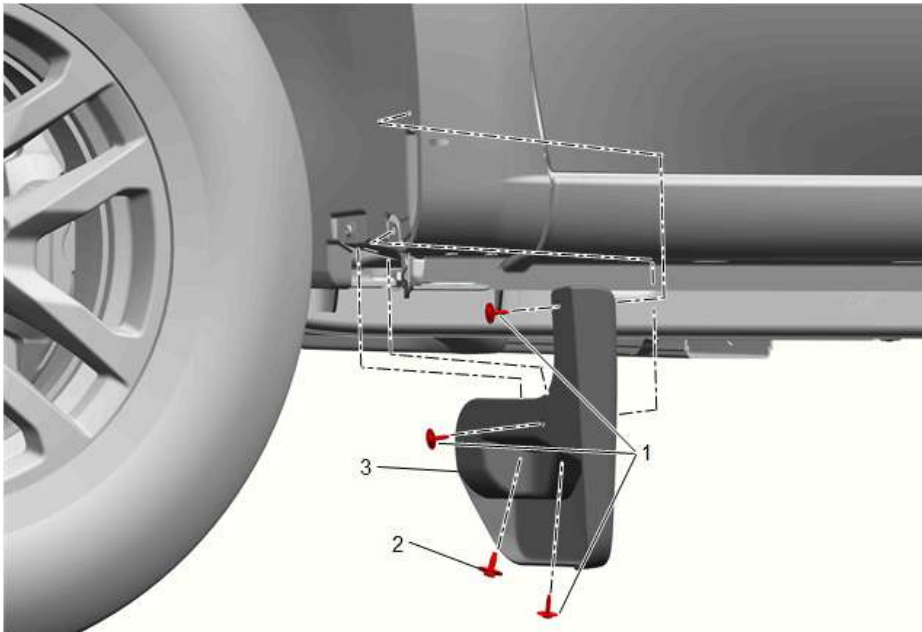


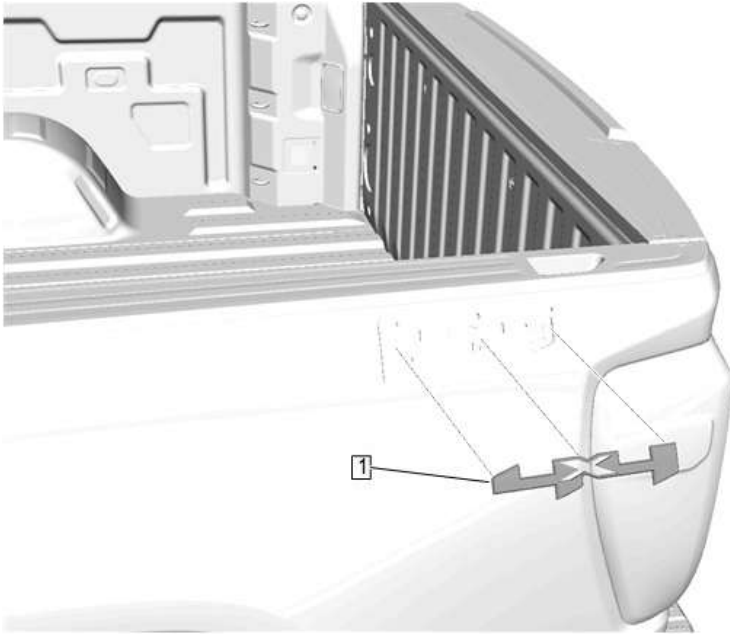
1. BODY HARDWARE AND TRIM
2. EXTERIOR TRIM
3. REPAIR INSTRUCTIONS
- 4.

## Front Fender Paint Protector Replacement



[Click here for full size](#)

Callout	Component Name
1	<p>Front Fender Paint Protector Screw [3x]</p> <p>Caution:</p> <p>Refer to <a href="#">Fastener Caution</a>.</p> <p>Tighten:</p> <p>2.5 N-m (22 lb in)</p>
2	<p>Front Fender Paint Protector Bolt</p> <p>Tighten</p> <p>9 N-m (80 lb in)</p>
3	<p>Front Fender Paint Protector</p> <p>Procedure</p> <p>Using a suitable flat bladed plastic tool to release the retainer from the front fender.</p>



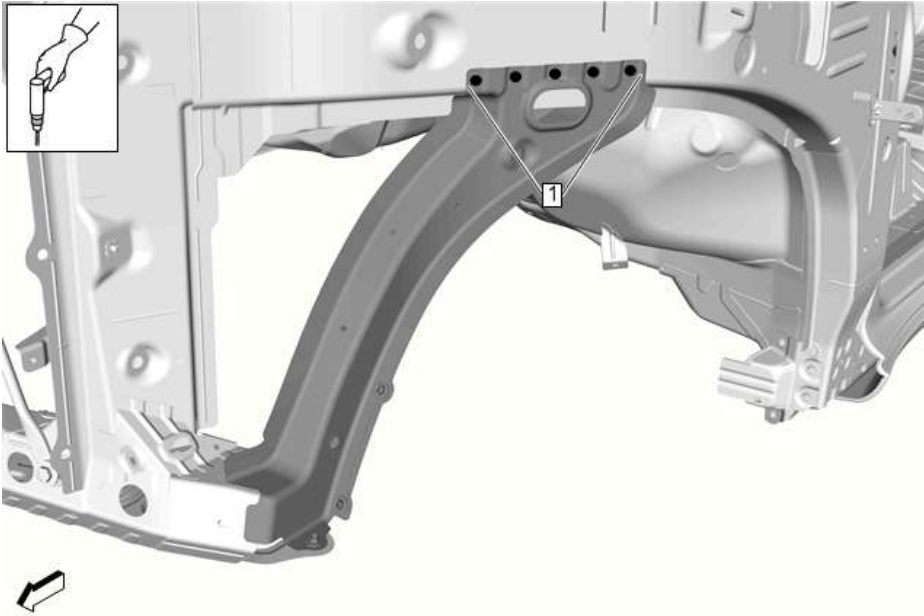
1. [Click here for full size](#)
2. The paint surface must be clean and dry before installation of a new emblem/nameplate (1).
3. Temperature ranges required for installation of a new emblem/nameplate (1) are 16°C (60°F) - 43°C (110°F) for the body, and the emblem/nameplate.
4. General surface contaminants, such as dirt, dust, fingerprints, moisture, oil, etc., can be removed with a dry cleaning cloth from 3M (Scotch Brite High Performance Cloth), or Contec (Thunderbolt Cloth).



11.

[Click here for full size](#)

12. Center Pillar Lower Trim Panel (1) >> Remove [2x] - [Center Pillar Lower Trim Panel Replacement](#)

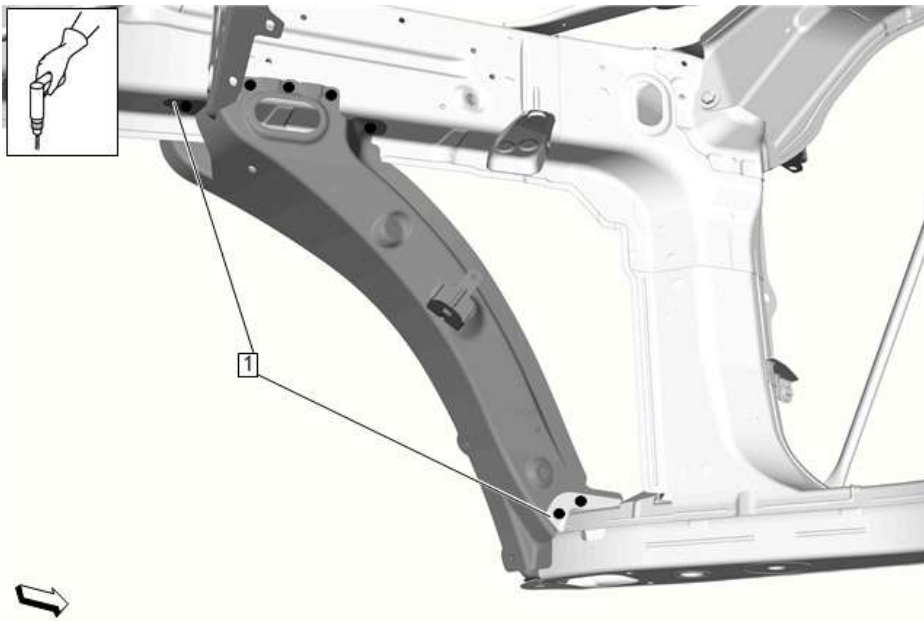


4. [Click here for full size](#)

5. Note:

The 6.7 mm (17/64") holes will be used for rivet installation.

6. Drill 6.7 mm (17/64") hole (1) through wheelhouse panel for rivet installation. [5X]



7. [Click here for full size](#)

8. Note:

The 6.7 mm (17/64") holes will be used for rivet installation.

9. Drill 6.7 mm (17/64") hole (1) through wheelhouse panel for rivet installation. [7X]

2. Test for less than 2 $\Omega$  in the ground circuit end to end.
3.
  - If 2 $\Omega$  or greater, repair the open/high resistance in the circuit.
  - If less than 2 $\Omega$ , replace the K4 Assist Step Control Module.
5.
  - **If less than 10 $\Omega$ ,**
6. Ignition ON.
7. Verify the scan tool Left Assist Step Switch parameter is Inactive.
8.
  - **If not Inactive**
9.
  1. Ignition OFF, disconnect the X2 harness connector at the K4 Assist Step Control Module.
  2. Test for infinite resistance between the K4 Assist Step Control Module signal circuit terminal 11 and ground.
  3.
    - If less than infinite resistance, repair the short to ground on the circuit.
    - If infinite resistance, replace the K4 Assist Step Control Module.
10.
  - **If Inactive**
11. Install a 3 $A$  fused jumper wire between the signal circuit terminal 1 and ground:
12. Verify the scan tool Left Assist Step Switch parameter Active.
13. Note:
 

DTC B052C 02 will set after approximately 1 $min$ .
14.
  - **If not Active**
15.
  1. Ignition OFF, remove the jumper wire, disconnect the X2 harness connector at the K4 Assist Step Control Module, ignition ON.
  2. Test for less than 1 $V$  between the signal circuit and ground.
  3.
    - If 1 $V$  or greater, repair the short to voltage on the circuit.
  4.
    - If less than 1 $V$
  5. Test for less than 2 $\Omega$  in the signal circuit end to end.
  6.
    - If 2 $\Omega$  or greater, repair the open/high resistance in the circuit.
    - If less than 2 $\Omega$ , replace the K4 Assist Step Control Module.
16.
  - **If Active**

## Actions Taken When the DTC Sets

Accent Lamp Control Circuit = Inoperative

## Conditions for Clearing the DTC

- The conditions for setting the DTC no longer exist.
- Ignition Off >> Greater than 30 s
- A history DTC will clear after 100 consecutive malfunction-free ignition cycles.

## Reference Information

Schematic Reference

[Interior Lights Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

[Control Module References](#)

## Circuit/System Testing

1. Note :

It may take up to 2> min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

2. Ignition/Vehicle & All vehicle systems >> Off

3. Disconnect the appropriate electrical connector:

4.

- E63D Flood Lamp - Driver Door Handle
- E63P Flood Lamp - Passenger Door Handle

5. Test for less than 10 Ω; between the test points: Ground circuit terminal 2> & Ground

6.

- **If 10 Ω; or greater**

7.

1. Test for less than 2> Ω; between the test points: Ground circuit terminal 2> @ Component harness & The other end of the circuit

2.

- If 2> Ω; or greater >> Repair the open/high resistance in the circuit.
- If less than 2> Ω; >> Repair the open/high resistance in the ground connection.

1. **DIAGNOSTIC OVERVIEW, STARTING POINT, AND PROGRAMMING**
2. **PROGRAMMING AND SETUP**
3. **REPAIR INSTRUCTIONS**
- 4.

## **K71 Transmission Control Module: Programming and Setup (8L90 (MQE))**

### **Diagnostic Instructions**

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)

#### Note :

- Do NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Verify the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required, install a battery maintainer or power supply that provides a steady and stable voltage. Do not use a battery charger, as charging voltage will often fluctuate when connected to the vehicle. This may interrupt programming. If a battery maintainer is not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn Off or disable systems that may put a load on the vehicle's battery. For example, interior lights, daytime running lights, HVAC, and radio.
- During the programming procedure, follow the Service Programming System (SPS) prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to No.

### **Reference Information**

#### Special Tools

<sptool><sptool-no>EL-49642</sptool-no><sptool-desc>SPS Programming Support Tool</sptool-desc></sptool>

Equivalent regional tools: [Special Tools](#)

### **Programming an Existing or New Control Module**

To program an existing or new control module, perform the following procedure:

1. Install the special tool: <sptool><sptool-no>EL-49642</sptool-no><sptool-desc>SPS Programming Support Tool</sptool-desc></sptool>
2. Ignition >> On / Vehicle >> In Service Mode
3. Access SPS and follow the on-screen instructions for the control module: K71 Transmission Control Module
4.
  1. Select >> Programming
  2. Select >> MCVM Operations - If applicable
  3. Ignition/Vehicle >> Off- For greater than 2> min
  4. Select >> Setup - Follow the on-screen instructions.
5. Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to No.
6. All OK.

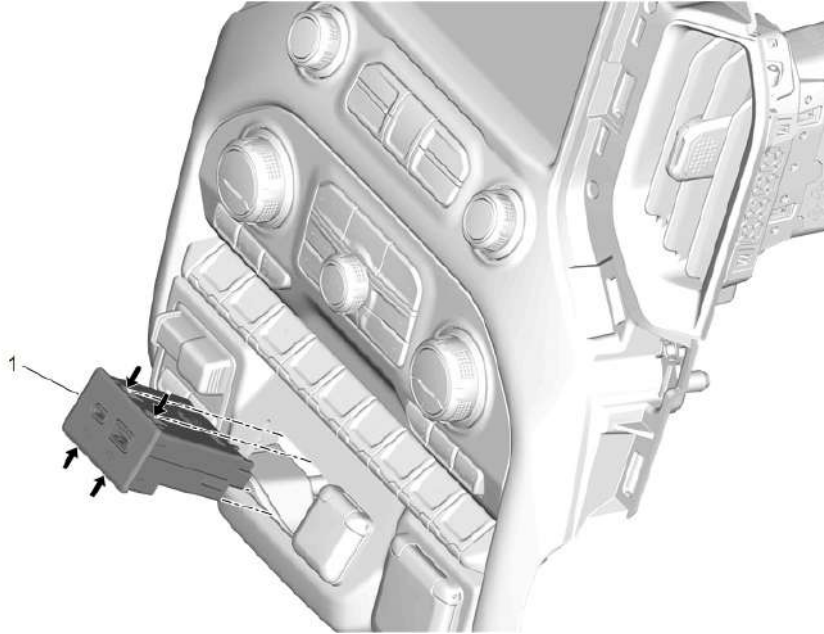
### **Unsuccessful Programming Recovery**

Illustration	Tool Number/ Description
 <p data-bbox="92 421 304 450"><a href="#">Click here for full size</a></p>	<p data-bbox="352 300 464 329">DT-45756</p> <p data-bbox="352 356 443 385">J-45756</p> <p data-bbox="352 414 667 443">Rear Output Shaft Seal Installer</p>
 <p data-bbox="92 902 304 931"><a href="#">Click here for full size</a></p>	<p data-bbox="352 748 464 777">DT-52297</p> <p data-bbox="352 806 616 835">Front Axle Service Fixture</p>
 <p data-bbox="92 1182 304 1211"><a href="#">Click here for full size</a></p>	<p data-bbox="352 1028 464 1057">DT-52529</p> <p data-bbox="352 1086 596 1115">Pinion Shim Gauge Plate</p>
 <p data-bbox="92 1462 304 1491"><a href="#">Click here for full size</a></p>	<p data-bbox="352 1308 464 1337">DT-52506</p> <p data-bbox="352 1366 699 1395">Pinion Flange Holder and Remover</p>
 <p data-bbox="92 1742 304 1771"><a href="#">Click here for full size</a></p>	<p data-bbox="352 1588 464 1617">DT-52555</p> <p data-bbox="352 1646 564 1675">Side Bearing Installer</p>
 <p data-bbox="92 2022 304 2051"><a href="#">Click here for full size</a></p>	<p data-bbox="352 1868 464 1897">DT-52556</p> <p data-bbox="352 1926 692 1955">Outer Pinion Bearing Cup Installer</p>



1. DRIVER INFORMATION AND ENTERTAINMENT
2. CELLULAR, ENTERTAINMENT, AND NAVIGATION
3. REPAIR INSTRUCTIONS
- 4.

## USB 2 Port Receptacle Replacement



[Click here for full size](#)

Callout	Component Name
Preliminary Procedure	
<a href="#">Radio Control Assembly Replacement</a>	
1>	USB 2 Port Receptacle Procedure Release the retaining tabs.

### **Related Part Information**

Part Name	Catalog Name	Part Code
USB 2 Port With Remote Receptacle	RECEPTACLE,USB 2 PORT W/ REM	9280A

1. ENGINE/PROPULSION
2. ENGINE CONTROLS AND FUEL - 3.0L (LM2) DIESEL
3. DIAGNOSTIC INFORMATION AND PROCEDURES
- 4.

## **DTC P10D1**

### **Diagnostic Instructions**

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

### **DTC Descriptor**

Reductant Injector Temperature - Exhaust Gas Temperature Not Plausible

### **Circuit/System Description**

For an overview of the component/system, refer to: [Exhaust Aftertreatment System Description](#)

<b>Circuit</b>	<b>Description</b>
High Control - Terminal 1>	The output circuit is switched to 12 V to activate the component.
Low Control - Terminal 2>	The output circuit is switched to ground to activate the component.
<b>Component</b>	<b>Description</b>
Q61 Reductant Injector	The reductant injector is used to dose and atomize the reductant into the exhaust system.
K20 Engine Control Module	The control module controls a series of actuators to ensure optimal engine performance. The control module does this by reading values from a variety of sensors, interprets the data and adjusts the engine actuators accordingly.

### **Conditions for Running the DTC**

- DTC P1048, P1049, P2047, P2048, P2049
- Ignition = Off - For greater than 8> h
- Ignition = On or Engine = Running
- Ignition Voltage = Greater than 11 V

Frequency the DTC runs = Continuously - After the running conditions are met

### **Conditions for Setting the DTC**

Reductant Injector - Temperature / Exhaust Gas Temperature = Not within a calibrated range

### **Actions Taken When the DTC Sets**

DTCs listed in the DTC Descriptor Category = Type B> DTC

### **Conditions for Clearing the DTC**

DTCs listed in the DTC Descriptor Category = Type B> DTC

### **Reference Information**

Schematic Reference

[Engine Controls Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

1. Ignition/Vehicle >> Off
2. Disconnect the electrical connector: K111 Fuel Pump Driver Control Module
3. Ignition >> On / Vehicle >> In Service Mode
4. Test for less than 1> V between the test points:
5.
  - { P1176 5> V Reference circuit terminal 10 @ Control module harness & Ground
  - { P1177 5> V Reference circuit terminal 12 @ Control module harness & Ground
6.
  - If 1> V or greater >> Repair the short to voltage on the circuit.
  - If less than 1> V >> Replace the component: K111 Fuel Pump Driver Control Module
16.
  - **If between 4.8 and 5.2 V**
17. All OK.

## Repair Instructions

Perform the Diagnostic Repair Verification after completing the repair: [Diagnostic Repair Verification](#)

- [Fuel Tank Pressure Sensor Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

1. ENGINE/PROPULSION
2. ENGINE CONTROLS AND FUEL - 5.3L (L82 L84) OR 6.2L (L87)
3. DIAGNOSTIC INFORMATION AND PROCEDURES
- 4.

## **Electronic Ignition System Diagnosis**

### **Diagnostic Instructions**

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

### **Circuit/System Description**

For an overview of the component/system, refer to: [Electronic Ignition System Description](#)

The ECM controls the spark event for each cylinder through individual ignition coil control circuits. When the ECM commands the ignition control circuit On, electrical current flows through the primary winding of the ignition coil, creating a magnetic field. When a spark event is requested, the ECM commands the ignition control circuit Off, interrupting current flow through the primary winding. The collapsing magnetic field created by the primary winding induces a high voltage in the secondary winding, which is connected to the spark plugs. The ignition system on this engine uses ignition coils with integrated power transistors.

### **Reference Information**

Schematic Reference

[Engine Controls Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

[Control Module References](#)

Special Tools

<sptool><sptool-no>J-26792</sptool-no><sptool-desc>Ignition Spark Tester</sptool-desc></sptool>

Equivalent regional tools: [Special Tools](#)

### **Circuit/System Testing**

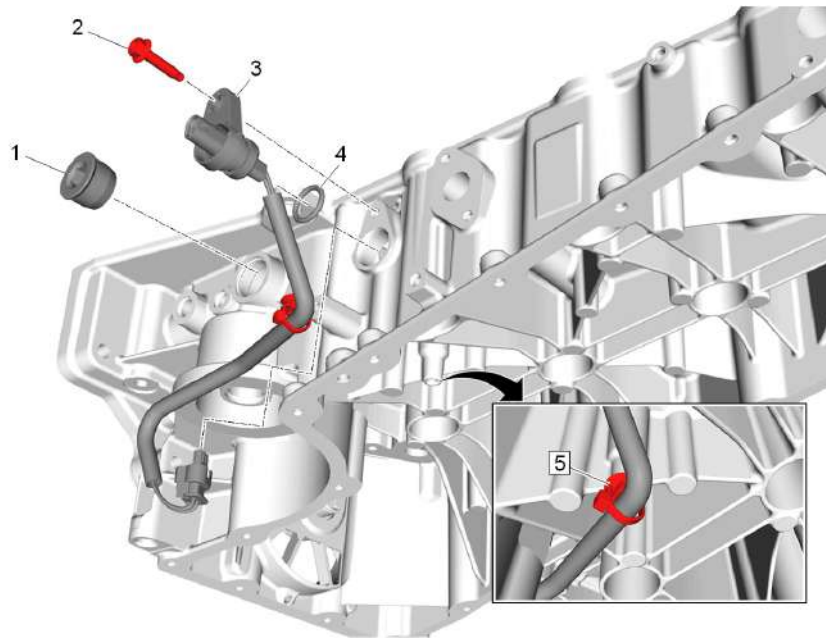
Note :

Do NOT perform this procedure unless directed here from the following diagnostic/test:

- [DTC P0300-P0308](#)
- [Engine Cranks But Does Not Run](#)

1. Note :

It may take up to 2> min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.



13.

[Click here for full size](#)

14. Engine Block Core Hole Plug (1>) >> Remove
15. Oil Pump Flow Control Solenoid Valve Bolt (2>) >> Remove
16. Engine Wiring Harness Clip (5>) >> Remove
17. Oil Pump Flow Control Solenoid Valve Wire (3>) >> Remove
18. Oil Pump Flow Control Valve Seal (4>) >> Remove and DISCARD

1. GENERAL INFORMATION
2. SQUEAKS AND RATTLES
3. DIAGNOSTIC INFORMATION AND PROCEDURES
- 4.

## **Squeaks and Rattles**

Special Tools

- *CH-39570* Chassis Ear
- *GE-41416* Ultrasonic Leak Detector

For equivalent regional tools, refer to [Special Tools](#).

- Note:

Squeaks and rattles are caused by improperly controlled relative motion between vehicle components. There are 4 ways to prevent squeaks and rattles.

To aid in diagnosing, use *CH-39570* ear or *GE-41416* detector .

- Attach the component that squeaks or rattles securely.
- Separate the components that squeak or rattle to prevent contact.
- Insulate the components that squeak or rattle.
- Insulate low uniform friction surfaces to eliminate stickslip motion.

passes through the valve and exhausts.

