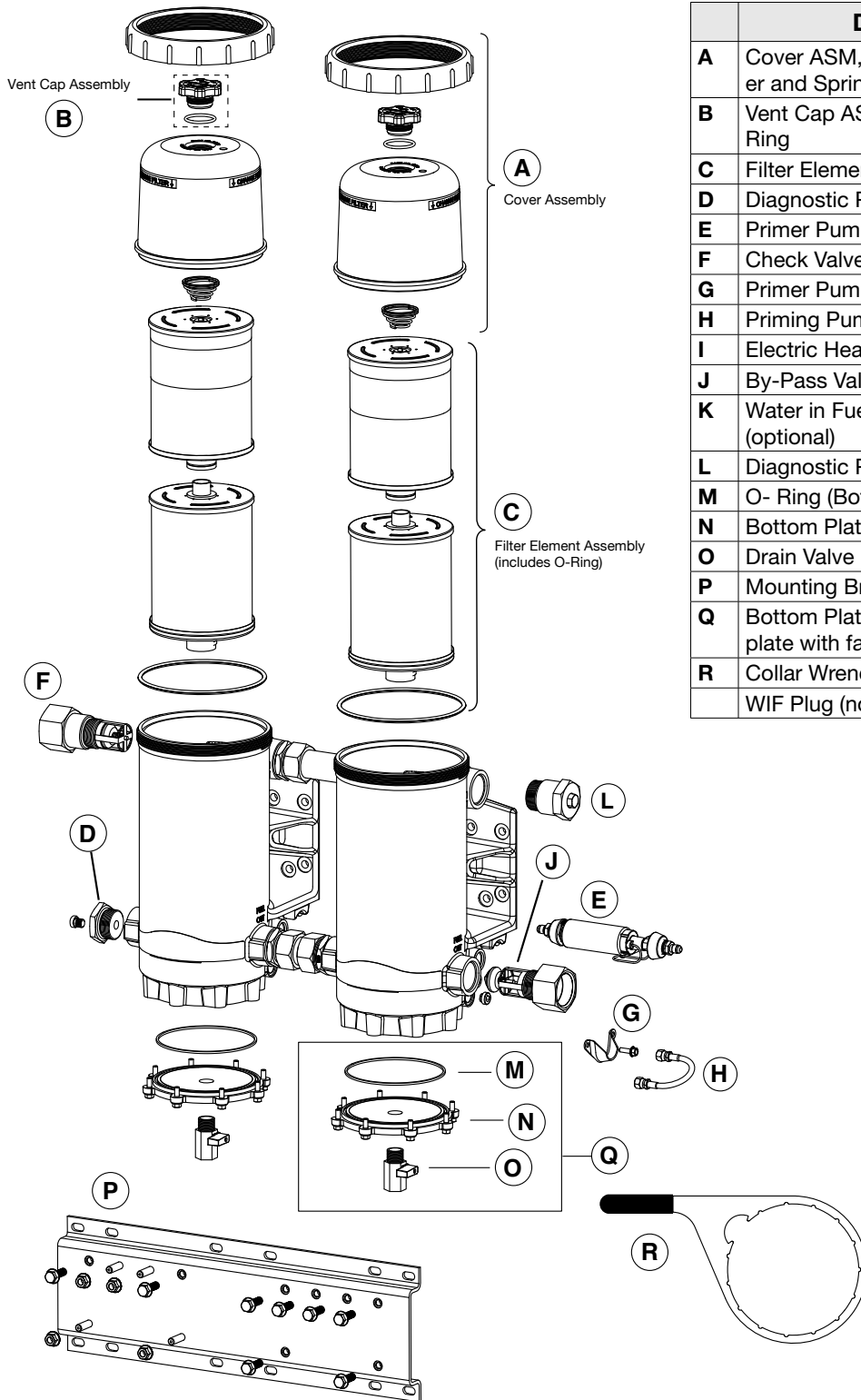
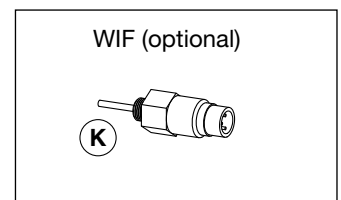
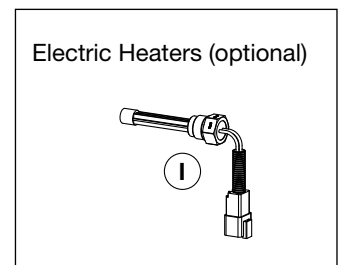




# Industrial Pro Installation Instructions

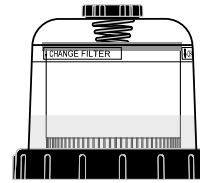
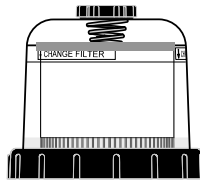


	Description	MTU P/N
A	Cover ASM, Collar, Vent Cap, Cover and Spring	800239
B	Vent Cap ASM, Vent cap and O Ring	800240
C	Filter Element w/ O Ring	XP54708300058
D	Diagnostic Plug	800242
E	Primer Pump	800243
F	Check Valve - Extended	800244
G	Primer Pump Clamps (2) Screws (4)	800245
H	Priming Pump Hoses (2) Fittings (4)	800246
I	Electric Heater (Optional)	800247
J	By-Pass Valve	800248
K	Water in Fuel (WIF) Sensor (optional)	800249
L	Diagnostic Plug Fitting - Extended	800250
M	O- Ring (Bottom Plate)	23538373
N	Bottom Plate & Bolts	800252
O	Drain Valve	800158
P	Mounting Bracket w/Fasteners	800254
Q	Bottom Plate ASM, O-ring, bottom plate with fasteners and drain valve	800255
R	Collar Wrench	800156
	WIF Plug (not shown)	800257



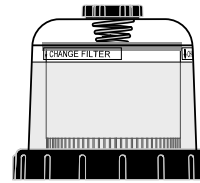
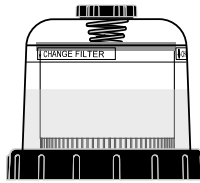
## “SEEING IS BELIEVING”®

- *See when NOT to change the fuel filter.*
- *See the condition of the fuel.* Seeing what collects on the filter media or what’s happening inside the clear cover can help diagnose many fuel and mechanical conditions.
- *“Filter on Top” configuration.* Water and debris removed from the fuel falls to the lower chamber and stays away from the filter media resulting in longer filter life.
- *Built in protection when priming the fuel filter.* Unfiltered fuel is kept on the “dirty” side of the filter media during priming ensuring only clean fuel reaches the engine.



When new, the fuel level in the filter will be very low with minimal restriction. As the filter is used, contaminants collect on the filter from the bottom up. Fuel rises on the filter indicating remaining filter life.

Fuel level increases in clear cover. As contaminants collect on the filter, the fuel rises to a non-contaminated section of the filter, providing optimal filtration while maintaining lowest restriction.



Fuel level at filter wrap level. Even though the fuel level is now more than half of the filter element, the fuel is still flowing through clean media at minimal restriction levels. The filter still has significant life remaining.

The filter element is now completely covered by fuel. At this point, all of the media’s surface area is utilized. Restriction is increasing and the filter element should be changed at the next scheduled maintenance interval.



## Fuel Processor Installation

This system must be installed between the fuel tank and the transfer fuel pump on the suction side of the fuel system.

⚠ **WARNING:** Fuels are combustible.

- **RISK OF FIRE OR EXPLOSION:**

- Avoid open flames, electrical sparks or ignition sources
- Do not smoke.

⚠ **WARNING:** When diesel fuel is circulated through an operating engine, it can become very hot. To prevent personal injury,

⚠ Scalding hazard: Do not allow fuel to come in contact with eyes or unprotected skin. Allow the engine and fuel to cool to ambient temperature before replacing the fuel filter or performing service operations which could result in spillage of fuel from the fuel system. If this is not possible, protective equipment (face shield, insulated hat, gloves, and apron) must be worn.

⚠ Always perform engine or vehicle fuel system maintenance in a well ventilated area that is kept free of bystanders.

⚠ CAUTION: To ensure priming pump hoses are not kinked by mishandling, do not lift or handle the fuel processor by the hoses. Do not allow the weight of the processor to rest on the hoses.

## Installation Steps

1. With the engine shut down and at ambient temperature, close the fuel shutoff valve (if equipped) and place a suitable container under the fuel filters.
  2. Remove the primary fuel filter element assembly, sedimenter, and/or water separator. Drain the used element and dispose of it in an environmentally responsible manner, according to state and/or federal (EPA) recommendations. The fuel can be returned to the tank.
  3. Installation of the Industrial Pro should be on the suction side of the fuel system. Do not exceed 22 lb/in<sup>2</sup> (15 kPa) inlet pressure to the fuel processor.
  4. Mount the Industrial Pro in the desired location keeping the following points in mind:
    - Mounting the Industrial Pro directly on the engine is **NOT RECOMMENDED**.
    - Mount vertically with the cover and element pointing up.
    - Make sure there is enough top and side clearance for the cover to be conveniently removed for filter replacement. Filter service clearance: Dual Tall: 6.0" (152 mm) minimum.
- ⚠ CAUTION: The Industrial Pro functions BEST when installed so that the Filter Element is above the "FULL" level of the fuel tank. The housing can be installed up to 6' (1.8 m) below the "FULL" level of the fuel tank. Installing below the "FULL" level causes the starting level to be higher than normal. If mounted below full tank level, a shut off valve will be required at the inlet to allow filter changes without overflow of fuel. Mounting below 6' (1.8 m) eliminates the "Seeing is Believing" functionality.



# Industrial Pro Installation Instructions

- Securely mount the Industrial Pro using twelve bolts (3/8"-24UNF or M10). (See Figure 1)

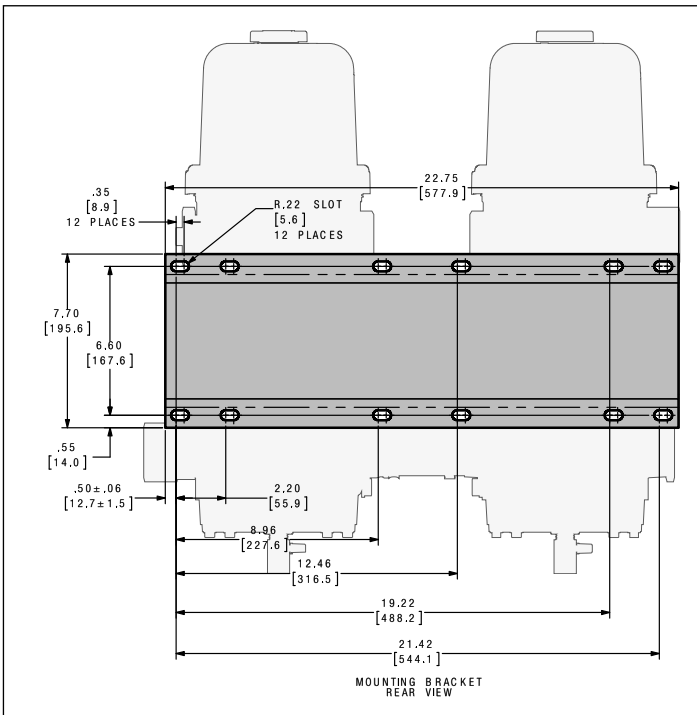


Figure 1- Mounting Dimensions

- Route the fuel supply line from the fuel tank to Industrial Pro inlet (see Figure 2). Route a fuel line from the Industrial Pro outlet to the fuel pump inlet.

⚠ CAUTION: To avoid fuel line water traps that can freeze in cold conditions and restrict, or block, the flow of fuel to the engine, be certain that there are no low spots in the hoses when routing them in the engine compartment.

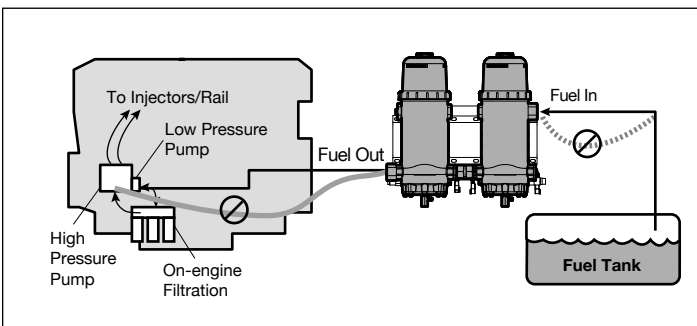


Figure 2 - Industrial Pro Connections

**Note:** When the engine is shut off, fuel levels may drop until the engine is restarted.

To minimize restrictions, observe the following guidelines when plumbing the system.

- Keep the fuel line routing as smooth as possible with no low hanging loops which can trap water.
- Use 90° elbows only when necessary.

- If the fuel hoses are made up to length on the job, be sure that the inner liner of the fuel hose is not cut by the fitting, creating potential check valve effects. Also make sure hoses are clean and free of debris before installing.

⚠ CAUTION: To avoid damaging the aluminum fuel housing, do not over-tighten fuel lines or line fittings. Do not exceed 65 ft-lbs (88 N·m). See the table of torque values on page 9.

- Apply liquid thread sealant to the inlet and outlet hose threads and connect the hoses to the unit.

## Installing a WIF (Water In Fuel) Sensor With Optional Indicator (LED)

**⚠ WARNING:** Fuels are combustible.

**• RISK OF FIRE OR EXPLOSION:**

- Avoid open flames, electrical sparks or ignition sources
- Do not smoke.

**⚠ Before Installation:**

- Check that the engine is stopped and starting is disabled.
- Switch off the operating voltage to the engine ECU.

1. Screw the WIF sensor (See Figure 4) (3) with the sealing ring A18x22 (4) in the Industrial Pro WIF sensor port (See Figure 3) by hand.

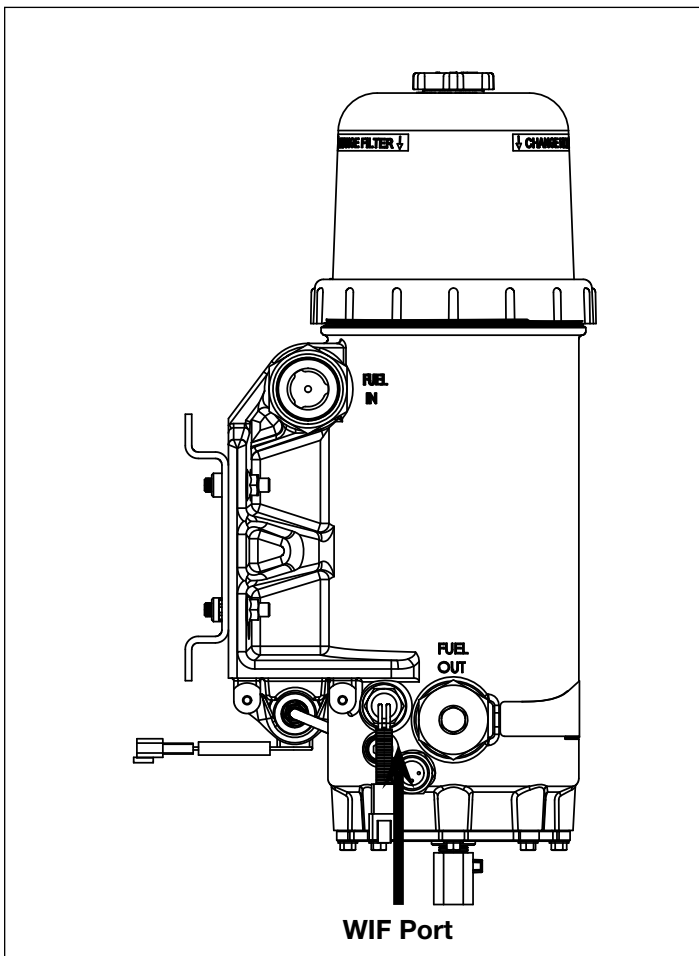


Figure 3 - WIF Port Location

2. Tighten the sensor (3) with torque wrench to max. 30 Nm (22 ft-lbs) tightening torque.
3. Connect the F70 plug (1) of the WIF sensor harness (5) to the WIF sensor (3) and tighten the bayonet lock (2).

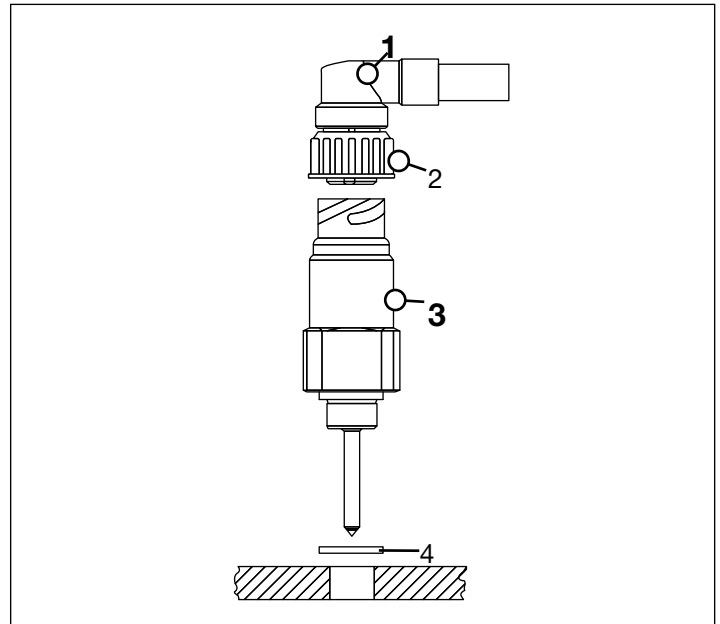


Figure 4 - WIF Sensor Installation

4. Route the WIF sensor harness (5) from the Industrial Pro to the XF70 connector on the engine. Securely route and support the the WIF sensor harness in the equipment.
5. Connect the XF70 plug of the WIF sensor harness (Figure 5) (5) to the XF70 connector on the engine and tighten the bayonet lock (2) (Figure 5).

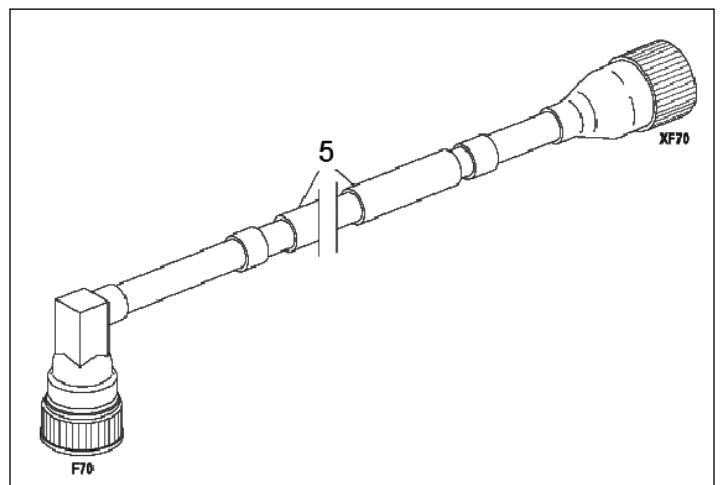


Figure 5 - WIF Sensor Harness

**Note:** The WIF sensor must be activated in the engine ECU for proper monitoring.

## Primer Pump Service

⚠ **WARNING:** Fuels are combustible.

- **RISK OF FIRE OR EXPLOSION:**
  - Avoid open flames, electrical sparks or ignition sources
  - Do not smoke.

### Disassembly

1. Open the vent cap and then open the drain valve - drain the Industrial Pro below the primer pump connections points.
2. Close the drain valve. Dispose of the fuel in an environmentally safe manner.
3. Disconnect the primer pump electrical connection.
4. Disconnect the fuel hoses at the fittings on the primer pump.
5. Remove the fittings (use backup wrench as needed) and set aside for later use. If the unit has 90° fittings, note the fitting orientation.
6. Remove the fitting on the end of the pump using two wrenches to hold the end stationary as the fitting is loosened. (See Figure 6).
7. The washer on the fittings **MUST** be in place when reassembled.

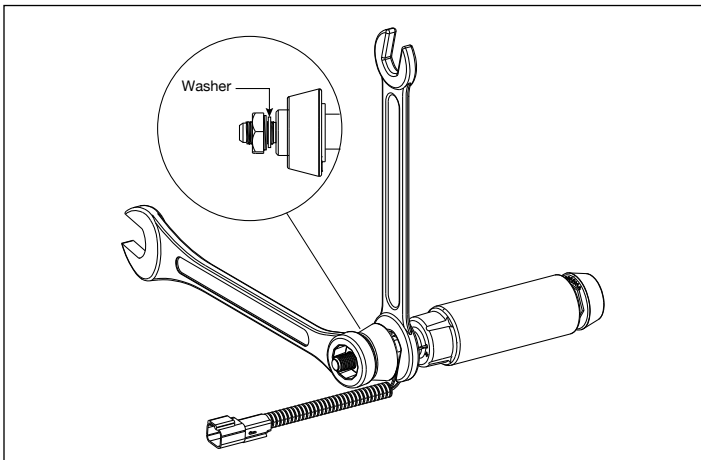


Figure 6 - Removing the Primer Pump Fitting

8. Remove the primer pump mounting strap bolts and straps.
9. Remove primer pump.

### Assembly

1. Install the new primer pump with fuel flow arrow aimed towards fuel outlet. (See Figure 7)

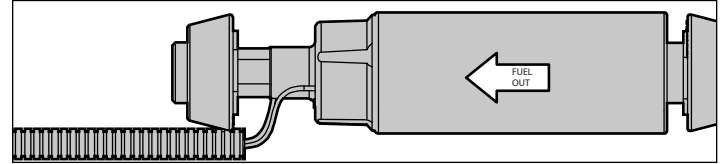


Figure 7 - Primer Pump

2. Install the primer pumps straps and bolts and torque to 8-10 ft-lbs.
3. Install the primer pump fittings aimed as originally installed (noted during disassembly).

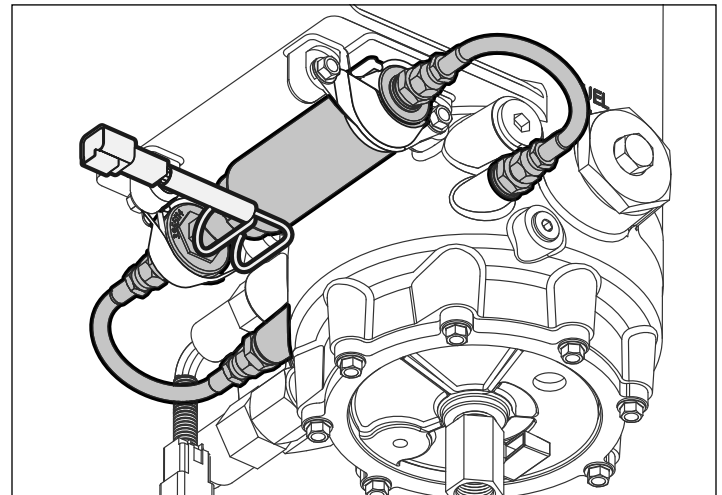


Figure 8 - Primer Pump Location

4. Torque the primer pump fitting jam nuts to 10-15 ft-lbs (use backup wrench as needed).
5. Connect the fuel hoses to the primer pump and torque to 10-15 ft-lbs (use backup wrench as needed).
6. Connect the primer pump electrical connection.

### zPriming

Use primer pump to prime the Industrial Pro or follow manual process listed below.

1. Prime the unit by filling the clear cover with clean diesel fuel until it reaches the top of the filter.
2. Install the vent cap. Hand tighten until it "clicks".
3. Start the engine and run for one minute.
4. Slowly open the vent cap and allow the fuel to drop to about one inch above the collar.
5. Close the vent cap. Hand tighten until it "clicks".

**Note:** It is normal for the fuel level to vary after the initial start-up and during.



### Priming Pump Electrical Specifications

Supply Voltage: 24V

Maximum Current 6A@24V

Recommended Fuse: 10 Amp

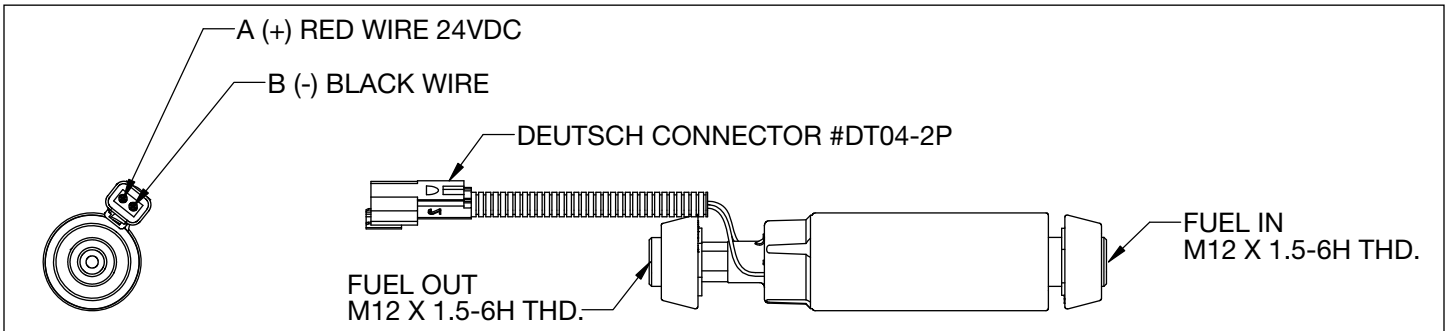


Figure 9 - Priming Pump Electrical Connections

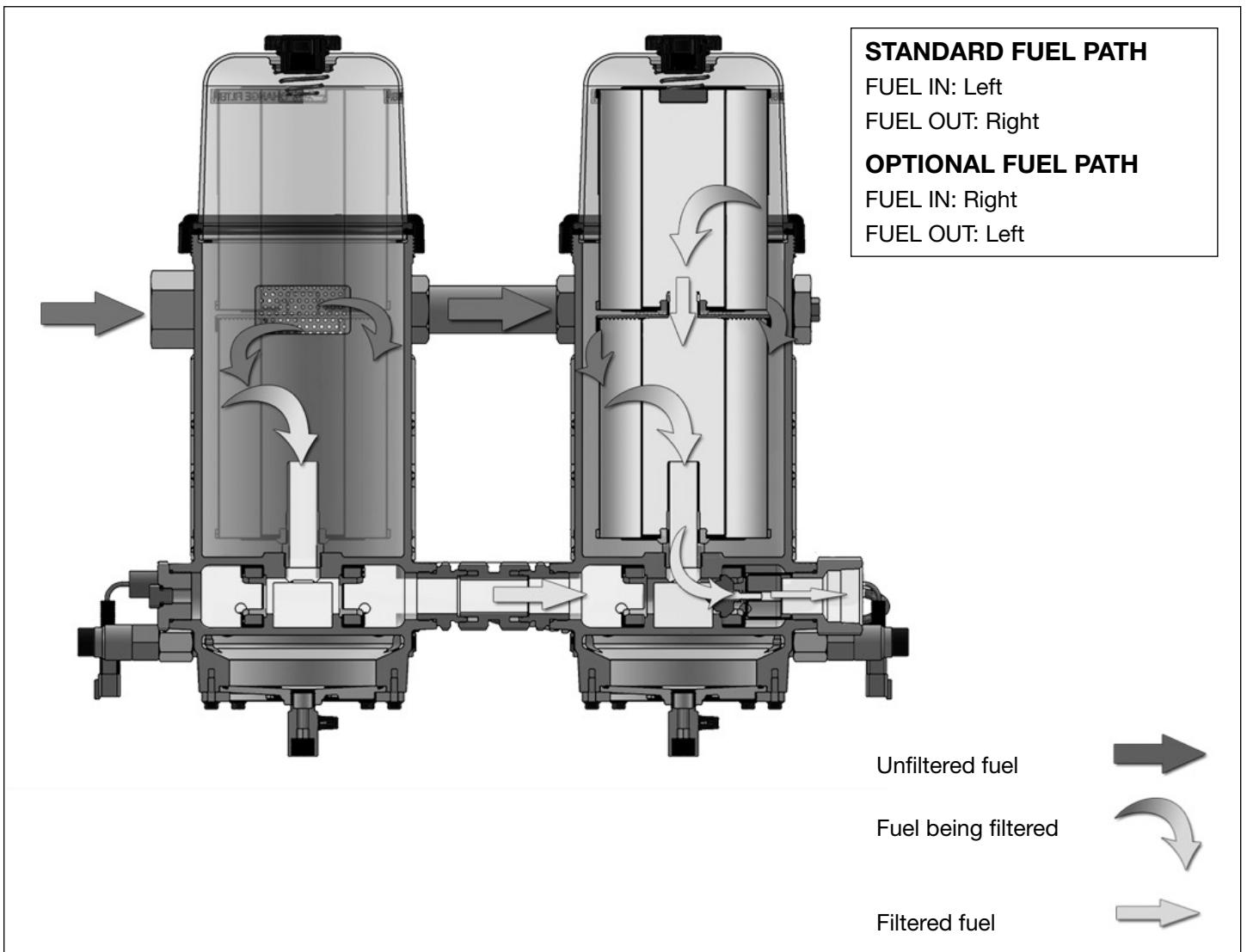


Figure 10 - Fuel Flow Path

## Installing an Optional Electric Heater

**⚠ WARNING:** Fuels are combustible.

- **RISK OF FIRE OR EXPLOSION:**

- Avoid open flames, electrical sparks or ignition sources

Do not smoke. All units come with pre-drilled ports to allow for pre-heaters (dual units require two pre-heaters):

Dual Tall: Four ports (two per body). (See Figure 11)

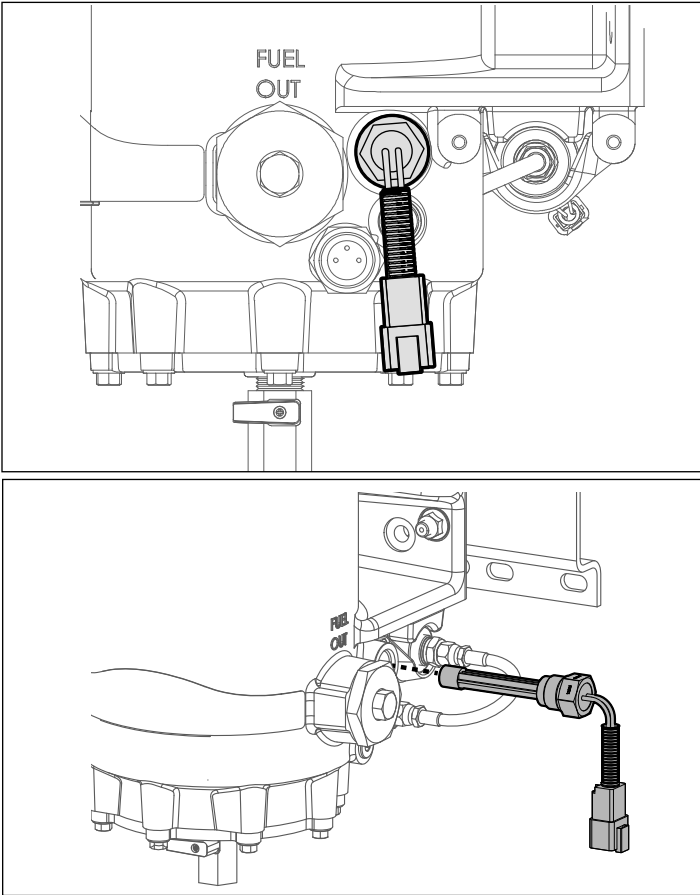


Figure 11 - Pre-heater Installation

To install, thread heater into housing and torque to 15-30 ft-lbs (20.3-40.7 N-m). Follow the wiring diagram in Figures 12 and 13.

Refer to equipment owner's manual for more specific information related to wiring diagrams of the equipment to which the unit will be applied.

**Note:** When wiring the electric preheater, use a fuse NOT a circuit breaker.

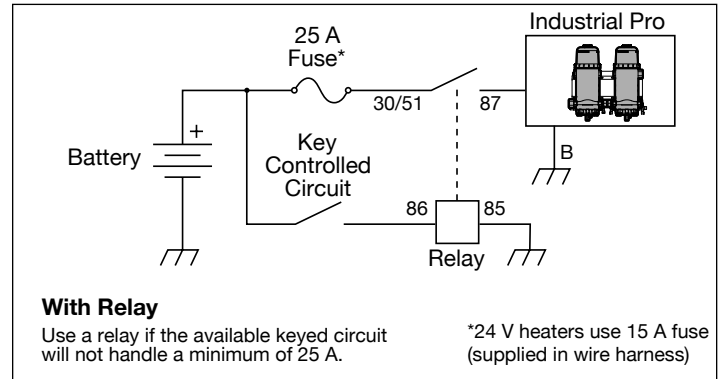


Figure 12 - Wiring with Relay

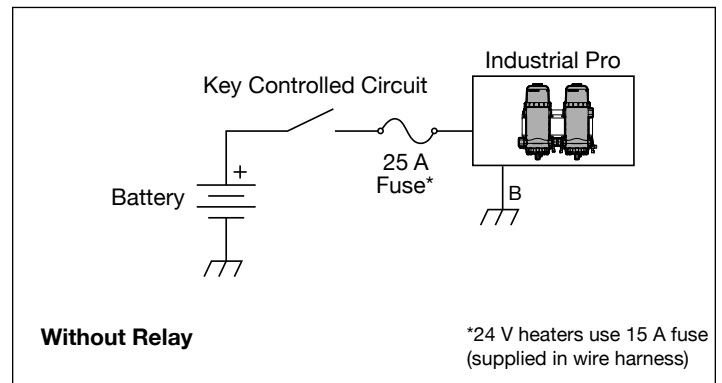


Figure 13 - Wiring without Relay

**Note:** For systems with multiple Industrial Pro® units, the pre-heater power supply wiring must be split in the junction box. See Figure 14 for wiring a Dual system.

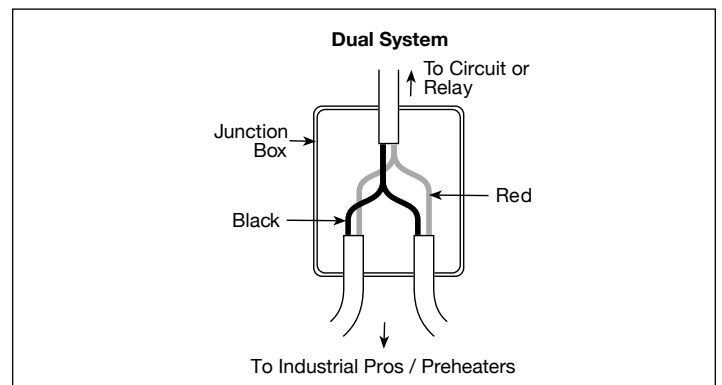


Figure 14 - Wiring Dual Filter Systems

## Filter Change Procedure

**⚠ WARNING:** Fuels are combustible.

- **RISK OF FIRE OR EXPLOSION:** Avoid open flames, electrical sparks or ignition sources

**Note:** Do not smoke. Change the filter only when the fuel level reaches and remains at the top of the black band on the filter. The filter may become dark, however, there is additional filter capacity and restriction will remain low until the fuel reaches the black band.

1. Turn off the engine. Remove the vent cap and dispose of the O-ring. Clean the threads of the vent cap and on the top of the cover. Set the vent cap aside.
2. Open the drain valve and drain the fuel completely from the unit, then close the drain valve. The unit must be completely drained to prevent contamination of the clean side of the filtration system.
3. Using the collar wrench loosen the collar. (See Figure 15). Remove the clear cover and collar from the Industrial Pro. Discard the cover O-ring and install a new O-ring (supplied with the filter) on the cover. Clean the threads on the collar and body of the Industrial Pro.

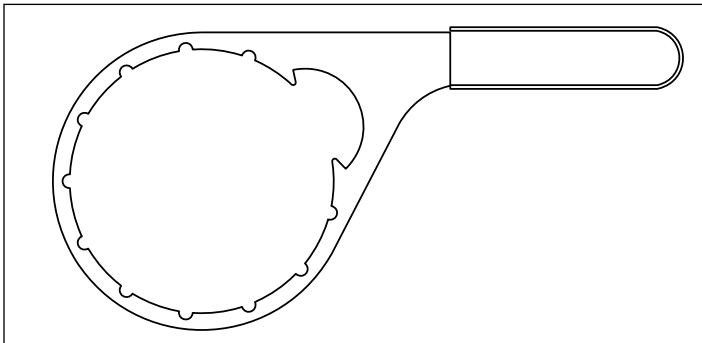


Figure 15 – Collar Wrench

4. Install the new O-ring on the vent cap (supplied with the filter).
5. Remove the filter element(s) from the Industrial Pro by pulling upward.
6. Install the new filter element. After checking to make sure the new o-ring seal is seated correctly on the base of the cover, install the cover and collar. Simultaneously apply modest pressure to the top of the cover and turn the collar until it no longer spins freely. Using the collar wrench, tighten the collar the distance of two additional ribs.
7. Prime the fuel system according to the steps in "Priming the Fuel System". (The vent cap will be returned to the Industrial Pro during the priming process).

## Priming the Fuel System

1. Check to make sure the drain valve at the base of the Industrial Pro is closed. Close the fuel shutoff valve (if equipped).
2. Remove the vent cap from the top of the clear cover. Fill the Industrial Pro full of clean fuel. Tighten the vent cap (**tighten by hand only**) until it "clicks".
3. Open the fuel shutoff valve (if equipped). Start the engine. When the lubrication system reaches its normal operating pressure, increase engine speed to high idle for one to two minutes. Loosen the vent cap until the fuel level drops to just above the collar. Tighten the vent cap (tighten by hand only) until it "clicks".

**Note:** The clear filter cover will not fill completely during engine operation. It will gradually fill over time and the fuel level will rise as the filter becomes clogged.

## Draining Contaminants

1. Turn off the engine and open the vent cap.
2. Place a suitable container under the drain valve at the base of the Industrial Pro and open the drain valve.
3. Water will flow into the container. When fuel begins to flow out of the drain, close the drain valve.
4. Tighten the vent cap by hand until it "clicks." Start the engine. Raise the RPM for one minute to purge the air from the system.

## Suggested Preventive Maintenance

**Weekly** – Drain water.

**Every Filter Change** – Change o-rings.

**Every 12 Months** – Check all electrical connections for corrosion. Check all fuel fittings for leaks.

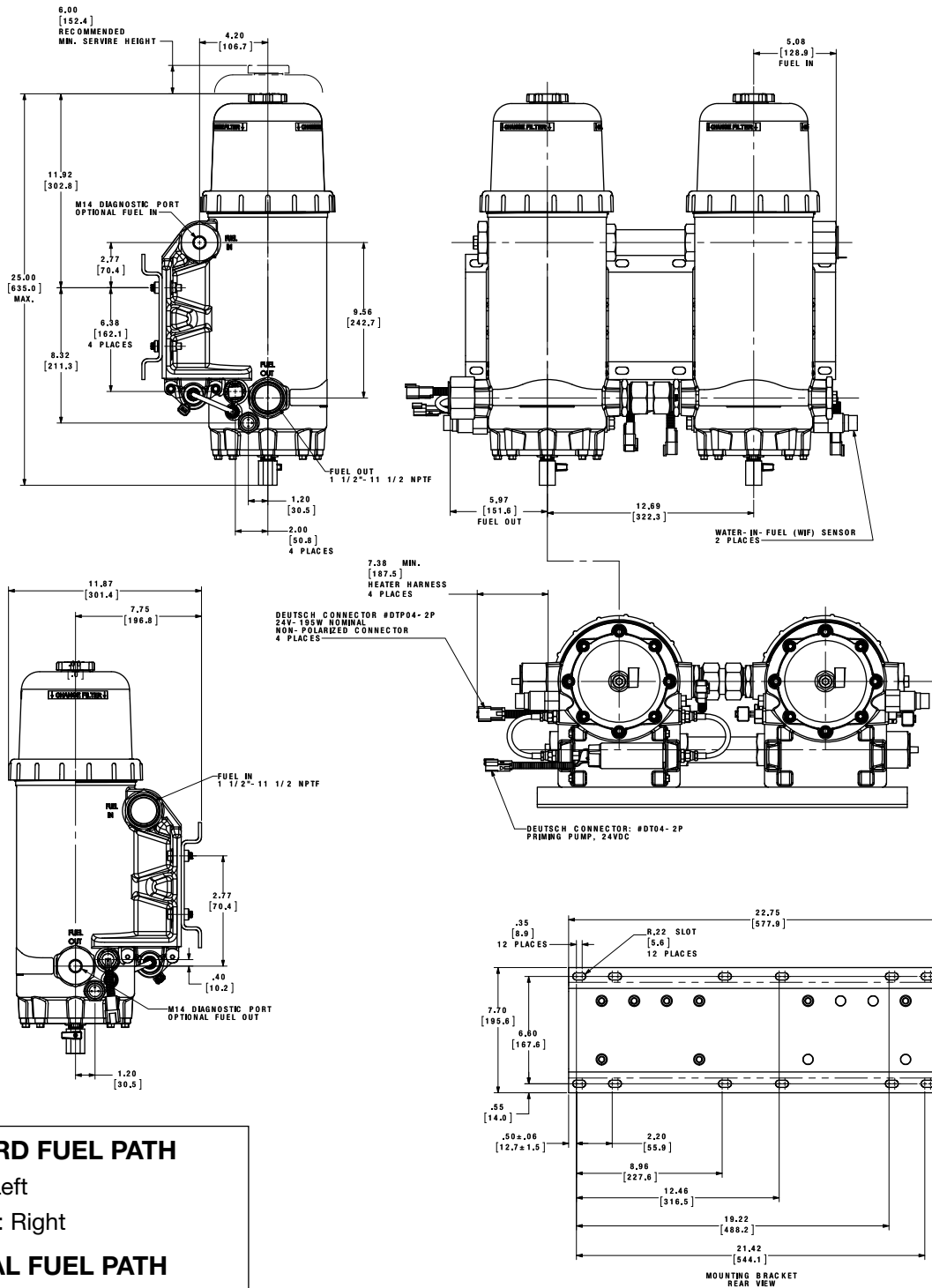
Extreme winter or salt corrosion environments may require lubrication of the top collar threads with antiseize lubricant every 180 days.

## Torque Values

Application	Torque	
	ft-lb	N-m
WIF Probe to Housing	22	30
Fuel Connection Fittings to Housing Body	55-65	74.6-88.1
Heater to Housing	15-30	20.3-40.7
Drain Valve to Bottom Plate	10-15	13.6-20.3
Primer Pump Strap to Body	8-10	10.8-13.6
Primer Pump Fittings to Housing Body	13-15	17.6-20.3
Pump Inlet/Outlet Hose to Fittings	10-15	13.6-20.3
Assembly to Mounting Bracket	35-50	47.5-67.8
Bottom Plate	8-10	10.8-13.6



## Dimensions



### STANDARD FUEL PATH

FUEL IN: Left  
FUEL OUT: Right

### OPTIONAL FUEL PATH

FUEL IN: Right  
FUEL OUT: Left

Water Capacity to WIF (each body) = ~ 550ml

Water Capacity to Bottom of Filter (each body) = ~ 1900ml

