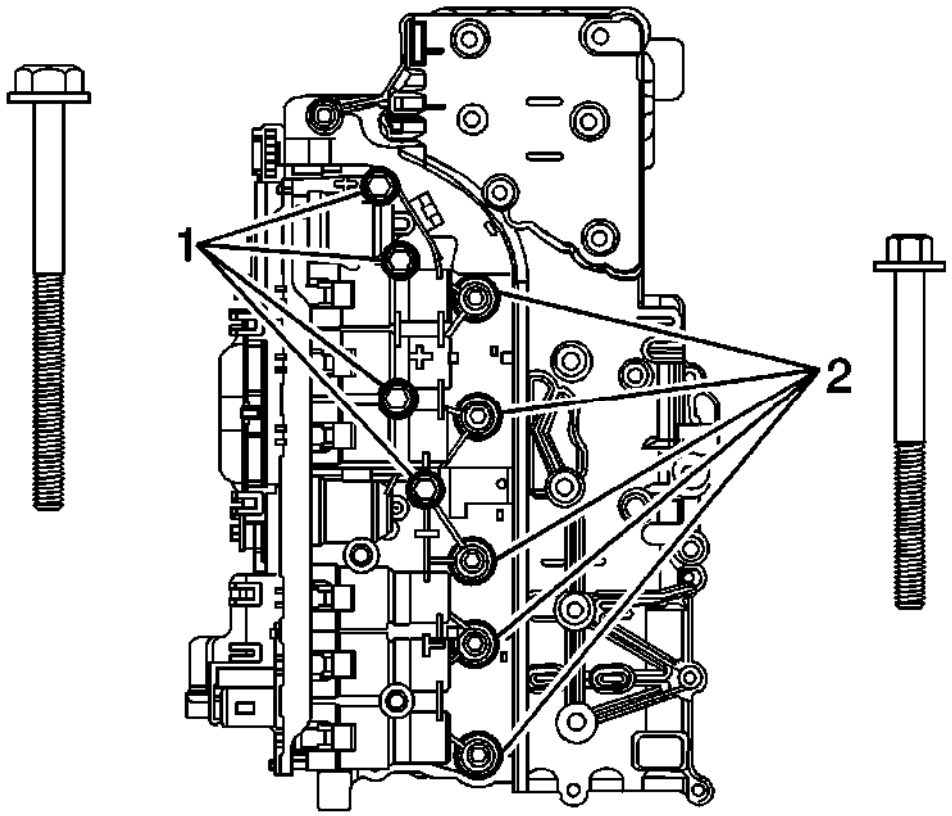


Fig. 57: View Of Bolts
Courtesy of GENERAL MOTORS COMPANY

4. Install the 4 bolts (1) and 5 bolts (2) securing the control solenoid valve assembly to the control valve lower body assembly. Hand tighten only.

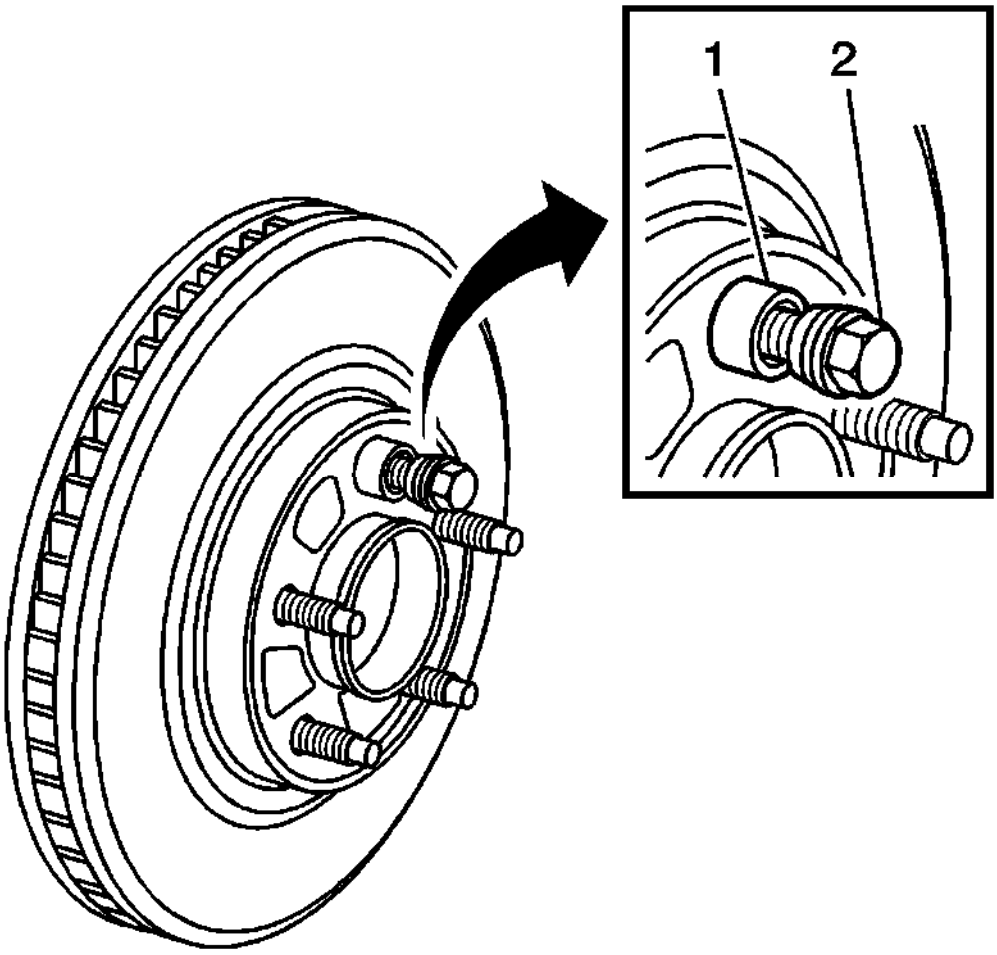


Fig. 205: Identifying Conical Brake Rotor Washers & Lug Nut
Courtesy of GENERAL MOTORS COMPANY

WARNING: Refer to Brake Dust Warning .

NOTE:

- **Brake rotor thickness variation MUST be checked BEFORE checking for assembled lateral runout (LRO). Thickness variation exceeding the maximum acceptable level can cause brake pulsation. Refer to Brake Rotor Thickness Variation Measurement.**
- **Brake rotor assembled LRO exceeding the maximum allowable specification can cause thickness variation to develop in the brake rotor over time, usually between 4,800-11, 300 km (3,000-7,000 mi). Refer to Brake Rotor Assembled Lateral Runout Measurement.**

1. Remove the **CH-45101-100** Conical Brake Rotor Washers and the lug nuts that were installed during the assembled LRO measurement procedure.

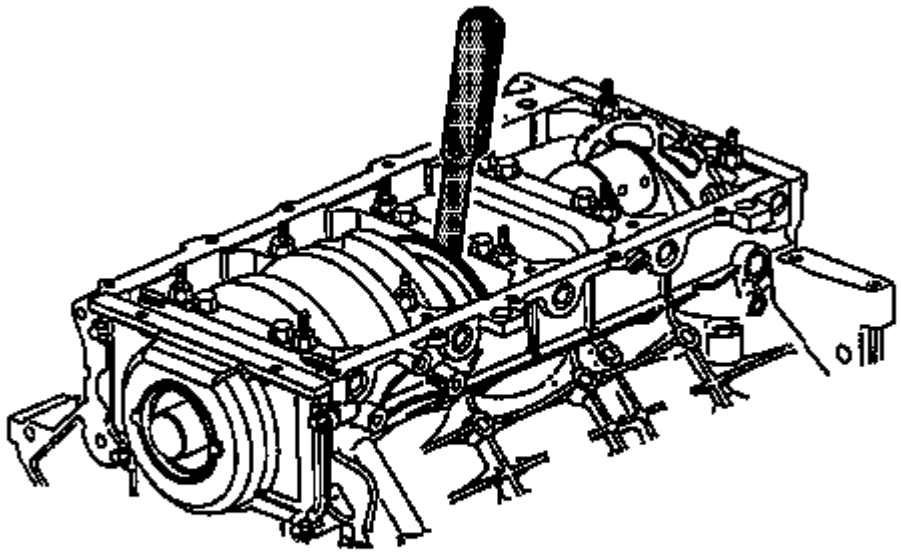


Fig. 301: Measuring Crankshaft End Play
Courtesy of GENERAL MOTORS COMPANY

12. Measure the crankshaft end play.
    1. Thrust the crankshaft forward or rearward.
    2. Insert a feeler gauge between the center crankshaft bearing and the bearing surface of the crankshaft and measure the bearing clearance.

       The proper crankshaft end play clearance is 0.04-0.2 mm (0.0015-0.0078 in).

    3. If the bearing clearance is not within specifications, inspect the thrust surfaces for nicks, gouges or raised metal. Minor imperfections may be removed with a fine stone.

PISTON, CONNECTING ROD, AND BEARING INSTALLATION (6.2L)

Special Tools

- **J 8037** Piston Ring Compressor
- **J 8087** Cylinder Bore Gauge
- **J 41556** Connecting Rod Guide

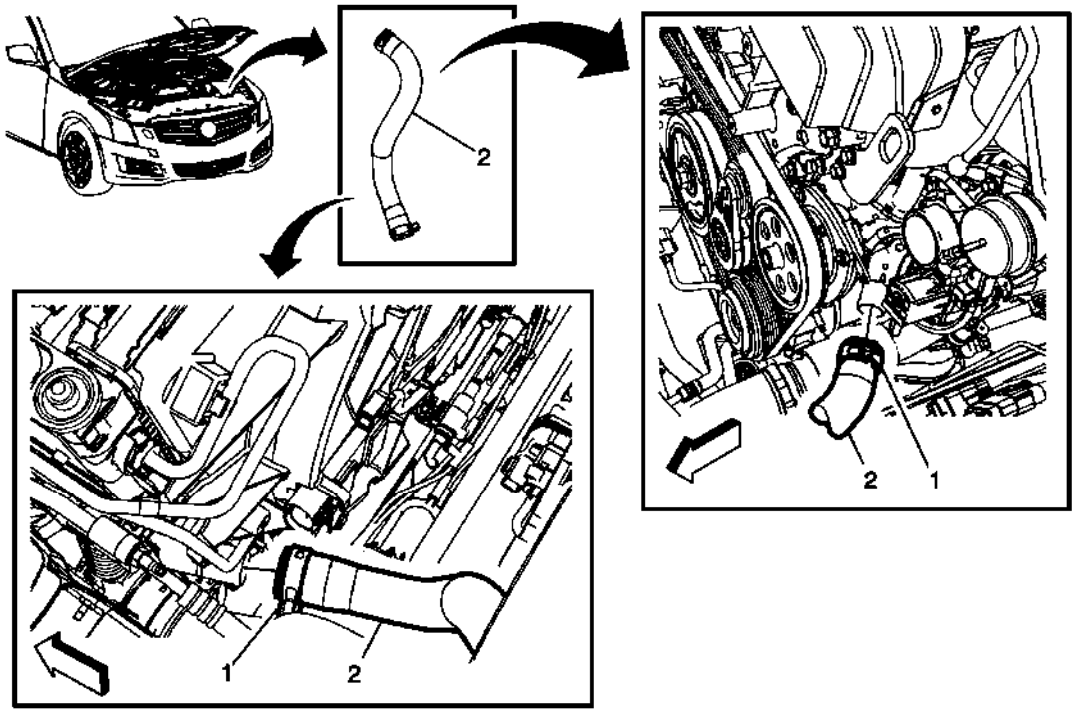


Fig. 66: Radiator Outlet Hose (LTG with V03)
Courtesy of GENERAL MOTORS COMPANY

Radiator Outlet Hose Replacement (LTG with V03)

Callout	Component Name
Preliminary Procedures 1. Drain the cooling system. Refer to **Cooling System Draining and Filling (Static Fill)**, **Cooling System Draining and Filling (GE 47716)**. 2. Remove the front compartment front sight shield. Refer to **Front Compartment Front Sight Shield Replacement** . 3. Remove the air cleaner outlet duct. Refer to **Air Cleaner Outlet Duct Replacement** .	
1	Radiator Outlet Hose Clamp (Qty: 2) **Procedure** Reposition the radiator outlet hose clamps using the **BO-38185** hose clamp pliers. **Special Tools** **BO-38185** Hose Clamp Pliers For equivalent regional tools, refer to **Special Tools**.
2	Radiator Outlet Hose **Procedure** 1. Fill the cooling system to the proper level. Refer to **Cooling System Draining and Filling (Static Fill)**, **Cooling System Draining and Filling (GE 47716)**. 2. Inspect the cooling system for leaks.

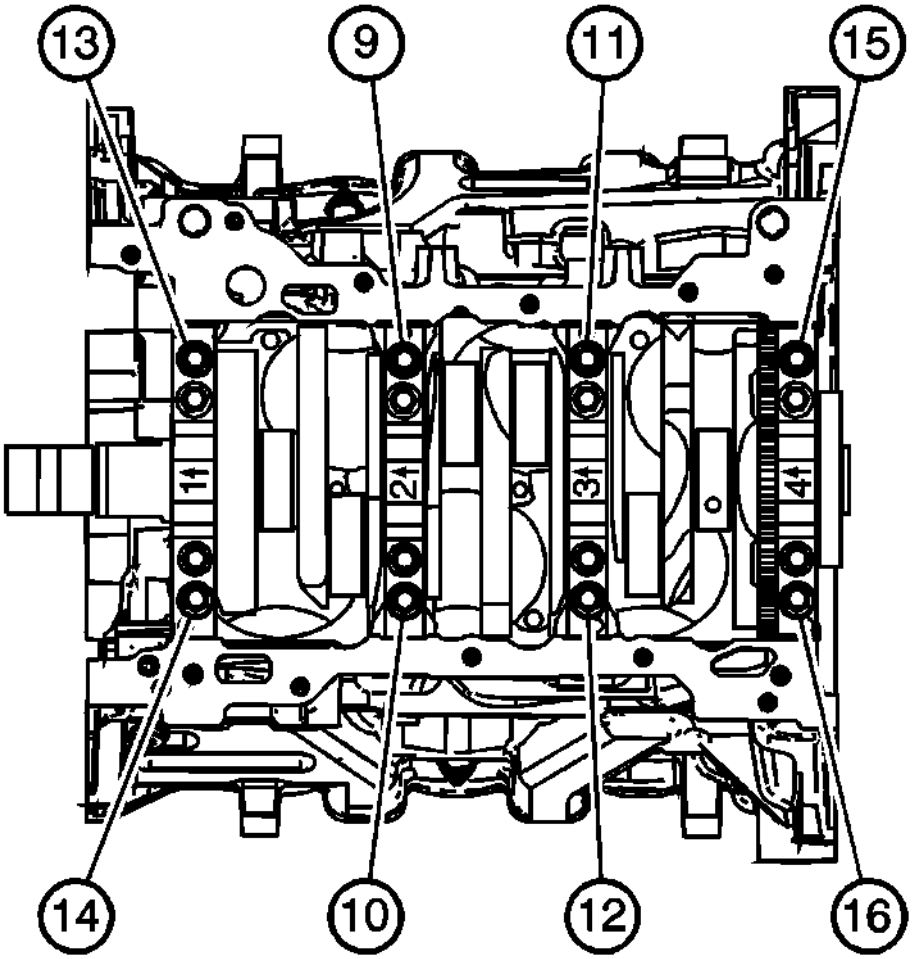


Fig. 487: Identifying Outboard Crankshaft Main Bearing Bolt Tightening Sequence
Courtesy of GENERAL MOTORS COMPANY

11. Tighten the outboard bolts (9-16) second, in two passes.
    1. Tighten the outboard bolts to 15 N.m (11 lb ft) on the first pass.
    2. Tighten the outboard bolts (9-16) an additional 110 degrees on the 2nd pass.

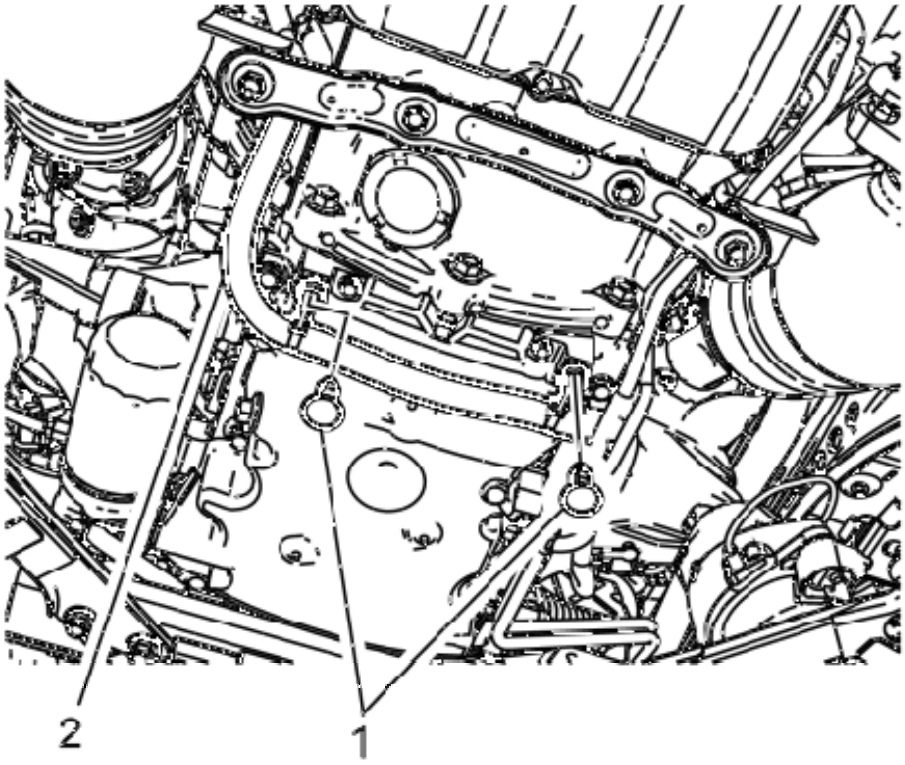


Fig. 273: Electrical Wiring Harness Retainers
Courtesy of GENERAL MOTORS COMPANY

10. Reposition the wiring harness and install the electrical wiring harness retainers (1) to secure the harness to the engine oil pan.
11. Install the engine oil cooler and adapter assembly. Refer to **Engine Oil Cooler Adapter Replacement**.

STEERING KNUCKLE REPLACEMENT (RWD)

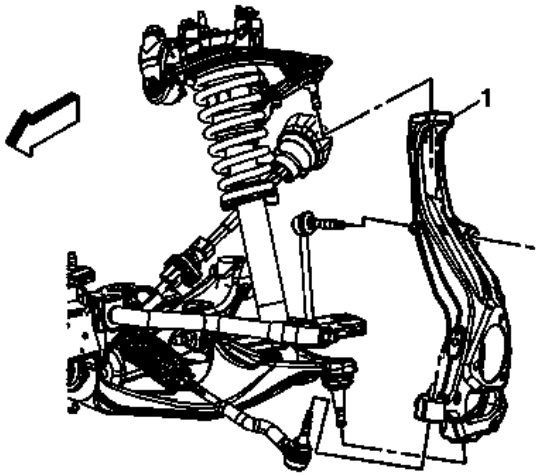


Fig. 12: Identifying Steering Knuckle (RWD)
Courtesy of GENERAL MOTORS COMPANY

Steering Knuckle Replacement (RWD)

Callout	Component Name
Preliminary procedure 1. Raise and support the vehcile. Refer to **Lifting and Jacking the Vehicle** . 2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** . 3. Remove the wheel bearing/hub assembly. Refer to **Front Wheel Bearing and Hub Replacement (RWD)**.	
1	Steering Knuckle **Procedure** 1. Remove the outer tie rod end from the knuckle. Refer to **Steering Linkage Outer Tie Rod Replacement (RWD)** . 2. Remove the upper ball joint from the knuckle. Refer to **Shock Absorber and Spring Removal and Installation**. 3. Remove the lower ball joint from the knuckle. Refer to **Lower Control Arm Replacement (RWD)**. 4. Remove the stabilizer link from the knuckle. Refer to **Stabilizer Shaft Link Replacement (RWD)**.

LOWER CONTROL ARM REPLACEMENT (RWD)

Special Tools

J 43631 Ball Joint Remover

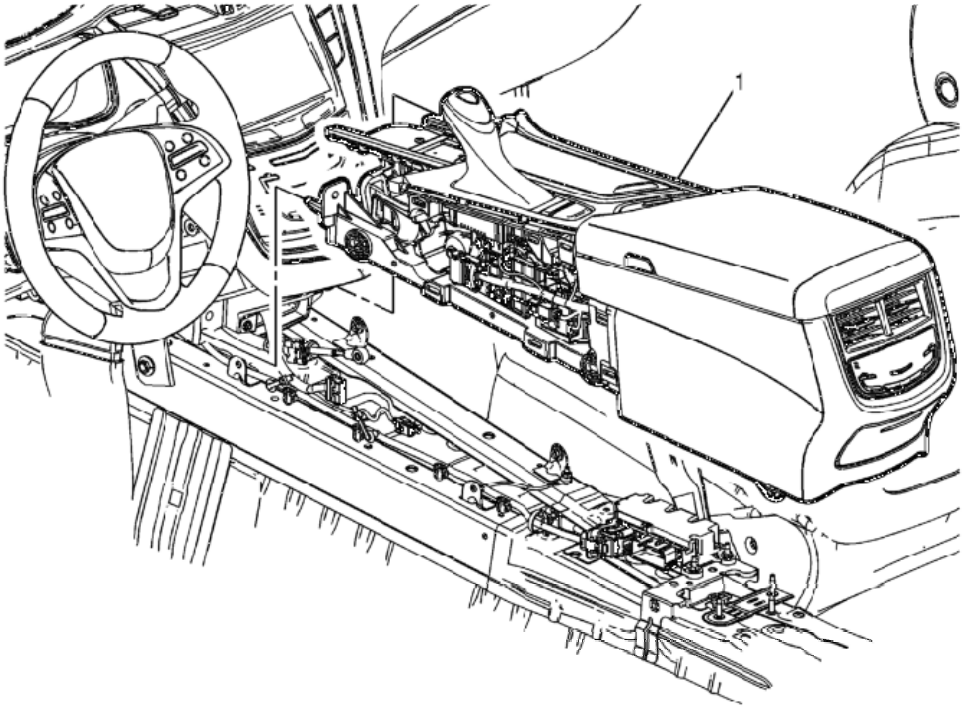
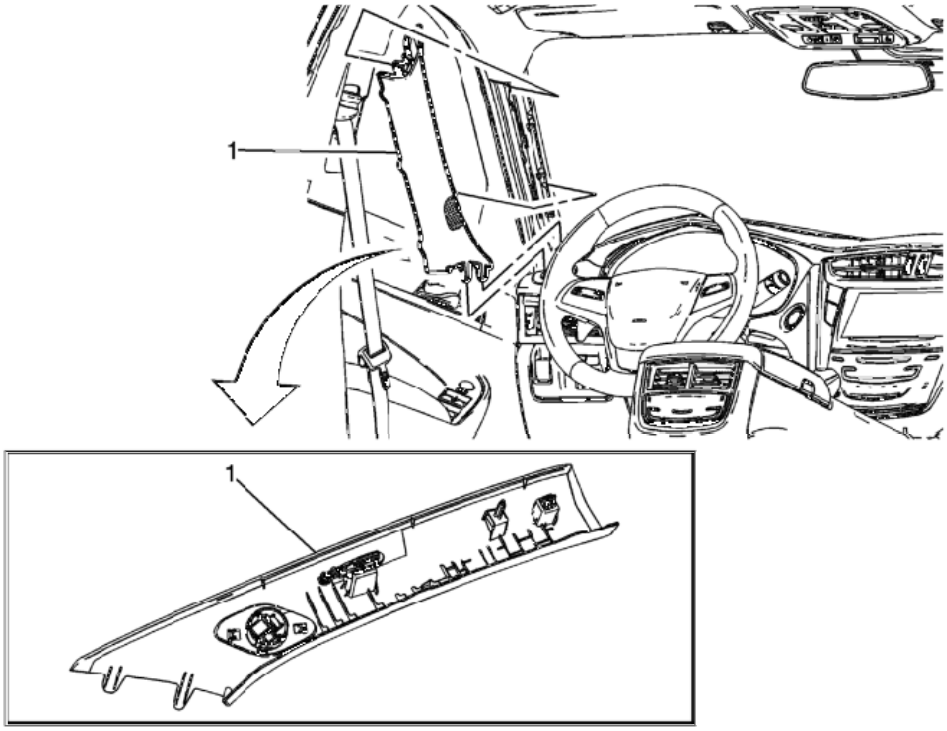


Fig. 35: Front Floor Console
Courtesy of GENERAL MOTORS COMPANY

1. Remove the front floor console (1). Refer to **Front Floor Console Replacement**.



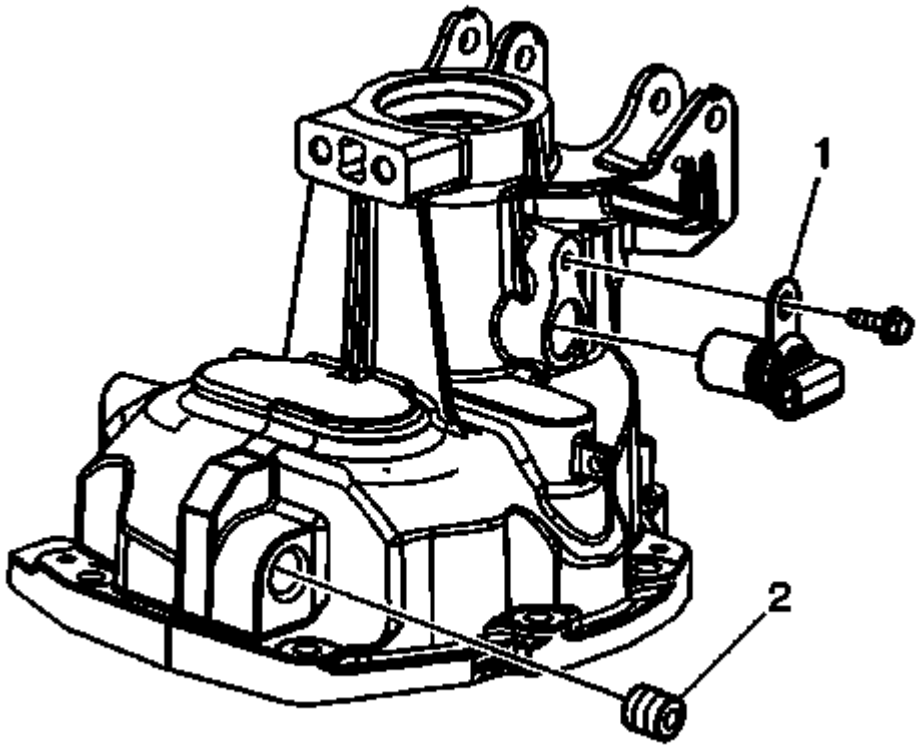


Fig. 196: Identifying Transmission Case Drain Plug & Vehicle Speed Sensor
Courtesy of GENERAL MOTORS COMPANY

14. Remove the bolt and the vehicle speed sensor (1).
15. Remove the plug (2).

Right Rear Door Latch Unlock Control	B3130 02, B3135 02	4	B3130 01, B3135 01	-
1. Driver Door Lock Malfunction 2. Passenger Door Lock Malfunction 3. Left Rear Door Lock Malfunction 4. Right Rear Door Lock Malfunction				

Circuit/System Description

The body control module (BCM) powers the reversible door latch assemblies by providing battery positive voltage and ground to the appropriate lock and unlock control circuits of the door latch assemblies. The lock and unlock control circuits of the rear doors and passenger door latch assemblies are all connected together. When the door latch assemblies are not active, all actuator lock and unlock control circuits are supplied a floating voltage door driver by the BCM. Transitioning of the lock actuators to the lock or unlocked position depends upon which control circuits receive voltage and which control circuits receive ground.

The underhood fuse block contains a PCB relay which controls the functions of the electronic child locks which is part of the rear door latch assemblies. When the relay is in it's inactive state and the BCM commands the latches to LOCK and UNLOCK, voltage will pass through the relay contacts for normal LOCK and UNLOCK functions of the passenger, left rear and right rear door latch assemblies

Conditions for Running the DTC

When the ignition is ON.

Conditions for Setting the DTC

B3125 01, B3130 01, B3135 01

The BCM detects a short to battery on a door latch control circuit

B3125 02, B3130 02, B3135 02

- A short to ground or an open/high resistance in the BCM B+ circuit.
- The BCM detects a short to ground on a door latch control circuit.

Action Taken When the DTC Sets

The BCM will not command the door lock system.

Conditions for Clearing the DTC

- This DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Reference Information

guidelines:

- **Refer to SIR Component Views in order to determine if you are performing service on or near the SIR components or the SIR wiring.**
- **If you are performing service on or near the SIR components or the SIR wiring, disable the SIR system. Refer to Disabling the SIR System.**

2. Disable the supplemental inflatable restraint (SIR) system. Refer to **SIR Disabling and Enabling** .
3. Remove the steering column shroud. Refer to **Steering Column Shroud Replacement (Without Key Release Lever Knob)**, **Steering Column Shroud Replacement (With Key Release Lever Knob)**.
4. Remove the driver knee bolster bracket. Refer to **Driver Knee Bolster Bracket Replacement (Right Hand Drive)** , **Driver Knee Bolster Bracket Replacement (Left Hand Drive)** .
5. Disconnect any electrical connectors as necessary.

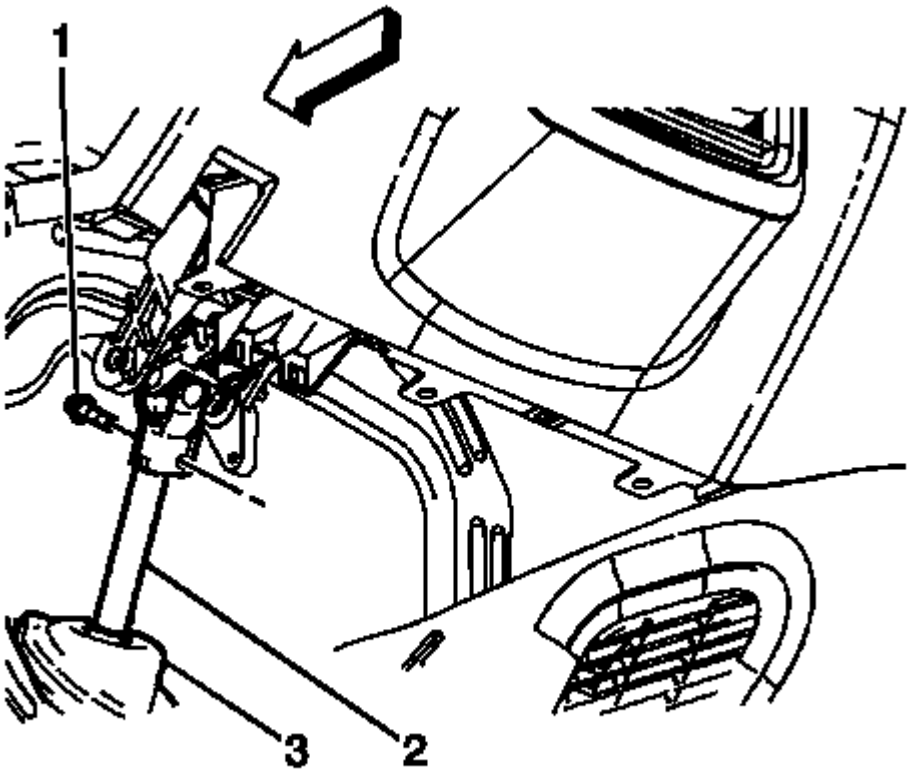


Fig. 25: Identifying Intermediate Steering Shaft Components
Courtesy of GENERAL MOTORS COMPANY

6. Remove the upper intermediate steering shaft bolt (1).

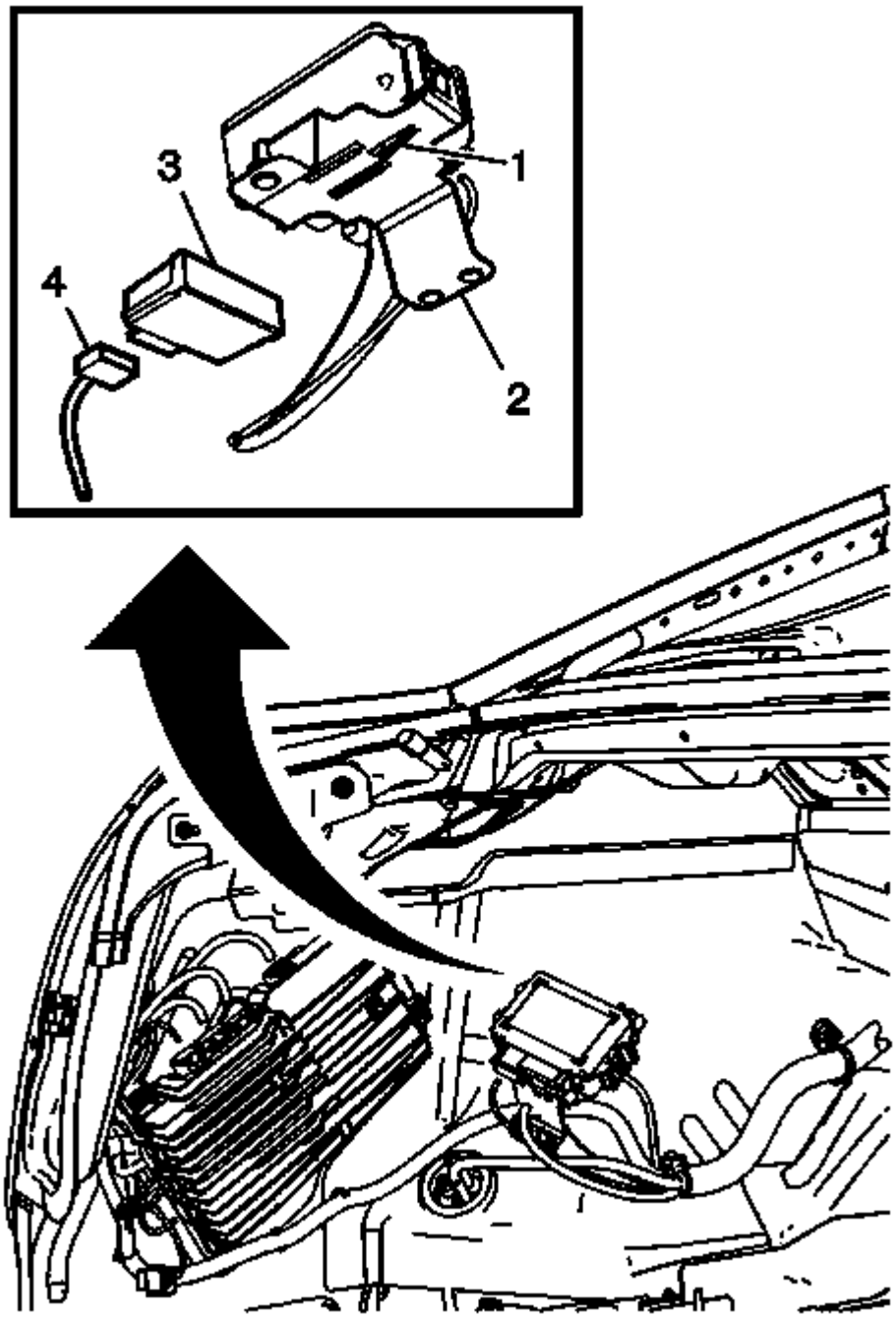


Fig. 7: Locating Tire Pressure Indicator Module
Courtesy of GENERAL MOTORS COMPANY

1. Remove the left rear compartment trim. Refer to **Rear Compartment Side Trim Panel Replacement (Coupe)** .
2. Depress the lock tab (1) for the tire pressure indicator monitoring module (TPIM) (3).
3. Slide the TPIM (3) over the lock tab (1) and remove it from the mounting bracket (2).
4. Lower the TPIM (3) and remove the electrical connector (4).

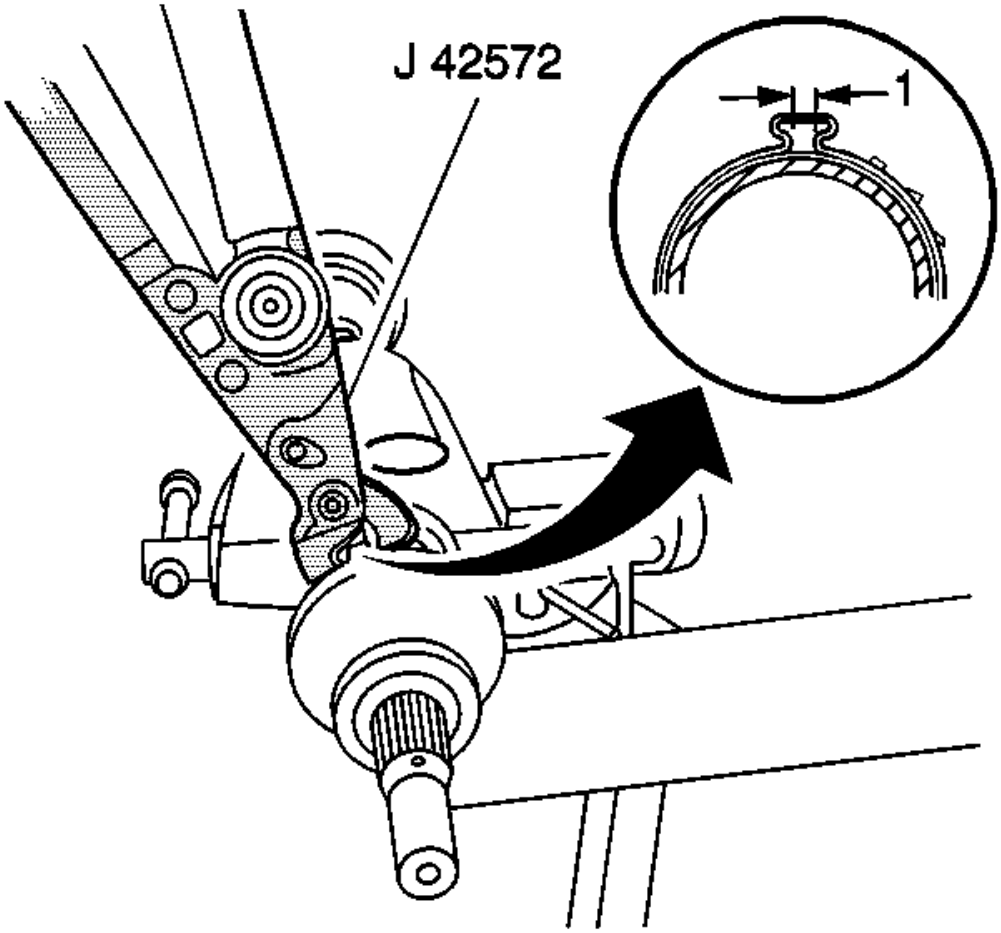


Fig. 93: Crimping Seal Retaining Clamp
Courtesy of GENERAL MOTORS COMPANY

NOTE: The seal must not be dimpled, stretched or otherwise deformed.

36. Inspect the boot for proper shape.

    If the boot is not shaped correctly, equalize the pressure in the boot by lifting the boot edge slightly and shape the properly by hand.

37. Inspect the boot for damage.

    If the boot has been cut or punctured during assembly, you must discard and replace the boot.

NOTE: The seal retaining clamp must not be over-tightened or under-tightened.

38. Using the **J 42572** drive shaft seal clamp pliers , crimp the large seal retaining clamp and tighten until

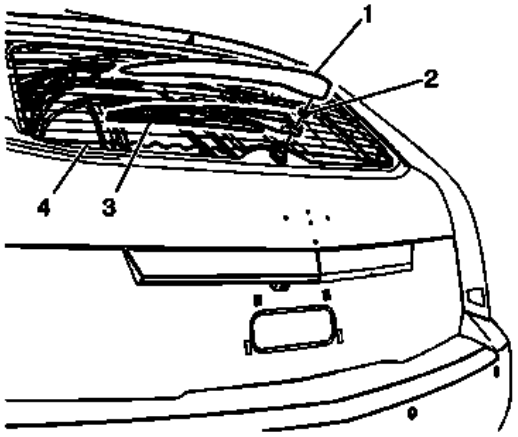


Fig. 29: Rear Window Wiper Arm Components (Wagon)
Courtesy of GENERAL MOTORS COMPANY

Rear Window Wiper Arm Replacement (Wagon)

Callout	Component Name
1	Rear Window Wiper and Washer Switch Opening Cover **TIP:** Release the center clip from the rear window wiper and washer switch opening cover and pull the cover rearward from the wiper arm hinge.
2	Rear Window Wiper Arm Nut **CAUTION:** **Refer to Fastener Caution .** **Tighten** 10 N.m (89 lb in)
3	Rear Window Wiper Arm Assembly **Procedure** 1. Clean the knurls on the rear wiper motor pivot shaft with a soft wire brush prior to re-installation of the rear wiper arm. 2. Position and install the wiper arm to the wiper motor pivot shaft. 3. Hold the wiper blade at the center of the wavy defroster grid line upon securing the wiper arm to the wiper motor pivot shaft.
4	Rear Window Defroster Grid Line

WINDSHIELD WIPER BLADE REPLACEMENT

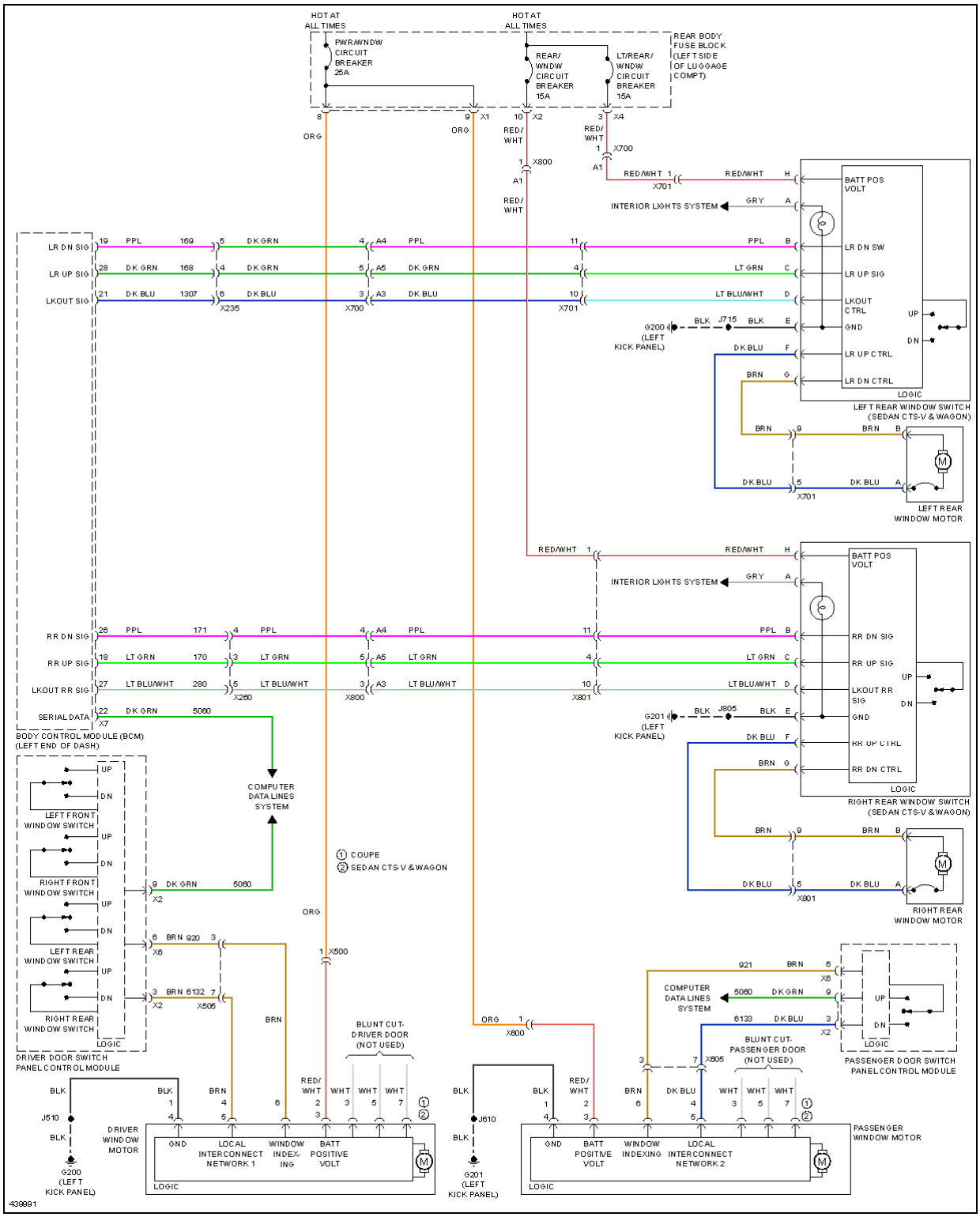


Fig. 385: Power Windows Circuit, Sedan CTS-V