

U3017-CONTROL MODULE TIMER/CLOCK PERFORMANCE

For a complete wiring diagram, refer to the **Wiring Information**.

Theory of Operation

The Powertrain Control Module (PCM) determines that the ignition off time received from Body Control Module (BCM) is either too high or too low compared to a calculated value. The PCM also factors in the coolant temperature drop observed over a key cycle during this monitor.

- **When Monitored:**

This diagnostic runs once within five minutes after engine startup provided a block heater is not detected and provided there is a minimum 10 degree C (18 degree F) coolant temperature drop between previous ignition off and next key on; and power-down coolant temperature is greater than or equal to 76.6 degrees C (169.8 F).

- **Set Condition:**

The BCM engine ignition off time is too high or low for the coolant temperature drop observed over the key cycle. The PCM will light the MIL lamp after this monitor runs and fails twice. The PCM will turn off the MIL lamp once the diagnostic runs and passes in four consecutive drive cycles. Note: This DTC can also set when using the scan tool to change the vehicle from Shipping Mode to Customer Mode (during New Vehicle Prep).

Possible Causes

CHANGING THE VEHICLE FROM SHIPPING MODE TO CUSTOMER MODE
COOLANT CHANGE/ADDING COOLANT
LOW BATTERY VOLTAGE
(RECENTLY) RECONFIGURED VEHICLE
REPROGRAMMED BODY CONTROL MODULE (BCM)
COOLANT TEMPERATURE SENSOR
BODY CONTROL MODULE (BCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

Diagnostic Test

1. CHANGING THE VEHICLE FROM SHIPPING MODE TO CUSTOMER MODE

1. **NOTE:** When performing the normal procedure of Changing the Shipping/Customer Mode with the scan tool (during Post-Delivery Inspection), this may cause the BCM to lose the ignition off timer used by the PCM.

Was the vehicle changed from Shipping Mode to Customer Mode recently?

- Yes**
- Turn the ignition on, erase the DTC, and leave the ignition on for five seconds. This will resynchronize the Ignition-Off Timer values in the PCM and BCM. Then, turn the ignition off for one minute. Then, start the vehicle, allow to idle for five minutes to make sure the DTC does not return.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).
- No**
- Go To 2

2. COOLANT CHANGE/ADDING COOLANT

1. **NOTE:** If there are any Coolant Temperature Sensor DTCs present, perform the Diagnostics for those DTCs before continuing with this one.
2. Turn the ignition on.
3. With the scan tool, record all Freeze frame data.
4. With the scan tool, erase DTCs.
5. If Coolant is low or was recently changed, fill the coolant to the proper level.
6. Test drive the vehicle until it reaches normal operating temperature.
7. Shut the engine off and allow it to sit for two hours.
8. Restart the engine and allow it to run for 5 minutes.
9. With the scan tool, read DTCs.

Did the DTC return?

- Yes**
- Go To 3
- No**
- Test Complete.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

3. LOW BATTERY VOLTAGE AND/OR BATTERY REPLACED

1. If DTC P2509 is also present, it is usually caused by disconnecting the Battery before allowing the normal 10 minute Control Module power down. If DTC P2509 is also present, erase the DTCs and test drive the vehicle. If U3017 returns, continue with this Diagnostic Tree.
2. Verify that the Battery is in good condition. Perform the Battery System Diagnostic Procedure. (Refer to 08 - Electrical/Battery System/Diagnosis and Testing)

Did the Battery test low?

- Yes**
- Charge, repair, or replace the Battery as needed. After the repair, turn the ignition on, erase the DTC, and leave the ignition on for five seconds. Then, turn the ignition off for one minute. Then, start the vehicle, allow to idle for five minutes to make sure the DTC does not return.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).
- No**
- The Battery may have been momentarily disconnected before allowing the normal 10 minute Control Module power down. Turn the ignition on, erase the DTC, and leave the ignition on for five seconds. Then, turn the ignition off for one minute. Then, start the vehicle, allow to idle for five minutes to make sure the DTC does not return.

- If the DTC does return, Go To 4

4. RECENTLY RECONFIGURED VEHICLE

Was this vehicle recently reconfigured?

- Yes**
- Turn the ignition on, erase the DTC, and leave the ignition on for five seconds. Then, turn the ignition off for one minute. Then, start the vehicle, allow to idle for five minutes to make sure the DTC does not return.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).
- No**
- Go To 5

5. REPROGRAMMED BCM

Was the BCM recently reprogrammed?

- Yes**
- Turn the ignition on, erase the DTC, and leave the ignition on for five seconds. Then, turn the ignition off for one minute. Then, start the vehicle, allow to idle for five minutes to make sure the DTC does not return.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).
- No**
- Go To 6

6. COOLANT TEMPERATURE SENSOR

1. Remove the Coolant Temperature Sensor and reconnect the wiring to the sensor.
2. Turn ignition on.
3. Monitor the Scan Tool while heating the sensor with an external heat source (DO NOT USE OPEN FLAME).

Does the reading from the Coolant Temperature Sensor increase at least 3°C (5°F) on the Scan Tool?

- Yes**
- Replace the Body Control Module in accordance with the service information.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).
- No**
- Replace the Coolant Temperature Sensor in accordance with the service information.
 - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).