43.1 DESCRIPTION OF FLASH CODE 43

Flash Code 43 indicates that the ECM has detected that the engine coolant level has dropped below the recommended safe operating range.

There is a significant difference between the coolant level sensors used in Detroit Diesel Electronic Controls (DDEC) II and DDEC III/IV applications.

- Externally, the sensors physically look the same, see Figure 43-1.
- The sensor used for the DDEC II system has a black colored connector.
- The sensor used for the DDEC III/IV system has an off-white colored connector.

A coolant level module must be used with all coolant level sensors for DDEC II applications. All DDEC III/IV applications, except Volvo, do not require a coolant level module.

This code indicates that the coolant level is below the Coolant Level Sensor (CLS) probe or below the Add Coolant Level Sensor (ACLS) if there are two coolant level sensors. Add coolant and return to service. If the code persists with a full coolant level, contact Detroit Diesel Customer Service Center at 313-592-5800.

43.2 SAE J1587 EQUIVALENT CODE FOR FLASH CODE 43

The SAE J1587 equivalent code for Flash Code 43 is p 111/1.
43.3 TROUBLESHOOTING FLASH CODE 43

The following procedure will troubleshoot Flash Code 43.

43.3.1 Coolant Level Low

Perform the following steps to diagnose the coolant level low.

1. Turn ignition ON; plug in Diagnostic Data Reader (DDR).
2. Read active codes.
   [a] If code p111/1 is logged, there is an indication of a low coolant level condition. Add coolant to ensure coolant level probe is immersed in coolant.
   [b] If code p111/1 remains active, refer to section 43.3.2.
   [c] If code p111/1 is no longer active, troubleshooting is done. Return engine to service.

43.3.2 Test Relative Humidity/Turbo Compressor Inlet Temperature Sensor Circuit

After ensuring the coolant level is correct, troubleshoot Flash Code 43 as follows:

NOTE:
On DDEC IV S60 EGR engines, an open wire for the Relative Humidity/Turbo Compressor Inlet (TCI) Temperature Sensor circuit can sometimes generate Flash Code 43.

1. Unplug TCI Temperature Sensor connector.
2. Unplug the 10-pin connector on the engine sensor harness next to the ECM.
3. Install a jumper wire between cavities 1 and 2 of the TCI Temperature Sensor connector.
4. Measure resistance between cavities 3 and 4 of the 10-pin connector.
   [a] If greater than 5 Ω, wire 452 is open. Repair open wire 452 and verify repairs. Refer to section 43.3.5.
   [b] If less than 5 Ω, refer to section 43.3.3.
43.3.3 Replace Coolant Level Sensor

Using the DDEC sensor tester (J-37164-B) may be of assistance.

**NOTE:**
When replacing the CLS/ACLS, it could be an OEM-supplied part.

1. Turn ignition OFF; replace CLS/ACLS.
2. Turn ignition ON.
3. Read active codes.
   - [a] If no codes are logged, troubleshooting is complete.
   - [b] If codes are logged, refer to section 43.3.4.

43.3.4 Clean and Check Alternator Grounds

Perform the following steps to check the alternator ground.

1. If the grounds are clean and good, troubleshooting is complete.
2. If the grounds are damaged, repair the ground circuit and verify repairs.
   Refer to section 43.3.5.

43.3.5 Verify Repairs

Perform the following steps to verify repairs

1. Turn ignition OFF.
2. Reconnect all connectors.
3. Turn ignition ON.
5. Start and run the engine for one minute.
7. Check DDR for codes.
   - [a] If no codes are logged, troubleshooting is complete.
   - [b] If code p 111/1, and any other codes are logged, refer to section 43.3.1, and repeat the procedure, or contact Detroit Diesel Technical Service.
   - [c] If any code other than p 111/1 is logged, refer to section 9.1.
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