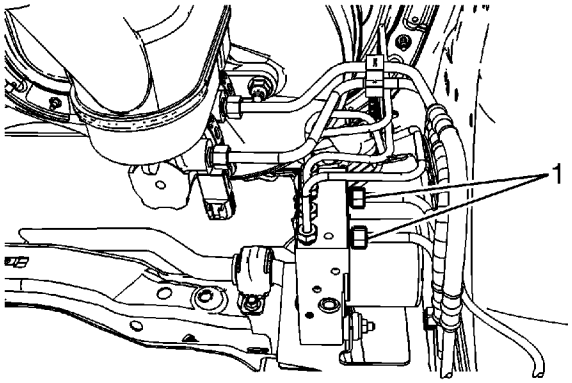
Antilock Brake System Automated Bleed Procedure

Warning: Refer to Brake Fluid Irritant Warning in the Preface section.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution in the Preface section.

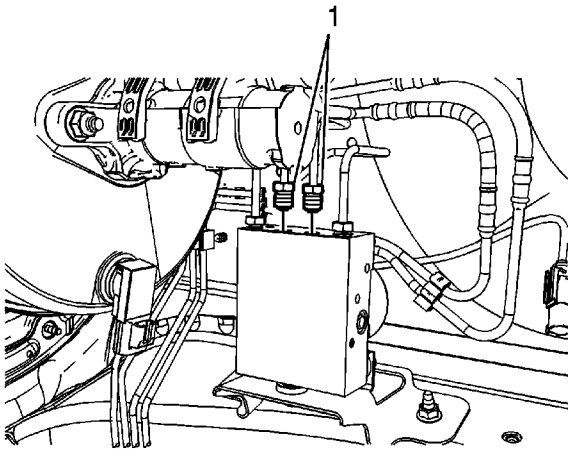
Note: The base hydraulic brake system must be bled before performing this automated bleeding procedure. If you have not yet performed the base hydraulic brake system bleeding procedure, refer to Hydraulic Brake System Bleeding before proceeding.

1. Install a scan tool to the vehicle.
2. Start the engine and allow the engine to idle.
3. Using the scan tool, begin the automated bleed procedure.
4. Follow the instructions on the scan tool to complete the automated bleed procedure. Apply the brake pedal when instructed by the scan tool.
5. Turn the ignition OFF.
6. Remove the scan tool from the vehicle.
7. Fill the brake master cylinder reservoir to the maximum-fill level with GM approved brake fluid from a clean, sealed brake fluid container. Refer to Master Cylinder Reservoir Filling.
8. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
9. With the ignition OFF, apply the brakes 3-5 times, or until the brake pedal becomes firm, in order to deplete the brake booster power reserve.
10. Slowly depress and release the brake pedal. Observe the feel of the brake pedal.
11. If the brake pedal feels spongy, repeat the automated bleeding procedure. If the brake pedal still feels spongy after repeating the automated bleeding procedure inspect the brake system for external leaks. Refer to Brake System External Leak Inspection.
12. Turn the ignition key ON, with the engine OFF. Check to see if the brake system warning lamp remains illuminated.
13. If the brake system warning lamp remains illuminated, DO NOT allow the vehicle to be driven until it is diagnosed and repaired. Refer to Symptoms - Hydraulic Brakes.
14. Drive the vehicle to exceed 13 km/h (8 mph) to allow ABS initialization to occur. Observe brake pedal feel.
15. If the brake pedal feels spongy, repeat the automated bleeding procedure until a firm brake pedal is obtained.



4. Disconnect the master cylinder inlet brake pipe fittings (1).

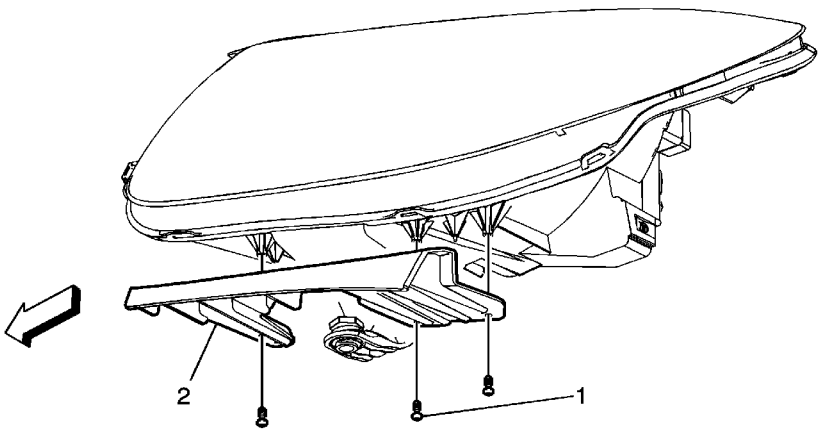
   Cap the brake pipe fittings and plug the brake pressure modulator valve (BPMV) inlet ports to prevent brake fluid loss and contamination.



5. Disconnect the BPMV outlet port front brake pipe fittings (1).

   Cap the brake pipe fittings and plug the BPMV outlet ports to prevent brake fluid loss and contamination.

Headlamp and Front End Fascia Mount Panel Replacement (AFS Enclave)

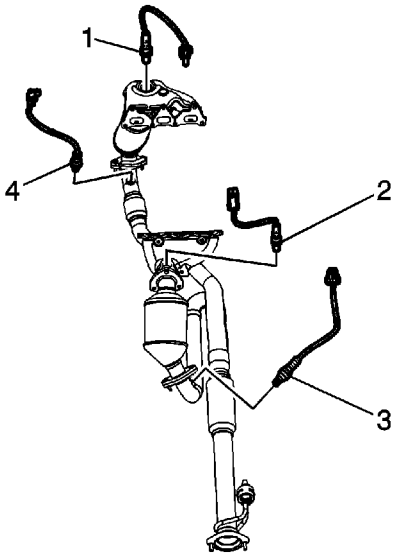


Callout	Component Name
Procedure Remove the headlamp capsule. Refer to Headlamp Capsule Replacement.	
1	Headlamp and Front Bumper Fascia Mounting Panel Support Screws (Qty: 3) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** Tighten the screws to 2 N·m (18 lb in)
2	Headlamp and Front Bumper Fascia Mounting Panel Support

4. Remove the HO2S (2) from the exhaust manifold.

Installation Procedure

Note: A special anti-seize compound is used in the HO2S threads. The compound consists of liquid graphite and glass beads. The graphite tends to burn away, but the glass beads remain, making the sensor easier to remove. New, or service replacement sensors already have the compound applied to the threads. If the sensor is removed from an exhaust component and if for any reason the sensor is to reinstalled, the threads must have anti-seize compound applied before the reinstallation.

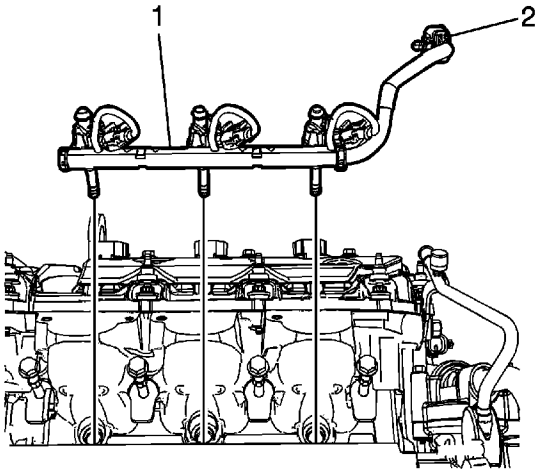


1. If reinstalling the old sensor, coat the threads with anti-seize compound GM P/N 12377953, or equivalent.

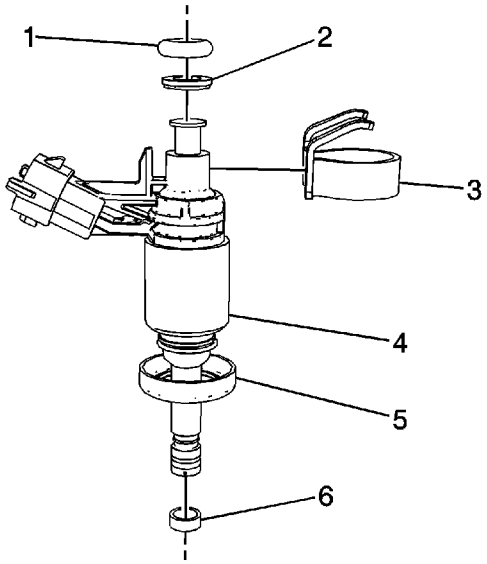
   Caution: Refer to Fastener Caution in the Preface section.

2. Install the HO2S (2) to the exhaust manifold.

   Tighten
   Tighten the sensor to 42 N·m (31 lb ft).

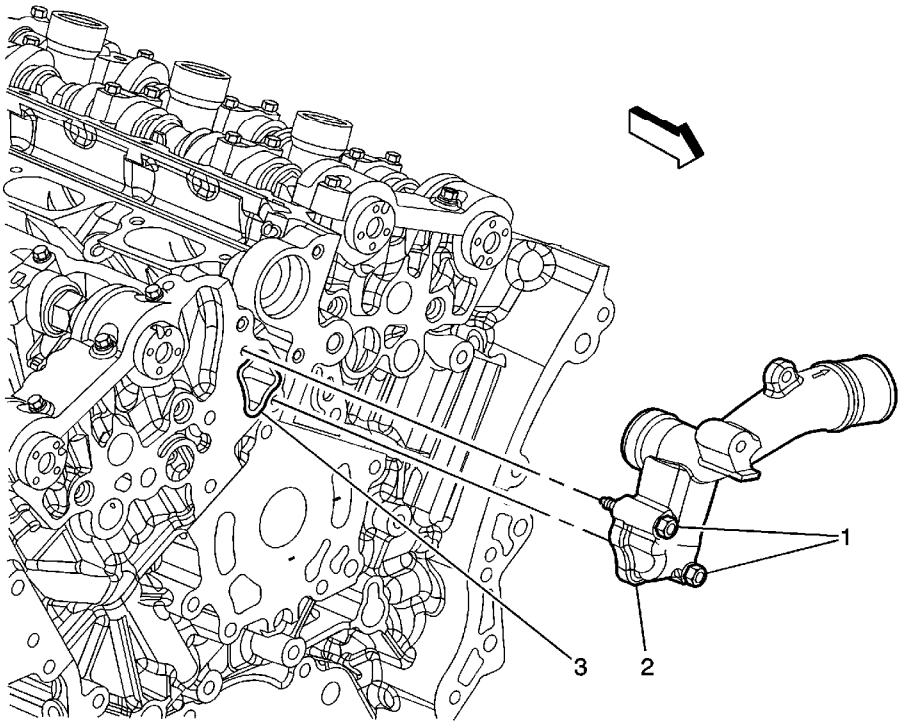


4. Remove the direct fuel injectors and harness (1) as an assembly, and disconnect the electrical connector (2). If necessary, use the *J 2619-01* slide hammer with the *J-37281-A* injector remover in order to remove the direct fuel injectors evenly.

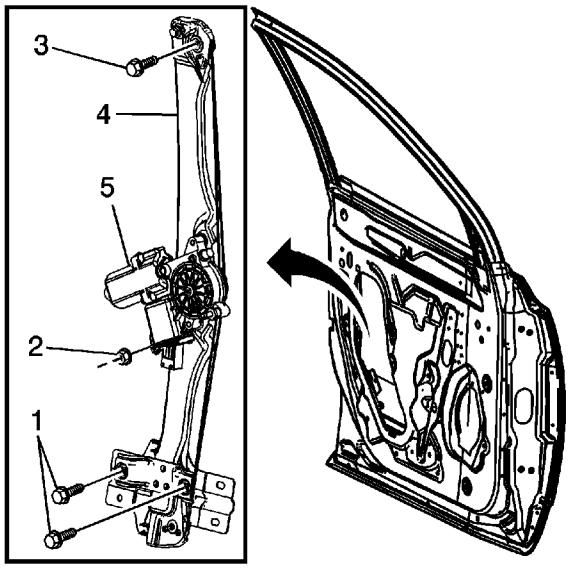


5. Remove and discard the following components from the fuel injectors (4).
   - Upper O-ring Seal (1)
   - Plastic Spacer (2)
   - Retaining Ring (3)
   - Isolator Cup (5)
   - Teflon Seal (6)
6. Inspect the fuel rail injector bores and clean with the *J-39313* adapter , and *EN-47909* cleaning kit , if required.

Water Outlet Replacement



Callout	Component Name
Preliminary Procedures 1. Remove the radiator inlet hose. Refer to Radiator Inlet Hose Replacement. 2. Remove the right engine strut mount. Refer to Engine Mount Strut Replacement - Right Side. 3. Remove the right engine mount strut bracket. Refer to Engine Mount Strut Bracket Replacement - Right Side.	
1	Water Outlet Housing Bolt (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Procedure** Remove the water outlet housing bolts. **Tighten** 10 N·m (89 lb in)
2	Water Outlet Housing
	Seal



1. Partially install the upper bolt (3) to the regulator (5).
2. Beginning with the upper portion, install the regulator through the door opening in a semi-horizontal position.
3. Position the regulator (5) fully forward into the door cavity.
4. Rotate the regulator to a vertical position.
5. Lower and hang the regulator onto the door sheet metal using the upper bolt (3) that was previously installed.
6. Remove the window support and lower the window to the window guide on the regulator.
7. Loosely tighten the regulator window carrier bolts.
8. Operate the window upward to the full up position, ensuring the window remains in the run channels.

Caution: Refer to Fastener Caution in the Preface section.

9. Install the nut (2) that retains the motor to the door.

Tighten
Tighten nut to 9 N·m (80 lb in).

10. Install the upper and lower bolts (3, 4) that retain the regulator to the door.

Tighten
Tighten bolts to 10 N·m (88 lb in).

11. Connect the electrical connector to the regulator motor.
12. Install the energy absorber retainers and energy absorber to the door.
13. Install the covers that conceal the regulator bolt holes.
14. Install the water deflector. Refer to Front Side Door Water Deflector Replacement.
15. Install the door trim panel. Refer to Front Side Door Trim Panel Replacement - Left Side or Front Side Door Trim Panel Replacement - Right Side.

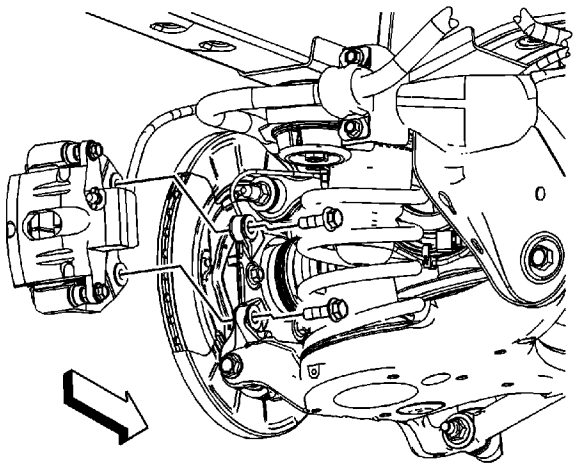
Rear Suspension Support Lower Mount Replacement - Rear (All Wheel Drive)

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

1. Remove the spare tire.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Remove the rear tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.

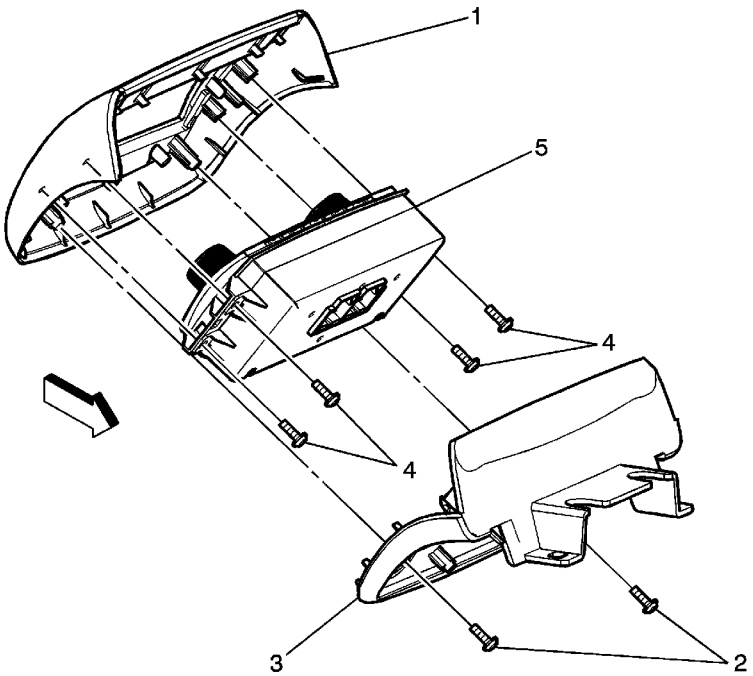


4. Remove the rear brake caliper bracket bolts.

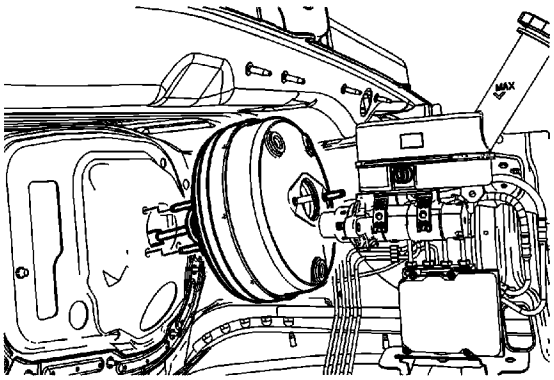
   Note: Support the rear brake calipers from the vehicle body not the suspension to prevent stressing of the brake hoses.

5. Support the rear brake caliper.
6. Support the exhaust system on a suitable stand and disconnect the rubber insulator hangers from the exhaust system.
7. Lower the exhaust only enough to allow lowering of the suspension crossmember 38 mm (1.5 in).
8. Install a jackstand under the front of the rear drive module.
9. Install jackstands under the front and rear of the suspension crossmember.

Auxiliary Heater and Air Conditioning Control Module Replacement



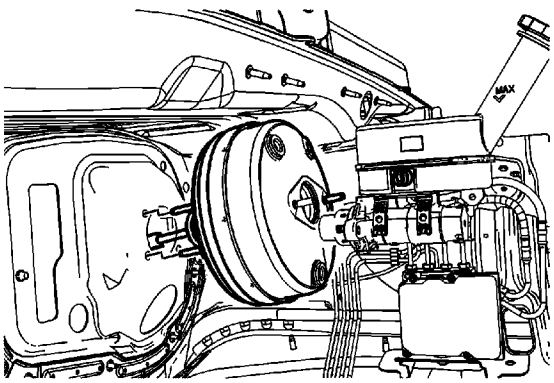
Callout	Component Name
1	Front Floor Console Extension Accessory Upper Bezel Refer to Front Floor Console Extension Accessory Upper Bezel Replacement.
2	Front Floor Console Extension Accessory Upper Bezel Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
3	Front Floor Console Extension Accessory Upper Bezel Closeout
4	Auxiliary HVAC Control Module Screw (Qty: 4) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
5	Auxiliary HVAC Control Module Assembly



19. Pull the vacuum brake booster forward and tilt upward slightly until the mounting studs clear the dash panel.
20. Remove the vacuum brake booster.

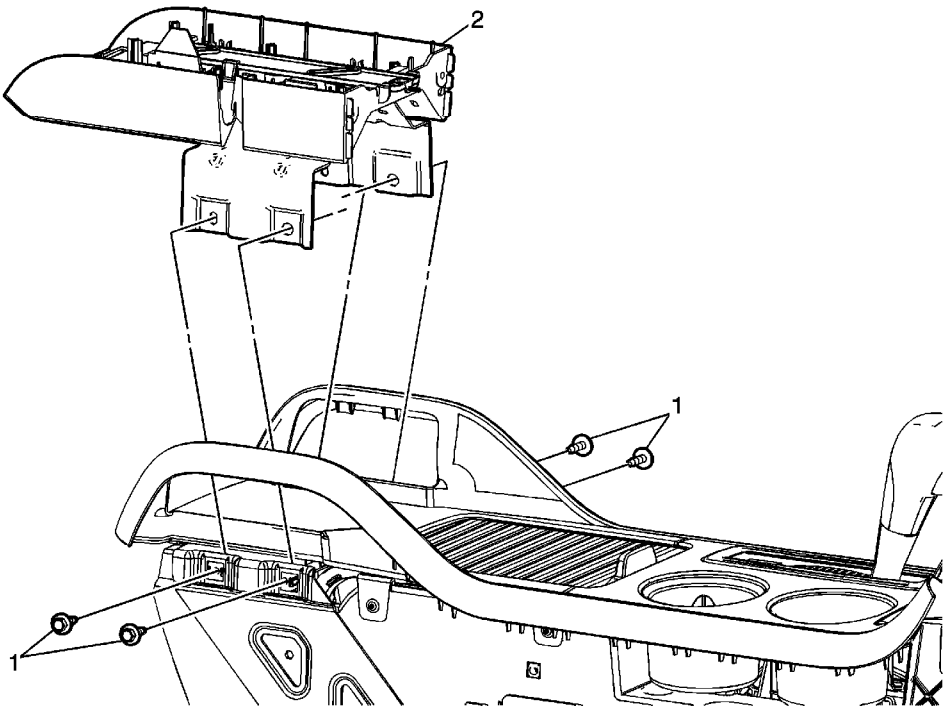
Installation Procedure

Note: Inspect the vacuum brake booster to dash panel gasket for damage and replace, if necessary.

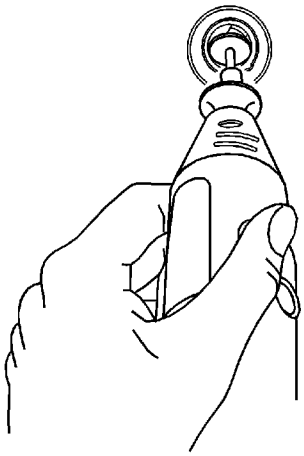


1. Align the vacuum brake booster mounting studs to the dash panel.
2. Install the vacuum brake booster.

Front Floor Console Armrest with Support Replacement

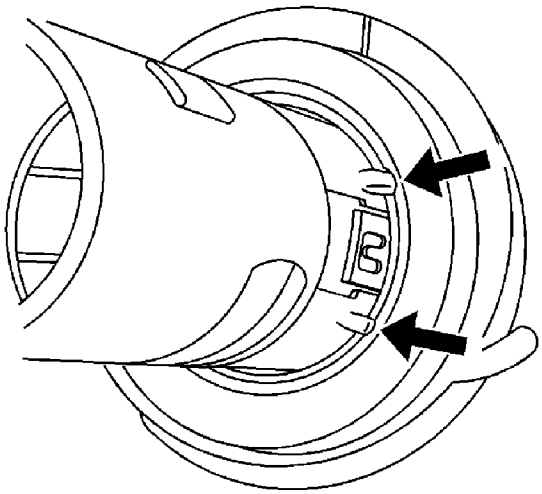


Callout	Component Name
Preliminary Procedures 1. Remove the front floor console filler. Refer to Front Floor Console Filler Replacement. 2. Remove the front floor console extension accessory upper bezel. Refer to Front Floor Console Extension Accessory Upper Bezel Replacement.	
1	Front Floor Console Armrest Assembly with Supports Bolt (Qty: 4) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 9 N·m (80 lb in)
2	Front Floor Console Armrest Assembly with Supports

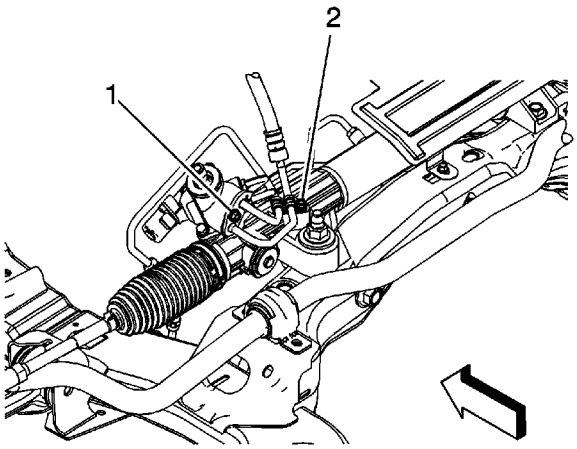


3. If J 42059 tool fails to release the lighter socket from the retainer, perform the following alternate method:
   3.1. Insert a small grinding tool with a cutoff wheel into the socket.
   3.2. Remove the plastic latches in the 3 mm (0.11 in) square windows.
   3.3. Use the J 42059 as directed above to remove the socket.

Installation Procedure



1. Route the connector through the retainer. Align the accessory power receptacle retainer to the slot in the opening.
2. Install the retainer by pressing into place fully seated.

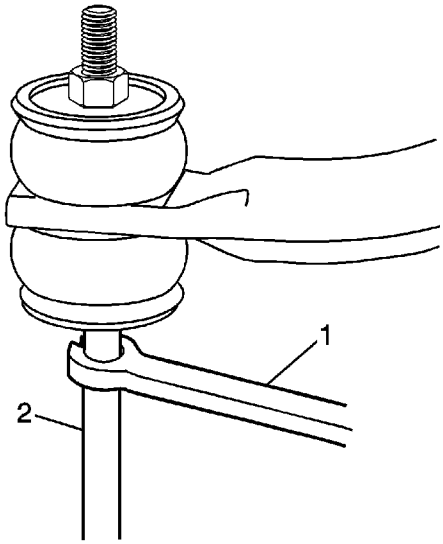


6. Insert the steering gear outlet hose in to the steering gear.
7. Install the power steering gear inlet hose retaining plate bolt (1) and tighten to **12 N·m (106 lb in)**.
8. Install the power steering gear inlet and outlet pipe clip bolt (2) and tighten to **9 N·m (80 lb in)**.
9. Clean any excess fluid from the vehicle and remove the drain pans.
10. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.

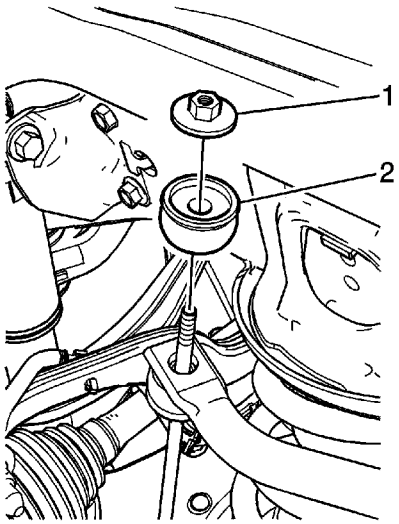
Stabilizer Shaft Replacement

Removal Procedure

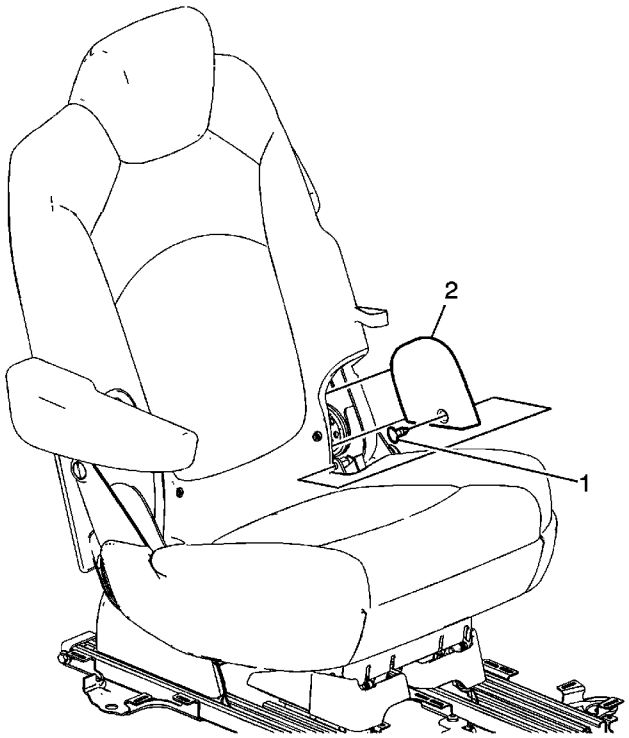
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the rear tires and wheels. Refer to Tire and Wheel Removal and Installation.
3. Remove the spare tire.



4. Insert a wrench (1) on the stabilizer shaft link (2) so as not to allow the stabilizer shaft link to rotate when removing or installing the retaining nut.



Rear Seat Recliner Inner Finish Cover Replacement - Upper (with 40 Percent Seat)



Callout	Component Name
1	Rear Seat Recliner Inner Finish Cover Push-in Retainer
2	Rear Seat Recliner Inner Finish Cover