

PUBLISHED: 22-JUL-2020
2020.0 DEFENDER (LE), 303-01C

ENGINE – INGENIUM I6 3.0L PETROL

ENGINE ASSEMBLY REMOVE FOR ACCESS (G2422510)

REMOVAL

12.41.06

ENGINE
ASSEMBLY –
REMOVE FOR
ACCESS

2000 CC,
INGENIUM
DIESEL

8.30

USED WITHINS

REMOVAL

mcx30.com

SPECIAL TOOL(S)



E136268

JLR-303-1591

Lifting Bracket, Engine - Rear



E218674

JLR-303-1673

Engine stand adaptor



E238238

JLR-303-1676

Engine lifting eyes

mcx30.com



JLR-303-1680

Engine Lifting Kit



E243070

JLR-303-1692

Engine Support

GENERAL EQUIPMENT

EQUIPMENT NAME
Engine stand
Hydraulic jib crane



WARNING:

- Be prepared to collect escaping coolant.

- Be prepared to collect escaping oil.
- Be prepared to collect escaping fuel.



NOTE:

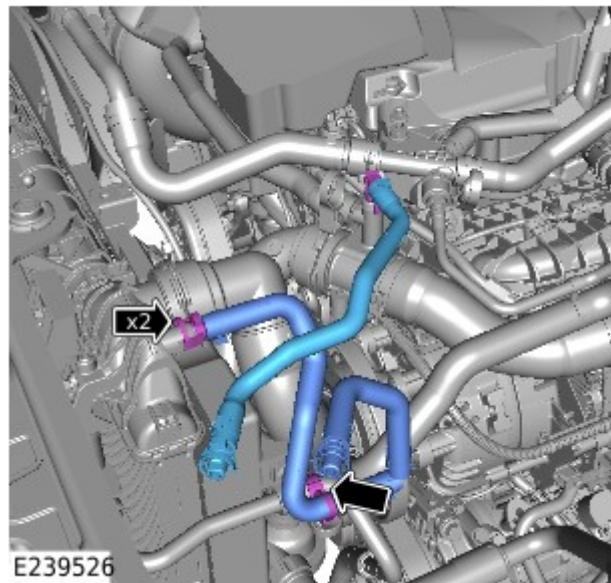
- This procedure contains illustrations showing certain components removed to provide extra clarity.
- This procedure contains some variation in the illustrations depending on the vehicle specification, but the essential information is always correct.

1. Before working on the fuel system make sure to study the fuel system health and safety section of this manual.
Refer to: [Petrol and Petrol-Ethanol Fuel Systems Health and Safety Precautions](#) (100-00 General Information, Description and Operation).
2. Raise and support the vehicle on a suitable 2 post lift.
Refer to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).
3. Power down the Mild Hybrid Electric Vehicle (MHEV) system.
Refer to: MHEV Power Down/Up (414-01 Battery, Mounting and Cables - Vehicles With: MHEV, General Procedures).
4. Remove the hood.
Refer to: [Hood](#) (501-02 Front End Body Panels, Removal and Installation).
5. Remove the cooling fan.
Refer to: [Viscous Cooling Fan](#) (303-03C Engine Cooling - INGENIUM I6 3.0L Petrol, Removal and Installation).
6. Drain the cooling system.
Refer to: [Cooling System Partial Draining and Vacuum Filling](#) (303-03C Engine Cooling - INGENIUM I6 3.0 L Petrol, General Procedures).
7. Remove the coolant expansion tank.
Refer to: [Coolant Expansion Tank](#) (303-03C Engine Cooling - INGENIUM I6 3.0L Petrol, Removal and Installation).
8. Remove the transmission.
Refer to: [Transmission - INGENIUM I6 3.0L Petrol](#) (311-01 Automatic Transmission, Removal).

9. Recover the Air Conditioning (A/C) refrigerant.

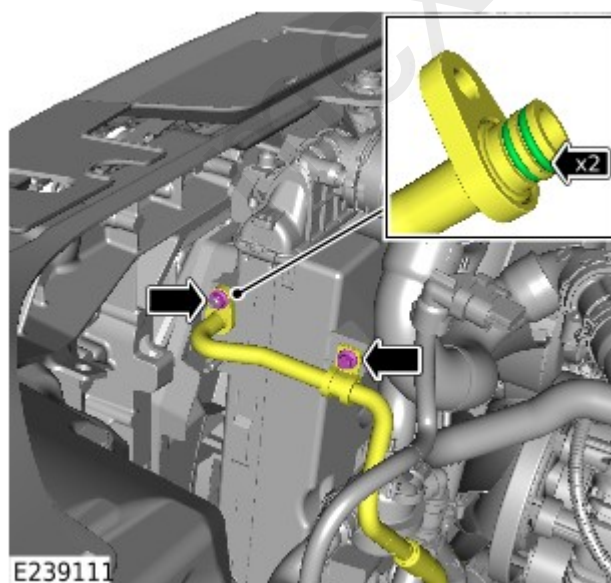
Refer to: [Air Conditioning System Recovery, Evacuation and Charging](#) (412-00 Climate Control System - General Information, General Procedures).

10.



- Disconnect the 2 coolant hoses.
- Release the clip.
- Remove the 2 coolant hoses.

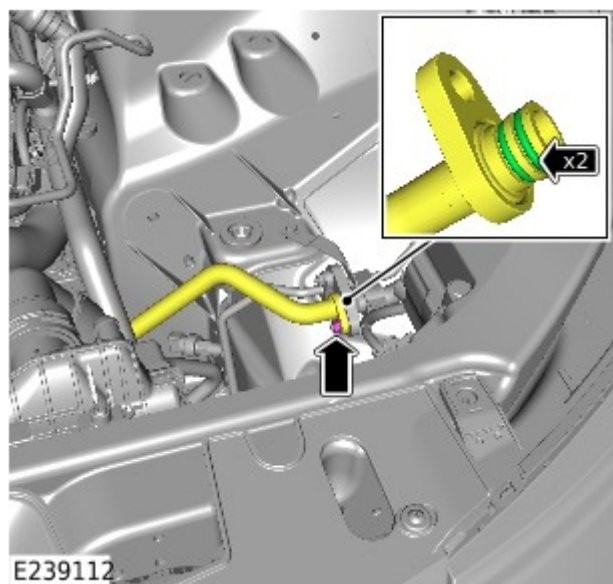
11.



- Remove the bolt.
- Remove the nut.
- Disconnect the A/C pipe.

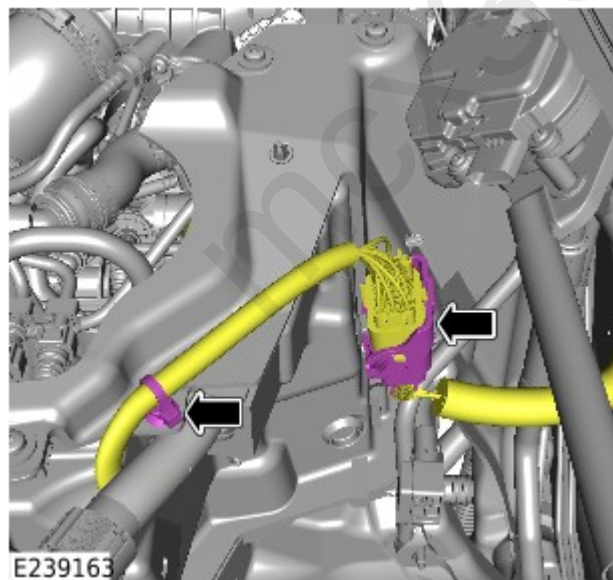
- Remove and discard the 2 O-ring seals.

12.



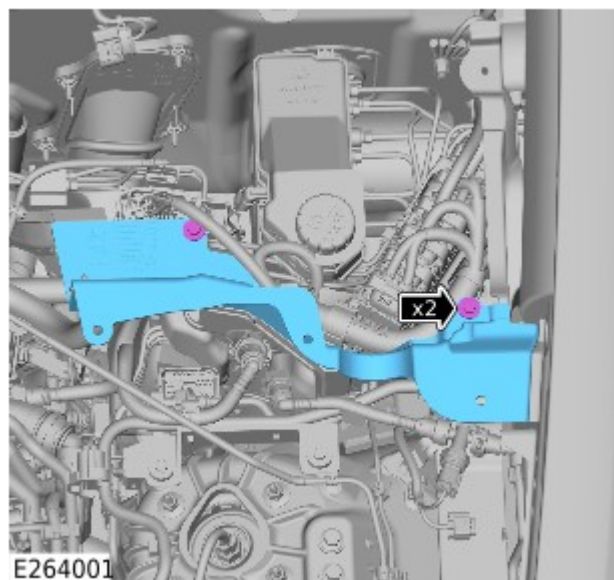
- Remove the nut.
- Disconnect the A/C pipe.
- Remove and discard the 2 O-ring seals.

13.



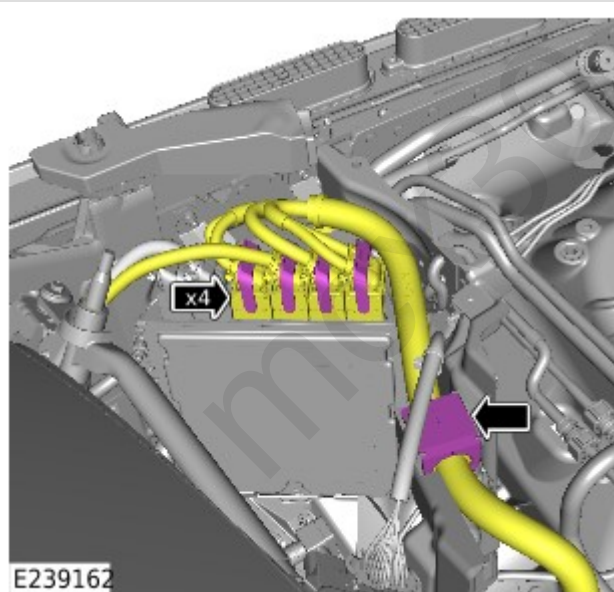
- Disconnect the electrical connector.
- Release the clip.

14.



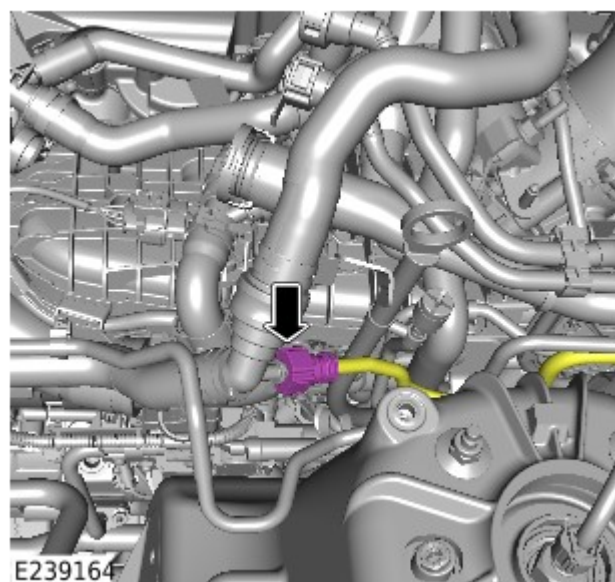
- Remove the 2 bolts.
- Remove the closing panel.

15.



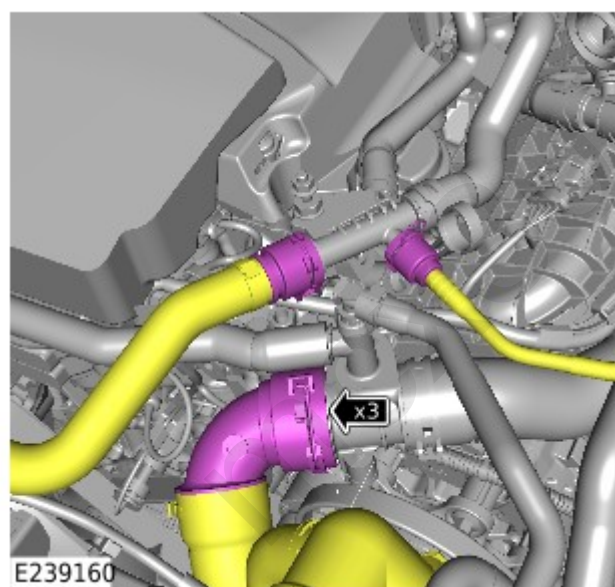
- Disconnect the 4 electrical connectors.
- Release the wiring harness.

16.



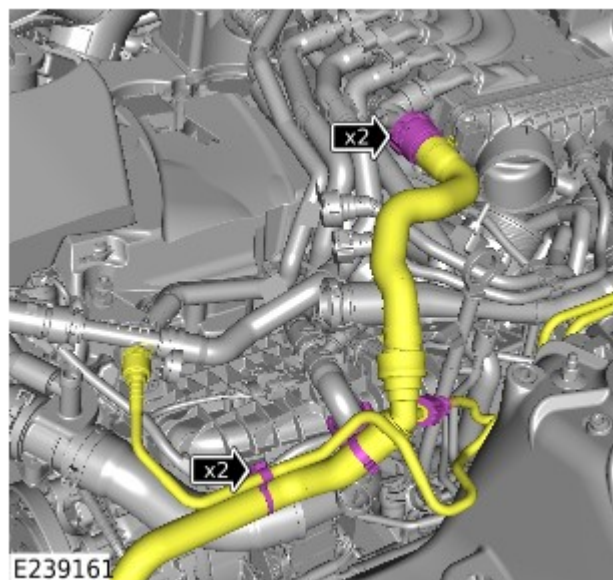
Disconnect the coolant pipe.

17.



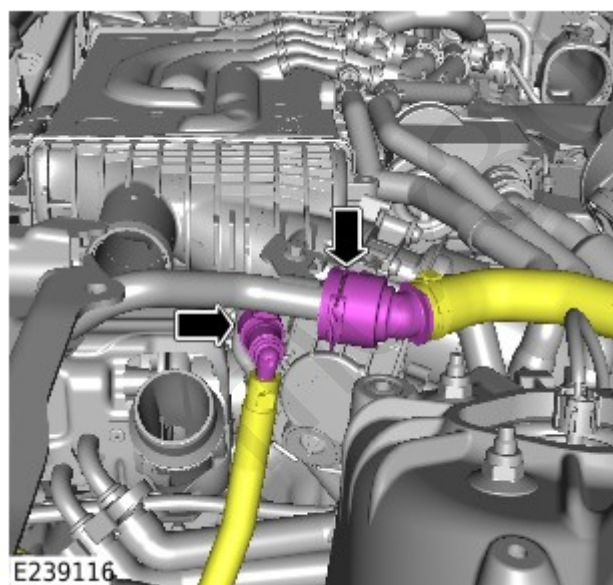
Disconnect the 3 coolant pipes.

18.



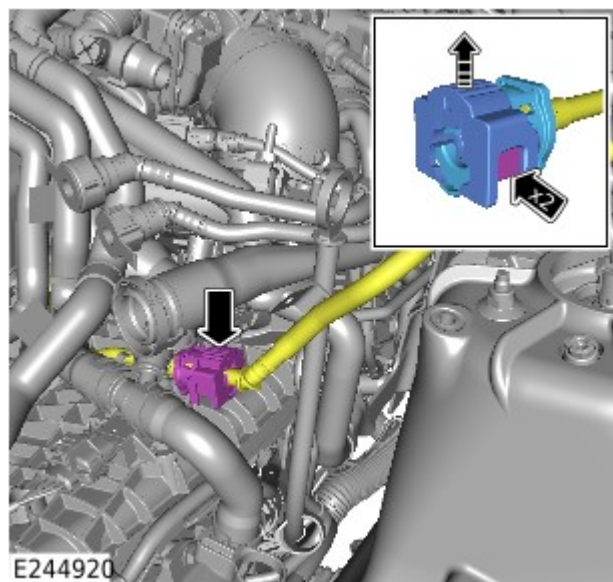
- Disconnect the 2 coolant pipes.
- Release the 2 clips.

19.



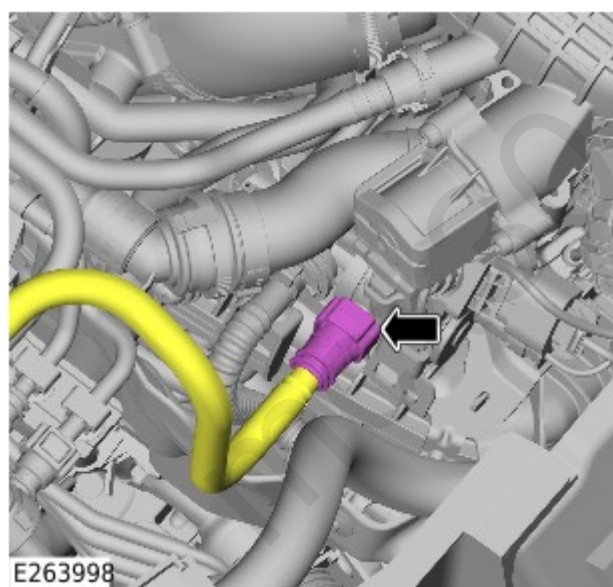
Disconnect the 2 coolant hoses.

20.



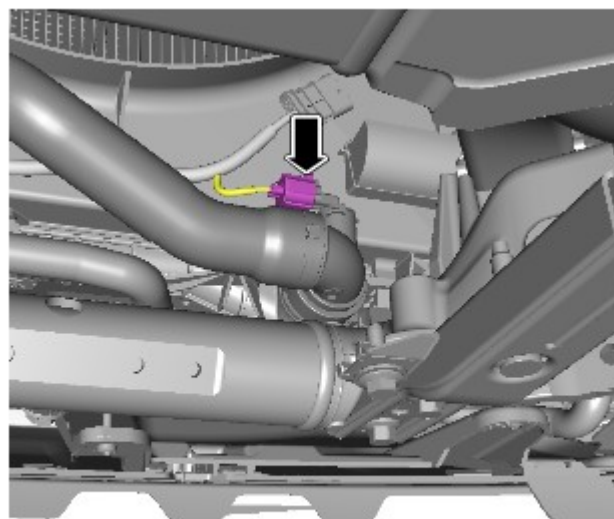
Disconnect the fuel line.

21.



Disconnect the breather pipe.

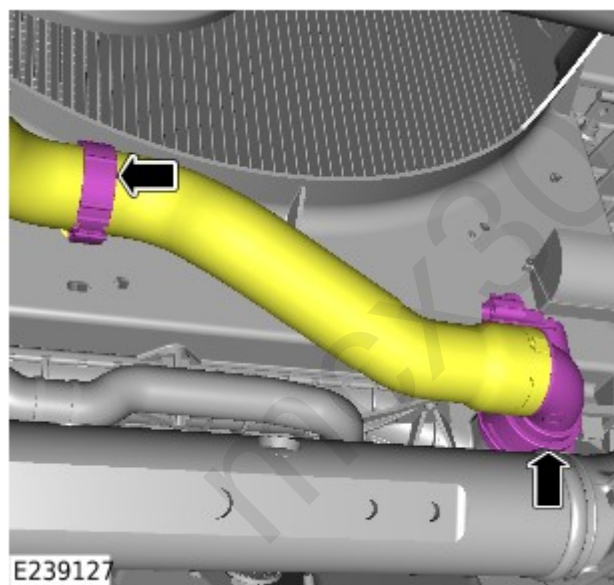
22.



E239176

Disconnect the electrical connector.

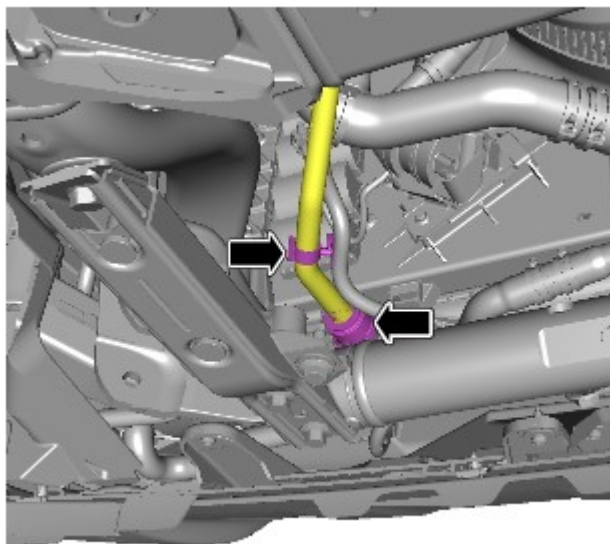
23.



E239127

- Disconnect the coolant hose.
- Release the clip.

24.



E239128

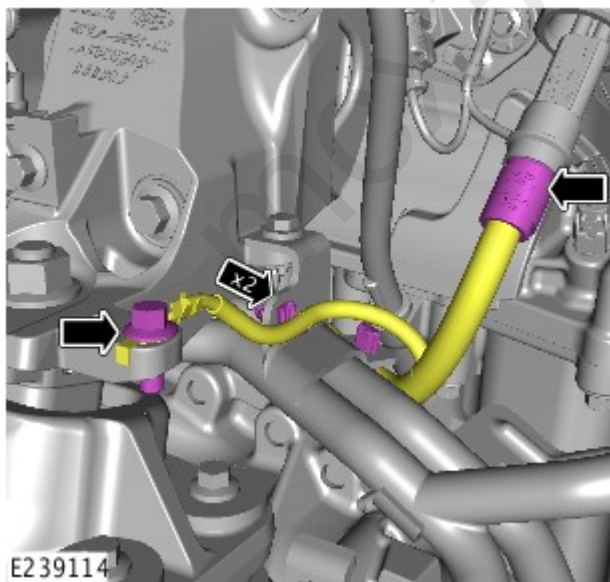
- Disconnect the coolant pipe.
- Release the clip.

25.



NOTE:

If equipped.



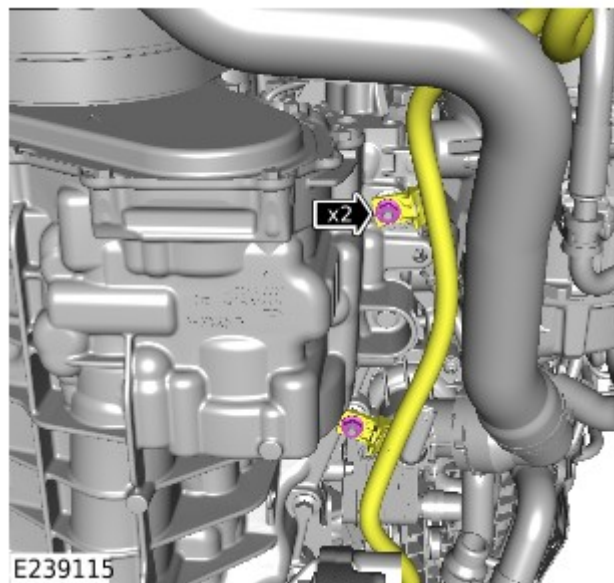
E239114

- Remove the bolt.
- Disconnect the electrical connector.
- Release the 2 clips.
- Position the wiring harness away from the engine.

26.

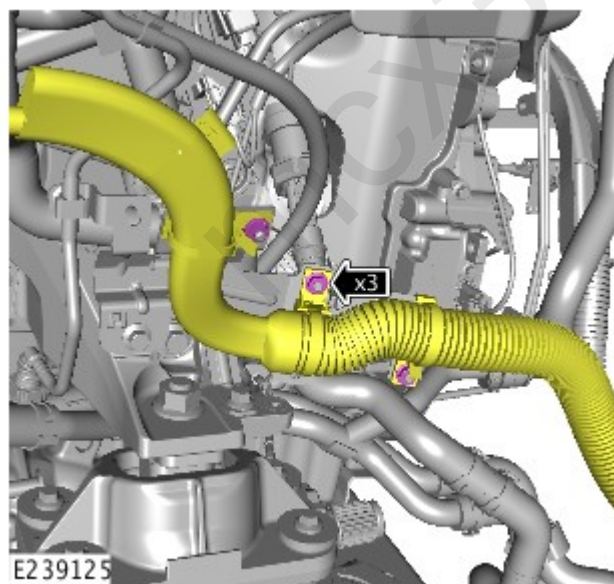
 NOTE:

If equipped.



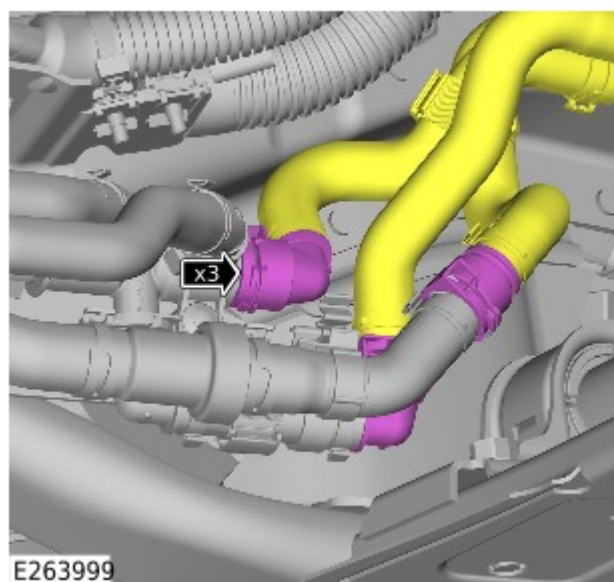
- Remove the 2 nuts.
- Position the wiring harness away from the engine.

27.



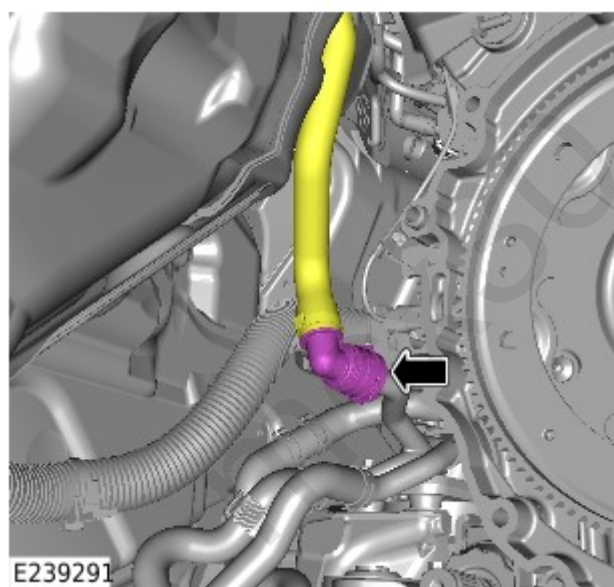
- Remove the 3 nuts.
- Release the wiring harness.

28.



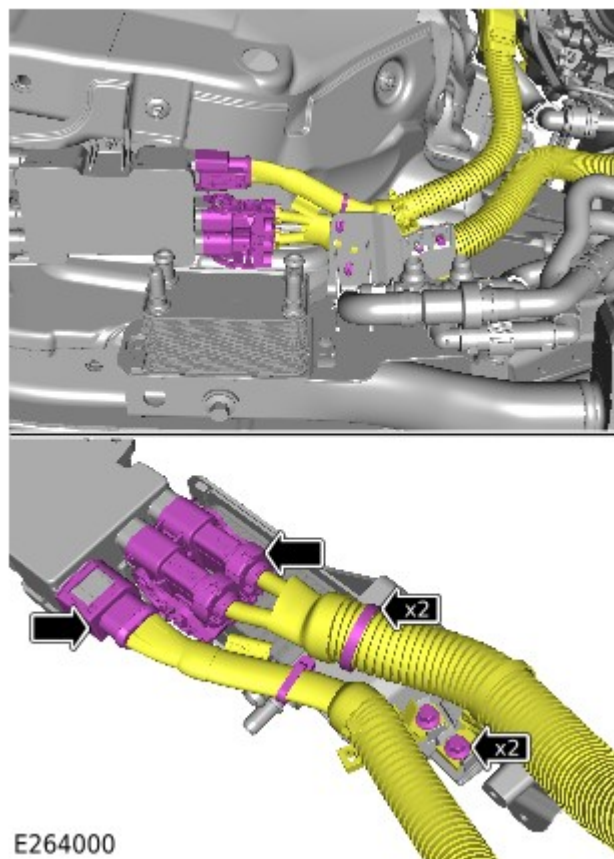
Disconnect the 3 coolant hoses.

29.



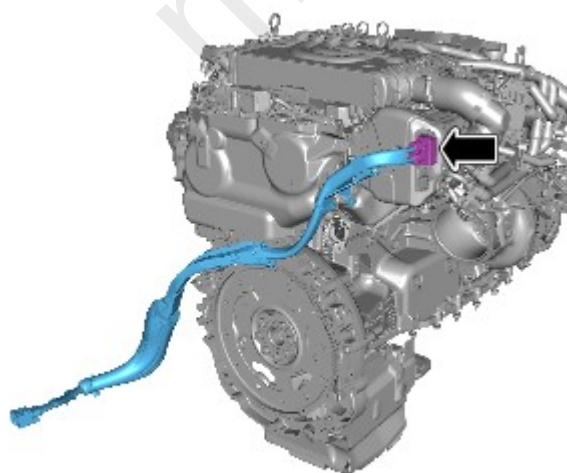
Disconnect the coolant hose.

30.



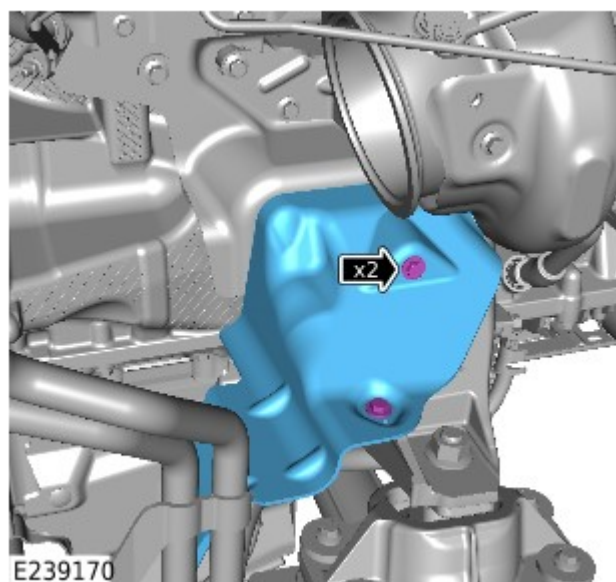
- Remove the 2 bolts.
- Release the 2 clips.
- Disconnect the 2 electrical connectors.

31.



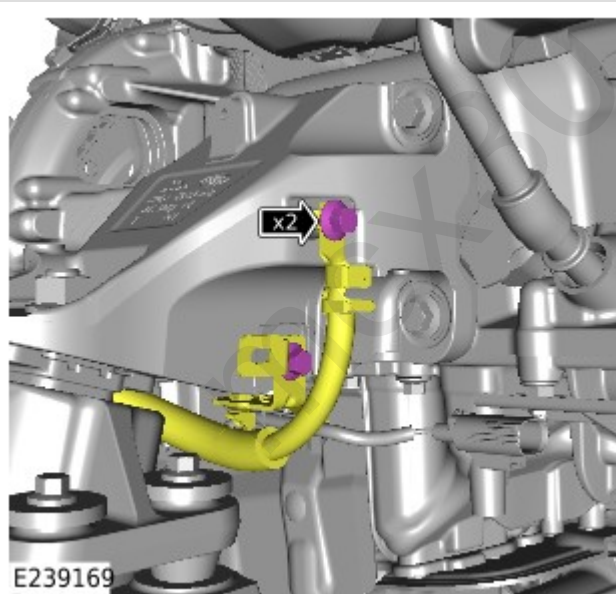
- Disconnect the electrical connector.
- Remove the wiring harness.

32.



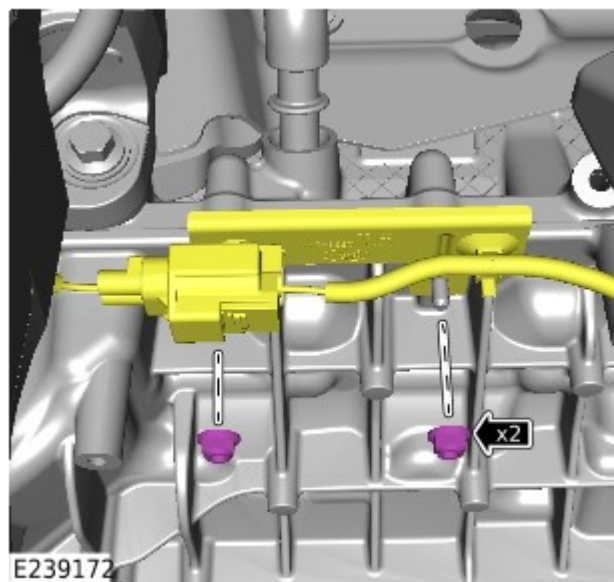
- Remove the 2 bolts.
- Remove the heatshield.

33.



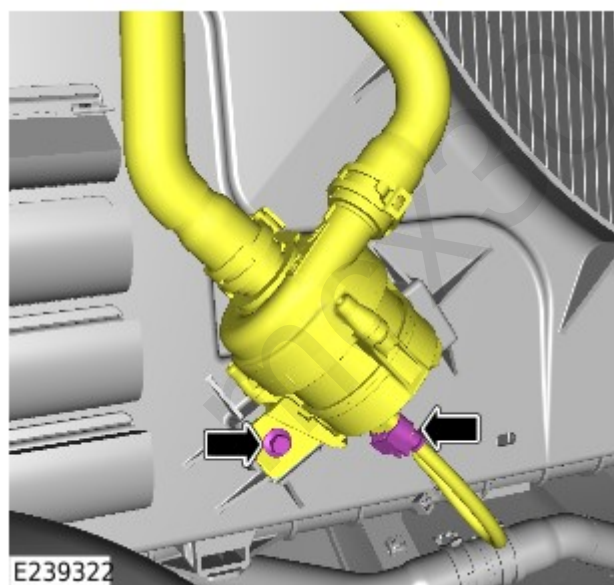
- Remove the 2 bolts.
- Position the wiring harness away from the engine.

34.



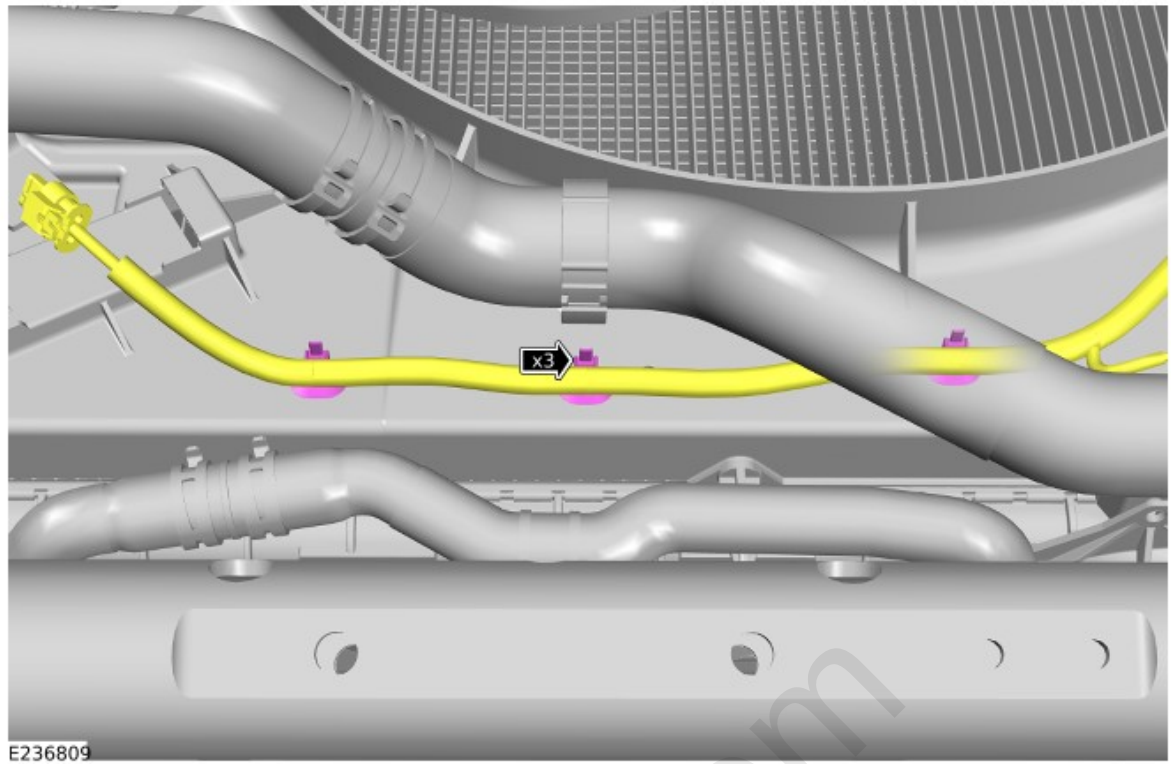
- Remove the 2 nuts.
- Position the wiring harness away from the engine.

35.



- Disconnect the electrical connector.
- Remove the bolt.

36.



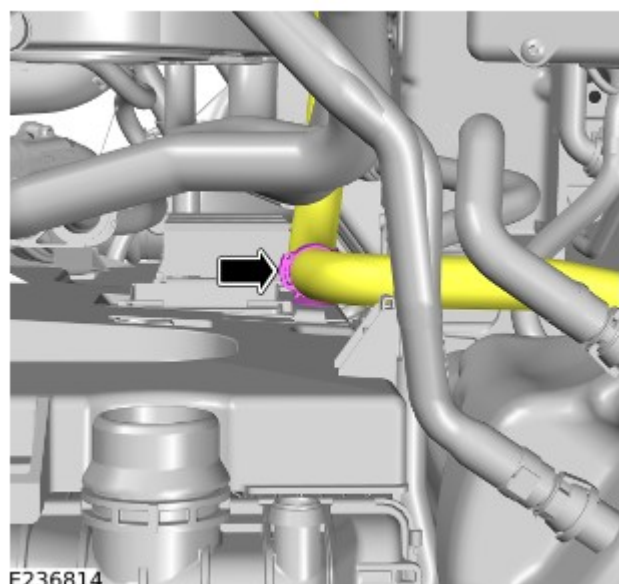
Release the 3 clips.

37.



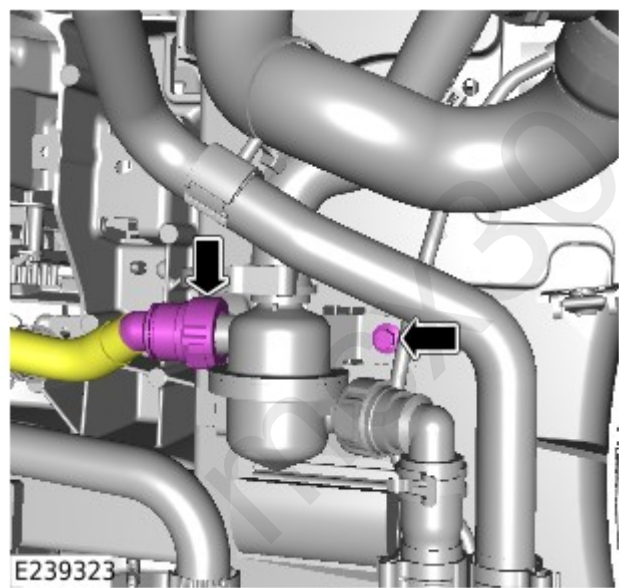
- Release the 3 clips.
- Position the wiring harness away from the cooling fan shroud.

38.



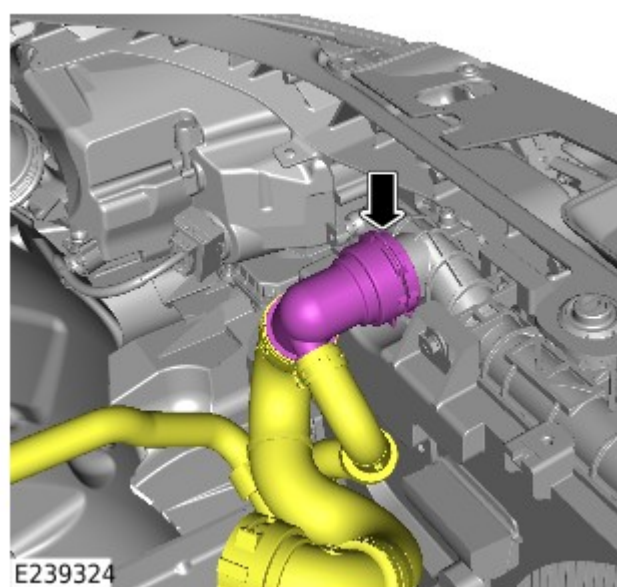
Release the clip.

39.



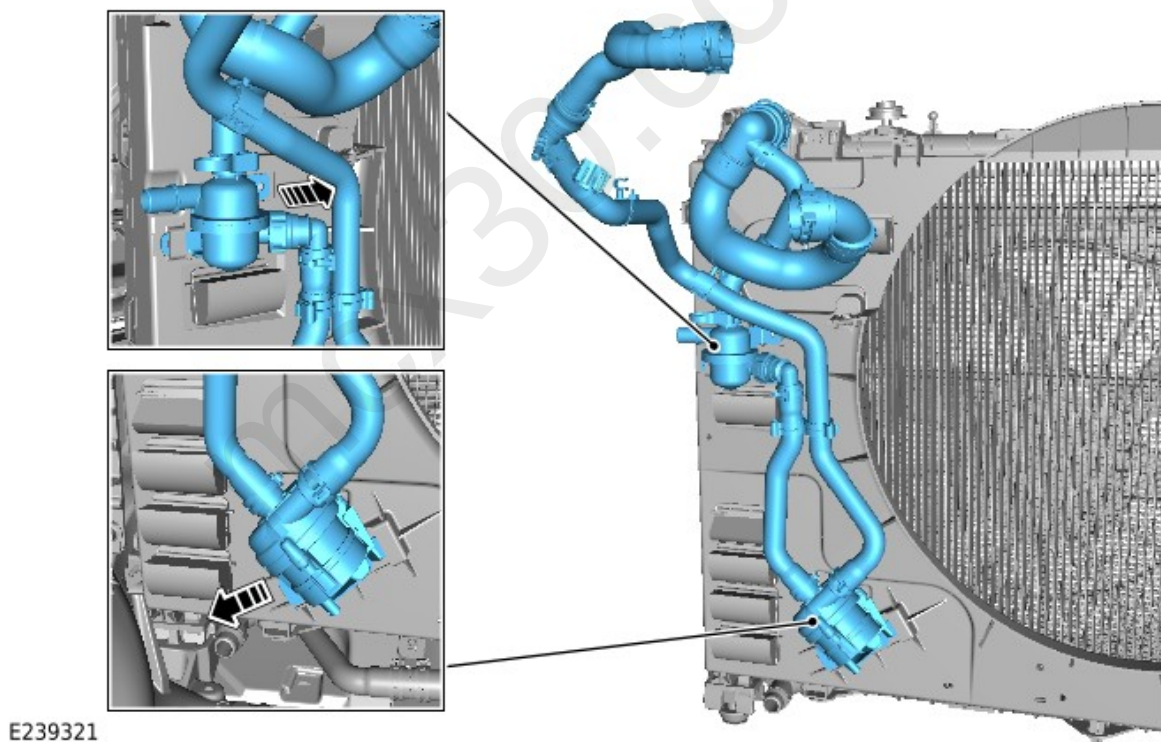
- Disconnect the coolant hose.
- Remove the bolt.

40.



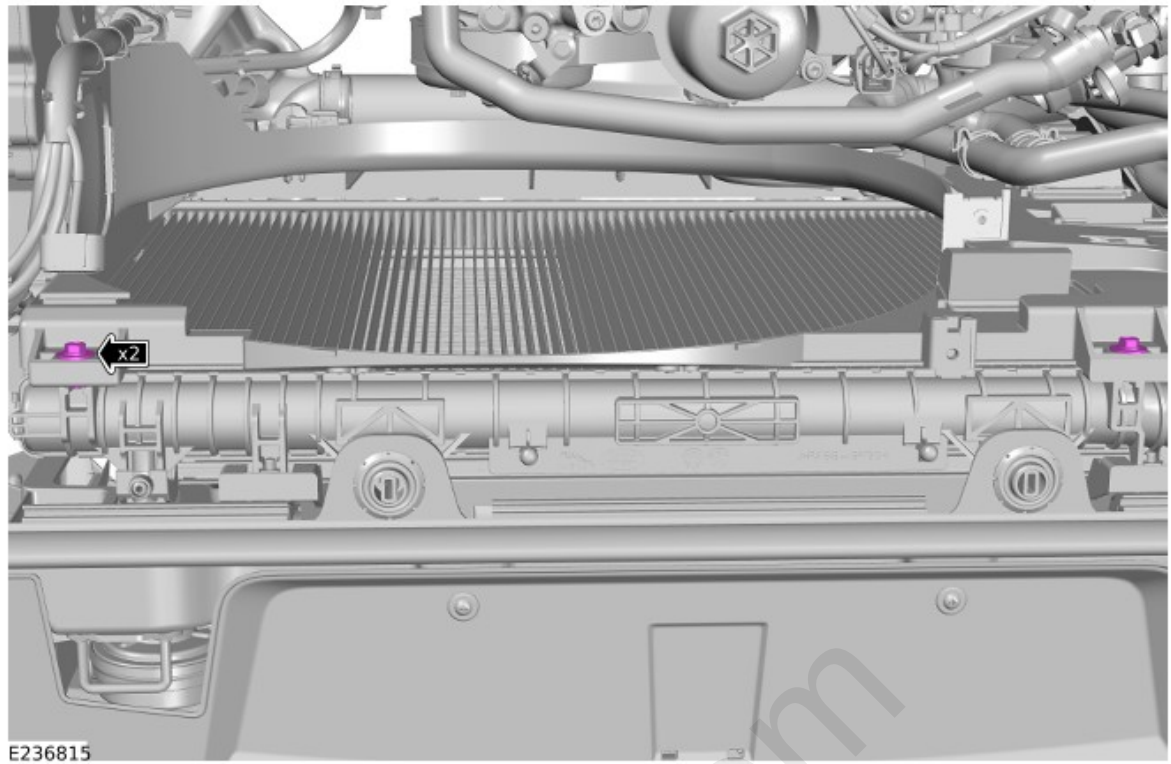
Disconnect the coolant hose.

41.



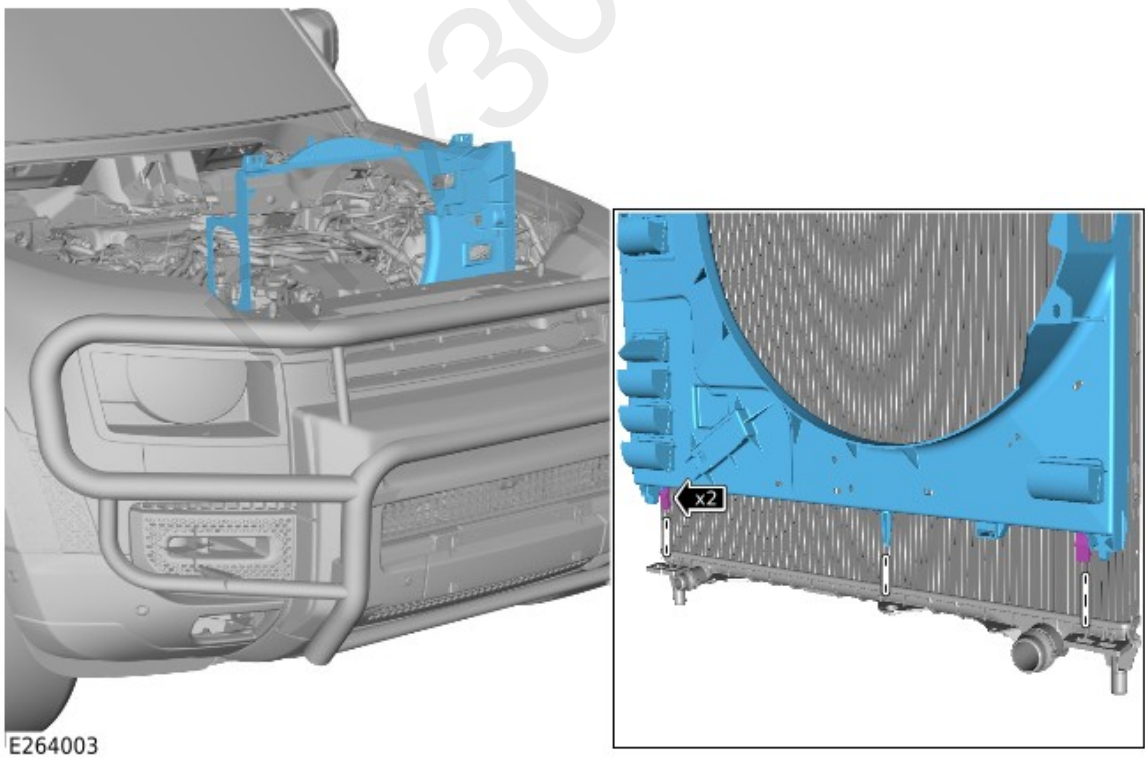
Remove the coolant hose assembly.

42.



Remove the 2 bolts.

43.

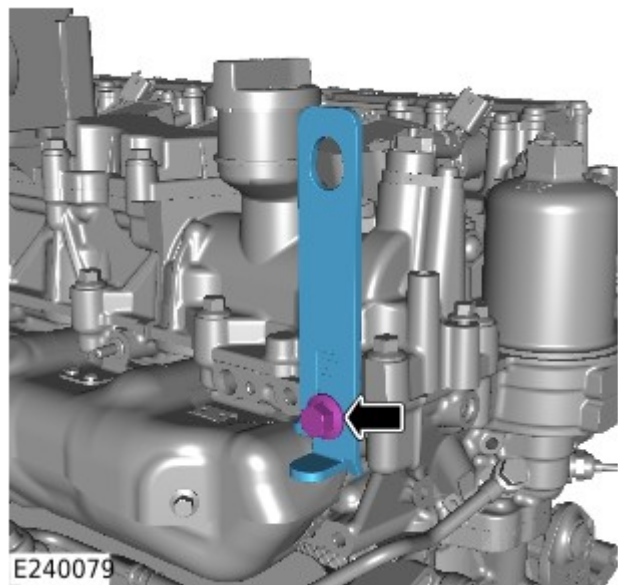


- Release the 2 clips.
- Remove the cooling fan shroud.

44.

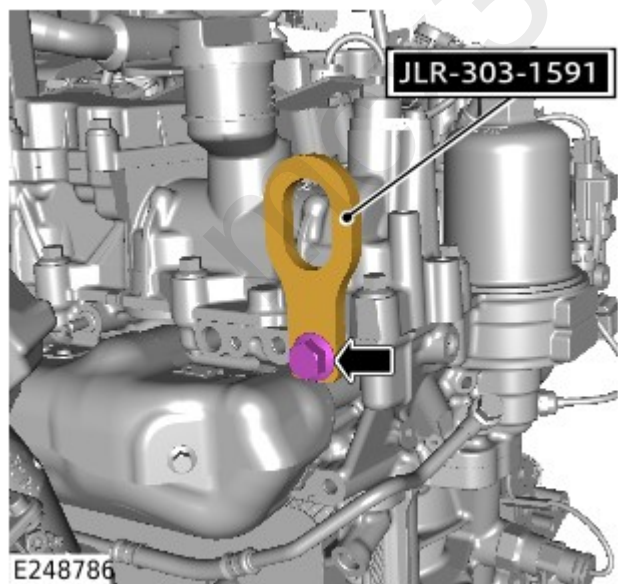
 NOTE:

If equipped.



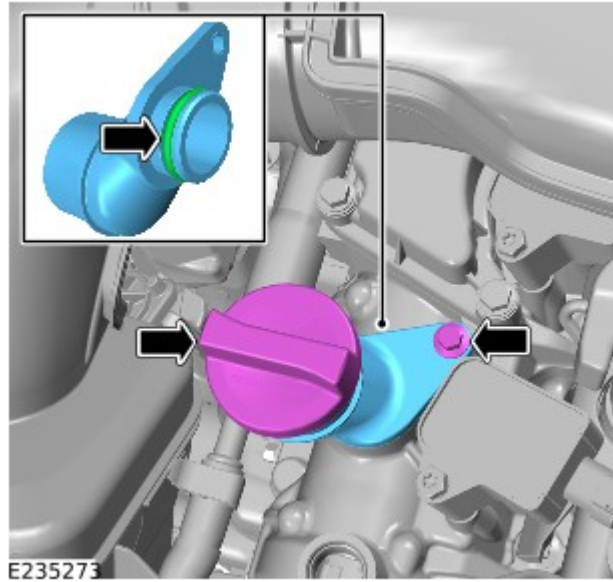
- Remove and discard the bolt.
- Remove and discard the lifting bracket.

45.



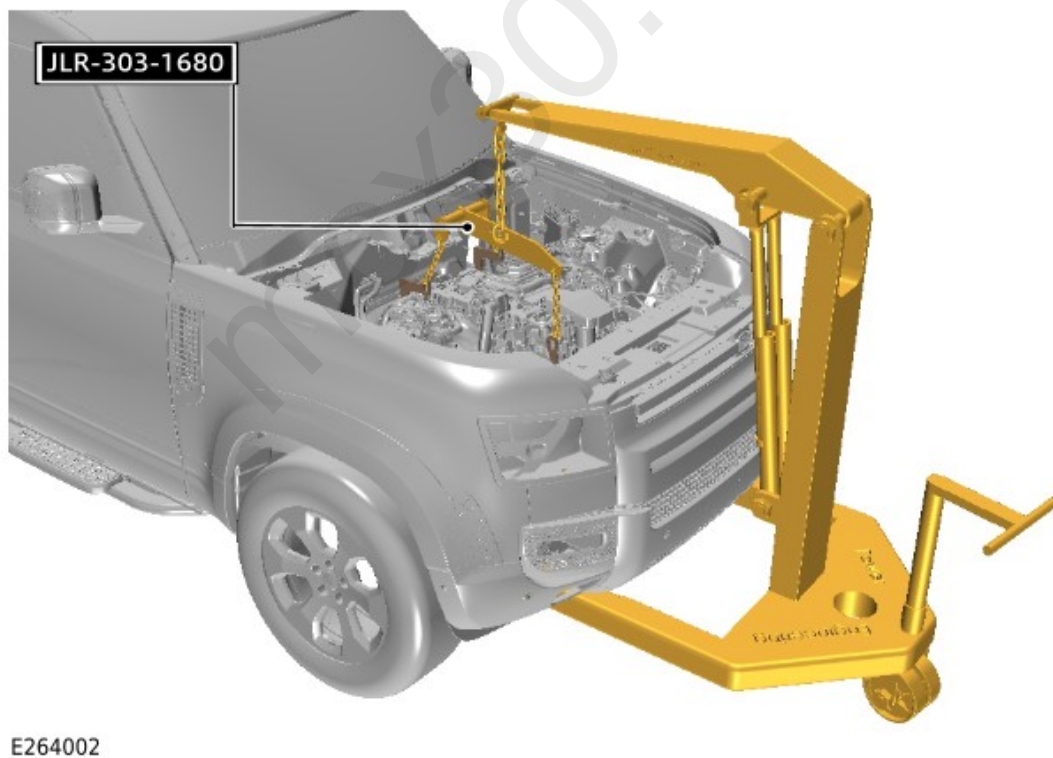
- Install the special tool.
Special Tool(s): [JLR-303-1591](#)
- Install, but do not fully tighten the bolt.

46.



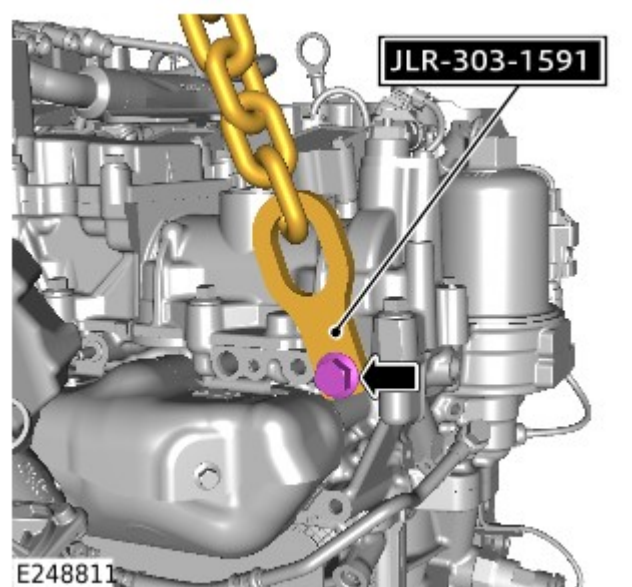
- Remove the bolt.
- Remove the oil filler.
- Remove and discard the O-ring seal.

47.



- Install a suitable hydraulic jib crane to the special tools as illustrated.
Special Tool(s): [JLR-303-1680](#), [JLR-303-1676](#), [JLR-303-1591](#)
- Operate the crane to align the special tool JLR-303-1591.

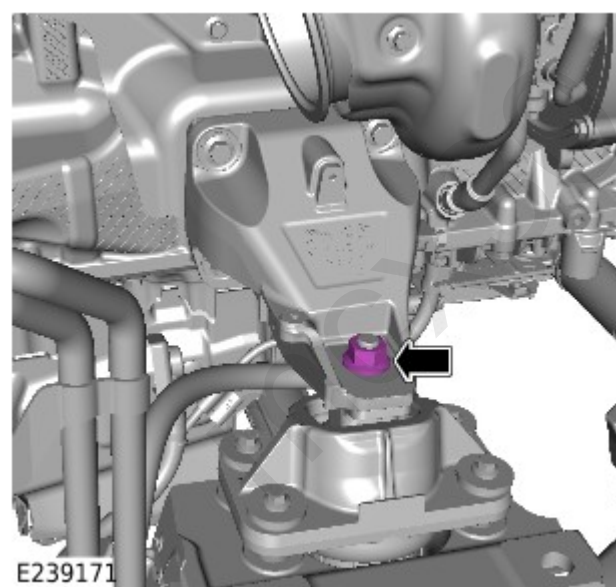
48.



Fully tighten the bolt.

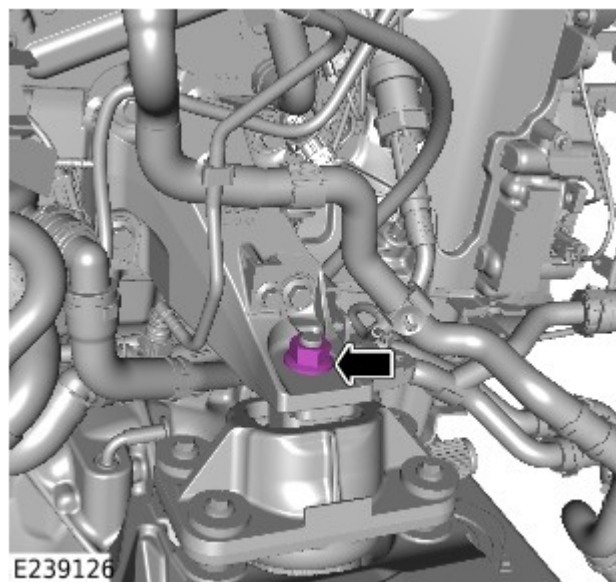
Torque: 50Nm

49.



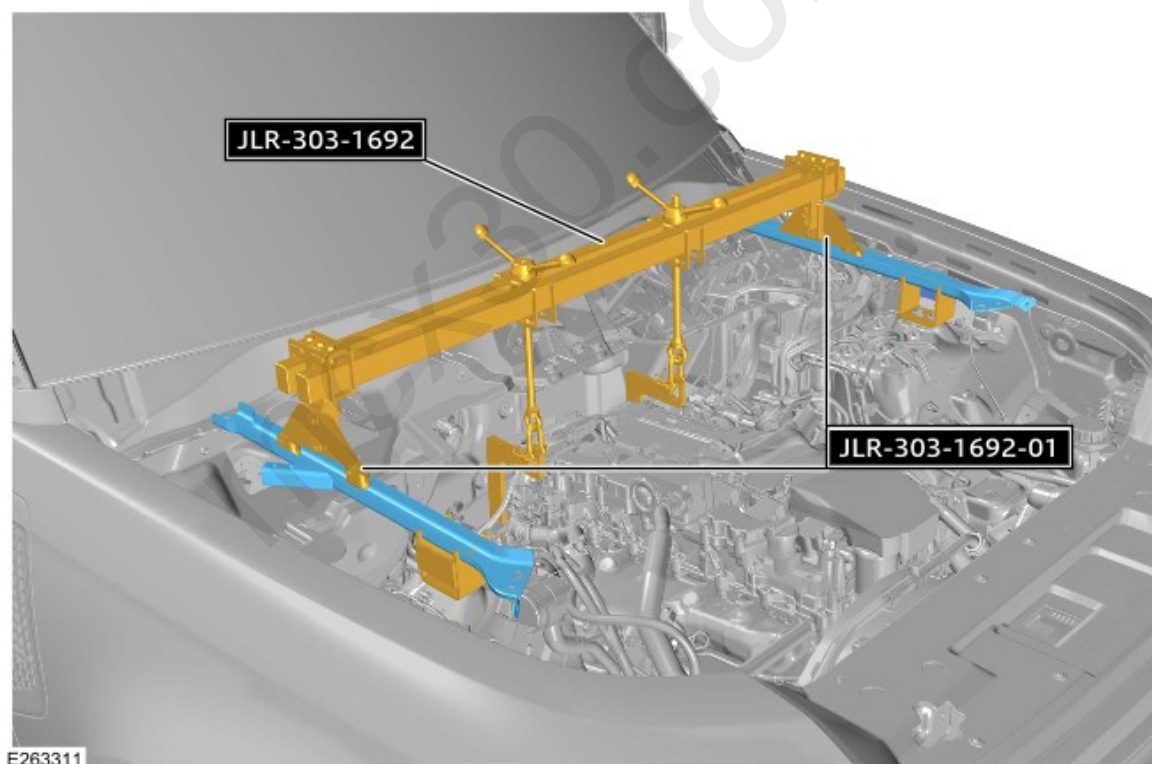
Remove and discard the nut.

50.



Remove and discard the nut.

51.



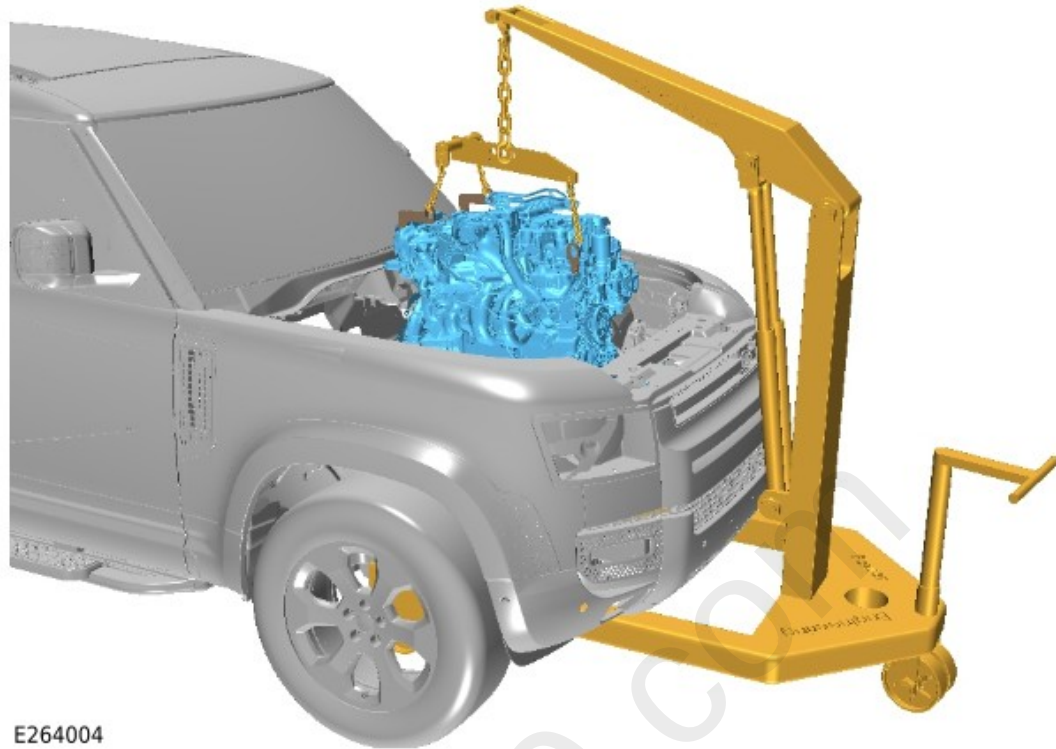
Remove the special tool.

Special Tool(s): [JLR-303-1692](#)

52.

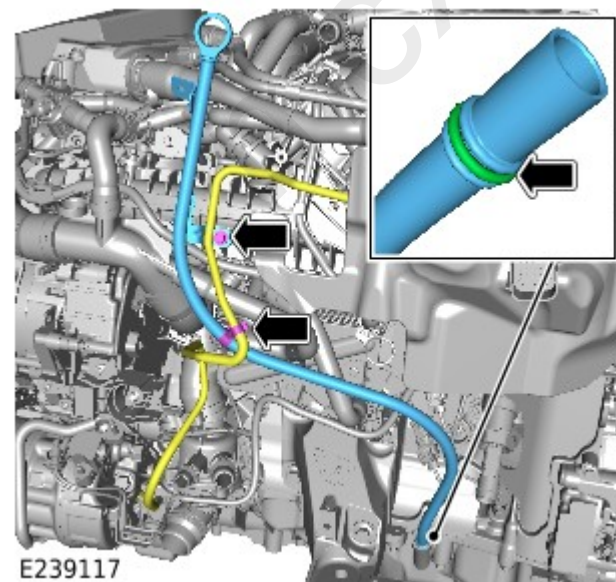
⚠ WARNING:

This step requires the aid of another technician.



Carefully remove the engine assembly.

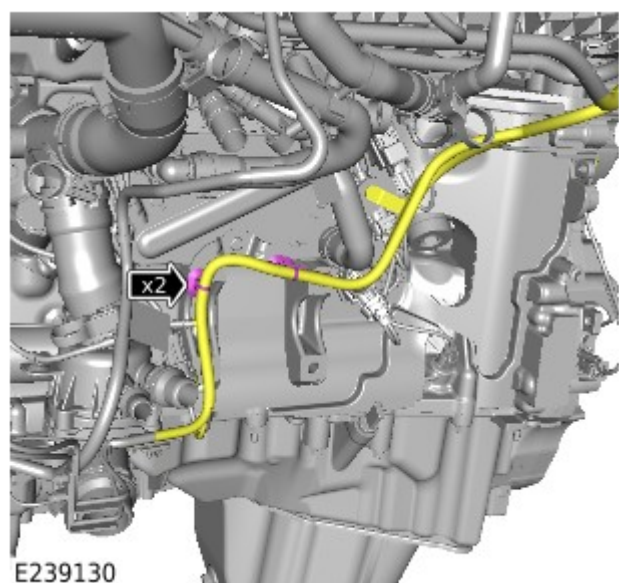
53.



- Remove the bolt.
- Release the clip.
- Remove the oil level gauge.

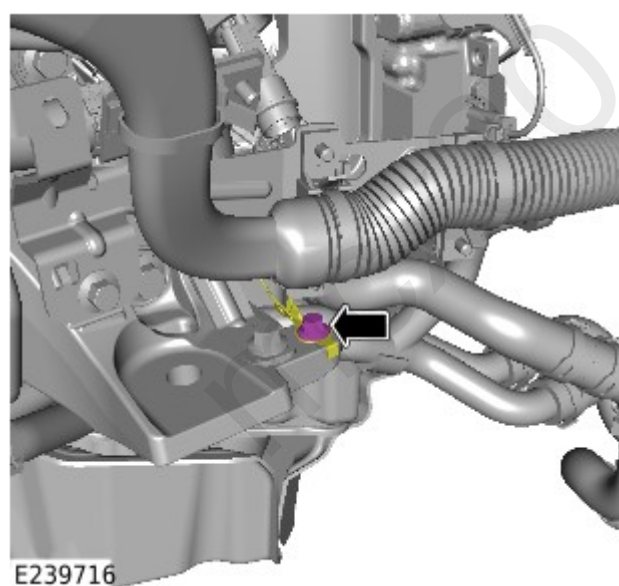
- Remove and discard the O-ring seal.

54.

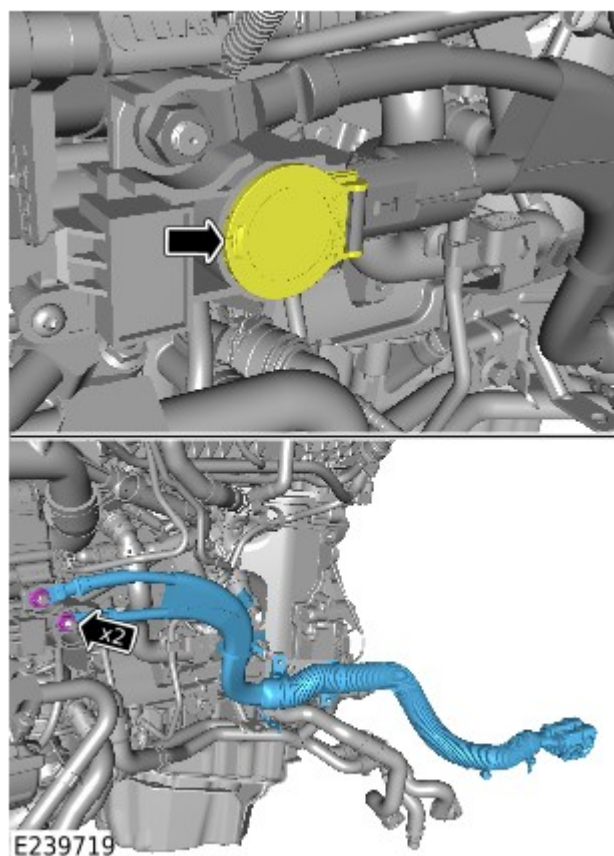


Release the 2 clips.

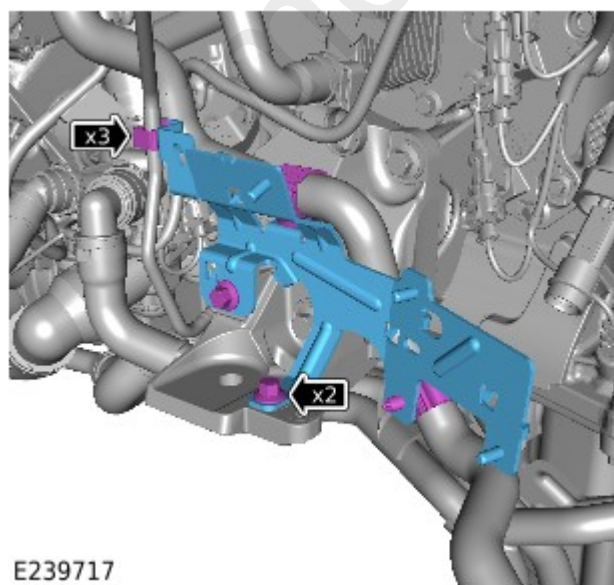
55.



Remove the bolt.



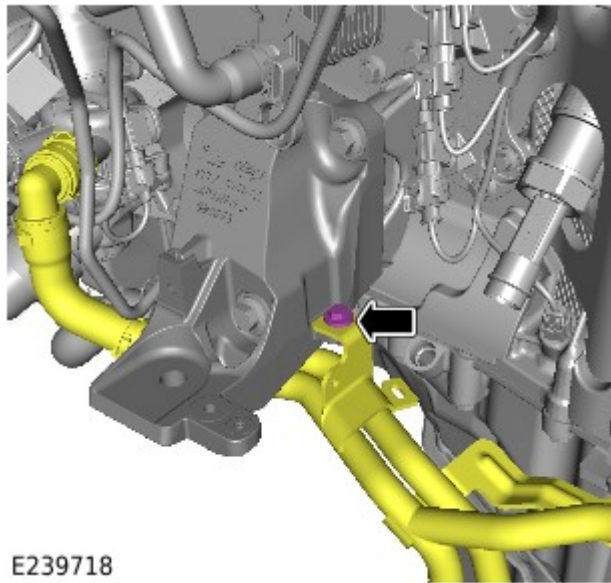
- Release the cover.
- Remove the 2 nuts.
- Remove the wiring harness.



- Release the 3 clips.
- Remove the 2 bolts.

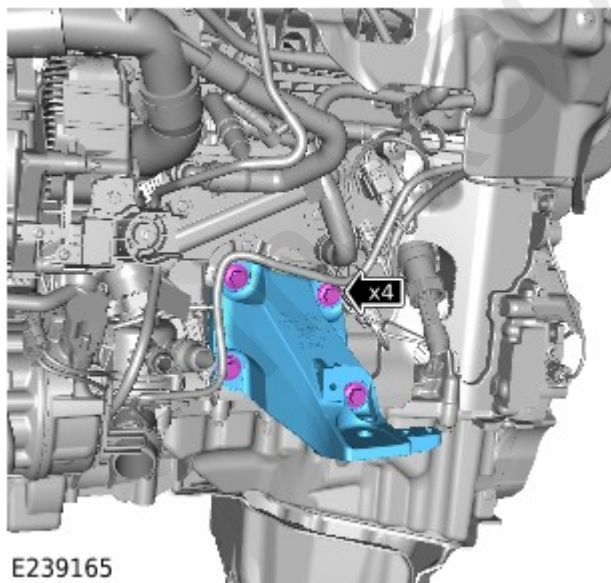
- Remove the bracket.

58.

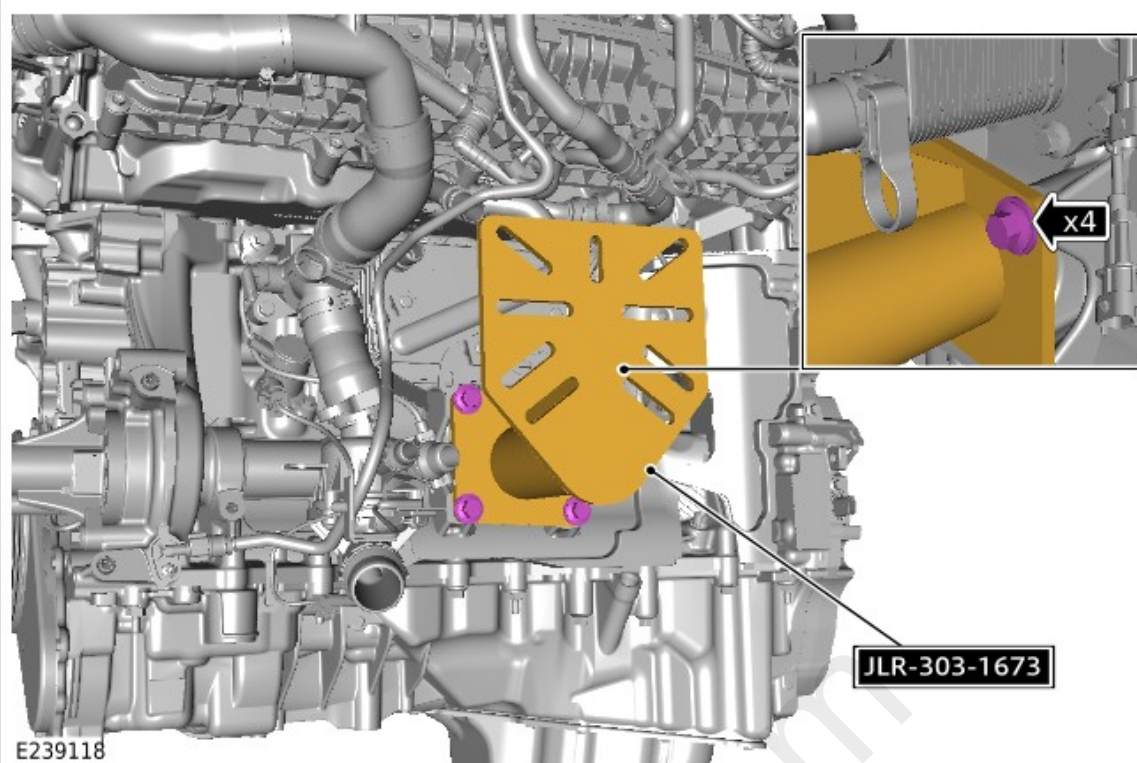


- Remove the bolt.
- Reposition the coolant pipes away from the left powertrain mount bracket.

59.



- Remove the 4 bolts.
- Remove the bracket.



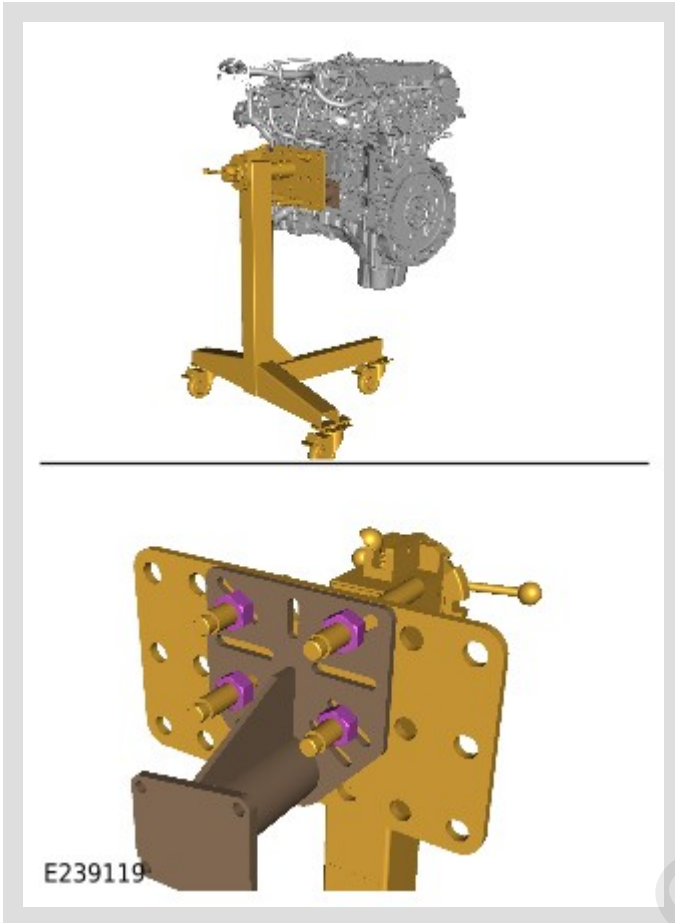
- Install the special tool as illustrated.

Special Tool(s): [JLR-303-1673](#)

- Install and tighten the 4 bolts.

Torque: **40Nm**

61.



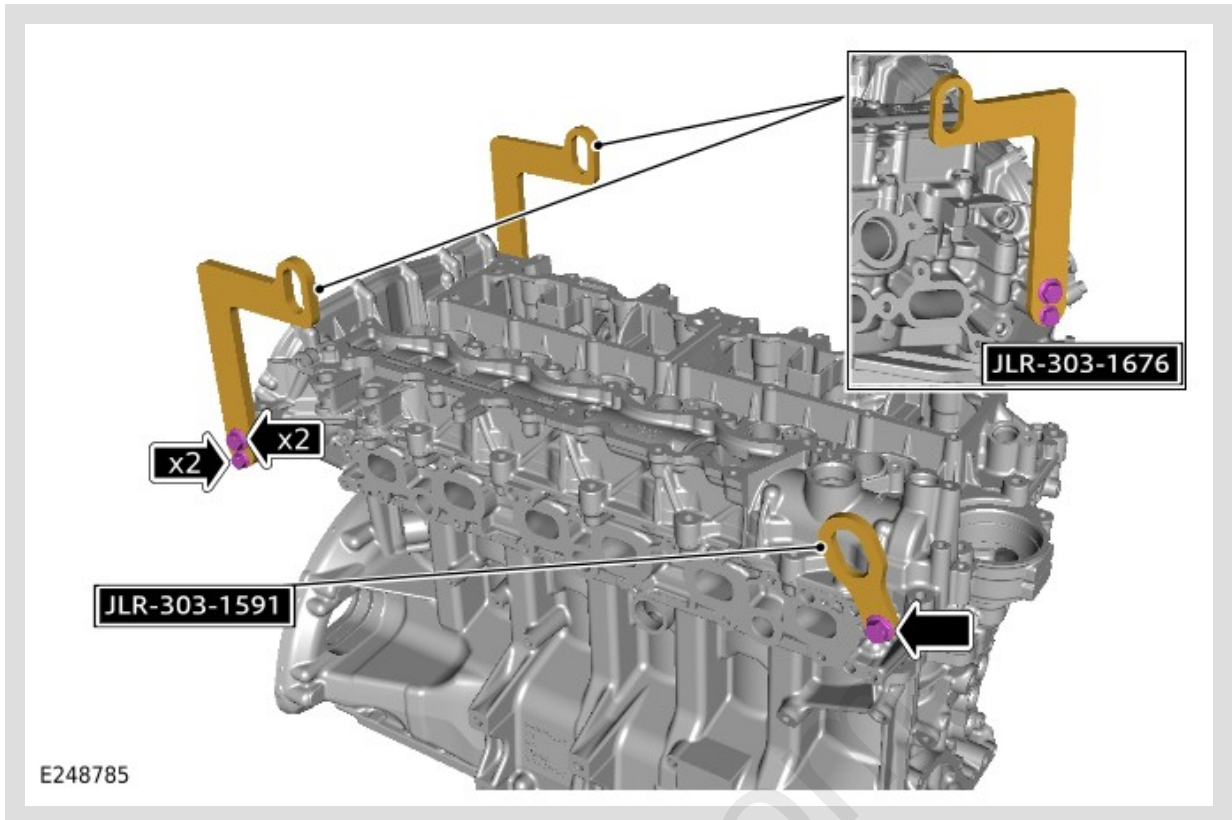
Install the engine assembly to a suitable engine stand following the manufacturers instructions.

General Equipment: [Engine stand](#)

62.

Remove the hydraulic jib crane.

General Equipment: [Hydraulic jib crane](#)



Remove the special tools.

Special Tool(s): [JLR-303-1591](#), [JLR-303-1676](#)