

Troubleshooting Tips For No-Start After High-Pressure Pump Replacement On 2000 - 2006 Sprinter Vans



Here are troubleshooting tips for a no-start condition after installation of a DTech remanufactured high-pressure pump on a 2000 - 2006 Sprinter Van.

On the 2000 - 2006 models the fuel supply and return lines are right next to each other and if they are switched there will be no delivery from the high-pressure pump and the engine will not start. Remove the lines, place them into a suitable container and crank the engine to determine which line is the supply. For 2000 - 2003 models connect the supply line to the pump's fuel connection port located closest to the rear of the engine, on 2004 - 2006 models connect to the top fitting.

General:

1. Check for battery voltage above 12 volts.
2. Check for diagnostic trouble codes (DTC) and make the necessary tests and repairs.
3. The minimum cranking speed is 170 RPM and the RPM variation should be less than 100 RPM. Check the battery, starter and crank shaft position sensor.
4. The fuel rail pressure should be approximately 3600 psi or 1.0 volt on the rail pressure sensor while cranking. Running the fuel rail pressure sensor test using a scan tool the voltage should be 0.47-0.53 volt with the key on / engine off.
5. On 2004 - 2006 models unplug the fuel quantity control valve (MPROP) electrical connector on the high-pressure pump to see if there is an increase in rail pressure. An increase in rail pressure indicates an electrical or ECM problem.
6. Check the fuel supply pressure. See below for the specific model year. Insure that a new filter has been installed and the fuel tank is at least $\frac{1}{4}$ full.
7. Check the injector return rates for a maximum of 7.5 mL per injector by cranking the engine for three ten second intervals. Wait 30 seconds between each interval to prevent overheating of the starter.
8. Check the rail pressure control valve (DRV) for leakage while cranking for 10 seconds. Measure from the rail return line. No leakage is allowed. If there is leakage check for the PWM 18-24% duty cycle control voltage from the ECM. If the duty cycle is correct remove the valve to inspect the valve's o-ring and backup washer, if they are good replace the valve.

Transfer Pump Pressure:

1. 2000 - 2003 model years do not have a supply pump in the fuel tank. The fuel supply system is under a vacuum up to the engine mounted mechanical supply pump.
2. Check for air leaks at all hose connections prior to the supply pump and at the fuel filter assembly.
3. Check for 6 - 22 PSI supply pump pressure while cranking. 2004 - 2006 model years have an electric supply pump in the fuel tank.
4. Check for 55 - 65 PSI supply pump pressure while cranking.

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PRODUCT INFORMATION

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While troubleshooting keep in mind that all DTech high-pressure pumps are tested for producing the specified cranking delivery and pressure values. Care must be taken during service to not introduce contaminants into the fuel supply to the high-pressure pump. Contamination can cause the suction and discharge check valves to remain open resulting in no delivery or no / low rail pressure from the high-pressure pump.

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