

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

1. Run the engine until the power steering fluid reaches about 80°C (170°F).
2. Turn the engine OFF.
3. If the power steering fluid reservoir is covered by a shield or a cover, remove the shield or the cover, as applicable.
4. Clean the power steering fluid reservoir and the reservoir cap.
5. Remove the reservoir cap.

Note: Inspect the power steering pump fluid level at regular intervals.

6. Inspect the power steering fluid level in the reservoir or on the cap stick, as applicable. Ensure that the fluid level is at the HOT/FULL/MAX mark on the cap stick or on the reservoir, as applicable.

Caution: When adding fluid or making a complete fluid change, always use the proper power steering fluid. Failure to use the proper fluid will cause hose and seal damage and fluid leaks.

7. Add power steering fluid if necessary. Refer to Adhesives, Fluids, Lubricants, and Sealers.
8. Install the reservoir cap.
9. If you removed a shield or a cover, install the shield or the cover, as applicable.

2013 Chevrolet Colorado

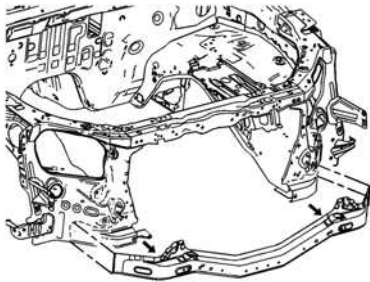
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

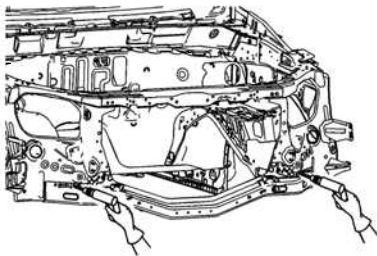
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning.

1. Disable the SIR system. Refer to SIR Disabling and Enabling.
2. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

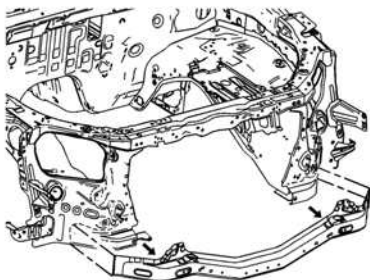


3. Remove all related panels and components.
4. Restore as much of the damage as possible to factory specifications. Refer to Dimensions - Body.
5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to Anti-Corrosion Treatment.

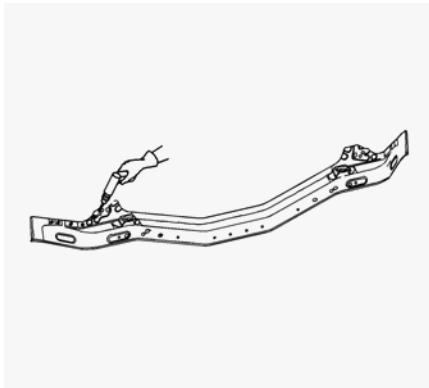


Note: Do not damage any inner panels or reinforcements.

6. Locate and drill out all factory welds. Note the number and location of welds for installation of the front end lower center tie bar.

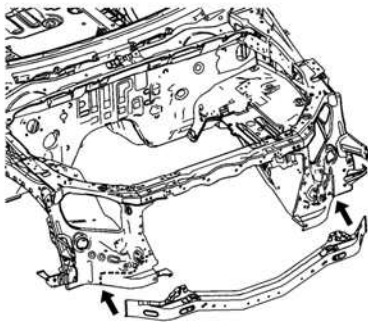


7. Remove the damaged front end lower center tie bar.

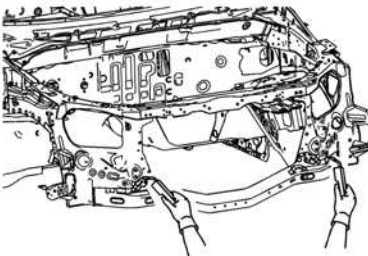


Note: If the location of the original plug weld holes can not be determined, or if structural weld-thru adhesive is present, space the plug w 40 mm (1½ in) apart.

1. Drill 8 mm (5/16 in) plug weld holes as necessary in locations noted from the original panel.
2. Prepare all mating surfaces as necessary.
3. Apply Weld-Thru coating or equivalent to all mating surfaces. Refer to Anti-Corrosion Treatment and Repair.



4. Position the front end lower center tie bar on the vehicle using 3-dimensional measuring equipment. Clamp the front end lower center

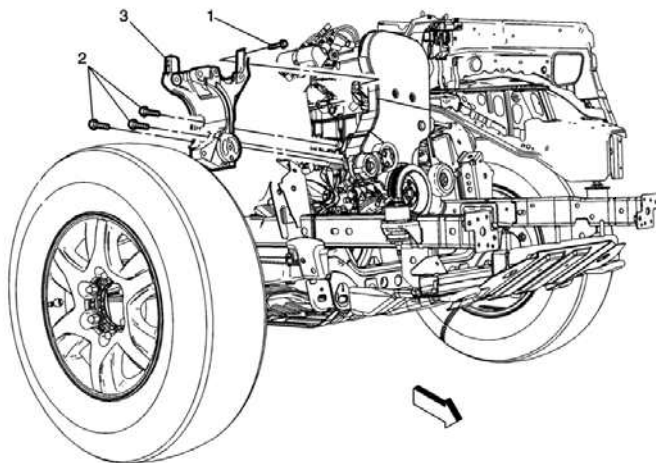


5. Plug weld accordingly.
6. Clean and prepare all welded surfaces.
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to Anti-Corrosion Treatment and Repair.
8. Paint and repair the area. Refer to Basecoat/Clearcoat Paint Systems.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
11. Enable the SIR system. Refer to SIR Disabling and Enabling.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Generator and Power Steering Pump Bracket Replacement

Callout Preliminary Procedures

Component Name

1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
3. Reposition the power steering pump. Refer to Power Steering Pump Replacement.
4. Remove the generator. Refer to Generator Replacement.

Generator and Power Steering Pump Bracket Fastener

1 **Caution:** Refer to Fastener Caution.

Tighten

25 Y (18 lb ft)

Generator and Power Steering Pump Bracket Fasteners (Qty: 3)

2 **Tighten**

45 Y (33 lb ft)

3 Generator and Power Steering Pump Bracket

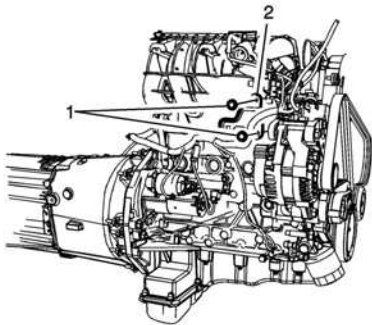
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

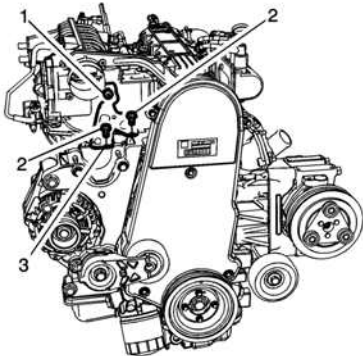
Fuel Delivery: | Fuel:

Removal Procedure

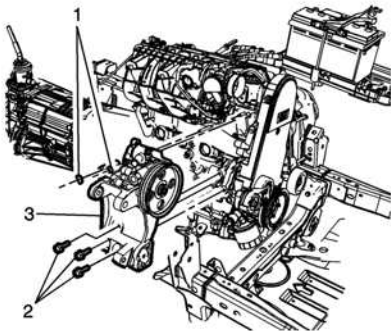
1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the air cleaner outlet resonator. Refer to Air Cleaner Outlet Resonator Replacement.
3. Remove the power steering fluid reservoir outlet hose. Refer to Power Steering Fluid Reservoir Outlet Hose Replacement.
4. Remove the power steering gear inlet pipe/hose. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
5. Remove the generator. Refer to Generator Replacement.



6. Remove the intake manifold bracket fasteners (1) and remove the intake manifold bracket (2).

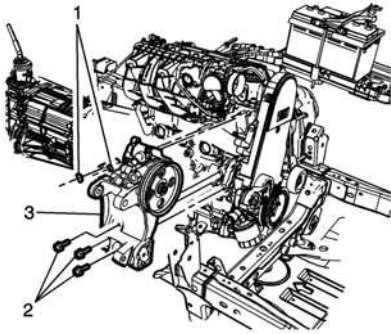


7. Remove the throttle body fastener (1) and remove the intake manifold bracket fasteners (2).
8. Remove the intake manifold bracket (3).



9. Remove the generator and power steering bracket fasteners (1) and the lower bracket fasteners (2).
10. Remove the generator and power steering pump bracket (3) from the engine compartment.
11. Remove the power steering pump. Refer to Power Steering Pump Replacement.

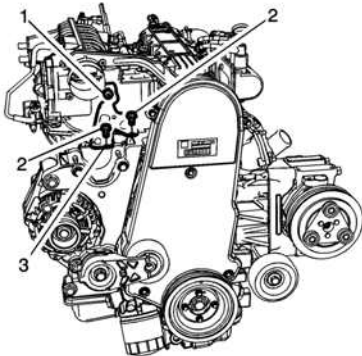
1. Install the power steering pump. Refer to Power Steering Pump Replacement.



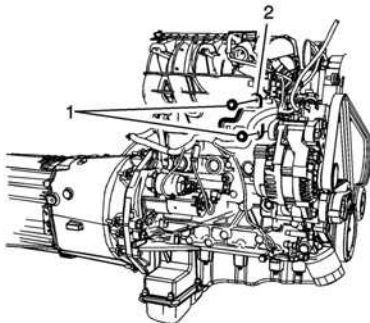
2. Install the generator and power steering pump bracket (3).

Caution: Refer to Fastener Caution.

3. Tighten the upper fasteners (1) to **25 Y (18 lb ft)**.
4. Tighten the lower fasteners (2) to **45 Y (33 lb ft)**.



5. Install the intake manifold bracket (3) and tighten the throttle body fastener (1) to **10 Y (89 lb in)**.
6. Tighten the fasteners (2) to **10 Y (89 lb in)**.



7. Install the intake manifold bracket (2) and tighten the fasteners (1) to **10 Y (89 lb in)**.
8. Install the generator. Refer to Generator Replacement.
9. Install the power steering fluid reservoir outlet hose. Refer to Power Steering Fluid Reservoir Outlet Hose Replacement.
10. Install the power steering gear inlet pipe/hose. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
11. Install the air cleaner outlet resonator. Refer to Air Cleaner Outlet Resonator Replacement.
12. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

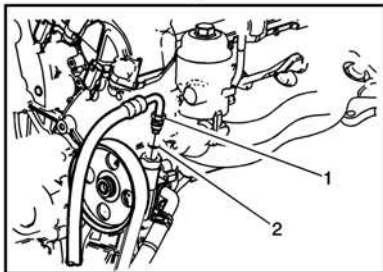
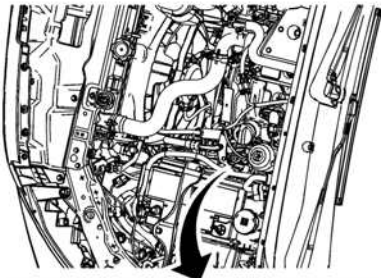
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

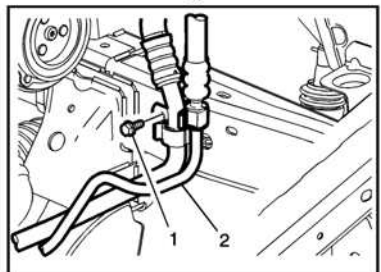
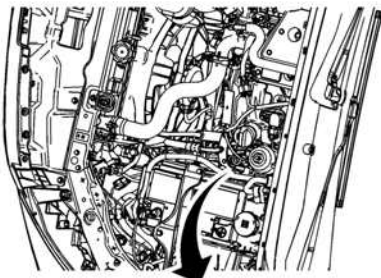
Fuel Delivery: | Fuel:

Removal Procedure

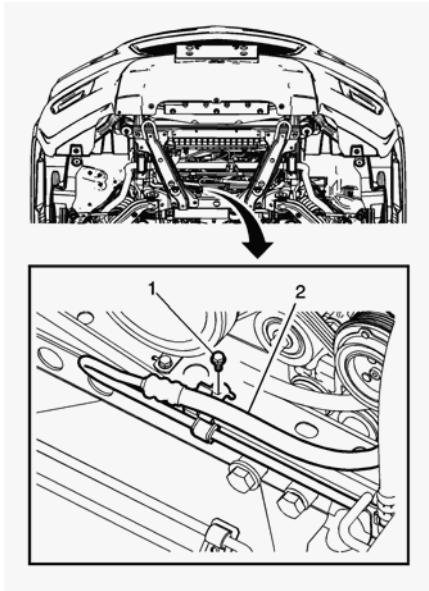
1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the power steering fluid reservoir as possible.
3. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
4. Disconnect the electrical harness retainers as necessary.



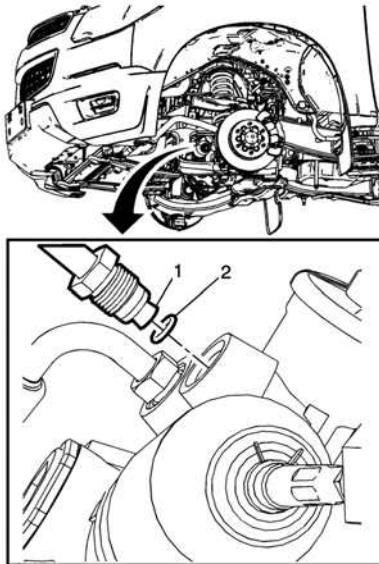
5. Disconnect the power steering gear inlet hose (1) and seal (2) from the power steering pump. Discard the seal.



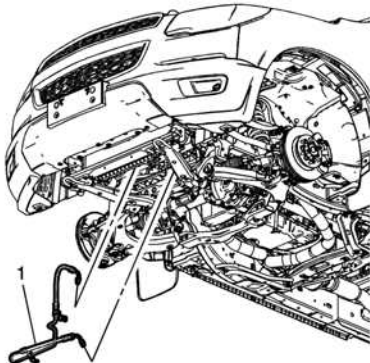
6. Remove the power steering gear inlet hose bracket bolt (1) and disengage the power steering gear inlet hose (2) and bracket from the v
7. Disconnect the power steering fluid reservoir hose from the clip on the steering gear inlet hose bracket.
8. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
9. Remove the engine protection shields. Refer to Engine Protection Shield Replacement.



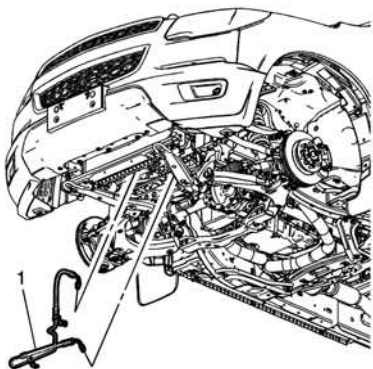
10. Remove the power steering gear inlet hose bracket bolt (1) and disengage the power steering gear inlet hose (2) and bracket from the crossmember.
11. Disconnect the power steering fluid reservoir outlet hose from the clip on the steering gear inlet hose bracket.



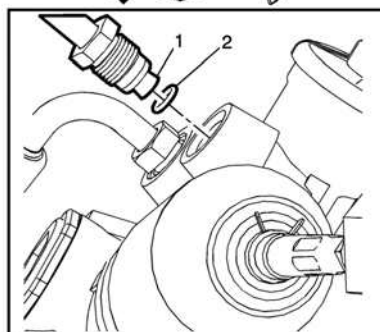
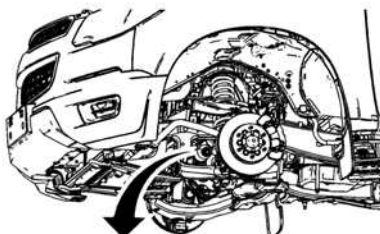
12. Disconnect the power steering gear inlet hose (1) and seal (2) from the steering gear. Discard the seal.



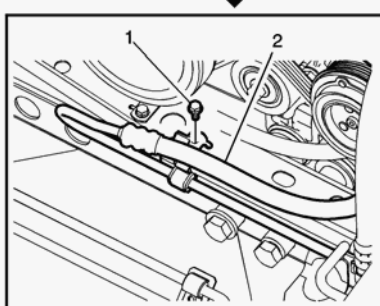
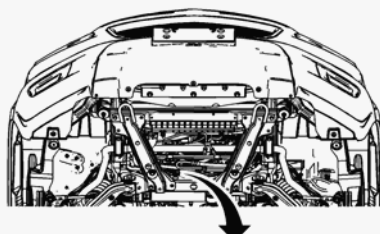
13. Remove the power steering gear inlet hose (1) from the vehicle.



1. Position the power steering gear inlet hose (1) in the vehicle.

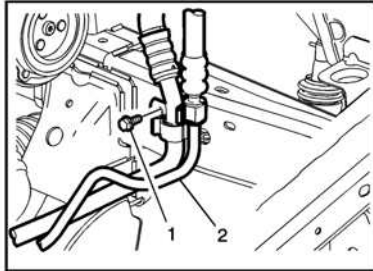
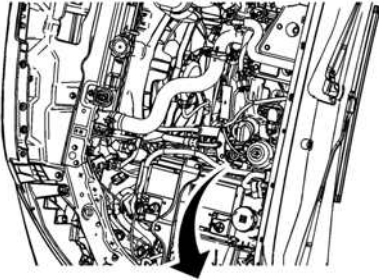


2. Install a NEW power steering gear inlet hose seal (2) on the power steering gear inlet hose (1).
- Caution:** Refer to Fastener Caution.
3. Connect the power steering gear inlet hose (1) to the steering gear and tighten the fitting to **25 Y (18 lb ft)**.

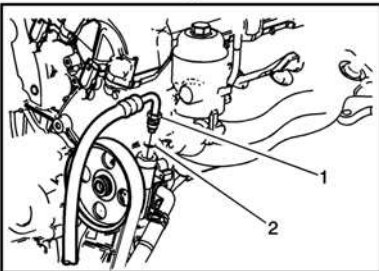
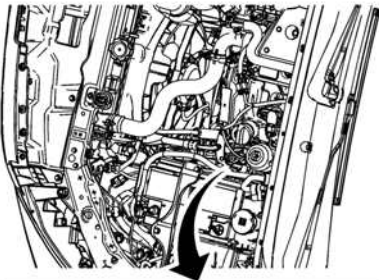


4. Connect the power steering gear inlet hose (1) and bracket to the vehicle crossmember.

5. Install the power steering gear inlet hose bracket bolt and tighten to **9 Y (80 lb in)**.
6. Secure the power steering fluid reservoir outlet hose in the clip on the power steering gear inlet hose bracket.
7. Install the engine protection shields. Refer to Engine Protection Shield Replacement.
8. Lower the vehicle.



9. Connect the power steering gear inlet hose (1) and bracket to the vehicle frame.
10. Install the power steering gear inlet hose bracket bolt and tighten to **9 Y (80 lb in)**.
11. Secure the power steering fluid reservoir outlet hose in the clip on the power steering gear inlet hose bracket.



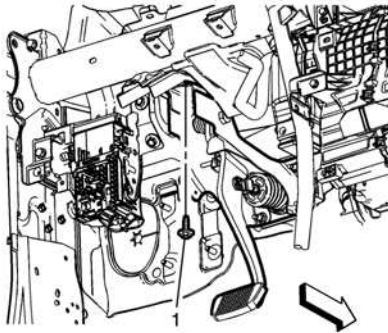
12. Install a NEW power steering gear inlet hose seal (2) on the power steering gear inlet hose (1).
13. Connect the power steering gear inlet hose to the power steering pump and tighten the fitting to **34 Y (25 lb ft)**.
14. Connect the electrical harness retainers as necessary.
15. Clean any excess power steering fluid from the vehicle.
16. Remove the drain pans.
17. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.
18. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.

2013 Chevrolet Colorado

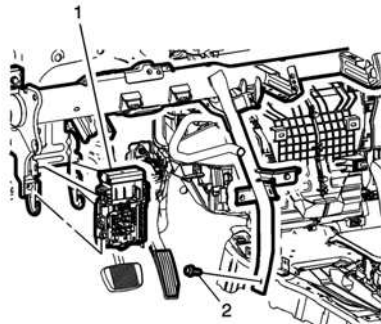
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Removal Procedure

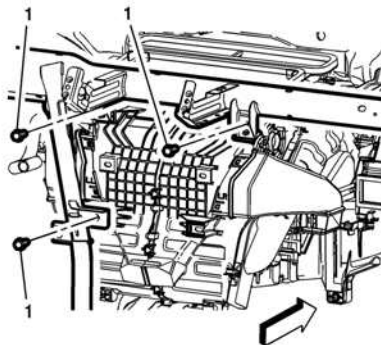
1. Remove the Instrument panel assembly. Refer to Instrument Panel Assembly Replacement.



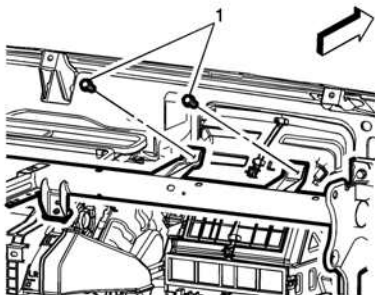
2. Remove the bolt (1) securing the instrument panel tie bar to the break pedal assembly.



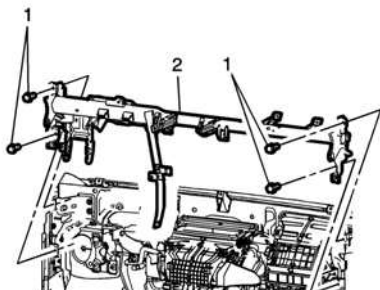
3. Unsnap the instrument panel fuse block (1) from the instrument panel tie bar assembly and position out of the way.
4. Remove the bolt (2) securing the instrument panel tie bar brace to the floor panel.



5. Remove the 3 bolts (1) securing the instrument panel tie bar assembly to the heater module.



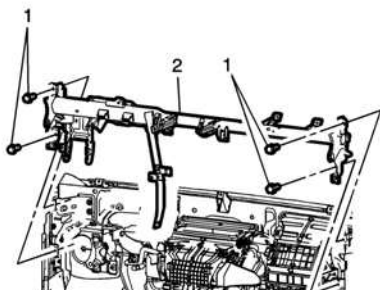
6. Remove the 2 bolts (1) securing the instrument panel tie bar assembly to the blower module.



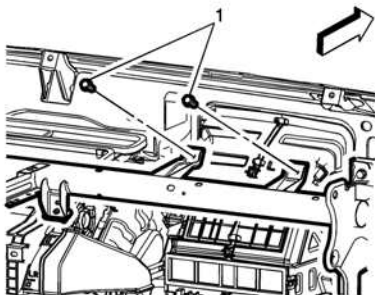
7. Remove the bolts (1) securing the instrument panel tie bar assembly (2) to the vehicle body.
8. Note the location and routing of the instrument panel wiring harness in order to ensure proper installation.
9. Support the HVAC module in order to prevent damage.
10. With the aid of an assistant remove the instrument panel tie bar assembly (2) from the vehicle.

Installation Procedure

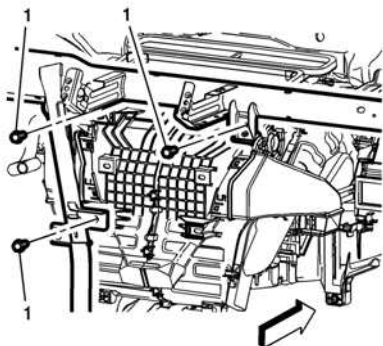
1. With the aid of an assistant position the instrument panel tie bar assembly into the vehicle.
2. Install the instrument panel wiring harness assembly to its in vehicle position as it was noted in the removal procedure.



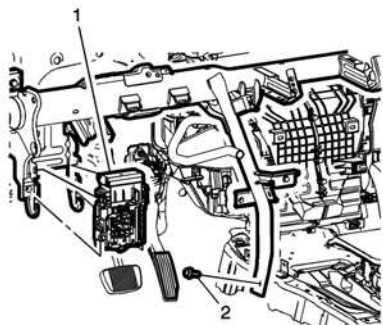
3. Loosely install the bolts (1) securing the instrument panel tie bar assembly (2) to the vehicle body.



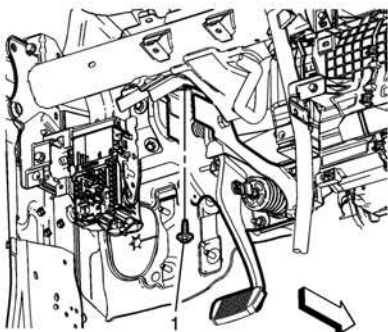
4. Loosely install the bolts (1) securing the instrument panel tie bar assembly to the blower module.



5. Loosely install the bolts (1) securing the instrument panel tie bar assembly to the heater module.



6. Loosely install the bolt (2) securing the instrument panel tie bar brace to the floor panel.
7. Install the instrument panel fuse block (1) onto the instrument panel tie bar assembly.



8. Loosely install the bolt (1) securing the instrument panel tie bar to the brake pedal assembly.

Caution: Refer to Fastener Caution.

9. Tighten the instrument panel tie bar to vehicle body bolts to **19Y (14 lb ft)**.
10. Tighten the instrument panel tie bar to heater module bolts to **6.6Y (58 lb in)**.
11. Tighten the instrument panel tie bar assembly to the blower bolts to **6.6Y (58 lb in)**.

12. Tighten the instrument panel tie bar brace to the floor panel bolt to **8Y (71 lb in)** .
13. Tighten the instrument panel tie bar assembly to the break pedal assembly **22Y (16 lb ft)** .
14. Install the Instrument panel assembly. Refer to Instrument Panel Assembly Replacement.

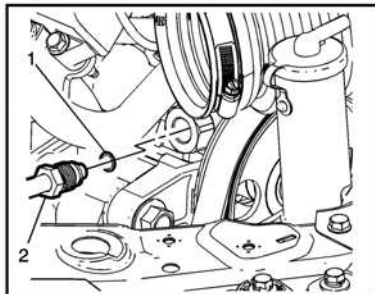
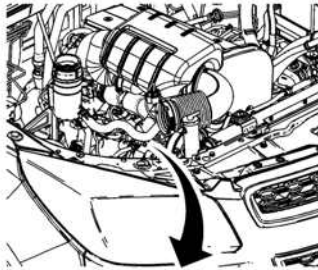
2013 Chevrolet Colorado

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

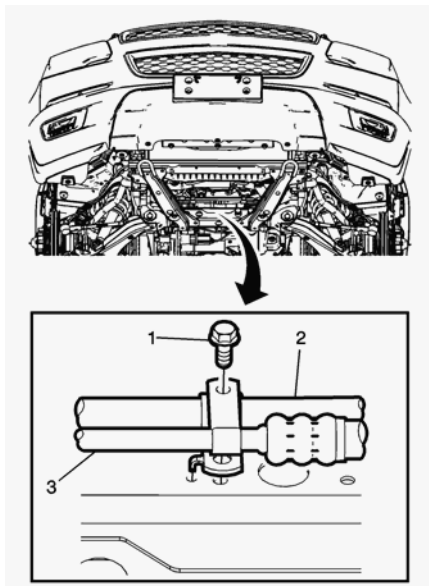
Fuel Delivery: | **Fuel:**

Removal Procedure

1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Disconnect the electrical harness retainers as necessary.



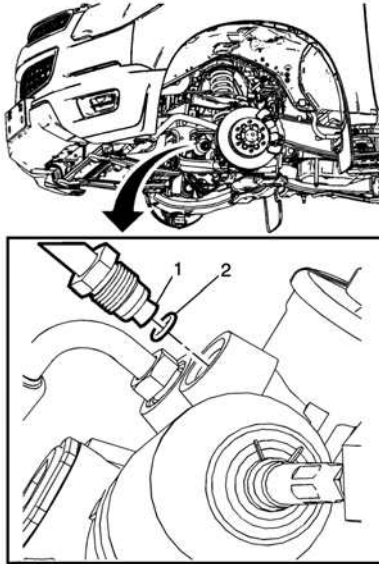
4. Disconnect the power steering gear inlet hose (2) from the power steering pump.
5. Remove the power steering gear inlet hose seal (1) from the power steering gear inlet hose.
Discard the seal.
6. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
7. Remove the engine protection shields. Refer to Engine Protection Shield Replacement.



8. Remove the bolt (1) from the power steering gear inlet hose (3).

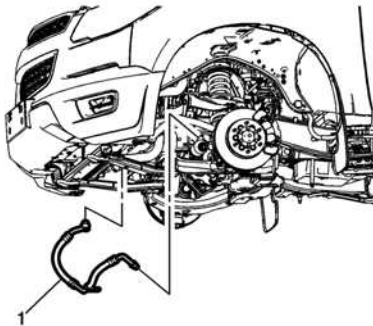
9. If equipped with LHD, disconnect the power steering gear inlet hose bracket from the power steering fluid reservoir hose bracket on the crossmember.

If equipped with RHD, disconnect the power steering gear inlet hose bracket from the second crossmember.



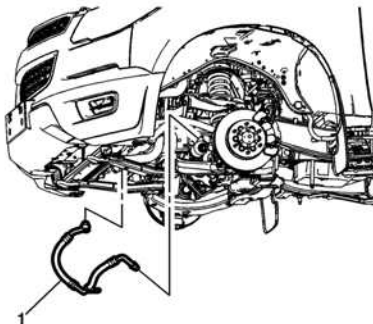
10. Disconnect the power steering gear inlet hose (1) from the steering gear.
11. Remove the power steering gear inlet hose seal (2).

Discard the seal.

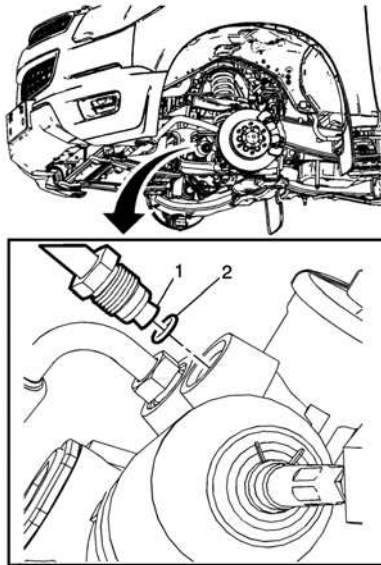


12. Remove the power steering gear inlet hose (1) from the vehicle.

Installation Procedure



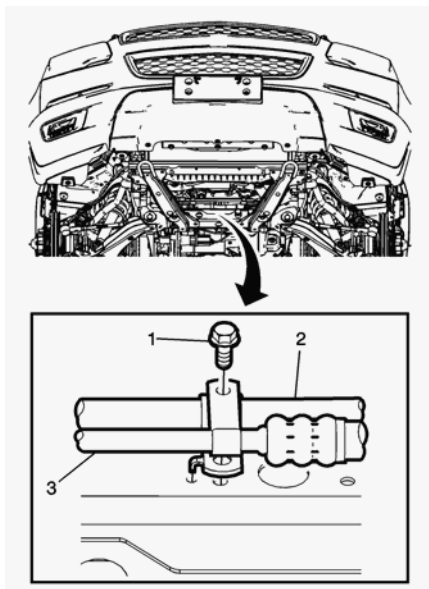
1. Position the power steering gear inlet hose (1) in the vehicle.



2. Install a NEW power steering gear inlet hose seal (2).

Caution: Refer to Fastener Caution.

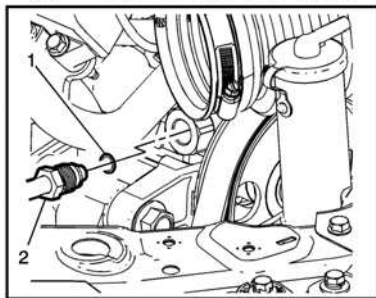
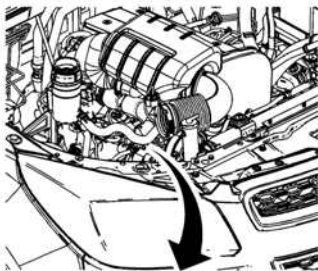
3. Connect the power steering gear inlet hose (1) to the steering gear. Tighten the fitting to **25 Y (18 lb ft)**.



4. If equipped with LHD, connect the power steering gear inlet hose (3) and the bracket to the power steering fluid reservoir hose bracket crossmember.

If equipped with RHD, connect the power steering gear inlet hose and the bracket to the second crossmember.

5. Install the bolt (1) to the power steering gear inlet hose bracket and tighten to **9 Y (80 lb ft)**.
6. Install the engine protection shields. Refer to Engine Protection Shield Replacement.



7. Install a NEW power steering gear inlet hose seal (1) to the power steering gear inlet hose (2).
8. Connect the power steering gear inlet hose to the power steering pump. Tighten the fitting to **34 Y (25 lb ft)**.
9. Connect the electrical harness retainers as necessary.
10. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
11. Clean any excess power steering fluid from the vehicle.
12. Remove the drain pans.

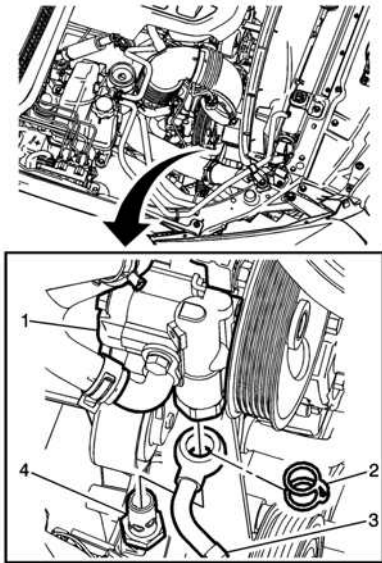
2013 Chevrolet Colorado

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

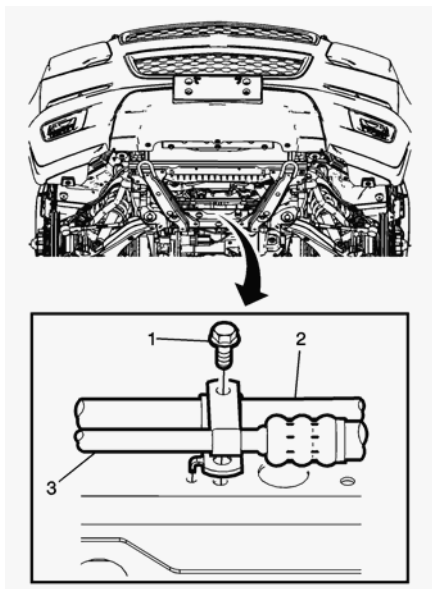
Fuel Delivery: | **Fuel:**

Removal Procedure

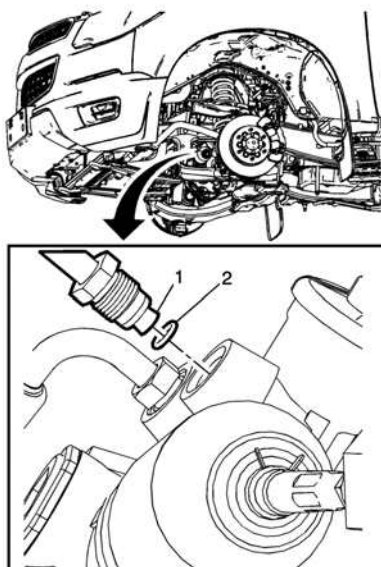
1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
4. Disconnect the electrical harness retainers as necessary.
5. Disconnect the drive belt from the power steering pump pulley. Refer to Drive Belt Replacement.



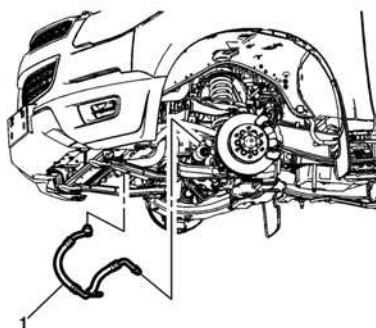
6. Remove the power steering gear inlet hose banjo bolt (4) from the power steering pump (1).
7. Disconnect the power steering gear inlet hose (3) from the power steering pump.
8. Remove the power steering gear inlet hose seal (2) from the power steering gear inlet hose.
Discard the seal.
9. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
10. Remove the engine protection shields. Refer to Engine Protection Shield Replacement.



11. Remove the bolt (1) from the power steering gear inlet hose (3).
12. If equipped with LHD, disconnect the power steering gear inlet hose bracket from the power steering fluid reservoir hose bracket on the crossmember.
If equipped with RHD, disconnect the power steering gear inlet hose bracket from the second crossmember.

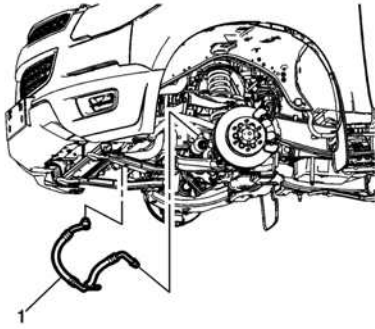


13. Disconnect the power steering gear inlet hose (1) from the steering gear.
14. Remove the power steering gear inlet hose seal (2).
Discard the seal.

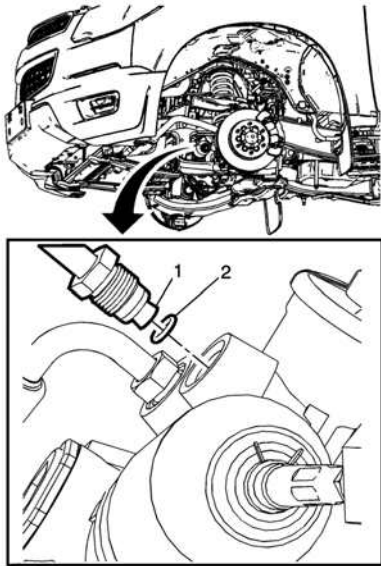


15. Remove the power steering gear inlet hose (1) from the vehicle.

Installation Procedure



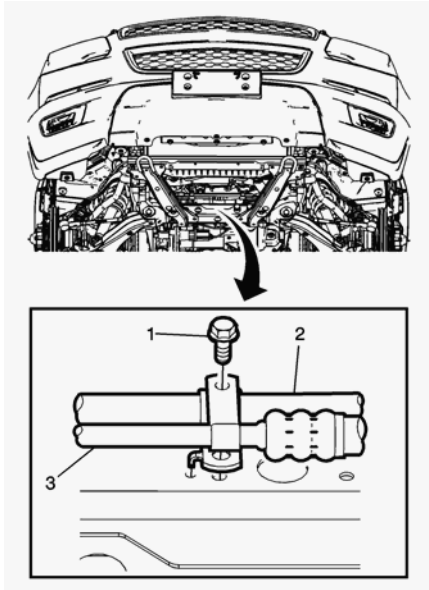
1. Position the power steering gear inlet hose (1) in the vehicle.



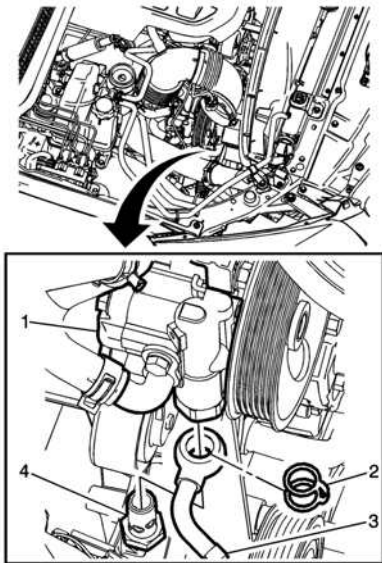
2. Install a NEW power steering gear inlet hose seal (2).

Caution: Refer to Fastener Caution.

3. Connect the power steering gear inlet hose (1) to the steering gear. Tighten the fitting to **25 Y (18 lb ft)**.



4. If equipped with LHD, connect the power steering gear inlet hose (3) and the bracket to the power steering fluid reservoir hose bracket crossmember.
If equipped with RHD, connect the power steering gear inlet hose and the bracket to the second crossmember.
5. Install the bolt (1) to the power steering gear inlet hose bracket and tighten to **9 Y (80 lb ft)**.
6. Install the engine protection shields. Refer to Engine Protection Shield Replacement.
7. Lower the vehicle.



8. Install a NEW power steering gear inlet hose seal (2) to the power steering gear inlet hose (3).
9. Connect the power steering gear inlet hose to the power steering pump (1). Install the power steering gear inlet hose banjo bolt (4) to the pump and tighten to **28 Y (21 lb ft)**.
10. Connect the electrical harness retainers as necessary.
11. Connect the drive belt to the power steering pump pulley. Refer to Drive Belt Replacement.
12. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
13. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
14. Clean any excess power steering fluid from the vehicle.
15. Remove the drain pans.

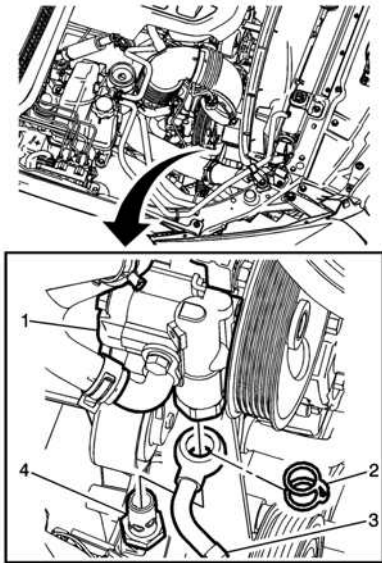
2013 Chevrolet Colorado

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

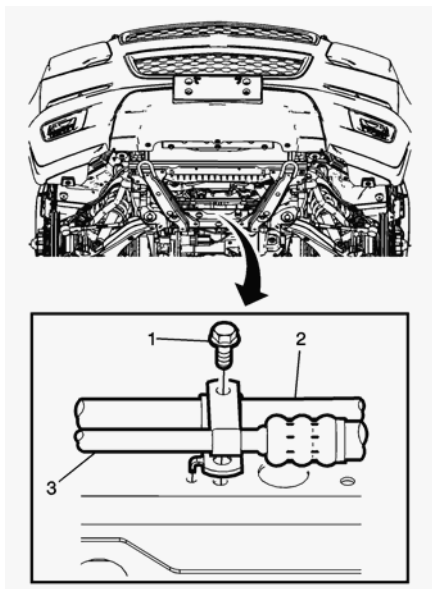
Fuel Delivery: | **Fuel:**

Removal Procedure

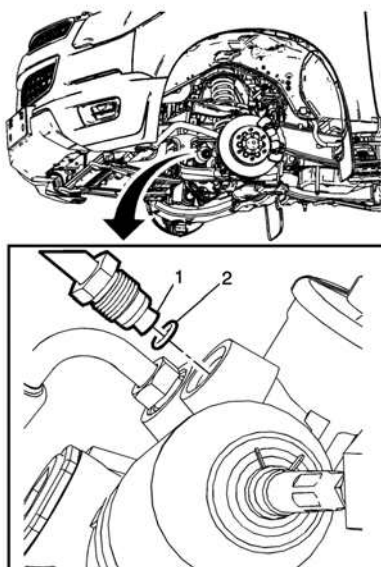
1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
4. Disconnect the electrical harness retainers as necessary.
5. Disconnect the drive belt from the power steering pump pulley. Refer to Drive Belt Replacement.



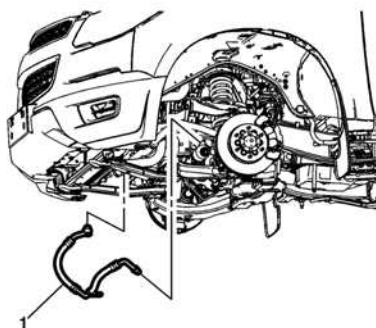
6. Remove the power steering gear inlet hose banjo bolt (4) from the power steering pump (1).
7. Disconnect the power steering gear inlet hose (3) from the power steering pump.
8. Remove the power steering gear inlet hose seal (2) from the power steering gear inlet hose.
Discard the seal.
9. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
10. Remove the engine protection shields. Refer to Engine Protection Shield Replacement.



11. Remove the bolt (1) from the power steering gear inlet hose (3).
12. If equipped with LHD, disconnect the power steering gear inlet hose bracket from the power steering fluid reservoir hose bracket on the crossmember.
If equipped with RHD, disconnect the power steering gear inlet hose bracket from the second crossmember.

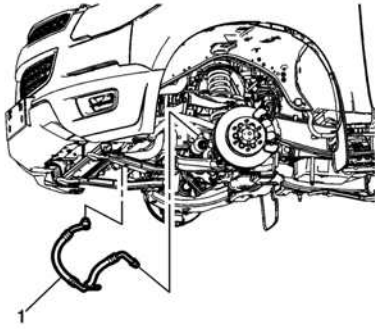


13. Disconnect the power steering gear inlet hose (1) from the steering gear.
14. Remove the power steering gear inlet hose seal (2).
Discard the seal.

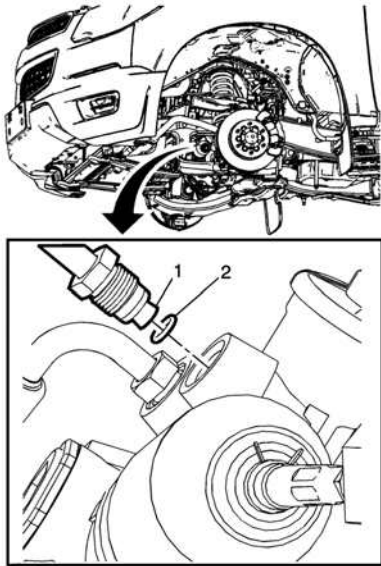


15. Remove the power steering gear inlet hose (1) from the vehicle.

Installation Procedure



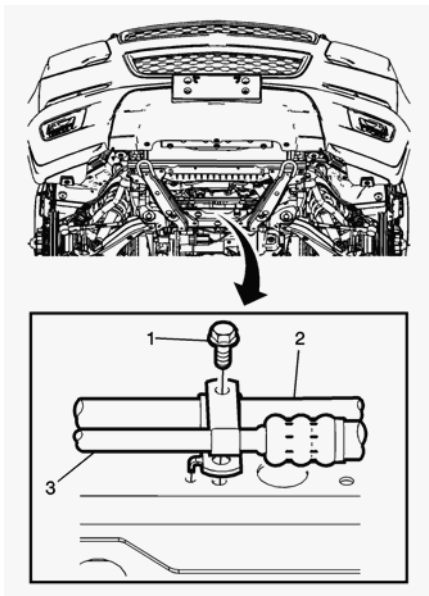
1. Position the power steering gear inlet hose (1) in the vehicle.



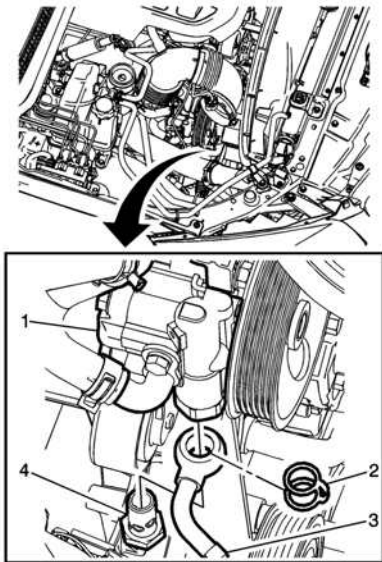
2. Install a NEW power steering gear inlet hose seal (2).

Caution: Refer to Fastener Caution.

3. Connect the power steering gear inlet hose (1) to the steering gear. Tighten the fitting to **25 Y (18 lb ft)**.



4. If equipped with LHD, connect the power steering gear inlet hose (3) and the bracket to the power steering fluid reservoir hose bracket crossmember.
If equipped with RHD, connect the power steering gear inlet hose and the bracket to the second crossmember.
5. Install the bolt (1) to the power steering gear inlet hose bracket and tighten to **9 Y (80 lb ft)**.
6. Install the engine protection shields. Refer to Engine Protection Shield Replacement.
7. Lower the vehicle.



8. Install a NEW power steering gear inlet hose seal (2) to the power steering gear inlet hose (3).
9. Connect the power steering gear inlet hose to the power steering pump (1). Install the power steering gear inlet hose banjo bolt (4) to the pump and tighten to **28 Y (21 lb ft)**.
10. Connect the electrical harness retainers as necessary.
11. Connect the drive belt to the power steering pump pulley. Refer to Drive Belt Replacement.
12. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
13. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
14. Clean any excess power steering fluid from the vehicle.
15. Remove the drain pans.

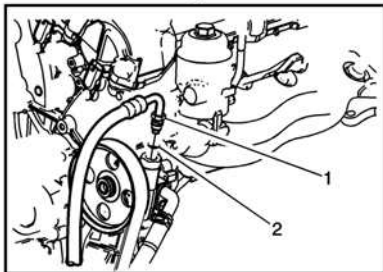
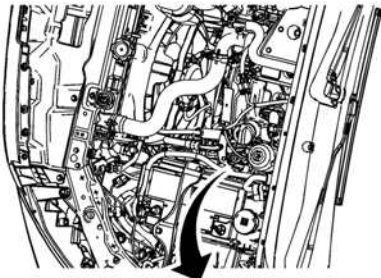
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

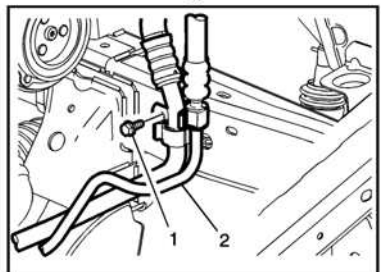
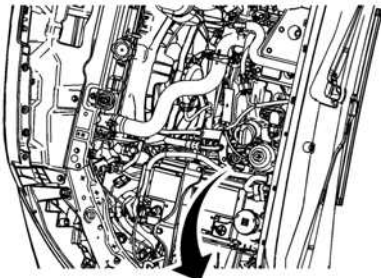
Fuel Delivery: | Fuel:

Removal Procedure

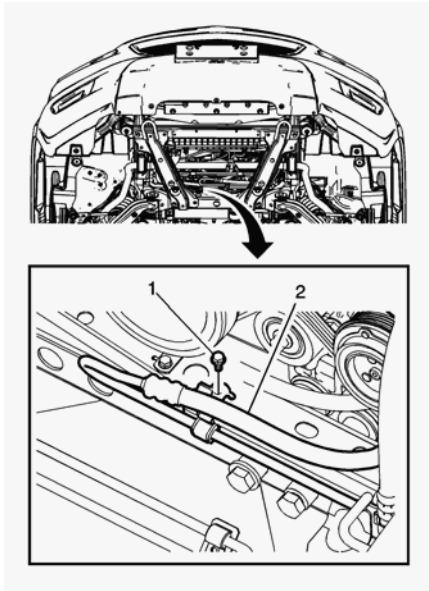
1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the power steering fluid reservoir as possible.
3. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
4. Disconnect the electrical harness retainers as necessary.



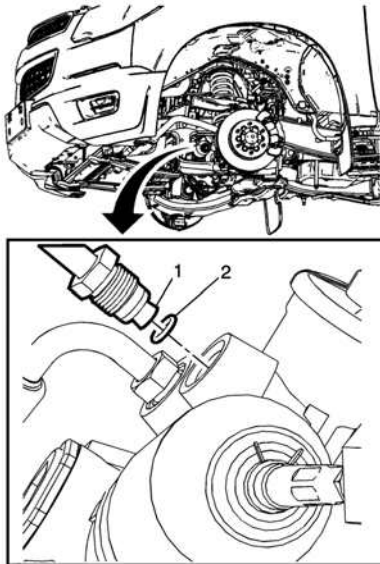
5. Disconnect the power steering gear inlet hose (1) and seal (2) from the power steering pump. Discard the seal.



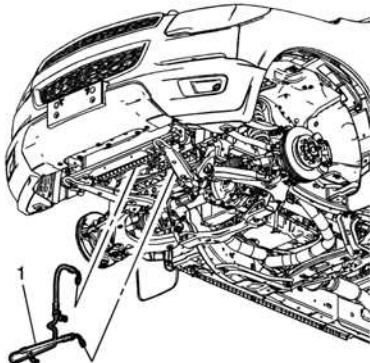
6. Remove the power steering gear inlet hose bracket bolt (1) and disengage the power steering gear inlet hose (2) and bracket from the v
7. Disconnect the power steering fluid reservoir hose from the clip on the steering gear inlet hose bracket.
8. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
9. Remove the engine protection shields. Refer to Engine Protection Shield Replacement.



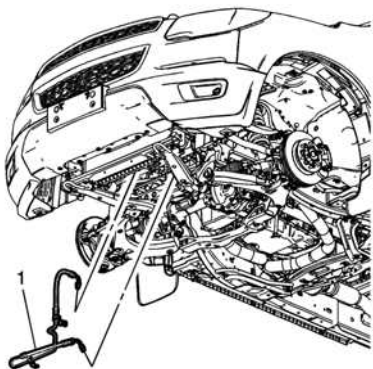
10. Remove the power steering gear inlet hose bracket bolt (1) and disengage the power steering gear inlet hose (2) and bracket from the crossmember.
11. Disconnect the power steering fluid reservoir outlet hose from the clip on the steering gear inlet hose bracket.



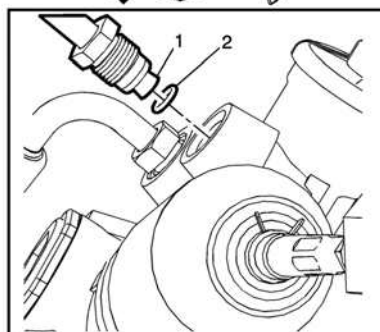
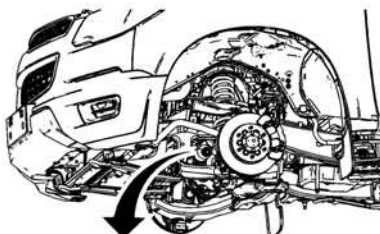
12. Disconnect the power steering gear inlet hose (1) and seal (2) from the steering gear. Discard the seal.



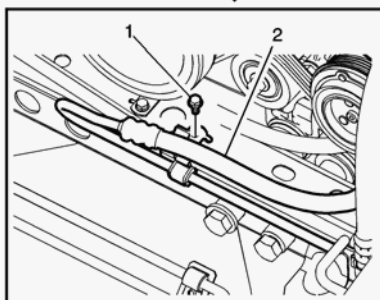
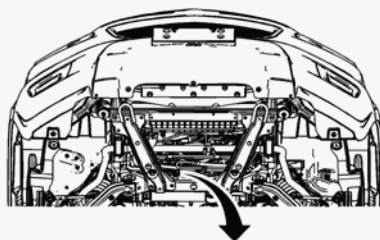
13. Remove the power steering gear inlet hose (1) from the vehicle.



1. Position the power steering gear inlet hose (1) in the vehicle.

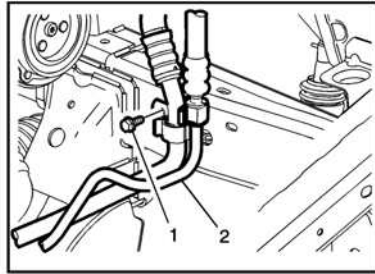
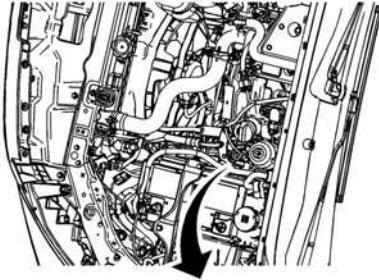


2. Install a NEW power steering gear inlet hose seal (2) on the power steering gear inlet hose (1).
- Caution:** Refer to Fastener Caution.
3. Connect the power steering gear inlet hose (1) to the steering gear and tighten the fitting to **25 Y (18 lb ft)**.

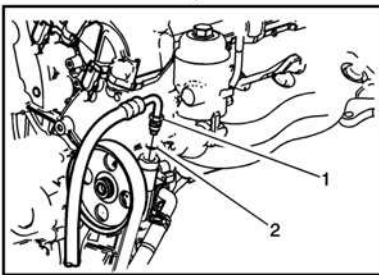
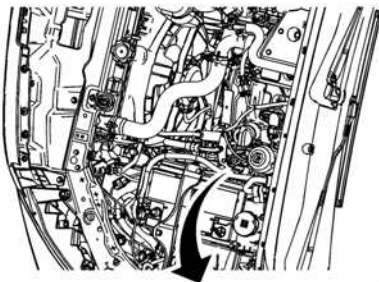


4. Connect the power steering gear inlet hose (1) and bracket to the vehicle crossmember.

5. Install the power steering gear inlet hose bracket bolt and tighten to **9 Y (80 lb in)**.
6. Secure the power steering fluid reservoir outlet hose in the clip on the power steering gear inlet hose bracket.
7. Install the engine protection shields. Refer to Engine Protection Shield Replacement.
8. Lower the vehicle.



9. Connect the power steering gear inlet hose (1) and bracket to the vehicle frame.
10. Install the power steering gear inlet hose bracket bolt and tighten to **9 Y (80 lb in)**.
11. Secure the power steering fluid reservoir outlet hose in the clip on the power steering gear inlet hose bracket.

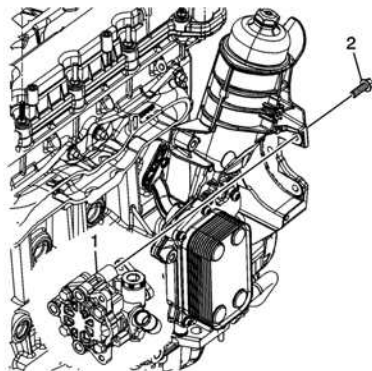


12. Install a NEW power steering gear inlet hose seal (2) on the power steering gear inlet hose (1).
13. Connect the power steering gear inlet hose to the power steering pump and tighten the fitting to **34 Y (25 lb ft)**.
14. Connect the electrical harness retainers as necessary.
15. Clean any excess power steering fluid from the vehicle.
16. Remove the drain pans.
17. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.
18. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



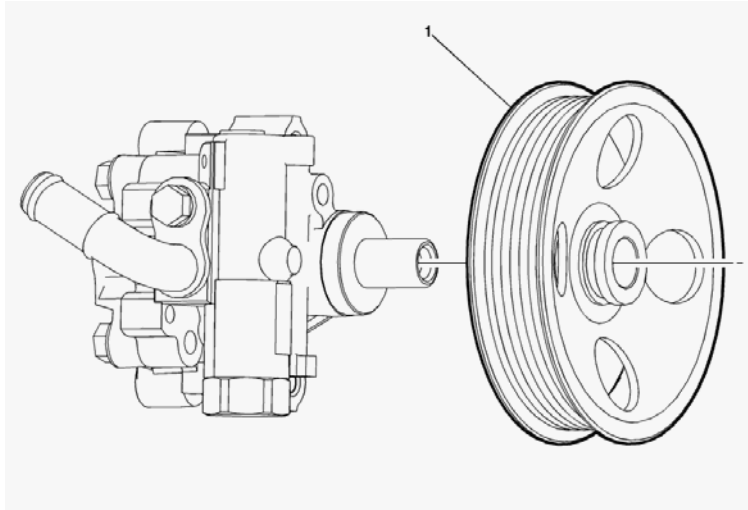
1. Install the power steering pump (1).

Caution: Refer to Fastener Caution.

2. Install the power steering pump bolts (2) and tighten to **25 Y (18 lb ft)**.

2013 Chevrolet Colorado

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



Power Steering Pump Pulley Replacement

Callout

Component Name

Preliminary Procedure

Remove the power steering pump. Refer to Power Steering Pump Replacement.

Power Steering Pump Pulley

Procedure

1. Use the *CH-25034-C* remover in order to remove the power steering pump pulley.
2. Use the *CH-25033-C* installer in order to install the power steering pump pulley.

1

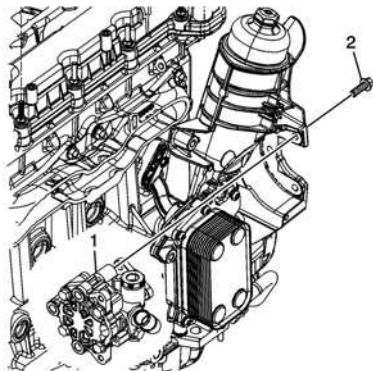
Special Tools

- *CH-25033-C* Pulley Installer
- *CH-25034-C* Pulley Remover

For equivalent regional tools, refer to Special Tools.

2013 Chevrolet Colorado

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



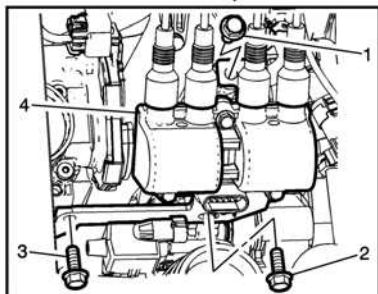
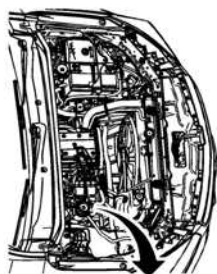
Remove the power steering pump mounting bolts (2) and the power steering pump (1).

2013 Chevrolet Colorado

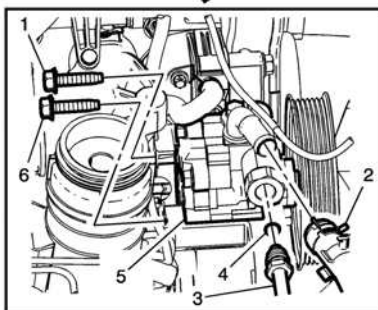
Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

Removal Procedure

1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Disconnect the electrical connectors as necessary.
4. Disconnect the electrical harness retainers as necessary.
5. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
6. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
7. Disconnect the drive belt from the power steering pump pulley only. Refer to Drive Belt Replacement.



8. Remove the 3 ignition coil bracket bolts (1, 2, 3).
9. Disconnect the ignition coil with the bracket (4) from the intake manifold. Position the ignition coil with the bracket to the side.



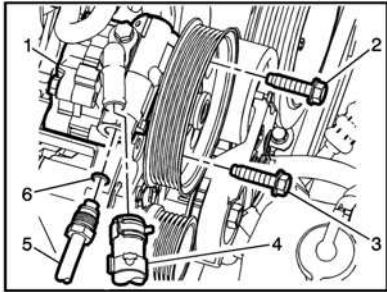
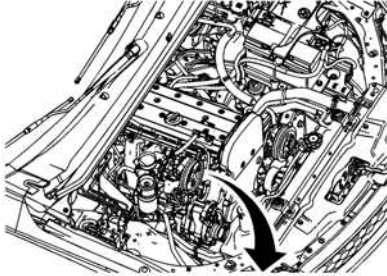
10. Loosen the hose clamp and disconnect the power steering fluid reservoir outlet hose (2) from the power steering pump (5).

11. Disconnect the power steering gear inlet hose (3) from the power steering pump (5). Refer to Power Steering Gear Inlet Pipe/Hose Rep
12. Remove the steering gear inlet hose O-ring seal (4).

Discard the seal.

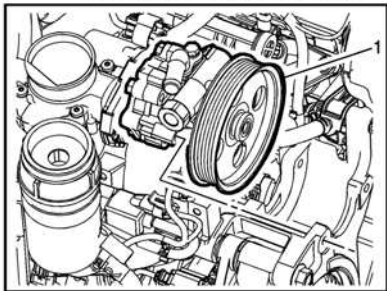
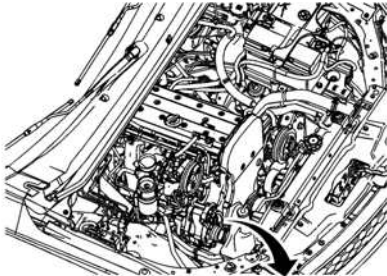
Note: The intake manifold obscures the view of the rear bolts.

13. Remove the right rear bolt (6) from the power steering pump.
14. Remove the left rear bolt (1) from the power steering pump.



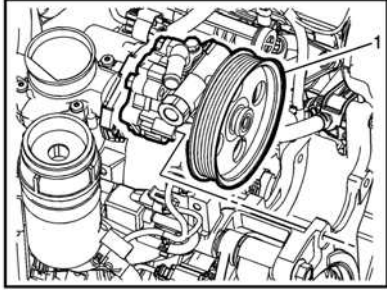
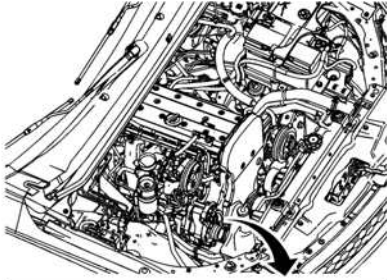
Note: Access the front bolts through the holes in the pulley.

15. Remove the 2 front bolts (2, 3) from the power steering pump (1).

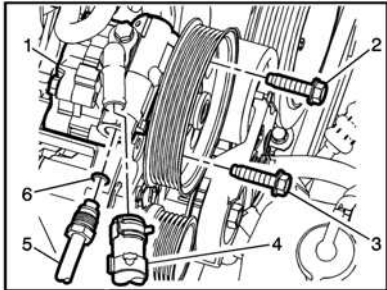
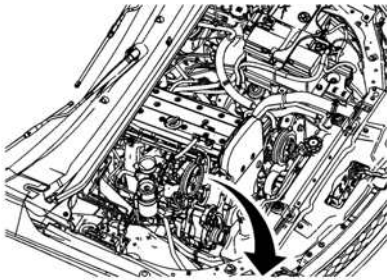


16. Remove the power steering pump and pulley as an assembly (1) from the vehicle.
17. Transfer components as necessary.

[Installation Procedure](#)



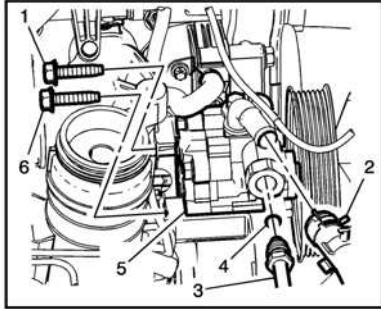
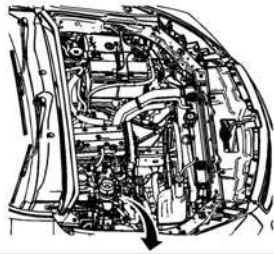
1. Position the power steering pump and pulley as an assembly (1) in the vehicle.
2. Align the bolt holes in the power steering pump with the bolt holes in the bracket.



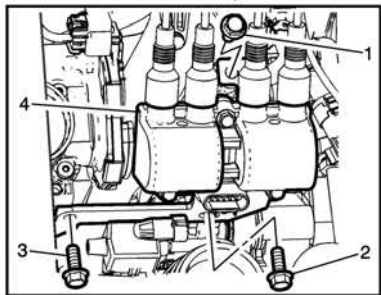
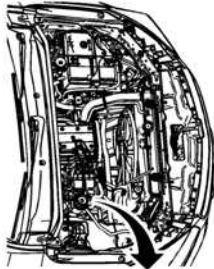
Caution: Refer to Fastener Caution.

Note: The power steering pump bolts go through the holes in the bracket and fasten to the holes in the pump.

3. Install the 2 front bolts (2, 3) to the power steering pump (1) and tighten to **25 Y (18 lb ft)**.



4. Install the left rear bolt (1) to the power steering pump (5) and tighten to **25 Y (18 lb ft)**.
5. Install the right rear bolt (6) to the power steering pump (5) and tighten to **25 Y (18 lb ft)**.
6. Install a NEW power steering gear inlet hose O-ring seal (4) to the power steering gear inlet hose (3).
7. Connect the power steering gear inlet hose (3) to the power steering pump (5). Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
8. Connect the power steering fluid reservoir outlet hose (2) to the power steering pump (5). Secure the hose with the clamp.



9. Connect the ignition coil with the bracket (4) to the intake manifold.
10. Install the 3 ignition coil bracket bolts (1, 2, 3) and tighten to **16 Y (12 lb ft)**.
11. Connect the drive belt to the power steering pump pulley. Refer to Drive Belt Replacement.
12. Install the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
13. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
14. Connect the electrical harness retainers as necessary.
15. Connect the electrical connectors as necessary.
16. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
17. Clean any excess power steering fluid from the vehicle.
18. Remove the drain pans.

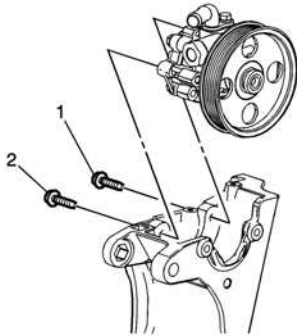
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

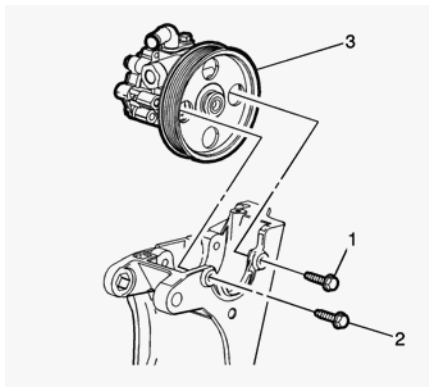
Fuel Delivery: | Fuel:

Removal Procedure

1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the power steering fluid reservoir as possible.
3. Remove the generator and power steering pump bracket. Refer to Generator and Power Steering Pump Bracket Replacement.
4. Secure the generator and power steering pump bracket in a vice.



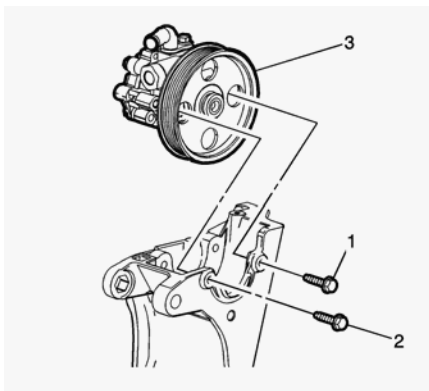
5. Remove the right rear bolt (1) from the power steering pump.
6. Remove the left rear bolt (2) from the power steering pump.



Note: Access the front bolts through the holes in the pulley.

7. Remove the 2 front bolts (1, 2) from the power steering pump.
8. Remove the power steering pump (3) from the generator and power steering pump bracket.
9. Transfer components as necessary.

[Installation Procedure](#)

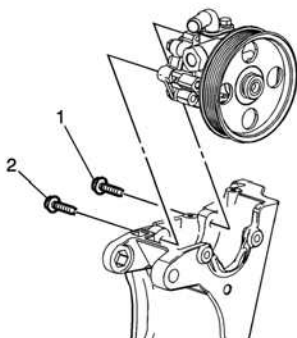


1. Position the power steering pump (3) in the generator and power steering pump bracket.

Caution: Refer to Fastener Caution.

Note: Start all power steering pump bolts by hand before tightening to specification.

2. Install the 2 front bolts (1, 2) and tighten to **25 Y (18 lb ft)**.



3. Install the left rear bolt (2) and tighten to **25 Y (18 lb ft)**.
4. Install the right rear bolt (1) and tighten to **25 Y (18 lb ft)**.
5. Install the generator and power steering pump bracket. Refer to Generator and Power Steering Pump Bracket Replacement.
6. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
7. Clean any excess power steering fluid from the vehicle.
8. Remove the drain pans.

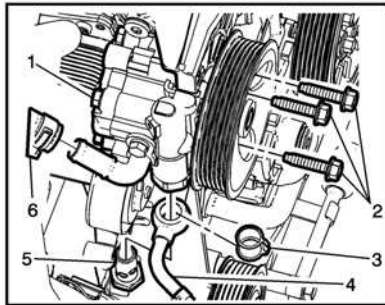
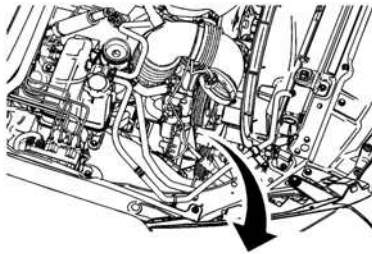
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

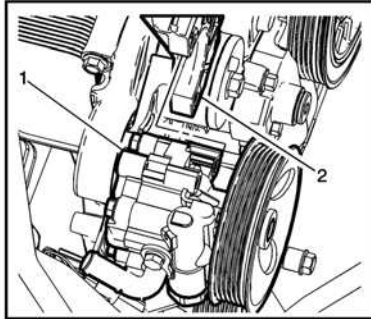
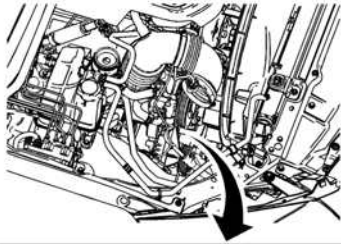
Fuel Delivery: | Fuel:

Removal Procedure

1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Remove the charge air cooler outlet air hose. Refer to Charge Air Cooler Outlet Air Hose Replacement.
4. Remove the charge air cooler inlet air hose. Refer to Charge Air Cooler Inlet Air Hose Replacement.
5. Disconnect the drive belt from the power steering pump pulley only. Refer to Drive Belt Replacement.
6. Disconnect the power steering gear inlet hose from the power steering pump. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.

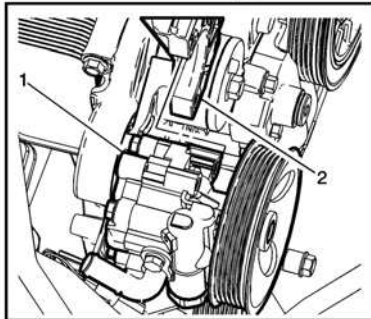
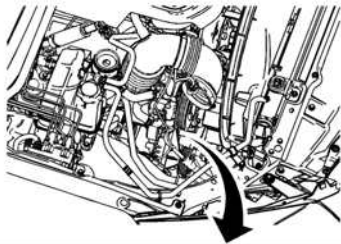


7. Remove the steering gear inlet hose O-ring seal (3).
Discard the seal.
 8. Loosen the hose clamp and disconnect the power steering fluid reservoir outlet hose (6) from the power steering pump (1).
- Note:** Access the power steering pump bolts through the holes in the pulley.
9. Remove the 3 bolts (2) from the power steering pump.

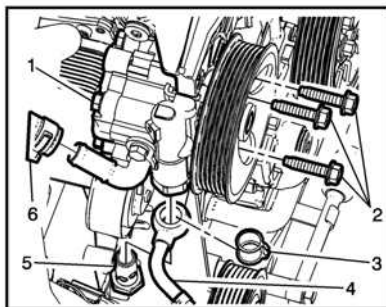
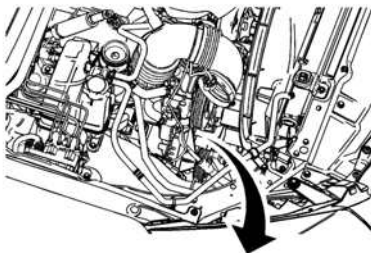


10. Remove the power steering pump (1) from the vehicle.
11. Transfer components as necessary.

[Installation Procedure](#)



1. Position the power steering pump (1) in the vehicle.
2. Align the bolt holes in the power steering pump with the bolt holes in the bracket (2).



Caution: Refer to Fastener Caution.

Note: The power steering pump bolts go through the holes in the bracket and fasten to the holes in the pump.

3. Install the 3 bolts (2) to the power steering pump (1) and tighten to **25 Y (18 lb ft)**.
4. Connect the power steering fluid reservoir outlet hose (6) to the power steering pump. Secure the hose with the clamp.
5. Install a NEW power steering gear inlet hose O-ring seal (3) to the power steering gear inlet hose (4).
6. Connect the power steering gear inlet hose to the steering gear. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
7. Connect the drive belt to the power steering pump pulley. Refer to Drive Belt Replacement.
8. Install the charge air cooler inlet air hose. Refer to Charge Air Cooler Inlet Air Hose Replacement
9. Install the charge air cooler outlet air hose. Refer to Charge Air Cooler Outlet Air Hose Replacement.
10. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
11. Clean any excess power steering fluid from the vehicle.
12. Remove the drain pans.

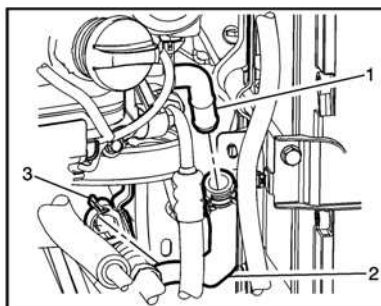
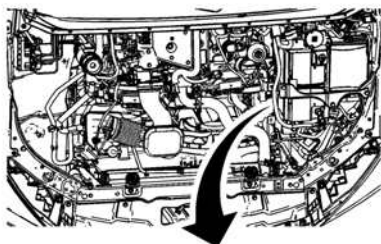
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

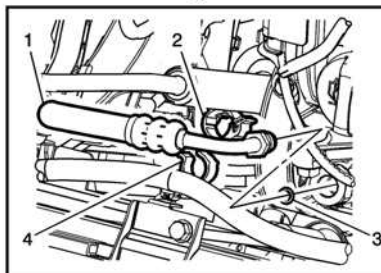
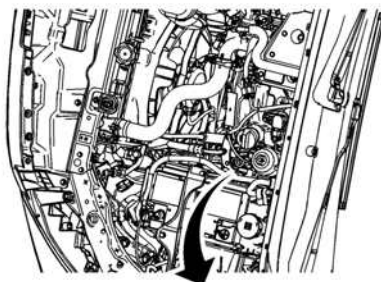
Fuel Delivery: | Fuel:

Removal Procedure

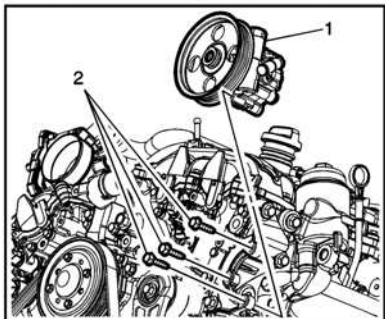
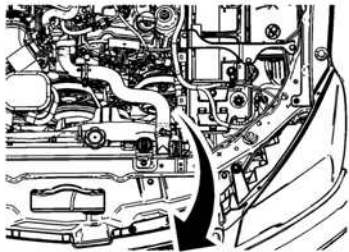
1. Place drain pans under the vehicle.
2. Remove as much power steering fluid from the reservoir as possible.
3. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
4. Disconnect the drive belt from the power steering pump pulley only. Refer to Air Conditioning Compressor and Power Steering Pump B Replacement.



5. Loosen the hose clamp and disconnect the power steering fluid reservoir outlet hose (2) from the power steering pump inlet (1).



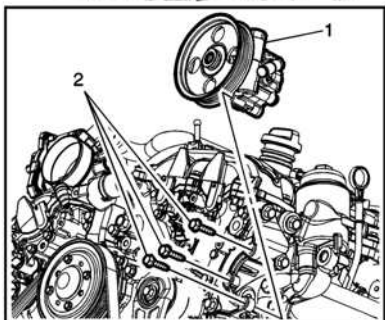
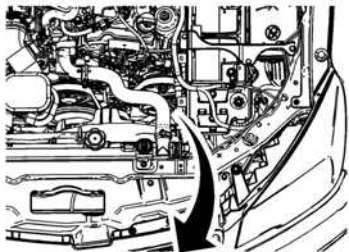
6. Disconnect the power steering gear inlet hose (1) from the power steering pump.
7. Remove the power steering gear inlet hose seal (3) from the power steering gear inlet hose.
Discard the seal.



Note: Access the power steering pump bolts through the holes in the pulley.

8. Remove the 3 power steering pump bolts (2) from the power steering pump (1).
9. Remove the power steering pump and the pulley as an assembly from the vehicle.
10. Transfer components as necessary.

Installation Procedure

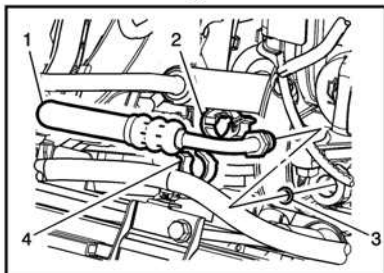
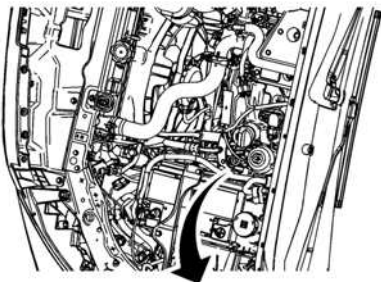


1. Position the power steering pump and pulley as an assembly (1) in the vehicle.
2. Align the bolt holes in the power steering pump with the bolt holes in the bracket.

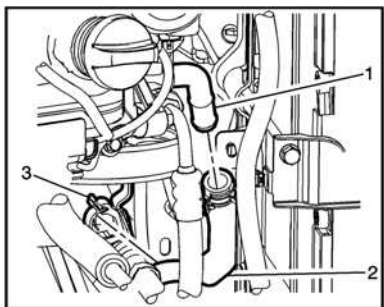
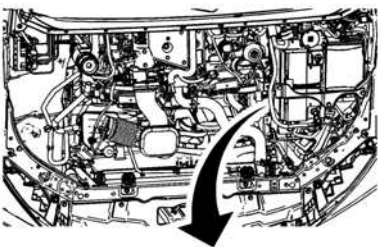
Caution: Refer to Fastener Caution.

Note: The power steering pump bolts go through the holes in the bracket and fasten to the holes in the pump.

3. Install the 3 power steering pump bolts (2) to the power steering pump and tighten to **22 Y (16 lb ft)**.



4. Install a NEW power steering gear inlet hose seal (3) to the power steering gear inlet hose (1).
5. Connect the power steering gear inlet hose to the power steering pump. Tighten the fitting to **34 Y (25 lb ft)**.



6. Connect the power steering fluid reservoir outlet hose (2) to the power steering pump inlet (1). Secure the hose with the clamp.
7. Connect the drive belt to the power steering pump pulley. Refer to Air Conditioning Compressor and Power Steering Pump Belt Replacement.
8. Fill and bleed the power steering system. Refer to Power Steering System Bleeding.
9. Clean any excess power steering fluid from the vehicle.
10. Remove the drain pans.
11. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.

2013 Chevrolet Colorado

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

Caution: Do not start the vehicle with any power steering gear inlet or outlet hoses disconnected. When disconnected, plug or cap all openings of components. Failure to do so could result in contamination or loss of power steering fluid and damage to the system.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Note:

- Use clean, new power steering fluid only. Refer to Adhesives, Fluids, Lubricants, and Sealers.
 - Hoses touching the frame, body or engine may cause system noise. Ensure the hoses do not touch any other part of the vehicle.
 - Loose connections may not leak, but could allow air into the steering system. Ensure all hose connections are tight.
 - Maintain the power steering fluid level throughout the bleeding procedure.
1. Fill the power steering fluid reservoir with fluid to the minimum system level, the FULL COLD level, or the middle of the hash mark on the cap stick fluid level indicator, as applicable.
 2. Raise the vehicle until the front wheels are off the ground. Refer to Lifting and Jacking the Vehicle.
 3. With the key in the ON position and with the engine OFF, turn the steering wheel from stop to stop 12 times.

If the vehicle is equipped with longer length power steering hoses, turn the steering wheel from stop to stop 15 to 20 times.
 4. Verify the power steering fluid level. Refer to Checking and Adding Power Steering Fluid.
 5. Start the engine. Rotate the steering wheel from left to right. Inspect the power steering system for signs of cavitation or fluid aeration, like pump noise or whining.
 6. Verify the fluid level. Repeat the bleed procedure, if necessary.
 7. Lower the vehicle.

2013 Chevrolet Colorado

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

Fuel Delivery: | **Fuel:**

The hydraulic power steering pump is a constant displacement vane-type pump that provides hydraulic pressure and flow for the power steering gear. The hydraulic power steering pump is either belt-driven or direct cam-driven.

The power steering fluid reservoir holds the power steering fluid. The power steering fluid reservoir may be integral with the power steering pump or remotely located. The vehicle may have a combination of a power steering fluid reservoir integral with the power steering pump and a remotely located power steering fluid reservoir. The following locations are typical locations for the remote reservoir:

- Mounted to the front of the dash panel
- Mounted to the inner fender
- Mounted to a bracket on the engine

The 2 basic types of power steering gears are listed below:

- A recirculating ball system
- A rack and pinion system

In the recirculating ball system, a worm gear converts steering wheel movement to movement of a sector shaft. A pitman arm attached to the bottom of the sector shaft actually moves one tie rod. An intermediate rod moves the other tie rod.

In the rack and pinion system, the rack and the pinion are the 2 components that convert steering wheel rotation to lateral movement. The steering shaft is attached to the pinion in the steering gear. The pinion rotates with the steering wheel. Gear teeth on the pinion mesh with the gear teeth on the rack. The rotating pinion moves the rack from side to side. The lateral action of the rack pushes and pulls the tie rods in order to change the direction of the vehicle's front wheels.

The power steering pressure hose connects the power steering pump union fitting to the power steering gear and allows pressurized power steering fluid to flow from the pump to the gear.

The power steering return hose returns fluid from the power steering gear back to the power steering fluid reservoir. The power steering return hose may contain an integral fin-type or line-type power steering fluid cooler.

In a typical power steering system, a pump generates hydraulic pressure, causing fluid to flow, via the pressure hose, to the steering gear valve assembly. The steering gear valve assembly regulates the incoming fluid to the right and left chambers in order to assist in right and left turns.

Turning the steering wheel activates the valve assembly, which applies greater fluid pressure and flow to 1 side of the steering gear piston, and lower pressure and flow to the other side of the piston. The pressure assists the movement of the gear piston. Tie rods transfer this force to the front wheels, which turn the vehicle right or left.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Note: Do not reuse any drained power steering fluid regardless of appearance or condition.

1. Raise the vehicle until the front wheels are off the ground. Refer to Lifting and Jacking the Vehicle.
2. Place a large drain pan under the vehicle in order to collect the draining fluid.
3. Remove the fluid return hose at the power steering fluid reservoir or the pump inlet connection, as applicable.
4. Plug the reservoir return hose inlet connection on the power steering fluid reservoir or the pump, as applicable.

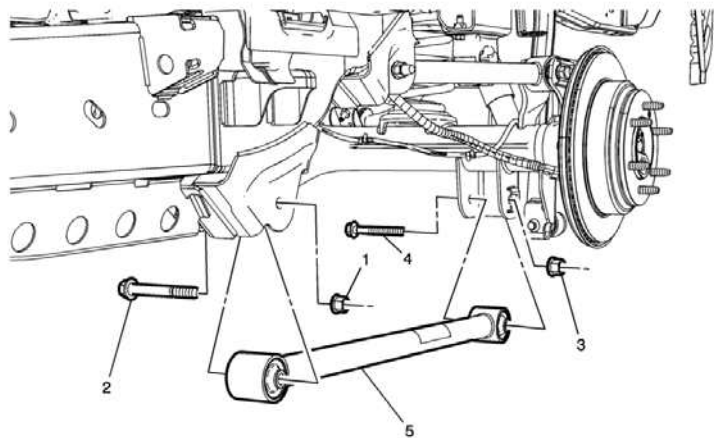
Note: This step may require 4 L (4 qt) of power steering fluid until the draining fluid appears clear.

5. Have an assistant maintain the minimum fluid level in the reservoir using clean, new power steering fluid. Refer to Checking and Adding Power Steering Fluid.
6. With the key in the ON position and with the engine OFF, turn the steering wheel fully to the left and to the right. Continue until the fluid from the return hose runs clear.
7. Remove the plug and install the fluid return hose to the power steering fluid reservoir or the pump inlet connection, as applicable.
8. Bleed the power steering system. Refer to Power Steering System Bleeding.
9. Inspect the power steering fluid for the following indications of contamination:

- Milky fluid – water
- Brown fluid – burnt
- Plastic debris or dirt chunks
- If the fluid is contaminated, repeat steps 3–9.
- Remove the drain pan.
- Lower the vehicle.

2013 Chevrolet Colorado

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



Rear Axle Tie Rod Replacement - Lower

Callout	Component Name
Preliminary 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.
	Lower Tie Rod End Nut
1	Caution: Refer to Fastener Caution. Tighten 137 Y (101 lb ft)
2	Lower Tie Rod End Bolt
	Lower Tie Rod End Nut
3	Tighten 137 Y (101 lb ft)
4	Lower Tie Rod End Bolt
	Lower Tie Rod End
5	Procedure Support the rear axle with a suitable jack stand.

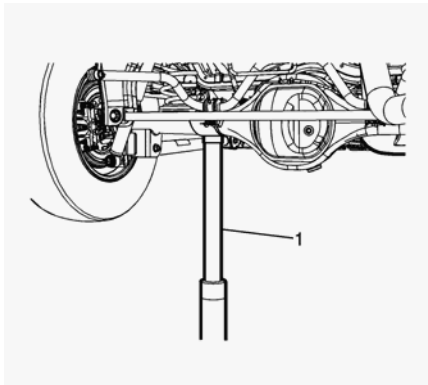
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

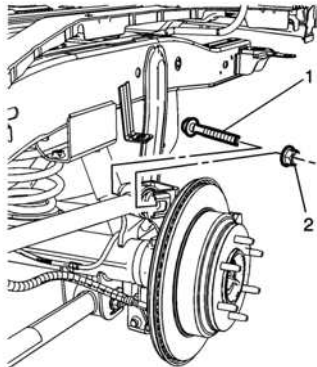
Fuel Delivery: | Fuel:

Removal Procedure

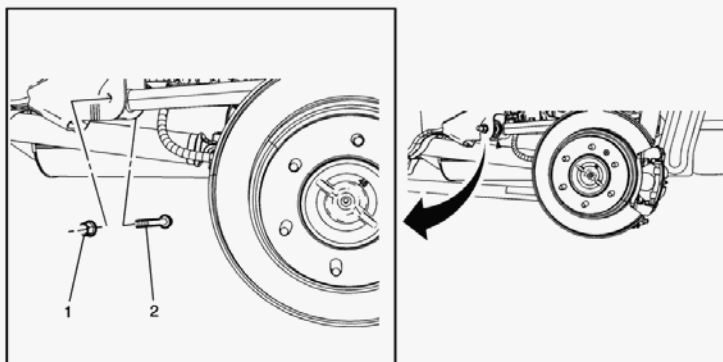
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation.



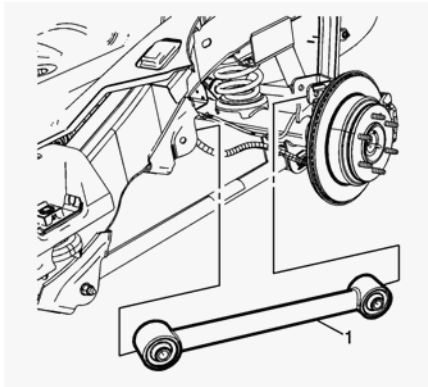
3. Support the rear axle with a suitable jack stand (1).



4. Remove the upper tie rod bolt (1) and nut (2).

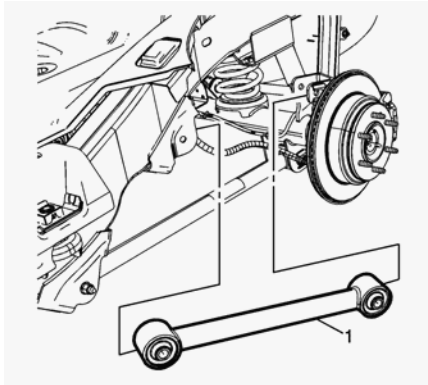


5. Remove the upper tie rod nut (1) and bolt (2).

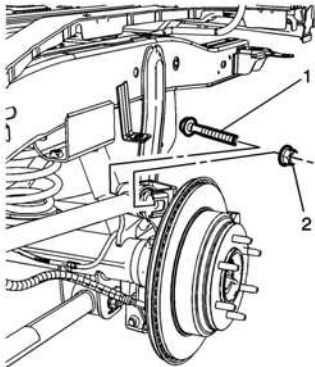


6. Remove the upper tie rod from the rear axle (1).

[Installation Procedure](#)

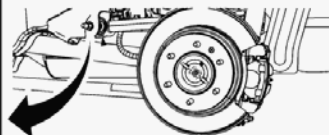
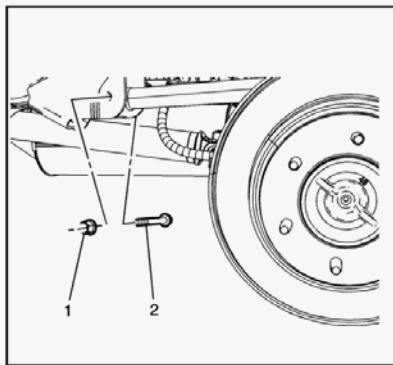


1. Position the upper tie rod (1) in the vehicle.

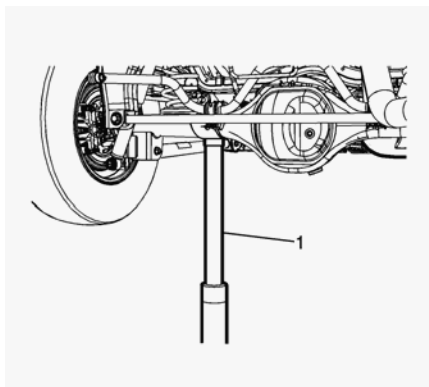


Caution: Refer to Fastener Caution.

2. Install the upper tie rod rear bolt (1) and nut (2) and tighten to **137 Y (101 lb ft)**.



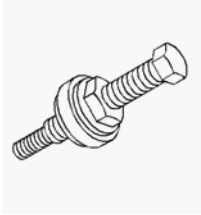
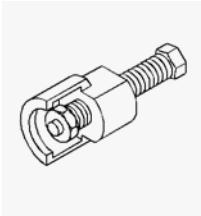
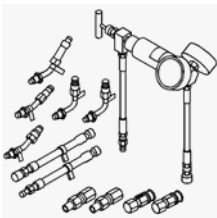
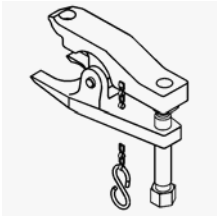
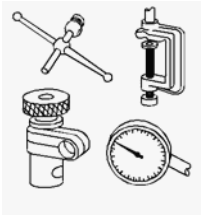
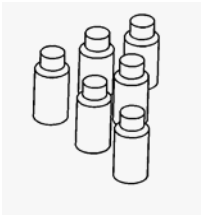
3. Install the tie rod bolt (2) and nut (1) and tighten to **137 Y (101 lb ft)**.
4. Install the tire and wheel. Refer to Tire and Wheel Removal and Installation.



5. Remove the suitable jack stand (1) from the rear axle.
6. Remove the supports and lower the vehicle.

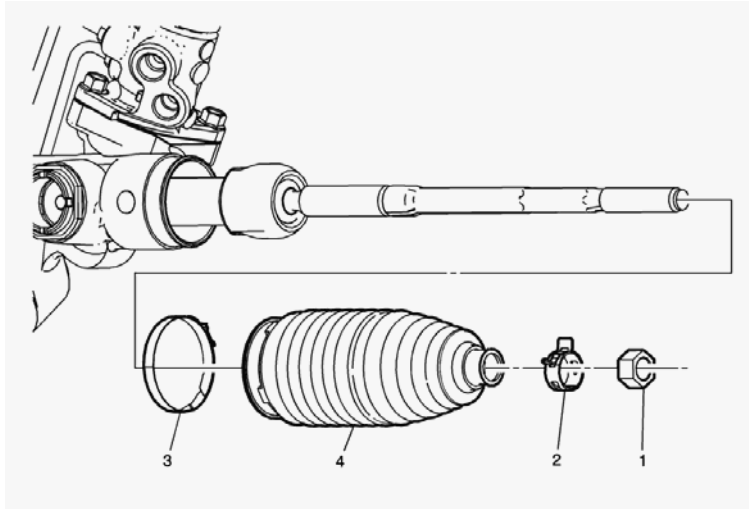
2013 Chevrolet Colorado

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

Illustration	Tool Number/ Description
	CH-25033-C J-25033-C KM-25033-C Pulley Installer
	CH-25034-C J-25034-C KM-25034-C Pulley Remover
	CH-44721 DW310-030A J-29877 J-44721 KM-354-B 5-8840-0135-0 Power Steering Analyzer
	CH-47975-B Ball Joint Separator
	GE-8001 CH-45101 DT-571-B DT-21777-B GE-49690 J-8001 J-21777-B J-45101 MKM-571-B MKM-572 Dial Indicator Set
	GE-28431-6 J-28431-6 Fluorescent Dye

2013 Chevrolet Colorado

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



Steering Gear Boot Replacement

Callout

Component Name

Preliminary Procedures

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the steering linkage outer tie rod. Refer to Steering Linkage Outer Tie Rod Replacement.

Steering Linkage Inner Tie Rod Nut

Procedure

1.
 1. Place match marks on the steering linkage inner tie rod nut and steering linkage inner tie rod.
 2. During installation, align the match marks.
 3. Do not tighten the nut during installation. Tighten the nut after adjusting the front toe. Refer to Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment.

2. Steering Gear Boot Outer Clamp

Steering Gear Boot Inner Clamp

Procedure

3.
 1. Cut the old steering gear boot inner clamp.
Discard the clamp.
 2. Crimp the new steering gear inner boot clamp.

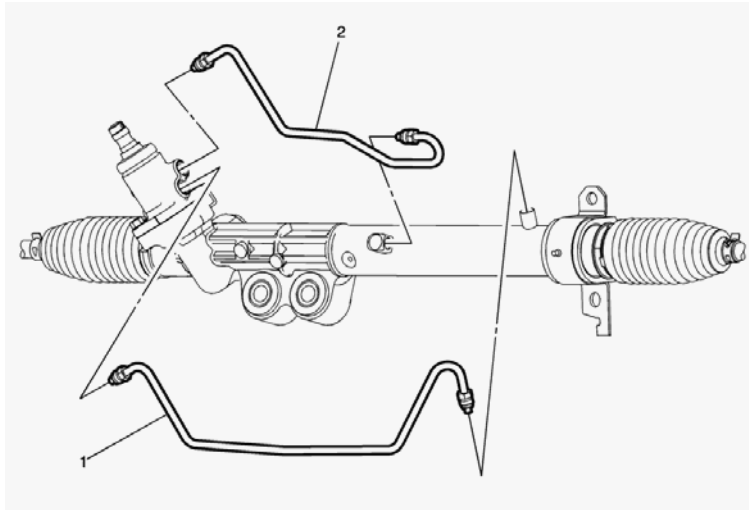
Steering Gear Boot

Procedure

4.
 1. After removing the boot, inspect the inner tie rod for evidence of corrosion or contamination. If none is evident, continue with the repair. If corrosion or contamination is evident, replace the steering gear. Refer to Steering Gear Replacement.
 2. Ensure the new steering gear boot is seated in the assembly groove of the steering gear.

2013 Chevrolet Colorado

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



Steering Gear Pipe Replacement

Callout

Component Name

Preliminary Procedures

1. Raise and support the Vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the steering gear. Refer to Steering Gear Replacement.

Steering Gear Pipe — Long

Caution: Refer to Fastener Caution.

Tighten

1

- Steering Gear Pipe to Steering Gear Cylinder Fitting: 24 Y (18 lb ft).
- Steering Gear Pipe to Steering Gear Pinion Housing Fitting: 20 Y (15 lb ft).

Steering Gear Pipe — Short

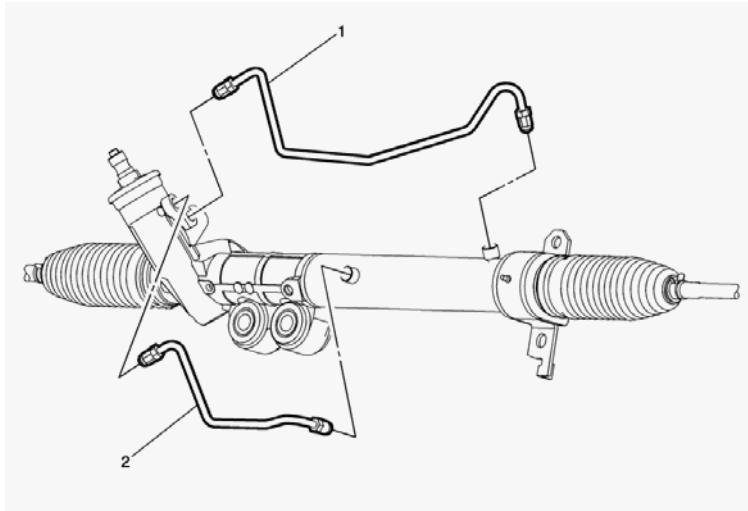
Tighten

2

- Steering Gear Pipe to Steering Gear Cylinder Fitting: 24 Y (18 lb ft).
- Steering Gear Pipe to Steering Gear Pinion Housing Fitting: 20 Y (15 lb ft).

2013 Chevrolet Colorado

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



Steering Gear Pipe Replacement

Callout

Component Name

Preliminary Procedures

1. Raise and support the Vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the steering gear. Refer to Steering Gear Replacement.

Steering Gear Pipe — Long

Caution: Refer to Fastener Caution.

Tighten

1

- Steering Gear Pipe to Steering Gear Cylinder Fitting: 24 Y (18 lb ft).
- Steering Gear Pipe to Steering Gear Pinion Housing Fitting: 20 Y (15 lb ft).

Steering Gear Pipe — Short

Tighten

2

- Steering Gear Pipe to Steering Gear Cylinder Fitting: 24 Y (18 lb ft).
- Steering Gear Pipe to Steering Gear Pinion Housing Fitting: 20 Y (15 lb ft).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

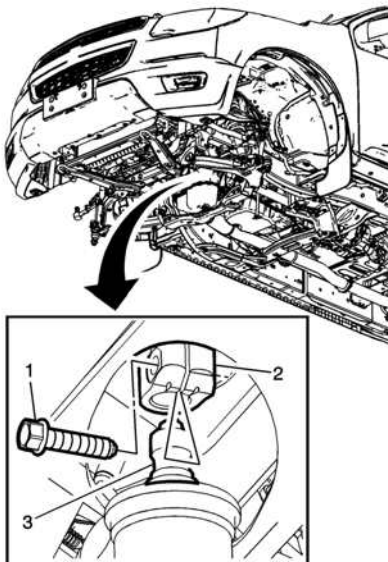
Removal Procedure

Caution: With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering column must be secured in position before disconnecting the following components:

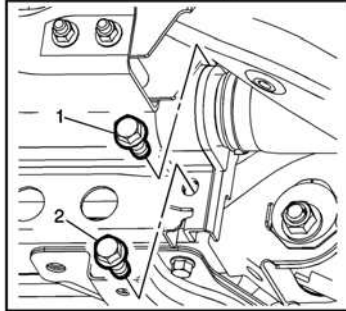
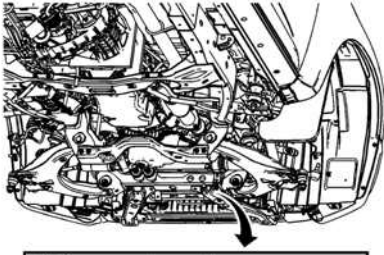
- The steering column
- The intermediate shaft(s)
- The steering gear

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure will cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

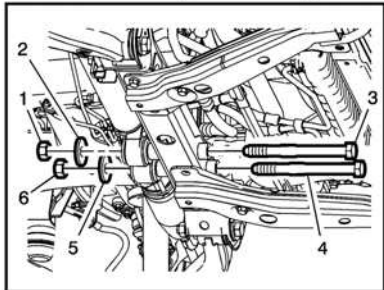
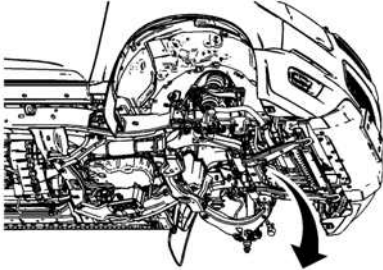
1. With the steering wheel in the straight ahead position, LOCK the steering column.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Remove the front tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.
4. Remove the driver's side engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
5. Disconnect the 2 steering linkage outer tie rods from the 2 steering knuckles. Refer to Steering Linkage Outer Tie Rod Replacement.
6. If equipped with 4WD and LHD, remove the front differential carrier assembly. Refer to Differential Carrier Assembly Replacement.
7. Disconnect the power steering gear inlet hose from the steering gear. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
8. Disconnect the power steering fluid reservoir hose from the steering gear. Refer to Power Steering Fluid Reservoir Hose Replacement.



9. Use paint in order to place match marks on the lower steering shaft (2) and on the steering gear pinion shaft (3).
10. Disconnect the lower steering shaft from the steering gear pinion shaft. Refer to Lower Steering Shaft Assembly Replacement.

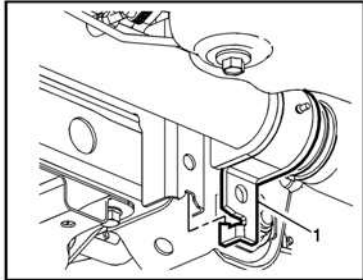
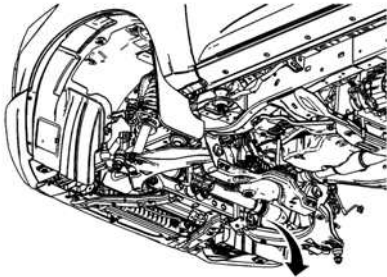


11. Remove the 2 steering gear bolts (1 2) from the passenger's side of the steering gear.

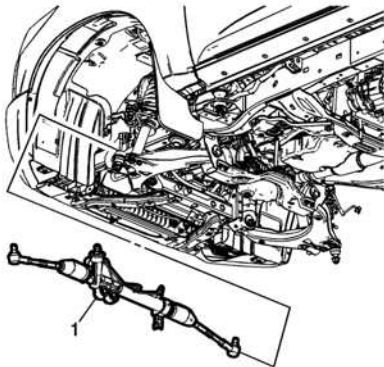


12. Remove the following components from the driver's side of the steering gear:

1. The 2 steering gear nuts (1, 6)
2. The 2 steering gear washers (2, 5)
3. The 2 steering gear bolts (3, 4)



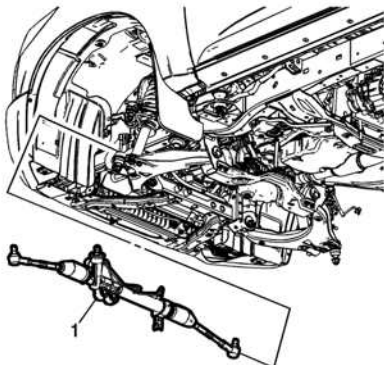
13. Disconnect the steering gear bracket hook (1) from the bracket.



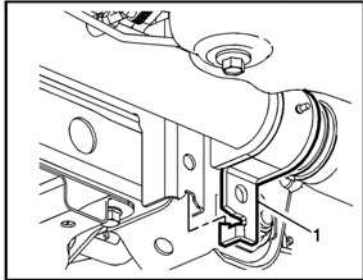
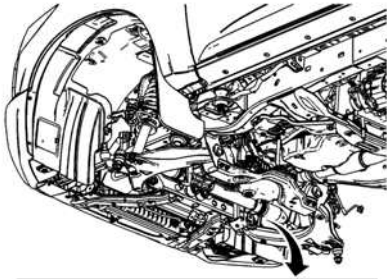
14. Remove the steering gear (1) from the driver's side of the vehicle.
15. Transfer components as necessary.

Installation Procedure

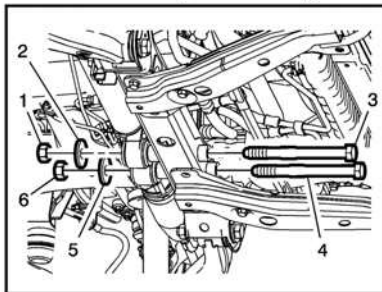
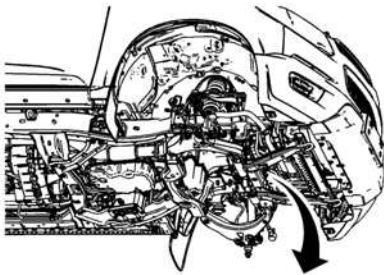
1. If you are replacing the steering gear, copy the match marks from the old parts to the new parts.



2. From the driver's side of the vehicle, position the steering gear (1) in the vehicle.



3. Connect the steering gear bracket hook (1) to the bracket.

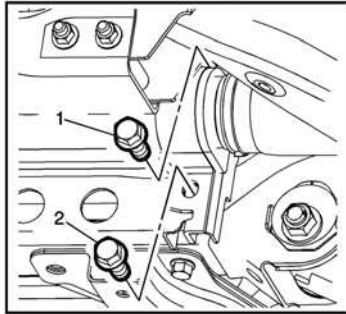
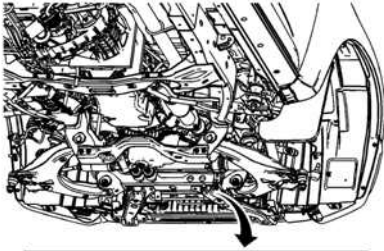


4. Install the following components to the driver's side of the vehicle:

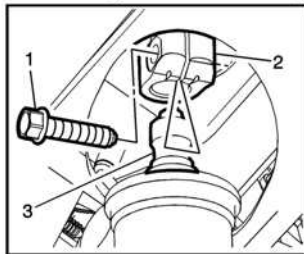
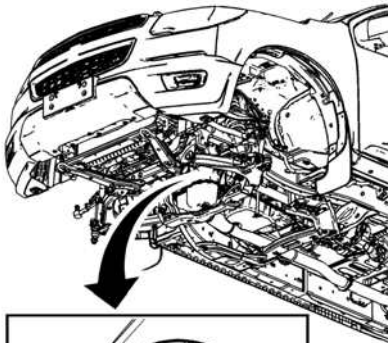
1. The 2 steering gear bolts (3, 4)
2. The 2 steering gear washers (2, 5)
3. The 2 steering gear nuts (1, 6)

Caution: Refer to Fastener Caution.

5. Use a wrench in order to hold the steering gear bolts. Tighten the steering gear nuts to **220 Y (162 lb ft)**.



6. Install the 2 steering gear bolts (1 2) to the passenger's side of the vehicle and tighten to **116 Y (86 lb ft)**.



7. Align the match marks and connect the lower steering shaft (2) to the steering gear pinion shaft (3).
8. Install the intermediate steering shaft lower bolt. Refer to Lower Steering Shaft Assembly Replacement.
9. Connect the power steering fluid reservoir hose to the steering gear. Refer to Power Steering Fluid Reservoir Hose Replacement.
10. Connect the power steering gear inlet hose to the steering gear. Refer to Power Steering Gear Inlet Pipe/Hose Replacement.
11. If equipped with 4WD and LHD, install the front differential carrier assembly. Refer to Differential Carrier Assembly Replacement.
12. Connect the 2 steering linkage outer tie rods to the 2 steering knuckles. Refer to Steering Linkage Outer Tie Rod Replacement.
13. Install the driver's side engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
14. Install the front tire and wheel assemblies. Refer to Tire and Wheel Removal and Installation.
15. Lower the vehicle.

2013 Chevrolet Colorado

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

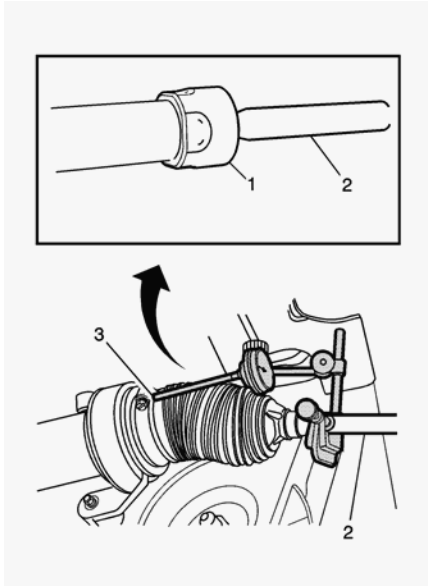
Special Tools

GE-8001 Dial Indicator Set

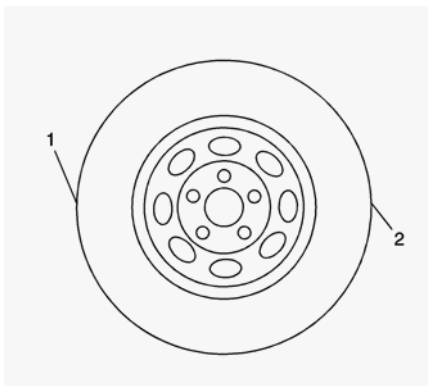
For equivalent regional tools, refer to Special Tools.

Note: This inspection procedure does not supersede local government required inspections that have more stringent requirements.

1. Turn the ignition key to the ON position with the engine OFF.



2. With the aid of an assistant, turn the steering wheel to the full stop position and hold the steering wheel in that position until the test is complete. The steering linkage inner tie rod (2) being tested should be inside the steering gear housing. The inner tie rod housing (1) being tested should be inside the steering gear housing and seated against the steering stop.
3. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
4. If there is not a good location for the GE-8001 dial indicator pointer at the steering gear housing, install a large worm gear hose clamp (3) to the housing over the larger steering gear boot clamp and align the clamp so that the screw can be a location for the GE-8001 dial indicator pointer.
5. Install the GE-8001 dial indicator between the inner tie rod and the steering gear housing or the worm gear clamp in such a way as to measure the lash between the inner tie rod and the steering gear housing. The lash between the inner tie rod and the steering gear housing is equal to the lash between the inner tie rod and the inner tie rod housing because the inner tie rod housing is inside the steering gear housing during this procedure.



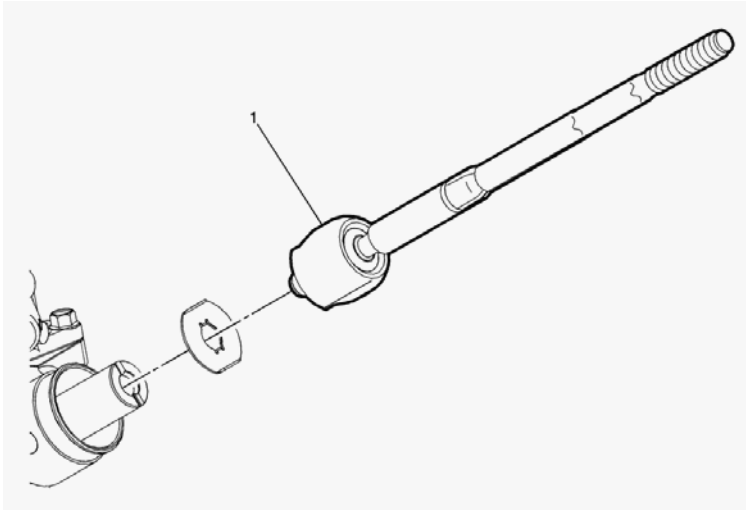
Note: Only move the tire enough to feel any lash between the inner tie rod and the inner tie rod housing without moving the steering gear rack.

6. Grasping the tire at the 3 o'clock (2) and 9 o'clock (1) positions, gently push in on one side of the tire in order to remove any lash.
7. Zero the GE-8001 dial indicator.
8. On the same side of the tire previously pushed in, gently pull out and measure the lash.
9. Record the measurement shown on the GE-8001 dial indicator.

10. If the measured value exceeds 0.5 mm (0.02 in), replace the inner tie rod. Refer to Steering Linkage Inner Tie Rod Replacement.
11. Repeat the procedure for the other side.

2013 Chevrolet Colorado

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



Steering Linkage Inner Tie Rod Replacement

Callout

Component Name

Preliminary Procedures

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the steering gear boot. Refer to Steering Gear Boot Replacement.

Steering Linkage Inner Tie Rod

Caution: Do not change the steering gear preload adjustment before moving the inner tie rod from the steering gear. Changing steering gear preload adjustment before moving the inner tie rod could result in damage to the pinion and the steering gear.

Caution: Refer to Fastener Caution.

Procedure

1

1. Bend the tabs on the washer in order to release the steering linkage inner tie rod.
2. Place a pipe wrench on the flats of the steering gear rack. Position the pipe wrench between the steering gear housing and the inner tie rod housing.
3. Place a wrench on the flats of the steering linkage inner tie rod housing.
4. Rotate the steering linkage inner tie rod housing counterclockwise in order to remove the steering linkage inner tie rod from the rack.
5. Remove the washer from the steering gear rack.

Discard the washer.

6. Install a NEW washer to the steering gear rack.
7. Rotate the steering linkage inner tie rod housing clockwise in order to install the steering linkage inner tie rod to the rack.

Tighten

108 Y (80 lb ft)

2013 Chevrolet Colorado

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

Special Tools

GE-8001 Dial Indicator Set

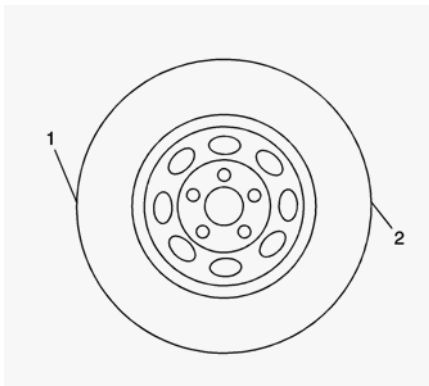
For equivalent regional tools, refer to Special Tools.

Note: This inspection procedure does not supersede local government required inspections that have more stringent requirements.

1. Inspect the outer tie rod seal. If the outer tie rod seal is torn, replace the outer tie rod. Refer to Steering Linkage Outer Tie Rod Replacement.
2. Raise the side of the vehicle being inspected with a floor jack while maintaining contact between the opposite wheel and the shop floor. Support control arm with a floor jack stand as far outboard as possible and remove the floor jack. Refer to Lifting and Jacking the Vehicle.



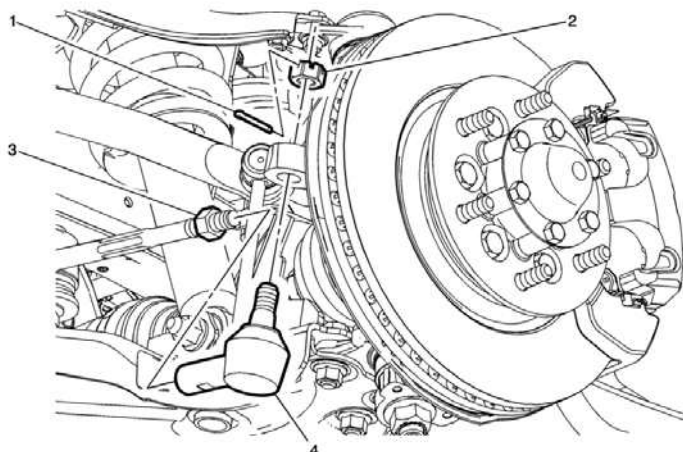
3. Install the GE-8001 dial indicator between the outer tie rod and the steering knuckle as shown in the graphic. Note that the tire and wheel assembly removed only for clarification of the GE-8001 dial indicator position.



4. Grasping the tire at the 3 o'clock (2) and 9 o'clock (1) positions, gently push in on one side of the tire to remove any lash.
5. Zero the GE-8001 dial indicator .
6. On the same side of the tire previously pushed inwards, gently pull outwards and measure the lash.
7. Record the measurement shown on the GE-8001 dial indicator .
8. If the measured value exceeds 0.5 mm (0.02 in), replace the outer tie rod. Refer to Steering Linkage Outer Tie Rod Replacement.
9. Repeat the procedure for the other side.

2013 Chevrolet Colorado

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



Steering Linkage Outer Tie Rod Replacement

Callout

Component Name

Preliminary Procedures

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.

Steering Linkage Outer Tie Rod Nut Pin

Procedure

1. Remove the steering linkage outer tie rod nut pin.
Discard the pin.
2. Install a NEW steering linkage outer tie rod nut pin.

Steering Linkage Outer Tie Rod Nut

Caution: Refer to Fastener Caution.

Tighten

2.
 1. First pass tighten to 98Y (72 lb ft)
 2. Second pass tighten to 29 Y (21 lb ft)
 3. Third pass LOOSEN to 10 Y (89 lb in)
 4. Final pass tighten up to 30 degrees in order to install the steering linkage outer tie rod nut pin.

Steering Linkage Inner Tie Rod Nut

Procedure

3.
 1. Place match marks on the steering linkage inner tie rod nut and steering linkage inner tie rod.
 2. During installation, align the match marks.
 3. Do not tighten the nut during installation. Tighten the nut after adjusting the front toe. Refer to Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment.

Callout

Component Name

Steering Linkage Outer Tie Rod

Procedure

4

1. Use the *CH-47975-B* separator in order to separate the steering linkage outer tie rod from the steering knuckle.
2. Inspect the steering linkage inner tie rod for bent or damaged threads.
3. Clean the tapered surface of the steering knuckle.
4. After the installation is complete, measure and adjust the front toe. Refer to Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment.

Special Tools

CH-47975-B Ball Joint Separator

For equivalent regional tools, refer to Special Tools.