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Service Information Bulletin

SUBJECT	DATE
SPN 520296 (MCM) (GHG14) and SPN 520296 (MCM) (GHG17)	January 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 520296/FMI 31 - GHG14	This is an updated diagnostic for GHG14
DDC-SVC-MAN-0191		SPN 520296/FMI 31 - GHG17	This is a new diagnostic for 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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Exhaust Gas Recirculation Valve Actuator, Learn Cycle Incomplete

Table 1.

SPN 520296/FMI 31	
Description	The Fault Code Sets When the Motor Control Module (MCM) Detects that the Exhaust Gas Recirculation (EGR) Valve Position is Incorrect
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

Check as follows:

1. Turn the ignition OFF.
2. 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 use DiagnosticLink[®] to perform the EGR Slow Learn routine. Verify repair.
 - b. No; Go to step 3.
3. Verify the orientation of the pull rod. Is the "S" stamped on the pull rod facing toward the EGR actuator and the "V" stamped on the pull rod facing toward the EGR valve?
 - a. Yes; Go to step 4.
 - b. No; remove the pull rod and install the pull rod correctly. Perform the EGR Slow Learn routine. Verify repair.
4. Move the pull rod toward the rear of the engine by hand. Does the pull rod move?
 - a. Yes; Go to step 5.
 - b. No; Go to step 8.
5. Turn ignition ON (key ON, engine OFF).
6. 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 7.
 - 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 DD15TC or DD16 equipped with Delphi actuators, Refer to section "Removal of the DD15 and DD16 Delphi[®] Exhaust Gas Recirculation Valve Actuator".
 For DD15TC or DD16 equipped with Soneboz actuators, Refer to section "Removal of the DD15 and DD16 Soneboz[®] Exhaust Gas Recirculation Valve Actuator".
 For DD15AT, Refer to section "Removal of the GHG14 DD15 AT Exhaust Gas Recirculation Valve Actuator".
7. 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 8.
 - b. No; update the MCM software using the latest server information. If the fault returns, Go to step 8.
8. Turn the ignition OFF.
9. Disconnect and inspect the pull rod from the EGR actuator and the EGR valve. Are the bearings or inserts in the pull rod missing (1)?



- a. Yes; replace the pull rod. Verify repair.
 - b. No; Go to step 10.
10. Rotate the bearings in the pull rod in the normal direction of movement when installed. Do the bearings move?
 - a. Yes; Go to step 11.
 - b. No; replace the pull rod.
11. 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 12.
 - 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".
12. Install the pull rod.
13. Use DiagnosticLink[®] to perform the EGR Slow Learn routine.
14. Does fault code SPN 520296/FMI 31 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 DD15TC or DD16 equipped with Delphi actuators, Refer to section "Removal of the DD15 and DD16 Delphi[©] Exhaust Gas Recirculation Valve Actuator".
 For DD15TC or DD16 equipped with Soneceboz actuators, Refer to section "Removal of the DD15 and DD16 Soneceboz[®] Exhaust Gas Recirculation Valve Actuator".
 For 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.

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Exhaust Gas Recirculation Valve Actuator, Learn Cycle Incomplete

Table 2.

SPN 520296/FMI 31	
Description	The Fault Code Sets When the Motor Control Module (MCM) Detects that the Exhaust Gas Recirculation (EGR) Valve Position Does Not Reach the Commanded Position Within a Calibrated Time.
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

Check as follows:

1. Turn the ignition OFF.
2. 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; Go to step 3.
 - b. No; install the components correctly (replace any clamps that need readjustment), and use DiagnosticLink[®] to perform the EGR Slow Learn routine. Verify repair.
3. Verify the orientation of the pull rod. Is the "S" stamped on the pull rod facing toward the EGR actuator and the "V" stamped on the pull rod facing toward the EGR valve?
 - a. Yes; Go to step 4.
 - b. No; remove the pull rod and install the pull rod correctly. Perform the EGR Slow Learn routine. Verify repair.
4. Move the pull rod toward the rear of the engine by hand, and then release the pull rod. Does the pull rod move?
 - a. Yes; Go to step 5.
 - b. No; Go to step 7.
5. Monitor the EGR actuator while turning the ignition ON (key ON, engine OFF). Does the EGR actuator move when the ignition is first turned on?
 - a. Yes; Go to step 6.
 - b. No; replace the EGR actuator.
6. Turn the ignition OFF.
7. 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 8.
8. Rotate the bearings in the pull rod in the normal direction of movement when installed. Do the bearings move?
 - a. Yes; Go to step 9.
 - b. No; replace the pull rod.
9. 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 10.
 - b. No; replace the EGR valve.
10. Install the pull rod back onto the EGR actuator.
11. Use DiagnosticLink[®] to perform the EGR Slow Learn routine.
12. Does fault code SPN 2791/FMI 31 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.