



LTB01145NAS2

TECHNICAL BULLETIN

08 MAR 2018

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NOTE: The information in Technical Bulletins is intended for use by trained, professional Technicians with the knowledge, tools, and equipment required to do the job properly and safely. It informs these Technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by 'do-it-yourselfers'. If you are not a Retailer, do not assume that a condition described affects your vehicle. Contact an authorized Land Rover service facility to determine whether this bulletin applies to a specific vehicle.

INFORMATION

This reissue replaces all previous versions. Please destroy all previous versions.

Changes are highlighted in blue

SECTION:

303-01B: Engine - INGENIUM I4 2.0L Petrol

SUBJECT/CONCERN:

Rattle From Engine Timing Chain Area

AFFECTED VEHICLE RANGE:

MODEL:	MODEL YEAR:	VIN:	ASSEMBLY PLANT:	APPLICABILITY:

MODEL:	MODEL YEAR:	VIN:	ASSEMBLY PLANT:	APPLICABILITY:
Discovery Sport (LC)	2018	721851-746001	Halewood	INGENIUM I4 2.0L Petrol
Range Rover Evoque (LV)	2018	265969-293366	Halewood	INGENIUM I4 2.0L Petrol
Range Rover Velar (LY)	2018	700014-742418	Solihull	INGENIUM I4 2.0L Petrol

MARKETS:

NORTH AMERICA

CONDITION SUMMARY:

SITUATION:

A rattle noise may be evident from the engine compartment and/or the engine Malfunction Indicator Lamp (MIL) may be illuminated on the Instrument Cluster. Upon further investigation, Diagnostic Trouble Codes (DTCs) P052A-00, P0011-71, and/or P000A-00 are found stored in the Powertrain Control Module (PCM).

CAUSE:

This may be caused by a Variable Camshaft Timing (VCT) unit internal seal that is below specification.

ACTION:




Should a customer express concern, follow the appropriate Workshop Procedure below.

PARTS:

PART NUMBER	DESCRIPTION	QUANTITY
LR091759	Intake Camshaft VCT Unit	1
LR091809	Timing Cover Gasket	1
LR095784	O-ring	2
LR091743	Timing Chain Tensioner	1
LR091750	VCT Unit Bolt	1

PART NUMBER	DESCRIPTION	QUANTITY
LR091801	Timing Cover Blanking Plug	1
STC50550	Sealant	1
LRN2279	Coolant	2

TOOLS:

 <p>E176771</p>	<p>LOCKING TOOL, CRANKSHAFT PULLEY</p> <p>JLR-303-1630</p>	 <p>E204261</p>	<p>CAMSHAFT SETTING TOOL</p> <p>JLR-303-1635</p>
 <p>E204262</p>	<p>LOCKING TOOL, VCT ACTUATOR</p> <p>JLR-303-1636</p>		

WARRANTY:

△ NOTES:

- Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to JLR claims submission system to obtain the latest repair time.

- The JLR Claims Submission System requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.

DESCRIPTION	SRO	TIME (HOURS)	CONDITION CODE	CAUSAL PART
Variable Valve Timing Actuator - Single - Renew - Range Rover Velar (L560)	12.66.29	2.8	42	LR091759
Variable Valve Timing Actuator - Single - Renew - Discovery Sport (L550), Range Rover Evoque (L538)	12.66.29	2.1	42	LR091759

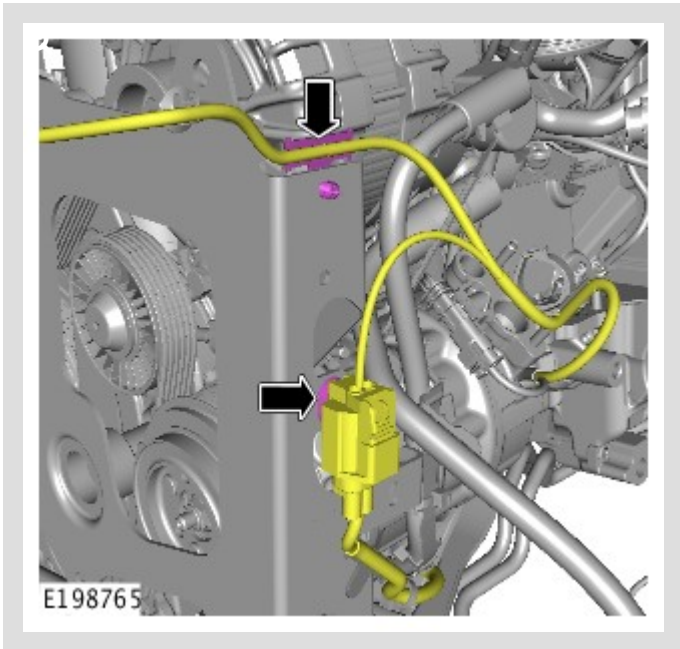
 **NOTE:**

Normal Warranty procedures apply.

WORKSHOP PROCEDURE 'A': RANGE ROVER VELAR (L560) ONLY

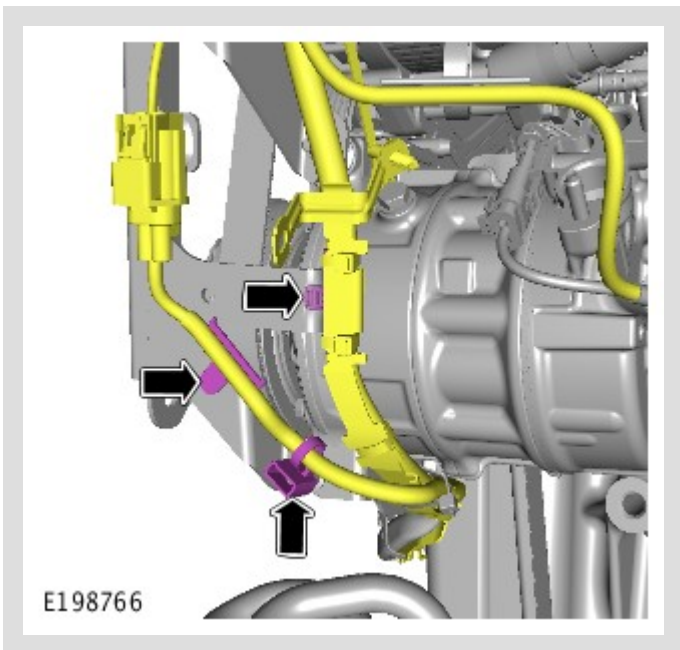
- 1 Raise and support the vehicle (see TOPIx Workshop Manual section 100-02: Jacking and Lifting - Lifting).
- 2 Disconnect the startup battery ground cable (see TOPIx Workshop Manual section 414-01: Battery, Mounting and Cables - General Procedures - Battery Disconnect and Connect).
- 3 Remove the hood (see TOPIx Workshop Manual section 501-02: Front End Body Panels - Removal and Installation - Hood).
- 4 Remove the upper timing cover (see TOPIx Workshop Manual section 303-01B: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover).
- 5 Remove the charge air cooler (see TOPIx Workshop Manual section 303-12B: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Removal and Installation - Charge Air Cooler).

6



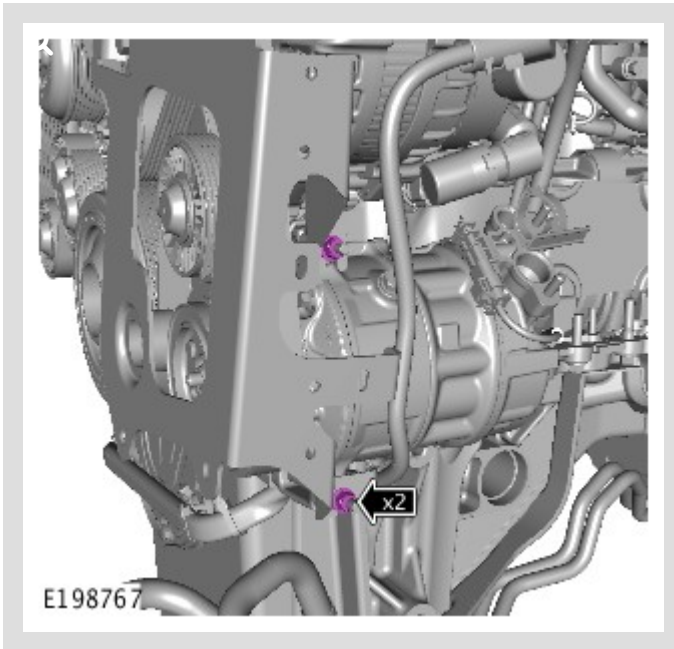
Release the wiring.

7



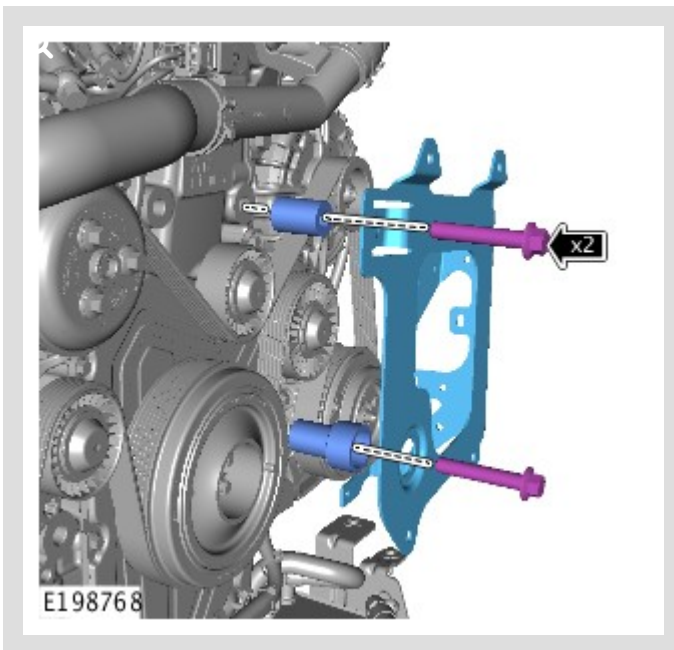
Release the wiring.

8

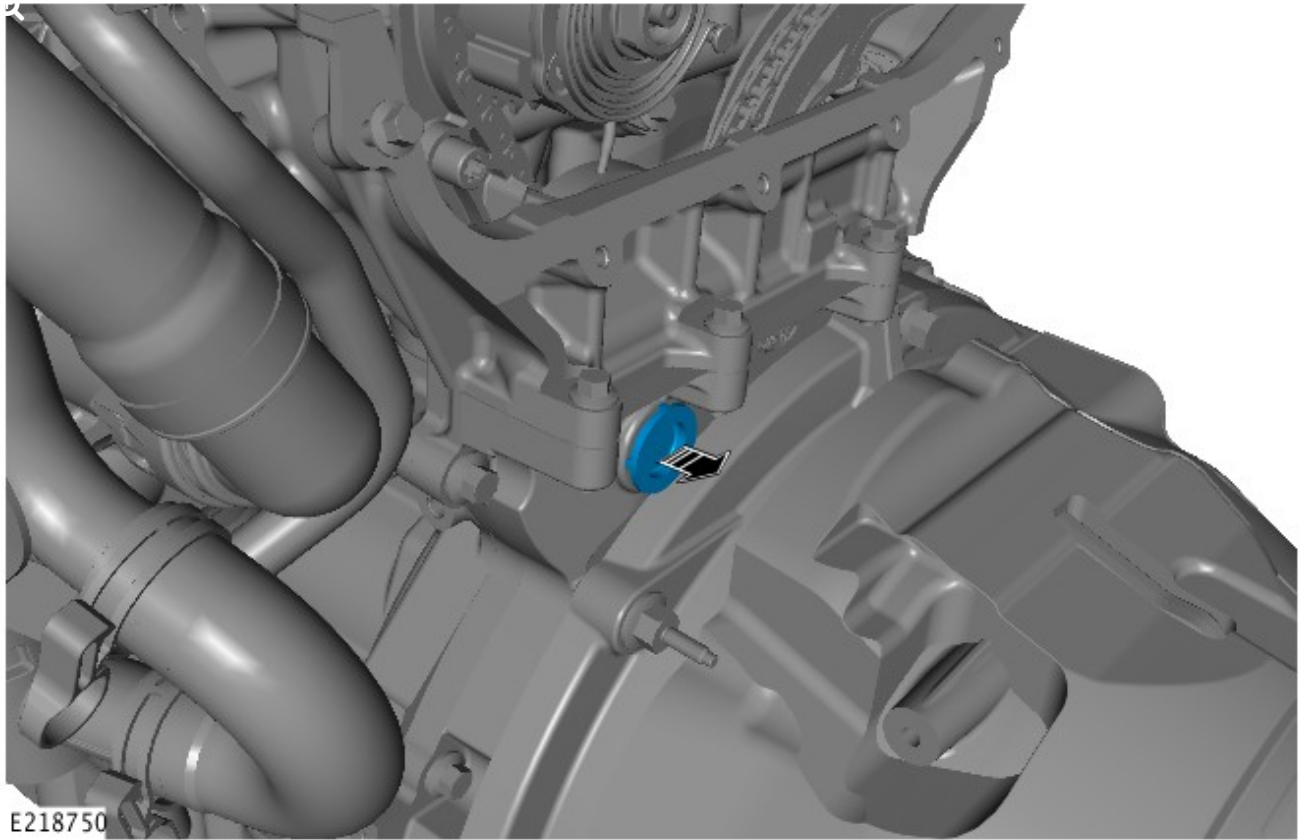


Remove the charge air cooler bracket fasteners.

9

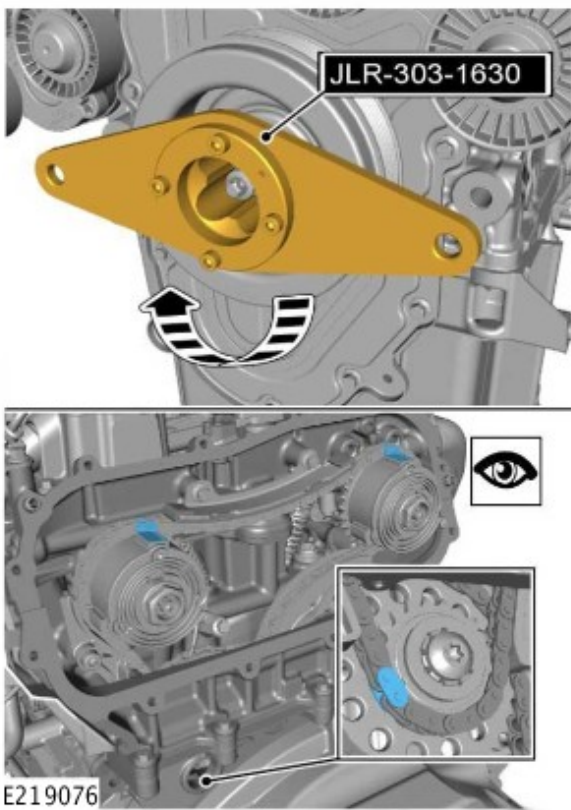


Remove the charge air cooler bracket.



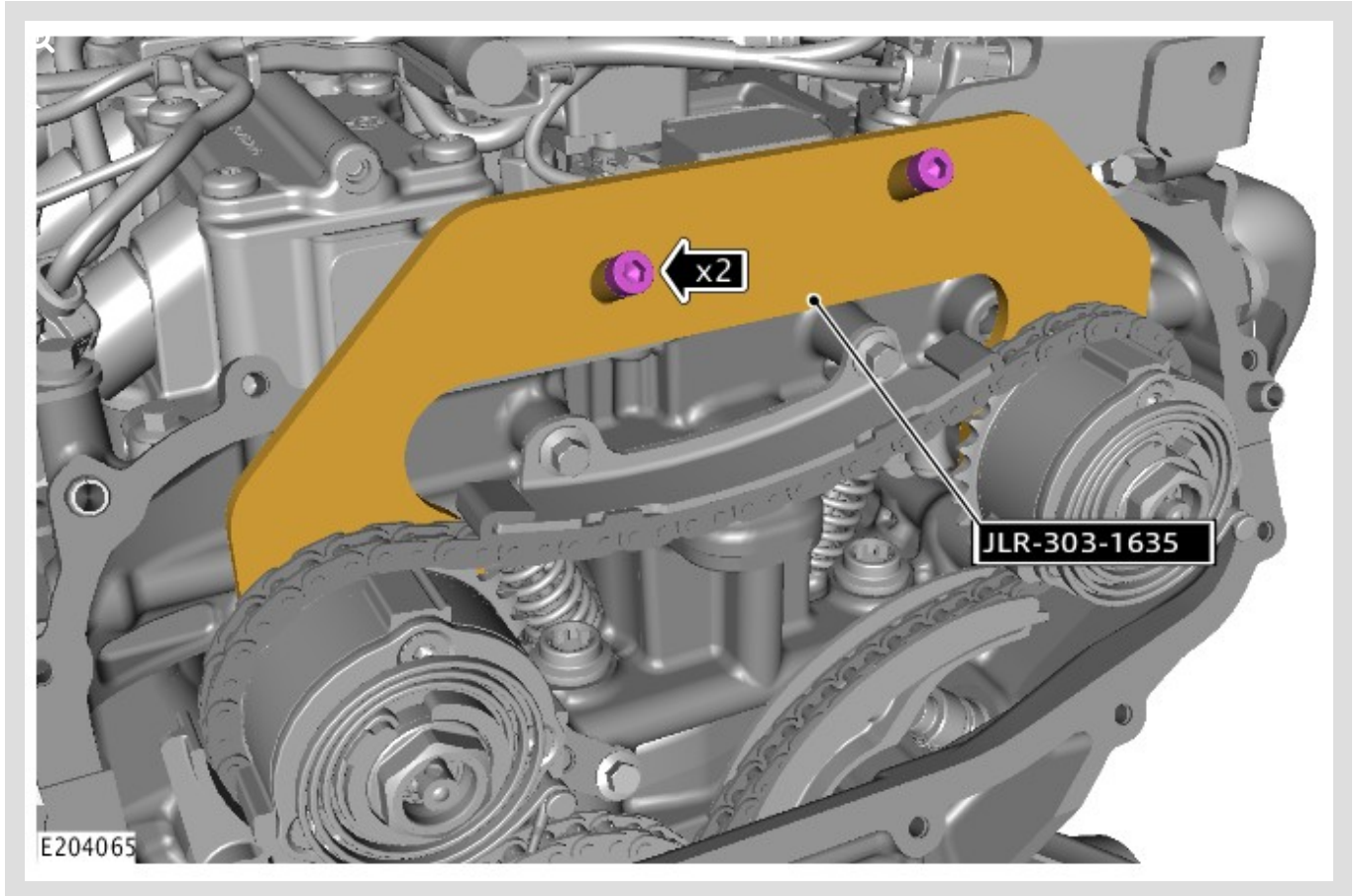
Use a suitable tool to remove the lower timing cover blanking plug.

- 1 Discard the plug.



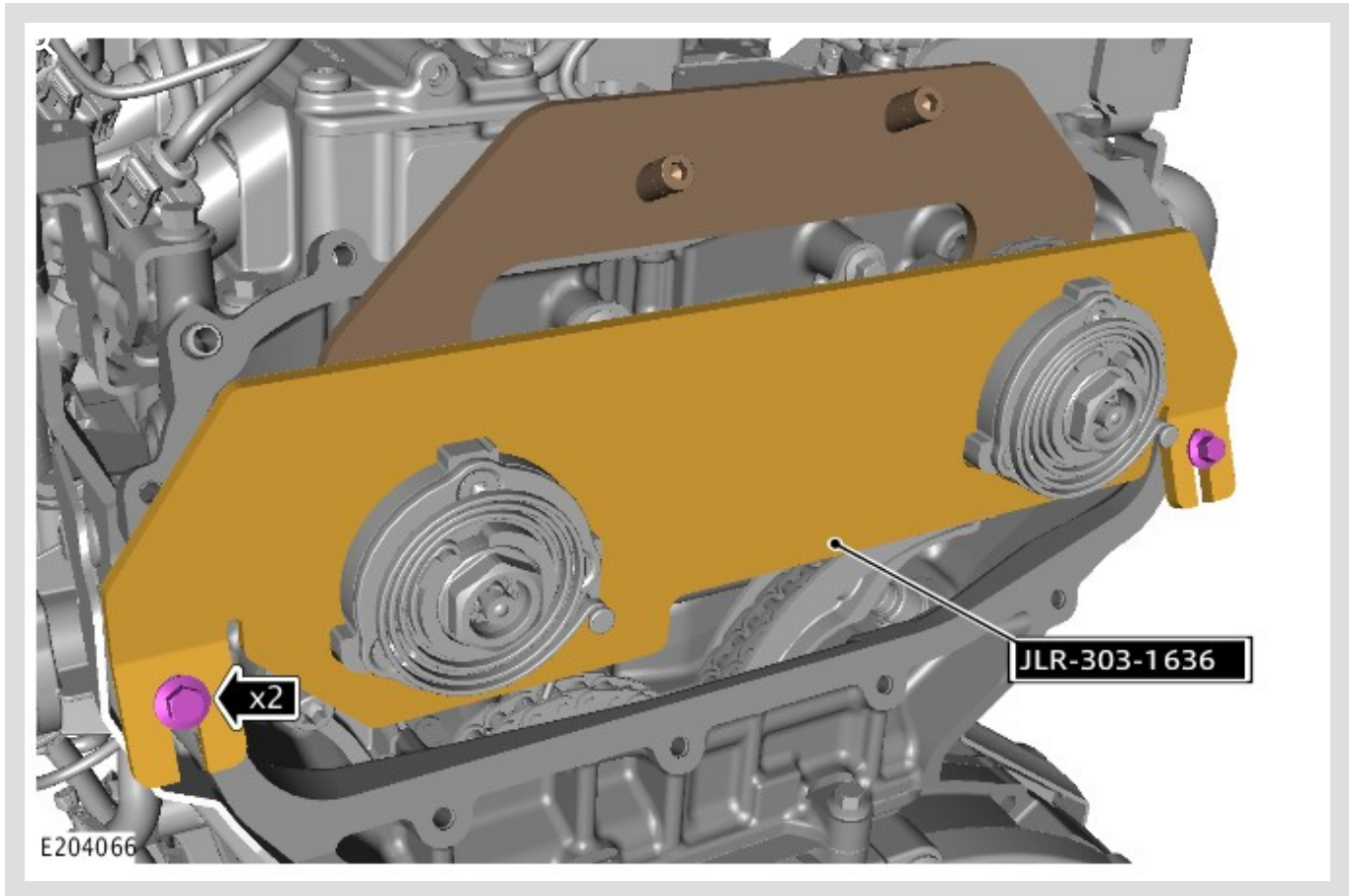
Install special tool JLR-303-1630 as shown.

- 1 Rotate the tool clockwise until the timing marks align as shown.



Install special tool JLR-303-1635 as shown.

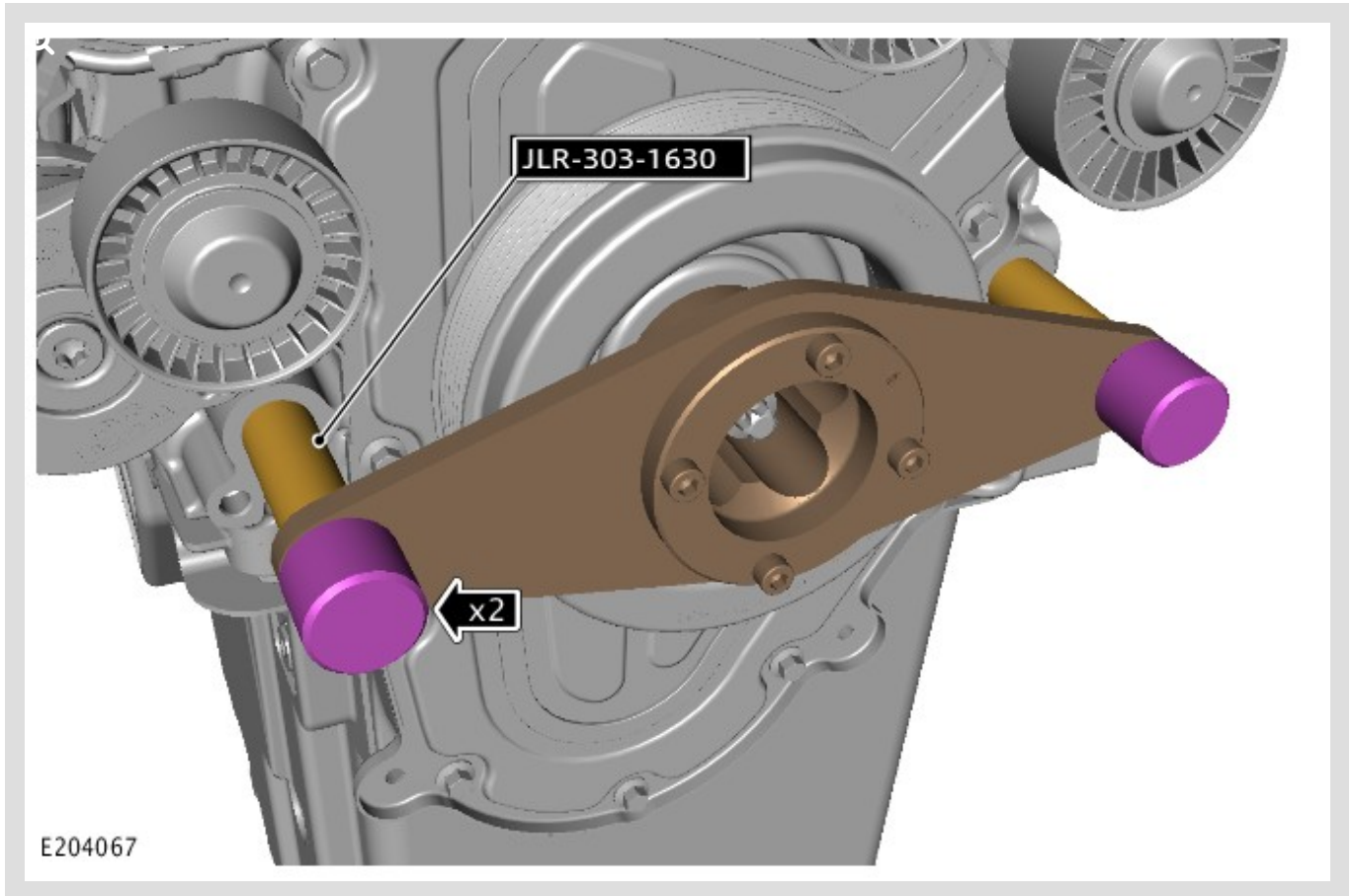
- Torque: **13 Nm**



Install special tool JLR-303-1636 as shown.

- Torque: **13 Nm**

14

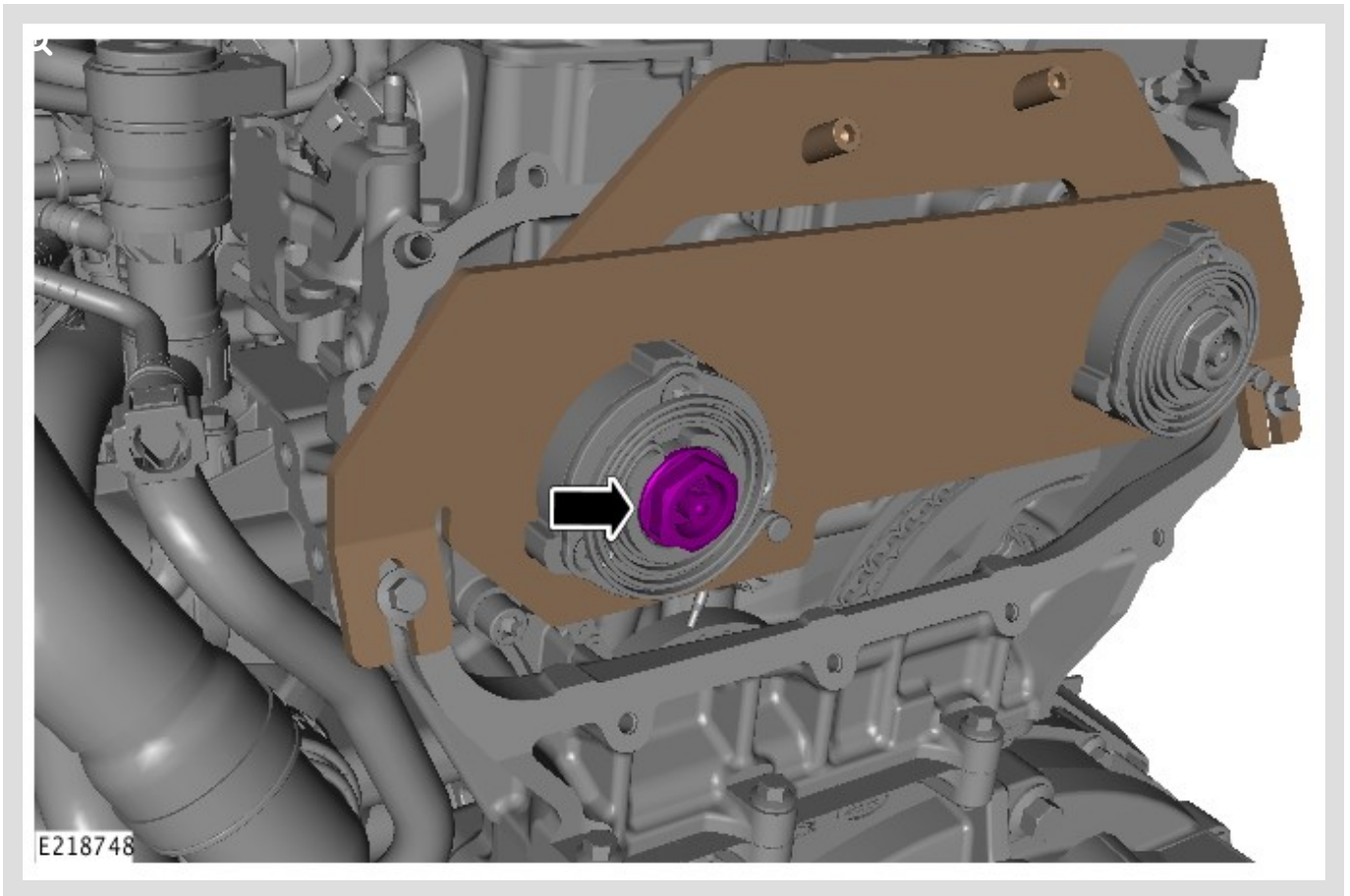


Lock special tool JLR-303-1630 in position.

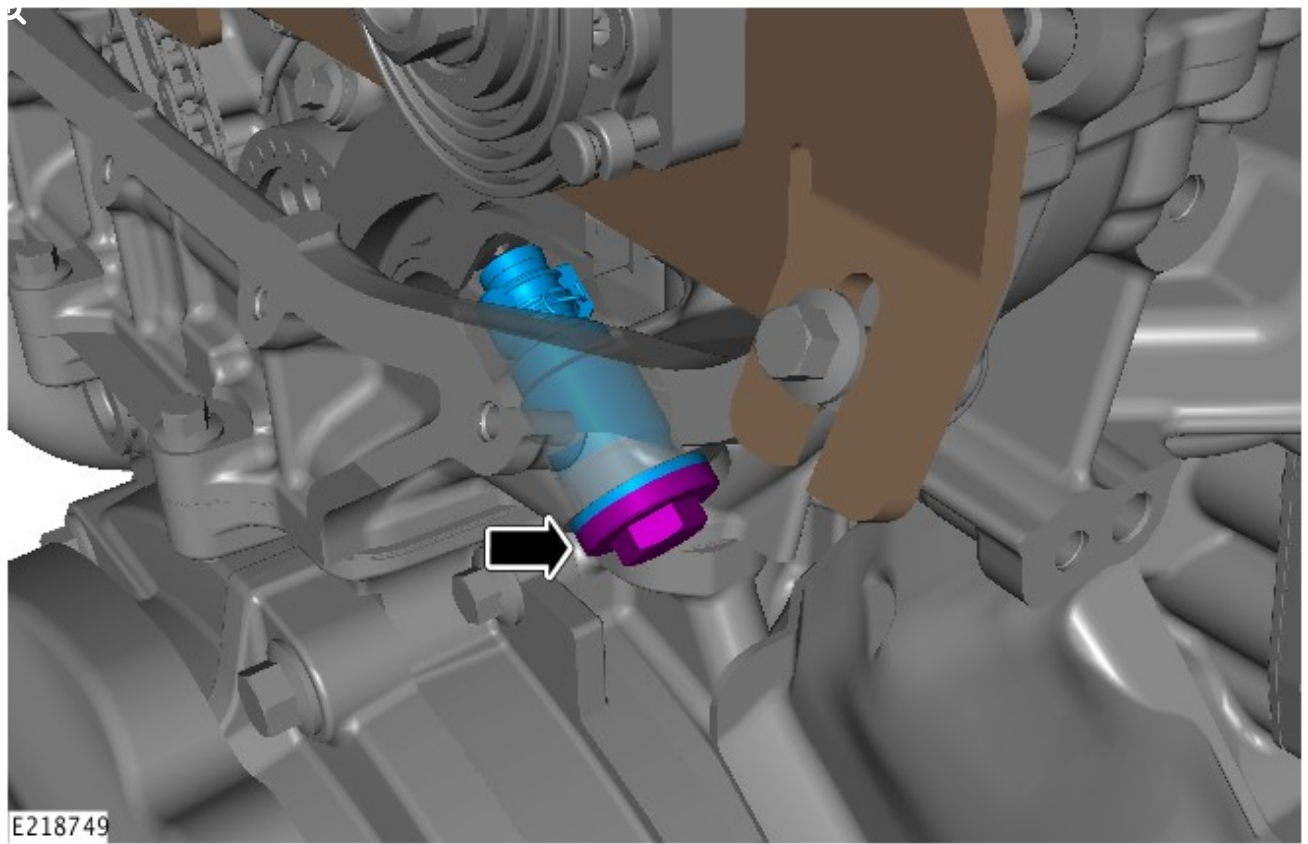
15

ⓘ CAUTION:

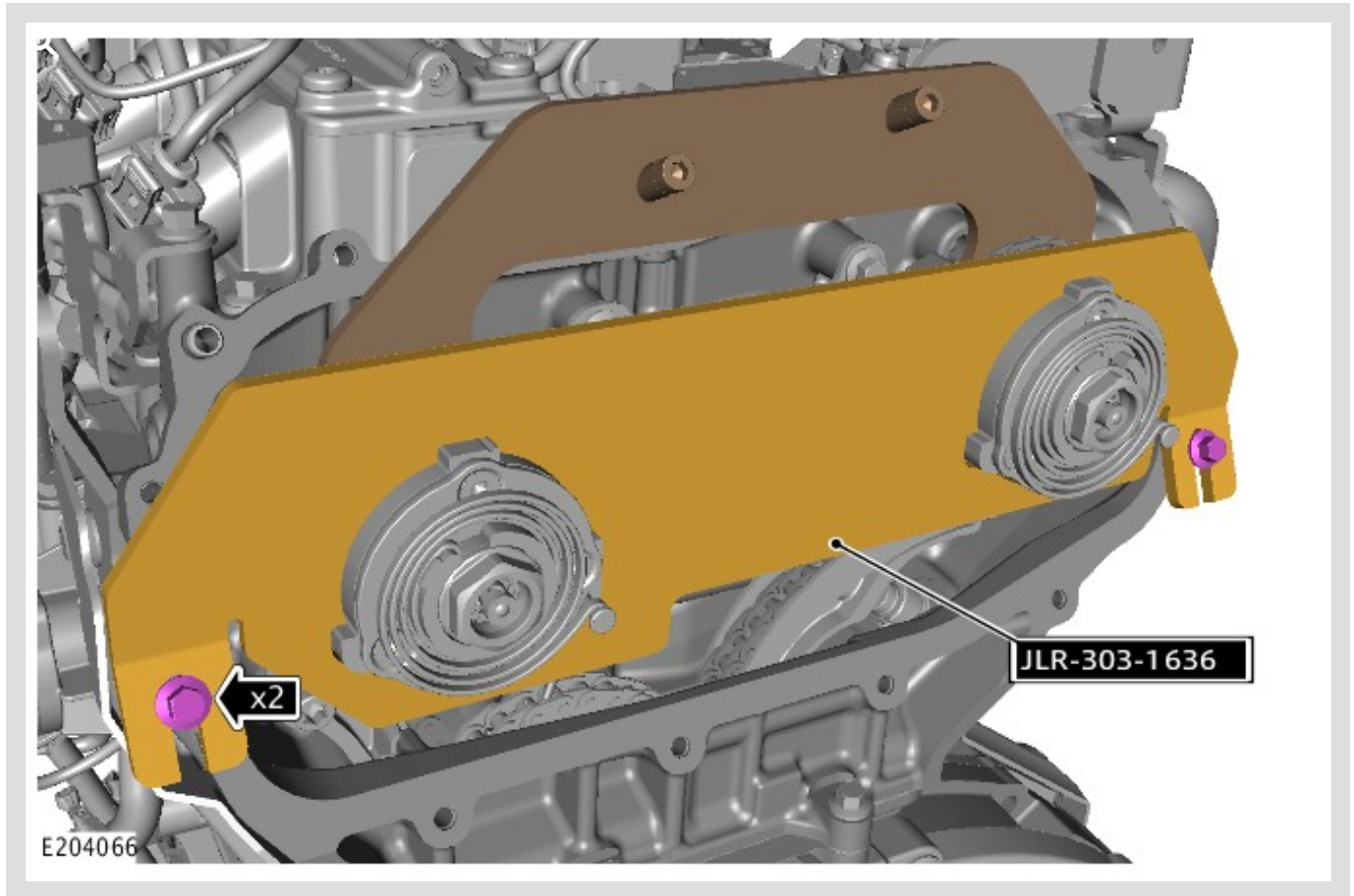
Do not fully remove the VCT actuator fastener.



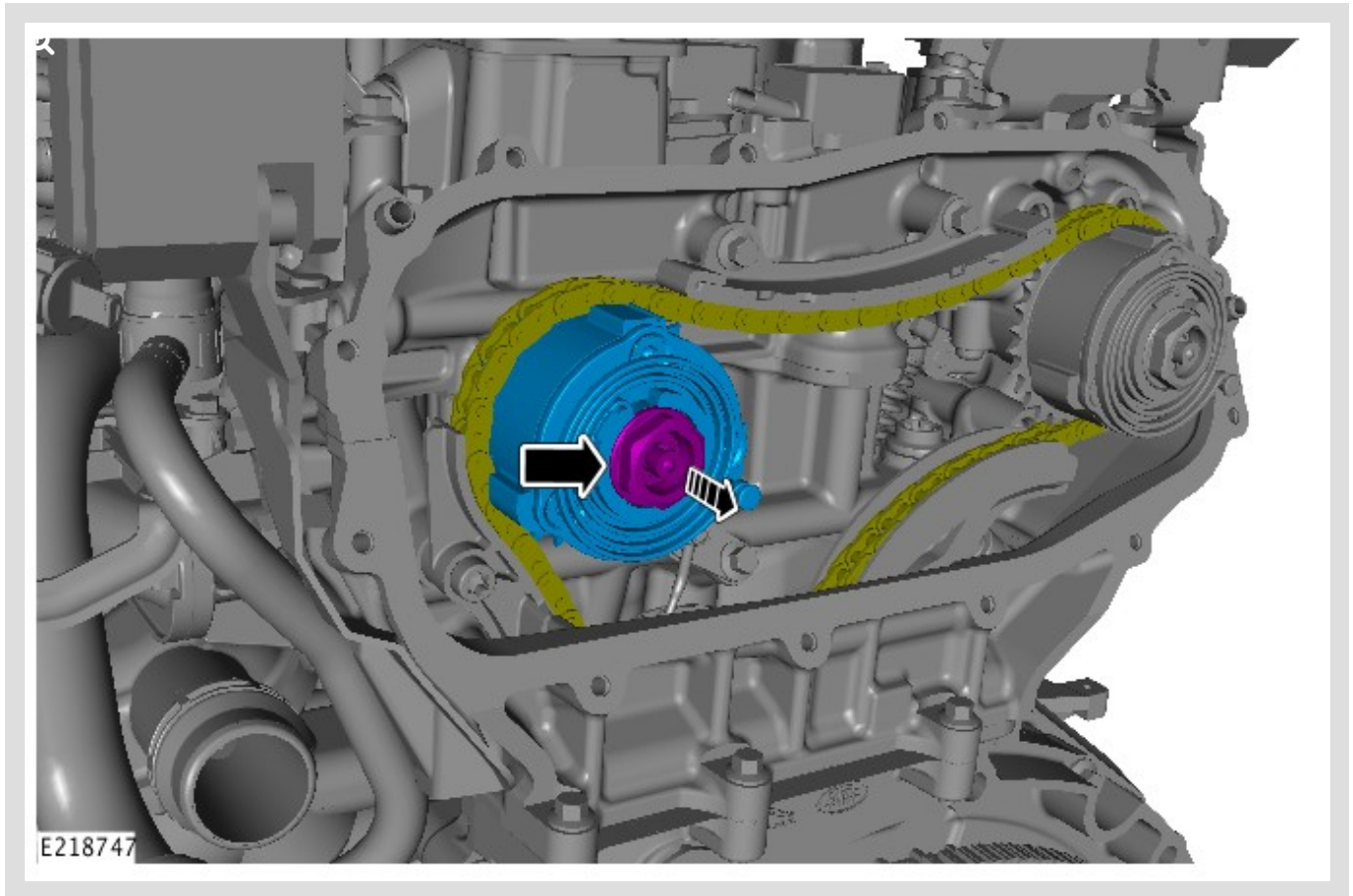
Loosen but do not fully remove the VCT actuator fastener.



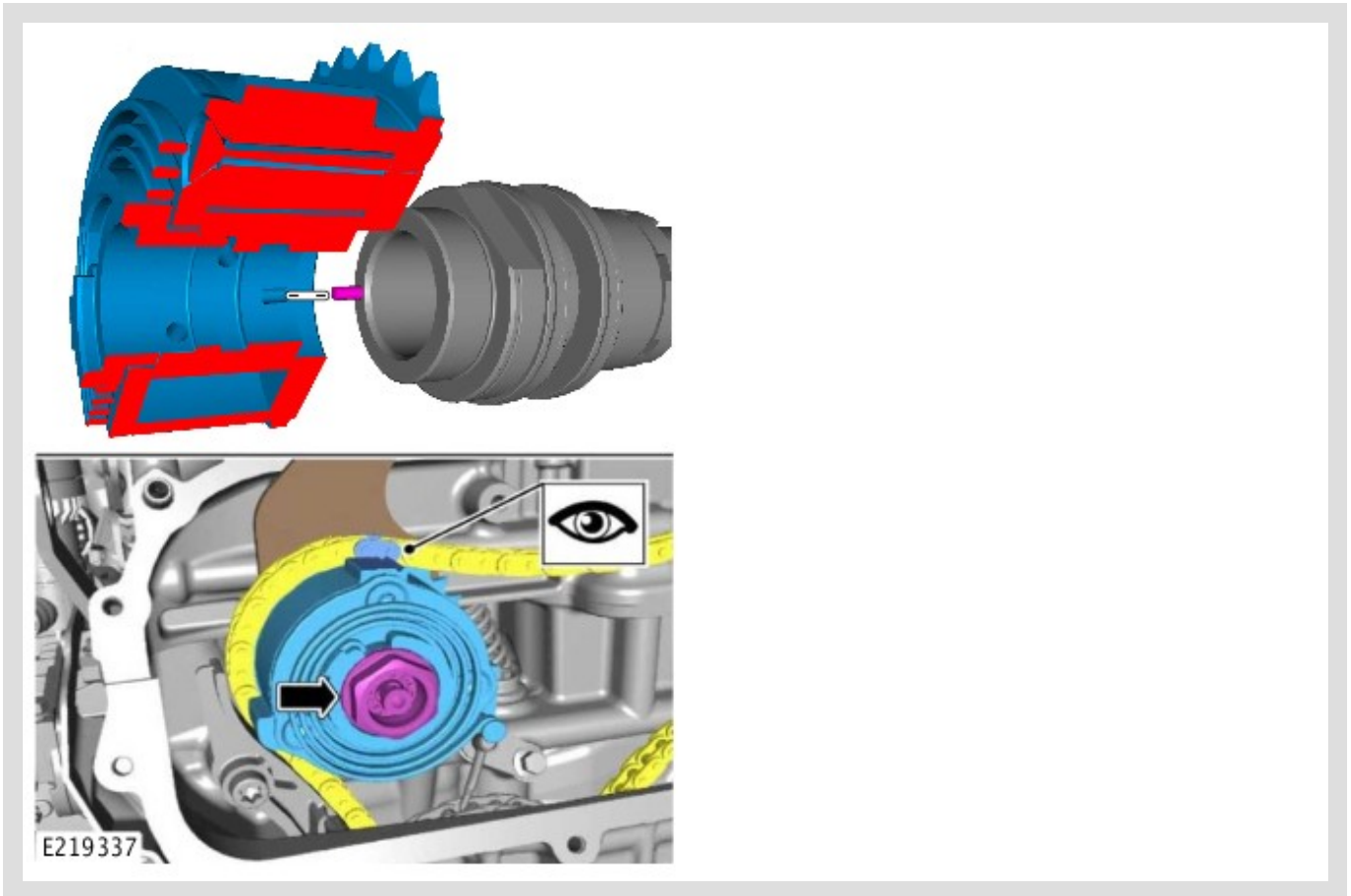
Remove and discard the upper timing chain tensioner.



Remove special tool JLR-303-1636.



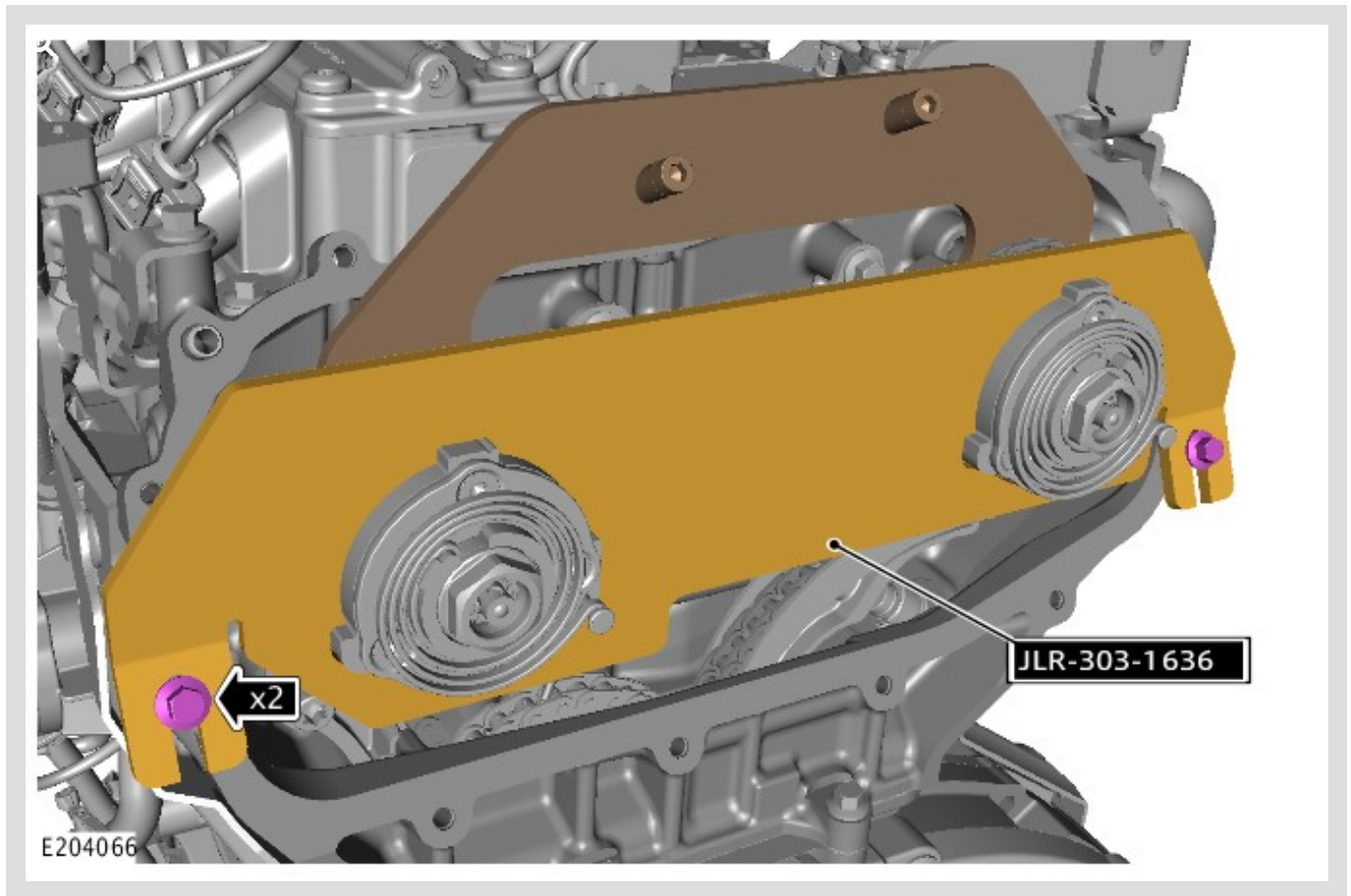
Remove and discard the intake camshaft VCT actuator.



Install the new intake camshaft VCT actuator and fastener.

- Make sure the locating pin is correctly aligned to the VCT actuator.
- Make sure the timing marks are aligned.
- Torque:
 - Stage 1: **10 Nm**
 - Stage 2: **Loosen 90°**

20



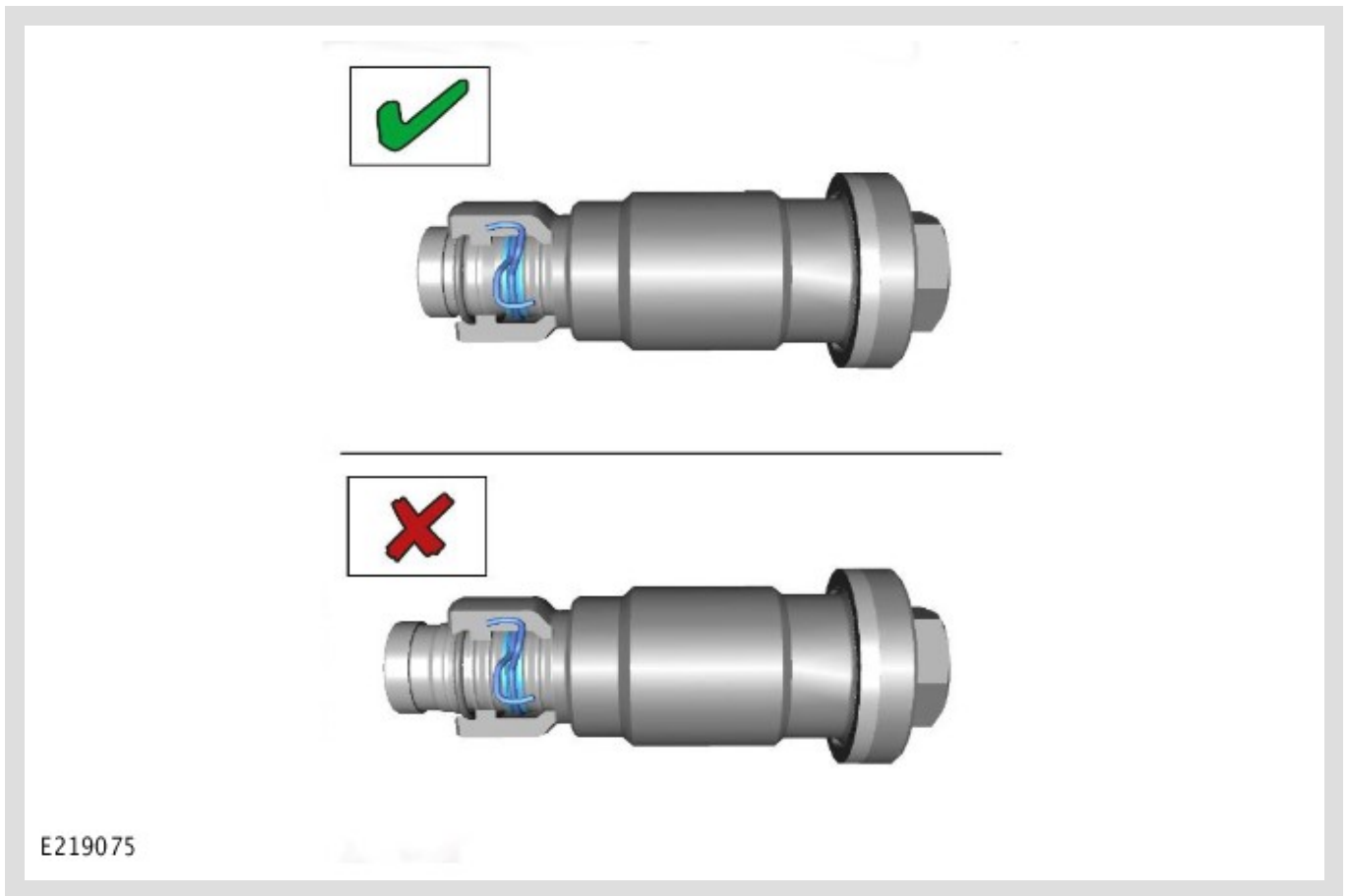
Install special tool JLR-303-1636 as shown.

- Torque: **13 Nm**

21

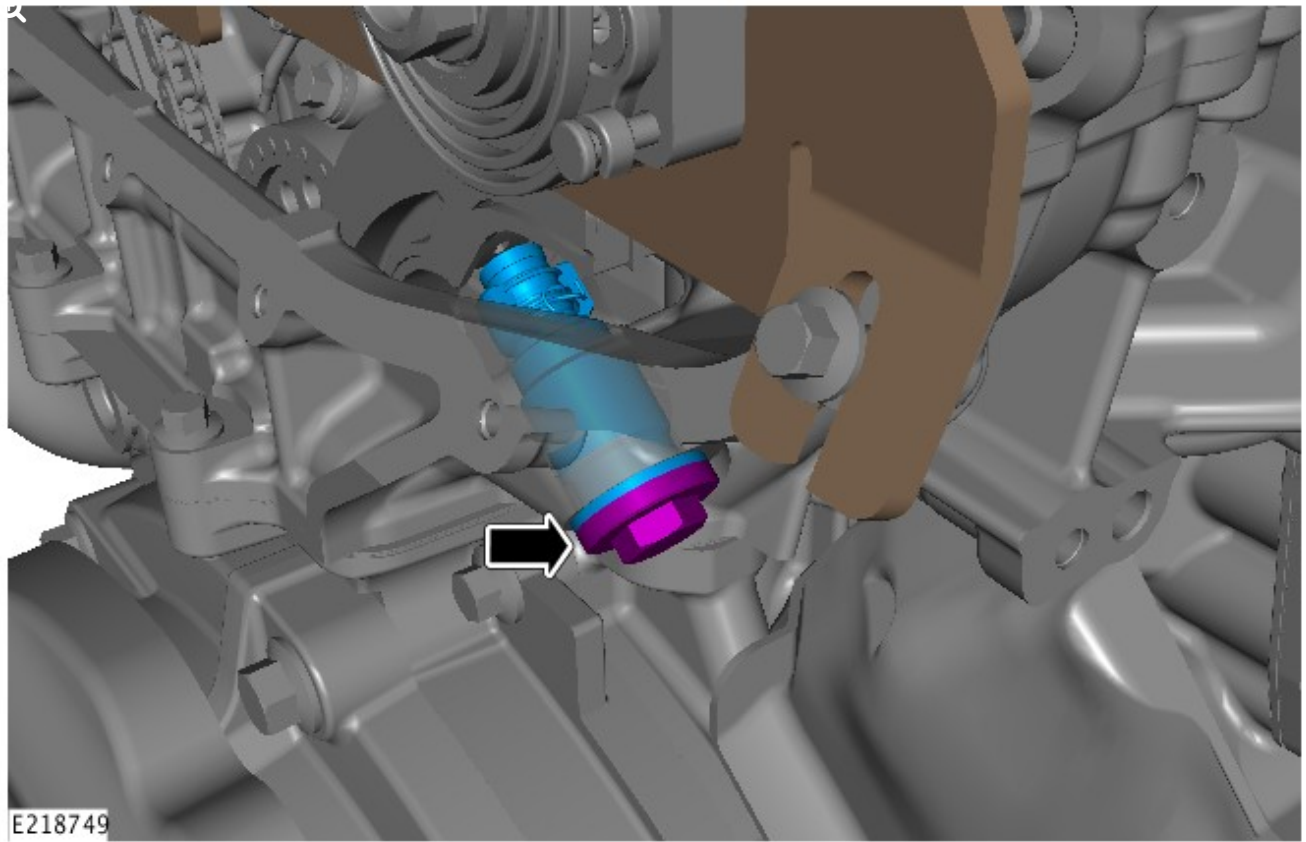
△ NOTE:

The upper timing chain tensioner must be compressed before installing.



Make sure the upper timing chain tensioner is compressed as shown [✓] before installing.

22



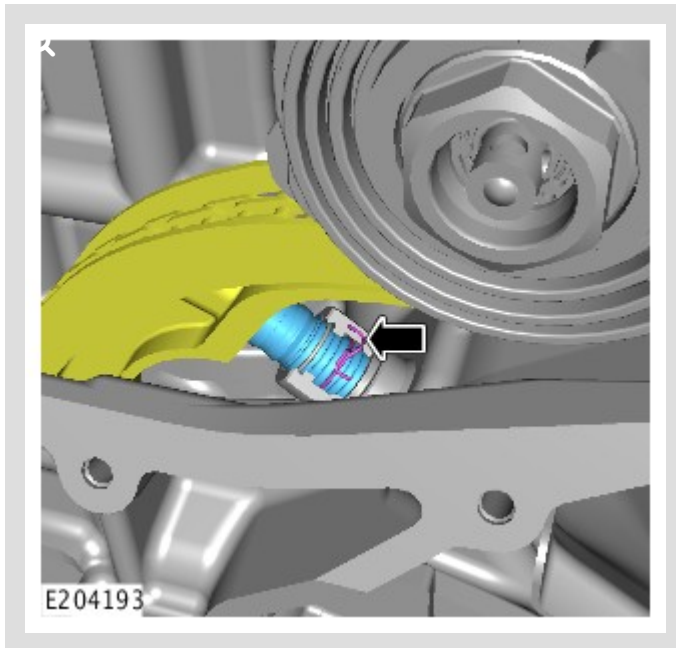
Install the upper timing chain tensioner.

- Torque: **55 Nm**

23

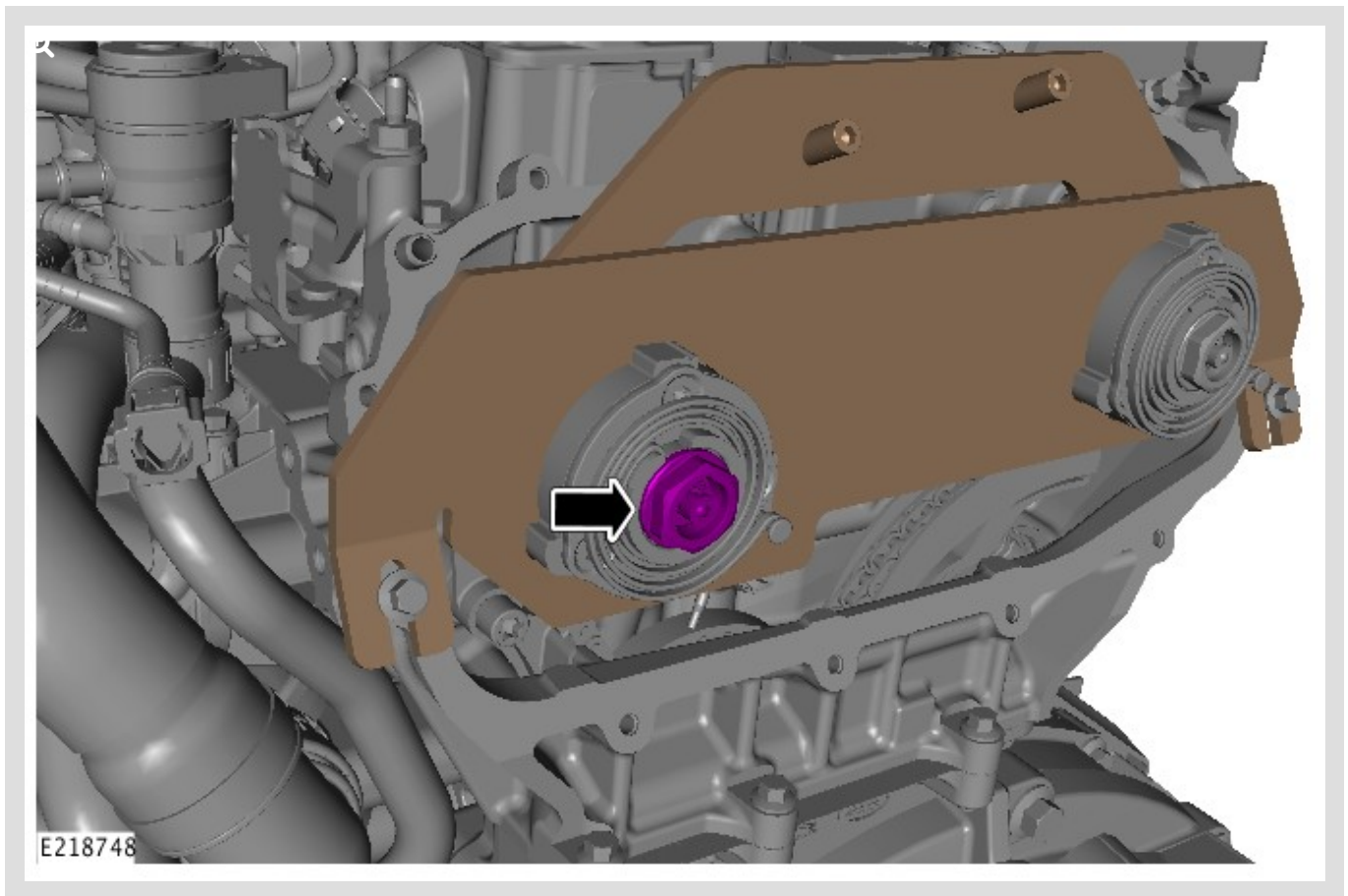
ⓘ CAUTION:

Make sure the upper timing chain tensioner piston is fully deployed.



Release the upper timing chain tensioner piston.

24

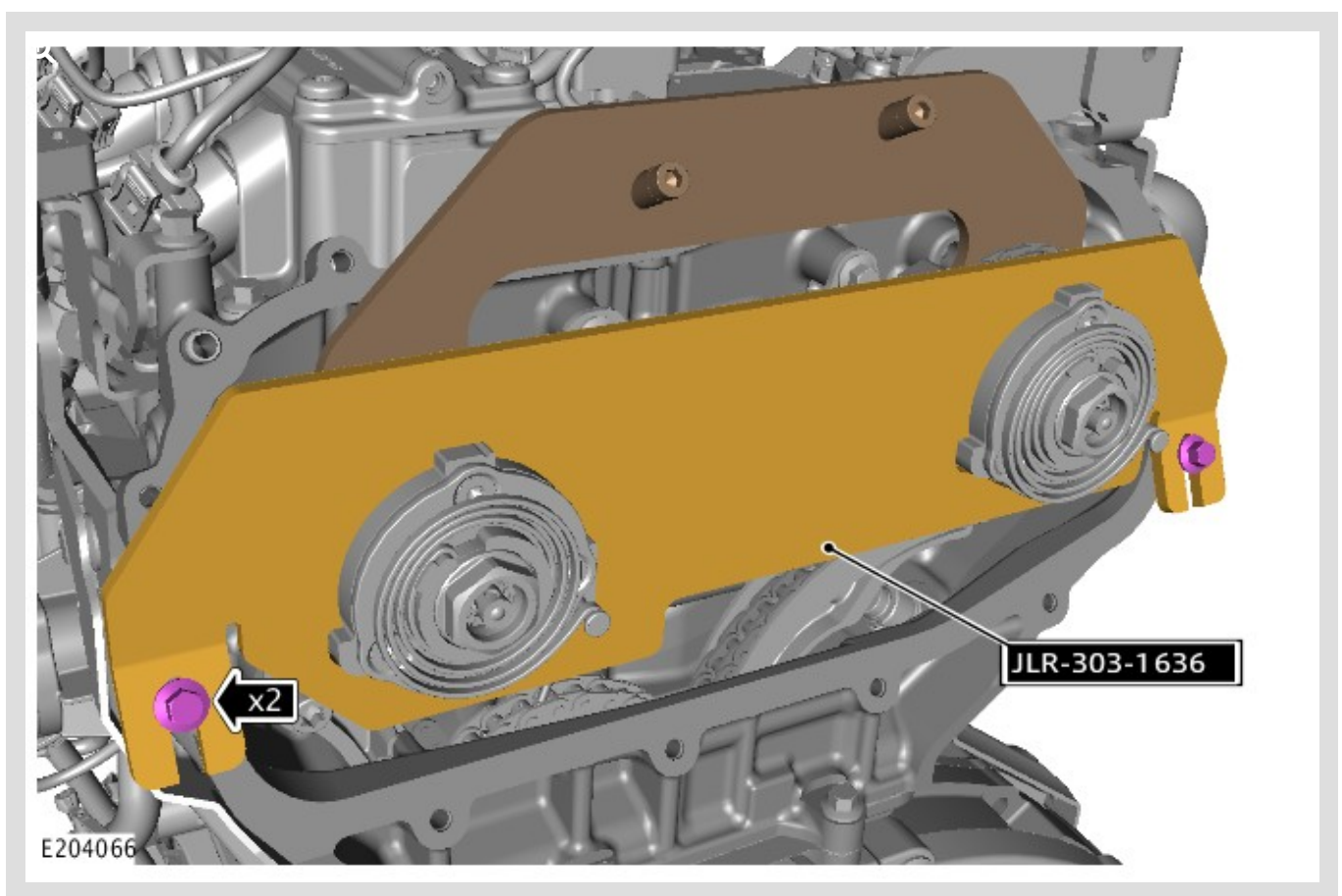


Tighten the intake camshaft VCT actuator fastener.

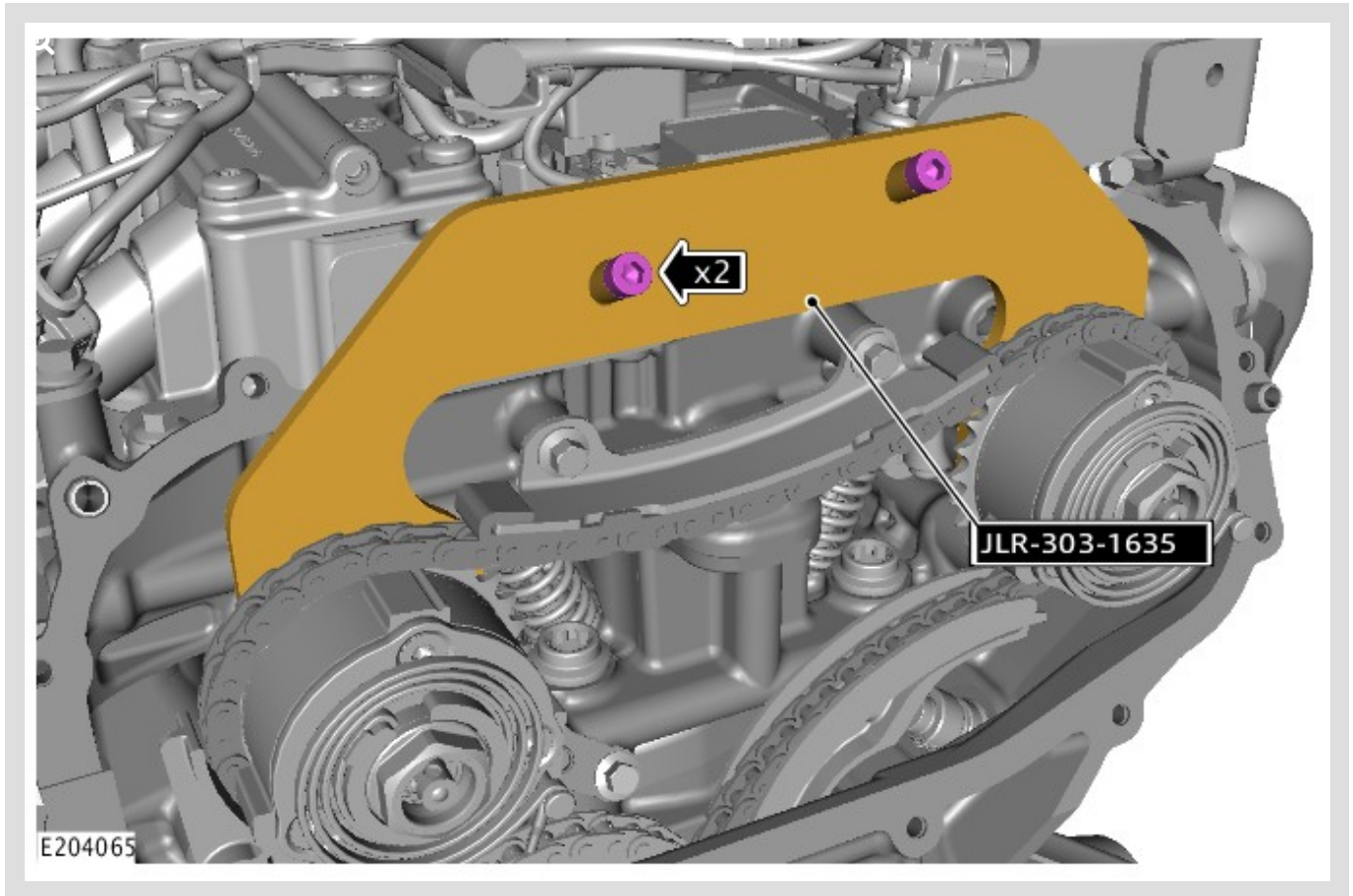
- Torque:
 - Stage 1: **25 Nm**

■ Stage 2: 60°

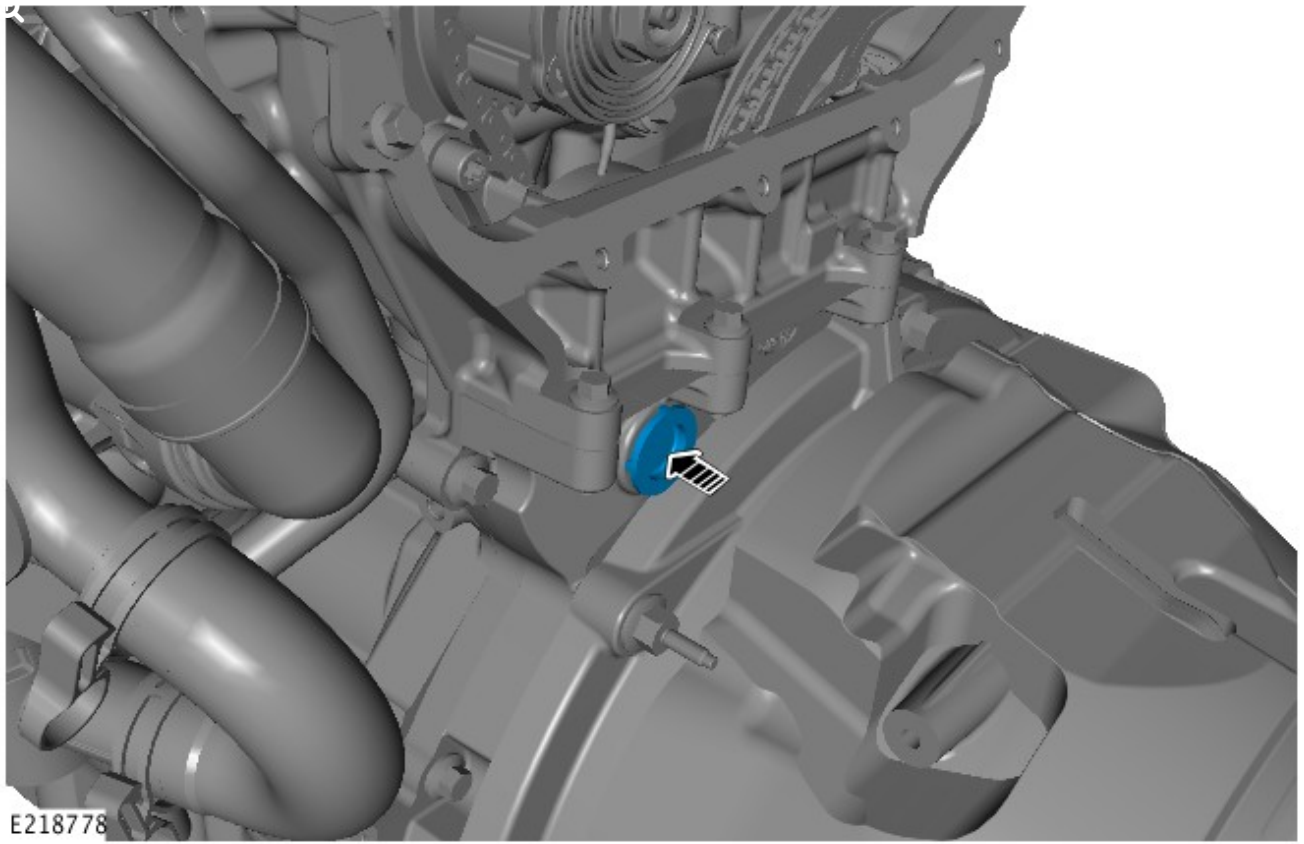
25



Remove special tool JLR-303-1636.

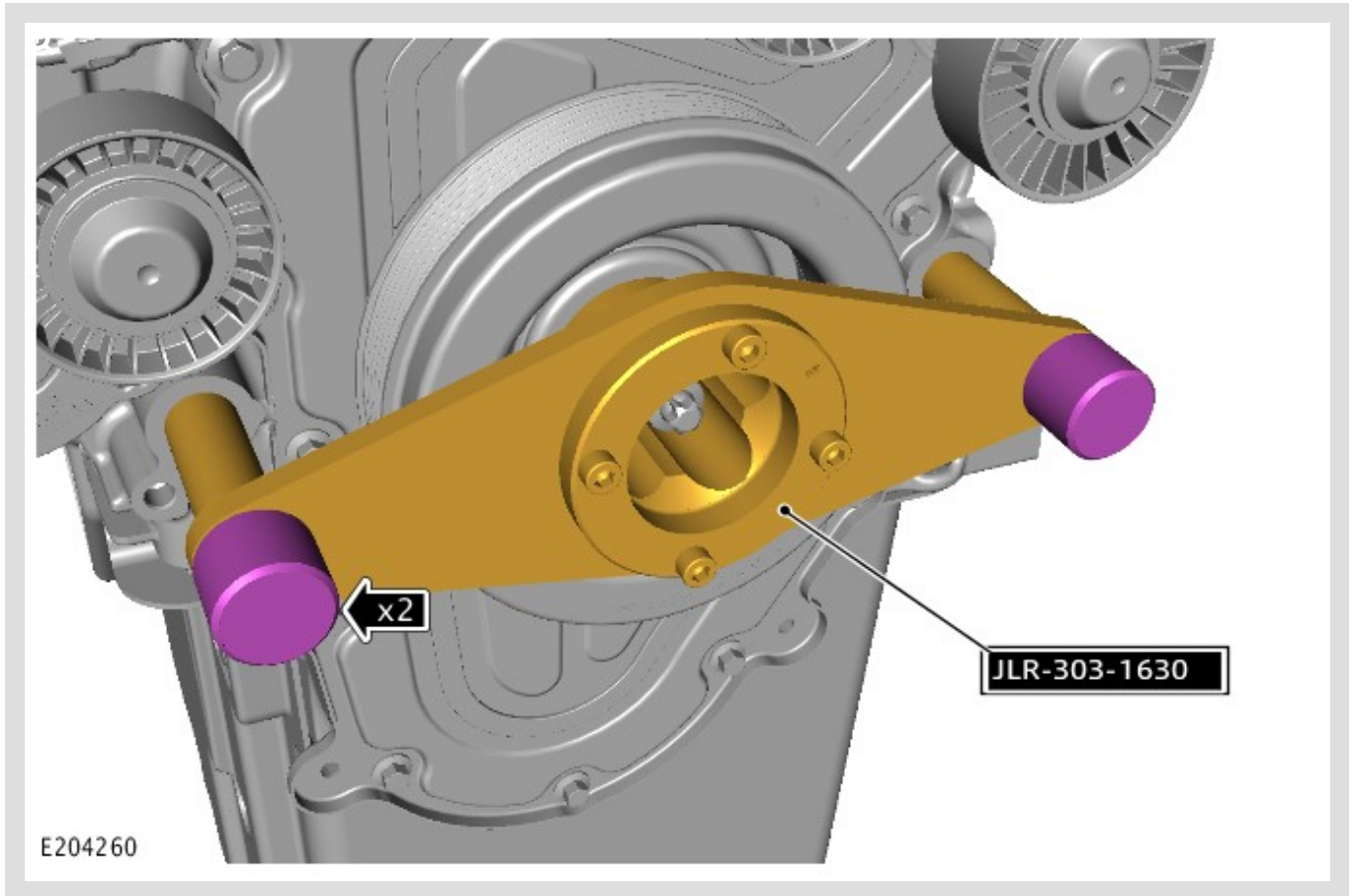


Remove special tool JLR-303-1635.



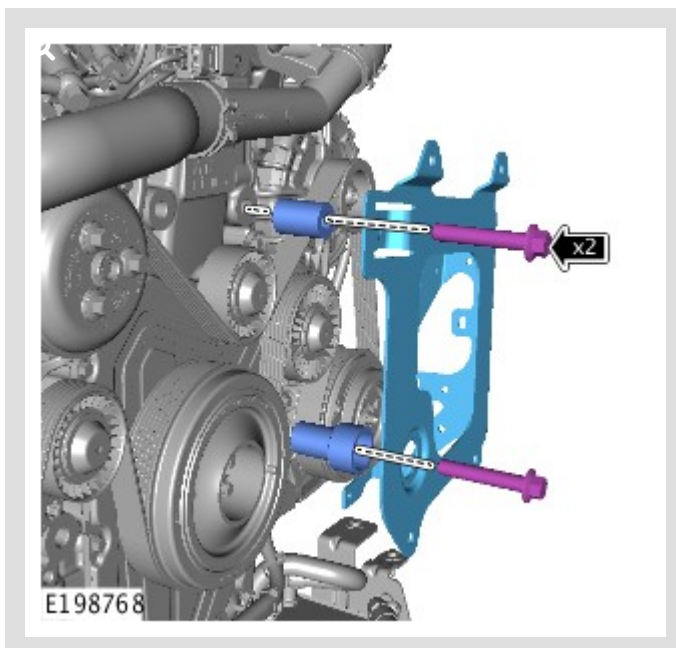
Install a new lower timing cover blanking plug.

28



Remove special tool JLR-303-1630.

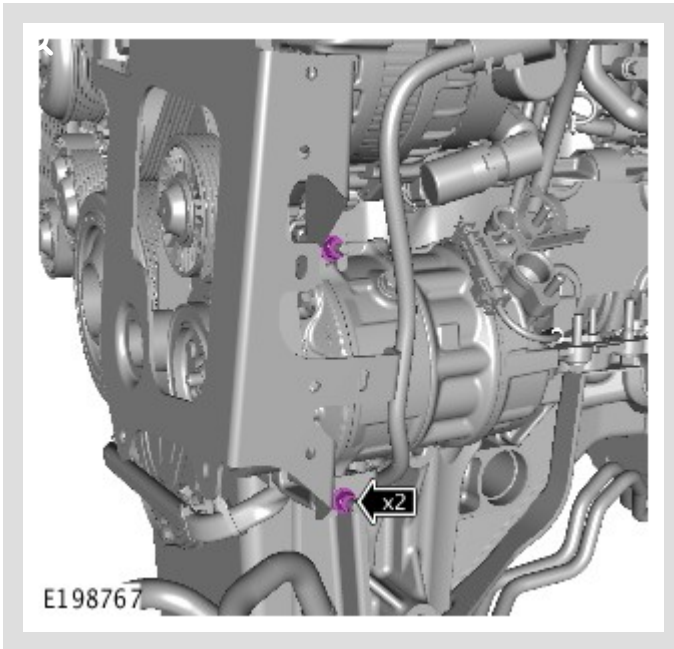
29



Install the charge air cooler bracket.

- Torque: **47 Nm**

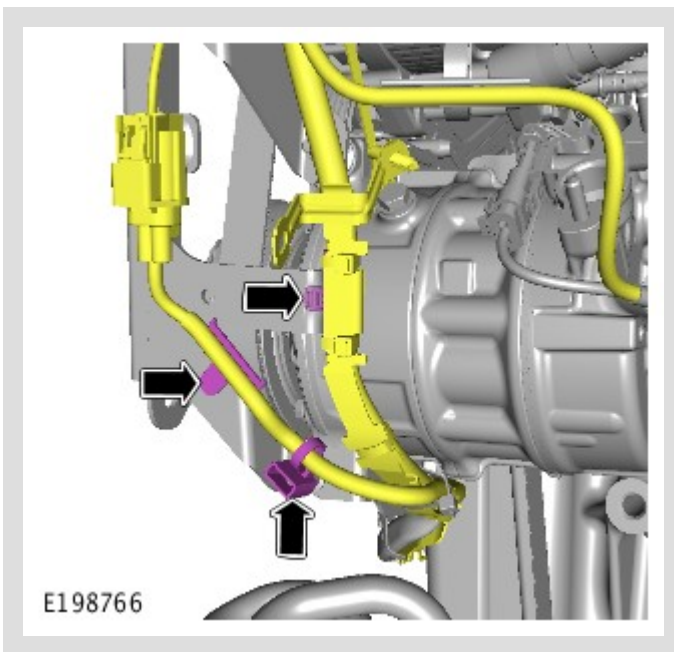
30



Install the charge air cooler bracket fasteners.

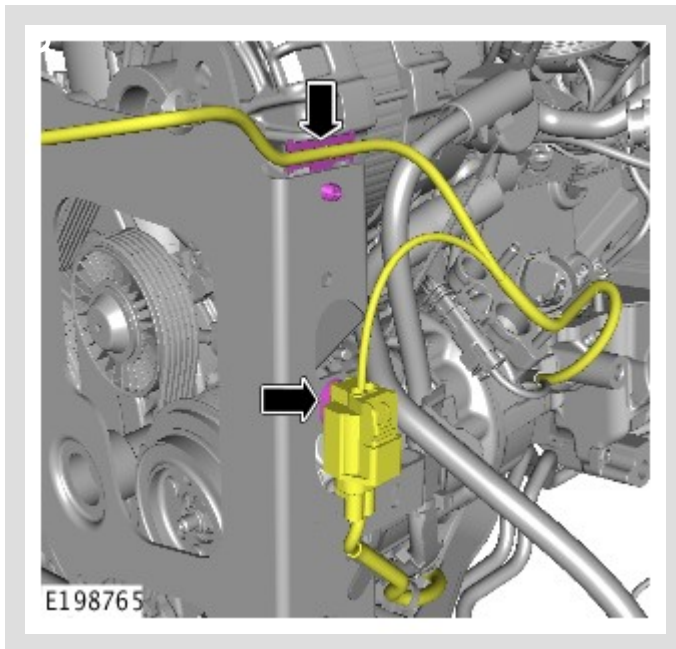
- Torque: **10 Nm**

31



Position the wiring in place.

32



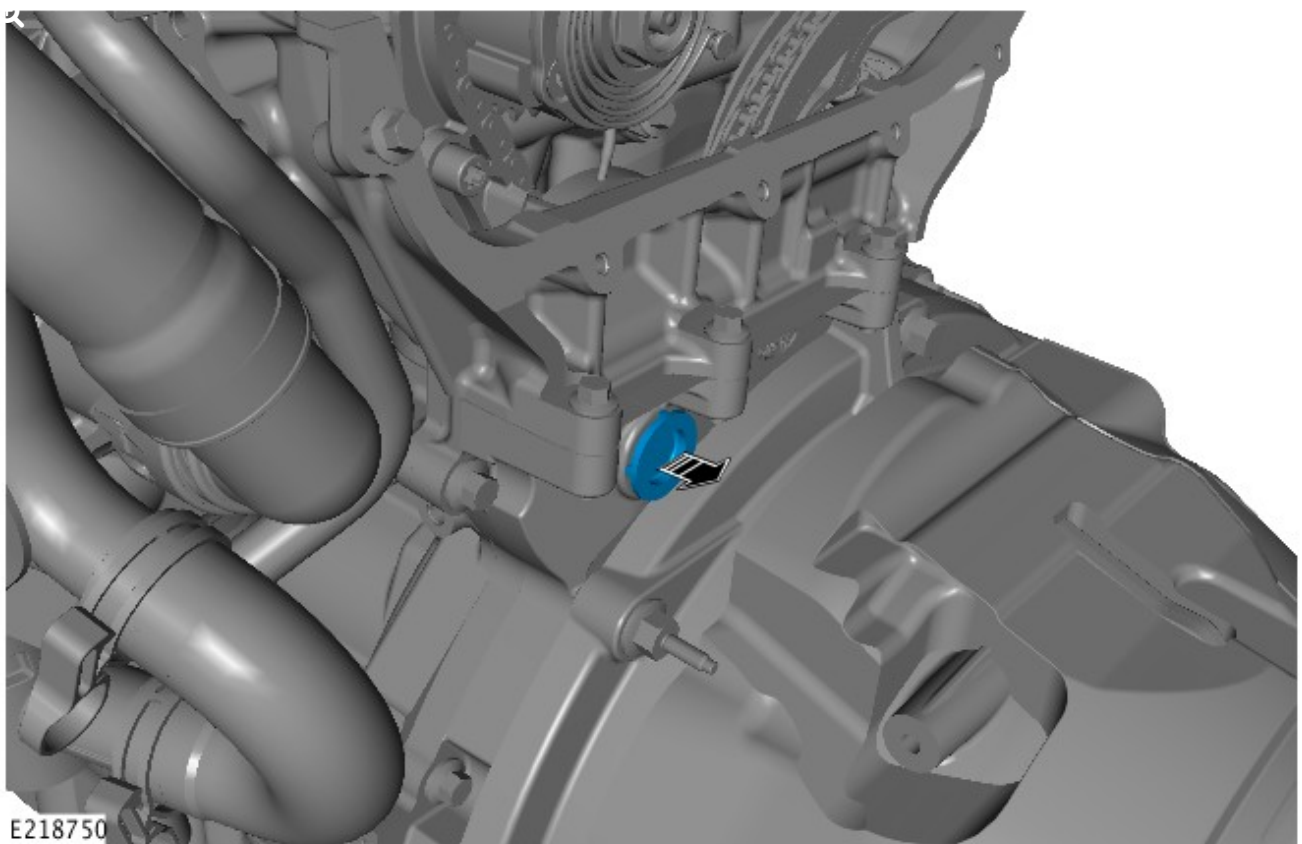
Position the wiring in place.

-
- 33 Install the charge air cooler (see TOPIx Workshop Manual section 303-12B: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Removal and Installation - Charge Air Cooler).
-
- 34 Install the upper timing cover (see TOPIx Workshop Manual section 303-01B: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover).
-
- 35 Install the hood (see TOPIx Workshop Manual section 501-02: Front End Body Panels - Removal and Installation - Hood).
-
- 36 Connect the startup battery ground cable (see TOPIx Workshop Manual section 414-01: Battery, Mounting and Cables - General Procedures - Battery Disconnect and Connect).
-
- 37 Lower the vehicle (see TOPIx Workshop Manual section 100-02: Jacking and Lifting - Lifting).

WORKSHOP PROCEDURE 'B': DISCOVERY SPORT (L550), RANGE ROVER EVOQUE (L538) ONLY

- 1 Raise and support the vehicle (see TOPIx Workshop Manual section 100-02: Jacking and Lifting - Lifting).
- 2 Disconnect the startup battery ground cable (see TOPIx Workshop Manual section 414-01: Battery, Mounting and Cables - General Procedures - Battery Disconnect and Connect).
- 3 Remove the upper timing cover (see TOPIx Workshop Manual section 303-01B: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover).
- 4 Remove the accessory drive belt (see TOPIx Workshop Manual section 303-05B: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Accessory Drive Belt).
- 5 Remove the charge air cooler (see TOPIx Workshop Manual section 303-12B: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Removal and Installation - Charge Air Cooler).

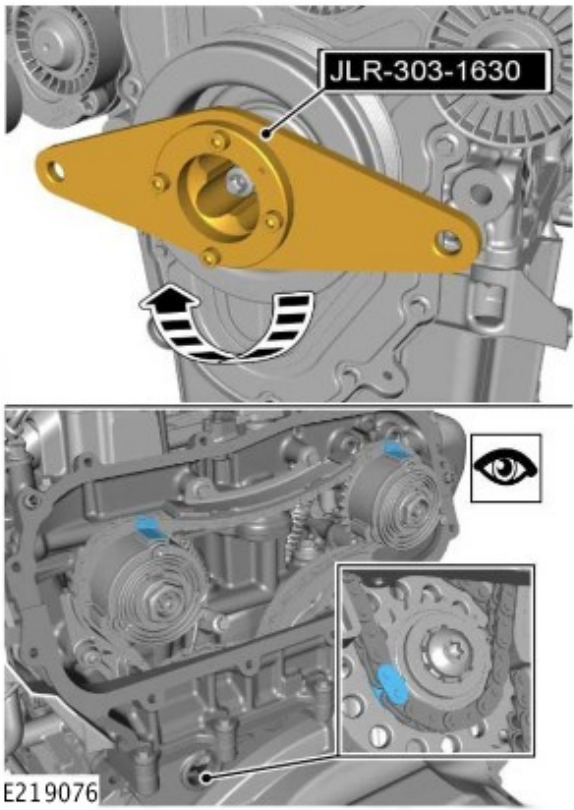
6



Use a suitable tool to remove the lower timing cover blanking plug.

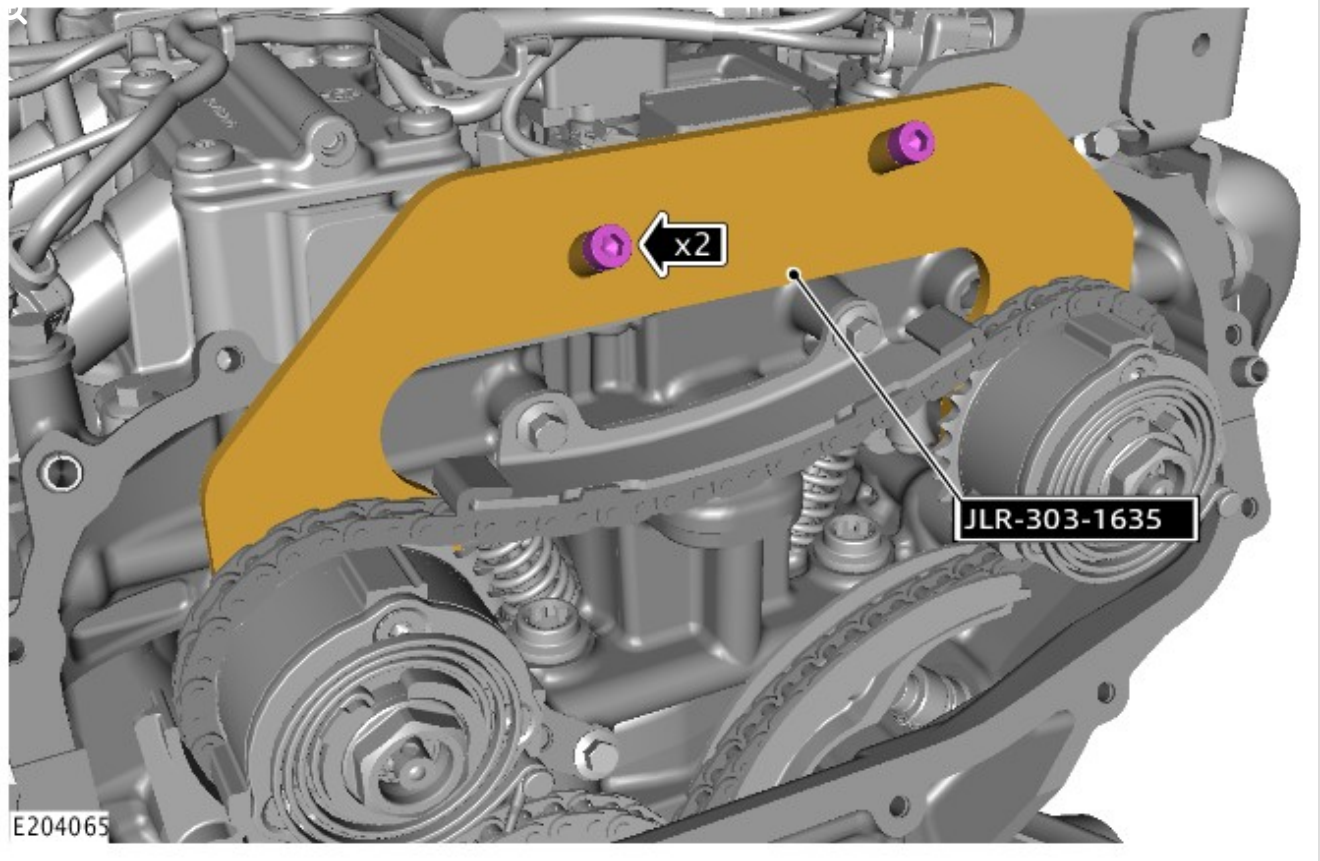
1 Discard the plug.

7



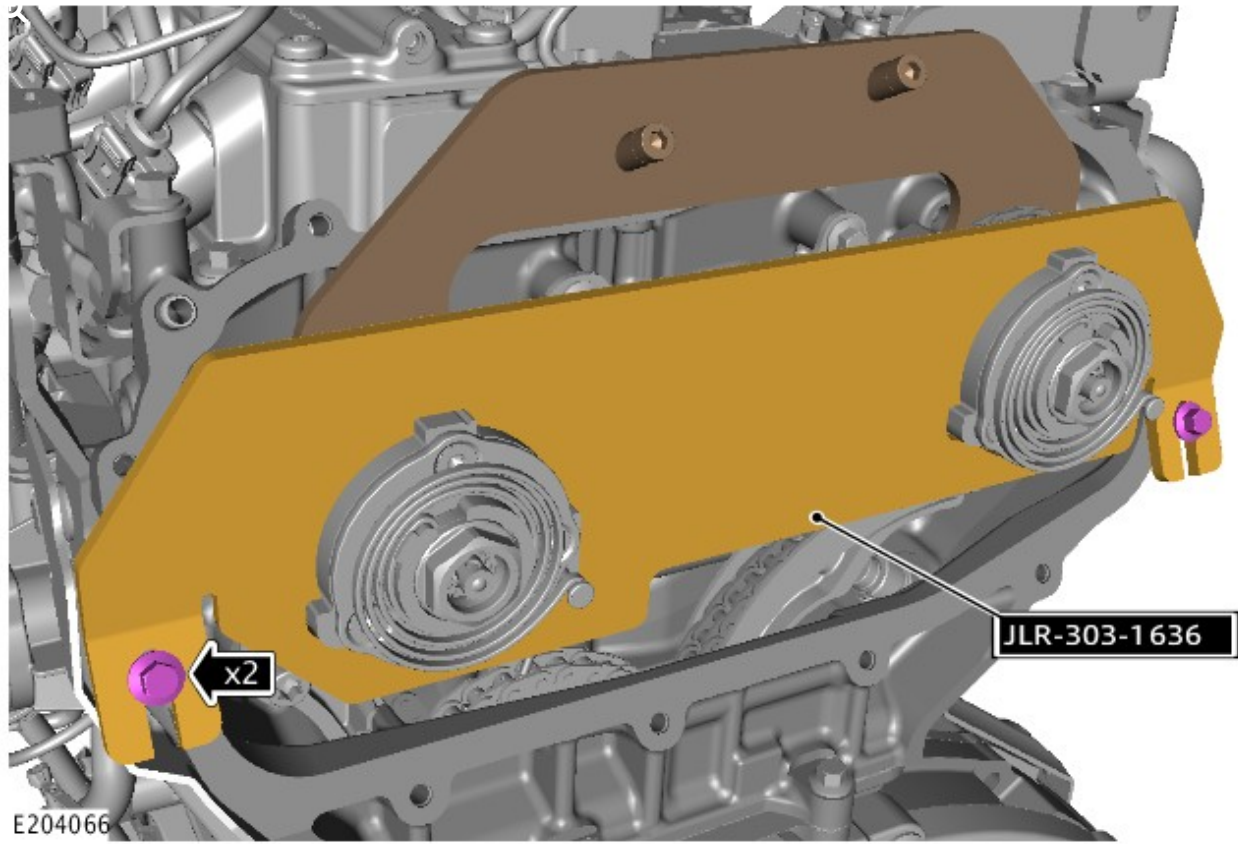
Install special tool JLR-303-1630 as shown.

- 1** Rotate the tool clockwise until the timing marks align as shown.



Install special tool JLR-303-1635 as shown.

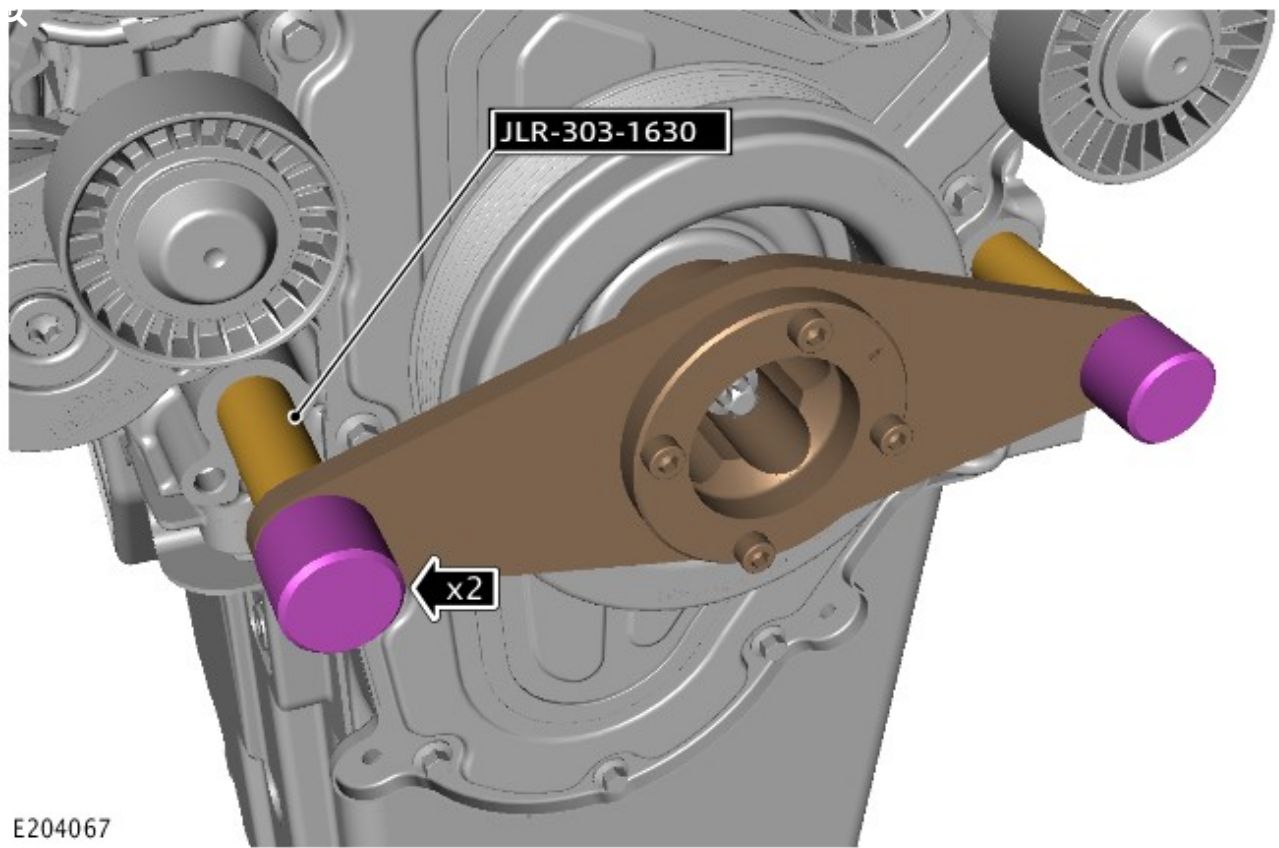
- Torque: **13 Nm**



Install special tool JLR-303-1636 as shown.

- Torque: 13 Nm

10

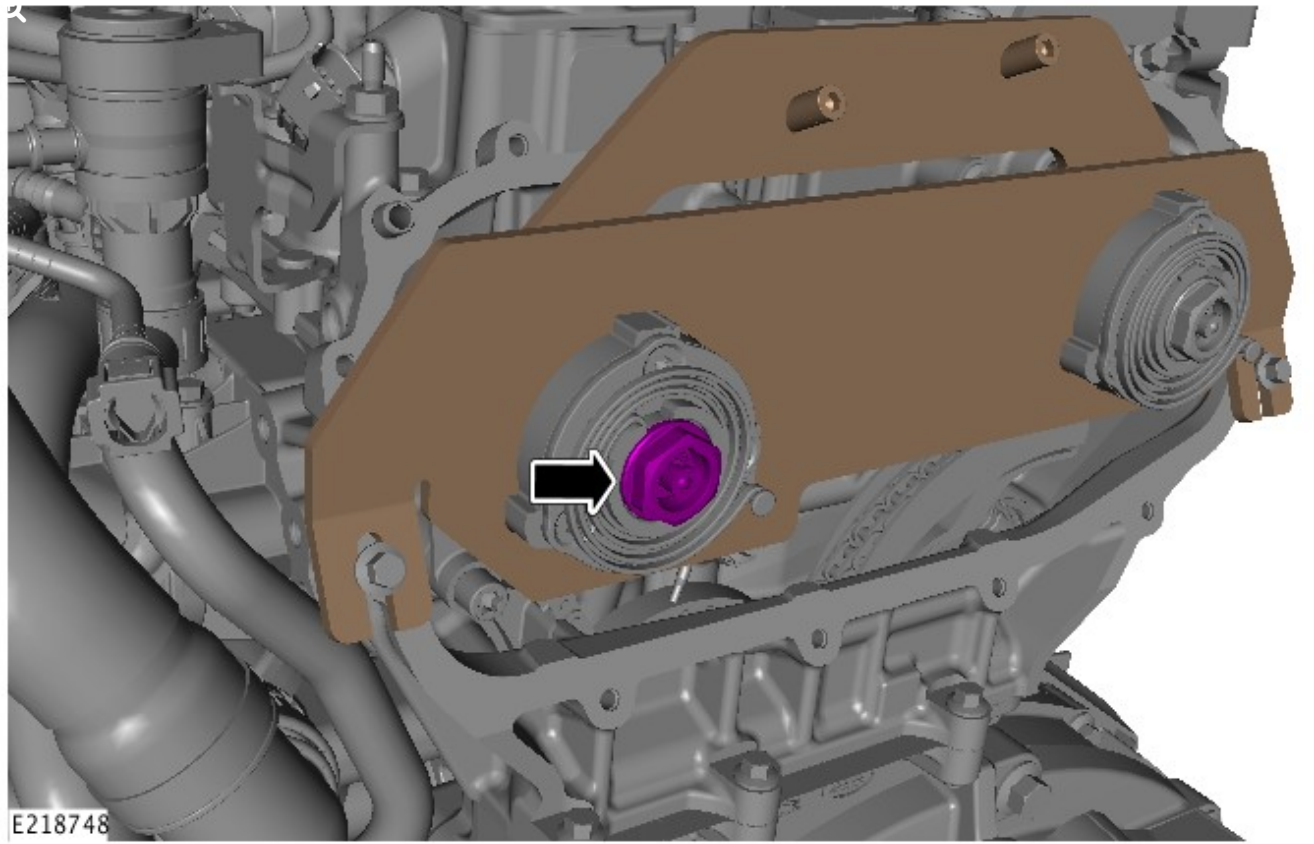


Lock special tool JLR-303-1630 in position.

11

ⓘ CAUTION:

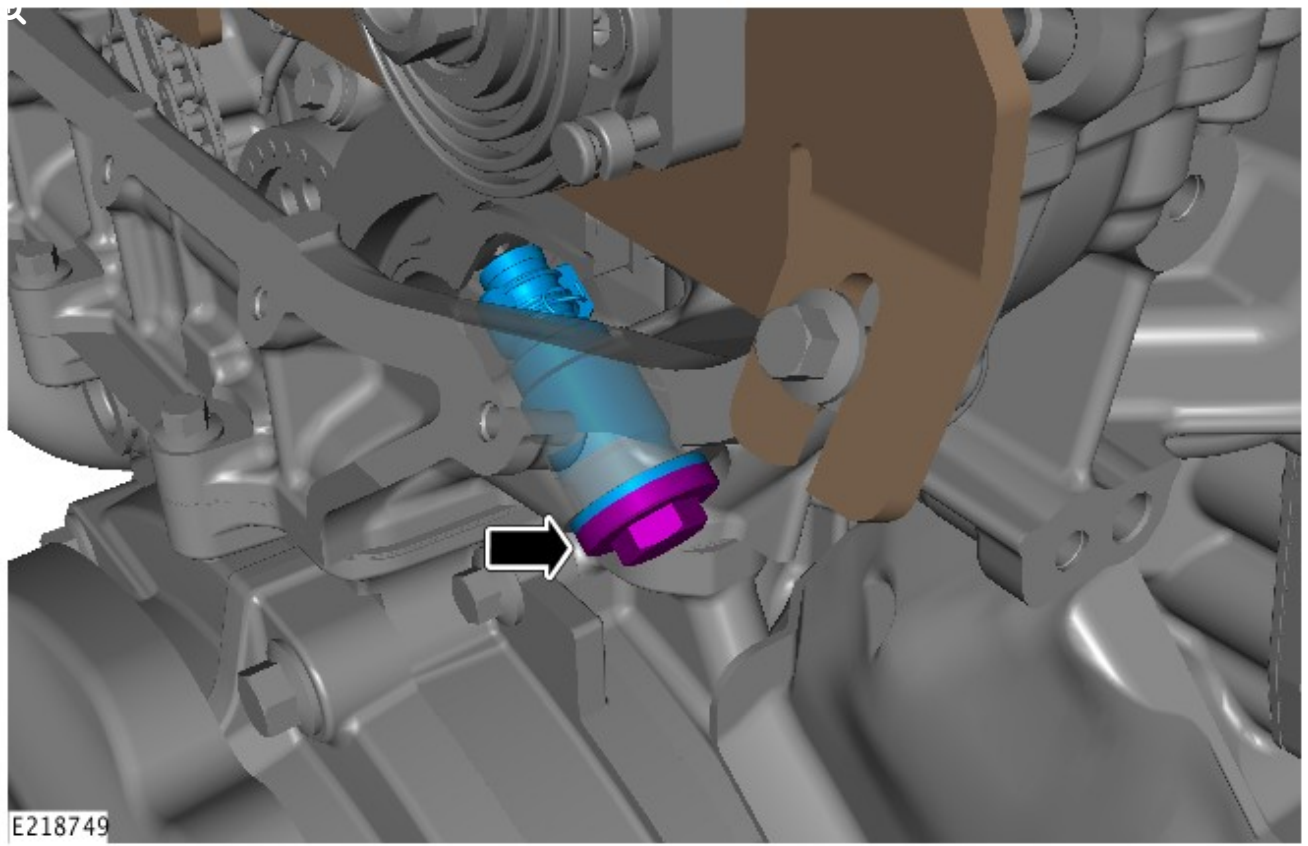
Do not fully remove the VCT actuator fastener.



E218748

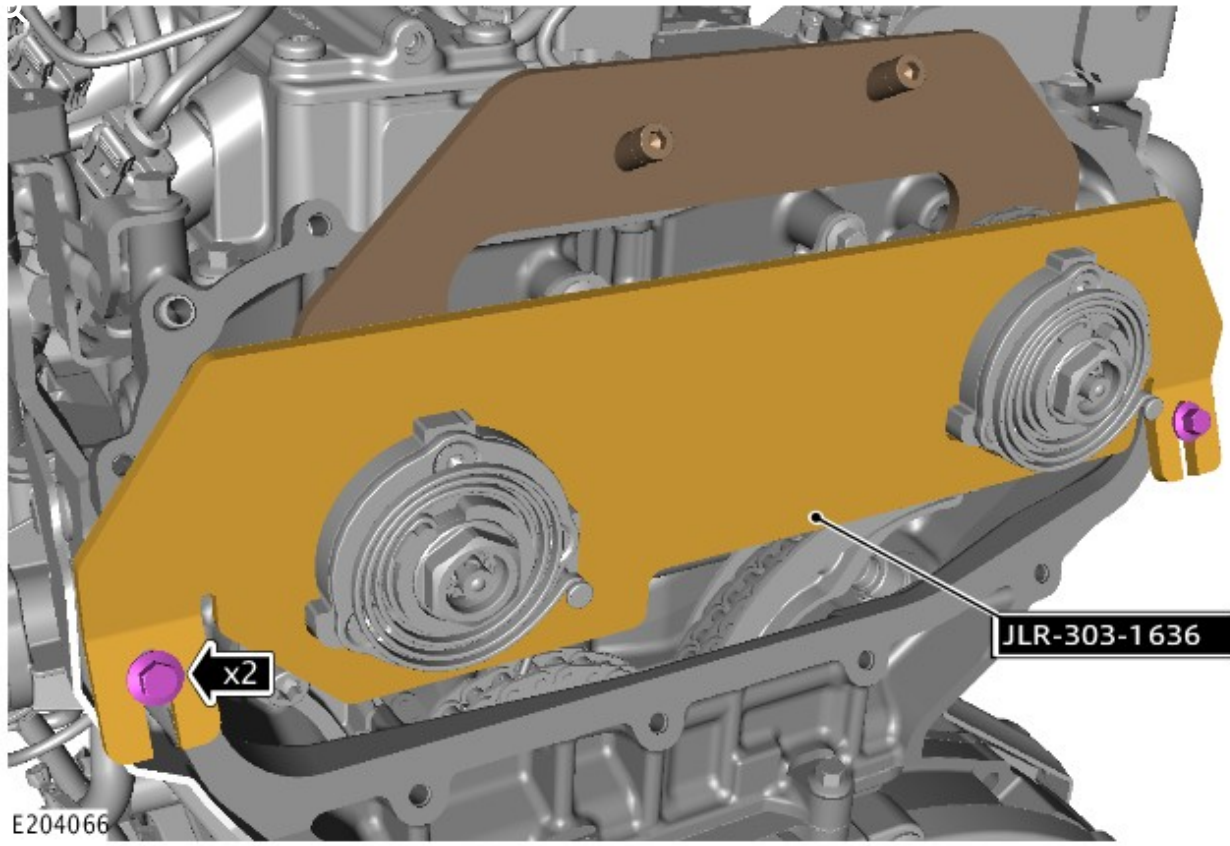
Loosen but do not fully remove the VCT actuator fastener.

12

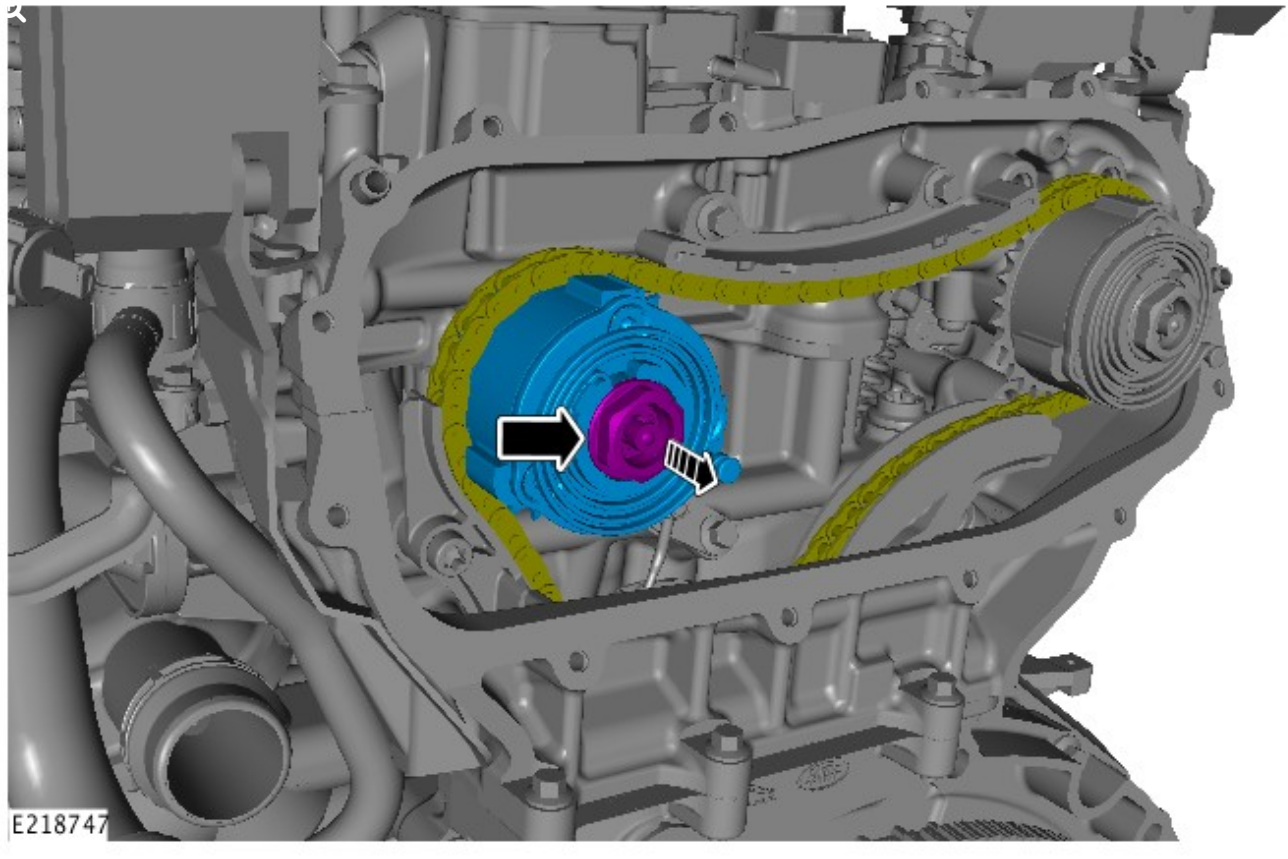


Remove and discard the upper timing chain tensioner.

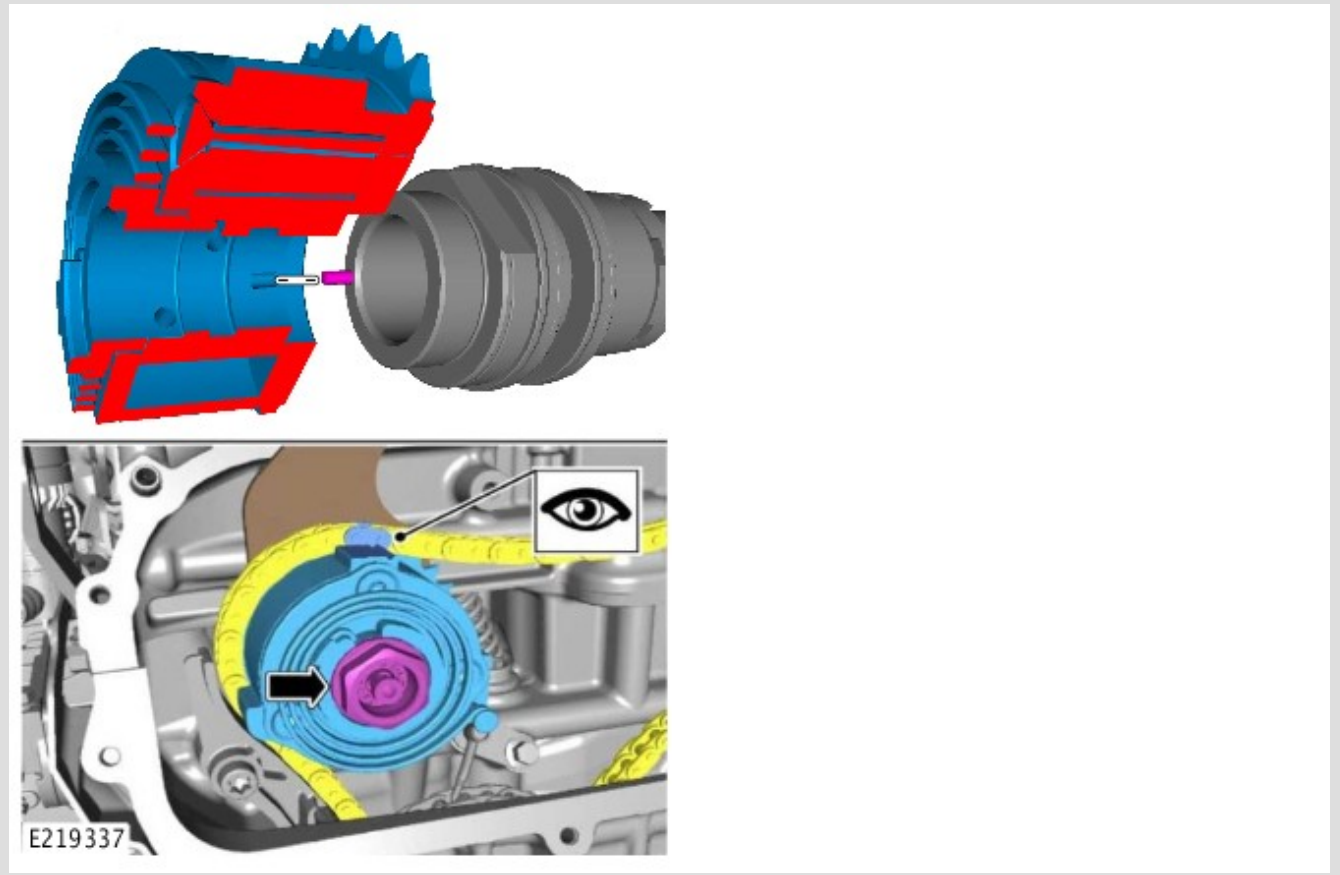
13



Remove special tool JLR-303-1636.



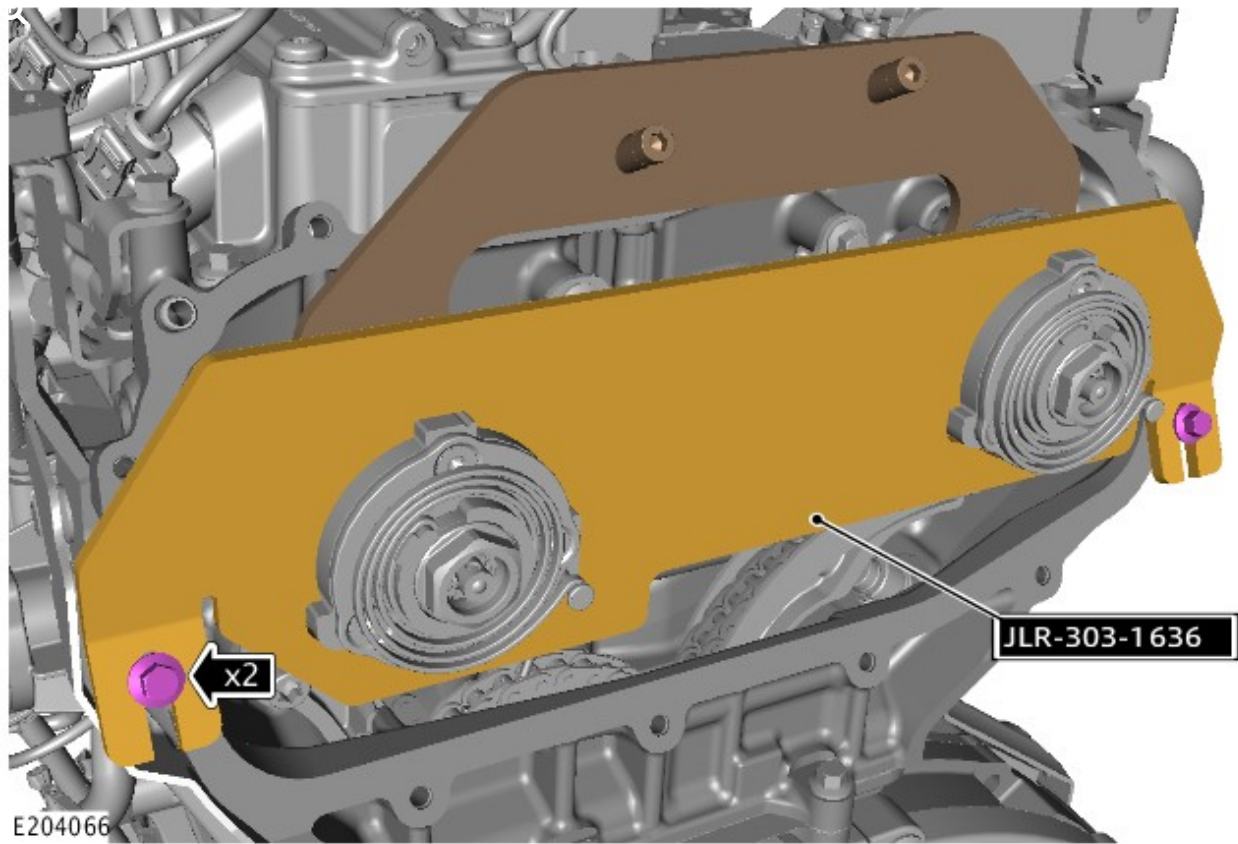
Remove and discard the intake camshaft VCT actuator.



Install the new intake camshaft VCT actuator and fastener.

- Make sure the locating pin is correctly aligned to the VCT actuator.
- Make sure the timing marks are aligned.
- Torque:
 - Stage 1: **10 Nm**
 - Stage 2: **Loosen 90°**

16



Install special tool JLR-303-1636 as shown.

- Torque: **13 Nm**

17

△ NOTE:

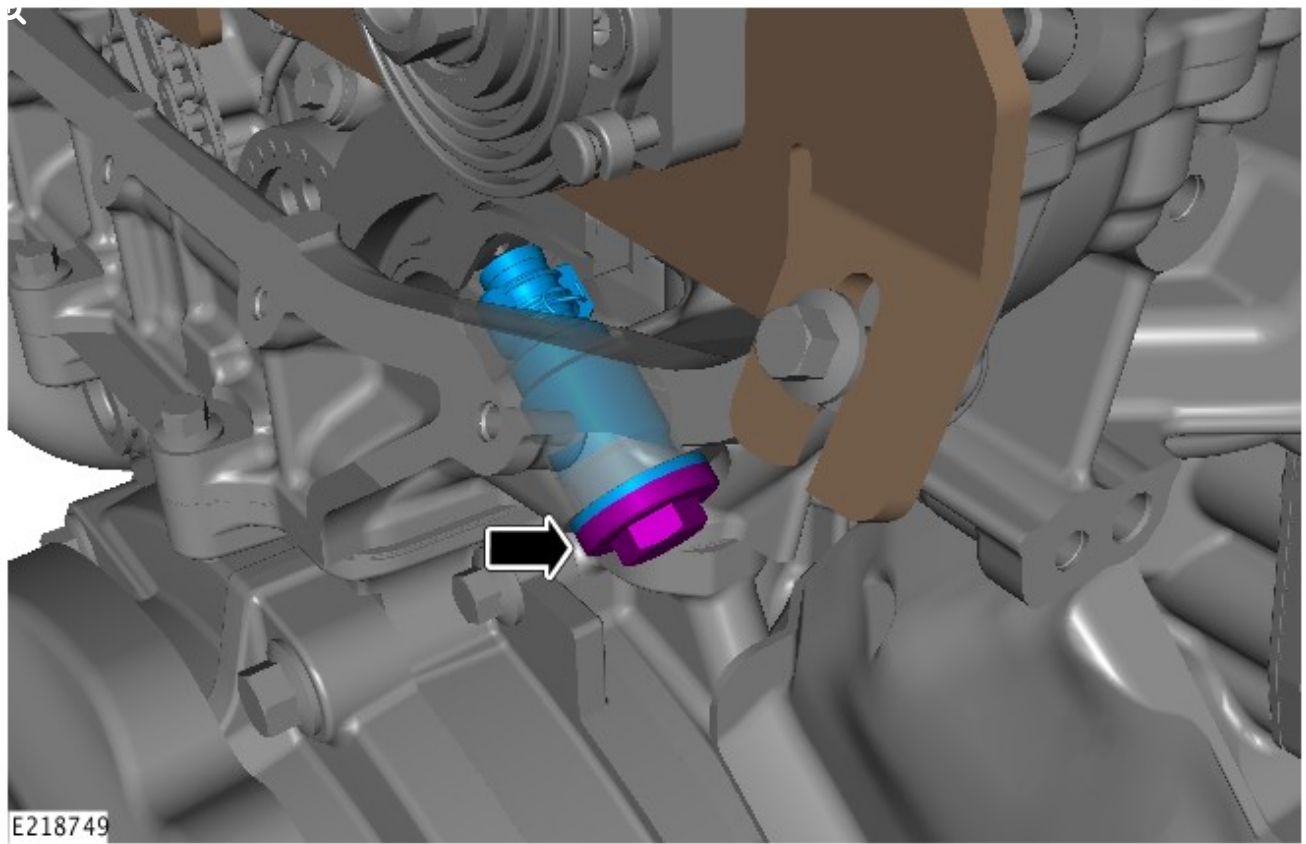
The upper timing chain tensioner must be compressed before installing.



E219075

Make sure the upper timing chain tensioner is compressed as shown [✓] before installing.

18



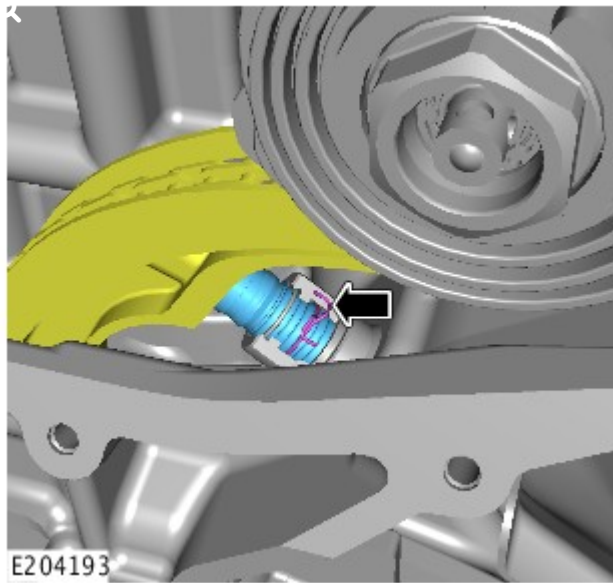
Install the upper timing chain tensioner.

- Torque: **55 Nm**

19

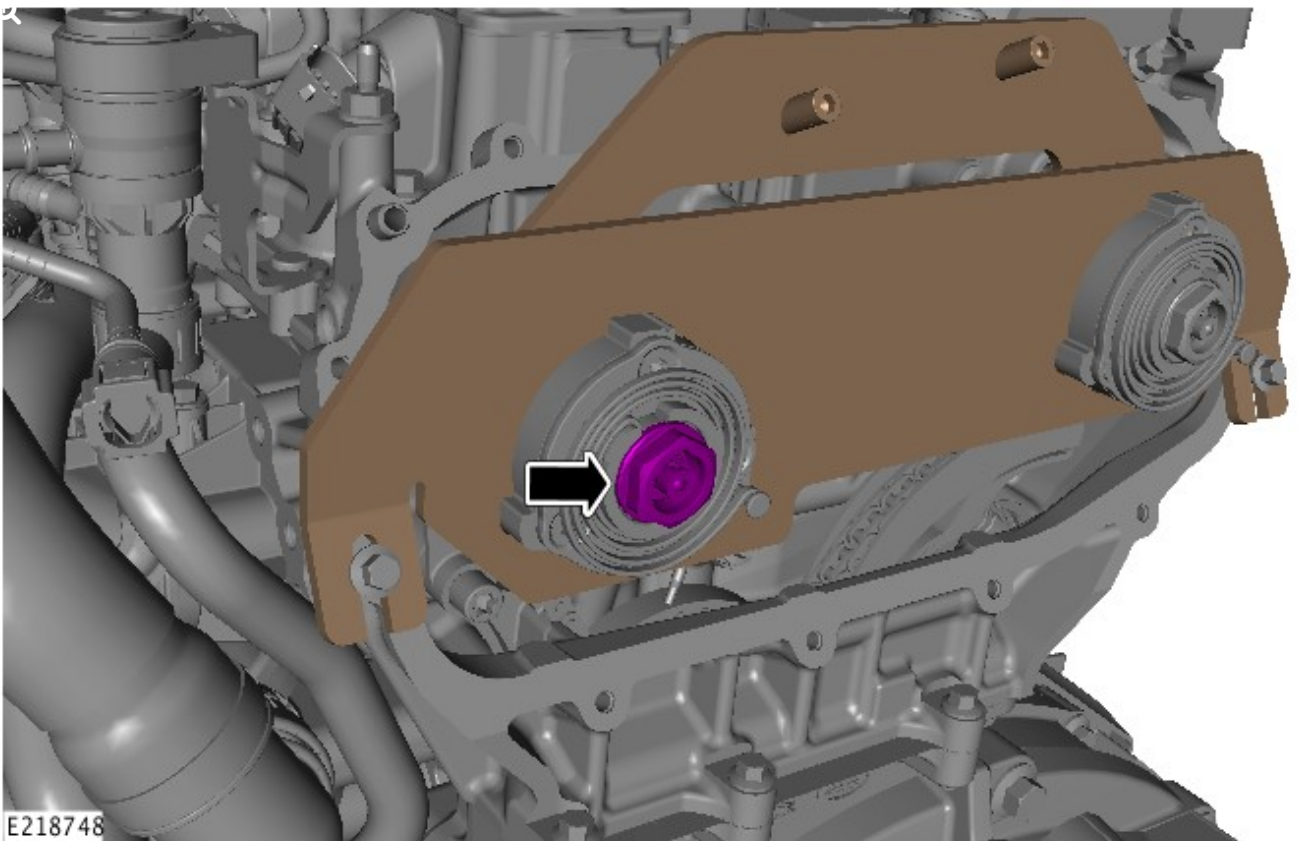
ⓘ CAUTION:

Make sure the upper timing chain tensioner piston is fully deployed.



Release the upper timing chain tensioner piston.

20

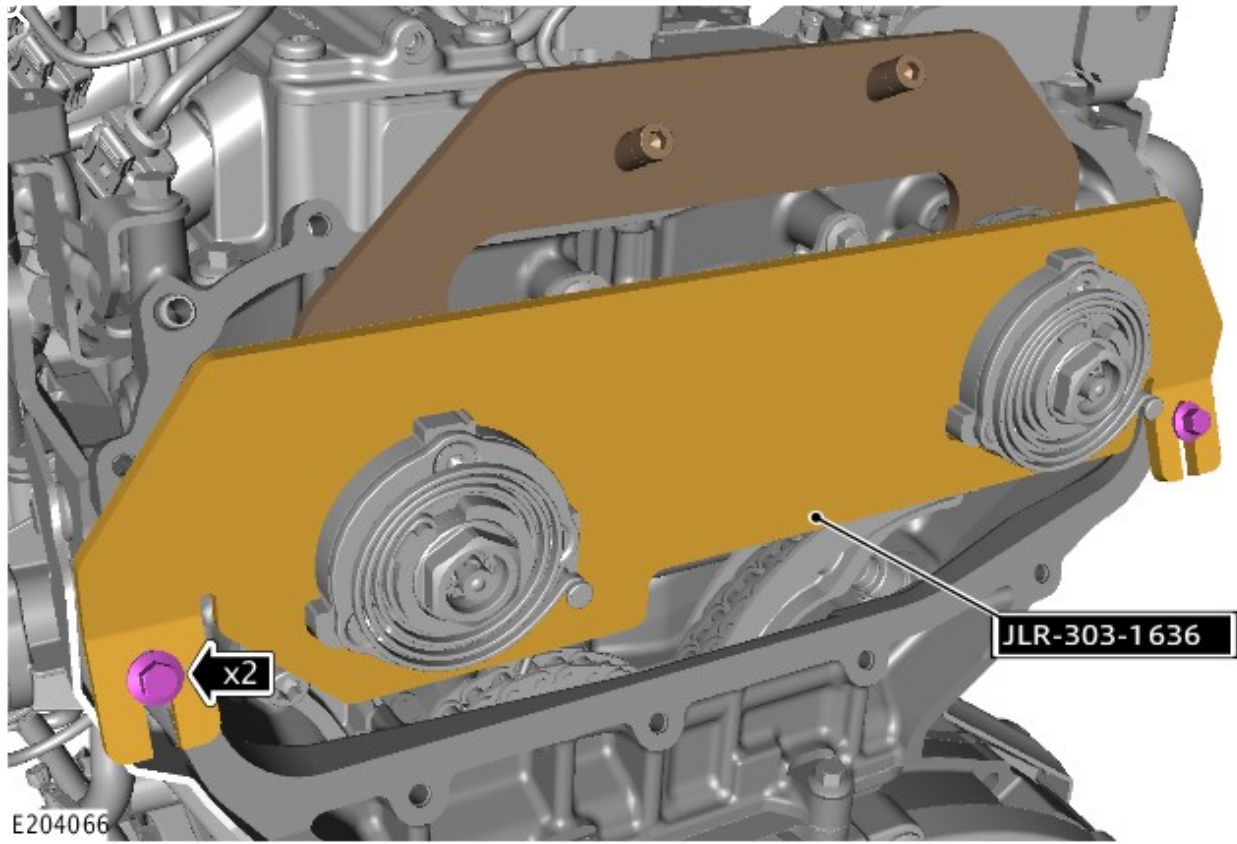


Tighten the intake camshaft VCT actuator fastener.

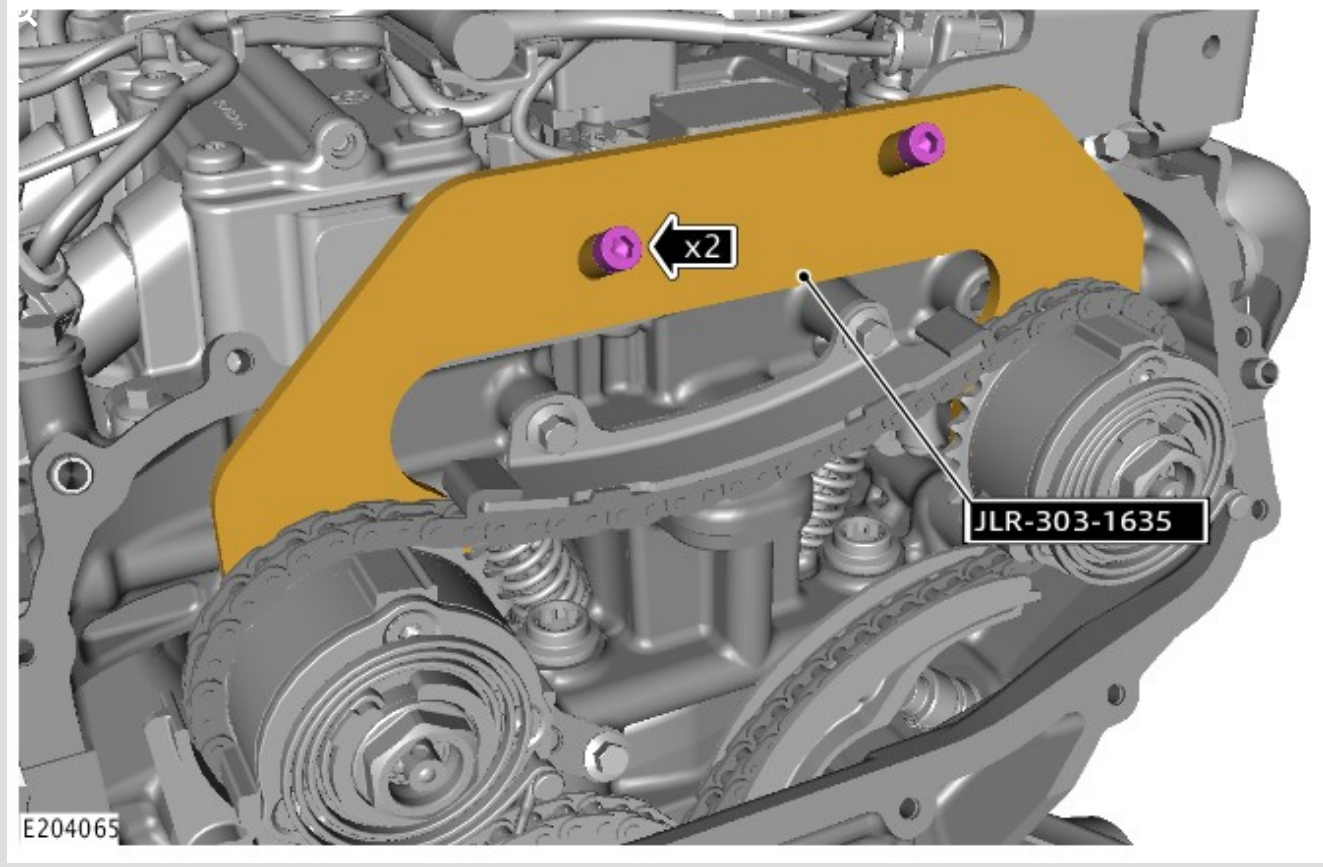
- Torque:
 - Stage 1: **25 Nm**

■ Stage 2: 60°

21

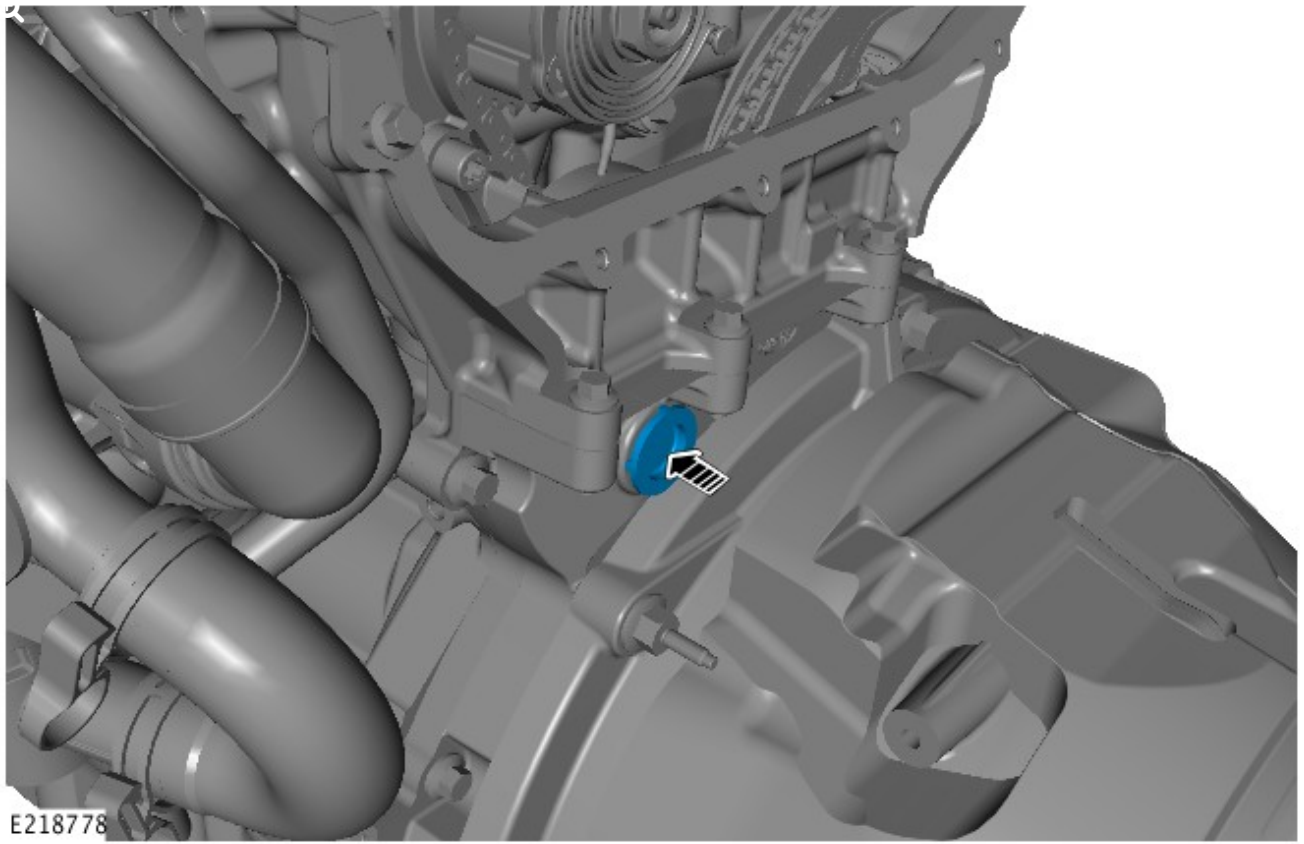


Remove special tool JLR-303-1636.



Remove special tool JLR-303-1635.

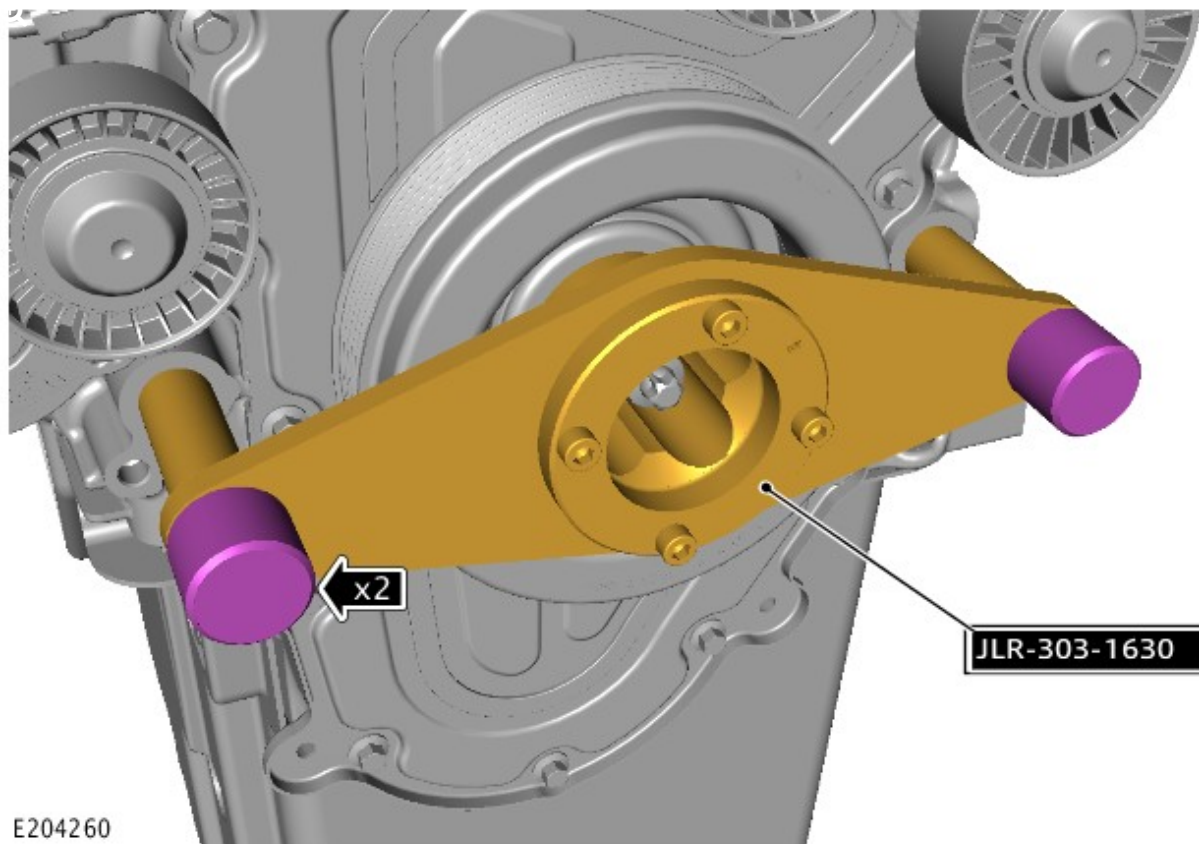
23



E218778

Install a new lower timing cover blanking plug.

24



Remove special tool JLR-303-1630.

25 Install the accessory drive belt (see TOPIx Workshop Manual section 303-05B: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Accessory Drive Belt).

26 Connect the startup battery ground cable (see TOPIx Workshop Manual section 414-01: Battery, Mounting and Cables - General Procedures - Battery Disconnect and Connect).

27 Lower the vehicle (see TOPIx Workshop Manual section 100-02: Jacking and Lifting - Lifting).