X15 CM2350 X116B

Fault Code: 3383 | SPN: 3058 | FMI: 16

Engine Exhaust Gas Recirculation (EGR) System - Data Valid But Above Normal Operating Range - Moderately Severe Level

1 Check for primary fault codes

2 Leaking EGR differential pressure sensor mounting surface

3 Plugged EGR differential pressure sensor supply ports

4 EGR valve stuck open

5 High exhaust restriction

6 ECM calibration revision history check

7 EGR differential pressure sensor is malfunctioning

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1 Check for primary fault codes

Solution: S00000295

Verification

Conditions

- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Use the recommended Cummins® electronic service tool or equivalent to read the fault codes.

Specification

Before troubleshooting this fault code, troubleshoot any fault code that is active or has more than one inactive count within the last 25 engine operating hours from the following list:

- EGR: 1228, 1896, 2272, 2349, 2351, 2352, 2353
- EGR differential pressure: 1866, 2273, 2274
- Turbocharger: 1898, 2387, 3616
- Intake manifold: 125
- Intake throttle: 175, 176, 177, 3539, 3541, 3542

Linked Solutions

- None

Repair

- Perform a search on the appropriate fault codes.

Validation

- None

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2 Leaking EGR differential pressure sensor mounting surface

Solution: S00001114

Verification

Conditions

- Turn keyswitch OFF.

Action

- Remove the EGR differential pressure sensor. Refer to Procedure 019-370
- Inspect the o-rings between the EGR differential pressure sensor and the mounting surface. Refer to Procedure 019-370
- Inspect the EGR differential pressure sensor. Refer to Procedure 019-370

Leaks can be easily noted by traces of soot, however, the sensor will need to be removed to inspect the o-rings between the EGR differential pressure sensor and the mounting surface.

Specification

- If leaks are detected at the EGR differential pressure sensor mounting surface, then proceed to the Repair section.
- If any carbon buildup is found, then proceed to the Repair section.

Linked Solutions

- None

Repair

Repair or replace **only** the components that were found to be out of specification.

- Clean or replace the EGR differential pressure sensor. Refer to Procedure 019-370
- Clean the EGR differential pressure sensor mounting surface. Refer to Procedure 011-066

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

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3 Plugged EGR differential pressure sensor supply ports

Solution: S00000795

Verification

Conditions

- Turn keyswitch OFF.

Action

- Remove the EGR mass measurement flow assembly. Refer to Procedure 011-066
- Visually inspect the EGR differential pressure sensor flow port cross-drillings for soot blockage. Refer to Procedure 011-066
- Visually inspect the exhaust gas entrance ports for soot blockage. Refer to Procedure 011-066

Specification

- If plugging or damage is found, then proceed to the Repair section.

Linked Solutions

- None

Repair

- Remove and clean the EGR mass measurement flow assembly. Refer to Procedure 011-066

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

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4 EGR valve stuck open

Solution: S00001117

Verification

Conditions

- Turn keyswitch OFF.

Action

- Remove the EGR valve. Refer to Procedure 011-022
- Visually inspect the EGR valve. Refer to Procedure 011-022

Specification

- If any damage is found, then proceed to the Repair section.

Linked Solutions

- None

Repair

- Clean or replace the EGR valve. Refer to Procedure 011-022

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

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5 High exhaust restriction

Solution: S00000324

Verification

Conditions

- Turn keyswitch OFF.

Action

- Check the exhaust restriction. Refer to Procedure 011-009

Specification

- If the exhaust restriction is **not** within specification, then a restriction in the exhaust has been detected. Refer to Procedure 018-020

Linked Solutions

- None

Repair

- Repair the source of the exhaust restriction.
- Check the face of the aftertreatment diesel oxidation catalyst for plugging. Refer to Procedure 011-049
- Check the face of the aftertreatment diesel particulate filter for plugging. Refer to Procedure 011-041
- Check for deposits in the decomposition tube. Refer to Procedure 011-062
- Check the face of the aftertreatment SCR catalyst for plugging. Refer to Procedure 011-036
- For a restricted turbocharger, replace the turbocharger. Refer to Procedure 010-033

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

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6 ECM calibration revision history check

Solution: S00000443

Verification

Conditions

- Connect all components.
- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Use the recommended Cummins® electronic service tool or equivalent to read the fault codes.
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revision listed in the ECM calibration revision history for applicable changes.

Specification

- If a calibration update for this fault code is available, the ECM calibration revision **must** be that revision or higher.

Linked Solutions

- None

Repair

- Prior to downloading the ECM calibration, check to see that all job images and all other troubleshooting has been documented as downloading an ECM calibration will remove the fault codes on the ECM.
- Download the updated ECM calibration code. Refer to Procedure 019-032

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
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7 EGR differential pressure sensor is malfunctioning

Solution: S00003480

Verification

Conditions

- Turn keyswitch OFF.

Action

- Verify all preceding solution verifications for this fault code have been performed.

Specification

- If the fault code is still active or inactive with more than one count within the last 25 engine hours and all the preceding solution verifications have been performed, then proceed to the Repair section.

Linked Solutions

- None

Repair

- Replace the EGR differential pressure sensor. Refer to Procedure 019-370

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable Fault Code
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

If all steps have been completed and no root cause has been identified, then follow the technical escalation process.

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