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CNC Fabrication, LLC Valley Mount 4 Line Feed Fuel Line Kit for 94.5-03 7.3L W/ T4 Turbo mount Powerstroke Installation Instructions.

IMPORTANT

*Please read these instructions first to give you an idea, and continue to refer to the pictures as a reference guide. If you feel uncomfortable doing this install, please seek out a professionally trained diesel mechanic or someone very familiar with hydraulics.

CONTENTS: (Fittings are on the lines and installed on the manifold block),

- 1qty driver front line (Marked DF on end that goes to the head)
- 1qty driver rear line (Marked DR on end that goes to the head)
- 1qty passenger front line (Marked PF on end that goes to the head)
- 1qty passenger rear line (Marked PR on end that goes to the head)
- Turbo pedestal Viton o-rings
- 1qty 1/8” NPT allen head pipe plug (install if not installing a pressure sensor in the manifold block)
- 2qty 10mm & 2qty 8mm button head allen bolts for bolting down the base plate/manifold assembly
- 7/8” freeze plug (FOR 94.5-97 MODEL YEARS THAT HAD MECHANICAL FUEL PUMP)
- 1qty fuel block distribution assembly

1. Remove the battery ground clamps for safety. Remove the engine cover, intake spider, and turbo. Drain the fuel bowl. Place some rags in the bottom of the valley of the engine to soak up any residual fuel when the OEM fuel lines/fittings will be removed. Disconnect the supply/return/drain lines from the fuel bowl and remove the fuel bowl. **(FOR 94.5-97 Once the fuel bowl is out of the way then remove the fuel pump and lines. Install the cup(freeze) plug into the mechanical fuel pump plunger port)**. Cover the intake plenums, turbo pedestal oil ports, and fuel ports so no dirt/debris/small parts fall into the engine during this install. Remove any sensors, wiring, and/or plugs that may be in your way. Most you can work around, but it can make it easier to install this kit with some things removed. To best remove the factory fuel fittings/adapters in the ends of the heads, remove the accessory drive belt. Unbolt the alternator and AC brackets and let them set in the engine bay. You can use something to wedge the brackets against the block to temporarily hold the brackets back to give you enough room to remove the factory fittings and install the new fittings in the heads. You may or may not want to remove the HPOP lines, but it makes the job easier to get the new fittings to line up correct. Another tip is to use a strap of some sort to hold the turbo downpipe up and out of the way, or a floor jack from under the truck pushing the exhaust up so you can reach the fuel fitting in the back passenger head

2. It is recommended that you use Loctite brand 545,or natural gas/propane rated thread sealant only on the fittings with NPT pipe threads (These are the threads that go into the heads themselves). You can use Teflon tape, but be very careful as to not get any tape over the opening of the fitting, and make sure you wrap the tape on the fittings in the correct direction as IT DOES MATTER. This includes the threads that go into each corner of the heads and the port on top of the fuel distribution block. Be careful not to damage the threads on the tubing side of the fitting. Do not add sealant to the threaded ends of the fittings where the fuel line tubing connects to the adapter. The 45* fitting in the driver rear needs to roughly point to the center of the engine valley (PICTURE 1). Next, install the a 45* fitting in the driver front and point to the valley (PICTURE 2), passenger front 45* facing the rear (PICTURE 3), passenger rear 45* to the valley (PICTURE 4). The port on top of the distribution block is 1/8”NPT, if you are going to install a pressure sensor, do not use the supplied allen head plug and install the sensor as most sensors are 1/8” NPT thread type.

Note: You may need to loosen the clamps where the up-pipes bolt to the exhaust manifolds in order to push back the up-pipe collector that connects to the turbo.

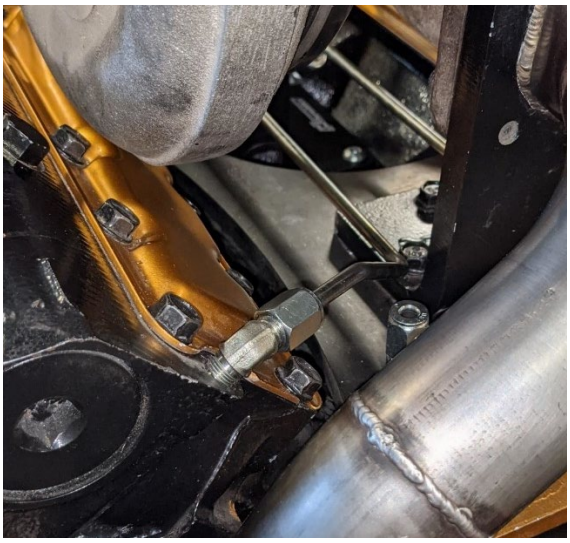
3. Be sure the 10mm and 8mm holes in the valley of the engine are completely clear of debris in the bottom of the holes. If not, use a threading (bottom) tap to clean the holes out. Preferred method to get the debris out of the holes is low compressed air and a shop vac over the hole when blowing out the holes so dirt/debris do not accidently go into any of the open ports. Install the manifold/base plate assembly in the valley of the engine with the supplied bolts. Do not tighten the bolts all the way down yet (leave them about a ¼ turn loose). The fittings on the lines already have the ferrules preset onto the lines ready to install, so do NOT overtighten. Next, install the fuel lines. Connect each line by starting the line nuts by hand only a couple threads to make sure they do not cross thread onto the already installed fittings in the heads/manifold block. Be sure the tubing ends line perfectly parallel to the fitting or the ferule may not seal correctly (See PICTURE's 5 and 6 for alignment example). If the nuts don't quite go on with just your fingers, then use a wrench to thread them on, but be certain they are not wanting to cross thread. Once they are threaded on far enough you will feel resistance when the ferrule is almost seated. Then tighten the nut another 1/4-1/3 of a turn (which is 1-2 flats of the nut). The connection is now properly set. DO NOT OVER TIGHTEN THE FITTINGS or you risk damaging the ferrule. These lines and fittings are hydraulic and are capable withstanding over 3000psi. NOTE: **See Parker Ferulok EO-2 for formal installation instructions**.

4. Connect the supply hose from the fuel pump to the supplied 90* Pushlok fitting on the fuel manifold assembly. After that connection, turn on the ignition (DO NOT START THE ENGINE). This will/should pressurize the system and is a good opportunity to check for leaks. Good idea to maybe do this 2 or 3 times. Once you have verified there are no leaks, then reassemble the previously removed turbo, alternator/AC brackets, and etc. It is also a good idea to install new turbo to pedestal O-rings, but may not be necessary if they have been recently replaced. Most people will use an AirDog II 4G or FASS Titanium Signature Series type fuel pump system that has an integrated regulator for the return. These pumps make for a very nice and easy install so you will only need one fitting to connect the supply line to the manifold and install a plug in the other port.

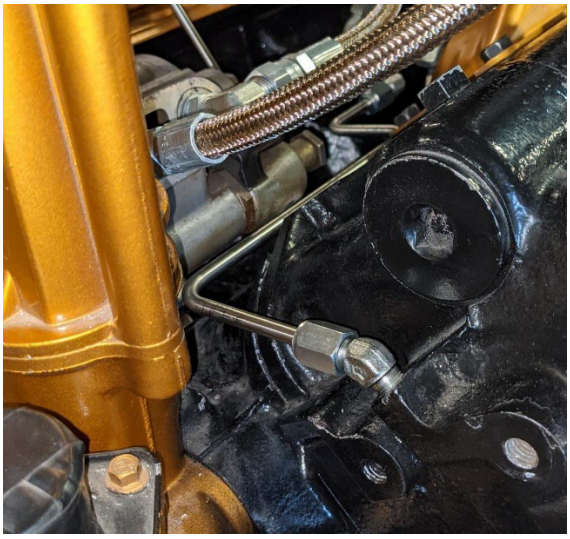
   NOTE: If you have a fitting that is slightly leaking, turn off the pump and let the pressure bleed down. Undo the fitting and inspect for dirt/debris on the mating surfaces and be sure the tube didn't get bent and is "squared up" going into the female port in the fitting. If everything is clean and straight, then turn the nut on the connection that is leaking one more flat and recheck for leaks.

   DO NOT KEEP TIGHTENING DOWN THE NUT ONTO THE FITTING UNTIL IT PHYSICALLY CANNOT TIGHTEN ANYMORE. THIS WILL DAMAGE THE FITTING AND WILL NOT SEAL.

PICTURE 1

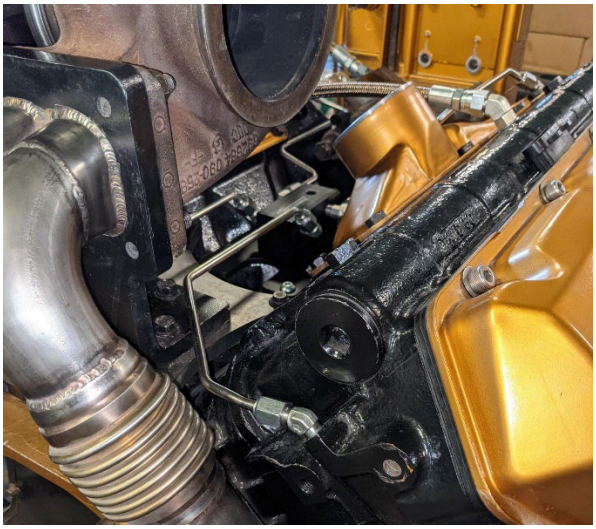


PICTURE 2



PICTURE 3

PICTURE 4



PICTURE 5

INCORRECT

PICTURE 6

CORRECT

PICTURE 7