

JTB00611NAS1

**TECHNICAL BULLETIN**

22 DEC 2017



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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 Jaguar service facility to determine whether this bulletin applies to a specific vehicle.

**INFORMATION****SECTION:**

303-01C / 01D: Engine - INGENIUM I4 2.0L Petrol

**SUBJECT/CONCERN:**

Rattle From Engine Timing Chain Area

**AFFECTED VEHICLE RANGE:**

| MODEL:        | MODEL YEAR:  | VIN:           | ASSEMBLY PLANT: | APPLICABILITY:          |
|---------------|--------------|----------------|-----------------|-------------------------|
| F-PACE (X761) | 2018 Onwards | 249771 Onwards | Solihull        | INGENIUM I4 2.0L Petrol |

| MODEL:        | MODEL YEAR:  | VIN:           | ASSEMBLY PLANT: | APPLICABILITY:          |
|---------------|--------------|----------------|-----------------|-------------------------|
| F-TYPE (X152) | 2018 Onwards | K47339 Onwards | Castle Bromwich | INGENIUM I4 2.0L Petrol |
| XE (X760)     | 2018 Onwards | P06869 Onwards | Castle Bromwich | INGENIUM I4 2.0L Petrol |
| XF (X260)     | 2018 Onwards | Y46487 Onwards | Castle Bromwich | INGENIUM I4 2.0L Petrol |

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## MARKETS:

NORTH AMERICA

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## 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 Workshop Procedure below.

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## PARTS:

| PART NUMBER | DESCRIPTION              | QUANTITY |
|-------------|--------------------------|----------|
| JDE38702    | Intake Camshaft VCT Unit | 1        |
| JDE38617    | Timing Cover Gasket      | 1        |
| T4N19140    | O-ring                   | 2        |

| PART NUMBER | DESCRIPTION                | QUANTITY |
|-------------|----------------------------|----------|
| JDE38696    | Timing Chain Tensioner     | 1        |
| JDE38679    | VCT Unit Bolt              | 1        |
| JDE38603    | Timing Cover Blanking Plug | 1        |
| STC50550    | Sealant                    | 1        |
| JLM209723   | Coolant                    | 2        |

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**TOOLS:**


**LOCKING  
TOOL,  
CRANKS  
AND  
CAMSHAFT  
PULLEY**

JLR-303-1630



**CAMSHAFT  
SETTING  
TOOL**

JLR-303-1635



**LOCKING  
TOOL,  
VCT  
ACTUATOR**

JLR-303-1636

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**WARRANTY:**
**NOTES:**


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- 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<br>(HOURS) | CONDITION<br>CODE | CAUSAL<br>PART |
|---------------------------------------------------------------------------|----------|-----------------|-------------------|----------------|
| Variable Valve Timing Actuator - Single -<br>Renew - F-PACE (X761)        | 12.66.29 | 3.1             | 42                | JDE38702       |
| Variable Valve Timing Actuator - Single -<br>Renew - F-TYPE (X152)        | 12.66.29 | 1.9             | 42                | JDE38702       |
| Variable Valve Timing Actuator - Single -<br>Renew - XE (X760), XF (X260) | 12.66.29 | 3.3             | 42                | JDE38702       |

**NOTE:**

Normal Warranty procedures apply.

**SERVICE INSTRUCTION:**

- <sup>1</sup> Raise and support the vehicle ((see TOPIx Workshop Manual section 100-02: Jacking and Lifting - Lifting).
- <sup>2</sup> Disconnect the startup battery ground cable (see TOPIx Workshop Manual section 414-01: Battery, Mounting and Cables - General Procedures - Battery Disconnect and Connect).

<sup>3</sup>

**NOTE:**

F-PACE, XE, and XF vehicles only.

Remove the hood (see TOPIx Workshop Manual section 501-02: Front End Body Panels - Removal and Installation - Hood).

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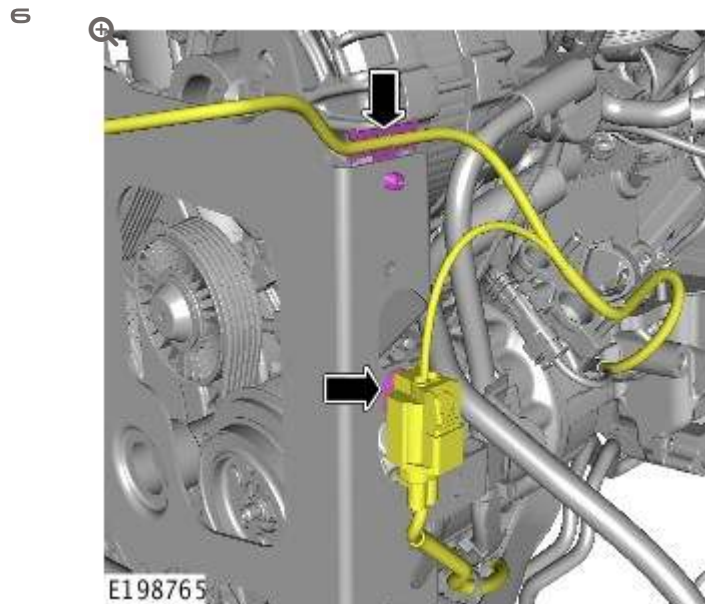
4 Remove the upper timing cover:

- **F-TYPE, XE:** see TOPIx Workshop Manual section: 303-01C: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover.
- **F-PACE, XF:** see TOPIx Workshop Manual section: 303-01D: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover.

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5 Remove the charge air cooler:

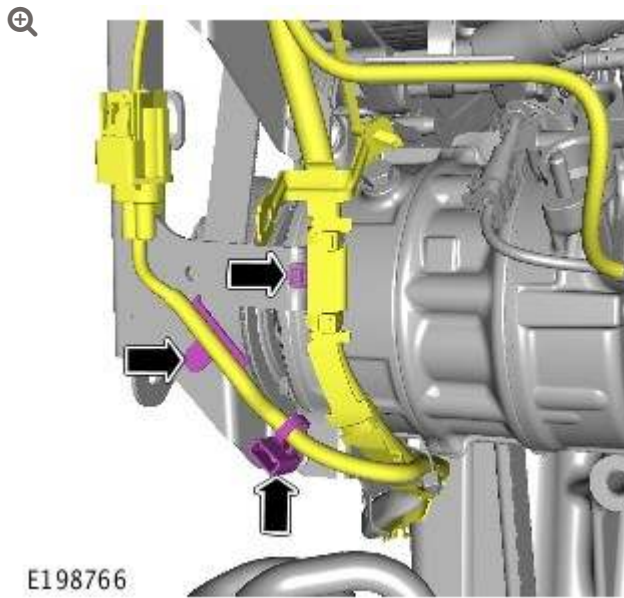
- **F-TYPE, XE:** see TOPIx Workshop Manual section: 303-12C: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Charge Air Cooler.
- **F-PACE, XF:** see TOPIx Workshop Manual section: 303-12D: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Charge Air Cooler.



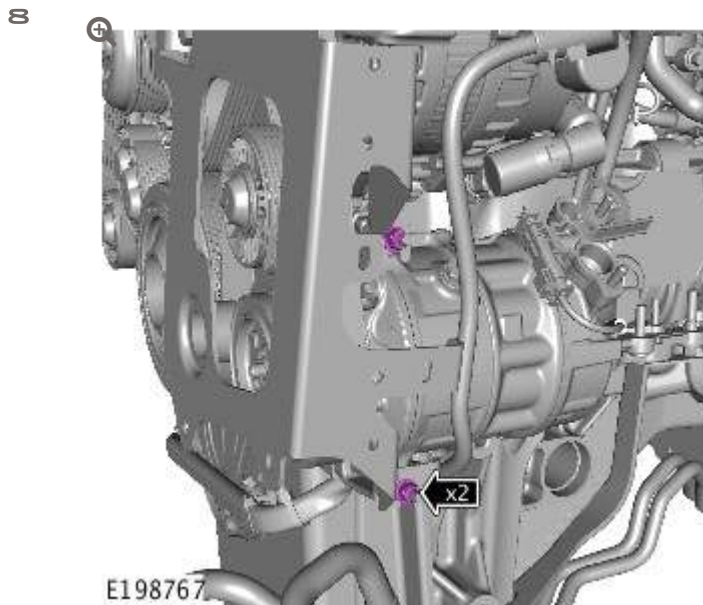
Release the wiring.

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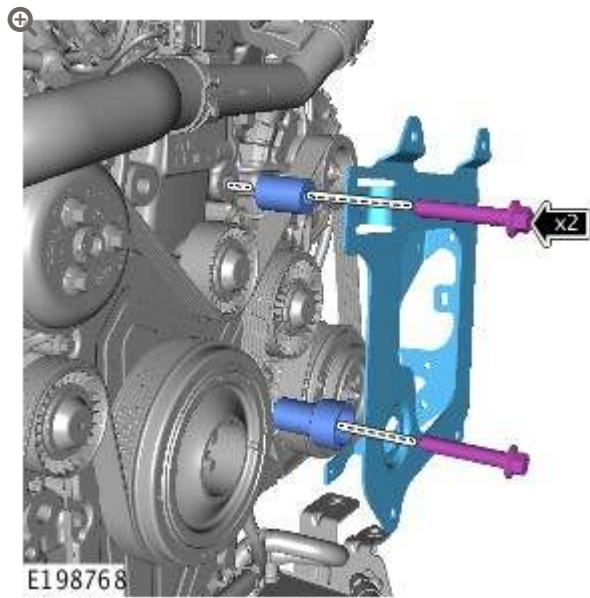
7



Release the wiring.

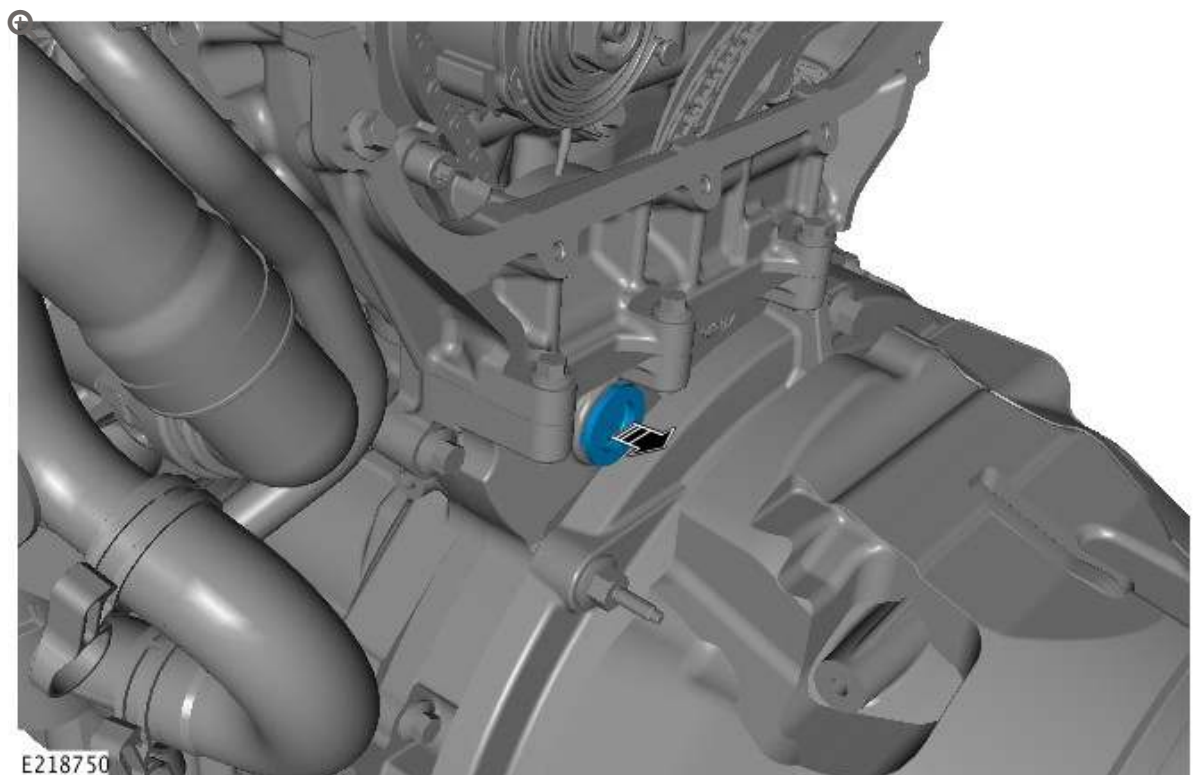


Remove the charge air cooler bracket fasteners.



Remove the charge air cooler bracket.

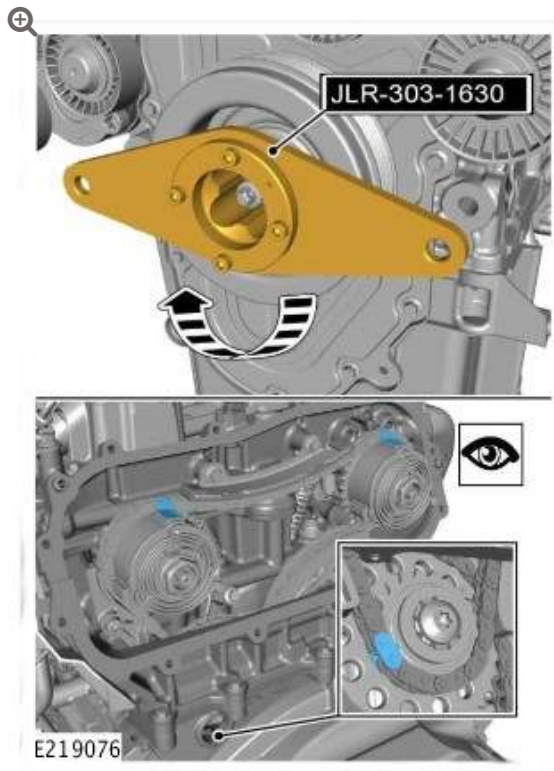
10



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

- 1 Discard the plug.

11

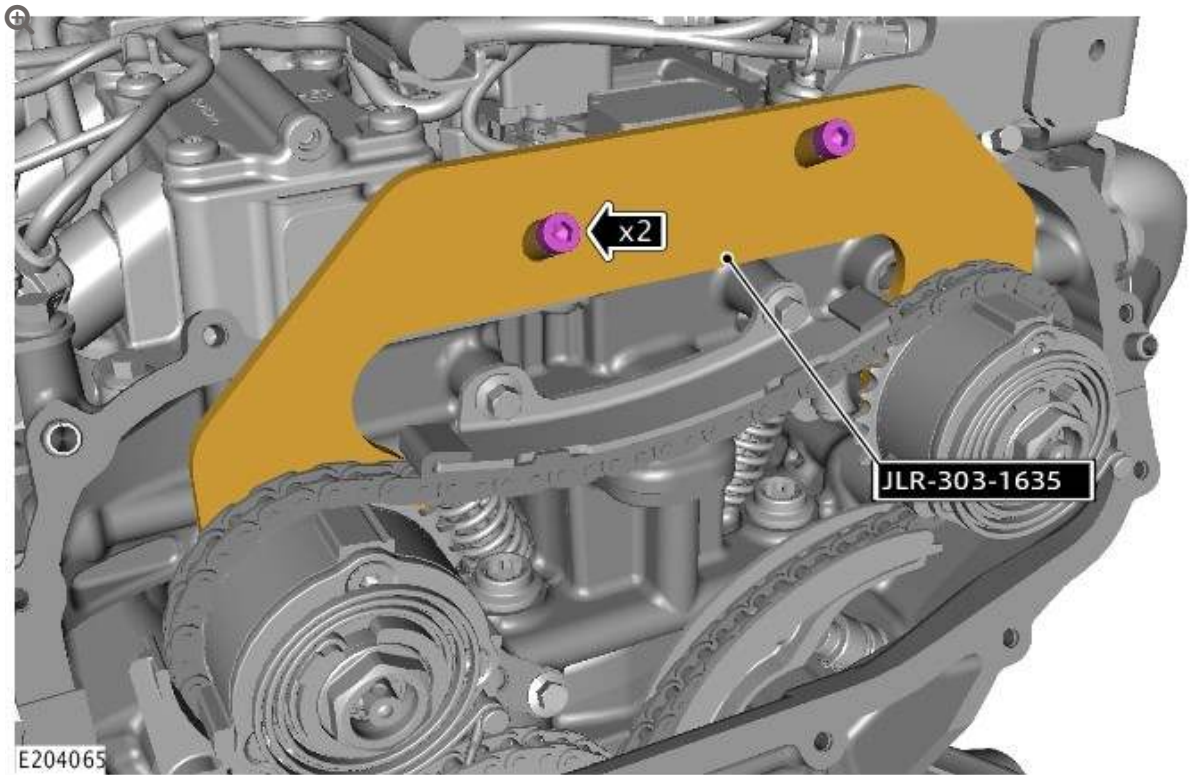


Install special tool JLR-303-1630 as shown.

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

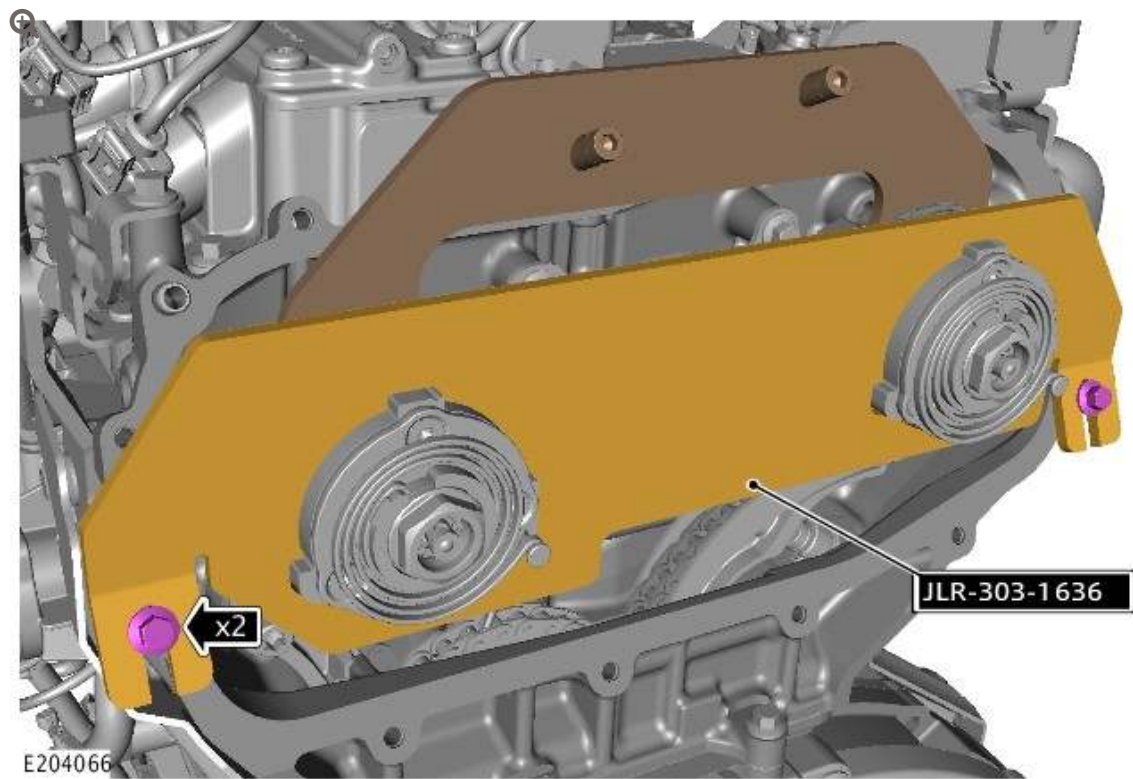
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12



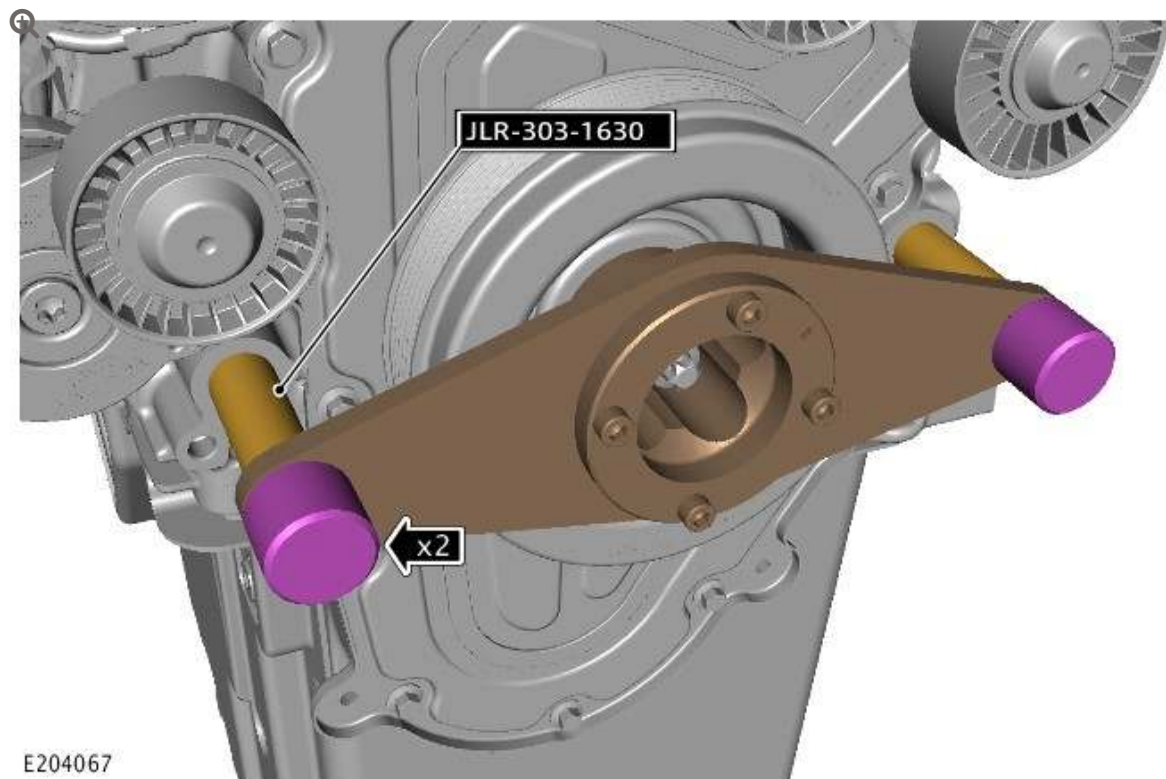
Install special tool JLR-303-1635 as shown.

- Torque: **13 Nm**



Install special tool JLR-303-1636 as shown.

- Torque: **13 Nm**



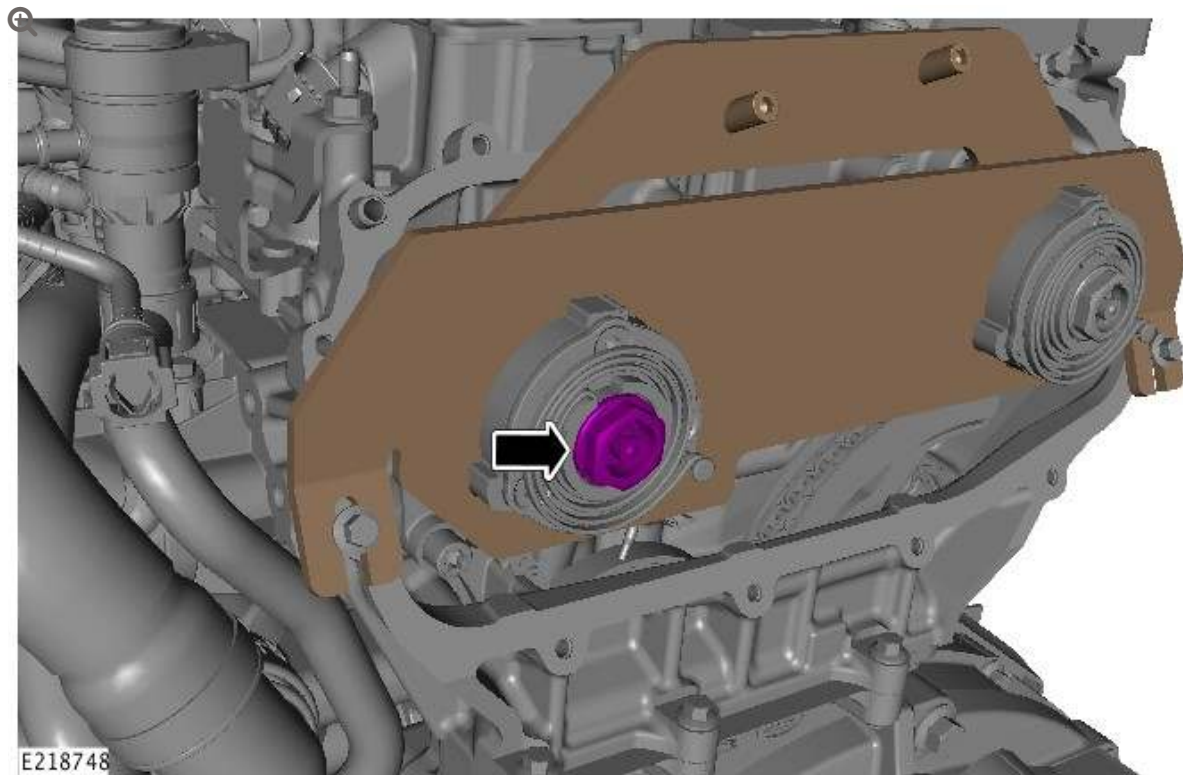
Lock special tool JLR-303-1630 in position.

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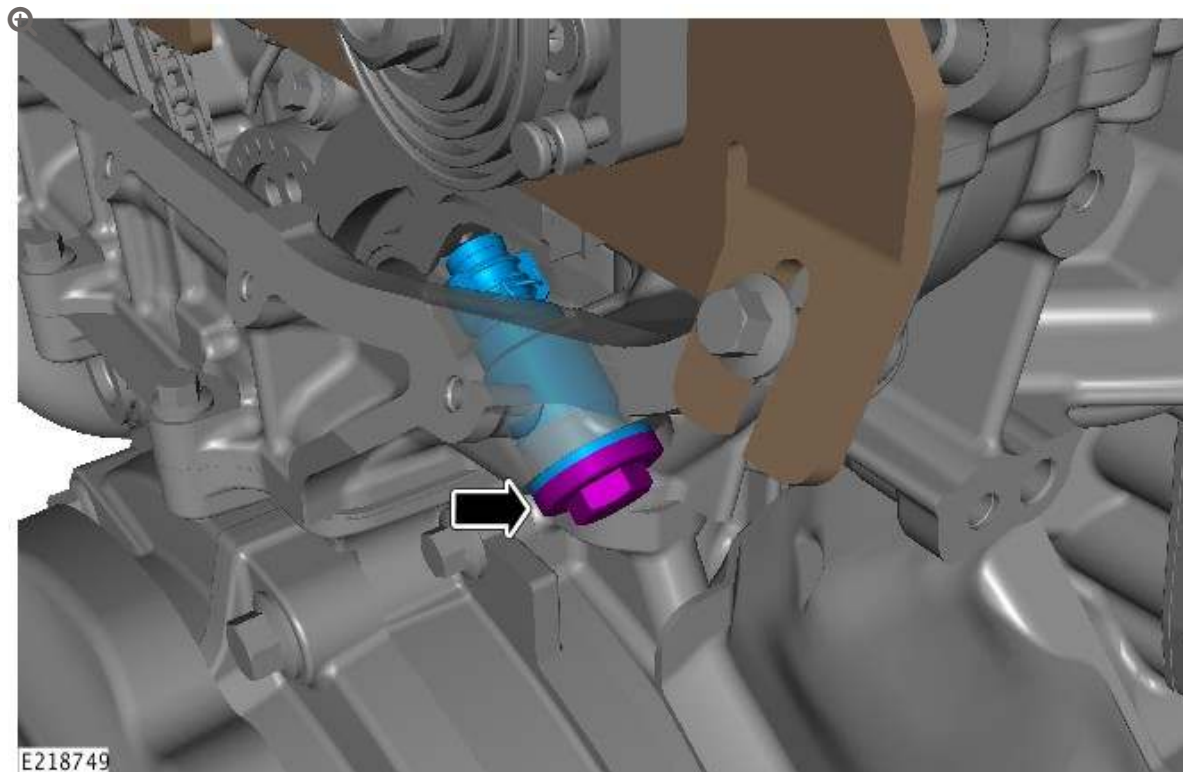
**CAUTION:**

Do not fully remove the VCT actuator fastener.



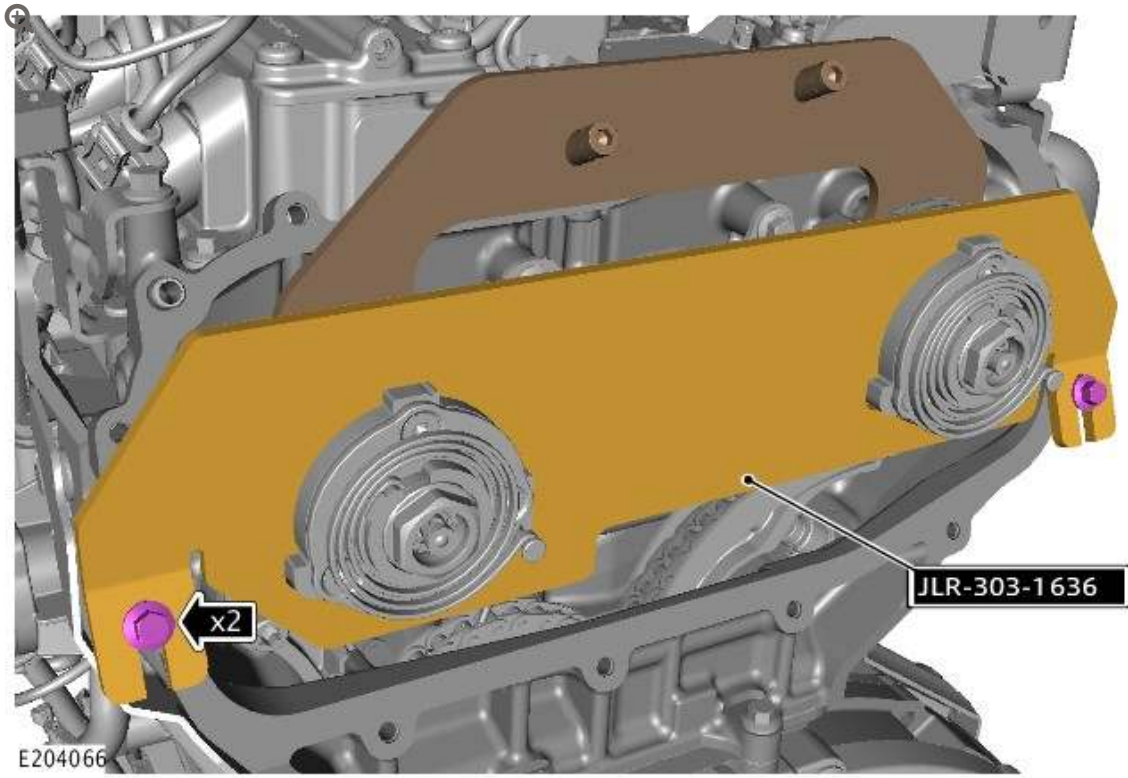
Loosen but do not fully remove the VCT actuator fastener.

16



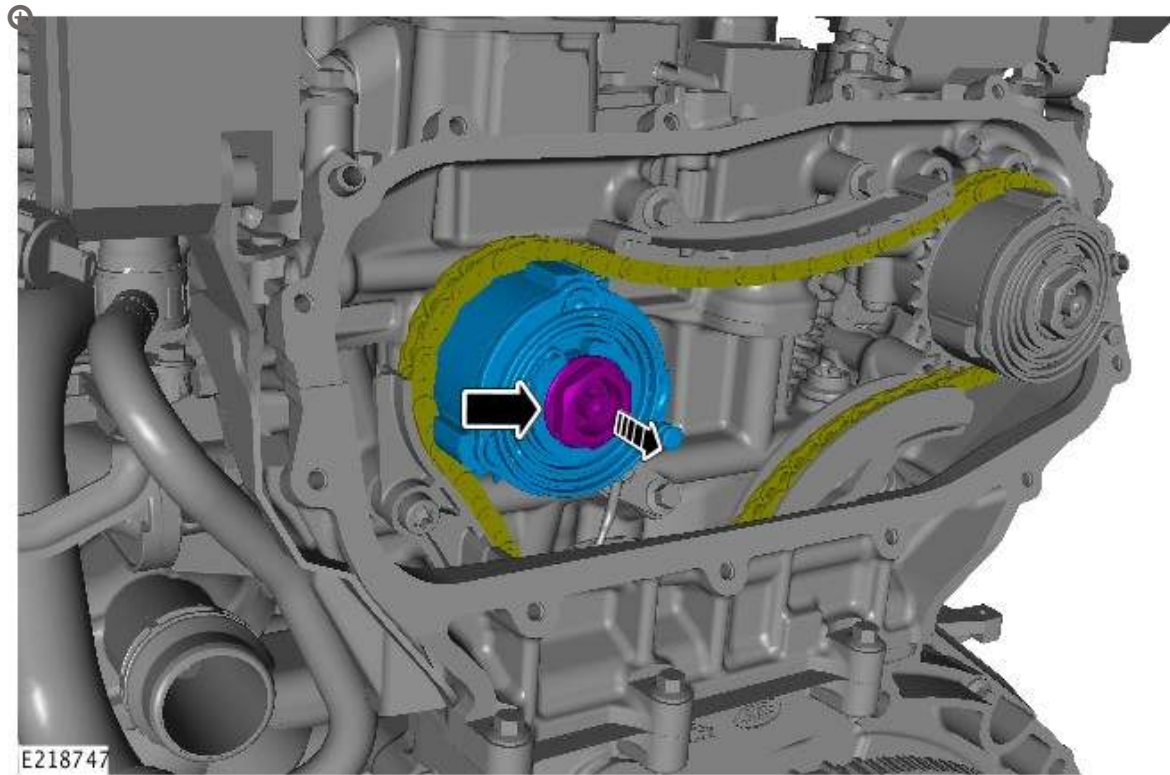
Remove and discard the upper timing chain tensioner.

17



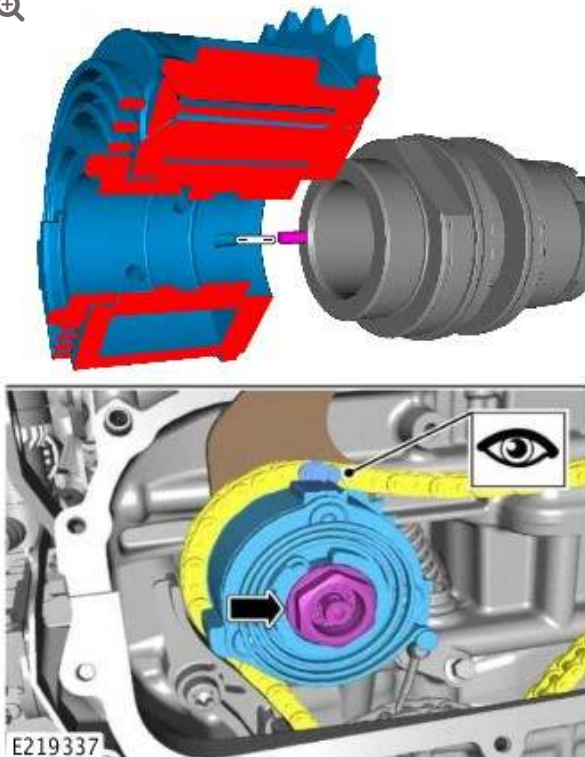
Remove special tool JLR-303-1636.

18



Remove and discard the intake camshaft VCT actuator.

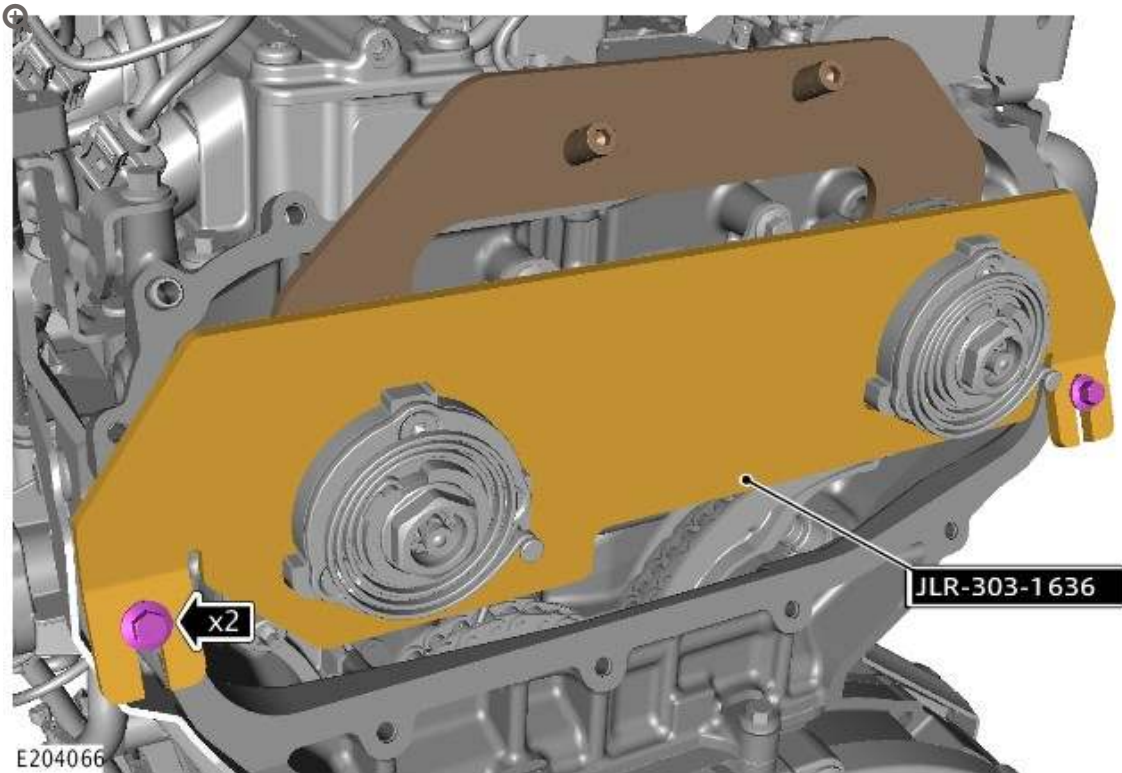
19



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

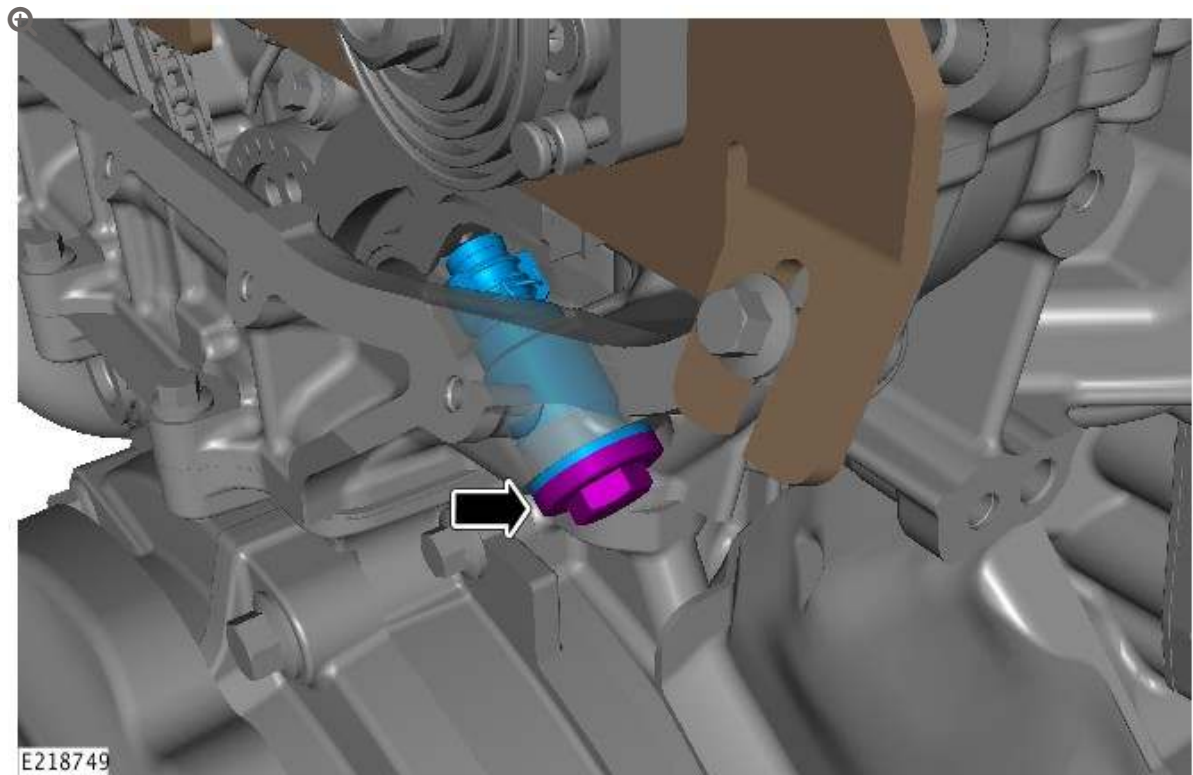
**NOTE:**

The upper timing chain tensioner must be compressed before installing.



E219075

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



Install the upper timing chain tensioner.

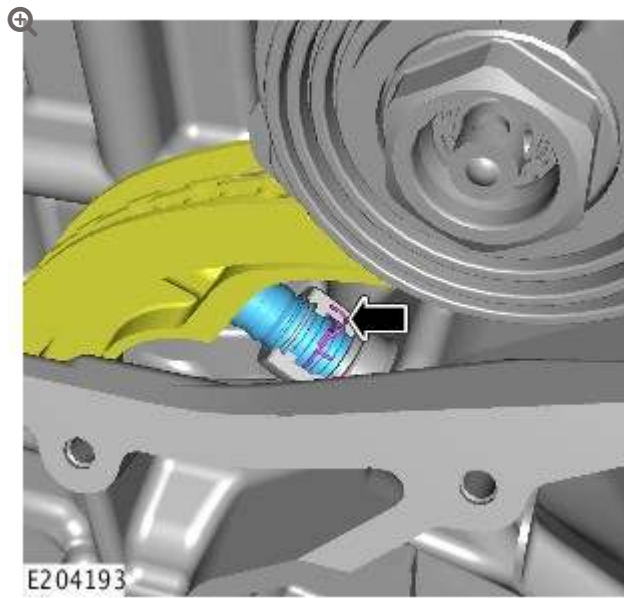
- Torque: **55 Nm**

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23

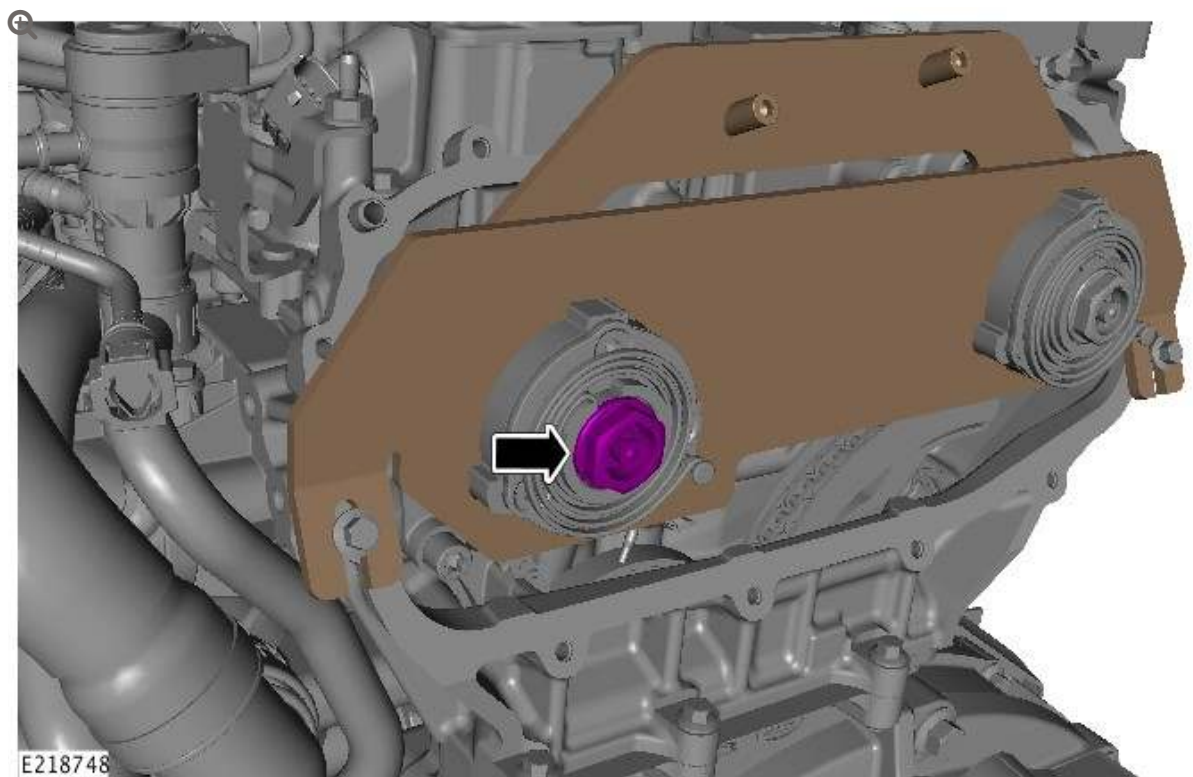
**CAUTION:**

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:

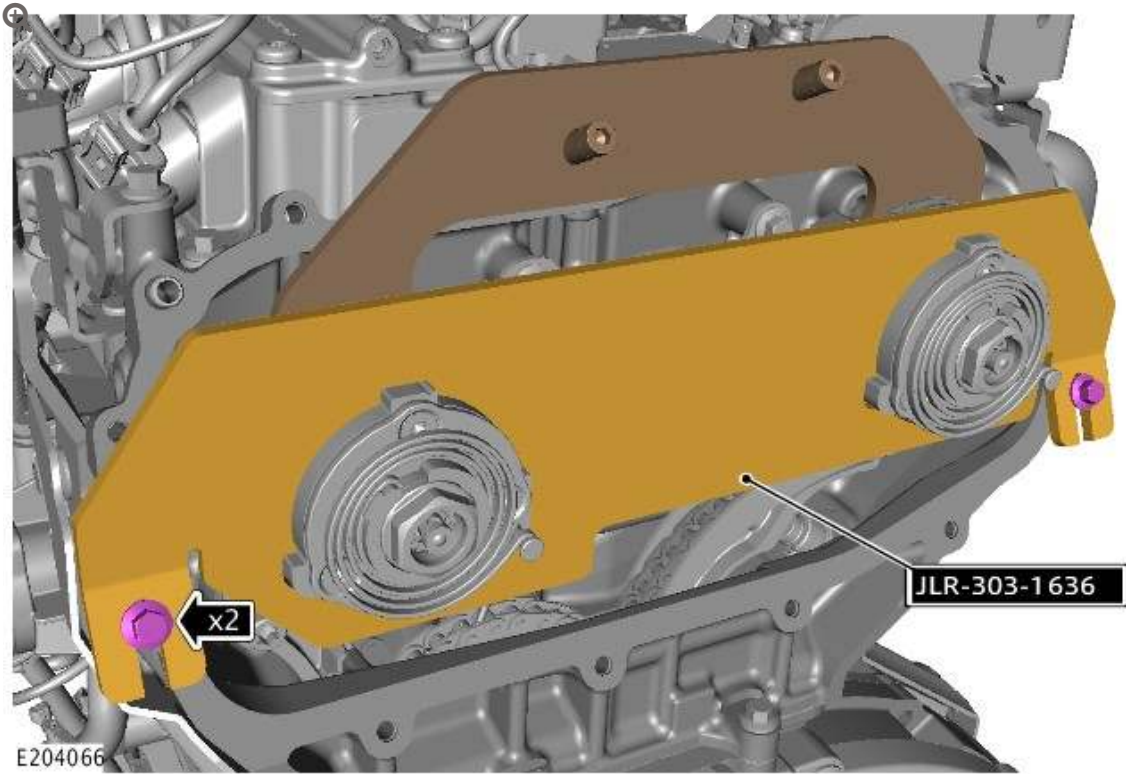
■

Stage 1: **25 Nm**

■ Stage 2: **60°**

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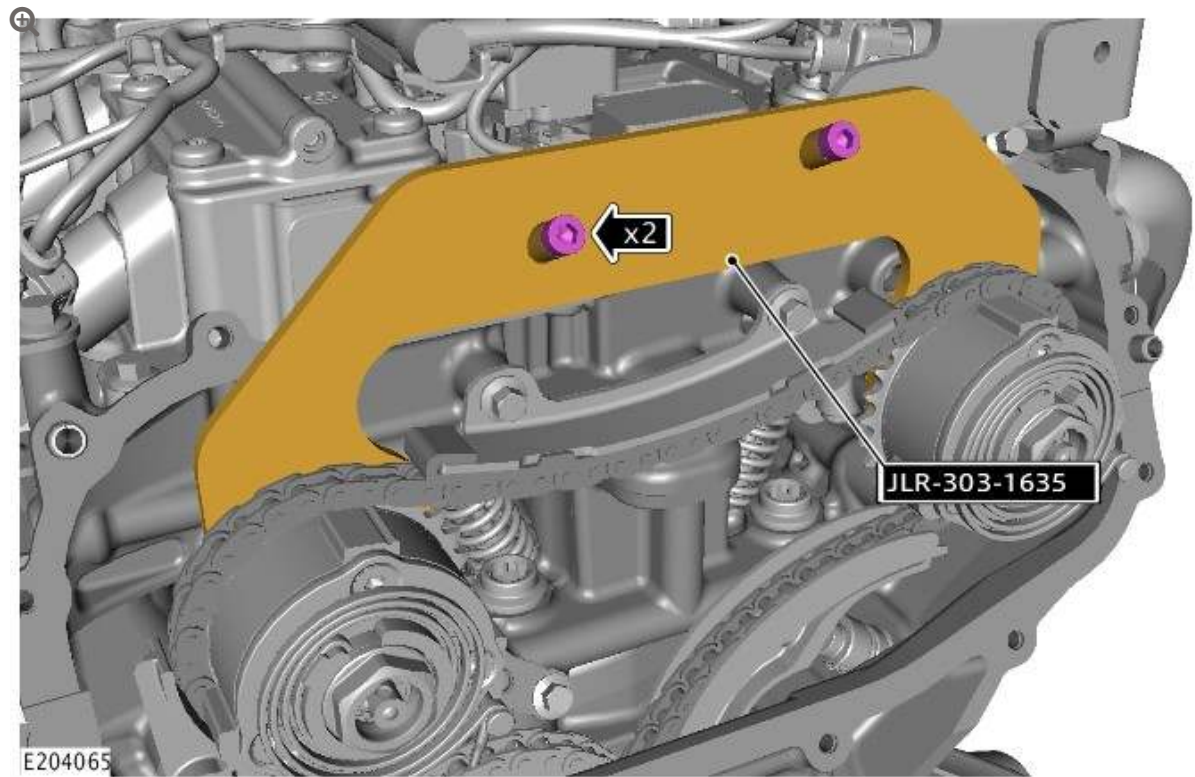
25



Remove special tool JLR-303-1636.

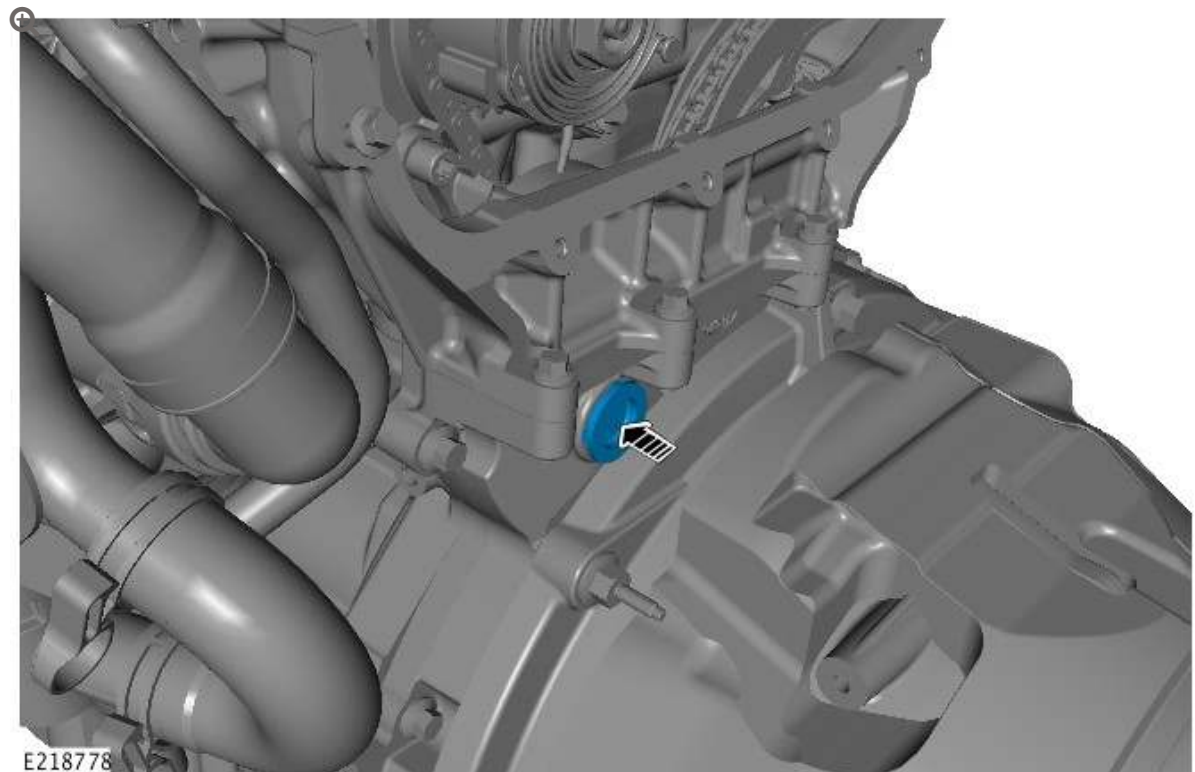
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26



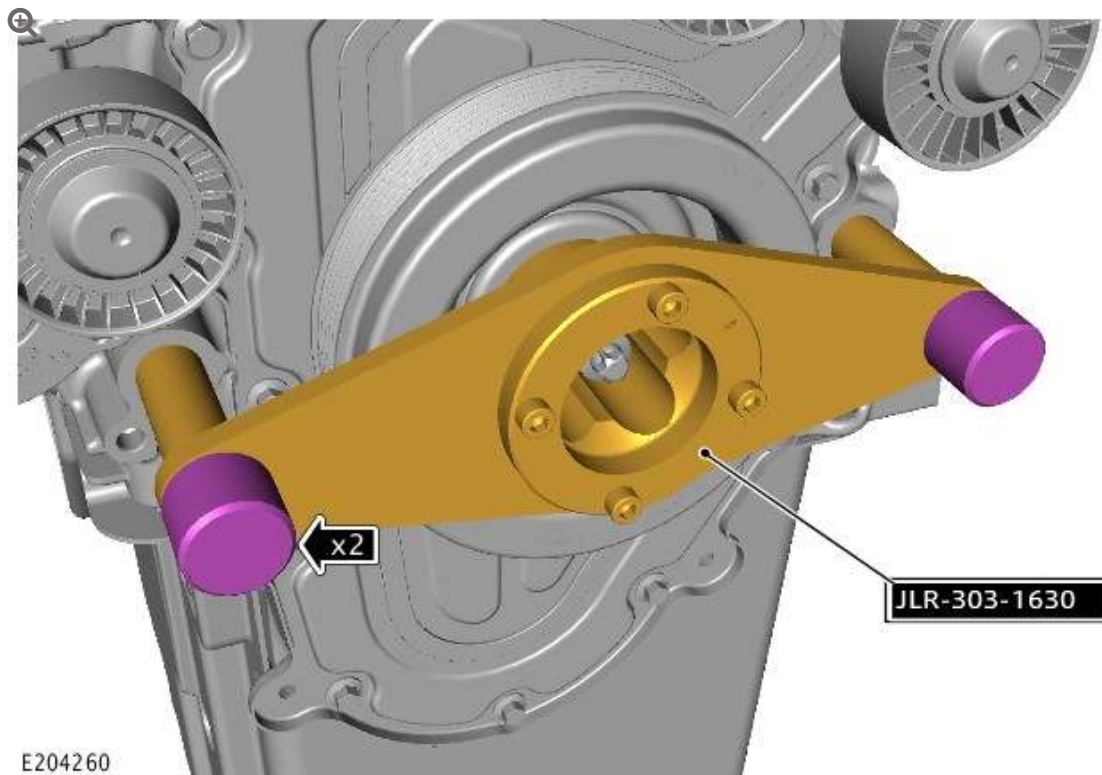
Remove special tool JLR-303-1635.

27



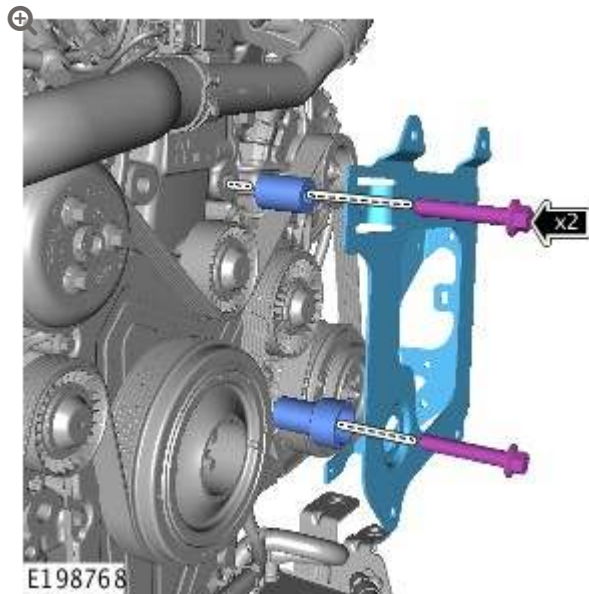
Install a new lower timing cover blanking plug.

28



Remove special tool JLR-303-1630.

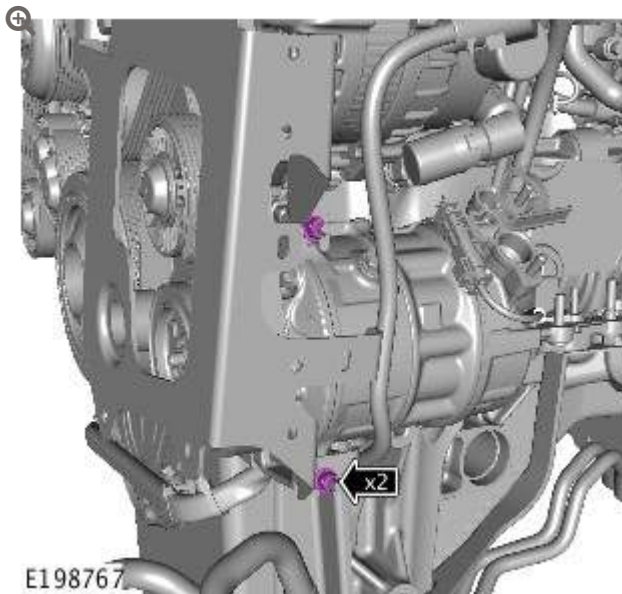
29



Install the charge air cooler bracket.

- Torque: **47 Nm**

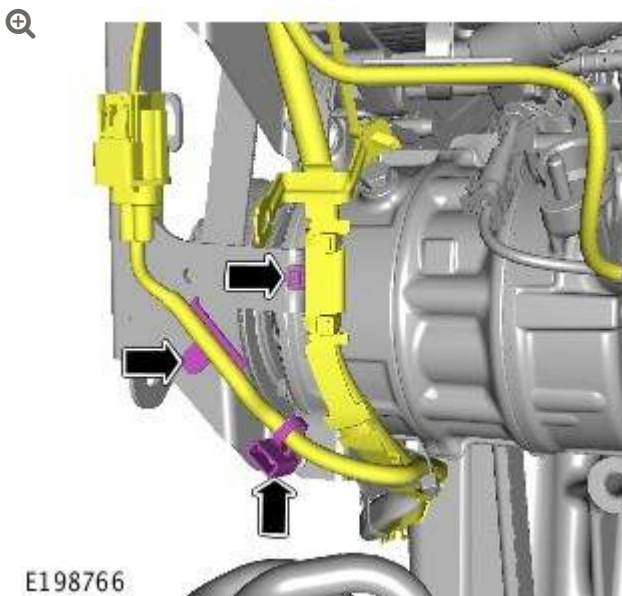
30



Install the charge air cooler bracket fasteners.

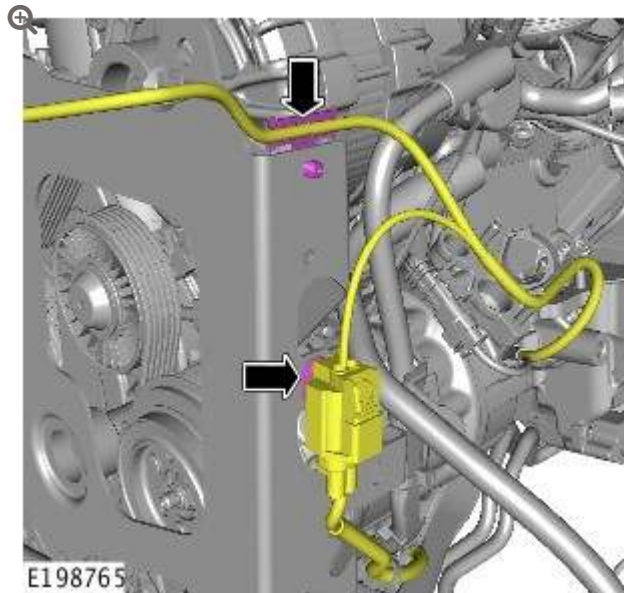
- Torque: **10 Nm**

31



Position the wiring in place.

32



Position the wiring in place.

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### 33 Install the charge air cooler:

- **F-TYPE, XE:** see TOPIx Workshop Manual section: 303-12C: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Charge Air Cooler.
- **F-PACE, XF:** see TOPIx Workshop Manual section: 303-12D: Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol - Charge Air Cooler.

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### 34 Install the upper timing cover:

- **F-TYPE, XE:** see TOPIx Workshop Manual section: 303-01C: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover.
- **F-PACE, XF:** see TOPIx Workshop Manual section: 303-01D: Engine - INGENIUM I4 2.0L Petrol - Removal and Installation - Upper Timing Cover.

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#### NOTE:

F-PACE, XE, and XF vehicles only.

Install the hood (see TOPlx Workshop Manual section 501-02: Front End Body Panels - Removal and Installation - Hood).

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

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**37** Lower the vehicle ((see TOPlx Workshop Manual section 100-02: Jacking and Lifting - Lifting).