

Injector Pump Failure Fuel System Flooded with Metal Particles

The shop had performed a service on the customer's 2015 Silverado equipped with a 6.6L Duramax Turbo Diesel, which included a fuel filter replacement. Weeks later the customer contacts the shop owner requesting reimbursement in the amount of \$14,000 to cover the repair cost of the fuel injection system due to an alleged defective fuel filter. The system had been flooded with contaminants and the customer had been convinced it was the fault of the fuel filter.

Mechanic A says...A defective fuel filter is the reason for the failed injectors and injector pump.

Mechanic B says...The damage to the system is due to low sulfur diesel fuel and the lack of fuel lubricity for the injector pump.

Read on and you make your own determination as to which mechanic (A or B) has made the correct diagnosis.

Fuel Quality

The vehicle in question was fitted with a Bosch CP4 injector pump. Reports indicate that this style pump was not designed to operate on diesel fuel produced in the US. The low sulfur fuel produced in the US does not provide sufficient lubrication to protect the system. The reduction of sulfur in the fuel from 500 PPM to 15 PPM (parts per million) has created some major and very expensive challenges.

To comply with stringent emission standards the reduction in the sulfur content of the fuel was mandated. The refining process by which this is achieved can alter the lubricating properties in the fuel, affecting the lubricity of the fuel. Some diesel owners rely on chemical additives to improve the lubricity of the fuel to help protect the metal components. Lubricity is a measure of the fuel's ability to provide lubrication sufficient to prevent premature wear of the fuel system components and moving parts within the injector pump. Degradation within the system can result in premature wear and metal particles being dispersed throughout the fuel system, resulting in a catastrophic failure and costly repairs. Flushing the system is not the solution. The entire fuel system, including the injector pump, fuel injectors, high-pressure and return fuel lines must be replaced. In addition, the fuel filter housing and the fuel tank must be cleaned to prevent a re-

currence. Install a new fuel filter. We have heard reports of repair costs ranging from \$10,000 to \$18,000.

Another concern is that the system operating pressures of the Bosch CP4 injector pump may result in aeration of the fuel within the pump, promoting metal-to-metal contact and accelerated wear, flooding the fuel system with metal particles.

Bosch CP4 Applications and Failures

GM has used the Bosch CP3 injector pump on the 6.6L Duramax for most applications from 2001-2010 without any quality issues. The vehicle mentioned in this writing was equipped with a Bosch CP4 injector pump. GM used this pump on the 6.6L Duramax (RPOs LML, LGH) applications from 2011-2016. The change from the Bosch CP3 to the CP4 injector pump was likely due to the injector pump being lighter and a reduction in production cost. In 2017 GM changed to a Denso injector pump.

Other vehicle manufacturers such as Ford and Dodge have used the same Bosch CP4 injector pump.

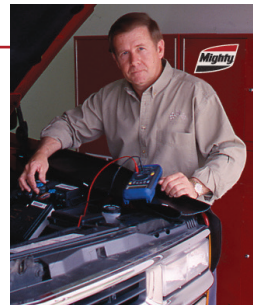
Ford used the injector pump on the Power Stroke 6.7L from 2011-2021.

Dodge went to the CP4 injector pump from 2019-2020 on the Ram 2500/3500 Pickups and the Ram 3500/4500/5500 Chassis Cabs with the 6.7L Cummins engine. Dodge is currently recalling approximately 222,410 vehicles and replacing the injector pumps with the Bosch CP3 unit due to high failure rates of the CP4 injector pump.

Ram and Jeep used the CP4 injector pump on the 3.0L EcoDiesel equipped vehicles from 2014-2021.

Summary

Be prepared to address these issues with your customer when fraudulent claims are made regarding your services or the quality of the parts that you installed when performing maintenance on their vehicle. A defective fuel filter will not create and flood the fuel system with metal. Mechanic B was accurate in his diagnosis and that was lack of fuel lubricity resulted in the damage to the system.



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Why now this sudden lack of interest in the sulfur content of his diesel fuel?