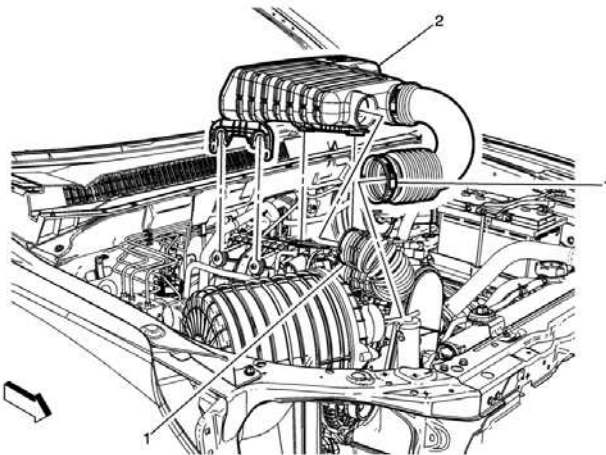


2013 Chevrolet Colorado

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



Air Cleaner Outlet Resonator Replacement

Callout

Component Name

Air Cleaner Resonator Clamps (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

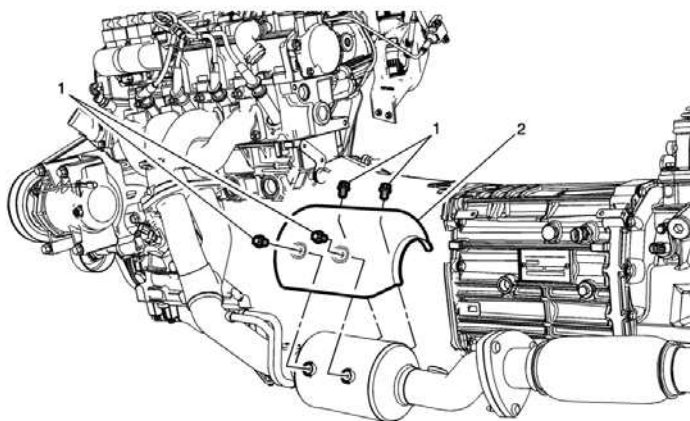
4 Y (35 lb in)

2

Air Cleaner Resonator

2013 Chevrolet Colorado

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



Catalytic Converter Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Catalytic Converter Heat Shield Fasteners (Qty: 4)

Caution: Refer to Fastener Caution.

1

Tighten

8 Y (71 lb in).

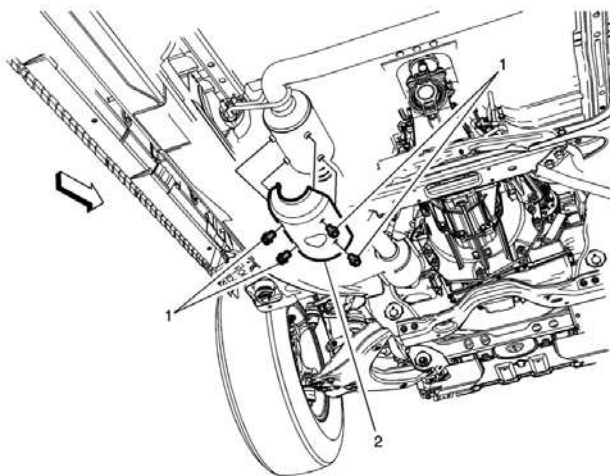
2

Catalytic Converter Heat Shield

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Catalytic Converter Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Catalytic Converter Heat Shield Fasteners (Qty: 4)

Caution: Refer to Fastener Caution.

1

Tighten

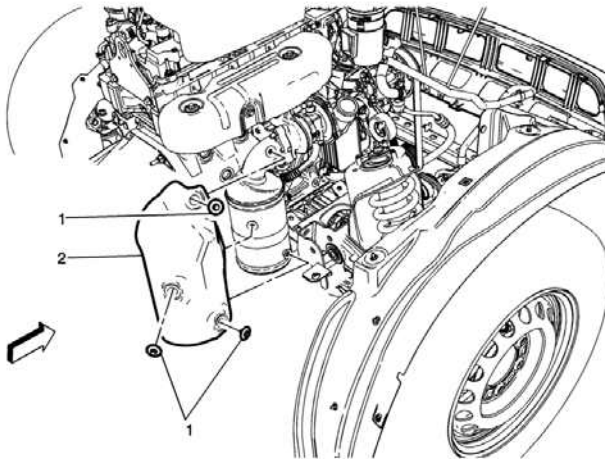
8 Y (71 lb in).

2

Catalytic Converter Heat Shield

2013 Chevrolet Colorado

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



Catalytic Converter Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Preliminary Procedures

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.
3. Remove the left front engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.

Catalytic Converter Heat Shield Fastener (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

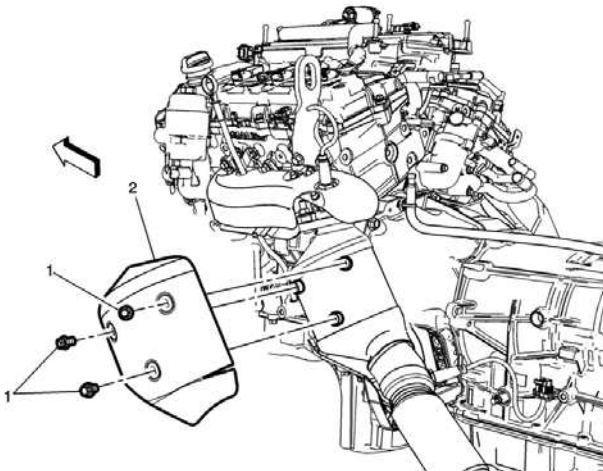
10 Y (89 lb in)

2

Catalytic Converter Heat Shield

2013 Chevrolet Colorado

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



Catalytic Converter Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the left front engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.

Catalytic Converter heat Shield - Left Fasteners (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

10 Y (89 lb in).

2

Catalytic Converter Heat Shield - Left

2013 Chevrolet Colorado

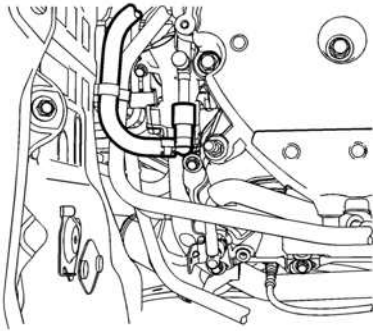
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

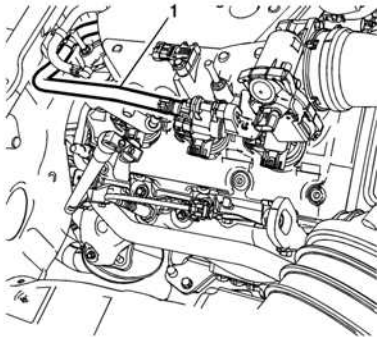
The fuel system fuel feed and evaporative emissions hose/pipes are serviceable individually or as a complete bundled assembly, the following procedure details the removal of both the fuel feed pipe and the evaporative emissions pipe.

Warning: Refer to Relieving Fuel Pressure Warning.

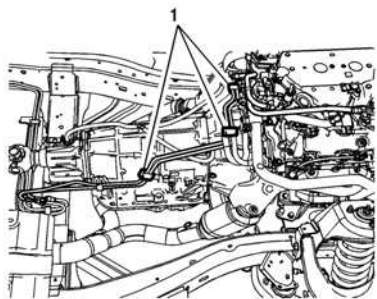
1. Relieve the fuel system pressure. Refer to Fuel Pressure Relief.



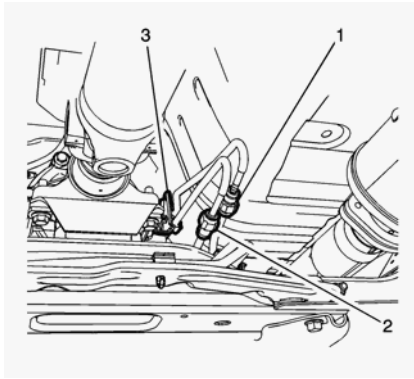
2. Disconnect the fuel feed pipe (1) from the fuel rail. Refer to Metal Collar Quick Connect Fitting Service.



3. Disconnect the evaporative emission (EVAP) purge line (1) from the purge solenoid.
4. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



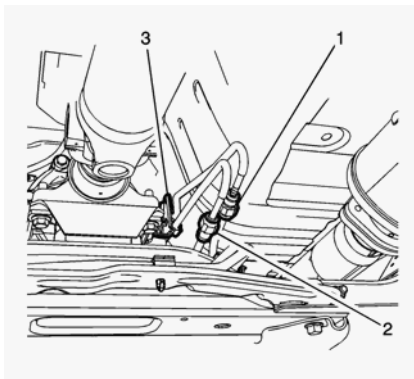
5. Open the retaining clips (1) at the locations shown and remove the pipes from the retainers.



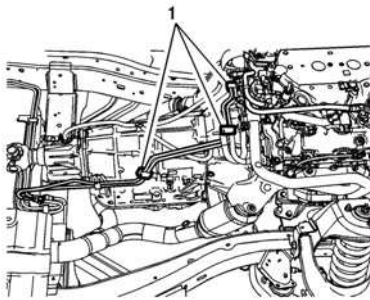
6. Disconnect the fuel feed front pipe (1) and the EVAP front pipe (2) at the location shown. Refer to Plastic Collar Quick Connect Fitting Service.
7. Carefully guide the front fuel feed and EVAP hose/pipes down through the engine compartment, removing from the bottom.

[Installation Procedure](#)

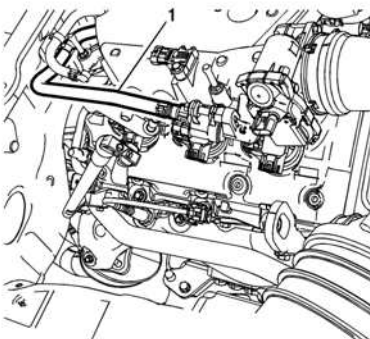
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. With the aid of an assistant, carefully guide the front fuel feed and EVAP hose/pipes up through the engine compartment into position.



3. Connect the fuel feed front pipe (1) and the EVAP front pipe (2) at the location shown. Refer to Plastic Collar Quick Connect Fitting Service.

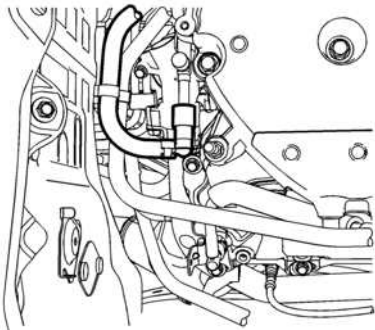


4. Install the pipes to the retaining clips (1) at the locations shown and close the retaining clips.
5. Lower the vehicle.



6. Connect the evaporative emission (EVAP) purge line (1) to the purge solenoid.

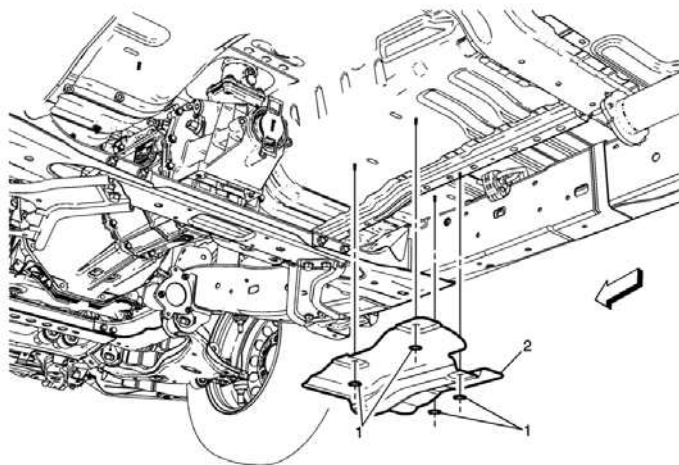
Evaporative Emission Front Pipe Replacement



7. Connect the fuel feed pipe (1) to the fuel rail. Refer to Metal Collar Quick Connect Fitting Service.
8. Start the vehicle and check for leaks.

2013 Chevrolet Colorado

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



Exhaust Front Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Exhaust Front Heat Shield Fastener (Qty: 4)

Caution: Refer to Fastener Caution.

1

Tighten

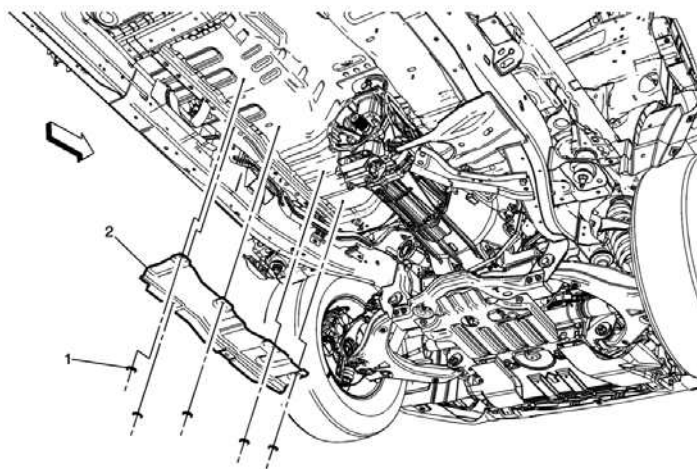
28 Y (21 lb ft)

2

Exhaust Front Heat Shield

2013 Chevrolet Colorado

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



Exhaust Heat Shield Replacement - Body Panel

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Exhaust Heat Shield Fastener (Qty: 5)

Caution: Refer to Fastener Caution.

1

Tighten

9 Y (81 lb in)

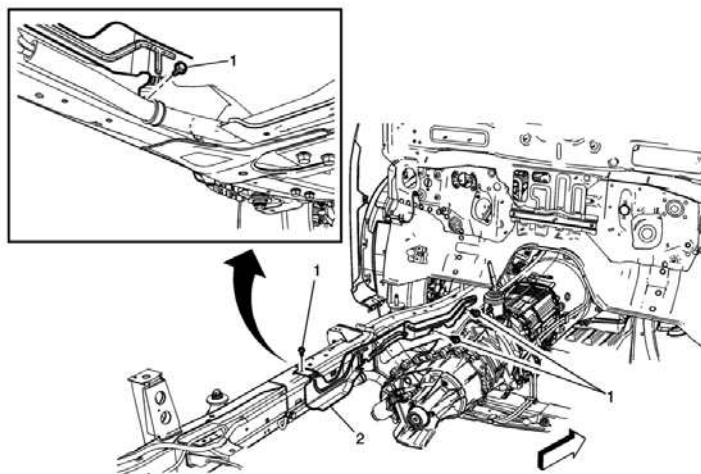
2

Exhaust Heat Shield

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Heat Shield Replacement - Frame

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Caution: Refer to Fastener Caution.

Exhaust Heat Shield Fasteners (Qty :4)

1

Tighten

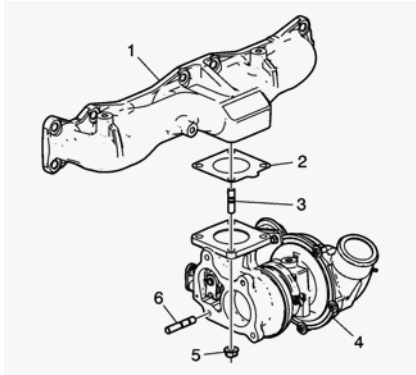
9 Y (81 lb in).

2

Exhaust Heat Shield

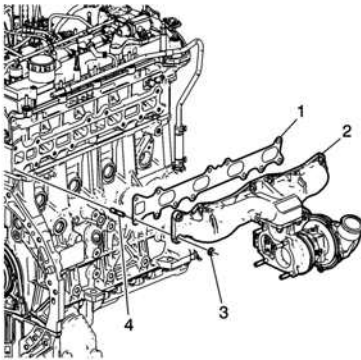
2013 Chevrolet Colorado

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

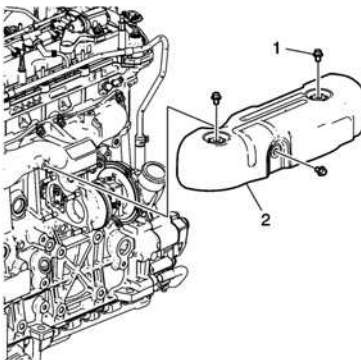


Caution: Refer to Fastener Caution.

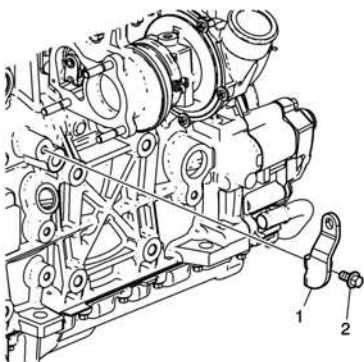
1. Install the turbocharger exhaust pipe studs (6) and tighten until fully seated.
2. Install the exhaust manifold to turbocharger studs (3) and tighten until fully seated.
3. Install the turbocharger gasket (2).
4. Install the turbocharger (4) to the exhaust manifold (1).
5. Install the exhaust manifold to turbocharger nuts (5) and tighten to **24 Y (18 lb ft)**.



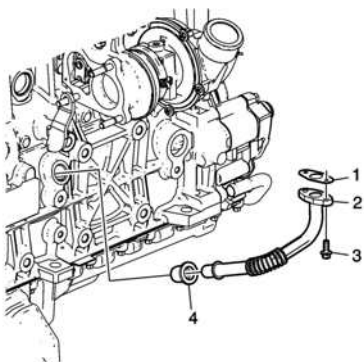
6. Install the exhaust manifold studs (4) and tighten to **32 Y (24 lb ft)**.
7. Install the exhaust manifold gasket (1).
8. Install the exhaust manifold with turbocharger (2).
9. Install the exhaust manifold nuts (3) and tighten to **36 Y (27 lb ft)**.



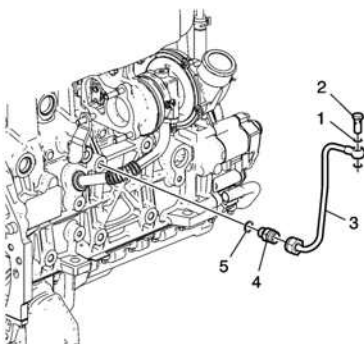
10. Install the exhaust manifold heat shield (2).
11. Install the exhaust manifold heat shield bolts (1) and tighten to **32 Y (24 lb ft)**.



12. Install the turbocharger bracket (1) and bracket bolt (2).
13. Tighten the bracket bolt (2) to **32 Y (24 lb ft)**.



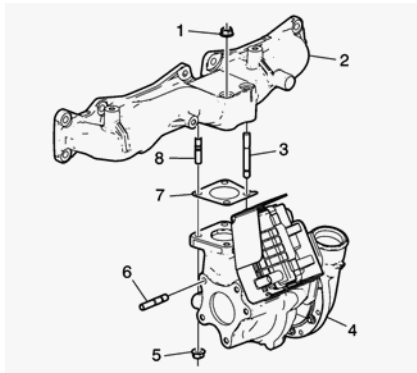
14. Install the turbo oil return pipe seal (4).
15. Install the turbo oil return pipe gasket (1) and pipe (2).
16. Install the turbo oil return pipe bolts (3) and tighten to **15 Y (11 lb ft)**.



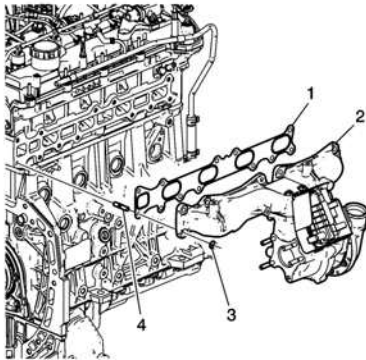
17. Install the oil feed pipe adapter (4) and washer (5). Tighten the adapter to **54 Y (40 lb ft)**.
18. Install the turbo oil feed pipe (3).
19. Install the turbo oil feed pipe bolt (2) and washers (1). Tighten the bolt to **25 Y (18 lb ft)**.

2013 Chevrolet Colorado

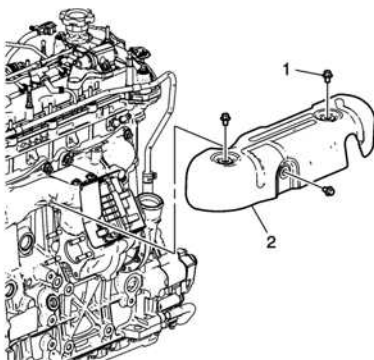
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



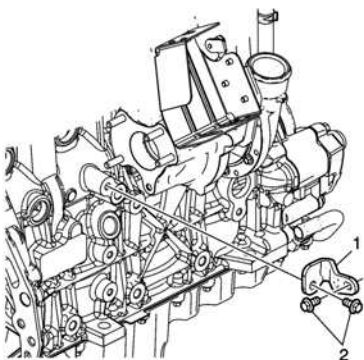
1. Install the turbocharger exhaust pipe studs (6) and tighten until fully seated.
2. Install the exhaust manifold to turbocharger studs (3 and 8) and tighten until fully seated.
3. Install the turbocharger gasket (7).
4. Install the turbocharger (4) to the exhaust manifold (2).
5. Install the exhaust manifold to turbocharger nuts and tighten to **24 Y (18 lb ft)**.



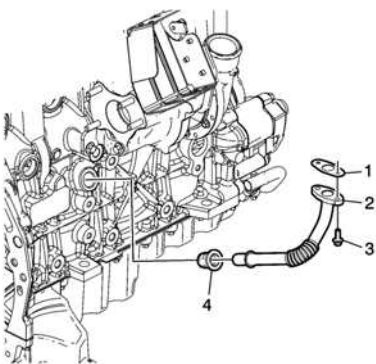
6. Install the exhaust manifold studs (4) and tighten to **32 Y (24 lb ft)**.
7. Install the exhaust manifold gasket (1).
8. Install the exhaust manifold with turbocharger (2).
9. Install the exhaust manifold nuts (3) and tighten to **36 Y (27 lb ft)**.



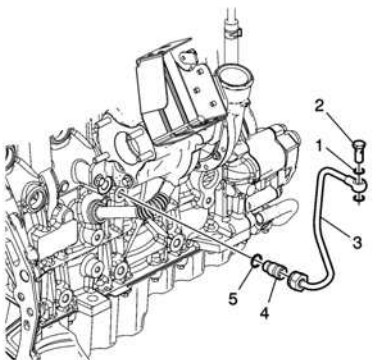
10. Install the exhaust manifold heat shield (2).
11. Install the exhaust manifold heat shield bolts (1) and tighten to **32 Y (24 lb ft)**.



12. Install the turbocharger bracket (1) and bracket bolts (2).
13. Tighten the bracket bolts (2) to **32 Y (24 lb ft)**.



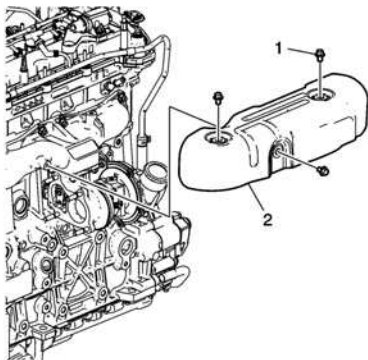
14. Install the turbo oil return pipe seal (4).
15. Install the turbo oil return pipe (2) and gasket (1).
16. Install the turbo oil return pipe retaining bolts (3) and tighten to **15 Y (11 lb ft)**.



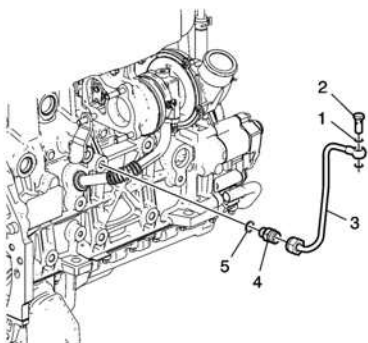
17. Install the oil feed pipe adapter (4) and washer (5). Tighten the adapter to **54 Y (40 lb ft)**.
18. Install the turbo oil feed pipe (3).
19. Install the turbo oil feed pipe bolt (2) and washers (1). Tighten the bolt to **25 Y (18 lb ft)**.

2013 Chevrolet Colorado

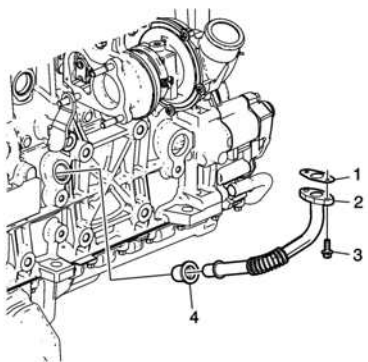
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



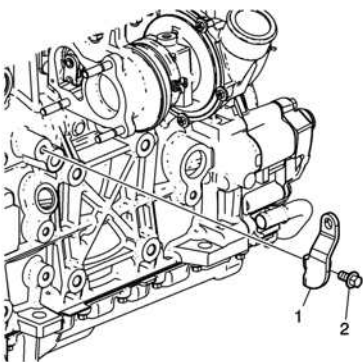
1. Remove the exhaust manifold heat shield bolts (1).
2. Remove the exhaust manifold heat shield (2).



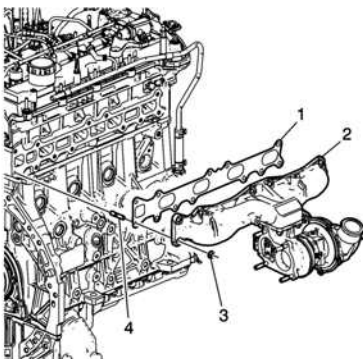
3. Remove the turbo oil feed pipe bolt (2) and washers (1).
4. Remove the turbo oil feed pipe (3).
5. Remove the oil feed pipe adapter (4) and washer (5).



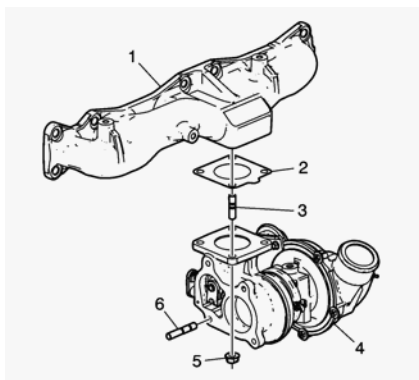
6. Remove the turbo oil return pipe retaining bolt (3).
7. Remove the turbo oil return pipe (2) and gasket (1).
8. Remove the turbo oil return pipe seal (4).



9. Remove the turbo charger bracket bolt (2) and bracket (1).



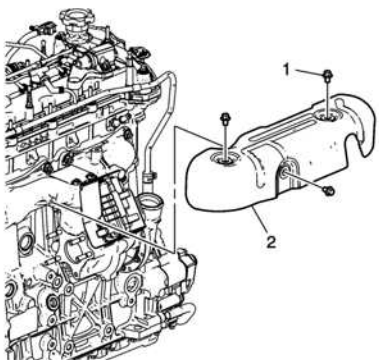
10. Remove the exhaust manifold nuts (3).
11. Remove the exhaust manifold with turbocharger (2) and gasket (1).
12. Remove the exhaust manifold studs (4).



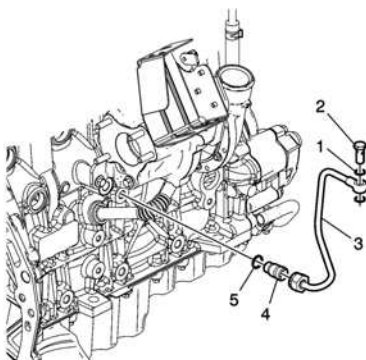
13. Remove the exhaust manifold to turbocharger nuts (5).
14. Separate the exhaust manifold (1) from the turbocharger (4).
15. Remove the turbocharger gasket (2).
16. Remove the exhaust manifold to turbocharger stud (3).
17. Remove the turbocharger exhaust pipe studs (6).

2013 Chevrolet Colorado

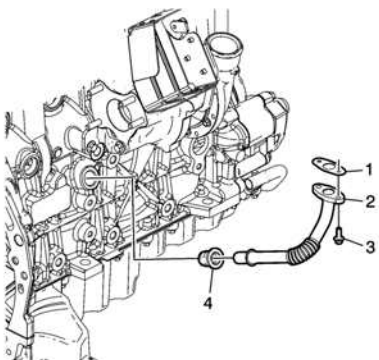
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



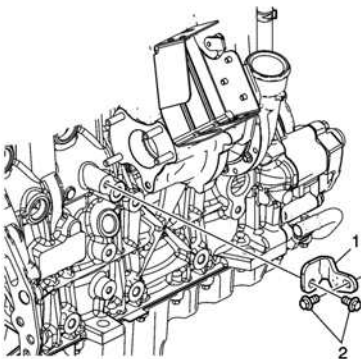
1. Remove the exhaust manifold heat shield bolts (1).
2. Remove the exhaust manifold heat shield (2).



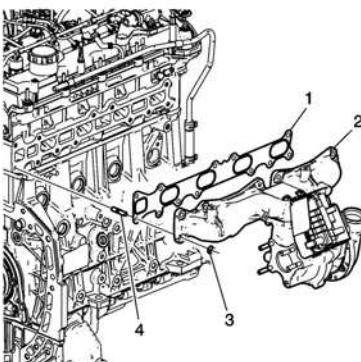
3. Remove the turbo oil feed pipe bolt (2) and washers (1).
4. Remove the turbo oil feed pipe (3).
5. Remove the oil feed pipe adapter (4) and washer (5).



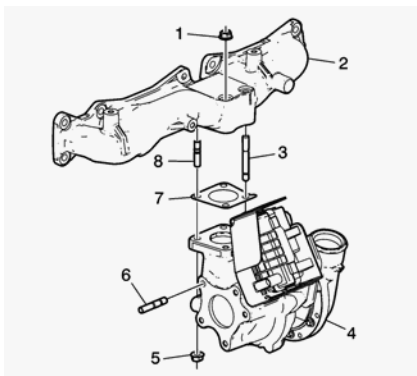
6. Remove the turbo oil return pipe retaining bolt (3).
7. Remove the turbo oil return pipe (2) and gasket (1).
8. Remove the turbo oil return pipe seal (4).



9. Remove the turbo charger bracket bolts (2) and bracket (1).



10. Remove the exhaust manifold nuts (3).
11. Remove the exhaust manifold with turbocharger (2) and gasket (1).
12. Remove the exhaust manifold studs (4).



13. Remove the exhaust manifold to turbocharger nuts (1 and 5).
14. Separate the exhaust manifold (2) from the turbocharger (4).
15. Remove the turbocharger gasket (7).
16. Remove the exhaust manifold to turbocharger stud (3 and 8).
17. Remove the turbocharger exhaust pipe studs (6).

2013 Chevrolet Colorado

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

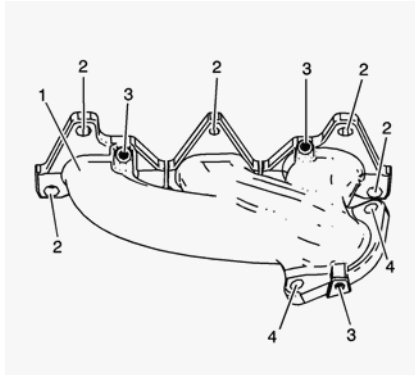
[Cleaning Procedure](#)

1. Clean the exhaust manifold in solvent.

Warning: Refer to Safety Glasses Warning.

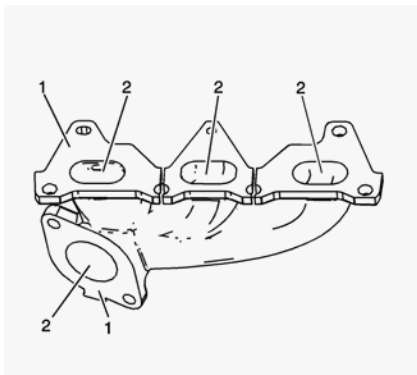
2. Dry the exhaust manifold with compressed air.

[Inspection Procedure](#)



1. Inspect the left exhaust manifold for the following:

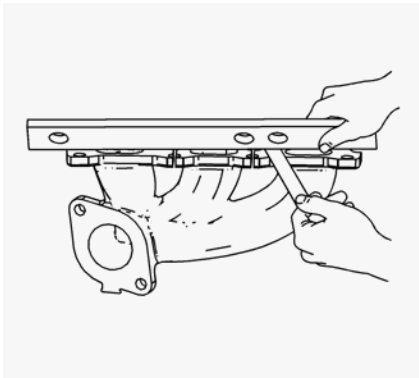
- Damage or excessive corrosion to the exhaust manifold exterior (1)
- Damage to the exhaust manifold mounting holes (2)
- Damage to the threaded holes (3) for the heat shield
- Damage to the exhaust manifold flange bolt holes (4)



- Inspect the left exhaust manifold for the following:

- Damage to the gasket sealing surfaces (1)
- Damage or restrictions within the exhaust passages (2)
- Repair or replace the left exhaust manifold and/or components as necessary.

Exhaust Manifold Cleaning and Inspection - Left Side



- Measure the alignment or surface flatness of the exhaust manifold flanges, using a straight edge and a feeler gauge. Exhaust manifold surface flatness must not exceed 0.254 mm (0.010 in).
- If the surface flatness is not within specifications, the exhaust manifold is warped and must be replaced.

2013 Chevrolet Colorado

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

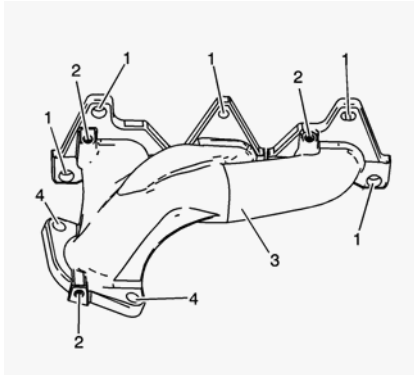
[Cleaning Procedure](#)

1. Clean the exhaust manifold in solvent.

Warning: Refer to Safety Glasses Warning.

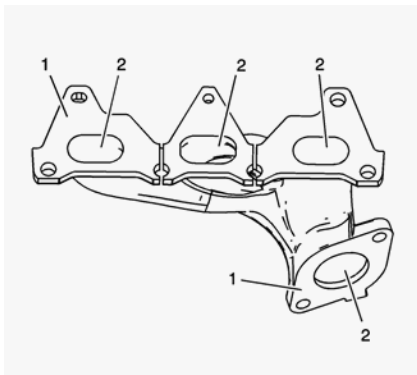
2. Dry the exhaust manifold with compressed air.

[Inspection Procedure](#)



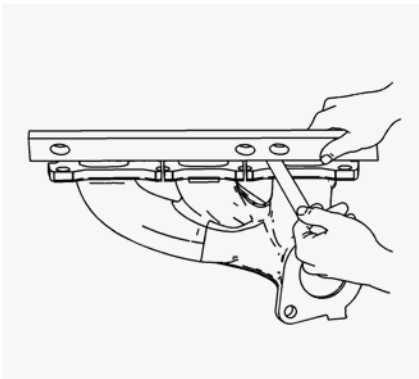
1. Inspect the right exhaust manifold for the following:

- Damage to the exhaust manifold mounting holes (1)
- Damage to the threaded holes (2) for the heat shield
- Damage or excessive corrosion to the exhaust manifold exterior (3)
- Damage to the exhaust manifold flange bolt holes (4)



- Inspect the right exhaust manifold for the following:
 - Damage to the gasket sealing surfaces (1)
 - Damage or restrictions within the exhaust passages (2)
- Repair or replace the right exhaust manifold and/or components as necessary.

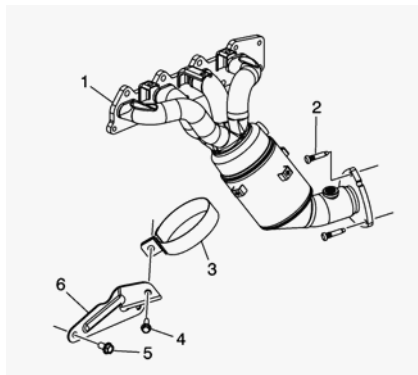
Exhaust Manifold Cleaning and Inspection - Right Side



- Measure the alignment or surface flatness of the exhaust manifold flanges, using a straight edge and a feeler gauge. Exhaust manifold surface flatness must not exceed 0.254 mm (0.010 in).
- If the surface flatness is not within specifications, the exhaust manifold is warped and must be replaced.

2013 Chevrolet Colorado

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

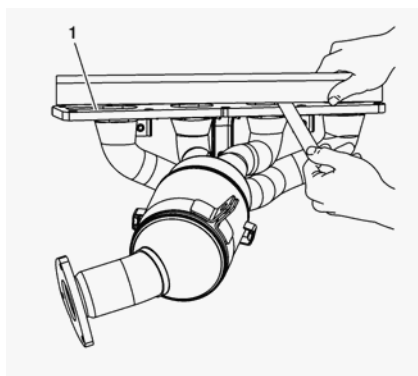


Note: Do not reuse the exhaust manifold-to-cylinder head gaskets. Upon installation of the exhaust manifold, install a NEW gasket. An improperly installed gasket or leaking exhaust system may effect On-Board Diagnostics (OBD) II system performance.

1. Clean the exhaust manifold (1) in solvent.

Warning: Refer to Safety Glasses Warning.

2. Dry the exhaust manifold with compressed air.
3. Inspect the exhaust manifold port flange stud (2), exhaust manifold brace (6), exhaust manifold brace clamp (3), and exhaust manifold brace bolts (4 and 5) for damage.

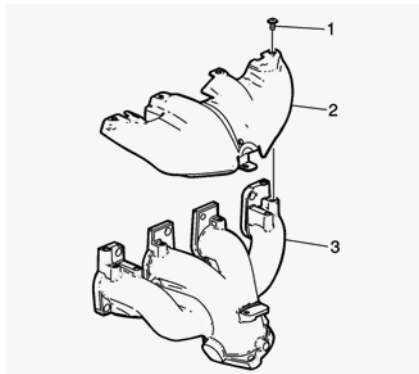


4. Use a straight edge and a feeler gauge and measure the exhaust manifold mounting face (1) for warpage.

An exhaust manifold face with warpage in excess of **0.25 mm (0.0100 in)** may cause an exhaust leak and may effect OBD II system performance. Exhaust manifolds not within specifications must be replaced.

2013 Chevrolet Colorado

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

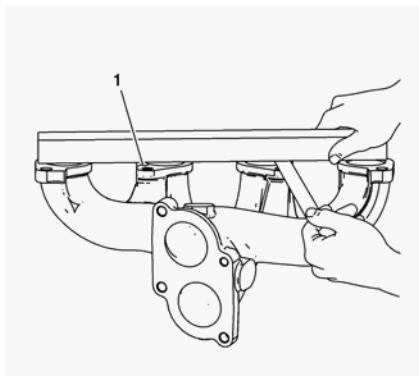


Note: Do not reuse the exhaust manifold-to-cylinder head gaskets. Upon installation of the exhaust manifold, install a NEW gasket. An improperly installed gasket or leaking exhaust system may effect On-Board Diagnostics (OBD) II system performance.

1. Clean the exhaust manifold (3) in solvent.

Warning: Refer to Safety Glasses Warning.

2. Dry the exhaust manifold with compressed air.
3. Inspect the heat shield (2) for damage.

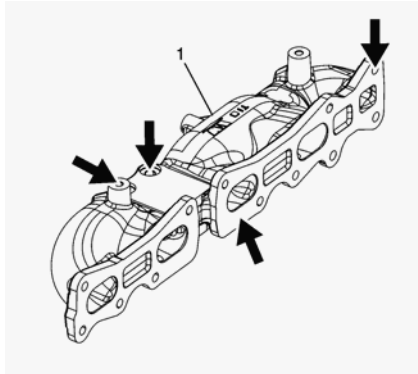


4. Use a straight edge and a feeler gauge and measure the exhaust manifold mounting face (1) for warpage.

An exhaust manifold face with warpage in excess of **0.25 mm (0.0100 in)** may cause an exhaust leak and may effect OBD II system performance. Exhaust manifolds not within specifications must be replaced.

2013 Chevrolet Colorado

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



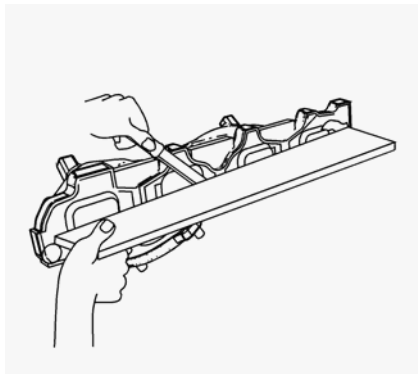
Note: Do not reuse the exhaust manifold-to-cylinder head gaskets. Upon installation of the exhaust manifold, install a NEW gasket. An improperly installed gasket or leaking exhaust system may effect On-Board Diagnostics (OBD) II system performance.

Warning: Refer to Safety Glasses Warning.

1. Clean the exhaust manifold in solvent.

Warning: Refer to Safety Glasses and Compressed Air Warning.

2. Dry the exhaust manifold with compressed air.
3. Inspect the heat shield for damage.

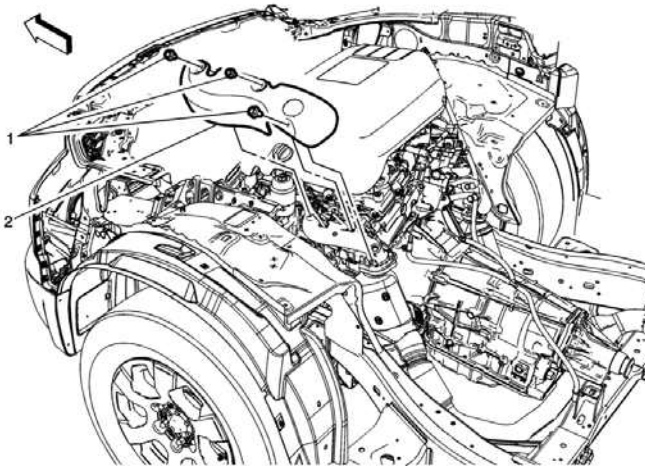


4. Use a straight edge and a feeler gauge and measure the exhaust manifold mounting face for warpage.
5. An exhaust manifold face with warpage in excess of **0.25 mm (0.0100 in)** may cause an exhaust leak and may effect OBD II system performance. Exhaust manifolds not within specifications must be replaced.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Manifold Heat Shield Replacement - Left Side

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Remove the heated oxygen sensor-bank 2 - sensor 1. Refer to Heated Oxygen Sensor Replacement - Bank 2 Sensor 1.

Exhaust Manifold Heat Shield Fasteners (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

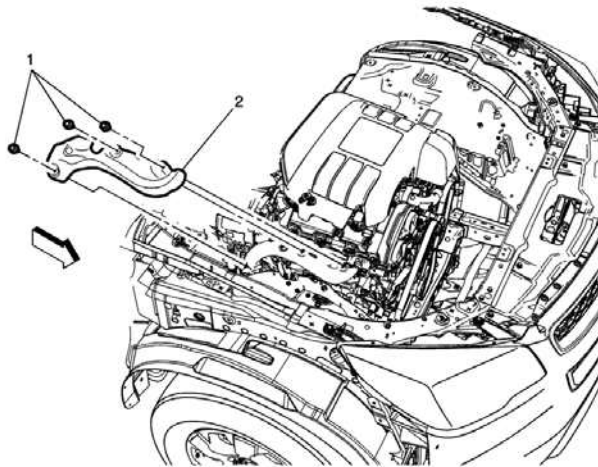
10 Y (89 lb in)

2

Exhaust Manifold Heat Shield-Left

2013 Chevrolet Colorado

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



Exhaust Manifold Heat Shield Replacement - Right Side

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Exhaust Manifold Heat Shield Fasteners (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

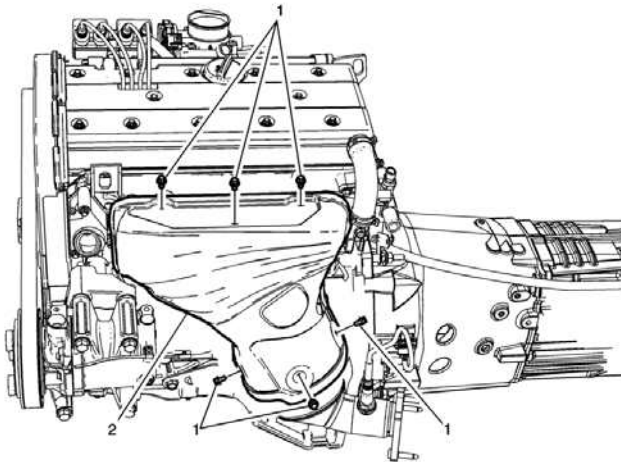
10 Y (89 lb in)

2

Exhaust Manifold Heat Shield-Right

2013 Chevrolet Colorado

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



Exhaust Manifold Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

Remove the heated oxygen sensor - 1. Refer to Heated Oxygen Sensor Replacement - Sensor 1.

Exhaust Manifold Heat Shield Fasteners (Qty: 6)

Caution: Refer to Fastener Caution.

1

Tighten

8 Y (71 lb in).

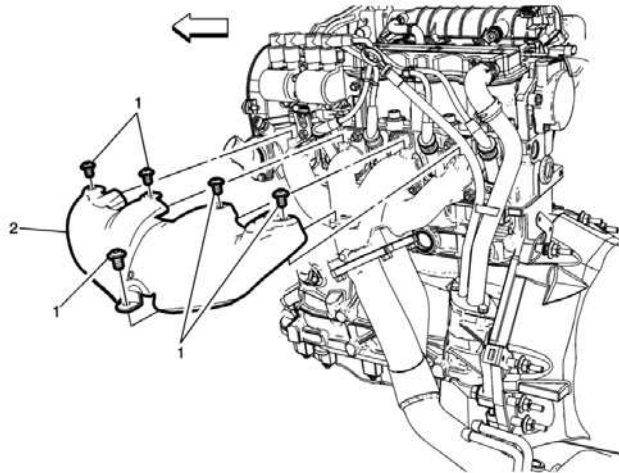
2

Exhaust Manifold Heat Shield

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Manifold Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Exhaust Manifold Heat Shield Fasteners (Qty: 5)

Caution: Refer to Fastener Caution.

1

Tighten

9 Y (80 lb in)

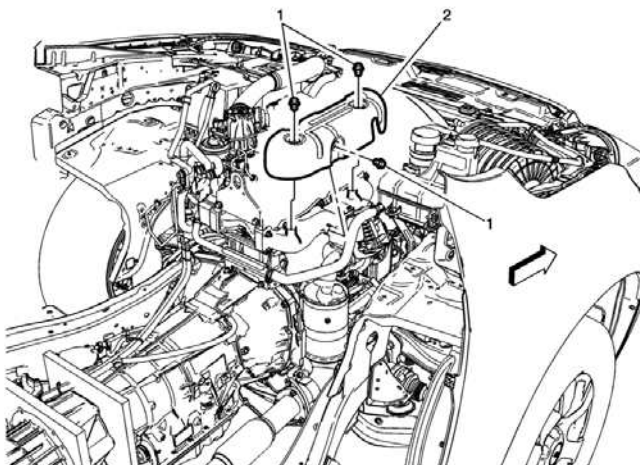
2

Exhaust Manifold Heat Shield

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Manifold Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Preliminary Procedure

Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement

Caution: Refer to Fastener Caution.

Exhaust Manifold Heat Shield Fastener (Qty :3)

1

Tighten

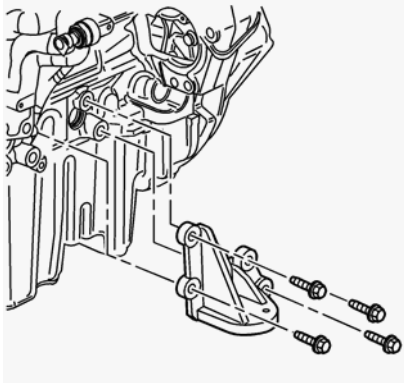
10 Y (89 lb in).

2

Exhaust Manifold Heat Shield

2013 Chevrolet Colorado

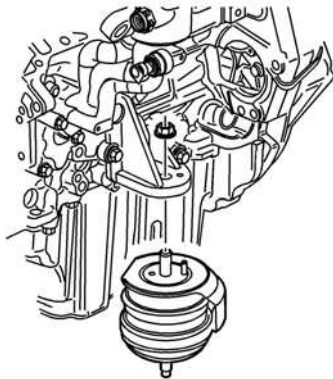
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



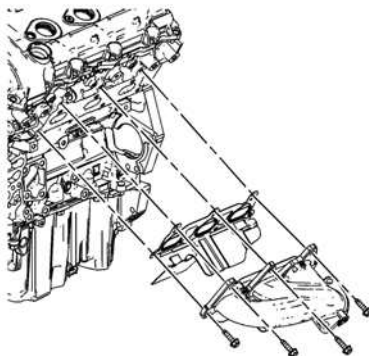
1. Install the engine mount bracket.

Caution: Refer to Fastener Caution.

2. Install the engine mount bracket bolts and tighten to **60 Y (44 lb ft)**.

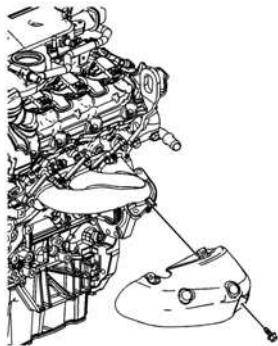


3. Install the engine mount.
4. Install the engine mount nut and tighten to **80 Y (59 lb ft)**.



5. Position a NEW exhaust manifold gasket onto the left exhaust manifold.
6. Install the exhaust manifold bolts into the left exhaust manifold.
7. Place the left exhaust manifold, exhaust manifold gasket and bolts as an assembly in position on the left cylinder head.
8. Install the exhaust manifold bolts into the left cylinder head and tighten to **20 Y (15 lb ft)**.

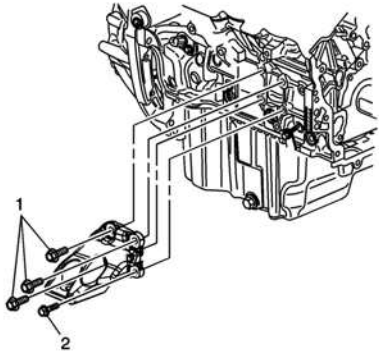
Exhaust Manifold Installation - Left Side



9. Install the left exhaust manifold heat shield.
10. Install the left exhaust manifold heat shield bolts.

2013 Chevrolet Colorado

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

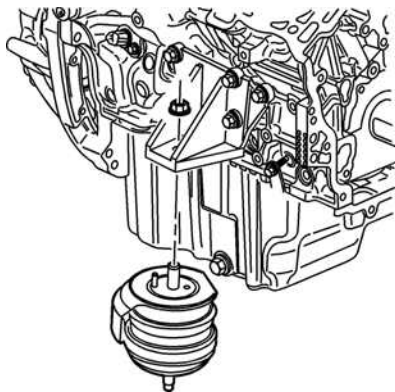


1. Install the engine mount bracket.

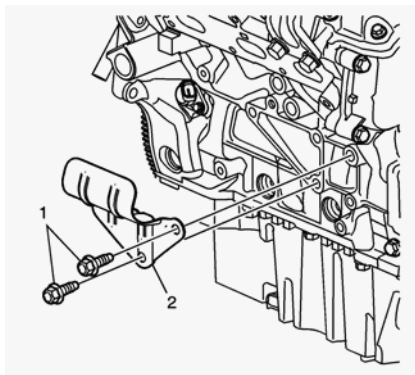
Caution: Refer to Fastener Caution.

2. Install the engine mount bracket bolts and tighten

- The M10 engine mount bracket bolts (1) to **60 Y (44 lb ft)**.
- The M8 engine mount bracket bolt (2) to **38 Y (28 lb ft)**.

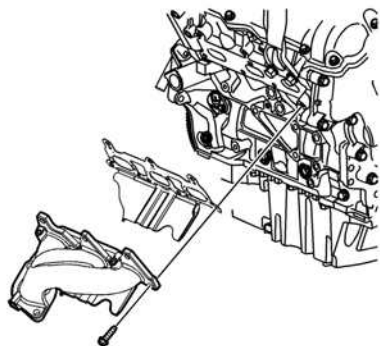


- Install the engine mount.
- Install the engine mount nut and tighten to **80 Y (59 lb ft)**.

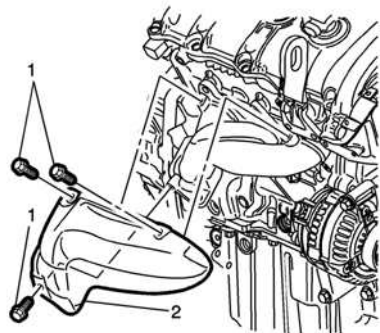


- Install the exhaust manifold lower heat shield (2).
- Install the exhaust manifold lower heat shield bolts (1) and tighten to **58 Y (43 lb ft)**.

Exhaust Manifold Installation - Right Side



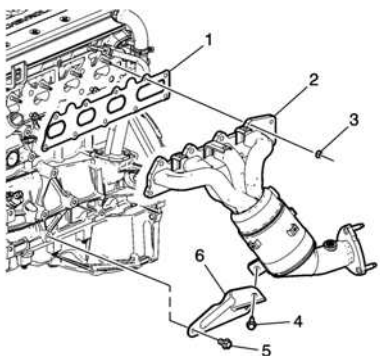
- Position a NEW exhaust manifold gasket onto the right exhaust manifold.
- Install the exhaust manifold bolts into the right exhaust manifold.
- Place the right exhaust manifold, exhaust manifold gasket and bolts as an assembly in position on the right cylinder head.
- Install the exhaust manifold bolts into the right cylinder head and tighten the exhaust manifold bolts to **20 Y (15 lb ft)**.



- Place the right exhaust manifold heat shield in position.
- Install the exhaust manifold heat shield bolts and tighten to **10 Y (89 lb in)**.

2013 Chevrolet Colorado

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



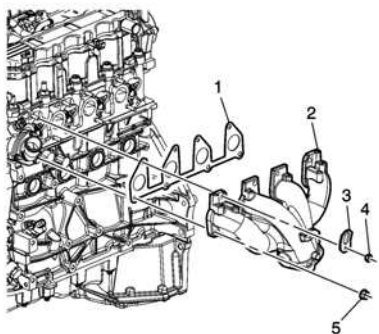
1. Install the exhaust manifold (2) and the NEW exhaust manifold gasket (1)
2. Install the exhaust manifold nuts (3) finger tight.
3. Install the exhaust manifold brace (6).
4. Install the exhaust manifold brace bolts (4 and 5) finger tight.

Caution: Refer to Fastener Caution.

5. Tighten the exhaust manifold nuts:
 1. First pass **10 Y (89 lb in)**.
 2. Second pass an additional **170–185 degrees**.
6. Tighten the exhaust manifold brace to engine block bolts (5) to **24 Y (18 lb ft)**.
7. Tighten the exhaust manifold brace to exhaust manifold bolt (4) to **20 Y (15 lb ft)**.

2013 Chevrolet Colorado

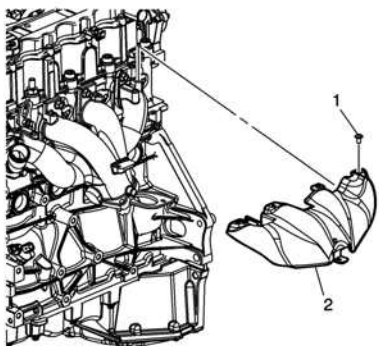
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



1. Install the exhaust manifold (2) and the NEW exhaust manifold gasket (1)
2. Install the engine lift bracket (3) and exhaust manifold nuts (4 and 5) finger tight.

Caution: Refer to Fastener Caution.

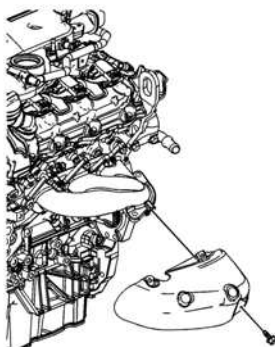
3. . Tighten the exhaust manifold nuts to **24 Y (18 lb ft)**.



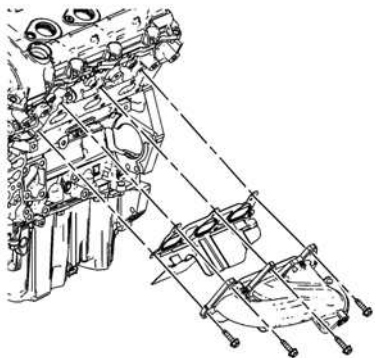
4. Install the heat shield (2) and bolts (1).
5. Tighten the bolts to **9 Y (80 lb in)**.

2013 Chevrolet Colorado

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



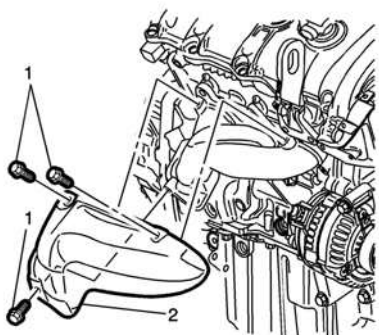
1. Remove the left exhaust manifold heat shield bolts.
2. Remove the left exhaust manifold heat shield.



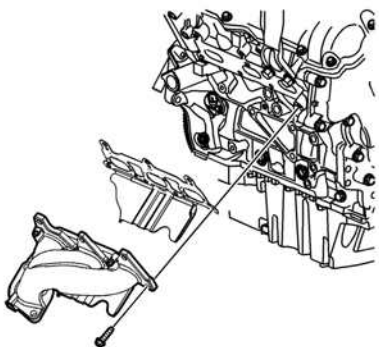
3. Remove the exhaust manifold bolts from the left cylinder head.
4. Remove the left exhaust manifold.
5. Remove and discard the exhaust manifold gasket from the left cylinder head.

2013 Chevrolet Colorado

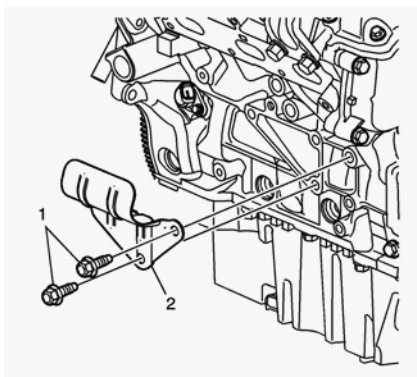
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



1. Remove the right exhaust manifold heat shield bolts.
2. Remove the right exhaust manifold heat shield.



3. Remove the exhaust manifold bolts from the right cylinder head.
4. Remove the right exhaust manifold.
5. Remove and discard the exhaust manifold gasket from the right cylinder head.

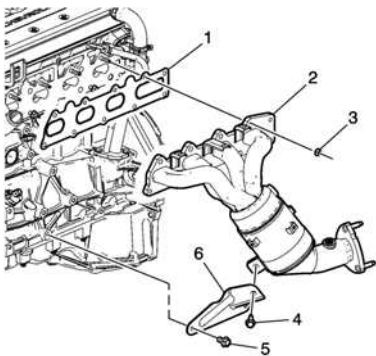


6. Remove the exhaust manifold lower heat shield bolts (1).
7. Remove the exhaust manifold lower heat shield (2).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

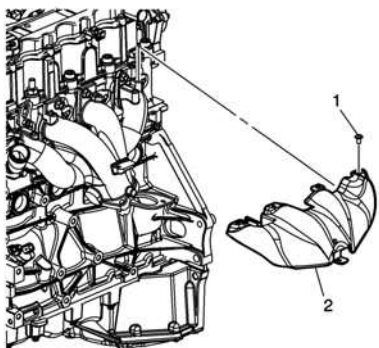
Fuel Delivery: | Fuel:



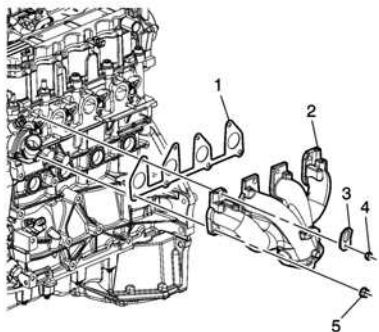
1. Remove the exhaust manifold brace bolts (4 and 5).
2. Remove the exhaust manifold brace (6).
3. Remove the exhaust manifold nuts (3).
4. Remove the exhaust manifold (2) and the exhaust manifold gasket (1).

2013 Chevrolet Colorado

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



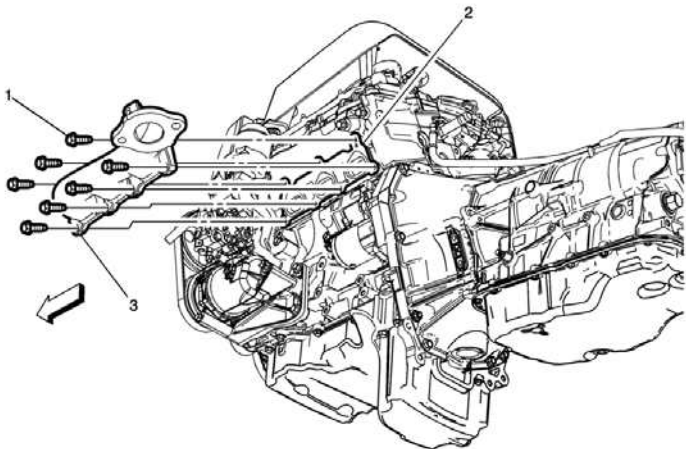
1. Remove the exhaust manifold heat shield bolts (1).
2. Remove the exhaust manifold heat shield (2).



3. Remove the exhaust manifold nuts (4 and 5) and engine lift bracket (3).
4. Remove the exhaust manifold (2) and gasket (1).

2013 Chevrolet Colorado

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



Exhaust Manifold Replacement - Left Side

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Remove the battery. Refer to Battery Replacement.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Disconnect the exhaust manifold from the catalytic converter. Refer to Front Pipe Replacement.
4. Remove the left exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement - Left Side.
5. Remove the oil level indicator tube. Refer to Oil Level Indicator Tube Replacement

Exhaust Manifold - Left Fasteners (Qty: 7)

Caution: Refer to Fastener Caution.

1

Tighten

20 Y (15 lb ft).

2

Exhaust Manifold Gasket

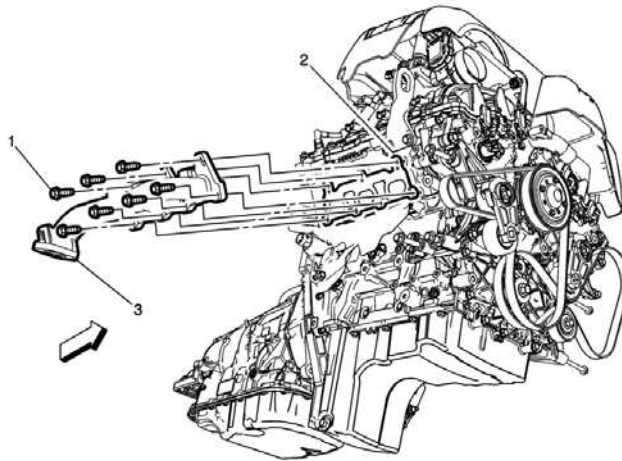
Note: Replace with a NEW gasket.

3

Exhaust Manifold - Left

2013 Chevrolet Colorado

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



Exhaust Manifold Replacement - Right Side

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Remove the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement.
2. Disconnect the exhaust manifold from the catalytic converter. Refer to Front Pipe Replacement.
3. Remove the right exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement - Right Side.

Exhaust Manifold - Right Fasteners (Qty: 7)

Caution: Refer to Fastener Caution.

1

Tighten

20 Y (15 lb ft)

Exhaust Manifold Gasket

2

Note: Replace with a NEW gasket.

Exhaust Manifold - Right Side

3

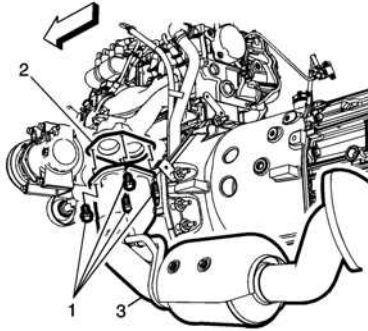
2013 Chevrolet Colorado

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

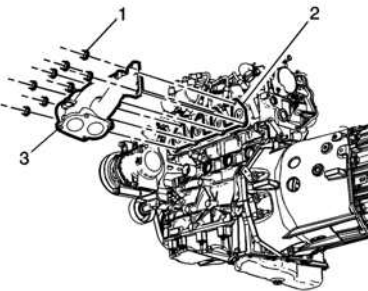
[Removal Procedure](#)

Warning: Refer to Exhaust Service Warning.

1. Remove the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
2. Disconnect the spark plug wires.
3. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.

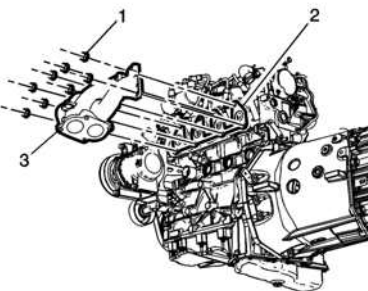


4. Remove the exhaust front pipe (3) to the exhaust manifold fasteners (1) and discard the exhaust gasket (2).
5. Lower the vehicle.



6. Remove the exhaust manifold fasteners (1) and the engine lift bracket.
7. Remove the exhaust manifold (3) and discard the exhaust manifold gasket (2).
8. Clean the exhaust manifold surfaces.

[Installation Procedure](#)



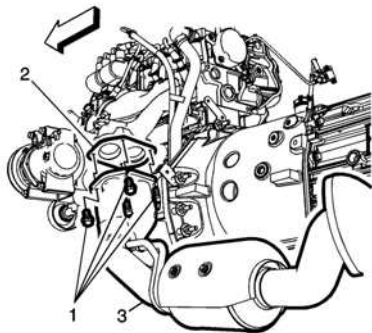
1. Install the exhaust manifold (3), to the cylinder head with a NEW gasket (2), and finger tighten the fasteners (1).

Caution: Refer to Fastener Caution.

2. Tighten the exhaust manifold fasteners (1) to **24 Y (18 lb ft)**.

Exhaust Manifold Replacement (LP8)

3. Install the engine lift bracket.



4. Install the exhaust front pipe (3) to the exhaust manifold with a NEW gasket (2) and tighten the fasteners (1) to **22 Y (16 lb ft)**.
5. Install the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
6. Start the engine and check for exhaust leaks.

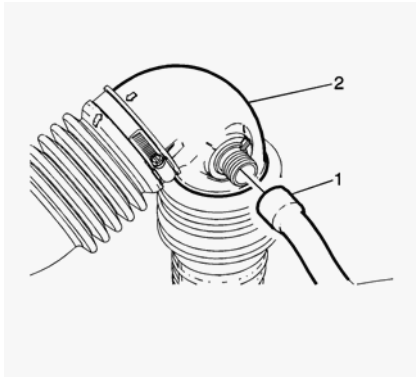
2013 Chevrolet Colorado

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

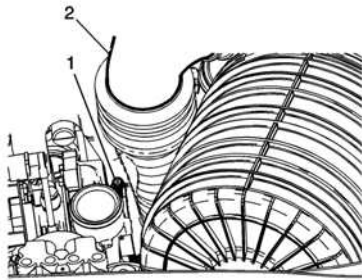
[Removal Procedure](#)

Warning: Refer to Exhaust Service Warning.

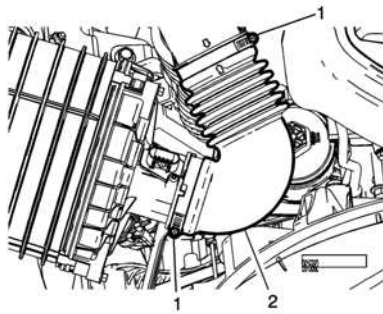
1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Remove the transmission oil level indicator tube, if equipped.
3. Remove the radiator surge tank and set aside the power steering reservoir. Refer to Radiator Surge Tank Replacement.
4. Remove the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
5. Remove the oxidation catalytic converter. Refer to Oxidation Catalytic Converter Replacement.



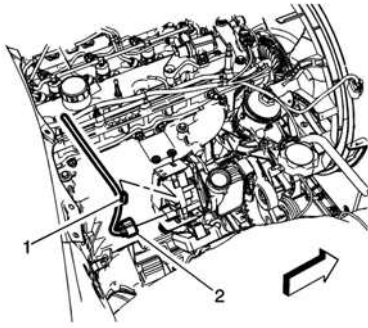
6. Disconnect the crankcase ventilation pipe (1) from the air cleaner outlet duct (2).



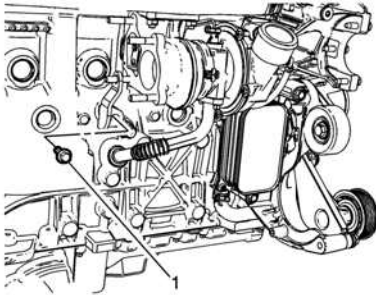
7. Loosen the lower clamp (1) and remove the air cleaner outlet tube (2) from the turbo assembly.



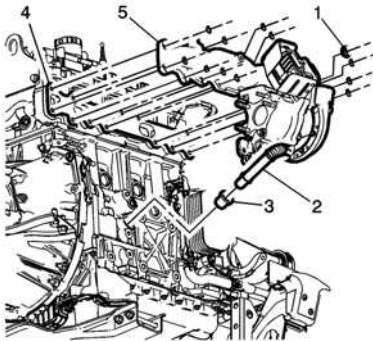
8. Loosen the upper clamps (1) and remove the outlet duct (2) from the air cleaner assembly.
9. Remove the charge air cooler inlet air hose. Refer to Charge Air Cooler Inlet Air Hose Replacement.



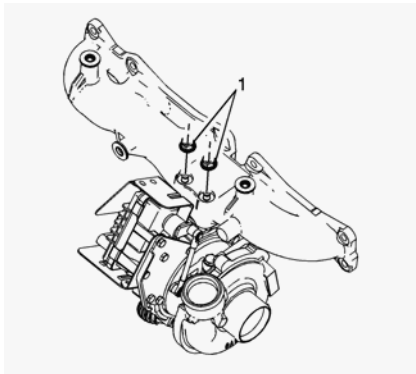
10. Disconnect the turbocharger connector (2) and harness retainer clip (1) from the turbocharger assembly.
11. Remove the left front engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
12. Remove the turbocharger oil feed at the turbocharger. Refer to Turbocharger Oil Feed Pipe Replacement.



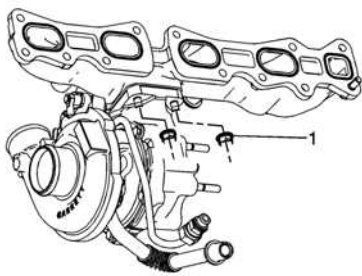
13. Remove the turbocharger brace fastener (1).



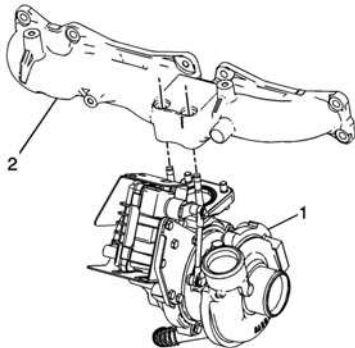
14. Remove the exhaust manifold fasteners (1) and disconnect the turbocharger oil return pipe (2) from the seal (3).
15. Discard the exhaust manifold gasket (4) and remove the exhaust manifold with the turbocharger assembly (5).



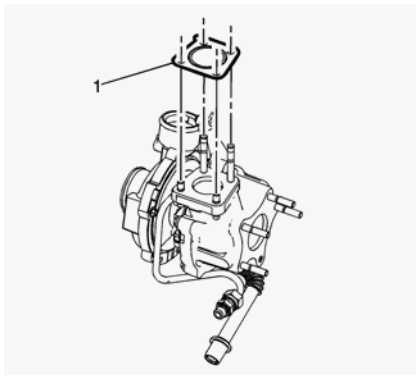
16. Remove the exhaust manifold to turbocharger fasteners (1).



17. Remove the exhaust manifold to turbocharger fasteners (1).

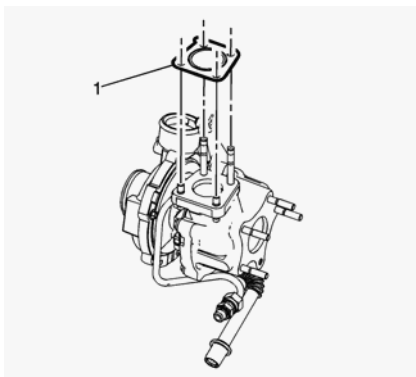


18. Separate the exhaust manifold (2) from the turbocharger (1).

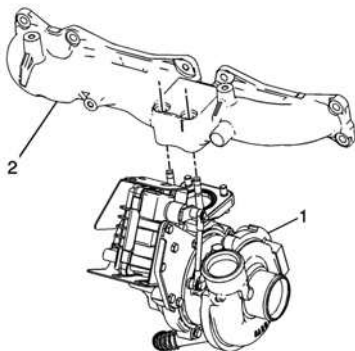


19. Discard the turbocharger gasket (1).

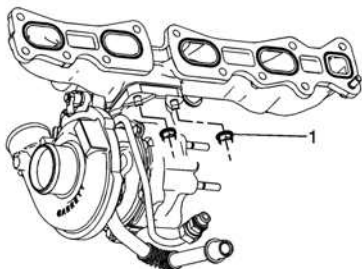
[Installation Procedure](#)



1. Install a NEW gasket (1) to the turbocharger.

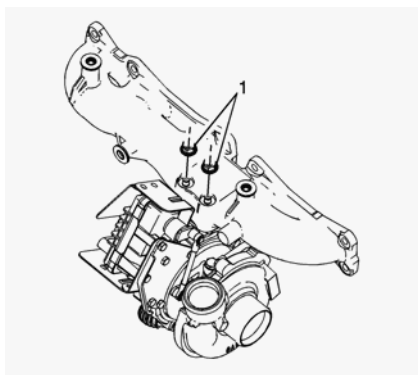


2. Install the exhaust manifold (2) to the turbocharger (1).

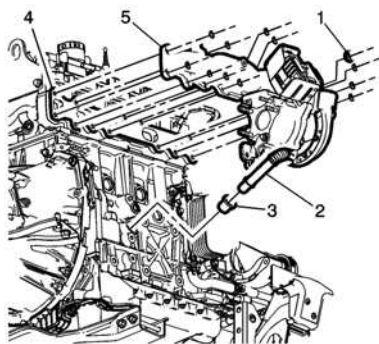


Caution: Refer to Fastener Caution.

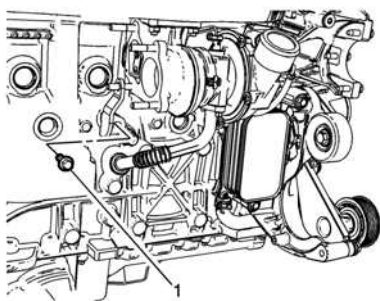
3. Install the turbocharger fasteners (1) and tighten to **32 Y (24 lb ft)**.



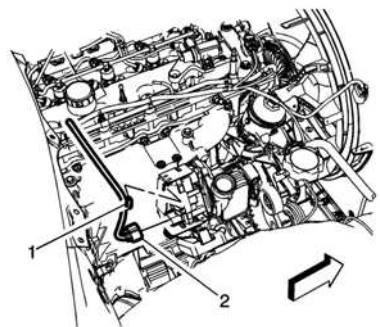
4. Install the turbocharger fasteners (1) and tighten to **32 Y (24 lb ft)**.



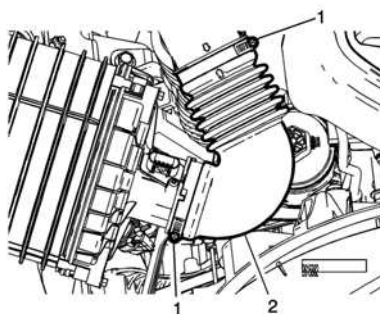
5. Install the exhaust manifold with the turbocharger (5), to the engine with a NEW gasket (4), and insert the turbocharger oil return pipe (2) into the seal (3).
6. Tighten the fasteners (1) to **36 Y (27 lb ft)**.
7. Install the turbocharger oil feed at the turbocharger. Refer to Turbocharger Oil Feed Pipe Replacement.



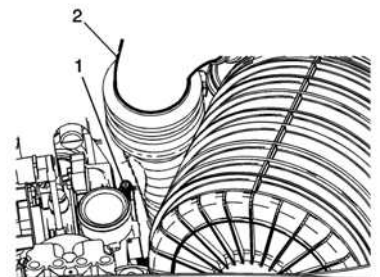
8. Install the turbocharger brace fastener (1) and tighten to **32 Y (24 lb ft)**.



9. Connect the turbocharger connector (2) and harness retainer clip (1) to the turbocharger assembly.
10. Install the charge air cooler inlet air hose. Refer to Charge Air Cooler Inlet Air Hose Replacement.

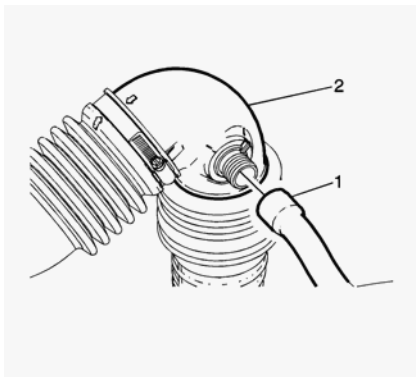


11. Install the outlet duct (2) to the air cleaner assembly and tighten the clamps (1).



12. Install the air cleaner outlet tube (2) to the turbo assembly and tighten the upper clamp (1).

Exhaust Manifold Replacement (LVN,LWH)



13. Connect the crankcase ventilation pipe (1) to the air cleaner outlet duct (2).
14. Install the oxidation catalytic converter. Refer to Oxidation Catalytic Converter Replacement.
15. Install the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
16. Install the radiator surge tank and the power steering reservoir. Refer to Radiator Surge Tank Replacement.
17. Install the transmission oil level indicator tube, if equipped.
18. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.
19. Install the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.

2013 Chevrolet Colorado

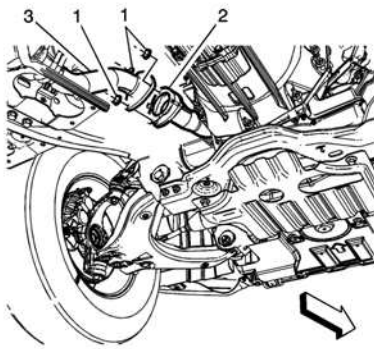
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

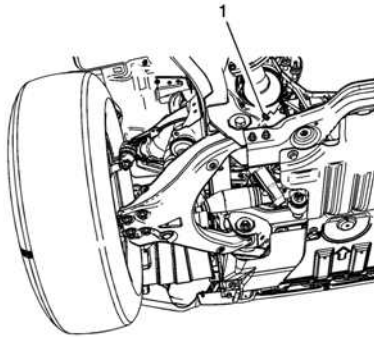
Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

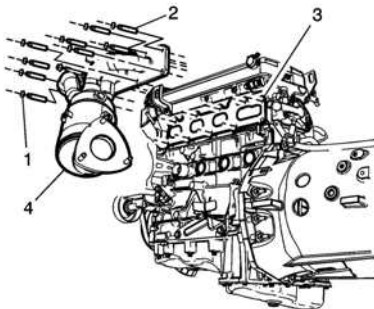
1. Remove the heated oxygen sensor – 1. Refer to Heated Oxygen Sensor Replacement - Sensor 1.
2. Remove the heated oxygen sensor – 2. Refer to Heated Oxygen Sensor Replacement - Sensor 2.
3. Remove the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
4. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
5. Remove the left front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement.



6. Remove the exhaust front pipe fasteners (1) and discard the exhaust gasket (2).



7. Remove the catalytic converter brace fastener (1) and slide the large clamp away from the stud.

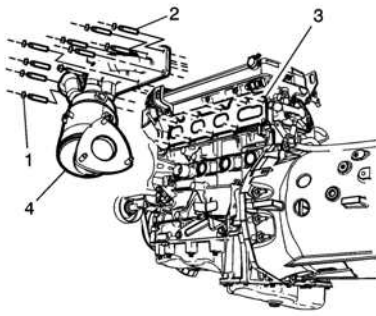


8. Remove the exhaust manifold with catalytic converter fasteners (1).

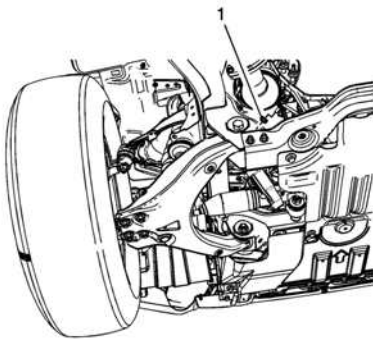
Note: Inspect any exhaust manifold studs (2) for damage and replace as necessary.

9. Remove the exhaust manifold with catalytic converter (4) and discard the exhaust manifold gasket (3).

[Installation Procedure](#)

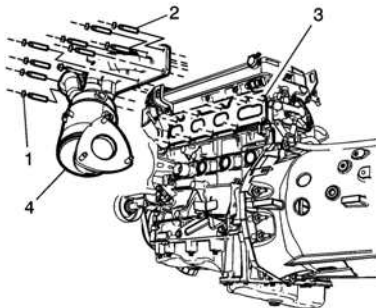


1. Position the exhaust manifold with catalytic converter (4) to the cylinder head with a NEW gasket (3).
2. Finger tighten the exhaust manifold fasteners (1).

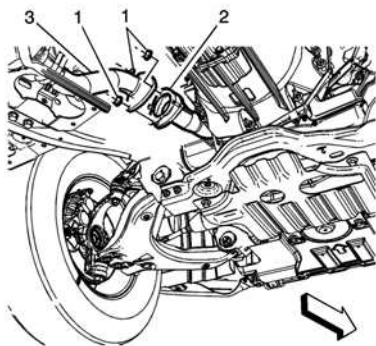


Caution: Refer to Fastener Caution.

3. Install the catalytic converter brace clamp fastener (1), to the catalytic converter brace stud. Tighten the fastener (1) to **20 Y (15 lb ft)**.



4. Tighten the exhaust manifold fasteners (1) to **10 Y (89 lb in) +170-185 degrees**.



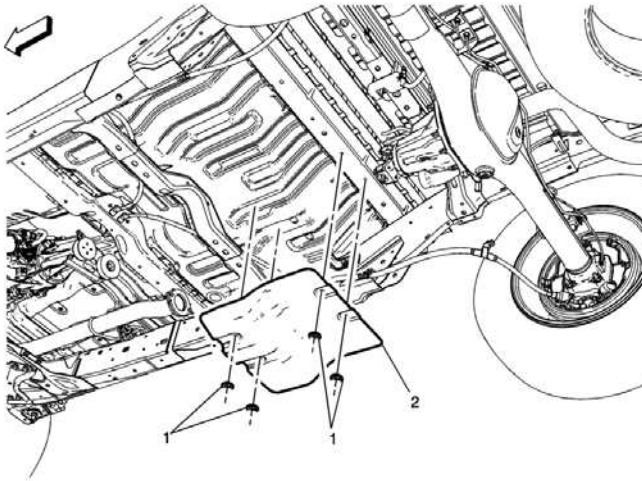
5. Install the exhaust front pipe (3) to the catalytic converter with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.
6. Install the heated oxygen sensor – 2. Refer to Heated Oxygen Sensor Replacement - Sensor 2.
7. Install the heated oxygen sensor – 1. Refer to Heated Oxygen Sensor Replacement - Sensor 1.
8. Install the left front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement.

Exhaust Manifold with Catalytic Converter Replacement (LE6)

9. Install the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
10. Start the engine and check for exhaust leaks.

2013 Chevrolet Colorado

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



Exhaust Muffler Heat Shield Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedures

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the exhaust muffler. Refer to Exhaust Muffler Replacement.

Exhaust Muffler Heat Shield Fastener (Qty: 4)

Caution: Refer to Fastener Caution.

1

Tighten

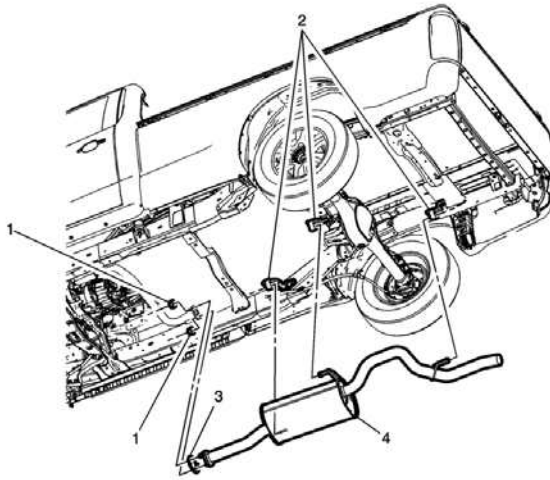
28 Y (21 lb ft)

2

Exhaust Muffler Heat Shield

2013 Chevrolet Colorado

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



Exhaust Muffler Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the propeller shaft strap.

Exhaust Muffler Fasteners (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

28 Y (21 lb ft).

2

Exhaust Isolators

3

Exhaust Gasket

Note: Replace the exhaust gasket with a NEW exhaust gasket.

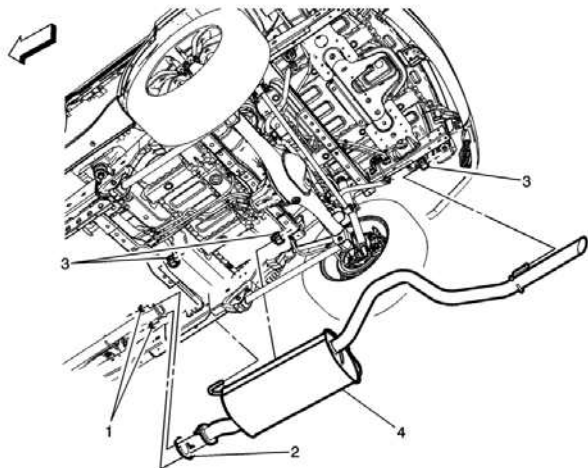
4

Exhaust Muffler

Note: Clean and lubricate the exhaust rods for ease of installation

2013 Chevrolet Colorado

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



Exhaust Muffler Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Exhaust Muffler Fasteners (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

28 Y (21 lb ft).

Exhaust Gasket

2

Note: Replace the exhaust gasket with a NEW exhaust gasket.

Exhaust Isolators

3

Exhaust Muffler

4

Note: Clean and lubricate the exhaust rods for ease of installation.

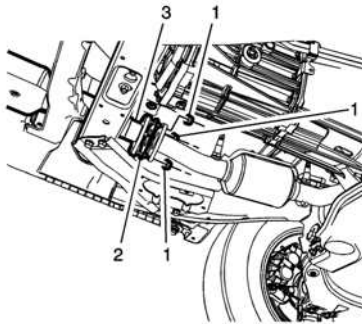
2013 Chevrolet Colorado

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

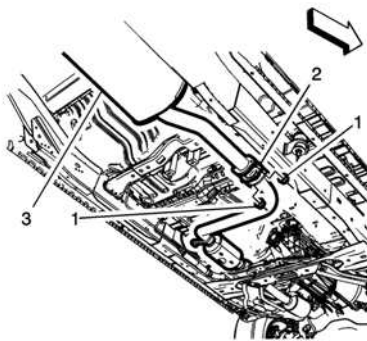
[Removal Procedure](#)

Warning: Refer to Exhaust Service Warning.

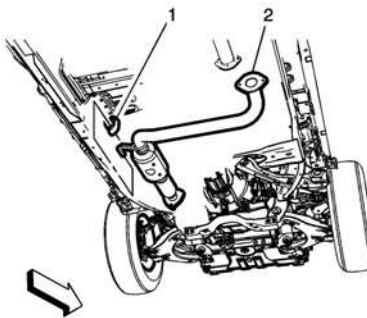
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Remove the exhaust pipe fasteners (1) and discard the exhaust gasket (2).

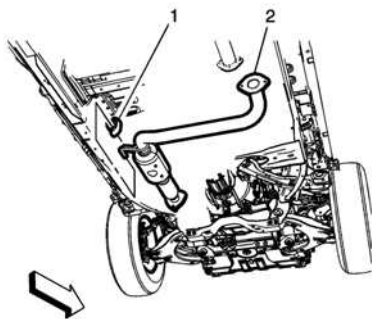


3. Remove the exhaust muffer fasteners (1) and discard the exhaust gasket (2).

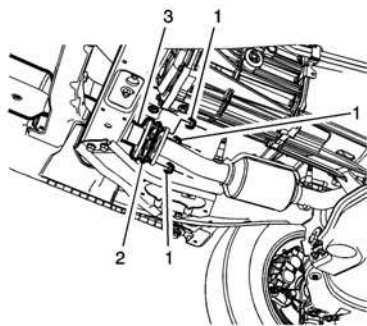


4. Remove the exhaust pipe (2) from the exhaust isolator (1) and remove the exhaust pipe from the vehicle.

[Installation Procedure](#)

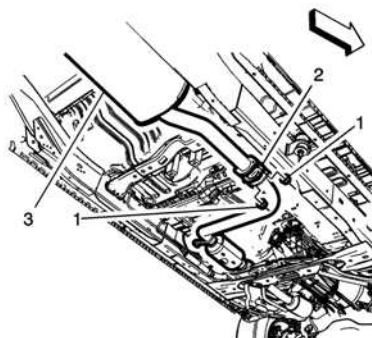


1. Position the exhaust pipe (2) into the exhaust isolator (1).



Caution: Refer to Fastener Caution.

2. Install the exhaust pipe (3) to the exhaust front pipe with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.



3. Install the exhaust front pipe to the exhaust muffler (3) with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.
4. Start the engine and check for exhaust leaks.

2013 Chevrolet Colorado

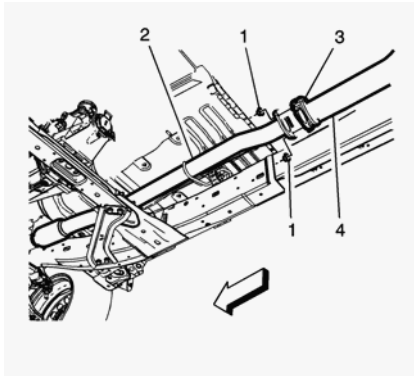
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

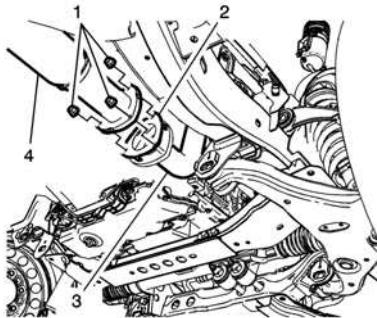
Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

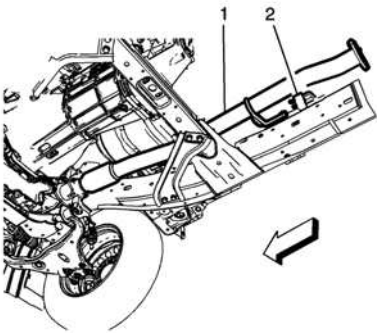
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Remove the exhaust muffler (4) fasteners (1) and discard the exhaust gasket (3).

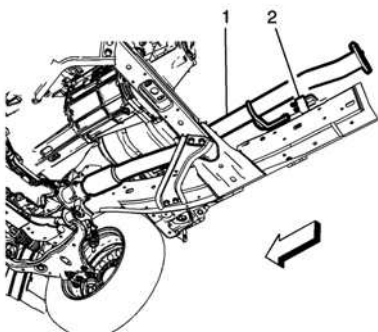


3. Remove the catalytic converter fasteners (1), from the exhaust pipe (4), and discard the gasket (2).

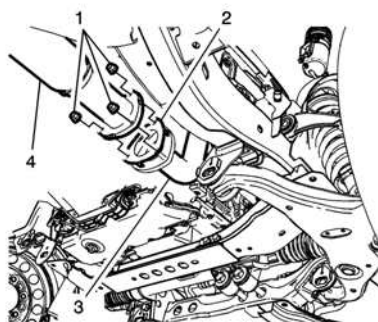


4. Remove the exhaust pipe (1) from the exhaust isolator (2).
5. Remove the exhaust pipe (1) from the vehicle.

[Installation Procedure](#)

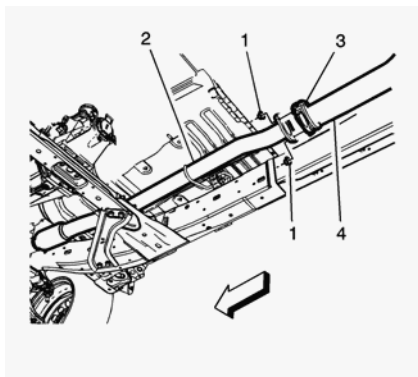


1. Install the exhaust pipe (1) into the exhaust isolator (2).



Caution: Refer to Fastener Caution.

2. Install the exhaust pipe (4) to the catalytic converter (3) with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.

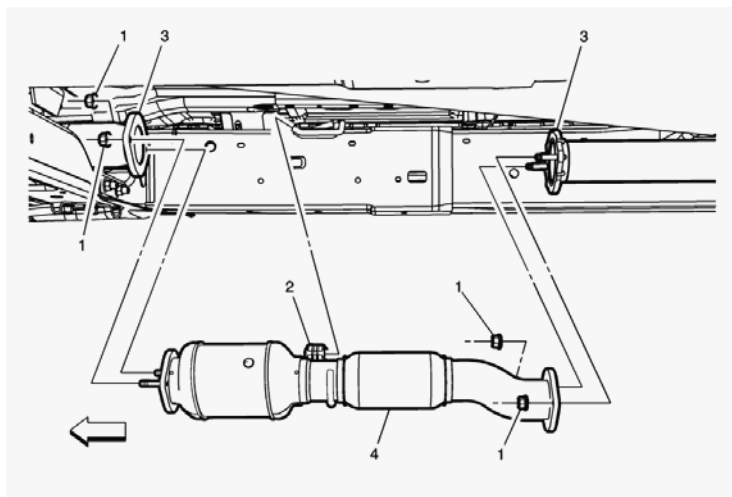


3. Install the exhaust pipe (2) to the muffler pipe (4) with a NEW gasket (3). Tighten the fasteners (1) to **28 Y (21 lb ft)**.
4. Start the engine and check for exhaust leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Pipe Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

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

Exhaust Muffler Fasteners (Qty: 4)

Caution: Refer to Fastener Caution.

1

Tighten

28 Y (21 lb ft).

2

Exhaust Isolator

3

Exhaust Gaskets

Note: Replace with NEW gaskets.

4

Exhaust Pipe with Catalytic Converter

2013 Chevrolet Colorado

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

Important: Use of non-OEM parts may cause driveability concerns.

The exhaust system carries exhaust gases, treated by the catalytic converter, through a resonator, if applicable and into the exhaust muffler where exhaust noise is lessened.

In order to secure the exhaust pipe to the exhaust manifold, a flange and seal-joint coupling is utilized. The exhaust system may utilize a slip-joint coupling design with a clamp and a U-bolt or a flange connection with a gasket.

Exhaust hangers and rubber insulators help to support the weight of the exhaust pipe along with insulating any exhaust system vibration, rattle, or noise.

Exhaust hangers also space the exhaust system away from the underbody of the vehicle and allows the exhaust system to expand as the exhaust system warms up.

Exhaust heat shields are used to protect the body and other components from damage due to the heat from the exhaust system.

The exhaust system may be comprised of the following components:

- Exhaust manifold
- Exhaust pipes
- Catalytic converters
- Exhaust muffler
- Exhaust resonator, if equipped
- Exhaust tail pipe, if equipped
- Exhaust hangers
- Exhaust heat shields

[Resonator](#)

Some exhaust systems are equipped with a resonator. The resonator, located either before or after the muffler, allows the use of mufflers with less back pressure. Resonators are used when vehicle characteristics require specific exhaust tuning.

[Catalytic Converter](#)

The catalytic converter is an emission control device added to the engine exhaust system in order to reduce hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) pollutants from the exhaust gas.

The catalytic converter is comprised of a ceramic monolith substrate, supported in insulation and housed within a sheet metal shell. The substrate may be washcoated with 3 noble metals:

- Platinum (Pt)
- Palladium (Pd)
- Rhodium (Rh)

The catalyst in the converter is not serviceable.

[Diesel Particulate Filter \(DPF\)](#)

Exhaust Particulate Filter

The exhaust particulate filter (EPF) captures diesel exhaust gas particulates, preventing their release into the atmosphere. This is accomplished by forcing particulate-laden exhaust (1) through a filter substrate of porous cells, which removes the particulates from the exhaust gas. The exhaust gas enters the filter, but because every other cell of the filter is capped at the opposite end, the exhaust particulates cannot exit the cell. Instead, the exhaust gas passes through the porous walls of the cell leaving the particulates trapped on the cell wall. The cleaned exhaust gas exits the filter through the adjacent cell. The EPF is capable of reducing more than 90 percent of particulate matter (PM).

Diesel Oxidation Catalyst

The diesel oxidation catalyst (DOC) (7) has two functions. One function is to reduce emissions of non methane hydro-carbons (NMHC) and carbon monoxide (CO), from the exhaust gases. The other function is to help start a regeneration event by converting the fuel-rich exhaust gases to heat. The engine control module (ECM) monitors the functionality of the DOC by determining if the exhaust gas temperature (EGT) sensor 1 (1) reaches a predetermined temperature during a regeneration event. The Diesel Particulate Filter (DPF) System Description DOC and the exhaust particulate filter (EPF) (6) are downstream of the turbocharger, and are two separate components under the vehicle.

Differential Pressure Sensor (DPS) and Pressure Lines

The difference between the inlet and outlet of the exhaust particulate filter (EPF). When pressure difference has increased above a calibrated threshold, a high particulate loading condition is indicated. The ECM will command a regeneration event in order to restore the filter. If the pressure differential continues to increase across the exhaust filter without a regeneration event, the ECM will illuminate an EPF lamp or send a message to the driver information center (DIC) referring the customer to clean the exhaust filter. To clean the exhaust filter the vehicle must be driven under the conditions necessary for a regeneration to take place. If these lamps and messages are ignored, the ECM will eventually illuminate the malfunction indicator lamp (MIL) and revert to Reduced Engine Power which will require the vehicle to be serviced. The DPS sensor provides a voltage signal to the ECM on a signal circuit relative to the pressure differential changes in the EPF. The ECM converts the signal voltage input to a pressure value. The DPS pressure lines (2) are connected before and after the EPF. To provide the pressure sensor with accurate back pressure measurements, the DPS pressure lines should have a continuous downward gradient without any sharp bends.

Exhaust Gas Temperature Sensors

The ECM uses two exhaust gas temperature (EGT) sensors to measure the temperature of the exhaust gases at the inlet and outlet of the exhaust particulate filter (EPF). The EGT sensors are variable resistors, when the EGT sensors are cold, the sensor resistance is low, and as the temperature increases, the sensor resistance increases. When sensor resistance is high, the ECM detects a high voltage on the signal circuit. When sensor resistance is low, the ECM detects a lower voltage on the signal circuit. Proper EGTs at the inlet and outlet of the EPF are crucial for proper operation and for initiating the regeneration process. A temperature that is too high in the EPF will cause the EPF substrate to melt or crack. The ECM monitors the temperatures at the EPF inlet and outlet to regulate EPF temperatures.

Normal Regeneration

Regeneration is the process of removing the captured particulates through incineration within the exhaust particulate filter (EPF). Elevated temperatures are created in the diesel oxidation catalyst (DOC) through a calibrated strategy in the engine control system. Regeneration occurs when the ECM calculates that the particulate level in the filter has reached a calibrated threshold using a number of different factors, including engine run time, distance traveled, fuel used since the last regeneration, and the exhaust differential pressure. In general, the vehicle will need to be operating continuously at speeds above 48 km/h (30 mph) for approximately 20-30 minutes for a full and effective regeneration to complete. During regeneration the exhaust gases reach temperatures above 550°C (1,022°F). The ECM monitors the EGT sensors during regeneration. If the sensors indicate that regeneration temperatures are exceeding a calibrated threshold, regeneration will be temporally suspended until the sensors return to a normal temperature. If EGT temperatures fall below a normal calibrated threshold, regeneration will be terminated and a corresponding DTC should set. If a regeneration event is interrupted for any reason, it will continue, including the next key cycle, when the conditions are met for regeneration enablement. Normal regeneration is transparent to the customer.

Service Regeneration

A scan tool is an essential tool that is required for service regeneration. Commanding a service regeneration is accomplished using the output control function. The vehicle will need to be parked outside the facility and away from nearby objects, such as other vehicles and buildings, due to the elevated exhaust gas temperature at the tail pipe during regeneration. The service regeneration can be terminated by applying the brake pedal, commanding service regeneration OFF using the scan tool, or disconnecting the scan tool from the vehicle.

Regeneration Process

A number of engine components are required to function together for the regeneration process to be performed. These components are the fuel injectors, turbocharger, IA valve, fuel pressure control, and the intake air heater (IAH). The regeneration process consists of several stages: Warming up the diesel oxidation catalyst (DOC) to 350°C (662°F) by performing the following:

- Reducing air flow with the intake air valve
- Increasing or decreasing boost pressure with the turbocharger, depending on engine load
- Elevating the engine speed
- Reduce fuel rail pressure
- Retard fuel injection timing
- Add late fuel injection pulses. The added fuel is not combusted but is oxidized by the DOC and exhaust particulate filter (EPF) to create heat.

Ash Loading

Ash is a non-combustible by product from normal oil consumption. Low Ash content engine oil (CJ-4 API) is required for vehicles with the exhaust particulate filter (EPF) system. Ash accumulation in the EPF will eventually cause a restriction in particulate filter. Regeneration will not burn off the ash, only particulate matter is burned off. An ash loaded EPF will need to be removed from the vehicle and cleaned or replaced.

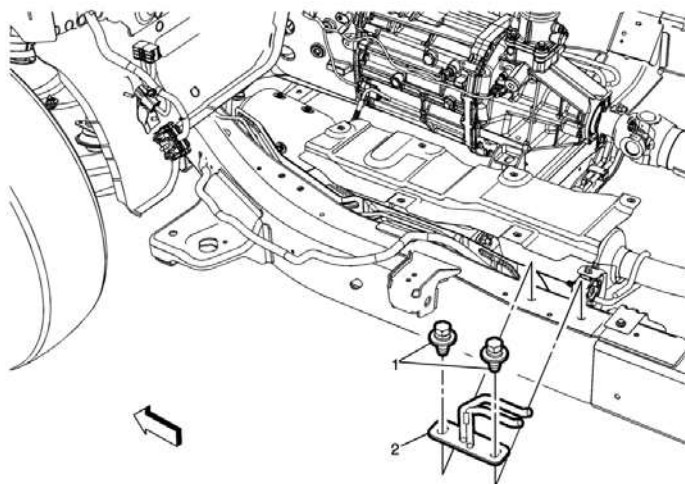
Muffler

Muffler

The exhaust muffler reduces the noise levels of the engine exhaust by the use of tuning tubes. The tuning tubes create channels inside the exhaust muffler that lower the sound levels created by the combustion of the engine.

2013 Chevrolet Colorado

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



Exhaust System Insulator, Hanger, Bracket Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Preliminary Procedure

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

Exhaust Front Hanger Bracket Fastener (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

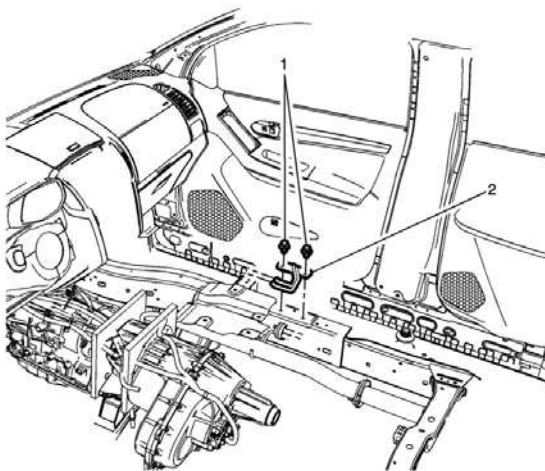
45 Y (33 lb ft).

2

Exhaust Front Hanger Bracket

2013 Chevrolet Colorado

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



Exhaust System Insulator, Hanger, Bracket Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Preliminary Procedure

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

1 Exhaust Front Hanger Bracket Fastener (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

45 Y (33 lb ft)

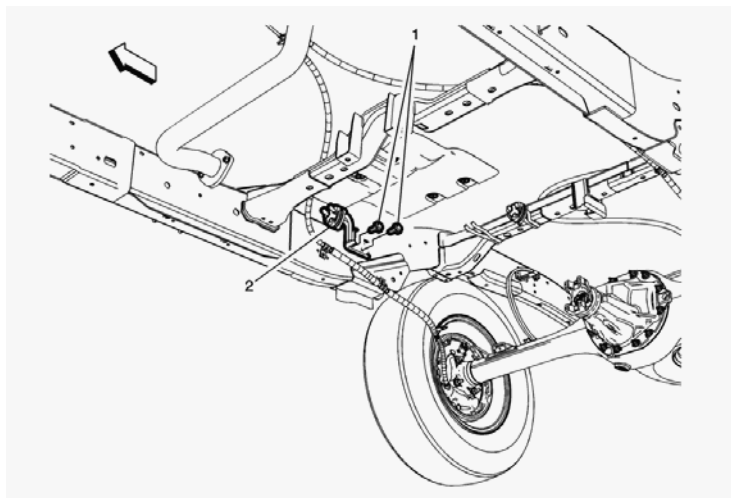
2

Exhaust Front Hanger Bracket

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust System Insulator, Hanger, Bracket Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedures

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

Exhaust Muffler Hanger Bracket Fastener (Qty: 2)

Caution: Refer to Fastener Caution.

1

Tighten

45 Y (33 lb ft)

2

Exhaust Muffler Hanger Bracket

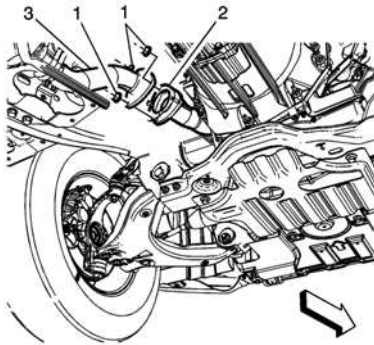
2013 Chevrolet Colorado

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

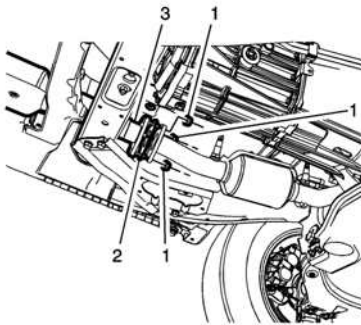
[Removal Procedure](#)

Warning: Refer to Exhaust Service Warning.

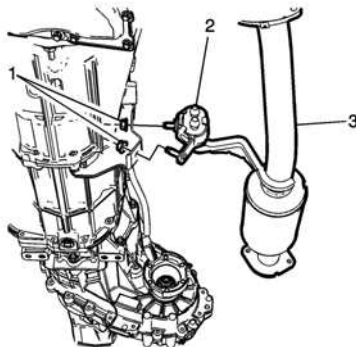
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Remove the exhaust front pipe fasteners (1), securing the exhaust front pipe (3) to the exhaust manifold/catalytic converter.
3. Discard the exhaust gasket (2).



4. Remove the exhaust pipe fasteners (1) from the exhaust pipe (3) and discard the exhaust gasket (2).

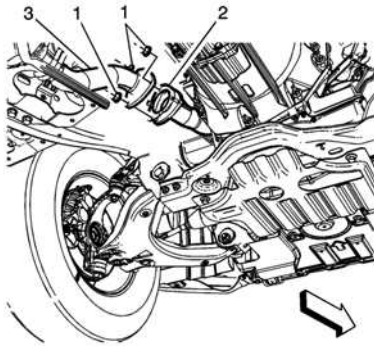


5. Remove the exhaust isolator bracket fasteners (1) and remove the exhaust front pipe (3) with the exhaust isolator and partial bracket (2).
6. Remove the exhaust isolator from the exhaust front pipe.

[Installation Procedure](#)

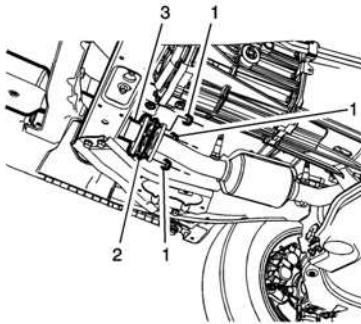
1. Install the exhaust isolator onto the exhaust front pipe.

Front Pipe Replacement (LE6)

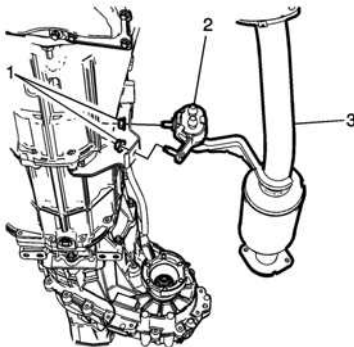


Caution: Refer to Fastener Caution.

2. Install the exhaust front pipe (3) to the exhaust manifold/catalytic converter with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.



3. Install the exhaust pipe (3), to the exhaust front pipe with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.



4. Install the exhaust isolator partial bracket (2) and tighten the fasteners (1) to **50 Y (37 lb ft)**.
5. Start the engine and check for exhaust leaks.

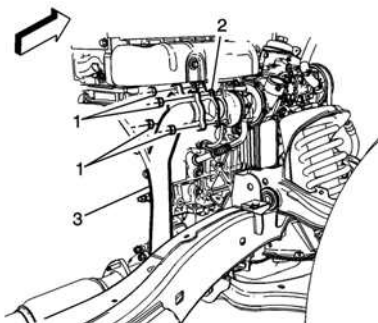
2013 Chevrolet Colorado

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

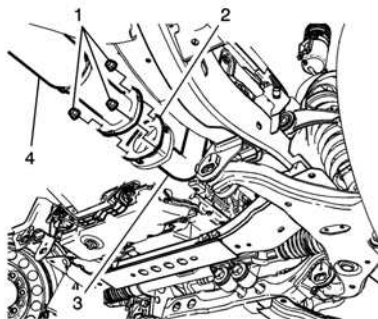
[Removal Procedure](#)

Warning: Refer to Exhaust Service Warning.

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Remove the transmission oil level indicator tube, if equipped.
3. Remove the radiator surge tank and set aside the power steering reservoir. Refer to Radiator Surge Tank Replacement.
4. Remove the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.

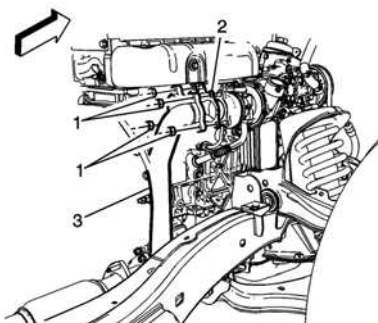


5. Remove the exhaust front pipe fasteners (1) and discard the gasket (2).



6. Remove the exhaust pipe fasteners (1) and discard the gasket (2).
7. Remove the exhaust front pipe (3) from the engine compartment.

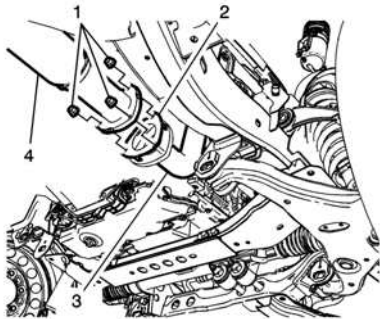
[Installation Procedure](#)



Caution: Refer to Fastener Caution.

1. Install the exhaust front pipe (3) to the turbocharger with a NEW gasket (2). Tighten the fasteners (1) to **22 Y (16 lb ft)**.

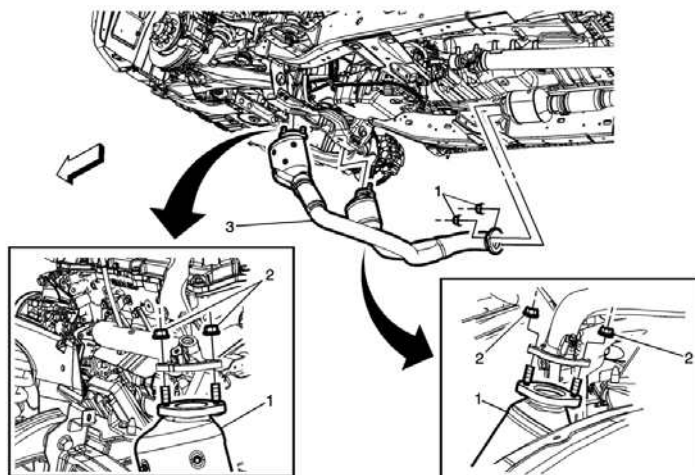
Front Pipe Replacement (LVN,LWH-NMO)



2. Install the exhaust pipe (4) to the exhaust front pipe (3) with a NEW gasket (2). Tighten the fasteners (1) to **28 Y (21 lb ft)**.
3. Install the exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement.
4. Install the transmission oil level indicator tube, if equipped.
5. Install the radiator surge tank and the power steering reservoir. Refer to Radiator Surge Tank Replacement.
6. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.
7. Start the engine and check for exhaust leaks.

2013 Chevrolet Colorado

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



Front Pipe Replacement

Callout

Component Name

Warning: Refer to Exhaust Service Warning.

Warning: Refer to Eye Protection Warning.

Preliminary Procedure

1. Remove the transmission rear mount. Refer to Transmission Mount Replacement.
2. Remove the front differential drive pinion gear yoke. Refer to Front Differential Drive Pinion Gear Yoke Replacement.
3. Remove the left exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement - Left Side.
4. Remove the right exhaust manifold heat shield. Refer to Exhaust Manifold Heat Shield Replacement - Right Side.
5. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.

Exhaust Muffler Fasteners (Qty: 2)

1

Caution: Refer to Fastener Caution.

Tighten

28 Y (21 lb ft).

Exhaust Manifold Pipe Fasteners (Qty: 4)

2

Tighten

45 Y (33 lb ft).

Exhaust Front Pipe and Catalytic Converters

3

Note: Replace with NEW gaskets.

2013 Chevrolet Colorado

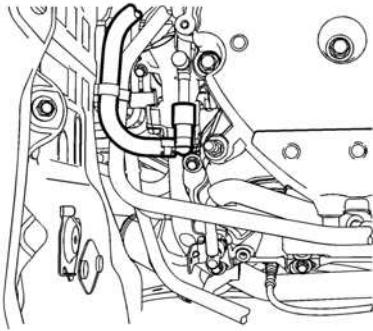
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

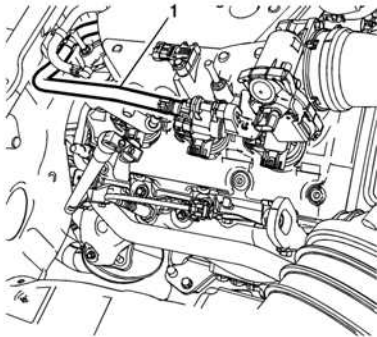
The fuel system fuel feed and evaporative emissions hose/pipes are serviceable individually or as a complete bundled assembly, the following procedure details the removal of both the fuel feed pipe and the evaporative emissions pipe.

Warning: Refer to Relieving Fuel Pressure Warning.

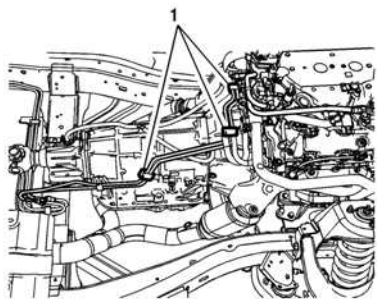
1. Relieve the fuel system pressure. Refer to Fuel Pressure Relief.



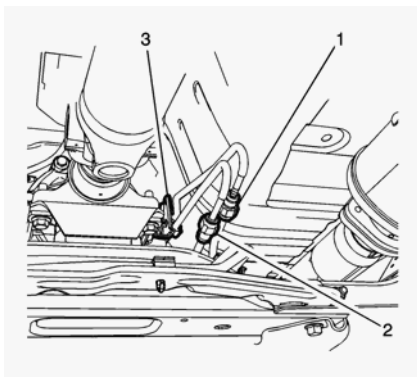
2. Disconnect the fuel feed pipe (1) from the fuel rail. Refer to Metal Collar Quick Connect Fitting Service.



3. Disconnect the evaporative emission (EVAP) purge line (1) from the purge solenoid.
4. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



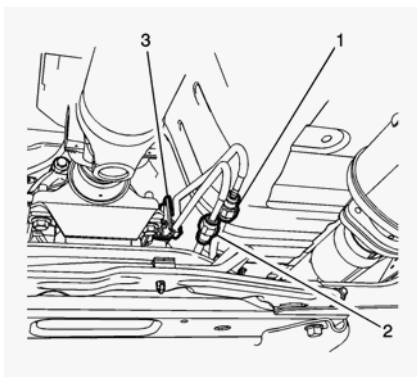
5. Open the retaining clips (1) at the locations shown and remove the pipes from the retainers.



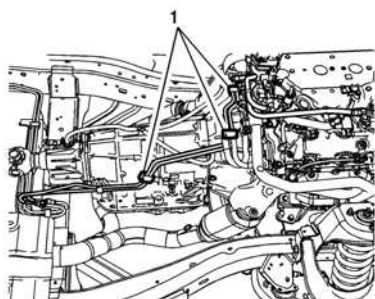
6. Disconnect the fuel feed front pipe (1) and the EVAP front pipe (2) at the location shown. Refer to Plastic Collar Quick Connect Fitting Service.
7. Carefully guide the front fuel feed and EVAP hose/pipes down through the engine compartment, removing from the bottom.

[Installation Procedure](#)

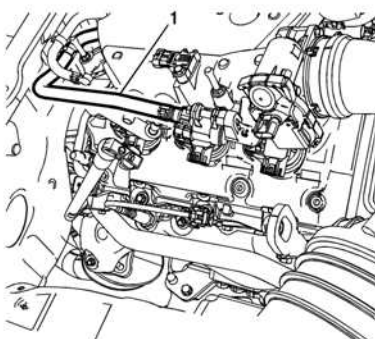
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. With the aid of an assistant, carefully guide the front fuel feed and EVAP hose/pipes up through the engine compartment into position.



3. Connect the fuel feed front pipe (1) and the EVAP front pipe (2) at the location shown. Refer to Plastic Collar Quick Connect Fitting Service.

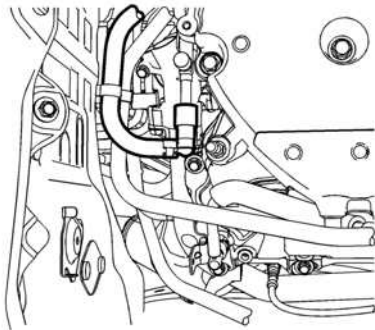


4. Install the pipes to the retaining clips (1) at the locations shown and close the retaining clips.
5. Lower the vehicle.



6. Connect the evaporative emission (EVAP) purge line (1) to the purge solenoid.

Fuel Feed Front Pipe Replacement

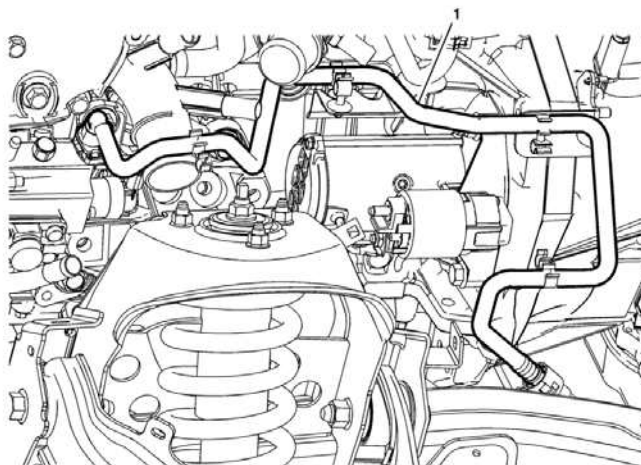


7. Connect the fuel feed pipe (1) to the fuel rail. Refer to Metal Collar Quick Connect Fitting Service.
8. Start the vehicle and check for leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Fuel Feed Pipe Replacement

Callout

Component Name

Preliminary Procedure

1. Turn OFF the engine for 30 seconds before proceeding. This will purge the fuel pressure from the complete fuel system.
2. Raise and properly support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Remove the left front wheel assembly. Refer to Tire and Wheel Removal and Installation.
4. Remove the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.

Fuel Feed Pipe

1

1. Disconnect the fuel line plastic collar quick connects. Refer to Plastic Collar Quick Connect Fitting Service.
2. Remove the fuel line from the fuel line brackets, if necessary, and remove the fuel line.

2013 Chevrolet Colorado

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Warning: While engine is operating, the exhaust system will become extremely hot. To prevent burns avoid contacting a hot exhaust system.