2002 ACCESSORIES/SAFETY EQUIPMENT

General Motors Corp. - Air Bag Restraint Systems

DESCRIPTION & OPERATION

WARNING: Accidental air bag deployment is possible. Personal injury may result. To avoid accidental air bag deployment or injury, read and carefully follow all WARNINGS and AIR BAG SAFETY PRECAUTIONS .

Supplemental Inflatable Restraint (SIR) system is designed to supplement protection provided by driver-side and passenger-side seat belts. A frontal collision of sufficient force up to 30 degrees off center line of vehicle will deploy driver-side and passenger-side air bag modules. A side collision of sufficient force will deploy side impact air bag module on side of impact. Steering column and knee bolsters also absorb collision energy.

SIR system consists of Sensing and Diagnostic Module (SDM), driver-side and passenger-side air bag modules, front end discriminating sensor, driver and passenger side impact air bag modules, Side Impact Sensors (SIS), SIR coil assembly and AIR BAG warning light.

AIR BAG MODULES

Air bag modules consist of an inflatable bag and an inflator. When vehicle is in an accident of sufficient force, SDM causes current flow through deployment loops. Current passing through inflators ignites inflator charges, producing gas which rapidly inflates air bags.

AIR BAG WARNING LIGHT

Ignition switch applies battery voltage to AIR BAG warning light. SDM controls AIR BAG warning light operation. When ignition is first turned on, AIR BAG warning light flashes 7 times while SDM checks SIR system for malfunctions. If no malfunctions are found, AIR BAG warning light will turn off. During vehicle operation, AIR BAG warning light warns driver of malfunctions which could potentially affect SIR system operation.

FRONT END DISCRIMINATING SENSOR

Front end discriminating sensor is an auxiliary sensor which assists SDM in determining when deployment should occur by providing an input signal. Front end discriminating sensor is not part of deployment loop.

KNEE BOLSTERS

Knee bolsters are used to absorb energy and control forward movement of front passengers by limiting leg movement during a frontal collision.

SENSING & DIAGNOSTIC MODULE (SDM)

SDM monitors vehicle velocity changes to detect frontal and side collisions which are severe enough to warrant

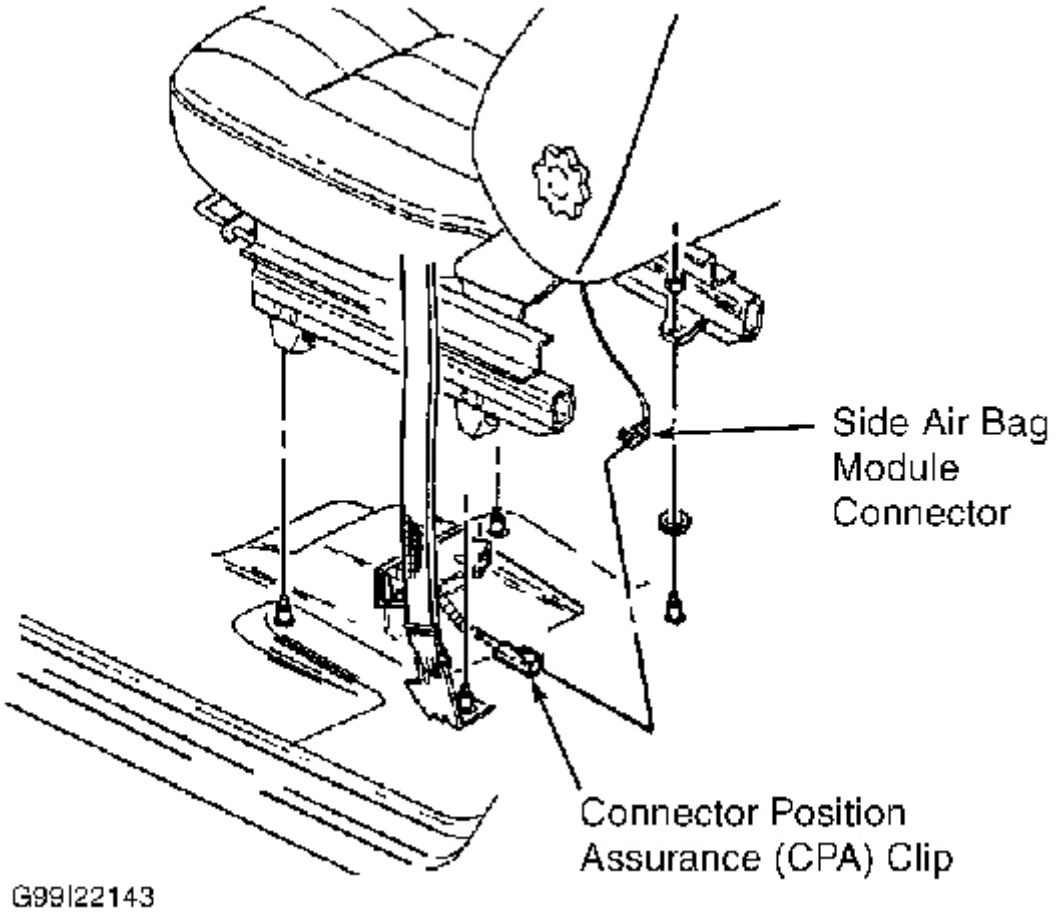


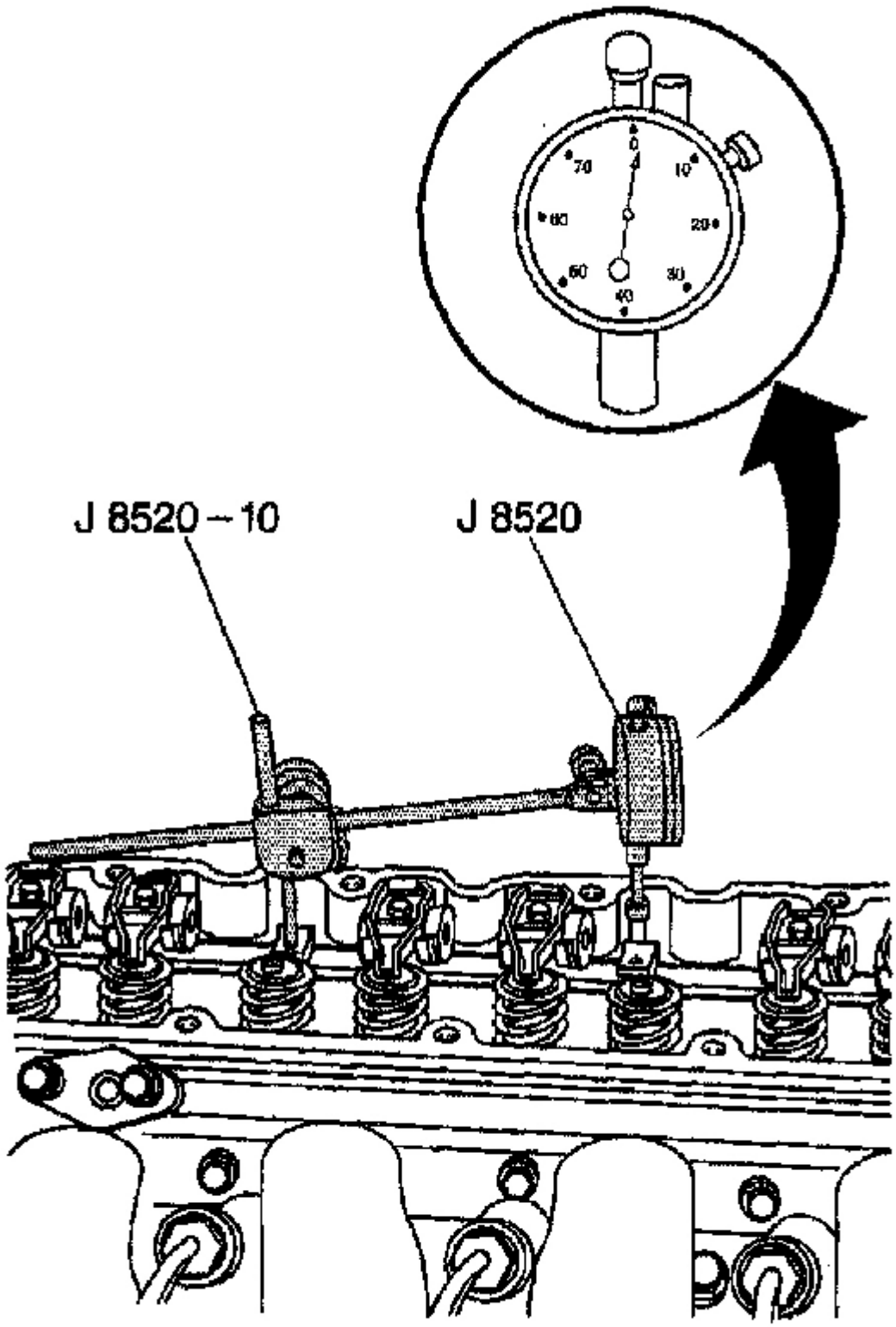
Fig. 4: Locating Side Impact Air Bag Module Yellow 2-pin Connector (Driver Side Shown; Passenger-side Is Similar)
Courtesy of GENERAL MOTORS CORP.

ACTIVATING SYSTEM

1. Turn ignition off. Remove key. Connect driver and passenger side impact air bag module connectors and install Connector Position Assurance (CPA) clips. See **Fig. 4** . Connect passenger-side air bag module connector and install CPA clip. See **Fig. 3** . Close glove box.
2. Connect driver-side air bag module connector and install CPA clip. See **Fig. 2** . Install AIR BAG fuse in instrument panel fuse block, located in lower left side of dash. Check system for proper operation. See **SYSTEM OPERATION CHECK** .

DISPOSAL PROCEDURES

WARNING: Accidental air bag deployment is possible. Personal injury could result.



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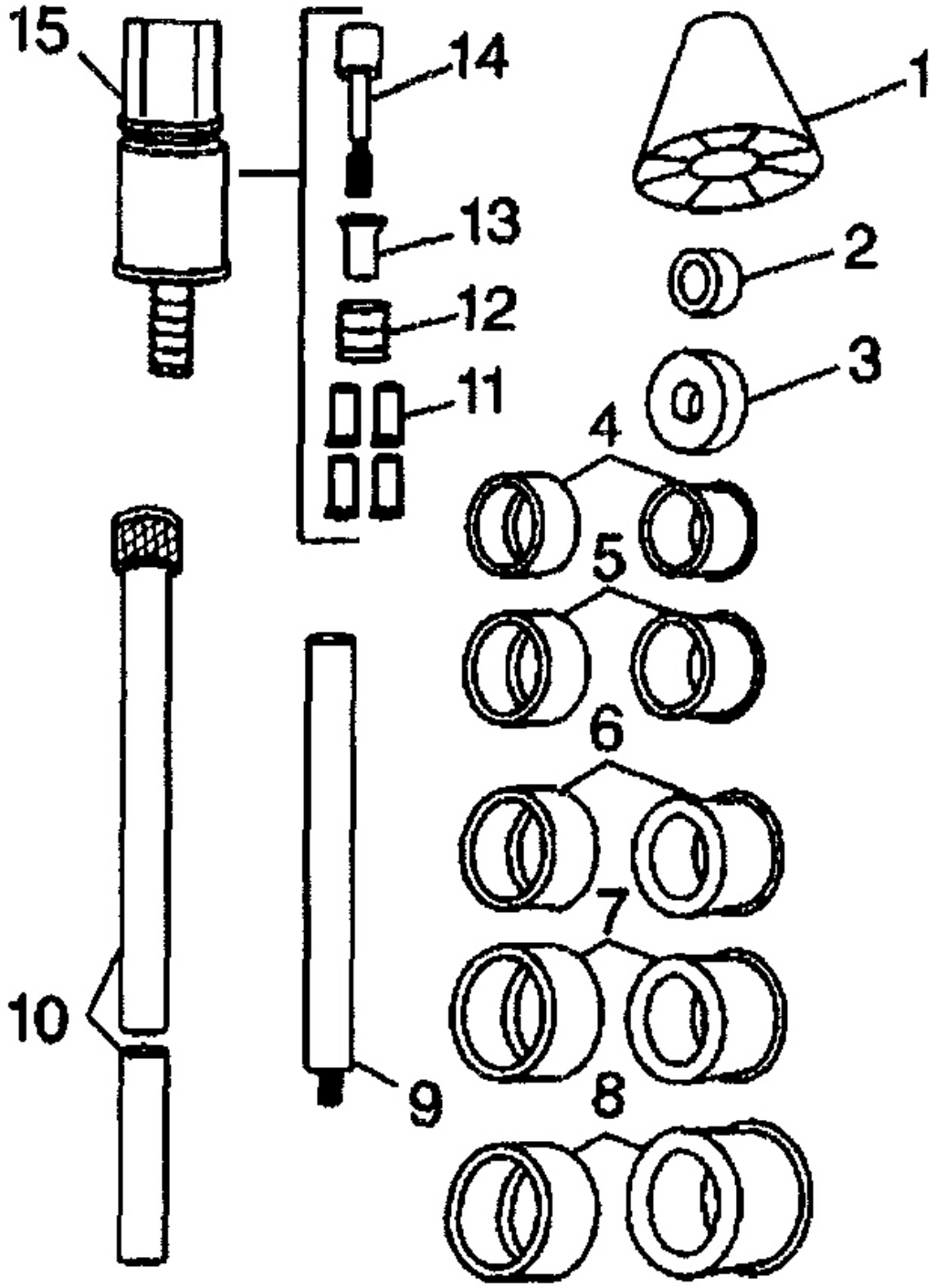

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CD Changer

The CD changer plays up to six standard size CDs continuously. Individual CDs may be loaded or ejected into or from any position.

A green light on each numbered button indicates a CD is loaded in the respective position. An amber light on a numbered button indicates that a CD is playing. When loading CDs, the loading slot indicators turn amber to indicate that the player is ready to accept a CD. CDs can be loaded or ejected with the radio or the ignition being on or off.

You must load CDs with the label side up. If you do not, the player will automatically eject the CDs.

Notice: **Loading CDs with adhesive labels will damage the player.**

To load a CD, perform the following steps:

1. Press the LOAD button. Available positions will blink amber.
2. Select a position by pressing the desired numbered button with the amber blinking light. If a button is not pressed within five seconds, the changer will go to the lowest available position.
3. Load the CD when the loading slot indicators turn amber. An internal door will open allowing a single CD to be inserted into the changer. After approximately 10 seconds the changer will be ready to play.

To load two or more CDs, perform the following steps:

1. Press and hold the LOAD button. The first CD will be loaded into the lowest numbered empty position.
2. Load a single CD when the loading slot indicators turn amber. After about 10 seconds the changer will cycle to the next available position.
3. Repeat Step 2 until all CDs are loaded into all of the desired positions. If you do not wish to load all of the positions, you can cancel the load all function by pressing a button with a green flashing indicator light or wait 20 seconds for the changer to time out.

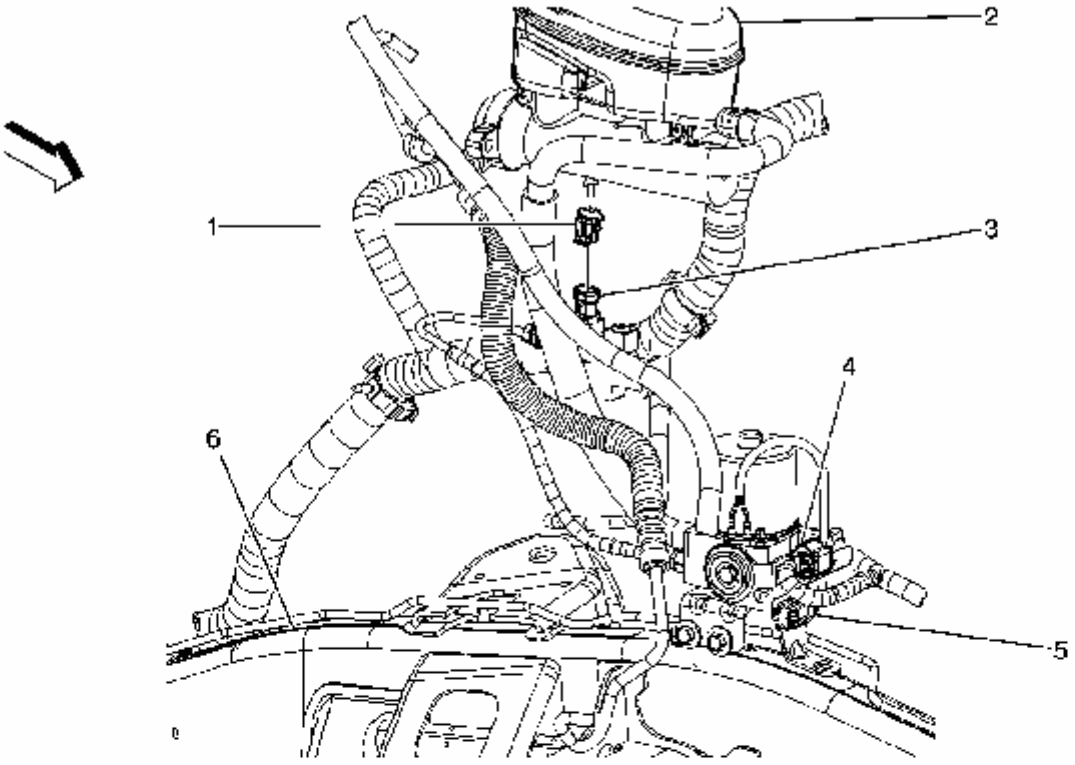


Fig. 4: Precharge Pump Component View (JL4)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 4

Callout	Component Name
1	Brake Pressure Differential Switch Connector
2	Master Cylinder Fluid Reservoir
3	Brake Pressure Differential Switch
4	Precharge Pump Connector
5	Precharge Pump
6	Frame

5. Remove the WSS cable mounting clip from the upper control arm.
6. Remove the WSS cable mounting clip from the frame attachment point.
7. Remove the WSS cable electrical connector.

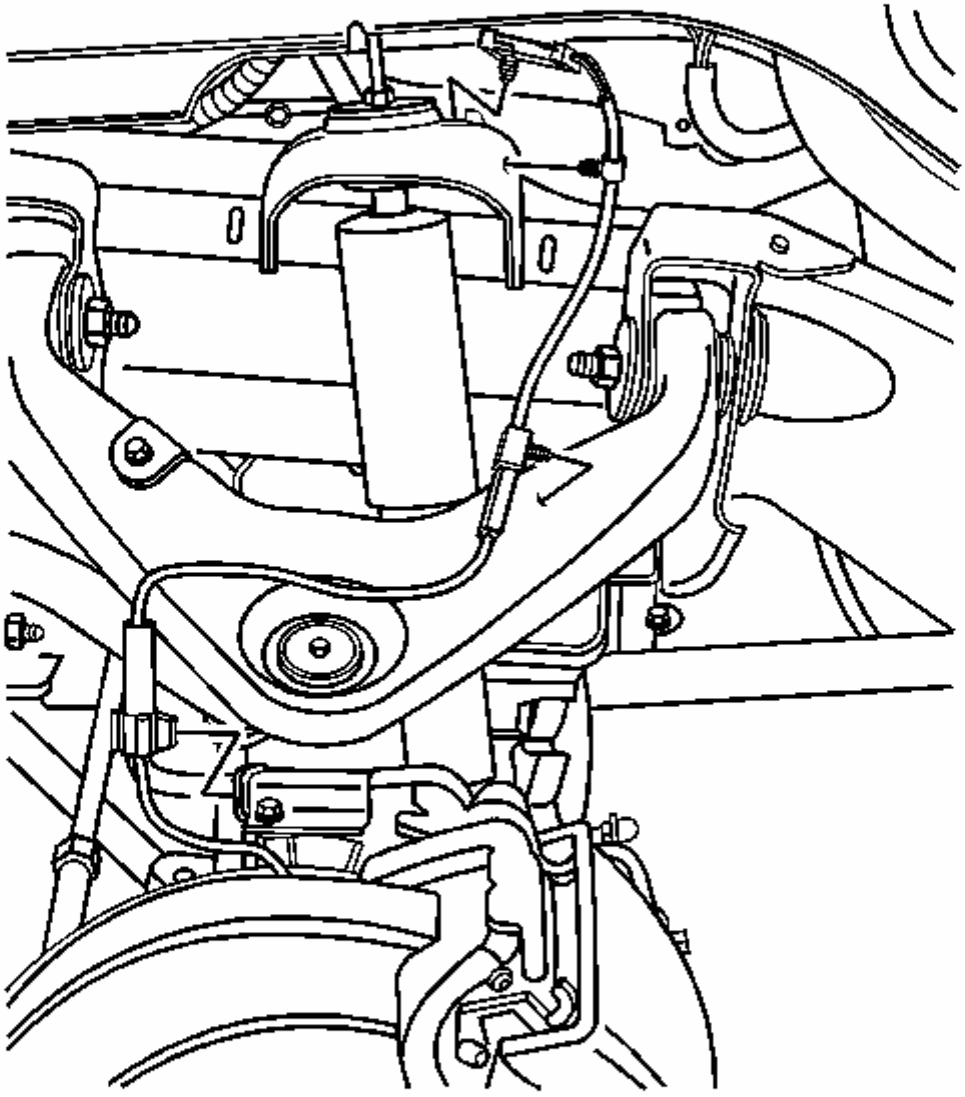


Fig. 31: View Of Wheel Speed Sensor Cable And Connectors
Courtesy of GENERAL MOTORS CORP.

8. Remove the WSS mounting bolt.

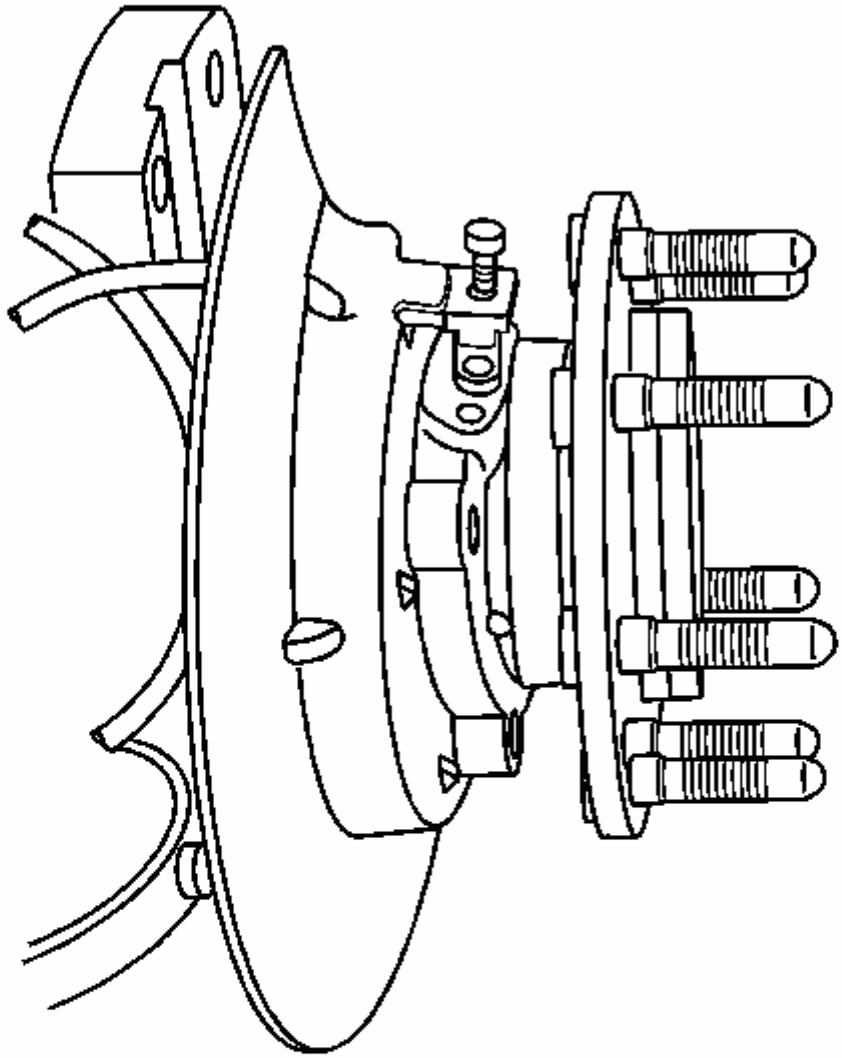


Fig. 35: View Of Wheel Speed Sensor Mounting Bolt
Courtesy of GENERAL MOTORS CORP.

6. Install the WSS cable mounting clip to the knuckle.
7. Install the WSS cable mounting clip to the upper control arm.
8. Install the WSS cable mounting clip to the frame attachment point.
9. Connect the WSS cable electrical connector.

14. Install the reverse boost valve and sleeve in the pump cover.
15. Install the oil pump reverse boost valve retaining ring (221).

OIL PUMP COVER AND BODY ASSEMBLE

Tools Required

J 21368 Pump Body and Cover Alignment Band. See **Special Tools and Equipment**.

Assembly Procedure

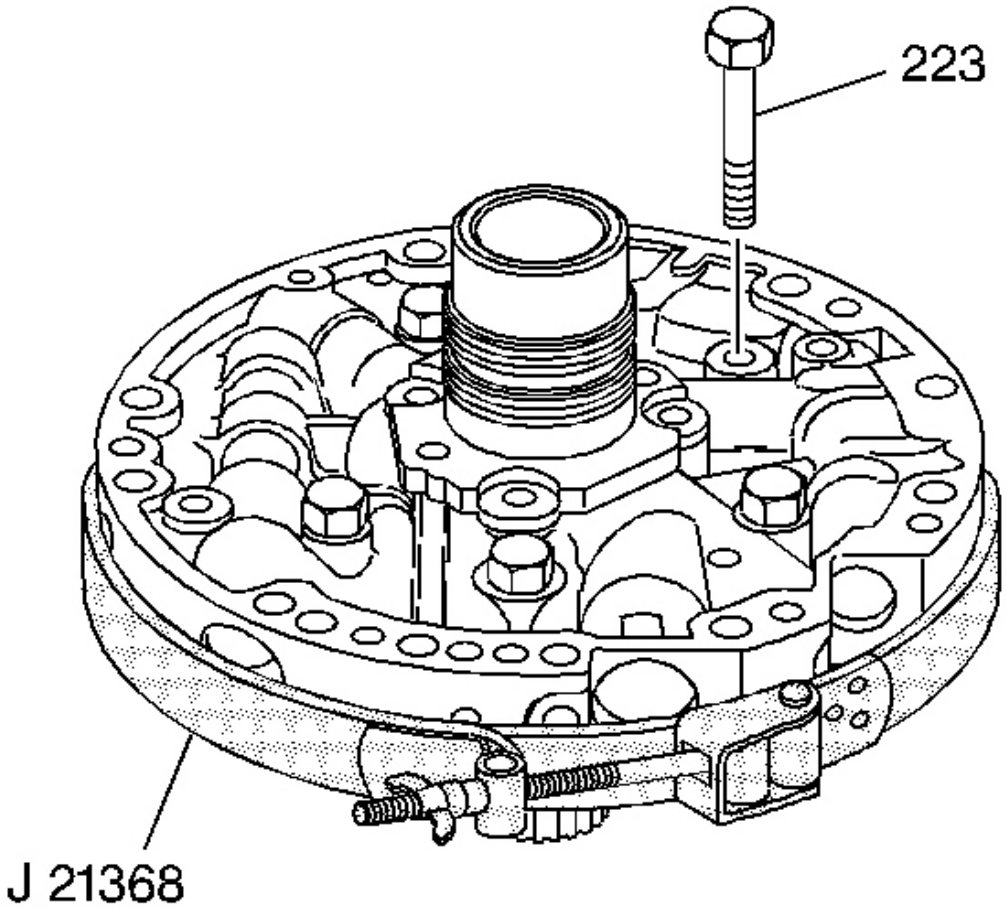


Fig. 236: Locating Pump Cover Bolts
Courtesy of GENERAL MOTORS CORP.

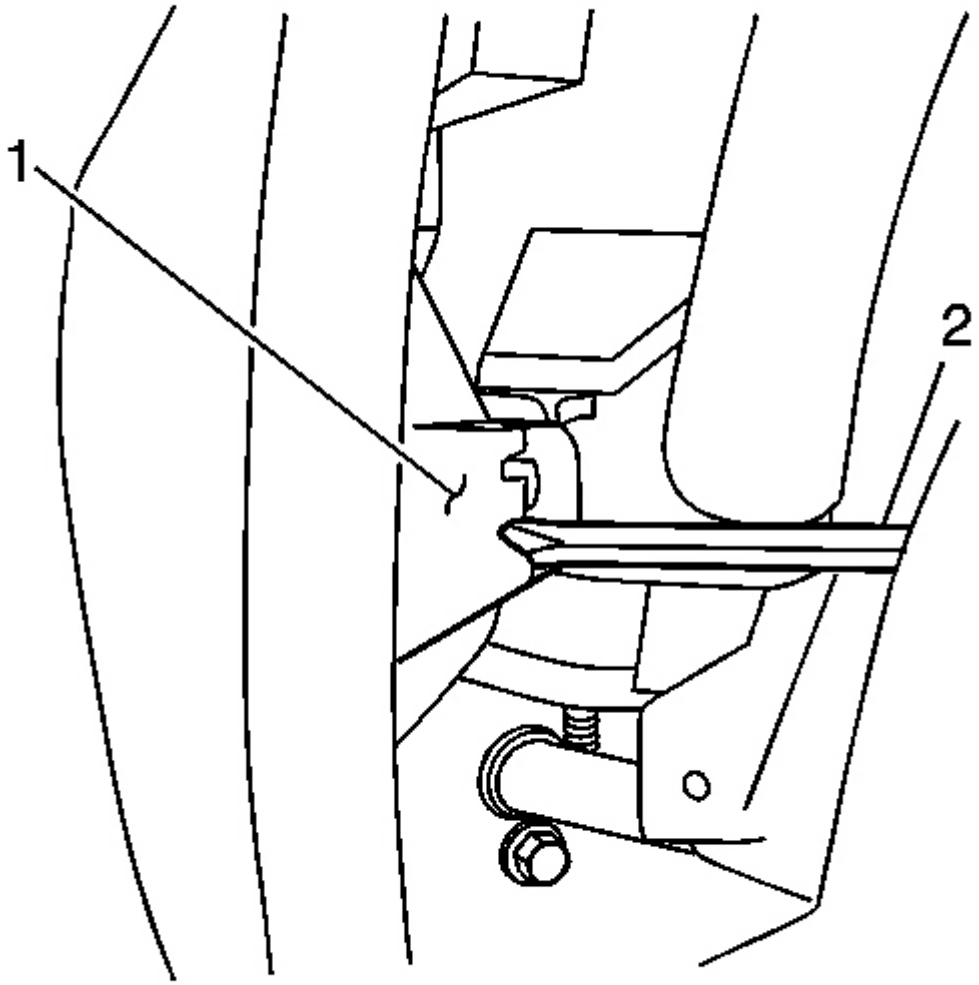


Fig. 12: Installing Pop-In Clip Onto Fascia T-Stud Bracket Using Screwdriver
Courtesy of GENERAL MOTORS CORP.

13. Remove the front fascia from the vehicle.

Installation Procedure

1. Install the T-stud bracket (1) to the fender T-stud (2) on both ends.

8	Replace the appropriate power mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	-	Go to **Step 10**	-
9	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the replacement?	-	Go to **Step 10**	-
10	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B3808

Circuit Description

The Body Control Module (BCM) internally grounds the door lock relay control circuit for the rear door lock relay when it receives a Class 2 message from the Driver Door Module (DDM) or Passenger Door Module (PDM). When the BCM grounds the door lock relay control circuit the rear door lock relay is energized and locks the rear doors.

Conditions for Running the DTC

- Battery voltage is between 9.0-16.0 volts.
- The DTC will set if the rear door lock function is active or inactive.

Conditions for Setting the DTC

The DTC will set if the door lock relay control circuit is shorted to ground or open for more then one second.

Action Taken When the DTC Sets

- If a short to ground is present on the door lock relay control circuit, the door lock relay will be energized and the rear door lock actuators will be held in the lock position and will not unlock.
- If an open condition is present on the door lock relay control circuit, the rear doors will unlock but not lock.

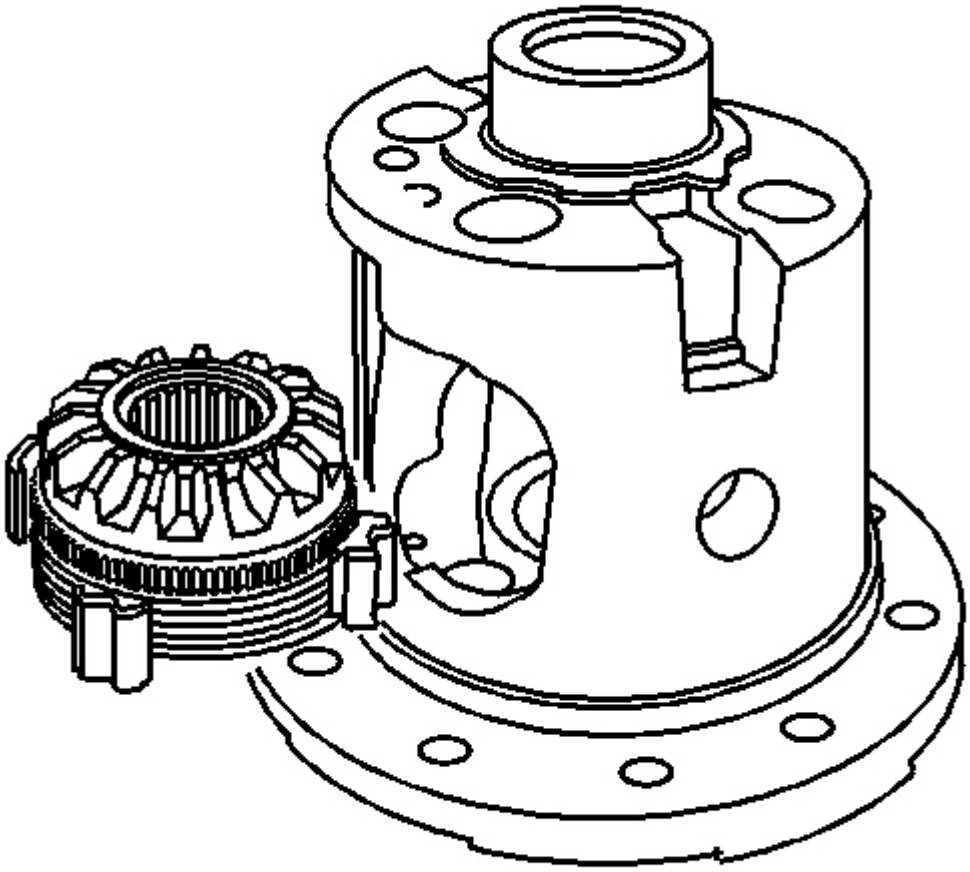


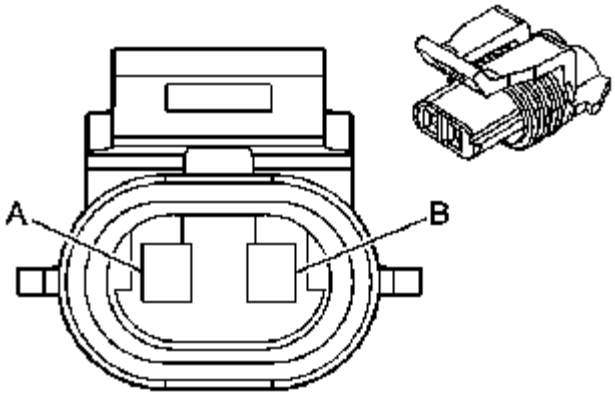
Fig. 50: View Of Left Side Gear Cam Unit & Clutch Disc Assembly
Courtesy of GENERAL MOTORS CORP.

3. Install the differential side gear shim into the right side or bell-end of the differential case.
4. Install the locking differential side gear and clutch disc assembly into the right side or bell-end of the differential case.
5. Install the pinion shaft.
6. Install the pinion shaft bolt.

   Tighten: Tighten the pinion shaft bolt finger tight.

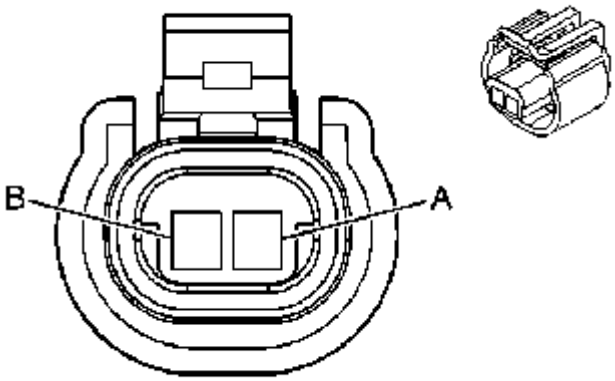
7. Install a brass drift between the left locking differential side gear cam unit and the pinion shaft.

   Press the brass drift in far enough in order to compress the clutch disc assembly and hold the left side gear



Connector Part Information		• 12052644 • 2-Way F Metri-Pack 150 Series Sealed (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN	1478	Coolant Level Switch Signal
B	BLK	550	Ground

Coolant Level Switch Connector End View - Diesel



Connector Part Information		• 15324243 • 2-Way F Metri-Pack 150 Series Sealed (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN	1478	Coolant Level Switch Signal
B	BLK	550	Ground

Engine Coolant Temperature (ECT) Sensor Connector End View

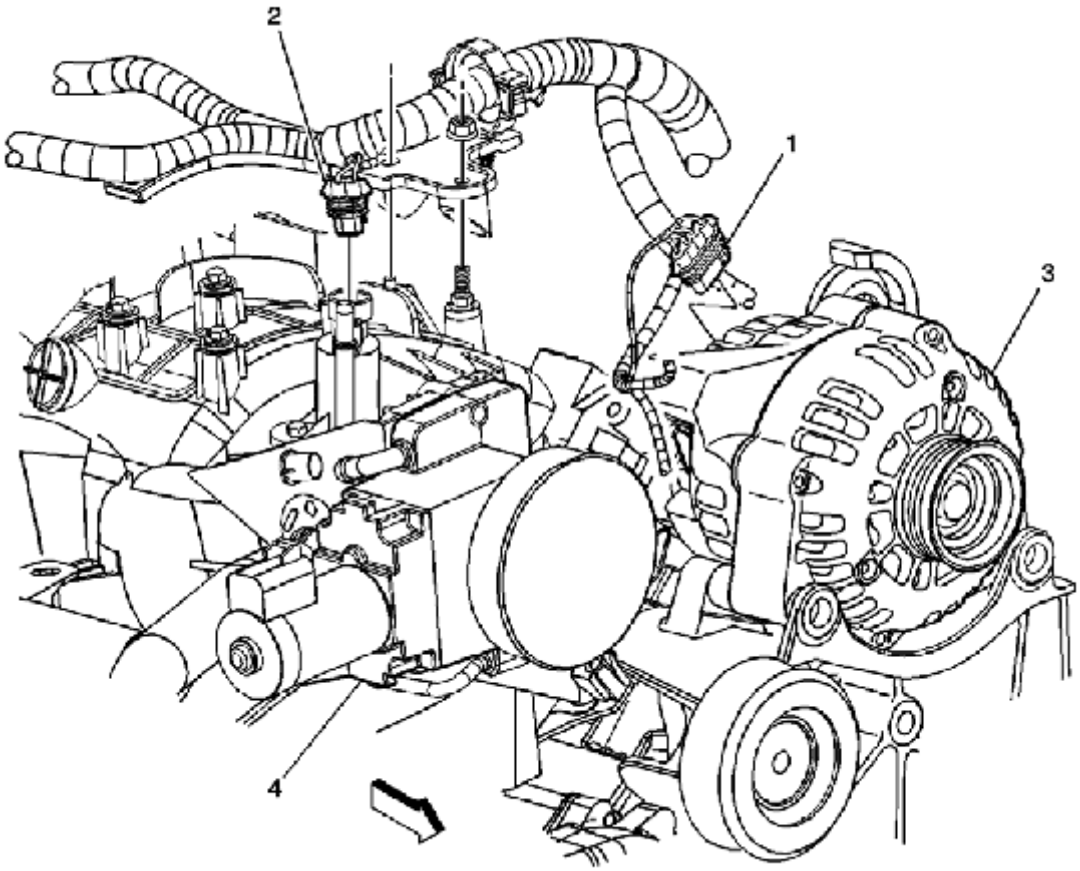


Fig. 3: Engine Component View (4.8L, 5.3L, 6.0L) - Top Front
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Generator Connector
2	Evaporative Emission (EVAP) Canister Purge Solenoid Connector
3	Generator
4	Throttle Body

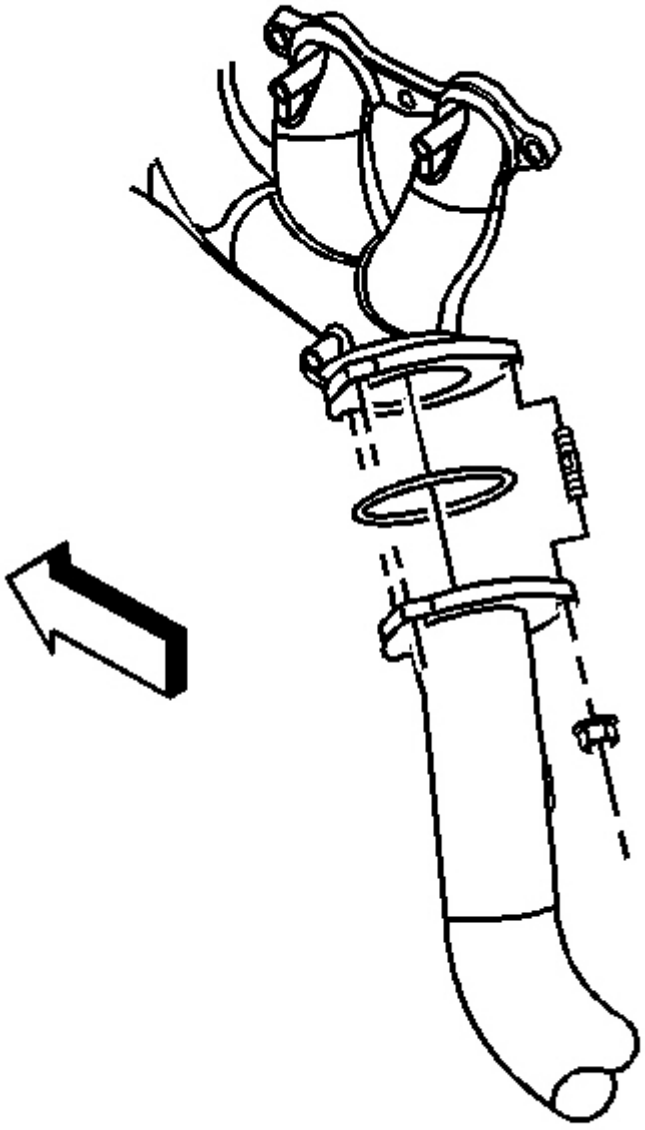


Fig. 58: View Of Left Exhaust Manifold Pipe Nuts
Courtesy of GENERAL MOTORS CORP.

5. Remove the left exhaust manifold pipe nuts.