



INSTALLATION MANUAL

MODEL PF-100
WITH OPTIONAL LOW PRESSURE WARNING LIGHT

FORD POWERSTROKE

READ INSTRUCTIONS THOROUGHLY
BEFORE BEGINNING INSTALLATION.

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PROTECTED UNDER US PATENTS
5,355,860; 5,746,184; 6,729,310
and Foreign Patents Issued & Pending

Installation Manual

PUREFLOW® DIESEL SYSTEM

AirDog™

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MODEL PF-100

Welcome to the **PUREFLOW® DIESEL SYSTEM AirDog™** Air/fuel Separation, filtration and delivery system for the diesel engine.

The installation of the **AirDog™** can be made relatively easy by following the steps outlined in this manual.

1. Inventory the package components completely. Notify PUREFLOW® TECHNOLOGIES INC. Immediately of any parts missing or damaged.
2. Read the owner's manual and 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.

Use good judgment and common sense when installing the AirDog™

If any installation procedure is uncertain, contact PUREFLOW® TECHNOLOGIES INC. for technical assistance.

Please fill out and mail the Product Registration/ Warranty Card enclosed with this manual.

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OVERVIEW

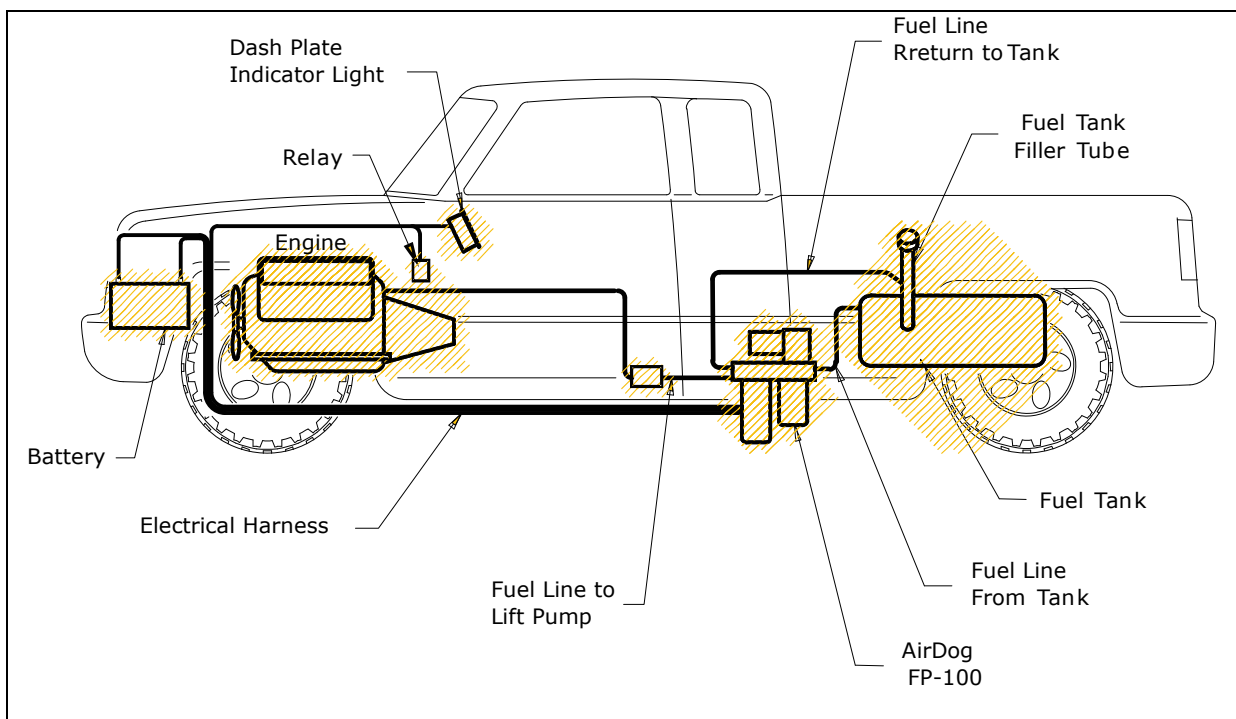
The PUREFLOW® DIESEL SYSTEM AirDog™ Air/Fuel Separation System is the “missing link” between the fuel tank and the engine for diesel powered equipment.

The AirDog™ 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.

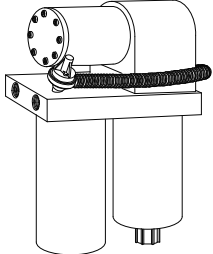
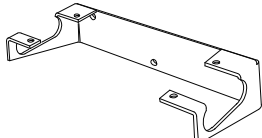


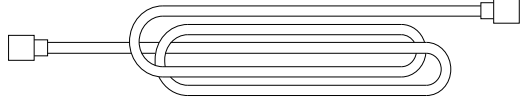
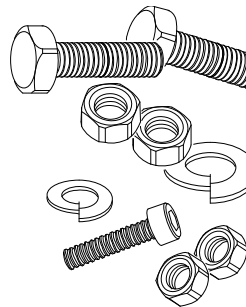
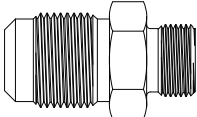
The AirDog™ FP-100 is suitable for all stock and slightly modified Powerstroke® Diesels. Connecting the AirDog™ to the stock fuel suction tube at the tank is OK.

Satisfactory performance and operation from the AirDog™ depends upon proper installation and maintenance.

TYPICAL INSTALLATION



AirDog™ PARTS LIST

Qty	Description	Part Number	Image
1	AirDog™		
1	Mounting Bracket		
1	Installation Manual		
	Optional Indicator Light Assembly Includes: Indicator Light, Dash Plate, Grommet & Pressure Switch		
1	Electrical Harness		
1	Mounting Hdwr Kit, Unit-to-Bracket Includes: 4 II-A20C Socket Head Cap Screws, 1/4-20 x 1-1/4" Lg. Stainless Steel 3 1J-1-C20SN Bolt, Hex Hd., Grade 8, 3/8-16 x 1-1/4" Lg. 4 1S-1-ASN Hex Nut, 1/4-20, Stainless Steel 3 1S-1-CSN Hex Nut 3/8-16 Steel, Nickel Plated 4 1R-6-ASN Washer, Split-Lock, Helical, #1/4, Stainless Steel 3 1R-6-CSN Washer, Split-Lock, Helical, #3/8, Steel, Nickel Plated		
2	Fuel Fitting, #8 SAE male to 3/8" -NPT	4A-1-01-08-06-B	

NOTE: Various components and materials discussed in this manual that are marked
"(*)" are special to a particular vehicle installation and supplied in a separate kit.

Ford/Power Stroke Installation Accessory Kit Includes

Frame Mounting Bracket with Backup Plate	1
3/8"-16x4-1/2" Hex Head Bolt	3
3/8" Lock Nut, 3/8" Flat Washer	3
1/2" ID Fuel Line (with quick connect fitting attached-one end)	17ft.
5/16" Quick Connect to 1/2" Hose Barb	1
#8 Flare (female swivel) x 1/2" Hose Barb Fitting	4
Filler Tube Return Fuel Fitting (1-1/2" OD) w/Hose Clamps	1
90 Degree #8 Swivel (female) to #8 (male)	3
12" Cable Ties	5
6" Cable Ties	10
16/14 Ring Terminal	1

SAFETY GUIDELINES AND WARNINGS!

IMPORTANT Use diesel fuel compatible thread sealer on all NPT tapered pipe thread fuel fitting connections!

IMPORTANT When installing push lock fuel line fittings remember to lubricate the fittings with oil before inserting fittings into the fuel line.

NOTE: Proper location of the AirDog™ on the vehicle is essential. Consider hazards presented to the equipment by road debris and the elements.

WARNING! 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.

FORD POWERSTROKE INSTALLATION PROCEDURES

Installation of AirDog™ and Bracket to the Truck's Frame

Loose assemble mounting bracket to frame with backing plate using 3/8" x 4 1/2" bolts, lock washers, and nuts included in the kit. Position mounting bracket so that its back is adjacent to the rear of the transmission tail shaft (above the transfer case skid plate on 4 x 4's) to allow ease in changing of the fuel filter. After positioning bracket, properly torque fasteners.

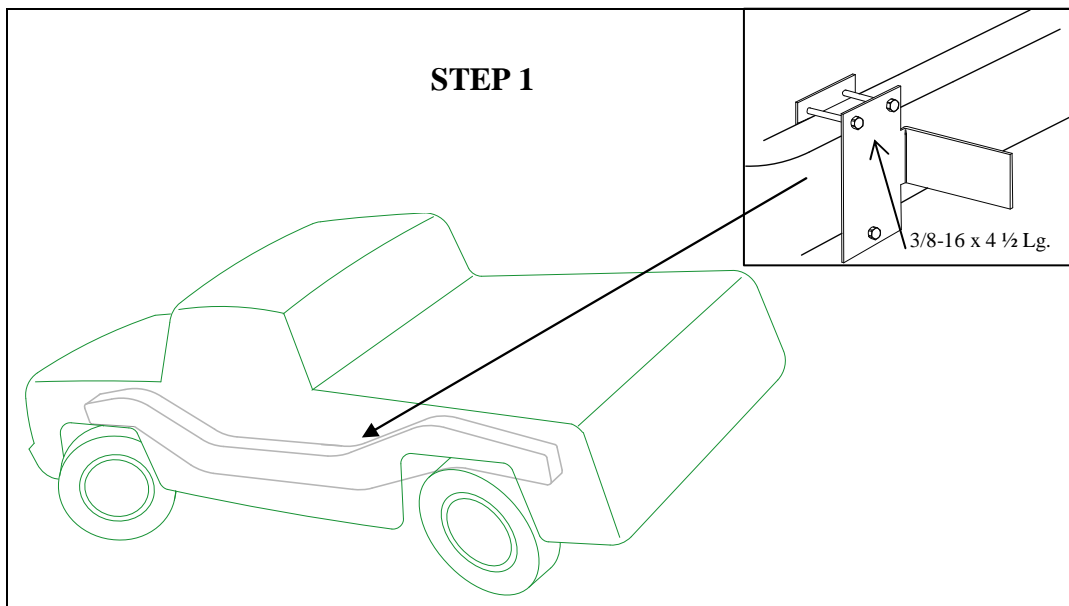
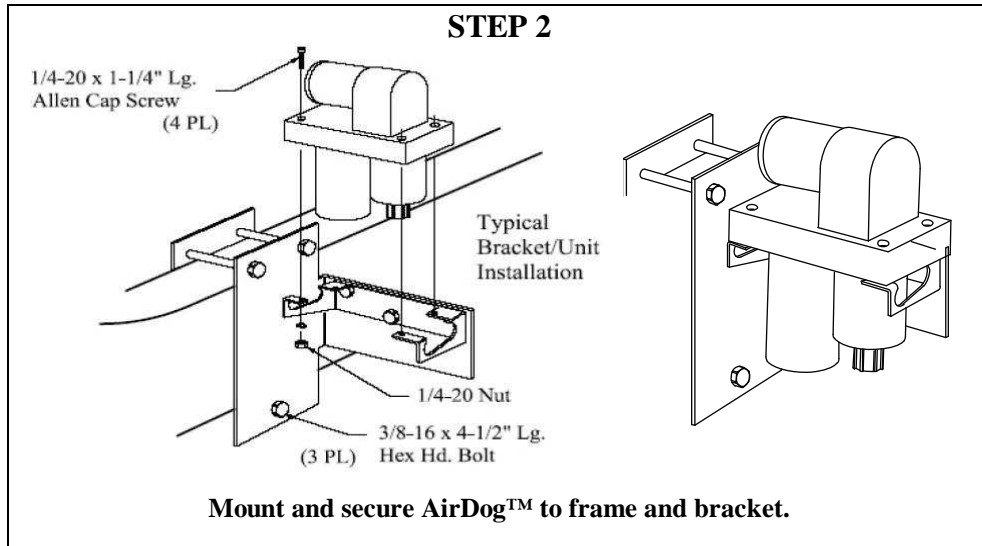


Figure 1: Location of bracket may change depending on make, model and year of truck.

Install the two 3/8" NPT x #8 SAE flare fuel fittings into the AirDog™ ports marked "FUEL IN" & "ENGINE". Use diesel compatible thread sealer when installing these fittings.

Note: Return fuel fitting comes factory installed to hold pressure regulator in place.

Remove fuel filter and water separator from AirDog™. Adjust AirDog™ to its bracket using 1/4-20 stainless steel socket head screws provided. Attach AirDog™ and bracket to the **frame mounting bracket** with 3/8-16 Hex head bolts. Secure all fasteners, as illustrated.



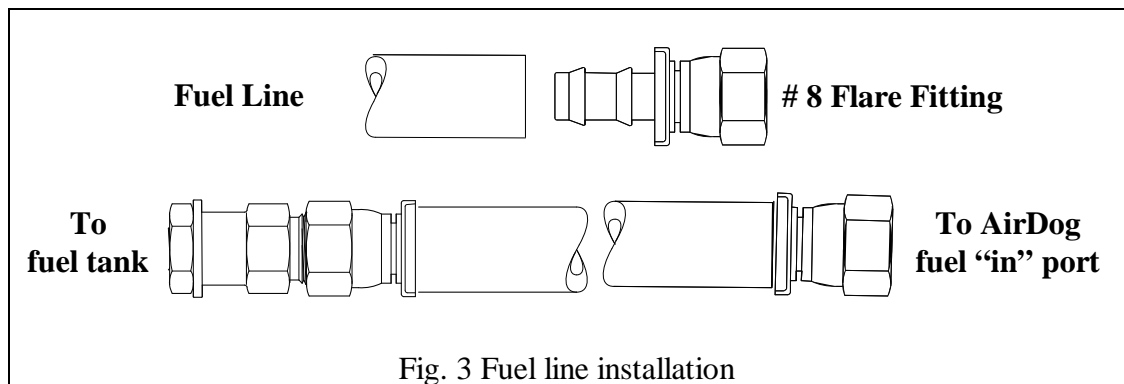
This is how your AirDog™ should look like after these procedures have been completed.

FUEL LINES

The fuel line supplied with the Ford Powerstroke installation kit has a quick disconnect fitting attached to one end. This fitting connects to the fuel tank suction tube. A quick connect fitting with hose barb, supplied in the accessory kit, connects to the OE electric lift pump.

Fuel Suction Line

- 5 - 1 From one end of fuel line supplied with attached 'Quick Disconnect' fitting, measure and cut length of line required to connect fuel tank SUCTION tube to AirDog™ inlet port marked "Fuel In".
- 5 - 2 Install #8 female swivel x 1/2" 'push lock' fitting into other end of fuel line (Ref. 5-1).



- 5 - 3 Remove the original fuel suction line from fuel tank by squeezing the tabs on the end of the connector together. Consult factory manual if unsure. Connect the 'New Fuel Line' Quick Connect fitting to fuel tank by pushing the connector onto the tank 'suction' tube until connector seats. Check connection for seating.

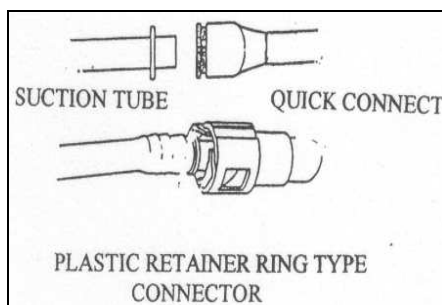
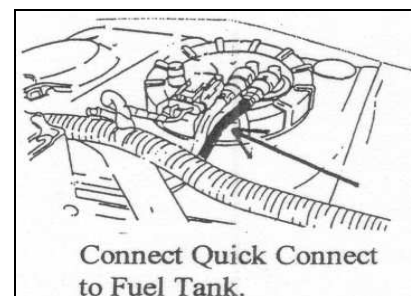


Fig. 4



Fuel Suction Line
Cont'd

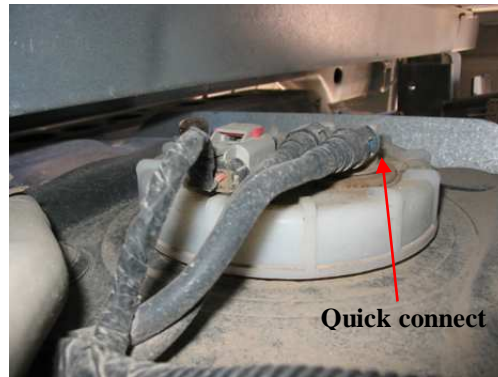


Figure 5: Fuel tank

To release quick-connect fitting from fuel tank suction tube, firmly push fitting toward the component being serviced while firmly holding the plastic retainer ring into the fitting. While the plastic ring is depressed, pull the fitting assembly from the suction tube. Use care to press the retainer ring squarely into the fitting body. It may be difficult to disconnect the fitting if the retainer is cocked during removal.

- 5 - 4 Connect 'New Fuel Suction Line' swivel end to #8 male flare fitting at AirDog™ port marked 'FUEL IN'.

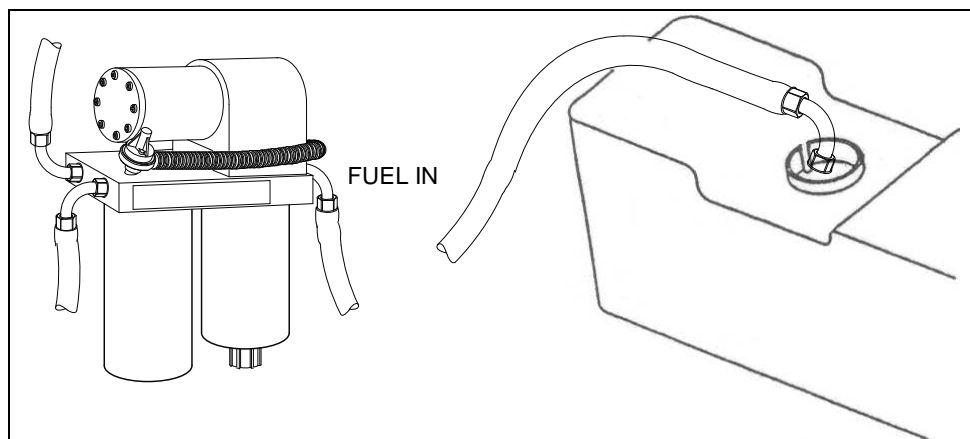
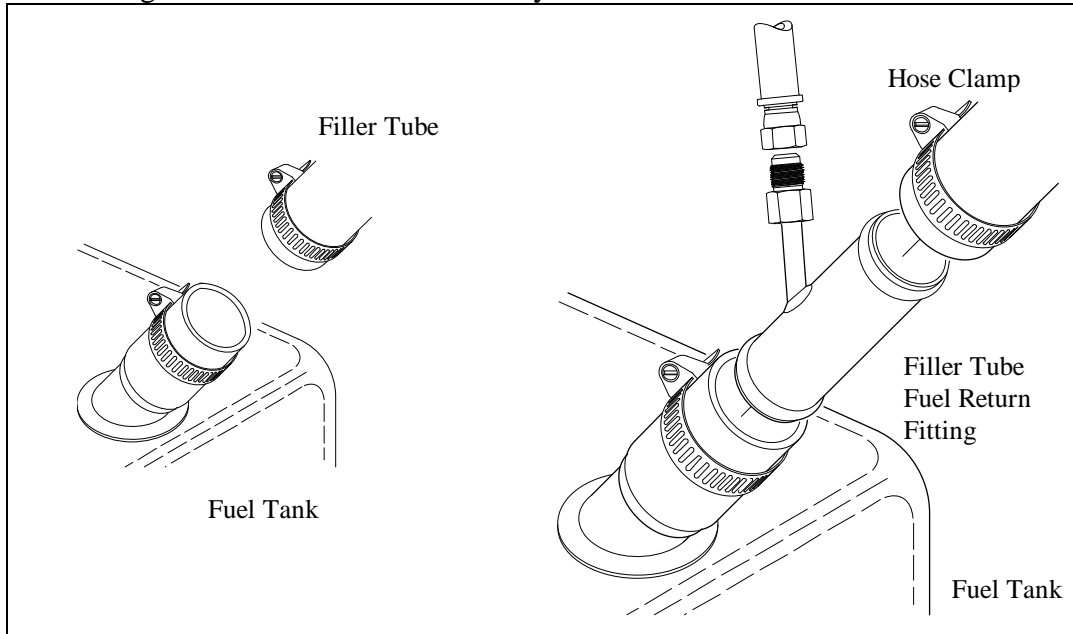


Figure 6: Connecting the AirDog™ to the suction tube at the tank

Fuel Supply Line
cont'd

'RETURN TO TANK' FUEL LINE

5 - 5 Installing fuel 'Return to Tank' assembly in filler tube.



STEP 1.

Cut filler tube as illustrated, removing 1½ inches. Loosen assembly clamps on each end of filler tube.

STEP 2.

Insert 'Return To Tank' assembly in filler tube, rotate and position #8 flare fitting. Properly tighten clamps.

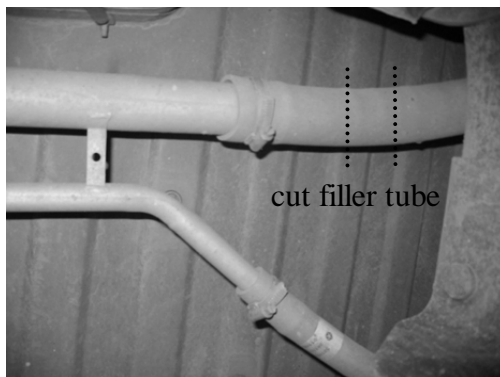
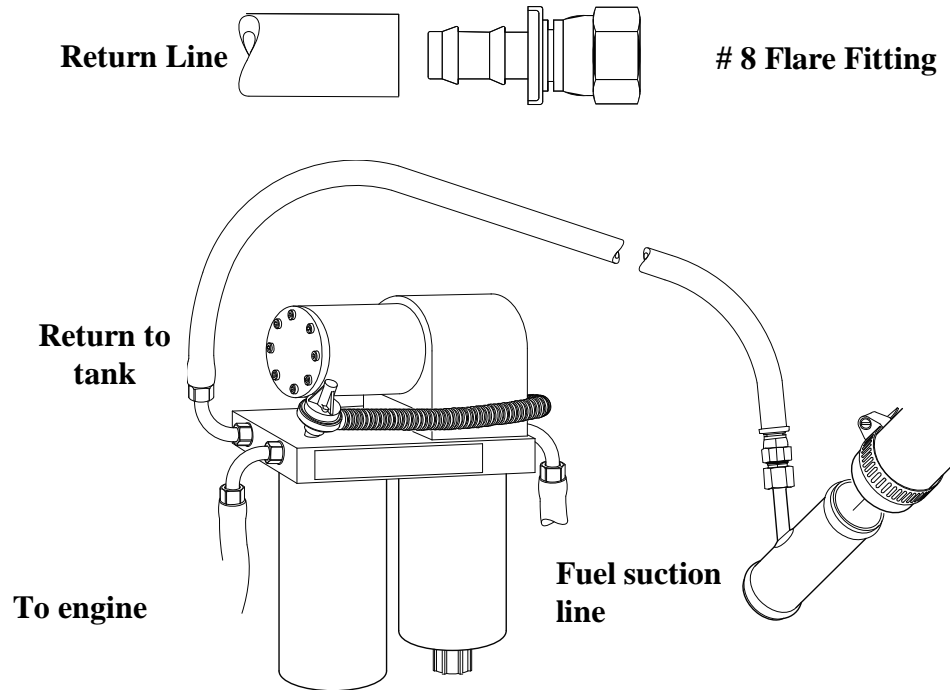


Figure 7: Installing 'Return to Tank' assembly

Fuel Supply Line

5 - 6 Installing fuel return line.



STEP 1.

STEP 2.

Measure and cut length of 1/2" ID fuel line necessary to connect AirDog™ to 'Return To Tank' assembly in filler tube. Install #8 Swivel x 1/2" pushlock fitting into each end of fuel line.

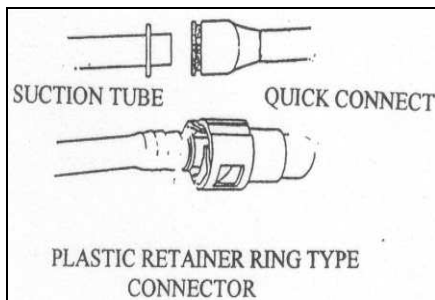
Connect fuel line to AirDog™ port marked 'TANK' & #8 flare fitting on 'Return To Tank' filler tube assembly. Properly torque fittings.



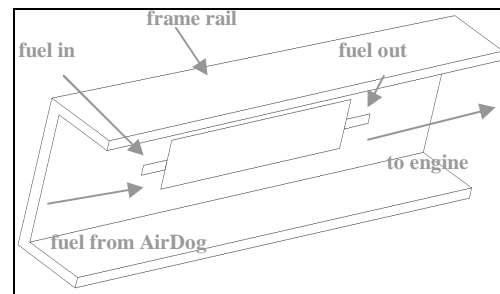
Figure 8: Connect return fuel line to 'Tank' port on the AirDog™

Fuel Supply Line from AirDog™ To 'OE' Lift Pump

- 5 - 7 First, remove the original factory fuel supply line at the electric OE lift pump, located on the drivers side inside frame rail, by squeezing the tabs on the end of the connector together. Second, firmly push fitting toward the component being serviced while firmly holding the plastic retainer ring into the fitting. While the plastic ring is depressed, pull the fitting assembly from the suction tube. Use care to press the retainer ring squarely into the fitting body. It may be difficult to disconnect the fitting if the retainer is cocked during removal



Quick Disconnect Fitting



'OE' Lift Pump

- 5 - 8 Measure and cut length of line, (with Quick Disconnect Fitting) required to connect the 'Fuel to Engine' port on AirDog™ to the 'OE' electric lift pump (Ref. 5-7).



Figure 11: Connecting AirDog™ to Lift Pump

Install straight hose barb on end to AirDog™. Connect quick connect fitting to inlet port on OE lift pump. Properly route fuel line and connect female swivel end to the AirDog™ fuel port marked 'ENGINE'.

IMPORTANT: Properly torque all fuel fittings and connections. Use 'ties' to secure fuel lines to vehicle to prevent chaffing and abrasion

WIRING HARNESS



The *AirDog™* is equipped with a relay controlled wiring harness that connects directly to the battery and is activated by the OE fuel pump connection. Optional "low fuel pressure" warning light is available.

- 6 - 1 Connect the RED lead to the POSITIVE (+) post of the driver's side battery. Connect the GREEN lead to the NEGATIVE (-) post of the same battery.
- 6 - 2 Route the wiring harness to the *AirDog™* and connect the 3 pin Deutsch connector to the corresponding connector on the *AirDog™* harness.
- 6 - 3 Secure the relay to the vehicle at either the engine side wheel house or firewall near the steering column.
- 6 - 4 Connect the *AirDog™* 'Relay activation lead' to the OE fuel pump connection or a point that is "HOT" when the ignition switch is at the on position.
- 6 - 5 Optional light kit. Remove 1/8" npt plug located in top of base, below the motor. Screw in pressure switch and tighten. Fasten the two wires from the wire harness to the pressure switch.
- 6 - 6 Drill a 5/8" hole in firewall approximately 2 inches to the door side of the steering column to allow entry of the Indicator Light harness into the passenger compartment.
- 6 - 7 Route the Indicator Light harness through the firewall. Install the grommet supplied in kit around wiring harness where it passes through the firewall to prevent chaffing.
- 6 - 8 Install Indicator Light and Dash Plate in lower left dash area or where desired. Drill an 11/16" hole at the desired location to mount the indicator light assembly. Install the adhesive backed dash plate by removing the backing and matching the corresponding dash plate hole with the 11/16" hole.
- 6 - 9 Properly assemble the indicator light in the dash plate. Connect the two female connectors on the wiring harness to the spade connectors on the indicator light.

BE SURE TO PROPERLY ROUTE AND SECURE THE WIRING HARNESS TO THE VEHICLE.

INITIAL START PROCEDURE

The *AirDog™* is a self priming system, however, to prevent damage to a dry seal and reducing the life expectancy of the system, it is recommended to prefill the water separator with diesel fuel before initial startup.

- 7-1 Prefill the water separator with diesel fuel.
- 7-2 Turn the starter key to the on/run position.

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

- 7-3 Start engine!

NOTE: Should any installation problems arise, please call, toll free 1-877-463-4373, for assistance (Monday – Friday, 8:00 am – 5:00 pm CST).

Visit our website at www.pureflowtechnologies.com for updated materials and frequently asked questions.