

Duramax Lift Pump

The Dmax trucks were all built without any sort of lift pump from the factory. There is no pump in the tank, on the frame, nothing. There is a hand primer pump on the filter housing, but aside from that, the transfer pump on the CP3 injection pump is tasked with inducing flow of fuel from the tank to the high pressure piston pump and then to the rails and finally the injectors. The exception here is that the chassis cab trucks with dual tanks have a transfer pump to move fuel from the rear tank to the front tank to equalize level and the vans are have a small lift pump that is used to prime the filter. In most conditions the Dmax performs adequately without a lift pump. The handicap of not having a lift pump is the tendency of leaks and restrictions in the system to cause loss of prime, reduce performance, etc. We are seeing more and more cases of no start, loss of prime, etc. due to the OE fuel filter head beginning to leak.

To put things into perspective the average Dmax fuel system restriction is 2" hg or -1psi. Under load the restriction easily reaches 8"hg and often much more under heavy acceleration and uphill. A reading of 8"hg is equivalent to -4 psi. That means whatever is outside (air) is trying to get inside with a 4 psi force. Adding a lift pump(s) to put a positive push on the fuel flips this in the opposite direction. In other words say you have 4 psi lift you have made an 8psi change in the pressure inside so now there is a 4 psi force trying to get out rather than 4 psi trying to get in. This ensures that there will be no air intrusion and if there is a leak it will show as seeping fuel.

Let's take this further.

Diesel Fuel will begin to "fizz" or "outgas" as pressures drop and temperature rises. This gas loosely termed as "air" travels to the fuel filter where it collects. This is evidenced by the appearance of a low mileage fuel filter cut open for inspection. There will be distinct color differences in the areas through which the fuel is flowing and where it is not. It will show black and white just like a dairy cow. What is happening is that the surface tension of the wetted media tends to inhibit the passing of air, but eventually it will pass, often in larger gulps. The simple act of adding a lift pump will change the filter from distinct black and white areas to a uniform shade of gray from top to bottom. This is because you are eliminating the outgassing and air collection and are now using all of the filter's surface area. Using more surface area at the same flow rate increases the residence time making the filter more efficient at removing contaminants. This is highly beneficial to the longevity of your fuel system components

Many people report smoother, quieter operation and often an improvement in response and even a slight nudge in fuel economy just from adding a lift pump. Having the fuel pressurized and being pushed through the regulator is beneficial versus having it drawn through. Pump regulation is able to maintain transitional targets much more smoothly and precisely.

Add a lift pump to your Duramax. It just makes sense.

[Kennedy Lift pumps](#)