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Document version 1.5 102902

## Fuel Tank Sending Unit and Pre Fuel Pump Modification Kit

Price - \$35.00

### Disclaimer:

Diesel Innovations sells this kit as a high performance fuel tank pickup assembly and pre pump repair kit. The kit was developed to reduce/eliminate the amount of air being introduced to the fuel system via the fuel tank and quick disconnect fittings before the fuel pump. The result of installing this kit includes improved fuel mileage, quieter running engine, and more responsive throttle. This kit is recommended for all 1999 to 2003 power stroke owners.

Diesel Innovations makes no claim that this kit will eliminate what is commonly called "cackle" or "idle knock". One side effect of this kit after installation is that the engine runs quieter. This allows you to hear other potential problems in your engine that were previously covered up by engine noise.

Please contact Diesel Innovations for more details.



**Note** – some components in the kit shown in the above picture may be slightly different than the components in the kit that are shipped.

### Tools Required to do the job:

10mm Socket (for removal of 4x4 skid plate)

13mm Socket

Flat Blade Screw Driver

9/16" Open End Wrench

5/8" Open End Wrench

3/8" Drill Bit

Drill

Hacksaw or Tubing Cutter

Floor Jack (if you don't have any help)

Razor Knife  
Flat Blade Screw Driver

Fuel line or A/C disconnect tool

**Please read and reread this ENTIRE document before starting the installation. We have made the kit and instruction documentation to be as simple as possible with the addition of as many pictures as we could. Lay out all of your parts on a clean surface and dry fit them together so that you know they are all there and fit correctly. This will also help you get better acquainted with how the kit is assembled and how all of the parts need to be connected.**

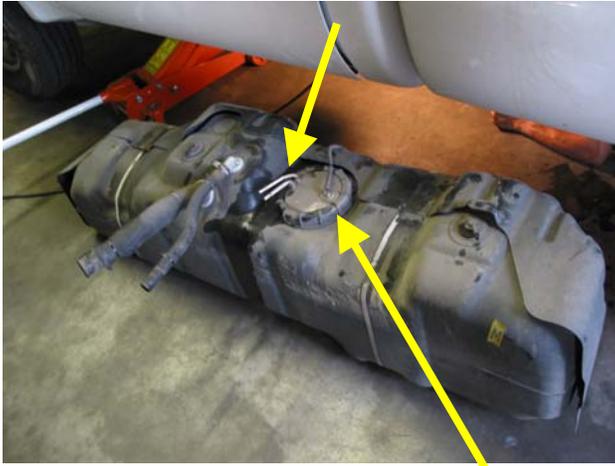
This kit should take you 2 to 3 hours to do if you take your time. The hardest part of the whole kit is getting the tank back up underneath the bed.

**NOTE - DO NOT USE A FLOOR JACK IN THE CENTER OF THE FUEL TANK!**

This will damage the fuel pickup assembly.

### **Fuel Tank Modifications**

- 1.** Disconnect the fuel filler neck fill hose and vent hose from the fuel filler neck tube by removing the 2 hose clamps that attach the fuel filler neck fill and vent hoses.
- 2.** Remove the 2 13mm bolts holding the tank straps to the frame. These are the ones that are toward the centerline of the truck, not the outer ones.
- 3.** Bend the straps down and lower the fuel tank.
- 4.** Disconnect fuel sending unit electrical connection.
- 5.** For '99 and '00 year trucks, you will need to cut the crimp in the fuel line at the rail feeding the tank. On '01 and up you can use a razor to cut hose at frame rail to tank.



6. Remove the large black retaining nut on the top of the fuel tank that holds the fuel-sending unit in place. You might need to get a scrap piece of wood and a mallet to help get it loose.
7. GENTLY remove the fuel-sending unit from tank. You will have to tilt the sending unit to get the float out. The sender and float assembly is easily bent or damaged. If it does get broken, you will have to purchase a complete replacement, as Ford does not sell individual parts for repair.



8. Measure the distance from the bottom of the pickup to the bottom of the flange. The distance should be around 15 1/4" for long beds and 13 3/4" for short beds.



9. Remove the white mixing valve from the sender by first removing the rubber hose by cutting off the 2 metal band clamps then gently twisting off the 3/8" steel line.



10. Loosen the hose clamp from around the top of the black rubber pickup foot and remove it from the white mixing valve.



11. Remove the metal filter screen from the bottom of the black pickup foot. Using a drill and 3/8" drill bit, drill out the center of the black foot to remove obstructions. (What you see in the picture is the black foot drilled out and the pickup screen back in place)



12. Attach the 3/8 compression union fitting to the existing 3/8" line on sending unit and tighten.



13. Install the black pickup foot on the supplied 3/8" tubing and push until it is past the check valve that you drilled through earlier.
14. Insert the other end of the supplied 3/8" tubing in to the compression fitting and snug up the compression nut. **DO NOT TIGHTEN YET!**
15. Measure the overall length of the new assembly and make sure it is **EXACTLY** what you had when you started. Cut off the unneeded tubing if it is too long. Tighten the compression fitting when the length is trimmed to the correct length.



**CAUTION** – If you cut the tubing too short, you will suck air through the check valve in the side of the pickup foot. The tubing **MUST** be pushed past this point in the black pickup foot.

16. Reinstall the modified sending unit back in to tank. Pay close attention to the orientation arrows on top of the sending unit to where they match up with the hole in the top of the tank.
17. Use the supplied diesel proof hose to replace the factory hose that was cut off in step 5 and secure with hose clamps.
18. Reinstall tank in reverse order of removal, making sure that no hoses are pinched in the process. If you have to use a floor jack, jack from either end of the tank to prevent damage to the pickup assembly.

## **Pre Fuel Pump Modifications**

1. Remove the factory hose from the input side of the fuel pump. On '01 and '02 with blue and black quick disconnect (QC) clip at the input to the pump, push the blue button to remove the fuel line. On '99 and '00 use a fuel line or A/C disconnect tool.
2. Use a razor knife to cut off the rubber fuel line from the steel tubing on the frame rail. **NOTE** – You ***WILL*** get drenched with diesel if you aren't careful.
3. Using the provided fuel line, hose clamps, and filter, install as shown. Make sure that the filter is oriented so that the word “IN” on the filter is towards the rear of the truck and the word “OUT” is towards the front of the truck.

