

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

This vehicle can be equipped with two different versions of electronic brake control modules. Vehicles with Antilock Brake System Only utilize control module version Advics ADS A2. Vehicles equipped with Vehicle Stability Enhancement System will have version Advics ADS V2G installed. The electronic brake control module (EBCM) includes the brake pressure modulator valve. The brake pressure modulator valve uses a 4 way configuration to control hydraulic pressure to each wheel individually.

The following vehicle performance enhancement systems are provided.

- Antilock Brake System (ABS)
- Electronic Brake Distribution
- Traction Control System
- Vehicle Stability Enhancement System

The following components are involved in the operation of the above systems:

- Electronic brake control module (EBCM) – The EBCM controls the system functions and detects failures.
- Brake pressure modulator valve – The brake pressure modulator valve contains the hydraulic valves and pump motor that are controlled electrically by the EBCM. The brake pressure modulator valve uses a 4 circuit configuration with a diagonal split. The brake pressure modulator valve directs fluid from the reservoir of the master cylinder to the left front and right rear wheels and fluid from the other reservoir to the right front and left rear wheels. The diagonal circuits are hydraulically isolated so that a leak or malfunction in one circuit will allow continued braking ability on the other.

The brake pressure modulator valve contains the following components:

- Pump motor
- Inlet valves (one per wheel)
- Outlet valves (one per wheel)
- One traction control/stability control supply valves
- One traction control/stability control isolation valves
- Pressure Sensor
- Wheel speed sensor – The wheel speed sensor receives a 12 V power supply voltage from the electronic brake control module (EBCM) and provides an output signal to the EBCM. As the wheel spins, the wheel speed sensor sends the EBCM a DC square wave signal. The EBCM uses the frequency of the square wave signal to calculate the wheel speed.
- Traction Control Switch – vehicle stability enhancement system and the engine torque reduction function of the traction control system are manually disabled or enabled by pressing the traction control switch.
- Steering angle sensor – The EBCM receives serial data message inputs from the steering angle sensor. The steering angle sensor signal is used to calculate the desired yaw rate.
- Multi-axis acceleration sensor – The yaw rate and lateral acceleration sensors are combined into one multi-axis acceleration sensor, external to the EBCM. The EBCM receives serial data message inputs from the yaw rate and lateral acceleration sensor and activates stability control depending on multi-axis acceleration sensor input.

Initialization Sequence

The EBCM performs 1 initialization test each ignition cycle. The initialization of the EBCM occurs when both the following conditions occur:

- The vehicle speed is greater than 6 km/h (4 MPH).
- The stop lamp switch is not applied.

The initialization sequence cycles each solenoid valve and the pump motor, as well as the necessary relays, for approximately 1.5 s to check component operation. The EBCM sets a DTC if any error is detected. The initialization sequence may be heard and felt while it is taking place, and is considered part of normal system operation.

The EBCM defines a drive cycle as the completion of the initialization sequence.

Antilock Brake System

When wheel slip is detected during a brake application, the ABS enters antilock mode. During antilock braking, hydraulic pressure in the individual wheel circuits is controlled to prevent any wheel from slipping. A separate hydraulic line and specific solenoid valves are provided for each wheel. The ABS can decrease, hold, or increase hydraulic pressure to each wheel brake. The ABS cannot, however, increase hydraulic pressure above the amount which is transmitted by the master cylinder during braking.

During antilock braking, a series of rapid pulsations is felt in the brake pedal. These pulsations are caused by the rapid changes in position of the individual solenoid valves as the EBCM responds to wheel speed sensor inputs and attempts to prevent wheel slip. These pedal pulsations are present only during antilock braking and stop when normal braking is resumed or when the vehicle comes to a stop. A ticking or popping noise may also be heard as the solenoid valves cycle rapidly. During antilock braking on dry pavement, intermittent chirping noises may be heard as the tires approach slipping. These noises and pedal pulsations are considered normal during antilock operation.

Vehicle equipped with ABS may be stopped by applying normal force to the brake pedal. Brake pedal operation during normal braking is no different than that of previous non-ABS systems. Maintaining a constant force on the brake pedal provides the shortest stopping distance while maintaining vehicle stability.

Pressure Hold

The EBCM closes the inlet valve and keeps the outlet valve closed in order to isolate the system when wheel slip occurs. This holds the pressure steady on the brake so that the hydraulic pressure does not increase or decrease.

Pressure Decrease

The EBCM decreases the pressure to individual wheels during a deceleration when wheel slip occurs. The inlet valve is closed and the outlet valve is opened. The excess fluid is stored in the accumulator until the return pump can return the fluid to the master cylinder.

Pressure Increase

The EBCM increases the pressure to individual wheels during a deceleration in order to reduce the speed of the wheel. The inlet valve is opened and the outlet valve is closed. The increased pressure is delivered from the master cylinder.

Electronic Brake Distribution

The electronic brake distribution is a control system that replaces the hydraulic proportioning function of the mechanical proportioning valve in the base brake system. The electronic brake distribution control system is part of the operation software in the EBCM. The electronic brake distribution uses active control with existing ABS in order to regulate the vehicles rear brake pressure.

The red brake warning indicator is illuminated when the electronic brake distribution function is disabled.

Traction Control System

When drive wheel slip is noted while the brake is not applied, the electronic brake control module (EBCM) will enter traction control mode.

First, the EBCM requests the engine control module (ECM) to reduce the amount of torque to the drive wheels via the serial data. The ECM reduces torque to the drive wheels by retarding spark timing and turning off fuel injectors. The ECM reports the amount of torque delivered to the drive wheels via the serial data circuit.

- Pressure hold

- Pressure increase
- Pressure decrease

Vehicle Stability Enhancement System

The Vehicle Stability Enhancement System adds an additional level of vehicle control to the EBCM.

Yaw rate is the rate of rotation about the vehicles vertical axis. The vehicle stability enhancement system is activated when the EBCM determines that the desired yaw rate does not match the actual yaw rate as measured by the yaw rate sensor.

The desired yaw rate is calculated from the following parameters:

- The position of the steering wheel
- The speed of the vehicle
- The lateral acceleration of the vehicle

The difference between the desired yaw rate and the actual yaw rate is the yaw rate error, which is a measurement of oversteer or understeer. If the yaw error becomes too large, the EBCM attempts to correct the vehicles yaw rate motion by applying differential braking to the appropriate wheel. The amount of differential braking applied to the left or right front wheel is based on both the yaw rate error and side slip rate error.

The vehicle stability enhancement system activations generally occur during aggressive driving, in turns or on bumpy roads without much use of the accelerator pedal. When braking during vehicle stability enhancement system activation, the pedal pulsations feel different than the ABS pedal pulsations. The brake pedal pulsates at a higher frequency during vehicle stability enhancement system activation.

Driver Information Indicator

Brake Warning Indicator

The instrument cluster turns the brake warning indicator ON when the following occurs:

- The instrument cluster performs the bulb check.
- The EBCM detects some faults, such as more than two wheel speed sensors are defective or the failure relating to the basic brake system occurs and sends a serial data message to the instrument cluster requesting illumination.
- The park brake is engaged or the brake fluid level is low.

ABS Warning Indicator

The instrument cluster turns the ABS warning indicator ON when the following occurs:

- The instrument cluster performs the bulb check.
- The EBCM detects a malfunction which disables the ABS and sends a serial data message to the instrument cluster requesting illumination.

Traction Control System/Vehicle Stability Enhancement System Warning Indicator

The instrument panel cluster turns the traction control system/vehicle stability enhancement system warning indicator ON when the following occurs:

- The instrument cluster performs the bulb check.
- The EBCM detects a malfunction which disables the traction control or stability control and sends a serial data message to the instrument cluster requesting illumination.

Traction Control System/Vehicle Stability Enhancement System OFF Indicator

The instrument panel cluster turns the traction control system/vehicle stability enhancement system OFF indicator ON when the following occurs:

- The instrument cluster performs the bulb check.
- The driver manually disables the traction control and stability control by pressing the traction control switch. The EBCM sends a serial data message to the instrument cluster requesting illumination.

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Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

Note: Before performing the ABS Automated Bleed Procedure, first perform a pressure bleed of the base brake system. Refer to Hydraulic Brake System Bleeding. The automated bleed procedure is recommended when one of the following conditions exist:

- Base brake system bleeding does not achieve the desired pedal height or feel
- Extreme loss of brake fluid has occurred
- Air ingestion is suspected in the secondary circuits of the brake modulator assembly

The ABS Automated Bleed Procedure uses a scan tool to cycle the system solenoid valves and run the pump in order to purge any air from the secondary circuits. These circuits are normally closed off, and are only opened during system initialization at vehicle start up and during ABS operation. The automated bleed procedure opens these secondary circuits and allows any air trapped in these circuits to flow out toward the brake corners.

Performing the Automated Bleed Procedure

Caution: The Auto Bleed Procedure may be terminated at any time during the process by pressing the EXIT button. No further Scan Tool prompts pertaining to the Auto Bleed procedure will be given. After exiting the bleed procedure, relieve bleed pressure and disconnect bleed equipment per manufacturers instructions. Failure to properly relieve pressure may result in spilled brake fluid causing damage to components and painted surfaces.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
 2. Remove all four tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.
 3. Inspect the brake system for leaks and visual damage. Repair or replace components as needed.
 4. Lower the vehicle.
 5. Inspect the battery state of charge.
 6. Install a scan tool.
 7. Turn the ignition ON, with the engine OFF.
 8. If the vehicle is equipped with push button start, place the ignition in Service Only Mode.
- Do not apply the brake pedal.
 - Press and hold the ignition mode switch for a minimum of 5 seconds.
 - Release the ignition mode switch when the switch indicator illuminates green.
 - With the scan tool, establish communications with the ABS system. Select Control Functions. Select Automated Bleed from the Control Functions menu.
 - Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
 - Following the directions given on the scan tool, pressure bleed the base brake system. Refer to Hydraulic Brake System Bleeding.
 - Follow the scan tool directions until the desired brake pedal height is achieved.
 - If the bleed procedure is aborted, a malfunction exists. Perform the following steps before resuming the bleed procedure:
 - If a DTC is detected, refer to Diagnostic Trouble Code (DTC) List - Vehicle, and diagnose the appropriate DTC.
 - If the brake pedal feels spongy, perform the conventional brake bleed procedure again. Refer to Hydraulic Brake System Bleeding.
 - When the desired pedal height is achieved, press the brake pedal to inspect for firmness.
 - Lower the vehicle.
 - Remove the scan tool.
 - If the vehicle is equipped with push button start, remove the vehicle from Service Only Mode.
 - Do not apply the brake pedal.
 - Press the ignition mode switch once and release.
 - The ignition mode switch will no longer be illuminated.
 - The vehicle may be started normally.
 - Install the tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.
 - Inspect the brake fluid level. Refer to Master Cylinder Reservoir Filling.
 - Road test the vehicle while inspecting that the pedal remains high and firm.

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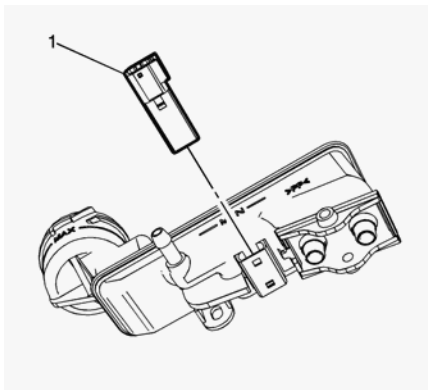
Fuel Delivery: | Fuel:

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

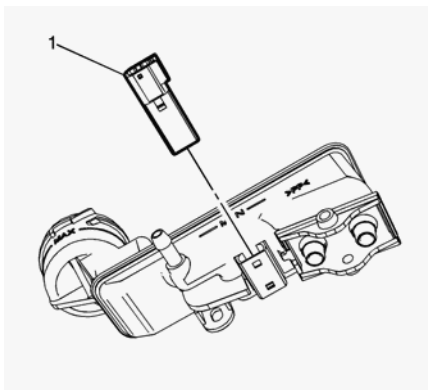
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

1. Disconnect the brake fluid level indicator switch electrical connector.



2. Using a small wooden or plastic tool, press upward on the locking tab of the brake fluid level indicator switch (1).
3. Remove the brake fluid level indicator switch from the master cylinder reservoir.

Installation Procedure



1. Install the brake fluid level indicator switch (1) to the master cylinder reservoir.
2. Push the brake fluid level indicator switch into the master cylinder reservoir until the locking tab is fully seated.
3. Connect the brake fluid level indicator switch electrical connector.

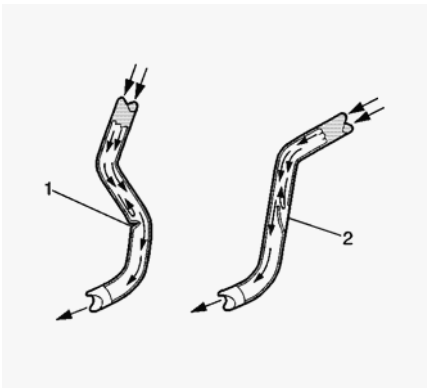
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Warning: Refer to Brake Fluid Irritant Warning.

1. Visually inspect all of the brake pipes for the following conditions:

- Kinks, improper routing, missing or damaged retainers
- Leaking fittings, excessive corrosion
- If any of the brake pipes exhibited any of the conditions listed, then the identified pipe, or pipes, require replacement.
- Ensure that the vehicle axles are properly supported at ride height in order to maintain the proper relationship of the flexible brake hoses to the



- Visually inspect all of the flexible brake hoses for the following conditions:
- Kinks (1), improper routing, twists, chafing, missing or damaged retainers
- Leaking connections, cracking, dry-rot, blisters, bulges
- If any of the flexible brake hoses exhibited any of the conditions listed, then the identified flexible brake hose, or hoses require replacement.
- Squeeze the flexible brake hoses with firm finger pressure to check for soft spots (2), indicating an internal restriction. Check the entire length of the brake hose.
- If any of the flexible brake hoses were found to have soft spots (2), then the identified flexible brake hose, or hoses require replacement.

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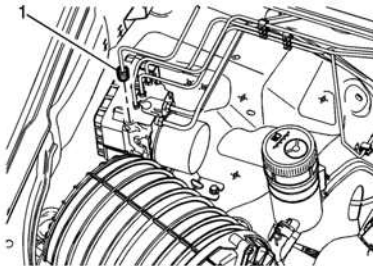
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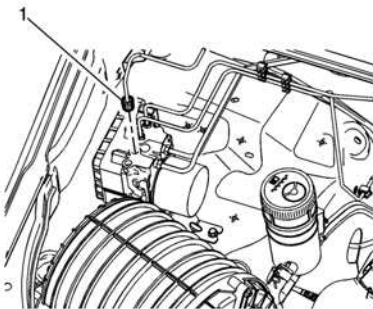
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

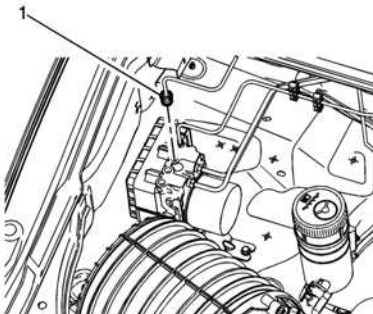
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



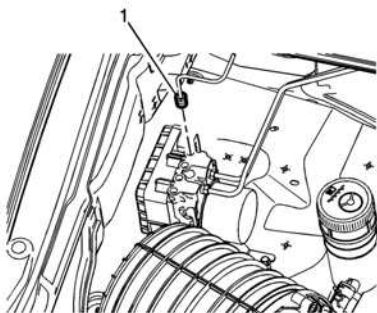
1. Disconnect the right rear brake pipe fitting (1) from the brake pressure modulator valve (BPMV).
2. Cap the brake pipe to prevent brake fluid loss and contamination.



3. Disconnect the left rear brake pipe fitting (1) from the BPMV.
4. Cap the brake pipe to prevent brake fluid loss and contamination.



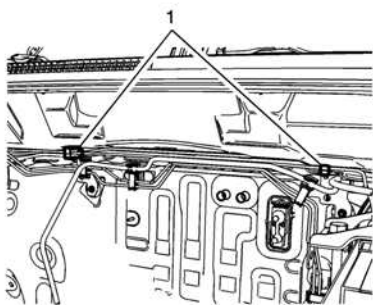
5. Disconnect the right front brake pipe fitting (1) from the BPMV.
6. Cap the brake pipe to prevent brake fluid loss and contamination.



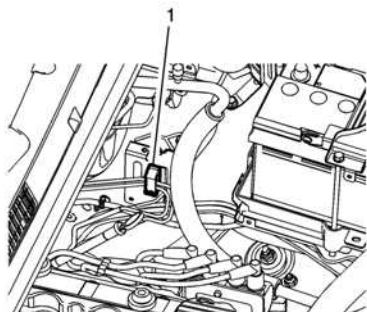
7. Disconnect the left front brake pipe fitting (1) from the BPMV.
8. Cap the brake pipe to prevent brake fluid loss and contamination.



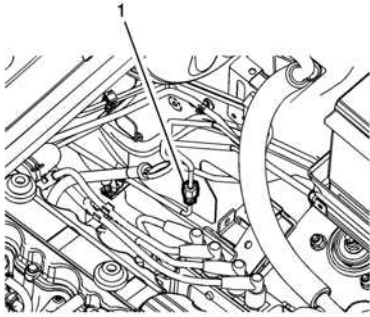
9. Release the right front brake pipe from the clip (1) on the right front wheel house.



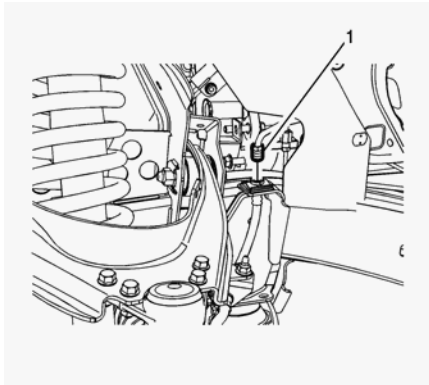
10. Release the brake pressure modulator valve (BPMV) brake pipes from the clips (1) on the dash panel.



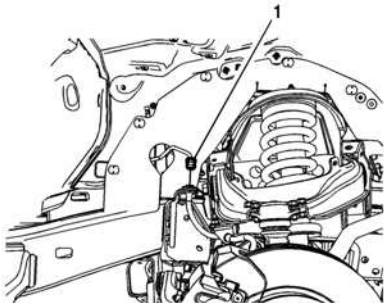
11. Disconnect the left front and rear brake pipes from the clip (1) on the left front wheel house.



12. Disconnect the 2 rear brake pipe unions (1) from the 2 rear brake pipe fittings.
13. Cap the brake pipes to prevent brake fluid loss and contamination.
14. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
15. Remove the front tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.



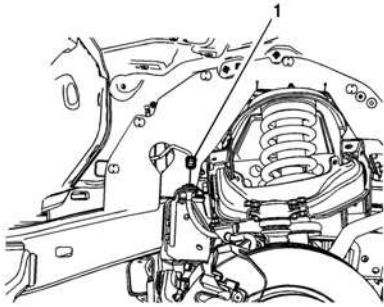
16. Disconnect the left front brake pipe fitting (1) from the left front brake hose.
17. Cap the brake hose fitting to prevent brake fluid loss and contamination.



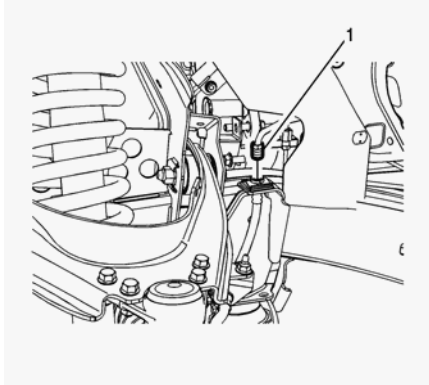
18. Disconnect the right front brake pipe fitting (1) from the right front brake hose.
19. Cap the brake hose fitting to prevent brake fluid loss and contamination.
20. Remove the BPMV brake pipe assembly.

Installation Procedure

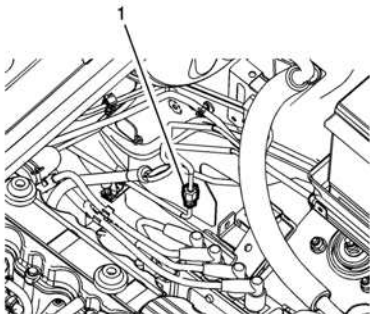
1. Install the BPMV brake pipe assembly.



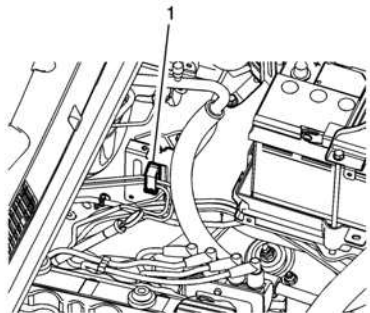
2. Connect the right front brake pipe fitting (1) to the right front brake hose and tighten the fitting to **16 Y (12 lb ft)**.



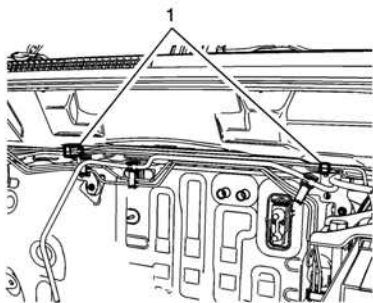
3. Connect the left front brake pipe fitting (1) to the left front brake hose and tighten the fitting to **16 Y (12 lb ft)**.
4. Lower the vehicle enough to access the engine compartment.



5. Connect the 2 rear brake pipe unions (1) to the 2 rear brake pipe fittings and tighten the fittings to **16 Y (12 lb ft)**.



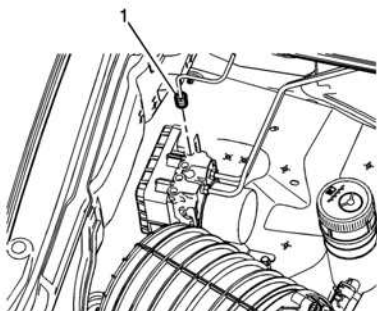
6. Disconnect the left front and rear brake pipes from the clip (1) on the left front wheel house.



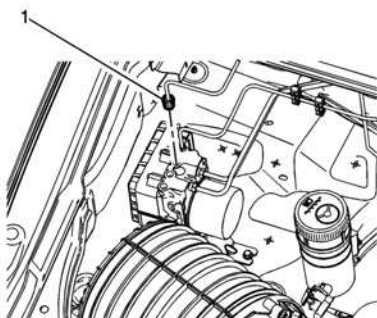
7. Install the BPMV brake pipes to the clips (1) on the dash panel.



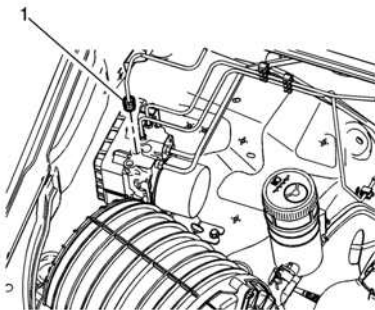
8. Install the right front brake pipe to the clip (1) on the right front wheel house.



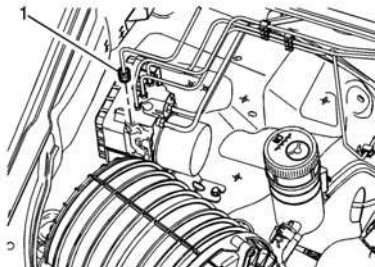
9. Connect the left front brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.



10. Connect the right front brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.



11. Connect the left rear brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.



12. Connect the right rear brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.
13. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
14. Install the tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.

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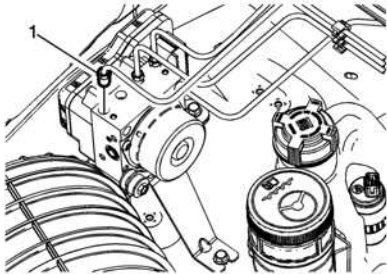
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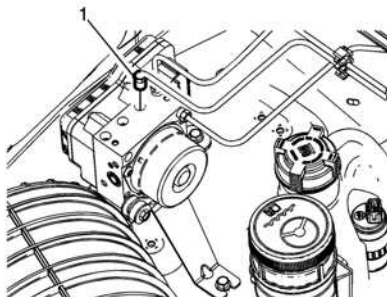
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

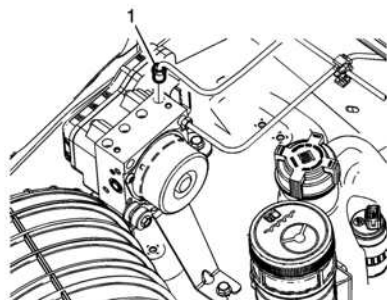
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



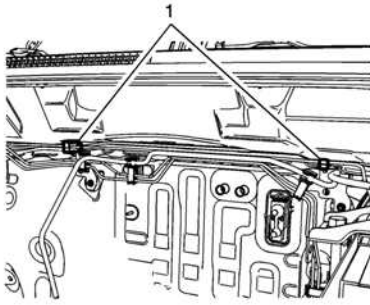
1. Disconnect the rear brake pipe fitting (1) from the brake pressure modulator valve (BPMV).
2. Cap the brake pipe to prevent brake fluid loss and contamination.



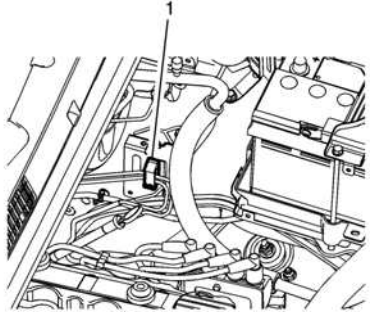
3. Disconnect the right front brake pipe fitting (1) from the BPMV.
4. Cap the brake pipe to prevent brake fluid loss and contamination.



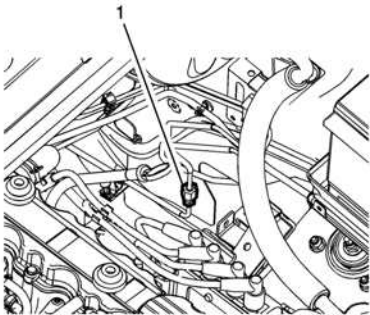
5. Disconnect the left front brake pipe fitting (1) from the BPMV.
6. Cap the brake pipe to prevent brake fluid loss and contamination.



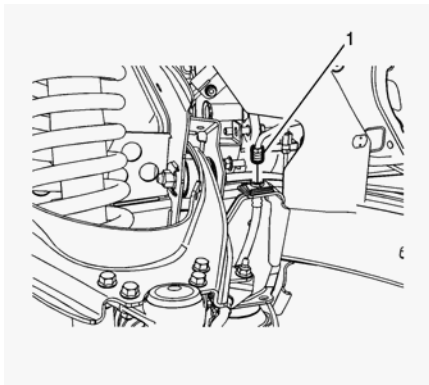
7. Release the BPMV brake pipes from the clips (1) on the dash panel.



8. Release the BPMV brake pipes from the clip (1) on the left wheel house panel.



9. Disconnect the rear brake pipe union (1) from the rear brake intermediate pipe.
10. Cap the brake pipe to prevent brake fluid loss and contamination.
11. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
12. Remove the left front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

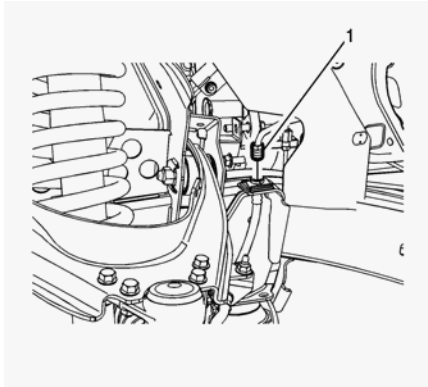


13. Disconnect the left front brake pipe fitting (1) from the left front brake hose.
14. Cap the brake hose fitting to prevent brake fluid loss and contamination.

15. Remove the BPMV pipe assembly.

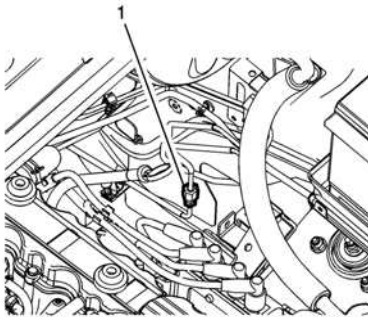
Installation Procedure

1. Install the BPMV pipe assembly.

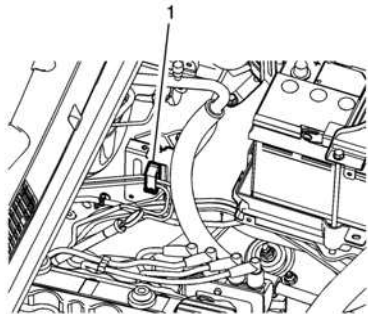


Caution: Refer to Fastener Caution.

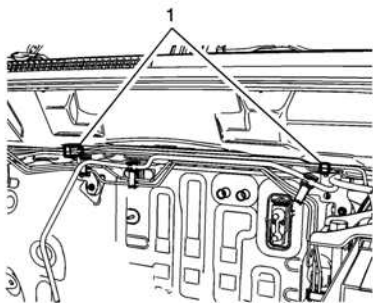
2. Connect the left front brake pipe fitting (1) to the left front brake hose and tighten the fitting to **16 Y (12 lb ft)**.
3. Lower the vehicle enough to access the engine compartment.



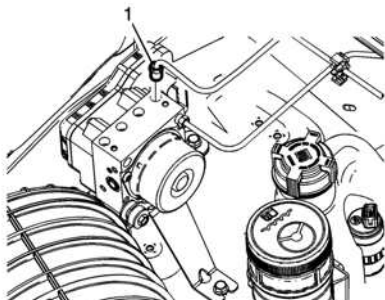
4. Connect the rear brake pipe union (1) to the rear brake intermediate pipe and tighten the rear brake pipe fitting to **16 Y (12 lb ft)**.



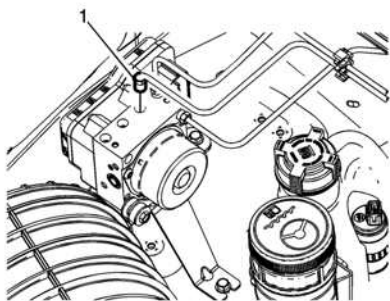
5. Install the BPMV brake pipes to the clip (1) on the left wheel house panel.



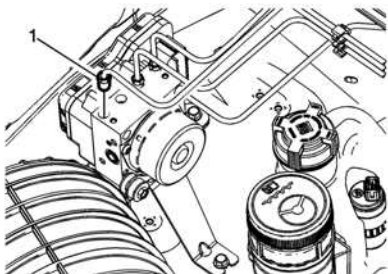
6. Install the BPMV brake pipes to the clips (1) on the dash panel.



7. Connect the left front brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.



8. Connect the right front brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.



9. Connect the rear brake pipe fitting (1) to the BPMV and tighten the fitting to **16 Y (12 lb ft)**.
10. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
11. Install the left front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

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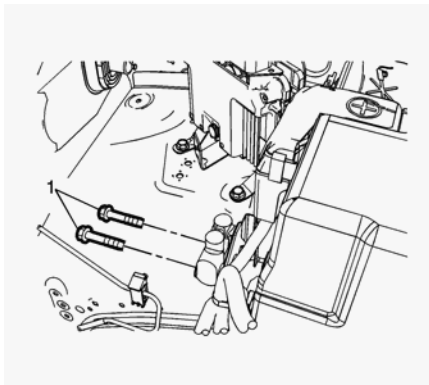
Warning: Refer to Brake Fluid Irritant Warning.



1. Disconnect the rear brake pipe fitting (1) from the proportion valve.
2. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



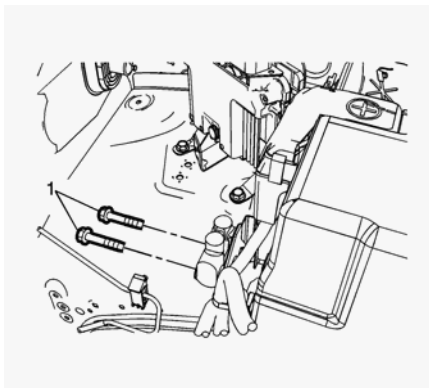
3. Disconnect the master cylinder brake pipe fitting (1) from the proportion valve.
4. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



5. Remove the brake proportion valve bolts (1).
6. Remove the brake proportion valve.

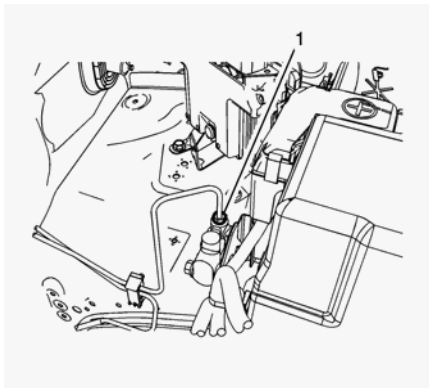
Installation Procedure

1. Install the brake proportion valve.



Caution: Refer to Fastener Caution.

2. Install the brake proportion valve bolts (1) and tighten to **20 Y (15 lb ft)**.



3. Connect the master cylinder brake pipe fitting (1) to the proportion valve and tighten to **16 Y (12 lb ft)**.



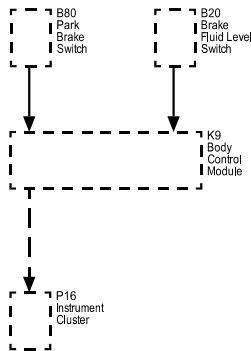
4. Connect the rear brake pipe fitting (1) to the proportion valve and tighten to **16 Y (12 lb ft)**.
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Brake Warning Indicator

Brake Warning Block Diagram



(HW)	Hard-Wired
(HW)	Hard-Wired
(DA)	Serial Data
(B80)	B80 Park Brake Switch
(B20)	B20 Brake Fluid Level Switch
(K9)	K9 Body Control Module
(P16)	P16 Instrument Cluster

The instrument cluster turns the brake warning indicator ON when the following occurs:

- The instrument cluster performs the bulb check. The brake warning indicator illuminates for 5 s.
- When the Electronic Brake Control Module (EBCM) detects low brake fluid level it sends a serial data message to the instrument cluster, v illuminate the red brake indicator.
- The Body Control Module (BCM) detects that the parking brake is engaged. The instrument cluster receives a serial data message from th requesting illumination.

Driver Information Center Messages

When the Electronic Brake Control Module (EBCM) detects low brake fluid level it sets DTC C0267 and sends a serial data message to the Dri Center , which will display Brake Fluid Low message.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

System Component Description

The brake assist system consists of the following:

Brake Pedal

Receives, multiplies and transfers brake system input force from driver.

Brake Pedal Pushrod

Transfers multiplied input force received from brake pedal to brake booster.

Vacuum Brake Booster

Uses source vacuum to decrease effort required by driver when applying brake system input force.

At rest, source vacuum is applied to both sides of the vacuum diaphragm for single boosters, or to both sides of each of the diaphragms for tandem boosters. Return springs maintain the booster in a rest position.

When brake system input force is applied, vacuum to the rear of the diaphragm(s) is cut off, and air at atmospheric pressure is admitted in its place. This provides a decrease in brake pedal effort required. When input force is removed, vacuum again replaces atmospheric pressure within the booster.

Vacuum Source

Supplies force used by vacuum brake booster to decrease brake pedal effort.

The primary source for vacuum is typically the vehicle's internal combustion engine. Some vehicles may use a vacuum pump to ensure an adequate supply of vacuum under various operating conditions, such as during cold start-up, heavy throttle, and high altitude.

Vacuum Pump Relay

Vehicles equipped with a vacuum pump will typically be equipped with a relay used to provide voltage to the vacuum pump motor, when commanded by the powertrain controller.

Vacuum Monitoring System

Provides a feedback voltage signal relative to the amount of vacuum available for the vacuum power brake booster.

This typically consists of a vacuum sensor mounted either into the power vacuum brake booster, integrated with the vacuum check valve, or in-line within the vacuum hose. The sensor feedback is typically monitored by the powertrain control module(s).

Vacuum Source Control

If equipped with a system to monitor available levels of vacuum for the brake assist system, the powertrain control module(s) typically perform the primary monitoring function.

The powertrain controller will typically monitor the feedback signal of a vacuum sensor, as it relates to available vacuum at the vacuum power brake booster. The powertrain controller uses the information to make sure available vacuum remains above predetermined levels. If additional vacuum is required, the powertrain controller may reactivate engine cylinders, if equipped, or command a vacuum pump ON, if equipped, and/or may alter the operation of various other engine controls and devices, as necessary.

Vacuum Source Delivery System

Enables delivery and retention of source vacuum for vacuum brake booster.

This typically consists of a vacuum check valve and a vacuum hose or pipe. If a vacuum pump is used, additional check valves may be used.

System Operation

Brake system input force from the driver is multiplied by the brake pedal and transferred by the pedal pushrod to the hydraulic brake master cylinder. Effort required to apply the brake system is reduced by the operation of the vacuum brake booster.

When brake system force is applied, vacuum to the rear of the diaphragm(s) is cut off, and air at atmospheric pressure is admitted in its place. The vacuum acts to pull the diaphragm(s) forward, while the atmospheric pressure acts to push from behind. As a result, the amount of effort required by the driver is reduced. When input force is removed, vacuum again replaces atmospheric pressure within the vacuum power brake booster to help return the booster to rest. Return springs maintain the system in a rest position.

If the vehicle is equipped with a vacuum monitoring system, the powertrain control module(s) typically will alter powertrain functions and/or command the vacuum pump ON, if equipped, to provide for the vacuum needs of the brake assist system, as operating conditions warrant.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

Warning: Avoid taking the following actions when you service wheel brake parts:

- Do not grind brake linings.
- Do not sand brake linings.
- Do not clean wheel brake parts with a dry brush or with compressed air.

Some models or aftermarket brake parts may contain asbestos fibers which can become airborne in dust. Breathing dust with asbestos fibers may cause serious bodily harm. Use a water-dampened cloth in order to remove any dust on brake parts. Equipment is available commercially in order to perform this washing function. These wet methods prevent fibers from becoming airborne.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Caution: Avoid spilling brake fluid onto painted surfaces, electrical connections, wiring, or cables. Brake fluid will damage painted surfaces and cause corrosion to electrical components. If any brake fluid comes in contact with painted surfaces, immediately flush the area with water. If any brake fluid comes in contact with electrical connections, wiring, or cables, use a clean shop cloth to wipe away the fluid.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Warning: Brake fluid may irritate eyes and skin. In case of contact, take the following actions:

- Eye contact—rinse thoroughly with water.
- Skin contact—wash with soap and water.
- If ingested—consult a physician immediately.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Warning: Refer to Brake Fluid Irritant Warning.

1. In order to inspect for external brake fluid leaks, first check the fluid level in the master cylinder.

While a slight brake fluid level drop can be considered a normal condition due to brake lining wear, a very low level may indicate a brake fluid leak in the hydraulic system.

2. If the fluid level is abnormally low, adjust the brake fluid level. Refer to Master Cylinder Reservoir Filling.
3. Start the engine and allow it to idle.
4. Apply constant, moderate foot pressure to the brake pedal.

If the brake pedal gradually falls away while under foot pressure, there may be a brake fluid leak.

5. Turn OFF the ignition.
6. Visually inspect the following brake system components for brake fluid leaks, excessive corrosion, and damage. Give particular attention to all brake pipe and flexible hose connections to ensure that there are not any slight brake fluid leaks – even though the brake pedal may feel firm and hold steady:

- Master cylinder brake pipe fittings
- All brake pipe connections
- Brake pipes
- Brake hoses and connections
- Brake calipers and/or wheel cylinders, if equipped

• While slight dampness around the master cylinder reservoir can be considered acceptable, brake fluid leaking from any of the brake system components requires immediate attention. If any of these components exhibit signs of brake fluid leakage, repair or replace those components. After the repair or replacement, reinspect the hydraulic brake system to assure proper function.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

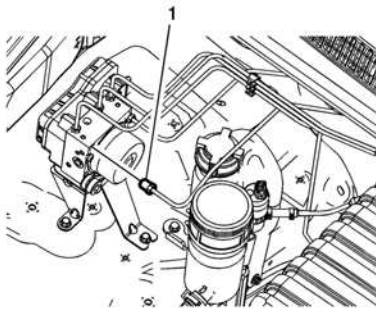
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

Caution: Always connect or disconnect the wiring harness connector from the EBCM/EBTCM with the ignition switch in the OFF position. Failure to follow this precaution could result in damage to the EBCM/EBTCM.

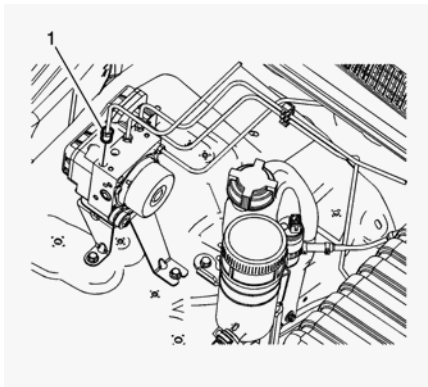
1. Turn the ignition to the OFF position.
2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.

Note: The area around the electronic brake control module (EBCM) and brake pressure modulator valve (BPMV) assembly must be free to prevent contamination of disassembled ABS components.

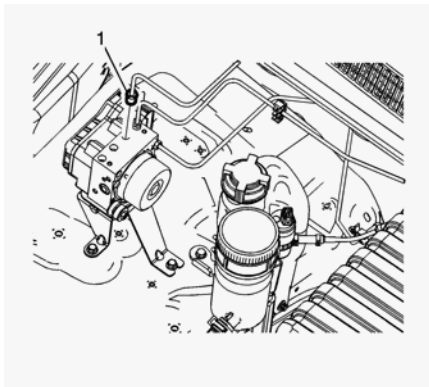
3. Clean the area surrounding the EBCM/BPMV of any accumulated dirt and debris.
4. Disconnect the EBCM electrical connector.



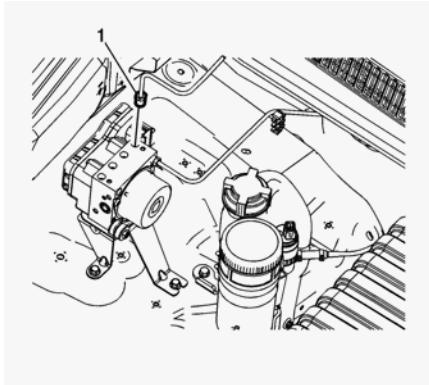
5. Disconnect the master cylinder secondary brake pipe fitting (1) from the BPMV.
6. Cap the brake pipe fitting and plug the BPMV inlet port to prevent brake fluid loss and contamination.



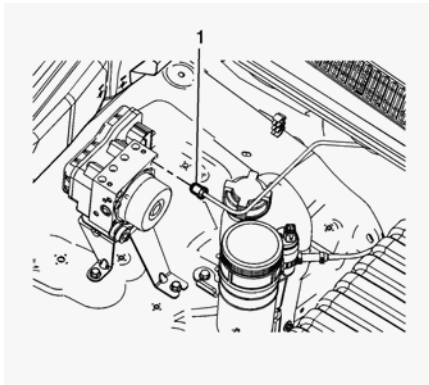
7. Disconnect the rear brake pipe fitting (1) from the BPMV.
8. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



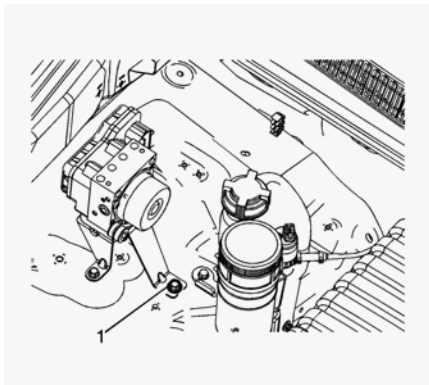
9. Disconnect the right front brake pipe fitting (1) from the BPMV.
10. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



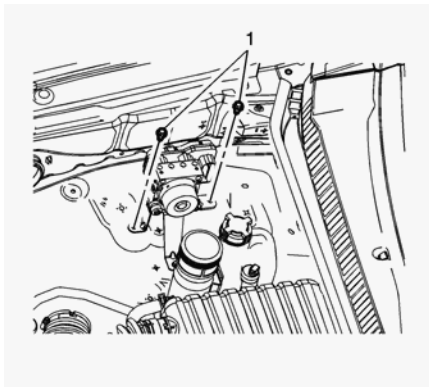
11. Disconnect the left front brake pipe fitting (1) from the BPMV.
12. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



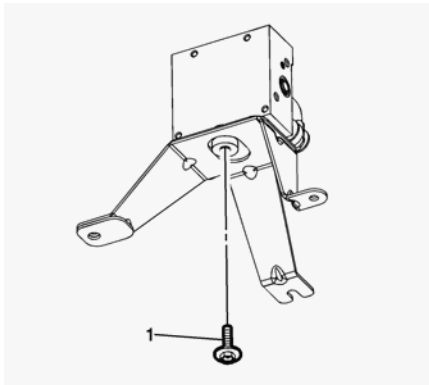
13. Disconnect the master cylinder primary brake pipe fitting (1) from the BPMV.
14. Cap the brake pipe fitting and plug the BPMV inlet port to prevent brake fluid loss and contamination.



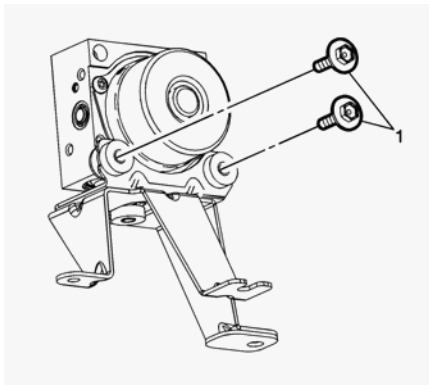
15. Loosen, but do not remove, the BPMV bracket inner bolt (1).



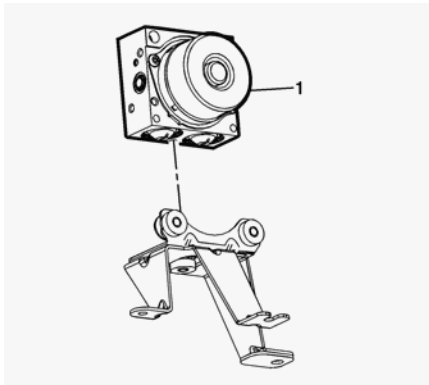
16. Remove the BPMV bracket outer bolts (1).
17. Remove the BPMV and bracket assembly.



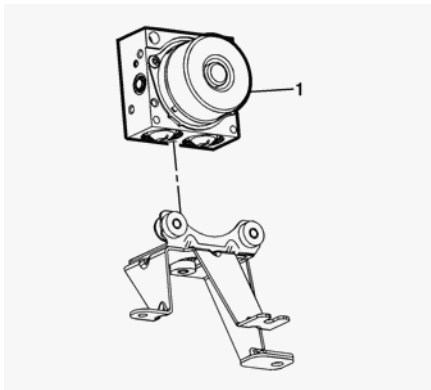
18. Remove the BPMV lower bolt (1).



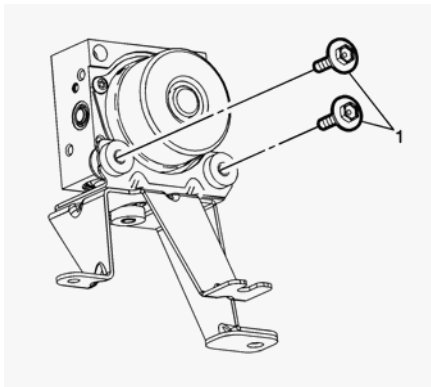
19. Remove the BPMV upper bolts (1).



20. Remove the BPMV (1) from the BPMV bracket.

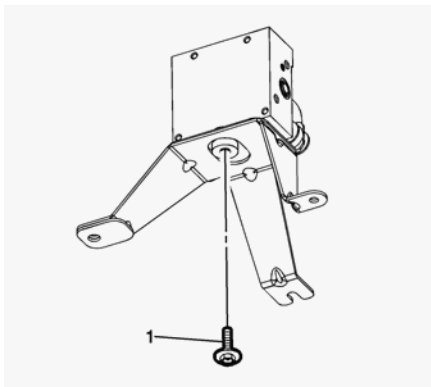


1. Install the BPMV (1) to the BPMV bracket.

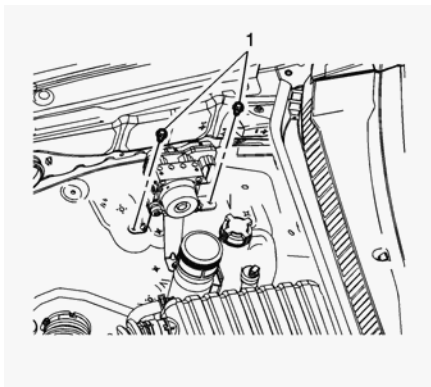


Caution: Refer to Fastener Caution.

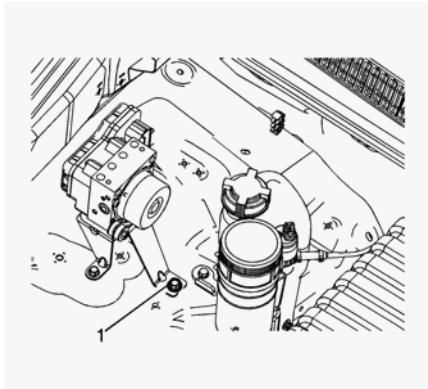
2. Install the BPMV upper bolts (1) and tighten to **5 Y (44 lb in)**.



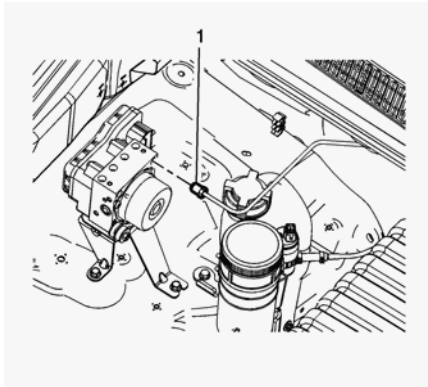
3. Install the BPMV lower bolt (1) and tighten to **5 Y (44 lb in)**.
4. Install the BPMV and bracket assembly to the vehicle.



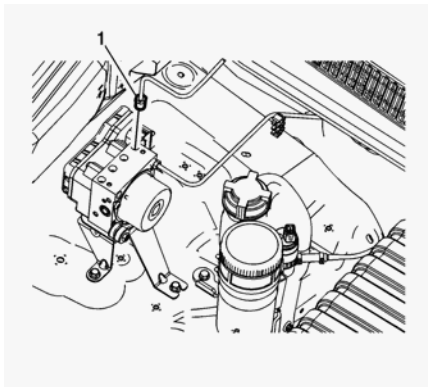
5. Install the BPMV bracket outer bolts (1) and tighten to **9 Y (80 lb in)**.



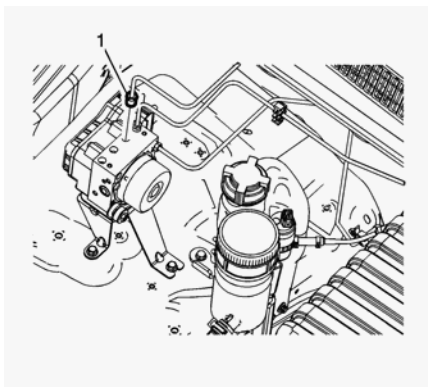
6. Tighten the BPMV bracket inner bolt (1) to **9 Y (80 lb in)**.



7. Connect the master cylinder primary brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



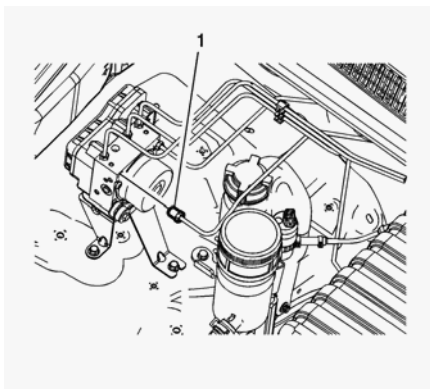
8. Connect the left front brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



9. Connect the right front brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



10. Connect the rear brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



11. Connect the master cylinder secondary brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.
12. Connect the EBCM electrical connector.
13. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
14. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
15. Program the EBCM. Refer to Control Module References.
16. Observe the brake pedal feel. If the pedal now feels spongy, air may have been in the secondary hydraulic circuit of the brake module; have been introduced into the primary circuit. If the pedal feels spongy, bleed the antilock brake system. Refer to Antilock Brake System Bleed.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

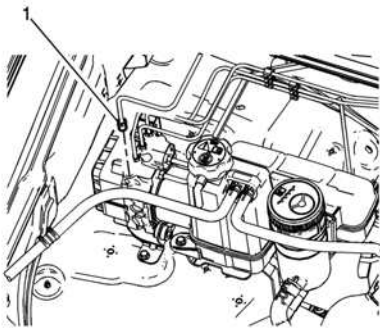
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

Caution: Always connect or disconnect the wiring harness connector from the EBCM/EBTCM with the ignition switch in the OFF position. Failure to follow this precaution could result in damage to the EBCM/EBTCM.

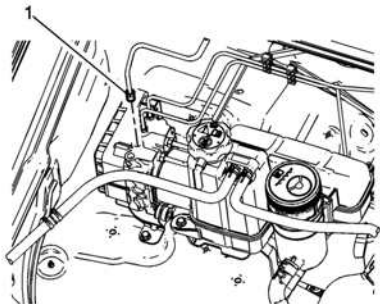
1. Turn the ignition to the OFF position.
2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.

Note: The area around the electronic brake control module (EBCM) and brake pressure modulator valve (BPMV) assembly must be free to prevent contamination of disassembled ABS components.

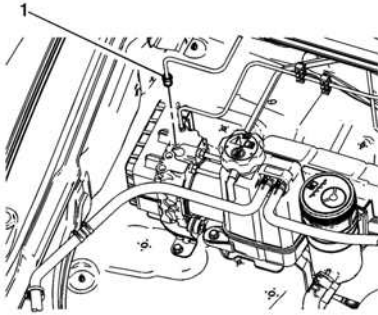
3. Clean the area surrounding the EBCM/BPMV of any accumulated dirt and debris.
4. Disconnect the EBCM electrical connector.



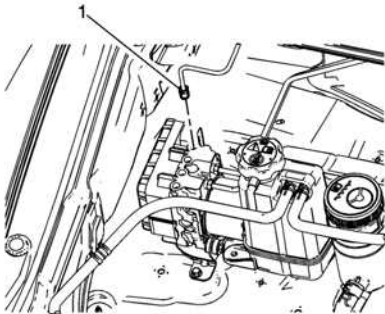
5. Disconnect the right rear brake pipe fitting (1) from the BPMV.
6. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



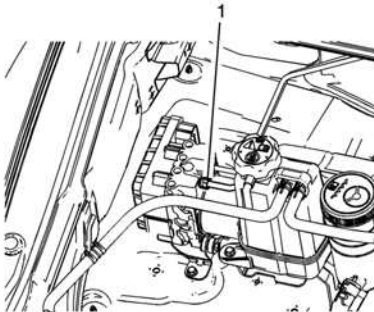
7. Disconnect the left rear brake pipe fitting (1) from the BPMV.
8. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



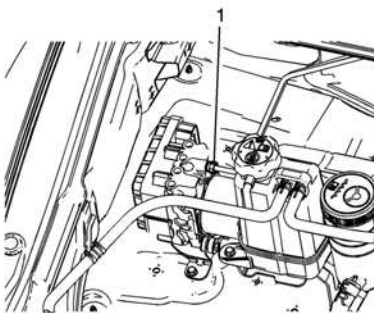
9. Disconnect the right front brake pipe fitting (1) from the BPMV.
10. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



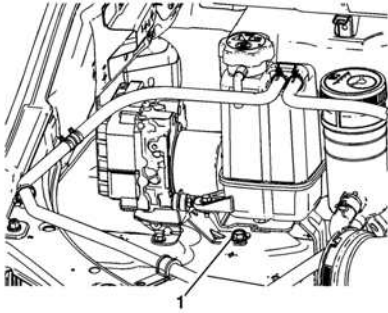
11. Disconnect the left front pipe fitting (1) from the BPMV.
12. Cap the brake pipe fitting and plug the BPMV outlet port to prevent brake fluid loss and contamination.



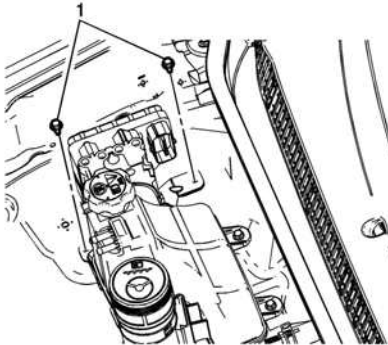
13. Disconnect the master cylinder secondary brake pipe fitting (1) from the BPMV.
14. Cap the brake pipe fitting and plug the BPMV inlet port to prevent brake fluid loss and contamination.



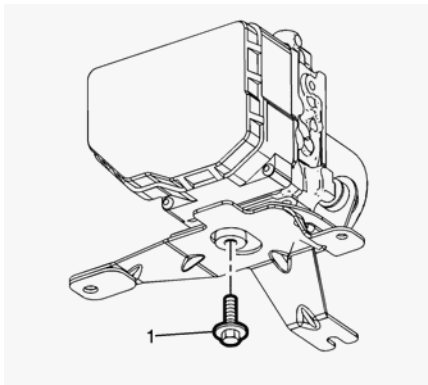
15. Disconnect the master cylinder primary brake pipe fitting (1) from the BPMV.
16. Cap the brake pipe fitting and plug the BPMV inlet port to prevent brake fluid loss and contamination.



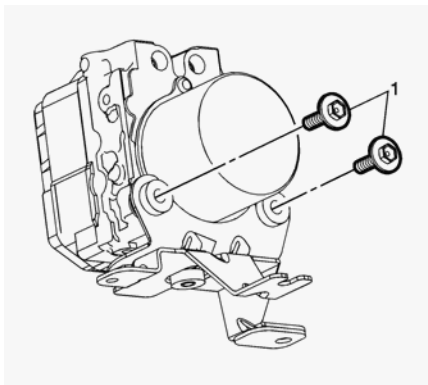
17. Loosen, but do not remove, the BPMV bracket inner bolt (1).



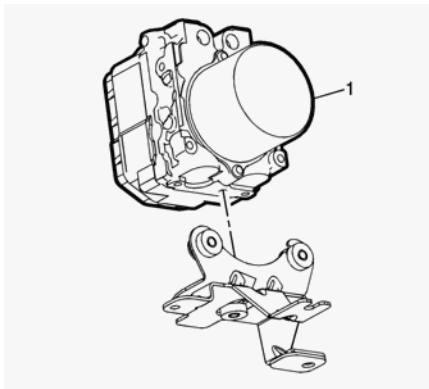
18. Remove the BPMV bracket outer bolts (1).
19. Remove the BPMV and bracket assembly.



20. Remove the BPMV lower bolt (1).

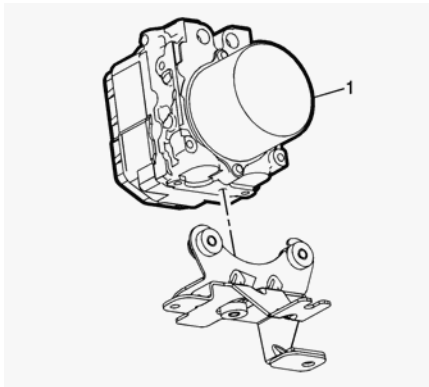


21. Remove the BPMV upper bolts (1).

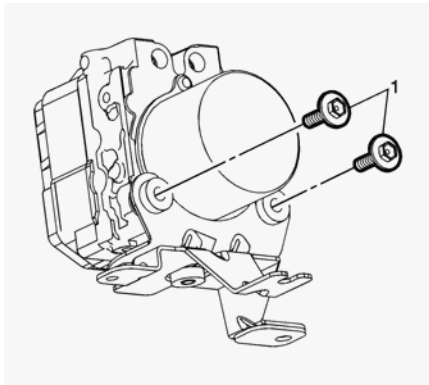


22. Remove the BPMV (1) from the BPMV bracket.

[Installation Procedure](#)

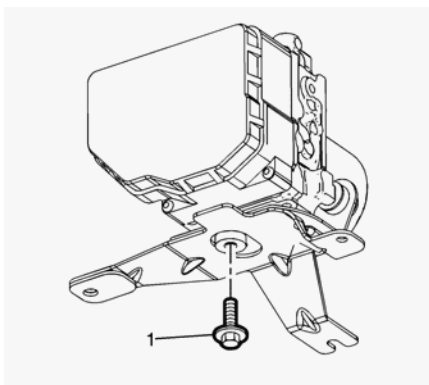


1. Install the BPMV (1) to the BPMV bracket.



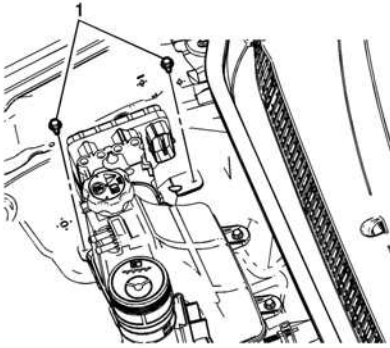
Caution: Refer to Fastener Caution.

2. Install the BPMV upper bolts (1) and tighten to **5 Y (44 lb in)**.

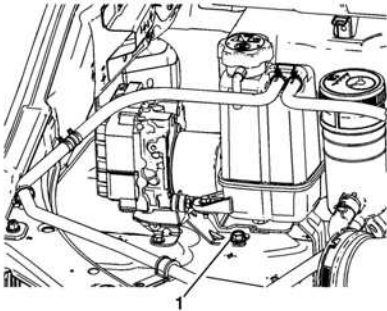


3. Install the BPMV lower bolt (1) and tighten to **5 Y (44 lb in)**.

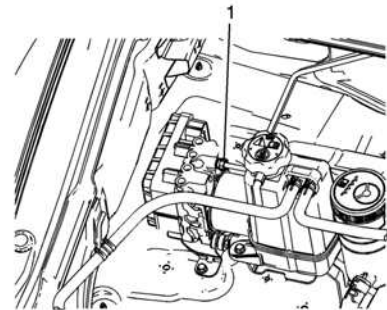
4. Install the BPMV and bracket assembly to the vehicle.



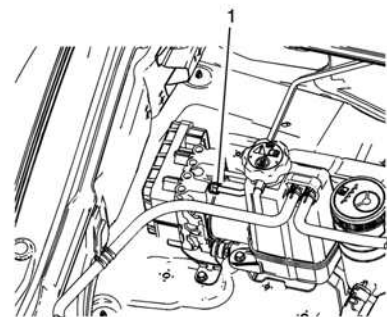
5. Install the BPMV bracket outer bolts (1) and tighten to **9 Y (80 lb in)**.



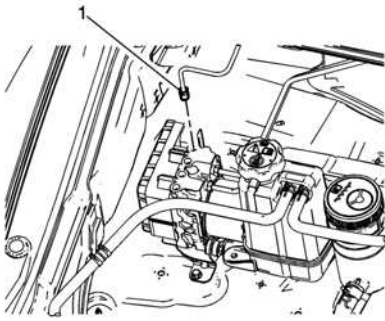
6. Tighten the BPMV bracket inner bolt (1) to **9 Y (80 lb in)**.



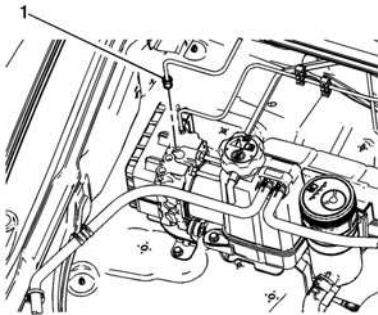
7. Connect the master cylinder primary brake pipe fitting (1) and tighten to **20 Y (15 lb ft)**.



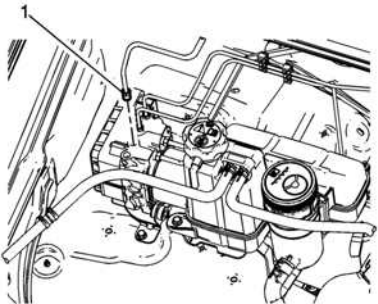
8. Connect the master cylinder secondary brake pipe fitting (1) and tighten to **20 Y (15 lb ft)**.



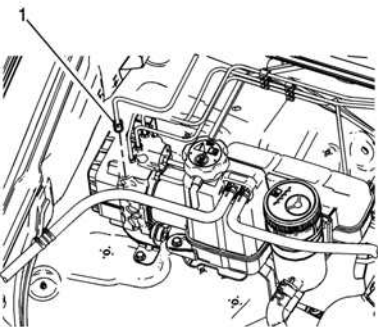
9. Connect the left front brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



10. Connect the right front brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



11. Connect the left rear brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.



12. Connect the right rear brake pipe fitting (1) and tighten to **16 Y (12 lb ft)**.
13. Connect the EBCM electrical connector.
14. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.

15. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
16. Program the EBCM. Refer to Control Module References.
17. Observe the brake pedal feel. If the pedal now feels spongy, air may have been in the secondary hydraulic circuit of the brake module or air may have been introduced into the primary circuit. If the pedal feels spongy, bleed the antilock brake system. Refer to Antilock Brake System Bleed.

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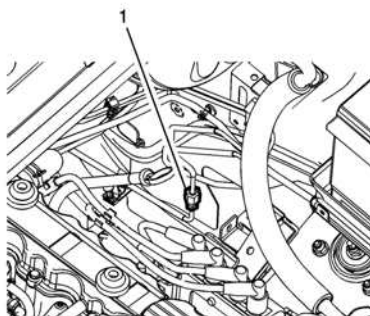
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.



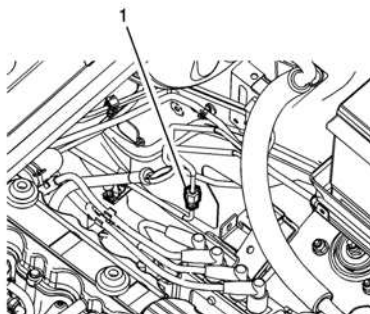
1. Disconnect the front brake combination valve brake pipe fitting (1) from the brake proportion valve.
2. Cap the brake proportion valve outlet port to prevent brake fluid loss and contamination.



3. Disconnect the rear brake intermediate brake pipe fitting from the front brake combination valve brake pipe union (1).
4. Remove the front brake combination valve brake pipe.
5. Cap the rear brake intermediate brake pipe fitting to prevent brake fluid loss and contamination.

Installation Procedure

1. Install the front brake combination valve brake pipe.



Caution: Refer to Fastener Caution.

2. Connect the rear brake intermediate brake pipe fitting to the front brake combination valve brake pipe union (1) and tighten the fitting to



3. Connect the front brake combination valve brake pipe fitting (1) to the brake proportion valve and tighten the fitting to **16 Y (12 lb ft)**.
4. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

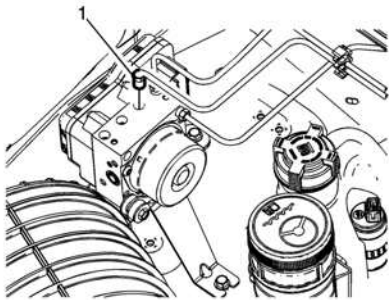
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

Note: The area around the electronic brake control module (EBCM) and brake pressure modulator valve (BPMV) assembly must be free to prevent contamination of disassembled ABS components.

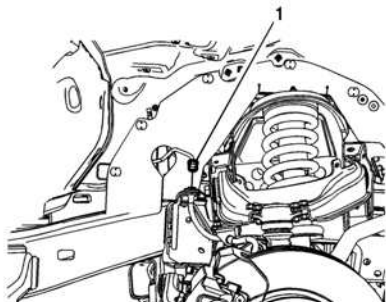
1. Clean the area surrounding the EBCM/BPMV of any accumulated dirt and debris.



2. Disconnect the front brake pipe fitting (1) from the BPMV.
3. Plug the BPMV outlet port to prevent brake fluid loss and contamination.



4. Release the front brake pipe from the retaining clip (1).
5. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
6. Remove the right front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

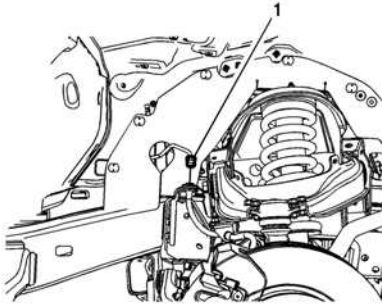


7. Disconnect the front brake pipe fitting (1) from the right front brake hose fitting.

8. Cap the right front brake hose fitting to prevent brake fluid loss and contamination.
9. Remove the front brake pipe.

Installation Procedure

1. Install the front brake pipe to the vehicle.

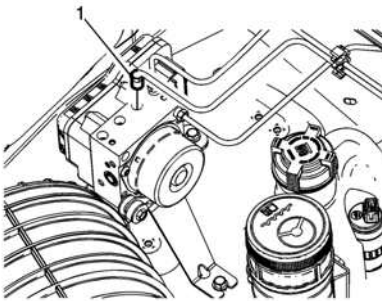


Caution: Refer to Fastener Caution.

2. Connect the front brake pipe fitting (1) to the right front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the front brake pipe to the retaining clip (1).



4. Connect the front brake pipe fitting (1) to the BPMV and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
6. Install the right front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

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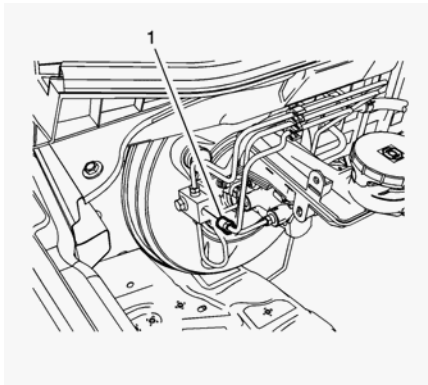
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

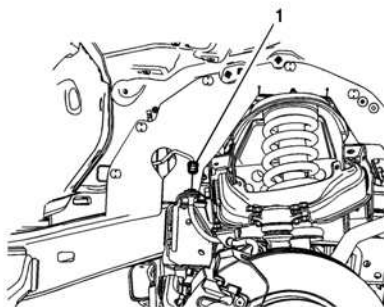
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



1. Disconnect the front brake pipe fitting (1) from the master cylinder union fitting.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



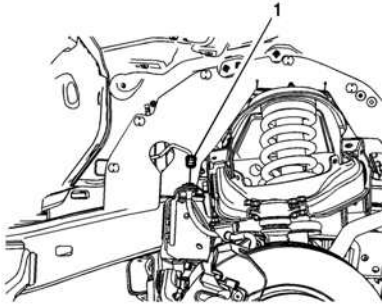
3. Release the front brake pipe from the retaining clip (1).
4. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
5. Remove the right front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.



6. Disconnect the front brake pipe fitting (1) from the right front brake hose fitting.
7. Cap the right front brake hose fitting to prevent brake fluid loss and contamination.
8. Remove the front brake pipe.

Installation Procedure

1. Install the front brake pipe to the vehicle.

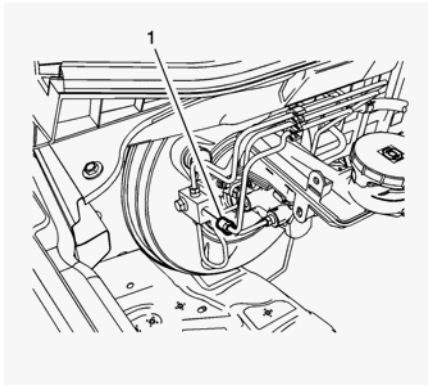


Caution: Refer to Fastener Caution.

2. Connect the front brake pipe fitting (1) to the right front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the front brake pipe to the retaining clip (1).



4. Connect the front brake pipe fitting (1) to the master cylinder union fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
6. Install the right front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

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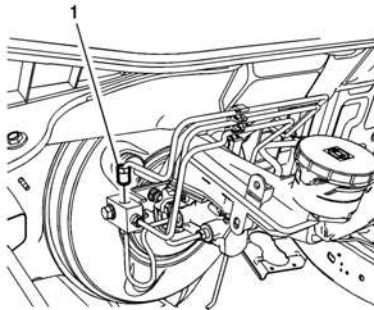
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

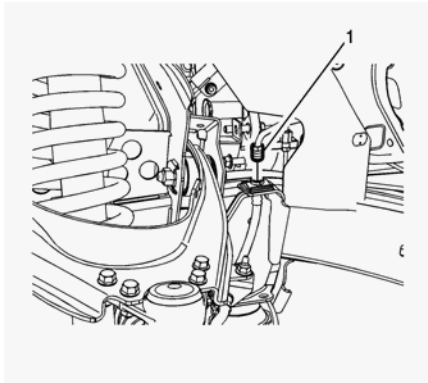
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution



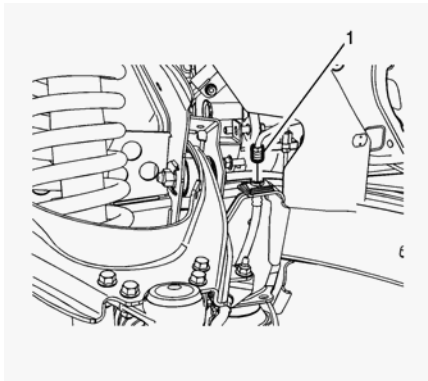
1. Disconnect the left front brake upper pipe fitting (1) from the master cylinder.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



3. Disconnect the left front brake upper pipe fitting (1) from the left front brake hose fitting.
4. Plug the brake hose inlet port to prevent brake fluid loss and contamination,
5. Remove the left front brake upper pipe.

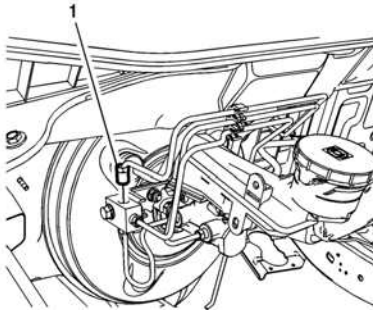
Installation Procedure

1. Install the left front brake upper pipe to the vehicle.



Caution: Refer to Fastener Caution

2. Connect the left front brake upper pipe fitting (1) to the left front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Connect the left front brake upper pipe fitting (1) to the master cylinder and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
4. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding

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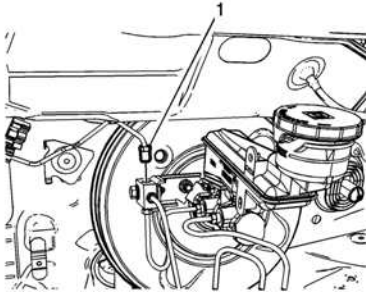
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

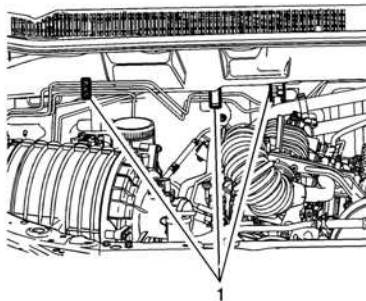
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



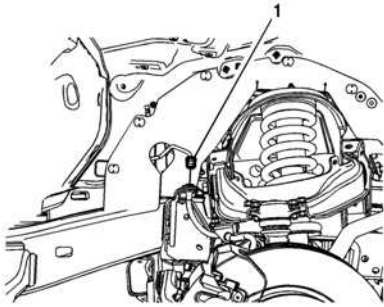
1. Disconnect the right front brake upper pipe fitting (1) from the master cylinder.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



3. Release the right front brake upper pipe from the retaining clips (1).



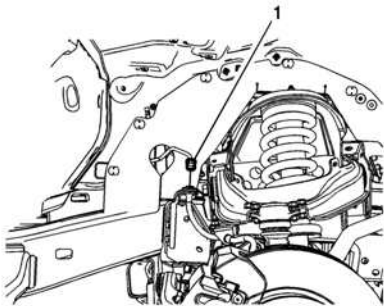
4. Release the right front brake upper pipe from the retaining clip (1).



5. Disconnect the right front brake upper pipe fitting (1) from the right front brake hose fitting.
6. Plug the brake hoseinlet port to prevent brake fluid loss and contamination,
7. Remove the right front brake upper pipe.

Installation Procedure

1. Install the right front brake upper pipe to the vehicle.

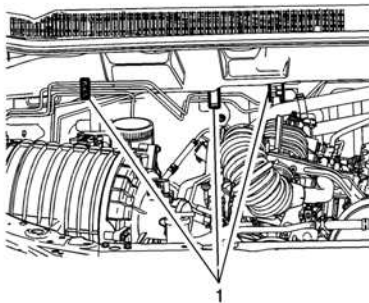


Caution: Refer to Fastener Caution.

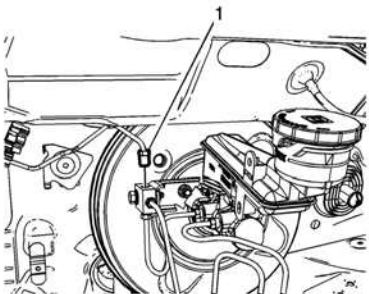
2. Connect the right front brake upper pipe fitting (1) to the right front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the right front brake upper pipe to the retaining clip (1).



4. Install the right front brake upper pipe to the retaining clips (1).



5. Connect the right front brake upper pipe fitting (1) to the master cylinder and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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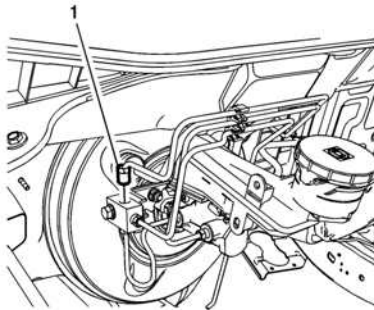
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

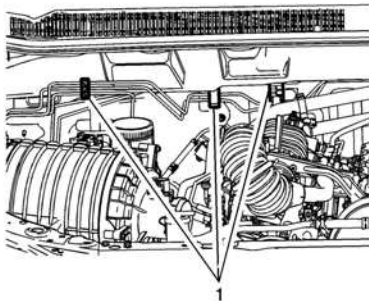
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning

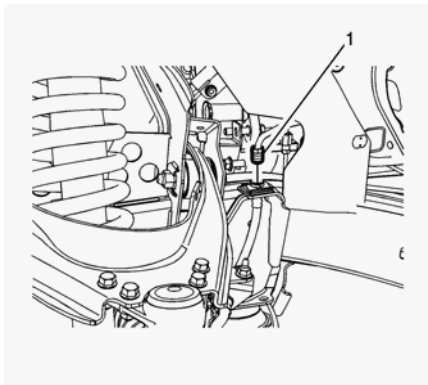
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution



1. Disconnect the left front brake upper pipe fitting (1) from the master cylinder.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



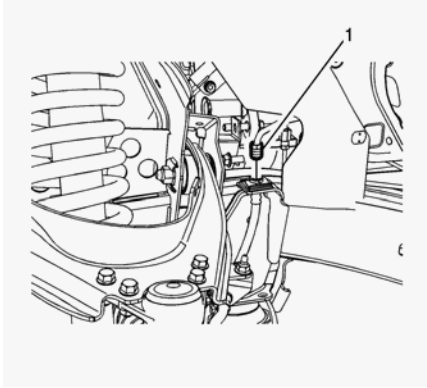
3. Release the left front brake upper pipe from the retaining clips (1).



4. Disconnect the left front brake upper pipe fitting (1) from the left front brake hose fitting.
5. Plug the brake hose inlet port to prevent brake fluid loss and contamination,
6. Remove the left front brake upper pipe.

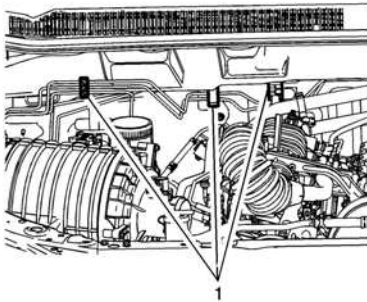
Installation Procedure

1. Install the left front brake upper pipe to the vehicle.

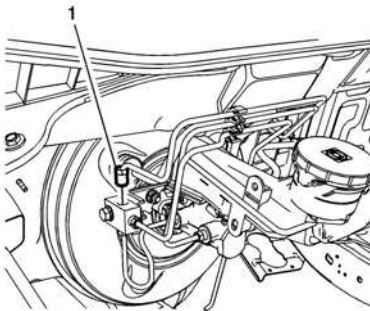


Caution: Refer to Fastener Caution

2. Connect the left front brake upper pipe fitting (1) to the left front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the right front brake upper pipe to the retaining clips (1).



4. Connect the left front brake upper pipe fitting (1) to the master cylinder and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding

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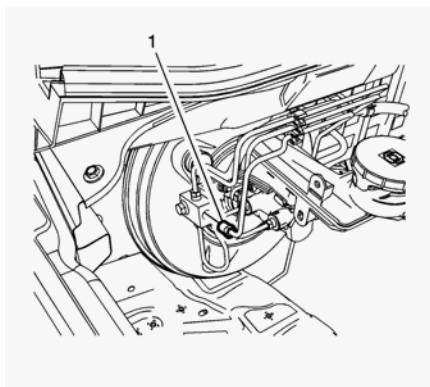
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

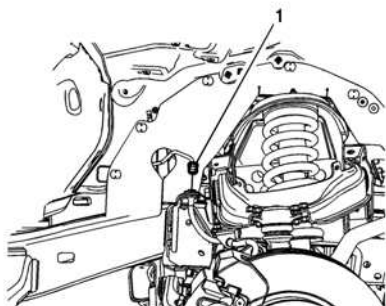
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



1. Disconnect the right front brake upper pipe fitting (1) from the master cylinder union fitting.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



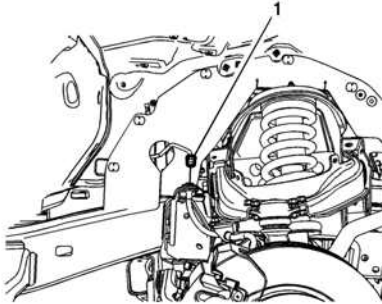
3. Release the right front brake upper pipe from the retaining clip (1).



4. Disconnect the right front brake upper pipe fitting (1) from the right front brake hose fitting.
5. Plug the brake hose inlet port to prevent brake fluid loss and contamination,
6. Remove the right front brake upper pipe.

Installation Procedure

1. Install the right front brake upper pipe to the vehicle.

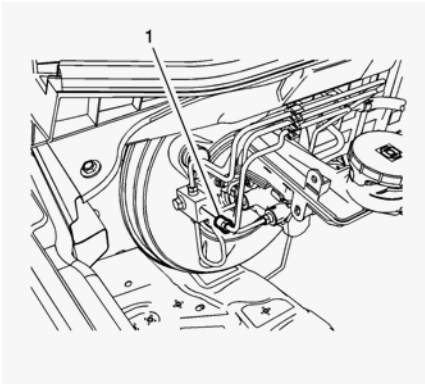


Caution: Refer to Fastener Caution.

2. Connect the right front brake upper pipe fitting (1) to the right front brake hose fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the right front brake upper pipe to the retaining clip (1).



4. Connect the right front brake upper pipe fitting (1) to the master cylinder union fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Special Tools

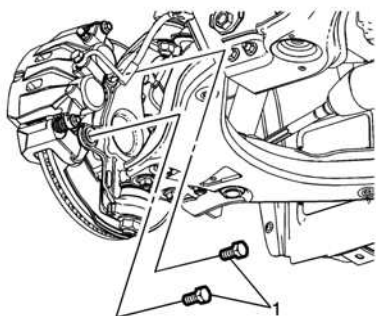
- CH-50787 ABS Sensor Rotor Remover
- CH-50788 ABS Sensor Rotor Installer

For equivalent regional tools refer to Special Tools.

Removal Procedure

Warning: Refer to Brake Dust Warning.

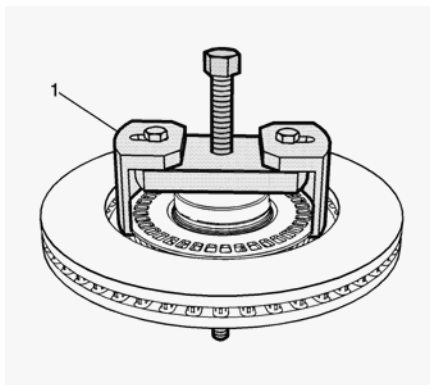
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.



3. Remove the front caliper bracket bolts (1).
4. Without disconnecting the brake caliper hose, remove the brake caliper and bracket assembly and support with heavy mechanics wire

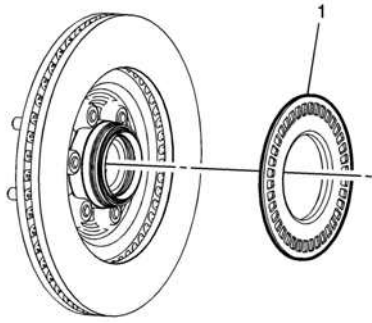
Note: It is not necessary to separate the wheel hub from the brake rotor.

5. Remove the brake rotor and hub assembly. Refer to Front Wheel Hub, Bearing, and Seal Replacement.



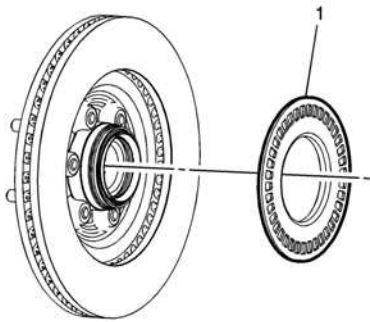
6. Assemble the CH-50787 ABS Sensor Rotor Remover (1) to the front wheel speed sensor reluctor wheel.

- Place the cup squarely over the wheel hub.
- Assemble the remover hooks under the front wheel speed sensor reluctor wheel.

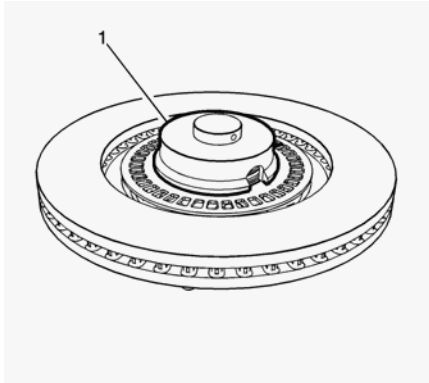


- Slowly tighten the forcing screw of the *CH-50787* ABS Sensor Rotor Remover and remove the front wheel speed sensor reluctor wheel (1) and brake rotor assembly.

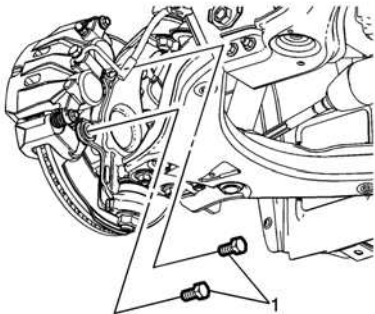
Installation Procedure



1. Place the wheel speed sensor reluctor wheel (1) squarely on to the wheel hub and brake rotor assembly.



2. Using the *CH-50788* ABS Sensor Rotor Installer (1) press the front wheel speed sensor reluctor wheel on to the front brake rotor and hub until fully seated.
3. Install the brake rotor and hub assembly. Refer to Front Wheel Hub, Bearing, and Seal Replacement.
4. Install the brake caliper and bracket assembly to the suspension knuckle.



Caution: Refer to Fastener Caution.

5. Install the front caliper bracket bolts (1) and tighten to **225 Y (166 lb ft)**.
6. Install the front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

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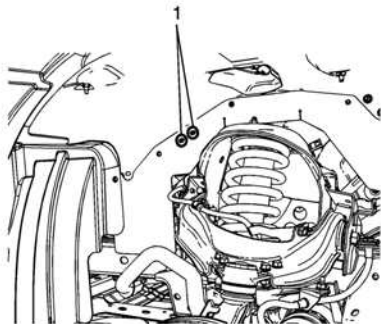
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

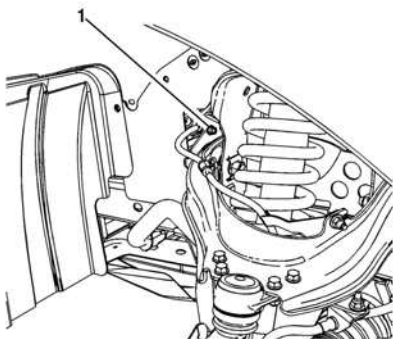
Removal Procedure

Warning: Refer to Brake Dust Warning.

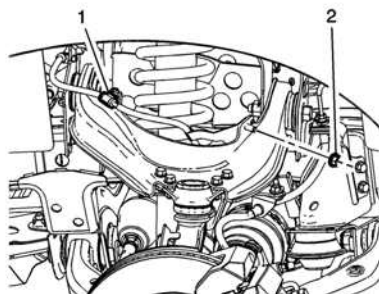
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.



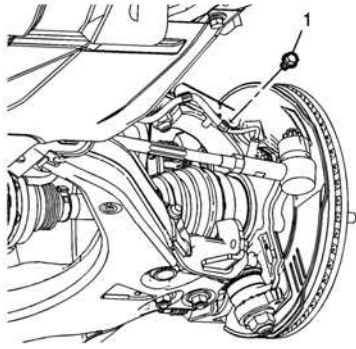
3. From within the wheel house, release the front wheel speed sensor electrical connector harness clip (1).



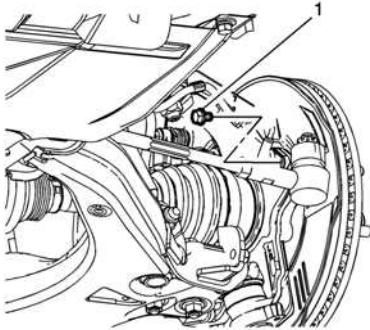
4. Release the front wheel speed sensor harness clip (1) from the vehicle frame.
5. Disconnect the front wheel speed sensor electrical connector.



6. Release the front wheel speed sensor harness clip (1) from the upper control arm.
7. Remove the front wheel speed sensor harness bracket nut (2).



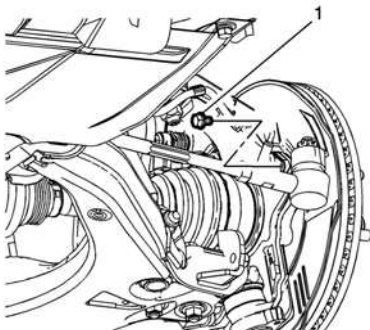
8. Remove the front wheel speed sensor harness bracket bolt (1).



9. Thoroughly clean the wheel speed sensor mounting area of the steering knuckle of any dirt and debris.
 10. Remove the wheel speed sensor bolt (1).
- Note:** Do not pry or lever against the wheel speed sensor to remove.
11. Carefully remove the wheel speed sensor from the suspension knuckle by pulling straight outward.

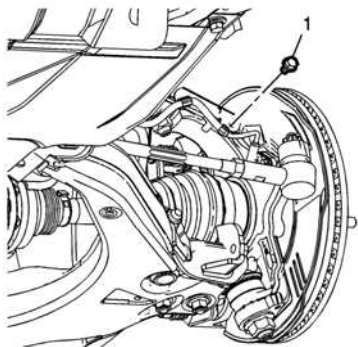
Installation Procedure

1. Install the wheel speed sensor to the suspension knuckle.

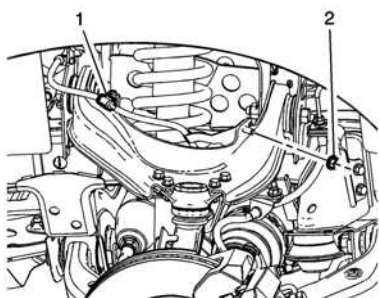


Caution: Refer to Fastener Caution.

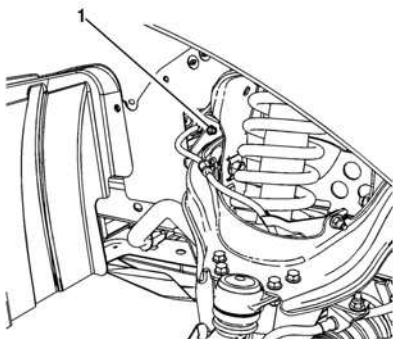
2. Install the wheel speed sensor bolt (1) and tighten to **8 Y (70 lb in)**.



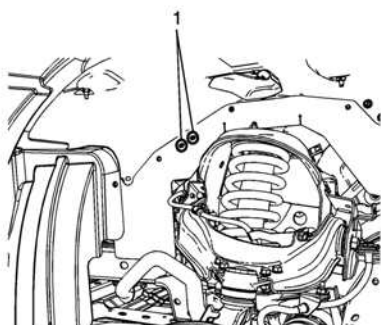
3. Install the front wheel speed sensor harness bracket bolt (1) and tighten to **8 Y (70 lb in)**.



4. Install the front wheel speed sensor harness clip (1).
5. Install the front wheel speed sensor harness bracket nut (2) and tighten to **19 Y (14 lb ft)**.



6. Install the front wheel speed sensor harness clip (1) to the vehicle frame.
7. Connect the front wheel speed sensor electrical connector.

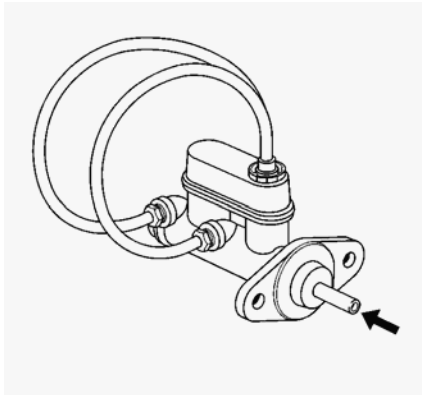


8. Install the front wheel speed sensor electrical connector harness clip (1).
9. Install the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Warning: Refer to Brake Fluid Irritant Warning.

1. Secure the mounting flange of the brake master cylinder in a bench vise so that the rear of the primary piston is accessible.
2. Remove the master cylinder reservoir cap and diaphragm.
3. Install suitable fittings to the master cylinder ports that match the type of flare seat required and also provide for hose attachment.
4. Install transparent hoses to the fittings installed to the master cylinder ports, then route the hoses into the master cylinder reservoir.
5. Fill the master cylinder reservoir to at least the half-way point with GM approved brake fluid from a clean, sealed brake fluid container. Refer to Cylinder Reservoir Filling.
6. Ensure that the ends of the transparent hoses running into the master cylinder reservoir are fully submerged in the brake fluid.
7. Using a smooth, round-ended tool, depress and release the primary piston as far as it will travel, a depth of about 25 mm (1 in), several times flow of fluid coming from the ports.

As air is bled from the primary and secondary pistons, the effort required to depress the primary piston will increase and the amount of travel decrease.
8. Continue to depress and release the primary piston until fluid flows freely from the ports with no evidence of air bubbles.
9. Remove the transparent hoses from the master cylinder reservoir.
10. Install the master cylinder reservoir cap and diaphragm.
11. Remove the fittings with the transparent hoses from the master cylinder ports. Wrap the master cylinder with a clean shop cloth to prevent br
12. Remove the master cylinder from the vise.

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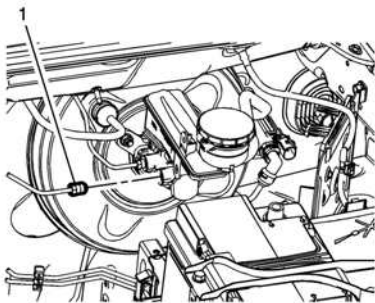
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

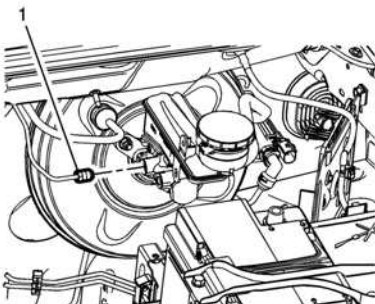
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

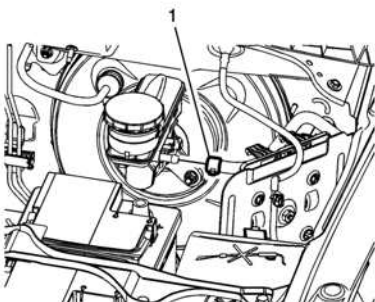
1. Apply and release the brake pedal several times until the pedal becomes firm to deplete the power vacuum brake booster vacuum reservoir.
2. Using a suitable tool, remove and properly discard the brake fluid from the master cylinder reservoir.
3. Clean the master cylinder assembly with denatured alcohol to remove any accumulated dirt and debris and allow to dry.
4. Disconnect the brake fluid level indicator switch electrical connector.
5. Release the wire harness retainer from the master cylinder reservoir.



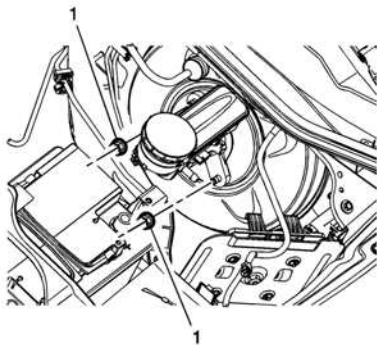
6. Disconnect the master cylinder secondary brake pipe fitting (1).
7. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



8. Disconnect the master cylinder primary brake pipe fitting (1).
9. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



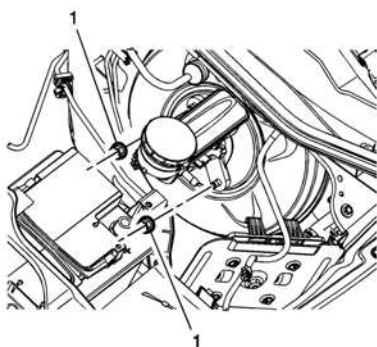
10. On manual transmission equipped vehicles, compress the clamp and remove the clutch master cylinder feed hose (1).
11. Cap the clutch master cylinder feed hose to prevent brake fluid loss and contamination.



12. Remove the master cylinder nuts (1).
13. Remove the master cylinder.

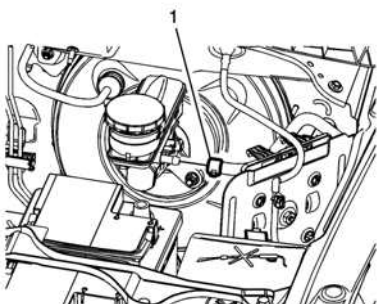
Installation Procedure

1. Bench bleed the master cylinder. Refer to Master Cylinder Bench Bleeding.
2. Install the master cylinder to the power brake booster.

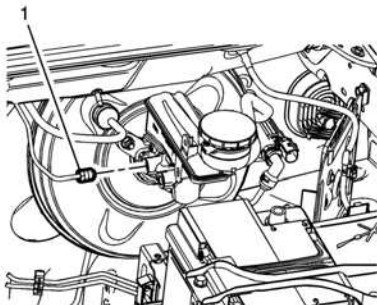


Caution: Refer to Fastener Caution.

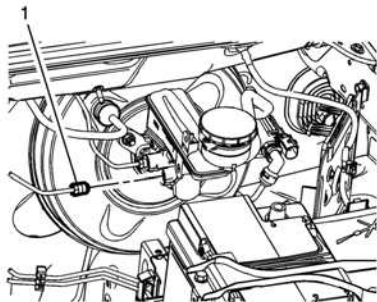
3. Install the master cylinder nuts (1) and tighten to **19 Y (14 lb ft)**.



4. On manual transmission equipped vehicles, compress the clamp and install the clutch master cylinder feed hose (1).



5. Connect the master cylinder primary brake pipe fitting (1) and tighten the fitting to **16 Y (12 lb ft)**.



6. Connect the master cylinder secondary brake pipe fitting (1) and tighten the fitting to **16 Y (12 lb ft)**.
7. Install the wire harness retainer to the master cylinder reservoir.
8. Connect the brake fluid level indicator switch electrical connector.
9. Fill the master cylinder reservoir. Refer to Master Cylinder Reservoir Filling.
10. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

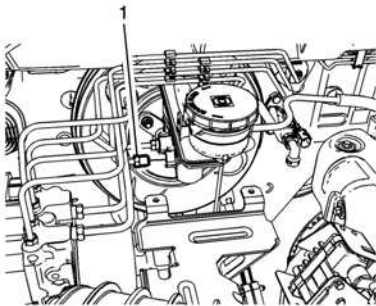
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

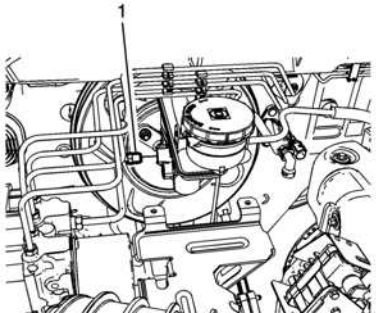
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

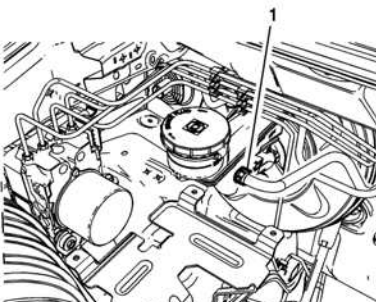
1. Apply and release the brake pedal several times until the pedal becomes firm to deplete the power vacuum brake booster vacuum reservoir.
2. Using a suitable tool, remove and properly discard the brake fluid from the master cylinder reservoir.
3. Without disconnecting the hoses or draining the engine coolant, remove and position aside the radiator surge tank. Refer to Radiator S Replacement.
4. Clean the master cylinder assembly with denatured alcohol to remove any accumulated dirt and debris and allow to dry.
5. Disconnect the brake fluid level indicator switch electrical connector.
6. Release the wire harness retainer from the master cylinder reservoir.



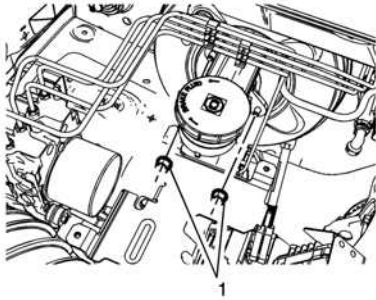
7. Disconnect the master cylinder secondary brake pipe fitting (1).
8. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



9. Disconnect the master cylinder primary brake pipe fitting (1).
10. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



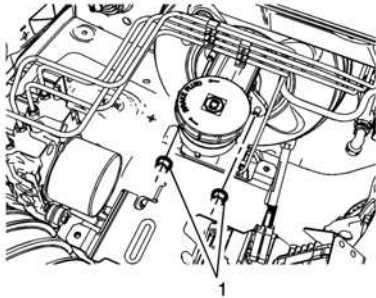
11. On manual transmission equipped vehicles, compress the clamp and remove the clutch master cylinder feed hose (1).
12. Cap the clutch master cylinder feed hose to prevent brake fluid loss and contamination.



13. Remove the master cylinder nuts (1).
14. Remove the master cylinder.

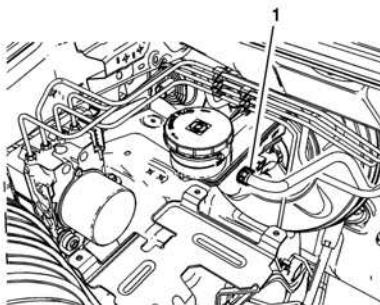
Installation Procedure

1. Bench bleed the master cylinder. Refer to Master Cylinder Bench Bleeding.
2. Install the master cylinder to the power brake booster.

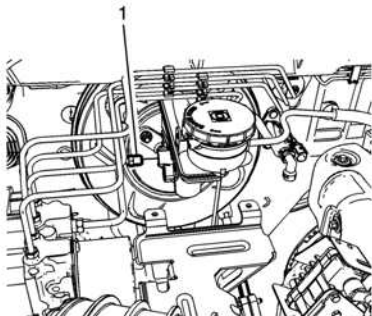


Caution: Refer to Fastener Caution.

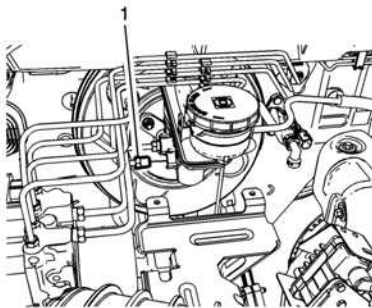
3. Install the master cylinder nuts (1) and tighten to **19 Y (14 lb ft)**.



4. On manual transmission equipped vehicles, compress the clamp and install the clutch master cylinder feed hose (1).



5. Connect the master cylinder primary brake pipe fitting (1) and tighten the fitting to **16 Y (12 lb ft)**.



6. Connect the master cylinder secondary brake pipe fitting (1) and tighten the fitting to **16 Y (12 lb ft)**.
7. Install the wire harness retainer to the master cylinder reservoir.
8. Connect the brake fluid level indicator switch electrical connector.
9. Install the radiator surge tank. Refer to Radiator Surge Tank Replacement.
10. Fill the master cylinder reservoir. Refer to Master Cylinder Reservoir Filling.
11. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

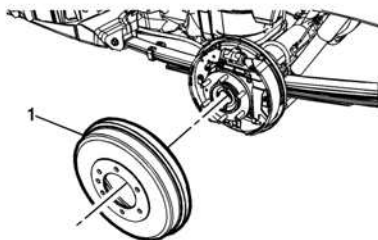
Special Tools

- J-42129 Wheel Hub Puller
- GE-02619-A Slide Hammer

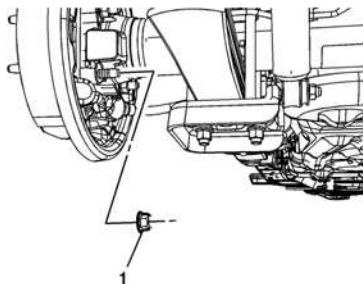
For equivalent regional tools, refer to Special Tools.

Removal Procedure

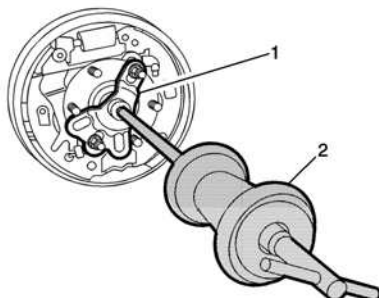
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.
3. Remove the rear wheel speed sensor, if equipped. Refer to Rear Wheel Speed Sensor Replacement.



4. Remove the rear brake drum (1).

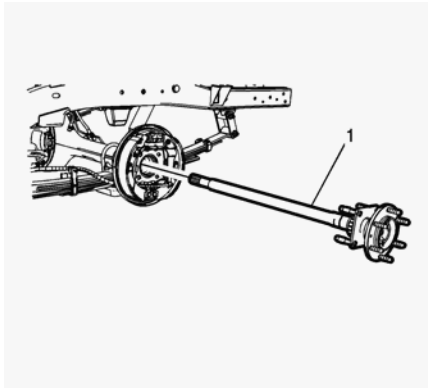


5. Remove the 4 axle bolts (1) from the axle housing.



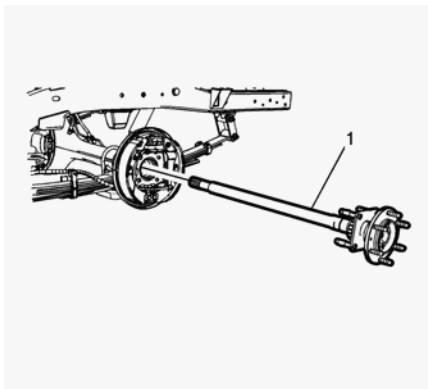
6. Using the GE-02619-A hammer (2) and the J-42129 puller (1), remove the rear axle.

7. Remove the GE-02619-A hammer (2) and the J-42129 puller (1) from the rear axle.

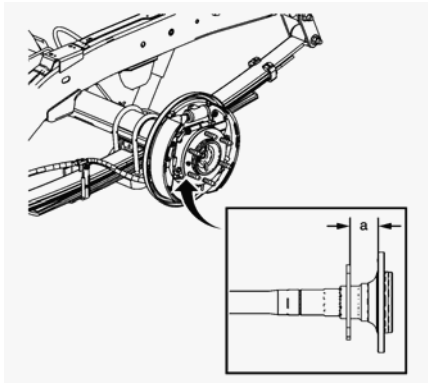


8. Remove the rear axle (1) from the vehicle.
9. If removing the rear axle shaft for service, remove the rear axle shaft seal and bearing. Refer to Rear Axle Shaft Seal and Bearing Re

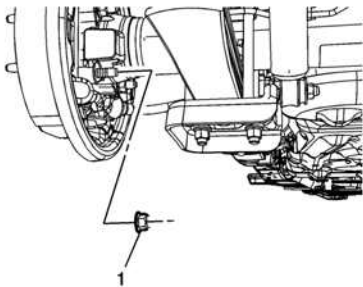
Installation Procedure



1. Install the rear axle shaft (1) in the rear axle housing.

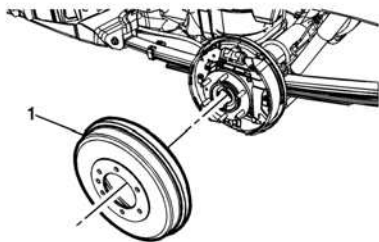


2. Check the rear axle bearing endplay (a). Ensure that it does not exceed **0.4 mm (0.016 in)**



Caution: Refer to Fastener Caution.

3. Install the 4 rear axle shaft nuts (1) and tighten to **84 Y 62 lb ft**.
4. Install the rear wheel speed sensor, if equipped. Refer to Rear Wheel Speed Sensor Replacement.



5. Install the rear brake drum (1).
6. Install the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.
7. Remove the support and lower the vehicle

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

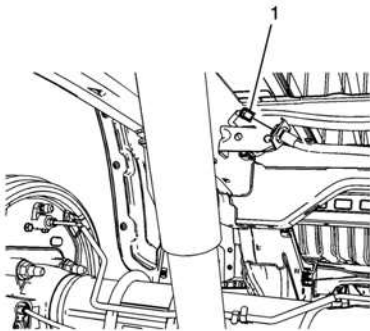
Removal Procedure

Warning: Refer to Brake Dust Warning.

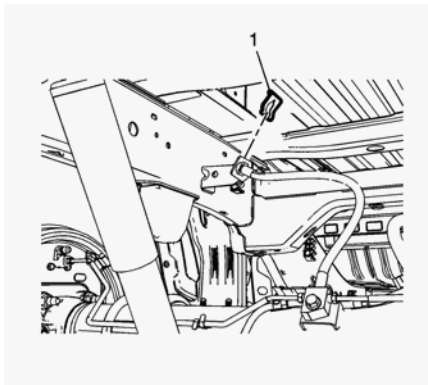
Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

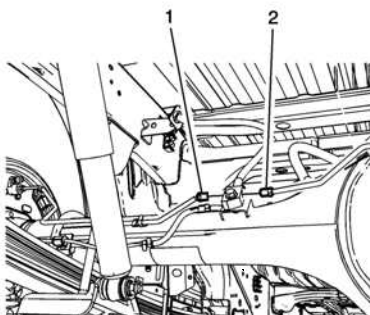
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the rear tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.
3. Remove all dirt and debris from the brake pipe and the brake hose fitting areas.



4. Disconnect the brake pipe fitting (1) from the rear brake hose.
5. Cap the brake pipe fitting to prevent brake fluid loss and contamination.

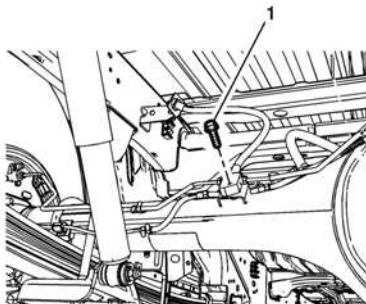


6. Remove the rear brake hose retaining clip (1).



7. Disconnect the left brake pipe fitting (1) from the rear brake hose.
8. Cap the brake pipe fitting to prevent brake fluid loss and contamination.

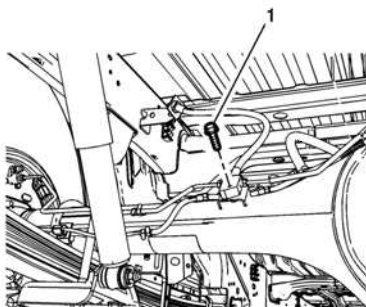
9. Disconnect the right brake pipe fitting (2) from the rear brake hose.
10. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



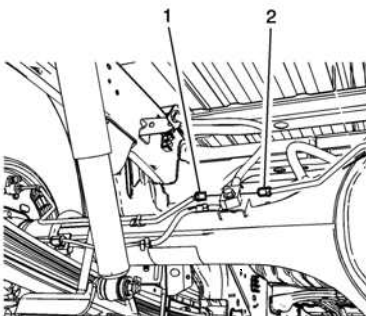
11. Remove the rear brake hose bolt (1).
12. Remove the rear brake hose.

Installation Procedure

1. Install the rear brake hose.

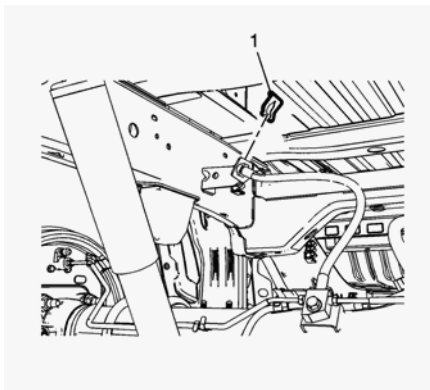


2. Install the rear brake hose bolt (1) and tighten the bolt to **20 Y (15 lb ft)**.

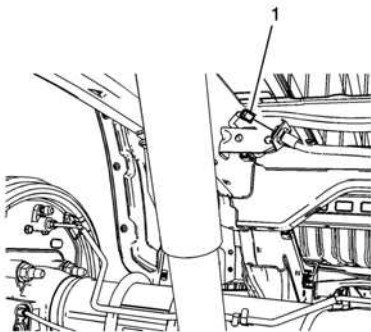


Caution: Refer to Fastener Caution.

3. Connect the left brake pipe fitting (1) to the rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.
4. Connect the right brake pipe fitting (2) to the rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



5. Install the rear brake hose retaining clip (1).



6. Connect the brake pipe fitting (1) to the rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.
7. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.
8. Install the rear tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

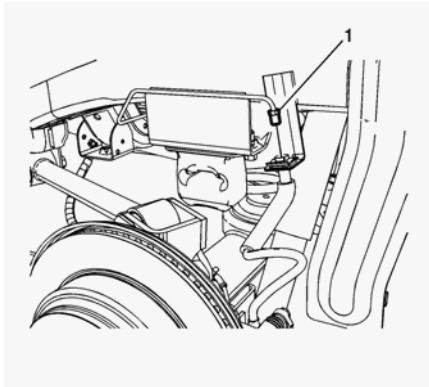
Removal Procedure

Warning: Refer to Brake Dust Warning.

Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

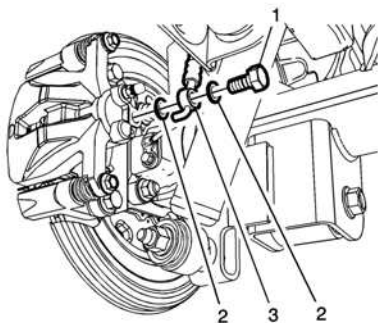
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove all dirt and debris from the brake pipe and the brake hose fitting areas.



3. Disconnect the brake pipe fitting (1) from the rear brake hose.
4. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



5. Remove the rear brake hose retaining clip (1).



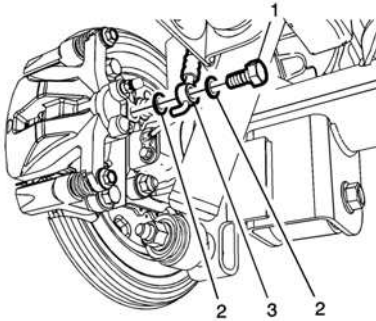
6. Remove the brake hose fitting bolt (1).
7. Remove the brake hose fitting gaskets (2) and the brake hose (3).

Note: Do not reuse the brake hose fitting gaskets.

8. Discard the brake hose fitting gaskets.
9. Remove the rear brake hose.

Installation Procedure

1. Install the rear brake hose.



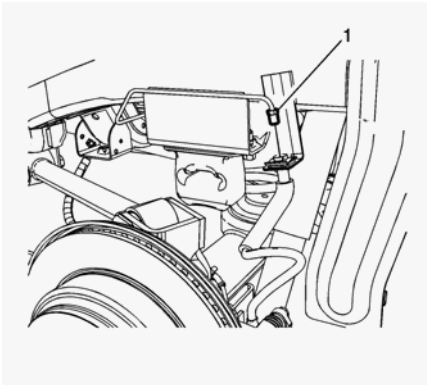
2. Assemble the brake hose fitting bolt (1) and 2 new brake hose fitting gaskets (2) to the brake hose (3).

Caution: Refer to Fastener Caution.

3. Install the brake hose assembly to the caliper and tighten the fitting bolt to **34 Y (25 lb ft)**.



4. Install the rear brake hose retaining clip (1).



5. Connect the brake pipe fitting (1) to the rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

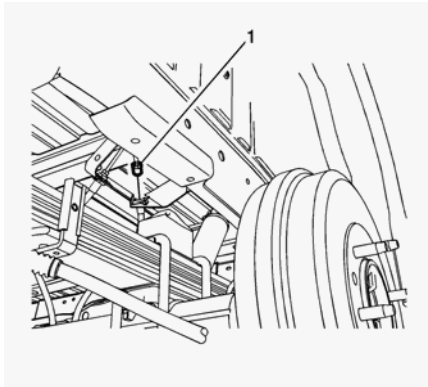
Removal Procedure

Warning: Refer to Brake Dust Warning.

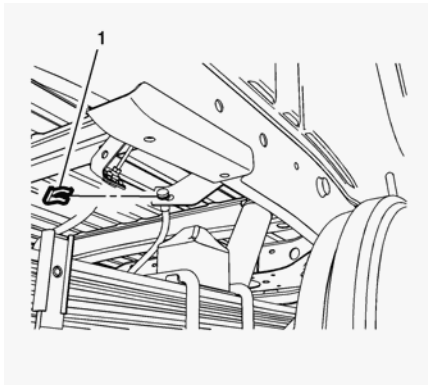
Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

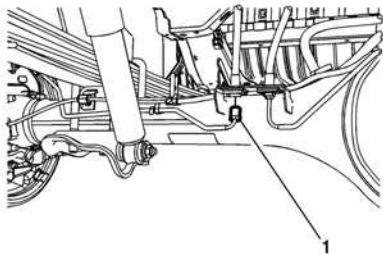
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove all dirt and debris from the brake pipe and the brake hose fitting areas.



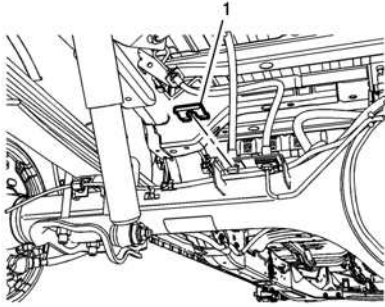
3. Disconnect the brake pipe fitting (1) from the left rear brake hose.
4. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



5. Remove the left rear brake hose retaining clip (1).



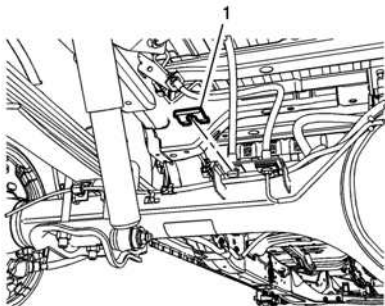
6. Disconnect the brake pipe fitting (1) from the left rear brake hose.
7. Cap the brake hose fitting to prevent brake fluid loss and contamination.



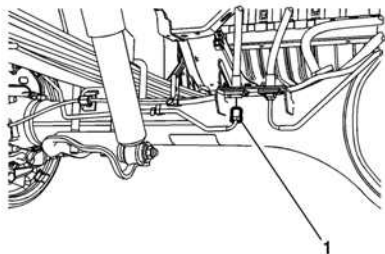
8. Remove the left rear brake hose retaining clip (1).
9. Remove the left rear brake hose.

Installation Procedure

1. Install the left rear brake hose.



2. Install the left rear brake hose retaining clip (1).

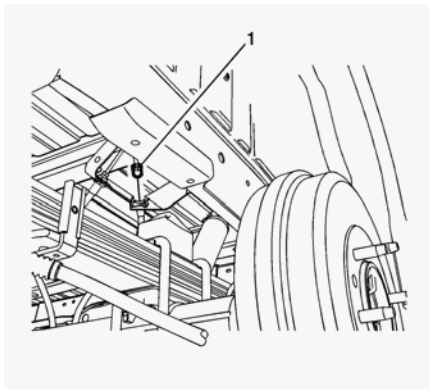


Caution: Refer to Fastener Caution.

3. Connect the brake pipe fitting (1) to the left rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



4. Install the left rear brake hose retaining clip (1).



5. Connect the brake pipe fitting (1) to the left rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

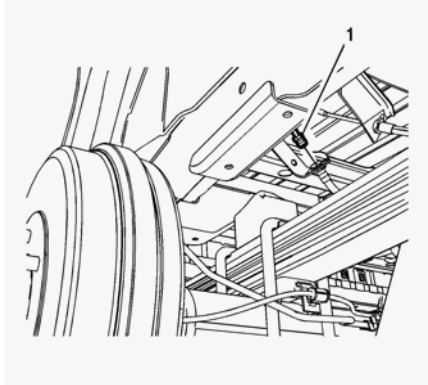
Removal Procedure

Warning: Refer to Brake Dust Warning.

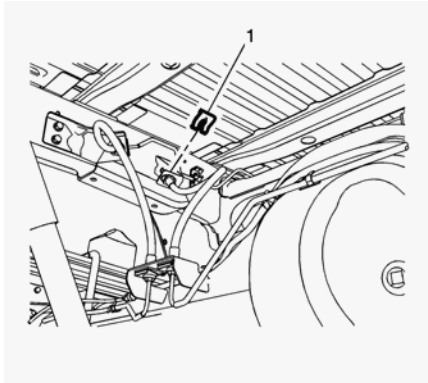
Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.

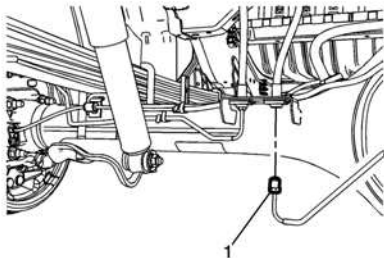
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove all dirt and debris from the brake pipe and the brake hose fitting areas.



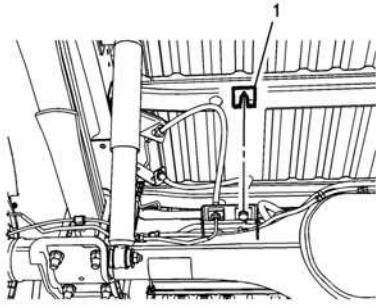
3. Disconnect the brake pipe fitting (1) from the right rear brake hose.
4. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



5. Remove the right rear brake hose retaining clip (1).



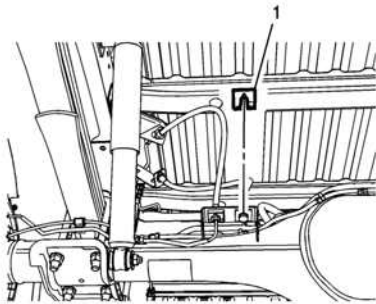
6. Disconnect the brake pipe fitting (1) from the right rear brake hose.
7. Cap the brake hose fitting to prevent brake fluid loss and contamination.



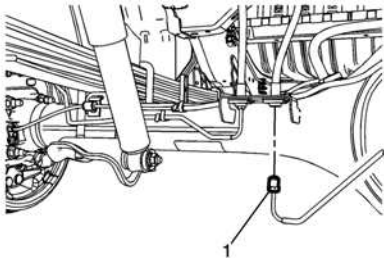
8. Remove the right rear brake hose retaining clip (1).
9. Remove the right rear brake hose.

Installation Procedure

1. Install the right rear brake hose.

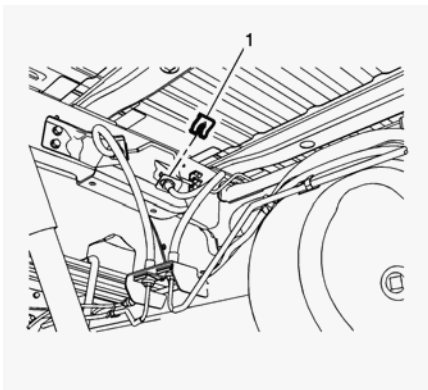


2. Install the right rear brake hose retaining clip (1).



Caution: Refer to Fastener Caution.

3. Connect the brake pipe fitting (1) to the right rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



4. Install the right rear brake hose retaining clip (1).



5. Connect the brake pipe fitting (1) to the right rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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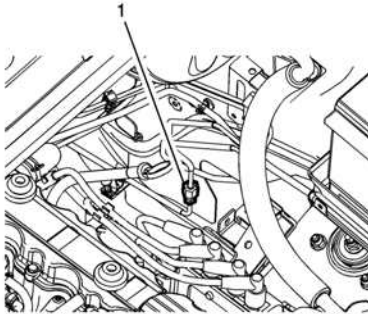
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

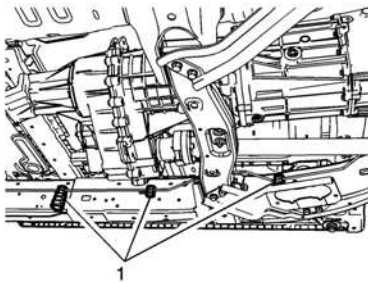
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

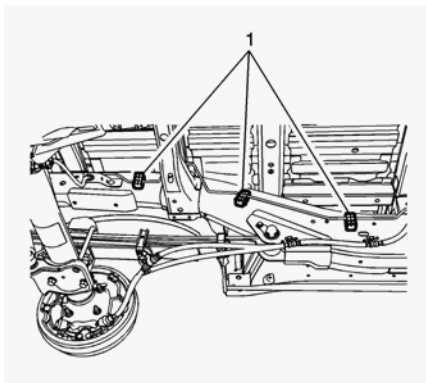
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



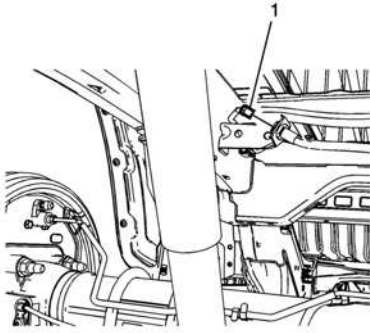
1. Disconnect the brake pipe union (1) from the rear brake intermediate pipe fitting.
2. Cap the brake pipe union to prevent brake fluid loss and contamination.
3. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
4. Remove the fuel tank. Refer to Fuel Tank Replacement.



5. Release the rear brake intermediate pipe from the retaining clips (1) on the left frame rail.



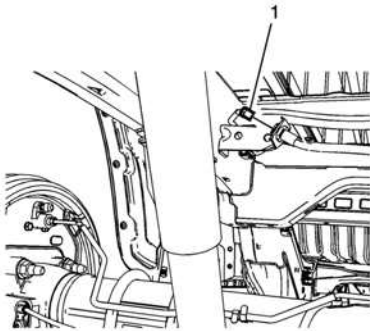
6. Release the rear brake intermediate pipe from the retaining clips (1) on the left frame rail.



7. Disconnect the rear brake intermediate pipe fitting (1) from the rear brake hose.
8. Plug the brake hose fitting to prevent brake fluid loss and contamination.
9. Remove the rear brake intermediate pipe.

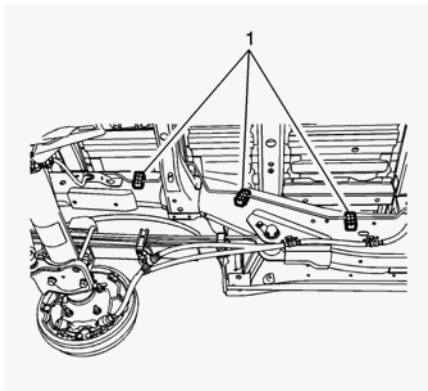
Installation Procedure

1. Install the rear brake intermediate pipe.

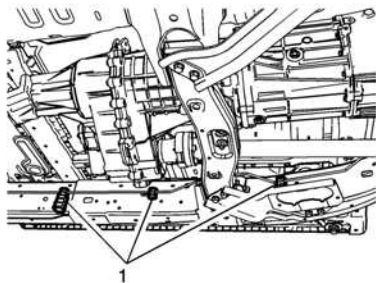


Caution: Refer to Fastener Caution.

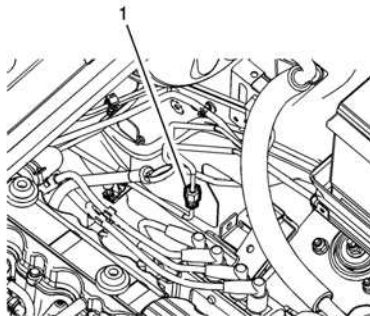
2. Connect the rear brake intermediate pipe fitting (1) to the rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



3. Install the rear brake intermediate pipe to the retaining clips (1) on the left frame rail.



4. Install the rear brake intermediate pipe to the retaining clips (1) on the left frame rail.
5. Install the fuel tank. Refer to Fuel Tank Replacement.



6. Connect the brake pipe union (1) to the rear brake intermediate pipe fitting and tighten the fitting to **16 Y (12 lb ft)**.
7. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

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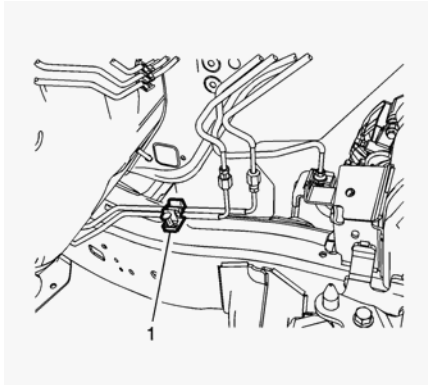
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

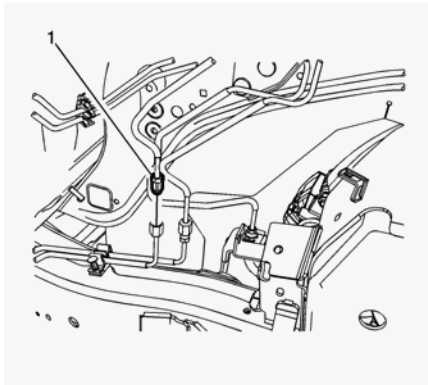
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

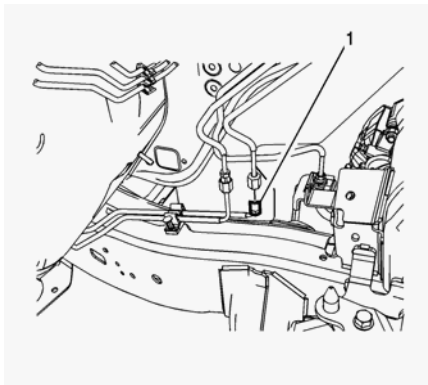
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



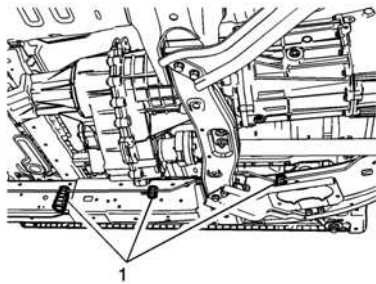
1. Release the rear brake intermediate pipes from the frame retainer (1).



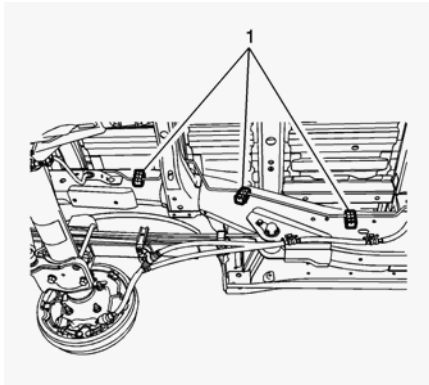
2. Disconnect the brake pipe fitting (1) from the rear brake intermediate pipe fitting.
3. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



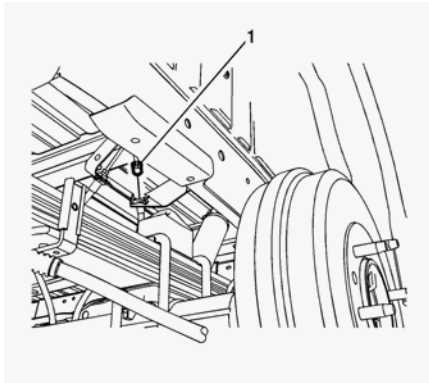
4. Disconnect the brake pipe fitting (1) from the rear brake intermediate pipe fitting.
5. Cap the brake pipe fitting to prevent brake fluid loss and contamination.
6. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
7. Remove the fuel filter, if equipped. Refer to Fuel Filter Replacement.
8. Remove the fuel tank. Refer to Fuel Tank Replacement.



9. Release the rear brake intermediate pipe from the retaining clips (1) on the left frame rail.



10. Release the rear brake intermediate pipe from the retaining clips (1) on the left frame rail.

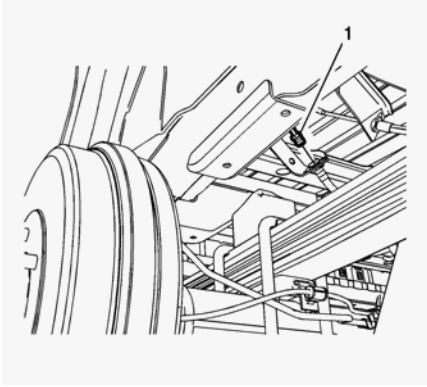


11. Disconnect the rear brake intermediate pipe fitting (1) from the left rear brake hose.



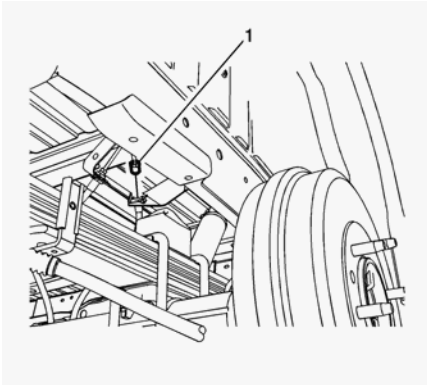
12. Disconnect the rear brake intermediate pipe fitting (1) from the right rear brake hose.
13. Plug the brake hose fitting to prevent brake fluid loss and contamination.
14. Remove the rear brake intermediate pipe assembly.

1. Install the rear brake intermediate pipe.

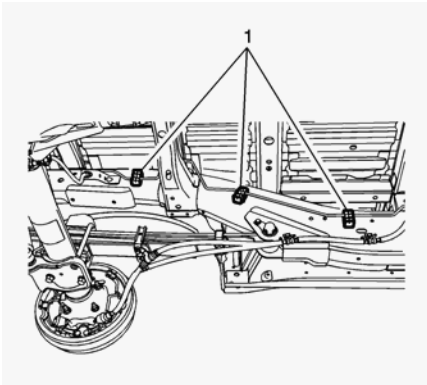


Caution: Refer to Fastener Caution.

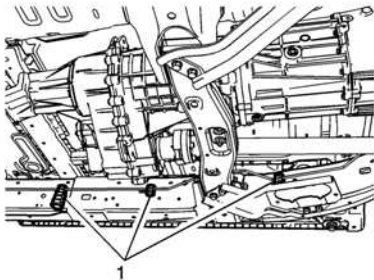
2. Connect the rear brake intermediate pipe fitting (1) to the right rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



3. Connect the rear brake intermediate pipe fitting (1) to the left rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



4. Install the rear brake intermediate pipe to the retaining clips (1) on the left frame rail.



5. Install the rear brake intermediate pipe to the retaining clips (1) on the left frame rail.
6. Install the fuel tank. Refer to Fuel Tank Replacement.

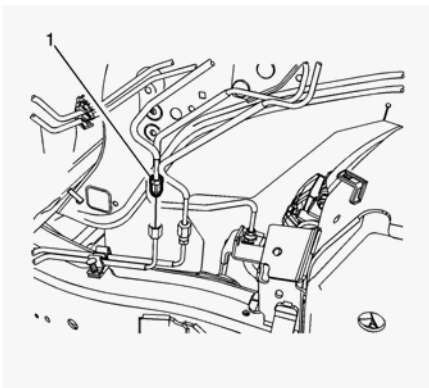
7. Install the fuel filter, if equipped. Refer to Fuel Filter Replacement.



8. Install the rear brake intermediate pipe to the retaining clip (1) on the left frame rail.



9. Connect the brake pipe fitting (1) to the rear brake intermediate pipe fitting and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



10. Connect the brake pipe fitting (1) to the rear brake intermediate pipe fitting and tighten the brake pipe fitting to .
11. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

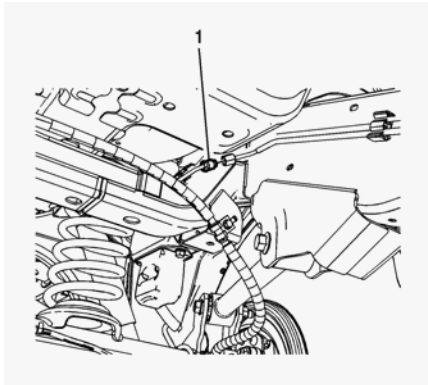
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

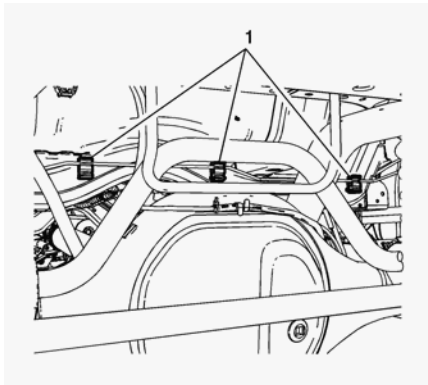
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

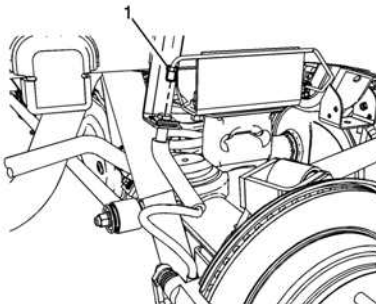
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Disconnect the rear brake rear pipe fitting (1) from the rear brake intermediate pipe.
3. Cap the rear brake intermediate pipe fitting to prevent brake fluid loss and contamination.



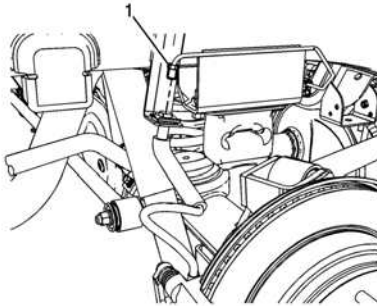
4. Release the rear brake rear pipe from the retaining clips (1) on the rear axle housing.



5. Disconnect the right rear brake rear pipe fitting (1).
6. Plug the brake hose fitting to prevent brake fluid loss and contamination.
7. Remove the rear brake rear pipe from the vehicle.

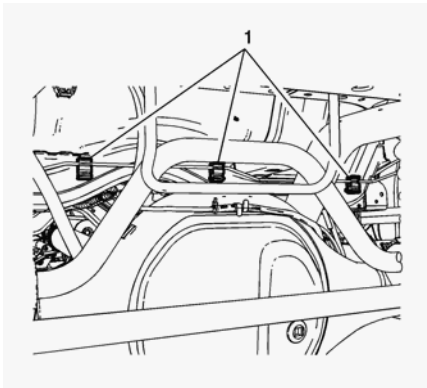
Installation Procedure

1. Install the rear brake rear pipe to the vehicle.

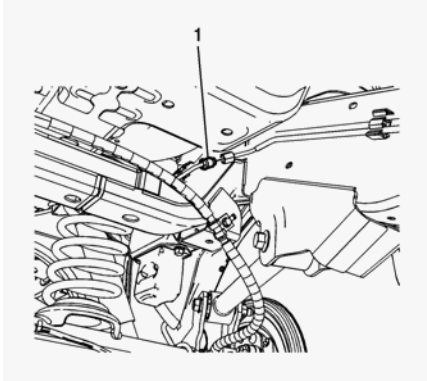


Caution: Refer to Fastener Caution.

2. Connect the rear brake rear pipe fitting (1) to the right rear brake hose and tighten the fitting to **16 Y (12 lb ft)**.



3. Install the rear brake rear pipe to the retaining clips (1) on the rear axle housing.



4. Connect the rear brake rear pipe fitting (1) to the rear brake intermediate pipe and tighten the fitting to **16 Y (12 lb ft)**.
5. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

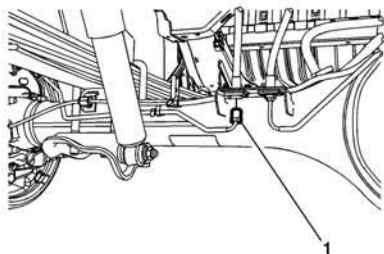
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

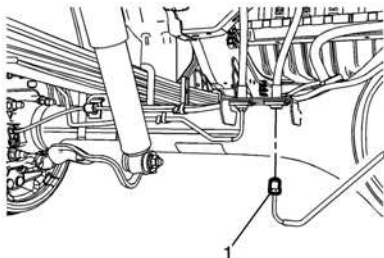
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

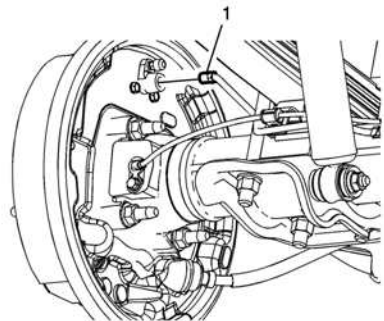
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Disconnect the left rear brake rear pipe fitting (1).
3. Plug the brake hose outlet port to prevent brake fluid loss and contamination.



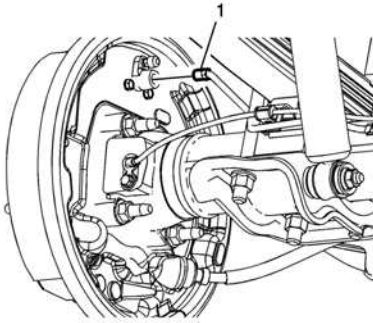
4. Disconnect the right rear brake rear pipe fitting (1).
5. Plug the brake hose outlet port to prevent brake fluid loss and contamination.
6. Release the rear brake rear pipes from the clips on the rear axle housing.



7. Disconnect the rear brake rear pipe fitting (1) from the left and right side rear brake cylinders.
8. Remove the rear brake rear pipes from the vehicle.
9. Plug the rear brake cylinder inlet port to prevent brake fluid loss and contamination.

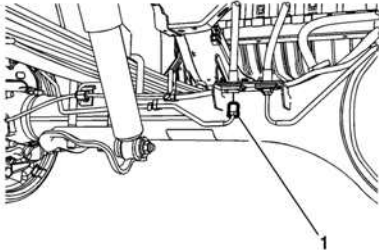
Installation Procedure

1. Install the rear brake rear pipes to the vehicle.

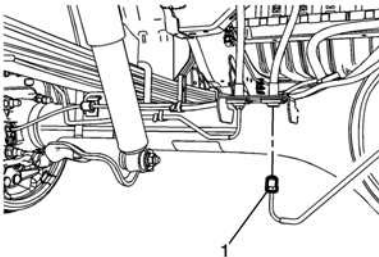


Caution: Refer to Fastener Caution.

2. Connect the rear brake rear pipe fitting (1) to the left and right side rear brake cylinders and tighten the fittings to **18 Y (13 lb ft)**.



3. Connect the left rear brake rear pipe fitting (1) and tighten the fitting to **18 Y (13 lb ft)**.



4. Connect the right rear brake rear pipe fitting (1) and tighten the fitting to **18 Y (13 lb ft)**.
5. Install the rear brake rear pipes to the clips on the rear axle housing.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

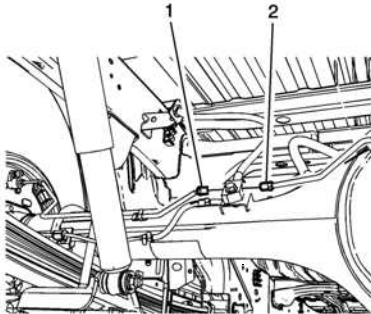
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

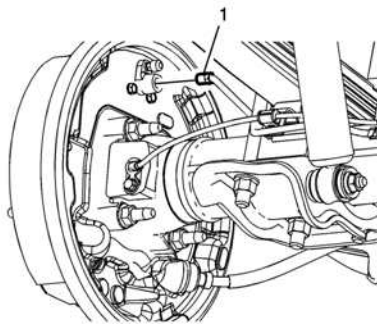
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



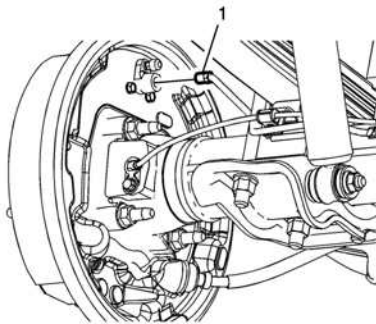
2. Disconnect the left rear brake rear pipe fitting (1).
3. Plug the brake hose outlet port to prevent brake fluid loss and contamination.
4. Disconnect the right rear brake rear pipe fitting (2).
5. Plug the brake hose outlet port to prevent brake fluid loss and contamination.
6. Release the rear brake rear pipes from the clips on the rear axle housing.



7. Disconnect the rear brake rear pipe fitting (1) from the left and right side rear brake cylinders.
8. Remove the rear brake rear pipes from the vehicle.
9. Plug the rear brake cylinder inlet port to prevent brake fluid loss and contamination.

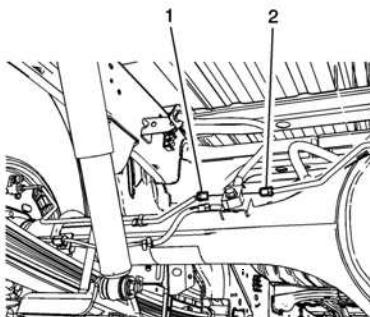
Installation Procedure

1. Install the rear brake rear pipes to the vehicle.



Caution: Refer to Fastener Caution.

2. Connect the rear brake rear pipe fitting (1) to the left and right side rear brake cylinders and tighten the fittings to **18 Y (13 lb ft)**.



3. Connect the left rear brake rear pipe fitting (1) and tighten the fitting to **18 Y (13 lb ft)**.
4. Connect the right rear brake rear pipe fitting (2) and tighten the fitting to **18 Y (13 lb ft)**.
5. Install the rear brake rear pipes to the clips on the rear axle housing.
6. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

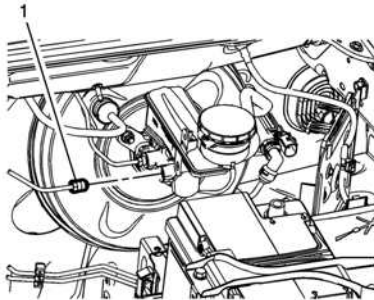
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



1. Disconnect the front brake upper pipe fitting (1) from the master cylinder.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



3. Disconnect the front brake upper pipe fitting (1) from the brake proportion valve.
4. Plug the proportion valve inlet port to prevent brake fluid loss and contamination.
5. Remove the front brake upper pipe.

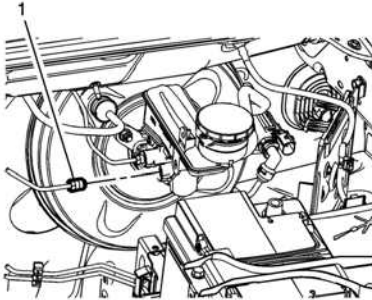
Installation Procedure

1. Install the front brake upper pipe to the vehicle.



Caution: Refer to Fastener Caution.

2. Connect the front brake upper pipe fitting (1) to the brake proportion valve and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Connect the front brake upper pipe fitting (1) to the master cylinder and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
4. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

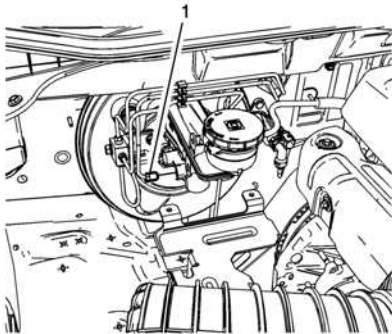
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

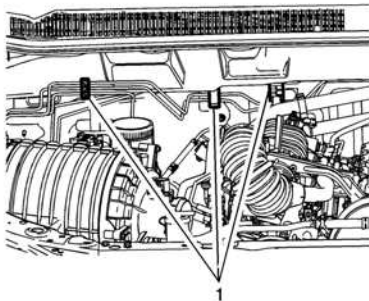
Removal Procedure

Warning: Refer to Brake Fluid Irritant Warning.

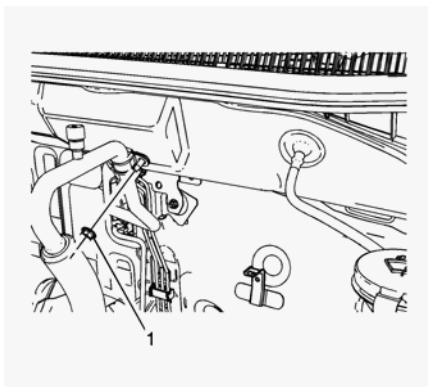
Caution: Refer to Brake Fluid Effects on Paint and Electrical Components Caution.



1. Disconnect the front brake upper pipe fitting (1) from the master cylinder.
2. Plug the master cylinder outlet port to prevent brake fluid loss and contamination.



3. Release the front brake upper pipe from the retaining clips (1).



4. Remove the air conditioning hose retainer fastener (1).
5. Release the air conditioning hose retainer from the dash panel stud.



6. Disconnect the front brake upper pipe fitting (1) from the brake proportion valve.
7. Plug the proportion valve inlet port to prevent brake fluid loss and contamination,
8. Remove the front brake upper pipe.

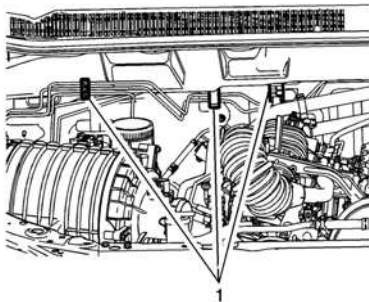
Installation Procedure

1. Install the front brake upper pipe to the vehicle.

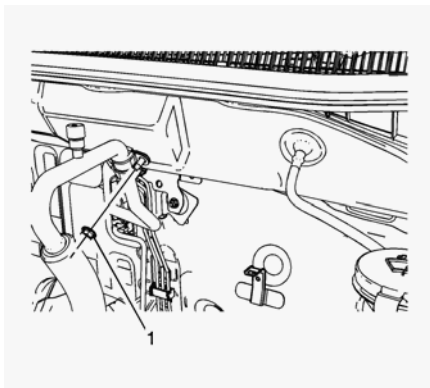


Caution: Refer to Fastener Caution.

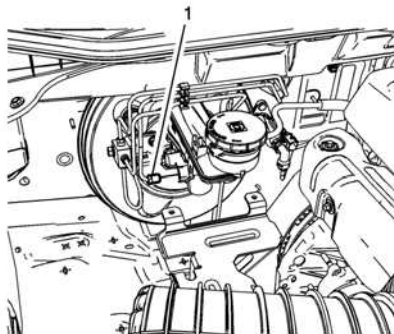
2. Connect the front brake upper pipe fitting (1) to the brake proportion valve and tighten the brake pipe fitting to **16 Y (12 lb ft)**.



3. Install the front brake upper pipe to the retaining clips (1).



4. Install the air conditioning hose retainer to the dash panel stud.
5. Install the air conditioning hose retainer fastener (1). Refer to Air Conditioning Compressor Hose Replacement

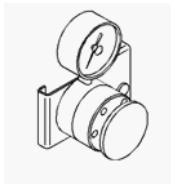


6. Connect the front brake upper pipe fitting (1) to the master cylinder and tighten the brake pipe fitting to **16 Y (12 lb ft)**.
7. Bleed the hydraulic brake system. Refer to Hydraulic Brake System Bleeding.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Illustration



Tool Number/ Description

CH 28662

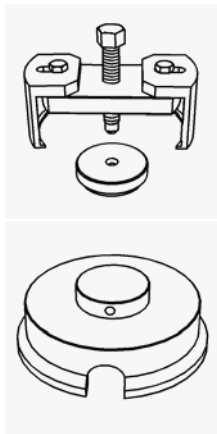
J 28662

Brake Pedal Effort Gauge

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Illustration



Tool Number/ Description

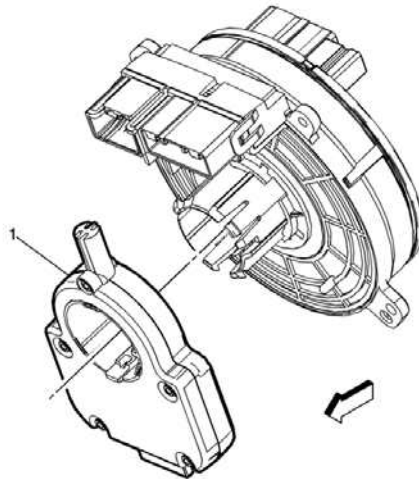
CH 50787
ABS Sensor Rotor Remover

CH 50788
ABS Sensor Rotor Installer

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Steering Angle Sensor Replacement

Callout

Component Name

Preliminary Procedure

Remove the steering wheel airbag coil. Refer to Steering Wheel Airbag Coil Replacement.

Steering Angle Sensor

Procedure

1

1. Press in the clip on the steering wheel airbag coil in order to remove the steering angle sensor.
2. After the installation is complete, center the steering angle sensor. Refer to Steering Angle Sensor Centering.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

The steering angle sensor does not require centering often. Centering of the steering angle sensor might be required after certain service procedures are performed. Some of these procedures are as follows:

- Electronic brake control module (EBCM) replacement
- Steering angle sensor replacement
- Steering gear replacement
- Steering column replacement
- Collision or other physical damage

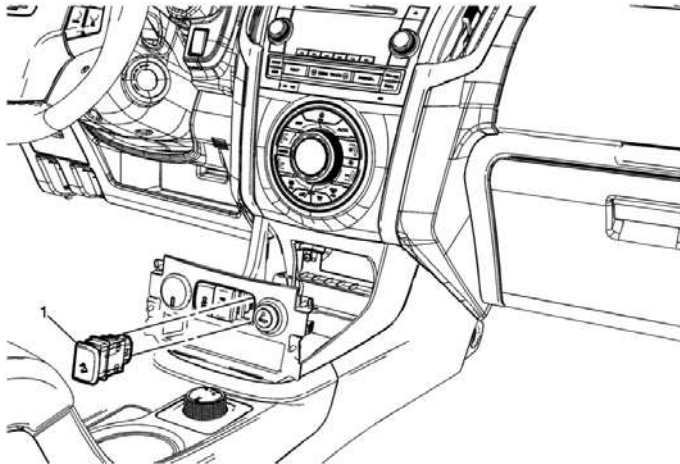
The steering angle sensor centering procedure can be completed with a scan tool using the following steps:

1. Using the steering wheel, align the front wheels forward.
2. Apply the parking brake, or set the transmission in the park position.
3. Install the scan tool to the data link connector.
4. Turn the ignition ON, and the engine OFF.
5. Select Steering Wheel Angle Sensor Reset in the Steering Wheel Angle Sensor Module Control Functions list or in the EBCM Module Setup list.
6. Follow the scan tool directions to complete the learn procedure.
7. Select Steering Wheel Angle Sensor Learn in the Steering Wheel Angle Sensor Module Functions list or in the EBCM Module Setup list.
8. Follow the scan tool directions to complete the learn procedure.
9. Clear any DTCs that may be set.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Vehicle Pitch Brake Control and Stability Control System Switch Replacement

Callout

Component Name

Preliminary Procedure

Remove the front floor console transmission shift opening bezel. Refer to Front Floor Console Transmission Shift Opening Bezel Replacement.

Vehicle Pitch Brake Control and Stability Control System Switch

Procedure

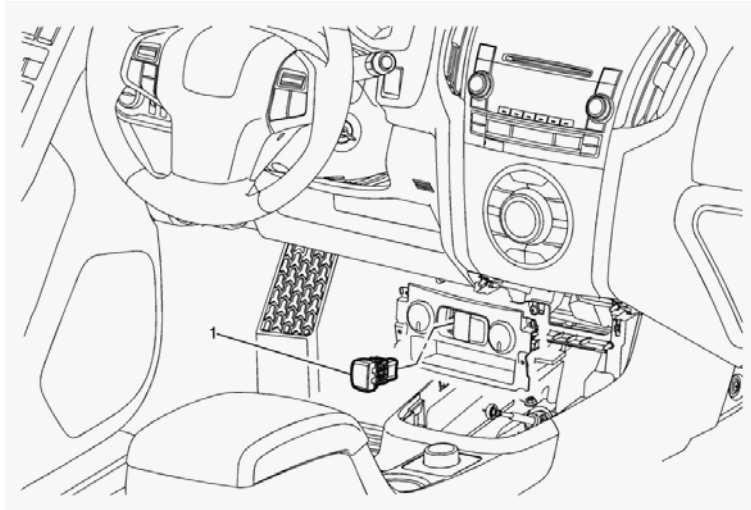
1

1. Disconnect the electrical connector.
2. Gently depress tabs to remove the switch assembly from the trim plate.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Vehicle Stability Control System Switch Replacement

Callout

Component Name

Preliminary Procedure

Remove the front floor console trim plate. Refer to Front Floor Console Trim Plate Replacement

Vehicle Stability Control System Switch

Procedure

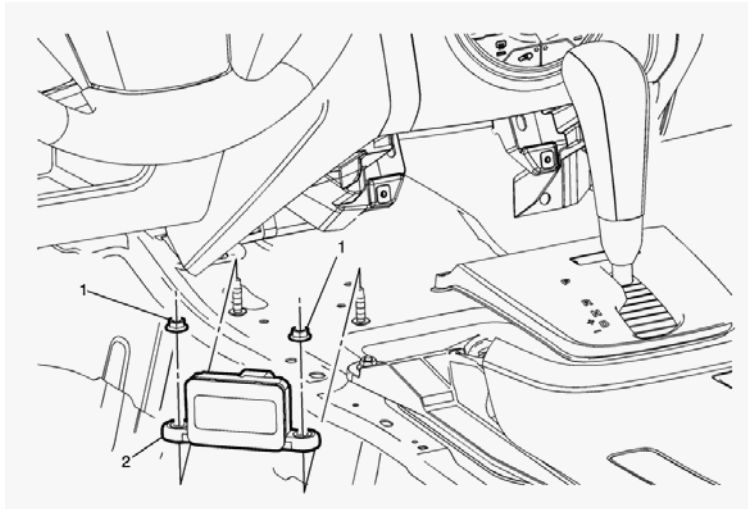
1

1. Disconnect the electrical connector.
2. Gently depress tabs to remove the switch assembly from the trim plate.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Vehicle Yaw Sensor Replacement

Callout

Component Name

Preliminary Procedure

Remove the front floor console transmission shift opening bezel. Refer to Front Floor Console Transmission Shift Opening Bezel Replacement.

Vehicle Yaw Sensor Nuts (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

9 Y (80 lb in)

Vehicle Yaw Sensor

Procedure

2

1. Disconnect the electrical connector.
2. After the installation is complete, perform the vehicle yaw learn.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

The yaw sensor does not require calibration often. Calibration of the yaw rate sensor might be required after certain service procedures are performed. Some of these procedures are as follows:

- Electronic brake control module (EBCM) replacement
- Multi-axis acceleration sensor replacement

The yaw rate sensor calibration procedure can be completed with a scan tool using the following steps:

1. Place vehicle on a level surface.
2. Apply the parking brake, or set the transmission in the park position.
3. Install the scan tool to the data link connector.
4. Turn the ignition ON, and the engine OFF.
5. Select Yaw Rate Sensor Reset in the Multi-axis Acceleration Sensor Module Control Functions list.
6. Follow the scan tool directions to complete the calibration procedure.
7. Select Yaw Rate Sensor Learn in the Multi-axis Acceleration Sensor Module Control Functions list.
8. Follow the scan tool directions to complete the calibration procedure.
9. Clear any DTCs that may be set.