



#18

DF-100 & DF-165
INSTALLATION MANUAL

PLEASE READ THE INSTRUCTIONS THOROUGHLY
BEFORE BEGINNING INSTALLATION

A large, metallic, three-dimensional Chevrolet bowtie logo is centered in the background of the middle section of the cover. The logo is silver and has a slight shadow, giving it a 3D appearance.

CHEVY DIESEL TRUCKS

1992 thru 2000

High Performance Fuel System

With New Quick Connect Components!

AirDog® II

FUEL PREPARATOR

Approved for Sale and Use in California by CARB!
(Limited Edition Model Pictured)



**SMALL RETURN LINE
FOR AIR, VAPOR AND
FOAM**



**PRESET OR
ADJUSTABLE PRESSURE
REGULATOR**

DEMAND FLOW SERIES

FLOWS ONLY THE AMOUNT OF FUEL THE ENGINE DEMANDS

SMALL and COMPACT

7" Long X 3.2" Wide X 10" Tall

OVERVIEW

Welcome to **PureFlow AirDog**

Fuel Air Separation, Filtration and Delivery System for the Diesel Engine!

The **AirDog® II** Fuel Air Separation system is a Premium replacement lift pump and filtration system for the Chevy 6.5 Litre diesel engine. A complete installation kit is included.

The **AirDog® II** delivers clean fuel to the engine free of virtually all air/vapor and at a positive flow. Thus, allowing the engine “test cell” performance and efficiency, while in “real world” use.

The **AirDog® II** DF-100 & DF-165 features an *Adjustable Pressure Regulator* preset set from the factory at 10 PSI. All AirDog®II systems include a complete installation kit.

The **AirDog® II** DF-100 is recommended for stock and slightly modified 6.5L Chevy Diesels.

The **AirDog® II** DF-165 Adj. are recommended for highly modified 6.5L Chevy Diesels.

PureFlow® products are manufactured with a personal touch,
unsurpassed attention to detail
and
the most stringent quality control!

TYPICAL INSTALLATION LAYOUT

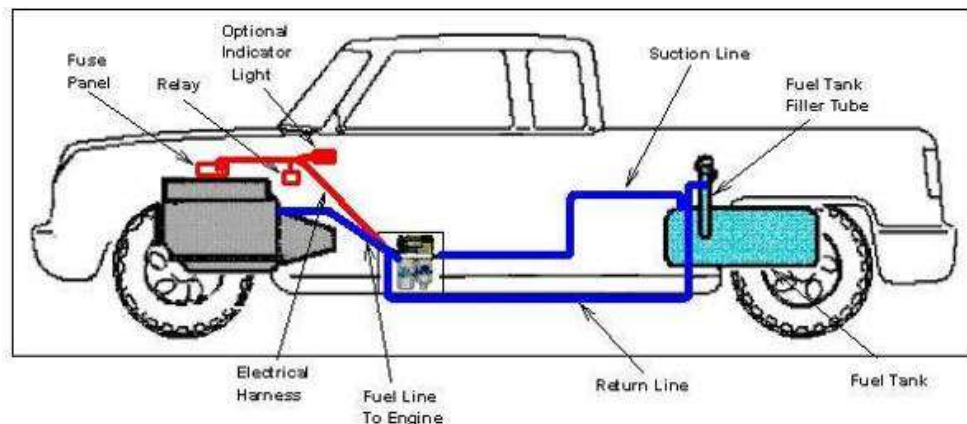


Figure 1

The AirDog II® draws fuel from the fuel tank at constant flow, removing water, particulates, and air/vapor. A regulated pressurized flow is maintained to meet the engine's varying fuel demands. The separated air/vapor and excess fuel not needed by the engine are returned from the AirDog® to the fuel tank.

NOTE: The pictures used in this manual are for example only and may not be exactly the same as your truck.

QUICK CONNECT COMPONENT OVERVIEW

Provided in this is an OE style quick connection system. This system works to allow for a quick, clean, and professional install.

SAE J2044 Quick Connect System

The SAE J2044 quick connect system is the most commonly used system in the automotive industry. The images below show the formation of SAE J2044 connection. To connect the assemblies, simply insert the male end form into the mating female connector. Push firmly until you hear it “click” into place. To disconnect the fittings, press down and hold the blue tabs on the female connector while you firmly pull the assembly apart.



AirDog® **MODEL DF-100 & DF-165**

The installation of your **AirDog®** can be made relatively easy by following the steps outlined in this manual, and:

1. Inventory the package components completely. Notify *PUREFLOW AIRDOG* immediately of any parts missing or damaged.
2. Read the installation manual completely. Understand how the system operates and installation recommendations before beginning installation.
3. The installation recommendations contained herein are suggested installation guidelines only. Individual installations may vary.
4. If any installation procedure is uncertain, contact *PUREFLOW AIRDOG* for technical assistance.
5. **When installing the AirDog® fuel lines be sure to keep the ORIGINAL ENGINE RETURN LINE connected as it is from the factory!**

SAFETY GUIDELINES!

CAUTION! Please be sure to chock the vehicle's tires to prevent rolling.

CAUTION! Please use proper supports when working beneath an elevated vehicle.

CAUTION! Most diesel pickups have two (2) 12volt batteries. Disconnect the battery cables to both batteries before proceeding with the AirDogII® installation.

CAUTION! Vehicle frame rails should not be drilled into or welded upon.

CAUTION! Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.

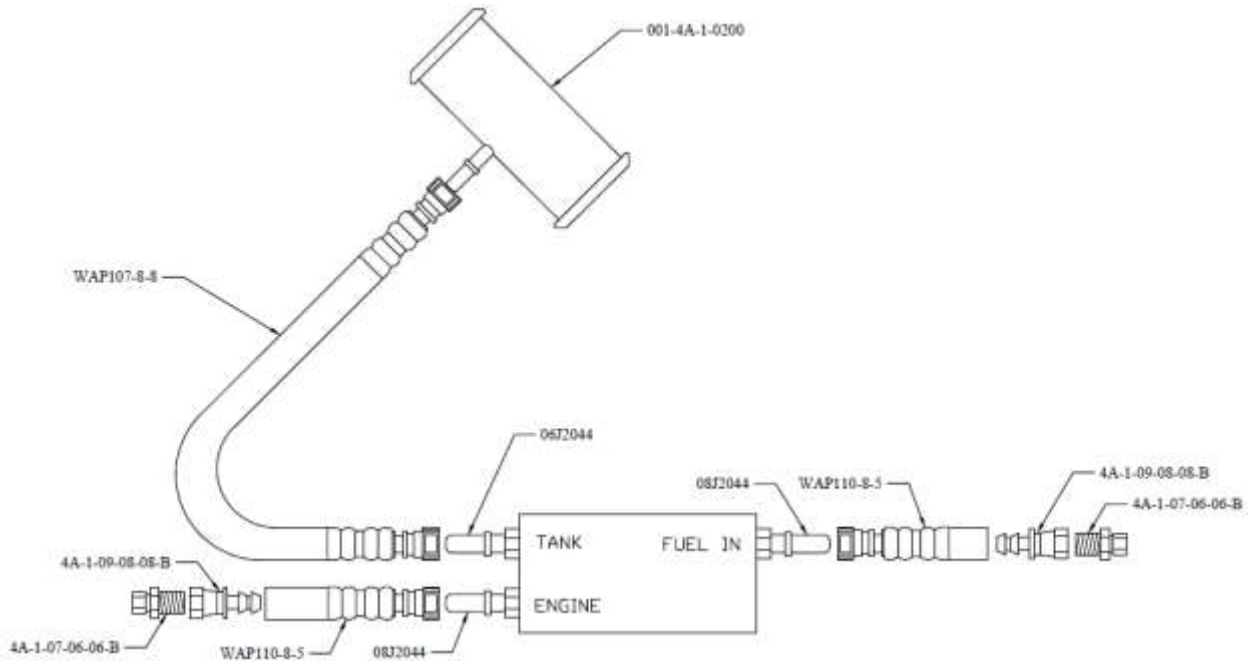
CAUTION! Use common sense when routing fuel lines and electrical harnesses. Keep them away from hot exhaust components and/or moving parts. Properly secure lines to prevent chaffing.

Use Good Judgment and Common Sense When Installing the AirDogII®!

AirDog® Parts List

1	Installation Manual	201-1-0201	
1	<i>AirDog</i> ®	FP-100 Or FP-150	
1	AirDog ® Mounting Bracket	001-3C-0004	
1	Mounting Bracket Hardware Kit	(Included In) 901-61-0102-PM-C	
1	Frame Bracket	010-3C-0002PC 010-3C-0001PC	
1	Spacer	010-3C-0003-A-P	
1	Wiring Harness	5E-2-010	
1	Return Fuel Filler Tube (with 2 Clamps)	001-4A-1-0200	
1	Bundle of Plastic Ties	5H-2-1-06/12	
1	Suction Hose Assembly	WAP110-8-5	
1	Return Hose Assembly	WAP112-8-8	
1	Pressure Hose Assembly	WAP110-8-5	
2	-8 Swivel x 1/2" Push Lock	4A-1-09-08-08-B	
2	3/8" compression x 3/8" NPT Male	4A-1-07-06-06-B	
2	3/8" NPT Female x -8 JIC	4A-2-02-06-08-B	
1	Push Lock Hose Splice	001-4A-1-0026	
2	1/2" Male SAE J2004 Quick Connect x 3/8" NPTF	08J2044-3/8 NPTF	
1	3/8" Male SAE J2004 Quick Connect x 1/8" NPTF	06J2044-1/8 NPTF	

ILLUSTRATION OF QUICK CONNECT COMPONENTS



Installing the AirDog® II & Mounting Brackets on the Truck's Frame!



Figure 2



Figure 3

- 4-1. Assemble the AirDog II mounting bracket to the frame bracket.



Figure 4



Figure 5

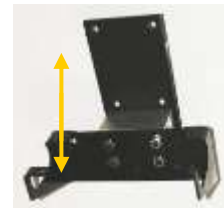


Figure 6

- 4-2. Use the spacer block to clear lines and wiring harnesses on the frame. Adjust the assembly up or down on the frame bracket as necessary for clearance.

- 4-3. Install a 1/2" Male SAE J2004 Quick Connect x 3/8" NPTF (08J2044-3/8NPTF) into the "ENGINE" and "FUEL IN" ports in the AirDog II.

Out to ENGINE

FUEL IN



Figure 7



- 4-4. Install the 3/8" Male SAE J2004 Quick Connect x 1/8" NPTF fitting (06J2044-1/8NPTF) into the "TANK" port of the AirDog II.



Figure 7a

WARNING: The NPT fitting threads must be lubricated with oil or anti-seize compound before installation to prevent galling!

- 4-5. Attach the AirDog II to the frame bracket assembly.



Figure 7b

Section 4**AirDog® & Mounting Brackets****Installing the AirDog® & Mounting Brackets on the Truck's Frame, cont'd!**

NOTE: The AirDogII® installs easily and is well protected from road debris when mounted on the inside of the driver's side frame.



Figure 8

Driver's Side
Frame Rail.



Figure 9

- 4-5. Clamp the frame between the AirDogII® bracket assembly and the backing plate using the 3/8" x 4" bolts, lock washers, and nuts included in the kit.

Figure 10



Front of Vehicle

- 4-6. Position the AirDogII® on the frame as necessary for clearance. Properly torque all fasteners!

NOTE: Be sure to mount the AirDogII® so the 'FUEL IN' port is directed toward the rear of the vehicle.

Installing the AirDog® Fuel Supply Line to the Engine

5A-1. Remove the factory electric fuel Pump mounted on the driver's side frame rail.



Figure 11

NOTE: Assemble the compression fitting to the -8 JIC flare fitting.



5A-2. Cut the steel fuel line that goes to the engine and install a 3/8" compression fitting with a 3/8" NPT female x -8 JIC on the end of that line.



Figure 12

5A-3 Insert the female quick connect end (see figure 12a) of the "Pressure Hose Assembly" into the male quick connect fitting previously installed in the port marked "ENGINE". You will hear a "click" when it connects.

Figure 12a



5A-4. Measure and cut the length of the "Pressure Hose Assembly" necessary to reach the fitting on the end line referenced in step 5A-2.



Figure 13



Figure 14

Installing the AirDog® Fuel Supply Line to the Engine, cont'd

5A-5. Install a straight -8 swivel x 1/2" Push Lock fitting on the cut end of the fuel line.

Lubricate the barb end of
the Push Lock fitting with oil.



Figure 15

Push the fuel line completely
onto the barb end of the fitting.



Figure 16

5A-6. Connect the swivel fitting to the compression fitting previously installed in step 5A-2.



Figure 17

CAUTION: Properly secure all fuel lines to prevent damage from chaffing and/or abrasion.

Installing the Fuel Supply Line from the fuel tank to the AirDog®

- 5B-1. Cut the steel fuel line that goes to the engine and install a 3/8" compression fitting with a 3/8" NPT female x -8 JIC on the end of that line.



Figure 18

- 5B-2. Insert the female quick connect end (see figure 19) of the "Suction Hose Assembly" to the male fitting installed in the "Fuel In" port during step 4-3 of this manual. A "click" will be heard when the fitting is properly connected.



Figure 19

- 5B-3. Measure and cut the length of the "Suction Hose Assembly" necessary to reach the fitting on the end line referenced in step 5B-1.
- 5B-4. Install a straight -8 swivel x 1/2" Push Lock fitting on each end of that fuel line.

Lubricate the barb end of the Push Lock fitting with oil.



Figure 20

Push the fuel line completely onto the barb end of the fitting.



Figure 21

- 5B-4. Connect the fuel line to the respective fittings on the AirDog® and the fuel line from the tank.



Figure 22

Fuel Return Line from the AirDog® to the Tank

Installing the fuel 'Return to Tank' assembly in Filler Tube

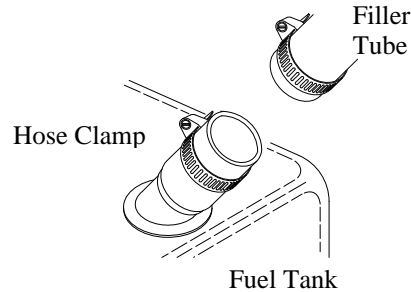


Figure 23

- 5C-1. Cut filler tube as illustrated, removing ½ inch. Loosen assemble clamps on each end of filler tube.



Figure 24



Figure 25

- 5C-2. Insert “Return Fuel Filler Tube” assembly in filler tube. **INSTALL THE FILLER TUBE WITH ARROWS POINTING TOWARD THE TANK!! SEE FIG 24** Properly tighten clamps.
- 5C-3. Insert the male quick connect end (see Figure 25) of the “Return Hose Assembly” into the installed male fitting in the port marked “Tank”. The fitting will “click” when properly installed.
- 5C-4. Attach the other end of the “Return Hose Assembly” onto the male end form of the “Return Fuel Filler Tube” installed in step 5C-2. A ”click” will be heard when the fitting is properly connected.
- 5C-5. Any excess fuel hose can be addressed by routing the hose in a fashion to take up the extra length, or a section of the hose can be removed. Push lock splices have been included if you choose to remove the excess hose.

The *AirDog*® is equipped with a relay controlled wiring harness.

WIRING DIAGRAM (In Red)

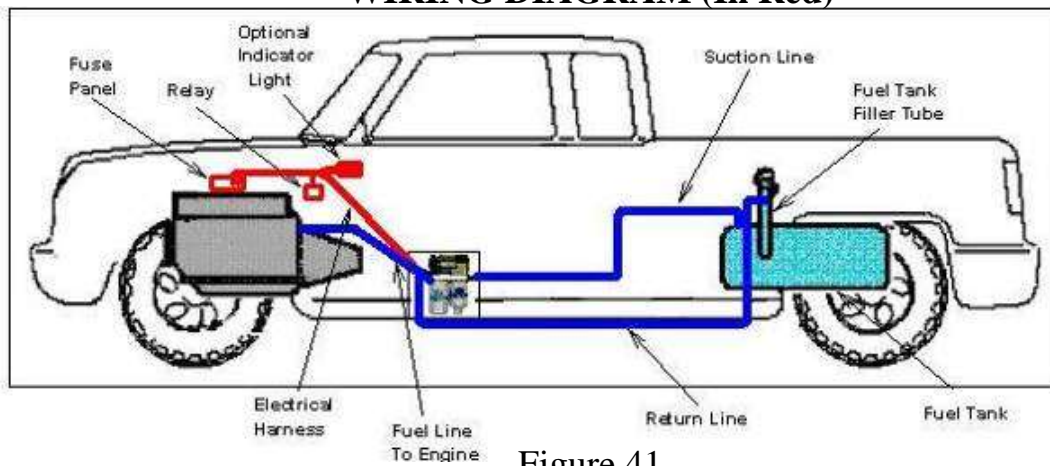


Figure 41

The *AirDog*® wiring harness!



- AirDog® Pump Motor Lead
- Pressure Sensor/Switch Lead
- Indicator Light Lead
- Battery Positive Lead
- Battery Negative Lead
- Mini Fuse Tap Relay Lead

Figure 42

CAUTION: If the *OPTIONAL* Low Pressure Indicator Light is not used, be sure to insulate the two (2) #10 Indicator Light connectors to prevent accidental contact.

Securing the Relay and Fuse Holder to the Vehicle

6-1. Secure the relay and fuse holder to the vehicle.



Figure 43



Figure 44

Connecting the AirDog[®] Relay Control

- 6-2. Remove the plastic housing covering the fuse box. On some models it may be necessary to remove the fender/cowl brace to allow access to the fuse box.
- 6-3. After accessing the fuse panel, use a test light or voltmeter to find a fuse terminal that is **HOT** only when the ignition is in the on/run position. Connect the Red Relay Trigger wire with the mini fuse tap to that terminal.



Figure 45



Relay
Trigger Lead
Connection



Figure 46

NOTE: The power supply leads can be connected to the battery or the alternator.

Connecting the power supply leads to the alternator instead of the battery will create a corrosion free connection.

Black (-)

Red (+)

Replace the Protective Cover



Figure 47



Figure 48

- 6-4A. Route the Red & Black power supply leads to the alternator
Connect the Black (-) lead to the alternator *Chassis Ground* connection. Connect the Red (+) lead to the alternator *Hot Lead* going to the battery.

Connecting the power supply leads, cont'd

- 6-4B. Should you choose to connect the power supply leads directly to the battery, connect the RED (+) lead to the POSITIVE (+) post of the driver's side battery. Connect the BLACK (-) lead to the NEGATIVE (-) post of the same battery.

Black (-)

Red (+)

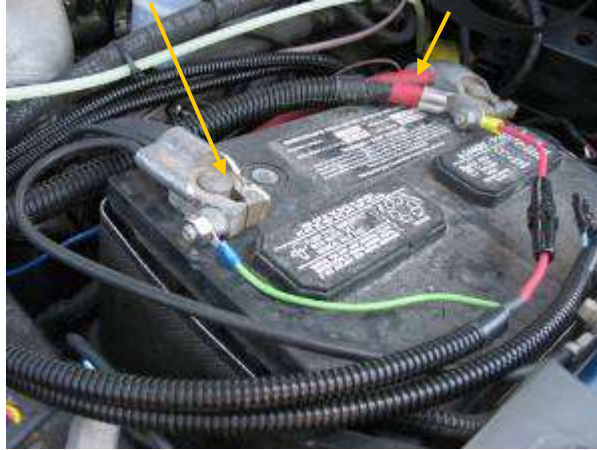


Figure 49

- 6-5. Route the wiring harness to the *AirDog*® and connect the 2 pin Deutsch connector to the corresponding connector on the *AirDog*®.



Figure 50

NOTE: If the Optional Indicator Light is not used, secure the pressure switch lead to the wiring harness with a plastic tie. Also, cover the pressure sensor lead to protect it you may want to use it later.

INITIAL START PROCEDURE

The *AirDog*® is a self priming system, however, to prevent possible damage to the system, it is recommended to fill the pre-filter with diesel fuel before initial startup.

- 7-1. Fill the water separator with diesel fuel.
- 7-2. Turn the starter key to the on/run position.
- 7-3. While the *AirDog*® is operating, bleed the air from the fuel line to the engine by loosening the fuel line connection at the engine fitting. As soon as the line is purged of air and pure fuel is observed, properly tighten the fuel fitting. **NOTE: put a rag or shop towel over and around fitting to prevent splatter. Catch all spilled fuel and dispose of properly.**
- 7-4. Start the engine!

RECHECK ALL FUEL FITTINGS FOR LEAKAGE AND PROPERLY TORQUE. BE SURE ALL FUEL LINES ARE PROPERLY ROUTED TO PROTECT FROM EXCESSIVE HEAT AND SECURED TO PROTECT FROM CHAFFING AND ABRASION. RECHECK ALL ELECTRICAL LINES, SECURE AS NECESSARY.

Checking Pump Noise!

NOTE: Each AirDog® has been manufactured in a Quality Controlled process and fully tested for operation and performance before shipment. This is a very quiet and smooth running system. However, if any fuel fitting on the vacuum side, between the fuel tank and the AirDog® or the pre-filter, has been left loose during the installation process, the system may suck air at an excessive rate and will be very noisy. Check all fuel line connections on the vacuum side for air leaks. Correct as necessary.

- A. The seal groove in the pre-filter is a snug fit and on occasion the seal has been found to not be fully seated. Remove the pre-filter, remove the seal from the top of the nut plate. Clean and lubricate the seal groove. Carefully replace the seal in the groove. Be sure to fully seat the seal.
- B. Check the fittings, especially the quick connect at the tank.

Additionally, as the brushes wear in the noise level will diminish and the pump becomes very quiet!

Filter Service Recommendations

Plugging of either the fuel filter or the water separator itself will cause low fuel pressure and low flow to the engine. If a low fuel pressure issue exists, replace the fuel filter.



Replace the water separator every other time you change the Fuel Filter or if it becomes damaged or plugged. It is suggested to check/drain the water separator every three months or as needed should you experience excessive 'water in fuel' conditions. When installing the water separator, be sure to clean the underside of the AirDog®II base. Follow the instructions printed on the water separator for proper tightening procedures.

CAUTION: Be extremely careful to prevent any contaminants or debris from entering the pre-filter when removing it for cleaning! Large debris will jam the Gerotor and cause the fuse to blow. This is not a warranty item. Should this happen, you can easily put the system back into working order. See the instructions on "How to clean the Gerotor" for proper procedures.

The Fuel Filter

Remove the fuel filter by turning it counter clockwise. Do Not pre-fill the fuel filter with fuel. The AirDog®II will fill the filter and prime the system automatically. Follow the instructions on the filter for proper tightening procedures.

CAUTION: Dispose of waste fuel and used filters properly to protect OUR environment!

Cleaning Foreign Debris from the Gerotor Assembly

Step 1
Remove the four (4) socket head cap crews that secure the gerotor cap.



Step 2
Carefully remove the O'ring, you will need to re-use it.



Step 3
Remove and clean the gerotor. Be very careful not to damage the gerotor.



Step 4
Clean the inside of the gerotor pocket.



Step 5
Replace the O'ring and center gear.



Step 6
Align the teeth and install the outer gear.



Step 7
Install the gerotor cap. Be very careful to index the cap to position the wide space between the half moon cuts to the bottom.



Step 8
Replace the cap into position. Be very careful, do not pinch the O'ring. Torque the cap screws in an opposing pattern.



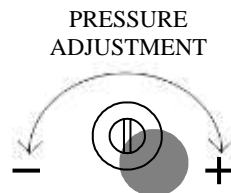
AirDog II DF-100 & 165 with Adjustable Pressure Regulator!

The AirDog®II rises to a new level of excellence with an Adjustable Regulator machined from stainless steel with a double O-ring seal system and a soft seat piston.

Pressure Adjustment



Loosen the Jam Nut
Re-Torque After Adjusting



Use a Screwdriver to Adjust
the Pressure Regulator

8 PSI: Turn the regulator counter clockwise until it stops, then turn clockwise 1 full turn.

Turn the adjustor screw counter clockwise to reduce the output pressure or clock wise to increase the pressure. Be sure to re-torque the Jam Nut after adjusting the regulator.

Changing the Regulator Spring



- Step 1. Remove the regulator by turning the "Base Nut/Adjustor Body" counter clockwise.
- Step 2. After removing the regulator assembly, remove the spring and the conical plunger. Verify the o-ring is intact.
- Step 3. Reset the conical plunger and place the spring inside the conical plunger.
- Step 4. Replace the assembly in the base. Tighten the Base Nut to proper torque.

Stainless Steel components with a Double O-ring Seal System and Soft Seat Piston.
New o-rings are included in the Customer Service O-ring Kit if replacements are required.

Installing a New Filter

1. Clean the area around the filter head and groove or seal area.

NOTE: Lubricate the seal with oil. Do not use diesel fuel to lubricate the seal.

2. Install a new fuel filter on the filter head. Turn clock-wise until the filter contacts the seal. Tighten the filter one full turn or follow tightening instructions on filter after contact with the seal has been made.

NOTE: It is not necessary to pre-fill the fuel filter!

CAUTION: DO NOT OVER TIGHTEN, OVER TIGHTENING CAN DISTORT THREADS OR DAMAGE THE FILTER SEAL.

3. **To prime the filter**, turn the ignition switch to the on position. Start the engine.

Water Separator

With the engine turned off, pinch off the suction line. Open valve on the bottom of the water separator. Drain into a suitable container until all water has been removed. Close valve. Remove the pinch in the suction.

DRAINING: The water separator should be serviced once a month or when severe water in fuel conditions require.

NOTE: Collect all spilled fuel and dispose of in accordance with federal, state and local regulations.