

DETROIT DIESEL



DDEC® VI Troubleshooting

NUMBER: 08 DDEC VI-18 REV **S.M. REF.:** 5.8 **ENGINE:** EPA07 MBE 4000 **DATE:** November 2008

SUBJECT: EXTENDED CRANK TIME

PUBLICATION: DDC-SVC-MAN-0010

The procedure has been revised.

5.8 EXTENDED CRANK TIME

There are no fault codes present and the engine finally starts after an extended crank time.

Check as follows:

1. Visually inspect fuel tank for proper fuel level. If the tank is low/empty, fill the tank and verify repair. If fuel level is OK, go to next step.
2. Visually inspect the entire fuel system for leaks and damage. Repair as necessary. If no leaks are found, check fuel pressure. Refer to section 5.8.1 "Fuel Pressure Test."

5.8.1 FUEL PRESSURE TEST

Check as follows:

1. Visually inspect the entire fuel system for leaks and damage. Repair as necessary.
2. Verify that there is ample fuel in the fuel tank. If the tank is low, fill the tank with ultra-low sulfur fuel.
3. Remove the supply fuel temperature sensor from the fuel pump.
4. Attach a calibrated fuel gauge capable of reading 0–551 kPa (0–80 psi) to the fuel pump port. Crank-start the engine and record the fuel pressure gauge reading.
 - [a] If the pressure is 0–60 kPa (0–10 psi) within 20 seconds of cranking or below 420 kPa (61 psi) with the engine running, refer to section 5.8.2 "No or Low Fuel Pressure Test."
 - [b] If pressure is above 490 kPa (71 psi) with the engine running, refer to section 5.8.3 "High Fuel Pressure Test."

5.8.2 NO OR LOW FUEL PRESSURE TEST

Check as follows:

1. Remove the fuel suction line going to the fuel pump.
2. Tee in a vacuum gauge into the pump and the line. Start/crank the engine over.
3. Is the reading on the gauge greater than 1.5–3.0 kPa (6–12 in. H₂O)?
 - [a] If yes, check the suction line from the fuel pump to the fuel tank for a restriction (bent, kinked, or internally collapsed). If there is no damage, check the fuel filter and get customer approval to replace the filters.
 - [b] If no, replace the fuel pressure regulator and retest fuel pressure. If the fuel pressure is not within specification, check all connections and perform leak test. Refer to section "Test #5 Leak Test." If fuel system passes leak test, replace fuel pump. Refer to section "Fuel Pump" in the workshop manual.

5.8.3 HIGH FUEL PRESSURE TEST

Check as follows:

1. Tee in a pressure gauge into the return line after the fuel pressure regulator.
2. Start the engine and monitor the gauge.
3. Is the pressure reading on the gauge above 21 kPa (3 psi)?
 - [a] If yes, check the fuel return line for damage (kinked, internally collapsed, or bent closed). If damaged, repair as needed.
 - [b] If no, replace the fuel pressure regulator. Verify repairs.



ADDITIONAL SERVICE INFORMATION

Additional service information is available in one of the DDEC VI troubleshooting guides.

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