

1 3 23-14

SB-10055464-7245**Service Information Bulletin**

SUBJECT	DATE
SPN 51/FMI 10 and 18	March 2014

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	GHG14 DD	SPN 51/FMI 10	The diagnostics have been updated.
	Platform	SPN 51/FMI 18	



13400 Outer Drive, West, Detroit, Michigan 48239-4001
 Telephone: 313-592-5000
www.demanddetroit.com

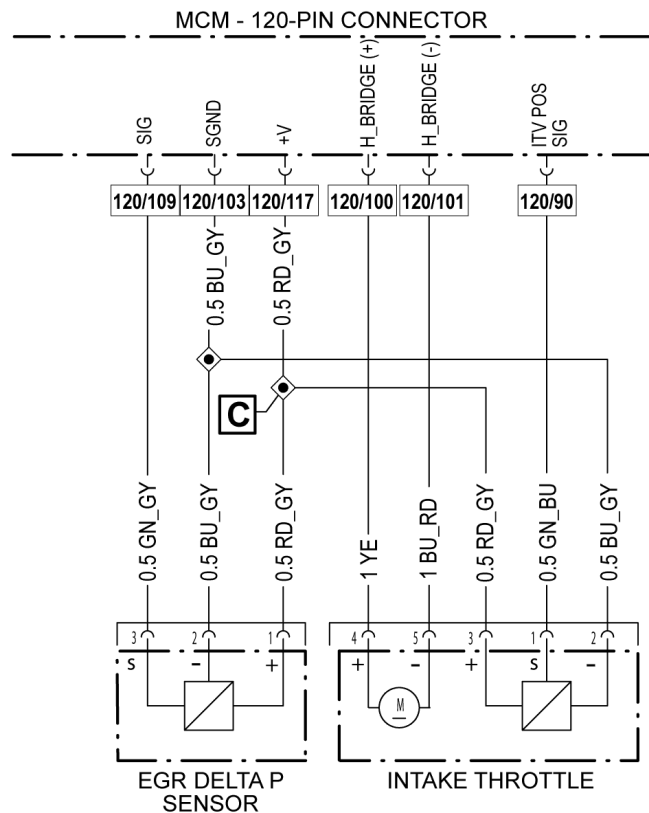
2 SPN 51/FMI 10 - GHG14

This diagnostic is typically Intake Throttle Position Abnormal Rate of Change.

This code sets when the Intake Throttle Valve (ITV) position is not within 30% of the commanded position during freezing conditions.

Table 1.

SPN 51/FMI 10	
Description	Intake Throttle Position Abnormal Rate Of Change
Monitored Parameter	Intake Throttle Valve (ITV)
Typical Enabling Conditions	Engine RPM = idle or higher
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	Five seconds
Dash Lamps	None
Engine Reaction	No Derate
Verification	Engine RPM = idle or higher



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Possible causes:

- Faulty ITV motor
- Faulty ITV position
- Frozen (ice buildup) ITV butterfly

NOTE: With the new strategy when the ignition key is turned on, the Intake Throttle Valve (ITV) will cycle two full times and then the ITV will be commanded short increments.

Check as follows:

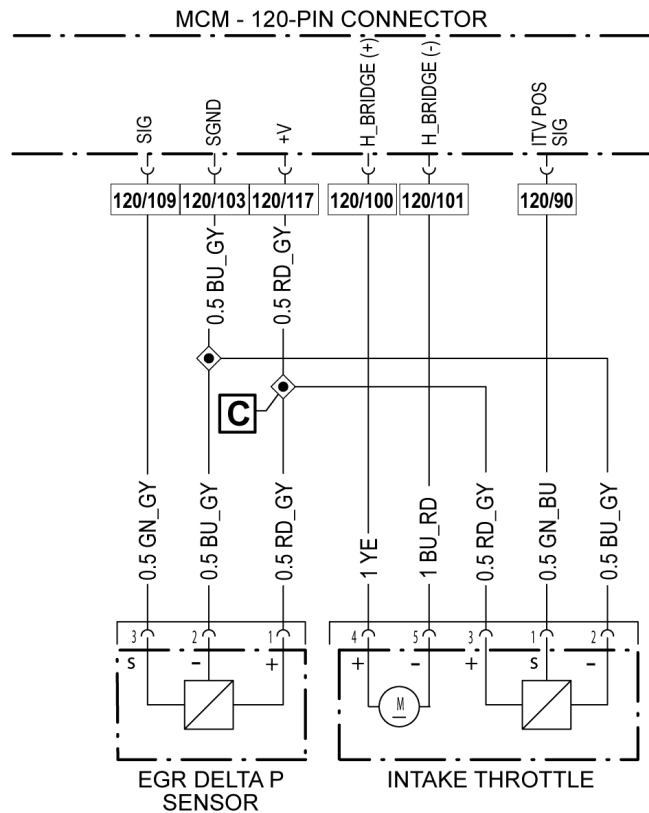
1. Connect Diagnostic Link™. Go to step 2.
2. Turn ignition ON (key ON, engine OFF). Go to step 3.
3. Check the Engine Coolant Temperature and Ambient Air Temperature in the Motor Control Module (MCM) when the fault code is set. Were temperatures below freezing when the code set?
 - a. Yes; Go to step 4.
 - b. No; Go to step 8.
4. Turn the ignition OFF? Go to step 5.
5. Remove the hose from the charge air cooler to the ITV. Go to step 6.
6. Inspect the hose and the ITV for signs of ice or moisture. Are there signs of ice or moisture?
 - a. Yes; clean the hose and ITV as necessary. Inspect the air intake system/air cleaner for signs of water intrusion. Repair as necessary. Verify repair.
 - b. No; Go to step 7.
7. Turn the ignition ON (key ON, engine OFF). Go to step 8.
8. Remove the hose from the charge air cooler to the ITV. Go to step 9.
9. Use the Service Routines > Intake Throttle Valve in DiagnosticLink to command the Intake Throttle Valve fully open and fully closed while watching the ITV flap. Does the ITV butterfly valve fully close and fully open when commanded?
 - a. Yes; Go to step 10.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
10. Using the Intake Throttle Valve service routine, command the ITV to 20% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 11.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
11. Command the ITV to 50% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 12.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
12. Command the ITV to 90% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 13.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
13. Turn the ignition OFF. Go to step 14.
14. Disconnect and inspect the ITV 5-pin connector. Are there any damaged pins, spread pins or the retainer clip missing?
 - a. Yes; repair as necessary. Verify repair.
 - b. No; Go to step 15.
15. Measure the resistance across pins 4 and 5 of the component side of the ITV motor connector. Is the resistance less than 10 ohms?
 - a. Yes; Go to step 16.
 - b. No; replace the ITV due to a shorted motor. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
16. Install a test Motor Control Module (MCM). Go to step 17.
17. Road test the vehicle. Is code SPN 51/FMI 2 still present?
 - a. Yes; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
 - b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

3 SPN 51/FMI 18 - GHG14

This diagnostic is typically Intake Throttle Position Data Valid but Below Normal Operating Range - Moderately Severe Level.

Table 2.

SPN 51/FMI 18	
Description	Intake Throttle Position Data Valid but Below Normal Operating Range – Moderately Severe Level
Monitored Parameter	Intake Throttle Valve (ITV)
Typical Enabling Conditions	Engine RPM = idle or higher
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	Five seconds
Dash Lamps	MIL
Engine Reaction	No Derate
Verification	Engine rpm = idle or higher



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Possible causes:

- Damaged ITV butterfly flap
- Faulty ITV motor
- Faulty ITV sensor

Check as follows:

1. Remove the hose from the Charge Air Cooler (CAC) to the ITV.

2. Visually inspect the ITV butterfly valve. Is there damage to the butterfly valve?
 - a. Yes; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
 - b. No; Go to step 3.
3. Connect Diagnostic Link™.
4. Turn the ignition ON (key ON, engine OFF).
5. Use the Service Routines > Intake Throttle Valve in DiagnosticLink to command the ITV fully open and fully closed while watching the ITV flap. Does the ITV butterfly valve fully close and fully open when commanded?
 - a. Yes; Go to step 6.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
6. Using the Intake Throttle Valve service routine, command the ITV to 20% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 7.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
7. Command the ITV to 50% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 8.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
8. Command the ITV to 90% while monitoring the ITV actual position. Is the actual valve position within +/- 5% of the commanded position?
 - a. Yes; Go to step 9.
 - b. No; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
9. Turn the ignition OFF. Go to step 10.
10. Disconnect and inspect the ITV 5-pin connector. Are there any damaged pins, spread pins or the retainer clip missing?
 - a. Yes; repair as necessary. Verify repair.
 - b. No; Go to step 11.
11. Measure the resistance across pins 4 and 5, component side, of the ITV motor connector. Is the resistance less than 10 ohms?
 - a. Yes; Go to step 12.
 - b. No; replace the ITV due to a shorted motor. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
12. Install a test Motor Control Module (MCM). Go to step 13.
13. Road test the vehicle. Is code SPN 51/FMI 2 still present?
 - a. Yes; replace the ITV. Refer to section "Removal of the Intake Throttle Valve and Adaptor". Verify repair.
 - b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.