

2014 ACCESSORIES & EQUIPMENT

Active Noise Cancellation - ATS

SCHEMATIC WIRING DIAGRAMS

ACTIVE NOISE CANCELLATION WIRING SCHEMATICS

Active Noise Cancellation

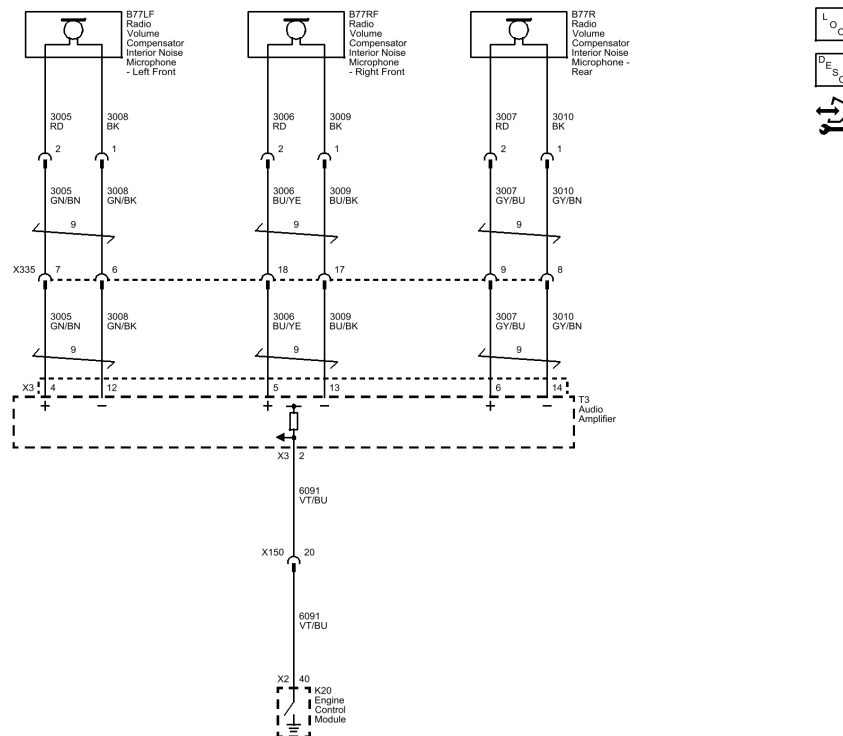


Fig. 1: Active Noise Cancellation Wiring Schematic
 Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B0560	DTC B0560 08 Engine RPM Input Circuit Signal Invalid
DTC B1277, B127C, or B127D	DTC B1277 Microphone 1 Input Signal Circuit DTC B127C Microphone 2 Input Signal Circuit

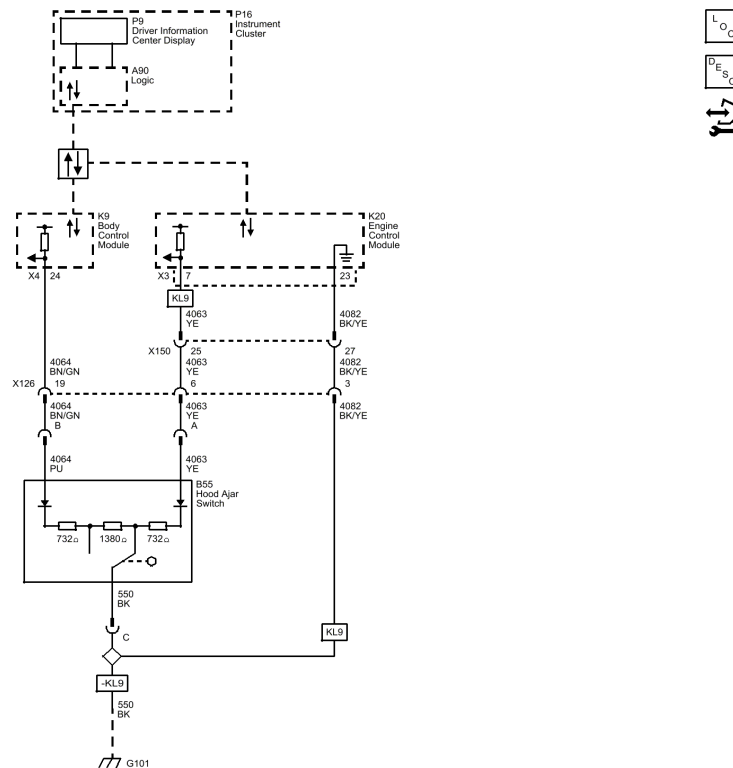


Fig. 1: Hood Ajar Switch Wiring Schematic
Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B3006	DTC B3006 Hood Ajar Circuit
DTC P257D-P257F	DTC P257D Engine Hood Switch Performance DTC P257E Engine Hood Switch Circuit Low Voltage DTC P257F Engine Hood Switch Circuit High Voltage

DTC B3006: HOOD AJAR CIRCUIT

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.

Switch. It may take up to 2 min for all vehicle systems to power down.

2. Test for less than 10 ohms between the low reference circuit terminal C and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.
 2. Test for less than 2 ohms in the low reference circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K20 Engine Control Module.
 - **If less than 10 ohms**
3. Ignition ON.
4. Test for greater than 11.5 V between the signal circuit terminal B and ground.
 - **If 11.5 V or less**
 1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.
 2. Test for infinite resistance between the signal circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If Infinite resistance.
 3. Test for less than 2 ohms in the signal circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K9 Body Control Module.
 - **If greater than 11.5 V**
5. Ignition OFF, disconnect the X4 and X7 harness connector at the K9 Body Control Module, ignition ON.
6. Test for less than 1 V between the signal circuit terminal B and ground.
 - **If 1 V or greater**

Repair the short to voltage on the circuit.

- **If less than 1 V**

7. Test or replace the B55 Hood Ajar Switch.

Component Testing

1. Ignition OFF, disconnect the harness connector at the B55 Hood Ajar Switch.
2. Test for 2738-3350 ohms between the signal terminal A and the signal terminal B with the hood latch in the CLOSED position.
 - **If not between 2738-3350 ohms**

Replace the B55 Hood Ajar Switch.
 - **If between 2738-3350 ohms**
3. Test for 658-806 ohms between the signal terminal A and the ground terminal C with the hood latch in the CLOSED position.

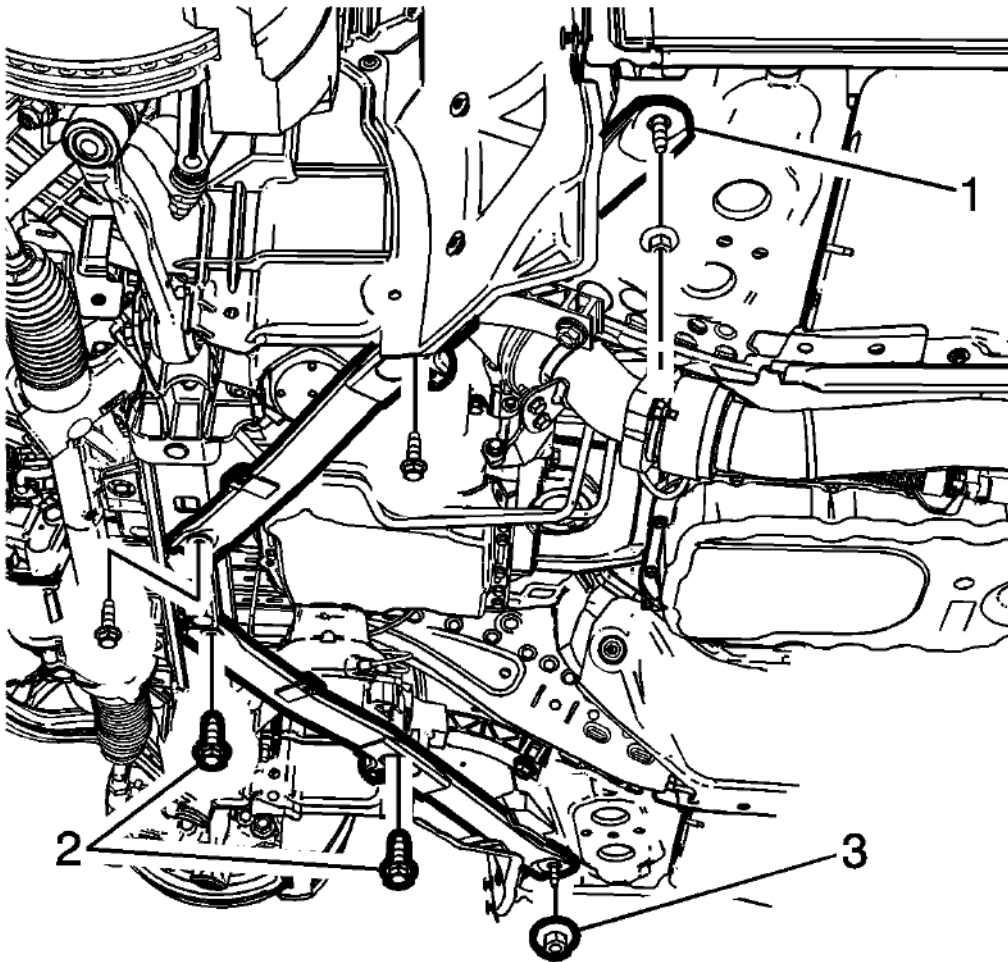


Fig. 17: Parking Brake Shoe Upper Return Spring
Courtesy of GENERAL MOTORS COMPANY

6. Install the parking brake shoe upper return spring (1).
7. Adjust the parking brake. Refer to **Parking Brake Adjustment**.
8. Install the rear brake rotor. Refer to **Rear Brake Rotor Replacement**.
9. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation**.
10. Enable the parking brake cable adjuster. Refer to **Parking Brake Cable Adjuster Enabling (Without J77)**, **Parking Brake Cable Adjuster Enabling (With J77)**.

PARKING BRAKE LEVER REPLACEMENT

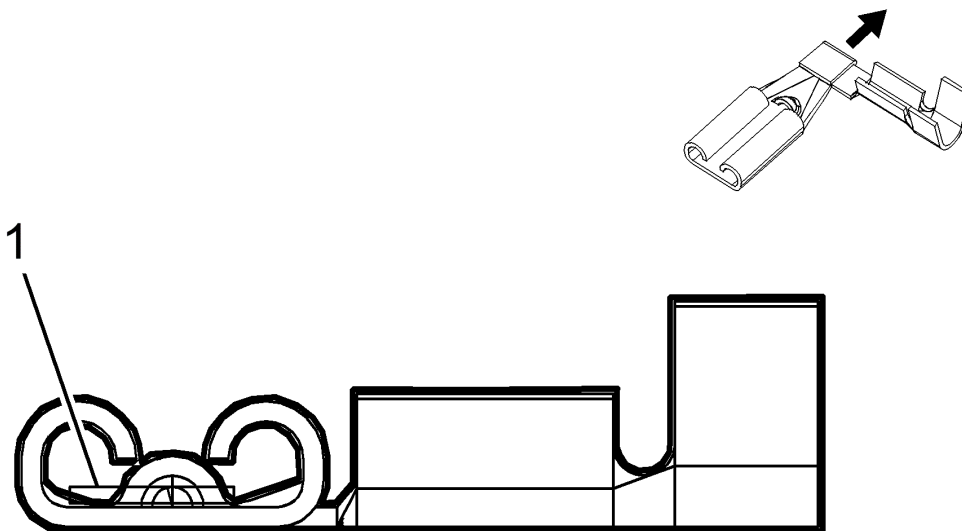
Special Tools

CH-37043 Parking Brake Cable Release Tool

For equivalent regional tools, refer to **Special Tools**.

2014 Cadillac ATS**2014 ELECTRICAL Wiring Systems and Power Management - Component Locator - Component Connector End Views -
ATS**

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
A-	-	-	-	Not Occupied	-	-
tbd 1	0.32	BK/WH	2267	Mirror Heating Element Supply Voltage	I	-

E17D OUTSIDE REARVIEW MIRROR GLASS CONNECTOR END VIEW - DRIVER X2**Connector Part Information**

- Harness Type: Outside Rearview Mirror - Driver
- OEM Connector: MTF0H272
- Service Connector: Service by Component - See Part Catalog
- Description: 1-Way F Slide Spade Terminal (NA)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray	Core Crimp	Insulation Crimp
I	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

E17D Outside Rearview Mirror Glass Connector End View - Driver X2

- Module is awake
- The DTC is only run when the output is active
- DTC B1451 is not already set
- System voltage between 6 and 16 V

Conditions for Setting the DTC**B1451 01**

Ignition output is not active and a short to battery is detected 3 consecutive times.

B1451 02

Ignition output is active and a short to ground is detected 3 consecutive times.

B1451 04

Ignition output is not active and an open circuit is detected 20 consecutive times.

Action Taken When the DTC Sets**B1451 02**

The ignition output is deactivated when a short to ground is detected. After 100 ms the output is activated again. This happens 3 times and then the output is deactivated until a new ACCESSORY or Ignition ON mode request is received.

B1451 01, B1451 04

No action is taken.

Conditions for Clearing the DTC

- The current DTC will clear when the malfunction is no longer present during a DTC check.
- A history DTC clears when the module power mode cycle counter reaches the reset threshold of 40, without a repeat of the malfunction.

Diagnostic Aids

- A short to voltage in the ignition control circuit will keep the vehicle modules awake, which can drain the vehicle's battery.
- A short to ground in the extension of this circuit through the body control module can back feed to the keyless entry control module. Check for a short to ground on the ignition circuit on the other side of the ignition pass thru, in the body control module, before replacing the body control module.

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Engine running.
2. Verify the scan tool Fuel Pressure Sensor Voltage parameter is between 0.2-4.8 V.
 - **If not between 0.2-4.8 V**

Refer to Circuit/System Testing (below).

- **If between 0.2-4.8 V**
3. All OK.

Circuit/System Testing

NOTE: **Verify that the fuel tank is not empty. Only perform this diagnostic if there is at least 2 gallons of fuel in the fuel tank. Clear the DTC, and start and run the engine. Verify that the DTC resets before proceeding with the circuit system testing. If the DTC does not reset, refer to diagnostic aids.**

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B47 Fuel Pressure Sensor. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the low reference circuit terminal 2 and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF, disconnect the harness connector at the K38 Chassis Control Module.
 2. Test for less than 2 ohms in the low reference circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K38 Chassis Control Module.
 - **If less than 10 ohms**
3. Ignition ON.
4. Test for 4.8-5.2 V between the 5 V reference circuit terminal 3 and ground.
 - **If less than 4.8 V**
 1. Ignition OFF, disconnect the harness connector at the K38 Chassis Control Module.
 2. Test for infinite resistance between the 5 V reference circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in the 5 V reference circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K38 Chassis Control Module.

- **If between the specified values**

3. Test for infinite resistance between each terminal and the Q6 Camshaft Position Actuator Solenoid Valve housing.

- **If less than infinite resistance**

Replace the Q6 Camshaft Position Actuator Solenoid Valve.

- **If infinite resistance**

4. All OK.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Camshaft Position Actuator Replacement - Bank 1**
- **Camshaft Position Actuator Replacement - Bank 2**
- **Camshaft Position Actuator Solenoid Valve Solenoid Replacement - Bank 1 (Right Side) Intake**
- **Camshaft Position Actuator Solenoid Valve Solenoid Replacement - Bank 1 (Right Side) Exhaust**
- **Camshaft Position Actuator Solenoid Valve Solenoid Replacement - Bank 2 (Left Side) Intake**
- **Camshaft Position Actuator Solenoid Valve Solenoid Replacement - Bank 2 (Left Side) Exhaust**
- **Control Module References** for K20 Engine Control Module replacement, programming, and setup

DTC P057B-P057D

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptors

DTC P057B

Brake Pedal Position Sensor Performance

DTC P057C

Brake Pedal Position Sensor Circuit Low Voltage

DTC P057D

Brake Pedal Position Sensor Circuit High Voltage

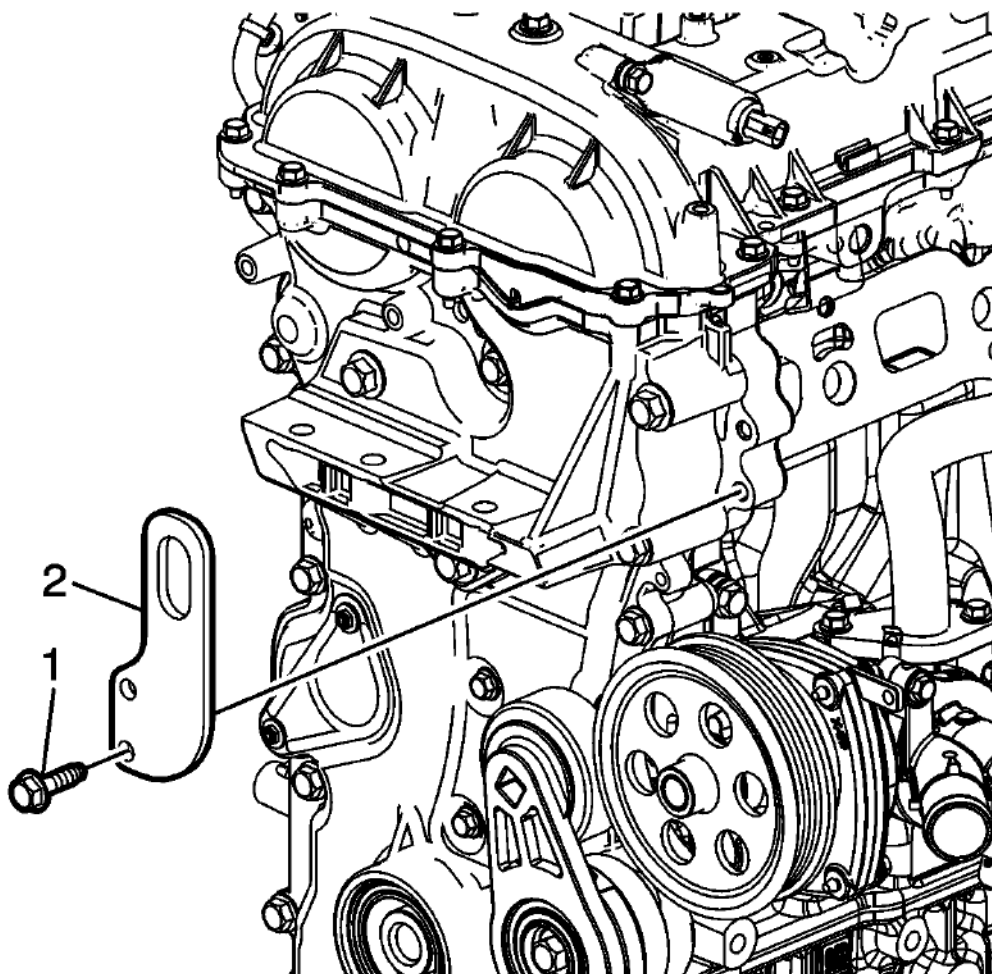


Fig. 39: Front Lift Bracket

Courtesy of GENERAL MOTORS COMPANY

6. Remove the front lift bracket (2) and bolts (1).

EN-50820 Front Crankshaft Seal Installer

KM-470-B Angular Torque Gauge

For equivalent regional tools, refer to **Special Tools** .

1. Remove the camshaft cover. Refer to **Camshaft Cover Replacement**.

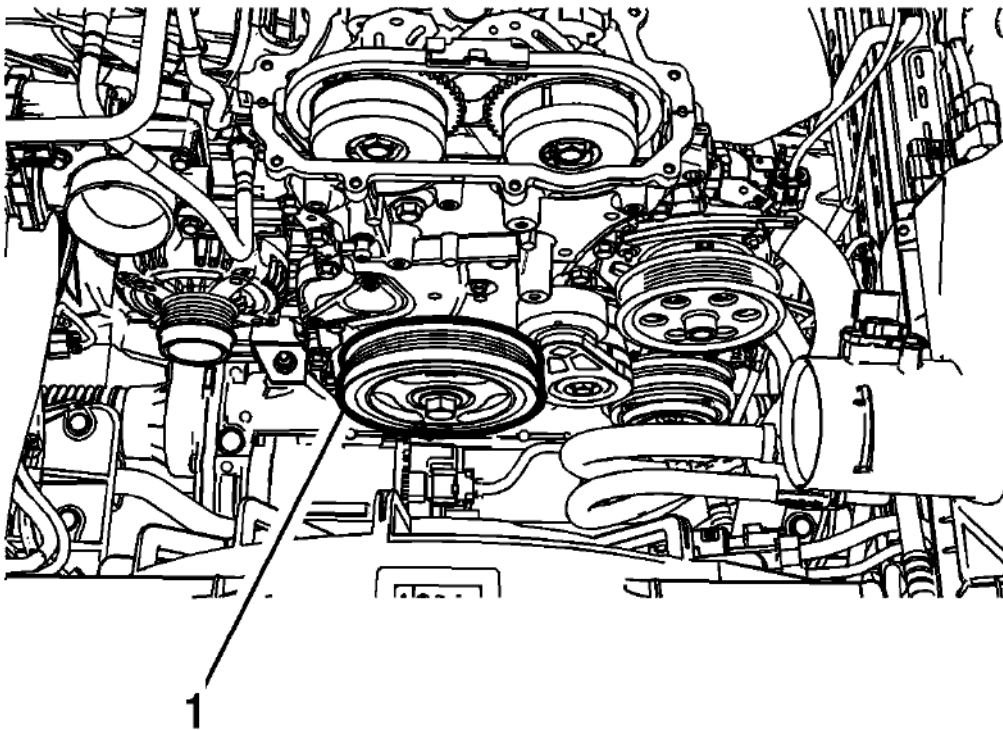


Fig. 83: Crankshaft Balancer

Courtesy of GENERAL MOTORS COMPANY

2. Remove the crankshaft balancer (1). Refer to **Crankshaft Balancer Replacement**.

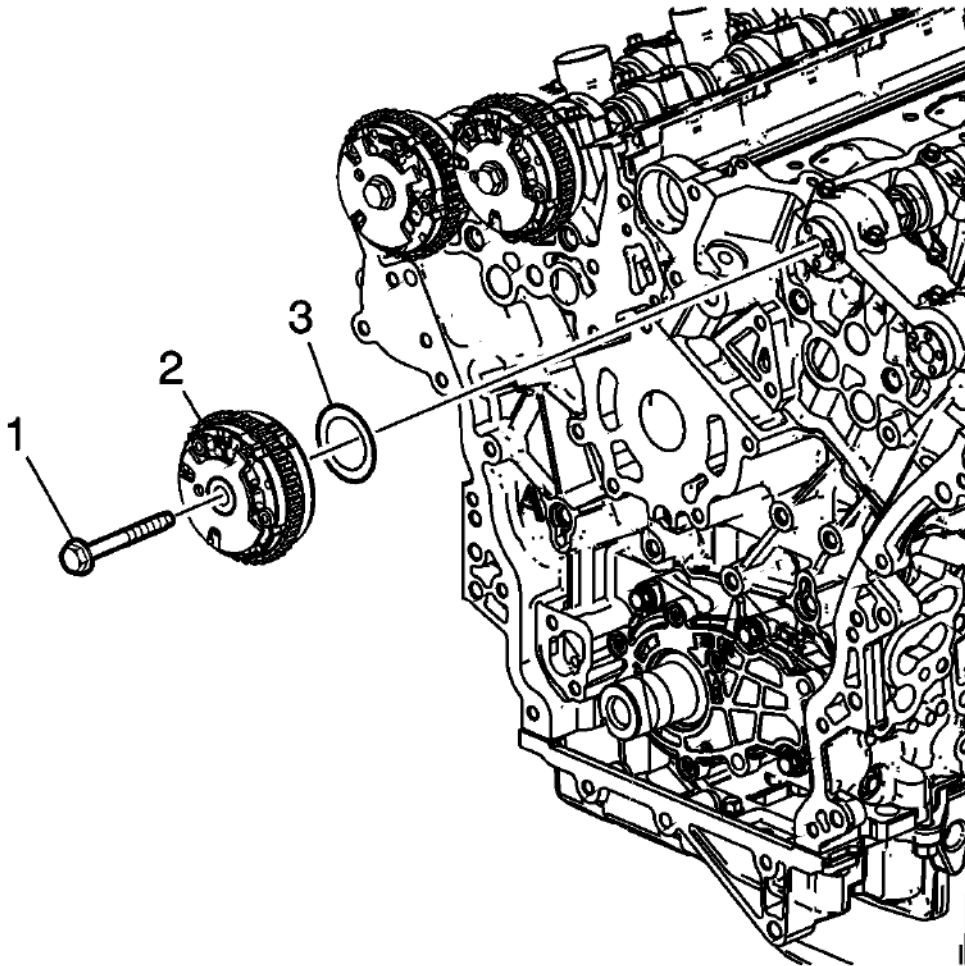


Fig. 67: View Of Camshaft Position Actuator Bolt
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Torque Reaction Against Timing Drive Chain Caution .

1. Use an open wrench on the hex cast into the camshaft in order to prevent engine rotation when loosening the camshaft position actuator bolt.
2. Remove the left intake camshaft position actuator bolt (1).
3. Remove the left intake camshaft position actuator (2).
4. Remove the camshaft thrust washer if applicable (3).

CAMSHAFT POSITION ACTUATOR REMOVAL - RIGHT SIDE EXHAUST

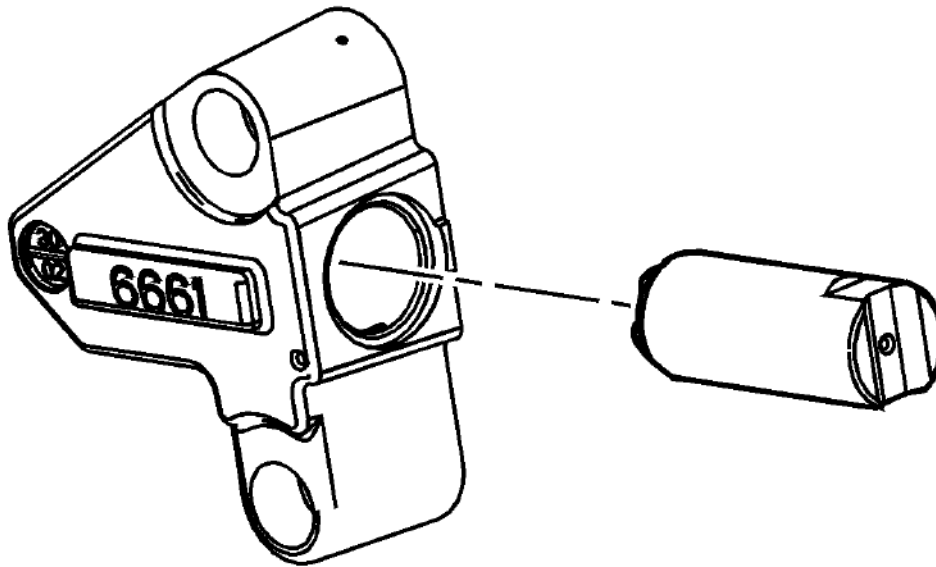


Fig. 601: View Of Plunger & Left Secondary Camshaft Drive Chain Tensioner Body
Courtesy of GENERAL MOTORS COMPANY

3. Install the plunger into the left secondary camshaft drive chain tensioner body.

*** PLEASE READ THIS FIRST ***

NOTE: Examples used in this article are general in nature and do not necessarily relate to a specific engine or system. Illustrations and procedures have been chosen to guide mechanic through engine overhaul process. Descriptions of processes of cleaning, inspection, assembly and machine shop practice are included.

Always refer to appropriate engine overhaul article, if available, in the **ENGINES** section for complete overhaul procedures and specifications for the vehicle being repaired.

CLEANING & INSPECTION

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Clean camshaft with solvent. Ensure all oil passages are clear. Inspect cam lobes and bearing journals for pitting, flaking or scoring. Using micrometer, measure bearing journal O.D.

Support camshaft at each end with "V" blocks. Position dial indicator with tip resting on center bearing journal. Rotate camshaft and note camshaft runout reading. If reading exceeds specification, replace camshaft.

Check cam lobe lift by measuring base circle of camshaft using micrometer. Measure again at 90-degree angle to tip of cam lobe. Cam lift can be determined by subtracting base circle diameter from tip of cam lobe measurement.

Different lift dimensions are given for intake and exhaust cam lobes. Reading must be within specification. Replace camshaft if cam lobes or bearing journals are not within specification.

Inspect camshaft gear for chipped, eroded or damaged teeth. Replace gear if damaged. On camshafts using thrust plate, measure distance between thrust plate and camshaft shoulder. Replace thrust plate if not within specification.

CAMSHAFT BEARINGS

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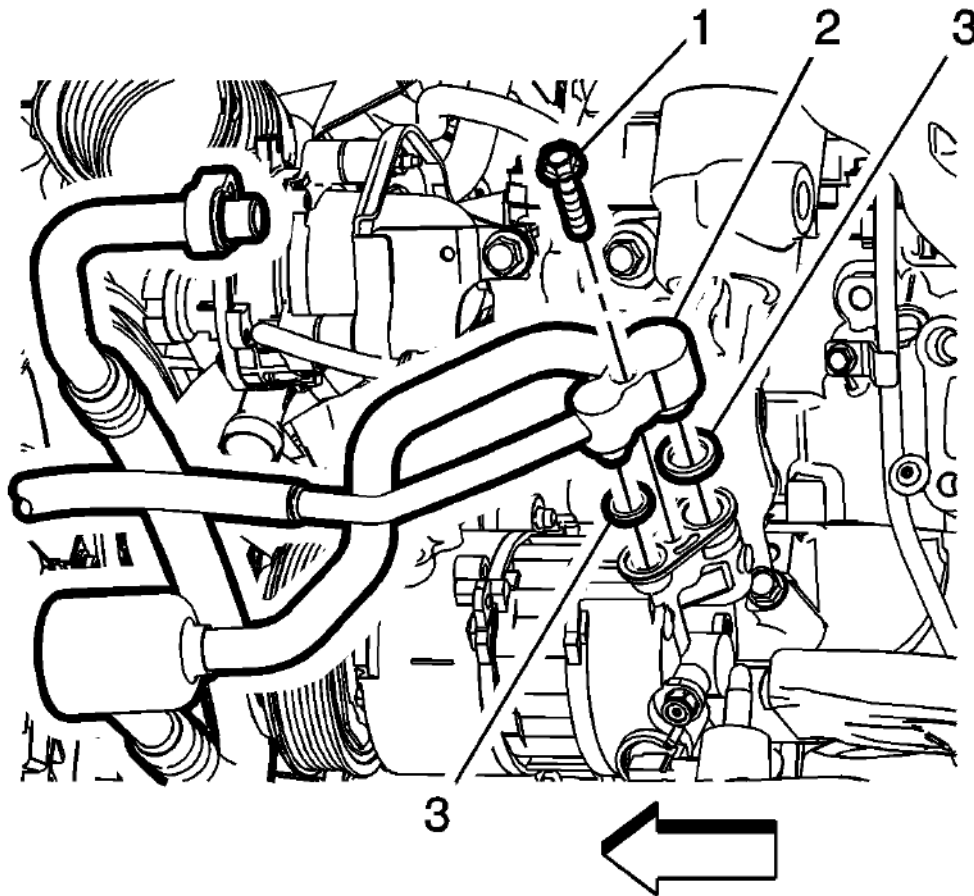


Fig. 21: Air Conditioning Compressor And Condenser Hose And Sealing Washers
Courtesy of GENERAL MOTORS COMPANY

7. Install NEW sealing washers (3) to the air conditioning compressor and condenser hose (2). Refer to **Air Conditioning System Seal Replacement**.

Install the air conditioning compressor and condenser hose (2) to the compressor.

8. Install the air conditioning compressor and condenser hose bolt (1) at compressor and tighten to 22 N.m (16 lb ft).

2014 Cadillac ATS**2014 SUSPENSION Rear Suspension - ATS**

• Final Pass	plus 105 degrees	
Trailing Arm Lower Control Arm Outer Nut (1)		
• First Pass	100	74 lb ft
• Final Pass	plus 105 degrees	
Trailing Arm Upper Control Arm Inner Nut (1)		
• First Pass	70	52 lb ft
• Final Pass	plus 105 degrees	
Trailing Arm Upper Control Arm Outer Nut (1)		
• First Pass	100	74 lb ft
• Final Pass	plus 105 degrees	
Upper Control Arm Inner Nut (1)		
• First Pass	70	52 lb ft
• Final Pass	plus 105 degrees	
Upper Control Arm Outer Nut (1)		
• First Pass	70	52 lb ft
• Final Pass	plus 105 degrees	
NOTE: (1) Torque to yield fastener in use, requires new bolt.		

ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS**Adhesives, Fluids, Lubricants, and Sealers**

Application	Type of Material	GM Part Number	
		United States	Canada
Wheel Bearing and Hub Bolt	Threadlocker	89021297	10953488

REPAIR INSTRUCTIONS**REAR WHEEL BEARING AND HUB REPLACEMENT**