. Place 4" EZ FIT Gasket (📍) on Suction Adapter seal surface (📍) prior to installing the Tank Adapter on the Suction Tube (📍). Carefully insert the Suction Tube into the center tube of the Tank Adapter so that the Suction Tube inserts into the check valve (📍). Position the Eductor Manifold to the correct general position.

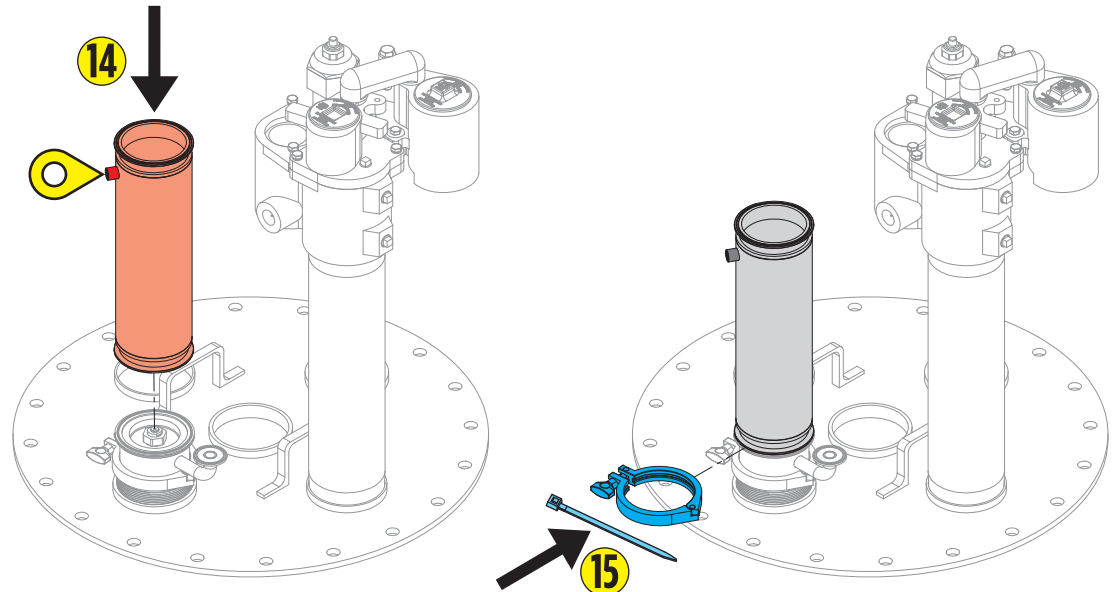
**IMPORTANT:** Make sure to not damage the O-rings in the ID of the check valve.



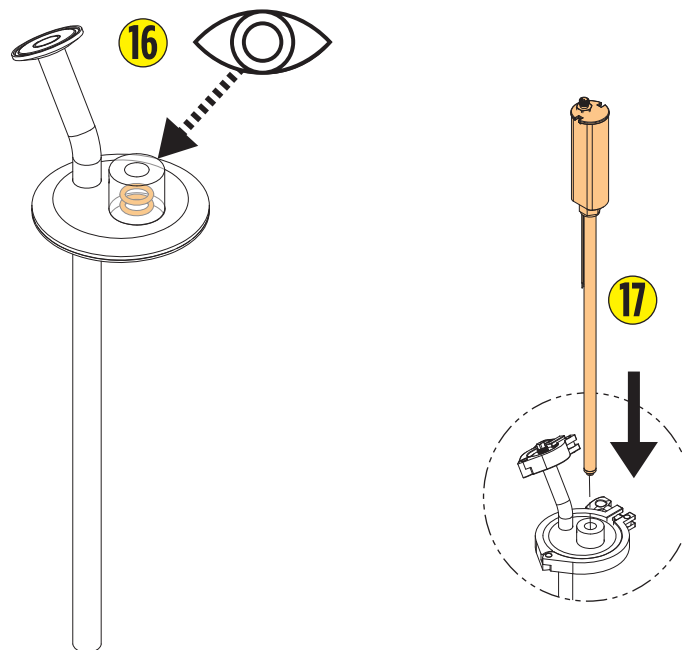
13. Place 4" EZ FIT Gasket on top of Tank Adapter and use an EZ FIT clamp to secure the Tank Adapter to the Suction Adapter. *Tighten the clamp thumbscrew to 25 in-lbs. DO NOT over-tighten.*



14. Place Separator Tube on top of Tank Adapter with the ¼" Vessel Suction Port (📍) positioned in the correct general direction (*not towards Eductor Manifold*).
15. Clamp separator vessel and tank adapter together. *Tighten the clamp thumbscrew to 25 in-lbs and secure with provided cable tie. DO NOT over-tighten.*

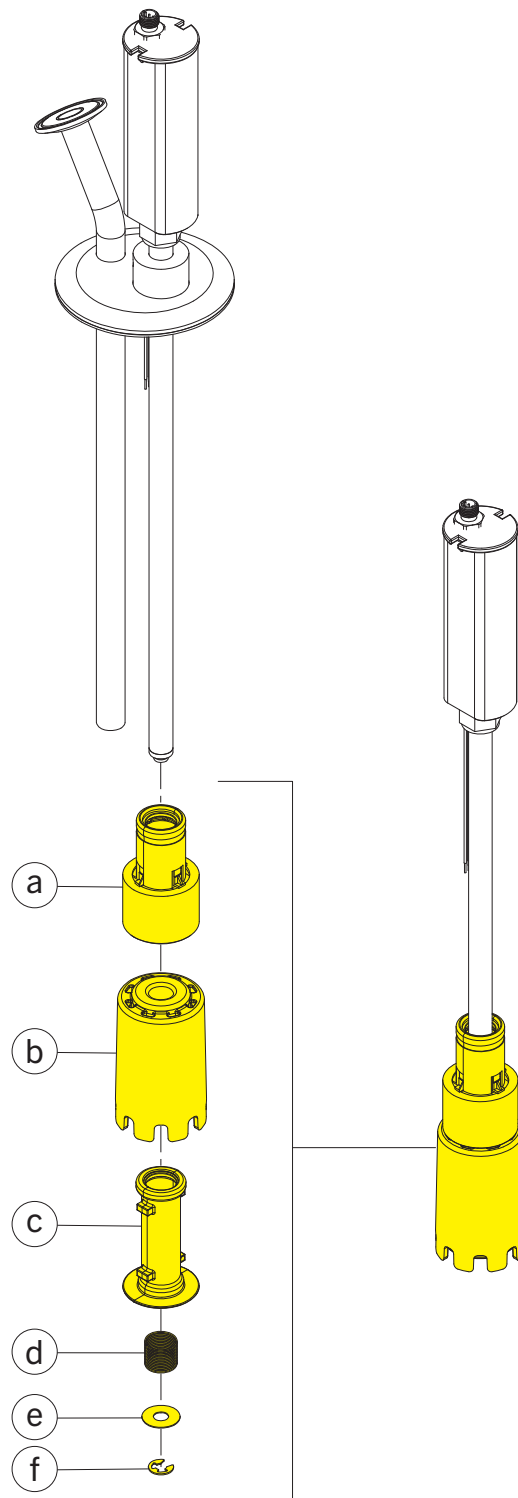


16. Verify two O-rings are located inside of coupler on the tank top cover.
17. Insert the LL3 probe through compression fitting. *DO NOT tighten the set screw.*



18. Install float kit components on the Probe Shaft as shown in the following order:

- a. Water Float (BLUE/BLACK)
- b. Probe Isolator Housing (BLACK cup)
- c. Flow Sensing Shuttle (BLACK)
- d. Spring
- e. Washer
- f. E-Clip



19. Place 4" EZ FIT Gasket on top of the Separator Vessel and then install the Separator Cover/Probe assembly:

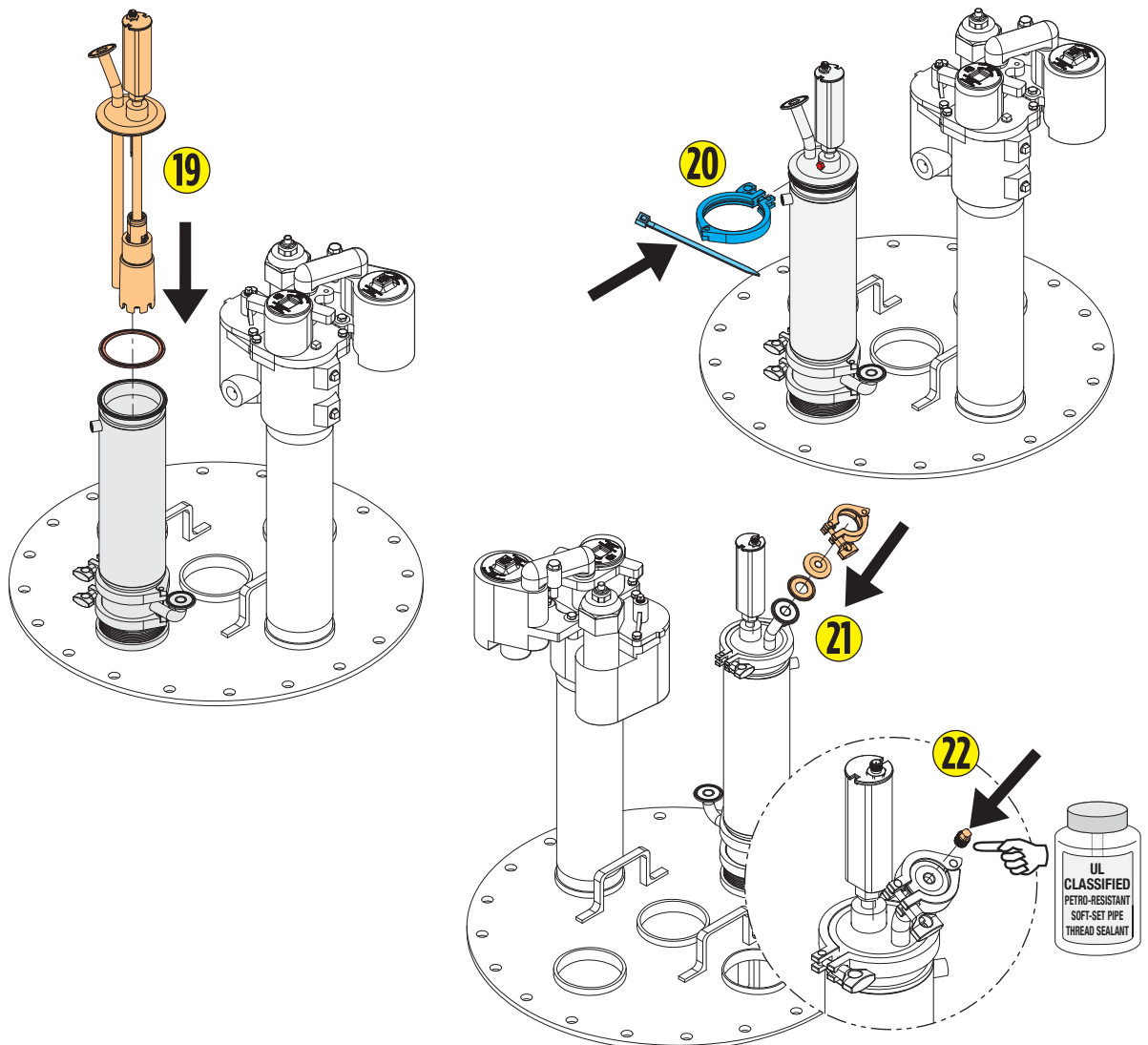
- Make sure the probe is on the bottom of the Vessel, but **DO NOT apply extra downward force to the probe** as this could damage the float assembly. *Tighten the screw to the probe shaft. DO NOT over-tighten.*

**NOTE:** The Probe should still be loose. *Be careful not to damage the probe or floats during this installation process.*

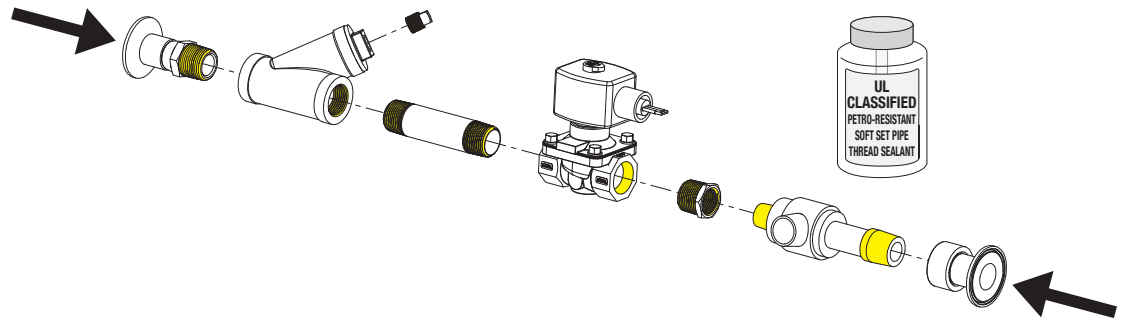
20. Clamp Separator Cover to Separator Vessel with the Drain Tube positioned in the best general direction for easy access. *Tighten the EZ FIT Clamp thumbscrew to 25 in-lbs and secure with provided cable tie. DO NOT over-tighten.*

21. Clamp EZ FIT Gasket and EZ FIT Blank on end of Drain Tube. *Tighten the clamp thumbscrew to 25 in-lbs and secure with provided cable tie. DO NOT over-tighten.*

22. Apply UL-classified non-hardening, non-toxic pipe thread sealant to the 1/4" NPT threads and install the pipe plug in the drain cover.



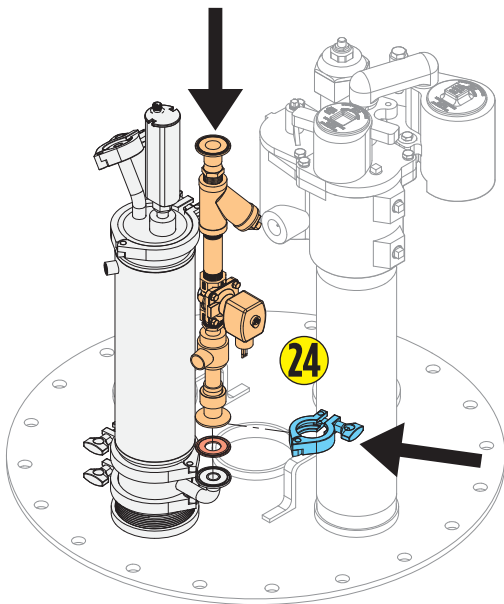
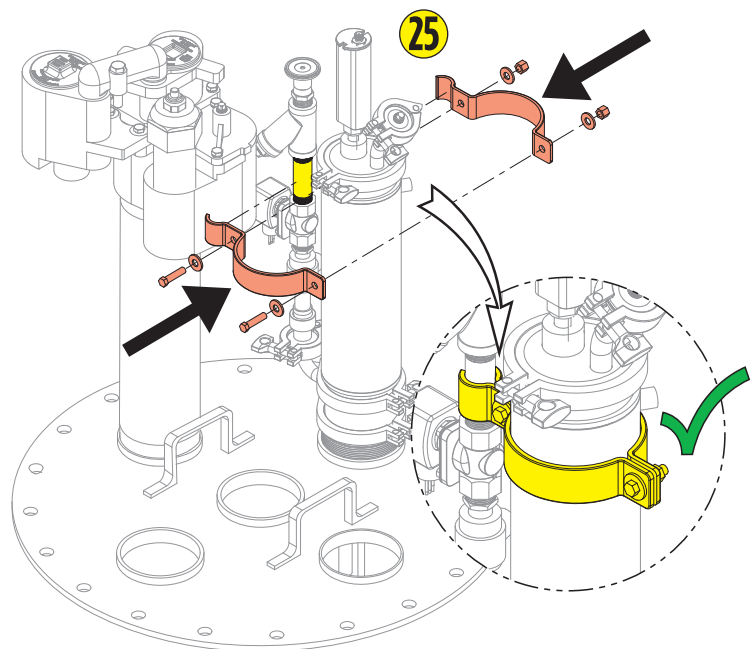
23. Assemble the Educator Manifold as shown, applying UL-classified non-hardening, non-toxic pipe thread sealant to the NPT threads including the  $\frac{3}{8}$ " NPT plug in the WYE strainer. **Do not overtighten fittings.**



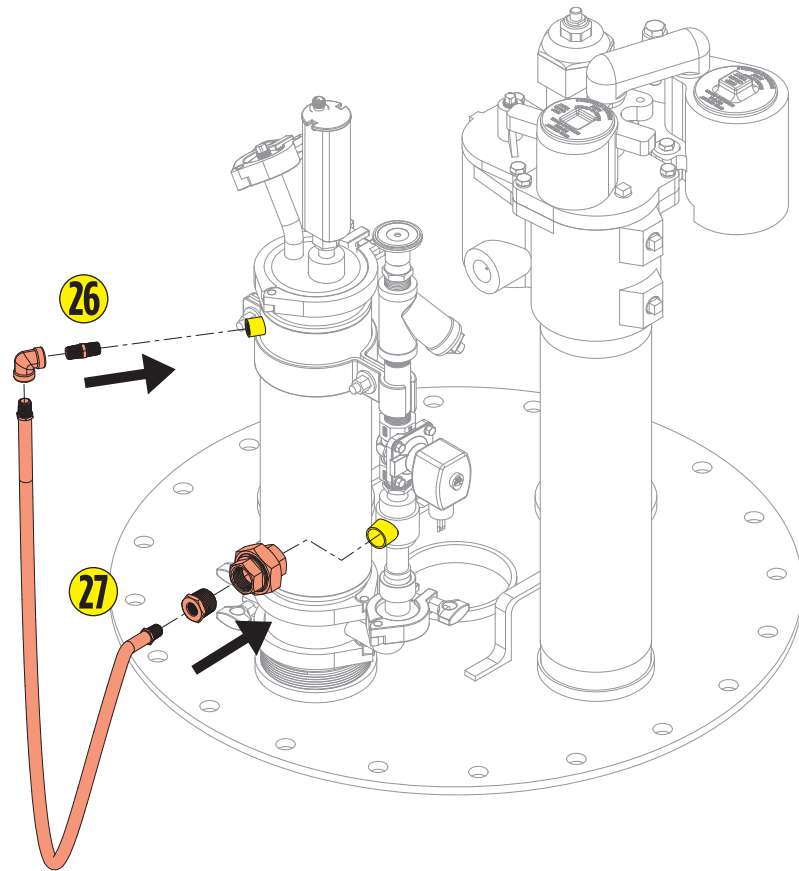
24. Place EZ FIT Gasket and Educator Manifold on the Return Tube of the Tank Adapter. Clamp the Educator Manifold to the Tank Adapter Return Tube with the Educator and solenoid in the correct general position for easy access to complete installation. Tighten the clamp thumbscrew to 25 in-lbs and secure with provided cable tie. **DO NOT over-tighten.**

25. Install Educator Clamp to hold the Educator Manifold to the Separator Vessel using supplied hardware.

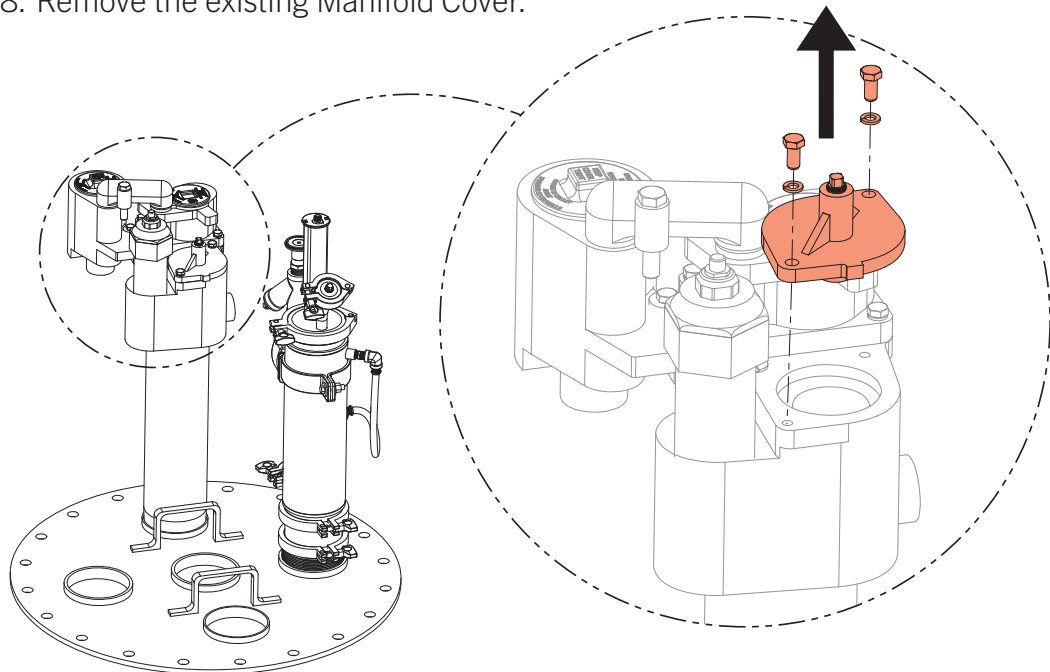
**NOTE:** If Educator Clamp is loose on the vessel, remove and apply provided rubber strip(s) to inside diameter of clamp and then re-install the clamp onto vessel.



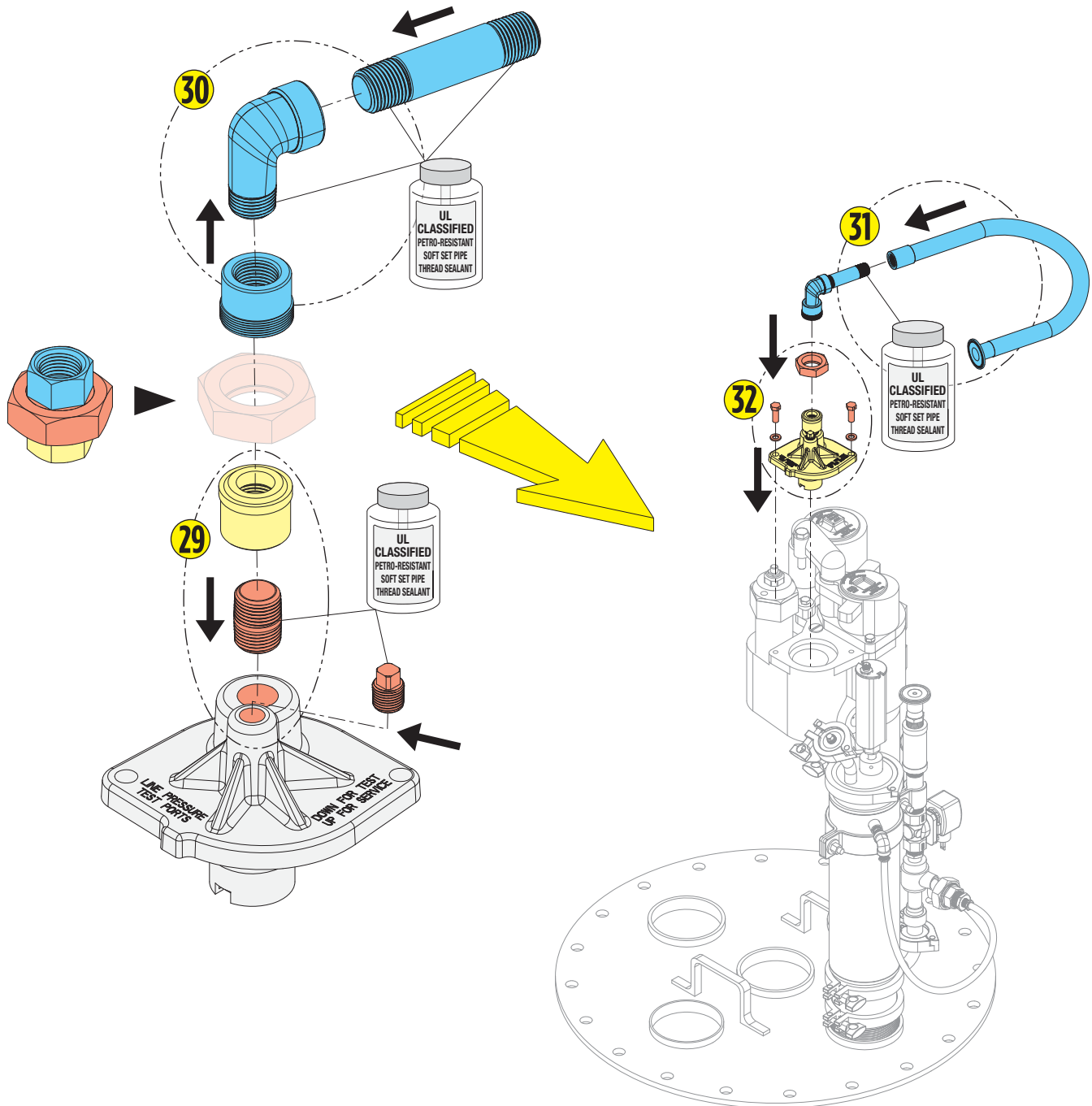
26. Install flow orifice and 90° pipe fitting to suction port of Separator Vessel.
27. Install the Flex Connector to the 90° pipe fitting in the Separator Vessel Suction Port, then connect the Flex Connector into the bushing. Finally connect the bushing to the union, and the union to the Educator.



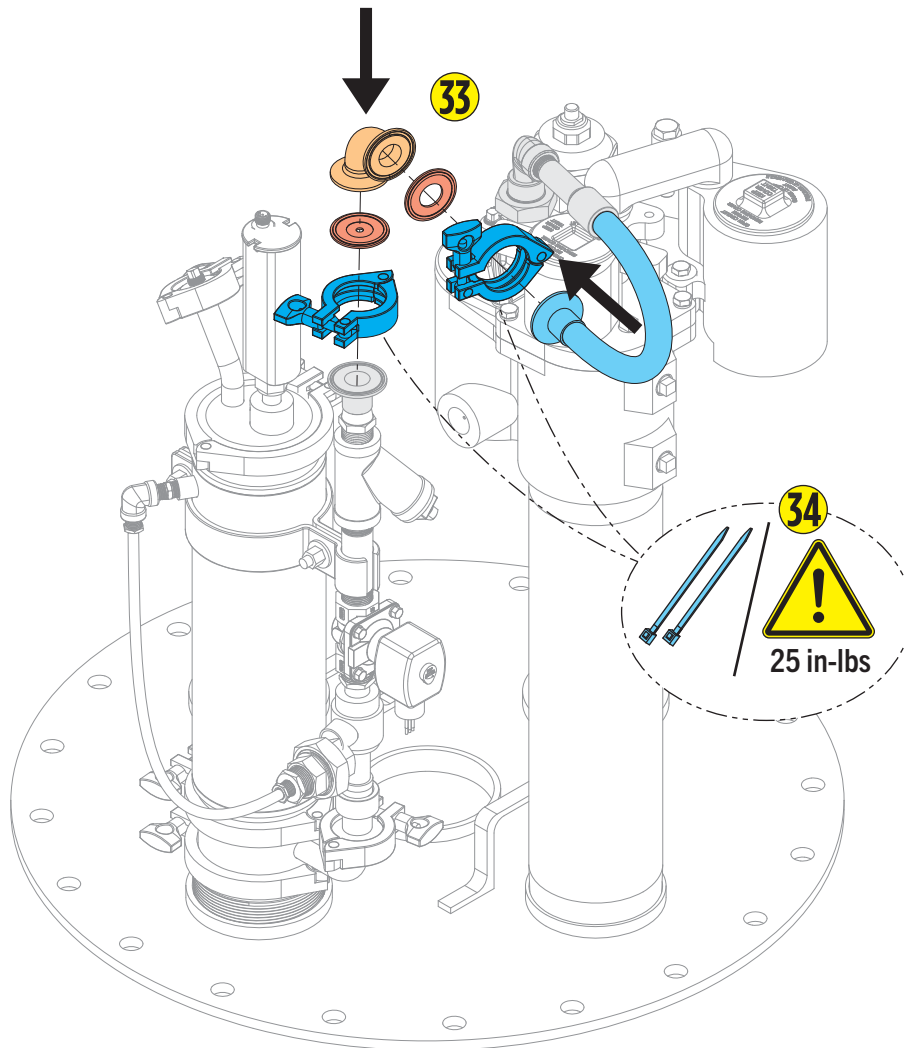
28. Remove the existing Manifold Cover.



29. Preassemble the new Manifold Cover by applying UL-classified non-hardening, non-toxic pipe thread sealant to the short pipe nipple, and the 1/4" pipe plug NPT threads. Install the pipe nipple and plug into the Manifold Cover. Next, thread the bottom half female union into the short pipe nipple.
30. Pre-assemble the top half female union to the 90° male coupler and connect to 4" pipe nipple.
31. Pre-assemble the female end of the flex connector to the 4" pipe nipple from the assembly in the previous step.
32. Install Manifold Cover assembly (Step 29) on the STP, connecting the pre-assembled components (Steps 30–31) to the Manifold Cover. *Position the union so that the fittings are not blocking the test port on the Manifold Cover.*



33. Install EZ FIT Gaskets, Flex Connector, and clamps to the Eductor Manifold and Manifold Cover Fitting. Reposition the Educator Manifold 90° Elbow as necessary to make a proper sweeping radius in the Flex Connector.
34. Verify all EZ FIT Clamps have been torqued to 25 in-lbs and all clamps are secured with the provided cable ties.

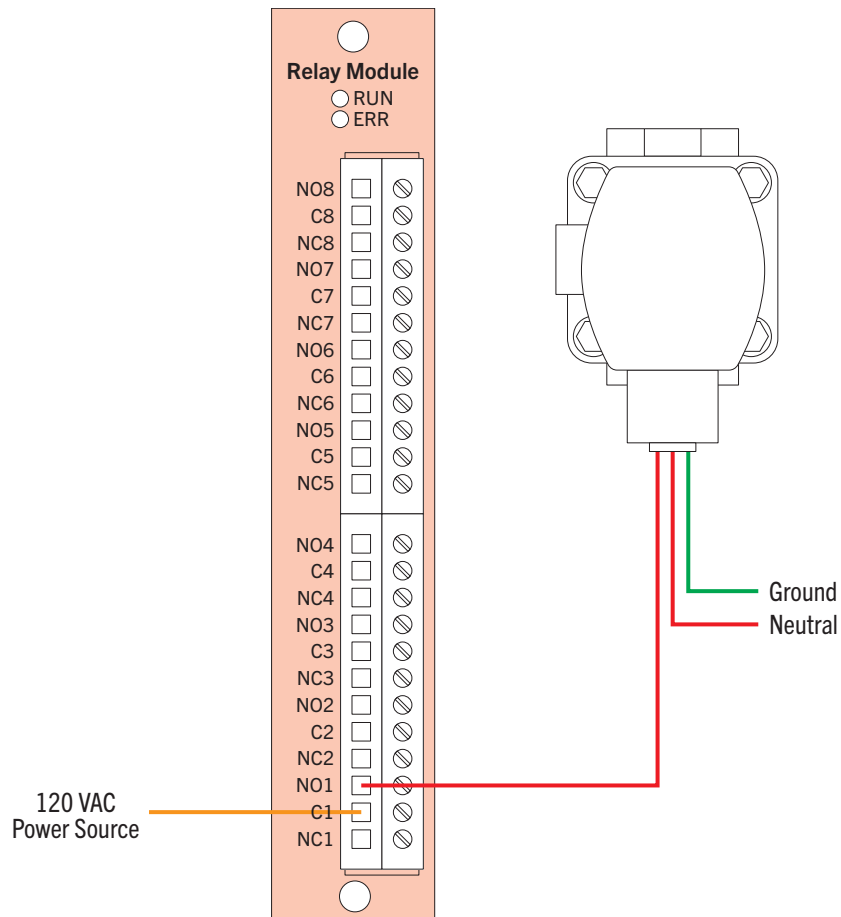


## 4.2 Electrical Install Instructions

### 4.2.1 Water Separator Solenoid Wiring

**IMPORTANT:** All wires must be installed within non-intrinsically safe conduit from the device (Solenoid) to the junction box.

1. Terminate 120 VAC power source wire to C position of the relay channel.
2. Terminate wire from Solenoid to NO position of the relay channel.
3. Connect the wire from Neutral to the Solenoid, and then connect wire from Ground to the Solenoid.



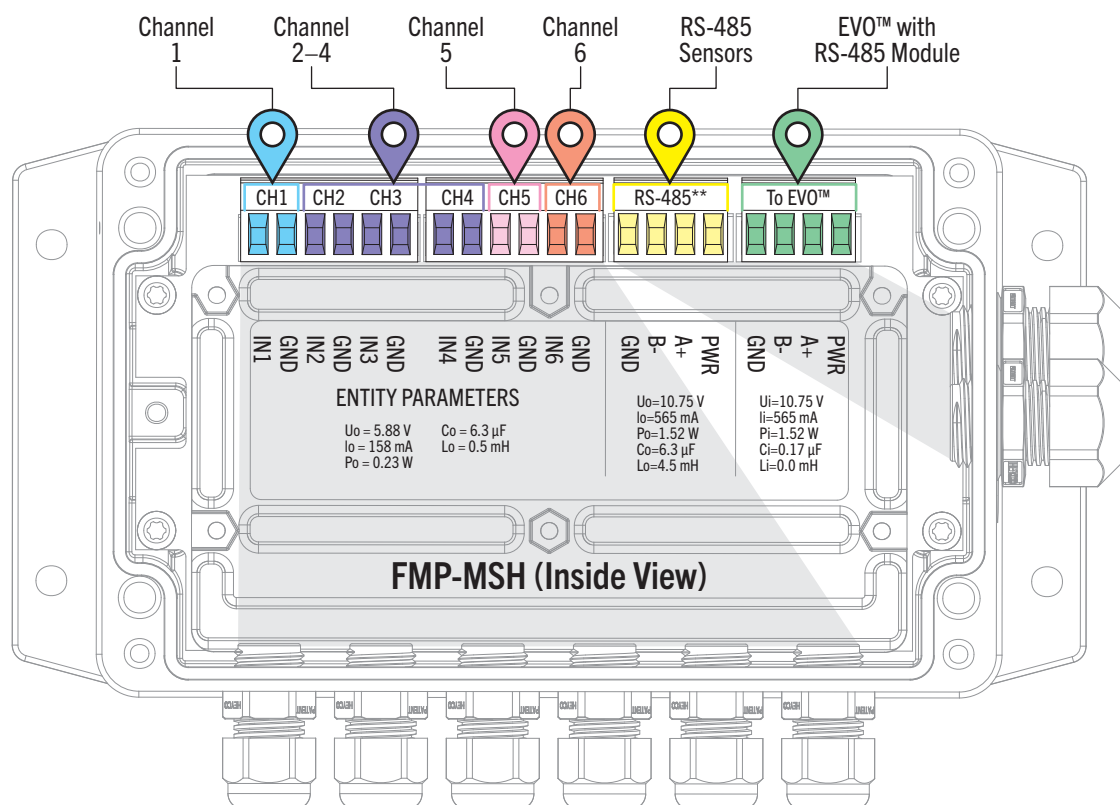
## 4.2.2 Water Separator Probe Wiring

### 4.2.2.1 Multiplexing Sensor Hub™

TABLE 4.1

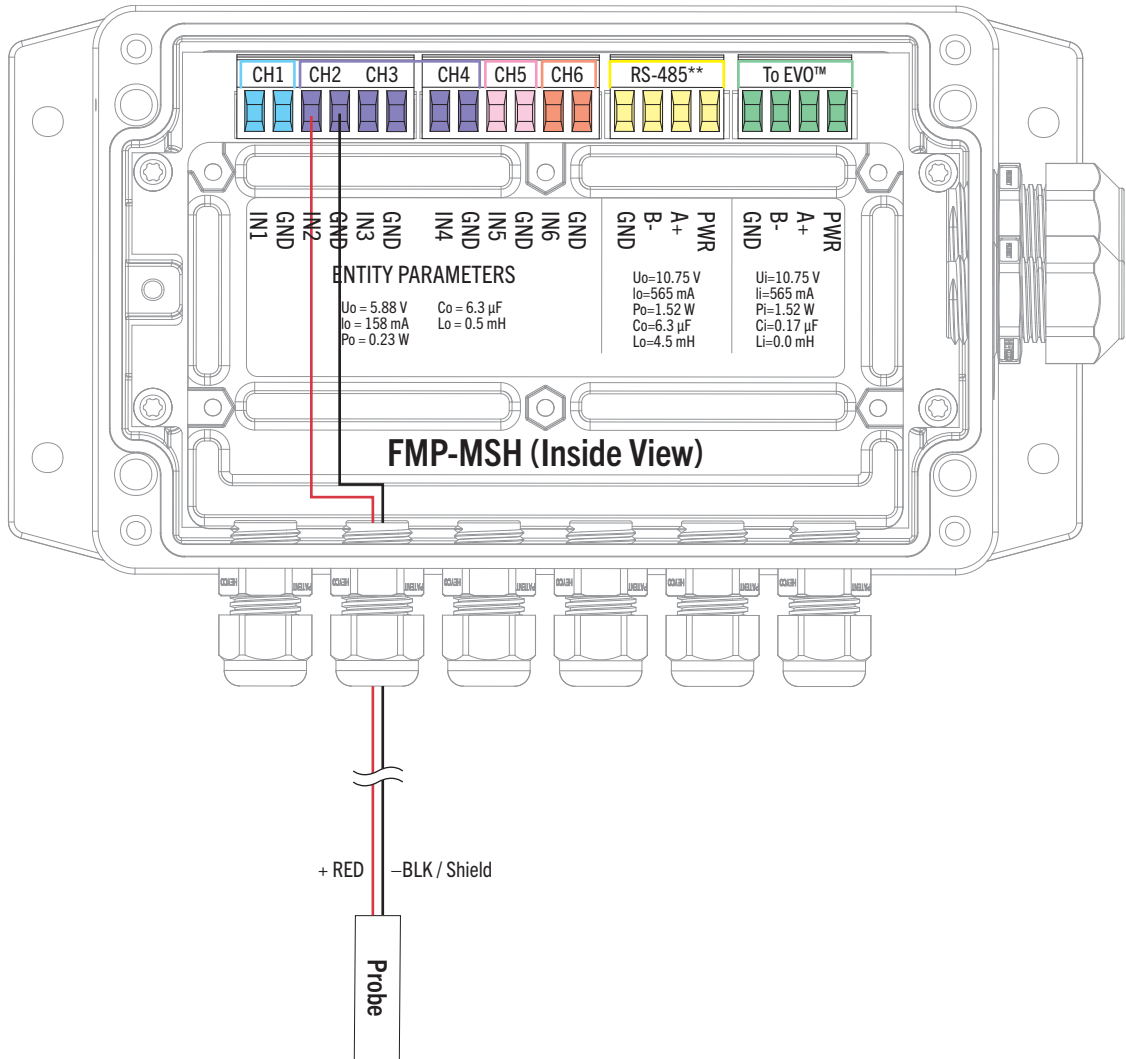
| Channel 1  | Channel 2–4  | Channel 5  | Channel 6  |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| FMP-LL3                                                                                     | FMP-DDS-U                                                                                     | FMP-DDS-U                                                                                     | FMP-ULS                                                                                       |
|                                                                                             | FMP-DTS-U                                                                                     | FMP-DTS-U                                                                                     | FMP-UHS                                                                                       |
|                                                                                             | FMP-EIS-U                                                                                     | FMP-ETIS-U                                                                                    | FMP-HFS2                                                                                      |
|                                                                                             | FMP-DIS-U                                                                                     | FMP-DIS-U                                                                                     | 10k Temperature Sensor                                                                        |
|                                                                                             | FMP-HIS-U                                                                                     | FMP-HIS-U                                                                                     |                                                                                               |
|                                                                                             | FMP-CDS-U                                                                                     | FMP-CDS-U                                                                                     |                                                                                               |
|                                                                                             | FMP-DPS-U                                                                                     | FMP-DPS-U                                                                                     |                                                                                               |
|                                                                                             | FMP-LL3-XX-WS*                                                                                | FMP-LL3-XX-WS*                                                                                |                                                                                               |
|                                                                                             |                                                                                               | FMP-ULS                                                                                       |                                                                                               |
|                                                                                             |                                                                                               | FMP-UHS                                                                                       |                                                                                               |

\*FMP-LL3-XX-WS is the probe used in the Corrosion Control™ Water Separator vessel.



**NOTE:** \*\*Reserved for future RS-485 sensors.

## MSH / Probe Wiring



## 4.2.2.2 UDP Module or Probe Module

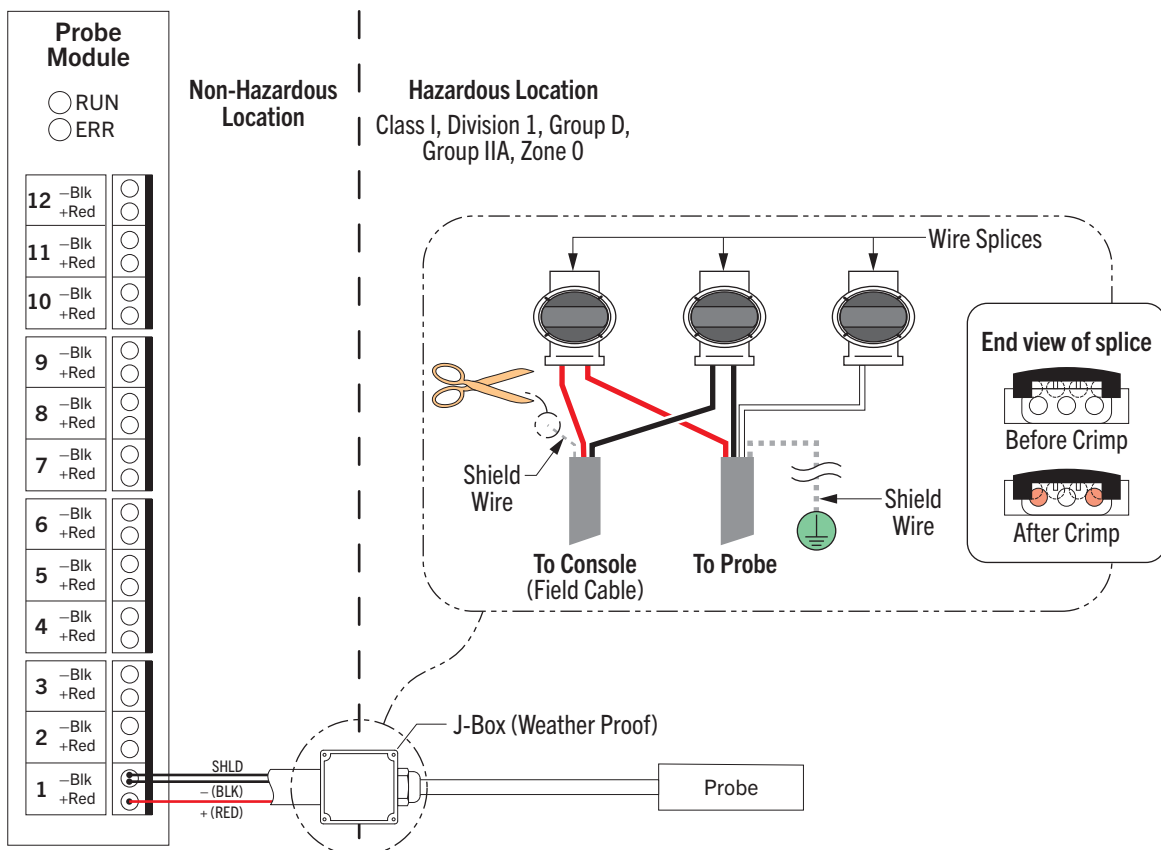
### Probe Connections – Junction Box

**NOTE:** Connections will follow LL3 wiring (UDP) mode.

- Shield to Ground (from Probe).
  - *If there is a ground screw in the junction box, the Shield wire of the probe should be terminated to the ground screw, and the shield wire of the field cable should be cut off and isolated from moisture.*
  - *If there is not a ground screw in the junction box, the Shield wire of the probe and the Shield wire of the field cable should be terminated together into a self-sealing, no-strip electrical connector.*
- BLACK to BLACK.
- RED to RED.
- WHITE is capped with a 3M™ Scotchlok™ cap.

### Probe Connections – EVO™ Console

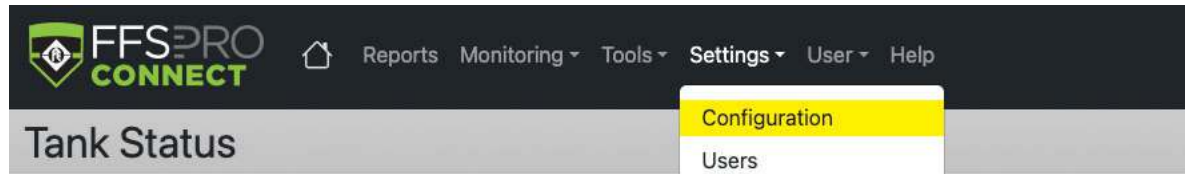
- BLACK and Shield tied together.
- RED to RED.
- Run the probe wires in IS conduit and enter the IS side of the console.



# 5

## Programming – EVO™ 600 / 6000

Go to Settings > Configuration.



- Complete all other site-specific programming including pumps and tanks prior to starting programming the Corrosion Control™ section.\*
- Corrosion Control™ programming will focus on Relays, Fuel Management Systems (FMS) and Corrosion Control™ sections of Configuration.\*

**NOTE:** \*Corrosion Control™ section is a subsection of the FMS section.

- Relays:
  - The Solenoid Relay will need to be named and Module and Channel identified.
  - Module can be Relay Module, Relay Module 10A, or Power Supply Module.
  - If multiple Relay Modules exist, select the Module and Channel where the Solenoid is wired.

### Configuration Overview

The Configuration information in this section is presented in the following format:

| ■                        | Group                         | Parameter Name | Parameter Value |
|--------------------------|-------------------------------|----------------|-----------------|
| <input type="checkbox"/> | System ID                     |                |                 |
| <input type="checkbox"/> | System Configuration          |                |                 |
| <input type="checkbox"/> | System Preferences            |                |                 |
| <input type="checkbox"/> | Date/Time                     |                |                 |
| <input type="checkbox"/> | User Roles                    |                |                 |
| <input type="checkbox"/> | Users                         |                |                 |
| <input type="checkbox"/> | Address Book                  |                |                 |
| <input type="checkbox"/> | Networking                    |                |                 |
| <input type="checkbox"/> | Communications                |                |                 |
| <input type="checkbox"/> | Email                         |                |                 |
| <input type="checkbox"/> | Printing                      |                |                 |
| <input type="checkbox"/> | Diagnostics                   |                |                 |
| <input type="checkbox"/> | Automatic Upgrades            |                |                 |
| <input type="checkbox"/> | Discrete Inputs               |                |                 |
| <input type="checkbox"/> | Relays                        |                |                 |
| <input type="checkbox"/> | Shifts                        |                |                 |
| <input type="checkbox"/> | Fuel Management Systems       |                |                 |
| <input type="checkbox"/> | General Purpose Analog Inputs |                |                 |
| <input type="checkbox"/> | One Touch Buttons             |                |                 |
| <input type="checkbox"/> | Logic Conditions              |                |                 |
| <input type="checkbox"/> | Notifications                 |                |                 |

# 5.1 Fuel Management System

Go to Settings > Configuration > Fuel Management Systems.

**NOTE:** Most programming for Corrosion Control™ is located under the Fuel Management Systems section of Configuration.

- **Pumps** – Programming section for the submersible where the WS is installed.
- **Corrosion Control** – Programming section where each WS/Probe is programmed and Pump/Solenoid Relays are assigned.

| ■ Group                                         | Parameter Name                                            | Parameter Value |
|-------------------------------------------------|-----------------------------------------------------------|-----------------|
| <input type="checkbox"/> Fuel Management System | Compensation Temperature                                  | 60.0° F         |
|                                                 | Use Safe Working Capacity                                 | No              |
|                                                 | Ullage Percent                                            | 95              |
|                                                 | Delivery Delay                                            | 1 min           |
|                                                 | Low Product Limits By                                     | Level           |
|                                                 | High Product Limits By                                    | Level           |
|                                                 | Development Mode                                          | No              |
|                                                 | <input type="checkbox"/> Static Tank Testing              |                 |
|                                                 | <input type="checkbox"/> Products                         |                 |
|                                                 | <input type="checkbox"/> Tank Types                       |                 |
|                                                 | <input type="checkbox"/> Tanks                            |                 |
|                                                 | <input type="checkbox"/> Sensors                          |                 |
|                                                 | <input type="checkbox"/> Store Inventory Schedules        |                 |
|                                                 | <input type="checkbox"/> Reconciliation                   |                 |
|                                                 | <input type="checkbox"/> Autocalibration                  |                 |
|                                                 | <input type="checkbox"/> Compliance Tracking              |                 |
|                                                 | <input type="checkbox"/> Pumps                            |                 |
|                                                 | <input type="checkbox"/> Pump Groups                      |                 |
|                                                 | <input type="checkbox"/> Corrosion Control                |                 |
|                                                 | <input type="checkbox"/> Lines                            |                 |
|                                                 | <input type="checkbox"/> Secondary Containment Monitoring |                 |
|                                                 | <input type="checkbox"/> Dispenser Interface              |                 |
|                                                 | <input type="checkbox"/> Sentinel Mode                    |                 |

## 5.1.1 Pumps

Go to Settings > Configuration > Fuel Management Systems > Pumps.

**NOTE:** Turbine Pump Interface™ (TPI) or Relays may be used to control submersibles and is programmable in the Pumps section of configuration.

- Pumps will need to be programmed for all submersibles installed on site. *Once programmed, the pumps will then be selectable under the Corrosion Control™ section of the Configuration.*

| ■                        | Group              | Parameter Name     | Parameter Value    |
|--------------------------|--------------------|--------------------|--------------------|
| <input type="checkbox"/> | Pumps              |                    |                    |
| <input type="checkbox"/> | Diesel Submersible | Name               | Diesel Submersible |
|                          |                    | Connection Type    | Smart Controller   |
|                          |                    | Controller Type    | MagVFC™/EcoVFC™    |
|                          |                    | Controller Address | 3                  |
|                          |                    | Is Grouped         | No                 |
|                          |                    | Tank               | Diesel             |
|                          |                    | Inlet Height       | 5.00 in            |
| <input type="checkbox"/> | External Hooks     |                    |                    |
| <input type="checkbox"/> | Shutdown On Alarm  |                    |                    |

## 5.1.2 Corrosion Control™

Go to Settings > Configuration > Fuel Management Systems > Corrosion Control.

**NOTE:** The Corrosion Control™ section will provide sections to program to operate the system.

- Run Schedule** – Time that systems will operate and energize the submersible and collect any water at bottom of tank in the WS.
- Name** – Name of a specific WS (additional Separators may be added by clicking “+”). *Create a descriptive name identifying the sump the separator is contained in.*
- Enter four key pieces of information:
  - Run Schedule** – Time of day to run.
  - Water Vessel Probe** – NOT the probe in the fuel tank.
  - Pump** – provides the vacuum.
  - Relay** – controls the Solenoid which opens the fuel flow to create the vacuum.

**NOTE:** The following programming is an example of Corrosion Control™ with sump multiplexer programming.

| ■                        | Group                      | Parameter Name | Parameter Value            |
|--------------------------|----------------------------|----------------|----------------------------|
| <input type="checkbox"/> | Corrosion Control          |                |                            |
| <input type="checkbox"/> | Water Separators           | Run Schedule   | 10:24                      |
| <input type="checkbox"/> | Water Separator DSL Sump 1 | Name           | Water Separator DSL Sump 1 |
| <input type="checkbox"/> | Probe                      | Probe Type     | LL3                        |
| <input type="checkbox"/> | Pump                       | Pump           | Diesel Submersible         |
| <input type="checkbox"/> | Relay                      | Relay          | Water Separator Solenoid   |

### 5.1.2.1 Probe

Go to Settings > Configuration > Fuel Management Systems > Corrosion Control > Probe.

- **Probe Type** – LL3.
- **Flow Offset** – This parameter is used, if needed, to adjust the flow sensor on the Probe. *The default setting is -0.34". This parameter can be adjusted manually or by using the Auto-Configure Flow Offset Tool.*
- **Connection Type** – Select the applicable connection type.
- **Module** – Select “1” unless multiple modules or Multiplexing Sensor Hubs™ are used.
- **Channel** – Select the appropriate channel.
- **Multiplexer Input** – Select the appropriate multiplexer input.

| ■                        | Group                      | Parameter Name    | Parameter Value          |
|--------------------------|----------------------------|-------------------|--------------------------|
| <input type="checkbox"/> | Corrosion Control          |                   |                          |
| <input type="checkbox"/> | Water Separators           | Run Schedule      | 10:24                    |
| <input type="checkbox"/> | Water Separator DSL Sump 1 | Name              |                          |
| <input type="checkbox"/> | Probe                      | Probe Type        | LL3                      |
|                          |                            | Flow Offset       | -0.33 in                 |
|                          |                            | Connection Type   | Sump Multiplexer         |
|                          |                            | Module            | 1                        |
|                          |                            | Channel           | 1                        |
|                          |                            | Multiplexer Input | 2                        |
| <input type="checkbox"/> | Pump                       | Pump              | Diesel Submersible       |
| <input type="checkbox"/> | Relay                      | Relay             | Water Separator Solenoid |

### 5.1.2.2 Pump

Go to Settings > Configuration > Fuel Management Systems > Corrosion Control > Pump.

- Select the pump where the water separator is installed.

| ■                        | Group                      | Parameter Name | Parameter Value            |
|--------------------------|----------------------------|----------------|----------------------------|
| <input type="checkbox"/> | Corrosion Control          |                |                            |
| <input type="checkbox"/> | Water Separators           | Run Schedule   | 10:24                      |
| <input type="checkbox"/> | Water Separator DSL Sump 1 | Name           | Water Separator DSL Sump 1 |
| <input type="checkbox"/> | Probe                      | Probe Type     | LL3                        |
| <input type="checkbox"/> | Pump                       | Pump           | Diesel Submersible         |
| <input type="checkbox"/> | Relay                      | Relay          | Water Separator Solenoid   |

### 5.1.2.3 Relay

Go to Settings > Configuration > Fuel Management Systems > Corrosion Control > Relay.

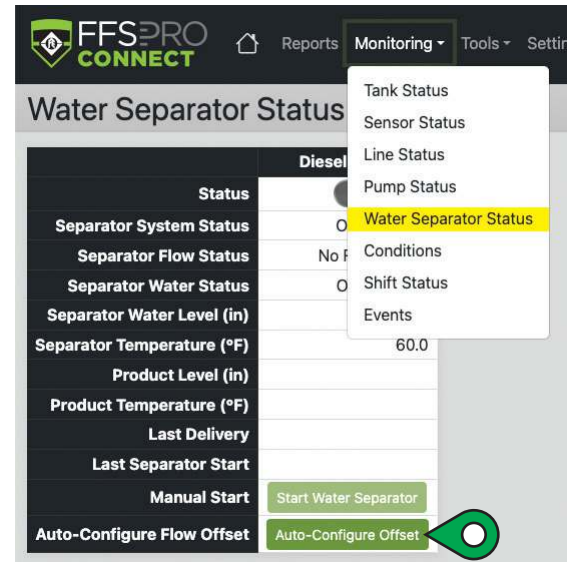
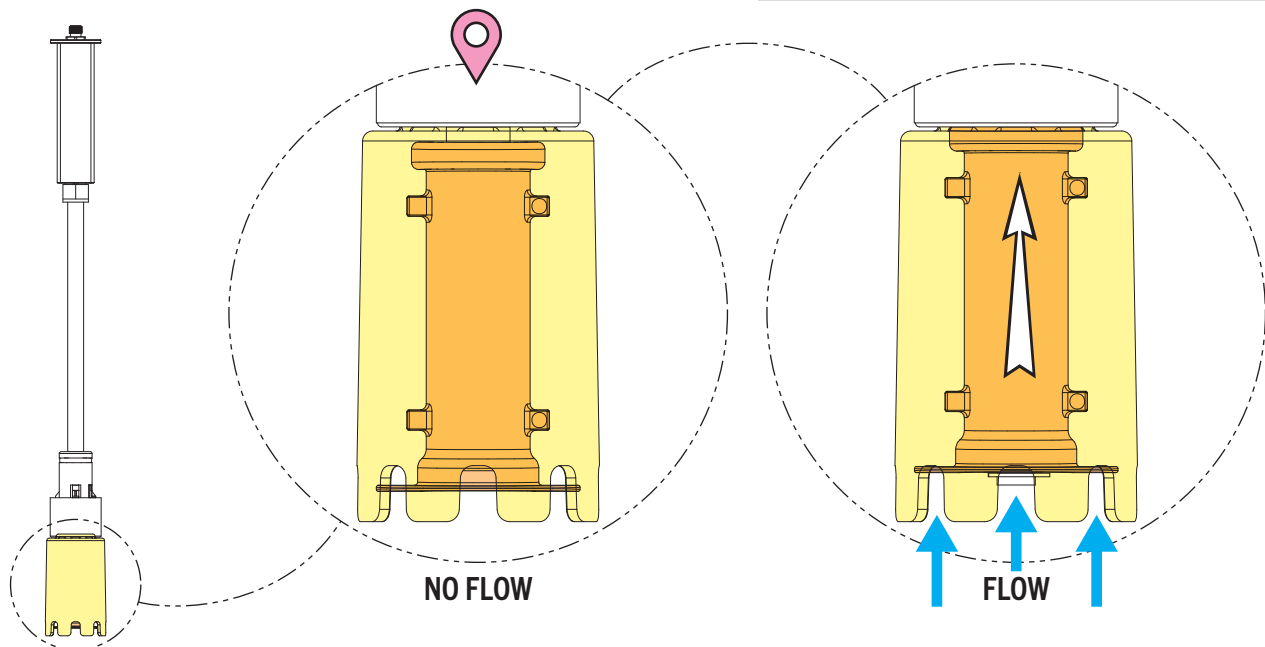
- Select the relay where the WS Solenoid is wired.

| ■                        | Group                      | Parameter Name | Parameter Value            |
|--------------------------|----------------------------|----------------|----------------------------|
| <input type="checkbox"/> | Corrosion Control          |                |                            |
| <input type="checkbox"/> | Water Separators           | Run Schedule   | 10:24                      |
| <input type="checkbox"/> | Water Separator DSL Sump 1 | Name           | Water Separator DSL Sump 1 |
| <input type="checkbox"/> | Probe                      | Probe Type     | LL3                        |
| <input type="checkbox"/> | Pump                       | Pump           | Diesel Submersible         |
| <input type="checkbox"/> | Relay                      | Relay          | Water Separator Solenoid   |

## 5.2 Auto-Configure Flow Offset Tool

Go to Monitoring > Water Separator Status.

- Select **Auto-Configure Offset** (📍), when the probe is installed in the vertical position and no flow (📍).  
*The flow detector should be in the bottom position.*



**NOTE:** Selecting **Auto-Configure Flow Offset** (📍), directs the user to the configuration screen and automatically populates the Flow Offset reading. *If not immediately visible, scroll down until it is displayed.*

| Water Separator Status     |                       |
|----------------------------|-----------------------|
|                            | Diesel Tank1          |
| Status                     |                       |
| Separator System Status    | Off                   |
| Separator Flow Status      | No Flow               |
| Separator Water Status     | OK                    |
| Separator Water Level (in) | -2.00                 |
| Separator Temperature (°F) | 60.0                  |
| Product Level (in)         |                       |
| Product Temperature (°F)   |                       |
| Last Delivery              |                       |
| Last Separator Start       |                       |
| Manual Start               | Start Water Separator |
| Auto-Configure Flow Offset | Auto-Configure Offset |

| Group                                               | Parameter Name    | Parameter Value            |
|-----------------------------------------------------|-------------------|----------------------------|
| <input type="checkbox"/> Corrosion Control          |                   |                            |
| <input type="checkbox"/> Water Separators           | Run Schedule      | 10:24                      |
| <input type="checkbox"/> Water Separator DSL Sump 1 | Name              | Water Separator DSL Sump 1 |
| <input type="checkbox"/> Probe                      | Probe Type        | LL3                        |
|                                                     | Flow Offset       | -0.33 in                   |
|                                                     | Connection Type   | Sump Multiplexer           |
|                                                     | Module            | 1                          |
|                                                     | Channel           | 1                          |
|                                                     | Multiplexer Input | 2                          |
| <input type="checkbox"/> Pump                       | Pump              | Diesel Submersible         |
| <input type="checkbox"/> Relay                      | Relay             | Water Separator Solenoid   |

**NOTE:** Select **Save** (📍) on top of configuration page to accept the auto-configured setting (if this is not done, the configuration will not be saved).

| Configuration       |          |
|---------------------|----------|
| Drag and drop: Move | Download |
| Upload...           | Merge... |
| Revert              | Save     |

# 6 Commissioning and Diagnostics

Program the Corrosion Control™ Application (see the Programming Guide).

1. From Corrosion Control™ Application, purge the WS for 10 minutes to verify operation of the system (including that the Flow Float indicates there is flow in the WS Vessel), and that there are no visible leaks in the pressure piping.

**NOTE:**

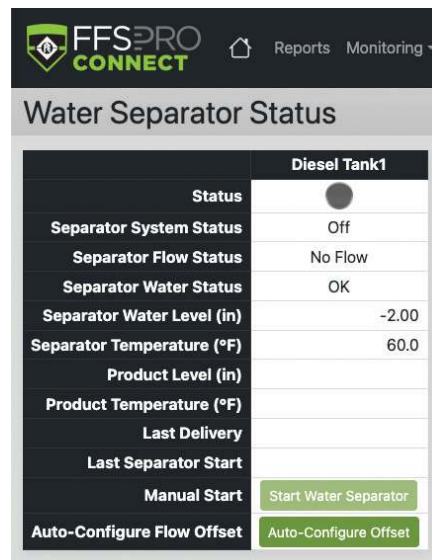
- If “no flow” is indicated, install a vacuum gauge in the ¼" drain cover port, and verify the system is creating vacuum in the WS Vessel.
  - If the WS Vessel fills with water/acid mixture during purge, empty the Vessel by removing the drain cover, inserting hand pump suction tube completely to the bottom of the Vessel, pumping out the content into an approved container. *Replace the drain cover and then repeat the purge process until all water and acid is removed.*
2. Verify the EZ-FIT Clamps are properly tightened and secured with cable ties.

## 6.1 Diagnostic Information

Go to Monitoring > Water Separator Status.

**NOTE:** After the WS is programmed, diagnostic information may be accessed from the Water Separator Status page (some examples are listed below, with further details contained in the following subsections).

- **Separator System Status** – On or Off indication that separator is running or not.
- **Separator Flow Status** – Flow or No Flow.
- **Separator Water Level** – Level of water accumulated in separator.
- **Separator Temperature** – Temperature of water or liquid accumulated in the Separator.
- **Last Delivery** – Date/ time of last fuel delivery.
- **Last Separator Start** – Last time the Separator was in operation.



| FFS PRO CONNECT            |                       | Reports | Monitoring |
|----------------------------|-----------------------|---------|------------|
| Water Separator Status     |                       |         |            |
| Status                     | Diesel Tank1          |         |            |
| Separator System Status    | Off                   |         |            |
| Separator Flow Status      | No Flow               |         |            |
| Separator Water Status     | OK                    |         |            |
| Separator Water Level (in) | -2.00                 |         |            |
| Separator Temperature (°F) | 60.0                  |         |            |
| Product Level (in)         |                       |         |            |
| Product Temperature (°F)   |                       |         |            |
| Last Delivery              |                       |         |            |
| Last Separator Start       |                       |         |            |
| Manual Start               | Start Water Separator |         |            |
| Auto-Configure Flow Offset | Auto-Configure Offset |         |            |

## 6.1.1 Status Indicator

**NOTE:** See below (📍). Flow Float not reporting properly (last three attempts) or Status reporting water present (WS filling, but not full yet) or WS runtime requirements are not met (below in-tank product level or temperature requirements).

-  Green – All systems normal.
-  Yellow – Indicates abnormal system operation.
-  Red – indicates out of range Separator Water level (FULL) or recirculation temp 25.

## 6.1.2 Separator System Status

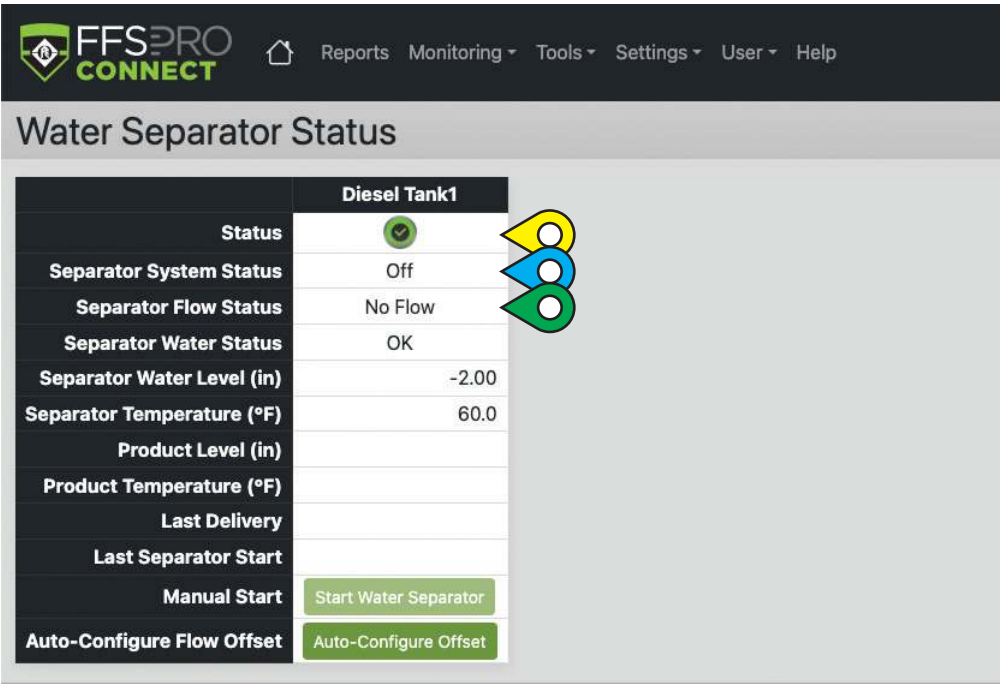
**NOTE:** See below (📍).

- Off – System is idle. (The WS has not been energized for a runtime.)
- On – System is active. (The WS has been energized for a runtime.)
- Service Required – Abnormal condition. (See Yellow or Red system status indicators.)

## 6.1.3 Separator Flow Status

**NOTE:** See below (📍).

- No Flow – Flow Float is reporting down (system should be idle, not energized).  
*If No Flow is reported when system is energized, ensure Auto-Configure Offset has been performed properly.*
- Flow – Flow Float is reporting up (system should be running, energized).  
*If Flow is reported when system is not energized, then check Flow Float and Plunger for debris.*



**FFS PRO CONNECT** Reports Monitoring Tools Settings User Help

### Water Separator Status

|                            | Diesel Tank1                                                                        |
|----------------------------|-------------------------------------------------------------------------------------|
| Status                     |  |
| Separator System Status    | Off                                                                                 |
| Separator Flow Status      | No Flow                                                                             |
| Separator Water Status     | OK                                                                                  |
| Separator Water Level (in) | -2.00                                                                               |
| Separator Temperature (°F) | 60.0                                                                                |
| Product Level (in)         |                                                                                     |
| Product Temperature (°F)   |                                                                                     |
| Last Delivery              |                                                                                     |
| Last Separator Start       |                                                                                     |
| Manual Start               | <button>Start Water Separator</button>                                              |
| Auto-Configure Flow Offset | <button>Auto-Configure Offset</button>                                              |

## 6.1.4 Separator Water Status

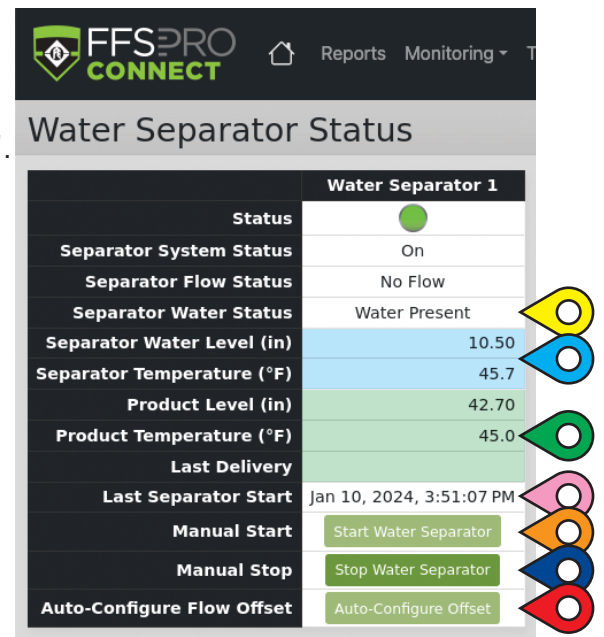
**NOTE:** See right (📍).

- OK – Water Float Level is reading < 5.50".
- Water Present – Water Float Level is reading between 6.00 – 13.00".
- FULL – Water Float is reading > 13.50".

## 6.1.5 Probe Readings

**NOTE:** See right (📍).

- Separator Water Level – Used to determine when water removal requirements. *Default reading is 4.86 until water level increases above Probe Isolator Housing.*
- Separator Temperature – Used to determine recirculation requirements.



|                            | Water Separator 1                                                                   |
|----------------------------|-------------------------------------------------------------------------------------|
| Status                     |  |
| Separator System Status    | On                                                                                  |
| Separator Flow Status      | No Flow                                                                             |
| Separator Water Status     | Water Present                                                                       |
| Separator Water Level (in) | 10.50                                                                               |
| Separator Temperature (°F) | 45.7                                                                                |
| Product Level (in)         | 42.70                                                                               |
| Product Temperature (°F)   | 45.0                                                                                |
| Last Delivery              |                                                                                     |
| Last Separator Start       | Jan 10, 2024, 3:51:07 PM                                                            |
| Manual Start               | <button>Start Water Separator</button>                                              |
| Manual Stop                | <button>Stop Water Separator</button>                                               |
| Auto-Configure Flow Offset | <button>Auto-Configure Offset</button>                                              |

## 6.1.6 In-Tank Product Probe Readings

**NOTE:** See above right (📍).

- Product Level – Used to determine safe operation of system.
- Product Temperature – Used to determine effective recirculation operation.
- Last Delivery – Used to correlate with non-scheduled Separator starts.

## 6.1.7 Last Separator Start

**NOTE:** See above right (📍).

- Last Separator Start – Indicates last manual, scheduled, recirculation, or delivery runtime of the Water Separator.

## 6.1.8 Manual Start

**NOTE:** See above right (📍). After Manual Start runtime, there is a five-minute wait period for system verification.

- Energize system for ten-minute runtime.

## 6.1.9 Manual Stop

**NOTE:** See above right (📍).

- Stop a Water Separator that is currently running.

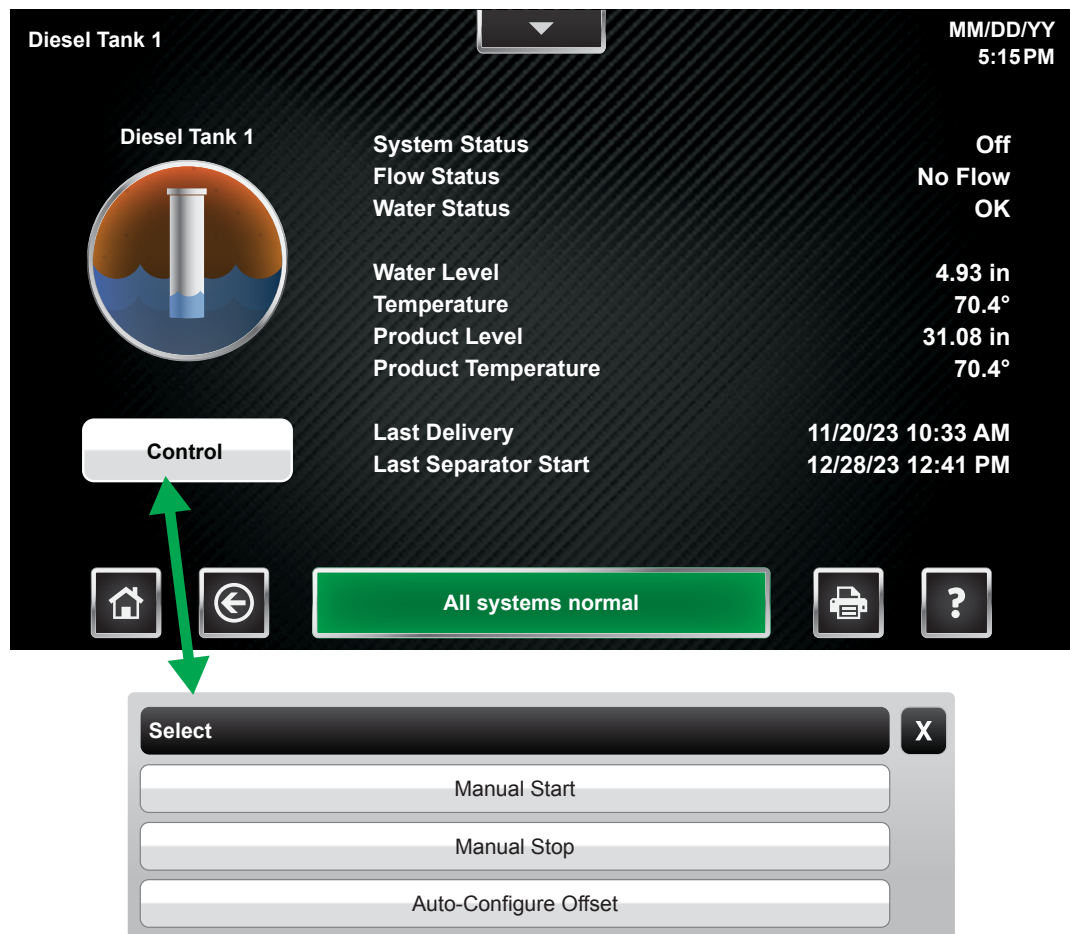
## 6.1.10 Auto-Configure Flow Offset

**NOTE:** See previous page (📍). Flow Offset is required in system configuration before proper Flow Status reporting can occur. (A typical offset is -0.34 if installed properly.)

- Auto-Configure Flow Offset – Used to generate offset of Flow Float.

## 6.2 Diagnostic Information GUI

- Separator System Status – On or Off, indication whether the Separator is running not.
- Separator Flow Status – Flow or No Flow.
- Separator Water Status – OK; Water Present; Full.
- Separator Water Level – Level of water accumulated in Separator.
- Separator Temperature – Temperature of water or liquid accumulated in Separator.
- Last Delivery – Date and time of last fuel delivery.
- Last Separator Start – Last time Separator was in operation.



## 6.3 Commissioning

- ☐ Confirm that all programming is complete.
- ☐ Confirm that Probe and Solenoid are properly wired.
- ☐ Purge system for 10 minutes by starting the Water Separator.

### **NOTE:**

- If No Flow is indicated, install a vacuum gauge in the ¼" drain cover port and verify the system is creating vacuum in the WS Vessel.
  - If the WS Vessel fills with water/acid mixture during purge, lockout/tagout STP, then empty the WS Vessel by removing the drain cover, inserting the hand pump (p/n **407945910**) suction tube completely to the bottom of the vessel, pumping out the content into an approved container. Replace the drain cover, and then repeat purge process until water/acid mixture is removed from storage tank bottom.
- ☐ Recheck all EZ-FIT connections.
  - ☐ Confirm correct tightness/torque value has been applied (where needed).
  - ☐ Cable ties are properly attached.

## 6.4 Troubleshooting

### 6.4.1 Water Separator is Full

1. Perform the lock out/tag out procedure on the STP circuit breaker.
2. Remove the EZ FIT Clamp and cover and set aside. Use care to protect the sealing surfaces.
3. Insert hand pump into Separator Drain Tube. Make sure the tube is all the way to the bottom.
4. Remove the water/acid/fuel mixture from the WS.  
**IMPORTANT:** Dispose of the water/acid/fuel mixture according to local codes pertaining to hazardous waste disposal.
5. Replace the EZ FIT Gasket. Use only new gaskets, and make sure you properly dispose of old gaskets.
6. Cover and clamp. Refer to the EZ FIT tightening instructions in the Flexible Connectors Installation Guide.
7. Verify proper operation.

## 6.4.2 No Flow

The Flow Sensing probe is not detecting flow:

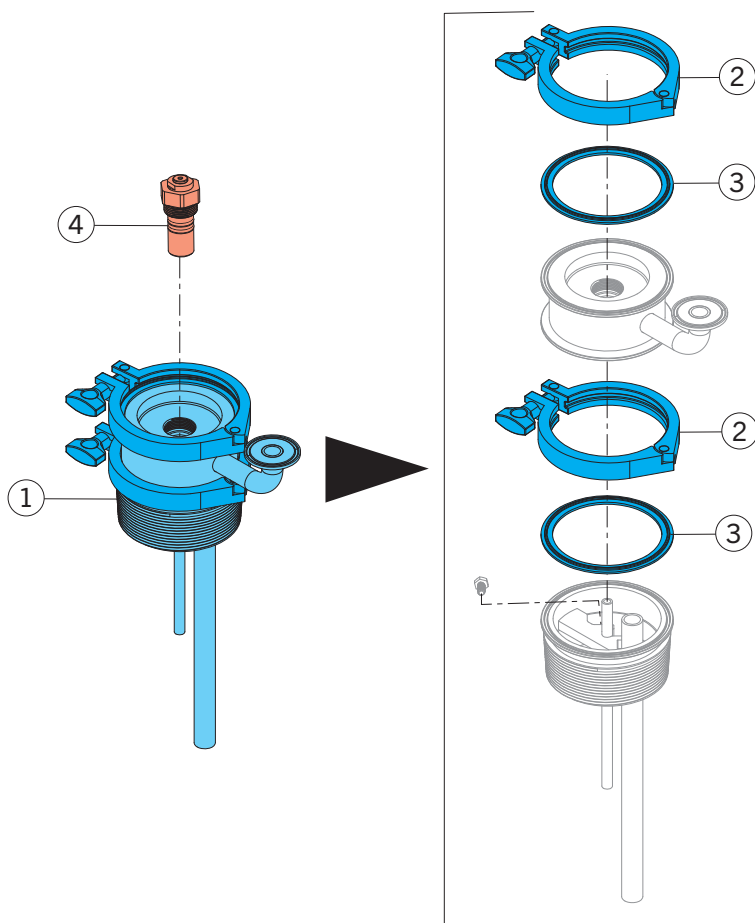
1. Verify the Flow Probe Kit is installed correctly.
2. Verify Flow Probe is gently touching the canister bottom and the set screw is tight.
3. Verify the Plunger in the canister moves freely.
4. Verify the EVO™ 600/6000 firmware is up-to-date.
5. Make sure the STP is running.
6. Verify the Relay Module Channel is operating properly.
7. Verify that the Solenoid Valve Wiring is correct.
8. Verify that there is vacuum in the system.

# 7 Appendix

## 7.1 Replacement Parts

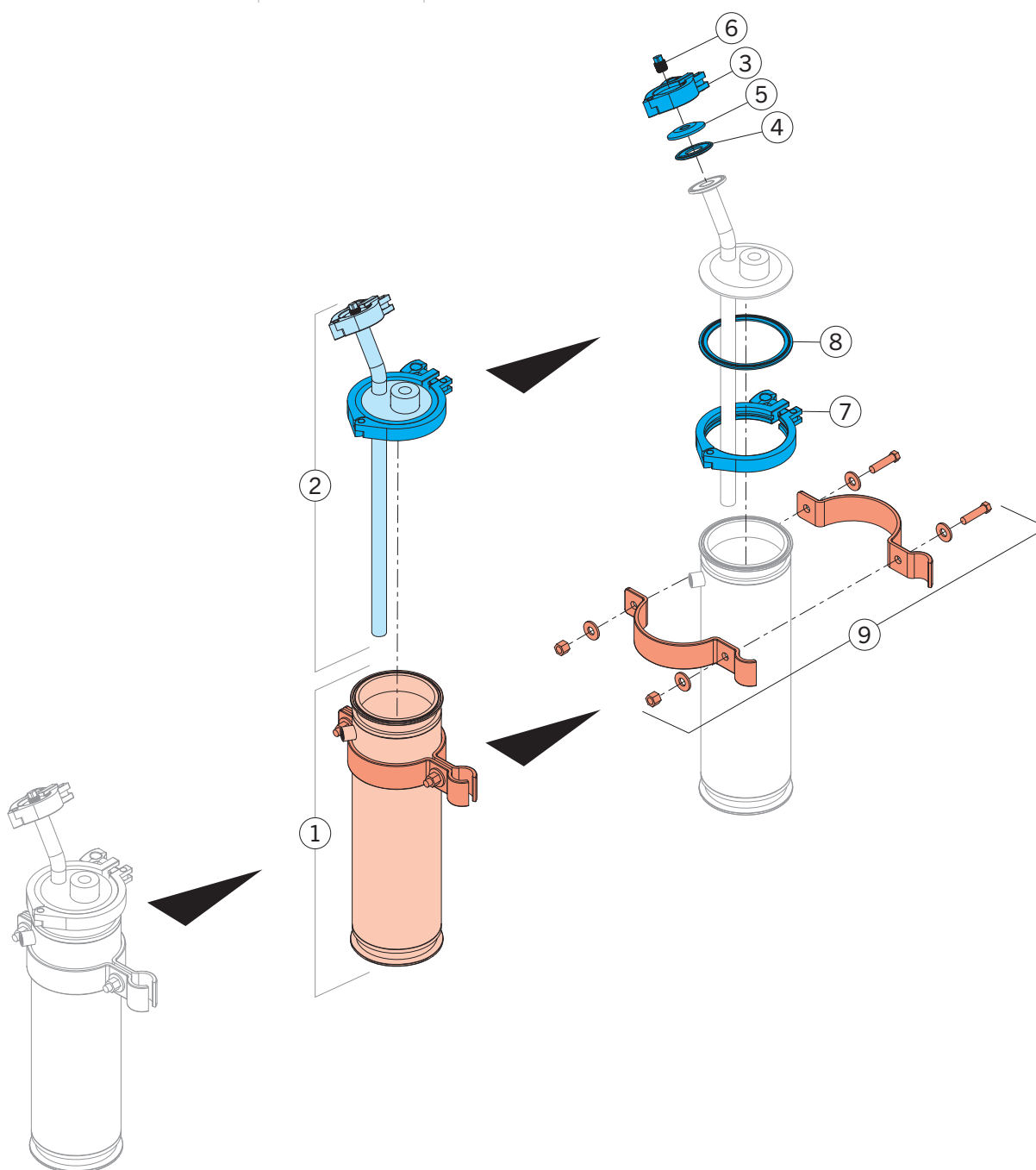
### 7.1.1 Separator Suction Adaptor Kit

| Reference # | Part #      | Description                                           |
|-------------|-------------|-------------------------------------------------------|
| 1           | 407945921   | Separator Suction Adapter Kit                         |
| 2           | EZ40CLAMP   | 4" EZ FIT Clamp                                       |
| 3           | 407493004   | 4" EZ FIT Gasket                                      |
| 4           | 10000017049 | Check Valve (comes with kit p/n 407945922 (see §3.2)) |



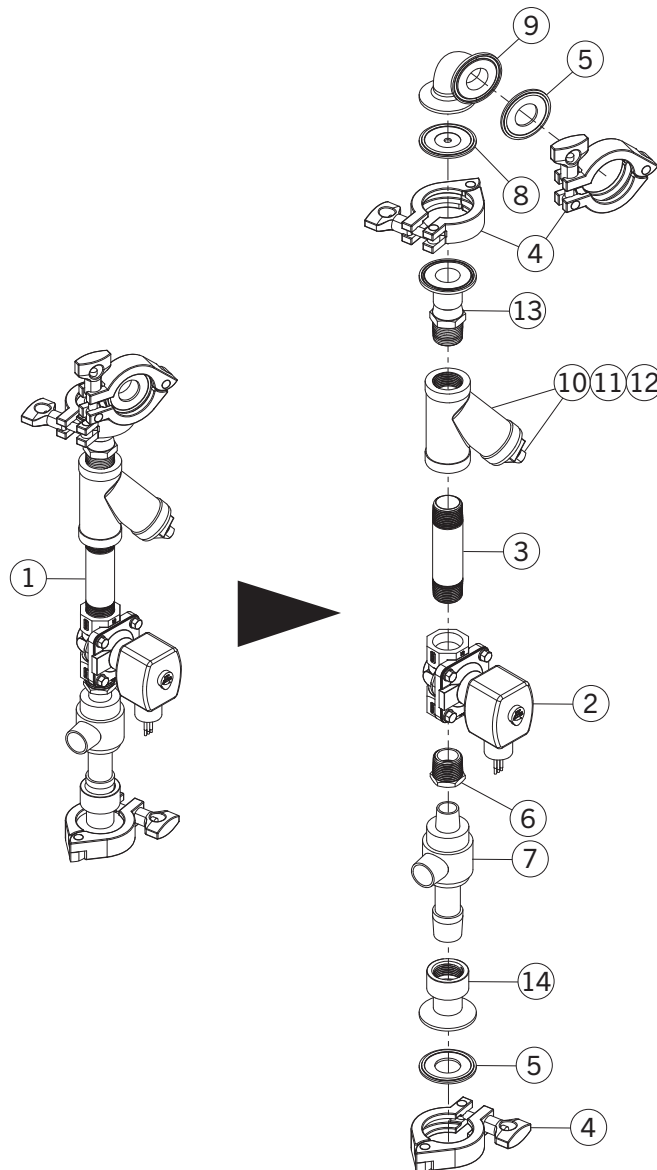
## 7.1.2 Separator Vessel / Cover Kit

| Reference # | Part #      | Description                |
|-------------|-------------|----------------------------|
| 1           | 407945914   | Separator Vessel Kit       |
| 2           | 407945925   | Separator Vessel Cover Kit |
| 3           | EZ10CLAMP   | 1" EZ FIT Clamp            |
| 4           | 407493001   | 1" EZ FIT Gasket           |
| 5           | 10000002180 | 1" EZ FIT Removal Cap      |
| 6           | 403499001   | ¼" NPT Pipe Plug           |
| 7           | EZ40CLAMP   | 4" EZ FIT Clamp            |
| 8           | 407493004   | 4" EZ FIT Gasket           |
| 9           | 407945920   | Eductor Clamp Kit          |



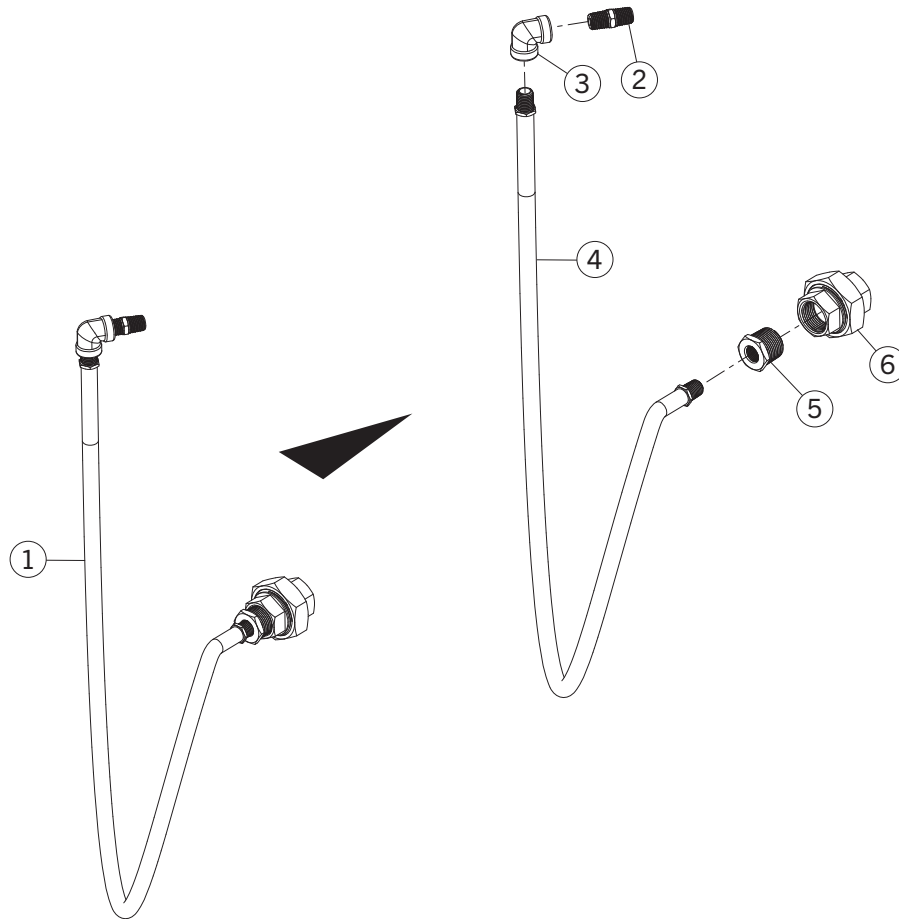
## 7.1.3 Eductor Manifold Kit

| Reference # | Part #           | Description                                    |
|-------------|------------------|------------------------------------------------|
| 1           | 407945926        | Eductor Manifold Kit                           |
| 2           | 407938001        | ¾" Solenoid Valve                              |
| 3           | Purchase Locally | ¾" NPT x 4" Long Stainless Steel Nipple        |
| 4           | EZ10CLAMP        | 1" EZ FIT Clamp                                |
| 5           | 407493001        | 1" EZ FIT Gasket                               |
| 6           | Purchase Locally | ¾" NPT Stainless Steel Coupling                |
| 7           | 407939001        | ¾" Eductor, Stainless Steel                    |
| 8           | 407765001        | ¾" EZ FIT Orifice Plate                        |
| 9           | 407995001        | 1" EZ FIT x EZ FIT Elbow                       |
| 10          | 407941001        | ¾" Y Strainer                                  |
| 11          | 407774901        | ¾" Y Strainer – <i>Replacement Screen Only</i> |
| 12          | 403499002        | ¾" NPT Pipe Plug                               |
| 13          | 407953004        | Bushing Adapter                                |
| 14          | EZ10X07FSS       | 1" EZ FIT x ¾" FNPT, Stainless Steel Adapter   |



## 7.1.4 Separator to Eductor Kit

| Reference # | Part #           | Description                             |
|-------------|------------------|-----------------------------------------|
| 1           | 407945917        | Separator to Eductor Kit                |
| 2           | 407764001        | ¼" NPT Flow Orifice                     |
| 3           | Purchase Locally | ¼" NPT Long Stainless Steel Elbow       |
| 4           | 407984001        | ¼" x 36" Long Flex Connector            |
| 5           | Purchase Locally | ¼" NPT x ¾" NPT Stainless Steel Bushing |
| 6           | Purchase Locally | ¾" NPT Stainless Steel Union            |



## 7.2 Related Documents

Documentation can be found online at [www.franklinfueling.com](http://www.franklinfueling.com).

| Part Number | Description                                    |
|-------------|------------------------------------------------|
| 228180033   | EVO™ 600/6000 Series Console Install Guide     |
| 228180061   | EVO™ 600/6000 Series Console Programming Guide |
| 10000002562 | EVO™ 600/6000 Series Console Operation Guide   |
| AG-022      | Corrosion Control™ Application Guide           |
| TB0421-03   | Installing the Water Separator Placeholder     |

## 7.3 Glossary

|                     |                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------|
| FMS.....            | Fuel Management System                                                                      |
| IS.....             | Intrinsically Safe                                                                          |
| NC.....             | Normally Closed                                                                             |
| MSH .....           | Multiplexing Sensor Hub™                                                                    |
| NO.....             | Normally Open                                                                               |
| RS-485 (RS485) .... | An IEEE standard for serial communications using shielded or unshielded twisted pair cables |
| STP .....           | Submersible Turbine Pump                                                                    |
| TPI.....            | Turbine Pump Interface™                                                                     |
| WS.....             | Water Separator                                                                             |

## 7.4 Notes







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