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Service Information Bulletin

SUBJECT	DATE
SPN 2791 (MCM) (GHG14) and SPN 2791 (MCM) (GHG17)	March 2016

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 2791/FMI 11 - GHG14	The diagnostic procedure has been updated, adding a step to check for other fault codes and deleting the links relating to the Delphi actuator since the Delphi actuator is not installed on these engines.
DDC-SVC-MAN-0191		SPN 2791/FMI 11 - GHG17	

DiagnosticLink® users: Please update the troubleshooting guides in DiagnosticLink with this newest version. To update the tool troubleshooting guide, open DiagnosticLink and from the Help - Troubleshooting Guides menu, select the appropriate troubleshooting manual, then click Update.



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2 SPN 2791/FMI 11 - GHG14

Smart Remote Actuator 3 (EGR), Common Error

Table 1.

SPN 2791/FMI 11	
Description	The Faults Code Sets when the Motor Control Module (MCM) Detects that the Exhaust Gas Recirculation (EGR) Valve Position is Incorrect or a High Coolant Temperature Has Been Detected.
Monitored Parameter	EGR Position
Typical Enabling Conditions	Engine Running
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	MIL, CEL
Engine Reaction	None
Verification	Engine Idle and Perform Several Neutral Run Ups.



WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

Check as follows:

1. Connect DiagnosticLink®.
2. Turn the ignition ON (key ON, engine OFF).
3. Check for multiple fault codes. Are fault codes SPN 2791/FMI 10, SPN 110/FMI 0 or SPN 110/FMI 2 present?
 - a. Yes; diagnose the other fault codes first.
 - b. No; Go to step 4.
4. Turn the ignition OFF.
5. Visually inspect the EGR system hardware, clamps, and connections. Are there any components that interfere with the travel of the pull rod?
 - a. Yes; install the components correctly, (replace any clamps that need readjustment), and perform the EGR Slow Learn routine. Verify repair.
 - b. No; Go to step 6.
6. Verify the orientation of the pull rod. Is the "S" stamped on the pull rod facing toward EGR actuator and the "V" stamped on the pull rod facing toward the EGR valve?
 - a. Yes; Go to step 7.
 - b. No; remove the pull rod and install the pull rod correctly. Perform the EGR Slow Learn routine. Verify repair.
7. Move the pull rod toward the rear of the engine by hand. Does the pull rod move?
 - a. Yes; Go to step 8.
 - b. No; Go to step 11.
8. Turn ignition ON (key ON, engine OFF).
9. Monitor the EGR actuator when the ignition is turned on. Does the EGR actuator move when the ignition is first turned on?
 - a. Yes; Go to step 10.
 - b. No; replace the EGR actuator. Refer to the following section:
 For DD13, Refer to section "Removal of the DD13 Exhaust Gas Recirculation Valve Actuator".
 For a DD15TC or DD16 equipped with a Soneceboz actuator, Refer to section "Removal of the DD15 and DD16 Soneceboz® Exhaust Gas Recirculation Valve Actuator".

For a DD15AT, Refer to section "Removal of the GHG14 DD15 AT Exhaust Gas Recirculation Valve Actuator".

10. Check the Motor Control Module (MCM) software level. Is the MCM software level 4.7.0.00 ZGS 002 or higher?
 - a. Yes; Go to step 11.
 - b. No; update the MCM software using the latest server information. Perform the repair verification. If the fault returns, Go to step 11.
11. Turn the ignition off.
12. Disconnect and inspect the pull rod from the EGR actuator and the EGR valve. Are the bearings or inserts (1) in the pull rod missing ?



- a. Yes; replace the pull rod. Verify repair.
 - b. No; Go to step 13.
13. Rotate the bearings in the pull rod in the normal direction of movement when installed. Do the bearings move?
 - a. Yes; Go to step 14.
 - b. No; replace the pull rod. Verify repair.
14. Move the EGR valve back and forth by hand. Does the EGR valve move from end stop to end stop?
 - a. Yes; Go to step 15.
 - b. No; replace the EGR valve. Refer to the following section:
 For the DD13, Refer to section "Removal of the Exhaust Manifold".
 For the DD15AT, Refer to section "Removal of the GHG14 DD15 AT Exhaust Gas Recirculation Valve/Hot Pipe".
 For the DD15TC and the DD16, Refer to section "Removal of the DD15 and DD16 Exhaust Gas Recirculation Valve".
15. Install the EGR valve actuator pull rod.
16. Use DiagnosticLink[®] to perform the EGR Slow Learn routine. Does fault code SPN 2791/FMI 11 become active?
 - a. Yes; replace the EGR actuator. Refer to the following section:
 For DD13, Refer to section "Removal of the DD13 Exhaust Gas Recirculation Valve Actuator".
 For a DD15TC or DD16 equipped with a Sonceboz actuator, Refer to section "Removal of the DD15 and DD16 Sonceboz[®] Exhaust Gas Recirculation Valve Actuator".
 For a DD15AT, Refer to section "Removal of the GHG14 DD15 AT Exhaust Gas Recirculation Valve Actuator".
 - b. No; the concern was corrected by performing the EGR Slow Learn routine. No further diagnostics or repairs are needed. Release the vehicle to the customer.

3 SPN 2791/FMI 11 - GHG17

EGR Valve Actuator Common Fault

Table 2.

SPN 2791/FMI 11	
Description	The Faults Code Sets when the Motor Control Module (MCM) Detects that the Exhaust Gas Recirculation (EGR) Valve Position is Incorrect or a High Coolant Temperature has Been Detected.
Monitored Parameter	EGR Position Error
Typical Enabling Conditions	Engine Running
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two seconds
Dash Lamps	MIL, CEL
Engine Reaction	None
Verification	Engine Idle and Perform Several Neutral Run Ups.



WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

Check as follows:

1. Connect DiagnosticLink®.
2. Turn the ignition ON (key ON, engine OFF).
3. Check for multiple fault codes. Are fault codes SPN 2791/FMI 10, SPN 110/FMI 0 or SPN 110/FMI 2 present?
 - a. Yes; diagnose the other fault codes first.
 - b. No; Go to step 4.
4. Turn the ignition OFF.
5. Visually inspect the EGR system hardware, clamps and connections. Are there any components that will interfere with the travel of the pull rod?
 - a. Yes; install the components correctly, (replace any clamps that need readjustment), and perform the EGR Slow Learn routine. Verify repair.
 - b. No; Go to step 6.
6. Verify the orientation of the pull rod. Is the "S" stamped on the pull rod facing toward EGR actuator and the "V" stamped on the pull rod facing toward the EGR valve?
 - a. Yes; Go to step 7.
 - b. No; remove the pull rod and install the pull rod correctly. Perform the EGR Slow Learn routine. Verify repair.
7. Move the pull rod toward the rear of the engine by hand. Does the pull rod move?
 - a. Yes; Go to step 8.
 - b. No; Go to step 11.
8. Turn ignition ON (key ON, engine OFF).
9. Monitor the EGR actuator when the ignition is turned ON (key ON, engine OFF). Does the EGR actuator move when the ignition is first turned on?
 - a. Yes; Go to step 10.
 - b. No; replace the EGR actuator.
10. Turn the ignition OFF.
11. Disconnect and inspect the pull rod from the EGR actuator. Are the bearings or inserts in the pull rod missing?

- a. Yes; replace the pull rod. Verify repair.
 - b. No; Go to step 12.
12. Rotate the bearings in the pull rod in the normal direction of movement when installed. Do the bearings move?
 - a. Yes; Go to step 13.
 - b. No; replace the pull rod.
13. Move the EGR valve back and forth by hand using the pull rod. Does the EGR valve move from end stop to end stop?
 - a. Yes; Go to step 14.
 - b. No; replace the EGR valve.
14. Install the pull rod back onto the EGR actuator.
15. Use DiagnosticLink® to perform the EGR Slow Learn routine.
16. Does fault code SPN 2791/FMI 11 become active?
 - a. Yes; replace the EGR valve actuator.
 - b. No; the concern was corrected by performing the Slow Learn routine. No further diagnostics or repairs are needed; release the vehicle to the customer.