

Swamp's Diesel Performance

Competition Parts For Your Diesel

304-A Sand Hill Rd.

La Vergne, TN 37086

Tel 615-793-5573 or (866) 595-8724/ Fax 615-793-5572

Email: dave@swampsdiesel.com

To complete the installation of the electric fuel system, only normal hand tools are needed. The only job-specific tool, which may be needed, is a fuel line disconnect tool, which is available at any auto parts store for a few dollars.

It is suggested that the installer mount the filter/pump bracket prior to disconnecting any of the factory lines along the frame rail, to minimize the mess.

Since there are multiple cab & chassis configurations, we fabricated a "C" channel bracket, which will wrap around the entire frame. The bracket is secured to the frame by tightening the lock nuts onto the threaded rod (supplied), which 'pinches' the bracket to the frame.

This design will allow for the pump and filter to be mounted inside the frame, but for the shorter frame (especially ext cab, short bed 4WD) models, the bracket may need to be reversed, such that the pump and filter are hanging on the outside of the frame rail...and not interfere with the transfer case (or aftermarket fuel tanks, etc)

All fuel lines between the fuel tank(s) and the tank selector valve will remain untouched, as we made no provision for altering the factory workings of the selector valve, with this fuel system.

The installation is as follows.

Remove the intake, & “Y” pipe, from the engine valley. Place rags into the 2 plenums to prevent stray tools from entering your engine. **BE SURE TO REMOVE RAGS PRIOR TO CRANKING THE TRUCK.**

Remove intake/air filter piping, as well as intercooler piping (if so equipped), such that the front and back of each head is (moderately) accessible. Your frustration level will be minimized if you remove the accessory drive belt from the pulleys, prior to removing the factory fuel lines on the front of each head.

To loosen both of the cast aluminum accessory brackets, remove 4, 13mm bolts from each bracket, allowing them to fall forward slightly, away from the head(s). This will give you adequate access to the factory fuel fittings at the front of each head.

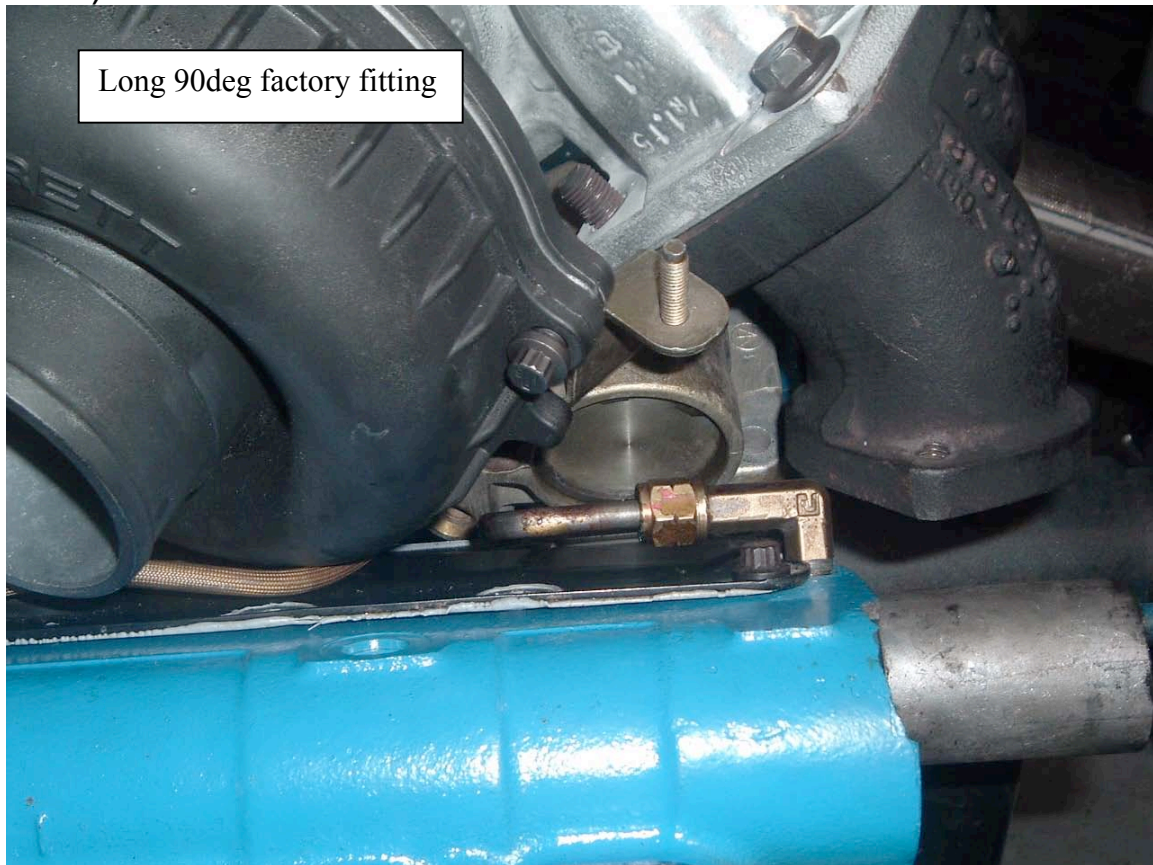
Place a catch pan underneath the factory fuel bowl drain line, and drain the contents of the fuel bowl into the catch pan, to be disposed of in an environmentally conscious manner. Remove the factory fuel filter bowl, disconnecting factory-wiring harnesses as necessary.

Prior to removing the mechanical lift pump from the block, clean the engine valley to prevent debris from entering the engine. A tubing cutter (hacksaw, sawzall, etc) may be used to cut the 2 hard fuel lines that exit the rear of the fuel pump (at the large “banjo” bolt).

Remove the factory mechanical lift pump, by first removing the 10mm bolts which hold it into the engine valley. The pump operates through the up & down motion of a plunger that rides on the camshaft. Take care to lift the fuel pump vertically out of the hole, to prevent from dislodging the shaft from the pump, which would allow it to fall into the oil pan. It is best to use 2 small pry bars, one in front and one behind, and gently work the pump up out of the hole in the block (a 7/8" diameter freeze plug has been supplied to plug this hole) A small amount of Loctite can be used to make this plug water/weather-tight. Simply place the freeze plug, squarely, into the hole, and gently drive it into the machined hole in the block (a smaller socket and extensions work adequately). Degrease the hole (with brake cleaner) prior to installing the plug.

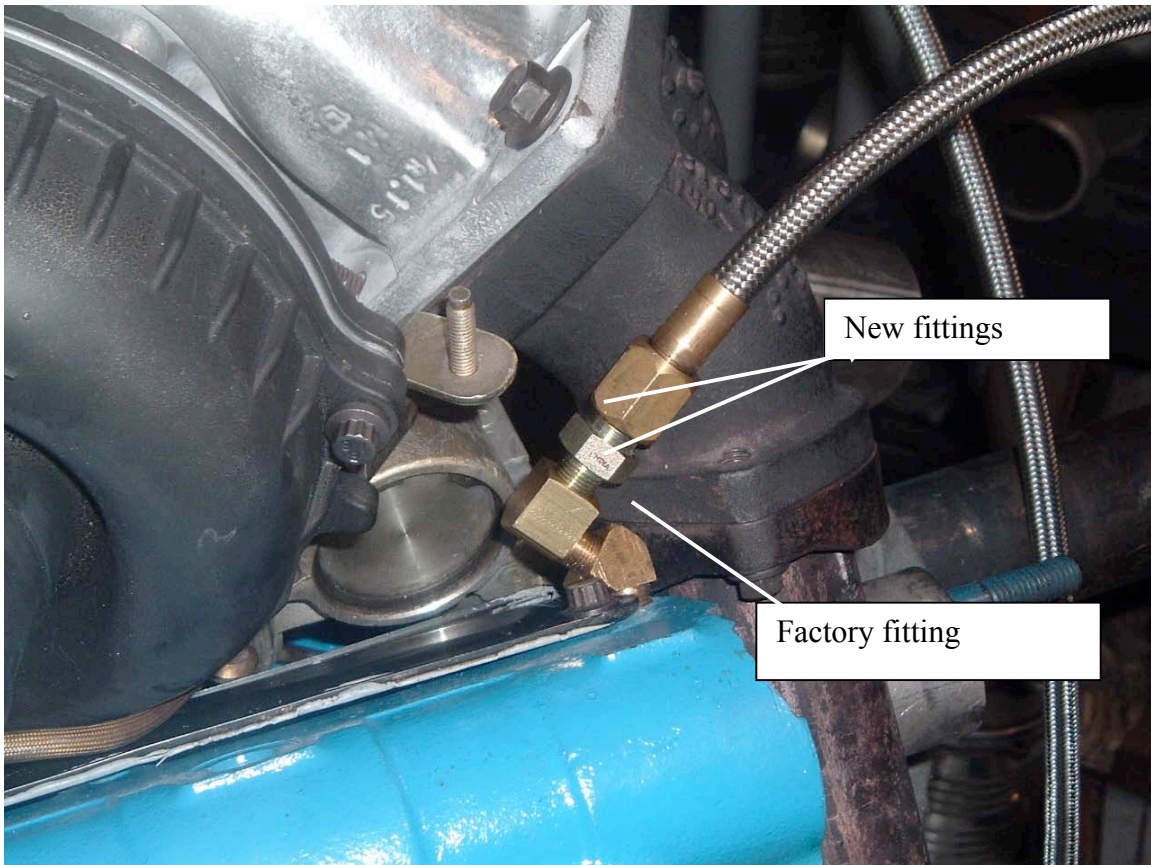
The factory fuel lines use 'Vibra-Loc' connections around the hard lines where they terminate into the heads. Our kit supplies one Vibra-Loc fitting to be used at the drivers side REAR, nearest the turbo (if needed). Some 1994-1997 model Power Strokes used a single, long 90-degree fitting, which cannot be removed without removing the turbo. If your truck has the long 90 degree fitting (as shown

here)



Then you will need to use the supplied hard line to adapt from the factory Vibra-Loc to the braided stainless hose.

If your truck **does not** have the long 90-degree factory Vibra-Loc fitting, then you can remove the factory hard line, and the intermediate 45-degree factory fitting. You should take care not to loosen the factory fitting where it screws into the head, if you must turn it, ensure that it is being tightened. The installation should be similar to the next picture.

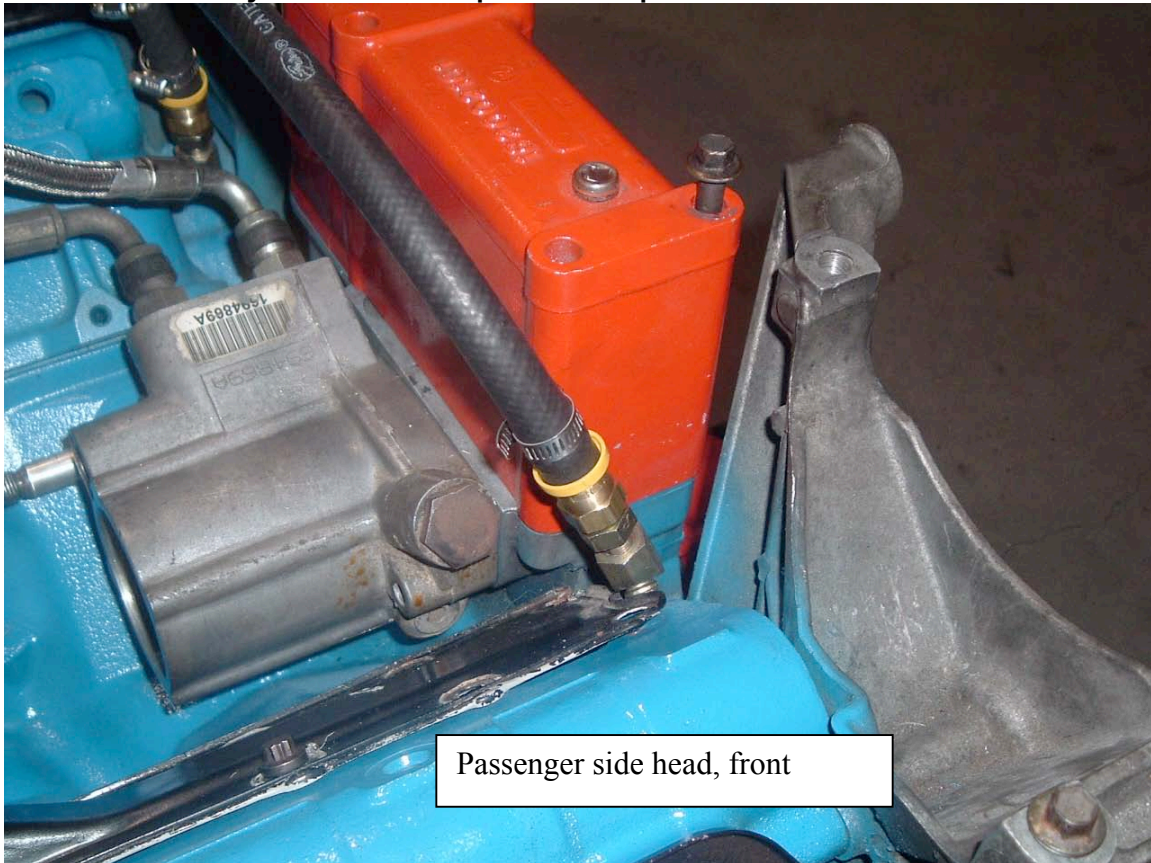


All other fittings are standard, 37-degree flare, hydraulic fittings (JIC).

After all factory lines are removed from the heads (with the exception of the drivers side rear), you may now begin installing the supplied fittings into the heads.

On the front of each head you are to install a 45degree (1/8" pipe, male to female, termed a "street 45") fitting into the hole in the cylinder head. When tight, this fitting should be pointed with the (female) hole facing up, so that the next fittings may be threaded & tightened without interfering with

the accessory brackets upon completion.



A second fitting can now be installed into the street 45 fitting you previously installed. This (straight) fitting will be 1/8" male pipe on one end, and a #6 male JIC fitting on it other end. Teflon tape, or hydraulic Loctite should be used on the pipe (tapered thread) fittings only, and not on the JIC end of the fittings.

The third fitting, which will thread into the #6 male JIC, is one of the #6 female (swivel) fitting with a barb (hose) end on the opposing end.

Similar combinations of fitting will be used on the front of both heads, as well as the passenger side rear head. (Near the down pipe).

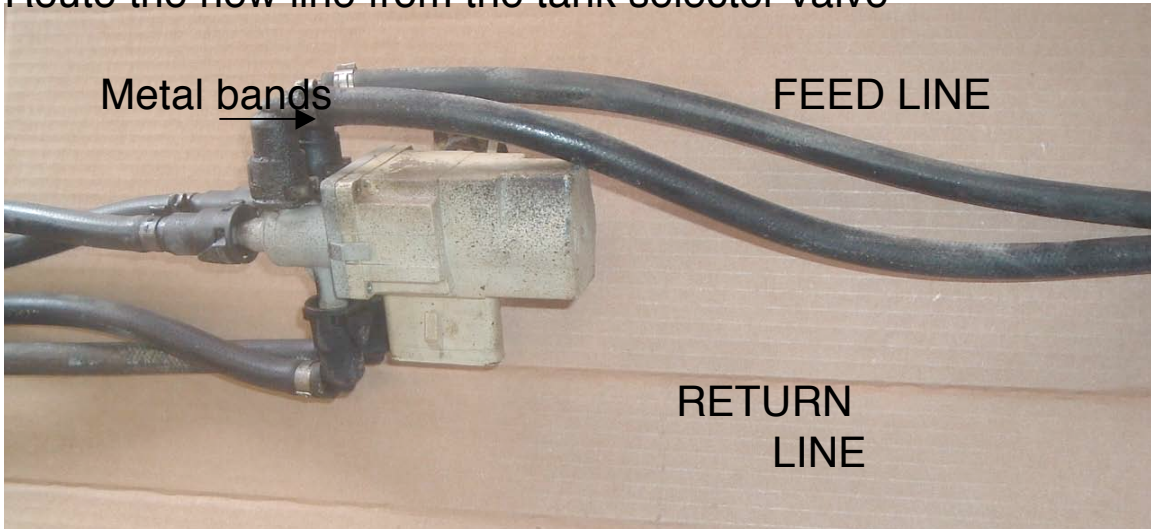
The **rubber** fuel hose should be used on the **front** of each head (feed lines), and the *rear* of each head will use the Teflon lined, *stainless steel braided hoses* (which will go to the regulator), to resist the heat of the turbocharger & exhaust.

Once the fittings are connected to the cylinder heads, and the pump/filter bracket is secured, you may now disconnect the 2 rubber hoses at the tank selector valve, on the frame rail. The tank selector valve has two hoses, which are aimed toward the front of the truck. The hose, on the selector valve, nearest the frame rail, is the FEED, and the other is the return.

If you have access to a shop vac, it is helpful to have a second person hold the suction/vacuum against the (appropriate) filler neck, as dictated by the switch on the dash) to prevent gravity from making a huge mess once the feed line is disconnected.

Having the hoses attached to the fuel pump pre-cut, will facilitate a quick change once the factory feed line is disconnected. To minimize the number of connections, we recommend that you cut the **metal bands** which clamp the factory feed (& return) hoses to the tank selector valve, and slide the new feed and return hoses over the plastic fittings on the tank selector, and clamp them with the supplied gear style clamps. If you unbolt the tank selector valve from the frame, you will have a great deal more working room, than trying to make these connections with it bolted to the frame.

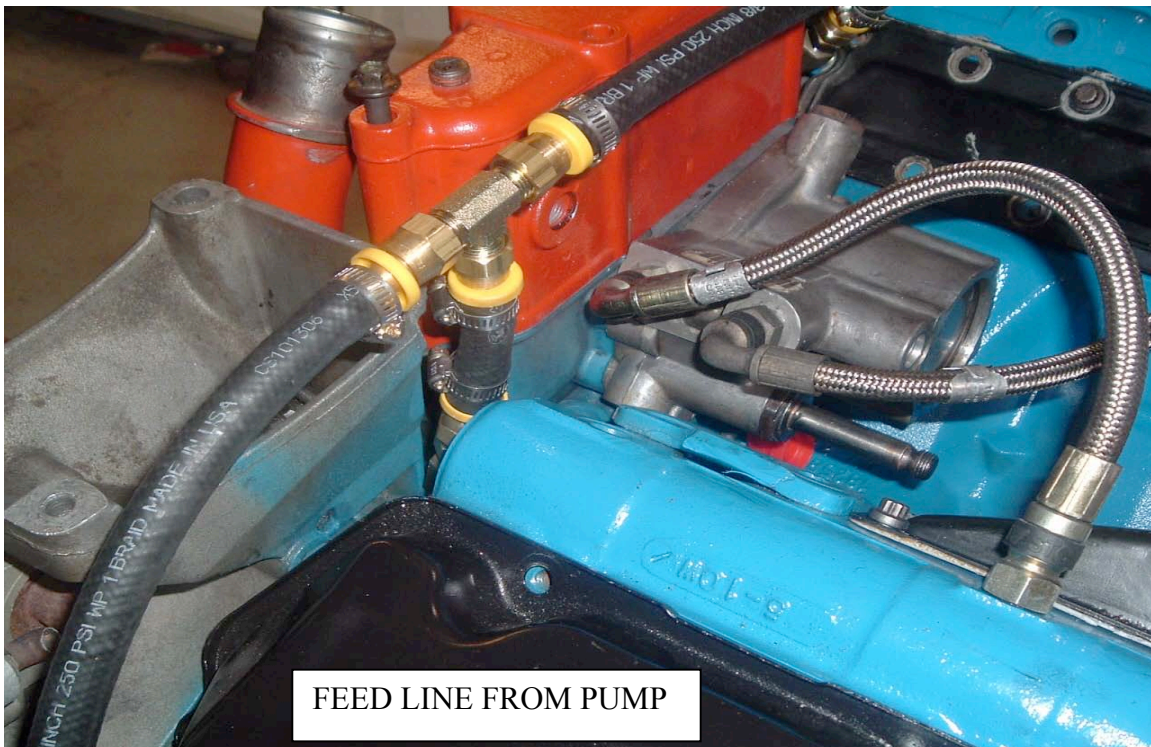
Route the new line from the tank selector valve



<---Rear (toward tanks)
→

front of truck-->

(Labeled "source") feed line, to the filter inlet, through the pump, and splitting at or near the A/C compressor,



feeding the front of each head. Route both the feed & return lines away from moving parts (such as steering shaft), or hot parts (such as exhaust manifolds). Once the routing of all hoses is complete, secure all lines to frame, cab, or other components, to prevent rubbing.

Out the rear of the passenger side head, route the (longer) stainless steel line over the turbo, along the firewall, over (or under) the brake master cylinder, to the open area below the driver's side hood hinge, where the regulator can be mounted.

The shorter, stainless steel, line will come from the factory 90-degree fitting, using our supplied Vibra-Loc connection (short, steel hard line) and into the fuel pressure regulator.

Out the bottom of the regulator, a new rubber line will be run down the cab/frame to the return side of the tank selector valve.

To complete the installation, once all of the fuel lines are installed, tightened and secure, you will need to do a small amount of wiring to send power to the fuel pump.

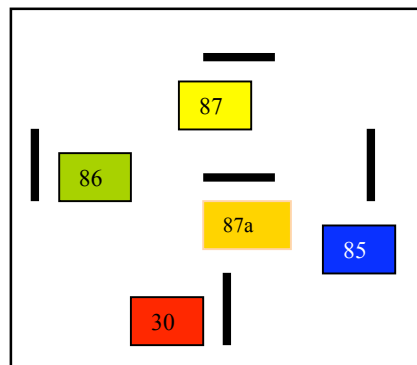
We have supplied a standard 5 pole, automotive relay, as well as a pigtail relay harness.

The relay is triggered, by using the factory wire coming out of pin#24, in the underhood 42-pin connector. Using the supplied Scotch-Loc “tap” connector, tap into the wire coming out of pin #24, and connect the lead wire into the LIGHT GREEN wire (terminal 86) on the relay pigtail. (Do not cut the wire in pin#24, simply tap into it).

Extend the YELLOW wire (terminal 87) from the relay pigtail, using the heavy gauge red wire (supplied) and connect it to the positive terminal on the fuel pump.

Extend the BLUE wire (terminal 85) from the pigtail harness, and connect it to a ground bolt on the cab.

Extend the RED wire (terminal 30) from the pigtail harness, and connect it to the 30amp breaker, and using a large ring terminal, connect it to the positive post on your battery.



Terminal 87a is unused.

Please re-read these directions prior to cranking the truck, to ensure all steps have been followed