DETROIT DIESEL

Service Information Bulletin

NUMBER: 2 **6**–09 **S.M. REF.:** Listed in Table **ENGINE:** EPA07 Series 60 **DATE:** February 2009

SUBJECT: EXTENDED CRANK TIME

ADDITIONS, REVISIONS, OR UPDATES

Publication Number	Platform	Section Title	Change	Page Number(s)
DDC-SVC-MAN-0009	EPA07 Series 60	4.13 Extended Crank Time	Extended Crank Time has been revised.	4–19

NOTE: Page numbers are based on the most recent version of the individual publication and may be adjusted throughout the annual print cycle.

4.13 EXTENDED CRANK TIME

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

4.13.1 FUEL LEVEL/LEAKS CHECK

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 4.13.1.1 "Fuel Pressure Test."

4.13.1.1 FUEL PRESSURE TEST

Check as follows:

1. Verify that there is ample fuel in the fuel tank; if the tank is low, fill the tank with ultra low sulfur fuel.
2. Remove the supply fuel temperature sending unit from the fuel pump.
3. Attach a calibrated fuel gauge capable of reading 0-100 psi (0-689 kPa) to the supply fuel temperature sensor port located on the fuel pump. Start/crank the engine and record the fuel pressure gauge readings. Compare recorded pressures to those of the following table:

Engine Speed, rpm	Average Fuel Pressure, PSI (kPa)
600	58-68 (400-468)
1800	80-95 (550-650)
2100	80-95 (550-650)

[a] If the pressure is 0-10 psi (0-60 kPa) within 20 seconds of cranking or less than 58 psi (400 kPa) at idle, refer to section 4.13.1.2 "No or Low Fuel Pressure Test."

[b] If pressure is above 95 psi (650 kPa) with the engine running, refer to section 4.13.1.3 "High Fuel Pressure Test."

4.13.1.2 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 6-12 in. H_2O?
   [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 fuel filter and get customer approval to replace the filters.
   [b] If no, go to step 4.
4. Replace the fuel pressure regulator and retest the fuel pressure. If the fuel pressure is still not within specs, refer to section 4.13.1.4 "Fuel Pump Test."

4.13.1.3 HIGH FUEL PRESSURE TEST

Check as follows:

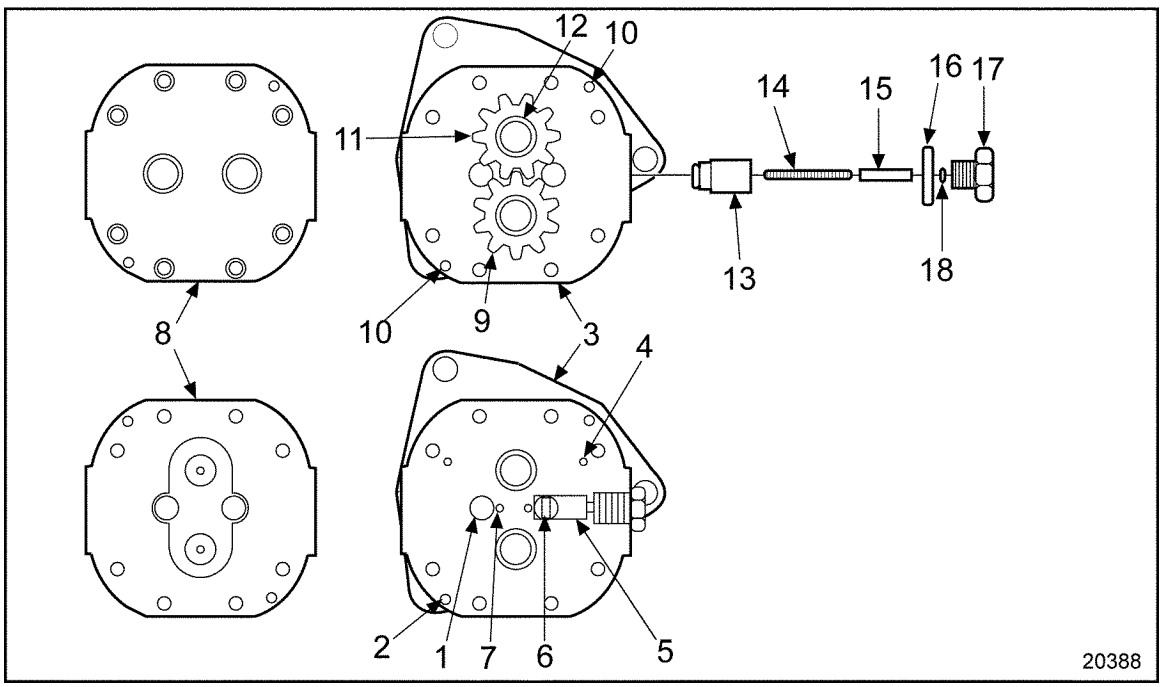
1. Tee in a pressure gauge into the return line after the fuel pressure regulator.
2. Start the engine and monitor the gauge.
3. Is the pressure reading on the gauge above 3 psi?
   [a] If yes, check the fuel return line for damage (kinked, internally collapsed, or bent closed). If damaged, repair as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

4.13.1.4 FUEL PUMP TEST

Check as follows:

1. Remove the fuel pump from the engine.
2. Crank the engine over and visually inspect the air compressor shaft.
   [a] If air compressor shaft is not turning, verify air compressor operation. Refer to the Bendix web site at http:\\www.bendix.com or call the Bendix Technical Assistance Center at 1-800-AIR-BRAKE, (1-800-247-2725).

[b] If air compressor shaft is turning, remove and inspect the fuel pump relief valve. The valve must be free of score marks, burrs, and foreign particles. If the valve is scored or damaged and can not be cleaned with a fine emery cloth, replace the relief valve. If the relief valve is not damaged, reuse the relief valve and continue disassembly and inspection of the fuel pump. Refer to section 2.4 "Fuel Pump" located in the *EPA07 Series 60 Workshop Manual* (DDC-SVC-MAN-0002).



1. Passage to Head of Relief Valve-Pressure Side
2. Dowel Hole
3. Body
4. Oil Seal Vent to Suction Side
5. Relief Valve Vent to Suction Side
6. Passage to Head of Relief Valve - Suction Side
7. Gear Teeth Vent Cavity
8. Cover
9. Drive Gear
10. Dowel
11. Drive Gear
12. Drive Shaft Gear
13. Relief Valve
14. Spring
15. Pin
16. O-ring
17. Plug
18. Spacer

Figure 1 Air Compressor and Shaft

ADDITIONAL SERVICE INFORMATION

Additional service information is available in *Power Service Literature*.

DETROIT DIESEL CORPORATION

13400 Outer Drive, West / Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.detroitdiesel.com