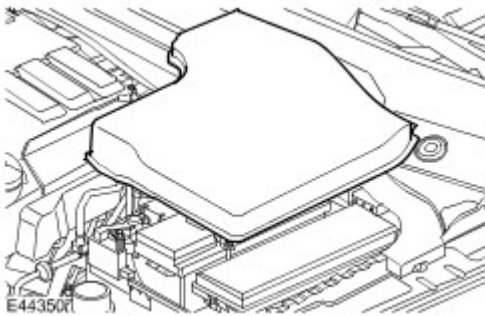




## Turbocharger (19.42.01)

### Removal

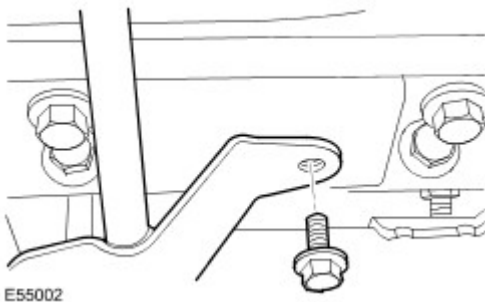
1. Remove the battery cover.



2. Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)

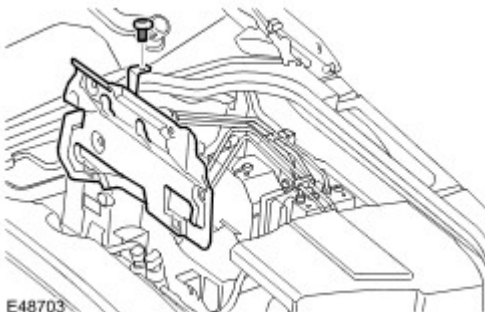
3. Remove the engine cover. For additional information, refer to [Engine Cover - 2.7L Diesel \(12.30.50\)](#) (Section 501-05)


4. Remove the oil level indicator.
  - ▶ Remove the retaining bolt.



5. Remove the engine compartment upper heat shield.

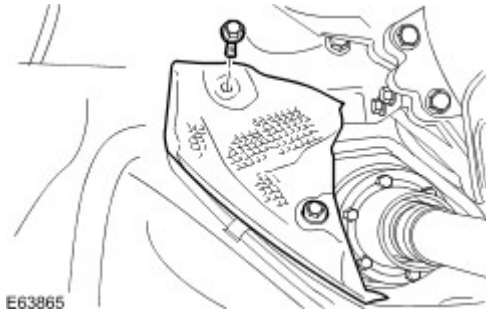
- ▶ Remove the screw.
- ▶ Release the two retaining clips,



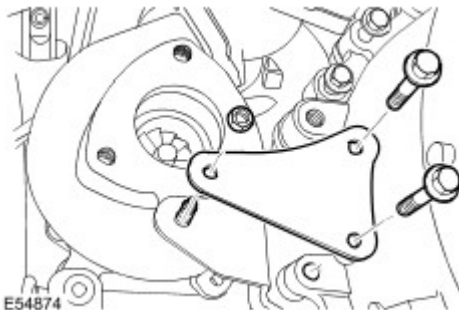
6.  **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

Raise and support the vehicle. For additional information, refer to [Lifting](#) (Section 100-02)

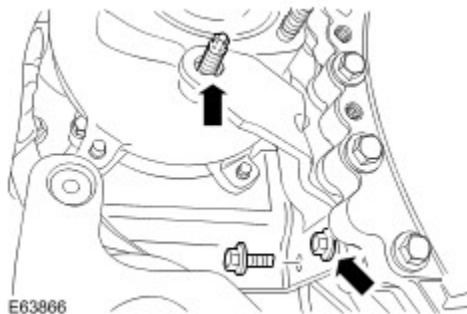
7. Remove the exhaust system. For additional information, refer to [Exhaust System \(30.10.08\)](#) (Section 309-00)
8. Remove the differential mounting bracket heat shield.
- ▶ Remove the two retaining bolts.



9. Remove the turbocharger support bracket.
- ▶ Remove the two retaining bolts.
  - ▶ Remove the retaining nut.

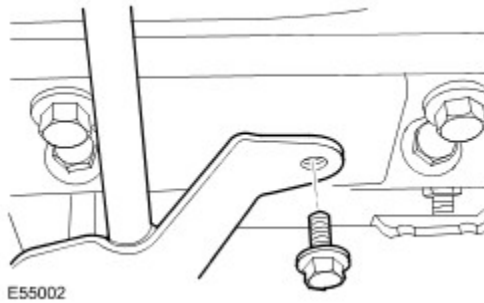


10. Remove the turbocharger support bracket retaining stud.

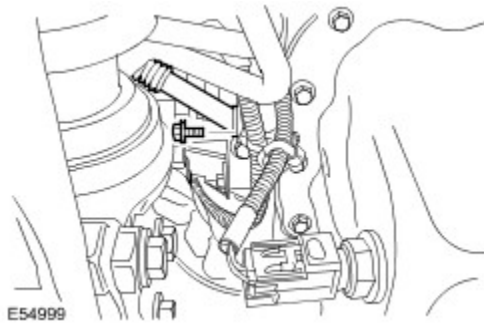


11. Remove the 2 turbocharger support bracket retaining bolts.
12. Reposition the oil level indicator tube.

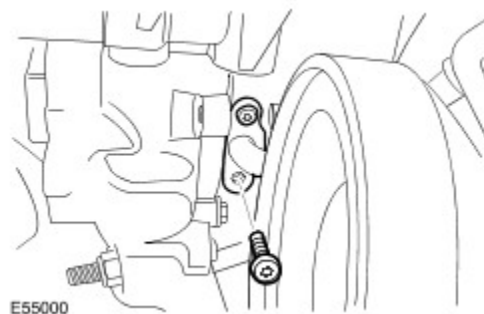
- ▶ Remove the oil level indicator tube retaining bolt.
- ▶ Remove and discard the O-ring seal.




13. Remove the turbocharger oil return tube retaining bolt.
- ▶ Release the turbocharger oil return tube.
  - ▶ Install blanking caps to the exposed ports.



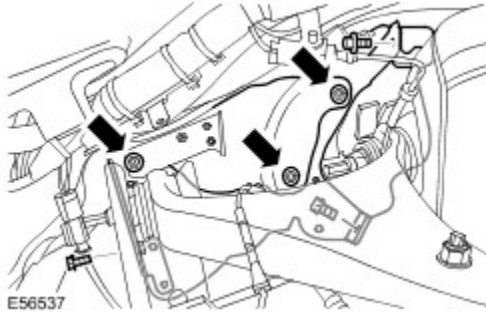
14. Remove the turbocharger oil return tube.
- ▶ Remove the two retaining bolts.
  - ▶ Remove and discard the gasket.
  - ▶ Install blanking caps to the exposed ports.
  - ▶ Remove and discard the O-ring seals.



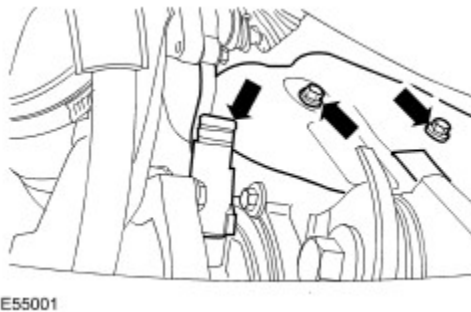
15.  **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

Lower the vehicle.

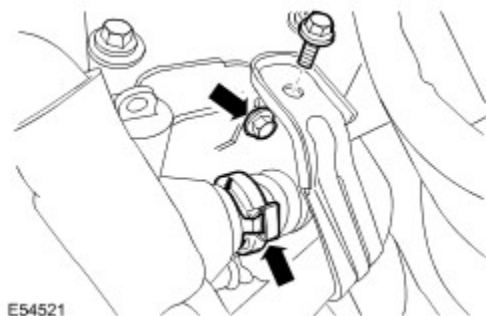
16. Remove the LH front wheel and tire.
17. Release the ABS sensor lead and brake pad wear indicator sensor lead from the body.
18. Remove the upper suspension arm and brake line heat shields for access.



19. Remove the height sensor link.
20. Remove the turbocharger heat shield.
  - ▶ Remove the two retaining bolts.
  - ▶ Disconnect the turbocharger oil supply tube.
  - ▶ Remove and discard the two sealing washers.
  - ▶ Install blanking caps to the exposed ports.



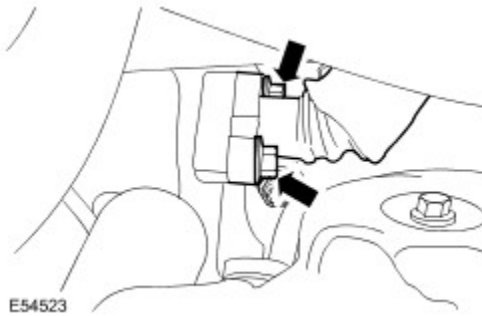
21. Release the LH EGR valve inlet tube.
  - ▶ Remove and discard the retaining clip.
  - ▶ Remove the support bracket.



- 22.

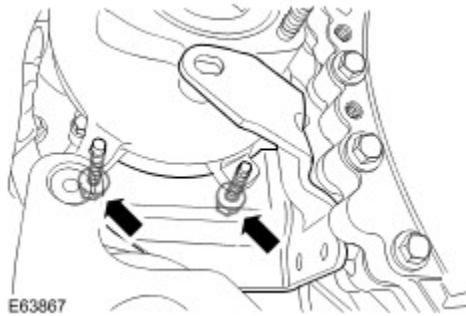
Remove the LH EGR valve inlet tube.

- ▶ Remove the two retaining bolts.
- ▶ Remove and discard the gasket.



23. Remove the turbocharger securing bracket.

- ▶ Remove the two retaining bolts.



24. Disconnect the turbocharger intake tube.

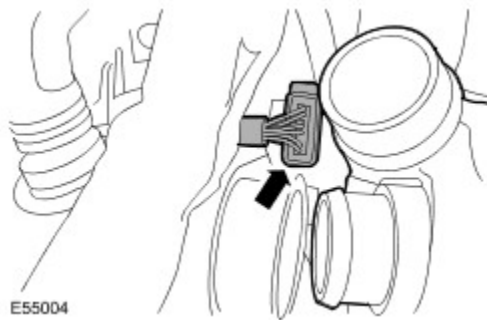
- ▶ Reposition the turbocharger intake pipe to turbocharger connecting hose.
- ▶ Release the two retaining clips,

25. Disconnect the turbocharger outlet pipe.

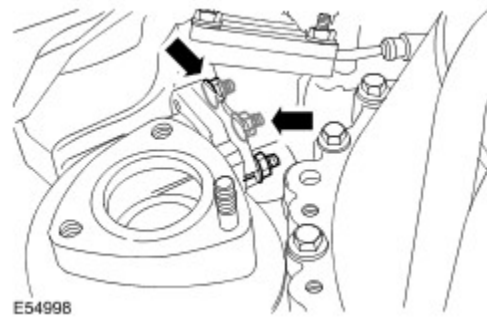
- ▶ Release the clip.



26. Disconnect the turbocharger electrical connector.

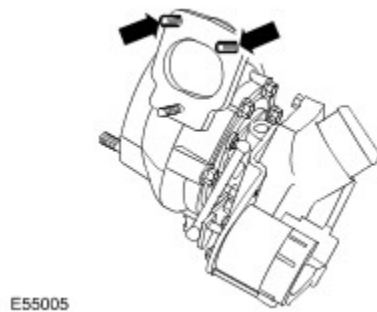


27. Remove the 3 turbocharger retaining nuts.




28. Remove the turbocharger.  
 ▶ Reposition the turbocharger.

29. Remove and discard the two retaining studs.  
 ▶ Install blanking caps to the exposed ports.



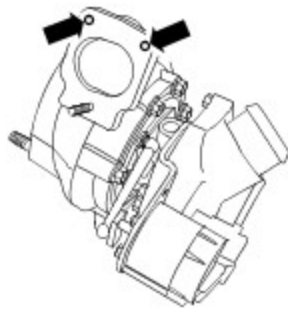
30.  **WARNING: Eye protection must be worn.**

 **WARNING: Never direct a high-pressure nozzle at the skin as the high-pressure air may penetrate to the underlying tissue, and cause serious injury.**

 **CAUTION: Always keep high-pressure equipment in good condition, and regularly maintained, particularly at joints and unions.**

Drill two 8 mm (0.3 inches) holes in the turbocharger as shown.

- ▶ Clean the turbocharger and blow out with an air line.

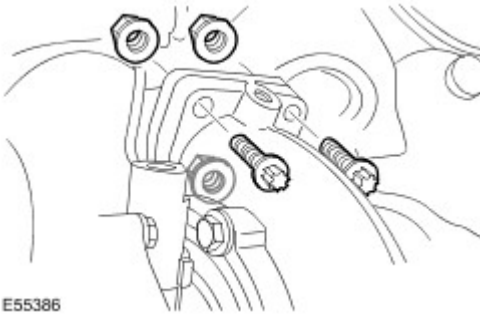


E55006

## Installation

1. Install the turbocharger.

- ▶ Reposition the turbocharger.



E55386

2. Align the turbocharger.

- ▶ Tighten the turbocharger retaining nuts to 24 Nm (18 lb.ft).

3. Connect the turbocharger electrical connector.

4. Connect the turbocharger outlet pipe.

- ▶ Tighten the clip.

5. Connect the turbocharger intake tube.

- ▶ Reposition the turbocharger intake pipe to turbocharger connecting hose.
- ▶ Tighten the 2 clips.

6. Install the turbocharger securing bracket.

- ▶ Tighten the retaining bolts to 32 Nm (24 lb.ft).

7. **NOTE :**

Do not fully close the retaining clip at this stage.

Install the LH EGR valve inlet tube.

- ▶ Install a new retaining clip.

- ▶ Install a new gasket.
  - ▶ Loosely install the two EGR valve inlet tube retaining bolts.
- 8 . Fully close the retaining clip.
- 9 . Tighten the two LH EGR valve inlet tube retaining bolts to 10 Nm (7 lb.ft).
- 10 . Install the turbocharger heat shield.
- ▶ Remove the blanking caps from the ports.
  - ▶ Install new sealing washers.
  - ▶ Connect the turbocharger oil supply tube.
  - ▶ Tighten to 30 Nm (22 lb.ft).
  - ▶ Install the two retaining bolts.
  - ▶ Tighten to 10 Nm (7 lb.ft).
- 11 . Install the upper suspension arm and brake line heat shields.
- 12 . Install the height sensor link.
- 13 . Attach the ABS sensor lead and brake pad wear indicator sensor lead to the body.
- 14 . Install the wheel and tire.
- 15 . Raise the vehicle.
- 16 . Install the turbocharger oil return tube.
- ▶ Remove the blanking caps from the ports.
  - ▶ Install a new gasket.
  - ▶ Tighten the two retaining bolts to 10 Nm (7 lb.ft).
- 17 . Install the turbocharger oil return tube retaining bolt.
- ▶ Install the retaining clamp.
  - ▶ Tighten to 10 Nm (7 lb.ft).
  - ▶ Install a new O-ring seal.
- 18 . Reposition the oil level indicator tube.
- ▶ Install a new O-ring seal.
  - ▶ Tighten to 10 Nm (7 lb.ft).
- 19 . Tighten the turbocharger support bracket to cylinder block retaining bolts to 23 Nm (17 lb.ft).
- 20 . Install the turbocharger support bracket.



- ▶ Tighten the retaining nut to 25 Nm (18 lb.ft).
  - ▶ Tighten the retaining bolts to 48 Nm (35 lb.ft).
- 21 . Install the differential mounting bracket heat shield.
- ▶ Tighten to 10 Nm (7 lb.ft).
- 22 . Install the exhaust system. For additional information, refer to [Exhaust System \(30.10.08\)](#) (Section 309-00)
- 23 . Install the oil level indicator.
- 24 . Install the engine compartment upper heat shield.
- 25 . Install the engine cover. For additional information, refer to [Engine Cover - 2.7L Diesel \(12.30.50\)](#) (Section 501-05)
- 26 . Install the battery cover.
- 27 . Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
- 28 . Check and top-up the engine oil.