

Fuel Tank Pickup Modifications-Dmax

The Duramax Fuel sending unit pickup assembly is very restrictive and not designed to provide the large volume of fuel required to support high horsepower numbers. It is relatively easy to improve the flow potential on these vehicles. To start, you will need to remove the fuel tank from the vehicle. You will do well to have the fuel level drawn down to, or below the low fuel light activation level as this makes it much easier to handle. Removal of the tank is not exceptionally difficult. If you have questions regarding details on tank removal I would suggest consulting a Service Manual. You will need the QD disconnect tools (Image 1) to disconnect the fuel lines.

Pickup-Sender Disassembly

With the tank removed from the truck I recommend washing the top of the unit thoroughly with a high pressure washer prior to disassembly. Cap the nipples to keep water from entering the tank. To begin disassembly, you will need to remove the lock ring (image 2) that retains the sending unit. This ring needs to be turned counterclockwise to release from the cams. The LB7 and LLY have very similar sending units with the exception being that the LB7 sender head is plastic and the LLY is Steel.



Image 1



Image 2

Remove the sending unit assembly from the tank being careful not to drop excessive debris into the tank. With the sending unit/pickup assembly out of the tank, I often to remove the float arm to avoid potential for bending. I then pry up the return line (image 3) from the press fit into the lower cup, and then the release the lock tabs (image 4) from the side of the lower cup and remove the cup.



Image 3



Image 4

With the cup removed, you will now see the OE pickup assy. I first cut the accordion hose (image 5) up at the head of the sending unit assembly, and then release the tabs (Image 6) retaining the pickup, remove and discard it.

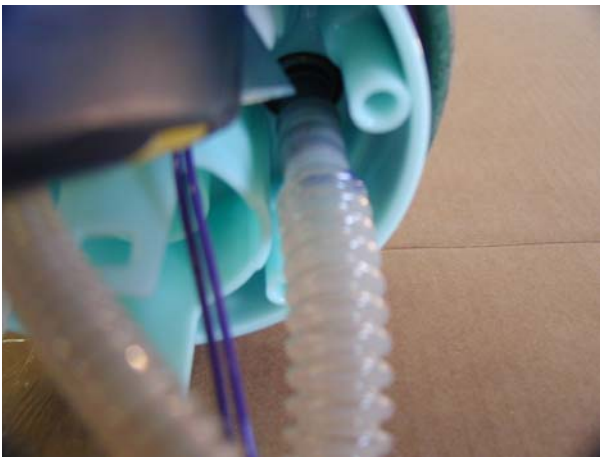


Image 5



Image 6

Bulkhead Fitting Kit

LLY owners can skip this section and proceed to Pickup-Sender Assembly. The LB7 Plastic sending unit head is also a major restriction. This is why we recommend the Duramax Fuel Tank Bulkhead Fitting Kit. <http://www.kennedydiesel.com/detail.cfm?ID=431> To install the bulkhead Fitting kit you must modify the plastic sending unit head. To start off, you will remove the entire supply nipple and gusset by cutting with a cut off tool or similar device. (images 7 and 8) The result will be a round hole flush with the surface. You will then enlarge this opening in the sender (image 9) to accept the Bulkhead Fitting (Image 10) making sure that you locate the hole so that the hex will fit within the area allowed by the recesses and ribs of the head. With the bulkhead fitting, I prefer to use a bit of pipe thread sealer (clean thoroughly first) under the external hex to ensure that it cannot leak. You can clean and prime the plastic with a small

amount of clear PVC primer on a Q tip. Proceed with caution as it will soften the plastic up quickly and you do not want to make mush.



Image 7



Image 8



Image 9



Image 10

With the bulkhead fitting in place and secure, you now can add the hose adapt fittings and proceed to the assembly section.

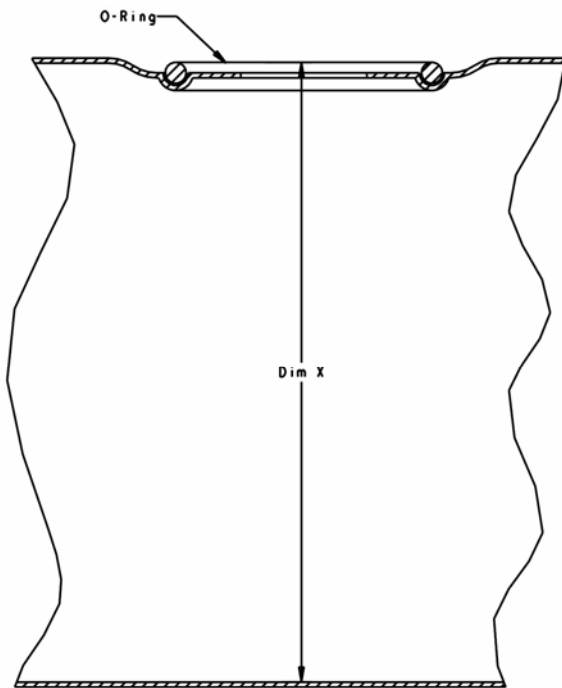
Pickup-Sender Assembly

The Billet pickup and hose assembly is first inserted (image11) and locked into the tabs. At this point the hose length is still excessive and will be cut to length. The bucket may now be re-attached and the return line can be pressed back into place.

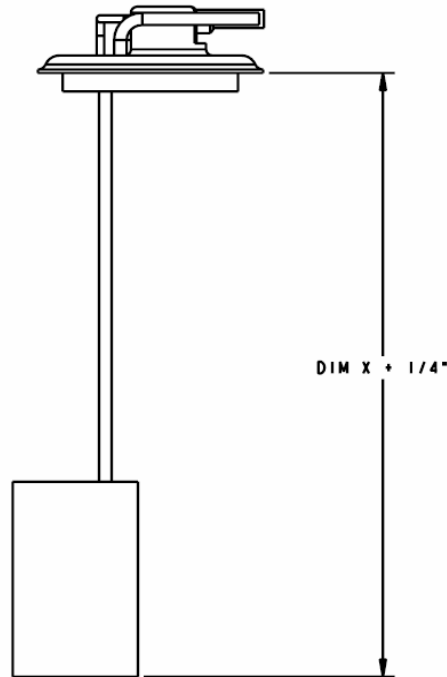


Image 11

I now measure the distance from the tank floor to the top of the tank seal (image 10 LH) and note this as measurement “X”. It will be approximately 13” but measure to be certain. I then set the sender assembly up to measure “X” + 1/4” (image 11), line up the hose and cut to length. The reason for the extra length is because we want to make sure that the bucket is on the floor of the tank. The OE accordion hose and spring loaded rods make sure of this, but the new hose is rigid and will not move once installed.



Tank Cross Section
Image 12



Sending Unit
Image 13

The LB7 will use the bulkhead nipple (image 14) with no clamp required, and the LLY will use the large elbow (image 15) that was previously used for the factory 5/8” vent hose. This connection will require a hose clamp.

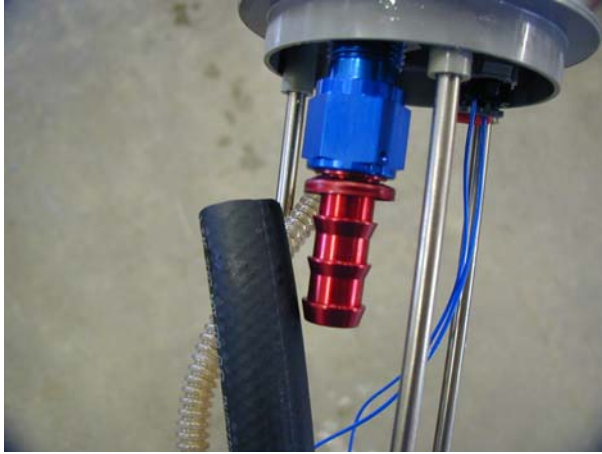


Image 14



Image 15

The Pickup-Sender assembly can now be reinstalled into the tank. Be certain that you have reinstalled the float arm if removed and that everything is as clean as possible. It should take a slight bit of compression to get the ring started. Once locked in, I will attach the hoses prior to re-installing the tank. The LB7 (image 16) uses the Bulkhead fitting for the supply hose and the OEM return is untouched. There is no vent at the sender. The LLY (Image 17) uses the OEM vent nipple for the fuel supply hose and the vent hose is transferred to the OEM supply nipple. The OEM return is untouched. The supply hose is left deliberately long to access the lift pump with a safe routing.



Image 16



Image 17

The tank can now be reinstalled!