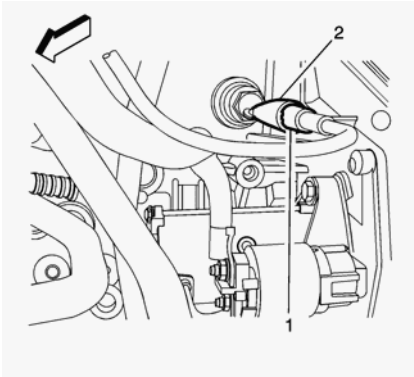


2013 Chevrolet Colorado

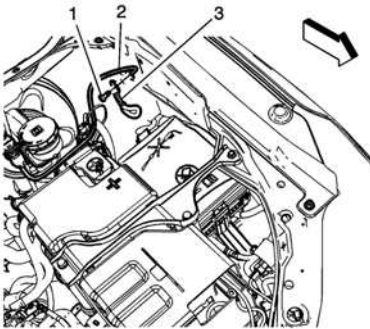
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

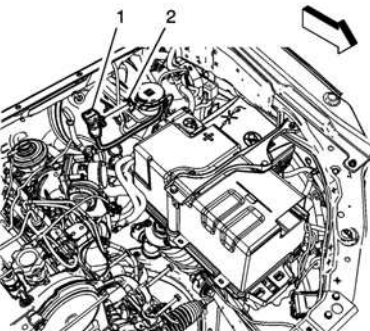
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



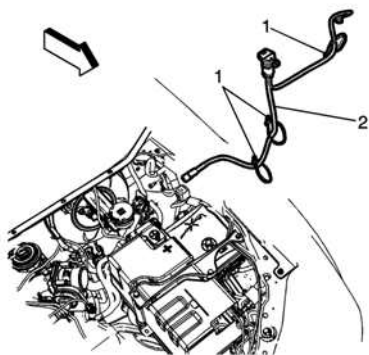
2. Disconnect the engine coolant heater cord connector (1) from the coolant heater (2).
3. Lower the vehicle.



4. Remove the fastener (1) securing the engine harness ground (3) and the engine coolant heater cord ground lead (2), to the inner wheel well panel brace.

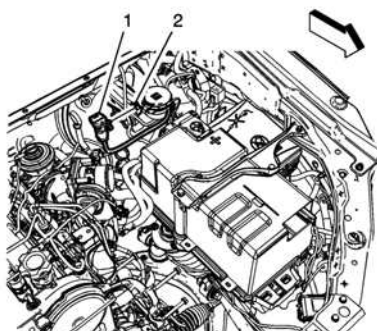


5. Remove the engine coolant heater cord retainer (1) from the power brake booster reservoir (2).

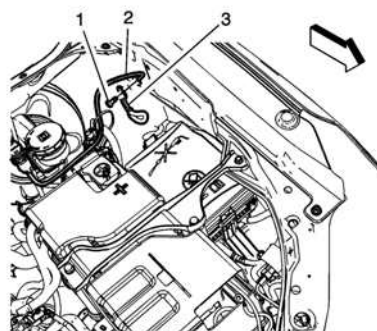


6. Remove the tie straps (1) and remove the engine coolant heater cord (2) from the engine compartment.

[Installation Procedure](#)

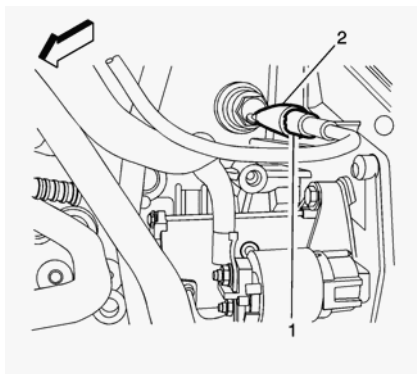


1. Install the engine coolant heater cord retainer (1) to the power brake booster (2).



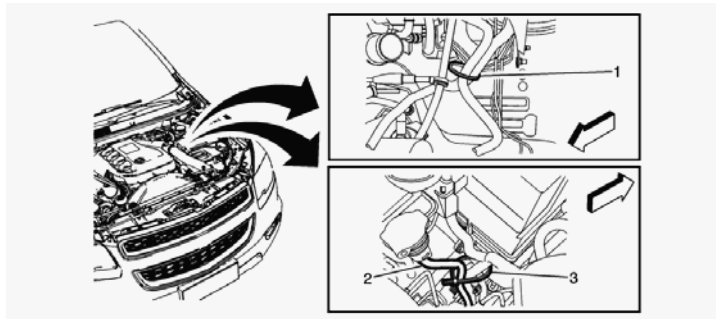
Caution: Refer to Fastener Caution.

2. Install the engine coolant heater cord ground lead (2) and the engine harness ground lead (3) to the inner wheel well panel brace. Tighten the fastener (1) to **9 Y (80 lb in)**.
3. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



4. Connect the engine coolant heater cord connector (1) to the coolant heater (2).

Coolant Heater Cord Replacement (LVN,LWH)



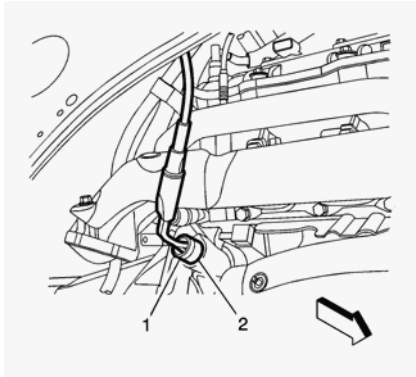
5. Secure the lower portion of the engine coolant heater cord to both battery cables using a wire tie (1).
6. Secure the upper portion of the engine coolant heater cord (2) to the battery positive cable using a wire tie (3).

2013 Chevrolet Colorado

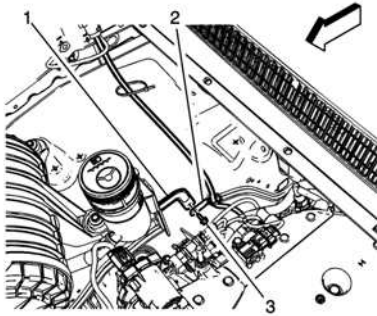
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

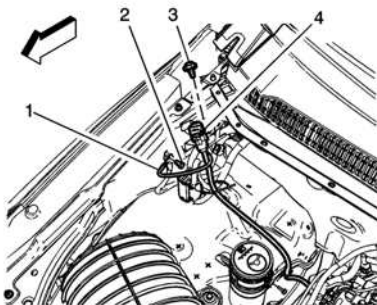
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



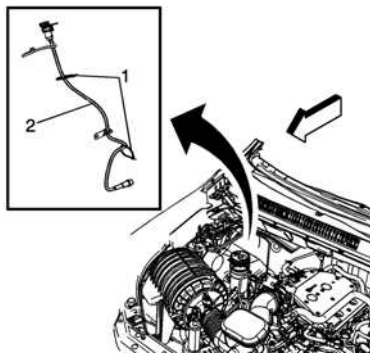
2. Disconnect the engine coolant heater cord connector (1) from the coolant heater (2).
3. Lower the vehicle.



4. Remove the fastener (3) securing the engine coolant heater cord bracket (2) to the power steering fluid bracket (1).

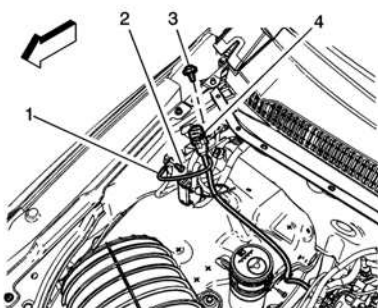


5. Remove the fastener (3) securing the engine coolant heater cord (4) to the cowl panel.
6. Remove the fastener (2) securing the engine coolant heater cord ground lead (1) to the inner wheel well panel brace.



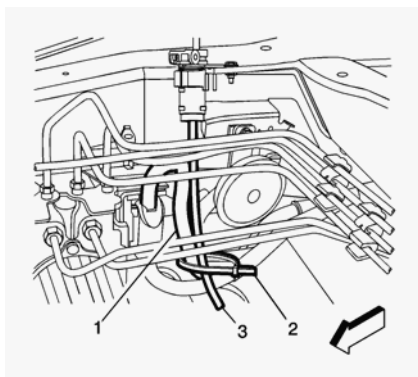
7. Remove the tie straps (1) and remove the engine coolant heater cord (2) from the engine compartment.

[Installation Procedure](#)

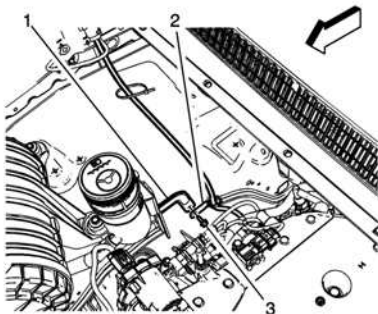


Caution: Refer to Fastener Caution.

1. Install the engine coolant heater cord (4) to the cowl panel and tighten the fastener (3) to **9 Y (80 lb in)**.
2. Install the ground lead (1) to the inner wheel house panel brace and tighten the fastener (2) to **9 Y (80 lb in)**.

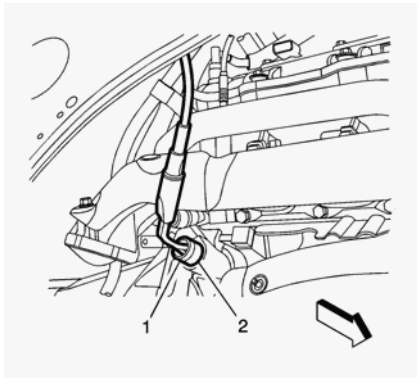


3. Secure the engine coolant heater cord (3) to the underhood harness (1) using a wire tie (2).



4. Install the engine coolant heater cord bracket (2) to the power steering fluid bracket (1) and tighten the fastener (3) to **9 Y (80 lb in)**.

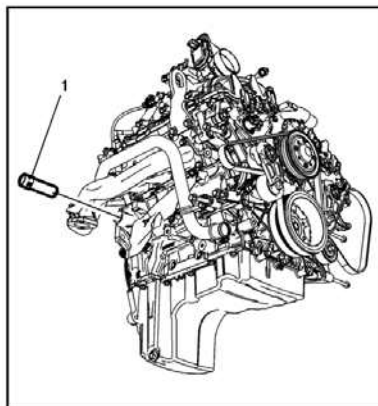
Coolant Heater Cord Replacement (LY7)



5. Connect the engine coolant heater cord connector (1) to the coolant heater (2).

2013 Chevrolet Colorado

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



Coolant Heater Replacement

Callout

Component Name

Preliminary Procedure

1. Disconnect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.
3. Disconnect the heater cord from the coolant heater.

1 Coolant Heater

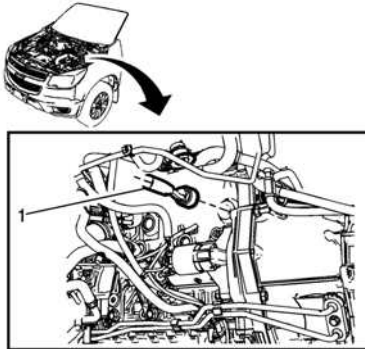
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

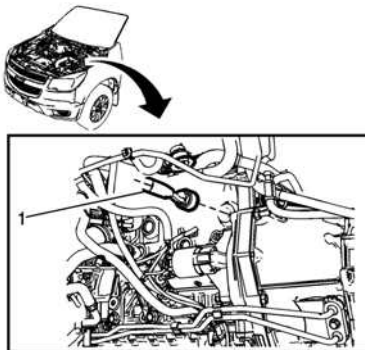
[Removal Procedure](#)

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the left front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement.
3. Disconnect the coolant heater cord from the heater block.



4. Remove the coolant heater (1).

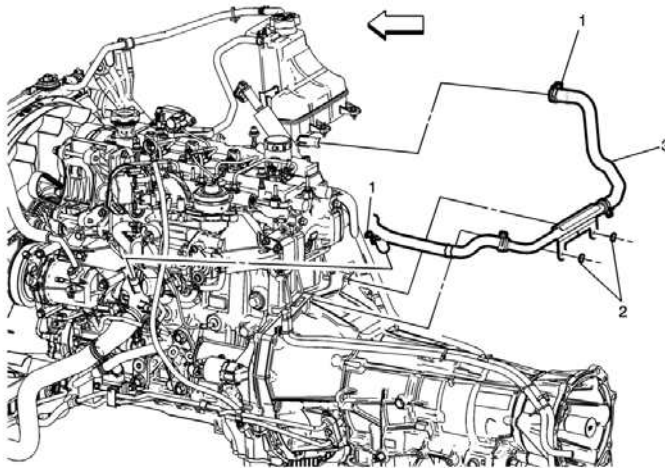
[Installation Procedure](#)



1. Install the coolant heater (1).
2. Connect the coolant heater cord from the heater block.
3. Install the left front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement.

2013 Chevrolet Colorado

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



Coolant Recovery Reservoir Inlet Hose Replacement

Callout

Component Name

Preliminary Procedure

Partially drain the cooling system. Refer to Cooling System Draining and Filling.

Radiator Surge Tank Inlet Hose Clamp (Qty 2)

Procedure

Disengage tension on the radiator surge tank inlet hose clamp using *BO-38185* Hose Clamp Pliers

1

Special Tools

BO-38185 Hose Clamp Pliers

For Equivalent regional tools, refer to Special Tools.

2

Fastener (Qty: 2)

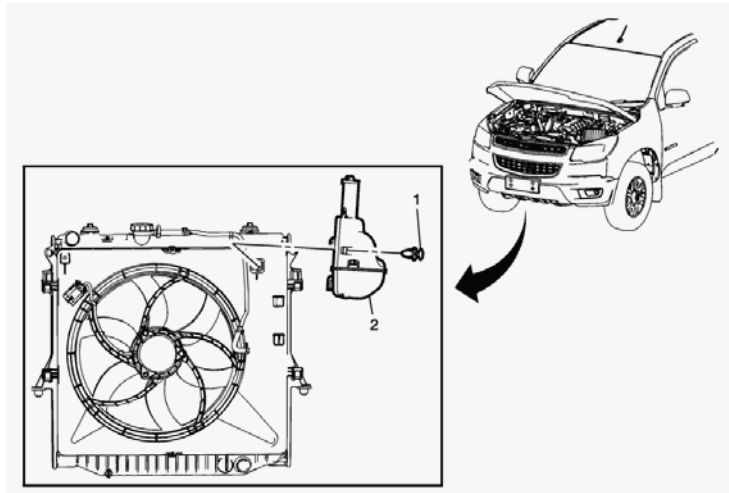
Caution: Refer to Fastener Caution.

3

Radiator Surge Tank Inlet Hose

2013 Chevrolet Colorado

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



Coolant Recovery Reservoir Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Place a drain pan under the vehicle to catch residual coolant loss.
3. Disconnect the coolant recovery reservoir vent hose from the coolant recovery reservoir. Refer to Coolant Recovery Reservoir Vent Hose Replacement.

1 Coolant Recovery Reservoir Push in Retainer

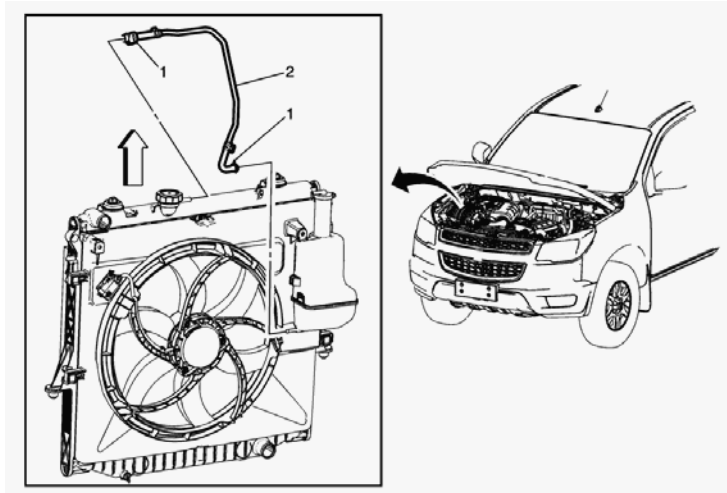
Coolant Recovery Reservoir

2 **Procedure**

Fill the coolant recovery reservoir to the proper level with engine coolant.

2013 Chevrolet Colorado

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



Coolant Recovery Reservoir Vent Hose Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
2. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
3. Place a drain pan under the vehicle to catch residual coolant. loss.

Coolant Recovery Reservoir Vent Hose Clamp (Qty: 2)

Special Tools

1

BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to Special Tools.

Coolant Recovery Reservoir Vent Hose

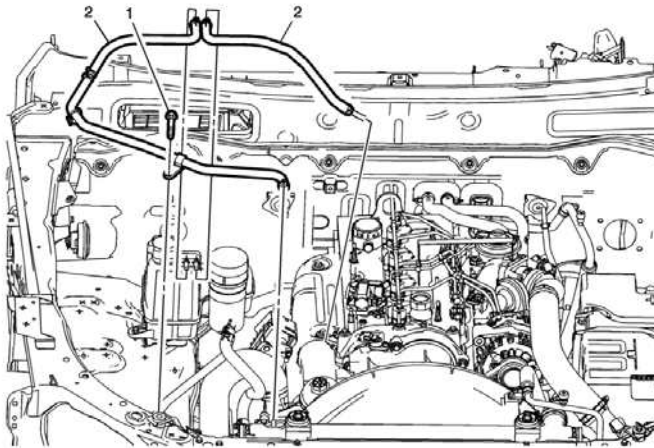
2

Procedure

Fill the coolant recovery reservoir to the proper level with engine coolant.

2013 Chevrolet Colorado

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



Coolant Recovery Reservoir Vent Hose Replacement

Callout

Component Name

Preliminary Procedure

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Disconnect the crankcase ventilation pipe from the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.

1

Coolant Recovery Reservoir Vent Hose Fastener

Caution: Refer to Fastener Caution.

Coolant Recovery Reservoir Vent Hose

2

Procedure

Reposition hose clamps to remove hoses.

2013 Chevrolet Colorado

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

System Overview

The engine cooling fan system is composed of one cooling fan, 2 relays, the engine control module (ECM), and the associated wiring. The cooling fan assembly includes 1 resistor mounted in the cooling fan shroud. The cooling fan resistor may be a stand alone component, or a part of the cooling fan motor and harness assembly. This combination of components enables the ECM to operate the cooling fan at 2 speeds using two fan control circuits. The ECM will operate the cooling fan at either Low or High speed based on the cooling requirements.

Low Speed Operation

The ECM applies ground at the FAN 1 control circuit for the coil side of the low speed cooling fan relay. The energized low speed relay switch closes to supply B+ through the cooling fan resistor, to the engine cooling fan motor. The result is cooling fan operation at a reduced speed.

High Speed Operation

The ECM applies ground at the FAN 2 control circuit for the coil side of the cooling fan high speed relay. The energized high speed relay switch closes to supply B+ directly to the engine cooling fan motor, by-passing the cooling fan resistor. The result is cooling fan operation at full speed.

2013 Chevrolet Colorado

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

System Overview

The engine cooling fan system consists of 2 electric cooling fans and 3 fan relays. The cooling fan relays are arranged in a series/parallel (S/P) configuration. This allows the engine control module (ECM) to operate both fans together at low or high speeds using 2 fan control circuits. The cooling fans receive positive voltage from the cooling fan relays, which receive battery positive voltage from the underhood fuse block. A separate dedicated ground is supplied for each cooling fan in order to complete the cooling fan circuits.

Low Speed Operation

The ECM applies ground to the coil side of the cooling fan low speed relay. This energizes the coil and applies voltage directly to the right cooling fan through the switch side of the low speed relay. The right cooling fan is connected in series to the left cooling fan through the de-energized series/parallel (S/P) cooling fan speed control relay. The result is a series circuit that operates both fans at low speed.

High Speed Operation

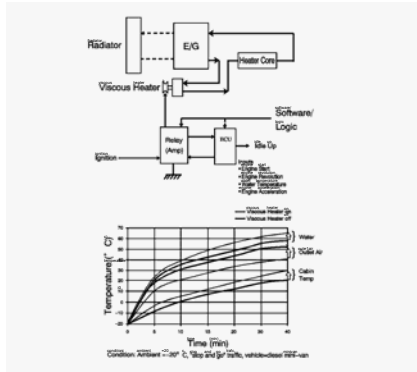
The ECM applies a ground to the coil side of the cooling fan low speed relay, the S/P cooling fan speed control relay, and the cooling fan high speed relay. When energized, the high speed fan relay applies voltage directly to the left cooling fan through the switch side of the relay. Simultaneously, the low speed fan relay and the S/P speed control relay provide ignition voltage and a direct path to ground for the right cooling fan. During high speed fan operation, both engine cooling fans have their own ground path. The result is a parallel circuit with both fans operating at high speed.

2013 Chevrolet Colorado

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

Coolant Heater

The optional engine coolant heater (RPO C32) or Viscous Heater is released only for the Diesel engines and operates using the mechanical radial torque from the engine crank to heat the coolant through the heated silicone oil from the friction among two plates. It designed to warm the coolant in the engine block area for improved heating comfort in very cold weather -20°C (-4°F). After the engine is warm the Clutch is disengaged and the Viscous Heater stops working



Cooling System

The cooling systems function is to maintain an efficient engine operating temperature during all engine speeds and operating conditions. The cooling system is designed to remove approximately one-third of the heat produced by the burning of the air-fuel mixture. When the engine is cold, the coolant does not flow to the radiator until the thermostat opens. This allows the engine to warm quickly.

Cooling Cycle

Coolant flows from the radiator outlet and into the water pump inlet. Some coolant flows from the water pump, to the heater core, then back to the water pump. This provides the passenger compartment with heat and defrost capability as the coolant warms up.

Coolant also flows from the water pump outlet and into the engine block. In the engine block, the coolant circulates through the water jackets surrounding the cylinders where it absorbs heat.

The coolant then flows through the cylinder head gasket openings and into the cylinder heads. In the cylinder heads, the coolant flows through the water jackets surrounding the combustion chambers and valve seats, where it absorbs additional heat.

From the cylinder heads, the coolant flows to the thermostat. The flow of coolant will either be stopped at the thermostat until the engine reaches normal operating temperature, or it will flow through the thermostat and into the radiator where it is cooled. At this point, the coolant flow cycle is completed.

Efficient operation of the cooling system requires proper functioning of all cooling system components. The cooling system consists of the following components:

Coolant

The engine coolant is a solution made up of a 50-50 mixture of DEX-COOL and suitable drinking water. The coolant solution carries excess heat away from the engine to the radiator, where the heat is dissipated to the atmosphere.

Radiator

The radiator is a heat exchanger. It consists of a core and 2 tanks. The aluminum core is a tube and fin downflow design that extends from the inlet tank to the outlet tank. Fins are placed around the outside of the tubes to improve heat transfer to the atmosphere.

The inlet and outlet tanks are a molded, high temperature, nylon reinforced plastic material. A high temperature rubber gasket seals the tank flange edge to the aluminum core. The tanks are clamped to the core with clinch tabs. The tabs are part of the aluminum header at each end of the core.

The radiator also has a drain cock located in the bottom of the left hand tank. The drain cock unit includes the drain cock and drain cock seal.

The radiator removes heat from the coolant passing through it. The fins on the core transfer heat from the coolant passing through the tubes. As air passes between the fins, it absorbs heat and cools the coolant.

Pressure Cap

The pressure cap seals the cooling system. It contains a blow off or pressure valve and a vacuum or atmospheric valve. The pressure valve is held against its seat by a spring, which protects the radiator from excessive cooling system pressure. The vacuum valve is held against its seat by a spring, which permits opening of the valve to relieve vacuum created in the cooling system as it cools off. The vacuum, if not relieved, might cause the radiator and/or coolant hoses to collapse.

The pressure cap allows cooling system pressure to build up as the temperature increases. As the pressure builds, the boiling point of the coolant increases. Engine coolant can be safely run at a temperature much higher than the boiling point of the coolant at atmospheric pressure. The hotter the coolant is, the faster the heat transfers from the radiator to the cooler, passing air.

The pressure in the cooling system can get too high above 140 kPa (20 psi). When the cooling system pressure exceeds the rating of the pressure cap, it raises the pressure valve, venting the excess pressure.

As the engine cools down, the temperature of the coolant drops and a vacuum is created in the cooling system. This vacuum causes the vacuum valve to open, allowing outside air into the surge tank. This equalizes the pressure in the cooling system with atmospheric pressure, preventing the radiator and coolant hoses from collapsing.

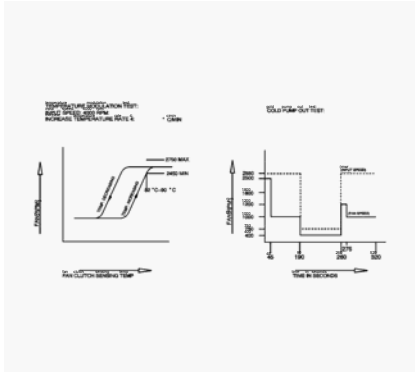
Coolant Recovery System

The coolant recovery system consists of a plastic coolant recovery reservoir and overflow tube. The recovery reservoir is also called a recovery tank or expansion tank. It is partially filled with coolant and is connected to the radiator fill neck with the overflow tube. Coolant can flow back and forth between the radiator and the reservoir.

In effect, a cooling system with a coolant recovery reservoir is a closed system. When the pressure in the cooling system gets too high above 105 kPa (15 psi), it will open the pressure valve in the pressure cap. This allows the coolant, which has expanded due to being heated, to flow through the overflow tube and into the recovery reservoir. As the engine cools down, the temperature of the coolant drops and a vacuum is created in the cooling system. This vacuum opens the vacuum valve in the pressure cap, allowing some of the coolant in the reservoir to be siphoned back into the radiator. Under normal operating conditions, no coolant is lost. Although the coolant level in the recovery reservoir goes up and down, the radiator and cooling system are kept full. An advantage to using a coolant recovery reservoir is that it eliminates almost all air bubbles from the cooling system. Coolant without bubbles absorbs heat much better than coolant with bubbles.

2.8L VMM Cooling Fan and Clutch

The engine cooling fan and clutch are driven by the crankshaft via the drive belt. The cooling fan draws air through the radiator to improve the transfer of heat from the coolant to the atmosphere. As the fan blades spin, they pull cool, outside air past the radiator core. The fan clutch drives the cooling fan. The fan clutch controls the amount of torque that is transmitted from the crankshaft to the fan blades. The clutch allows more torque to engage on the fan when the engine operating temperature increases and/or the vehicle speed is low. As the torque increases, the fan turns more quickly (see below figure of the Temperature Modulation Test). The fan clutch decreases the torque applied to the cooling fan when the engine temperature decreases and/or the vehicle speed is high. As the torque decreases, the fan speed decreases. One natural and non desired behavior of the Fan Clutch is the "Morning Sickness" which is the early unwanted engagement of the Clutch when the engine is off for several hours (during one night as an example), and is specially noticed due to noticeable fan noise. Additionally the phenomenon is more noticeable at low under hood temperatures and at engine rpm spills. This occurs because the oil seats in the working chamber of the Clutch and it's viscosity is high. When the Clutch starts spinning the oil is pushed against the internal walls thorough centrifugal force and goes to the Reservoir and the Clutch is disengaged. This behavior is controlled at the supplier to be minimum (see Cold Pump Out Test curve below) and avoid customer complains due to the noise it causes making them think it is not working properly.



Air Baffles and Seals

The cooling system uses deflectors, air baffles and air seals to increase cooling system capability. Deflectors are installed under the vehicle to redirect airflow beneath the vehicle and through the radiator to increase engine cooling. Air baffles are also used to direct airflow through the radiator and increase cooling capability. Air seals prevent air from bypassing the radiator and A/C condenser, and prevent recirculation of hot air for better hot weather cooling and A/C condenser performance.

2.4L DOHC Gasoline Engine Single Cooling Fan Description and Operation

The engine cooling fan system consists of one electrical cooling fan, a resistor module mounted with the cooling fan shroud, and three fan relays. The relays are arranged in a series parallel (S/P) configuration that allows the engine control module (ECM) to operate the fan at low, medium, or high speeds, depending on cooling requirements. The cooling fan and fan relays receive battery voltage from the underhood fuse block. The ground path for the operation of the cooling fan is provided at (see electrical schematic).

Low Speed Operation

The ECM energizes the fan 1 relay by grounding the fan 1 relay control circuit. The fan 1 relay coil closes the relay contacts to supply battery voltage from the FAN 1 fuse through the high resistance circuit of the cooling fan resistor module, and the fan motor supply voltage circuit to operate the cooling fan at low speed.

Medium Speed Operation

The ECM energizes the fan 2 and S/P relays by grounding the fan 2 relay control circuit. The energized fan 2 relay coil closes the relay contacts to supply battery voltage from the FAN 2 fuse. The voltage passes through the medium resistance circuit of the cooling fan resistor module, and the fan motor voltage supply circuit to operate the cooling fan at medium speed. At the same time, the energized S/P relay coil switches the dual pole contact position to prevent voltage from passing through the S/P relay to the low resistance circuit of the resistor module.

High Speed Operation

The ECM energizes the fan 1 relay by grounding the fan 1 relay control circuit. The ECM also energizes the high speed fan 2 relay and the S/P fan relay by grounding the fan 2 relay control circuit. The energized S/P fan relay coil switches the dual pole contact position, allowing voltage from the FAN 1 fuse to pass through the S/P relay to the low resistance circuit of the cooling fan resistor module, and the motor voltage supply circuit to operate the cooling fan at high speed. The energized fan 2 relay also provides voltage from the FAN 2 fuse through the medium resistance circuit of the cooling fan resistor module. This provides a back up to high speed operation if a condition exists in the high speed cooling fan circuit.

High Feature V6 Gasoline Engine Dual Cooling Fan Description and Operation

The engine cooling fan system consists of 2 electric cooling fans and 3 fan relays. The relays are arranged in a series/parallel (S/P) configuration that allows the engine control module (ECM) to operate both fans together at low or high speeds. The cooling fans receive positive voltage from the cooling fan relays which receive battery positive voltage from the underhood fuse block.

Low Speed Operation

In low speed operation, the ECM applies ground to the coil side of the cooling fan low speed relay. This energizes the coil and applies voltage directly to the right cooling fan through the switch side of the low speed relay. The right cooling fan is connected in series to the left cooling fan through the de-energized series/parallel (S/P) cooling fan speed control relay. The series circuit operates both fans at low speed.

High Speed Operation

In high speed operation, the ECM applies a ground to the coil side of the cooling fan low speed relay, the S/P cooling fan speed control relay, and the cooling fan high speed relay. When energized, the high speed fan relay applies voltage directly to the left cooling fan through the switch side of the relay. Simultaneously, the low speed fan relay and the S/P speed control relay provide ignition voltage and a direct path to ground for the right cooling fan. During high speed fan operation, both engine cooling fans have their own ground path. The result is a parallel circuit with both fans running at high speed.

Water Pump

The water pump is a centrifugal vane impeller type pump. The pump consists of a housing with coolant inlet and outlet passages and an impeller. The impeller is mounted on the pump shaft and consists of a series of flat or curved blades or vanes on a flat plate. When the impeller rotates, the coolant between the vanes is thrown outward by centrifugal force.

Cooling System Description and Operation

The impeller shaft is supported by one or more sealed bearings. The sealed bearings never need to be lubricated. Grease cannot leak out, dirt and water cannot get in as long as the seal is not damaged or worn.

The purpose of the water pump is to circulate coolant throughout the cooling system. The water pump is driven by the crankshaft via the drive belt.

Thermostat

The thermostat is a coolant flow control component. Its purpose is to help regulate the operating temperature of the engine. It utilizes a temperature sensitive wax-pellet element. The element connects to a valve through a small piston. When the element is heated, it expands and exerts pressure against the small piston. This pressure forces the valve to open. As the element is cooled, it contracts. This contraction allows a spring to push the valve closed.

When the coolant temperature is below the rated thermostat opening temperature, the thermostat valve remains closed. This prevents circulation of the coolant to the radiator and allows the engine to warm up. After the coolant temperature reaches the rated thermostat opening temperature, the thermostat valve will open. The coolant is then allowed to circulate through the thermostat to the radiator where the engine heat is dissipated to the atmosphere. The thermostat also provides a restriction in the cooling system, after it has opened. This restriction creates a pressure difference which prevents cavitation at the water pump and forces coolant to circulate through the engine block.

Transmission Oil Cooler

The transmission oil cooler is a heat exchanger. It is located inside the lower Radiator tank. The transmission fluid temperature is regulated by the temperature of the engine coolant in the radiator.

The transmission oil pump, pumps the fluid through the transmission oil cooler line to the transmission oil cooler. The fluid then flows through the cooler where the engine coolant absorbs heat from the fluid. The fluid is then pumped through the transmission oil cooler return line, to the transmission.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Special Tools

GE-26568 Coolant and Battery Fluid Tester

For equivalent regional tools, Refer to Special Tools

[Draining Procedure](#)

Warning: To avoid being burned, do not remove the radiator cap or surge tank cap while the engine is hot. The cooling system will release scalding fluid and steam under pressure if radiator cap or surge tank cap is removed while the engine and radiator are still hot.

1. Remove the coolant pressure cap from the radiator surge tank.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Place a drain pan under the drain cock.
4. Loosen the radiator drain cock. Refer to Radiator Drain Cock Replacement.
5. Drain the cooling system.
6. Lower the vehicle.
7. Inspect the coolant.
8. Follow the appropriate procedure based on the condition of the coolant.

- Normal in appearance—Follow the filling procedure.
- Discolored—Follow the flush procedure. Refer to Flushing.

[Filling Procedure](#)

Caution: The procedure below must be followed. Improper coolant level could result in a low or high coolant level condition, causing engine damage.

1. Raise and support the vehicle.

Caution: Refer to Fastener Caution.

2. Tighten the radiator drain cock. Refer to Radiator Drain Cock Replacement.
3. Lower the vehicle.

Note: Use a 50/50 mixture of DEX-COOL antifreeze and clean drinkable water.

4. Slowly fill the radiator with a 50/50 coolant mixture until the coolant level reaches the base of the radiator recovery tank. Refer to Approximate Fluid Capacities.
5. Allow 30 seconds for the coolant level to stabilize and continue to fill the coolant filler neck until the level stabilizes for at least 2 minutes.
6. Start the engine and allow to the engine to idle in PARK or NEUTRAL with the parking brake engaged.
7. Slowly fill the coolant mixture until the level stabilizes at the top of the radiator fill port.
8. Install the coolant pressure cap.
9. Raise the engine RPM to 2500 RPM for 30–40 seconds.
10. Shut the engine OFF.
11. Allow the engine to cool, remove coolant fill cap and repeat steps 4–10 until the coolant level has completely stabilized within the radiator fill port.
12. Inspect the concentration of the engine coolant using the GE-26568 Coolant and Battery Fluid Tester.
13. Inspect and if necessary, fill the radiator recovery tank as necessary.
14. Rinse away any excess coolant from the engine and the engine compartment.
15. Inspect the cooling system for leaks. If coolant lose is noticed. Refer to Cooling System Leak Testing.
16. Top off the radiator recovery tank, if necessary.
17. Install the coolant pressure cap.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Special Tools

GE-26568 Coolant and Battery Fluid Tester

For equivalent regional tools, Refer to Special Tools

[Draining Procedure](#)

Warning: To avoid being burned, do not remove the radiator cap or surge tank cap while the engine is hot. The cooling system will release scalding fluid and steam under pressure if radiator cap or surge tank cap is removed while the engine and radiator are still hot.

1. Remove the coolant pressure cap from the radiator surge tank.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Place a drain pan under the drain cock.
4. Loosen the radiator drain cock. Refer to Radiator Drain Cock Replacement.
5. Drain the cooling system.
6. Lower the vehicle.
7. Inspect the coolant.
8. Follow the appropriate procedure based on the condition of the coolant.

- Normal in appearance—Follow the filling procedure.
- Discolored—Follow the flush procedure. Refer to Flushing.

[Filling Procedure](#)

Caution: The procedure below must be followed. Improper coolant level could result in a low or high coolant level condition, causing engine damage.

1. Raise and support the vehicle.

Caution: Refer to Fastener Caution.

2. Tighten the radiator drain cock. Refer to Radiator Drain Cock Replacement.
3. Lower the vehicle.

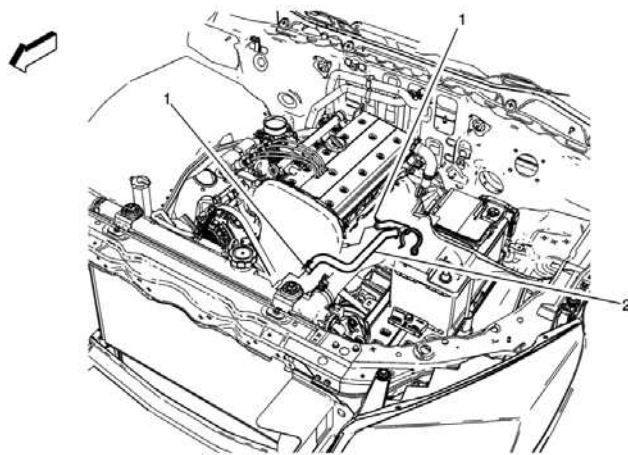
Note: Use a 50/50 mixture of DEX-COOL antifreeze and clean drinkable water.

4. Slowly fill the radiator with a 50/50 coolant mixture until the coolant level reaches the base of the radiator surge tank. Refer to Approximate Fluid Capacities.
5. Allow 30 seconds for the coolant level to stabilize and continue to fill the coolant filler neck until the level stabilizes for at least 2 minutes.
6. Start the engine and allow to the engine to idle in PARK or NEUTRAL with the parking brake engaged.
7. Slowly fill the coolant mixture until the level stabilizes at the base of the radiator surge tank.
8. Install the coolant pressure cap.
9. Raise the engine RPM to 2500 RPM for 30–40 seconds.
10. Shut the engine OFF.
11. Allow the engine to cool, remove coolant fill cap and repeat steps 4–10 until the coolant level has completely stabilized within the radiator surge tank.
12. Inspect the concentration of the engine coolant using the GE-26568 Coolant and Battery Fluid Tester.
13. Inspect and if necessary, fill the radiator surge tank as necessary.
14. Rinse away any excess coolant from the engine and the engine compartment.
15. Inspect the cooling system for leaks. If coolant lose is noticed. Refer to Cooling System Leak Testing.
16. Top off the radiator surge tank, if necessary.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Engine Coolant Air Bleed Hose Replacement

Callout

Component Name

Special Tools

BO-38185 Hose Clamp Pliers

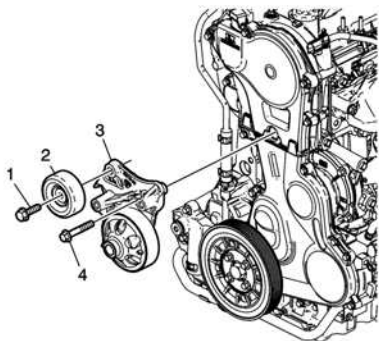
For equivalent regional tools, refer to Special Tools.

- | | |
|---|---|
| 1 | Engine Coolant Air Bleed Hose Clamps (Qty: 2) |
| 2 | Engine Coolant Air Bleed Hose |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



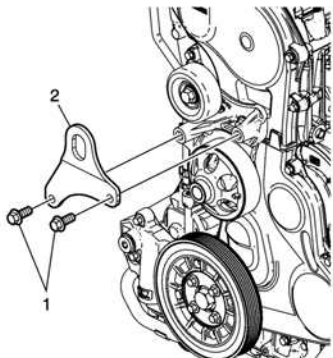
1. Install the cooler fan pulley (3).

Caution: Refer to Fastener Caution.

2. Install the pulley bracket bolts (4) and tighten to **45 Y (33 lb ft)**.

Note: The drive belt idler pulley bolt (1) has a left handed thread.

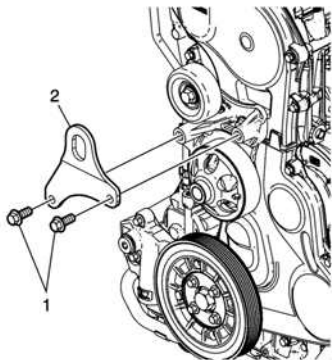
3. Install the drive belt idler pulley (2) and pulley bolt (1) and tighten to **45 Y (33 lb ft)**.



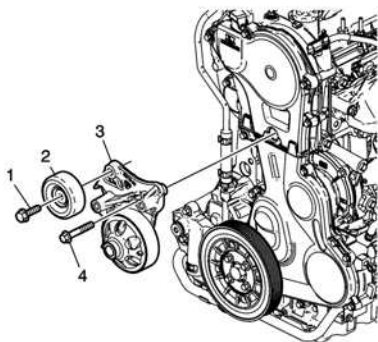
4. Install the front lift bracket (2).
5. Install the front lift bracket bolts (1) and tighten to **58 Y (43 lb ft)**.

2013 Chevrolet Colorado

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



1. Remove the front lift bracket bolts (1) and the bracket (2).



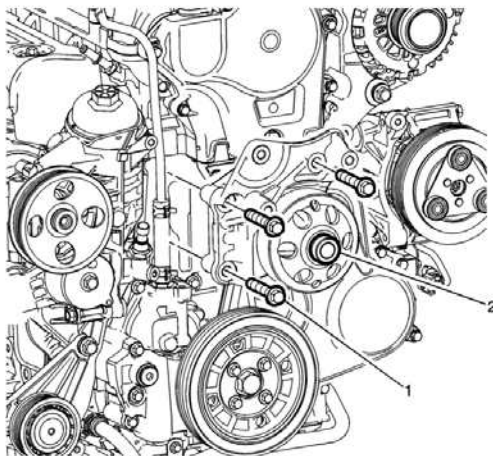
Note: The drive belt idler pulley bolt (1) has a left handed thread.

2. Remove the drive belt idler pulley bolt (1) and pulley (2).
3. Remove the cooler fan pulley mounting bolts (4) and the cooler fan pulley (3).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Engine Coolant Fan Bracket Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the Drive Belt Idler Pulley. Refer to Drive Belt Idler Pulley Replacement - Left Side.
2. Remove the engine coolant fan clutch. Refer to Fan Blade Clutch Replacement.

Engine Coolant Fan Bracket Fastener (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

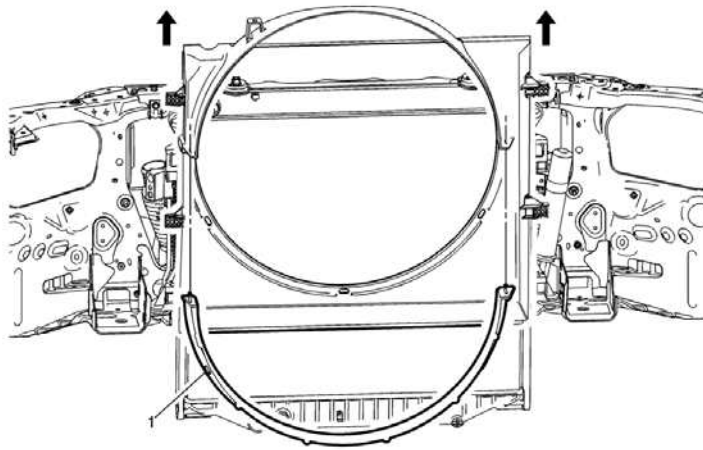
45 Y (33 lb ft)

2

Engine Coolant Fan Bracket

2013 Chevrolet Colorado

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



Engine Coolant Fan Lower Shroud Replacement

Callout

Component Name

Preliminary Procedure

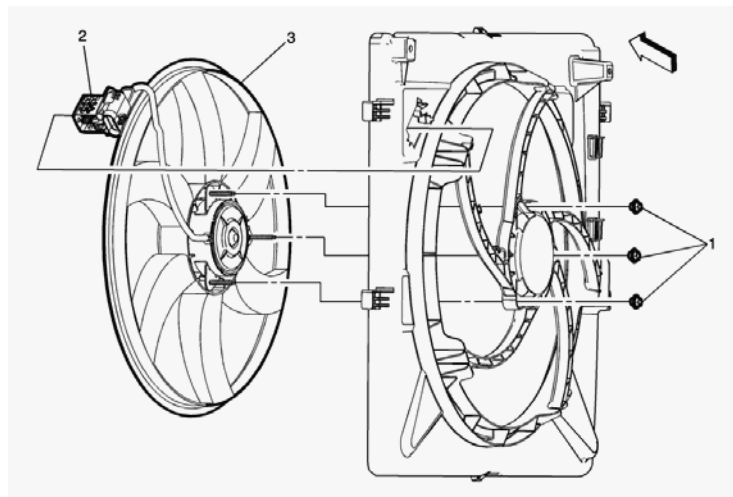
1. Unclip transmission cooler lines from shroud if equipped.
2. Disconnect any electrical connectors from the fan shroud.
3. Remove the engine protection shield. Refer to. Engine Protection Shield Replacement.

1 Lower Shroud

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Engine Coolant Fan Replacement

Callout

Component Name

Preliminary Procedure

Remove the engine coolant fan shroud from the vehicle. Refer to Engine Coolant Fan Shroud Replacement

1 Engine Coolant Fan Fasteners (Qty: 3)

Caution: Refer to Fastener Caution.

Electrical Connector Fastener

2 **Procedure**

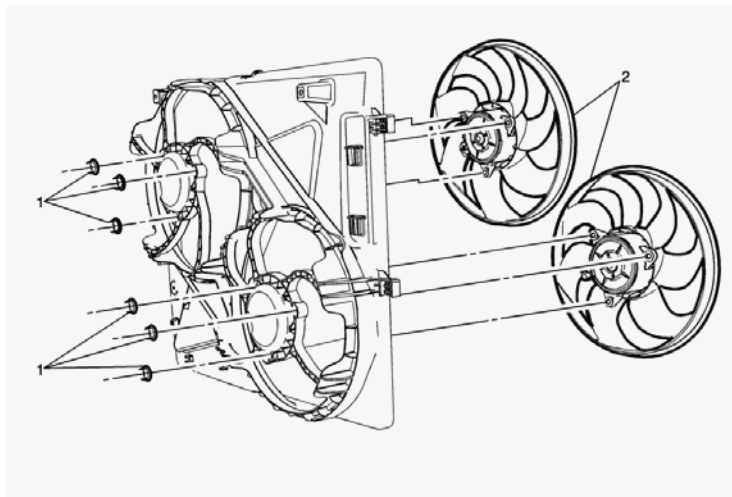
Remove the electrical connector fastener from the engine coolant fan shroud.

3 Engine Coolant Fan

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Engine Coolant Fan Replacement

Callout

Component Name

Preliminary Procedure

Remove the engine fan shroud. Refer to Engine Coolant Fan Shroud Replacement.

Fan Motor Fastener (Qty: 6)

Caution: Refer to Fastener Caution.

1

Tighten

10 Y (89 lb in)

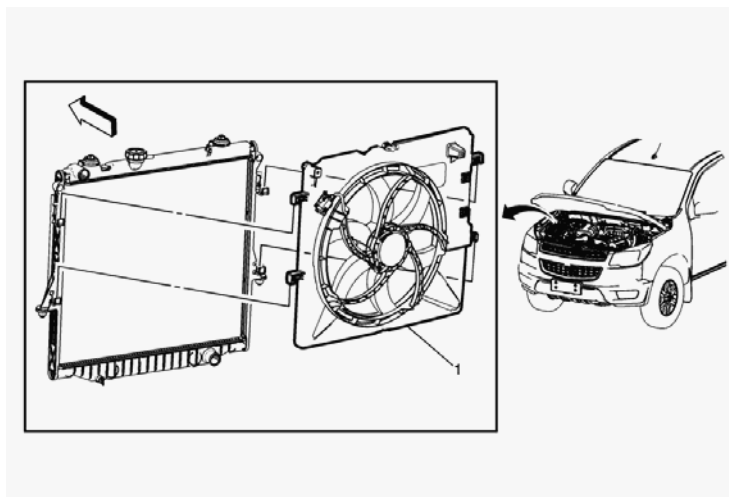
Engine Coolant Fan Motor (Qty: 2)

2

Note: Both fans are serviced as and assembly with the fan blades and can be serviced separately.

2013 Chevrolet Colorado

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



Engine Coolant Fan Shroud Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Remove the coolant recovery reservoir vent hose. Refer to Coolant Recovery Reservoir Vent Hose Replacement.
3. Remove the radiator inlet hose. Refer to Radiator Inlet Hose Replacement.
4. Remove the coolant recovery reservoir. Refer to Coolant Recovery Reservoir Replacement
5. Remove the air conditioning compressor and condenser hose fastener securing the hose to the shroud. Refer to Air Conditioning Compressor and Condenser Hose Replacement

Engine Coolant Fan Shroud

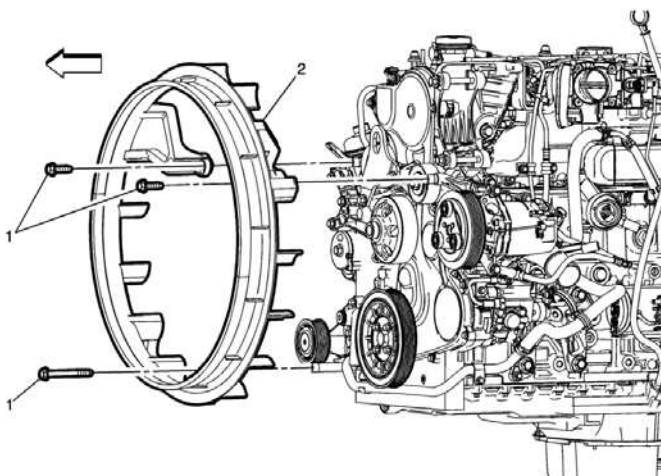
1

Procedure

Disconnect the engine coolant fan electrical connector.

2013 Chevrolet Colorado

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



Engine Coolant Fan Shroud Replacement

Callout

Component Name

Preliminary Procedure

1. Unclip transmission cooler lines from shroud if equipped.
2. Disconnect any electrical connectors from the fan shroud.
3. Remove lower shroud. Refer to. Engine Coolant Fan Lower Shroud Replacement
4. Remove the fan blade clutch. Refer to Fan Blade Clutch Replacement.

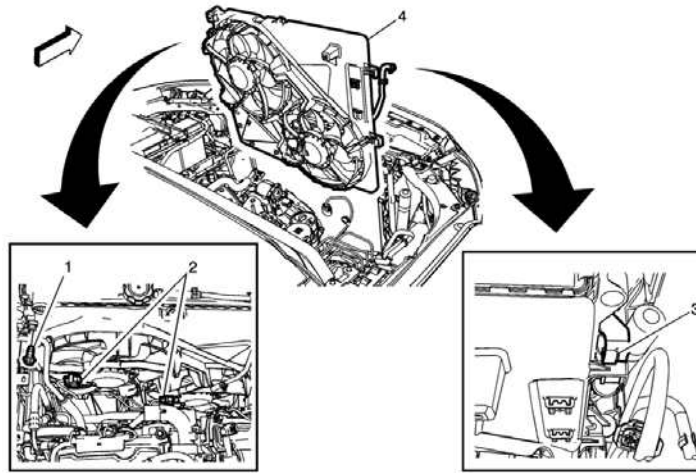
1 Engine Coolant Fan Shroud Bolts (Qty: 3)

Caution: Refer to Fastener Caution.

2 Engine Coolant Fan Shroud

2013 Chevrolet Colorado

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



Engine Coolant Fan Shroud Replacement

Callout

Component Name

Preliminary Procedures

1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the air cleaner outlet duct from the air cleaner. Refer to Air Cleaner Outlet Duct Replacement.
3. Remove the coolant recovery reservoir. Refer to Coolant Recovery Reservoir Replacement.
4. Remove the radiator inlet hose. Refer to Radiator Inlet Hose Replacement.

1 Retaining Fastener
Caution: Refer to Fastener Caution.

2 Fan Motor Harness Connector (Qty: 2)
Fan Shroud Retaining Tab (Qty: 2)

3 **Procedure**
Depress both retaining tabs while lifting upward on the engine coolant fan shroud.

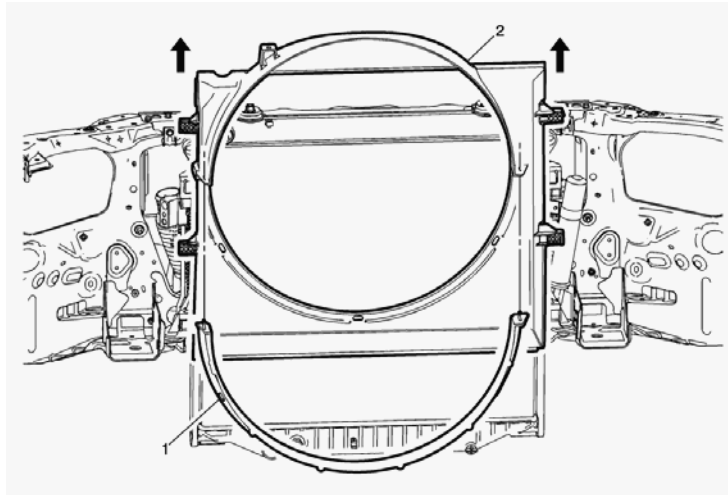
Engine Coolant Fan Shroud

4 **Procedure**
If replacing the shroud, transfer the engine cooling fan motors. Refer to Engine Coolant Fan Replacement.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Engine Coolant Fan Upper Shroud Replacement

Callout

Component Name

Preliminary Procedure

1. Unclip transmission cooler lines from shroud if equipped.
2. Disconnect any electrical connectors from the fan shroud.
3. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.
4. Loosen the clamp at the throttle body and bracket to remove the charge air cooler outlet air hose. Refer to Charge Air Cooler Outlet Air Hose Replacement.
5. Remove air conditioning compressor and condenser hose. Refer to Air Conditioning Compressor and Condenser Hose Replacement.
6. Remove the radiator inlet hose from the radiator. Refer to Radiator Inlet Hose Replacement.
7. Remove the coolant recovery reservoir vent hose from the radiator. Refer to Coolant Recovery Reservoir Vent Hose Replacement.

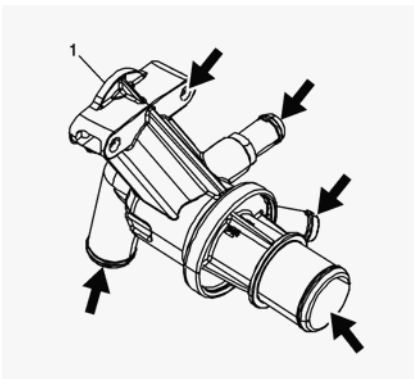
1 Lower Shroud

2 Upper Shroud

Note: Unclip engine coolant fan shroud from radiator.

2013 Chevrolet Colorado

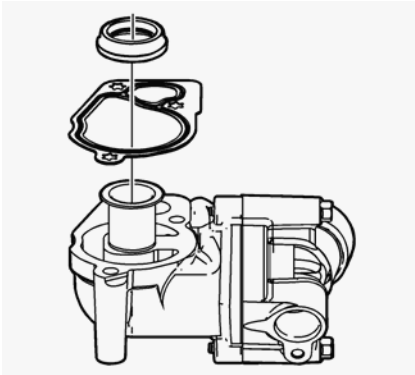
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



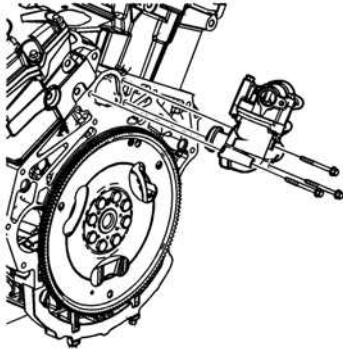
Clean and inspect the engine coolant thermostat assembly (1). Replace as necessary.

2013 Chevrolet Colorado

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



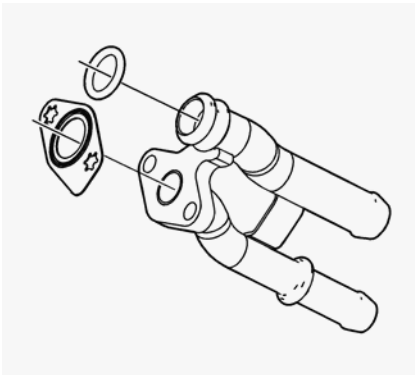
1. Install the NEW thermostat housing assembly O-ring and gasket.



2. Install the thermostat housing assembly.

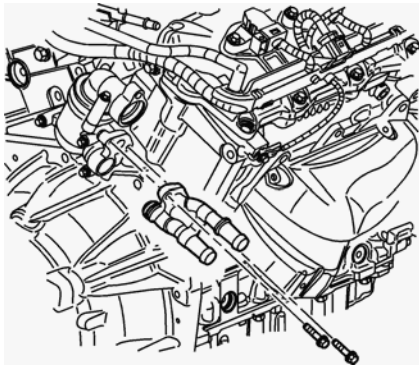
Caution: Refer to Fastener Caution.

3. Install the thermostat housing assembly bolts and tighten to **10 Y (89 lb in)**.



4. Install the NEW heater inlet/outlet pipe assembly O-ring and gasket.

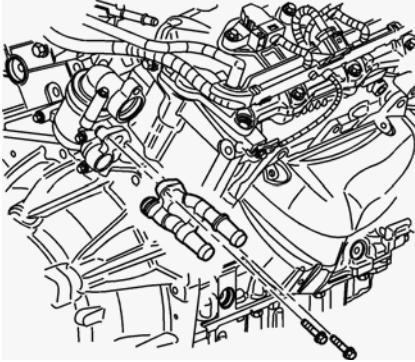
Engine Coolant Thermostat Housing Installation



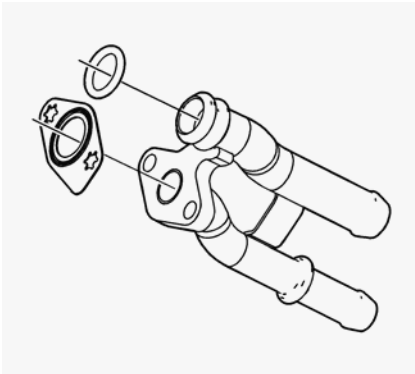
5. Install the heater inlet/outlet pipe assembly.
6. Install the heater inlet/outlet pipe assembly bolts and tighten to **10 Y (89 lb in)**.

2013 Chevrolet Colorado

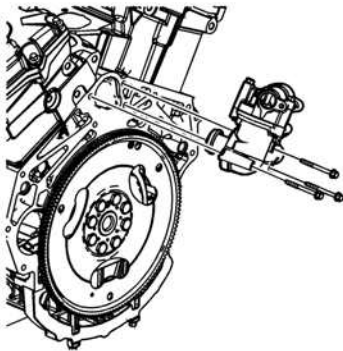
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



1. Remove the heater inlet/outlet pipe assembly bolts.
2. Remove the heater inlet/outlet pipe assembly.

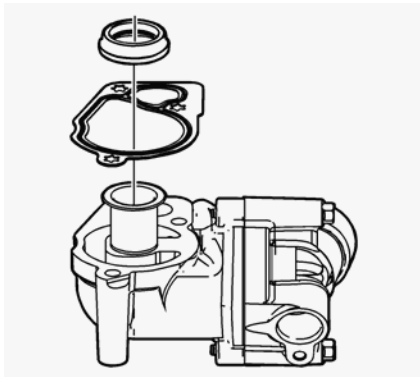


3. Remove and discard the heater inlet/outlet pipe assembly O-ring and gasket.



4. Remove the thermostat housing assembly bolts.
5. Remove the thermostat housing assembly.

Engine Coolant Thermostat Housing Removal



6. Remove and discard the thermostat housing assembly O-ring and gasket.

2013 Chevrolet Colorado

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

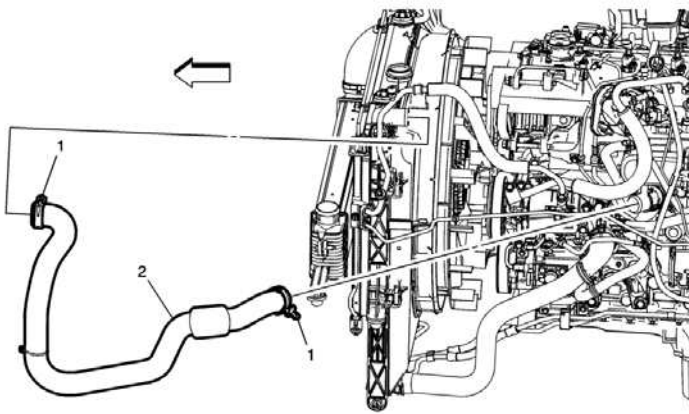
Special Tools

BO-38185 Hose Clamp Pliers

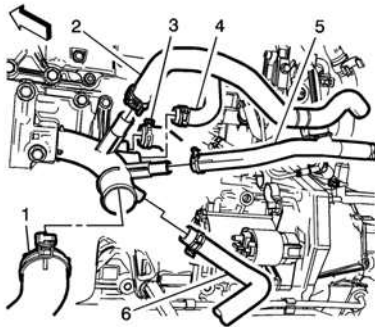
For equivalent regional tools, refer to Special Tools.

Removal Procedure

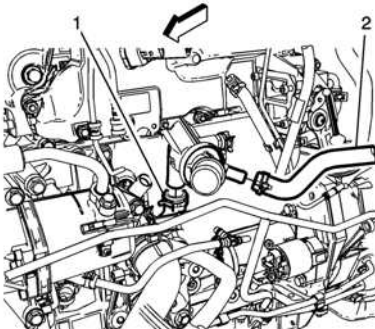
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.
3. Remove the battery. Refer to Battery Replacement.
4. Remove the intake manifold. Refer to Intake Manifold Replacement.



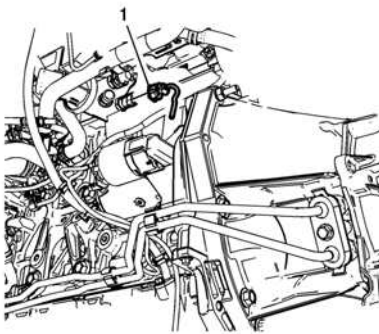
5. Remove the radiator inlet pipe clamp (1) to the thermostat housing and remove the radiator inlet pipe (2).



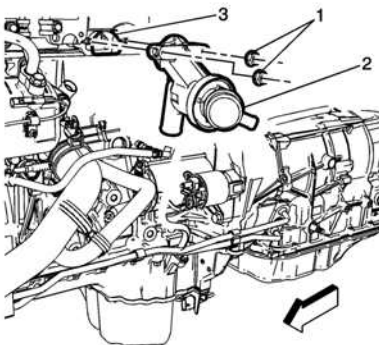
6. Remove the heater inlet hose or the heater bypass hose (2) using the BO-38185 pliers from the water pump inlet pipe.



7. Remove the thermostat bypass hose (1) and the heater outlet hose or the heater bypass hose (2).

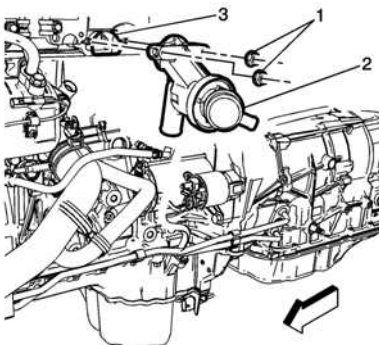


8. Disconnect the engine coolant temperature (ECT) connector (1).
9. Remove the EGR cooling feed hose. Refer to Exhaust Gas Recirculation Valve Cooling Feed Hose Replacement.

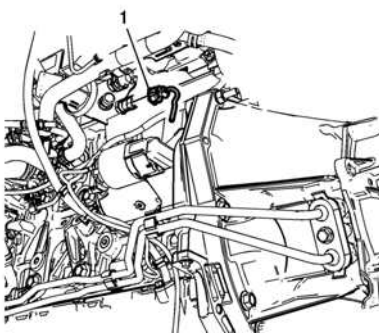


10. Remove the thermostat housing fasteners (1) and discard the seal (2).

[Installation Procedure](#)

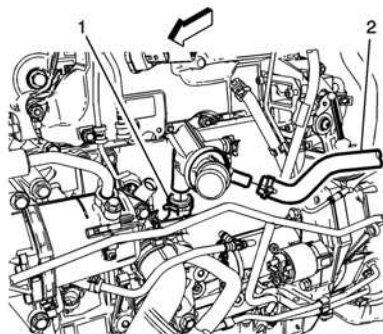


1. Install the thermostat housing (2) with a NEW seal (3) and tighten the fasteners (1) to **24 Y (18 lb ft)**.

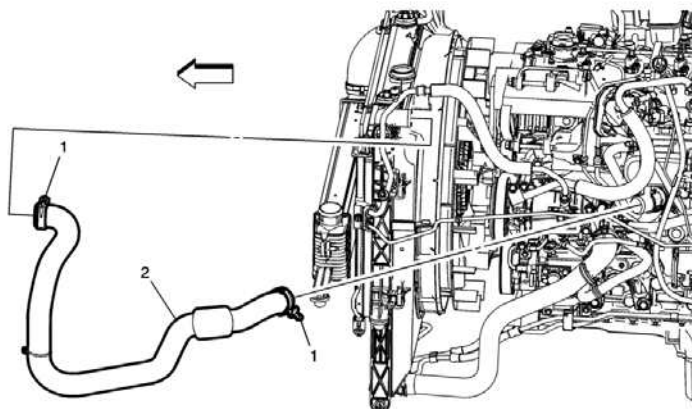


2. Connect the engine coolant temperature (ECT) connector (1).
3. Install the EGR cooling feed hose. Refer to Exhaust Gas Recirculation Valve Cooling Feed Hose Replacement.

Engine Coolant Thermostat Housing Replacement (Diesel)



4. Install the thermostat bypass hose (1) and the heater outlet hose or the heater bypass hose (2).



5. Install the radiator inlet pipe (2) to the thermostat housing with the clamp (1).
6. Install the intake manifold. Refer to Intake Manifold Replacement.
7. Install the battery. Refer to Battery Replacement.
8. Fill the cooling system. Refer to Cooling System Draining and Filling.
9. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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

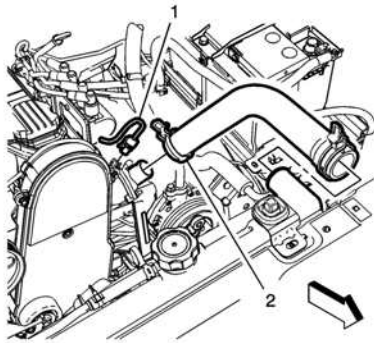
Special Tools

BO-38185 Hose Clamp Pliers

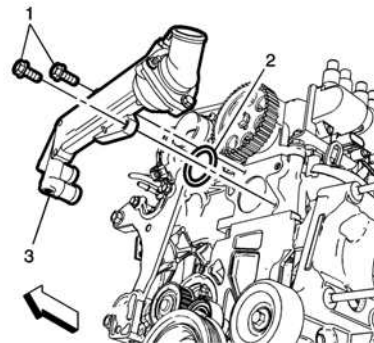
For equivalent regional tools, refer to Special Tools.

Removal Procedure

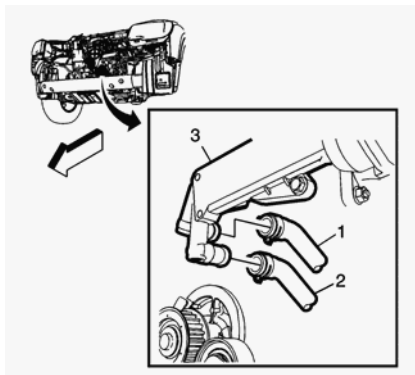
1. Drain the cooling system. Refer to Cooling System Draining and Filling.



2. Remove the radiator inlet pipe (2) using the BO-38185 pliers and disconnect the engine coolant temperature (ECT) sensor (1).
3. Remove the timing belt rear cover. Refer to Timing Belt Rear Cover Replacement.

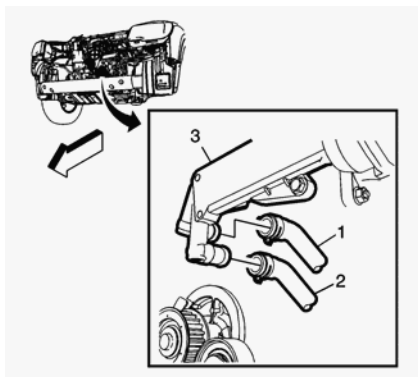


4. Remove the thermostat housing fasteners (1) and remove the thermostat housing (3).
5. Discard the thermostat housing seal (2).

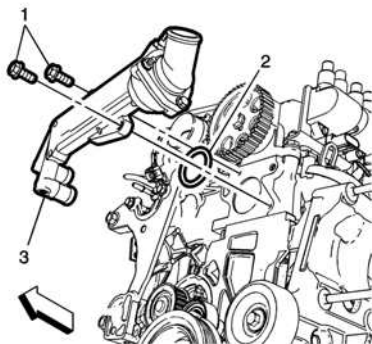


6. With the thermostat housing out of the engine, remove the heater inlet hose (2) using the BO-38185 pliers and the heater outlet hose (1) from the thermostat housing (3).

Installation Procedure

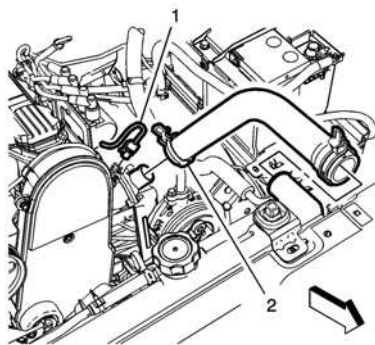


1. Install the heater outlet hose (1) and the heater inlet hose (2).



Caution: Refer to Fastener Caution.

2. Install the thermostat housing (3) with a NEW seal (2) and tighten the fasteners (1) to **20 Y (15 lb ft)**.
3. Install the timing belt rear cover. Refer to Timing Belt Rear Cover Replacement.

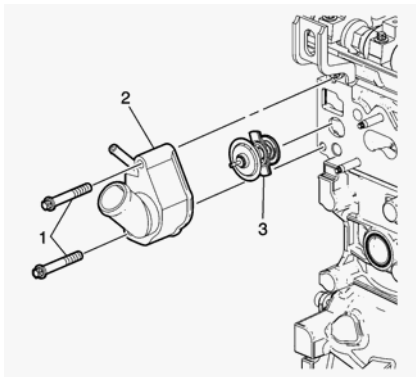


4. Connect the ECT sensor (1) and install the radiator inlet hose (2).
5. Fill the cooling system. Refer to Cooling System Draining and Filling.
6. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Install the thermostat assembly (3) into the thermostat housing (2).

Note: Install new thermostat seal O-ring in thermostat housing (2).

2. Install the thermostat housing (2).
3. Install the thermostat housing bolts (1).

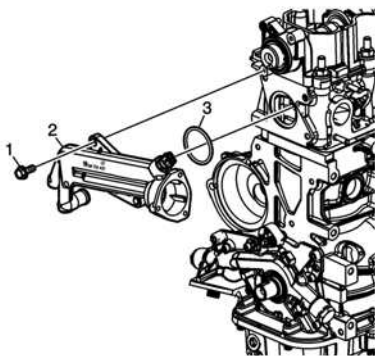
Caution: Refer to Fastener Caution.

4. Tighten the thermostat housing bolts (1) to **15.0 Y (11 lb ft)**.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

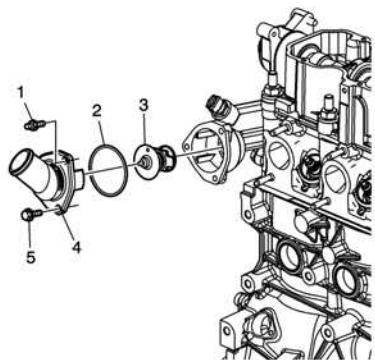
Fuel Delivery: | Fuel:



1. Install the thermostat housing (2) with a NEW seal (3).

Caution: Refer to Fastener Caution.

2. Tighten the thermostat housing bolts (1) to **15.0 Y (11 lb ft)**.



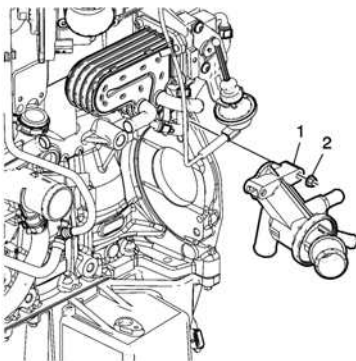
3. Install the thermostat assembly (3).
4. Install the thermostat housing cover (4) with NEW seal (2).

Caution: Refer to Fastener Caution.

5. Tighten the thermostat housing bolts (1 and 5) to **15.0 Y (11 lb ft)**.

2013 Chevrolet Colorado

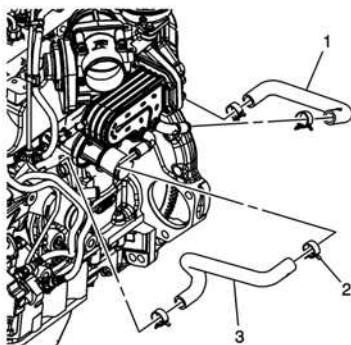
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



1. Install the engine coolant thermostat housing (1).

Caution: Refer to Fastener Caution.

2. Install the thermostat housing nuts (2) and tighten to **25 Y (19 lb ft)**.



3. Install the cooler bypass hoses (1 and 3).
4. Install the hose clamps (2).

2013 Chevrolet Colorado

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

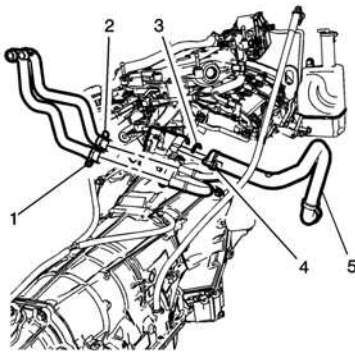
Special Tools

BO-38185 Hose Clamp Pliers

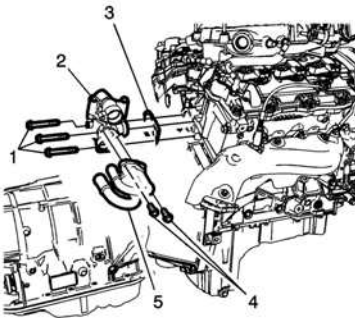
For equivalent regional tools, refer to Special Tools.

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.
3. Remove the cowl front panel. Refer to Cowl Front Panel Replacement.
4. Remove the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement.

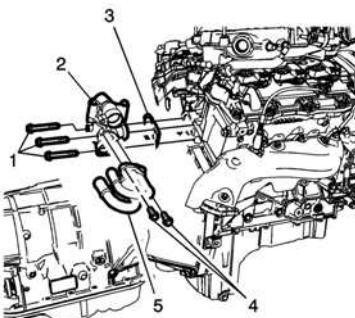


5. Using the BO-38185 pliers, remove the heater inlet hose (2) and the heater outlet hose (1).



6. Remove the thermostat lower housing fasteners (1) and discard the lower thermostat housing gasket (3).
7. Remove the heater inlet and outlet pipe fasteners (4) and remove the heater inlet and outlet pipes (5).
8. Remove the water inlet pipe on top of the lower thermostat housing. Refer to Water Inlet Replacement.

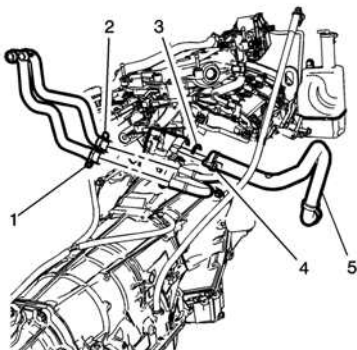
Installation Procedure



Engine Coolant Thermostat Lower Housing Replacement (LY7)

Caution: Refer to Fastener Caution.

1. Install the heater inlet and outlet pipes (5) to the lower thermostat housing with NEW gasket. Tighten the fasteners (4) to **10 Y (89 lb in)**.
2. Install the lower thermostat housing with a NEW gasket (3) and tighten the fasteners (1) to **10 Y (89 lb in)**.

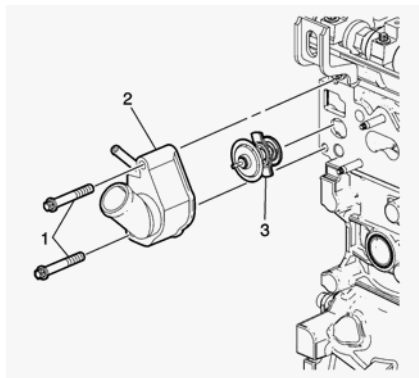


3. Install the heater outlet hose (1) and the heater inlet hose (2).
4. Install the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement.
5. Install the cowl front panel. Refer to Cowl Front Panel Replacement.
6. Fill the cooling system. Refer to Cooling System Draining and Filling.
7. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

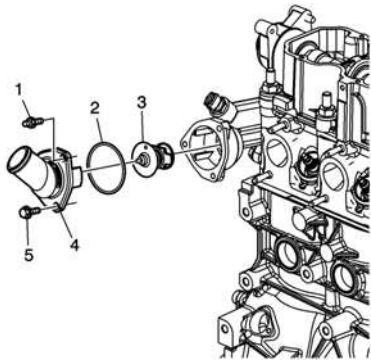


1. Remove the engine coolant thermostat housing bolts (1).
2. Remove the thermostat housing (2).
3. Remove thermostat assembly (3) from thermostat housing (2).

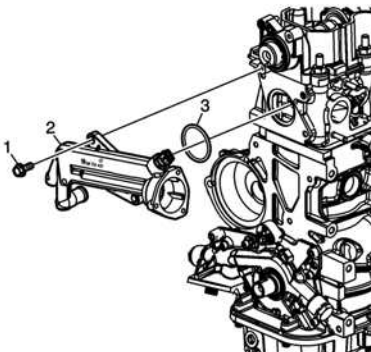
Note: Replace thermostat housing seal O-ring.

2013 Chevrolet Colorado

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



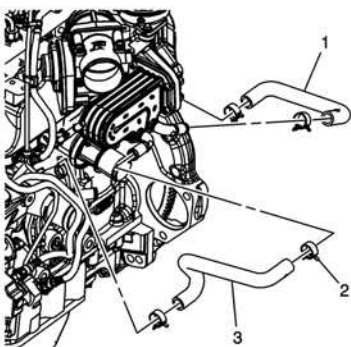
1. Remove the engine coolant thermostat housing cover bolts (1 and 5).
2. Remove the thermostat housing cover (4).
3. Remove the thermostat seal (2) and thermostat assembly (3).
4. If necessary, remove the heater inlet hose and heater outlet hose. Refer to Heater Inlet Hose Replacement and Heater Outlet Hose Replacement.



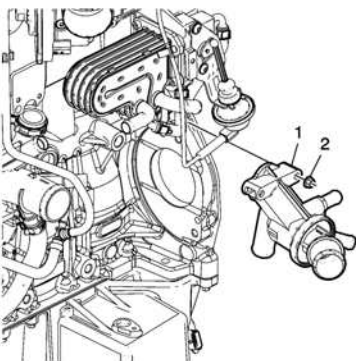
5. Remove the thermostat housing bolts (1).
6. Remove the thermostat housing (2) and seal (3).

2013 Chevrolet Colorado

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



1. Remove the hose clamps (2).
2. Remove the cooler bypass hoses (1 and 3).



3. Remove the engine coolant thermostat housing nuts (2) and the thermostat housing (1).

2013 Chevrolet Colorado

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

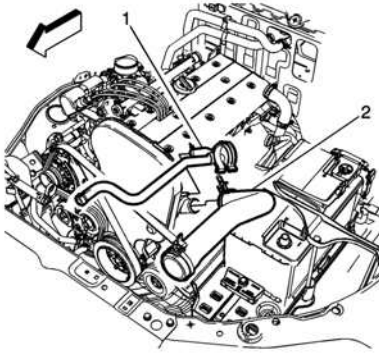
Special Tools

BO 38185 Hose Clamp Pliers

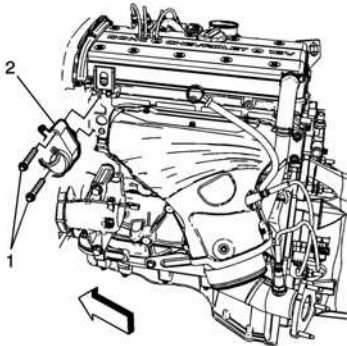
For equivalent regional tools, refer to Special Tools.

[Removal Procedure](#)

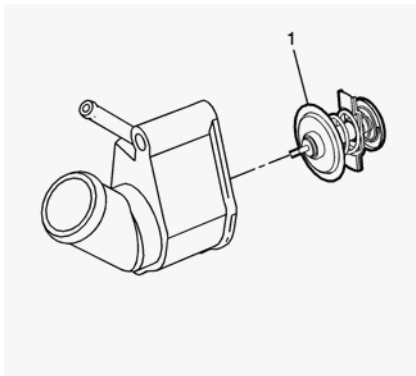
1. Drain the cooling system. Refer to Cooling System Draining and Filling.



2. Remove the engine coolant air bleed hose (1) and the radiator inlet hose (2) from the thermostat housing.

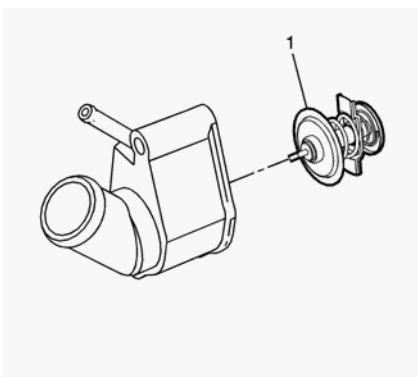


3. Remove the thermostat mounting fasteners (1) and remove the thermostat assembly (2) from the engine compartment.

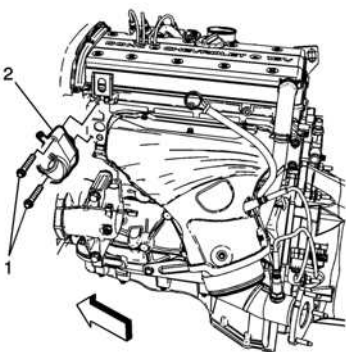


4. Remove the thermostat (1) from the housing.

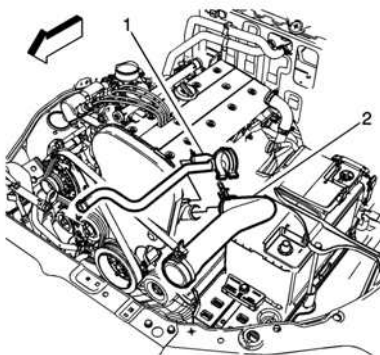
[Installation Procedure](#)



1. Install a NEW thermostat (1) into the housing.



2. Install the thermostat housing (2) to the cylinder head and tighten the fasteners (1) to **15 Y (11 lb ft)**.



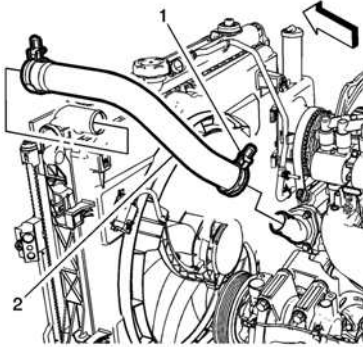
3. Install the engine coolant air bleed hose (1) and the radiator inlet hose (2) to the thermostat housing.
4. Fill the cooling system. Refer to Cooling System Draining and Filling.
5. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

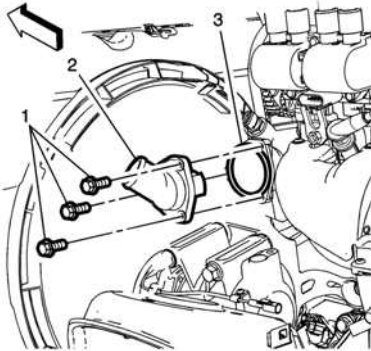
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

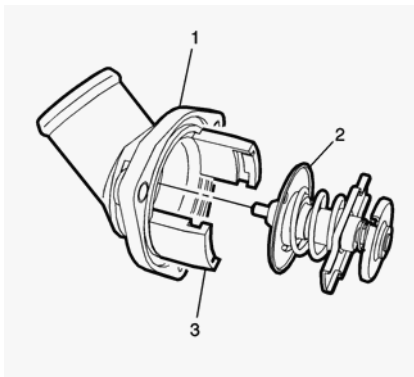
1. Drain the cooling system. Refer to Cooling System Draining and Filling.



2. Release the radiator inlet hose clamp (1) and remove the radiator inlet hose (2) from the thermostat housing.

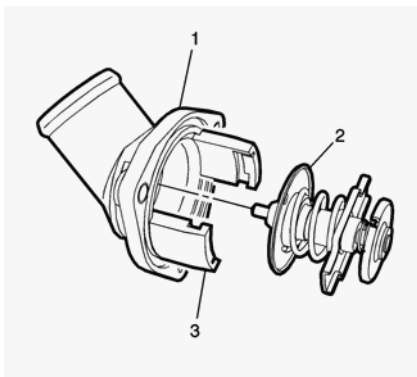


3. Remove the thermostat fasteners (1) and remove the thermostat (2).
4. Discard the thermostat seal (3).

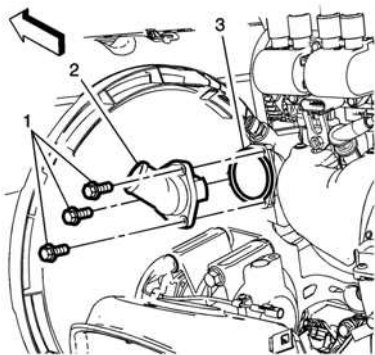


5. Remove the thermostat (2) by pushing down and twisting clockwise, to release it from the retaining tabs (3).

[Installation Procedure](#)

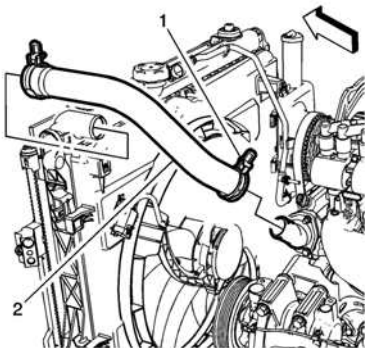


1. Install the thermostat (2) into the housing retaining tabs (3).



Caution: Refer to Fastener Caution.

2. Install the thermostat (2) with a NEW seal (3) and tighten the fasteners (1) to **9 Y (80 lb in)**.



3. Install the radiator inlet hose (2).
4. Fill the cooling system. Refer to Cooling System Draining and Filling.
5. Start the engine and check for coolant leaks.

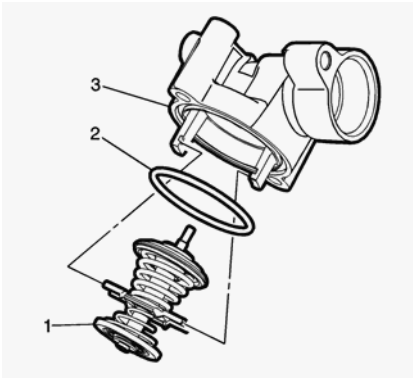
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

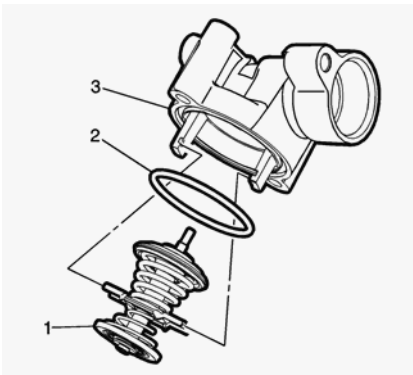
[Removal Procedure](#)

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Remove the water inlet pipe. Refer to Water Inlet Replacement.



3. Remove the thermostat (1) by pushing in and turning clockwise , to release it from the holding tabs on the water inlet pipe (3).
4. Discard the water inlet pipe seal (2).

[Installation Procedure](#)



1. Install the thermostat (1) into the retaining tabs on the water inlet pipe (3).
2. Install the water inlet pipe. Refer to Water Inlet Replacement.
3. Fill the cooling system. Refer to Cooling System Draining and Filling.
4. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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

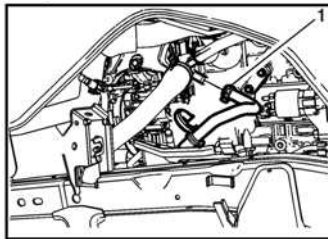
Special Tools

BO-38185 Hose Clamp Pliers

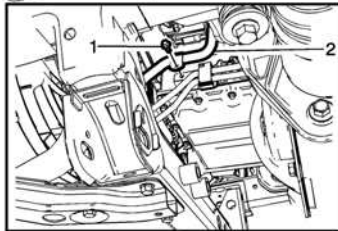
For equivalent regional tools, refer to Special Tools.

[Removal Procedure](#)

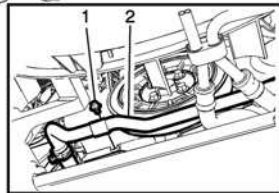
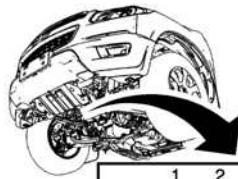
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.



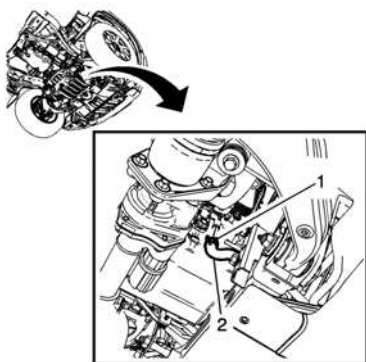
3. Remove the engine oil cooler hose (1) using the BO-38185 pliers from the water pump inlet pipe.



4. Remove the engine oil cooler pipe retainer fastener (1).

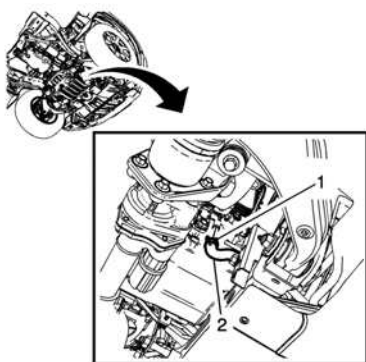


5. Remove the engine oil cooler hose clamp (1) and remove the engine oil cooler pipe (2).

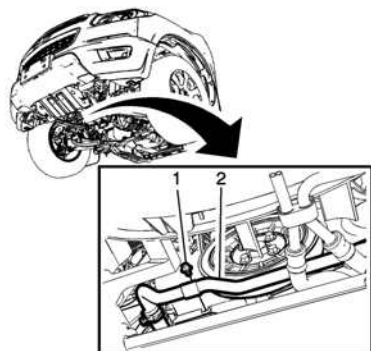


6. Remove the engine oil cooler hose (2) from the engine oil cooler with the hose clamp (1).
7. Remove the engine oil cooler hose and pipe from the front engine compartment.

[Installation Procedure](#)

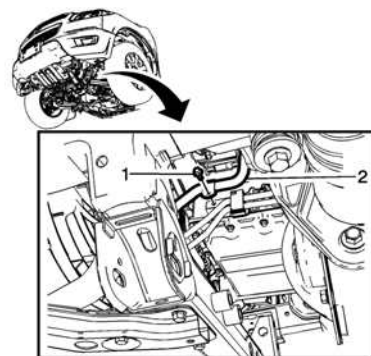


1. Install the engine oil cooler hose (2) to the engine oil cooler with the hose clamp (1).



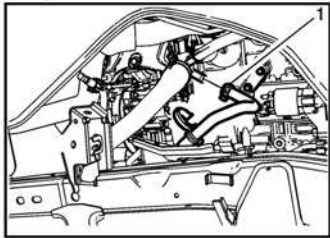
Caution: Refer to Fastener Caution.

2. Install the engine oil cooler pipe (2) to the engine front cover and tighten the fastener (1) to **15 Y (11 lb ft)**.



3. Install the engine oil cooler pipe (2) to the engine block and tighten the fastener (1) to **15 Y (11 lb ft)**.

Engine Oil Cooler Hose/Pipe Replacement

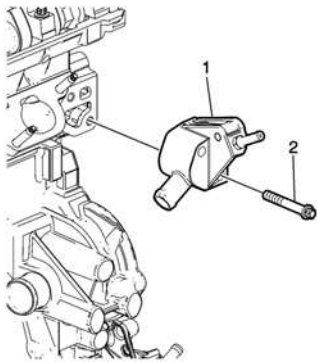


4. Install the engine oil cooler hose to the water pump inlet pipe with the hose clamp (1).
5. Fill the cooling system. Refer to Cooling System Draining and Filling.
6. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

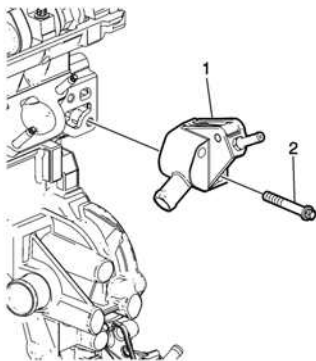


1. Install the engine water outlet adapter housing (1).
2. Install the engine water outlet adapter bolts (2).
3. Tighten the bolts (2) to **15 Y (12 lb ft)**.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Remove the engine water outlet adapter bolts (2).
2. Remove the engine water outlet adapter housing (1).

2013 Chevrolet Colorado

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

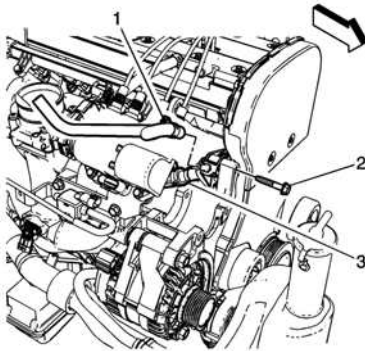
Special Tools

BO 38185 Hose Clamp Pliers

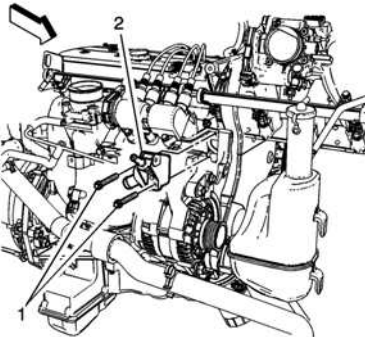
For equivalent regional tools, refer to Special Tools.

[Removal Procedure](#)

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Remove the power steering pump. Refer to Power Steering Pump Replacement.

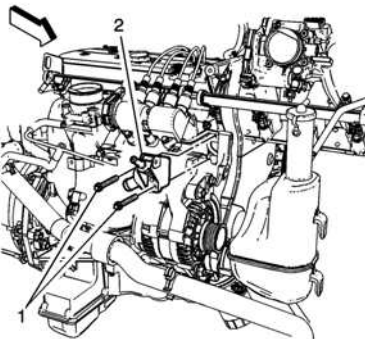


3. Remove the throttle body outlet hose (1) and the radiator outlet hose (3), from the water outlet adapter.
4. Remove the power steering pump support fastener (2).



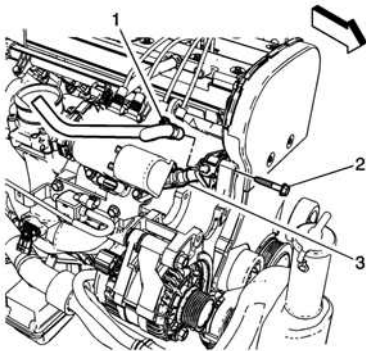
5. Remove the water outlet adapter mounting fasteners (1) and remove the water outlet adapter (2) from the engine compartment.

[Installation Procedure](#)



1. Install the water outlet adapter (2) to the cylinder head and tighten the fasteners (1) to **15 Y (11 lb ft)**.

Engine Water Outlet Adapter Replacement (LE6)

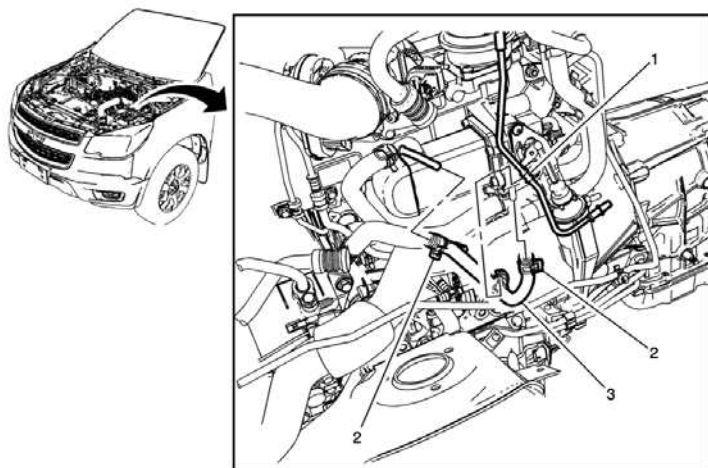


2. Install the radiator outlet hose (3) and the throttle body outlet hose (1) to the water outlet adapter.
3. Install the power steering pump support fastener (2) and tighten to **25 Y (18 lb ft)**.
4. Install the power steering pump. Refer to Power Steering Pump Replacement.
5. Fill the cooling system. Refer to Cooling System Draining and Filling.
6. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Gas Recirculation Manifold Cooling Return Hose Replacement

Callout

Component Name

Preliminary Procedure

Remove the battery. Refer to Battery Replacement.

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to Special Tools.

- | | |
|---|--|
| 1 | EGR Valve Vacuum Pipe |
| 2 | EGR Manifold Cooling Return Hose Clamp |
| | EGR Manifold Cooling Return Hose |

Procedure

- | | |
|---|---|
| 3 | |
| | 1. Unclip the EGR vacuum pipe (1) from the EGR cooling return hose and set aside. |
| | 2. Remove the EGR manifold cooling return hose. |

2013 Chevrolet Colorado

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

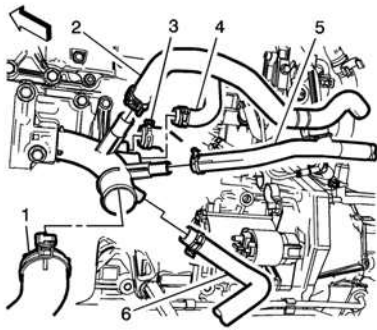
Special Tools

BO-38185 Hose Clamp Pliers

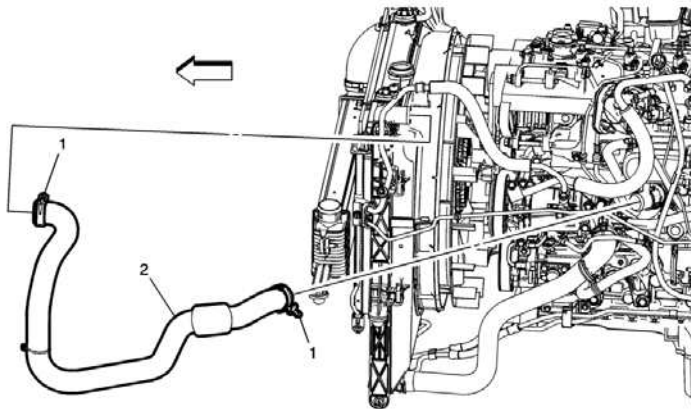
For equivalent regional tools, refer to Special Tools.

Removal Procedure

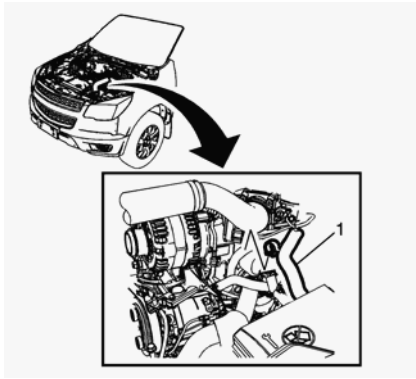
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the wheel. Refer to Tire and Wheel Removal and Installation.
3. Drain the cooling system. Refer to Cooling System Draining and Filling.
4. Remove the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
5. Remove the battery. Refer to Battery Replacement.



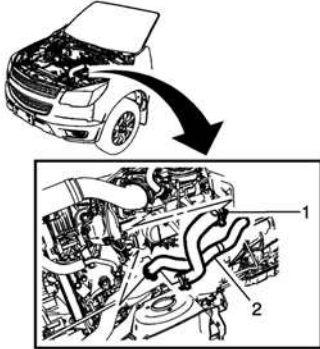
6. Remove the coolant recovery reservoir inlet hose (2) using the BO-38185 pliers from the water pump inlet pipe.



7. Remove the radiator inlet pipe clamp (1) to the thermostat housing and remove the radiator inlet pipe (2).

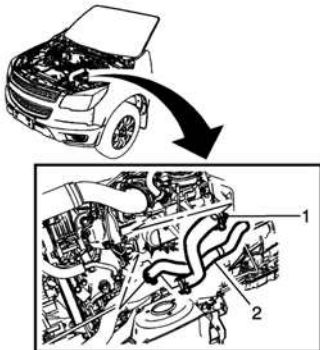


8. Disconnect the fuel injector harness (1) from the EGR manifold cooling return hose and set aside.

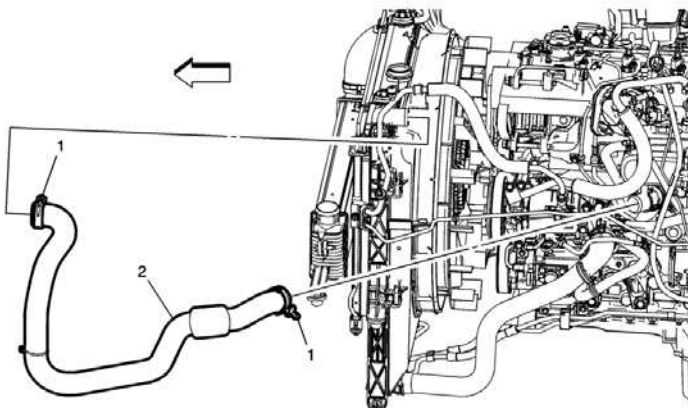


9. Remove the coolant recovery reservoir inlet hose at the water pump inlet pipe.
10. Remove the EGR manifold cooling return hose clamps (1) and remove the EGR manifold cooling return hose.

[Installation Procedure](#)

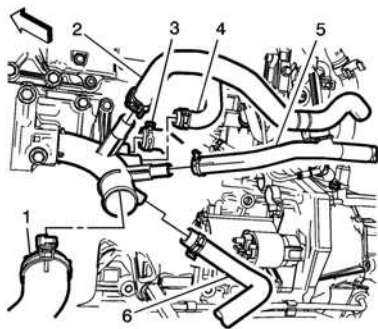


1. Install the EGR manifold cooling return hose (2) with the hose clamps (1).

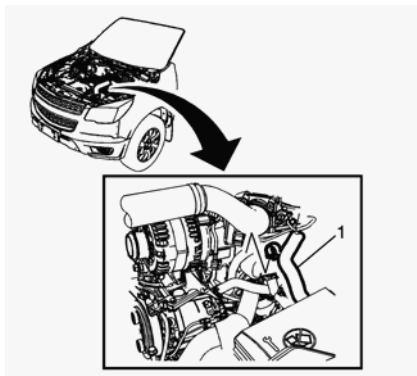


2. Install the radiator inlet pipe (2) to the thermostat housing with the clamp (1).

Exhaust Gas Recirculation Manifold Cooling Return Hose Replacement (Water pump pipe to EGR cooler)



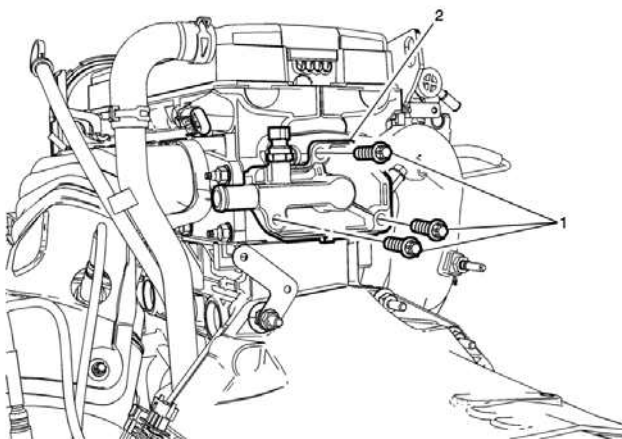
3. Install the coolant recovery reservoir inlet hose (2) to the water pump inlet pipe.



4. Connect the fuel injector harness clip (1) onto the EGR manifold cooling return hose.
5. Install the battery. Refer to Battery Replacement.
6. Install the left front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement.
7. Fill the cooling system. Refer to Cooling System Draining and Filling.
8. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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



Exhaust Gas Recirculation Valve Adapter Replacement

Callout

Component Name

Preliminary Procedure

1. Drain the coolant. Refer to Cooling System Draining and Filling.
2. Remove the engine coolant temperature sensor. Refer to Engine Coolant Temperature Sensor Replacement.
3. Remove the coolant hose from the exhaust gas recirculation valve adapter.

Exhaust Gas Recirculation Valve Adapter Fasteners (Qty: 3)

Caution: Refer to Fastener Caution.

1

Tighten

11 Y (97 lb in)

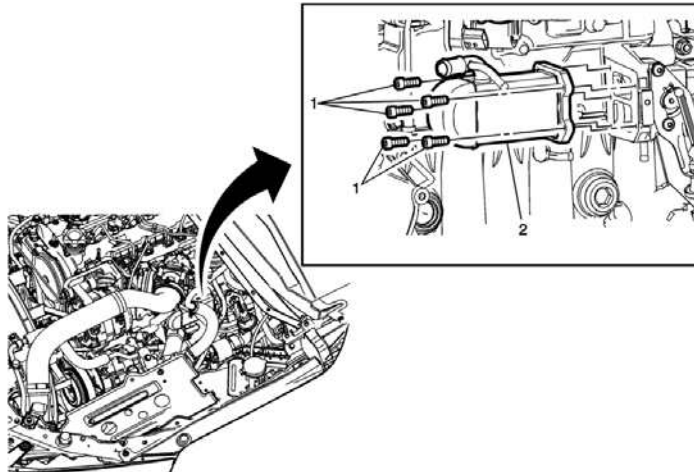
2

Exhaust Gas Recirculation Valve Adapter

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Gas Recirculation Valve Cooler Replacement

Callout

Component Name

Preliminary Procedure

1. Remove the battery to aid in accessing the EGR Cooler. Refer to Battery Replacement.
2. Partially drain the coolant and refill after repair is complete. Refer to Cooling System Draining and Filling.
3. Disconnect the coolant hoses from the EGR cooler. Refer to Exhaust Gas Recirculation Manifold Cooling Feed Hose Replacement and Exhaust Gas Recirculation Manifold Cooling Return Hose Replacement.

Exhaust Gas Recirculation Cooler Fastener (Qty: 5)

Caution: Refer to Fastener Caution.

1

Tighten

15 Y (11 lb ft)

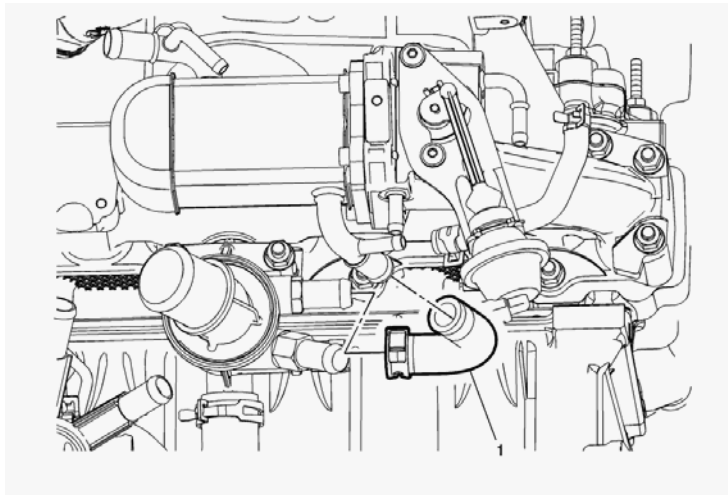
2

Exhaust Gas Recirculation Cooler

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Exhaust Gas Recirculation Valve Cooling Feed Hose Replacement

Callout

Component Name

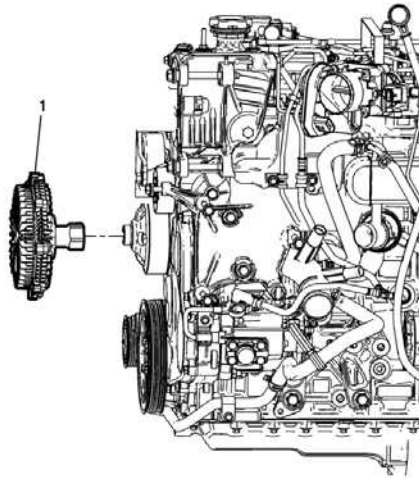
Preliminary Procedure

1. Remove the battery to aid in accessing the EGR cooler hoses. Refer to Battery Replacement.
2. Remove the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
3. Partially drain the coolant and refill after repair is complete. Refer to Cooling System Draining and Filling.

- 1 Exhaust gas recirculation manifold cooling feed hose

2013 Chevrolet Colorado

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



Fan Blade Clutch Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the engine coolant fan lower shroud. Refer to Engine Coolant Fan Lower Shroud Replacement.
2. Remove the engine coolant fan upper shroud. Refer to Engine Coolant Fan Upper Shroud Replacement.
3. Remove the engine coolant fan shroud. Refer to Engine Coolant Fan Shroud Replacement.
4. Remove the engine lift front bracket. Refer to Engine Lift Front Bracket Replacement.
5. Remove the cooling fan blade. Refer to Fan Blade Replacement.

Cooling Fan Clutch

Procedure

Use fan clutch holding wrench to remove the fan clutch from the water pump.

Caution: Refer to Fastener Caution.

1

Tighten

59 Y (44 lb ft)

Special Tools

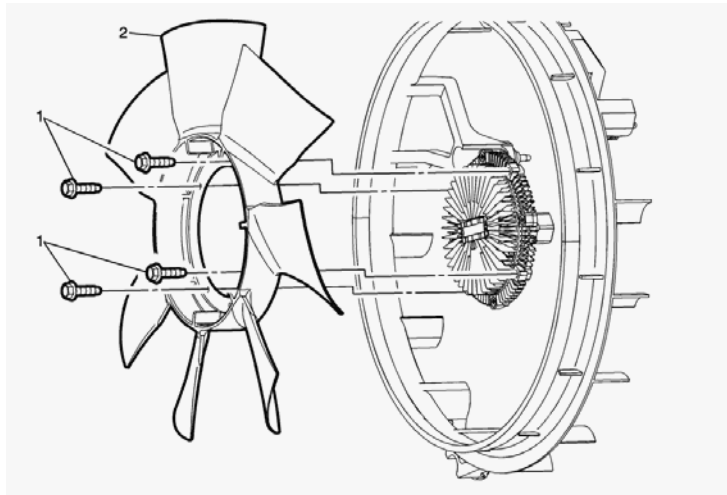
EN-46406-A Fan Clutch Holding Wrench

For regional tools . Refer to. Special Tools.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Fan Blade Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the engine cooling fan lower shroud. Refer to Engine Coolant Fan Lower Shroud Replacement.
2. Remove the engine cooling fan upper shroud. Refer to Engine Coolant Fan Upper Shroud Replacement.

1 Cooling fan blade retainers (Qty: 4)

2 Cooling fan blades.

2013 Chevrolet Colorado

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

Note: Do not use a chemical flush.

Store used coolant in the proper manner, such as in a used engine coolant holding tank. Do not pour used coolant down a drain. Ethylene glycol antifreeze is a very toxic chemical. Do not dispose of coolant into the sewer system or ground water. This is illegal and ecologically unsound.

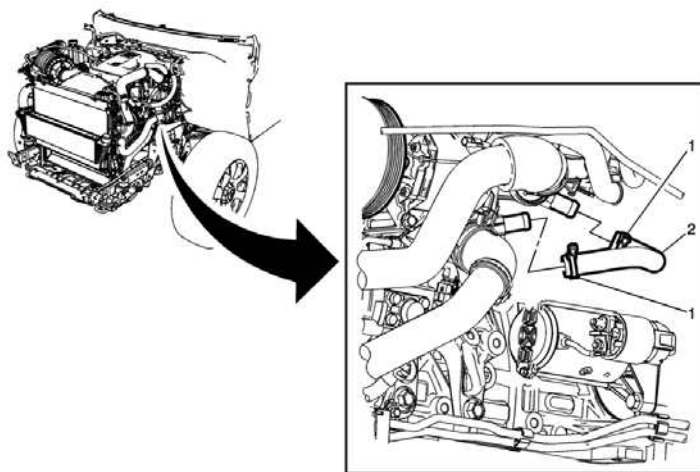
Various methods and equipment can be used to flush the cooling system. If special equipment is used, such as a back flusher, follow the manufacturer's instruction. Always remove the thermostat before flushing the cooling system.

When the cooling system becomes contaminated, the cooling system should be flushed thoroughly to remove the contaminants before the engine is seriously damaged.

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Remove the radiator surge tank. Refer to Radiator Surge Tank Replacement.
3. Clean and flush the radiator surge tank with clean, drinkable water.
4. Install the radiator surge tank. Refer to Radiator Surge Tank Replacement.
5. Follow the drain and fill procedure using only clean, drinkable water. Refer to Cooling System Draining and Filling.
6. Run the engine for 20 minutes.
7. Stop the engine.
8. Drain the cooling system. Refer to Cooling System Draining and Filling
9. Repeat the procedure if necessary, until the fluid is nearly colorless.
10. Fill the cooling system. Refer to Cooling System Draining and Filling.

2013 Chevrolet Colorado

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



Heater Water Bypass Inlet Hose Replacement

Callout

Component Name

Preliminary Procedure

1. Lift and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.
3. Remove the intake manifold. Refer to Intake Manifold Replacement.

Special Tools

BO-38185 Hose Clamp Pliers

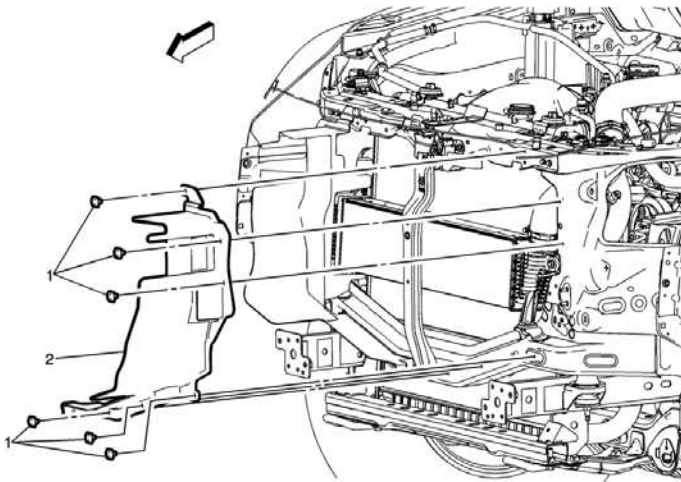
For equivalent regional tools, refer to Special Tools.

- | | |
|---|---|
| 1 | Heater Water Bypass Inlet Hose Clamp (Qty: 2) |
| 2 | Heater Water Bypass Inlet Hose |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Air Side Baffle Replacement - Left Side

Callout

Component Name

Preliminary Procedures

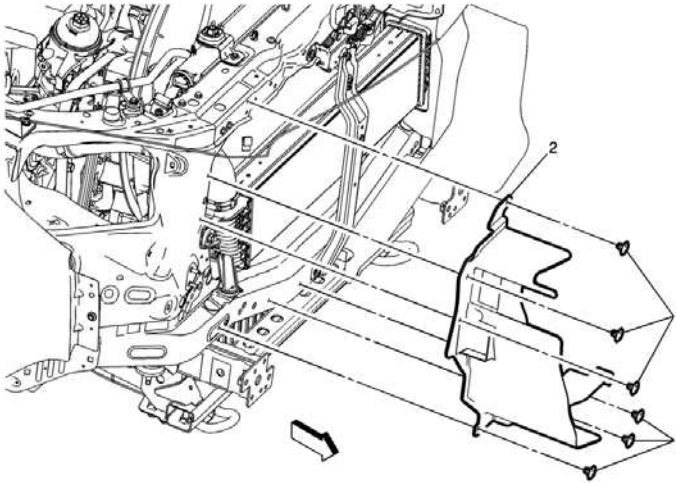
1. Remove front bumper fascia. Refer to Front Bumper Fascia Replacement.
2. Remove the radiator grille support reinforcement. Refer to Front Grille Support Reinforcement Replacement.
3. Remove the front bumper upper impact bar. Refer to Front Bumper Upper Impact Bar Replacement.
4. Remove the front bumper lower impact bar. Refer to Front Bumper Lower Impact Bar Replacement.

1 Radiator Air Side Baffle and Deflector Left Retainer (Qty: 6)

2 Radiator Air Side Baffle and Deflector Left

2013 Chevrolet Colorado

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



Radiator Air Side Baffle Replacement - Right Side

Callout

Component Name

Preliminary Procedures

1. Remove front bumper fascia. Refer to Front Bumper Fascia Replacement.
2. Remove the radiator grille support reinforcement. Refer to Front Grille Support Reinforcement Replacement.
3. Remove the front bumper upper impact bar. Refer to Front Bumper Upper Impact Bar Replacement.
4. Remove the front bumper lower impact bar. Refer to Front Bumper Lower Impact Bar Replacement.

1 Radiator Air Side Baffle and Deflector Left Retainer (Qty: 6)

2 Radiator Air Side Baffle and Deflector Right

2013 Chevrolet Colorado

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

Warning: NEVER spray water on a hot heat exchanger. The resulting steam could cause personal injury.

Caution: The heat exchanger fins are necessary for good heat transfer. Do not brush the fins. This may cause damage to the fins, reducing heat transfer.

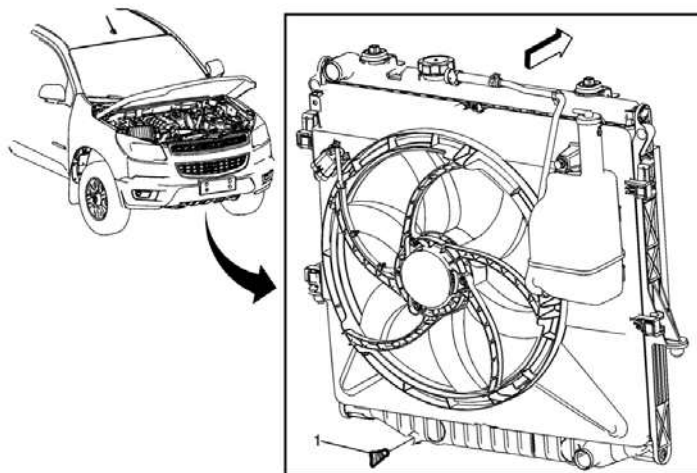
Note: Remove bugs, leaves, dirt, and other debris by blowing compressed air through the engine side of the radiator.

- Some conditions may require the use of warm water and a mild detergent.
- Clean the A/C condenser fins.
- Clean between the A/C condenser and radiator.
- Clean the radiator cooling fins.
- Clean between the transmission cooler and the radiator (if fitted)
- Straighten any damaged cooling fins.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Drain Cock Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.
2. Drain the engine coolant. Refer to Cooling System Draining and Filling.

1

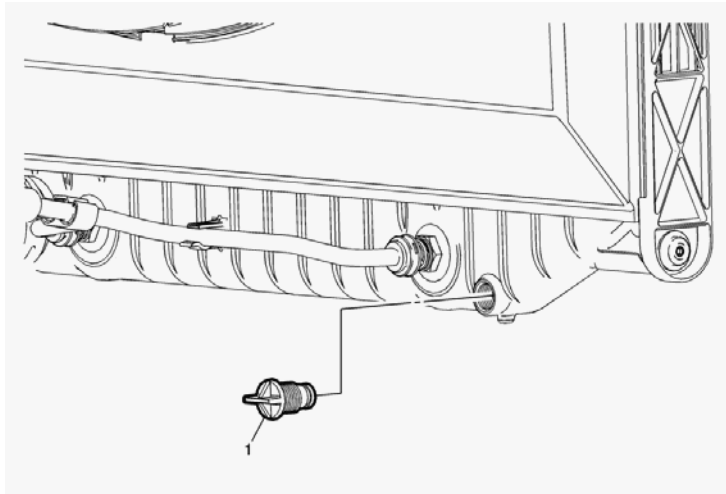
Radiator Drain Cock

Caution: Refer to Fastener Caution.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Drain Cock Replacement

Callout

Component Name

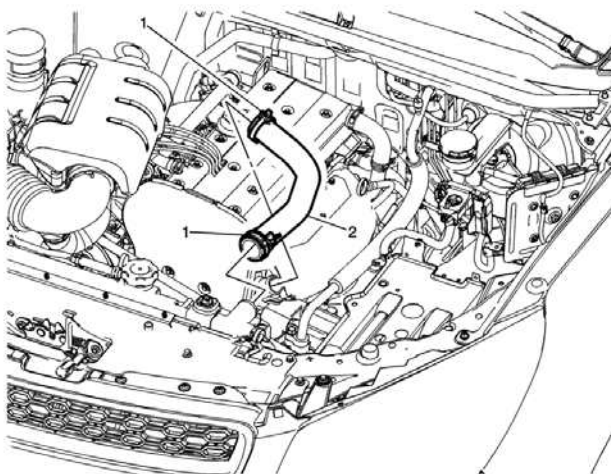
Preliminary Procedures

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. Drain the coolant. Refer to Cooling System Draining and Filling.

- 1 Radiator Drain Cock

2013 Chevrolet Colorado

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



Radiator Inlet Hose Replacement

Callout

Component Name

Preliminary Procedures

Drain the coolant. Refer to Cooling System Draining and Filling

Radiator Inlet Hose Clamps (Qty: 2)

Special Tools

1

BO-38185 Hose Clamp Pliers

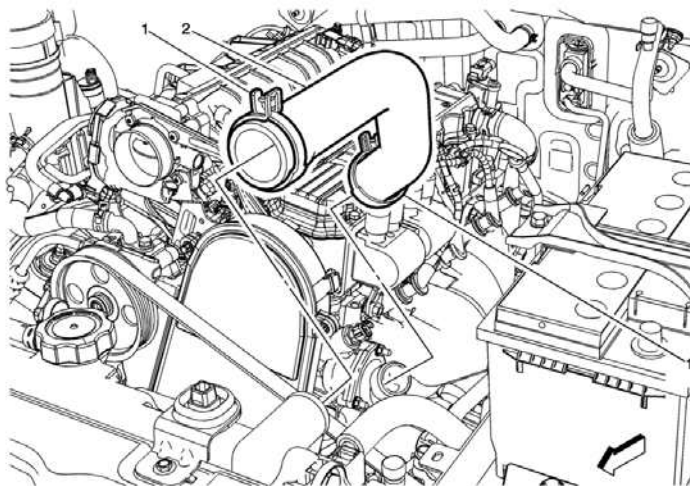
For equivalent regional tools, refer to Special Tools.

2

Radiator Inlet Hose

2013 Chevrolet Colorado

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



Radiator Inlet Hose Replacement

Callout

Component Name

Preliminary Procedure

Drain the cooling system. Refer to Cooling System Draining and Filling.

Radiator Inlet Hose Clamps (Qty: 2)

Procedure

Using *BO-38185* Hose Clamp Pliers reposition the radiator inlet hose clamps.

1

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools, Refer to Special Tools

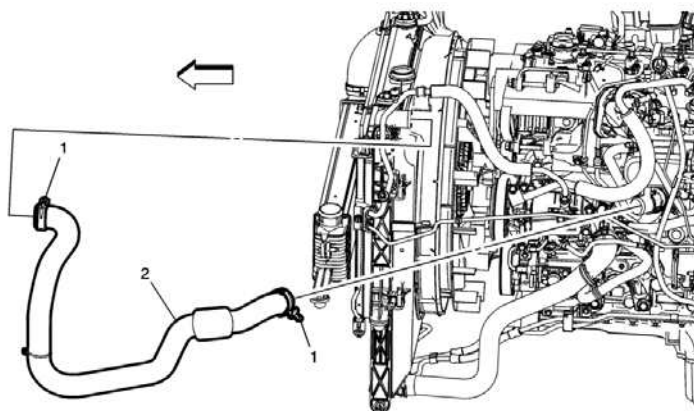
2

Radiator Inlet Hose

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Inlet Hose Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the coolant. Refer to Cooling System Draining and Filling
2. Remove battery tray. Refer to Battery Tray Replacement.

Radiator Inlet Hose Clamps (Qty: 2)

Special Tools

1

BO-38185 Hose Clamp Pliers

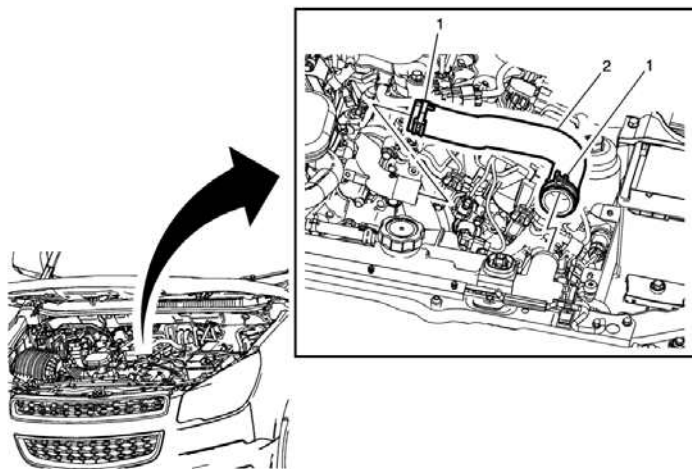
For equivalent regional tools, refer to Special Tools.

2

Radiator Inlet Hose

2013 Chevrolet Colorado

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



Radiator Inlet Hose Replacement

Callout

Component Name

Preliminary Procedure

Drain the cooling system. Refer to Cooling System Draining and Filling

Hose Clamp (Qty: 2)

Procedure

Reposition the heater inlet hose clamps using the *BO-38185* pliers .

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools. Refer to Special Tools.

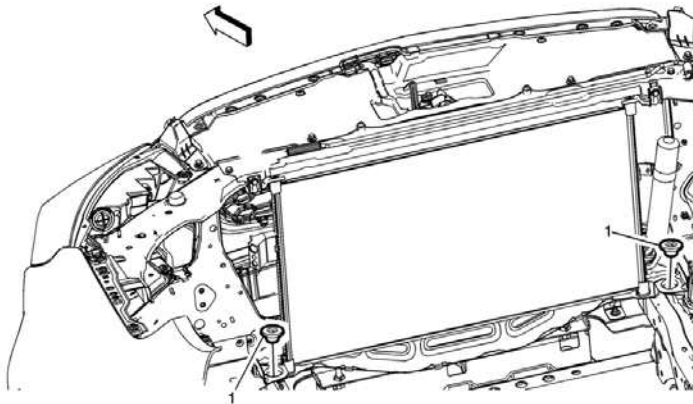
1

2

Radiator Intake Hose

2013 Chevrolet Colorado

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



Radiator Lower Mount Replacement

Callout

Component Name

Preliminary Procedure

Remove radiator. Refer to Radiator Replacement.

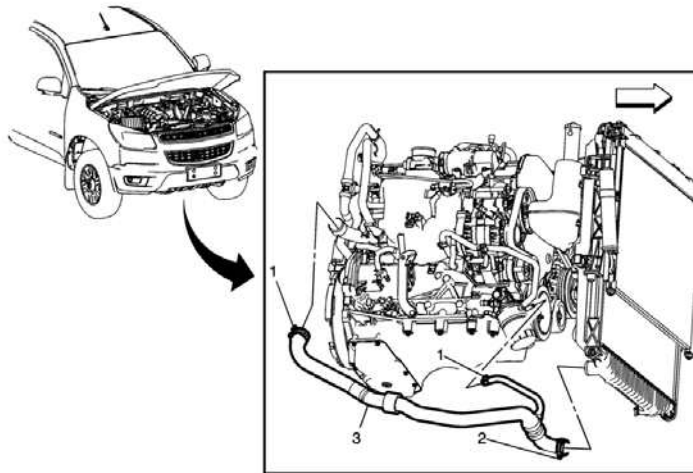
1

Lower Radiator Mount (Qty: 2)

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Outlet Hose Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
2. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
3. Remove the air cleaner outlet resonator. Refer to Air Cleaner Outlet Resonator Replacement.
4. Raise the vehicle. Refer to Lifting and Jacking the Vehicle.
5. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.
6. Drain the coolant. Refer to Cooling System Draining and Filling.

Radiator Outlet Hose Clamps (Qty: 2)

Procedures

Remove the radiator outlet hose clamps.

1

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to Special Tools.

Radiator Outlet Hose Clamp

Procedures

2

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the radiator outlet hose clamp from the radiator.

3

Radiator Outlet Hose

2013 Chevrolet Colorado

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

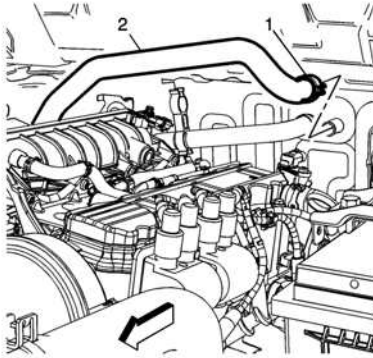
Special Tools

BO-38185 Hose Clamp Pliers

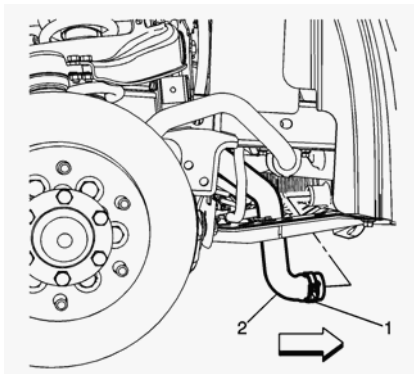
For equivalent regional tools, Refer to Special Tools

Removal Procedure

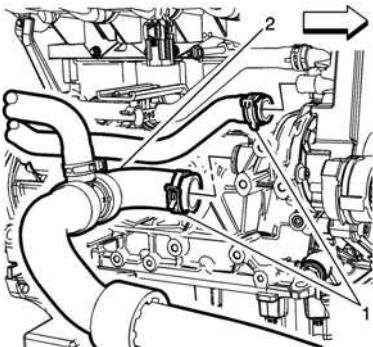
1. Drain the cooling system. Refer to Cooling System Draining and Filling.



2. Remove the radiator outlet hose clamp (1) using *BO-38185* Hose Clamp Pliers from the heater core.
3. Remove the radiator outlet hose (2) from the heater core.
4. Remove the generator bracket. Refer to Generator Bracket Replacement or Generator and Power Steering Pump Bracket Replacement.
5. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
6. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.



7. Remove the radiator outlet hose clamp (1) using *BO-38185* Hose Clamp Pliers from the radiator.
8. Remove the radiator outlet hose (2) from the radiator.



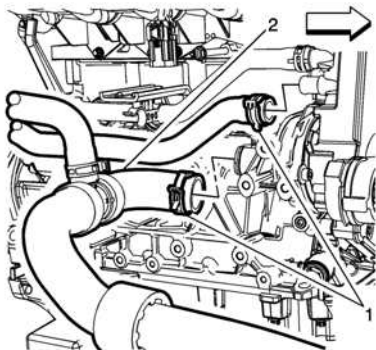
9. Remove the radiator outlet hose clamp (1) using *BO-38185* Hose Clamp Pliers from the engine.
10. Remove the radiator outlet hose (2) from the engine.

Radiator Outlet Hose Replacement (LP8)

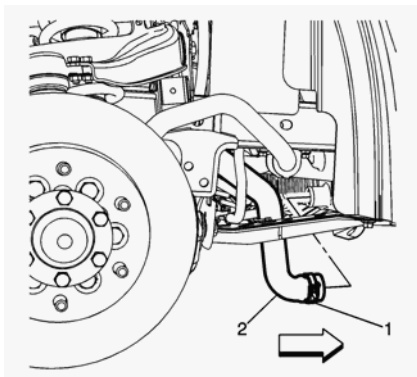
11. Remove the radiator outlet hose from the vehicle.

[Installation Procedure](#)

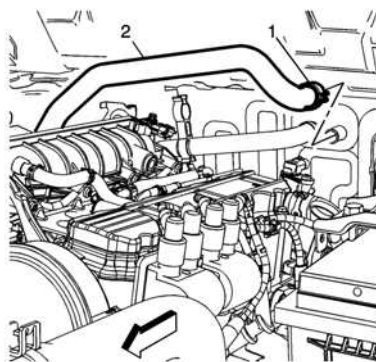
1. Install the radiator outlet hose to the vehicle.



2. Install the radiator outlet hose (2) to the engine.
3. Install the radiator outlet hose clamp (1) using *BO-38185 Hose Clamp Plier* to the engine.



4. Install the radiator outlet hose (2) to the radiator.
5. Install the radiator outlet hose clamp (1) using *BO-38185 Hose Clamp Plier* to the radiator.
6. Install the engine protection shield. Refer to Engine Protection Shield Replacement.
7. Install the generator bracket. Refer to Generator Bracket Replacement or Generator and Power Steering Pump Bracket Replacement.

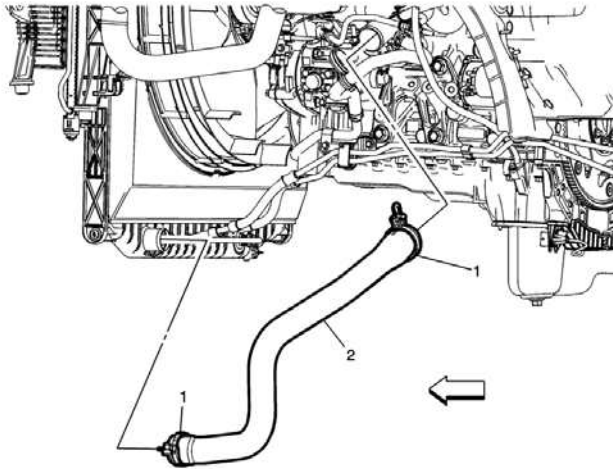


8. Install the radiator outlet hose (2) to the heater core.
9. Install the radiator outlet hose clamp (1) using *BO-38185 Hose Clamp Plier* to the heater core.
10. Fill the cooling system. Refer to Cooling System Draining and Filling.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Outlet Hose Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the coolant. Refer to Cooling System Draining and Filling.
2. Remove the charge air cooler outlet air hose clamps from the throttle body and air cooler outlet tube bracket. Refer to Charge Air Cooler Outlet Air Hose Replacement.
3. Remove the air conditioning compressor. Refer to Air Conditioning Compressor Replacement.

Radiator Outlet Hose Clamps (Qty 2)

Procedure

1

Reposition the heater inlet hose clamps using the *BO-38185* pliers .

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools. Refer to Special Tools.

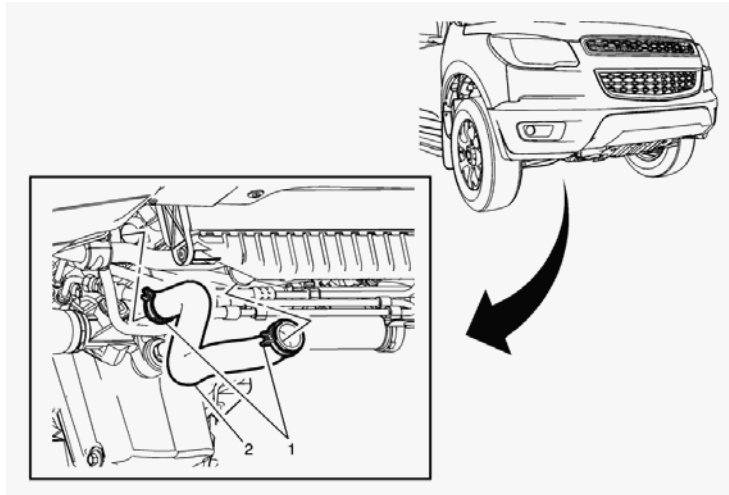
2

Radiator Outlet Hose

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Outlet Hose Replacement

Callout

Component Name

Preliminary Procedure

1. Drain the cooling system. Refer to Cooling System Draining and Filling
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle

Radiator Outlet Hose Clamp (Qty: 2)

Procedure

1. Reposition the heater inlet hose clamps using the *BO-38185* pliers .

Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools. Refer to Special Tools.

2. Radiator Outlet Hose

2013 Chevrolet Colorado

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

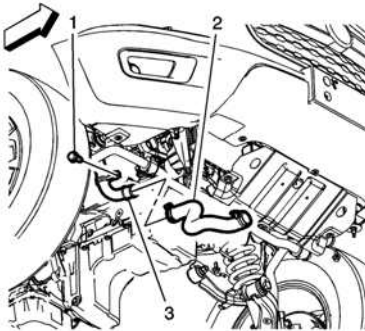
Special Tools

BO-38185 Hose Clamp Pliers

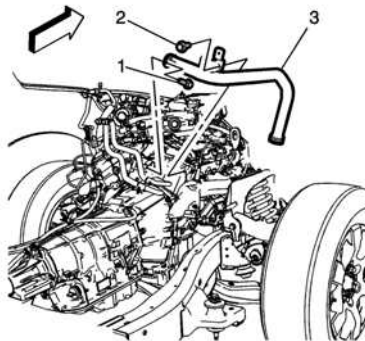
For equivalent regional tools, refer to Special Tools.

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the engine protection shield. Refer to Engine Protection Shield Replacement.
3. Drain the cooling system. Refer to Cooling System Draining and Filling.

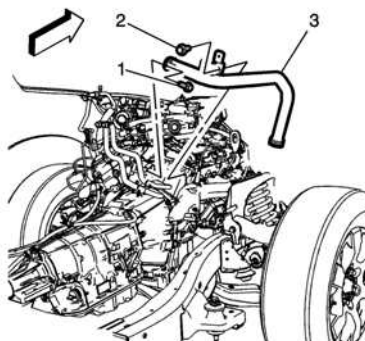


4. Remove the radiator outlet hose (2) using the BO-38185 pliers from the radiator outlet pipe.
5. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
6. Remove the transmission oil level indicator tube, if equipped. Refer to Oil Level Indicator Tube Replacement.
7. Remove the fastener (1) securing the radiator outlet pipe (3) to the engine block.



8. Remove the fastener (2) securing the radiator outlet pipe (3) to the engine block.
9. Remove the fastener (1) and the radiator outlet pipe (3) from the water inlet pipe.

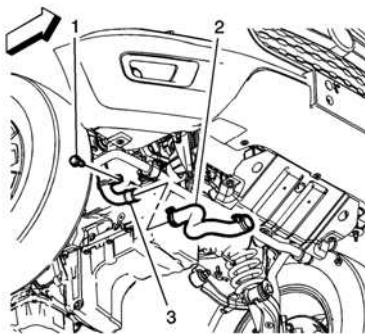
Installation Procedure



Radiator Outlet Pipe Replacement (LY7)

Caution: Refer to Fastener Caution.

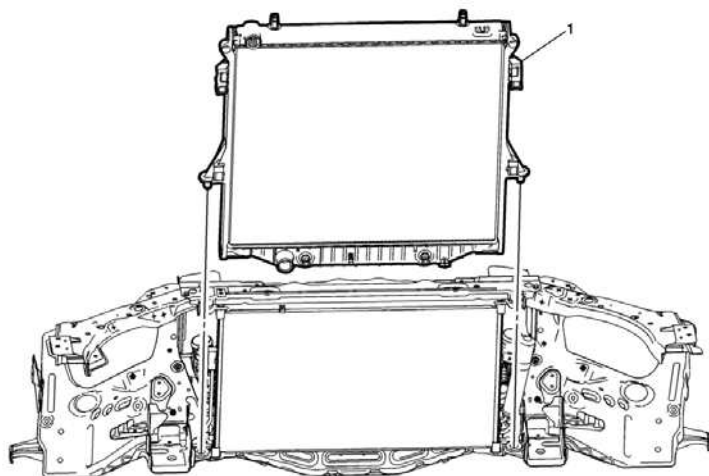
1. Install the radiator outlet pipe (3) to the water inlet pipe and tighten the fastener (1) to **22 Y (16 lb ft)**.
2. Install the radiator outlet pipe bracket support fastener (2) and tighten to **58 Y (43 lb ft)**.
3. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
4. Install the transmission oil level indicator tube, if equipped. Refer to Oil Level Indicator Tube Replacement.



5. Install the radiator outlet pipe (3) to the engine block and tighten the fastener (1) to **22 Y (16 lb ft)**.
6. Install the radiator outlet hose (2) to the radiator outlet pipe (3).
7. Install the engine protection shield. Refer to Engine Protection Shield Replacement.
8. Fill the cooling system. Refer to Cooling System Draining and Filling.
9. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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



Radiator Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the coolant. Refer to Cooling System Draining and Filling.
2. Remove the engine coolant fan upper shroud. Refer to Engine Coolant Fan Upper Shroud Replacement.
3. Remove the radiator inlet hose. Refer to Radiator Inlet Hose Replacement.
4. Remove the radiator outlet hose. Refer to Radiator Outlet Hose Replacement.
5. Remove the radiator upper bracket. Refer to Radiator Upper Bracket Replacement.

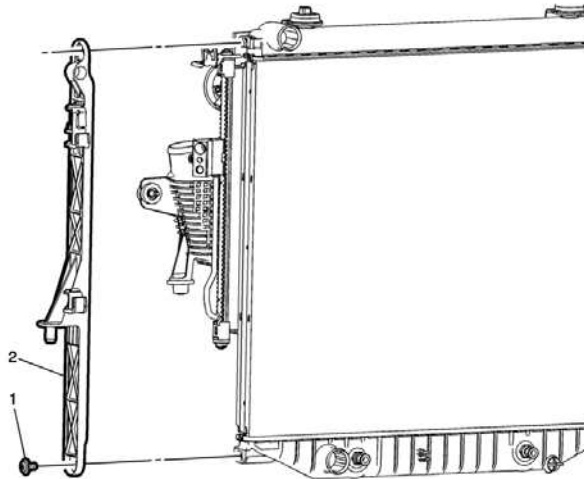
1

Radiator

Note: Tilt radiator rearward to remove.

2013 Chevrolet Colorado

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



Radiator Side Brace Bracket Replacement - Left Side

Callout

Component Name

Preliminary Procedure

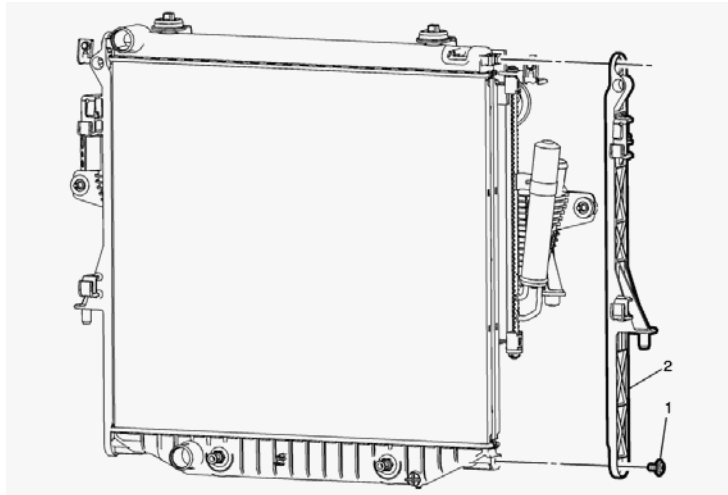
Remove Radiator. Refer to. Radiator Replacement

- 1 Left Radiator Support Bracket Fastener
Caution: Refer to Fastener Caution.
- 2 Left Radiator Support Bracket

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Side Brace Bracket Replacement - Right Side

Callout

Component Name

Preliminary Procedure

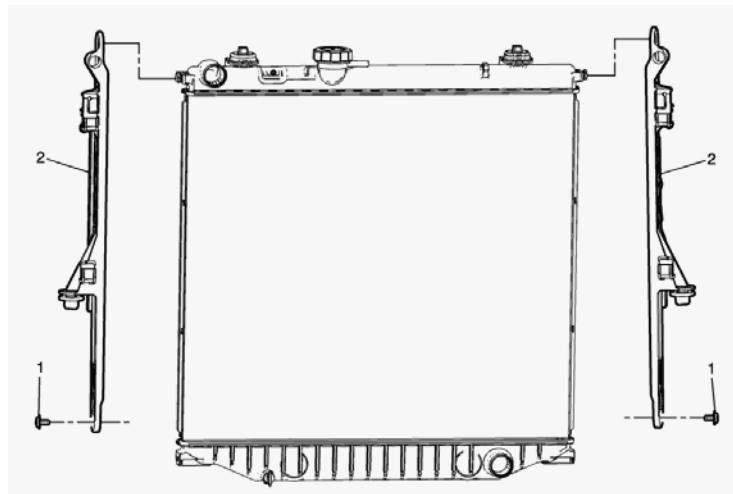
Remove Radiator. Refer to. Radiator Replacement

- | | |
|---|--|
| 1 | Right Radiator Support Bracket Fastener |
| | Caution: Refer to Fastener Caution. |
| 2 | Right Radiator Support Bracket |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Side Brace Bracket Replacement

Callout

Component Name

Preliminary Procedure

Remove the radiator. Refer to Radiator Replacement.

- | | |
|---|--|
| 1 | Radiator Side Brace Bracket Fasteners (Qty: 2) |
| 2 | Radiator Side Brace Brackets (Qty: 2) |

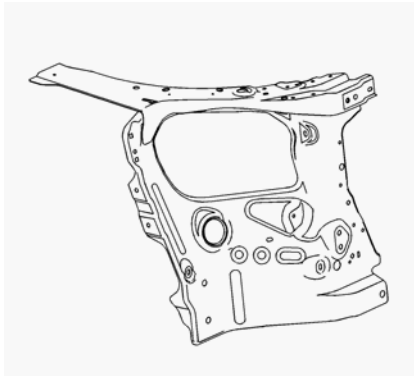
2013 Chevrolet Colorado

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

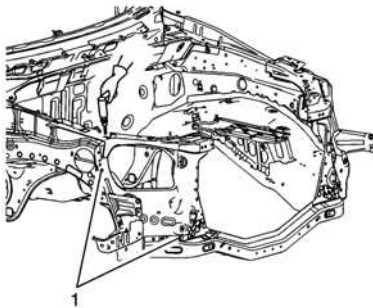
[Removal Procedure](#)

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.

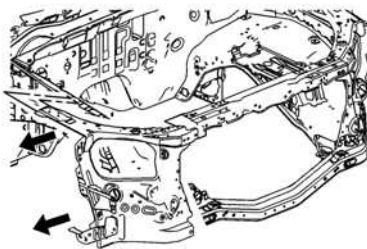


3. Remove all related panels and components.
4. Restore as much of the damage as possible to factory specifications. Refer to Dimensions - Body.
5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to Anti-Corrosion Treatment and Repair.



Note: Note the number and location of the factory welds for installation of the radiator side mounting panel.

6. Locate and drill out all factory welds (1).



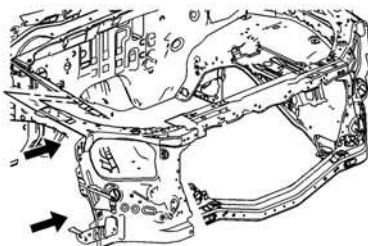
7. Remove the damaged radiator side mounting panel.

[Installation Procedure](#)

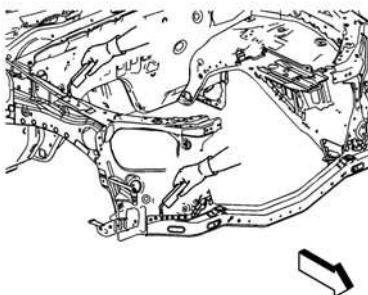


Note: If the location of the original plug weld holes can not be determined, or if structural weld-thru adhesive is present, space the plug weld holes every 40 mm (1½ in) apart.

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.



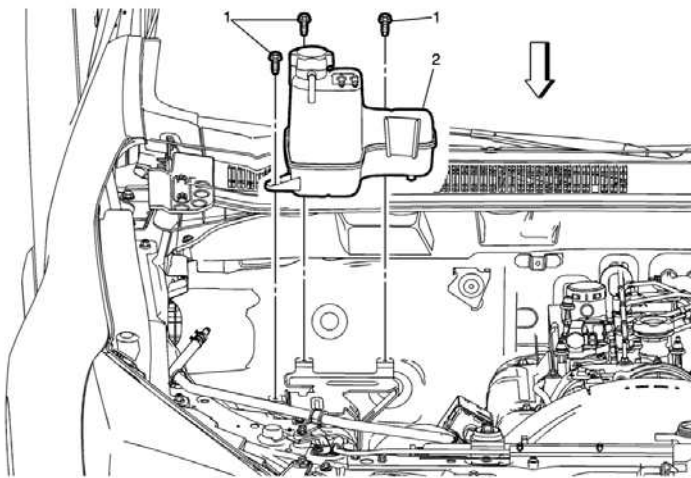
4. Position the radiator side mounting panel on the vehicle using 3-dimensional measuring equipment. Clamp the radiator side mounting panel in place.



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:



Radiator Surge Tank Replacement

Callout

Component Name

Preliminary Procedures

1. Drain the cooling system. Refer to Cooling System Draining and Filling.
2. Remove the coolant recovery reservoir inlet hose from the radiator surge tank. Refer to Coolant Recovery Reservoir Inlet Hose Replacement.
3. Remove the coolant recovery reservoir vent hose from the radiator surge tank. Refer to Coolant Recovery Reservoir Vent Hose Replacement.
4. Without disconnecting any hoses remove the power steering fluid reservoir from the radiator surge tank and position it out of the way. Refer to Power Steering Fluid Reservoir Replacement.

1 Radiator Surge Tank Fastener (Qty) 3

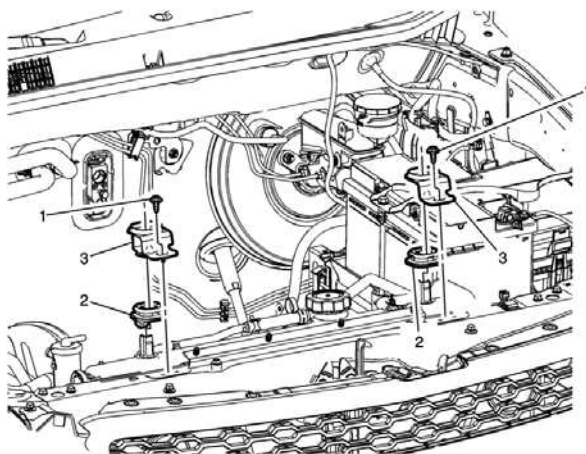
Caution: Refer to Fastener Caution.

2 Radiator Surge Tank

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Radiator Upper Bracket Replacement

Callout

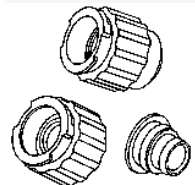
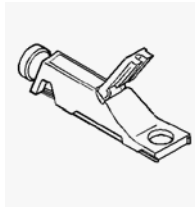
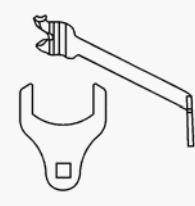
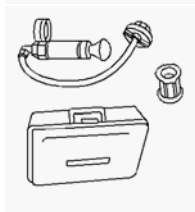
Component Name

- | | |
|---|--|
| | Radiator Upper Bracket Bolt (Qty: 2) |
| 1 | Caution: Refer to Fastener Caution. |
| | Tighten |
| | 9 Y(80 lb in) |
| 2 | Radiator Upper Mount (Qty: 2) |
| 3 | Radiator Upper Bracket (Qty: 2) |

2013 Chevrolet Colorado

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

Illustration



Tool Number/ Description

BO-38185

J-38185

Hose Clamp Pliers

EN-24460-A

J-24460-A

Cooling System Pressure Tester

EN-46406-A

J-46406-A

3-9606313

Fan Clutch Holding Tool

GE-26568

J-26568

Coolant and Battery Fluid Tester

GE-42401-A

J-42401-A

Adapter Cooling System

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

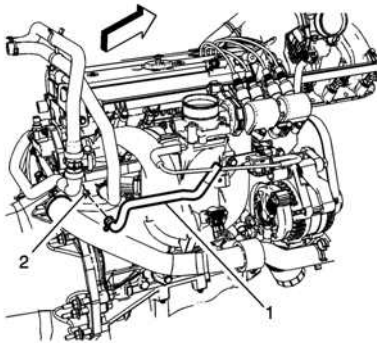
Special Tools

BO-38185 Hose Clamp Pliers

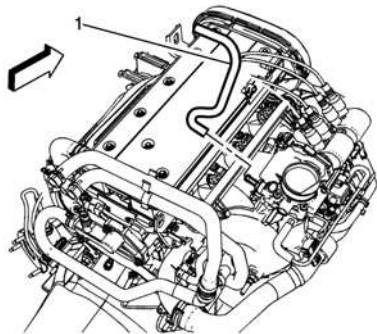
For equivalent regional tools, refer to Special Tools.

[Removal Procedure](#)

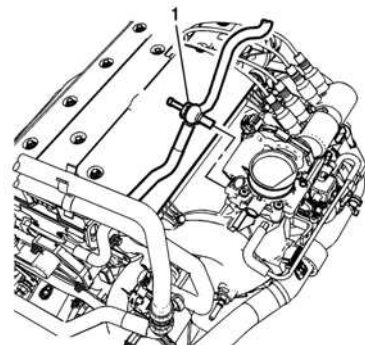
1. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
2. Remove the throttle body assembly. Refer to Throttle Body Assembly Replacement.
3. Drain the cooling system. Refer to Cooling System Draining and Filling.



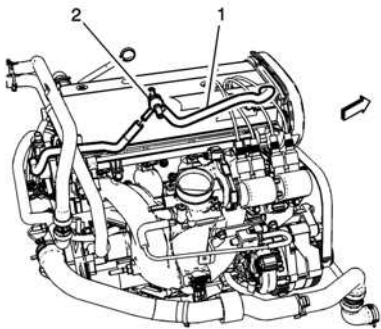
4. Remove the throttle body outlet hose (1) using the BO-38185 pliers from the radiator outlet hose fitting (2).



5. Remove the PCV pipe (1) from the vacuum source manifold fitting on the intake manifold.

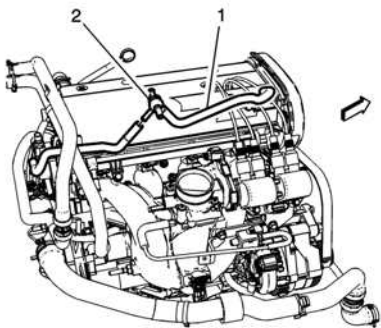


6. Remove the fastener (1) holding the vacuum source manifold fitting to the intake manifold.

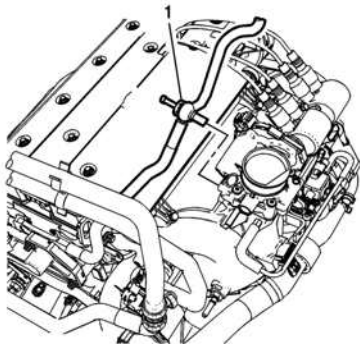


7. Remove the throttle body outlet hose (1) from the vacuum source manifold fitting (2).
8. Remove the throttle body outlet hose from the engine compartment.

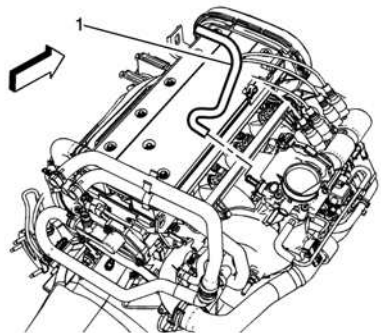
[Installation Procedure](#)



1. Install the throttle body outlet hose (1) onto the vacuum source manifold fitting (2).

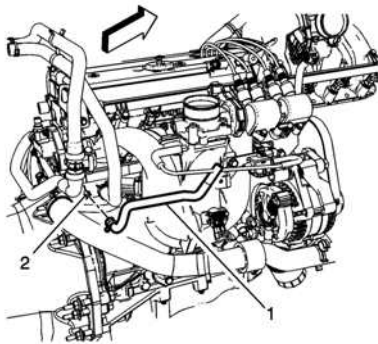


2. Install the vacuum source manifold fitting (1) onto the intake manifold.



3. Install the PCV pipe (1) from the vacuum source manifold fitting into the intake manifold.

Throttle Body Heater Outlet Hose Replacement (LE6-Radiator Hose-to-Vac Fitting)



4. Install the throttle body outlet hose (1) onto the radiator outlet hose fitting (2).
5. Install the throttle body assembly. Refer to Throttle Body Assembly Replacement.
6. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
7. Fill the cooling system. Refer to Cooling System Draining and Filling.
8. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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

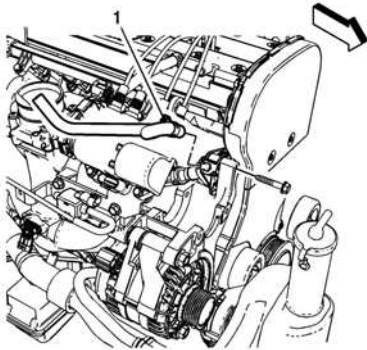
Special Tools

BO-38185 Hose Clamp Pliers

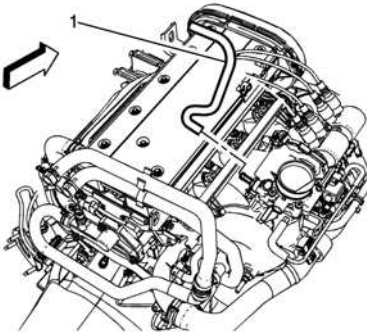
For equivalent regional tools, refer to Special Tools.

[Removal Procedure](#)

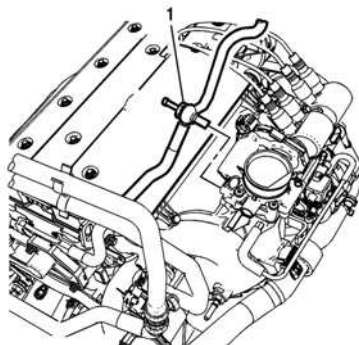
1. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
2. Remove the throttle body assembly. Refer to Throttle Body Assembly Replacement.
3. Drain the cooling system. Refer to Cooling System Draining and Filling.



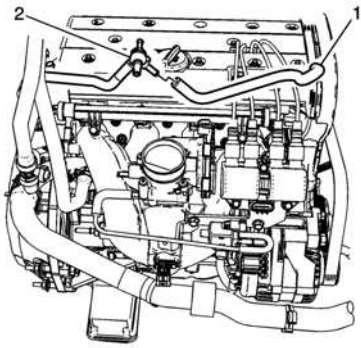
4. Remove the throttle body outlet hose (1) using the BO-38185 pliers from the engine cooling water outlet adapter.



5. Remove the PCV pipe (1) from the vacuum source manifold fitting on the intake manifold.

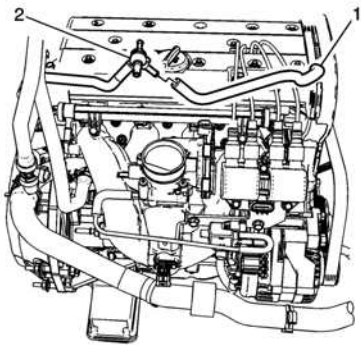


6. Remove the fastener (1) holding the vacuum source manifold fitting to the intake manifold.

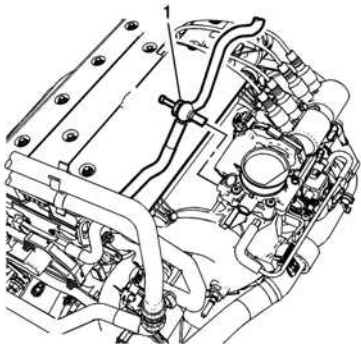


7. Remove the throttle body outlet hose (1) from the tee connector (2).
8. Remove the throttle body outlet hose from the engine compartment.

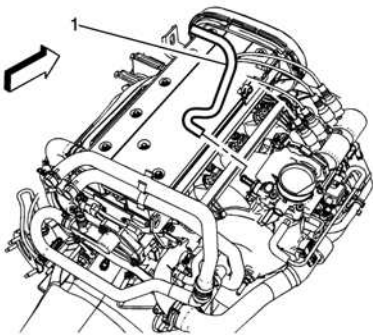
[Installation Procedure](#)



1. Install the throttle body outlet hose (1) onto the vacuum source manifold fitting (2).

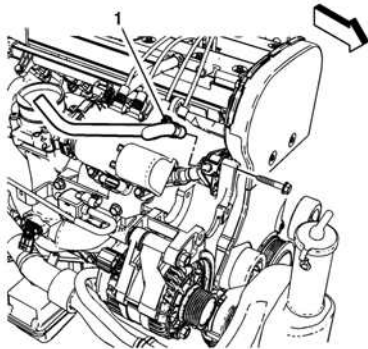


2. Install the vacuum source manifold fitting (1) onto the intake manifold.



3. Install the PCV pipe (1) from the vacuum source manifold fitting into the intake manifold.

Throttle Body Heater Outlet Hose Replacement (LE6-Water Outlet-to-Vacuum Fitting)



4. Install the throttle body outlet hose (1) onto the engine coolant outlet adapter.
5. Install the throttle body assembly. Refer to Throttle Body Assembly Replacement.
6. Install the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.
7. Fill the cooling system. Refer to Cooling System Draining and Filling.
8. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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

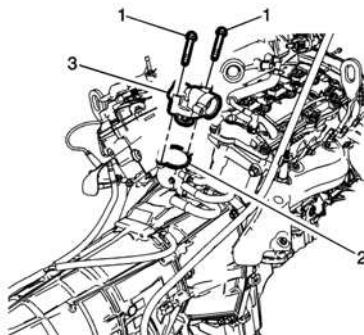
Special Tools

BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to Special Tools.

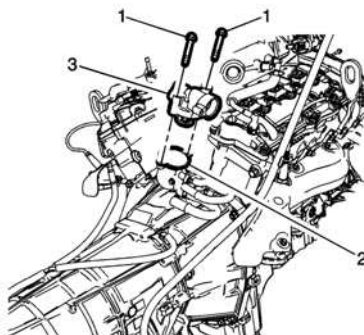
[Removal Procedure](#)

1. Remove the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement.



2. Remove the water inlet pipe fasteners (1) and remove the water inlet pipe (3) from the lower thermostat housing.
3. Discard the water inlet pipe seal (2).

[Installation Procedure](#)



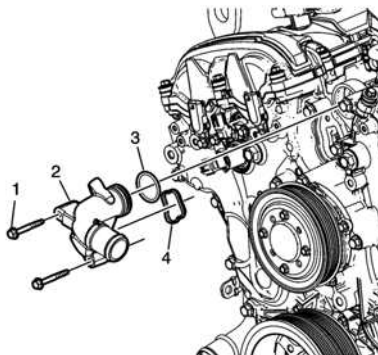
Caution: Refer to Fastener Caution.

1. Install the water inlet pipe (3) to the lower thermostat housing with a NEW seal (2). Tighten the fasteners (1) to **10 Y (89 lb in)**.
2. Install the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement.
3. Fill the cooling system. Refer to Cooling System Draining and Filling.
4. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

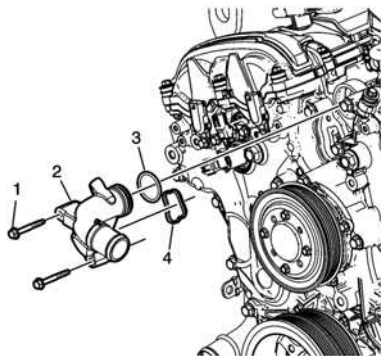
Fuel Delivery: | Fuel:



1. Install NEW water outlet O-ring seal (3) and gasket (4).
 2. Place the water outlet (2) and gaskets (3,4) in position .
- Caution:** Refer to Fastener Caution.
3. Install the water outlet bolts (1) and tighten to **10 Y (89 lb in)**.

2013 Chevrolet Colorado

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



1. Remove the water outlet bolts (1).
2. Remove the water outlet (2).
3. Remove and discard the water outlet O-ring seal (3) and gasket (4).

2013 Chevrolet Colorado

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

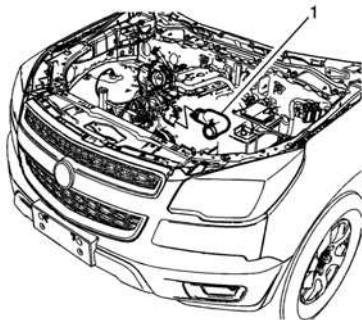
Special Tools

BO-38185 Hose Clamp Pliers

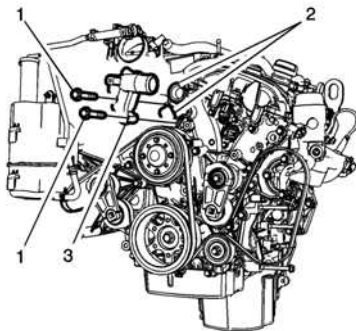
For equivalent regional tools, refer to Special Tools.

Removal Procedure

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.

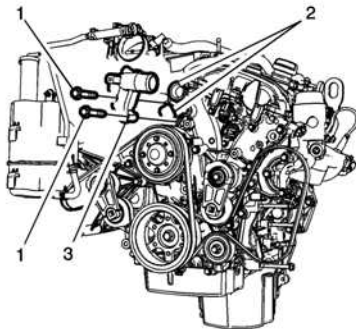


3. Remove the radiator inlet hose (1) using the BO-38185 pliers from the water outlet pipe.



4. Remove the water outlet mounting fasteners (1) and discard the water outlet seal (2).

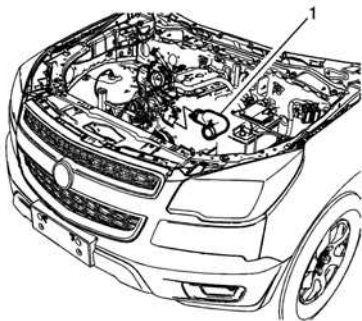
Installation Procedure



Caution: Refer to Fastener Caution.

1. Install the water outlet (3) to the engine block with a NEW seal (2) and tighten the fasteners (1) to **10 Y (89 lb in)**.

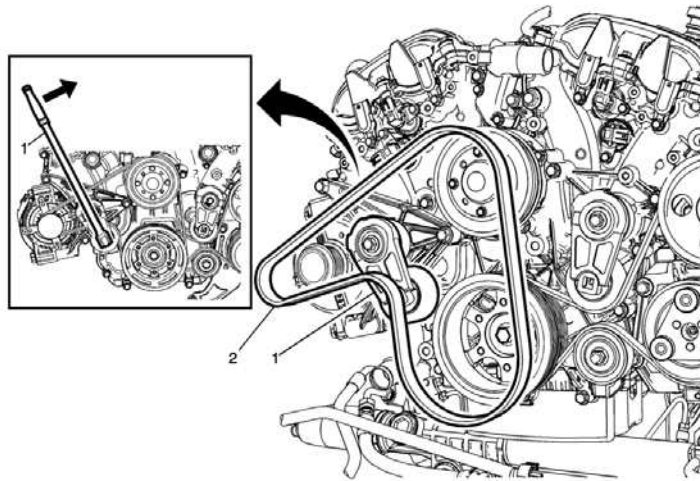
Water Outlet Replacement (LY7)



2. Install the radiator inlet hose (1).
3. Fill the cooling system. Refer to Cooling System Draining and Filling.
4. Install the intake manifold cover. Refer to Intake Manifold Cover Replacement.
5. Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

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



Water Pump and Generator Belt Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.

1

Water Pump and Generator Drive Belt Tensioner

Rotate the drive belt tensioner clockwise to release the drive belt tension.

Water pump and Generator Drive Belt

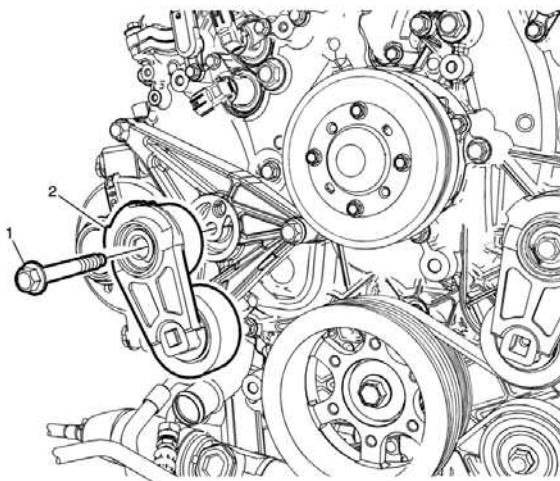
Procedure

2

1. Slide the drive belt off of the water pump pulley.
2. Slowly release the drive belt tensioner.
3. Remove the belt from behind the belt tensioner.
4. Inspect the belt for damage including frays, cracks and glazed areas due to slippage.

2013 Chevrolet Colorado

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



Water Pump and Generator Belt Tensioner Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the intake manifold cover. Refer to Intake Manifold Cover Replacement.
2. Remove the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
3. Remove the water pump and generator belt. Water Pump and Generator Belt Replacement.

Water Pump and Generator Belt Tensioner Fastener

1

Tighten

25 Y (18 lb ft)

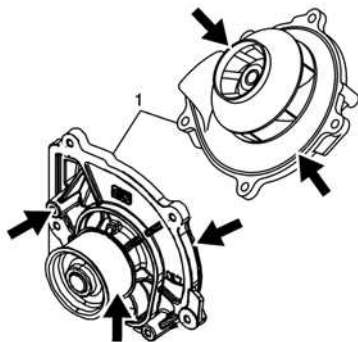
2

Water Pump and Generator Belt Tensioner

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

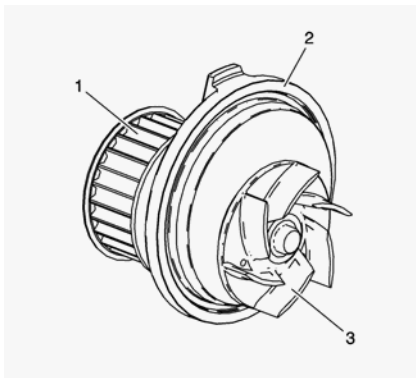


1. Clean the water pump assembly (1).
2. Clean the water pump mating surfaces.
3. Inspect the water pump gear for damage.
4. Inspect the water pump mating surfaces for damage.
5. Inspect the water pump shaft for looseness.
6. Inspect the water pump assembly for damage.
7. Replace the water pump if any damage is found.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Clean all excess dirt and debris from the water pump housing.
2. Rotate the water pump sprocket (1). The water pump sprocket and impeller (3) should turn straight and smoothly. If the sprocket wobbles, is noisy, or feels rough when rotated, replace the water pump.
3. Inspect the exterior of the water pump for the following:
 - Damage to the water pump sprocket (1)
 - Damage to the water pump gasket sealing surface (2)
 - Damage, corrosion or restrictions to the water pump impeller (3)
- Replace the water pump as necessary.

2013 Chevrolet Colorado

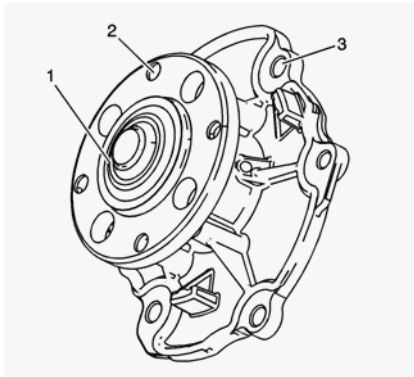
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Cleaning Procedure](#)

Caution: Do not immerse the water pump in solvent. The solvent may enter the water pump's permanently lubricated bearings and cause premature bearing failure.

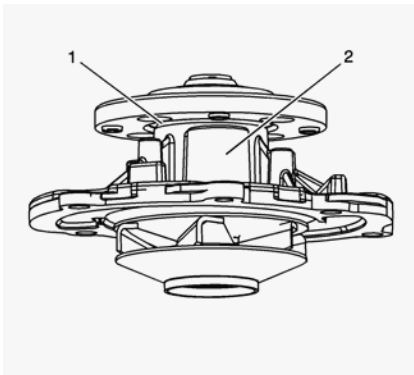
1. Remove the old gasket material from the water pump sealing surfaces.
2. Clean all excess dirt and debris from the water pump housing.

[Inspection Procedure](#)

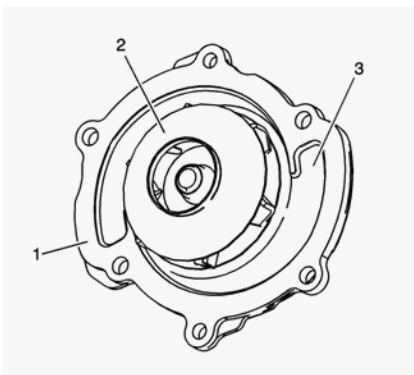


1. Rotate the water pump hub (1). The water pump hub and impeller should turn straight and smoothly. If the hub wobbles, is noisy, or feels rough when rotated, replace the water pump.
2. Inspect the exterior of the water pump for the following:

- Damage to the water pump hub bolt threads (2) for the water pump pulley
- Damage to the water pump bolt holes (3)



- Examine the water pump shaft (1) and the weep hole reservoir (2) in the water pump body for signs of leakage. If coolant leakage is evident, replace the water pump.



- Inspect the interior of the water pump for the following:

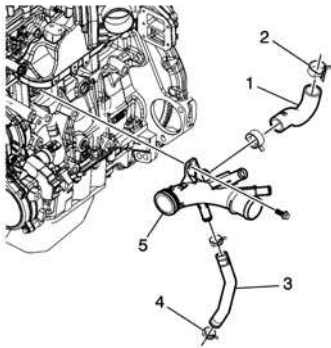
Water Pump Cleaning and Inspection

- Damage to the water pump gasket sealing surface (1)
- Damage, corrosion or restrictions to the water pump impeller (2)
- Damage, corrosion or restrictions to the coolant passages (3)
- Repair or replace the water pump as necessary.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

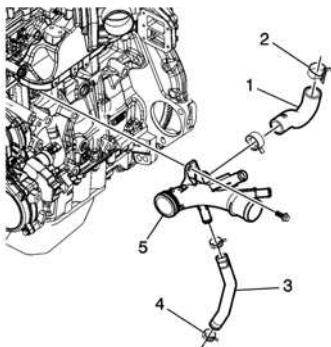


1. Install the water pump inlet pipe (5).
2. Install the engine cooler hose (3) and hose clamps (4).
3. Install the thermostat bypass hose (1) and hose clamps (2).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Remove the thermostat bypass hose clamps (2) and hose (1).
2. Remove the engine oil cooler hose clamps (4) and hose (3).
3. Remove the water pump inlet pipe (5).

2013 Chevrolet Colorado

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

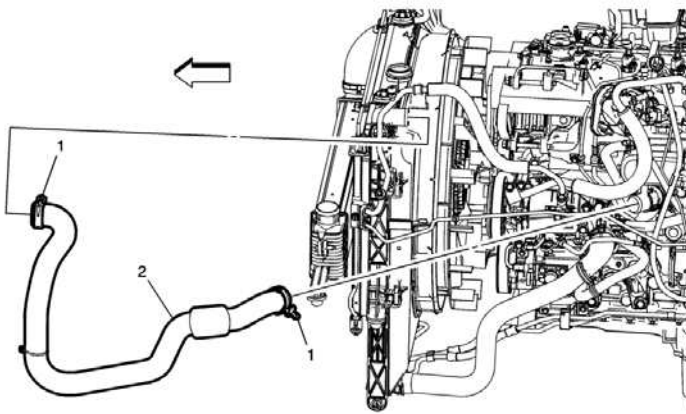
Special Tools

EN - 38185 Hose Clamp Pliers

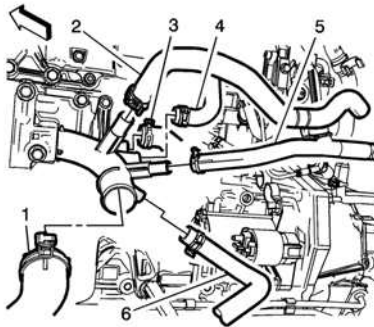
For equivalent regional tools, refer to Special Tools.

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Drain the cooling system. Refer to Cooling System Draining and Filling.
3. Remove the air conditioning compressor bracket. Refer to Air Conditioning Compressor Bracket Replacement.
4. Remove the intake manifold. Refer to Intake Manifold Replacement.

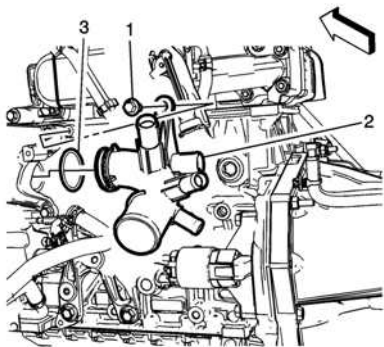


5. Remove the radiator inlet pipe clamp (1) to the thermostat housing and remove the radiator inlet pipe (2).



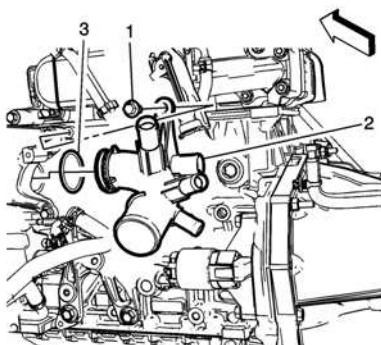
6. Using the *BO-38185* pliers, remove the following hoses from the water inlet pipe:

- Radiator Outlet Hose (1)
- Coolant Recovery Reservoir Inlet Hose (2)
- Thermostat Bypass Hose (3)
- EGR Manifold Coolant Return Hose (4)
- Heater Inlet Hose (5)
- Engine Oil Cooler Hose (6)



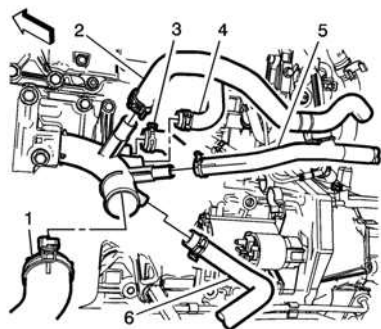
- Remove the water pump inlet pipe fastener (1) and remove the water pump inlet pipe (2).
- Discard the water pump inlet pipe seal (3).

[Installation Procedure](#)



Caution: Refer to Fastener Caution.

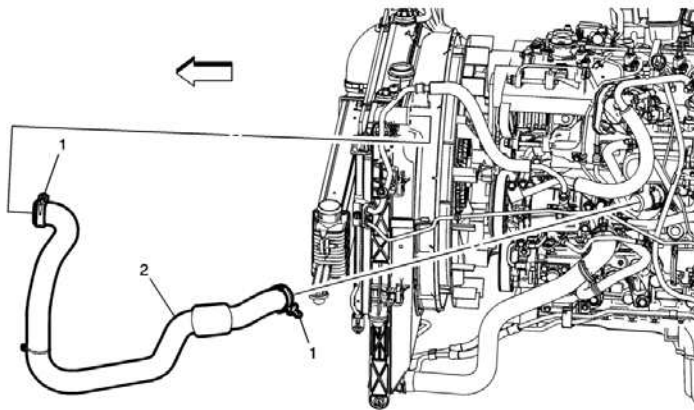
1. Install the water pump inlet pipe (2) to the back of the water pump with a NEW seal (3). Tighten the fastener (1) to **25 Y (18 lb ft)**.



2. Install the following hoses to the water inlet pipe:

- Radiator Outlet Hose (1)
- Coolant Recovery Reservoir Inlet Hose (2)
- Thermostat Bypass Hose (3)
- EGR Manifold Coolant Return Hose (4)
- Heater Inlet Hose (5)
- Engine Oil Cooler Hose (6)

Water Pump Inlet Pipe Replacement (Diesel)

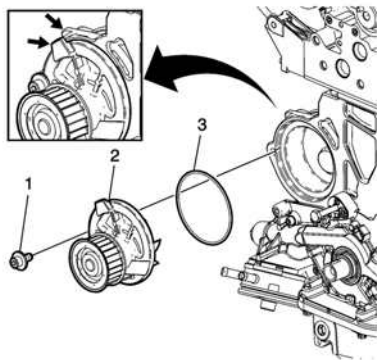


- Install the radiator inlet pipe (2) to the thermostat housing with the clamp (1).
- Install the intake manifold. Refer to Intake Manifold Replacement.
- Install the air conditioning compressor bracket. Refer to Air Conditioning Compressor Bracket Replacement.
- Fill the cooling system. Refer to Cooling System Draining and Filling.
- Start the engine and check for coolant leaks.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Install the water pump (2) and NEW seal (3). Make sure the water pump is aligned correctly as seen in the insert.

Caution: Refer to Fastener Caution.

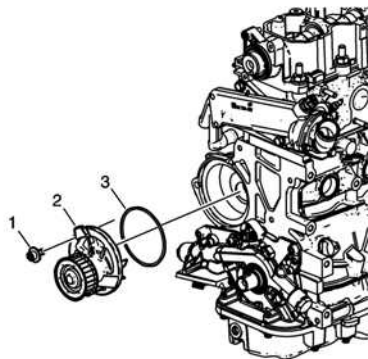
Note: Apply silicone grease to the water pump O-ring seal (3) before installation. Refer to Adhesives, Fluids, Lubricants, and Sealers.

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

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Install the water pump (2) and NEW seal (3).

Caution: Refer to Fastener Caution.

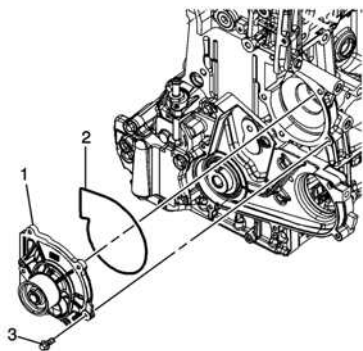
Note: Apply silicone grease to the water pump O-ring seal (3) before installation. Refer to Adhesives, Fluids, Lubricants, and Sealers.

2. Install the bolts (1) and tighten to **8 Y (6.0 lb ft)**

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



1. Install a new gasket (2) and the water pump assembly (1).
2. Install the water pump bolts (3). Finger tighten the bolts.

Caution: Refer to Fastener Caution.

3. Tighten the water pump bolts to **32 Y (24 lb ft)**.

Caution: Refer to Component Fastener Tightening Caution.

4. Apply sealant GM P/N 12346004 (Canadian P/N 10953480) or equivalent to the water pump drain plug.
5. Install the water pump drain plug, if necessary. Tighten the plug to **20 Y (15 lb ft)**.

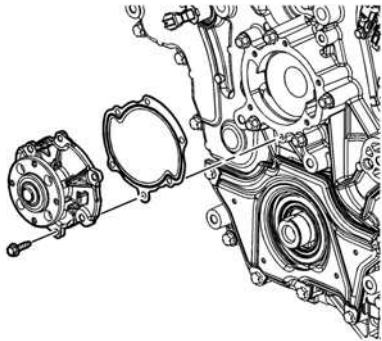
2013 Chevrolet Colorado

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

Special Tools

EN 46104 Water Pump Pulley Holding Tool

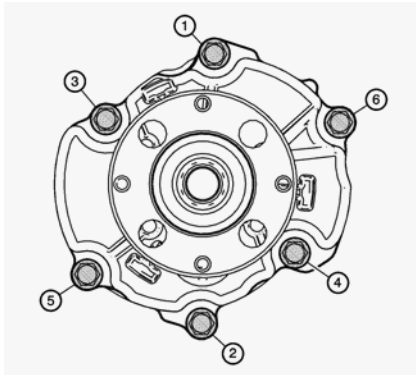
For equivalent regional tools, refer to Special Tools.



1. Ensure that the engine front cover and water pump are clear of old gasket material.
2. Ensure that the water pump mounting bolt holes in the front cover are completely clean and dry.
3. Place a NEW water pump gasket on the water pump.
4. Place the water pump in position on the front cover.

Caution: This vehicle is equipped with torque-to-yield or single use fasteners. Install a NEW torque-to-yield or single use fastener when installing this component. Failure to replace the torque-to-yield or single use fastener could cause damage to the vehicle or component.

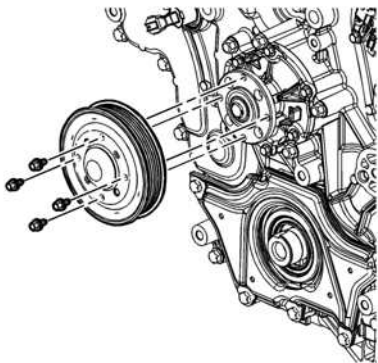
5. Install the NEW water pump bolts finger tight.



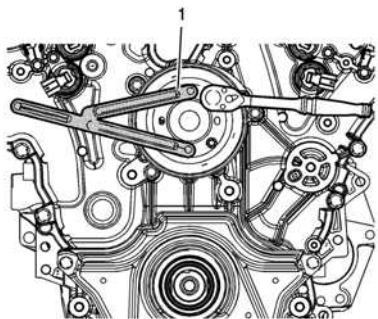
Caution: Refer to Fastener Caution.

6. Tighten the NEW water pump bolts.
 1. Tighten the bolts a first pass in the sequence shown to **10 Y (89 lb in)**.
 2. Tighten the bolts a second pass in the sequence shown to **10 Y (89 lb in)**.
 3. Tighten the bolts a final pass in the sequence shown an additional **45 degrees**.

Water Pump Installation



7. Install the water pump pulley.
8. Loosely install the water pump pulley bolts.

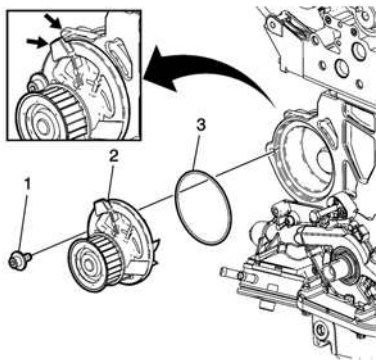


9. Install the *EN 46104* tool (1) onto the water pump pulley and tighten the water pump pulley bolts to **10 Y (89 lb in)**.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

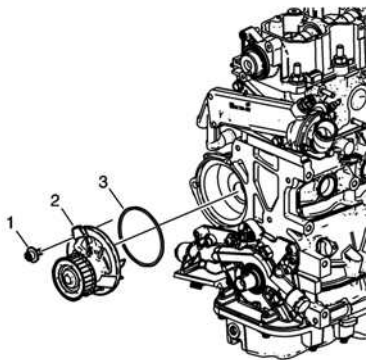


1. Remove the water pump cover bolts (1).
2. Remove the water pump (2) and o-ring seal (3).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

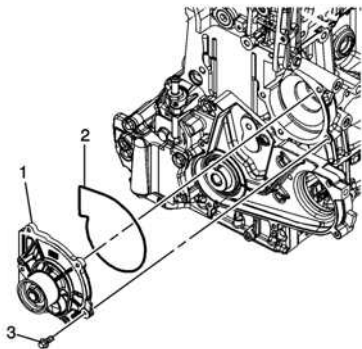
Fuel Delivery: | Fuel:



1. Remove the water pump cover bolts (1).
2. Remove the water pump (2) and o-ring seal (3).

2013 Chevrolet Colorado

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



1. Remove the water pump bolts (3) and water pump (1).
2. Remove the water pump seal (2).

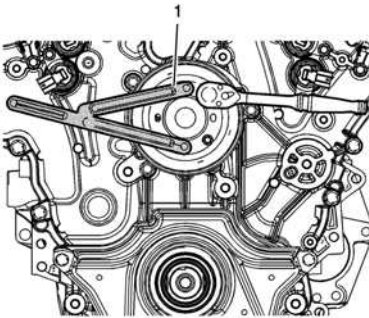
2013 Chevrolet Colorado

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

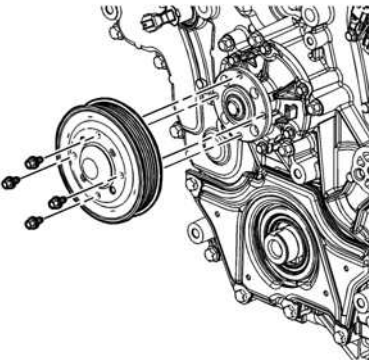
Special Tools

EN 46104 Water Pump Pulley Holding Tool

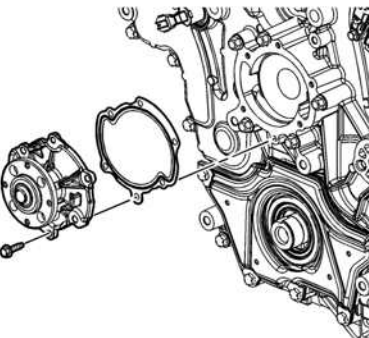
For equivalent regional tools, refer to Special Tools.



1. Install the EN 46104 holding tool (1) onto the water pump pulley.



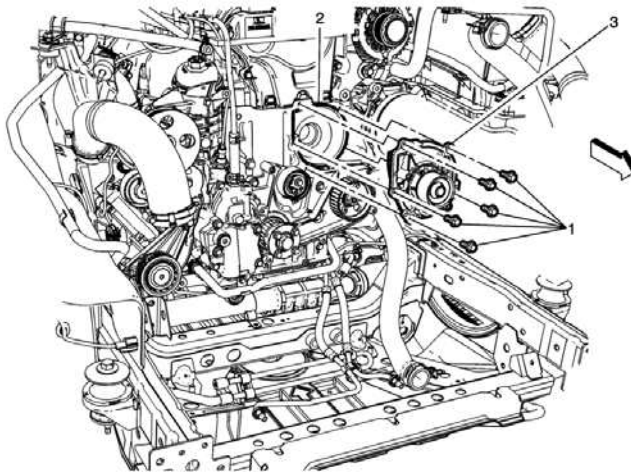
2. Remove the water pump pulley bolts.
3. Remove the water pump pulley.



4. Remove and discard the water pump bolts.
5. Remove the water pump from the front cover.
6. Remove the water pump gasket.

2013 Chevrolet Colorado

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



Water Pump Replacement

Callout

Component Name

Preliminary Procedure

Remove the timing belt rear cover. Refer to Timing Belt Rear Cover Replacement.

Water Pump Fasteners (Qty: 5)

Caution: Refer to Fastener Caution.

1

Tighten

32 Y (24 lb ft)

2

Water Pump Seal

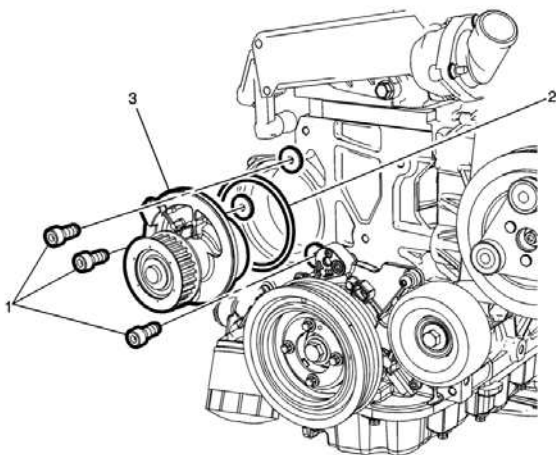
Note: Replace the water pump seal with a NEW seal.

3

Water Pump

2013 Chevrolet Colorado

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



Water Pump Replacement

Callout

Component Name

Preliminary Procedure

Remove the timing belt rear cover. Refer to Timing Belt Rear Cover Replacement.

Water Pump Fasteners (Qty :3)

1

Caution: Refer to Fastener Caution.

Tighten

8 Y (71 lb in)

2

Water Pump Seal

Note: Replace the water pump seal with a NEW seal.

3

Water Pump