



FUEL BOWL DELETE

REGULATED RETURN FUEL SYSTEM KIT

Fits 03-07 6.0L Powerstroke Diesel - Single or Dual Alternator

NOT INTENDED FOR TRUCKS WITH STOCK FUEL PUMPS!



Installation Guide

DD-60FS-FBD-RRK-V3



**INSPECT CONTENTS OF THIS KIT
THOROUGHLY **BEFORE** STARTING
THE INSTALLATION PROCESS!**

IF YOU FIND A PROBLEM WITH YOUR PACKAGE:

- **KEEP ALL OF THE PARTS & PACKAGING TOGETHER**
- **DO **NOT** ATTEMPT INSTALLATION OF THE PRODUCT**
- **PROMPTLY NOTIFY YOUR SELLING DEALER**
- **PROVIDE DEALER WITH PHOTOGRAPHS IF REQ'D***
- **WAIT FOR FURTHER INSTRUCTIONS FROM DEALER**

***WE RESERVE THE RIGHT TO REQUEST
PHOTOGRAPHS OF PACKAGING OR PARTS
IN ORDER TO PROPERLY ADDRESS ANY
SITUATION INVOLVING EITHER DAMAGED
OR MISSING ITEMS.**

THANK YOU FOR YOUR COOPERATION!

Thank You for purchasing the Driven Diesel FUEL BOWL DELETE Regulated Return fuel system kit! Please read and familiarize yourself with this manual fully before proceeding with the installation of the kit. Also, always work safely. Make sure that there is plenty of light and adequate ventilation, and allow yourself several hours to complete the installation. After reading these instructions, if you feel that the installation is beyond your capability, please have this kit installed by a qualified mechanic.

Finally, the installation of this kit requires exposing the fuel system. Diesel fuel is flammable, and its vapor is explosive; therefore, common sense dictates that there be no smoking or open flame within 50 feet of the workspace. If any fuel spills, contain it and wipe it up immediately. Do not let the fuel stand on any painted surfaces of your vehicle, or damage to the finish may occur. We HIGHLY RECOMMEND having an appropriate fire extinguisher close by!

Please don't hesitate to contact Driven Diesel should you have any questions.

Contents of Driven Diesel 6.0L Fuel Bowl Delete Regulated Return Kit

Please use the following parts list and pictures to become familiar with this kit. ALL of the parts listed below should be contained in your kit. Please notify us if you are missing any parts **BEFORE** starting your installation! We will refer to the different fittings by their part number throughout the installation.

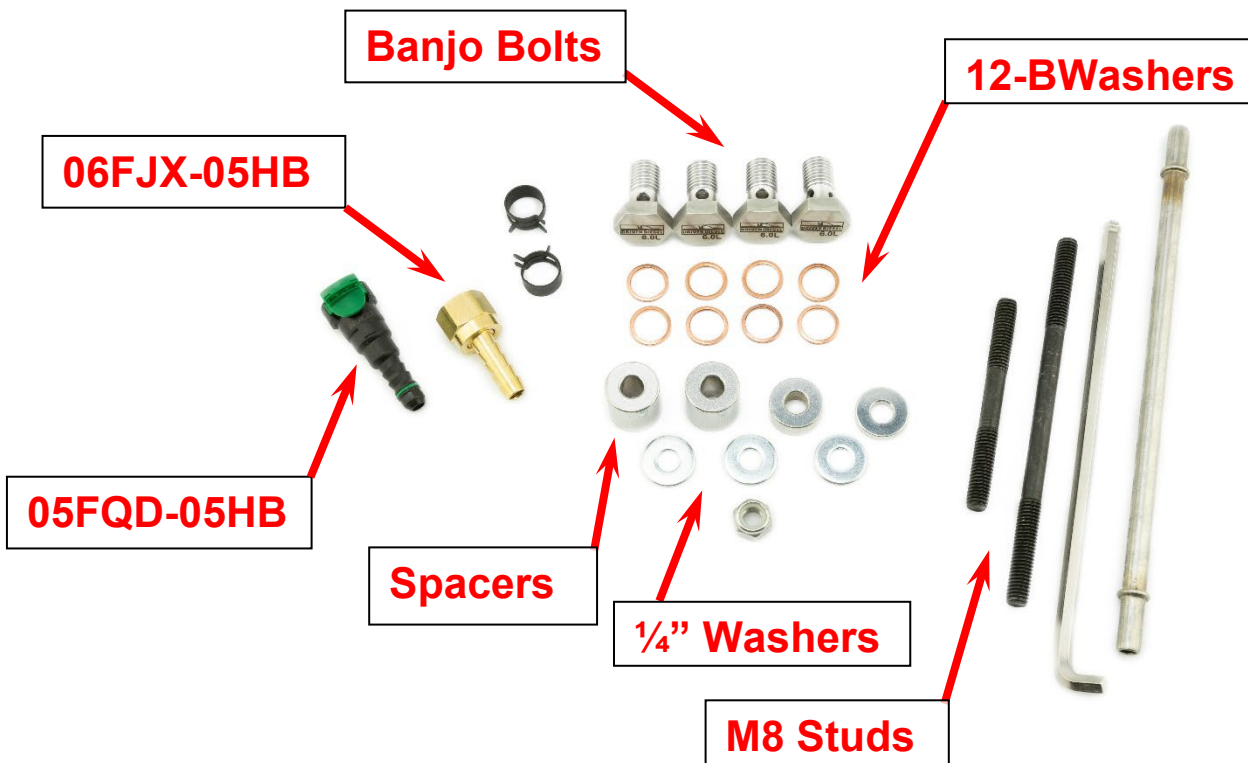
<u>Qty:</u>	<u>Part Number:</u>	<u>Description:</u>
1	60FS-FBDDSF-TUBE	Driver Side Feed Tube Assembly with Rubber Bumper
1	60FS-DSR-HOSE	Driver Side Return Hose Assembly
1	60FS-DSR-TUBE	Driver Side Return Tube Assembly
1	60FS-PSF-HOSE	Passenger Side Feed Hose Assembly
1	60FS-PSF-TUBE	Passenger Side Feed Tube Assembly
1	60FS-PSR-HOSE	Passenger Side Return Hose Assembly
1	60FS-PSR-TUBE	Passenger Side Return Tube Assembly
6'	5/16" 300psi HOSE	5/16" Hose To Build Return Line
1	QD-5/16x8-SS	Fuel Pump Delete Tube (bypasses OEM fuel pump return circuit)
1	60FS-REG-ASSY	Regulator Assembly (with Fittings, Bracket & Gauge)
1	60FS-FBD-ASSY	Custom Machined Fuel Bowl Delete and Bracket Assembly
1	60FS-FBD-HW-PACK	Hardware Pack (Fittings, Screws, etc.) – SEE BELOW
1	60FS-BLOWDOWN	10' Length of Rubber Blowdown Line
1	6mm ALLEN	6mm Stubby Allen Wrench

Hardware Pack Contents:

4	Banjo Bolt	Driven Diesel Stainless Steel High Flow Banjo Bolts
8	12-BWasher	12mm Copper Banjo Bolt Washers
1	M8 x 80mm Stud	8mm x 80mm Stud
1	M8 x 140mm Stud	8mm x 140mm Stud
4	3/4 Diameter Spacers	(2) 3/4" x 3/4", (1) 3/4" x 5/16" & (1) 3/4" x 5/32" Alum. Spacers
3	1/4" Flat Washer	1/4" Flat Washers
1	M8 Nylok	M8 Nylok Nut
1	02MP-Plug	1/8" Male NPT Plug
1	06FJX-05HB	Brass #6 Female AN to 5/16" Hose Barb Fitting (2-Piece)
1	05FQD-05HB	Black Polymer 5/16" Quick Disconnect to 5/16" Hose Barb Fitting
2	PC09	Black Self Tightening Pinch Clamps



1. 5/16" RETURN HOSE 2. 60FS-DSR-HOSE 3. 60FS-PSR-HOSE 4. 60FS-PSF-HOSE
 5. 60FS-DSR-TUBE 6. 60FS-PSR-TUBE 7. 60FS-PSF-TUBE 8. 60FS-FBDDSF-TUBE



Use the above diagrams to identify the different hoses and fittings in the kit

IMPORTANT NOTE ABOUT DELETING THE FILTER BOWL:

Due to the fact that the fuel filter bowl and the oil filter bowl are an integrated unit, you have a few different options for deleting the fuel filter bowl. You need to be aware of these options and make sure you are prepared for whichever you choose BEFORE you begin the installation of this kit. Your options are:

- A. Retain YOUR Factory Oil Filter Bowl – in order to do this, you will need to remove the stock oil/fuel filter assembly, cut the fuel filter bowl off of the oil filter bowl and clean up the cut area of the oil filter bowl with a grinder or similar. Then thoroughly clean the oil filter bowl and reinstall it with a new filter and o-ring.**
- B. Install a replacement oil filter bowl that does not require modification. We offer this part as an option when ordering this kit. Simply remove your old filter bowl assembly and install the replacement oil filter bowl with a new oil filter & o-ring.**
- C. Run a remote oil filter assembly (like those found in a Bullet Proof Diesel oil cooler kit, or similar). In this instance, you will not have any oil filter bowl in the engine valley. NOTE: SHOULD BE INSTALLED BEFORE OR DURING INSTALL OF THIS FUEL BOWL DELETE FUEL SYSTEM KIT!**

Some of the Basic Tools Needed for Installation:

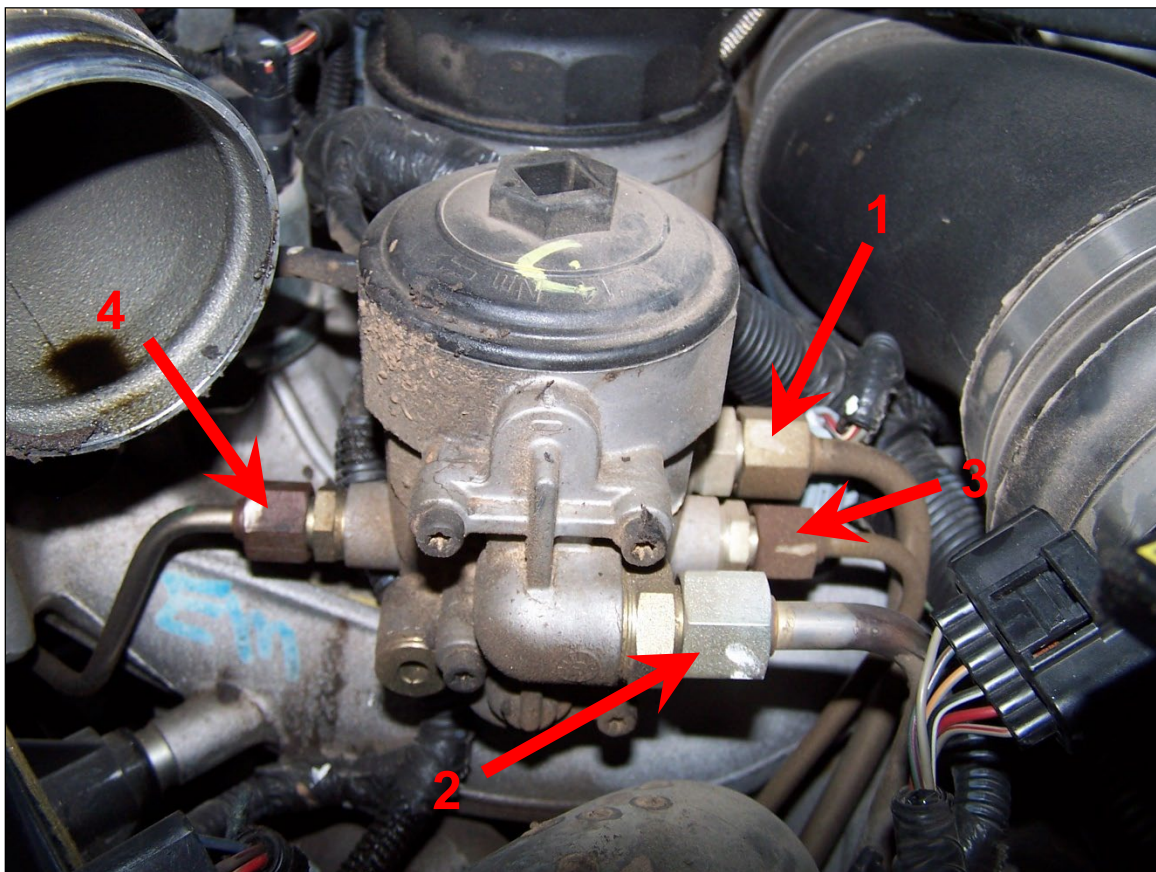
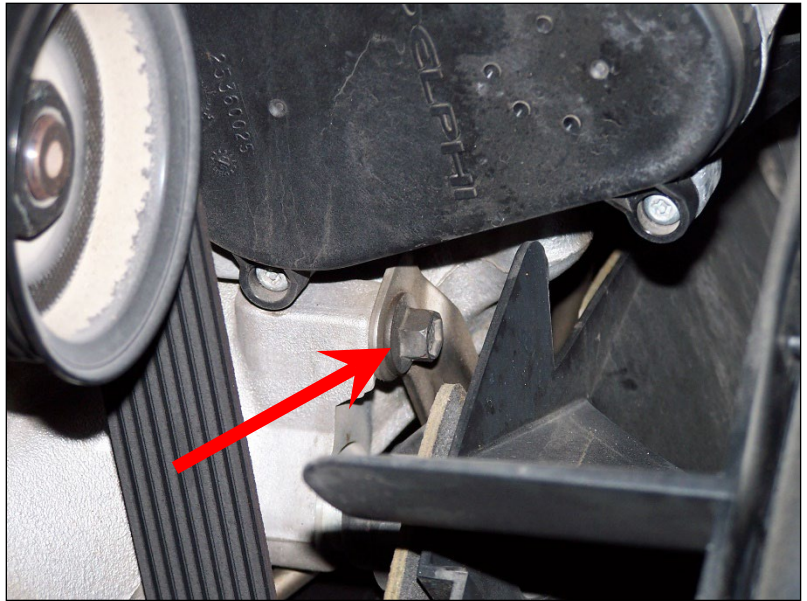
Standard Combination Wrench Set
3/8" Drive Metric Socket Set
T-27, T-30 and T-45 Torx Wrenches
Screw Driver Set
5/32" Hex "Allen" Wrench
Bolt Cutters, Sharp Shears or Dremel Tool

Metric Combination Wrench Set
1/4" Drive Metric Socket Set
1/2" Drive Breaker Bar
Diagonal Cutting Pliers
Anti-Seize
Penetrating Oil

Let The Fun Begin!

1. Begin by disconnecting both batteries (negative cables first, then positive). TIP: Write down your radio stations first.
2. To give it time to work, spray the 2 nuts on the driver side exhaust manifold to up-pipe flange with penetrating oil. Hint, you're doing this from under the truck.
3. Remove entire airbox / intake system.
4. Remove both driver side and passenger side intercooler tubes.
5. Using 1 or 2 small flat blade screwdrivers, remove the fan shield from the top of the fan shroud. You will need to pull the rubber trim back to see where it needs to be pried back to be released from the shroud.

6. Remove fuel from the filter bowl by either removing the cap and sucking it out with a shop syringe or removing the test port plug and draining it into a cup or rag.
7. If you have a “dual alternator” truck, the lower alternator will need to be removed, along with its mounting bracket.
8. Locate and remove the bolt for the passenger side fuel line retaining bracket using a 10mm wrench. (see photo at right)
9. Disconnect the passenger side fuel line (#4 in image below) from the filter bowl using an 11/16” wrench.
10. Remove the passenger side banjo bolt and copper washers. Set these aside, they will NOT be reused.
11. Cut the passenger side fuel line in the middle and remove both pieces. This can be done with a sharp pair of shears, bolt cutters or a die grinder. If you use a die grinder, be sure to put tape or some other protection over the exposed fuel port in the head first.
12. Disconnect the driver side fuel line (#3 below) from the filter bowl using an 11/16” wrench.
13. Remove the driver side banjo bolt, washers and finally the driver side fuel line.



1. Fuel Supply Line (banjo style in later trucks)
 3. Driver Side Fuel Line

2. Fuel Return Line
 4. Passenger Side Fuel Line

14. Disconnect fuel Supply and Return lines from filter bowl using a 13/16" wrench (#1 and #2 in photo above). These lines will NOT be re-used. We recommend disconnecting the flexible fuel line quick disconnect fittings (using a fuel line release tool) from the other end, removing the bolt from the retaining bracket on the front of the head and completely removing the metal lines from the engine. See the image at the top of page 12 for clarification.

IF YOU ARE RUNNING A BULLET PROOF DIESEL OIL COOLER KIT, OR ANY OTHER SIMILAR KIT THAT NO LONGER USES THE STOCK OIL FILTER ON THE ENGINE: REMOVE THE STOCK OIL FILTER HOUSING IF IT IS STILL INSTALLED. IT IS NO LONGER NEEDED AS THE MOUNTING POINT FOR THE STOCK FUEL FILTER BOWL. SIMPLY REMOVE THE (4) T-45 TORX BOLTS FROM THE BASE OF THE OIL FILTER HOUSING AND REMOVE THE HOUSING FROM THE TRUCK AT THIS TIME. SKIP FORWARD TO STEP 23

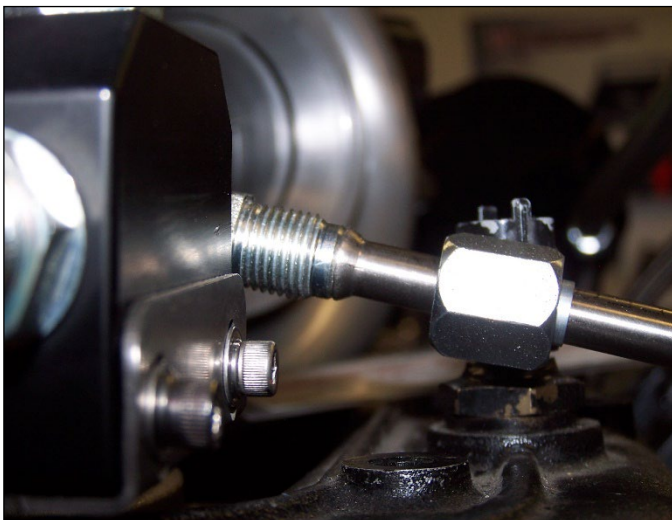
15. Remove the oil filter cap and oil filter. This will allow the oil in the oil filter bowl to drain back to the oil pan.
16. Take note of the wiring harness that passes between the fuel and oil filter bowls. In some years it is below the bridge that connects the two filter bowls, in others it is above the bridge. If the harness is ABOVE the bridge, you will need to remove the standpipe from the oil filter housing before proceeding. If the harness is below the bridge, skip ahead to step 18.
17. Locate the T-30 Torx bolt that retains the black plastic standpipe in the bottom of the oil filter housing and remove it. Once the bolt is removed, rotate the standpipe counterclockwise to release it and lift it out of the filter bowl. Set the standpipe aside as you will need to reinstall it in a later step.
18. Once the oil filter bowl has drained, remove the (4) T-45 Torx bolts at the base of the oil filter bowl. At this point you should be able to remove the oil/fuel filter bowl assembly from the truck. If your wiring harness is routed above the bridge, you may have to twist and turn the bowl assembly to get it out from under the harness.
19. If you are going to modify and keep your current oil filter bowl, now is the time to do so. We recommend cutting the fuel filter off as close to the oil filter bowl as possible (leaving the least amount of the "bridge" sticking out of the oil filter bowl when done) and then using a grinder to eliminate any sharp edges. Once you have made your modifications to the bowl, THOROUGHLY wash and dry it to prevent any debris or contamination from entering your engine after reassembly.
20. If removed, reinstall the oil filter stand pipe and its T-30 retention bolt. Torque the bolt to 27in/lbs (yes...INCH pounds!).
21. If you are using a new oil filter bowl & o-ring, remove and discard the old o-ring that sealed the base of the oil filter bowl to the top of the oil cooler cover and install the new o-ring in its place.
22. Set your oil filter bowl in place and loosely start (3) of the original T-45 Torx bolts. Tighten these bolts each a little at a time until snug. Torque the (3) T-45 Torx bolts to 11ft/lb.
23. Depending on your setup, you will use either the LONG (140mm) or the SHORT (80mm) stud for this step. If you are using a STOCK FORD OIL COOLER, you need the LONG stud. If you are using a BULLETPROOF DIESEL REMOTE OIL COOLER, you need the SHORT stud. Locate the oil filter bowl mounting hole that is farthest forward on the driver side. Its right against the bend of the intake manifold. Thread the stud "finger tight" into this hole.

24. Install the aluminum spacers over the previously installed stud. This will be the starting point for positioning the fuel bowl delete bracket. See the yellow box below Step 27 for notes about adjusting spacer height for your specific engine.
- OEM OIL COOLER** : Use (1) of each size aluminum spacer (you will have one tall spacer left over).
 - BULLETPROOF DIESEL OIL COOLER KIT** : Use ALL (4) aluminum spacers.
25. Set the Driven Diesel Fuel Bowl Delete block with attached bracket over the stud. The rear fitting should be pointing toward the driver side and slightly down, and the front fitting should be pointing toward the passenger side and slightly up. The jamb nuts on both fittings should still be loose so the 90° fittings can be rotated as needed.
26. Locate the 60FS-FBDDSF-TUBE, along with a Banjo Bolt and (2) Copper Washers. Even though it is not shown in the pictures, leave the rubber bumper installed on the tube.
27. Drop the banjo end of the 60FS-FBDDSF-TUBE down behind the thermostat housing. Once it comes out below the thermostat housing, you can hold it from the top and position it to easily insert a banjo bolt with a copper washer installed through the banjo end of the tube. Install a 2nd copper washer on the banjo bolt, so there is one on each side of the banjo fitting on the tube. Then carefully rotate the tube into position on the front of the head and loosely start the banjo bolt into the threaded port. Install the bolt hand tight for now, the tube should still move a little until we get it connected to the bowl delete fitting.

Due to variances in castings, cylinder head machining or other aftermarket part usage, the next step may require a little bit of adjustment to get things aligned properly. Alignment adjustments will be made by rotating the rear 90° fitting on the bowl delete block and/or changing the spacers under the mounting bracket. If the bracket needs to go up more, add 1 washer at a time on top of the spacers (but under the bracket). If the bracket needs to go down, remove the small aluminum spacer, replace it with 2 washers and check again. Remove 1 washer at a time to further adjust.

The ultimate goal is to get the tube and the 90° fitting aligned so that they are in a straight line and the tube nut starts easily. When properly aligned, the bracket should be sitting flat on the spacers such that tightening the nut doesn't put any significant stress in the assembly.

See the images below for further clarification.



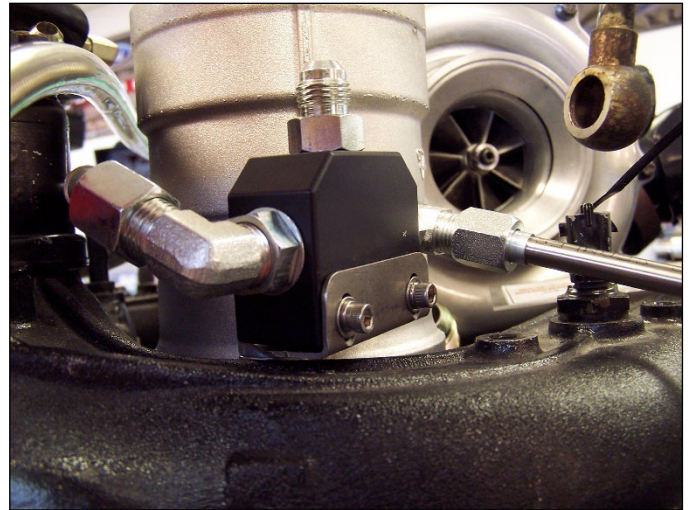
Side View – Tube and Fitting Aligned



Top View – Tube and Fitting Aligned



Spacers, Bracket, Top Washer and Nut Installed



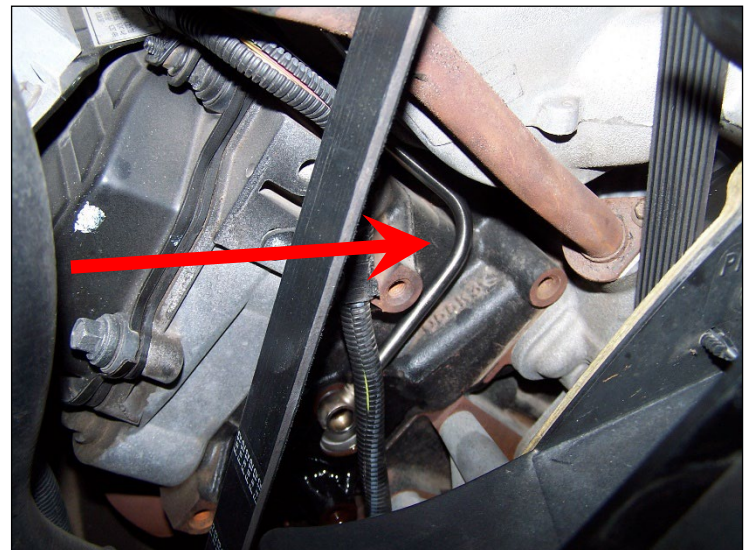
Bowl Delete Block Installed & Tube Connected

NOTE: Due to recent changes to accommodate the ODawg S2 intake manifolds, the bowl delete bracket and block will sit higher above the intake manifold than pictured here.

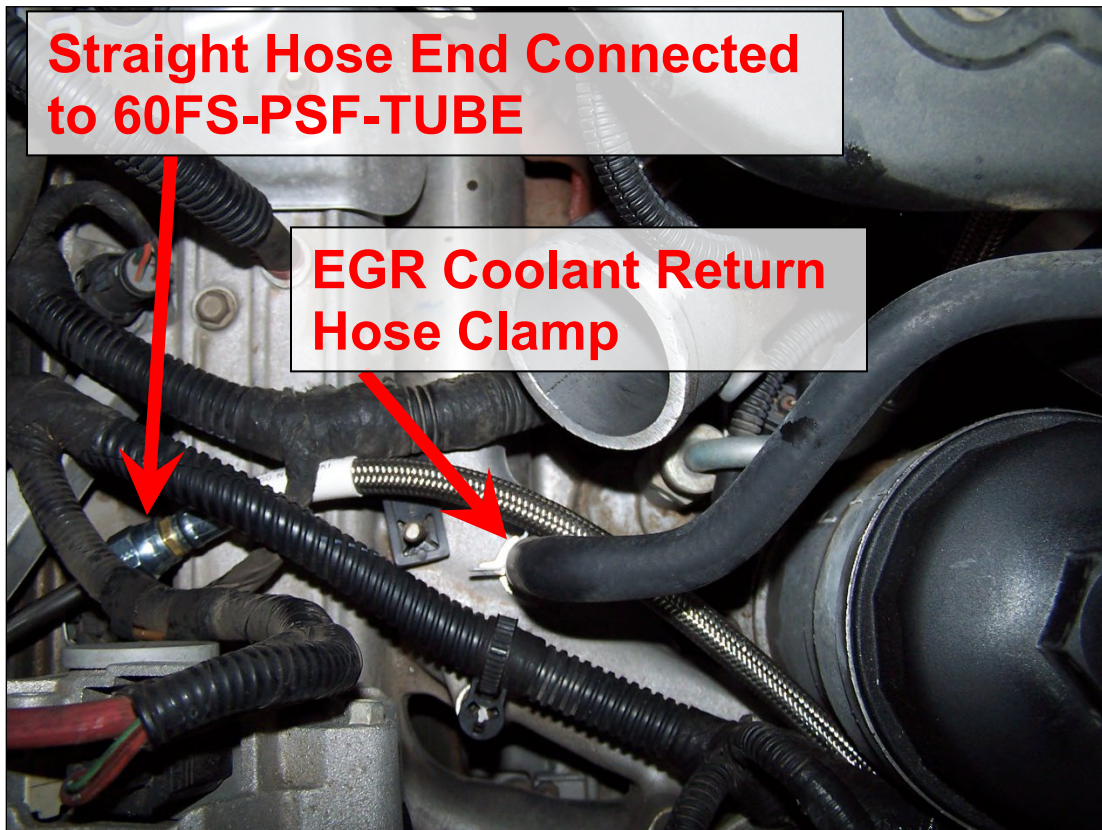
28. Once you get the tube nut at the top of the 60FS-FBDDSF-TUBE started, tighten it "Finger Tight". Then go back to the banjo fitting at the other end of the tube and finish tightening it to "Finger Tight". At this point, the tube should properly aligned.
29. Tighten the banjo bolt to **20ft/lbs MAX (1/16-1/8 turn past "finger tight"!) If you do not have an accurate, short handled, small drive torque wrench for this, please just tighten with a wrench to the point that it stops, then just a "bump" tighter to seal the washers.**
30. Tighten the tube nut at the top of the 60FS-FBDDSF-TUBE. It's a good idea to use a second wrench on the 90° fitting so the bracket or tube don't get bent. You can also tighten the locknut on the 90° fitting in the rear port of the fuel bowl delete block.
31. Tighten the nylok nut that retains the fuel bowl delete bracket to the stud.
32. Locate the 60FS-PSF-TUBE and 60FS-PSF-HOSE.

NOTE: The hoses shown in these installation instructions do not have the protective layer installed in order to make them more visible in the photos. We highly recommend leaving the black covering on the hoses to prevent chaffing adjacent components as the S.S. braiding is quite abrasive.

33. Position the 60FS-PSF-TUBE as shown in the photo at right.
34. Place a new copper banjo washer onto a Driven Diesel banjo bolt, insert the bolt in the banjo end of the 60FS-PSF-TUBE and install another copper washer on the other side. Install the banjo bolt in the port on the front of the passenger side cylinder head and tighten to **20ft/lbs (same as prior banjo fitting)**
35. Position the 60FS-PSF-HOSE as shown in the photo on the next page. Loosely connect the straight end of the hose to the the 60FS-PSF-TUBE.



36. Before proceeding, check the hose clamp on the EGR coolant return hose for interference with the 60FS-PSF-HOSE and reposition as necessary. See photo below.



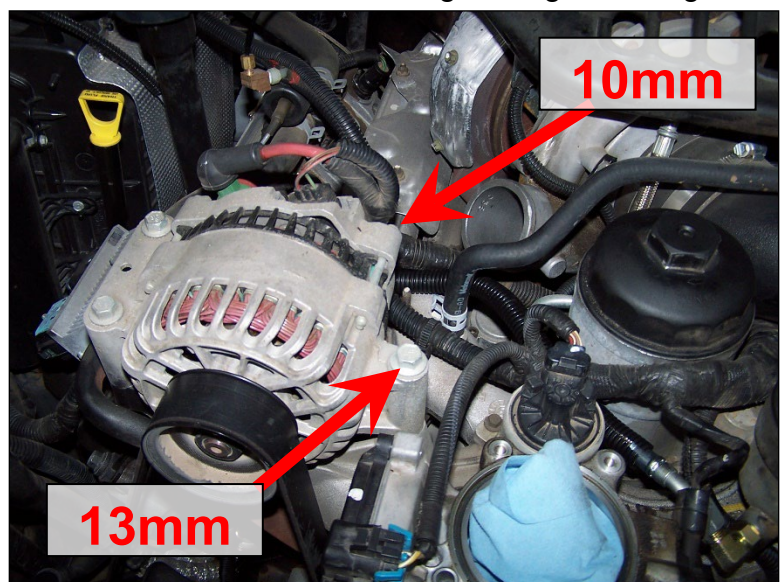
37. Connect the 45° fitting of the 60FS-PSF-HOSE to the front fitting of the fuel bowl delete block.

38. Adjust the angle of the fitting in the fuel bowl delete block so that the 45° hose end is pointing slightly downward and tighten the locknut (you'll need to hold the fitting with one wrench while tightening the locknut with another). See TOP RIGHT image on page 7 for orientation.

39. Tighten both of the 60FS-PSF-HOSE fittings, first at the fuel bowl delete and then at the 60FS-PSF-TUBE. Make sure that the hose doesn't kink or twist when tightening the fittings. Using a 3rd "backup wrench" on the brass nut on the hose side of the straight fitting to prevent it from twisting may be necessary.

40. Using a 13mm and 10mm socket, remove the alternator bolts shown in the photo at right.

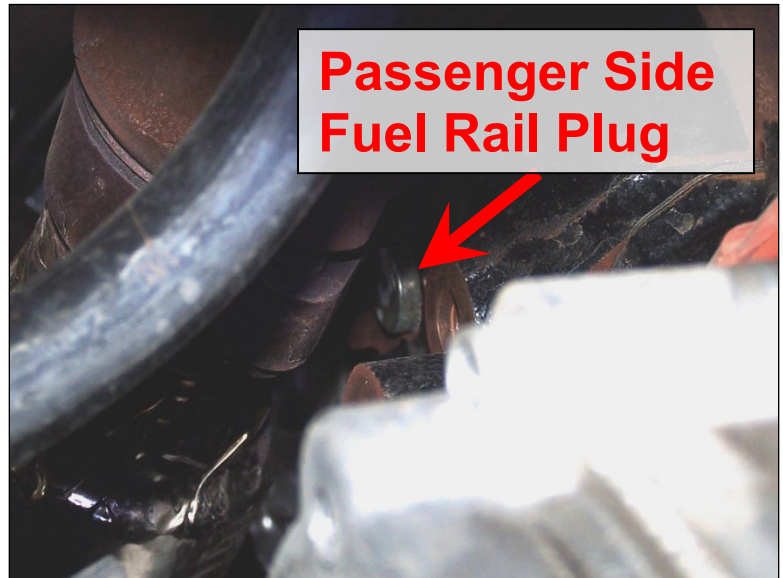
41. Locate the 60FS-REG-ASSY. The large hole in the regulator bracket is placed over the alternator boss where the 13mm bolt was removed and the small tab lines up where the 10mm bolt was.



42. Put a light coating of anti-seize on the threads of both bolts and reinstall them. The 13mm bolt gets tightened to 35ft/lbs.

NOTE: In the next steps we will be working on the fittings on the rear of the cylinder heads. Access to these fittings is tight and can be difficult. We've supplied a long handled 6mm allen wrench to help, but because the fittings don't necessarily orient themselves ideally when installed, you may need to modify our tool (shorten or bend the handle) or use one of your own. These fittings are tight, but once broken free they can usually be removed quite easily by hand.

43. Using the supplied long handle 6mm allen wrench, remove the plug from the rear of the passenger side cylinder head. Use the photo at right to help locate the plug, it will be the only silver colored fitting on the rear of the head. This is the easier of the 2 plugs to remove. NOTE: there is still fuel in the rail and it WILL come out when you remove the plug, have some paper towels or shop rags handy!



HINT: The passenger side fuel rail port can be accessed by reaching OVER the exhaust up-pipe. Once the fitting is broken loose, reach over the pipe to spin it out by hand. The same will work for installing the new fitting in a later step.

44. Using a 10mm closed end wrench (preferably) and a 1/2" deep socket, remove the bolts/nuts that secure the **driver** side up-pipe to the driver side exhaust manifold. You should have soaked these in penetrating oil earlier in step 2. See the photo at right.



45. Once the bolts are removed, the pipe needs to be pushed off the manifold toward the rear of the truck to allow additional clearance. This clearance will allow more room for tools as well as the room needed to get the old fitting out and the new Driven Diesel fitting in. See the top photo on the next page.

46. Using the supplied 6mm long handle allen wrench, remove the plug from the rear of the driver side cylinder head. Remember to have your paper towels or shop rags handy!

NOTE: You are now ready to start installing the fuel lines on the rear ports of the engine. It will be very helpful to have an assistant at this point to help guide the lines down from the top and hold them while you install the banjo fittings.

47. Locate the 60FS-PSR-TUBE. From the top, feed the banjo end of the tube down the back of the passenger side cylinder head. The top end of the tube should end up just above the rear fuel injector wiring harness as seen in the photo to the right.

48. Place a new copper banjo washer onto a new Driven Diesel banjo bolt. Insert the bolt through the banjo end of the tube and install the second new copper banjo washer.

49. Start the banjo bolt into the port on the rear of the passenger side head, making sure to align the tube into the locating groove before running the bolt all the way in. Tighten the bolt to **20ft/lbs (same as prior banjos)**.

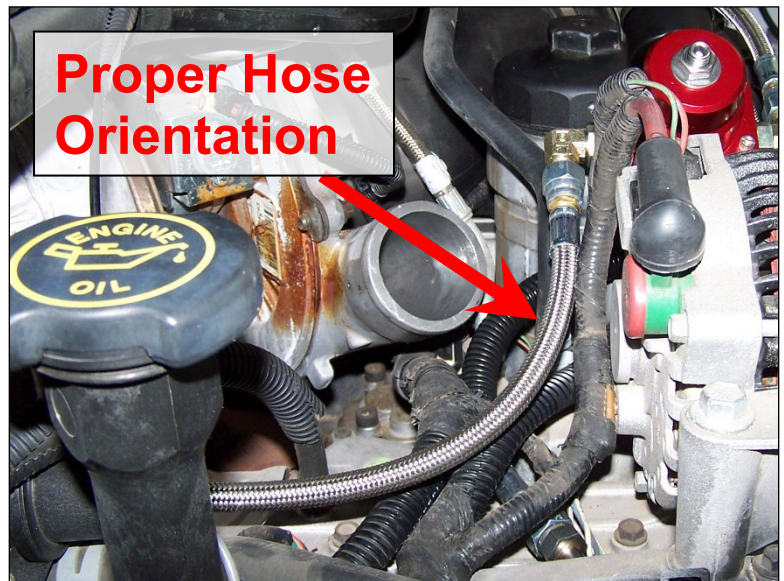
50. Locate the 60FS-DSR-TUBE. From the top, feed the banjo end of the tube down the back of the driver side cylinder head. The top end of the tube should end up just above the rear fuel injector wiring harness as seen in the photo to the right.

NOTE: There is a heat shield on the rear of the engine. The driver side tube must be between the heat shield and the engine, toward the inside of the bolt boss for the shield. If the tube will not align with the port on the cylinder head, it is probably on the wrong side of the bolt boss for the heat shield, lift it out and guide it down on the other side of the boss and try again.



51. Place a new copper banjo washer onto a new Driven Diesel banjo bolt. Insert the bolt through the banjo end of the tube and install the second new copper banjo washer. This is the hardest fitting in the kit to install, it may be helpful to use a thin pair of needle nose pliers or other method of holding the parts as it's very hard to get more than just a few fingers into this space.
52. Start the banjo bolt into the port on the rear of the driver side head, making sure to align the tube into the locating groove before running the bolt all the way in. Tighten the bolt to **20ft/lbs (same as prior banjos)**.
53. Locate the 60FS-PSR-HOSE. Connect one end to the rear port on the fuel pressure regulator and the other to the 60FS-PSR-TUBE coming up from behind the passenger side cylinder head.

54. Adjust the angle of the fitting on the regulator so that the hose is running down at an angle but is not bound up or pressed too tightly against the wiring harness(es). Tighten the locknut on the regulator fitting while holding the fitting with a second wrench. See the photo at right.



55. Tighten the rear hose end at the 60FS-PSR-TUBE first.
56. Now tighten the hose end at the regulator, you will probably need to use a second wrench on the copper nut in the middle of the fitting to keep the hose from twisting while you tighten it.

57. Locate the 60FS-DSR-HOSE. Connect one end to the front port on the fuel pressure regulator and the other to the 60FS-DSR-TUBE coming up from behind the driver side cylinder head.

58. Adjust the angle of the fitting on the regulator so that the hose is lightly laying on the intake tube. Tighten the locknut on the regulator fitting while holding the fitting with a second wrench. See the photo at right.



59. Tighten the rear hose end at the 60FS-DSR-TUBE first.
60. Now tighten the hose end at the regulator, you will probably need to use a second wrench on the copper nut in the middle of the fitting to keep the hose from twisting while you tighten it.

61. Before we make the return connection from the bottom of the regulator, we need to identify the OEM return line we will be connecting to. Removal of the stock pump is optional, unless you need clearance for something else. The (2) smaller hoses at the top of the pump are the fuel return to the tank, **we will be using the REAR facing RETURN (upper) hose only.**

62. Locate the QD-5/16x8-SS tube (8" long straight tube with 2 male quick disconnects). Insert one end of this tube into the REAR FACING return hose identified in the previous step UNTIL IT CLICKS and requires the use of a removal tool.

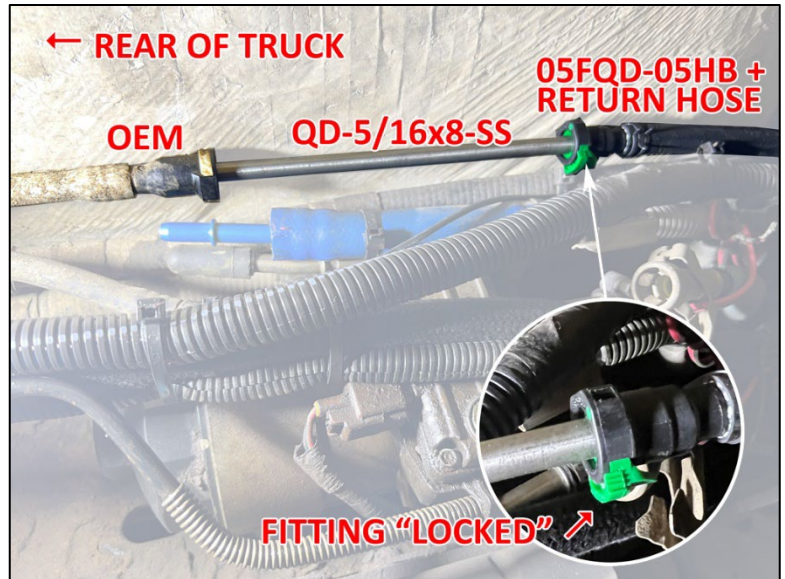
63. Install the black polymer 05FQD-05HB fitting onto the QD-5/16X8-SS tube from the previous step, making sure it securely clicks into place. Push in the lock button to secure.

64. Using the images at right, install the 2-piece Brass 06FJX-05HB fitting using a black PC09 clamp onto one end of the 5/16" return hose, then connect that hose to the 45° fitting on the bottom of the regulator. You can orient the 45° fitting and lock down the jam nut now as well.

65. Route the other end of the 5/16" return hose over to the drivers side front of the engine, following the path the OEM fuel lines take down to the frame. Continue following the OEM fuel lines back to the 05FQD-05HB that you installed in step 63, making sure to route the hose so it doesn't come in contact with hot exhaust manifolds or the steering shaft.

66. Line the 5/16" hose up with the side of the 05FQD-05HB to determine where to trim off the excess, making sure that you are not pulling the hose tight and will have a little "slack". Trim the hose, install the remaining PC09 clamp and then push the hose over the barb on the polymer fitting, securing with the clamp when complete. Secure the return hose with cable ties if needed/desired.

67. Locate the supplied fuel pressure gauge. This gauge has pipe thread, so a sealant like Teflon tape is required. Apply your chosen sealant to the threads and install the gauge into the port on the front of the fuel pressure regulator and tighten.



FUEL SUPPLY CONNECTION

The Driven Diesel Fuel Bowl Delete Regulated Return Fuel System was NOT designed to be used with the stock Ford fuel pump. Due to the fact that there are a number of different fuel supply systems that can be used with this Regulated Return, we cannot provide specific instructions for every possible configuration. The information below is provided to help you locate whatever parts are necessary to connect your chosen fuel supply system to our Fuel Bowl Delete Regulated Return Kit.

The Fuel Inlet Port on top of the Driven Diesel Fuel Bowl Delete Block is a STANDARD #6 MALE AN type fitting. If you are using a Driven Diesel Fuel Supply System, this will match up perfectly with the hose and fittings we supply in that kit. If you are using a FASS or AirDog, we do offer our "FASS/AirDog Install Kit" to make the connection of your pump easier. If you are using another type of fuel pump or delivery system, you may need additional parts. We recommend using a 90° #6 AN hose end to connect to the fuel bowl delete inlet fitting. It is generally easiest to use all #6 hose and fittings from the outlet of your Post-Pump fuel filter all the way up to the inlet of the Fuel Bowl Delete.

YOU'RE ALMOST DONE!

Before proceeding, it's time to **DOUBLE CHECK EVERY** fitting and bolt for proper tightness. Carefully go over each fuel line at both ends, checking both the line and the fittings for tightness. Once you've verified all of the fuel lines and fittings, check any bolts that have been removed and reinstalled up to this point. Once reassembly is complete, some of these fittings and hoses will not be easily accessible should you miss one and leave it loose!

68. Now we need to check for leaks. Start by turning the key to the "on" position (do not crank or start the engine) and let the fuel pump run until it shuts off. When the fuel pump shuts off, turn the key to the "off" position.
69. Repeat the above 8-10 times to refill fuel lines and rails and purge them of air.
70. Now, cycle the key to the "on" position and adjust the fuel pressure by turning the set screw in the middle of the regulator **CLOCKWISE** (in) until the pressure reaches 65psi. You may have to loosen the locknut on the regulator in order to turn it far enough and you may have to cycle the key more than once if the pump shuts off before you have it set.
71. Cycle the key to the "on" position and check each fitting and hose for leaks. The system is under pressure now so they should be pretty apparent. You may have to cycle the key several times to inspect every fitting and hose connection...take your time, this is important!
72. If any leaks are found, resolve them before proceeding. It's much easier to address them now than when everything is back together later.

Now that we're sure that there are no leaks and everything is tight, there are just a few more steps to get this wrapped up. The fuel pressure regulator has a "boost reference port" that is commonly used in super/turbocharged gas engine applications to raise fuel pressure under boost. We do NOT use this connection in our fuel system for boost reference. Instead, we have provided a length of poly tubing to route that port to atmosphere under the truck, just in case the diaphragm ever fails. We would rather dump the fuel on the ground under the truck than into the MAP line to the engine (run away hazard) or all over the top of the engine (fire hazard).

73. Locate the 60FS-BLOWDOWN line. Using the photo at right, connect the line to the brass nipple in the top half of the fuel pressure regulator. Route and secure this line, avoiding heat sources, so that the other end is under the truck and is pointing down at the ground. See #3 on the Troubleshooting Page for details.

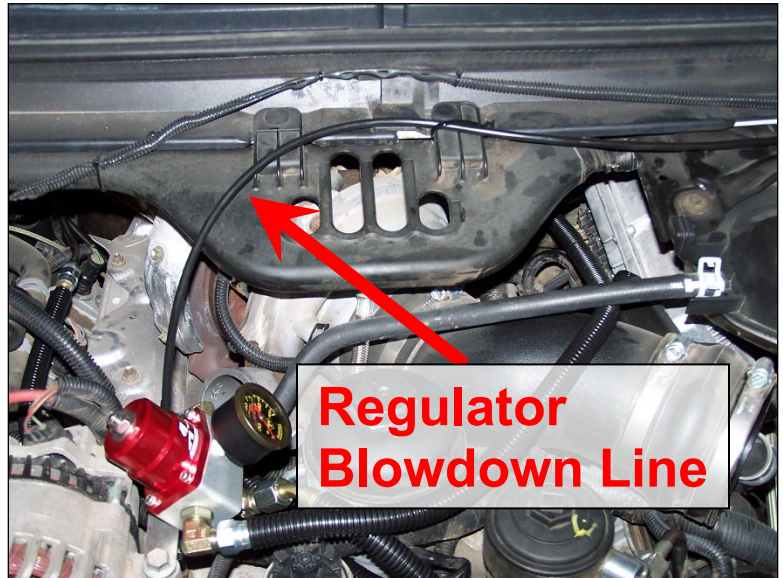
74. While you're under the truck working on the Blowdown line, reconnect the up-pipe to the exhaust manifold and tighten the nuts to 20ft/lbs.

75. Starting with step 7, reverse the disassembly steps and reinstall the alternator (dual alternator trucks only), intercooler tubes, intake and battery cables. Leave the fan shroud off until the engine has been run and a final leak check has been completed.

76. Start the engine and allow it to idle. While it's idling, thoroughly inspect for leaks one more time as everything is once again under pressure and flowing constantly. Any remaining air in the system will also be purged during this time.

77. If any leaks are detected, shut the truck off and resolve them before proceeding. Come back and perform another leak check (step 67) and proceed once the problem has been resolved.

78. Once the system is leak free and the truck has had a few minutes to purge any remaining air and start to build some engine heat, adjust the fuel pressure and tighten the fuel pressure lock nut. We recommend setting the fuel pressure to 65psi at full operating temperature.



CONGRATULATIONS! You've just completed the installation of the Driven Diesel 6.0L Regulated Return Fuel System Kit! Please Note: It is recommended that fuel filter service intervals be kept to no less often than every 15k miles (or 1x per year...whichever is first) due to the increase in fuel flow across the filter with a Regulated Return type fuel system.

Common Fuel System Issues – Troubleshooting Guide

If you run into any problems after the installation of your fuel system, please check this page for guidance before calling your dealer or Driven Diesel for help. The issues below represent the most common causes for technical support calls.

1. **THE REGULATOR MUST BE BROKEN – PRESSURE IS LOWER THAN DESIRED** – This is a multi-part problem, but the first thing you need to know is that if you don't have fuel spraying out of the hose connected to the brass nipple in the top half of the regulator, the regulator is **NOT** broken and is working fine. The fuel pressure regulator supplied with our kits is extremely simple, and the **ONLY** failure we have ever seen, since we started building fuel systems in 2001, has been a punctured diaphragm...which will leak fuel from the brass nipple. See below for some specific examples of where to look for your fuel pressure problem:
 - a. **AIRDOG II** – If you have an AirDog II/4G/5G pump that has replaced your factory fuel pump, you will need to adjust the fuel pressure at the pump. The ADII pumps are delivered from the manufacturer with the internal regulator set at 55psi. Locate the adjuster screw / jambnut. It is best to adjust the DRIVEN DIESEL fuel pressure regulator up (clockwise) several turns past the max pressure, THEN have someone adjust the AirDog pressure adjuster until the DRIVEN DIESEL gauge shows about 75-80psi. Finally, adjust the DRIVEN DIESEL regulator down to 60-65psi. This will leave you with about 10-15psi of "overhead" pressure, which will help keep the pressure at the desired level when you are heavy on the throttle and the injectors are using more fuel from the rails.
 - b. **FASS** – If you have a high pressure FASS pump and are unable to get 65psi at the Driven Diesel fuel pressure regulator, you may need to update the regulator in your FASS pump. Older Grey or Black High Pressure FASS pumps were delivered with a 55psi regulator spring. Newer Black FASS pumps (Serial Number S399570 OR HIGHER) have a 65psi regulator spring. ALL of them can benefit from our 75psi regulator upgrade, to ensure that you are able to get the proper 65psi at the engine, with pressure overhead for high demand situations. Check your Driven Diesel dealer for the "FASS Pump 75psi Regulator Kit".
2. **FUEL LEAKING FROM BRASS NIPPLE OR RUBBER TUBING UNDER TRUCK** – The brass nipple in the top half of the fuel pressure regulator is a "boost reference port". This is used to increase fuel pressure as boost increases...**IN GASOLINE APPLICATIONS!** We do NOT use this port in diesel applications because it poses serious risk of a "runaway" situation should the diaphragm in the regulator fail. Instead, we run a long piece of poly tubing from this port to a location under the truck, to make sure that fuel is not sprayed all over the engine in the event of a diaphragm puncture. In the event of a punctured diaphragm, contact us at 623-582-4404 to purchase a replacement.

S DIESEL, LLC (dba STRICTLY DIESEL AND/OR DRIVEN DIESEL) WARRANTY AND LIABILITY POLICY

MOST OF THE PRODUCTS SOLD BY S DIESEL, LLC, ARE DESIGNED TO INCREASE VEHICLE PERFORMANCE...USE AT YOUR OWN RISK!

Do not install or use any product(s) purchased from S DIESEL, LLC ("S DIESEL") until you have carefully read the following Warranty and Liability Policy (the "Warranty").

PRODUCT WARRANTY POLICY

Subject to the limitations, exclusions, and qualifications set forth below, the product or the products made and sold by S DIESEL (the "S Diesel Product" or "S Diesel Products") are warranted to Buyer as set forth in this Warranty. The installation of the S Diesel Products indicates that Buyer has read, understands and agrees to the terms and conditions of this Warranty. Any warranty on products that are made by another manufacturer which are resold by S DIESEL to Buyer is made to Buyer by the manufacturer of such products in accordance with and subject to all conditions and limitations of the manufacturer's warranty in effect on the date of the purchase by Buyer. S DIESEL makes no warranties to Buyer, express or implied, with respect to such products that are made by another manufacturer.

LIMITED WARRANTY

The S Diesel Products (except S Diesel Products specified to have different warranty terms) are warranted to be free from defects in material and workmanship, under normal use and service for a period (the "Product Warranty Period") of one (1) year from date of delivery to Buyer, unless S DIESEL performs the work installing the S Diesel Products, in which case the Product Warranty Period shall be extended to equal the Service Warranty Period (as defined below under "SERVICE WARRANTY POLICY"). S DIESEL's liability under this Warranty is limited to repair or replacement at its option, subject to the provisions set forth herein, of any S Diesel Products which upon examination S DIESEL are found to be defective. Buyer shall prepay cost of transportation of defective S Diesel Products to S DIESEL for inspection.

S DIESEL shall not have any responsibility under this Warranty unless (1) the defect in an S Diesel Product results in a claim arising within the Product Warranty Period, measured from the date of delivery to Buyer, (2) the S Diesel Product, if installed by an installer other than S DIESEL, was properly installed, (3) the S Diesel Product was normally maintained and not subject to misuse, negligence or accident, and (4) the S Diesel Product, system components and/or accessories were not repaired or altered in such a way that in the judgment of S DIESEL the S Diesel Product's performance or reliability was adversely affected.

EXCLUSIONS

Any of the above warranties by S DIESEL shall not apply if Buyer's vehicle is in an accident, misused, neglected, altered from the S Diesel Product's manufacturer original designs or specifications or serviced in connection with a warranty claim hereunder without prior written approval of S DIESEL.

REMEDIES EXCLUSIVE

Repair or replacement of defective S Diesel Products in accordance with the Limited Warranty above shall be Buyer's exclusive remedy for and shall constitute satisfaction of any and all liabilities of S DIESEL with respect to any defect in any S Diesel Product whether based in warranty, contract, tort, negligence, strict liability or otherwise.

DISCLAIMERS AND LIMITATIONS

THE EXPRESS WARRANTIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, CONDITIONS AND TERMS AS TO QUALITY OR FITNESS OF ALL PRODUCTS SUPPLIED BY S DIESEL TO BUYER, WHETHER WRITTEN, ORAL OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH OTHER WARRANTIES, CONDITIONS AND TERMS ARE HEREBY DISCLAIMED AND EXCLUDED BY S DIESEL. IN NO EVENT SHALL S DIESEL BE LIABLE FOR ANY LOSS OF ACTUAL OR ANTICIPATED PROFITS, LOSS OF ANTICIPATED BUSINESS, COST OF SUBSTITUTE PRODUCTS, LOSS OF USE OR DOWNTIME COSTS OR DELAY CLAIMS (WHETHER DIRECT OR INDIRECT) NOR FOR ANY OTHER SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR RELATING TO THIS WARRANTY OR THE SUPPLY OF S DIESEL PRODUCTS TO BUYER, WHETHER BASED IN WARRANTY, CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE. BUYER ACKNOWLEDGES THAT (A) THE PRODUCTS PURCHASED FROM S DIESEL WILL BE USED IN CONNECTION WITH ACTIVITIES, UNDER EXTREME CONDITIONS AND/OR SUBJECT TO MODIFICATIONS REQUESTED BY BUYER FOR WHICH THE PRODUCTS MAY OR MAY NOT BE SUITABLE; (B) THE WARRANTY OF SUCH PRODUCTS FOR PERFORMANCE IN CONNECTION WITH SUCH ACTIVITIES, UNDER SUCH EXTREME CONDITIONS AND/OR SUBJECT TO SUCH MODIFICATIONS REQUESTED BY BUYER IS NOT POSSIBLE; AND (C) ANY MANUFACTURER'S WARRANTY MAY BE VOIDED BY USE OF THE PRODUCTS IN CONNECTION WITH SUCH ACTIVITIES, UNDER SUCH EXTREME CONDITIONS AND/OR SUBJECT TO SUCH MODIFICATIONS REQUESTED BY BUYER. BUYER ACKNOWLEDGES THAT THE INSTALLATION OF ANY S DIESEL PRODUCTS THAT ARE NOT LEGAL FOR USE ON POLLUTION CONTROLLED MOTOR VEHICLES IS DONE SOLELY AT THE REQUEST OF BUYER AND ALL RESPONSIBILITY FOR ANY EFFECTS ON THE ORIGINAL VEHICLE MANUFACTURERS WARRANTY, ABILITY TO PASS ANY EMISSIONS INSPECTIONS OR FOR ANY FINES THAT MAY OCCUR DUE TO THE REMOVAL OF FEDERALLY MANDATED EMISSION CONTROL EQUIPMENT IS ON BUYER. No employee or representative of S Diesel has the authority to make any representation, promise or agreement which in any way varies from the terms and conditions of this Warranty. No suit or claim based on any cause of action, regardless of form, arising out of or relating to this Warranty or any of the S Diesel Products supplied by S DIESEL may be brought by Buyer or anyone claiming by, through or under Buyer against S DIESEL more than one year after the date that such cause of action arose.

IN THE EVENT BUYER DOES NOT AGREE WITH THE TERMS AND CONDITIONS OF THIS WARRANTY, BUYER MAY PROMPTLY RETURN THE PRODUCT TO S DIESEL FOR A FULL REFUND. THE PRODUCT MUST BE IN NEW, UNUSED

AND RESELLABLE CONDITION, BE RECEIVED WITHIN FIFTEEN (15) DAYS OF THE ORIGINAL PURCHASE AND BE ACCOMPANIED BY A DATED PROOF OF PURCHASE (RECEIPT). PRODUCTS RETURNED IN NEW, UNUSED AND RESELLABLE CONDITION MAY STILL BE SUBJECT TO RESTOCKING/REPACKAGING FEES.

THE INSTALLATION OR USE OF ANY PRODUCT PURCHASED FROM S DIESEL INDICATES THAT BUYER HAS READ, UNDERSTANDS AND AGREES TO THE TERMS AND CONDITIONS OF THIS WARRANTY.

ASSIGNABILITY OF WARRANTY

This Warranty is for the exclusive benefit of Buyer and is not assignable.

WARRANTY CLAIMS PROCEDURE

Warranty claim forms can be printed from the company websites (<http://www.drivendiesel.com> (Products) and <http://www.strictlydiesel.com> (Services)). A properly completed warranty claim form and a copy of the invoice for any defective Product or Service must be received by the Seller within the earlier of 30 days after the expiration of the Warranty Period or the incident giving rise to the claim. To qualify for an adjustment under this Warranty a defective Product must be returned prepaid to the Seller for inspection and must be accompanied by a dated proof of purchase receipt. In addition, the serial number of the defective Product, if any, must match the serial number on Buyer's invoice. All Warranty claims are subject to approval by the Seller and/or the Product's manufacturer. Buyer must pay all applicable service charges and taxes. Defective Products accepted for warranty compensation become the property of the Seller. To qualify for an adjustment under this Warranty a vehicle upon which S Diesel Services have been performed must be delivered to the Seller during Seller's hours of operation for inspection and must be accompanied by a dated proof of purchase receipt.

WAIVER

Any failure of the part of S Diesel to insist on strict compliance with the Warranty Provisions shall no way constitute a waiver of such right. No claim or rights arising out of a breach of the Warranty Provisions by Buyer may be discharged in whole or in part by a waiver of the claim or right, unless the waiver is in writing signed by an authorized representative of S Diesel. S Diesel's waiver or acceptance of any breach by Buyer of any provisions of the Warranty Provisions shall not constitute a waiver of or an excuse for nonperformance as to any other provision of the Warranty Provisions nor as to any prior or subsequent breach of the same provision.

APPLICABLE LAW

The Warranty shall be governed by the laws of the State of Arizona (excluding Arizona law with respect to conflicts of law).