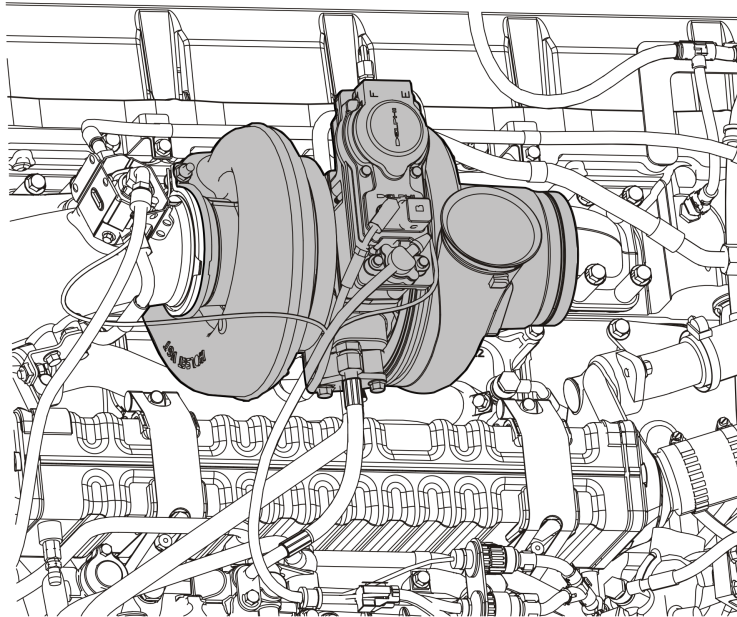


**Turbocharger
Replacement
D13F****Turbocharger, Replacement**

W2005653

This information covers the proper replacement procedure for the turbocharger on the Volvo D13F engine.

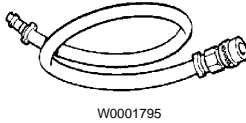
Contents

- "Special Tools" page 2.
- "Turbocharger, Replacement" page 3.

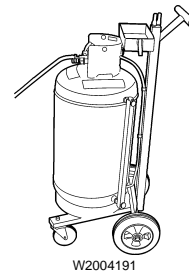
Note: Information is subject to change without notice.
Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

Special Tools

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



9996049
Coolant Drain Hose



DBT2V700
Coolant Extractor

2551-03-02-02 Turbocharger, 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.

Special tools: 9996049, DBT2V700

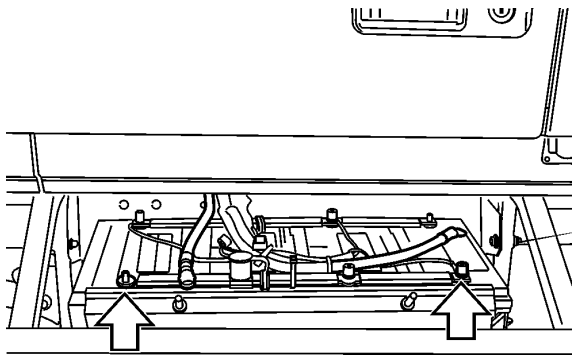
Removal

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.

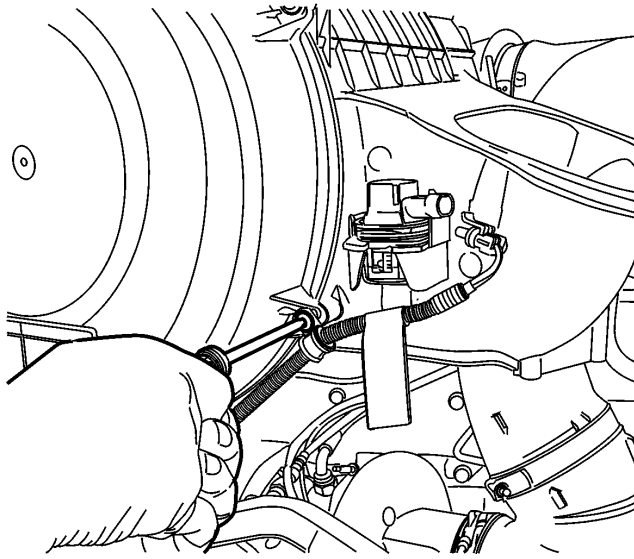
Note: Some models may be equipped with fender extenders, attached to the inner splash guard. Remove these as an assembly.

4

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

Note: An alternate method is to connect the coolant drain hose to the drain fitting and drain the coolant into an approved container.

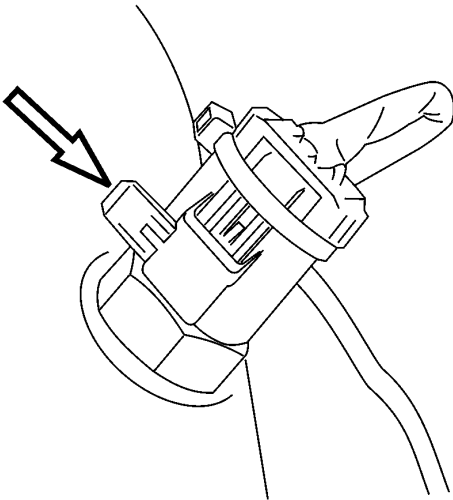
DBT2V700, 9996049



W2003861

5

Disconnect and remove the air filter restriction gauge wiring harness from the air filter housing.



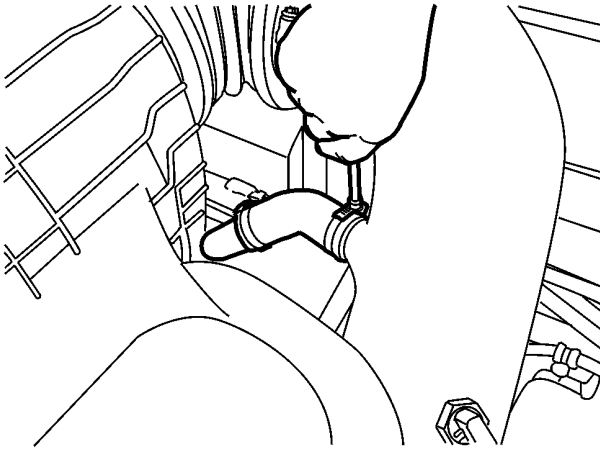
W2004720

6

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

7

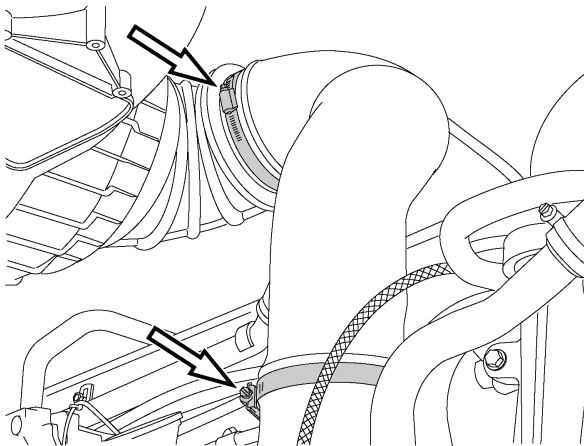
Loosen the air compressor fresh air hose clamp.



W2004719

8

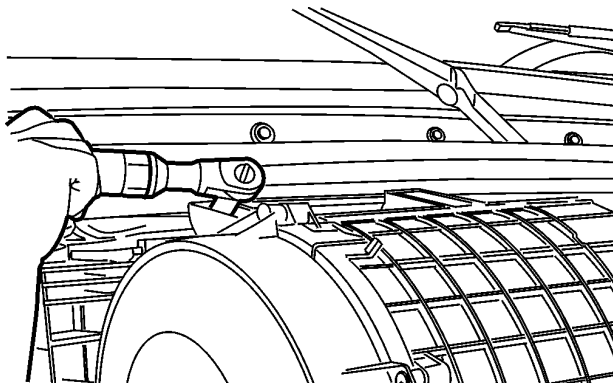
Loosen the clamps and remove the main fresh air pipe from: air compressor fresh air hose, air filter housing and turbo inlet elbow.



W2006005

9

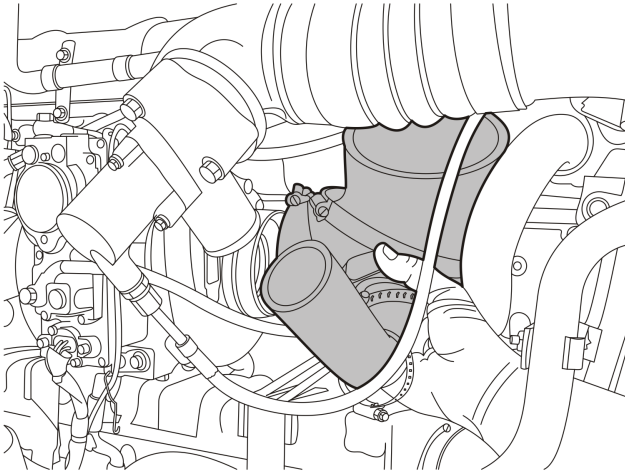
Remove the fastener and lift the air filter housing away from the cab.



W2003858

10

Remove the turbo inlet elbow.



W2005973

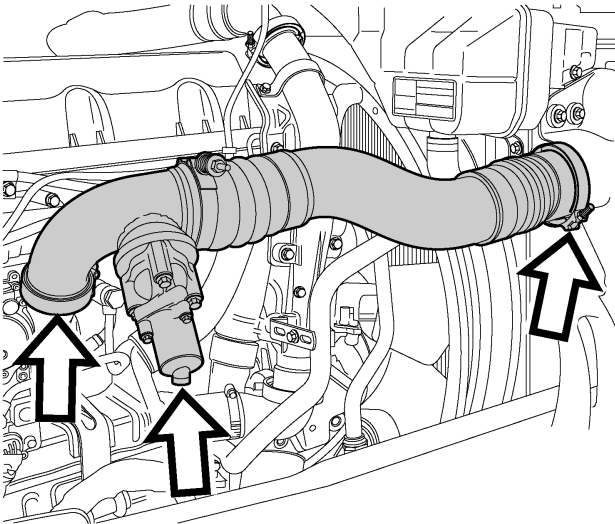
11

Remove the right-hand hood support bracket.

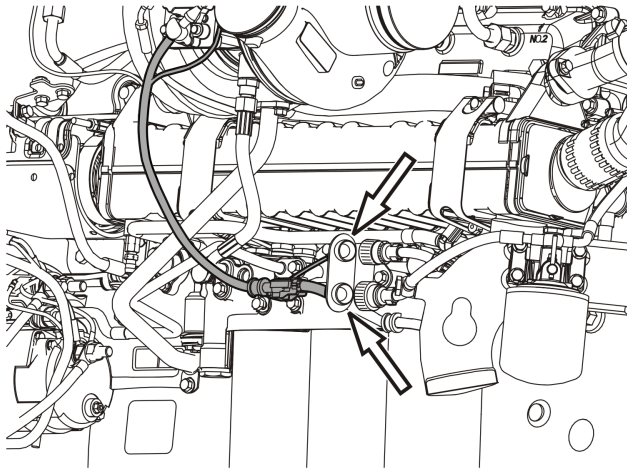
12

Remove the charge air pipe from between the turbocharger and charge air cooler.

Note: Disconnect DRV air supply line.



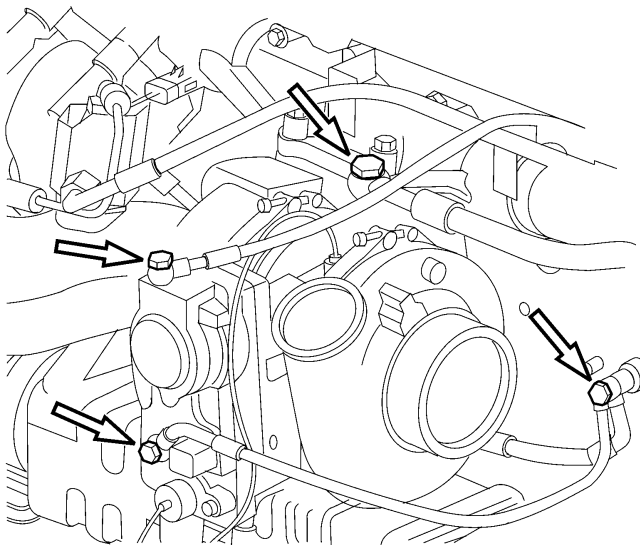
W2006107



W2005620

13

Release the actuator and turbocharger speed sensor wiring harnesses by cutting the nylon tie straps to free the harnesses. Disconnect the connectors located on the right side of the engine above the oil filter housing.

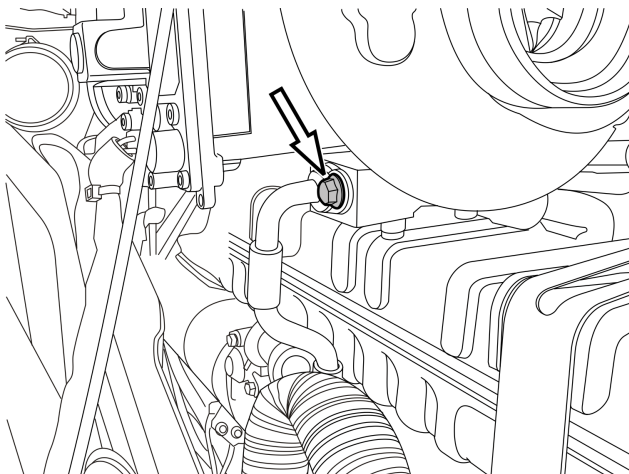


W2005965

14

Disconnect all coolant supply and return lines from the turbocharger and turbocharger actuator.

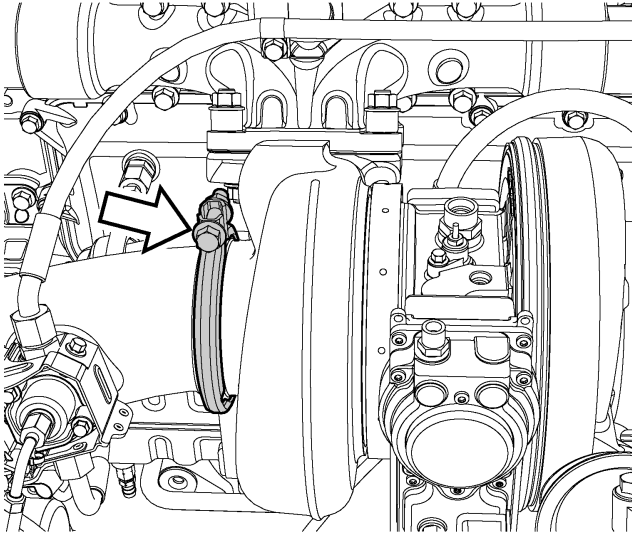
Note: The bottom return line must be removed from block.



W2005966

15

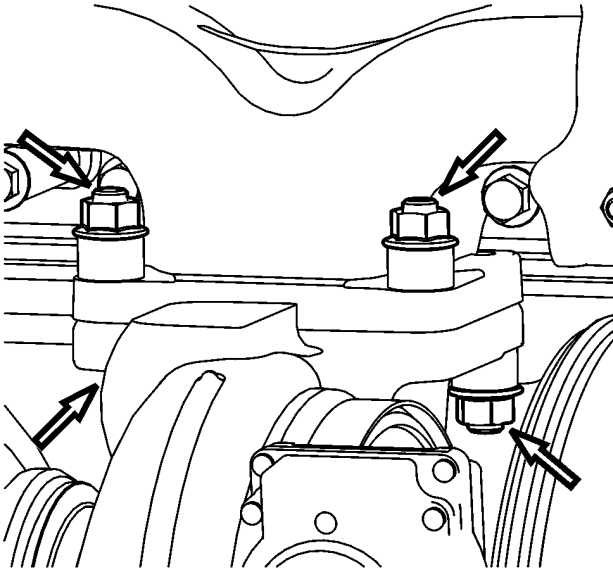
Disconnect oil supply line at turbocharger.



W2006108

16

Remove clamp at the turbocharger diffuser pipe and move slightly to allow the turbocharger to be free of the exhaust system.



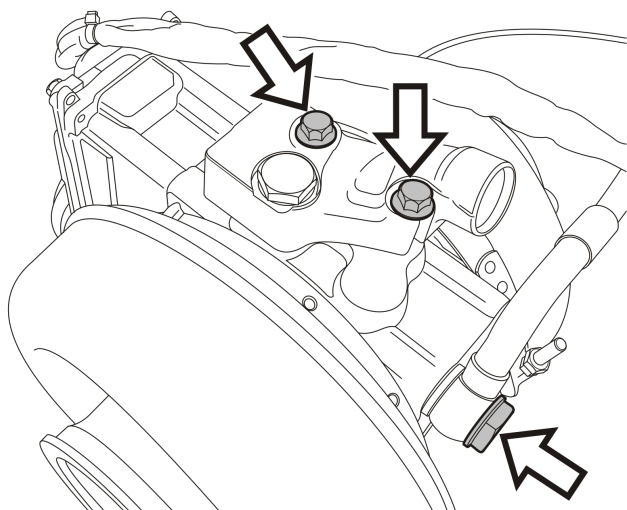
W2005011

17

Remove all four turbo flange mounting fasteners and spacers.

18

Lower the turbocharger away from the exhaust manifold studs and remove it from the engine.



W2006066

19

Remove coolant hose and oil adapter block from turbocharger.

Installation

1

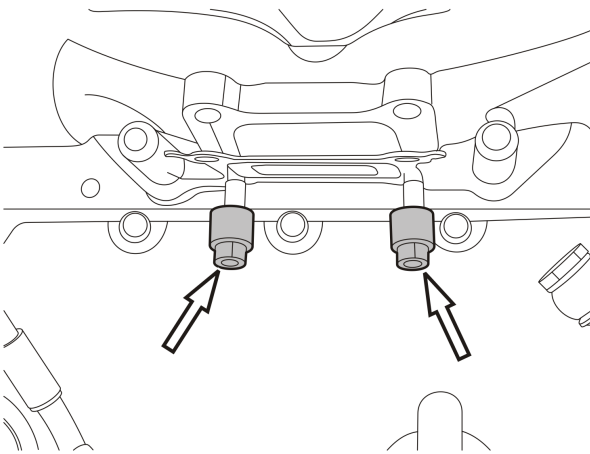
Clean the contact surface on the exhaust manifold, oil return/drain back pipe and adapter block.

2

Install coolant hose and oil adapter block with new gaskets to the new turbocharger.

3

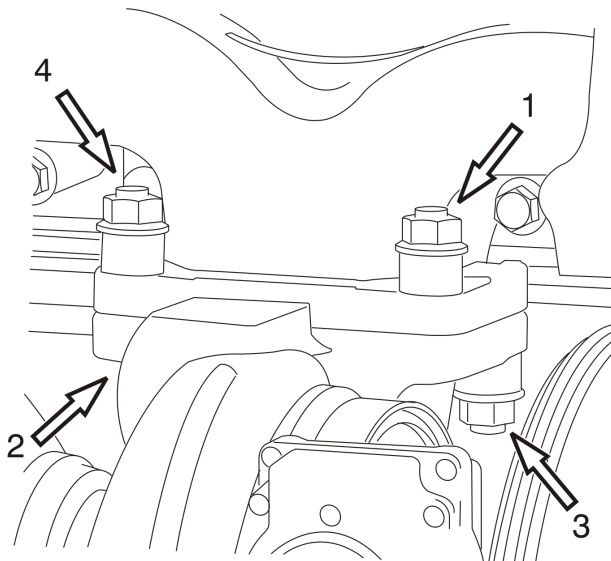
Place turbo gasket onto studs followed by the spacers and nuts. Start nuts onto studs to hold gasket and spacers.



W2005972

4

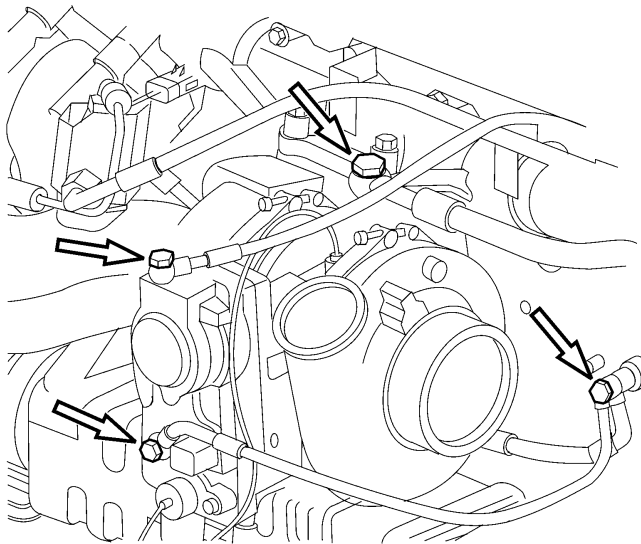
Insert turbo oil return line and at same time position the turbo onto the studs on exhaust manifold. Turbo flange slots slide onto manifold studs. Install remaining turbocharger flange mounting bolts and spacers. Torque-tighten fasteners to specification in the sequence shown.



W2005206

5

Replace all sealing washers used on the banjo fittings for turbo and turbo actuator.

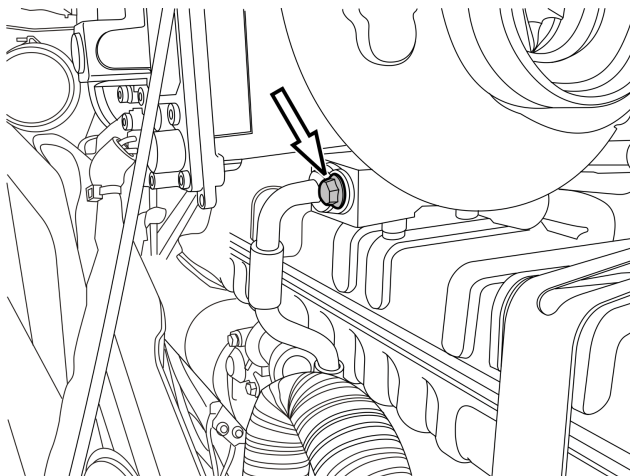


W2005965

6

Connect all coolant supply and return lines to the turbocharger and turbocharger actuator.

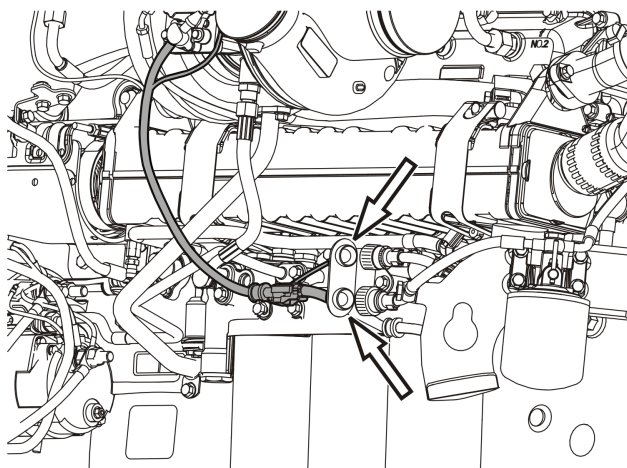
Note: The turbocharger coolant return line must be reconnected to the engine block.



W2005966

7

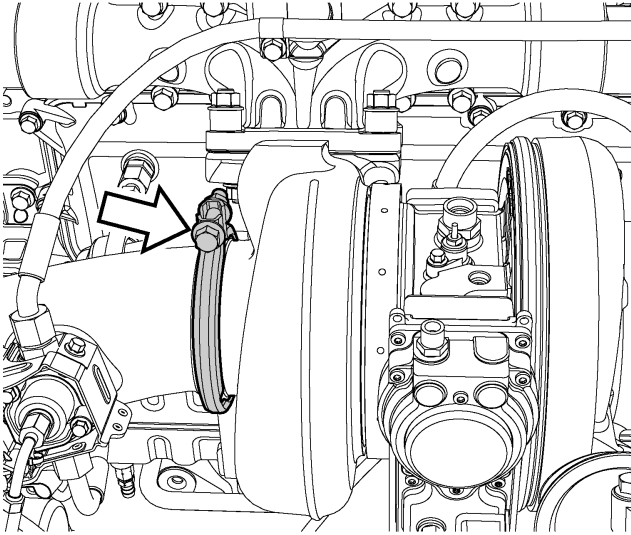
Reconnect the turbo oil feed line to turbo.



W2005620

8

Reconnect the turbocharger actuator and turbocharger wheel speed sensor wiring harness. Position connector with flat side toward the flat in the bracket. Secure harness to oil filter housing using a P-clamp.



W2006108

9

Position diffuser on turbo and install V-band clamp located between diffuser and turbo. Torque diffuser V-band clamp to specification.

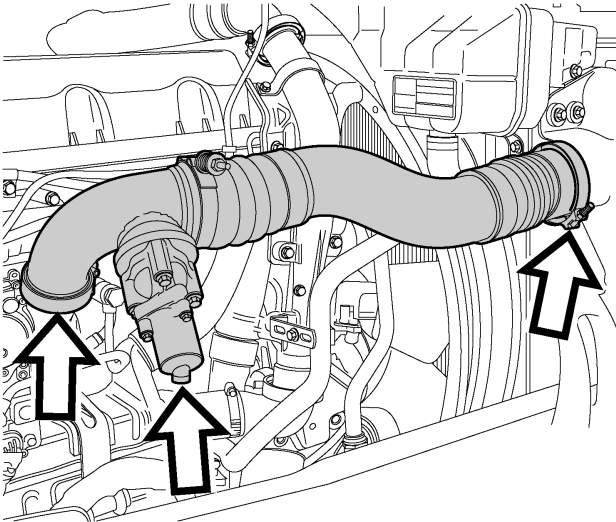
10

Replace all sealing O-rings on the charge air pipe.

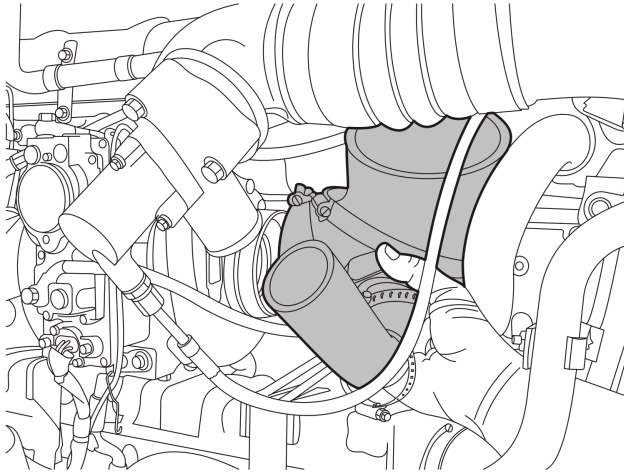
11

Install the charge air pipe located between the turbocharger and the charge air cooler.

Note: Also connect the DRV supply line.



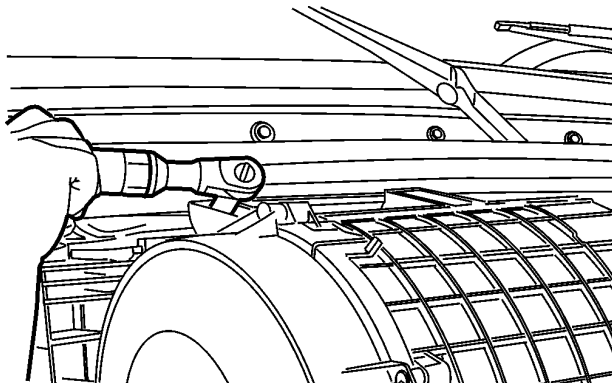
W2006107



W2005973

12

Install the turbo inlet elbow. Tighten the DRV valve and turbo inlet clamps.



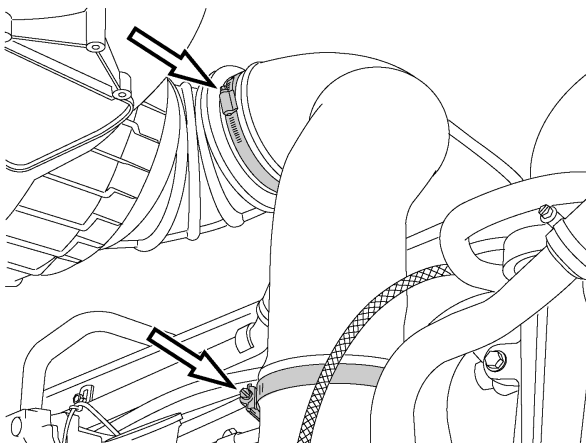
W2003858

13

Install hood support bracket.

14

Position the air filter housing against the cab and install fasteners to secure.



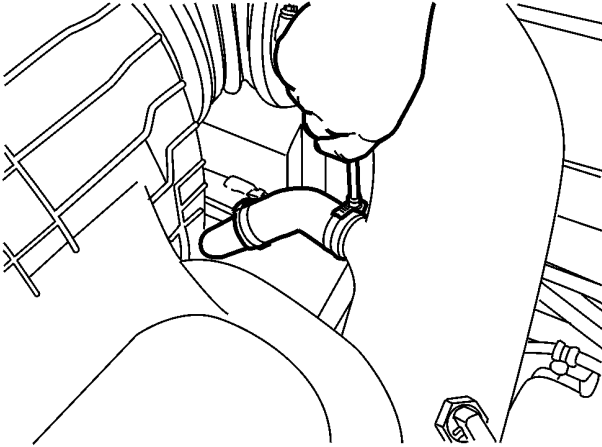
W2006005

15

Install the main fresh air pipe between the air filter housing and turbocharger inlet elbow. Tighten the clamps securely.

16

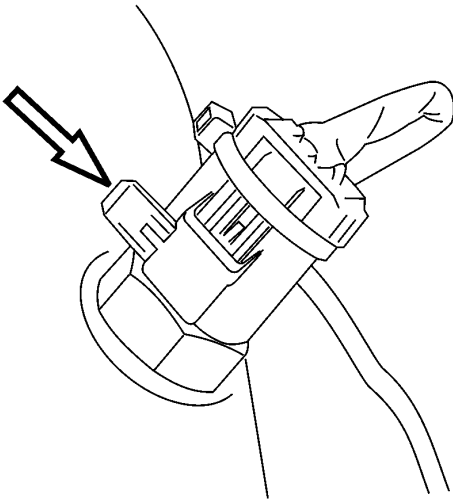
Install the air compressor fresh air hose to the main fresh air pipe, reposition the clamp and tighten to secure.



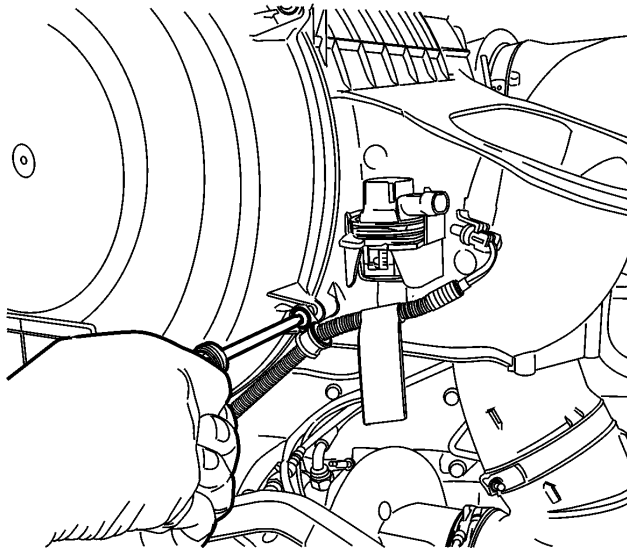
W2004719

17

Install the air temperature sensor connector to the sensor. Insert the connector lock tab, push in place and secure with a tie strap.



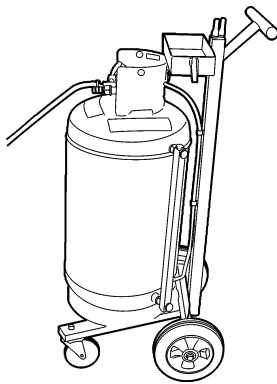
W2004720



W2003861

18

Connect and secure the air filter restriction gauge wiring harness to air filter housing.



W2004191

19

Fill the cooling system with the recommended coolant using the coolant extractor.

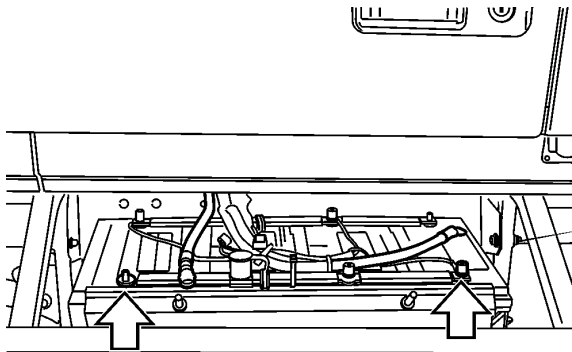
DBT2V700

20

Install the inner splash guard assembly.

21

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



W2003815

22

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