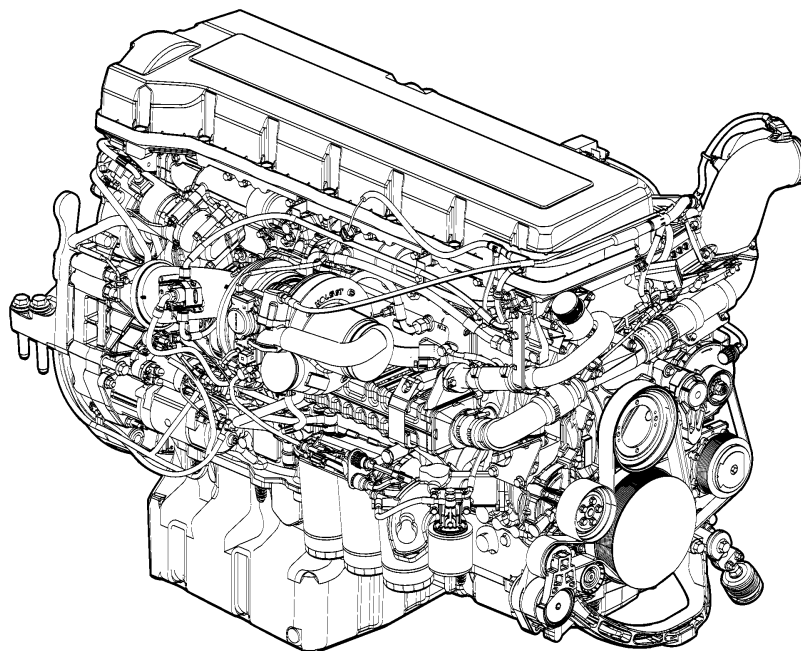


**EGR Valve
Replacement
D16F****EGR Valve, Replacement**

W2005772

This information covers the proper replacement procedure for the EGR valve on the Volvo D16F engine.

Note: For information on the design and function of the EGR system, refer to Service Information, group 25.

Contents

- "EGR Valve, Replacement" page 3

Note: Information is subject to change without notice.
Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

Tools

Special Tools

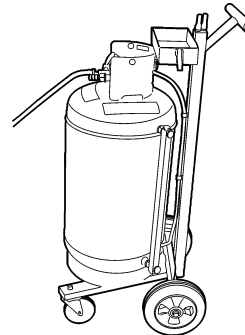
For special tools ordering information, refer to Tool Information, group 08.



W0001795

9996049

Coolant Drain Hose



W2004191

DBT2V700

Coolant Extractor

Service Procedures

2547-03-02-02

EGR Valve, Replacement

You must read and understand the precautions and guidelines in Service Information, group 20, "General Safety Practices, Engine" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

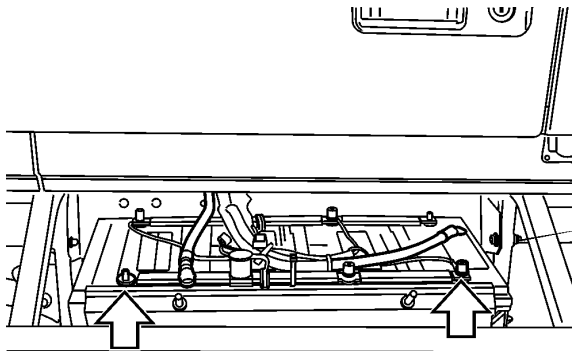
Removal

1

Apply the parking brake and place the shift lever in neutral.

2

Remove all cables from ground (negative) battery terminals to prevent personal injury from electrical shock.



W2003815

3

Remove inner splash guard as an assembly.

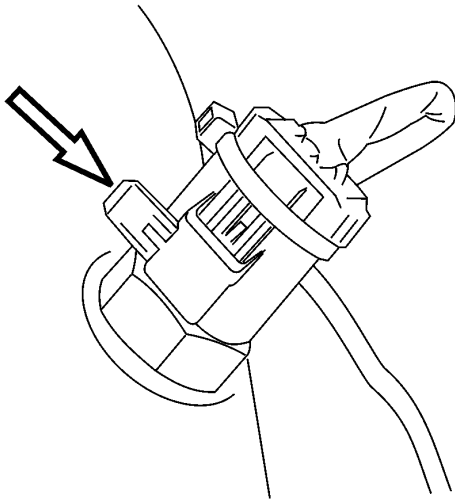
Note: Some models may be equipped with fender extenders, attached to the inner splash guard. Remove these as an assembly.

4

Connect the coolant extractor to the drain fitting at the bottom of the radiator and drain the coolant.

Note: An alternative method for draining the coolant is to connect the drain hose to the fitting and drain the coolant into a suitable container.

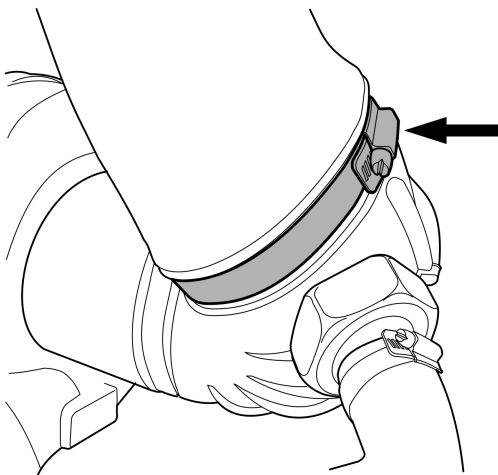
DBT2V700, 9996049



W2004720

5

Disconnect the air temperature sensor connector from the sensor. Cut the tie strap and disengage the lock tab. Remove the bolt and clamp securing the temperature sensor harness to the main fresh air pipe.



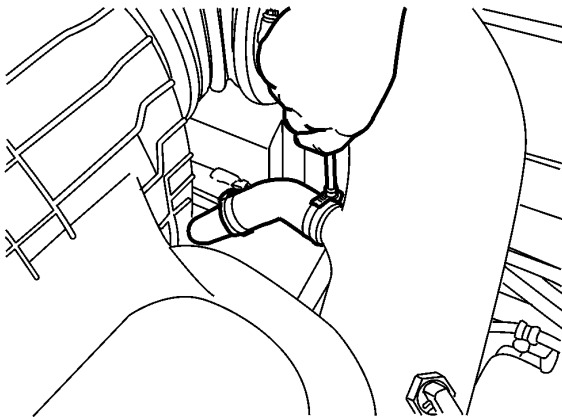
W2006004

6

Loosen the clamp of the main fresh air pipe at the turbocharger inlet elbow. Disconnect the main fresh air pipe from the turbocharger inlet elbow.

7

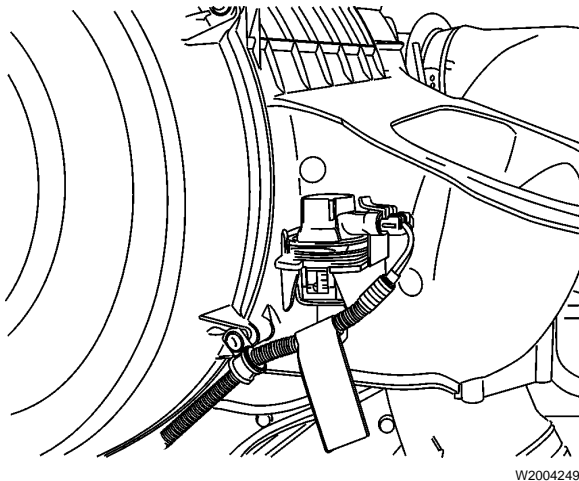
Loosen the clamp and remove the air compressor fresh air hose from the main fresh air pipe. Also, loosen the main fresh air pipe clamp at the air filter housing.



W2004719

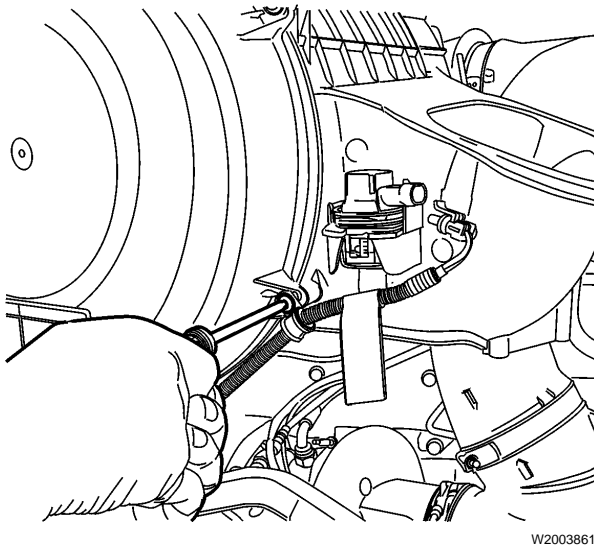
8

Remove the main fresh air pipe.



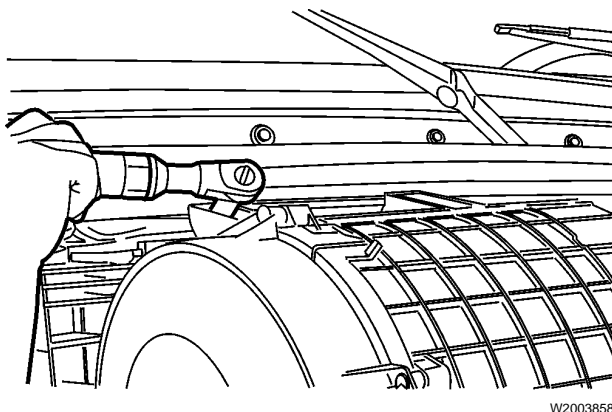
9

Remove the air filter housing by first disconnecting the air restriction gauge connector.



10

Remove the clamps securing the wiring harness to the air filter housing.

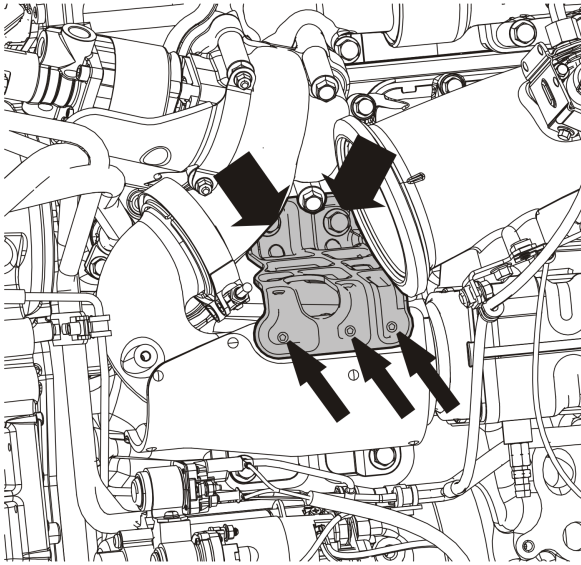


11

Remove the bolts at the top of the air filter housing and remove the housing assembly.

12

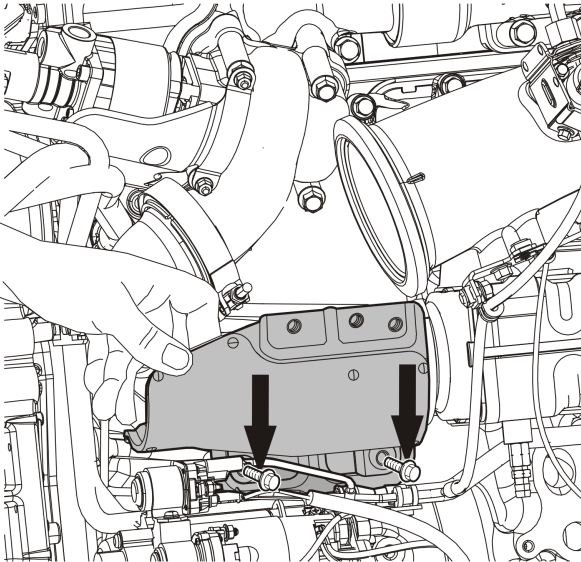
Remove the fasteners and bolts securing the upper EGR hot pipe shield and remove the shield.



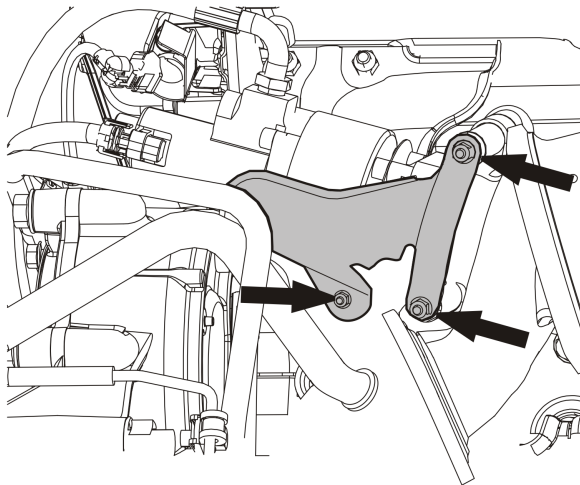
W2005686

13

Remove the bolts securing the lower EGR hot pipe shield and remove the shield.



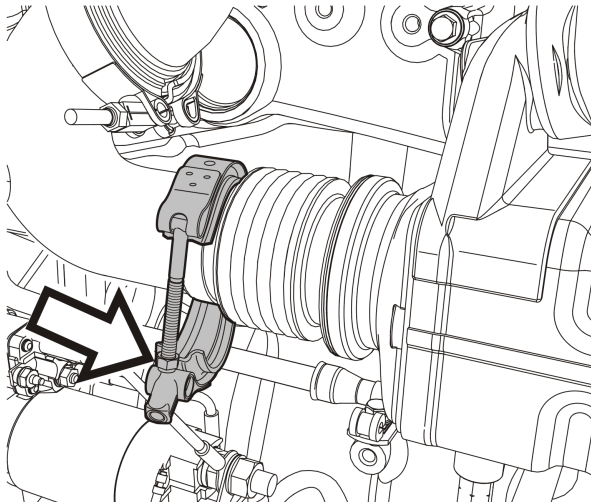
W2005687



W2005685

14

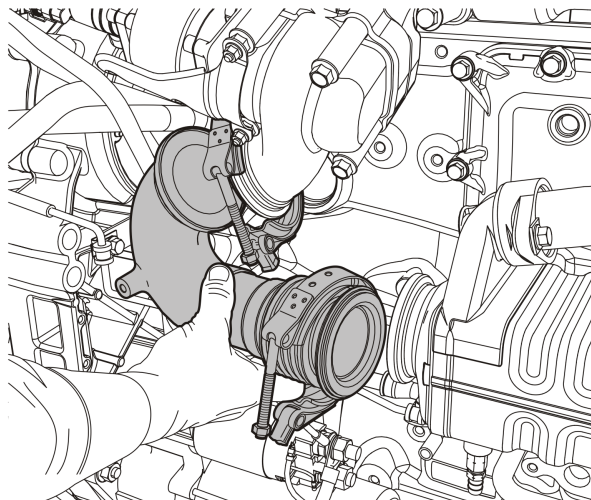
Remove the nuts and bolts securing the EGR valve heat shield and remove the shield.



W2005642

15

Loosen both high temperature V-clamps from the EGR hot pipe by removing the nuts from the T-bolts. Free the clamps from the EGR hot pipe flange.



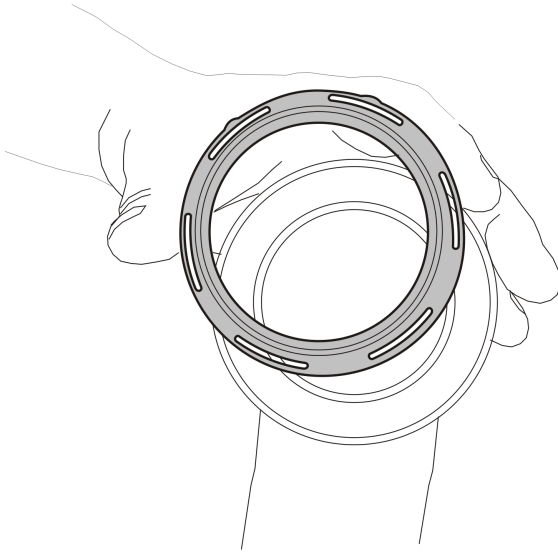
W2005641

16

Remove the EGR hot pipe from between the EGR valve and the EGR cooler.

17

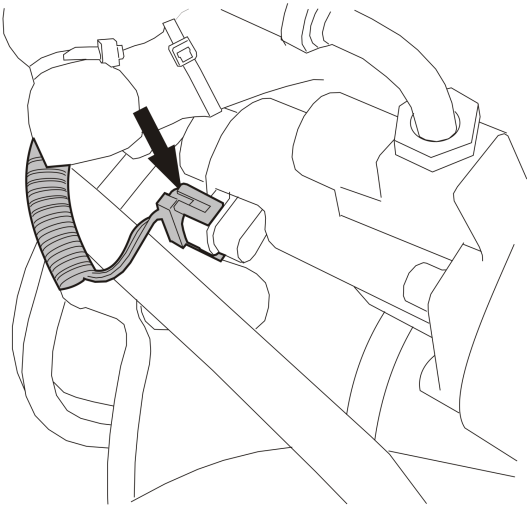
Remove the high temperature gaskets from the EGR valve end of the hot pipe and the EGR cooler end of the hot pipe. Discard the gaskets.



W2005688

18

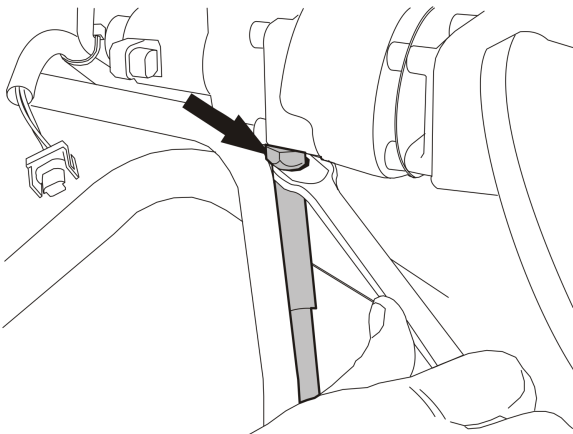
Remove the electrical connector from the EGR valve.



W2005689

19

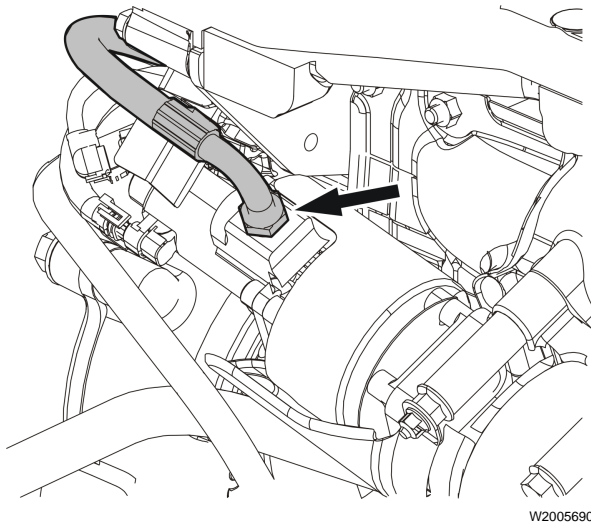
Loosen both the inlet and the return oil line fittings on the valve.



W2005692

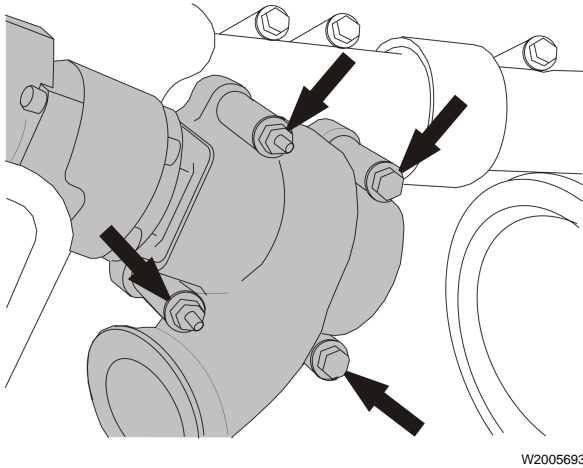
20

Remove the inlet oil line from the EGR valve.



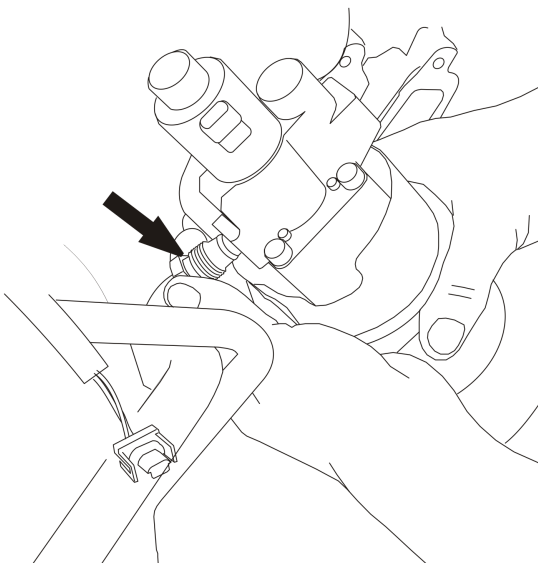
21

Remove all the EGR valve mounting bolts and remove the valve from the exhaust manifold. Discard the mounting bolts.



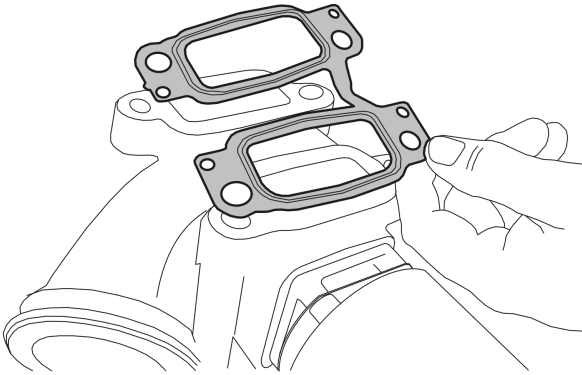
22

Remove the return oil line from the bottom of the EGR valve.



23

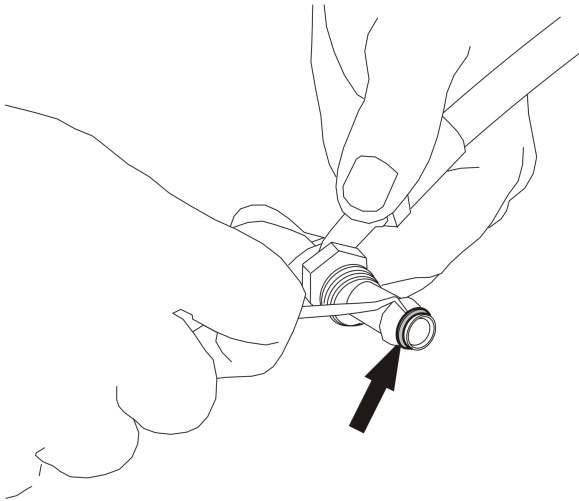
Remove the metal gasket from the EGR valve.



W2005696

24

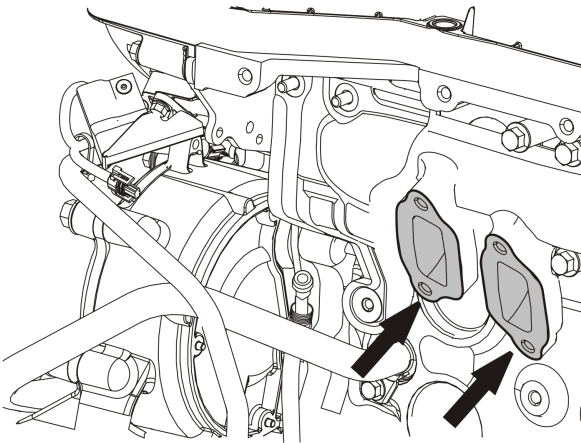
Replace the O-rings on both the inlet and return oil line fittings of the EGR valve. Lubricate the new O-rings with fresh engine oil.



W2005691

25

Clean any carbon deposits from the sealing surface of the EGR ports of the exhaust manifold.

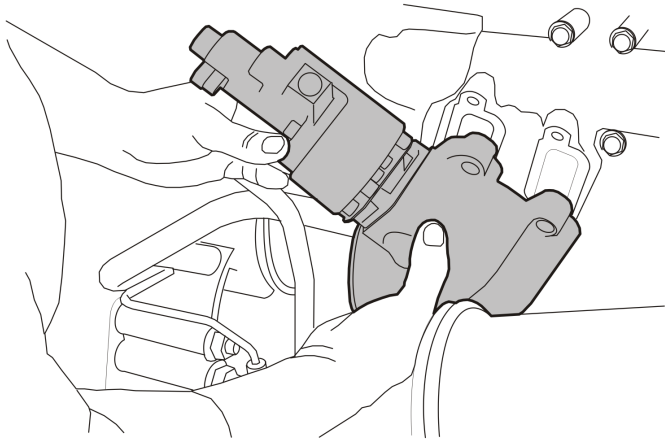


W2005697

Installation

1

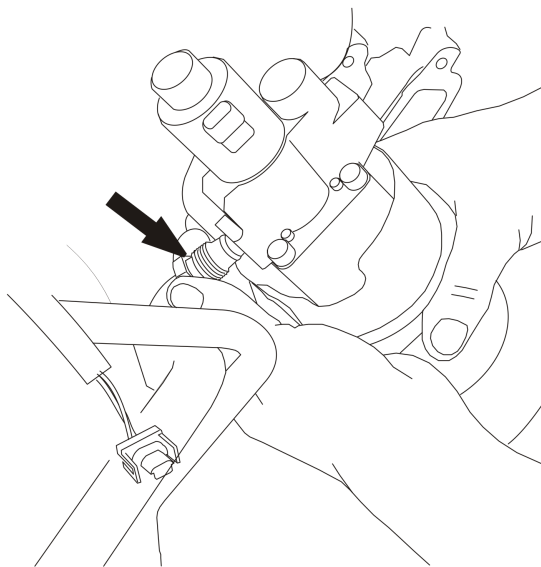
Position the EGR valve near the exhaust manifold EGR ports.



W2005695

2

Install the return oil line to the bottom of the EGR valve. Allow the fitting to remain only finger tight at this time.



W2005694

3

With the EGR valve positioned close to the exhaust manifold ports, slip a new metal gasket between the valve and the manifold. Install two new bolts to the top of the EGR valve to hold the gasket in place.

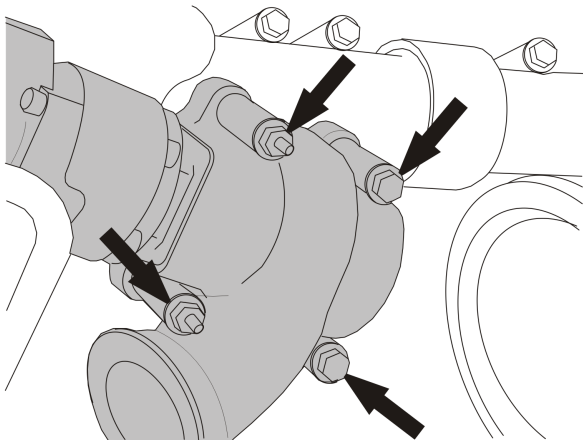
Note: The EGR mounting bolts are one-time use only. Whenever the EGR valve is removed for service, the mounting bolts must be replaced with new.

4

Install the other two new EGR valve bolts. Torque-tighten all EGR valve bolts to 61 Nm (45 ft-lb).

Note: The EGR mounting bolts are one-time use only. Whenever the EGR valve is removed for service, the mounting bolts must be replaced with new.

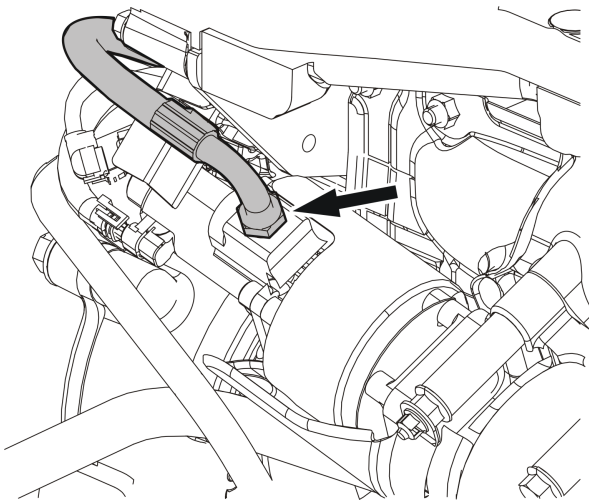
61 Nm (45 ft-lb)



W2005693

5

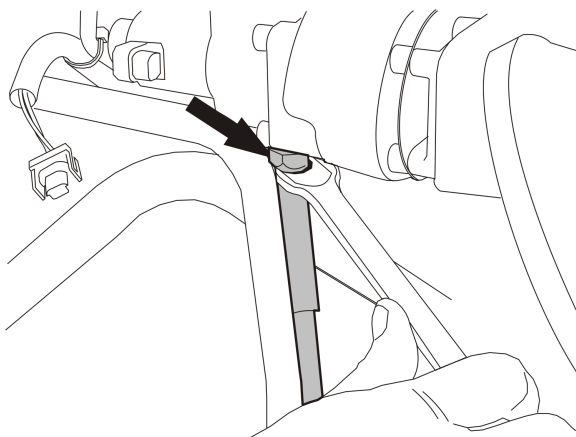
Install the inlet oil line to the EGR valve and tighten to specification.



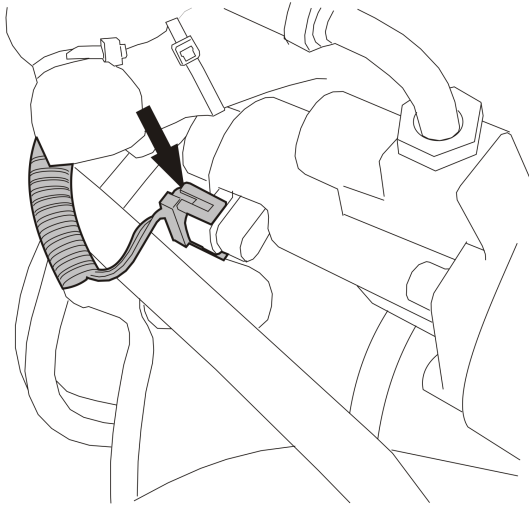
W2005690

6

Tighten the return oil line to specification.



W2005692



W2005689

7

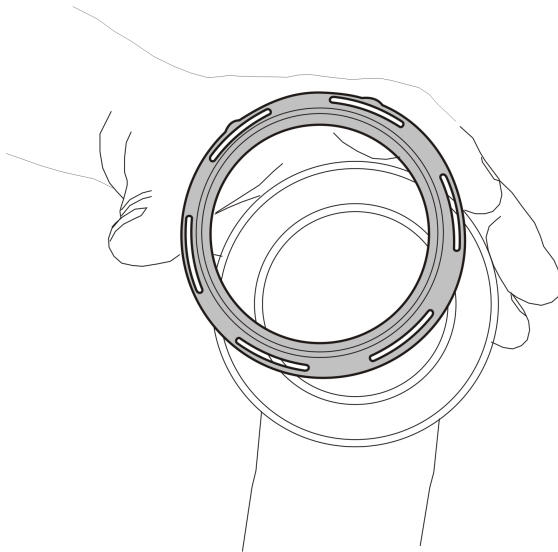
Inspect the electrical connector for damage. Make sure that the rubber seal is in good condition and in place on the connector. Install the electrical connector onto the EGR valve.

8

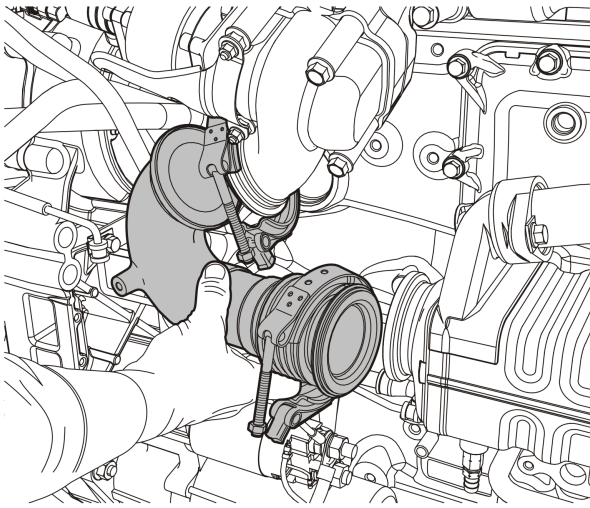
Position the EGR valve heat shield and install nuts and bolts.

9

Install new high temperature gaskets onto the EGR valve end of the hot pipe and the inlet of the EGR cooler. Ensure the gasket lays flat against the flange surfaces.



W2005688



W2005641

10

Inspect and lubricate the V-clamps. Hook the upper V-clamp over the EGR valve flange. Place the lower V-clamp over the bellows on the hot pipe.

11

Position the EGR hot pipe between the EGR valve and the EGR cooler. Be sure the flange engages properly. While holding the hot pipe in position, slide the upper V-clamp over the flange and tighten until snug. Slide the lower V-clamp over the flange of the EGR cooler and tighten the clamp until snug.

12

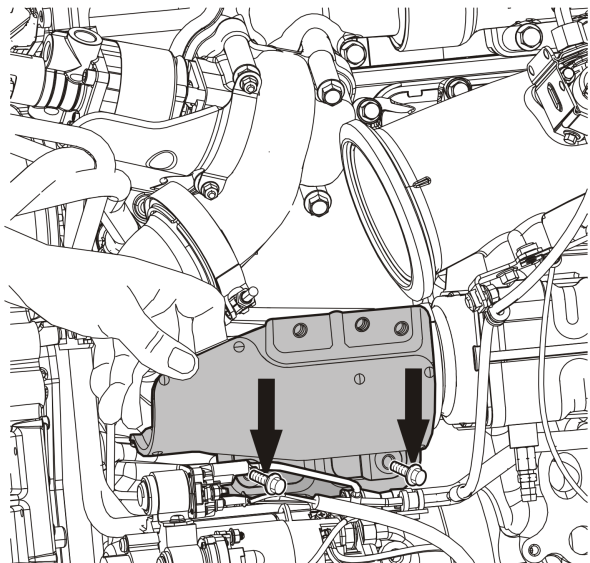
Position the V-clamps so that the T-bolts clear both heat shields. Apply anti-seize to the threads of the T-bolts. Torque-tighten to 20 ± 3 Nm (15 ± 2 ft-lb).

Note: After reaching the specified torque, inspect the V-clamps to ensure that no portion of the clamp has "bottomed out."

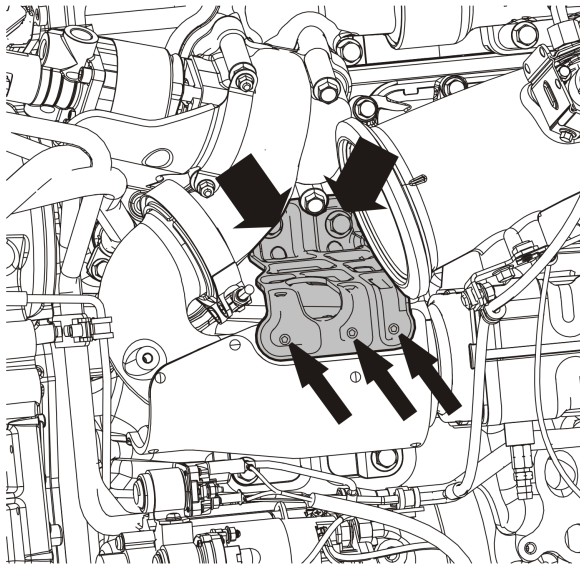
20 ± 3 Nm (15 ± 2 ft-lb)

13

Position the lower EGR hot pipe heat shield over the hot pipe and secure with bolts. Do not tighten at this time.



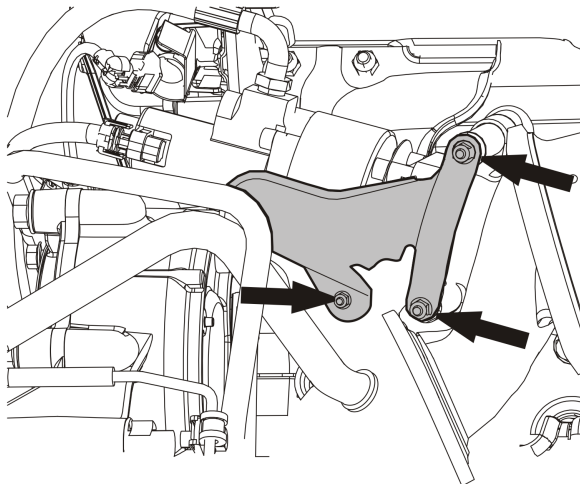
W2005687



W2005686

14

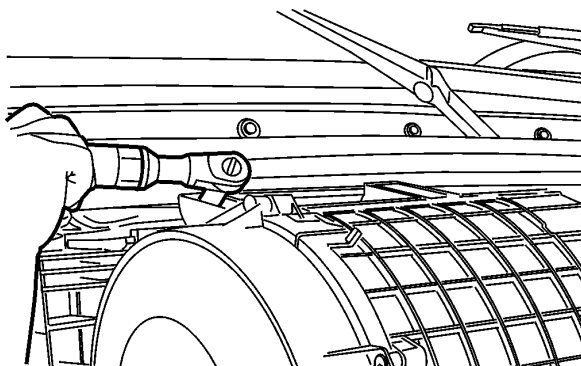
Position the upper EGR hot pipe heat shield and install the fasteners and bolts. Tighten the fasteners to specification.



W2005685

15

Position the EGR heat shield over the EGR valve and secure using the nuts that attach to the EGR bolts and the bolt that attaches to the cylinder head. Tighten the fasteners to specification.



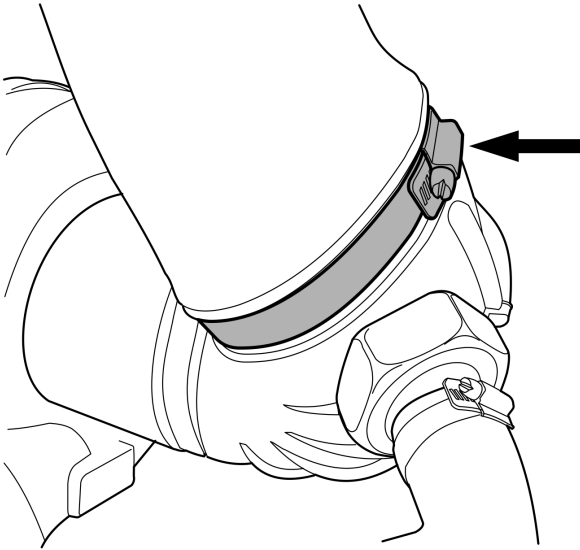
W2003858

16

Position the air filter housing against the cab and install the bolts at the top of the housing to secure.

17

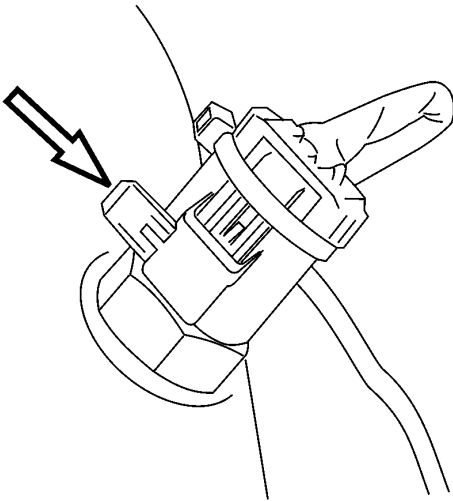
Install the main fresh air pipe to the turbocharger inlet elbow. Tighten the clamps to secure the pipe and then connect the air compressor hose to the pipe.



W2006004

18

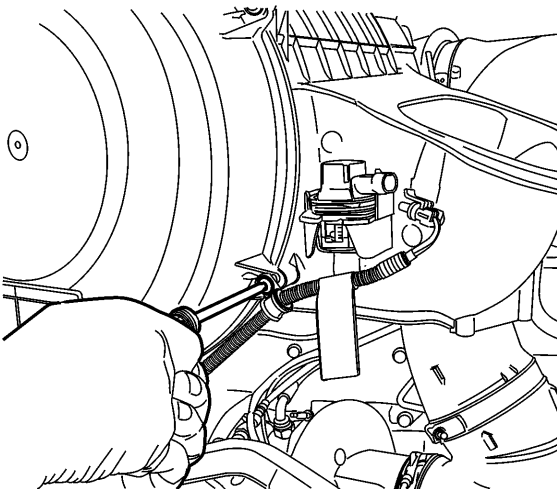
Install the air temperature sensor connector to the sensor. Insert the connector lock tab, push in place and secure with a tie strap. Install the bolt and clamp to secure the temperature sensor harness to the main fresh air pipe.



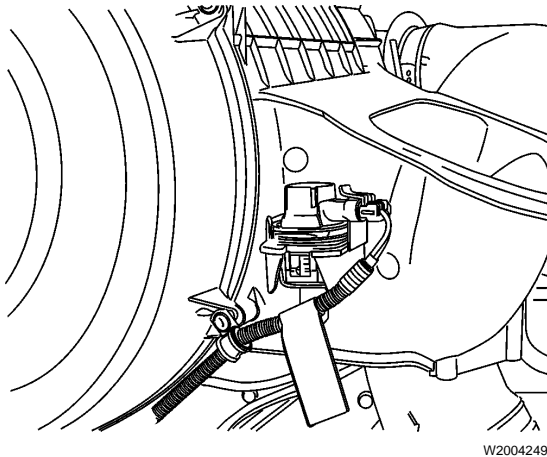
W2004720

19

Install the filter restriction gauge wiring harness to the air filter housing and tighten the clamps.



W2003861



20

Connect the air restriction gauge electrical harness connector.

21

Check the engine oil level and replenish as necessary with approved engine oil.

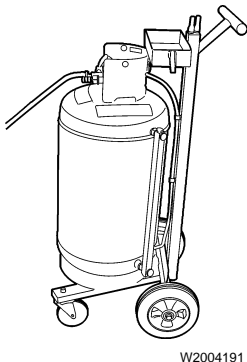
22

Install the inner splash guard assembly.

23

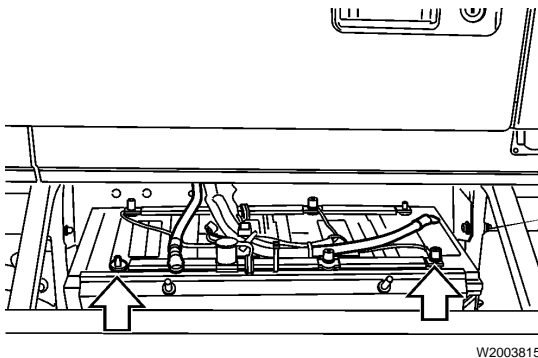
Using the coolant extractor, fill the system with approved coolant.

DBT2V700



24

Install all previously removed cables to the ground (negative) battery terminals.



25

Start the engine, check for leaks and proper operation. After shutdown, replenish fluids as necessary.