



DeatschWerks Technical Service Bulletin (TSB)

Bulletin No: TSB-17-04-14

Issue Date: April 14, 2017

Category: In-Tank Fuel Pump Assembly Install

Part Numbers Affected: 9-309-1039

Subject: DW300c Fuel Pump Install in 09-15 Cadillac CTS-V OE Pump Assembly

Description of Problem:

Due to the complex nature of the 2009-15 Cadillac CTS-V fuel pump assembly, installation and tuning of DW fuel pumps is more difficult than many other applications. Installation errors and improper pump tuning can result in pump damaged, and/or an under fueling condition. The DW technical department has identified 5 issues (3 installation and 2 tuning) which can cause potential problems. Corrective action for these issues is outlined below...

Corrective Action Suggested:

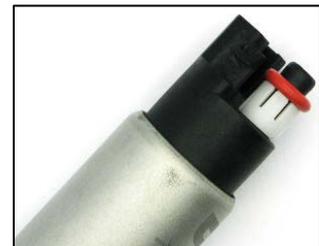
1. Broken Pre-Filter internals:

Installation of the pump fuel filter needs to be performed with special care. The CTS-V pre-filter has an internal skeleton which can be broken during installation if excessive force is used. Broken pieces of this internal skeleton can then be ingested into the turbine impeller inhibiting flow and causing impeller damage.



2. Damaged or Incorrect O-Ring Install:

- A. Be sure to use the included Lubricant - During installation, if no lubrication is used the O-ring can roll or pinch while the pump is being inserted and seated. A pinched, rolled, or cut O-ring will cause a leak and will bleed off pressure both when the pump is running and when it is shut off. An internal leak may affect the fuel supply while the system is running and may cause fuel pressure to bleed off quickly and completely when shut off; the amount and speed of bleed off will depend on the severity of the leak.
- B. Be sure to re-use the OE o-ring spacer - The spacer from the OE pumps must be transferred to the DW pumps. If the spacer is not transferred and the O-ring is simply placed on the outlet of the pump, either the installation process or the pressure from the operating pumps will push the O-ring down the neck of the pump outlet and cause an internal fuel leak resulting in little to no fuel getting to the engine.

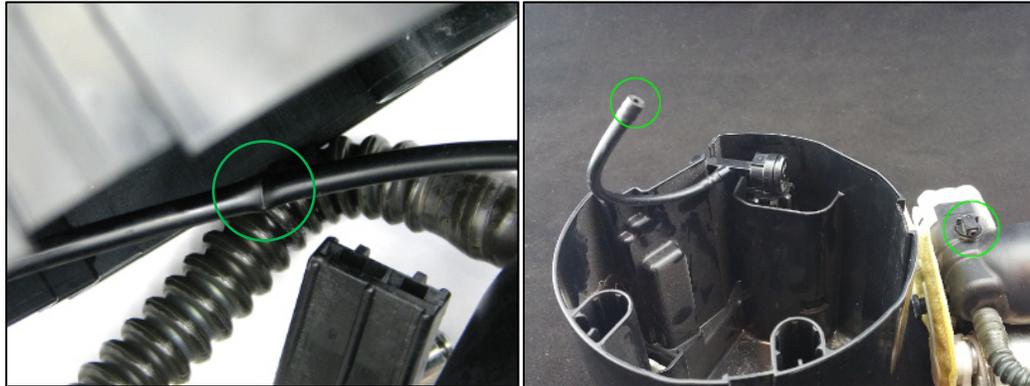




3. Venturi Supply Line Damaged:

During disassembly and reassembly, the small black plastic line that connects the center section of the pump assembly to the venturi pump on the bucket of the pump assembly is susceptible to damage. If the supply line is kinked, this could cause an issue with flow delivery to the venturi pump. As the venturi pump is what draws fuel into the bucket from both sides of the saddle tank, if the flow delivery to the venturi pump is compromised, the bucket may be emptied by the dual fuel pumps during low fuel level conditions. Further, the transfer of fuel from the other side of the saddle tank may be insufficient to completely transfer fuel from the non-pump side of the tank.

The port on the center section of the pump assembly is also susceptible to damage. Should the outlet be broken off, the venturi pump will no longer be driven and the pump assembly will not be able to keep the bucket full once the fuel level drops below the top of the bucket assembly. Further, there will be no transfer of fuel from the non-pump side of the saddle tank. Repair parts and repair service are available from DeatschWerks.



4. Fuel Pump Control – Pulse Width Modulation:

The CTS-V is a demand regulated return-less fuel system. Fuel pressure is controlled via pulse width modulation of the fuel pump signal. There is not a fuel pressure regulator in the OE system. Disabling pulse width modulation without the installation of a return line and fuel pressure regulator can result in massive pressure build up, fuel leaks, under flowing fuel delivery, and fuel pump failure.

5. Fuel Pump Control – Fuel Pressure Settings:

There is a pressure relief valve built into the OE Assembly that opens at 60-65psi. If fuel pressure is commanded above the limit of the PRV, a significant amount of pump flow will bleed off through the PRV greatly diminishing fuel flow leaving the assembly and reaching the engine. Commanding pressure above 60-65psi (especially when utilizing a boost-a-pump) will drastically decrease fuel flow to the engine.

In addition to providing this TSB guide outlining potential issues with CTS-V fuel pump installations, DW is offering free installation and testing of DW CTS-V fuel pumps at our facility. Contact DW technical support for more details.

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