

PUBLISHED: 15-AUG-2017
2015.0 RANGE ROVER (LG), 303-01

ENGINE - TDV8 4.4L DIESEL

LEFT CAMSHAFT (G1509162)

REMOVAL AND INSTALLATION

12.13.21	CAMSHAFTS - LH BANK - RENEW	LEFT HAND DRIVE, 4400 CC, TDV8	9.3	USED WITHINS	
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SPECIAL TOOL(S)

303-1239



E81374

303-1239

Adjustment Tool,
Camshaft



E131271

JLR-303-1568

Locking Tool,
Camshaft



E148198

JLR-303-1620

Timing Pin



E131589

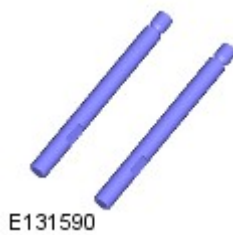
JLR-310-246

Locking Tool, Fuel Injection
Pump



JLR-310-247

Locking Tool,
Camshaft



JLR-310-248

Aligner, Fuel
Pump

PART(S)

STEP	REPLACE PART / RENEW PART	PART NAME	
Installation Step 6	Renew Part	Camshaft sprocket bolt	2
Installation Step 37	Renew Part	Fuel pump O-ring seal	1
Installation Step 39	Renew Part	Fuel Injection Pump retaining bolts	3

REMOVAL

1. Refer to: [Diesel Fuel System Health and Safety Precautions](#) (100-00 General Information, Description and Operation).
2. Disconnect the battery ground cable.
Refer to: [Specifications](#) (414-01 Battery, Mounting and Cables, Specifications).

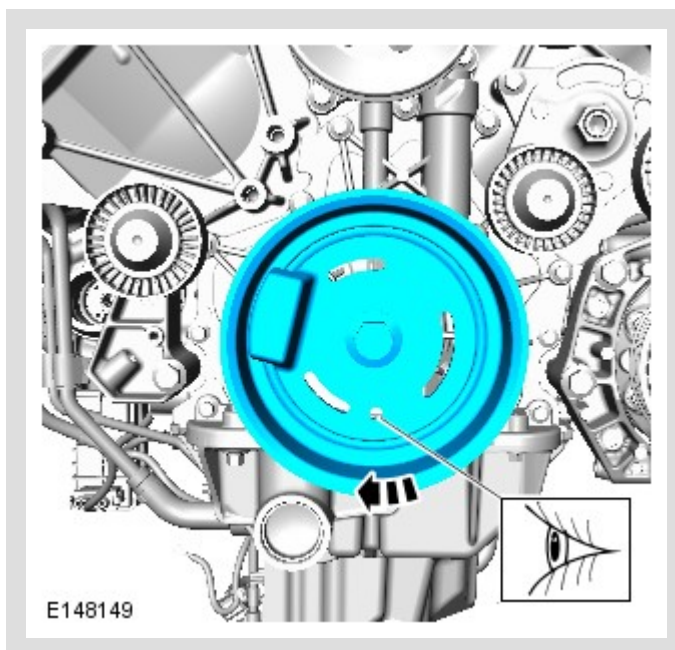
3. Refer to: [Cooling Fan](#) (303-03F Engine Cooling - TDV8 4.4L Diesel, Removal and Installation).

4. Refer to: [Left Valve Cover](#) (303-01E Engine - TDV8 4.4L Diesel, Removal and Installation).

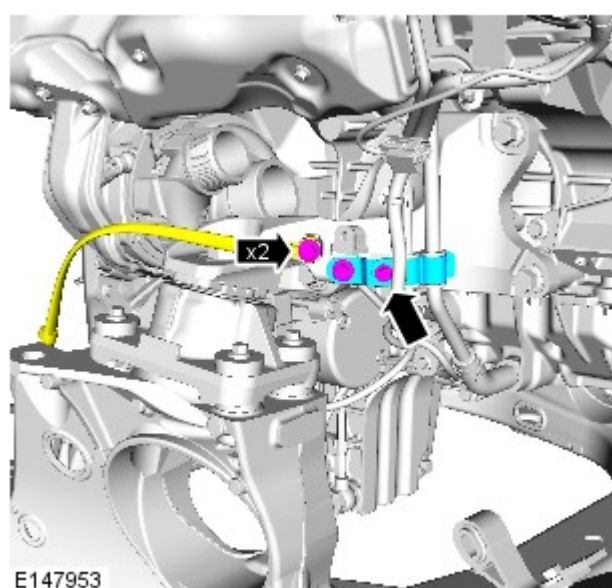
5. Refer to: [Generator](#) (414-02B Generator and Regulator - TDV8 4.4L Diesel, Removal and Installation).

6.  **CAUTION:**

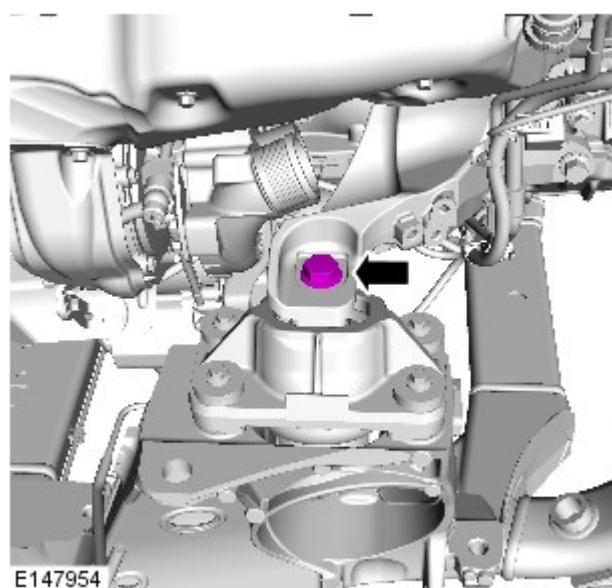
Only rotate the crankshaft clockwise.



7.



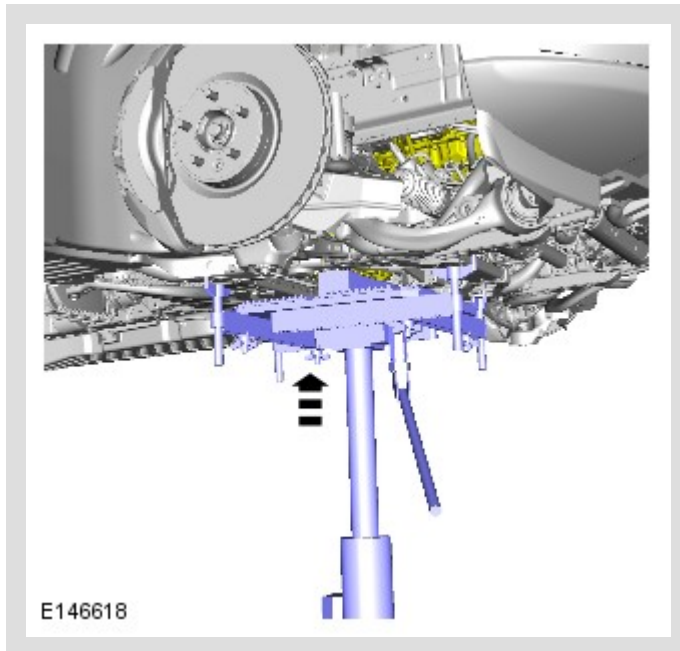
8.



9.

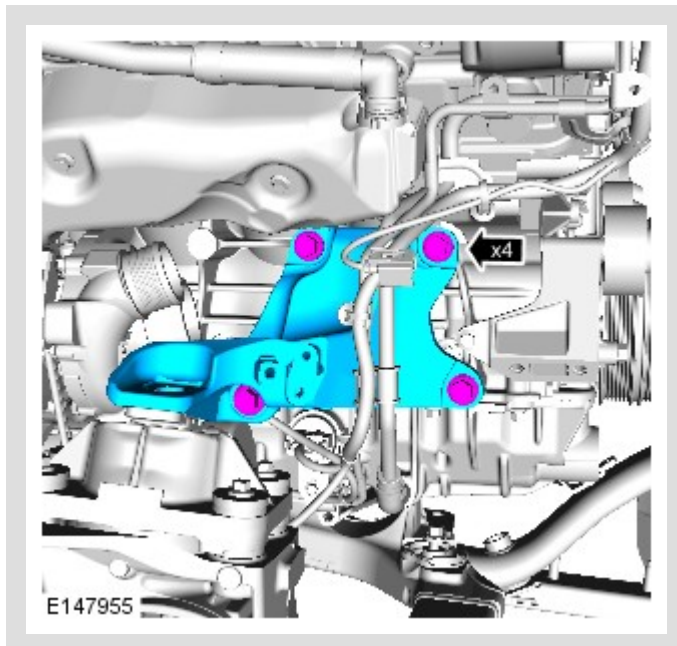
⚠ CAUTION:

Use a wooden block to protect the oil pan when supporting the engine.

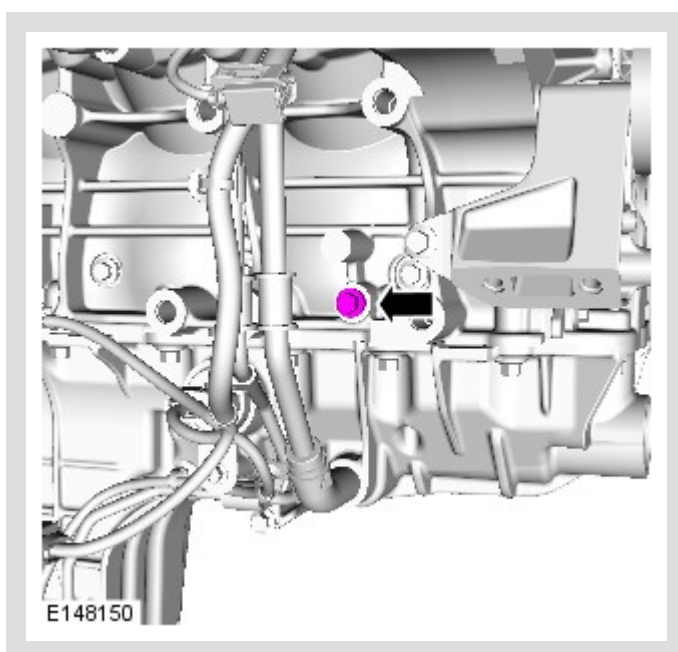


Using a suitable hydraulic jack, raise and support the engine.

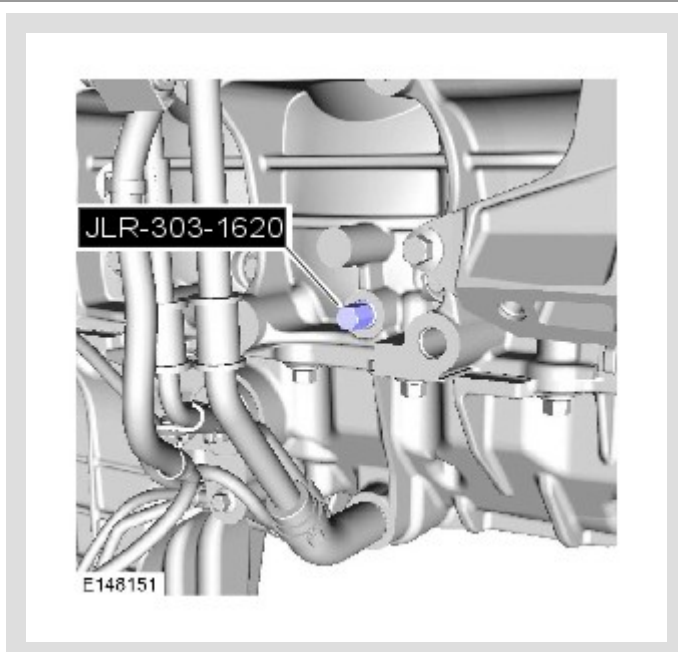
10.



11.

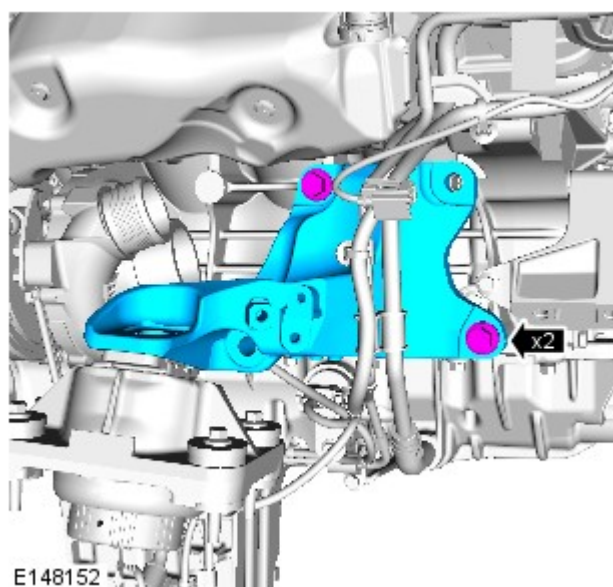


12.

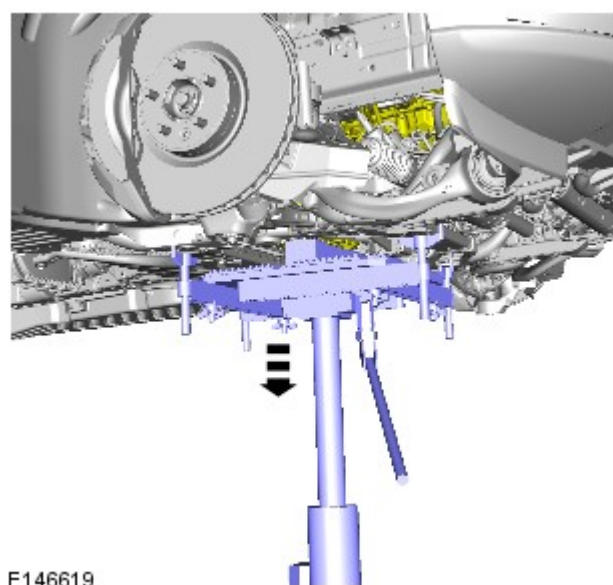


Special Tool(s): [JLR-303-1620](#)

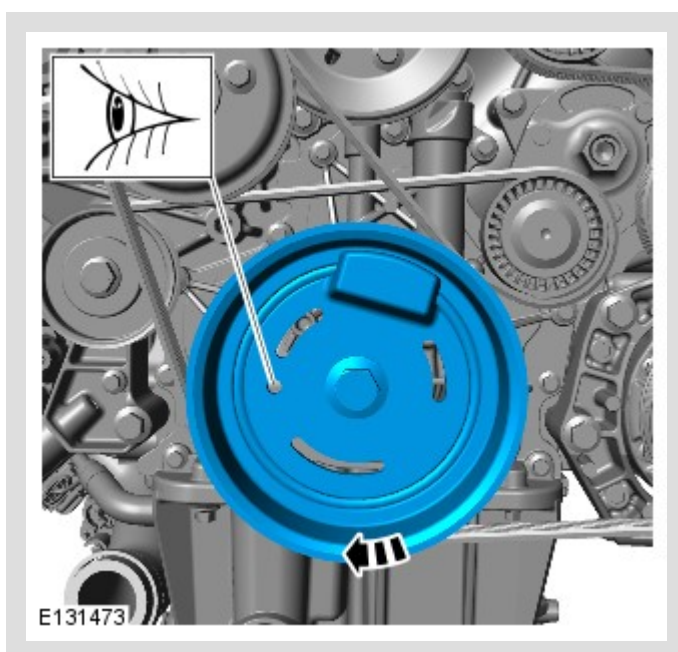
13.



14.



15.



Rotate the engine clockwise until the crankshaft contacts the timing pin. Do not attempt to rotate the engine counter clockwise.

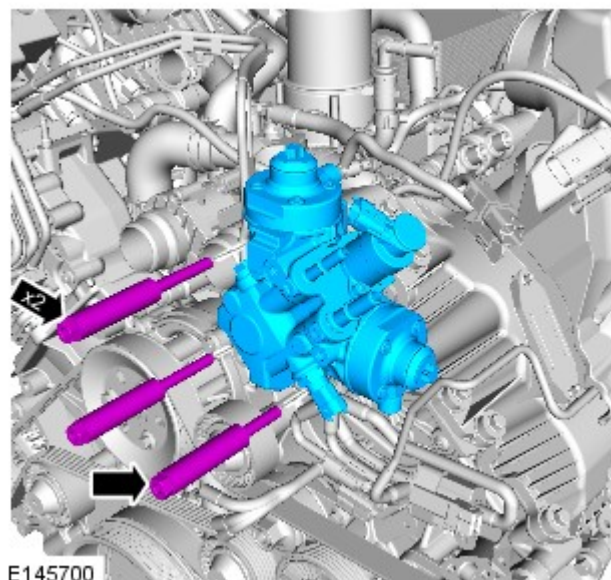
16.

⚠ CAUTION:

Discard the bolts.

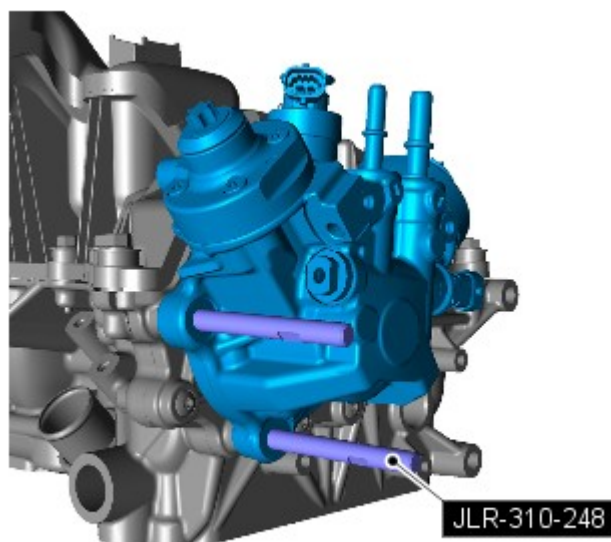
⚠ NOTE:

Note the different lengths of the bolts.



E145700

17.



E131307

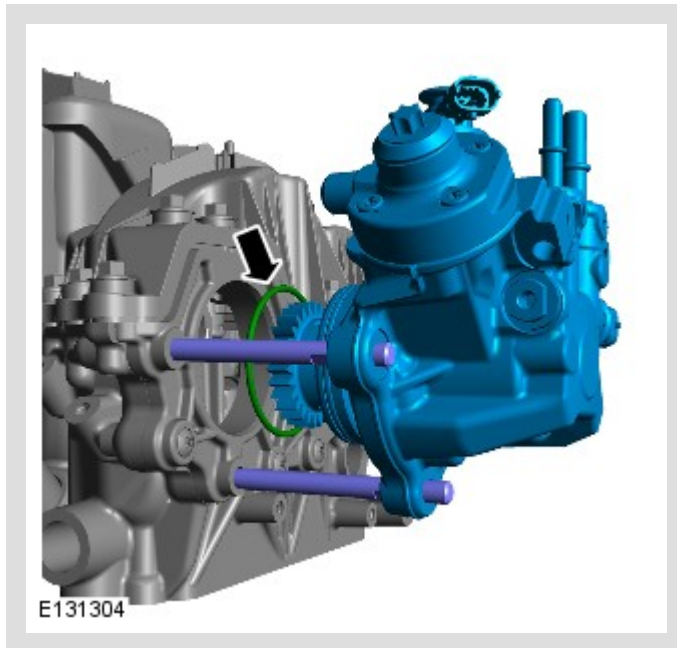
Install 2 guide pins in the original location of the 2 bolts.
Special Tool(s): [JLR-310-248](#)

18.

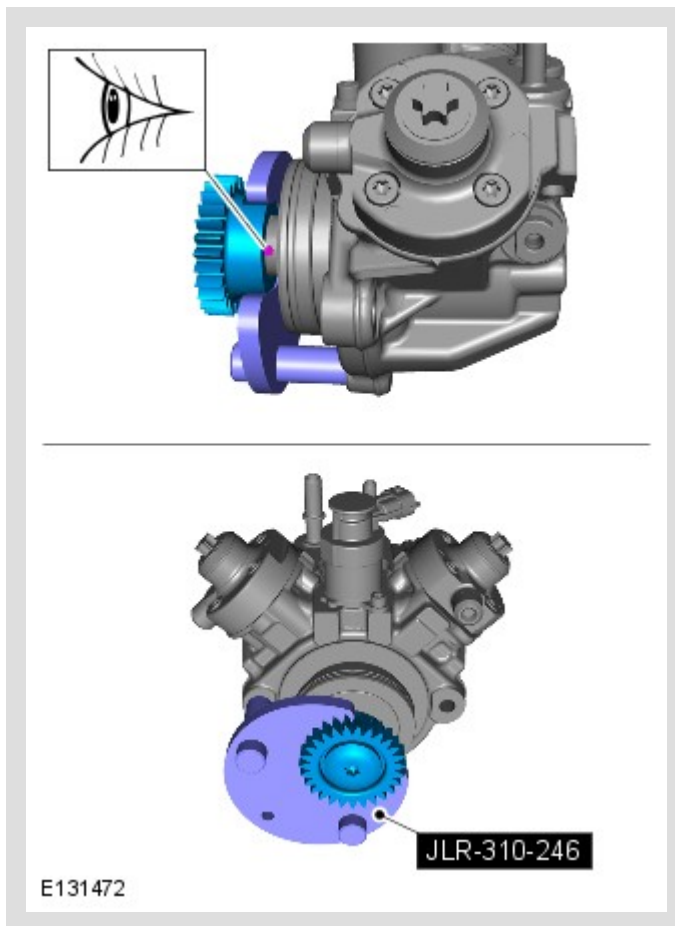


NOTE:

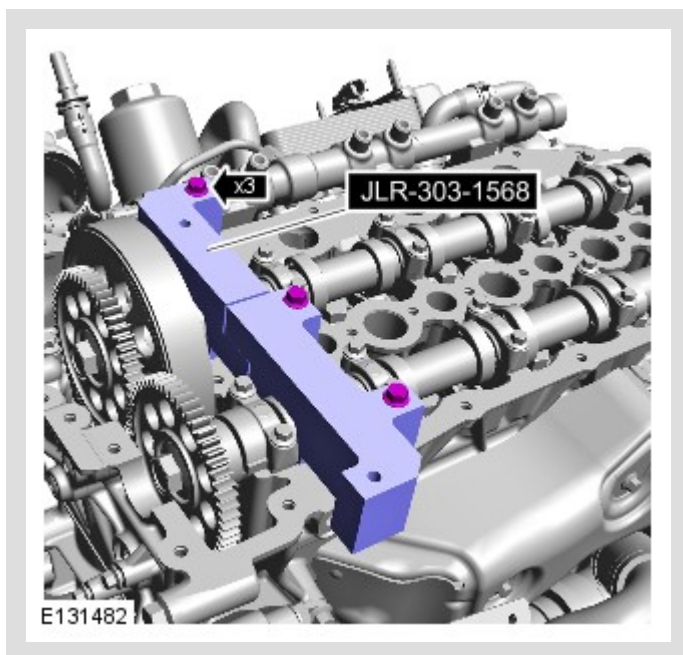
Discard the O-ring seal.



19.

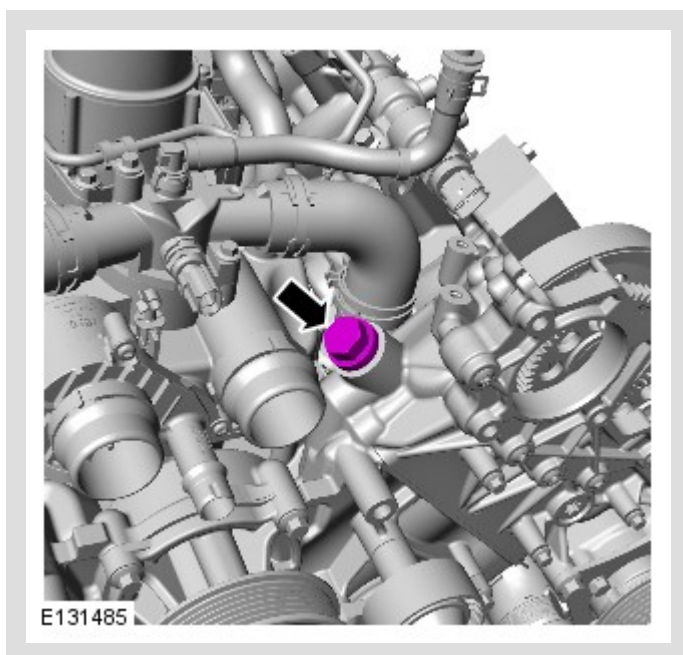


Special Tool(s): [JLR-310-246](#)



Special Tool(s): [JLR-303-1568](#)

21.



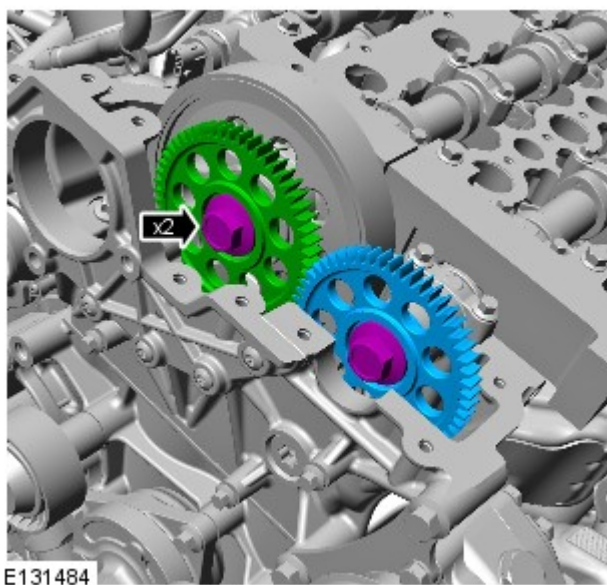
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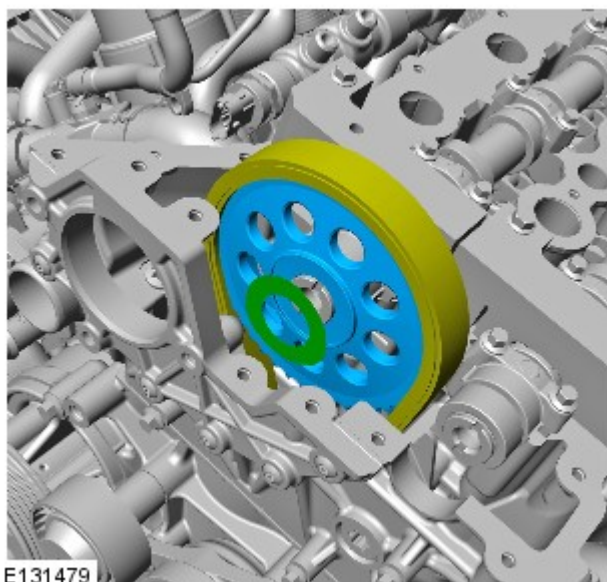




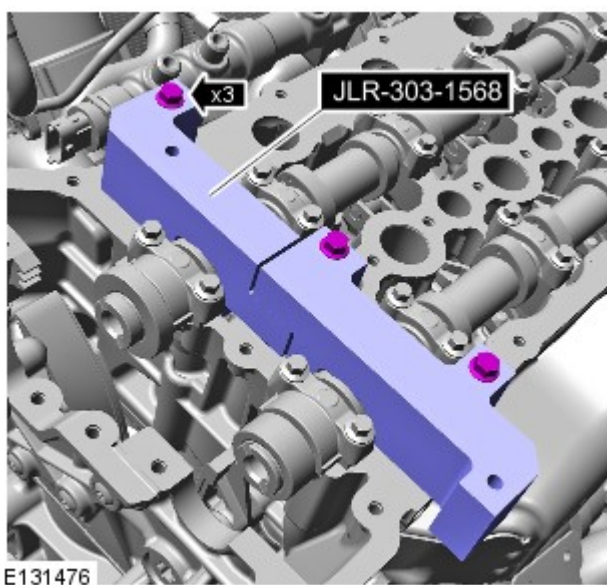
CAUTION:

Discard the bolts.





24.



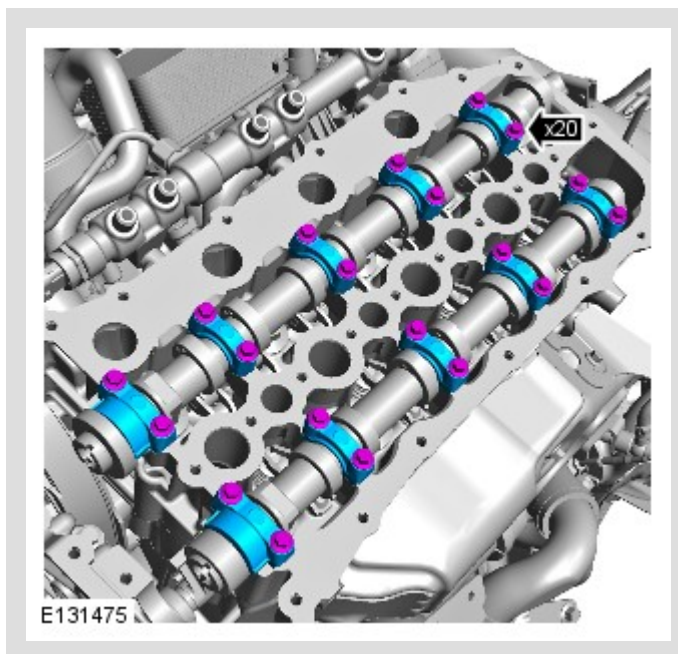
Remove the special tool.

25.



CAUTION:

Note the fitted position of the component prior to removal.

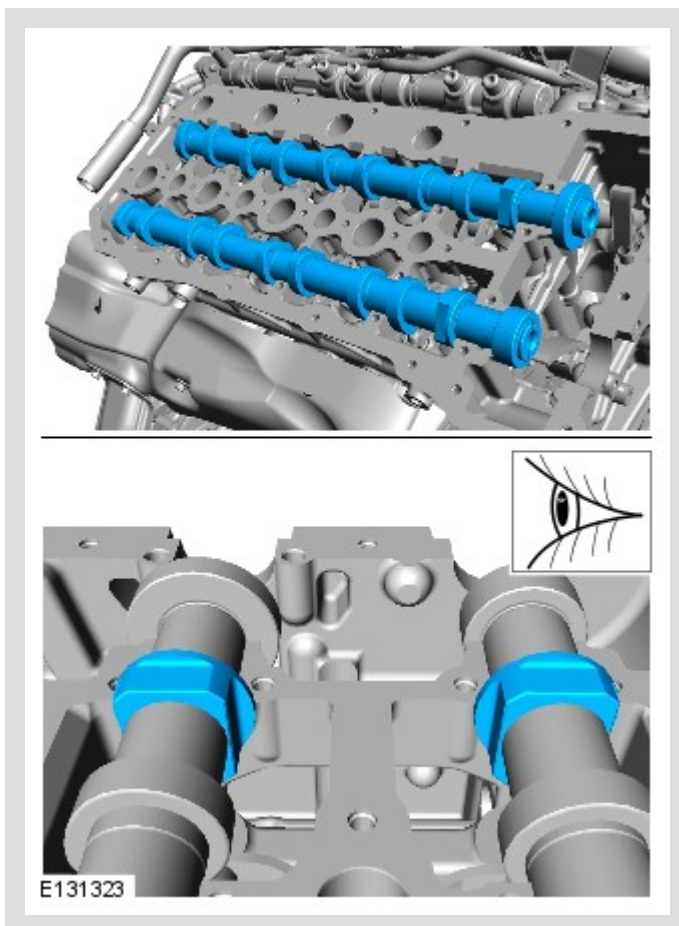


26.



NOTE:

Right-hand shown, left-hand similar.



INSTALLATION

1.



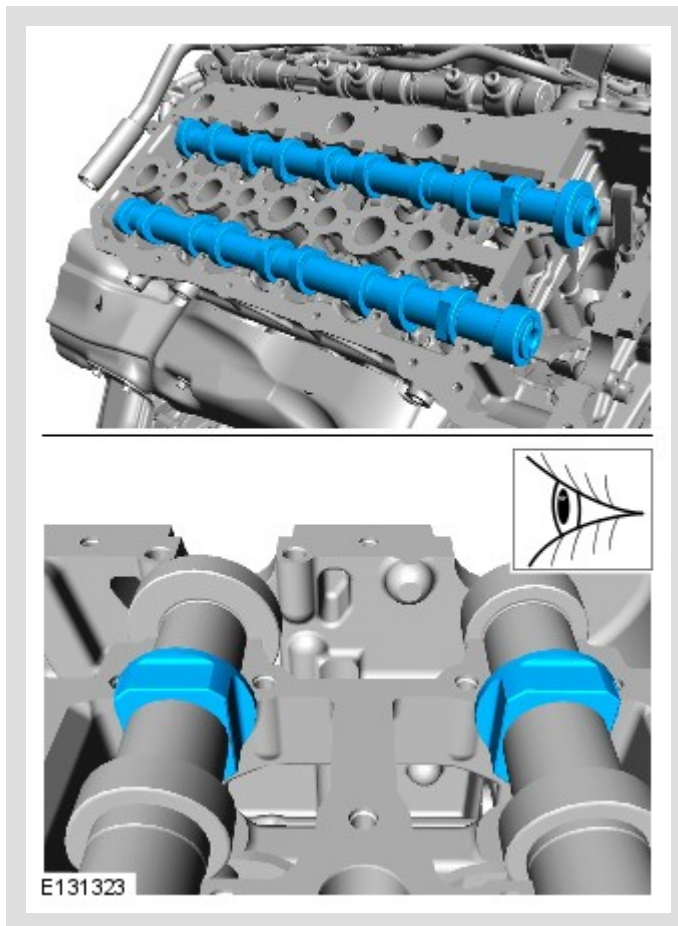
CAUTION:

Make sure that the mating faces are clean and free of foreign material.



NOTES:

- Lubricate the camshafts and the camshaft bearing caps with oil meeting Land Rover specification prior to installation.
- Align to the orientation noted on removal.
- Right-hand shown, left-hand similar.

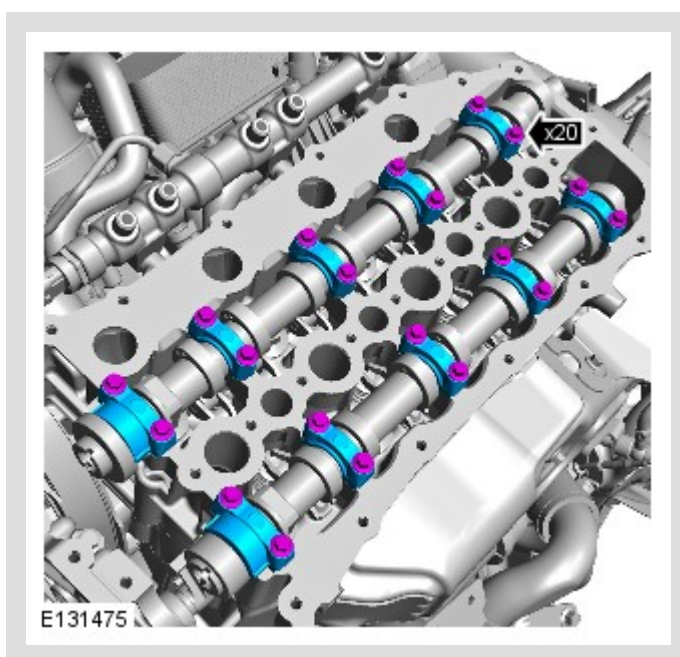


2.



CAUTIONS:

- Make sure that these components are installed to the noted removal position.
- Only tighten the bolts finger-tight at this stage.

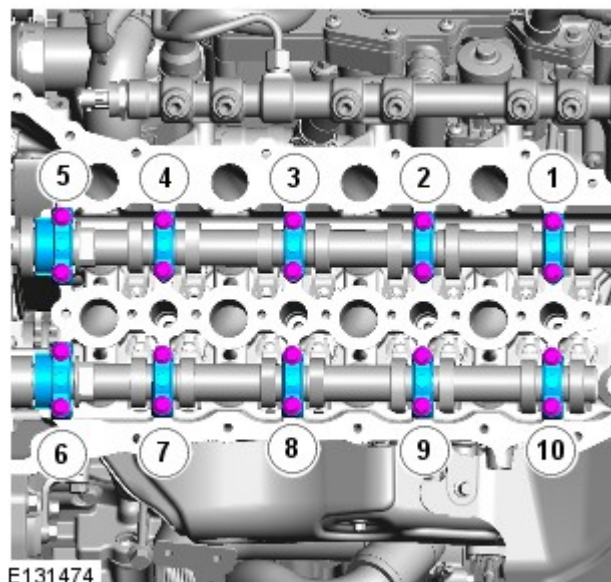


3.



CAUTION:

Tighten the bolts in the sequence shown.



Torque:

Stage 1: Bolts 3,4,2,5,1 5 Nm

Stage 2: Bolts 8,7,9,6,10 5 Nm

Stage 3: Bolts 5,4,3,2,1 10 Nm

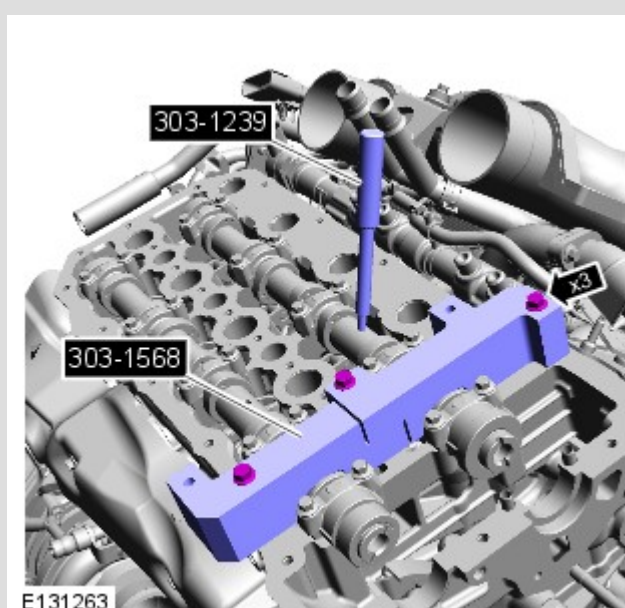
Stage 4: Bolts 10,9,8,7,6 10 Nm

4.



NOTE:

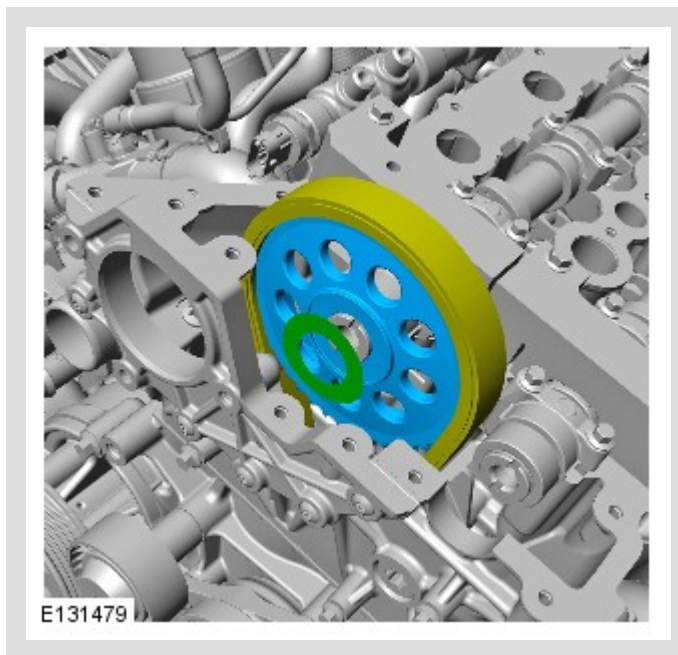
Right-hand shown, left-hand similar.



■ *Special Tool(s):* [JLR-303-1568](#)

- *Special Tool(s):* [303-1239](#)

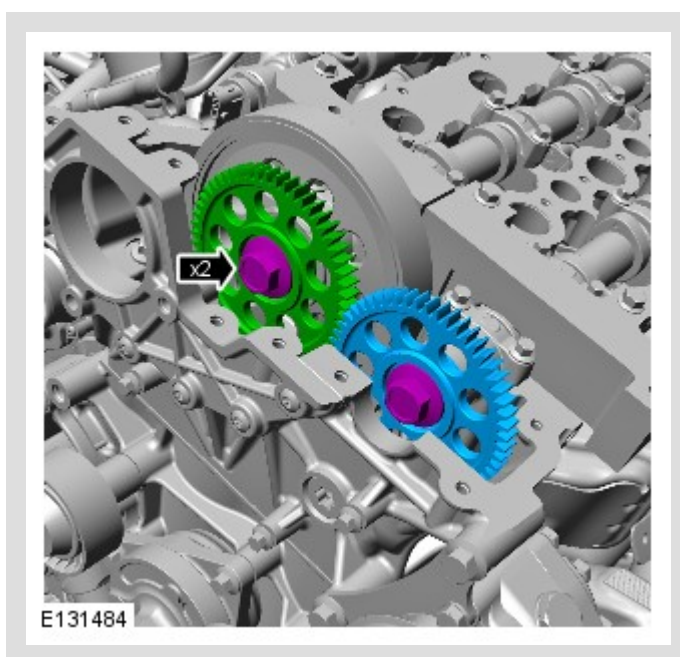
5.



6.

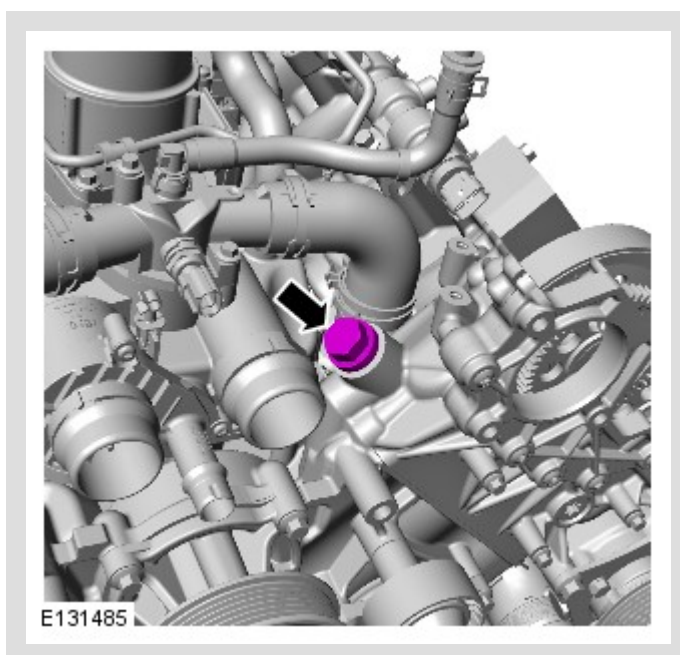
ⓘ **CAUTIONS:**

- Make sure that new bolts are installed.
- Only tighten the bolts finger-tight at this stage.



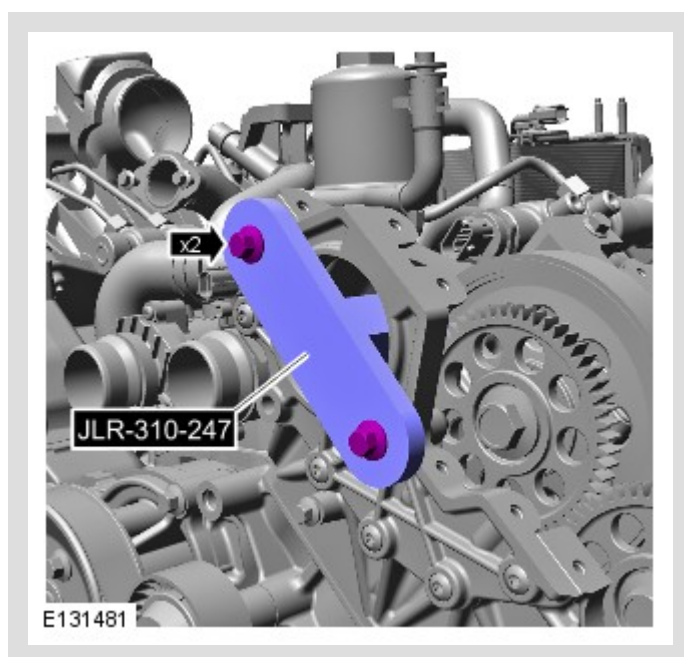
Renew Part: *Camshaft sprocket bolt : 2 .*

7.



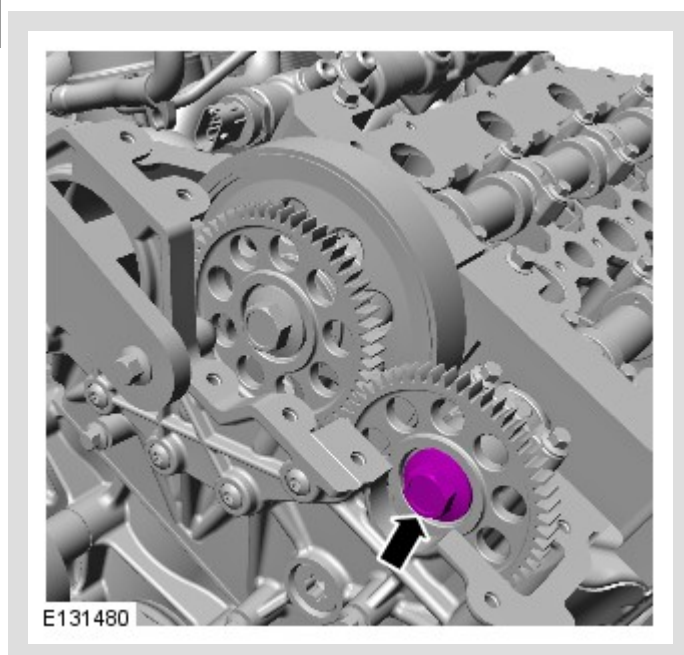
Torque: **65 Nm**

8.



Special Tool(s): [JLR-310-247](#)

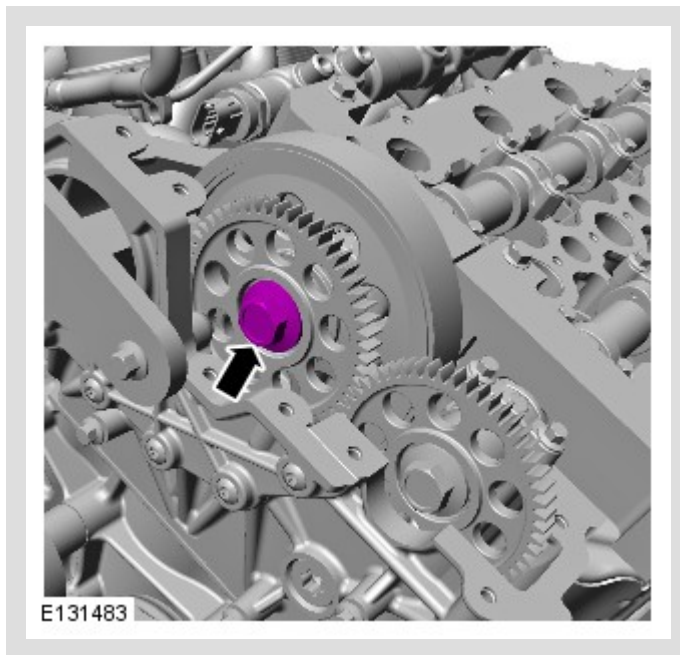
9.



Torque:

Stage 1: 80 Nm

10.

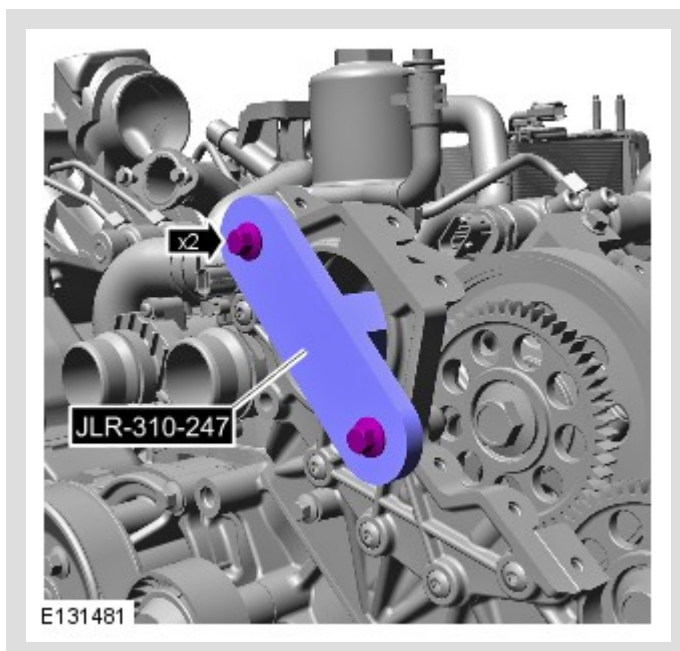


Torque:

Stage 1: 80 Nm

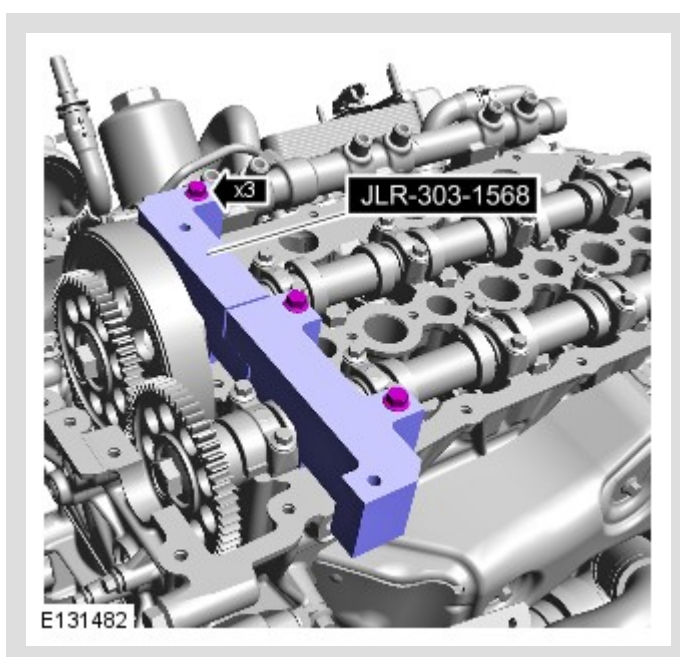
Stage 2: 80°

11.



Remove the special tool.

12.



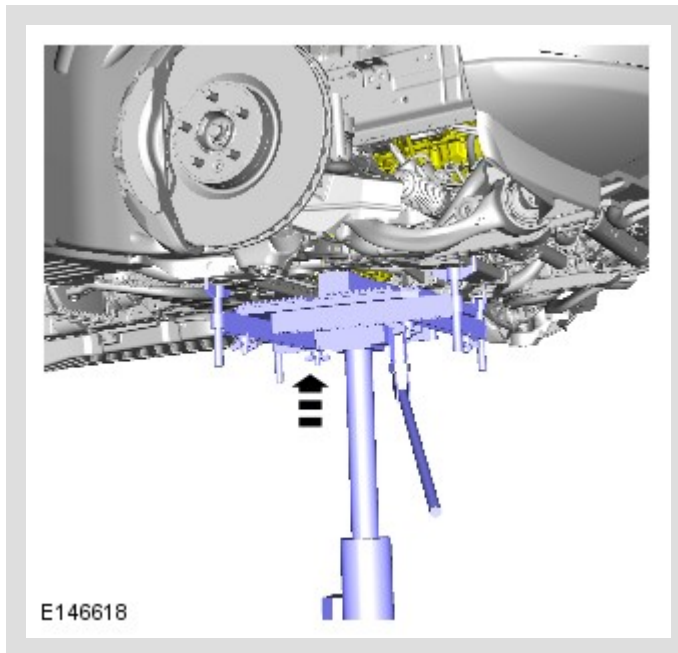
Remove the special tool.

13.



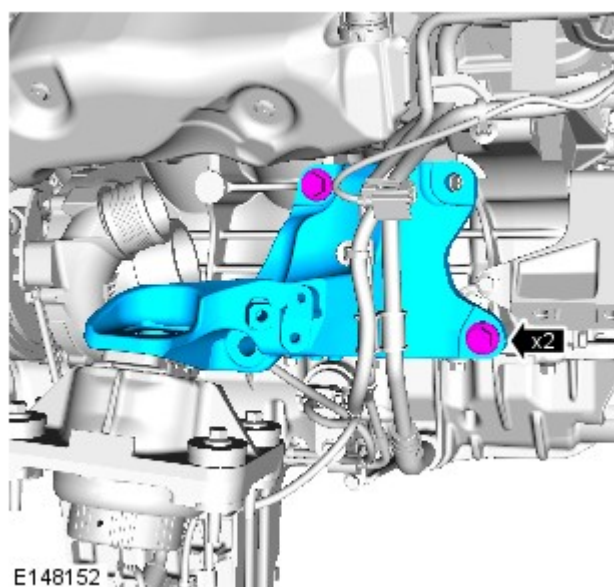
CAUTION:

Use a wooden block to protect the oil pan when supporting the engine.



Using a suitable hydraulic jack, raise and support the engine.

14.

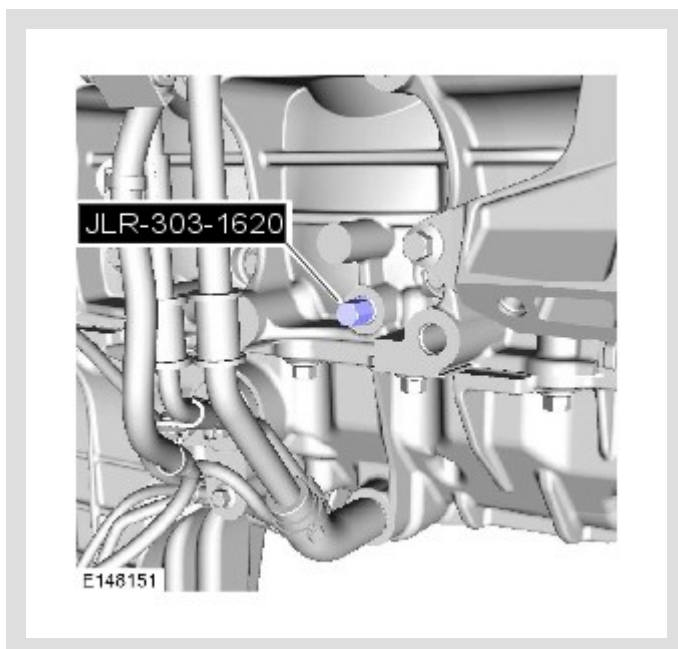


15.



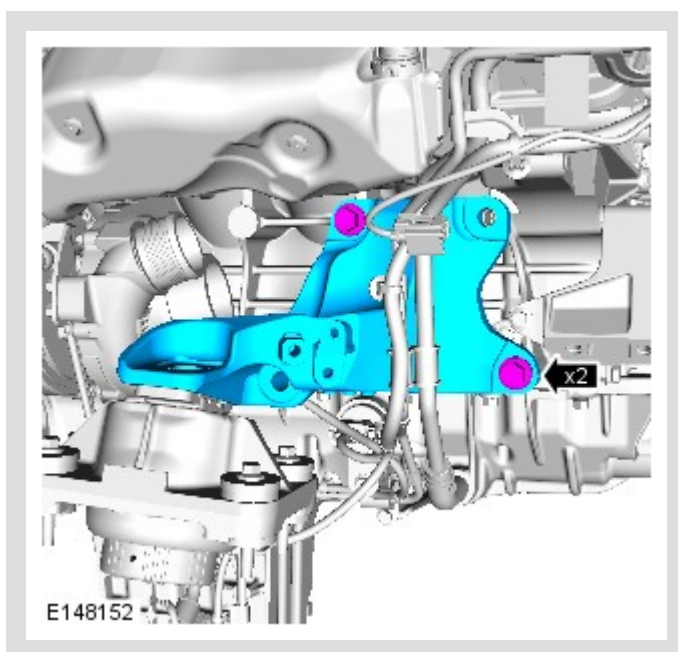
NOTE:

Remove the special tool.

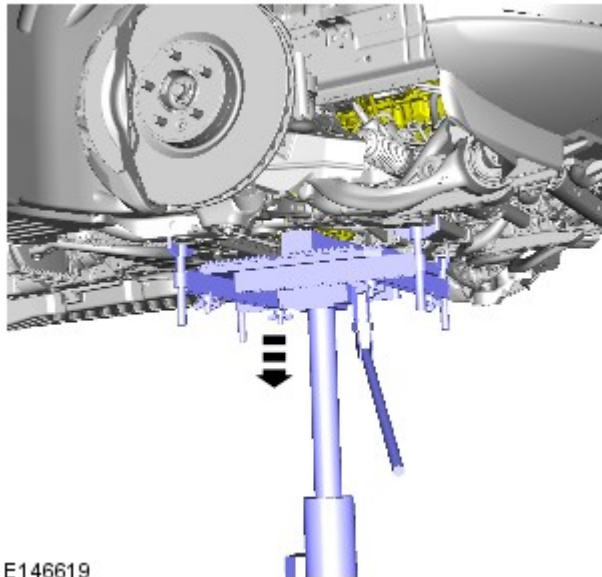


Special Tool(s): [JLR-303-1620](#)

16.



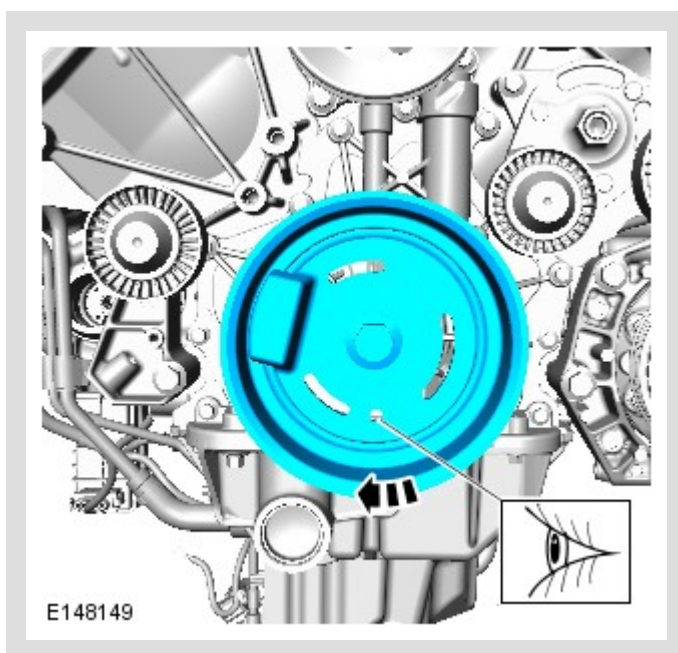
17.



18. Rotate the engine two complete turns clockwise.

19. **⚠ CAUTION:**

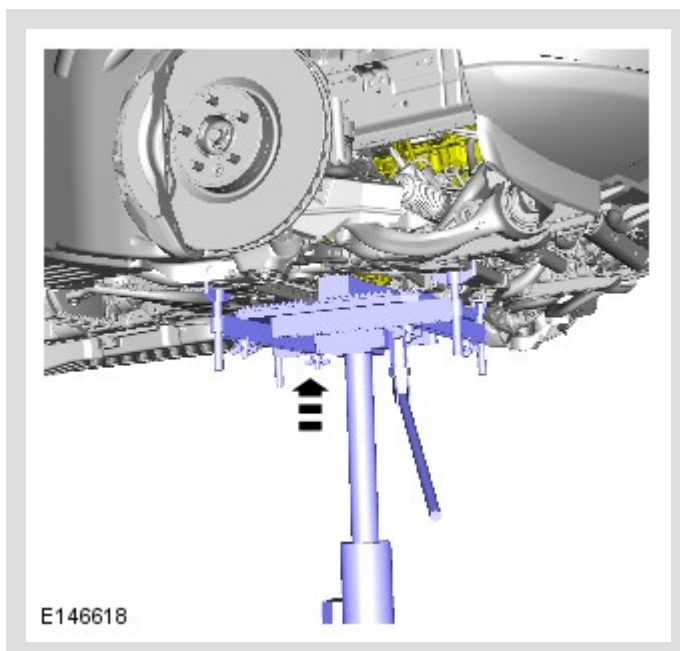
Only rotate the crankshaft clockwise.



20.

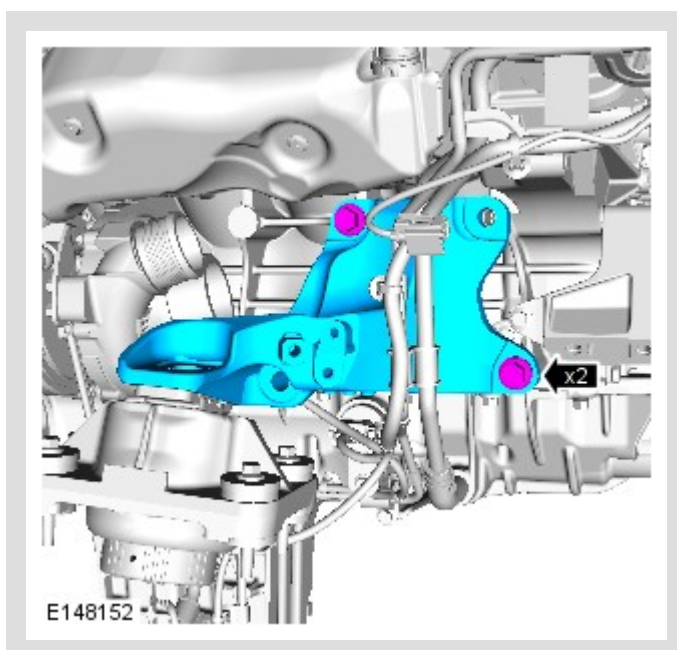
⚠ CAUTION:

Use a wooden block to protect the oil pan when supporting the engine.

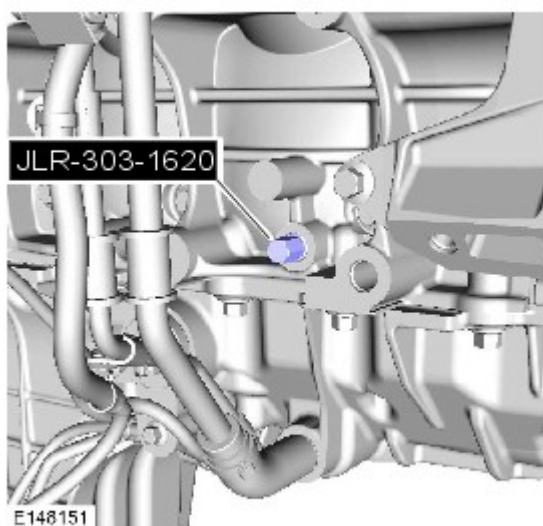


Using a suitable hydraulic jack, raise and support the engine.

21.

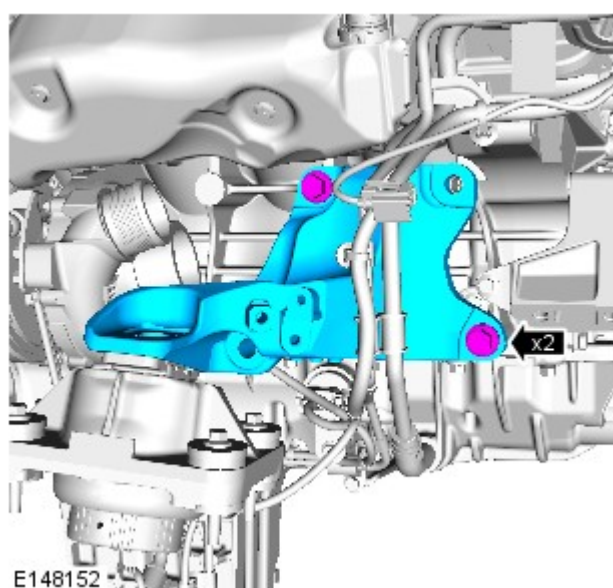


22.

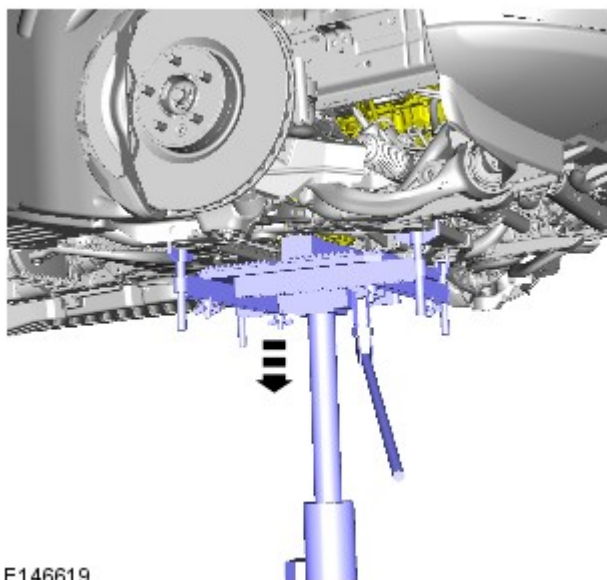


Special Tool(s): [JLR-303-1620](#)

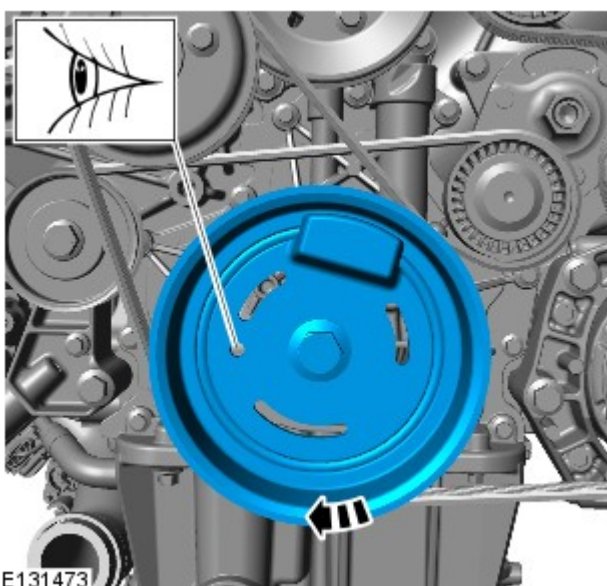
23.



24.



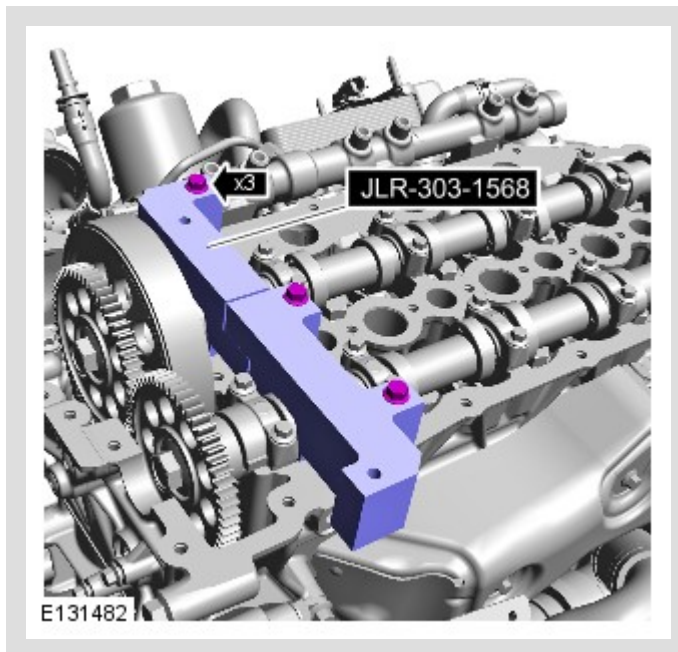
25.



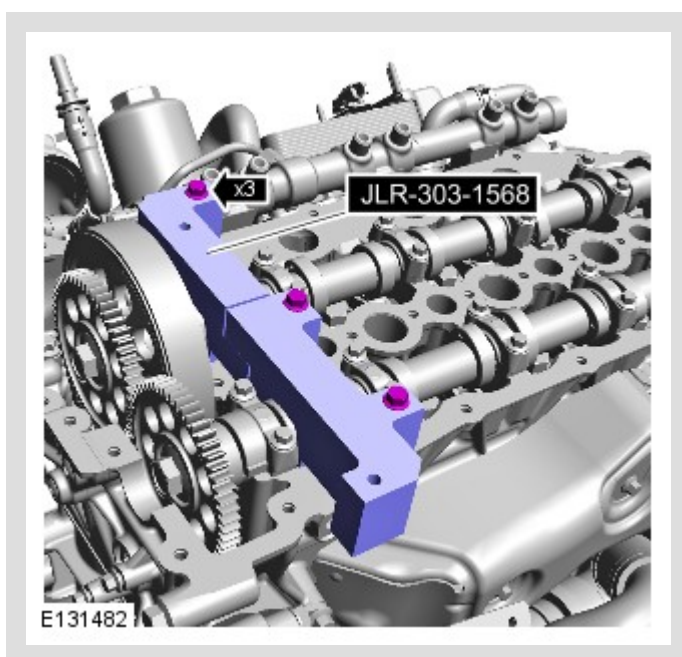
Rotate the engine clockwise until the crankshaft contacts the timing pin. Do not attempt to rotate the engine counter clockwise.

**CAUTION:**

If the special tool cannot be installed, the timing chain installation steps must be repeated.



Special Tool(s): [JLR-303-1568](#)

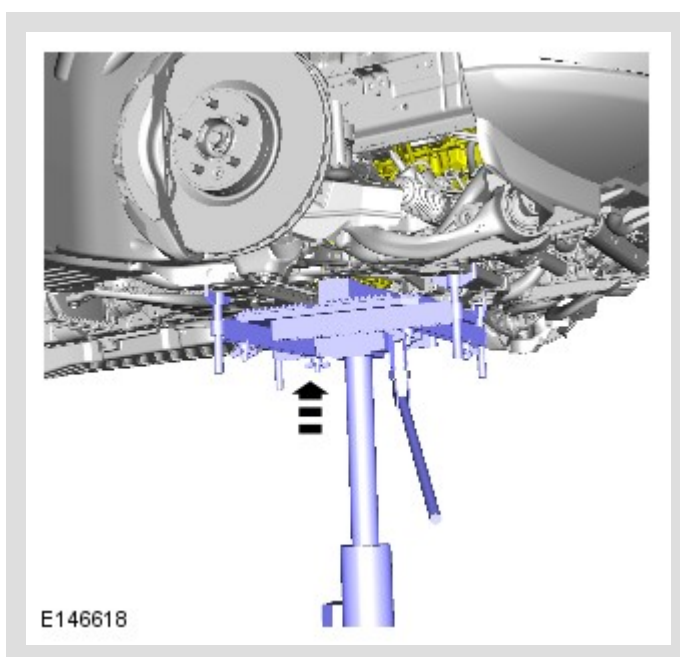


Remove the special tool.

28.

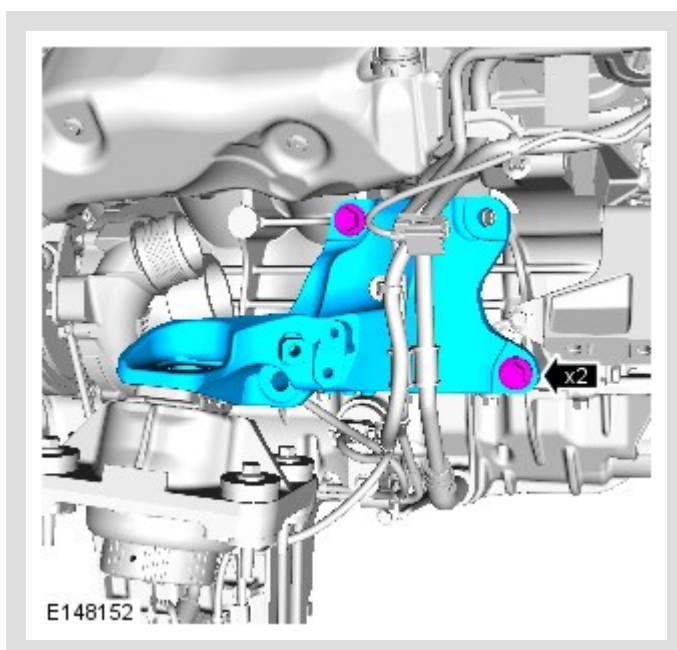
ⓘ CAUTION:

Use a wooden block to protect the oil pan when supporting the engine.



Using a suitable hydraulic jack, raise and support the engine.

29.

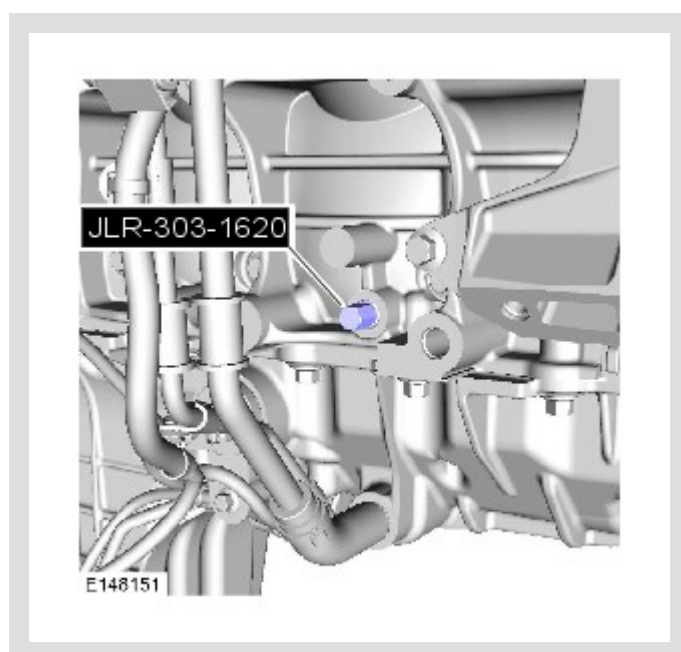


30.



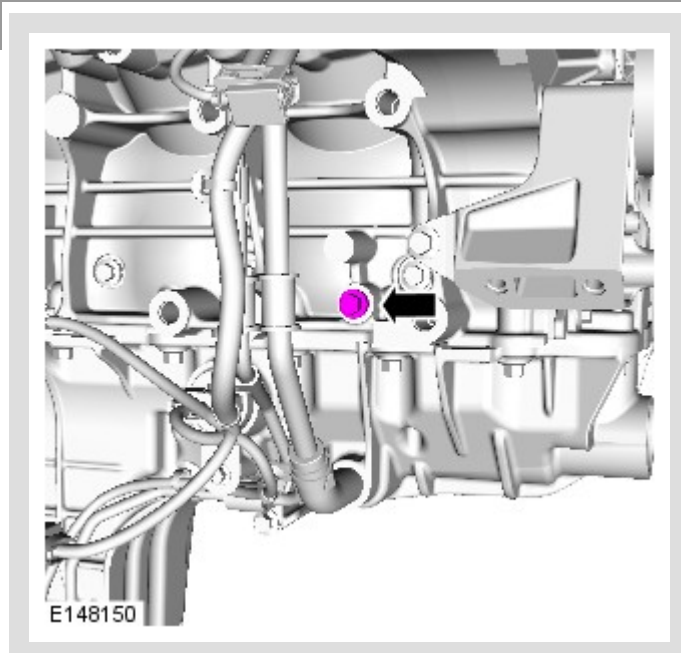
NOTE:

Remove the special tool.



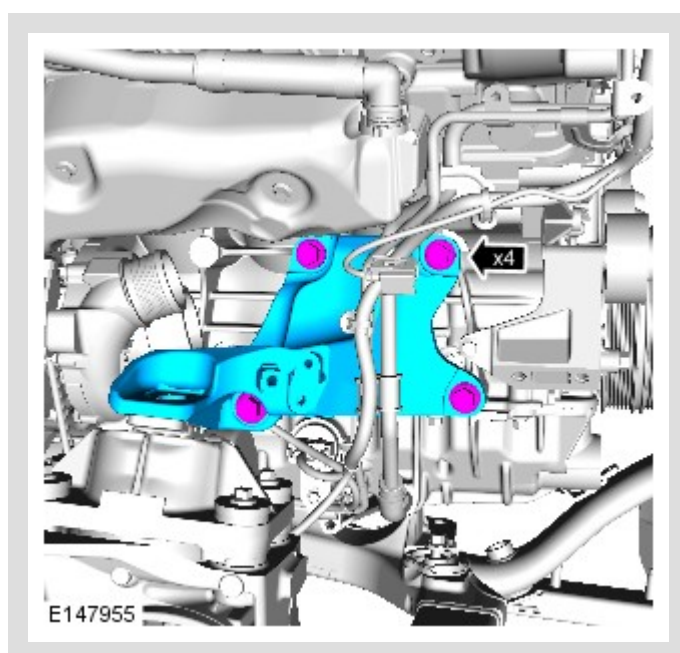
Special Tool(s): [JLR-303-1620](#)

31.



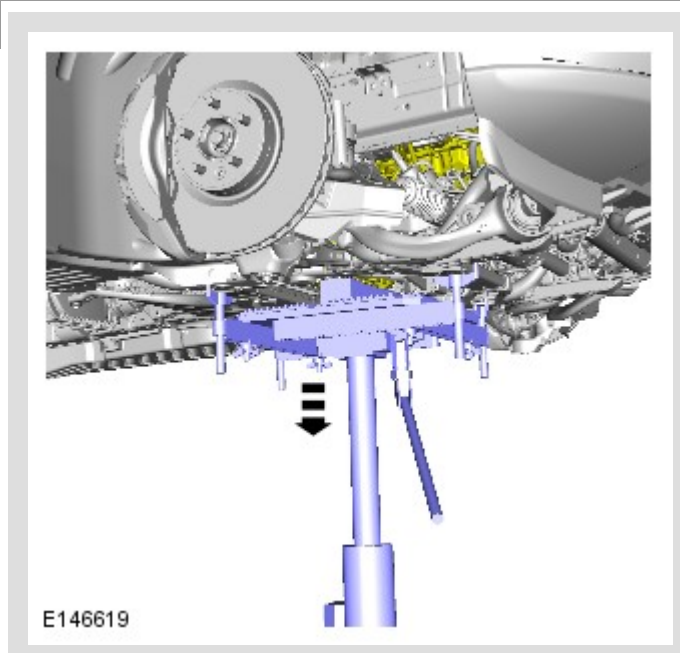
Torque: 23 Nm

32.

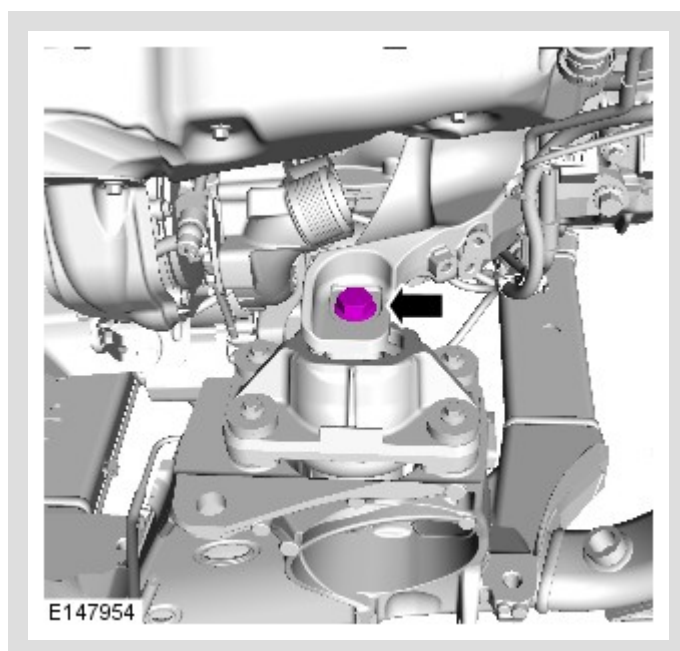


Torque: 119 Nm

33.

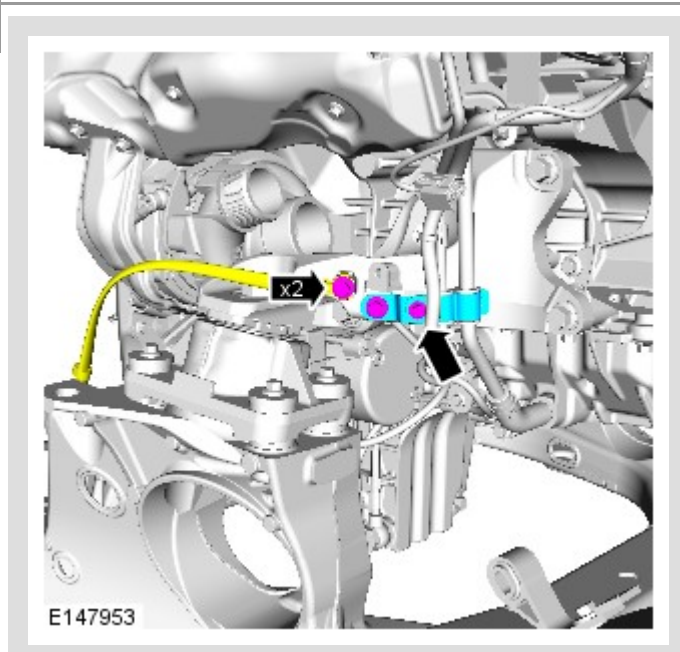


34.



Torque: 110 Nm

35.

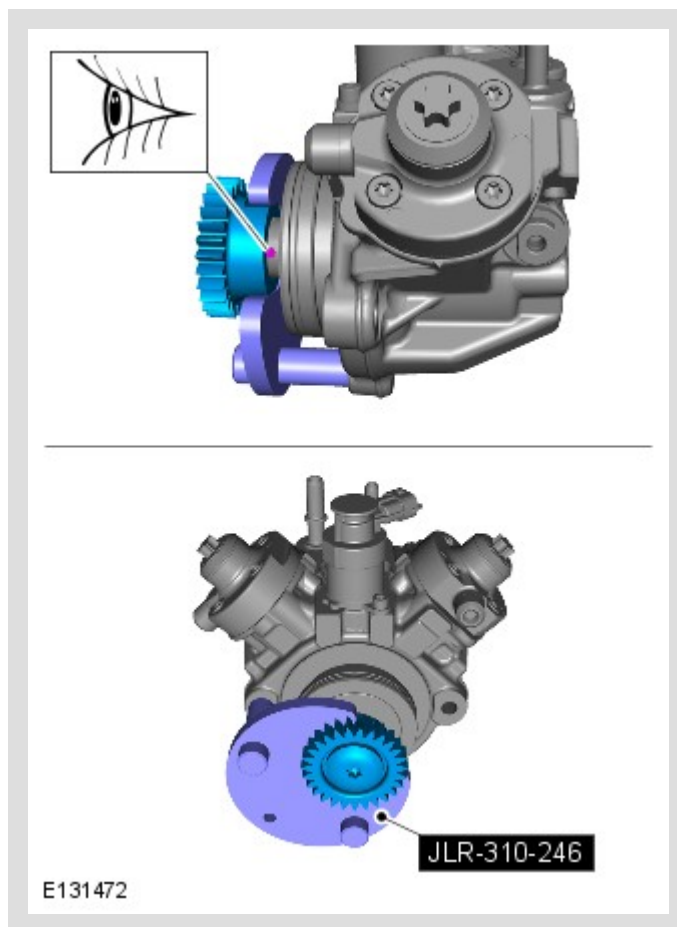


Torque:

M8 25 Nm

M6 10 Nm

36.



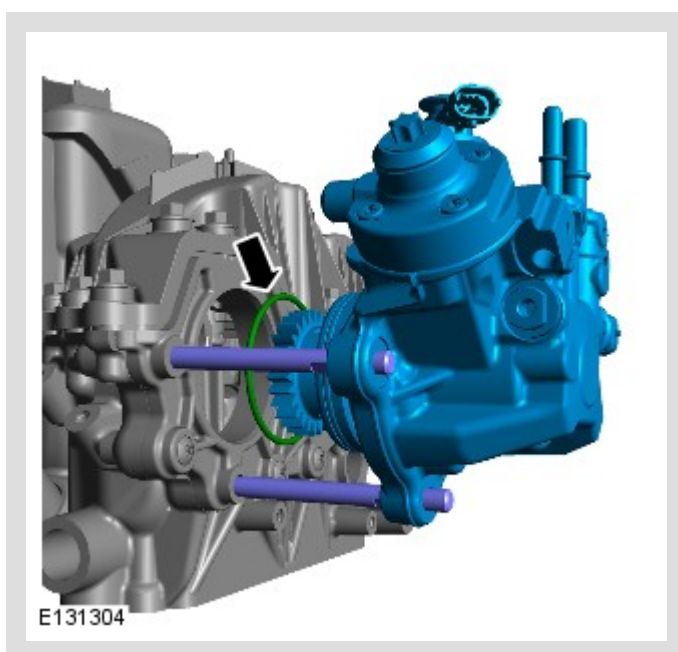
Special Tool(s): [JLR-310-246](#)

37.

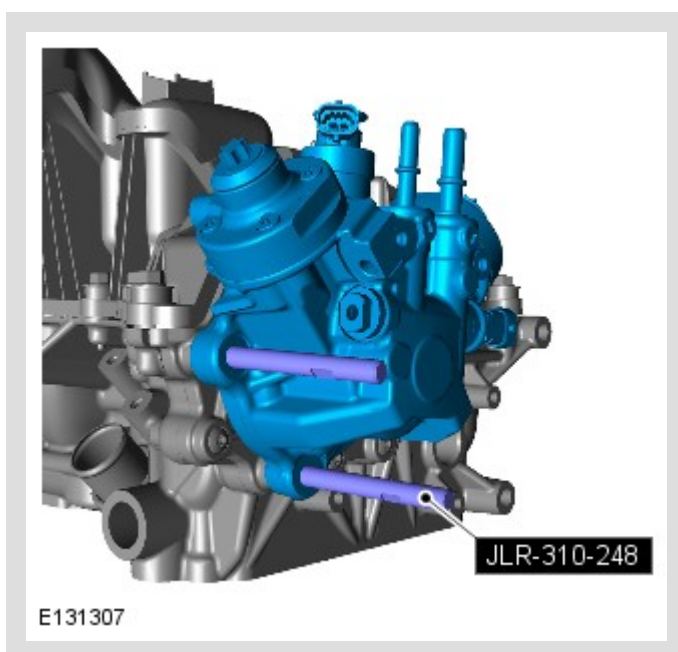


NOTE:

Lubricate the O-ring seal with clean engine oil.



Renew Part: *Fuel pump O-ring seal* : 1 .



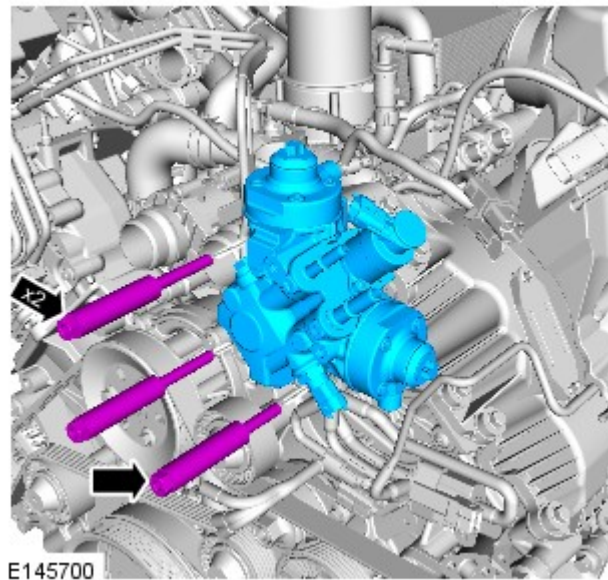
Remove the guide pins.

Special Tool(s): [JLR-310-248](#)

39.

⚠ CAUTIONS:

- Make sure that new bolts are installed.
- Install the bolts in the noted position.



Renew Part: [Fuel Injection Pump retaining bolts](#) : 3 .

Torque: 24 Nm

40. Refer to: [Generator](#) (414-02B Generator and Regulator - TDV8 4.4L Diesel, Removal and Installation).

41. Refer to: [Left Valve Cover](#) (303-01E Engine - TDV8 4.4L Diesel, Removal and Installation).

42. Refer to: [Cooling Fan](#) (303-03F Engine Cooling - TDV8 4.4L Diesel, Removal and Installation).

43. Connect the battery ground cable.
Refer to: [Specifications](#) (414-01 Battery, Mounting and Cables, Specifications).