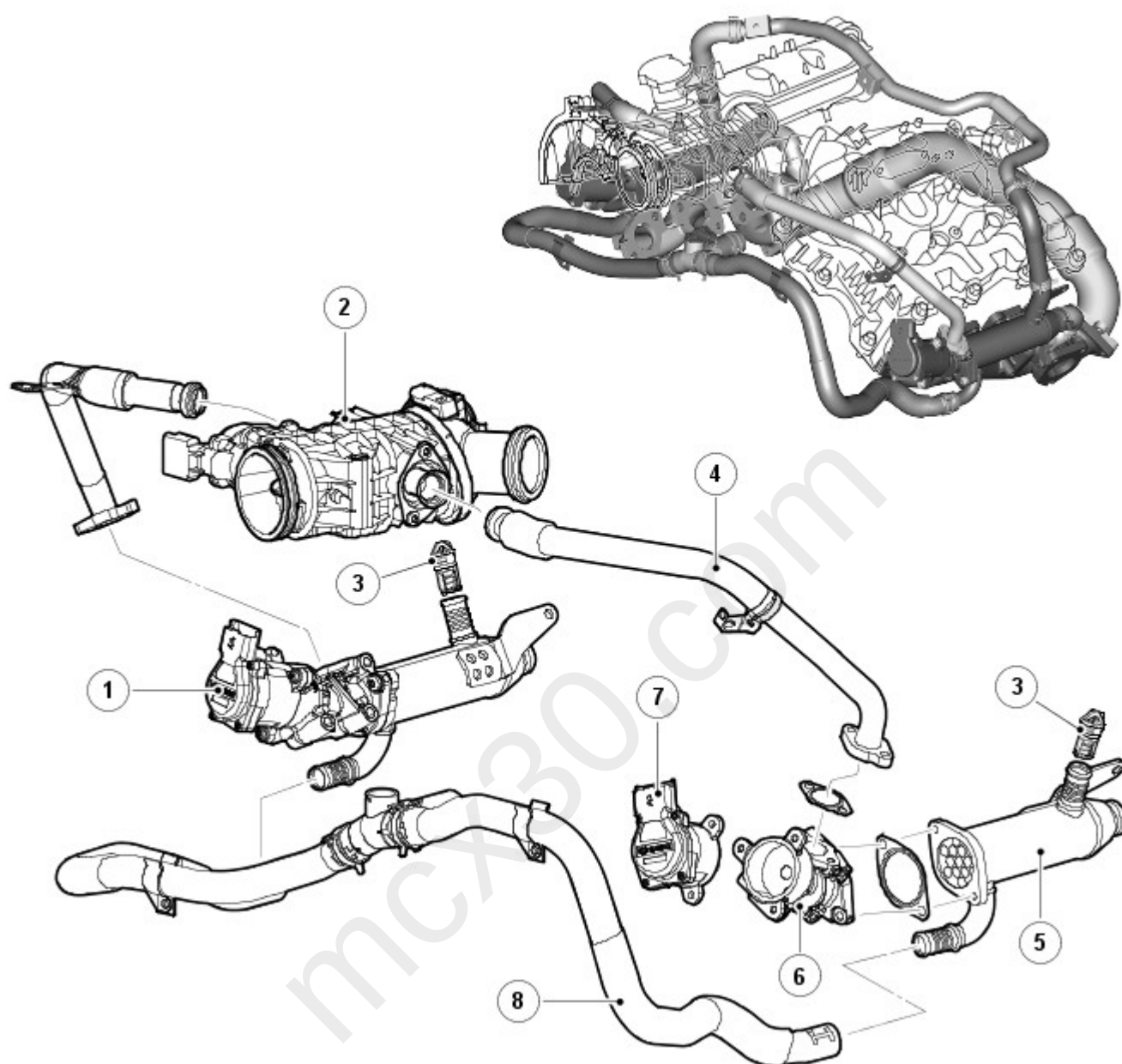


Engine Emission Control - TDV6 2.7L Diesel -**Torque Specifications**

Description	Nm	lb-ft
EGR valve outlet tube bolts	10	7
Wiring harness Torx screw	5	4
EGR valve inlet tube bolts	10	7
EGR valve bolts	10	7
Fuel line retaining bracket bolt	10	7
EGR valve support bracket bolts	10	7
Oil level indicator tube bolt	10	7
Oil filter element	25	18
EGR cooler cross-over pipe securing bolt	13	10
Upper suspension arm and brake line heat shield nuts and bolts	10	7
EGR valve to cooler retaining Torx screws	10	7

Engine Emission Control - TDV6 2.7L Diesel - Engine Emission Control

Description and Operation



E48444

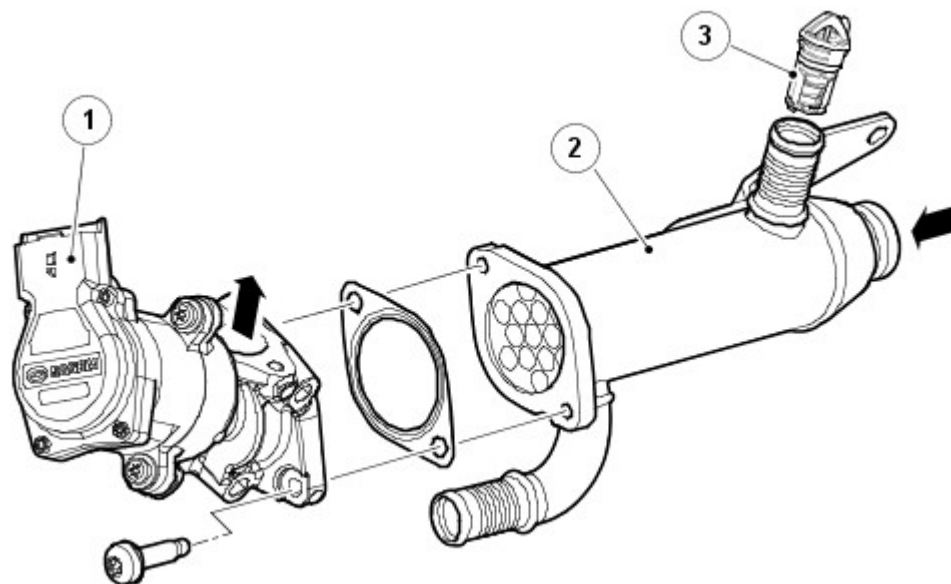
Item	Part Number	Description
1	-	EGR modulator/ cooler assembly
2	-	Electric throttle
3	-	EGR thermostat (from 2007MY)
4	-	EGR to electric throttle tube
5	-	EGR cooler
6	-	EGR modulator valve
7	-	EGR modulator solenoid valve
8	-	EGR coolant hoses

EGR SYSTEM

The EGR system comprises:

- EGR modulator x 2
- EGR cooler x 2
- Associated connecting pipes

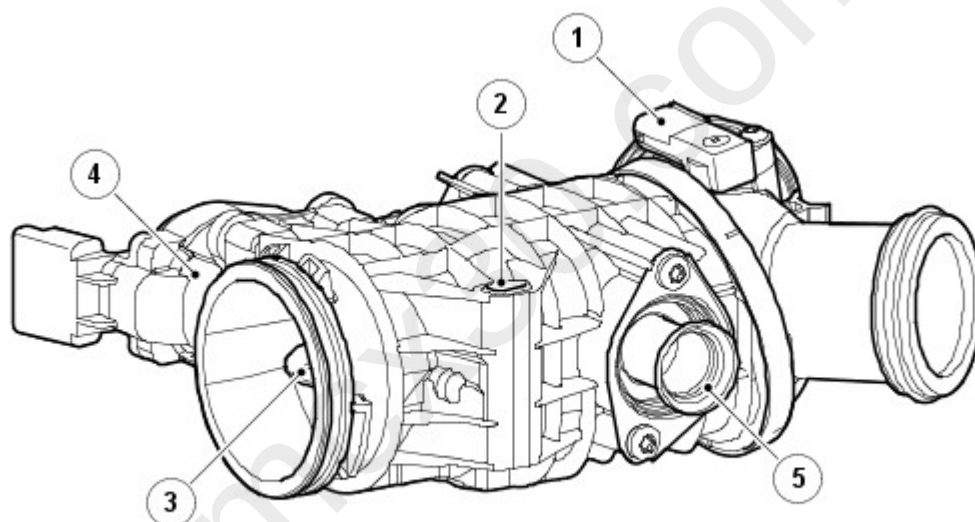
EGR Cooler and Modulator



E48446

Item	Part Number	Description
1	-	EGR modulator
2	-	EGR cooler
3	-	EGR thermostat (from 2007MY)

Electric Throttle Body



E48447

Item	Part Number	Description
1	-	Inlet air temperature sensor
2	-	Electric throttle body
3	-	Electric throttle flap
4	-	Electric throttle control motor
5	-	Gas inlet port

The EGR modulator and cooler are a combined unit.

The combined EGR modulator and cooler is located under each cylinder bank, between the exhaust manifold and the cylinder head. The cooler side of the EGR is connected to the vehicle cooling system, via hoses. The inlet exhaust side is connected directly into the exhaust manifolds on each side. The exhaust gas passes through the cooler and is expelled via the actuator and a metal pipe into the throttle housing. The EGR modulator is a solenoid operated valve which is controlled by the ECM. The ECM uses the EGR modulator to control the amount of exhaust gas being recirculated in order to reduce exhaust emissions and combustion noise. The EGR is enabled when the engine is at normal operating temperature and under cruising conditions.

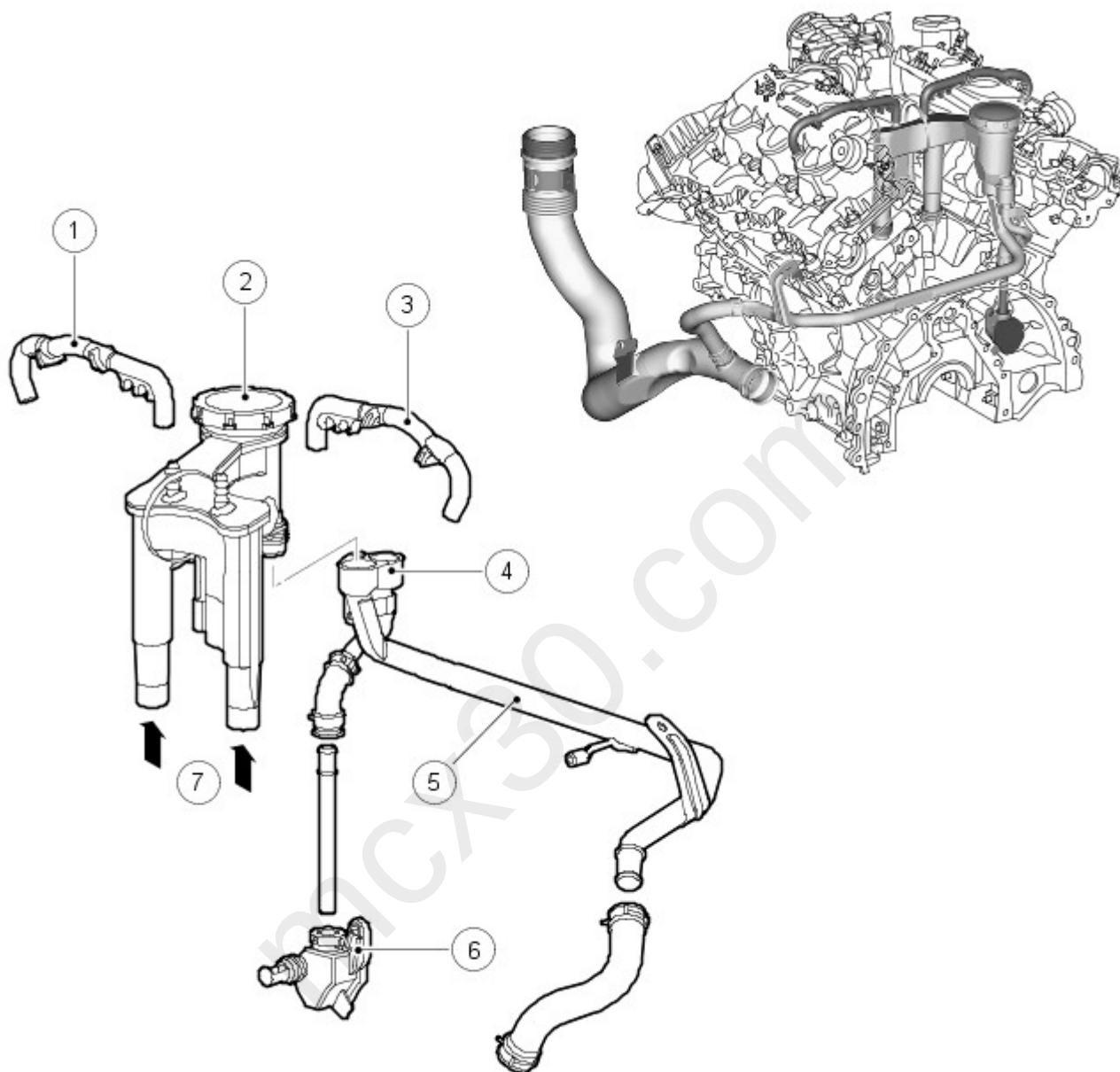
On vehicles from 2007MY, a flow regulating, wax thermostat is fitted to the coolant outlet of the EGR cooler. The purpose of the thermostat is to promote faster engine warm-up, improve cabin heater performance and assist the emissions to comply with the requirements of EU4 regulations. The thermostat is closed when cold, starts to open at 75°C (167°F) and is fully open at normal operating temperatures. The thermostat has a small bleed hole which allows a small amount of leakage when cold.

The EGR modulator receives a 12V supply from the main relay. The ground for the solenoid is via the ECM and is controlled using a PWM signal. The PWM duty signal of the solenoid ground is varied to determine the precise amount of exhaust gas delivered to the cylinders.

The modulators are operated through their full range at each engine start-up, to clear any carbon deposits that may have built up whilst the engine was running

In the event of a failure of the EGR modulator, the EGR function will become inoperative. The ECM can monitor the EGR modulator solenoid for short circuits and store fault codes in the event of failure. The modulator can also be activated for testing using a Land Rover approved diagnostic system.

CRANKCASE VENTILATION



E48445

Item	Part Number	Description
1	-	Breather tube
2	-	Oil separator
3	-	Breather tube
4	-	Crankcase oil return connection
5	-	Oil return tube
6	-	Crankcase oil return valve
7	-	Breather flow

The crankcase ventilation system on the TdV6 ensures that all gasses emitted from the crankcase during engine running are separated from any oil particles.

Crankcase gasses are drawn into the oil separator unit from the crankcase and the cylinder head covers (both banks) where the gas and oil are separated. The gas is returned to the inlet side of the air induction system prior to the turbo charger. The oil is drained down to the sump via an oil return valve located at the rear of the cylinder block.

Engine Emission Control - TDV6 2.7L Diesel - Engine Emission Control

Diagnosis and Testing

Principles of Operation

For a detailed description of the engine emission control system and operation, refer to the relevant Description and Operation section of the workshop manual. REFER to: [Engine Emission Control](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Description and Operation).

Inspection and Verification



CAUTION: Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle.

• **NOTE:** Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection

Mechanical	Electrical
● Engine breather system ● Oil separator ● Exhaust gas recirculation pipes/hoses (check for cracks) ● EGR valve(s) ● EGR cooler(s) ● Vacuum system	● Fuse(s) ● Wiring harness ● Loose or corroded electrical connector(s) ● Intake air shut off throttle ● Exhaust gas recirculation (EGR) valve(s) ● Engine Control Module (ECM)

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the cause is not visually evident, verify the symptom and refer to the Symptom Chart, alternatively check for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Symptom Chart

Symptom	Possible Causes	Action
Difficult to start	● Exhaust gas recirculation (EGR) valve stuck open	Check the Exhaust gas recirculation (EGR) valve.
Poor/Erratic idle		
Lack of power when accelerating		
Engine stops/stalls	● Exhaust gas recirculation (EGR) valve stuck open ● Breather system disconnected/restricted/blocked	Check the Exhaust gas recirculation (EGR) valve. Check the engine breather system. Check the oil separator. Check for Exhaust gas recirculation (EGR) DTCs.
Excessive fuel consumption	● Exhaust gas recirculation (EGR) valve stuck open ● Exhaust gas recirculation (EGR) not operating ● Breather system restricted/blocked	
Excessive black smoke		
Excessive emissions		
Excessive blow-by	● Breather system restricted/blocked	Check the engine breather hoses. Check the oil separator.
Engine oil leaks	● Breather system restricted/blocked	Check the engine breather hoses. Check the oil separator.

DTC Index

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code \(DTC\) Index - TDV6 2.7L Diesel, DTC: Engine Control Module \(PCM\)](#) (100-00 General Information, Description and Operation).

Engine Emission Control - TDV6 2.7L Diesel - Crankcase Vent Oil Separator

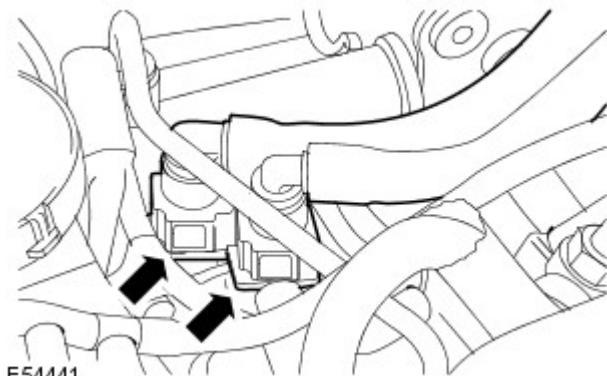
Removal and Installation

Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Disconnect the low-pressure fuel lines.

- Install blanking caps to the exposed ports.



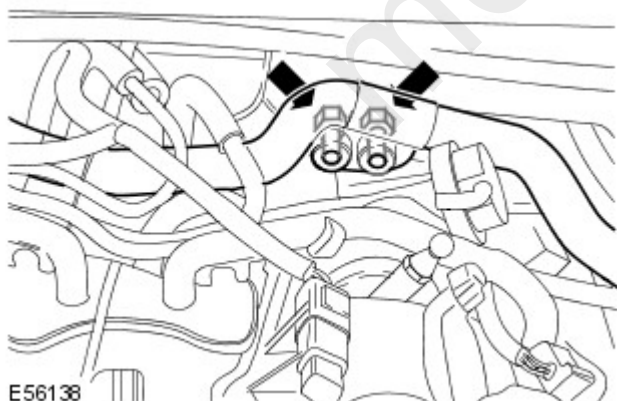
3. Disconnect both exhaust gas recirculation (EGR) coolant cross-over pipe hoses.

- Clamp the EGR coolant hoses to minimize coolant loss.

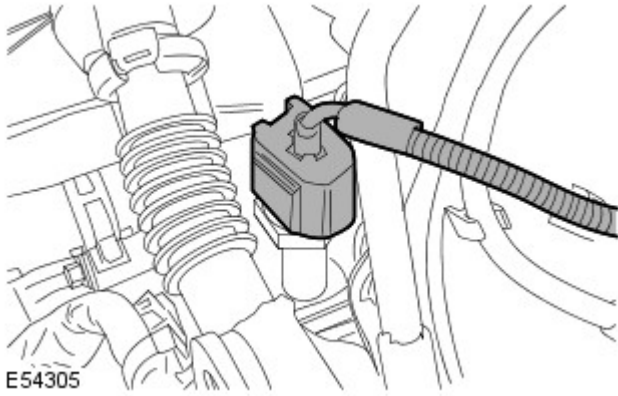


4. Remove the EGR coolant cross-over pipe.

- Remove the two retaining bolts.



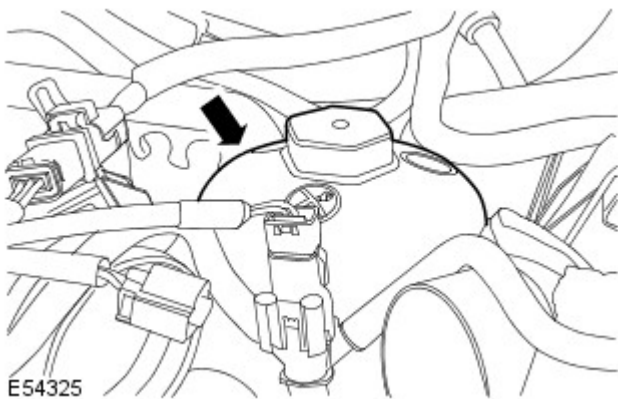
5. Disconnect the engine oil pressure (EOP) sensor electrical connector.



6.  **CAUTION:** The O-ring seal is to be reused unless damaged.

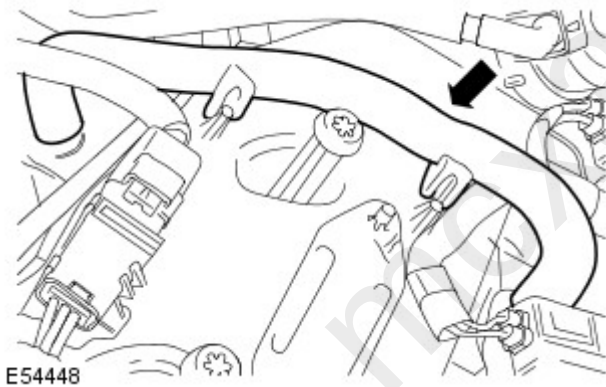
Using the special tool, remove the oil filter element.

- Loosen the element cover 4 complete turns to allow engine oil to drain from the filter cover.
- Remove element cover.
- Clean the immediate area.

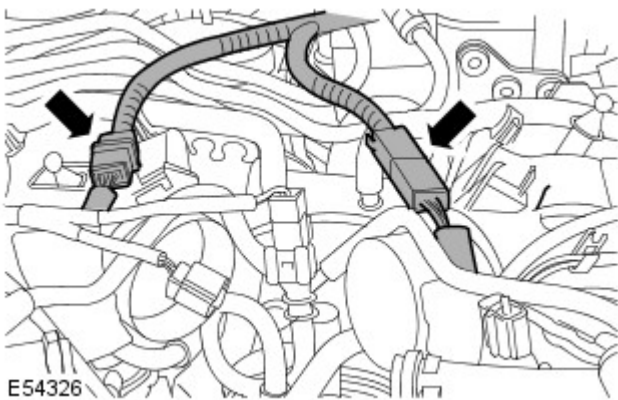


7. **NOTE:** Left-hand shown, right-hand similar.

Remove the breather pipes.



8. Disconnect the glow plug electrical connectors.





9. Disconnect the low-pressure fuel lines.

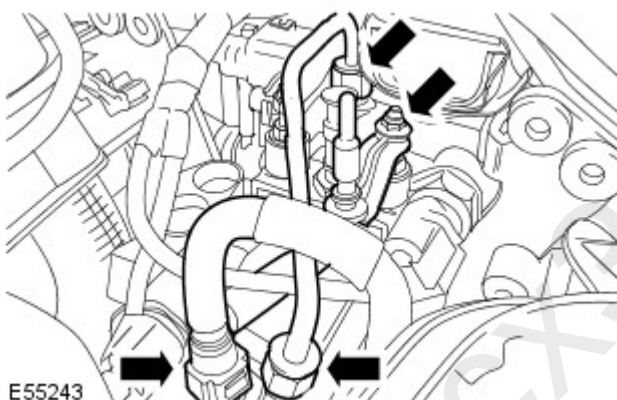
- Install blanking caps to the exposed ports.

10.  **CAUTION:** Make sure that the high-pressure fuel supply line remains in contact with the fuel pump and fuel injection diverter rail until both unions have been detached and cleaned. Failure to follow this instruction may result in foreign matter ingress to the fuel injection system.

- **NOTE:** Crankcase vent oil separator shown removed for clarity.

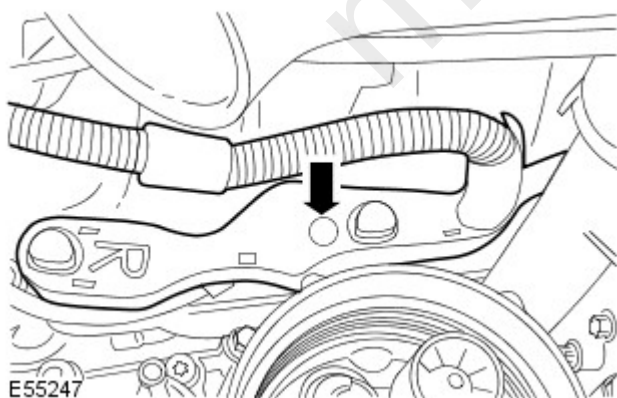
Remove and discard the high-pressure fuel supply line.

- Install blanking caps to the exposed ports.



11. Remove the low-pressure fuel line.

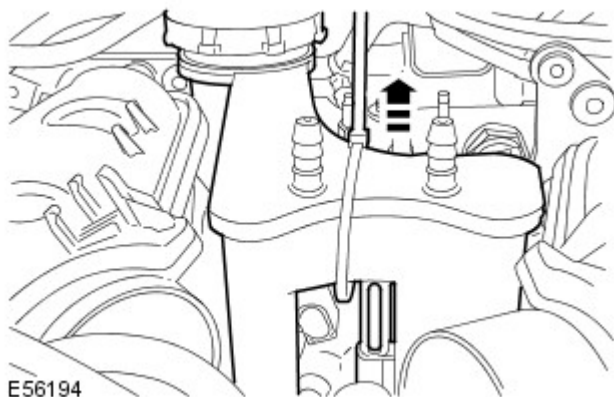
- Disconnect the low-pressure fuel line.
- Release the low-pressure fuel line.
- Install blanking caps to the exposed ports.



12. **NOTE:** Right-hand shown, left-hand similar.

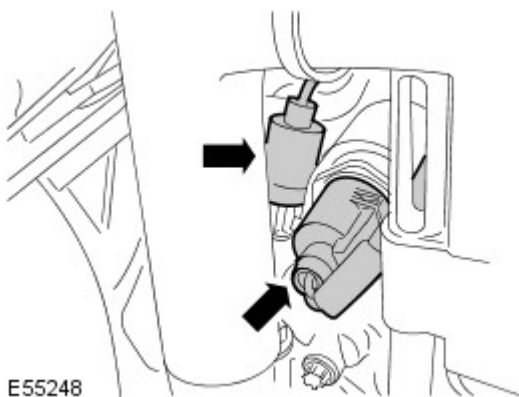
Remove the glow plug wires.

13. Reposition the crankcase vent oil separator.



E56194

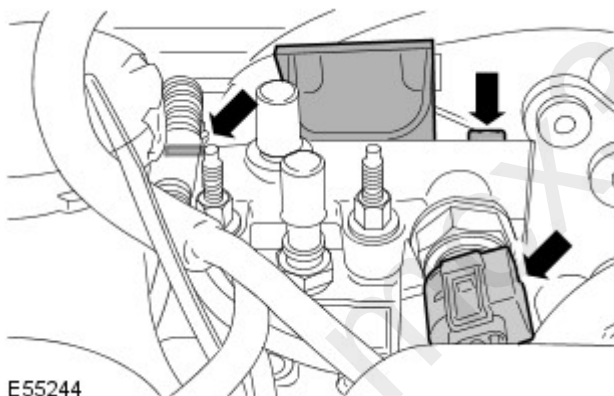
14. Disconnect the fuel injection pump electrical connectors.



E55248

15. Disconnect the fuel rail pressure (FRP) sensor electrical connector.

- Release the fuel charging wiring harness.

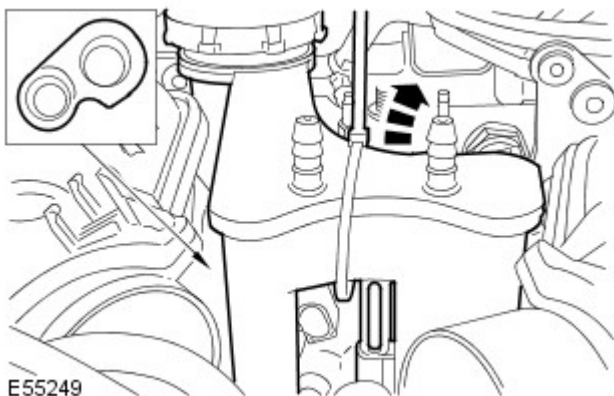


E55244

16.  CAUTION: The O-ring seals are to be reused unless damaged.

- NOTE: Remove the crankcase vent oil separator drain tube seal prior to the removal of the crankcase vent oil separator.
- NOTE: Using a suitable adhesive tape, protect the oil cooler.

Remove the crankcase vent oil separator.



E55249

Installation

1.  CAUTION: The O-ring seals are to be reused unless damaged.

Position the crankcase vent oil separator, but do not fully install at this stage.

- Clean the immediate area.

2. Connect the FRP sensor electrical connector.

- Attach the fuel charging wiring harness.

3. Install the crankcase vent oil separator.

4. Connect the fuel injection pump electrical connectors.

5. Install the glow plug wires.

6. Install the low-pressure fuel line.

- Remove the blanking caps from the ports.
- Connect the low-pressure fuel line.
- Attach the low-pressure fuel line.

7. Install the new high-pressure fuel supply line.

- Remove the blanking caps from the ports.
- Install the new high-pressure fuel supply line, but do not tighten unions at this stage.
- Stage 1: Tighten the high-pressure fuel supply line union at the fuel pump to 15 Nm (11 lb.ft).
- Stage 2: Tighten the high-pressure fuel supply line union at the fuel injection diverter rail to 15 Nm (11 lb.ft).
- Stage 3: Tighten the high-pressure fuel supply line union at the fuel pump to 30 Nm (22 lb.ft).
- Stage 4: Tighten the high-pressure fuel supply line union at the fuel injection diverter rail to 30 Nm (22 lb.ft).

8. Connect the low-pressure fuel lines.

- Remove the blanking caps from the ports.

9. Connect the glow plug electrical connectors.

10. Install the breather pipes.

11.  **CAUTION:** The O-ring seal is to be reused unless damaged.

Install the oil filter element.

- Clean the components.
- Tighten the oil filter element cover to 25 Nm (18 lb.ft).

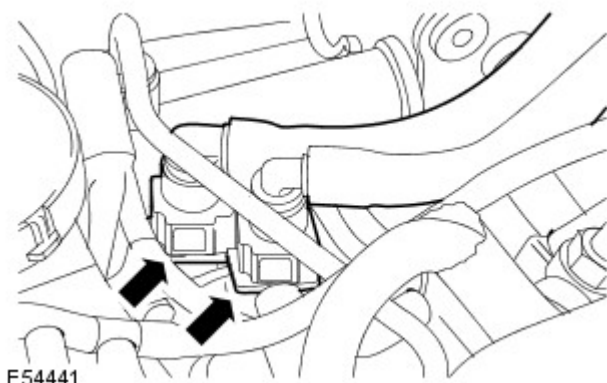
12. Connect the EOP sensor electrical connector.

13. Install the EGR coolant cross-over pipe.

- Install the two retaining bolts.
- Tighten to 13 Nm (10 lb.ft).

14. Connect both EGR coolant cross-over pipe hoses.

- Remove the EGR coolant hose clamps.



E54441

15. Connect the low-pressure fuel lines.

- Remove the blanking caps from the ports.

16. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

17. Check and top-up the engine oil.

18. Check and top-up the coolant.

19. Bleed the fuel system.

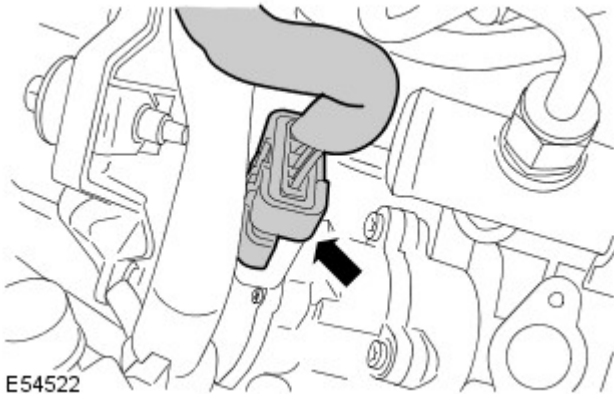
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Engine Emission Control - TDV6 2.7L Diesel - Exhaust Gas Recirculation (EGR) Valve LH Vehicles Without: Diesel Particulate Filter (DPF)

Removal and Installation

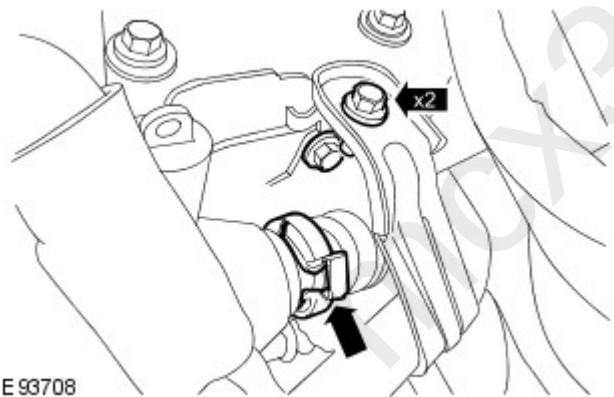
Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).
2. Remove the battery tray.
For additional information, refer to: [Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).
3. Remove the LH exhaust gas recirculation (EGR) outlet tube.
For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).
4. Disconnect the LH EGR valve electrical connector.



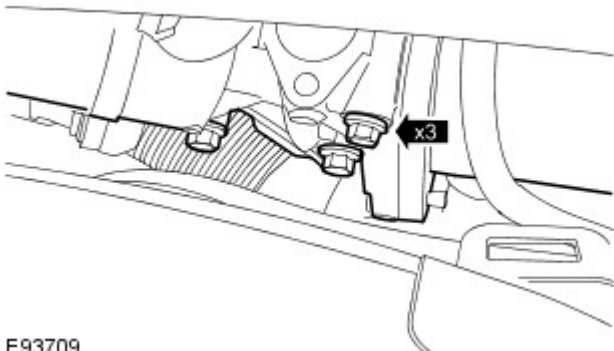
5. Release the LH EGR cooler.

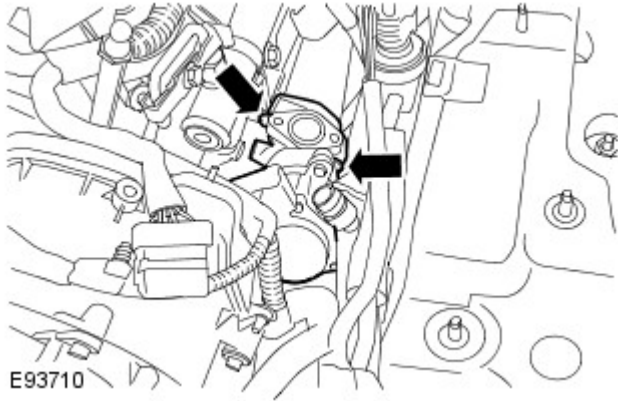
- Remove and discard the clip.
- Loosen the 2 bolts.



6. Release the LH EGR valve from the cylinder head.

- Remove the 3 bolts.





7. Remove the LH EGR valve.

- Remove the 2 bolts.
- Remove and discard the gasket.

Installation

1. Install the LH EGR valve.

- Clean the component mating faces.
- Install a new gasket.
- Tighten the bolts to 10 Nm (7 lb.ft).

2. NOTE: Do not tighten at this stage.

Install the LH EGR valve bolts.

3. NOTE: Install a new clip.

Secure the LH EGR cooler.

1. Secure the clip.
2. Tighten the bolts to 10 Nm (7 lb.ft).

4. Secure the LH EGR valve.

- Tighten the bolts to 10 Nm (7 lb.ft).

5. Connect the LH EGR valve electrical connector.

6. Install the LH EGR valve outlet tube.

For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

7. Install the battery tray.

For additional information, refer to: [Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

8. Connect the battery ground cable.

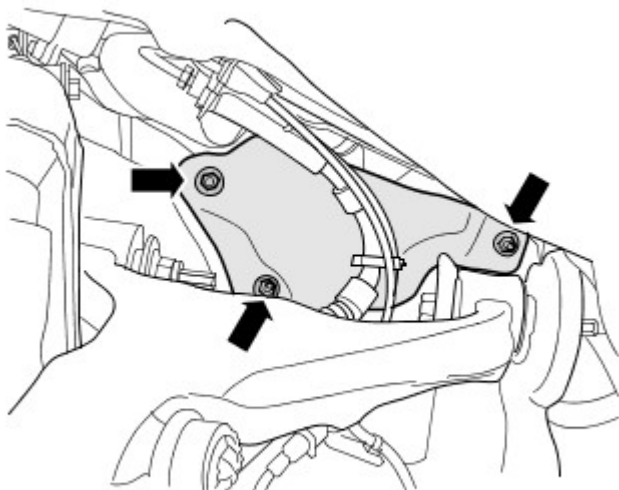
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

Engine Emission Control - TDV6 2.7L Diesel - Exhaust Gas Recirculation (EGR) Valve LH Vehicles With: Diesel Particulate Filter (DPF)

Removal and Installation

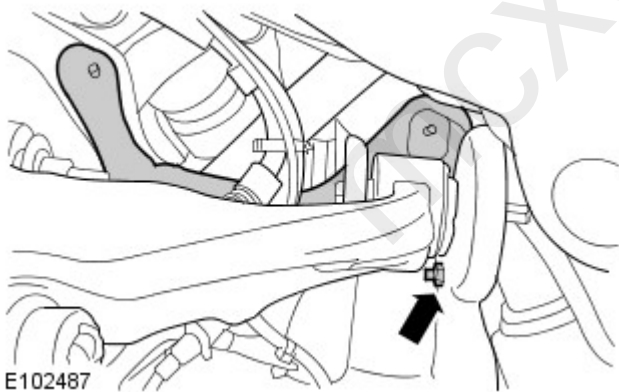
Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).
2. Remove the battery tray.
For additional information, refer to: [Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).
3. Raise and support the vehicle.
4. Remove the exhaust heat shield.
 - Access through the LH wheel arch.
 - Remove the 3 nuts.



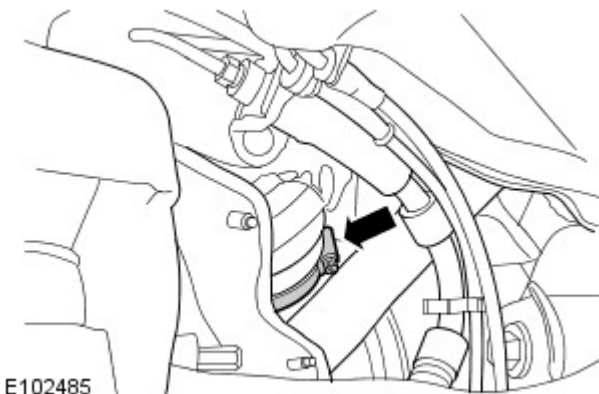
E102486

5. Remove the exhaust heat shield.
 - Access through the LH wheel arch.
 - Remove the bolt.



E102487

6. **NOTE:** Do not fully release the turbocharger outlet hose.
Release the turbocharger hose lower clip.

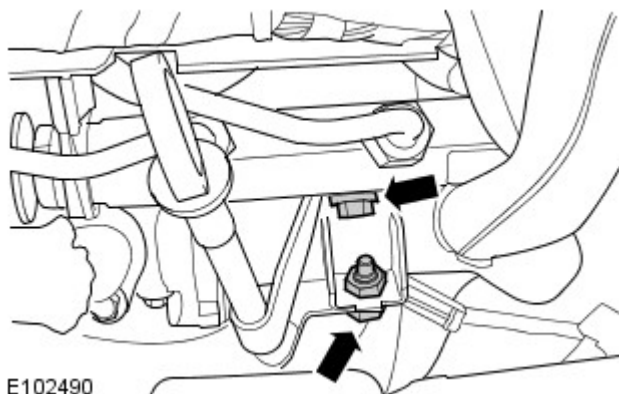


E102485

7. Lower the vehicle.

8. Remove the LH exhaust gas recirculation (EGR) outlet tube. For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

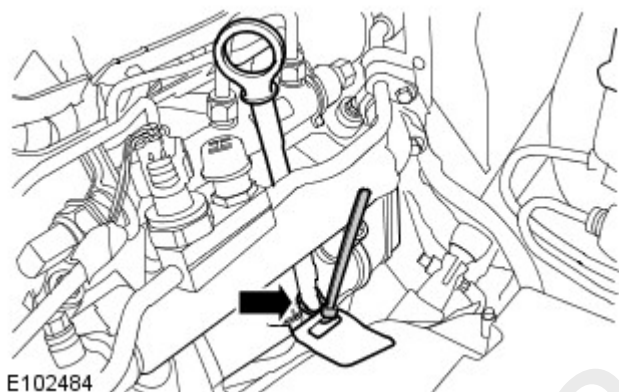
9. Release the oil level indicator tube.



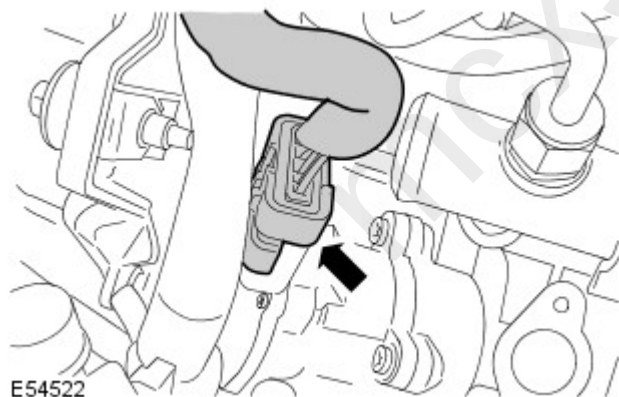
10. NOTE: Make sure that the turbocharger outlet pipe is free to be repositioned and allow the oil level indicator tube to be repositioned against the vehicle body.

Reposition the oil level indicator tube.

- Using a suitable tie strap, reposition and secure the oil level indicator tube to the vehicle body.

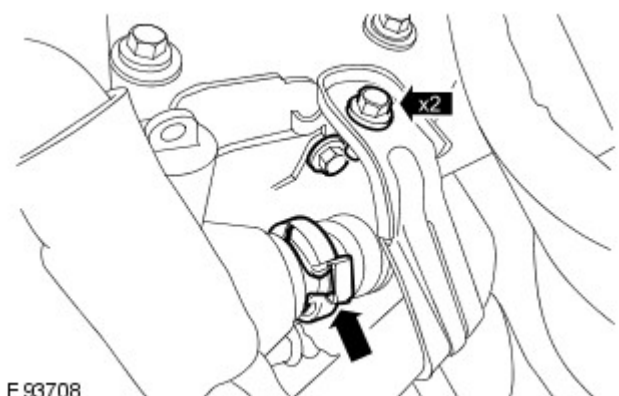


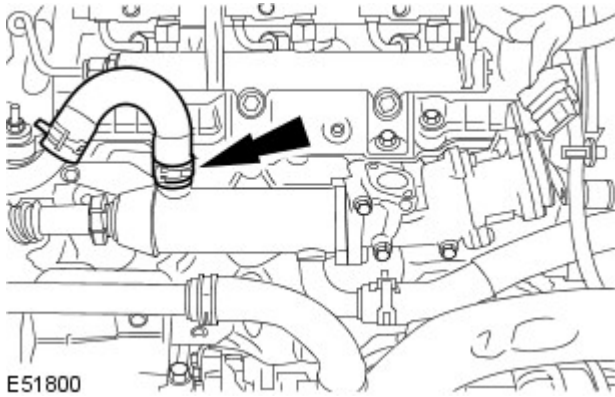
11. Disconnect the LH EGR valve electrical connector.



12. Release the LH EGR cooler.

- Remove and discard the clip.
- Loosen the 2 bolts.

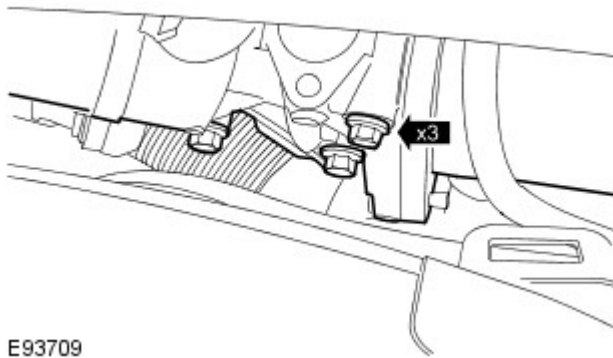




13. NOTE: RH illustration shown, LH is similar.

Disconnect LH EGR cooler rear coolant hose.

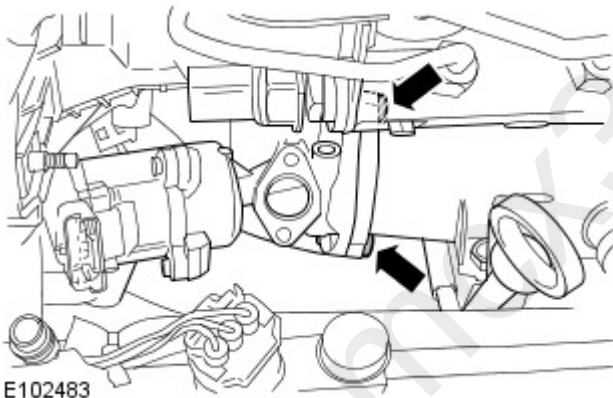
- Clamp the hoses to minimize coolant loss.
- Release the clip.



14. NOTE: The EGR valve front bolt cannot be removed with the EGR valve in its original orientation. The EGR valve must be removed before the front bolt can be removed.

Release the LH EGR valve from the cylinder head.

- Remove the 3 bolts.



15. NOTE: Reposition the EGR valve and EGR valve cooler assembly to gain access to the Torx bolts.

Remove the LH EGR valve.

- Remove the 2 bolts.
- Remove and discard the gasket.

Installation

1. NOTE: The EGR valve front bolt must be fitted to the EGR valve before the EGR valve is installed.

• **NOTE:** Reposition the EGR valve and EGR valve cooler assembly to gain access to the Torx bolts.

Install the LH EGR valve.

- Clean the component mating faces.
- Install a new gasket.
- Tighten the bolts to 10 Nm (7 Ib.ft).

2. NOTE: Do not tighten at this stage.

Install the LH EGR valve bolts.

3. NOTE: Install a new clip.

4. Secure the LH EGR valve.

Secure the LH EGR cooler.

- Tighten the bolts to 10 Nm (7 Ib.ft).
- 1. Secure the clip.
- 5. Connect the LH EGR valve electrical connector.**
- 2. Tighten the bolts to 10 Nm (7 Ib.ft).

6. Connect the coolant outlet hose to the LH EGR valve.

- Position and secure the clip.
- Remove the coolant hose clamps.

7. Secure the oil level indicator and tube.

- Reposition the turbocharger outlet pipe.
- Cut the cable tie.
- Tighten the 2 bolts to 10 Nm (7 lb.ft).

8. Install the LH EGR valve outlet tube.

For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

9. Raise the vehicle.

10. Secure the turbocharger outlet hose.

- Secure the clip.

11. Install the heat shields.

12. Lower the vehicle.

13. Install the battery tray.

For additional information, refer to: [Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

14. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

15. Check and top-up the coolant.

Engine Emission Control - TDV6 2.7L Diesel - Exhaust Gas Recirculation (EGR) Valve RH Vehicles With: Diesel Particulate Filter (DPF)

Removal and Installation

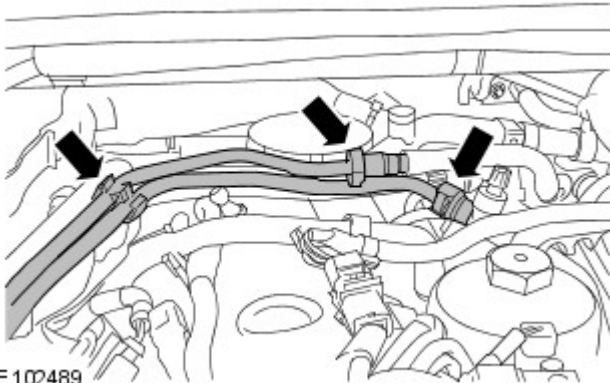
Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).
2. Remove the auxiliary battery tray.
For additional information, refer to: [Auxiliary Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

3. ⚠ WARNING: This procedure involves fuel handling. Be prepared for fuel spillage at all times and always observe fuel handling precautions. Failure to follow these instructions may result in personal injury.

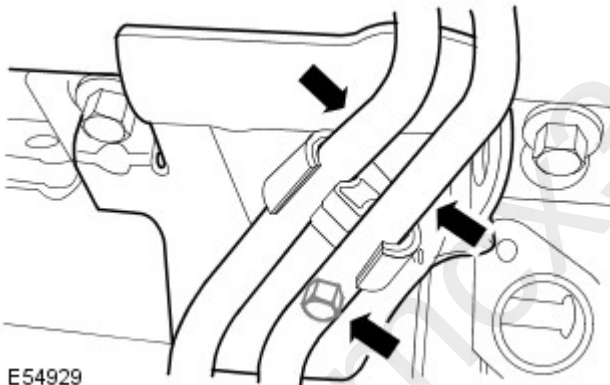
Disconnect the 2 fuel pipes.

- Release the 2 fuel pipe clips.



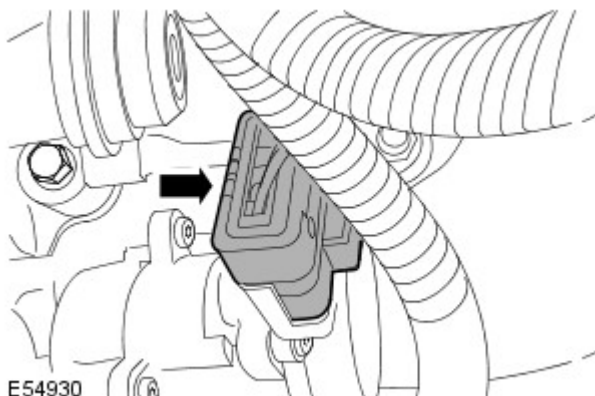
4. Remove the fuel line support bracket.

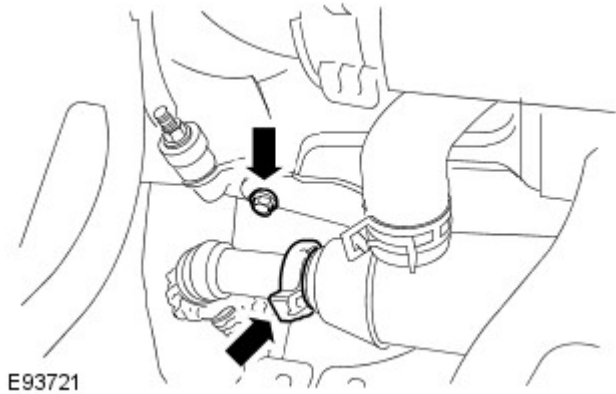
- Release the fuel pipe from the clips.
- Remove the bolt.



5. Remove the RH exhaust gas recirculation (EGR) valve outlet tube.
For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

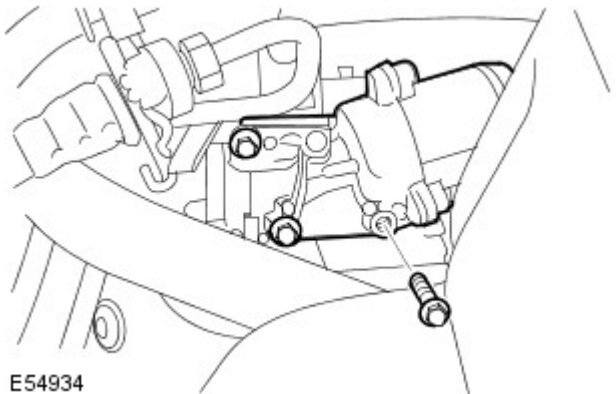
6. Disconnect the RH EGR valve electrical connector.





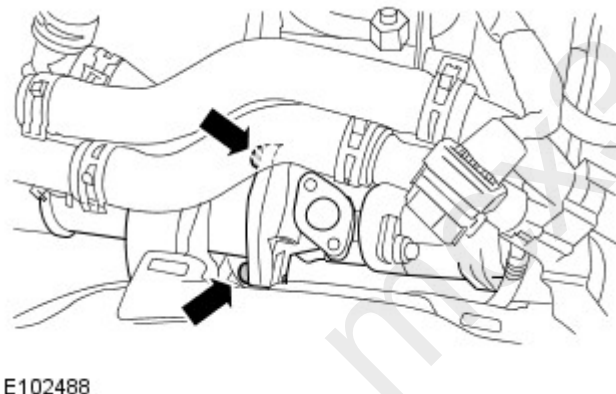
7. Release the RH EGR cooler.

- Remove and discard the clip.
- Loosen the bolt.



8. Release the RH EGR valve from the cylinder head.

- Remove the 3 bolts.



9. NOTE: Reposition the EGR valve and EGR valve cooler assembly to gain access to the Torx bolts.

Remove the RH EGR valve.

- Remove the 2 bolts.
- Remove and discard the gasket.

Installation

1. NOTE: Reposition the EGR valve and EGR valve cooler assembly to gain access to the Torx bolts.

Install the RH EGR valve.

- Clean the component mating faces.
- Install a new gasket.
- Tighten the bolts to 10 Nm (7 Ib.ft).

2. NOTE: Do not tighten at this stage.

Install the RH EGR valve bolts.

3. NOTE: Install a new clip.

Secure the RH EGR cooler.

1. Secure the clip.
2. Tighten the bolt to 10 Nm (7 Ib.ft).

4. Secure the RH EGR valve.

- Tighten the bolts to 10 Nm (7 Ib.ft).

5. Connect the RH EGR valve electrical connector.

6. Install the RH EGR valve outlet tube.

For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

7. Install the fuel line support bracket.

8. Connect and secure the low-pressure fuel lines.

9. Install the auxiliary battery tray.

For additional information, refer to: [Auxiliary Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

10. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

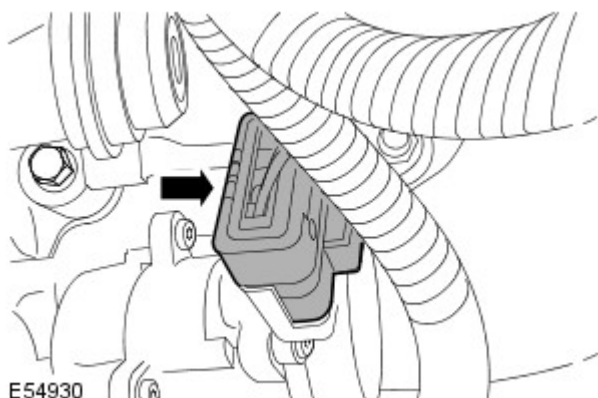
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Engine Emission Control - TDV6 2.7L Diesel - Exhaust Gas Recirculation (EGR) Valve RH Vehicles Without: Diesel Particulate Filter (DPF)

Removal and Installation

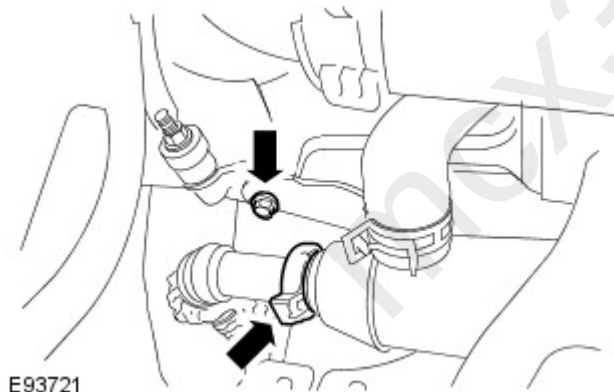
Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).
2. Remove the auxiliary battery tray.
For additional information, refer to: [Auxiliary Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).
3. Remove the RH exhaust gas recirculation (EGR) valve outlet tube.
For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).
4. Disconnect the RH EGR valve electrical connector.



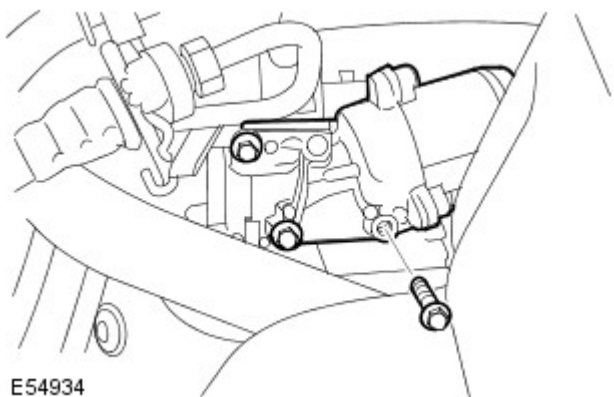
5. Release the RH EGR cooler.

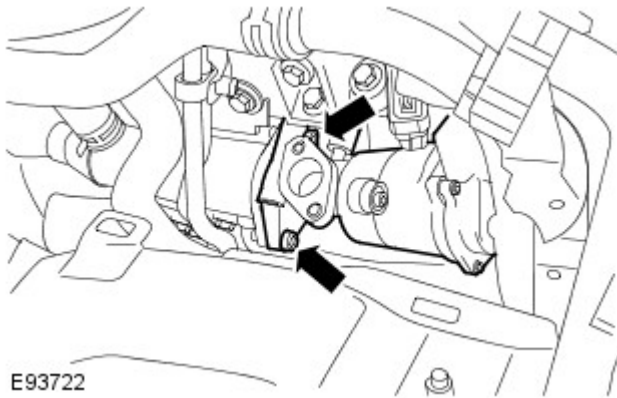
- Remove and discard the clip.
- Loosen the bolt.



6. Release the RH EGR valve from the cylinder head.

- Remove the 3 bolts.





7. Remove the RH EGR valve.

- Remove the 2 bolts.
- Remove and discard the gasket.

Installation

1. Install the RH EGR valve.

- Clean the component mating faces.
- Install a new gasket.
- Tighten the bolts to 10 Nm (7 lb.ft).

2. NOTE: Do not tighten at this stage.

Install the RH EGR valve bolts.

3. NOTE: Install a new clip.

Secure the RH EGR cooler.

1. Secure the clip.
2. Tighten the bolt to 10 Nm (7 lb.ft).

4. Secure the RH EGR valve.

- Tighten the bolts to 10 Nm (7 lb.ft).

5. Connect the RH EGR valve electrical connector.

6. Install the RH EGR valve outlet tube.

For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube](#) (303-08A Engine Emission Control - TDV6 2.7L Diesel, Removal and Installation).

7. Install the auxiliary battery tray.

For additional information, refer to: [Auxiliary Battery Tray](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

8. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

Engine Emission Control - TDV6 2.7L Diesel - Exhaust Gas Recirculation (EGR) Valve Outlet Tube

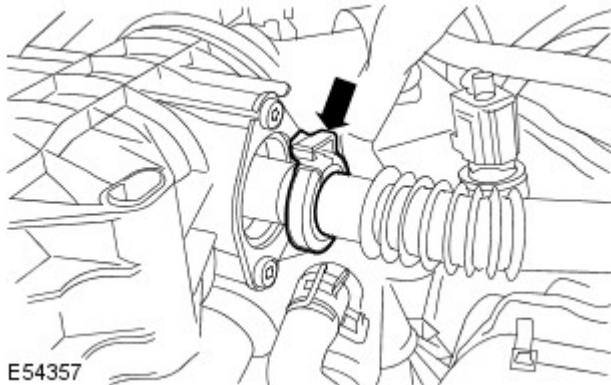
Removal and Installation

Removal

1. Disconnect the battery ground cable.
For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).
2. Remove the engine cover.
For additional information, refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
3. **NOTE:** Left-hand shown, right-hand similar.

Release the EGR valve outlet tube.

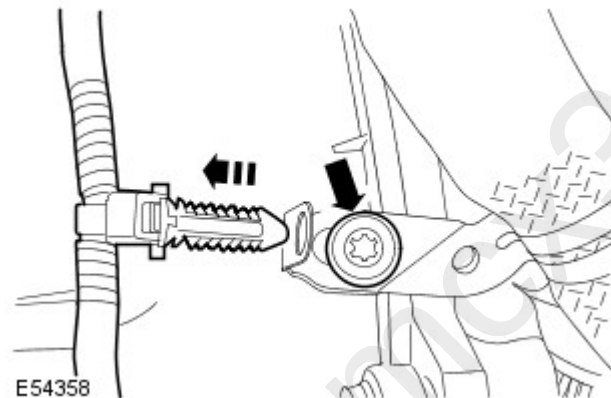
- Release the clip.



4. **NOTE:** Left-hand shown, right-hand similar.

Release the EGR valve outlet tube.

- Disconnect the engine wiring harness.
- Remove the Torx screw.

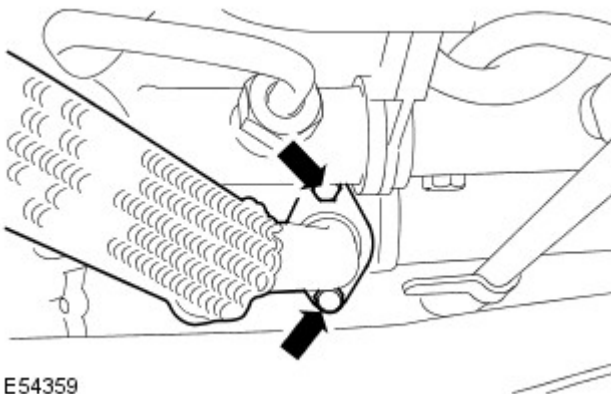


5. **NOTE:** Left-hand shown, right-hand similar.

- **NOTE:** Discard the gasket.
- **NOTE:** Discard the retaining clip.

Remove the EGR valve outlet tube.

- Remove the two bolts.



Installation

1. **NOTE:** Install a new retaining clip.
- **NOTE:** Install a new gasket.
- **NOTE:** Do not fully close the retaining clip at this stage.

Loosely install the EGR valve outlet tube.

- Install the two EGR valve outlet tube retaining bolts, but do not fully tighten at this stage.

2. Fully close the EGR valve outlet tube retaining clip.

3. Tighten the EGR valve outlet tube retaining bolts to 10 Nm (7 lb.ft).

4. Secure the engine wiring harness.

- Install the Torx screw and tighten to 5 Nm (4 lb.ft).
- Secure the engine wiring harness to the bracket with the clip.

5. Install the engine cover.

For additional information, refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

6. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

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