

Figure 1

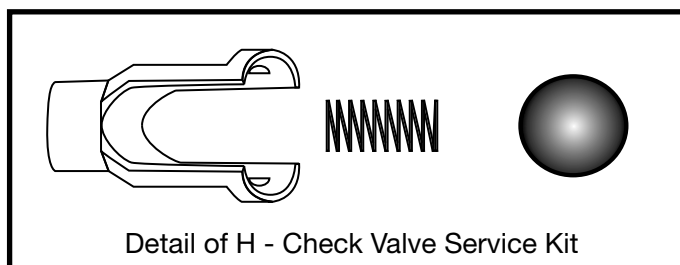
ITEM	NAME	PART NUMBER
A	Collar	102425
B	Vent Cap Assembly	380043
C	O-Ring Kit	380072
D	Clear Cover	102420
E	Filter Spring	380056
F	Filter Element	
H	Check Valve Service Kit	101132
I	Check Valve	
J	Drain Valve	102008
K	Collar/Vent Cap Wrench, Metal	380134
L	Collar/Vent Cap Wrench, Composite	382002
M	Electric Preheater	
	12 VDC	102901
	24 VDC	102903
N	Water-in-Fuel Sensor (WIF)	102512

**⚠ CAUTION:** These instructions are intended for use by professional mechanics who are trained in the proper use of power and hand tools, using appropriate safety precautions (including eye protection).

Diverter Cap Part Number	Required-Filter Head Stud Size	Required-Filter Head Seal ID	Required-Filter Head Seal OD
101480	1"-14	2.475"	2.895"
101592	13/16"-12	3.225"	3.435"

**Note:** For additional Diverter Caps, contact DAVCO Technology at 800-328-2611.

Table 1



Detail of H - Check Valve Service Kit

## INTRODUCTION

This system must be installed between the fuel tank and the transfer fuel pump. It can be used as **the only fuel filter in the fuel system** by removing the existing filter and heads, or remove the filters only and replace with special Diverter Caps (sold separately - see Table 1).

**Note:** If the Fuel Pro is used as the primary filter and a secondary filter is required, secondary filter life may be extended.

## PRE-INSTALLTION PRECAUTIONS

⚠ **Scalding hazard!** When diesel fuel is circulated through an operating engine, it can become very hot. Do not allow heated liquid fuel to come in contact with eyes or unprotected skin. Always allow the engine and fuel to cool to ambient temperature before replacing the fuel filter or performing service operations which could result in the spillage of fuel from the fuel system. If this is not possible, protective clothing (face shield, insulated hat, gloves, apron) must be worn.

⚠ **Fire Prevention!** Heated diesel fuel can form combustible vapor mixtures in the area around the fuel source. To eliminate the potential for fire, keep open flames, sparks or other potential ignition sources away from the work area, and do not smoke during filter replacement or service operations which could result in the escape of diesel fuel or fuel vapors.

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

⚠ The ignition key must be in the off position, unless otherwise specified in the instructions.

⚠ Dispose of diesel fuel and filters in an environmentally responsible manner, according to state and/or federal (EPA) regulations.

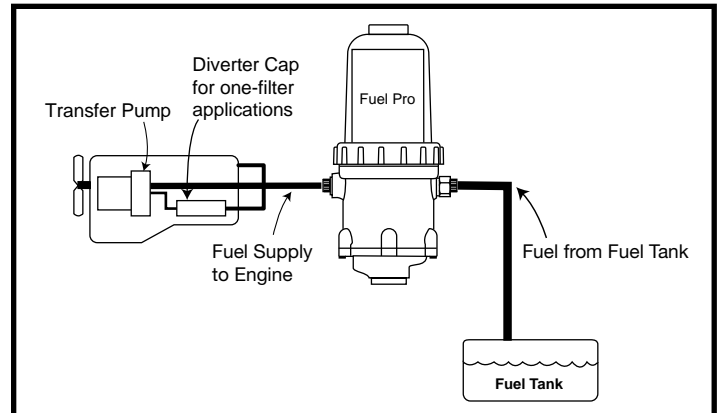


Figure 2

## INSTALLATION OF THE FUEL PRO

⚠ **CAUTION:** The Fuel Pro **MUST** be installed so that the Filter Element is above the "FULL" level of the fuel tank. If mounted below full tank level, a shutoff valve will be required at the inlet to allow filter changes without overflow of fuel.

**Note:** To avoid damaging the aluminum fuel processor body, do not overtighten fuel lines or fuel line fittings.

**Step 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.

**Step 2:** Drain the primary fuel filter, then remove the fuel filter, sedimenter, and/or water separator.

**Step 3:** For a one-filter system, select the required secondary filter head diverter cap from those listed in Table 1. The required part number is determined by the size of the spin-on filter stud and the filter sealing surface diameter.

Install the diverter cap on the secondary filter head as follows:

- Drain and remove the secondary fuel filter element.
- Lightly lubricate the seal on the top of the diverter cap with clean engine oil.
- Thread the adapter onto the secondary filter stud and **tighten by hand only**.
- Install the "Do Not Remove" sticker on the diverter cap.

**Step 4:** Mount the Fuel Pro in the desired location keep-

ing the following points in mind:

- a. **Mounting the Fuel Pro directly on the engine is NOT RECOMMENDED.**
- b. Mount vertically with the cover and element pointing up.
- c. Make sure there is enough top and side clearance for the cover to be conveniently removed for filter replacement. (see Figure 6)

**Step 5:** Route Fuel Lines: (see Figure 2)

- a. Route the fuel supply line from the fuel tank to the Fuel Pro inlet.
- b. Route a fuel line from the Fuel Pro outlet to the fuel pump inlet.

**Step 6:** To minimize restrictions, observe the following guidelines when plumbing the system.

- a. Keep the fuel line routing as smooth as possible with no low hanging loops which can trap water.
- b. Use 90° elbows only when necessary.
- c. 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 processor body, do not overtighten fuel lines or fuel line fittings.

**FUEL HEATING OPTIONS**

**Note:** The Engine Return Fuel Heat and Engine Coolant Heat options apply ONLY to the heater base. (See Figure 3) Return fuel heat can only be used if the return fuel flow rate is equal to or greater than 30 gph.

**Engine Return Fuel Heat**

To use return fuel as the Fuel Pro heating fluid, route the return fuel line from the engine into the heater base of the Fuel Pro. (See Figure 3) Either heater port can be used as an inlet or outlet. Connect a second fuel return line from the heater base to the fuel tank return port.

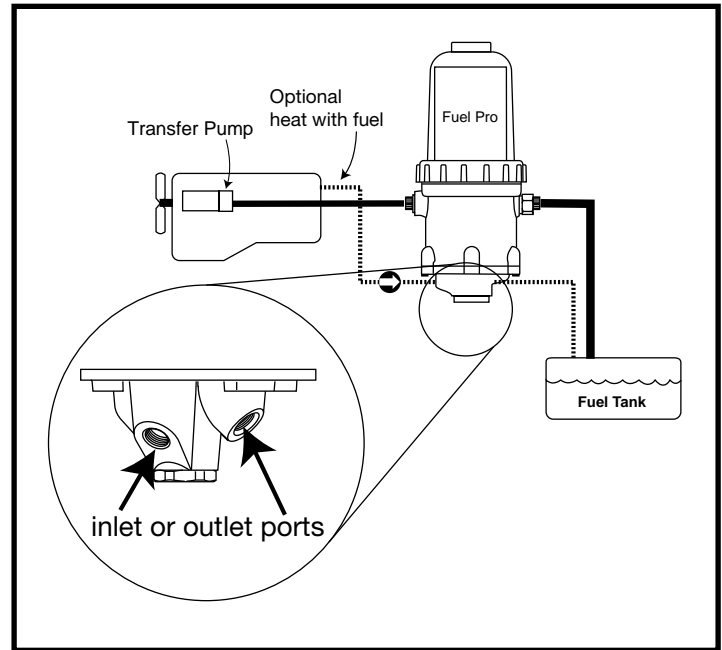


Figure 3

**Engine Coolant Heat**

Using 5/8" ID premium heater hose and clamps, connect a hose from the high pressure side of the engine coolant system to the heater base (see Figure 4) Either heater port can be used as an inlet or outlet. Route another hose from the heater base to a low pressure port in the coolant system. DO NOT route into the cab heater system.

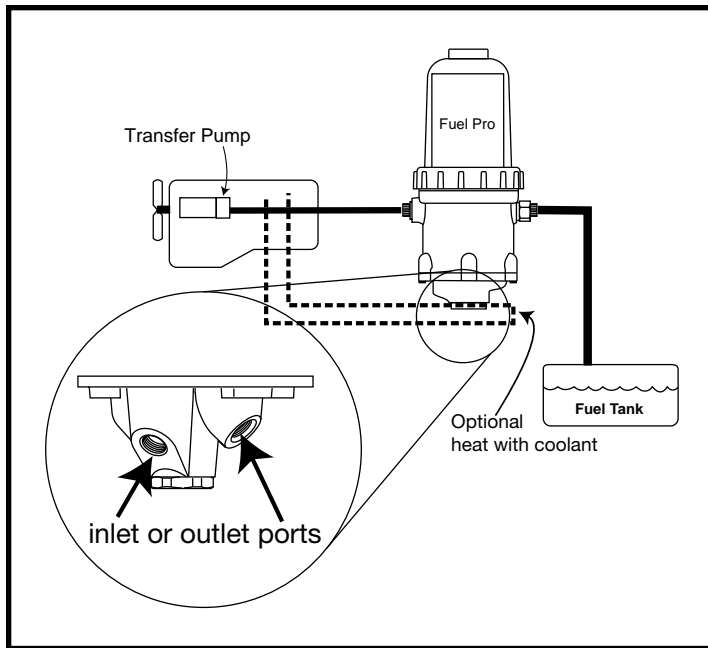


Figure 4

**ELECTRIC PREHEATER**

The Electric Preheater can be used with heated systems such as the ones described above or with unheated systems. (see the wiring diagram in Figure 5)

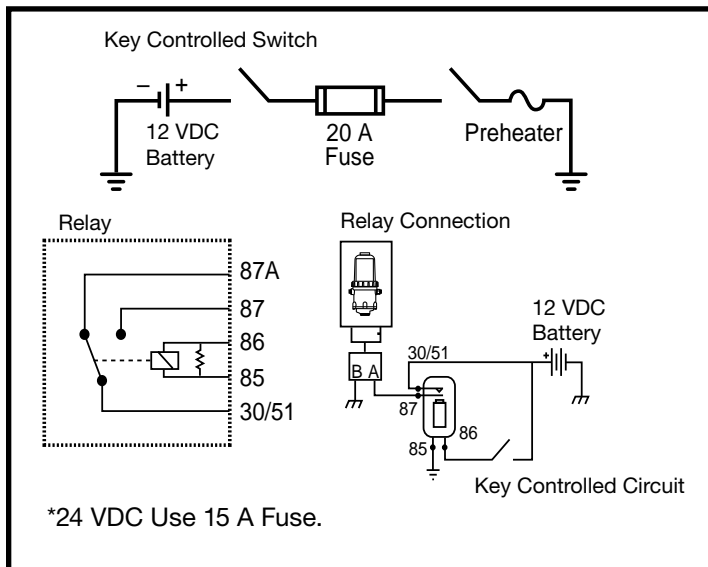


Figure 5

**Note:** When wiring the Electric Preheater, use a fuse – NOT a circuit breaker.

**PRIMING THE SYSTEM**

**Step 1:** Check to make sure the drain valve at the base of the Fuel Pro is closed.

**Step 2:** Remove the vent cap from the top of the clear cover. Prime the unit by filling the clear cover with clean diesel fuel until it reaches the top of the filter. Install the vent cap. **Hand tighten only.**

**Step 3:** Start the engine. When the lubrication system reaches its normal operating pressure, increase engine RPM to high idle for one to two minutes. After the air is purged loosen the vent cap until the fuel level lowers to just above the collar. **Tighten the vent cap by hand only.**

**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.

**SUGGESTED PREVENTIVE MAINTENANCE**

**Weekly** - Drain water.

**Every Filter Change** - Change o-rings and grommet (included with new filter).

**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 anti seize lubricant every 180 days.

**DRAINING CONTAMINANTS**

**Step 1:** Turn off the engine and open the vent cap.

**Step 2:** Place a cup under the drain valve at the base of the Fuel Pro and open the drain valve.

**Step 3:** Water will flow into the cup. When fuel begins to flow out of the drain, close the drain valve. (Drain the minimum amount of fuel possible.)

**Step 4:** Close the vent cap.

**Step 5:** Start the engine. Raise the RPM for one minute to purge the air from the system.

**FILTER CHANGE PROCEDURE**

**Step 1:** Remove the vent cap and open the drain valve to drain the fuel below the collar level.

**Step 2:** Remove the collar (using a DAVCO wrench) then remove the clear cover.

**Step 3:** Remove the filter, cover and vent cap seals.

**Step 4:** Using a clean shop rag, clean the cover, the collar and threads on the Fuel Pro body.

**Step 5:** Install a new filter, cover seal and vent cap seal.

**Step 6:** Reinstall the clear cover and collar. **Hand tighten the collar.**

**Step 7:** Prime the unit by filling the clear cover with clean diesel fuel until it reaches the top of the filter.

**Step 8:** Install the vent cap. **Hand tighten only.**

**Step 9:** Start the engine and run for one minute. **Slowly** open the vent cap and allow the fuel to drop to about one inch above the collar.

**Step 10:** Close the vent cap. **Hand tighten only.** It is normal for the fuel level to vary after the initial start-up and during engine operation. Filter performance is not affected.

**EMERGENCY TEMPORARY FILTER REPLACEMENT**

**Step 1:** Follow Steps 1 through 3 of the "Filter Change Procedure".

**Step 2:** If there is a filter grommet on the filter stud, remove it.

**Step 3:** Install an engine spin-on filter (part number (part number FF105, for example) on the threaded stud.

**Step 4:** Install the cover, spring, seal and collar over the filter and tighten by hand.

**Step 5:** Start the engine. Raise the RPM for one minute to purge the air from the system.

