



## Exhaust Manifold LH (30.15.10)

### Removal

1. Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
2. Remove the turbocharger. For additional information, refer to [Turbocharger \(19.42.01\)](#) (Section 303-04)
3. Drain the cooling system. For additional information, refer to [Cooling System Draining, Filling and Bleeding \(26.10.01\)](#) (Section 303-03)
4. Remove the battery tray. For additional information, refer to [Battery Tray \(76.10.30\)](#) (Section 414-01)
5. Remove the LH EGR valve outlet tube. For additional information, refer to [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube \(17.45.18\)](#) (Section 303-08)
6. Disconnect the coolant outlet hose from the LH EGR valve.

▶ Release the clip.

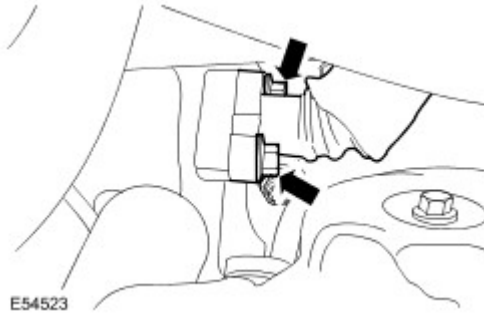


7. Release the LH EGR valve inlet tube.
  - ▶ Remove the two support bracket retaining bolts.
  - ▶ Remove the support bracket.
  - ▶ Remove and discard the retaining clip.

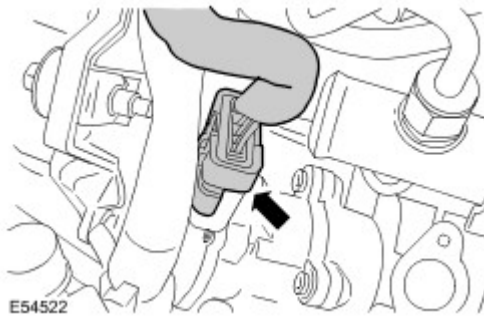


8. Remove the LH EGR valve inlet tube.

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

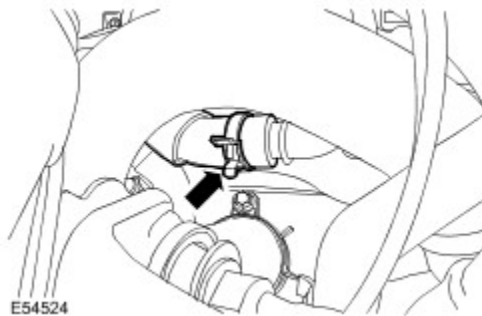


9. Disconnect the LH EGR valve electrical connector.



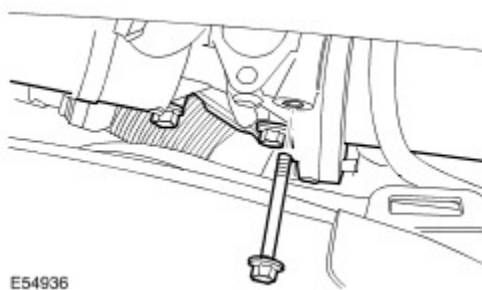
10. Disconnect the coolant inlet hose from the LH EGR valve.

- Release the clip.



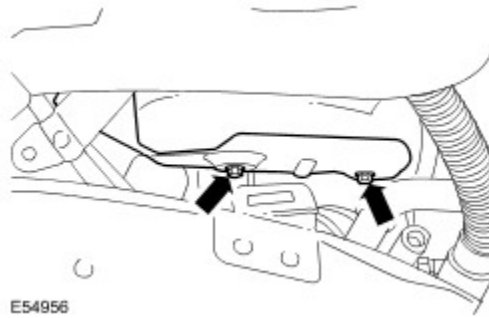
11. Remove the LH EGR valve.

- Remove the three retaining bolts.

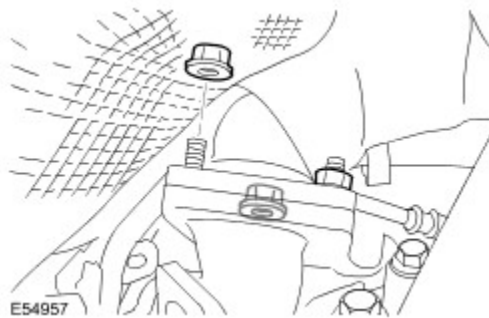


12. Remove the LH exhaust manifold heat shield.

➤ Remove the two retaining bolts.

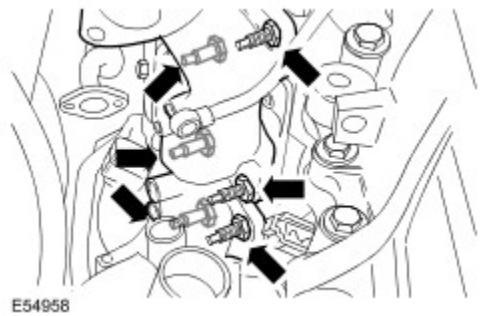


13. Remove the three exhaust cross-over pipe retaining nuts.



14. Remove the LH exhaust manifold.

➤ Remove the six retaining nuts.



15. Remove and discard the LH exhaust manifold gasket.

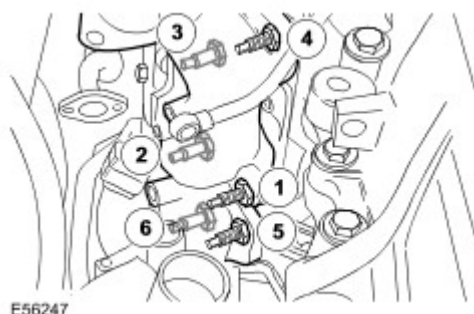
➤ Remove and discard the studs.



## Installation

- 1 . Tighten the LH exhaust manifold retaining studs to 13 Nm (10 lb.ft).
  - Install a new gasket.

- 2 . **NOTE :**  
Tighten the retaining nuts in the sequence shown.  
Install the LH exhaust manifold.
  - Tighten the nuts to 24 Nm (18 lb.ft).



- 3 . Install the three exhaust cross-over pipe retaining nuts.
  - Tighten the nuts to 24 Nm (18 lb.ft).
- 4 . Install the LH exhaust manifold heat shield.
  - Install the two retaining bolts and tighten to 10 Nm (7 lb.ft).
- 5 . Install the LH EGR valve.
  - Install the three EGR valve retaining bolts, but do not fully tighten at this stage.
- 6 . **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.
- 7 . Fully close the retaining clip.
- 8 . Tighten the two EGR valve inlet tube retaining bolts to 10 Nm (7 lb.ft).
- 9 . Tighten the three EGR valve retaining bolts to 10 Nm (7 lb.ft).
- 10 . Install the support bracket.
  - Tighten the two retaining bolts to 10 Nm (7 lb.ft).
- 11 . Connect the coolant inlet hose to the LH EGR valve.

- 12 .            Connect the LH EGR valve electrical connector.
- 13 .            Connect the coolant outlet hose to the LH EGR valve.
- 14 .            Install the LH EGR valve outlet tube. For additional information, refer to [Exhaust Gas Recirculation \(EGR\) Valve Outlet Tube \(17.45.18\)](#) (Section 303-08)
- 15 .            Install the battery tray. For additional information, refer to [Battery Tray \(76.10.30\)](#) (Section 414-01)
- 16 .            Install the turbocharger. For additional information, refer to [Turbocharger \(19.42.01\)](#) (Section 303-04)
- 17 .            Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
- 18 .            Refill and bleed the cooling system. For additional information, refer to [Cooling System Draining, Filling and Bleeding \(26.10.01\)](#) (Section 303-03)