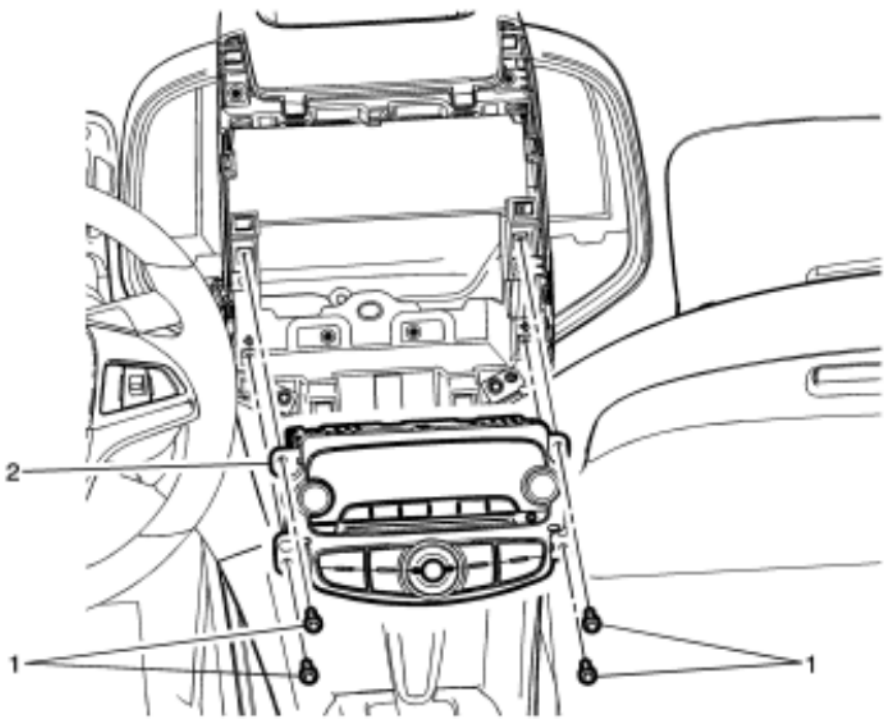
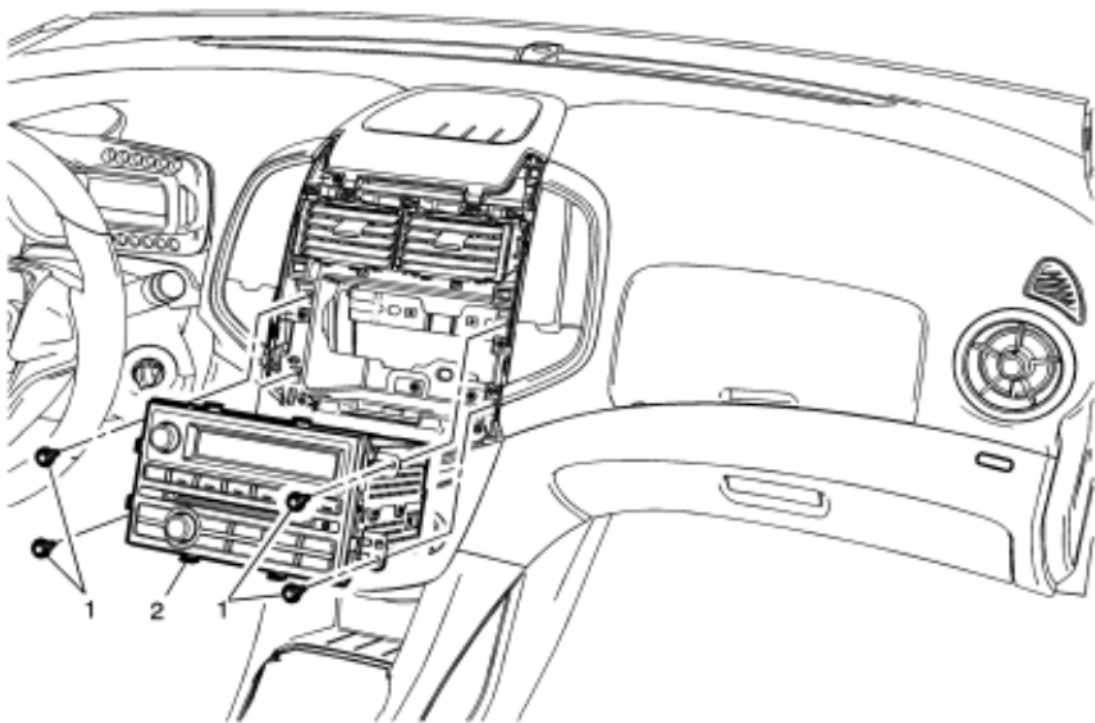


Radio Replacement (With US8)



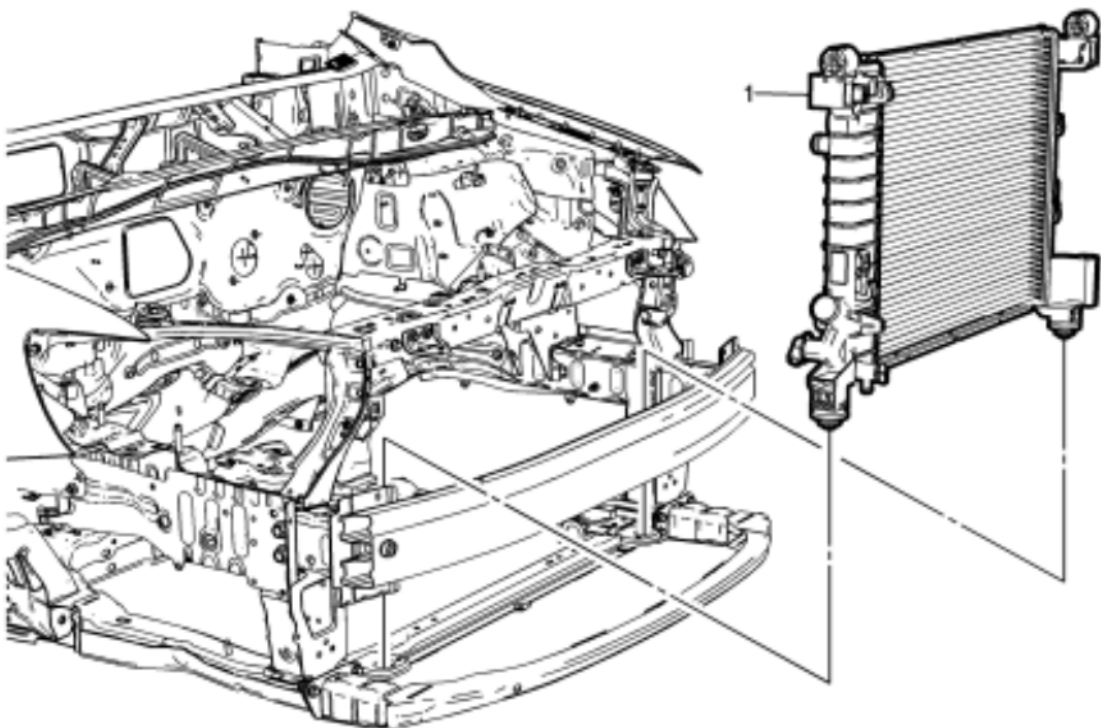
Callout	Component Name
Preliminary Procedure Remove the instrument panel center molding. Refer to Instrument Panel Center Molding Replacement .	
1	Radio Bolts (Qty: 4) Caution: Refer to Fastener Caution .
2	Radio Assembly Procedure 1. Disconnect the electrical connections. 2. Refer to Control Module References for programming and setup information.

Radio Replacement (Without US8)



Callout	Component Name
Preliminary Procedure Remove the instrument panel center molding. Refer to Instrument Panel Center Molding Replacement .	
1	Radio Bolts (Qty: 4) Caution: Refer to Fastener Caution .
2	Radio Assembly Procedure 1. Disconnect the electrical connections. 2. Refer to Control Module References for programming and setup information.

Radiator Replacement (Gasoline)



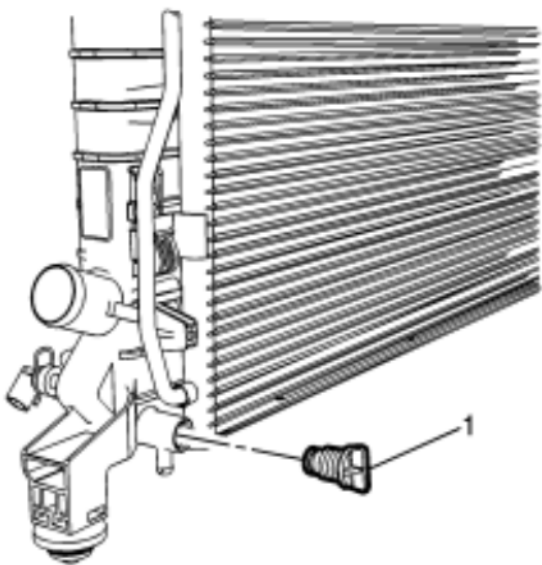
Callout	Component Name
Preliminary Procedures 1. Drain the coolant. Refer to Cooling System Draining and Filling . 2. Remove the engine coolant temperature sensor. 3. Remove the air conditioning condenser. Refer to Air Conditioning Condenser Replacement . 4. Remove the engine coolant fan shroud. Refer to Engine Coolant Fan Shroud Replacement . 5. Remove the radiator hoses. Refer to Radiator Inlet Hose Replacement and Radiator Outlet Hose Replacement . 6. Remove the radiator upper bracket. Refer to Radiator Upper Bracket Replacement .	
1	Radiator Tip Tilt radiator forward to remove.

Cooling System Draining and Filling

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. Remove the front bumper opening lower cover. Refer to [Front Bumper Fascia Opening Lower Cover Replacement](#) .
4. Place a drain pan under the drain cock.



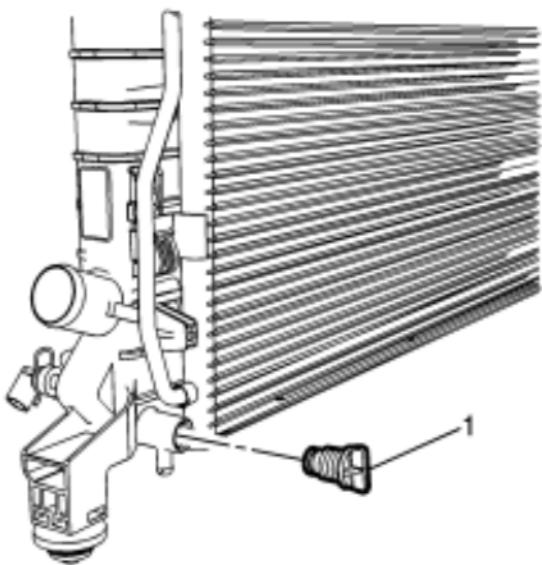
5. Loosen the radiator drain cock(1).
6. Drain the cooling system.
7. Lower the vehicle.
8. Inspect the coolant.
9. Follow the appropriate procedure based on the condition of the coolant.
 - Normal in appearance—Follow the filling procedure.
 - Discolored—Follow the flush procedure. Refer to [Coolant System 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(1) to **2 N·m (18 lbin)**.
3. Install the front bumper opening lower cover. Refer to [Front Bumper Fascia Opening Lower Cover Replacement](#) .
4. Lower the vehicle.

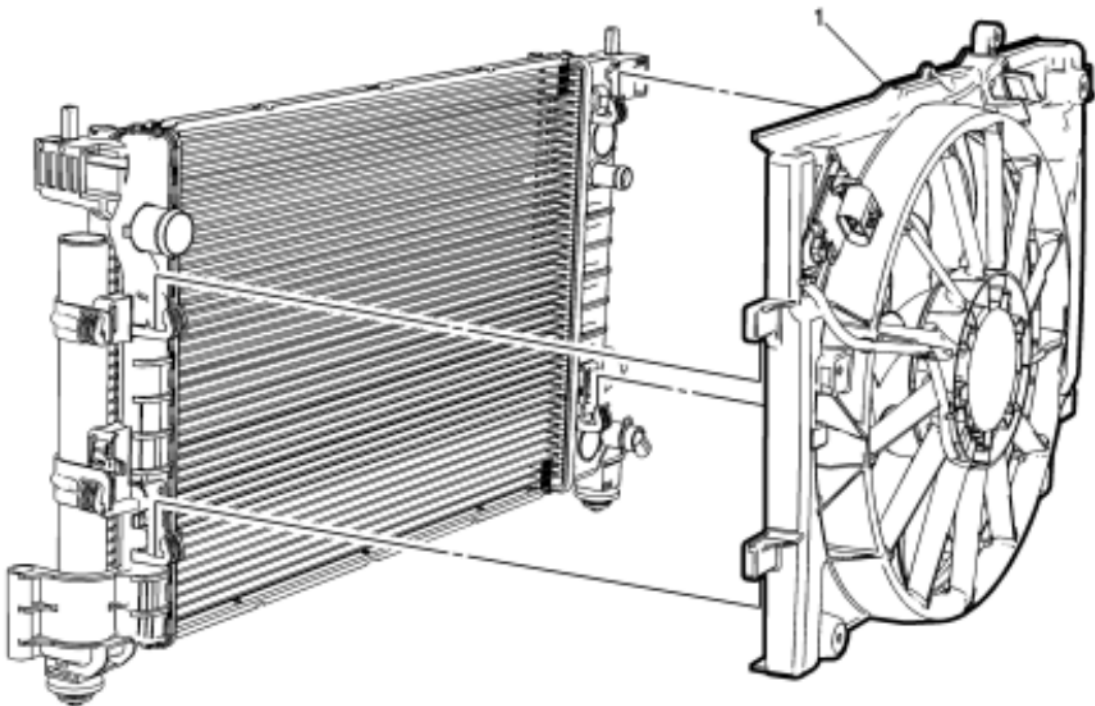
Note: Use a 50/50 mixture of DEX-COOL antifreeze and clean drinkable water.

5. 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](#) .

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6. 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.
7. Start the engine and allow to the engine to idle in PARK or NEUTRAL with the parking brake engaged.
8. Slowly fill the coolant mixture until the level stabilizes at the base of the radiator surge tank.
9. Install the coolant pressure cap.
10. Raise the engine RPM to 2500rpm for 30–40 seconds.
11. Shut the engine OFF.
12. 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.
13. Inspect and if necessary, fill the coolant reservoir bottle as necessary.
14. Rinse away any excess coolant from the engine and the engine compartment.
15. Inspect the cooling system for leaks.
16. Top off the radiator surge tank if necessary.

Engine Coolant Fan Shroud Replacement (Gasoline)



Callout	Component Name
Preliminary Procedure 1. Remove the radiator surge tank. Refer to Radiator Surge Tank Replacement . 2. Unclip transmission cooler lines from shroud if equipped. 3. Unclip radiator surge tank outlet hose from fan shroud. 4. Disconnect any electrical connectors from the fan shroud.	
1	Engine Coolant Fan Shroud Tip Unclip engine coolant fan shroud from radiator.

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Radiator Inlet Hose Replacement (1.6L or 1.8L)

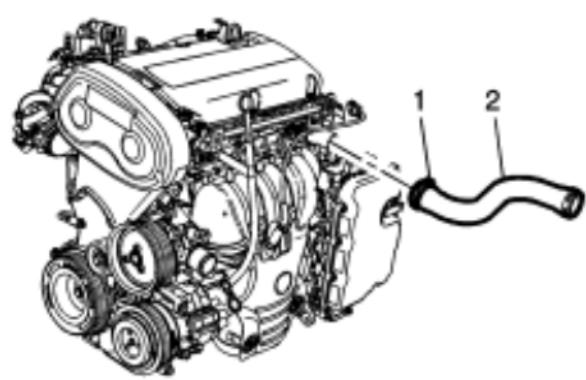
Special Tools

BO-38185 Hose Clamp Pliers

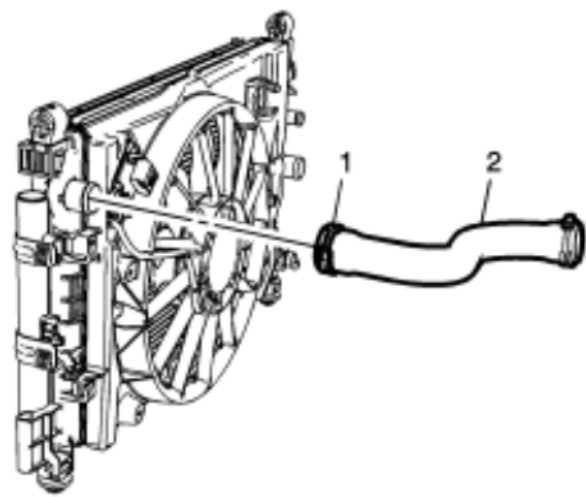
For equivalent regional tools, Refer to [Special Tools](#) .

Removal Procedure

- 1. Drain the cooling system. Refer to [Cooling System Draining and Filling](#) .



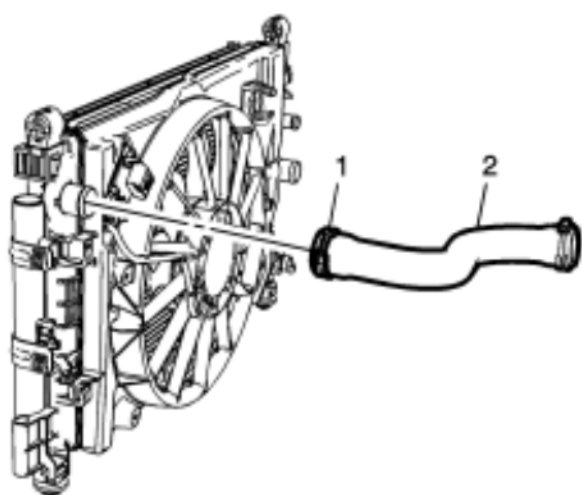
- 2. Remove the radiator inlet hose clamp(1) at the engine using BO-38185 Hose Clamp Pliers .
- 3. Remove the radiator inlet hose(2) from the engine.



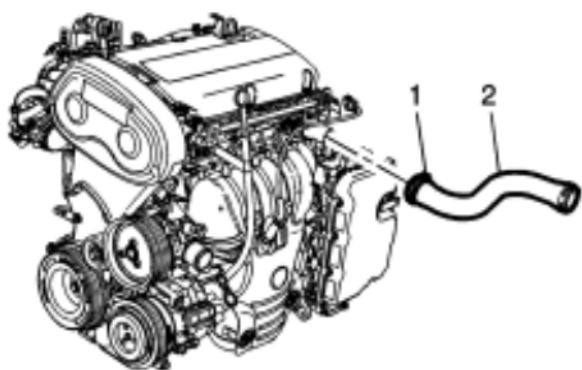
- 4. Remove the radiator inlet hose clamp(1) at the radiator using BO-38185 Hose Clamp Pliers .
- 5. Remove the radiator inlet hose(2) from the radiator.
- 6. Remove the radiator inlet hose from the vehicle.

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Installation Procedure



- 1. Install the radiator inlet hose to the vehicle.
- 2. Install the radiator inlet hose(2) to the radiator.
- 3. Install the radiator inlet hose clamp(1) at the radiator using *BO-38185* Hose Clamp Pliers .



- 4. Install the radiator inlet hose(2) to the engine.
- 5. Install the radiator inlet hose clamp(1) at the engine using *BO-38185* Hose Clamp Pliers .
- 6. Fill the cooling system. Refer to [Cooling System Draining and Filling](#) .

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Radiator Inlet Hose Replacement (1.2L or 1.4L)

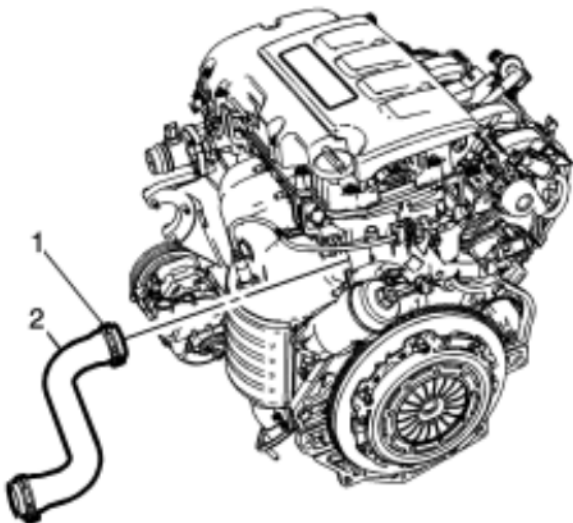
Special Tools

BO-38185 Hose Clamp Pliers

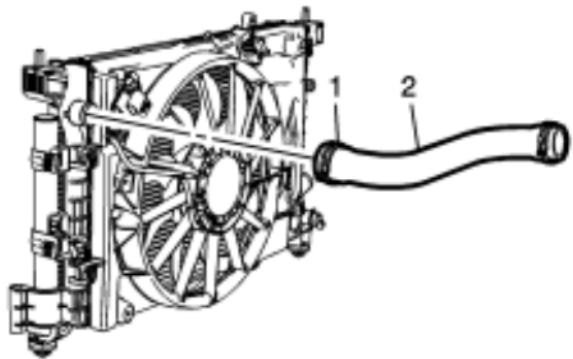
For equivalent regional tools, Refer to [Special Tools](#)

Removal Procedure

- 1. Drain the cooling system. Refer to [Cooling System Draining and Filling](#)



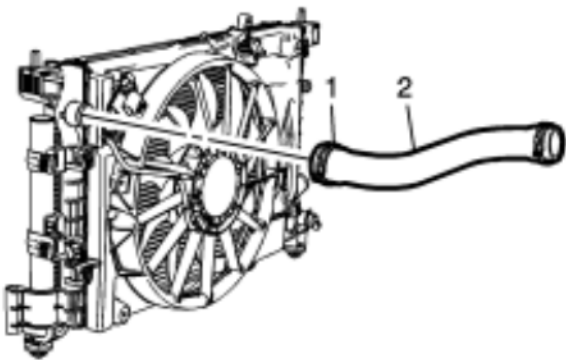
- 2. Remove the radiator inlet hose clamp(1) at the engine using *BO-38185* Hose Clamp Pliers .
- 3. Remove the radiator inlet hose(2) from the engine.



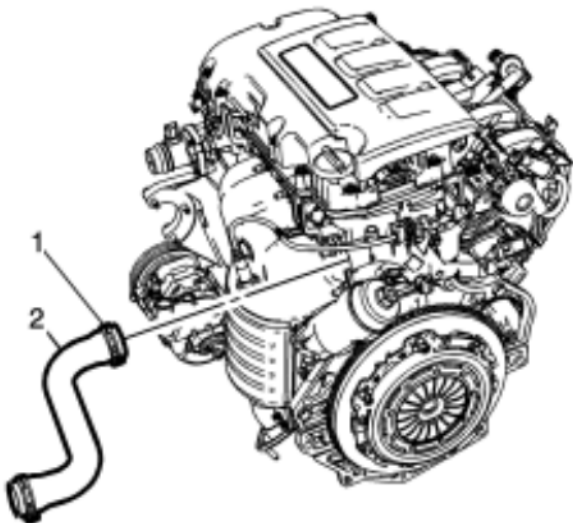
- 4. Remove the radiator inlet hose clamp(1) at the radiator using *BO-38185* Hose Clamp Pliers .
- 5. Remove the radiator inlet hose(2) from the radiator.
- 6. Remove the radiator inlet hose from the vehicle.

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Installation Procedure



- 1. Install the radiator inlet hose to the vehicle.
- 2. Install the radiator inlet hose(2) to the radiator.
- 3. Install the radiator inlet hose clamp(1) at the radiator using *BO-38185* Hose Clamp Pliers .



- 4. Install the radiator inlet hose(2) to the engine.
- 5. Install the radiator inlet hose clamp(1) at the engine using *BO-38185* Hose Clamp Pliers .
- 6. Fill the cooling system. Refer to [Cooling System Draining and Filling](#)

Radiator Inlet Hose Replacement (Diesel)

Special Tools

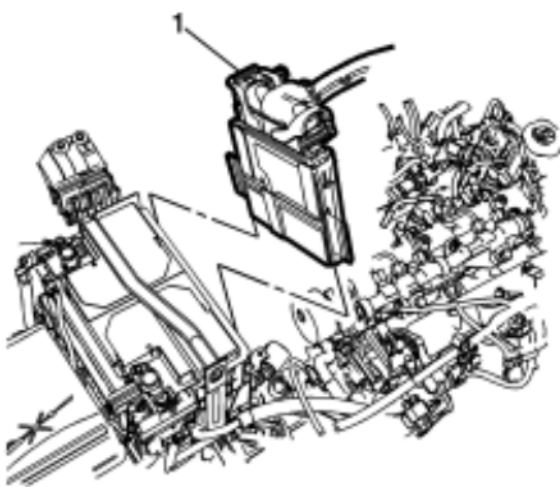
BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to [Special Tools](#) .

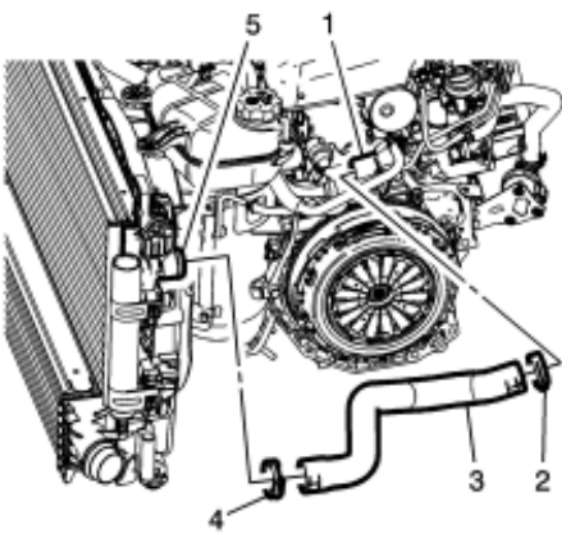
Removal Procedure

Warning: With a pressurized cooling system, the coolant temperature in the radiator can be considerably higher than the boiling point of the solution at atmospheric pressure. Removal of the surge tank cap, while the cooling system is hot and under high pressure, causes the solution to boil instantaneously with explosive force. This will cause the solution to spew out over the engine, the fenders, and the person removing the cap. Serious bodily injury may result.

1. Drain the coolant. Refer to [Cooling System Draining and Filling](#) .
2. Remove the radiator surge tank. Refer to [Radiator Surge Tank Replacement](#) .



3. Remove the electronic control module(1) from the battery tray.

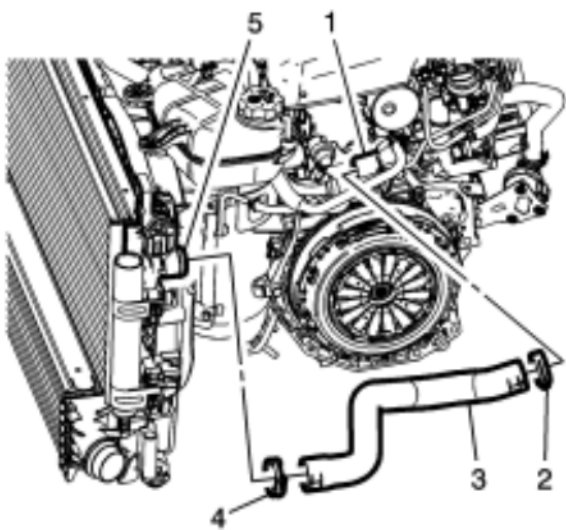


Note: Use a small screwdriver to unclip the retainer clip (black arrow) and pull the electronic control module out.

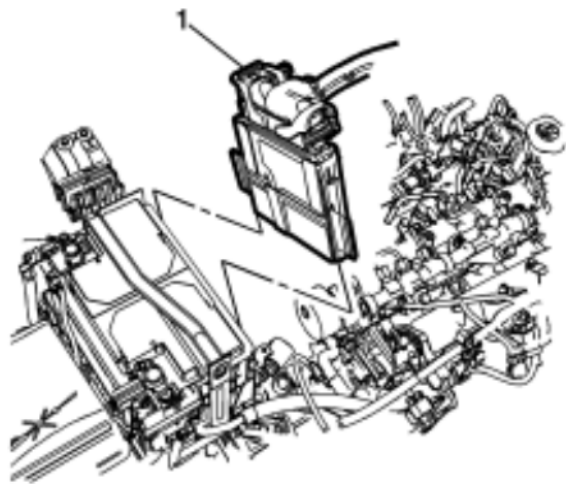
4. Unclip the retainer clip from the radiator inlet hose(3).
5. Remove the radiator inlet hose clamp(2) from the thermostat housing(1) using the BO-38185 pliers .
6. Remove the radiator inlet hose clamp(4) from the radiator(5) using the BO-38185 pliers .
7. Remove the radiator inlet hose(3).

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Installation Procedure



- 1. Install the radiator inlet hose(3).
- 2. Install the radiator inlet hose clamp(4) to the radiator(5) using the *BO-38185* pliers .
- 3. Install the radiator inlet hose clamp(2) to the thermostat housing(1) using the *BO-38185* pliers .
- 4. install the radiator inlet hose(3) into the retainer clip.



- 5. Install the electronic control module(1) to the battery tray.
- 6. Install the radiator surge tank. Refer to [Radiator Surge Tank Replacement](#) .
- 7. Fill the coolant system. Refer to [Cooling System Draining and Filling](#)

Radiator Outlet Hose Replacement (1.6L or 1.8L)

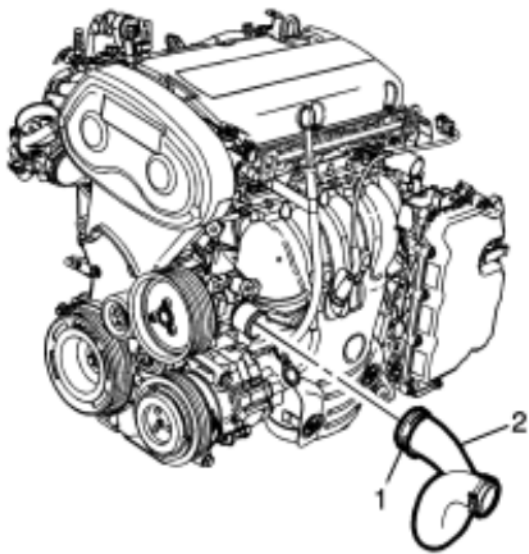
Special Tools

BO-38185 Hose Clamp Pliers

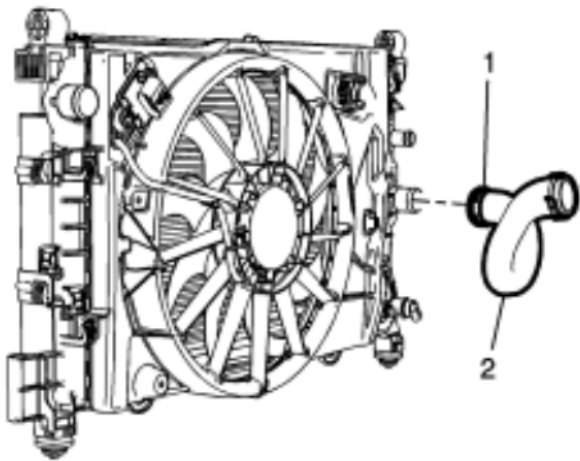
For equivalent regional tools, Refer to [Special Tools](#) .

Removal Procedure

1. Drain the cooling system. Refer to [Cooling System Draining and Filling](#) .



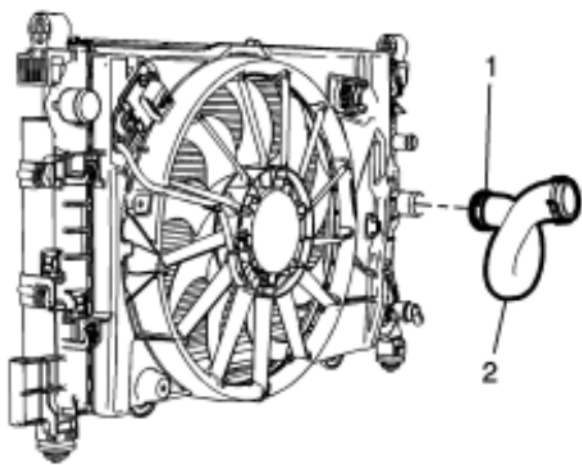
2. Remove the radiator outlet hose clamp (1) at the engine using BO-38185 Hose Clamp Pliers .
3. Remove the radiator outlet hose (2) from the engine.



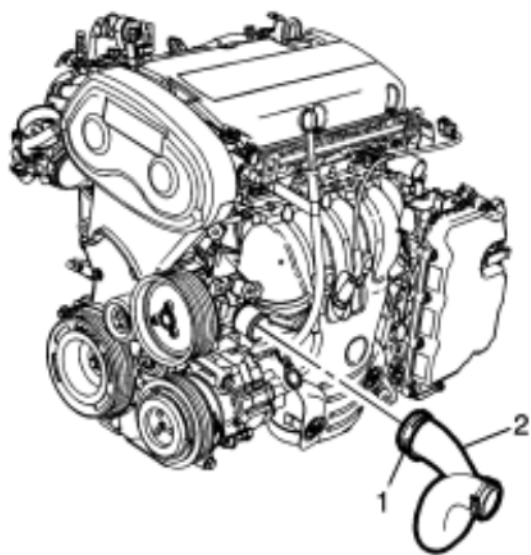
4. Remove the radiator outlet hose clamp (1) at the radiator using BO-38185 Hose Clamp Pliers .
5. Remove the radiator outlet hose (2) from the radiator.
6. Remove the radiator outlet hose from the vehicle.

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Installation Procedure



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



- 4. Install the radiator outlet hose(2) to the engine.
- 5. Install the radiator outlet hose clamp (1) at the engine using *BO-38185* Hose Clamp Pliers .
- 6. Fill the cooling system. Refer to [Cooling System Draining and Filling](#) .

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Radiator Outlet Hose Replacement (1.2L or 1.4L)

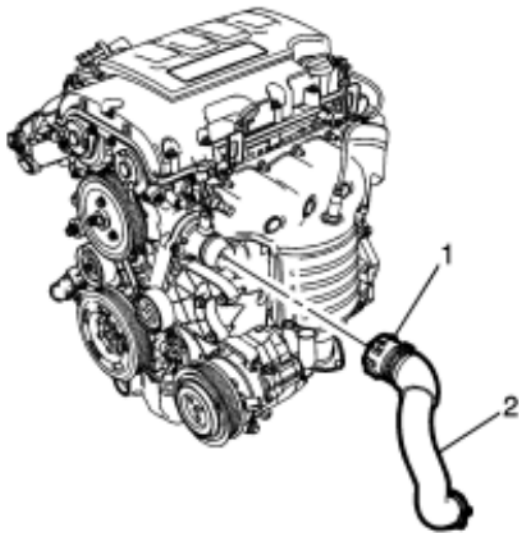
Special Tools

BO-38185 Hose Clamp Pliers

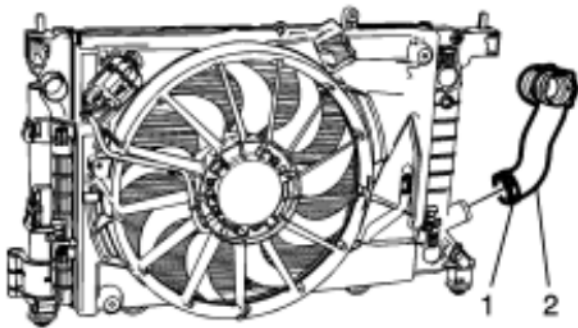
For equivalent regional tools, Refer to [Special Tools](#)

Removal Procedure

- 1. Drain the cooling system. Refer to [Cooling System Draining and Filling](#)
- 2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#)



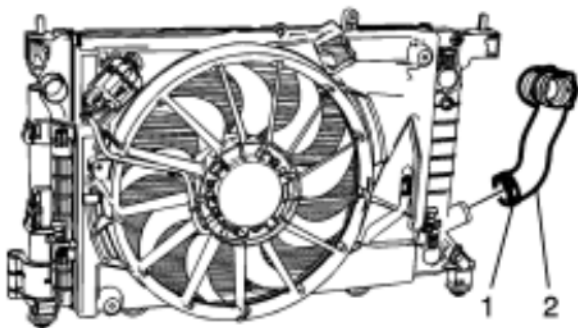
- 3. Disconnect the radiator outlet hose quick connect fitting (1) at the engine.
- 4. Remove the radiator outlet hose (2) from the engine.



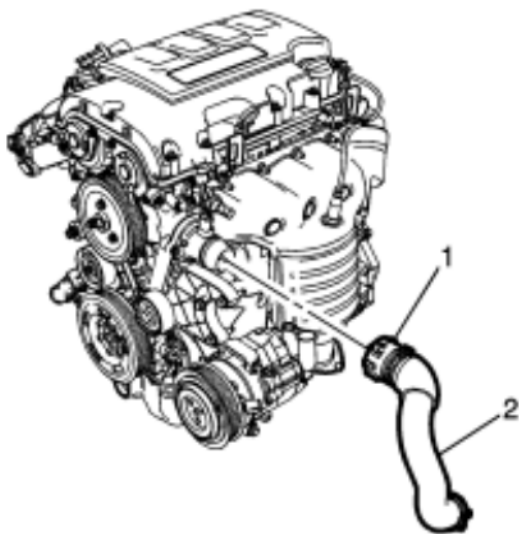
- 5. Remove the radiator outlet hose clamp (1) at the radiator using BO-38185 Hose Clamp Pliers .
- 6. Remove the radiator outlet hose (2) from the radiator.
- 7. Remove the radiator outlet hose from the vehicle.

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Installation Procedure



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



- 4. Install the radiator outlet hose(2) to the engine.
- 5. Connect the radiator outlet hose quick connect fitting(1) at the engine.
- 6. Lower the vehicle.
- 7. Fill the cooling system. Refer to [Cooling System Draining and Filling](#)

Radiator Outlet Hose Replacement (Diesel)

Special Tools

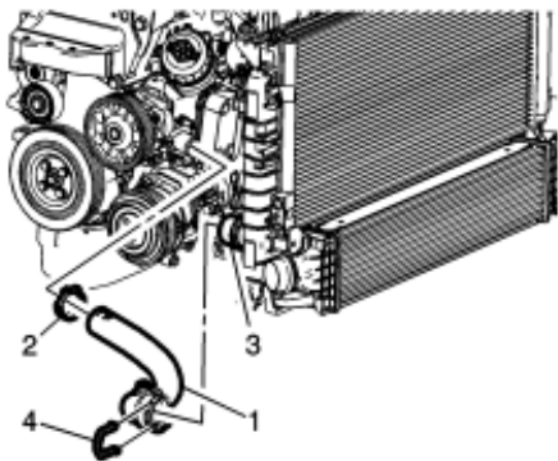
BO-38185 Hose Clamp Pliers

For equivalent regional tools, refer to [Special Tools](#) .

Removal Procedure

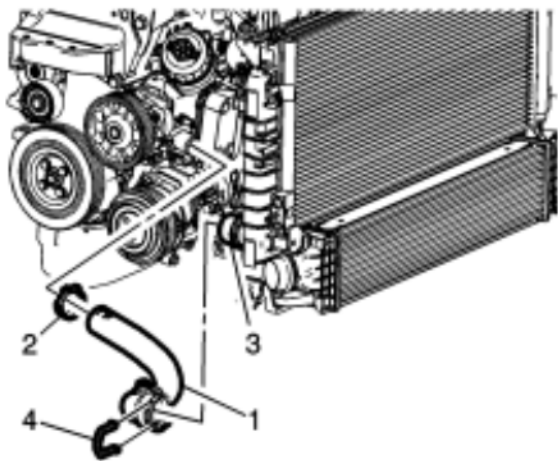
Warning: With a pressurized cooling system, the coolant temperature in the radiator can be considerably higher than the boiling point of the solution at atmospheric pressure. Removal of the surge tank cap, while the cooling system is hot and under high pressure, causes the solution to boil instantaneously with explosive force. This will cause the solution to spew out over the engine, the fenders, and the person removing the cap. Serious bodily injury may result.

1. Drain the cooling system. Refer to [Cooling System Draining and Filling](#) .
2. Remove the air cleaner outlet duct. Refer to [Air Cleaner Outlet Duct Replacement](#) .



3. Remove the radiator outlet hose clamp(2) Using the BO-38185 pliers .
4. Remove the radiator outlet hose(1) from the oil filter housing.
5. Remove the retainer clip(4).
6. Remove the radiator outlet hose(1) from the radiator(3).

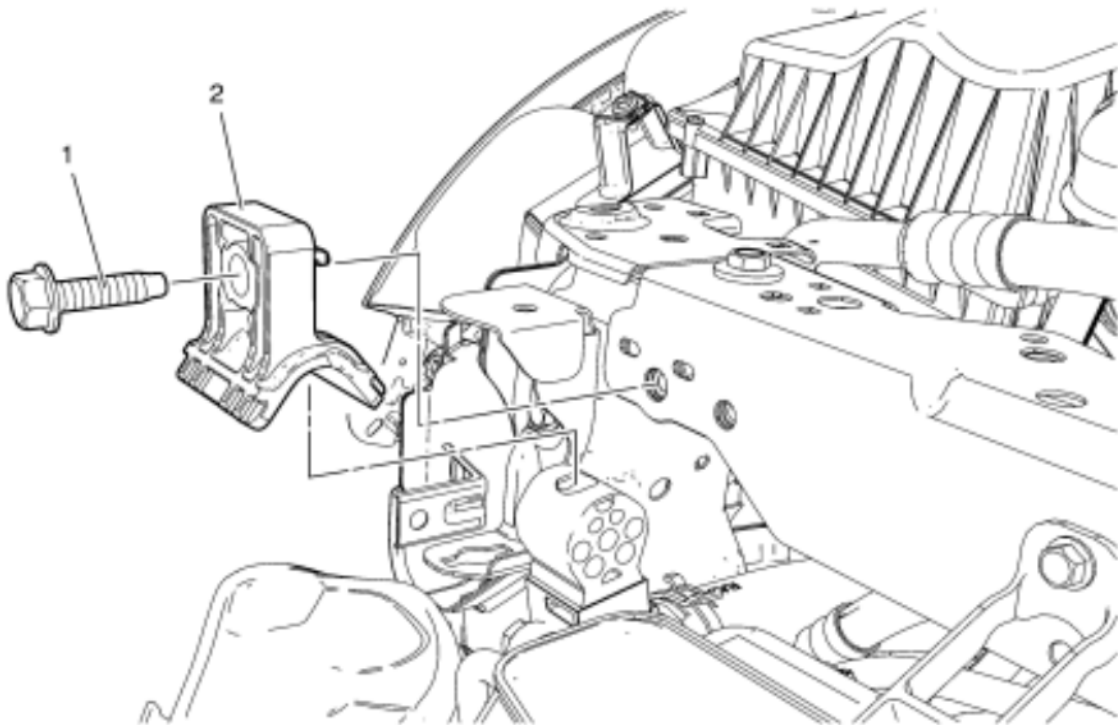
Installation Procedure



1. Install the radiator outlet hose(1) to the radiator(3).
2. Install the retainer clip(4).
3. Install the radiator outlet hose(1) to the oil filter housing.
4. Install the radiator outlet hose clamp(2) Using the BO-38185 pliers .
5. Install the air cleaner outlet duct. Refer to [Air Cleaner Outlet Duct Replacement](#) .
6. Fill the cooling system. Refer to [Cooling System Draining and Filling](#) .

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Radiator Upper Bracket Replacement



Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Radiator Support Bracket Bolt Caution: Refer to Fastener Caution . Tighten 9 N·m (80 lbin)
2	Radiator Support Bracket Procedure Pull the radiator forward until the bracket is reachable.

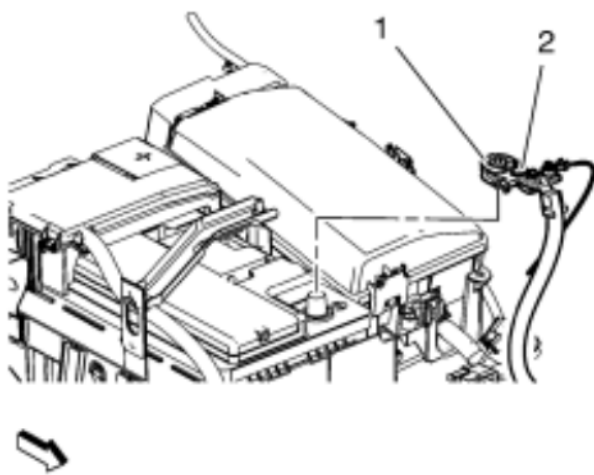
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Battery Negative Cable Disconnection and Connection (LCU,LDE)

Removal Procedure

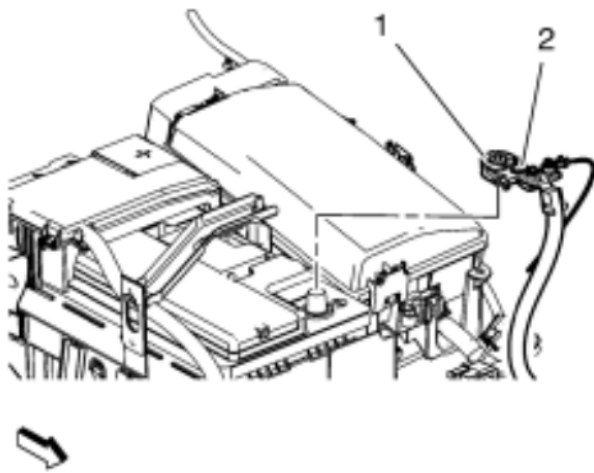
- 1. Turn on the radio and record all of the customer radio station presets.
- 2. Ensure that all lamps and accessories are turned off.
- 3. Turn the ignition OFF and remove the ignition key.

Warning: Refer to [Battery Disconnect Warning](#) .



- 4. Loosen the battery negative cable nut(2).
- 5. Remove the battery negative cable(1) from the battery.

Installation Procedure



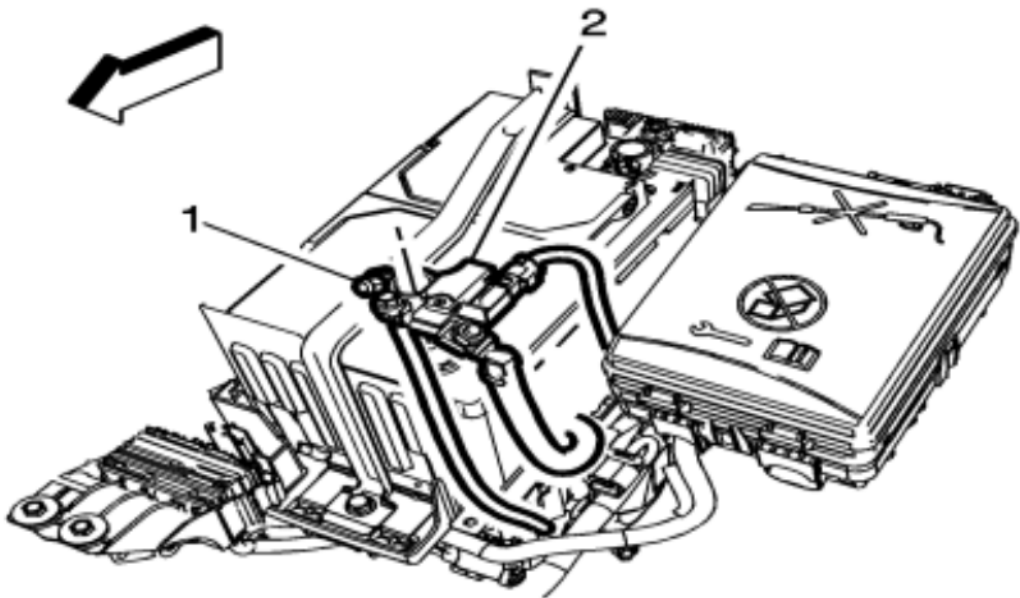
- 1. Install the battery negative cable(1) to the battery.

Caution: Refer to [Fastener Caution](#) .

- 2. Fasten the battery negative cable nut(2) and tighten the nut to **4.5N·m (40lbin)**.
- 3. Insert the ignition key and turn the ignition to the ON position.
- 4. Program volatile memory. Refer to [Control Module References](#) .

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Battery Negative Cable Disconnection and Connection (LSF,LDV)



Callout	Component Name
Preliminary Procedures 1. Turn on the radio and record all of the radio pre-set stations. 2. Ensure that all lamps and accessories are turned off. 3. Turn the ignition OFF and remove the ignition key.	
1	Warning: Refer to Battery Disconnect Warning . Battery Negative Cable Nut Caution: Refer to Fastener Caution . Tighten 4.5 N·m (40 lbin)
2	Battery Negative Cable Procedure 1. Disconnect the battery negative cable from the battery. 2. After connecting the battery negative cable, insert the ignition key and turn the ignition to the ON position. 3. Program the volatile memory. Refer to Control Module References .

Drive Belt Replacement

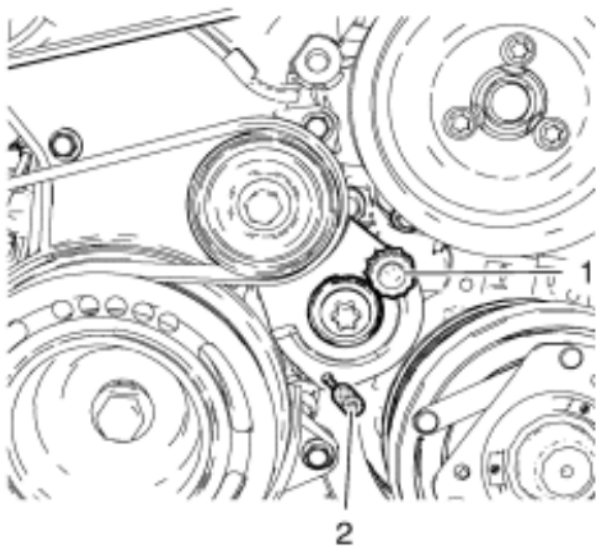
Special Tools

EN 6349 Locking Pin

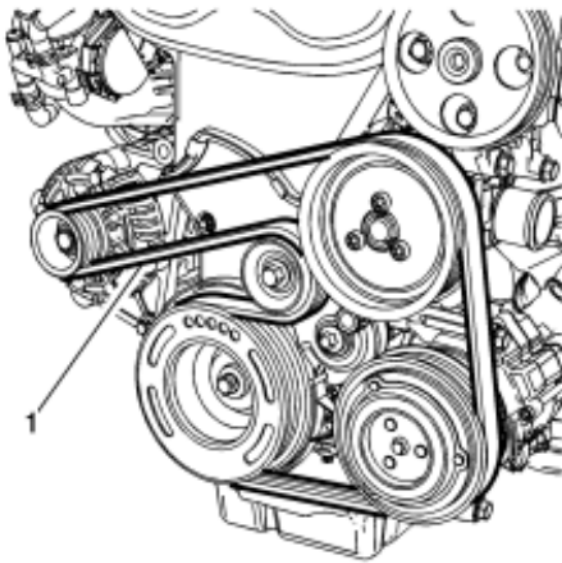
For equivalent regional tools, refer to [Special Tools](#) .

Removal Procedure

1. Remove the power steering pump belt, if equipped. Refer to [Power Steering Pump Belt Replacement](#) .
2. Remove the front wheelhouse liner inner front extension. Refer to [Front Wheelhouse Liner Inner Front Extension Replacement](#) .



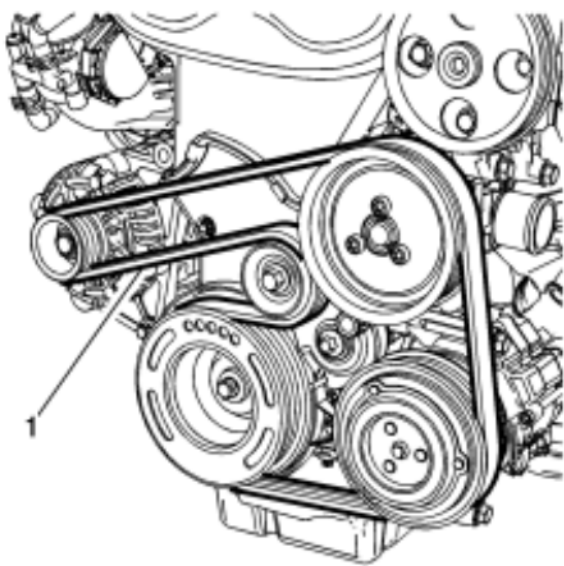
3. Release tension to the drive belt tensioner by rotating counterclockwise(1) and lock with *EN 6349* pin (2).



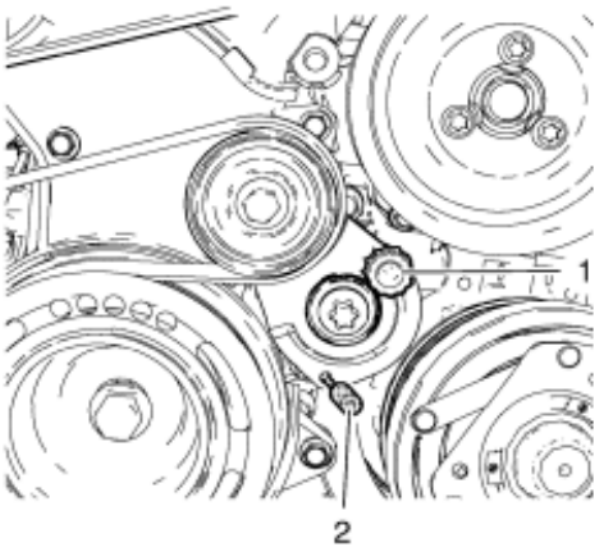
4. Remove the drive belt (1).

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Installation Procedure



- 1. Install the drive belt(1).



- 2. Release tension to the tensioner by rotating counterclockwise(1).
Note: Allow tensioner to slide back slowly.
- 3. Remove *EN 6349* pin (2).
- 4. Apply tension to the tensioner clockwise(1).
- 5. Install the front wheelhouse liner inner front extension. Refer to [Front Wheelhouse Liner Inner Front Extension Replacement](#) .
- 6. Install the power steering pump belt, if equipped. Refer to [Power Steering Pump Belt Replacement](#) .

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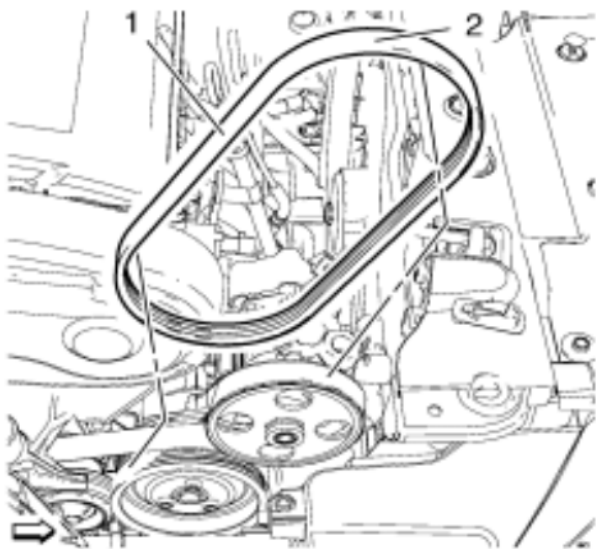
Power Steering Pump Belt Replacement

Special Tools

CH 49800 Installer Power Steering Pump Belt

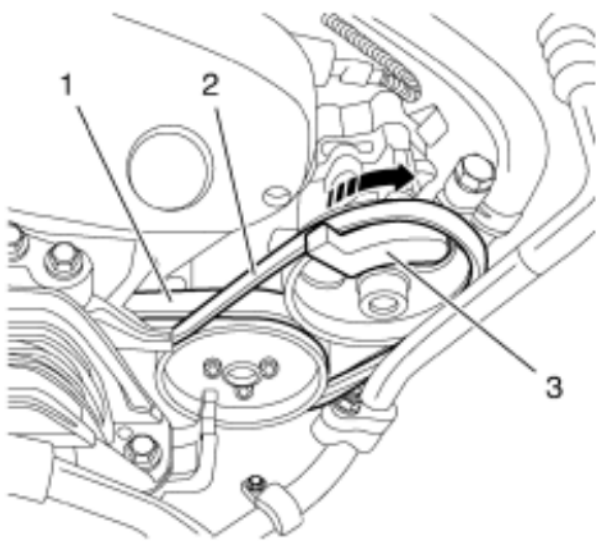
For equivalent regional tools, refer to [Special Tools](#) .

Removal Procedure



- 1. Cut the power steering pump belt(2) with a appropriate cutting tool at position(1).
- 2. Remove the power steering pump belt(2)

Installation Procedure

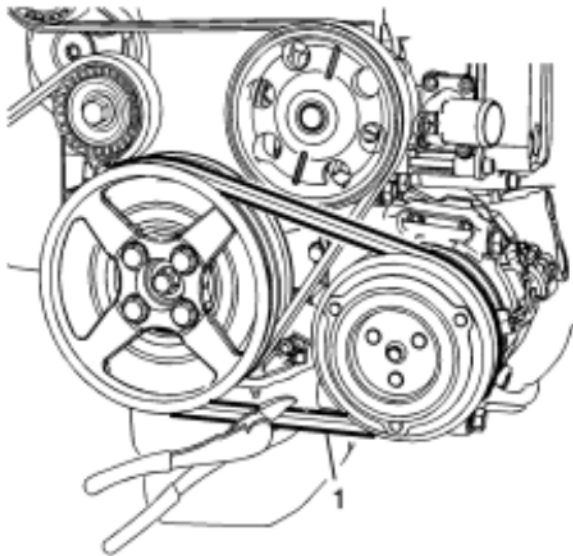


- 1. Relieve the tension of the drive belt(1). Refer to [Drive Belt Replacement](#) .
- 2. Install CH-49800 installer (3) on the power steering pump pulley.
- 3. Install NEW power steering belt(2) aligning pulley water pump.
- 4. Rotate the power steering pump pulley clockwise using hex wrench on the shaft power steering pump pulley.
- 5. Remove the CH-49800 installer (3).
- 6. Install the drive belt. Refer to [Drive Belt Replacement](#)

Air Conditioning Compressor Belt Replacement

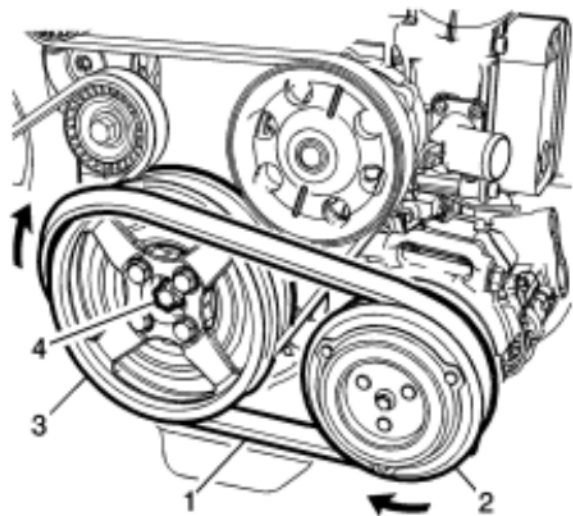
Removal Procedure

1. Remove the front wheelhouse liner inner front extension. Refer to [Front Wheelhouse Liner Inner Front Extension Replacement](#)



2. Cut the air conditioning (A/C) belt (1) with a appropriate cutting tool as shown.
3. Remove and discard the air conditioning (A/C) belt (1).

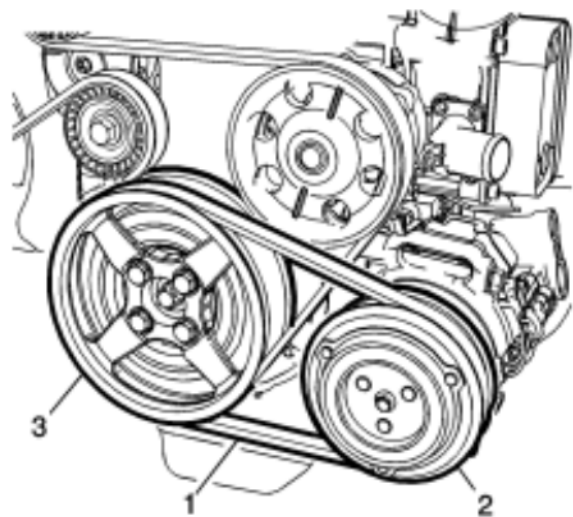
Installation Procedure



1. Position a NEW air conditioning (A/C) belt (1) on the crankshaft pulley (3) and air conditioning (A/C) compressor (2) as shown.

Note: Push the on belt while rotating the crankshaft pulley.

2. Using a socket and ratchet on the crankshaft pulley bolt (4), rotate the crankshaft in the direction of the arrow until the belt (1) is fully installed on the air conditioning (A/C) compressor (2).



3. After the belt is on the air conditioning (A/C) compressor pulley (2) , rotate the crankshaft (3) an additional complete revolution and ensure the air conditioning (A/C) belt (1) is fully seated on the crankshaft (3) and air conditioning (A/C) compressor (2).
4. Install the front wheelhouse liner inner front extension. Refer to [Front Wheelhouse Liner Inner Front Extension Replacement](#)