PUBLISHED: 23-NOV-2018
2018.0 F-PACE (X761), 303-01D

ENGINE - INGENIUM I4 2.0L PETROL

LOWER TIMING CHAIN (G2132026)

REMOVAL AND INSTALLATION

12.65.16	TIMING CHAIN - LOWER - RENEW	2000 CC, INGENIUM PETROL, 4WD	8.20	USED WITHINS	

SPECIAL TOOL(S)

JLR-303-1630

Locking Tool, Crankshaft Pulley

JLR-303-1635

Camshaft Setting Tool

JLR-303-1636

Locking Tool, Variable Camshaft Timing Actuator

PART(S)

STEP	PART NAME	QUANTITY
Installation Step 4	Lower timing chain guide	1
Installation Step 5	Lower timing chain guide	1
Installation Step 6	Lower timing chain tensioner	1
Installation Step 9	Upper timing chain guide	1
Installation Step 10	Variable camshaft timing actuator bolts	1
Installation Step 11	Timing chain tensioner arm	1

Installation Step 12	Variable camshaft timing actuator bolts	1
Installation Step 13	Upper timing chain guide	1
Installation Step 15	Upper timing chain tensioner	1

REMOVAL

CAUTION:

Before disconnecting any components, make sure the area is clean and free from foreign material. When disconnected all openings must be sealed.

NOTES:

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

1.

Raise and support the vehicle on a suitable 2 post lift.

Refer to: Lifting (100-02 Jacking and Lifting, Description and Operation).

2.

Disconnect the startup battery ground cable.

Refer to: Startup Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

3.

Remove the hood.

Refer to: Hood (501-02 Front End Body Panels, Removal and Installation).

4.

Remove the upper timing cover.

Refer to: Upper Timing Cover (303-01 Engine - INGENIUM I4 2.0L Petrol, Removal and Installation).

5.

Remove the lower timing cover.

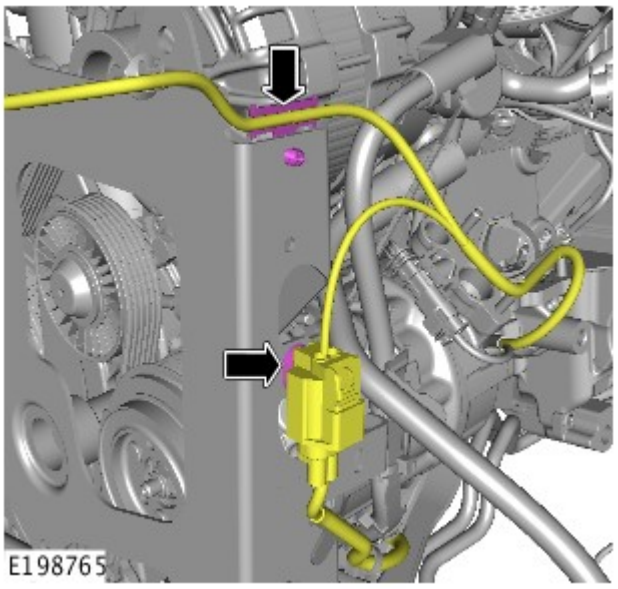
Refer to: Lower Timing Cover (303-01 Engine - INGENIUM I4 2.0L Petrol, Removal and Installation).

6.

Remove the charge air radiator.

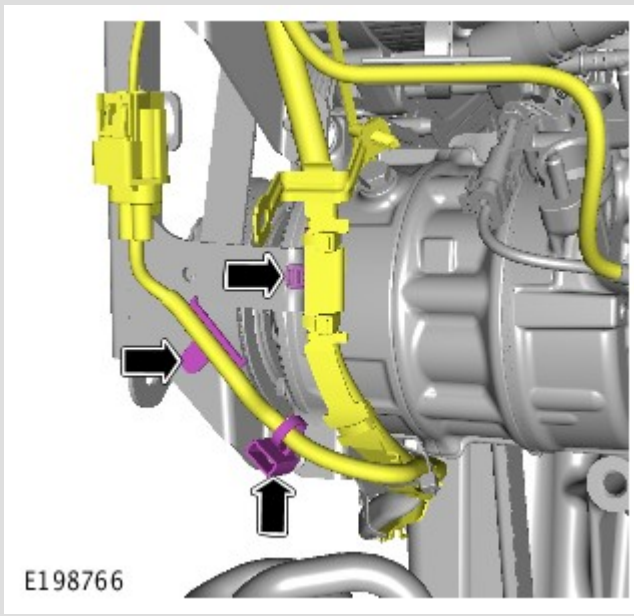
Refer to: Charge Air Cooler (303-12 Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol, Removal and Installation).

7.



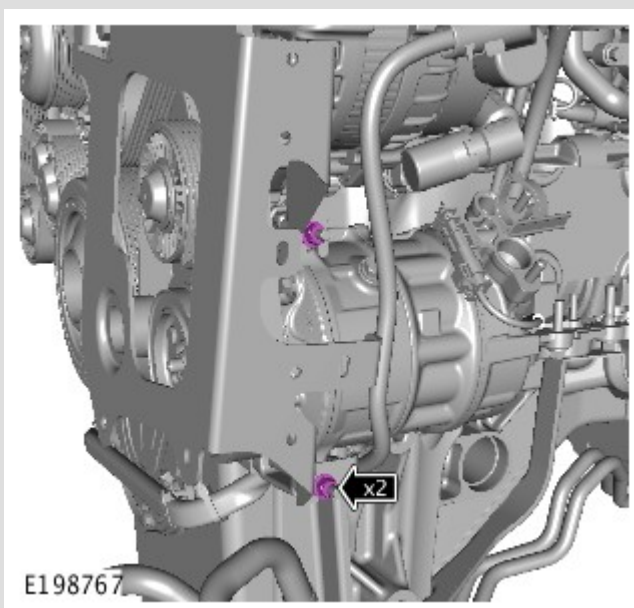
Release the 2 fir tree clips.

8.



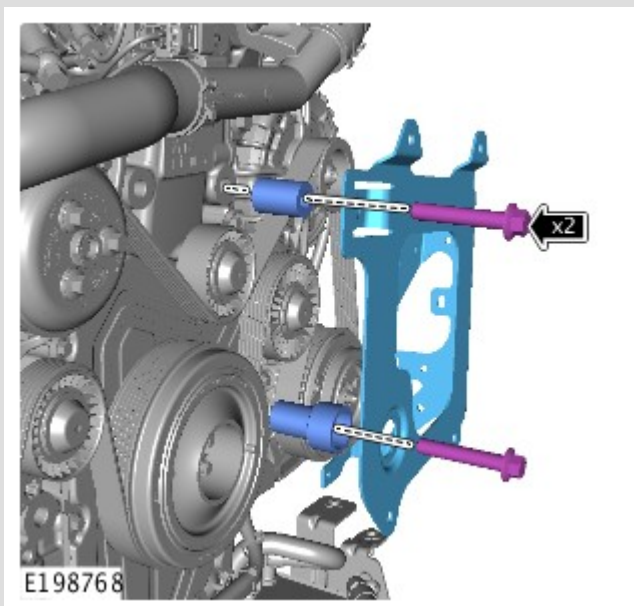
Release the 3 clips.

9.



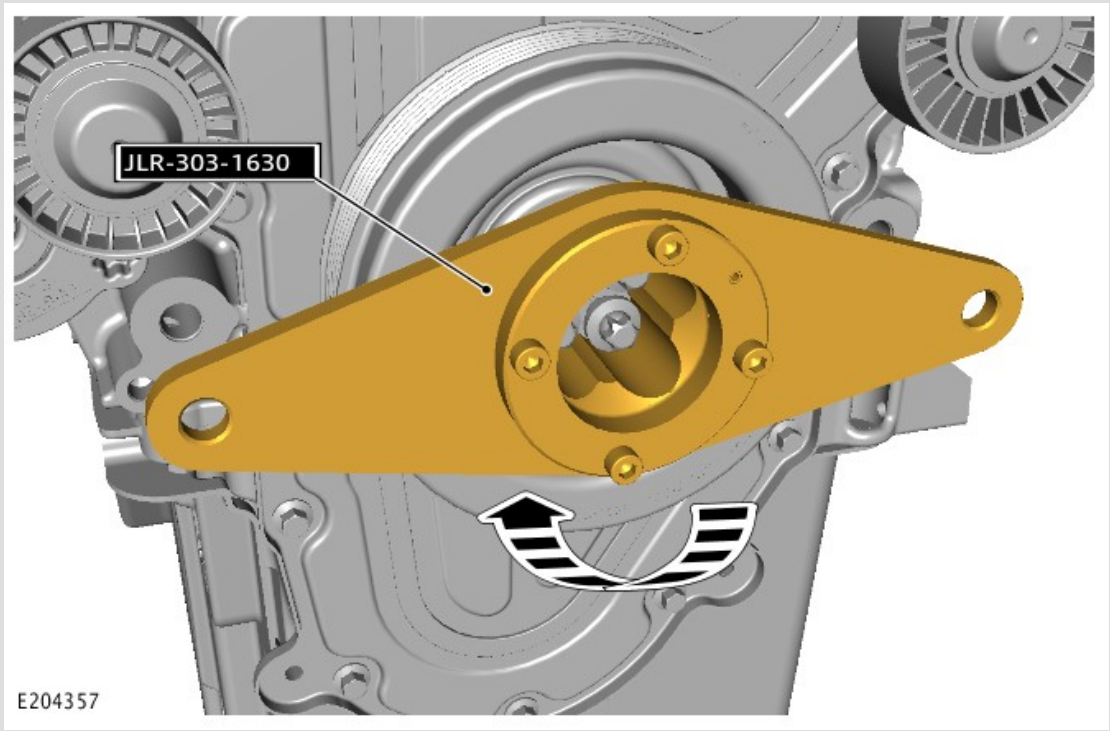
Remove the 2 nuts.

10.



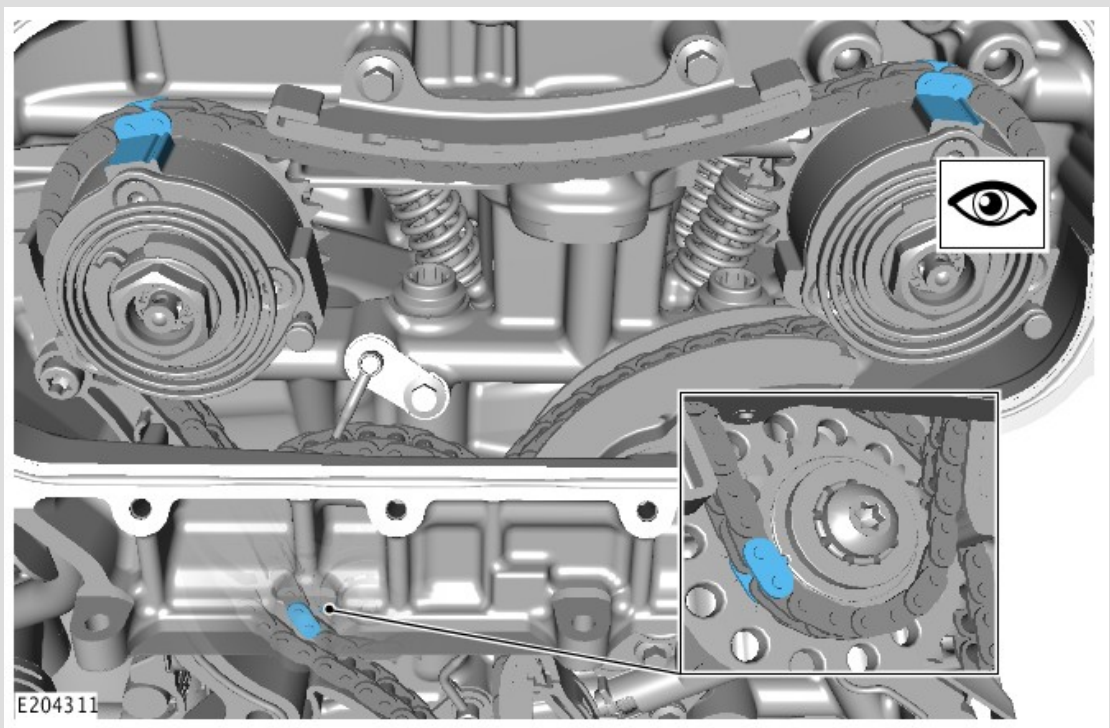
Remove the charge air radiator bracket.

11.



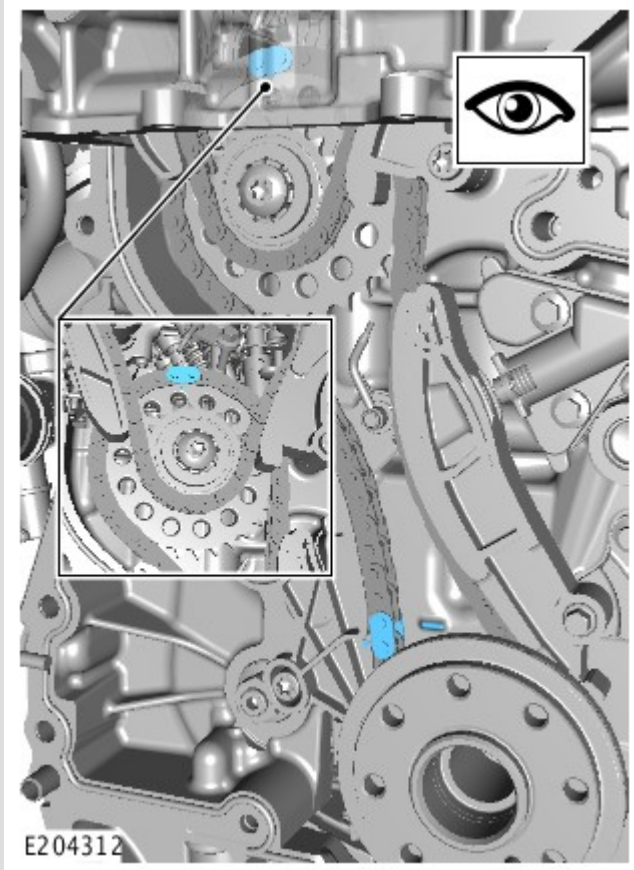
- Install the special tool JLR-303-1630 as illustrated.
  Special Tool(s): JLR-303-1630
- Use the special tool JLR-303-1630 to rotate the crankshaft until the timing marks align as illustrated in steps 7 and 8.

12.



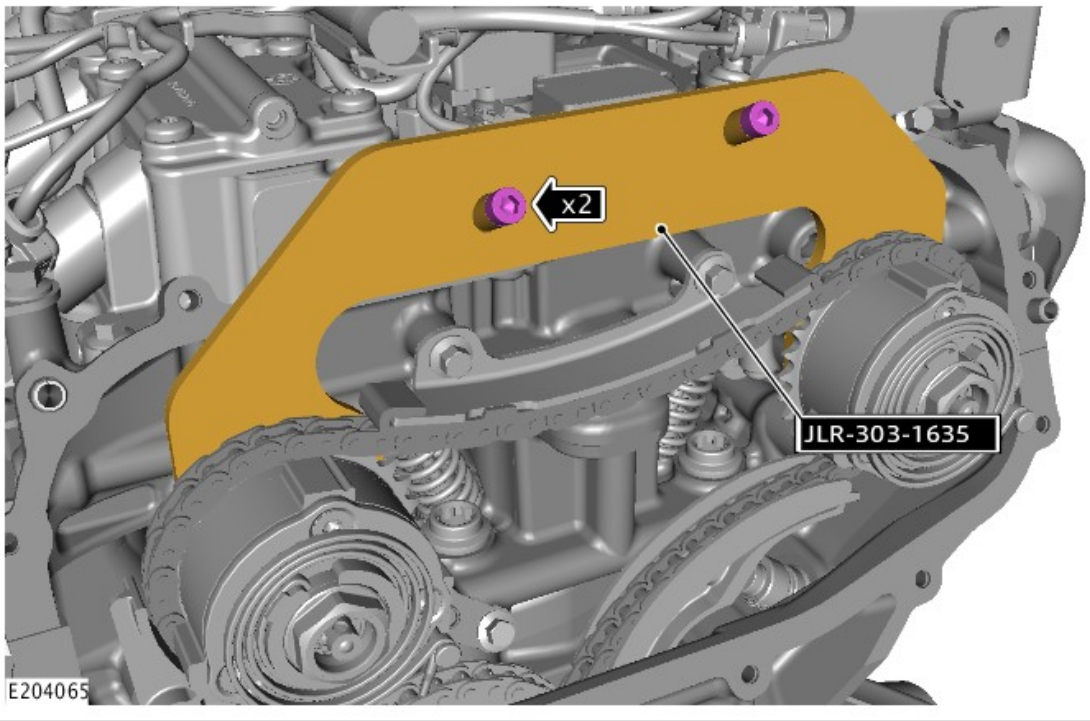
Make sure that the timing marks aligns as illustrated.

13.



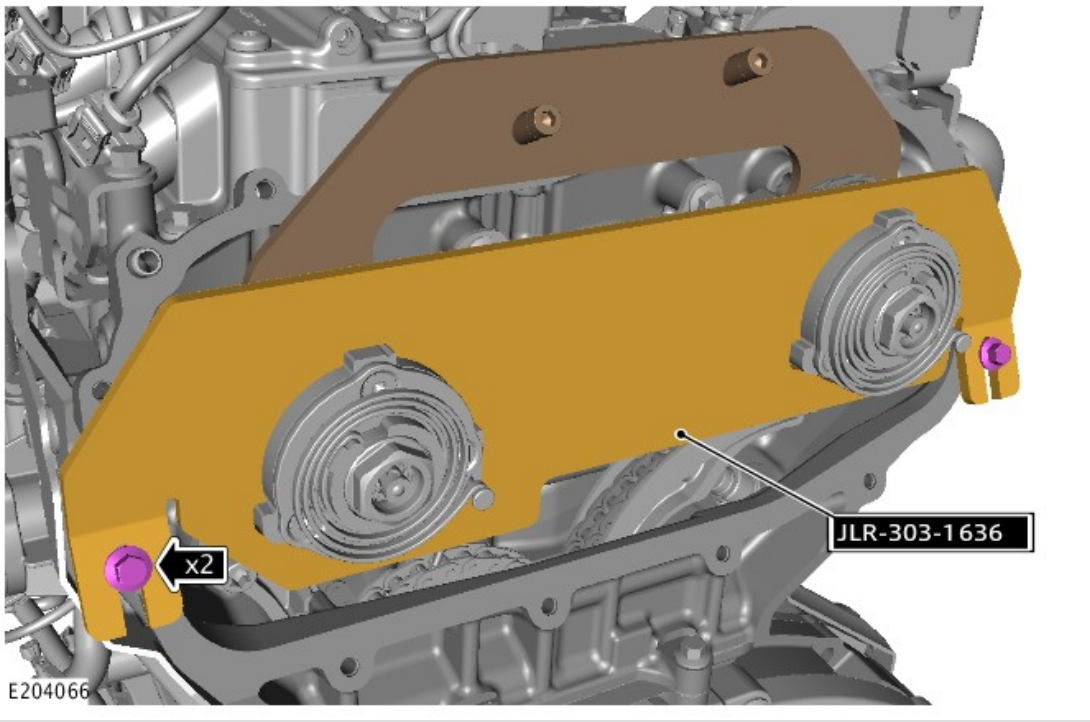
Make sure that the timing marks aligns as illustrated.

14.



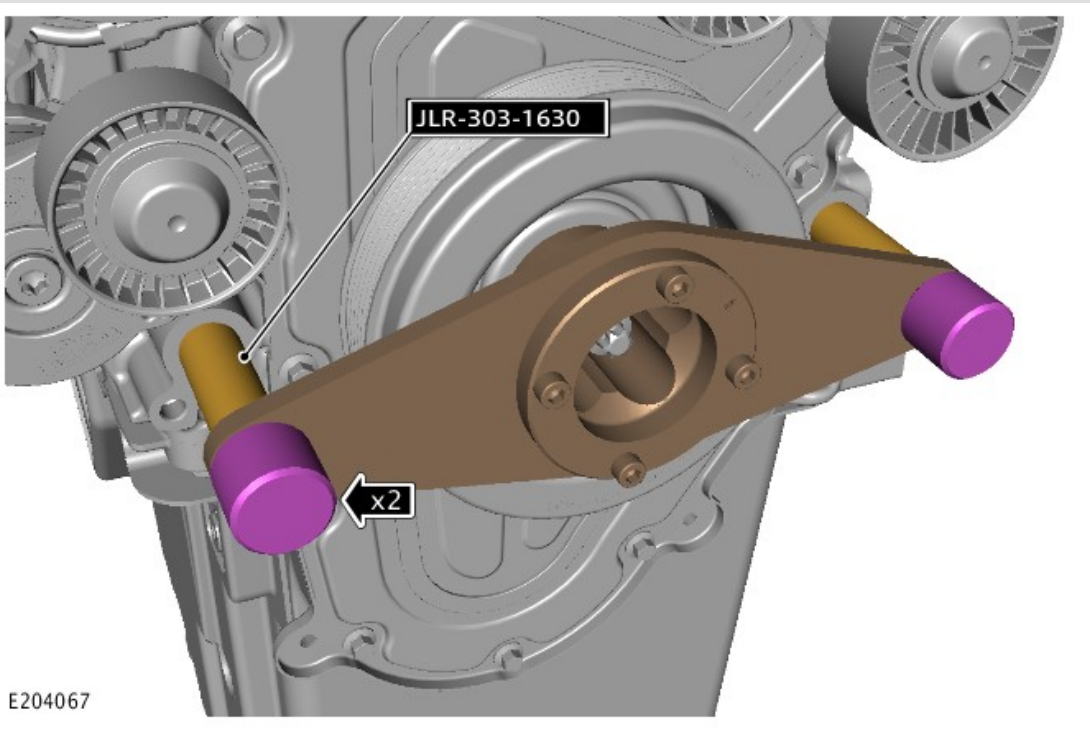
- Install the special tool JLR-303-1635 as illustrated.
  Special Tool(s): JLR-303-1635
- Install and tighten the 2 special tool bolts.
  Torque: **13 Nm**

15.



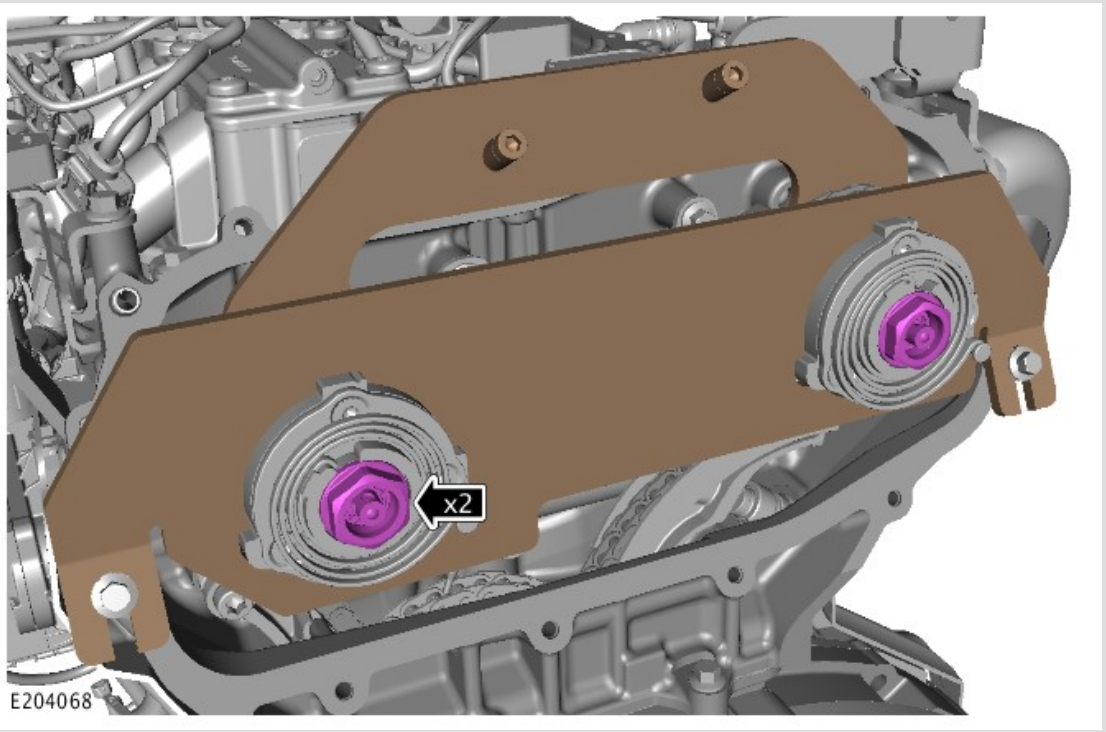
- Install the special tool JLR-303-1636 as illustrated.
  Special Tool(s): JLR-303-1636
- Install and tighten the 2 special tool bolts.
  Torque: **13 Nm**

16.



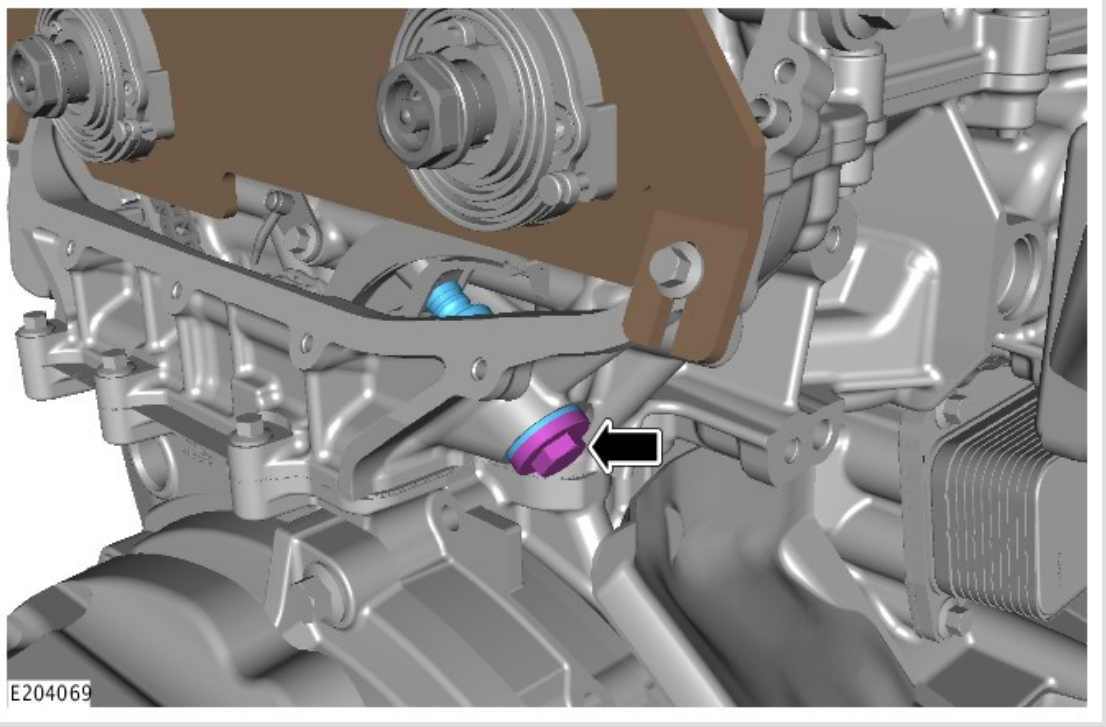
Install the special tool JLR-303-1630 to lock the crankshaft.
Special Tool(s): JLR-303-1630

17.



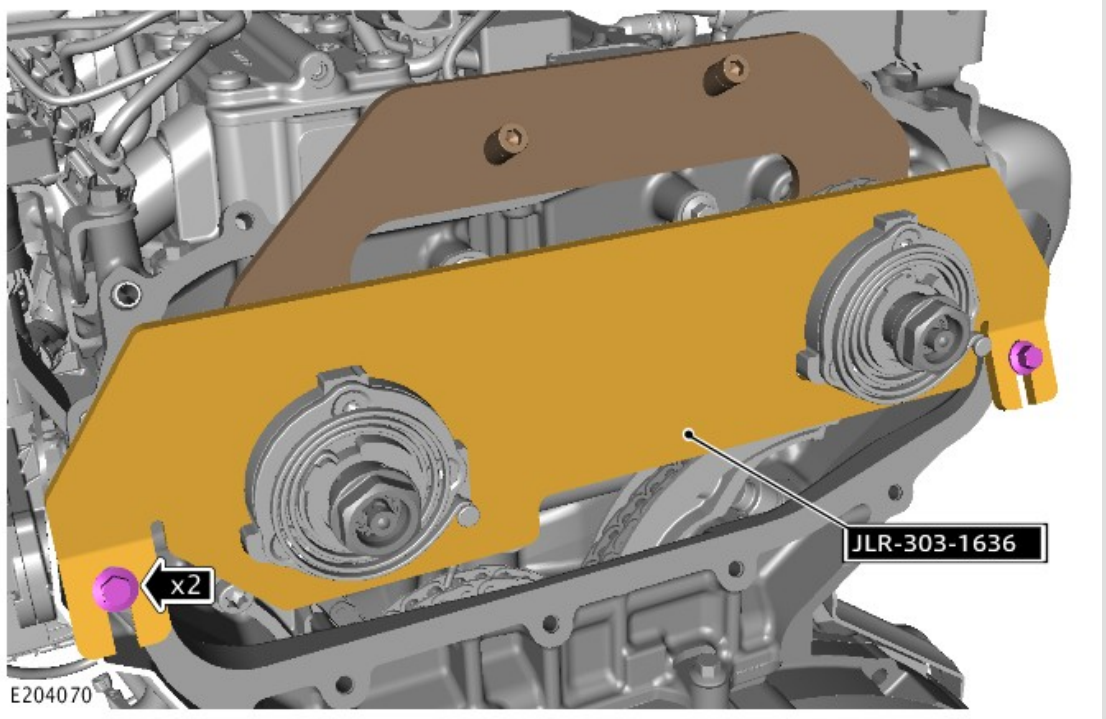
- Loosen, but do not fully remove the Variable Camshaft Timing (VCT) bolts.

18.



- Remove and discard the upper timing chain tensioner.

19.

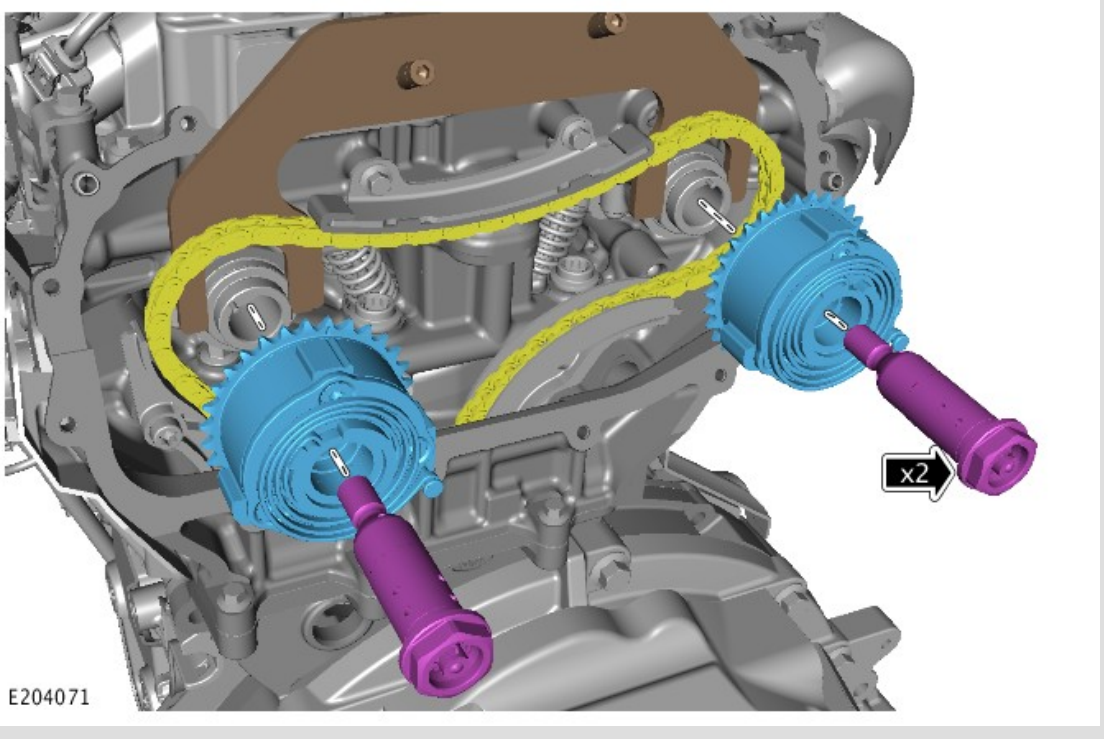


- Remove the 2 special tool bolts.
- Remove the special tool JLR-303-1636.
  Special Tool(s): JLR-303-1636

20.

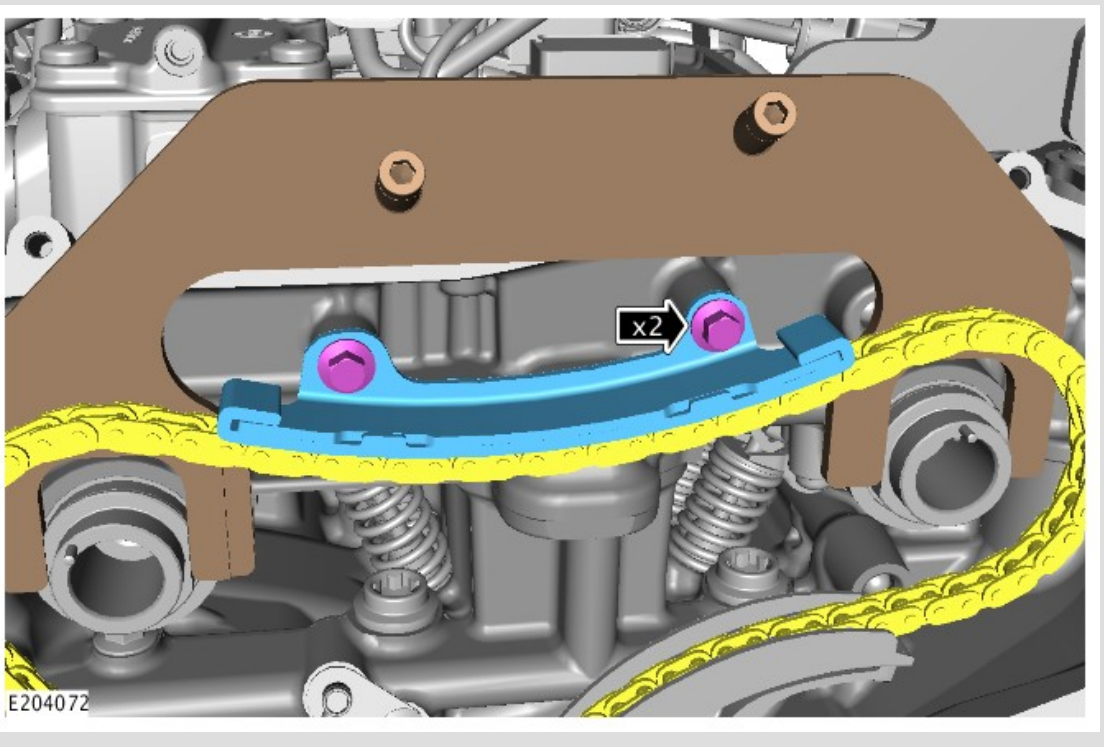
CAUTION:

Note the location of the Variable Camshaft Timing (VCT) units prior to removal. Each VCT unit is matched to a specific camshaft.



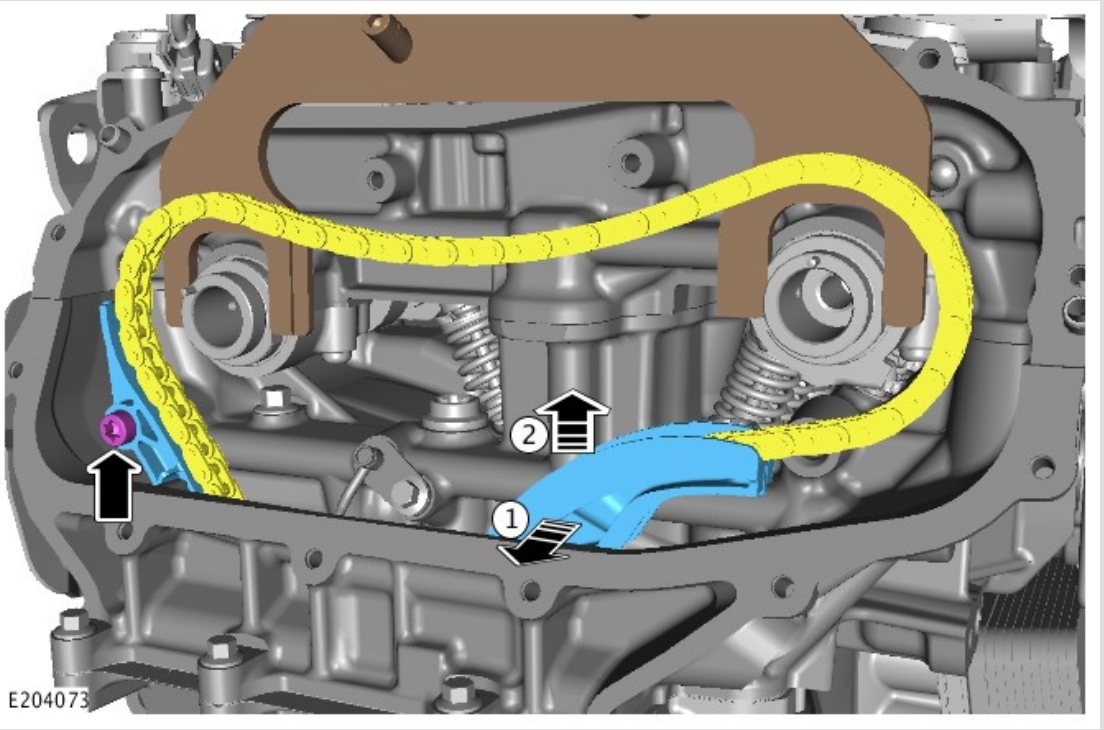
- Remove and discard the 2 VCT unit center bolts.
- Remove the 2 VCT units.

21.



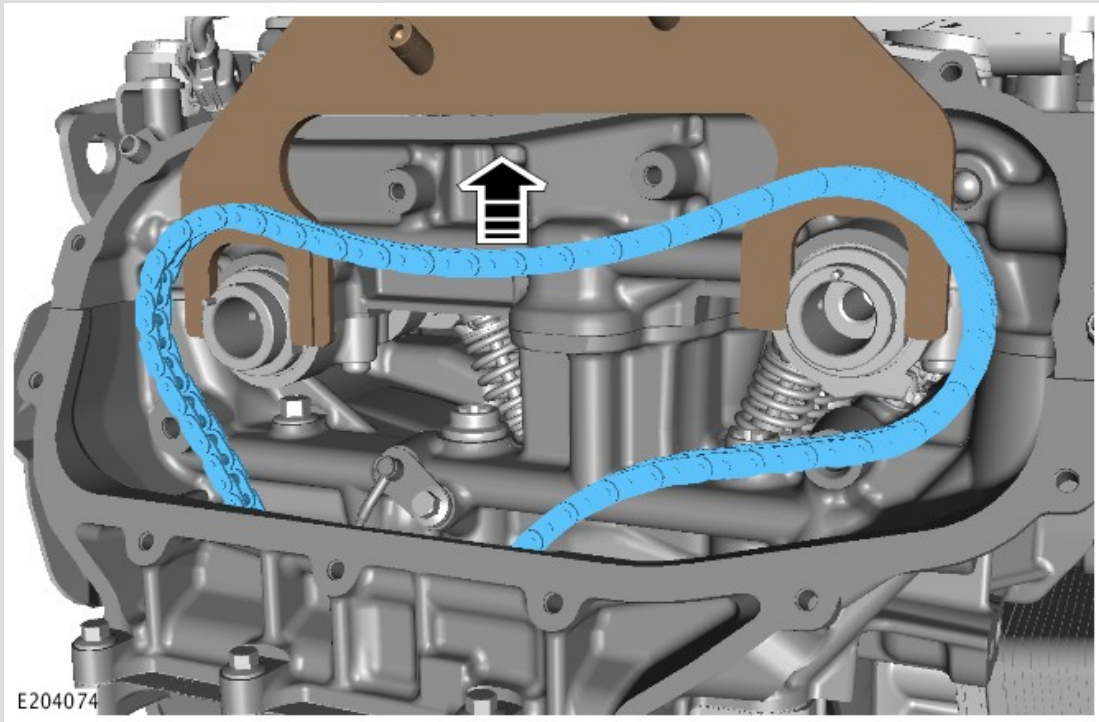
- Remove the timing chain guide.

22.



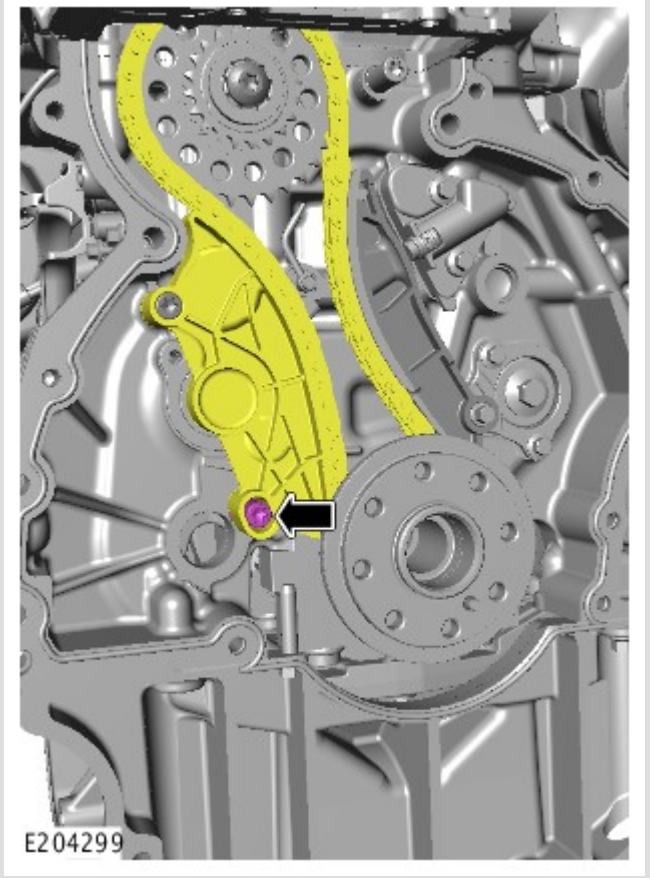
- Remove the left timing chain guide.
- Remove the timing chain tensioner guide.

23.



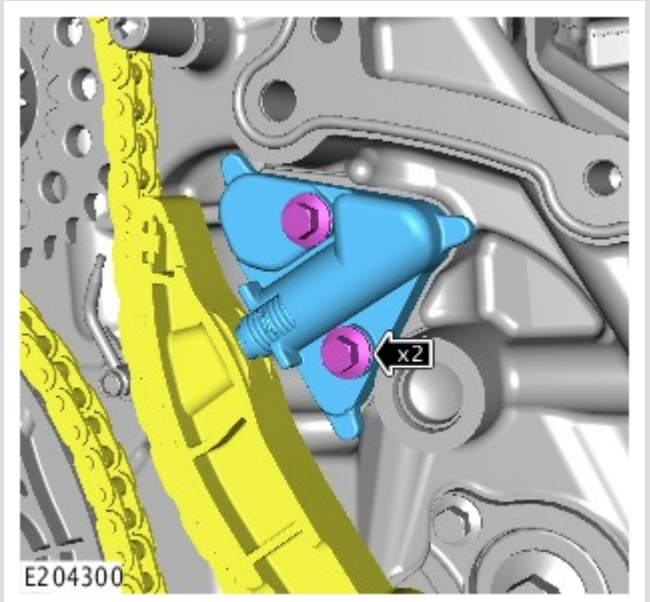
- Release the timing chain from the idler sprocket and remove.

24.



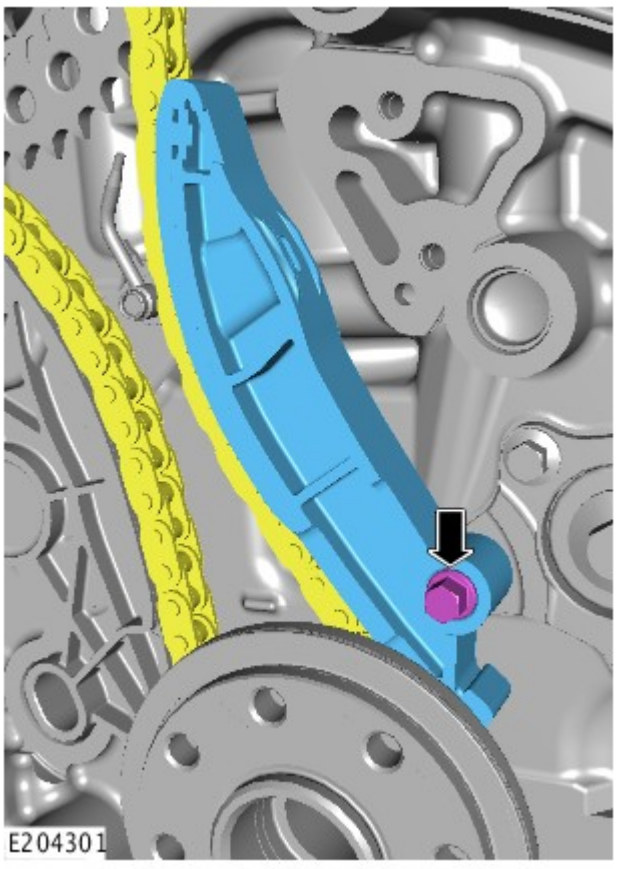
Remove the timing chain guide bolt.

25.



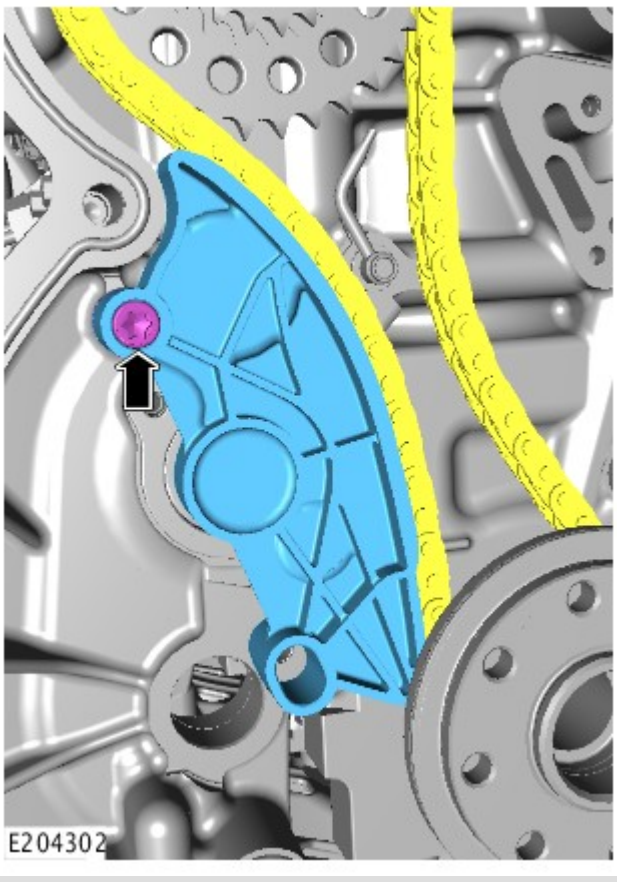
- Remove the 2 bolts.
- Remove and discard the lower timing chain tensioner.

26.



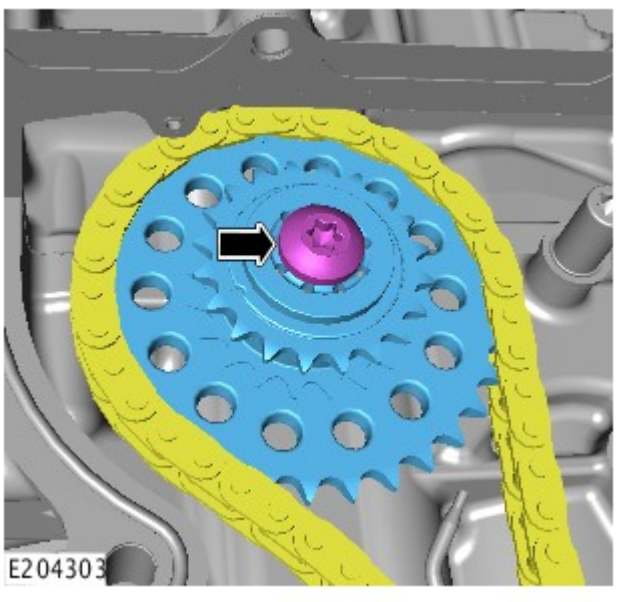
Remove the timing chain tensioner guide and bolt.

27.



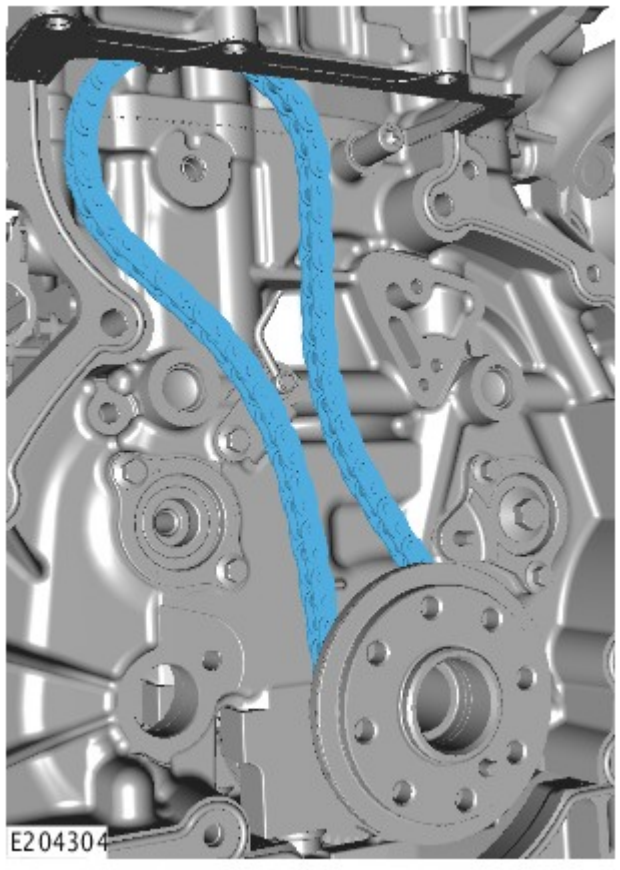
Remove the timing chain guide and bolt.

28.



Remove the idler sprocket.

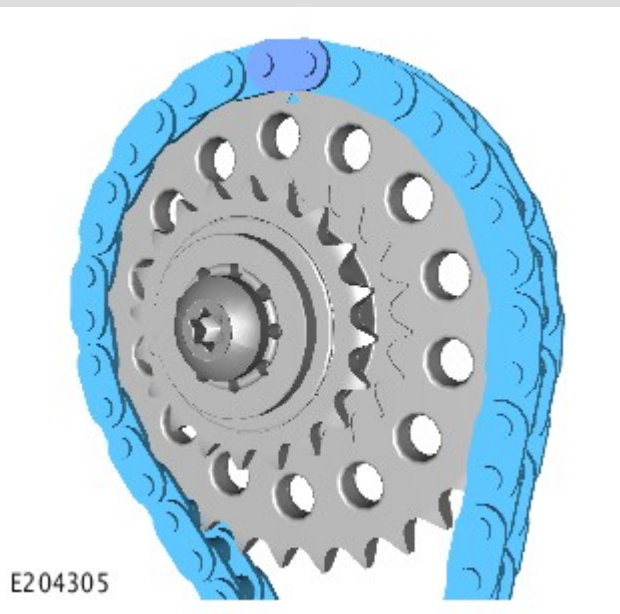
29.



Remove the lower timing chain.

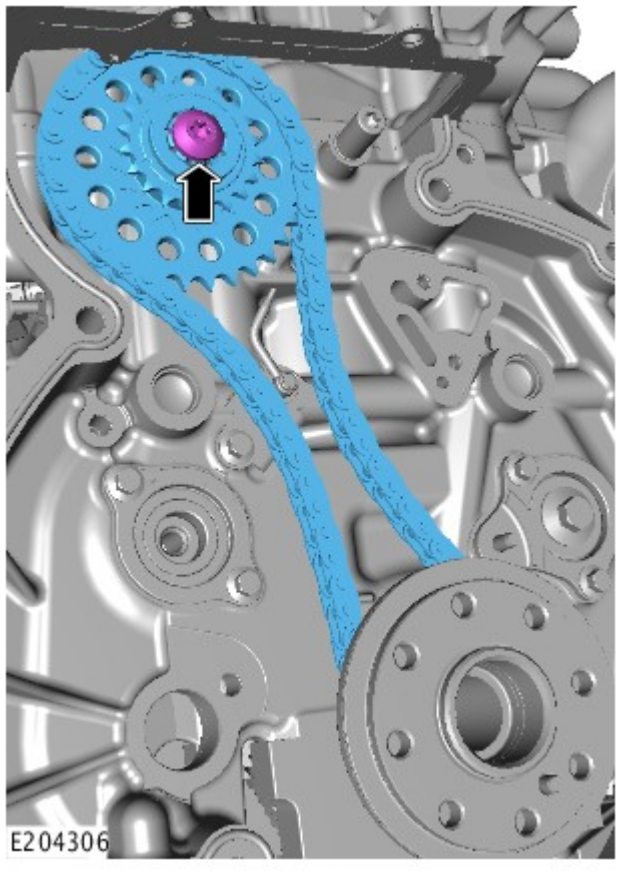
INSTALLATION

1.



- Install the timing chain onto the idler sprocket.
- Make sure that the coloured link is aligned as illustrated.

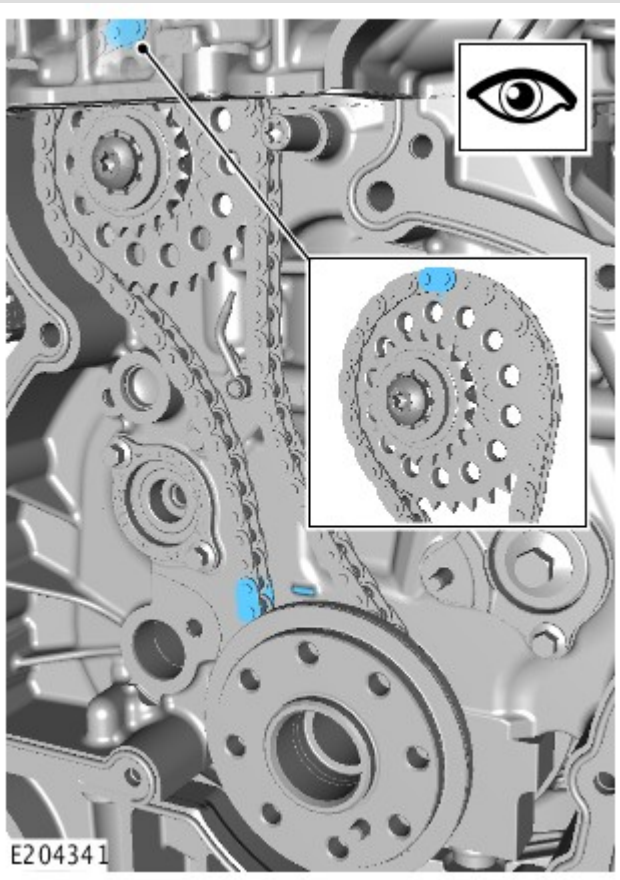
2.



- Install the timing chain and idler sprocket
- Make sure that the timing marks are aligned as illustrated in step 3.

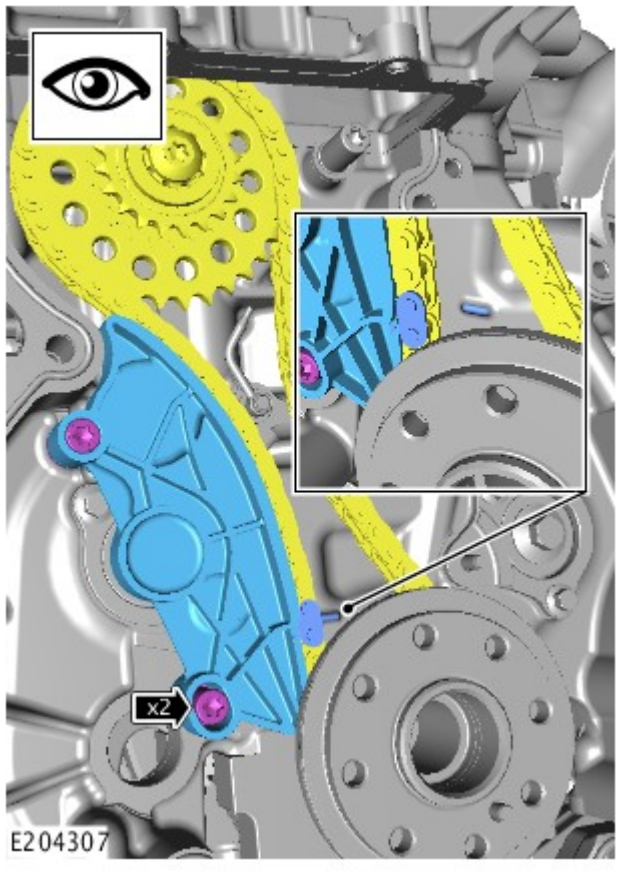
  Torque: **35 Nm**

3.



- Make sure that the timing marks are aligned as illustrated

4.

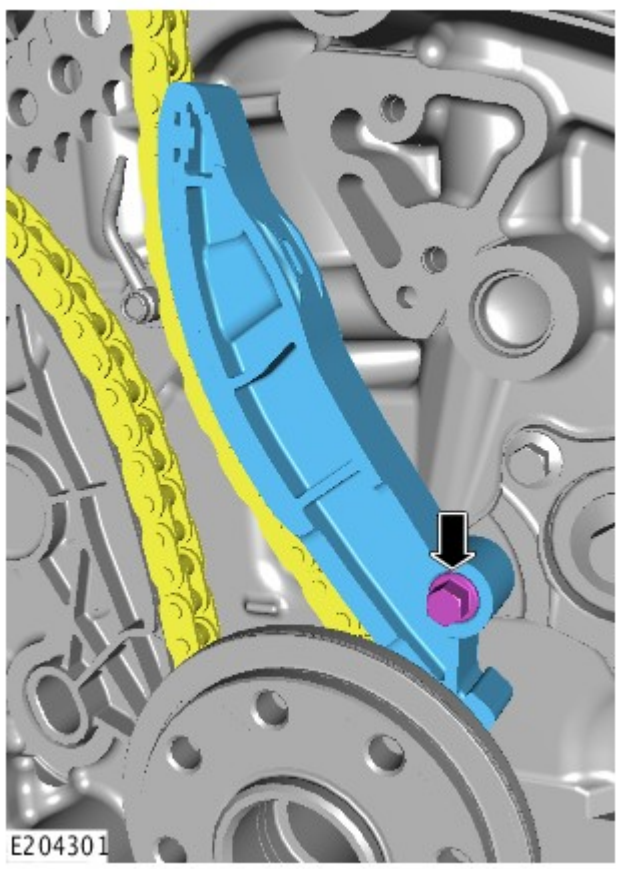


- Install the lower timing chain guide and bolts.
- Make sure that the timing marks remain aligned as illustrated.

  Renew Part: *Lower timing chain guide* *Quantity:* *1* .

  Torque: **25 Nm**

5.



- Install the timing chain tensioner guide and bolt.

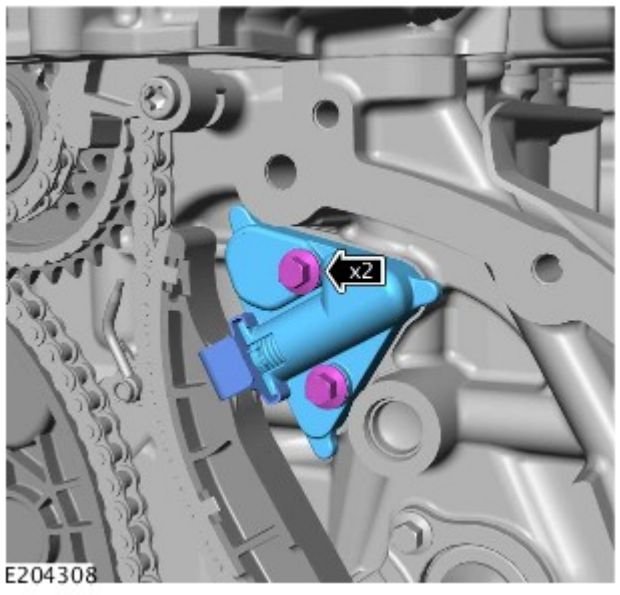
  Renew Part: *Lower timing chain guide* *Quantity:* *1* .

  Torque: **11 Nm**

6.

CAUTION:

Make sure that a new lower timing chain tensioner is installed.

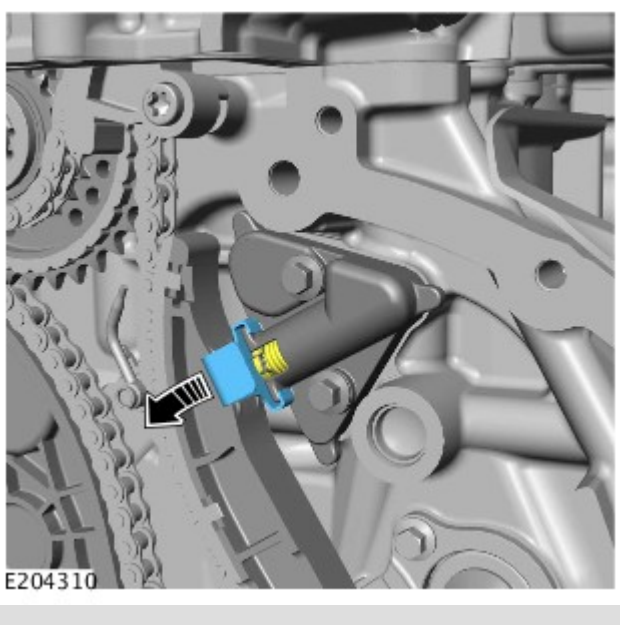


- Install a new lower timing chain tensioner.
  Renew Part: *Lower timing chain tensioner* *Quantity:* *1* .
- Install and tighten the 2 bolts.
  Torque: **11 Nm**

7.

CAUTION:

Make sure that the timing chain tensioner is fully deployed.

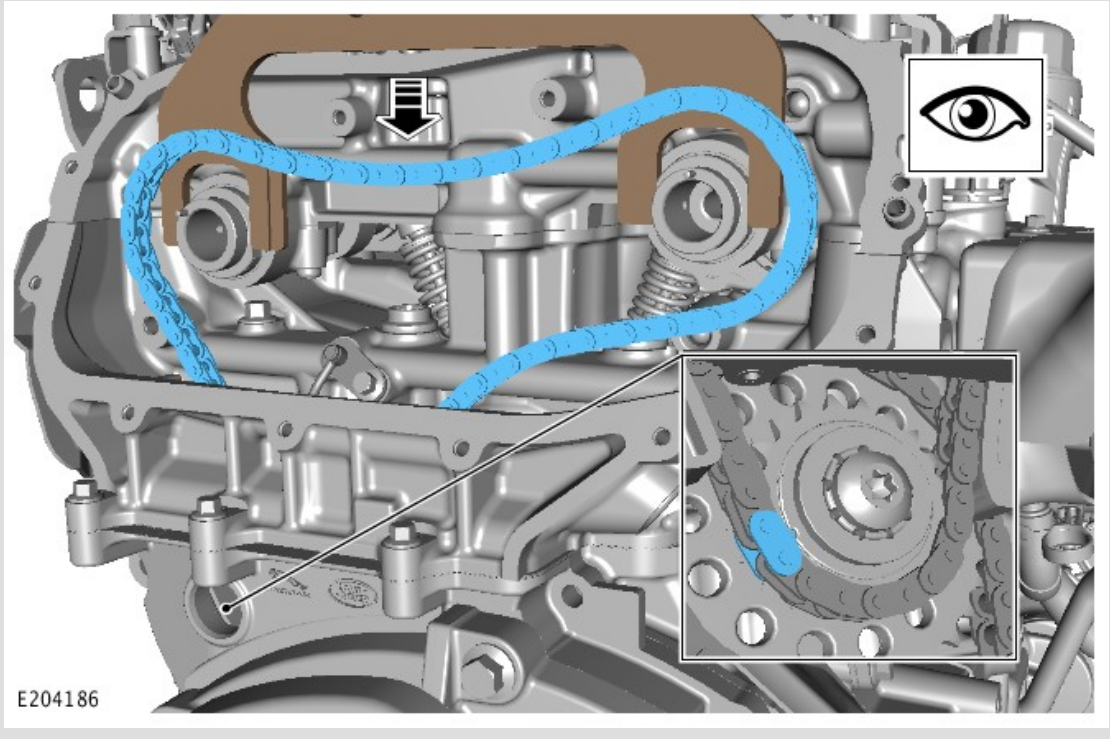


Release the lower timing chain tensioner piston.

8.

NOTE:

Maintain tension on the chain to prevent the coloured link from disengaging with its sprocket position.

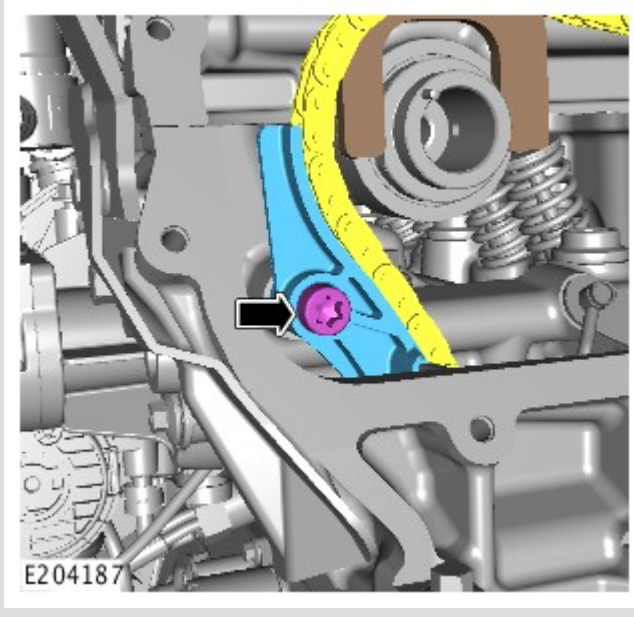


- Install the upper timing chain.
- Make sure that the coloured link is aligned as illustrated.

9.

CAUTION:

Make sure that the upper timing chain does not come off the idler sprocket and stays in the correct position.

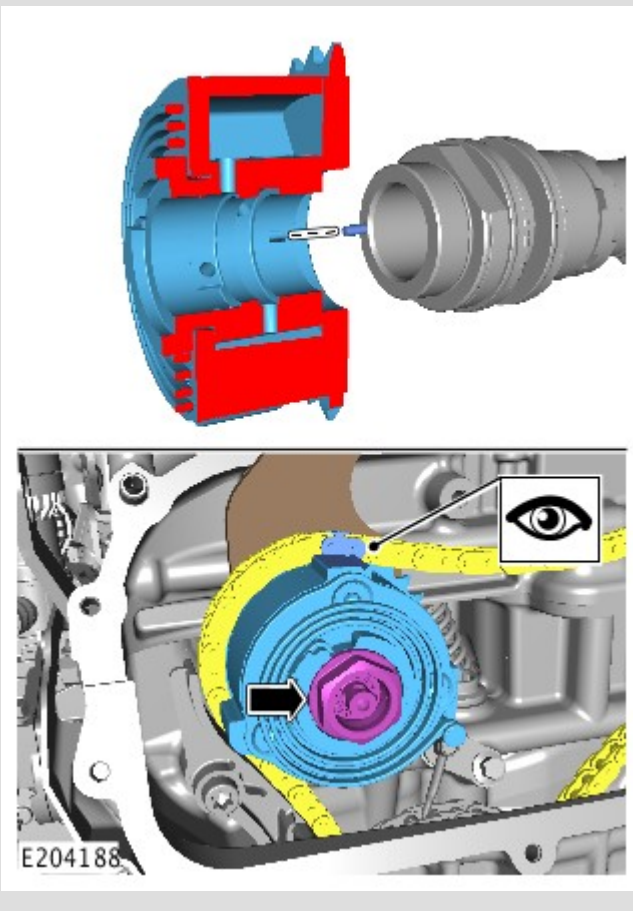


- Install a new left upper timing chain guide.
  Renew Part: *Upper timing chain guide* *Quantity:* *1* .
- Install and tighten the bolt.
  Torque: **25 Nm**

10.

CAUTION:

Make sure that the upper timing chain does not come off the idler sprocket and stays in the correct position.

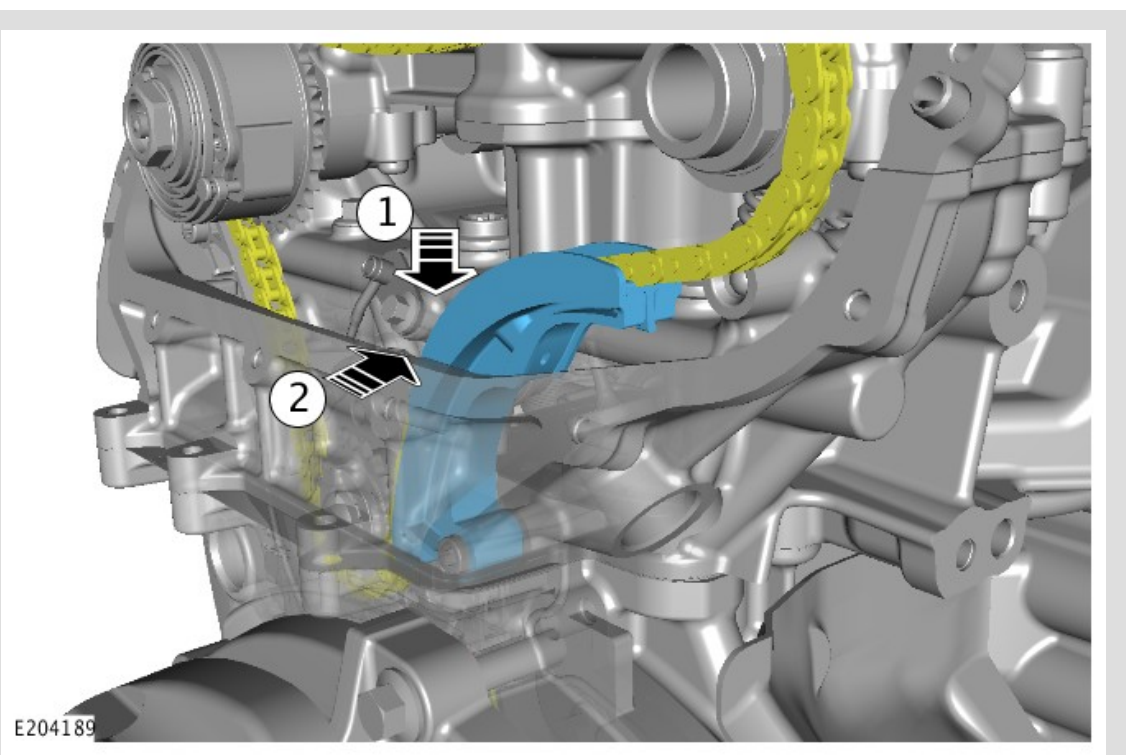


- Install the intake camshaft Variable Camshaft Timing (VCT) unit. Make sure that the correct VCT unit is installed as noted in the removal steps.
- Make sure that the camshaft pin is correctly seated in the VCT unit as illustrated.
- Install and tighten a new VCT unit center bolt.
  Renew Part: Variable camshaft timing actuator bolts Quantity: 1 .
  Torque:
  Stage 1: **10 Nm**
  Stage 2: **Loosen 90°**
- Check if the highlighted link on the timing chain is aligned with the timing mark on the VCT unit as illustrated.

11.

CAUTION:

Make sure that the upper timing chain does not come off the idler sprocket and stays in the correct position.

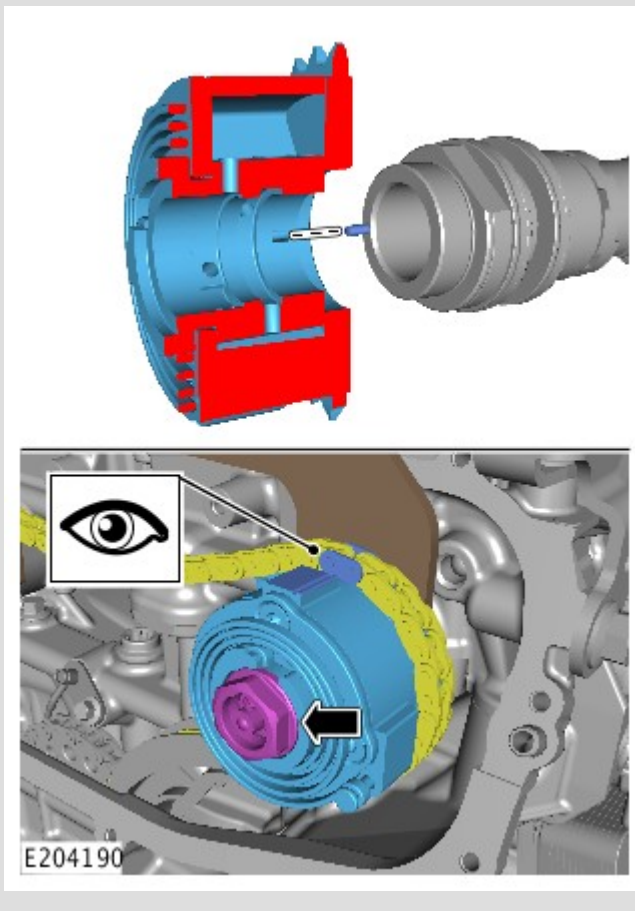


Install a new upper timing chain tensioner arm.
Renew Part: Timing chain tensioner arm Quantity: 1 .

12.

CAUTION:

Make sure that the upper timing chain does not come off the idler sprocket and stays in the correct position.

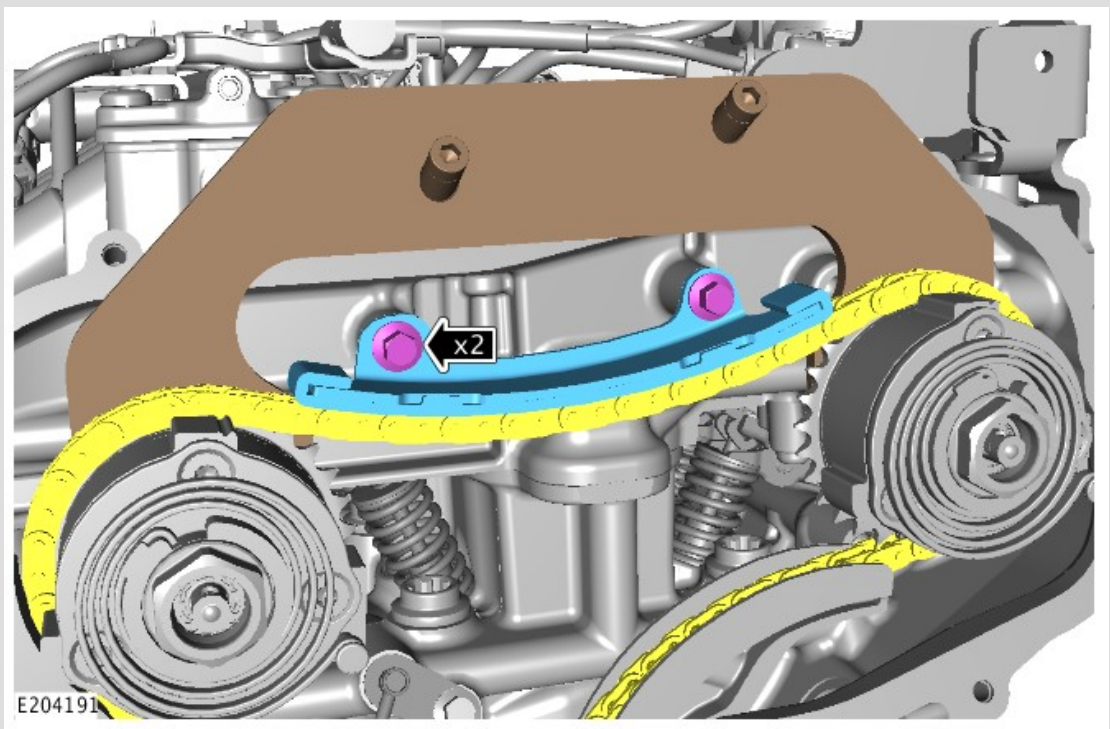


- Install the exhaust camshaft VCT unit. Make sure that the correct VCT unit is installed as noted in the removal steps.
- Make sure that the camshaft pin is correctly seated in the VCT unit as illustrated.
- Install and tighten a new VCT unit center bolt.
  Renew Part: *Variable camshaft timing actuator bolts* *Quantity:* *1* .
  Torque:
  Stage 1: **10 Nm**
  Stage 2: **Loosen 90°**
- Check if the highlighted link on the timing chain is aligned with the timing mark on the VCT unit as illustrated.

13.

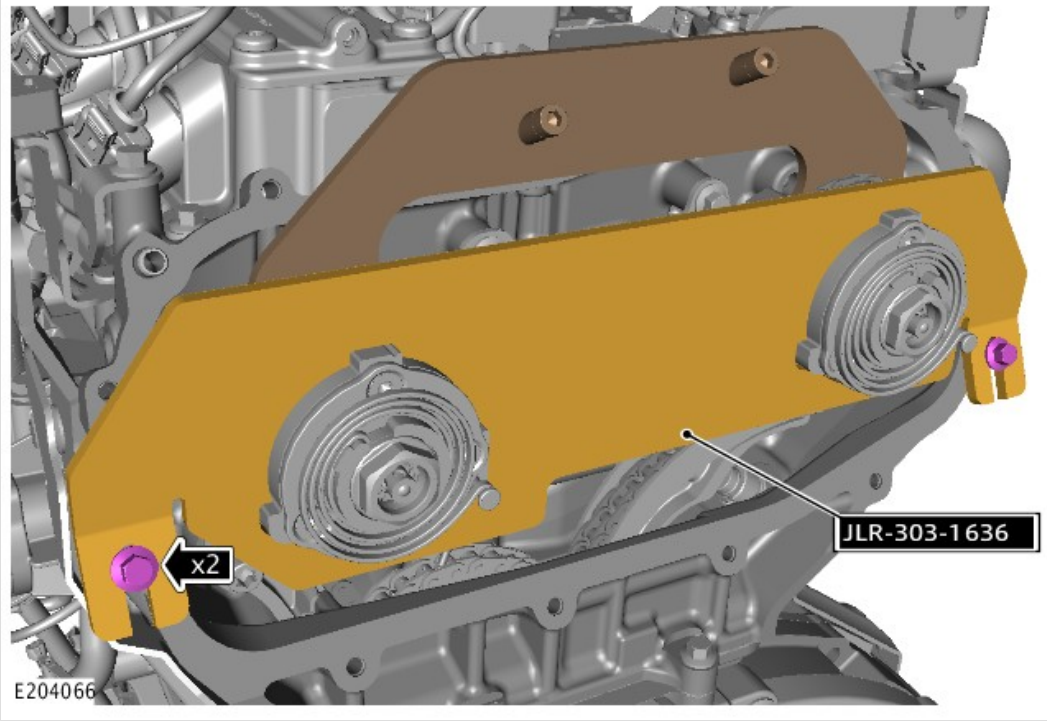
CAUTION:

Make sure that the upper timing chain does not come off the idler sprocket and stays in the correct position.



- Install a new upper timing chain guide.
  Renew Part: *Upper timing chain guide* *Quantity:* *1* .
- Install and tighten the 2 bolts.
  Torque: **11 Nm**

14.

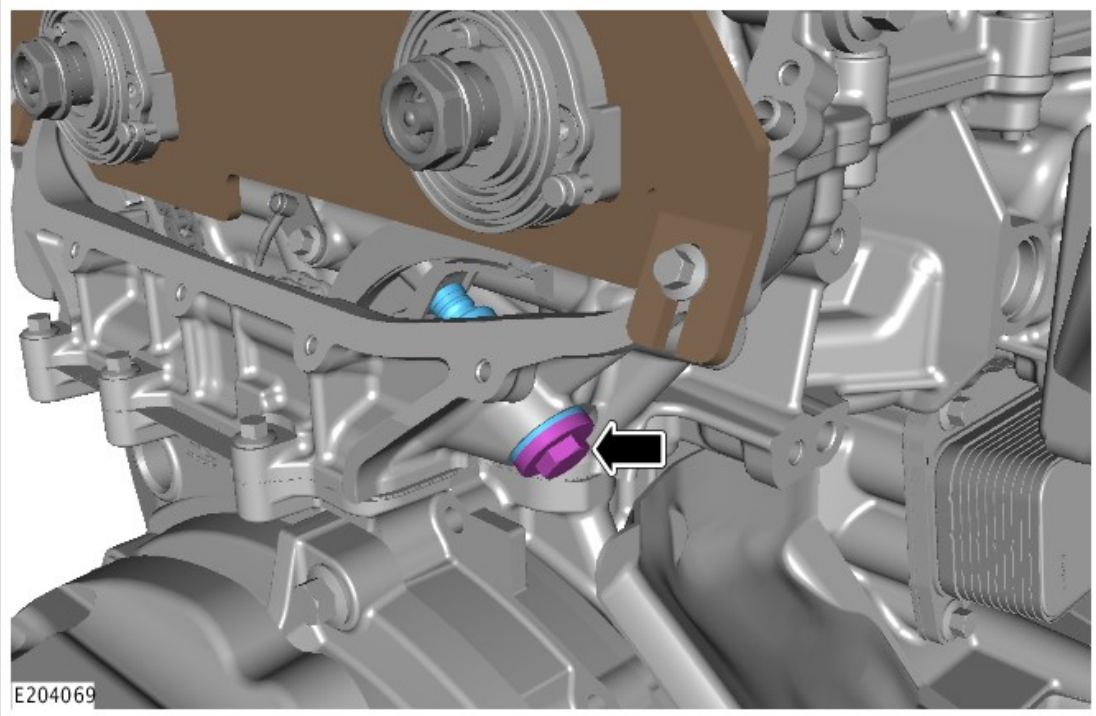


- Install the special tool JLR-303-1636.
  Special Tool(s): JLR-303-1636
- Install and tighten the 2 special tool bolts.
  Torque: **13 Nm**

15.

CAUTION:

Make sure that a new upper timing chain tensioner is installed.

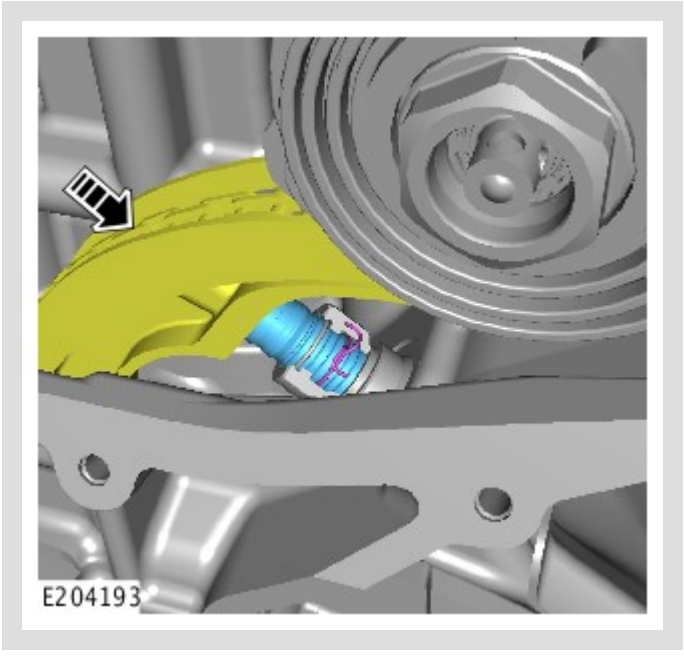


Install and tighten the new timing chain tensioner.
Renew Part: *Upper timing chain tensioner* *Quantity:* *1* .
Torque: **55 Nm**

16.

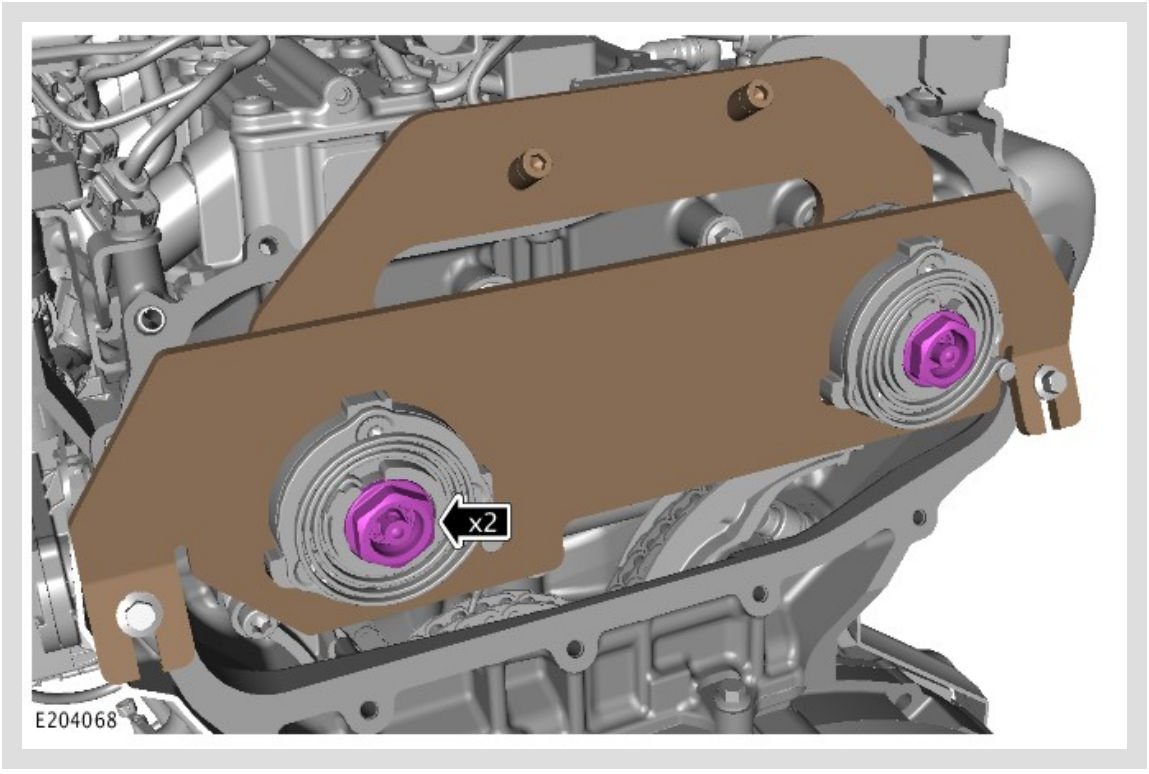
CAUTION:

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



- Release the secondary timing chain tensioner piston.

17.



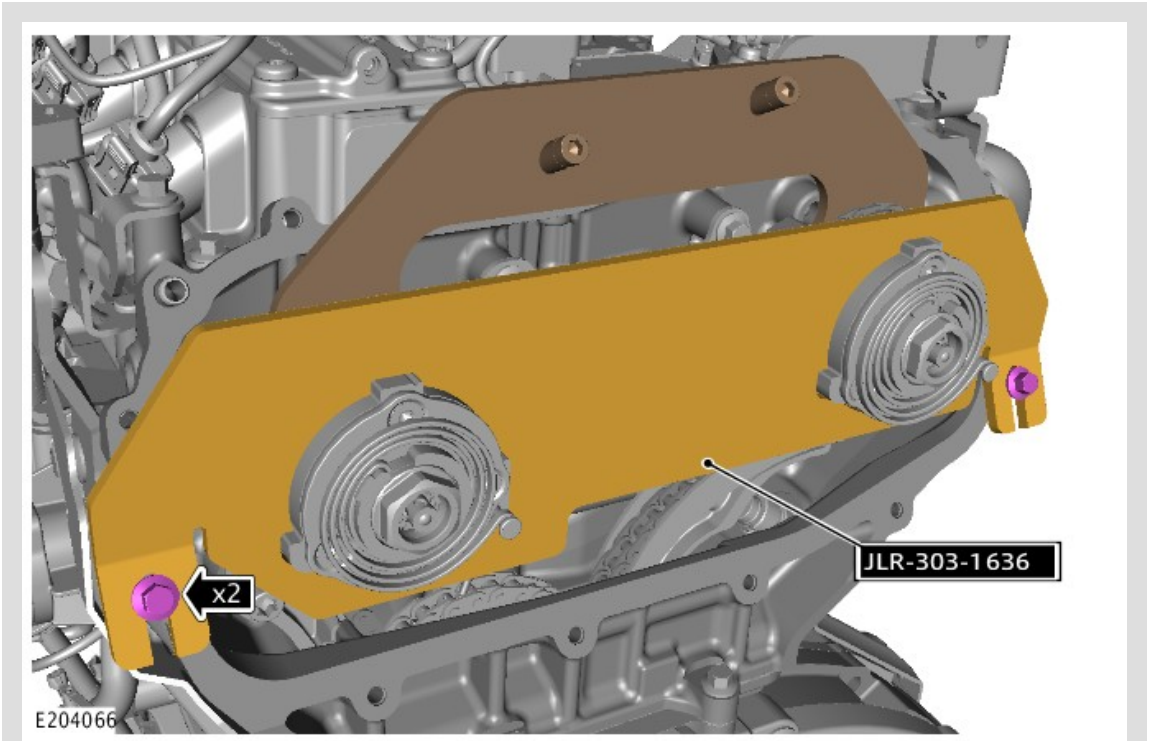
- Fully tighten the VCT bolts.

  Torque:

  Stage 1: **25 Nm**

  Stage 2: **60°**

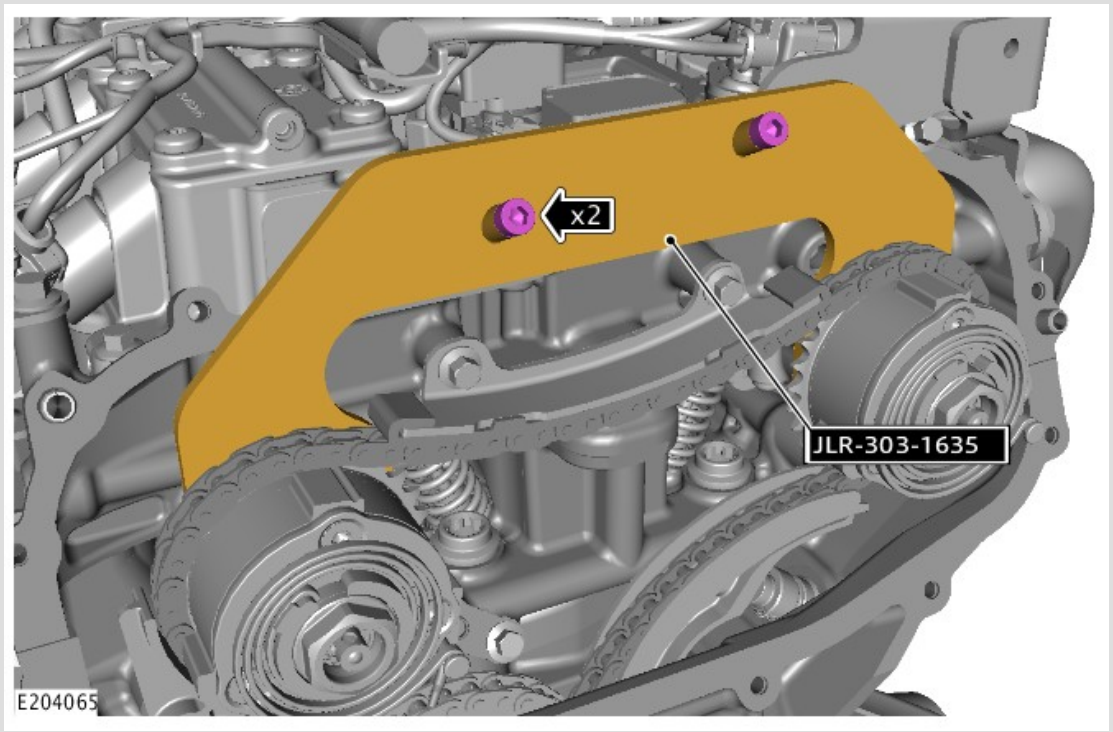
18.



- Remove the 2 special tool bolts.
- Remove the special tool JLR-303-1636.

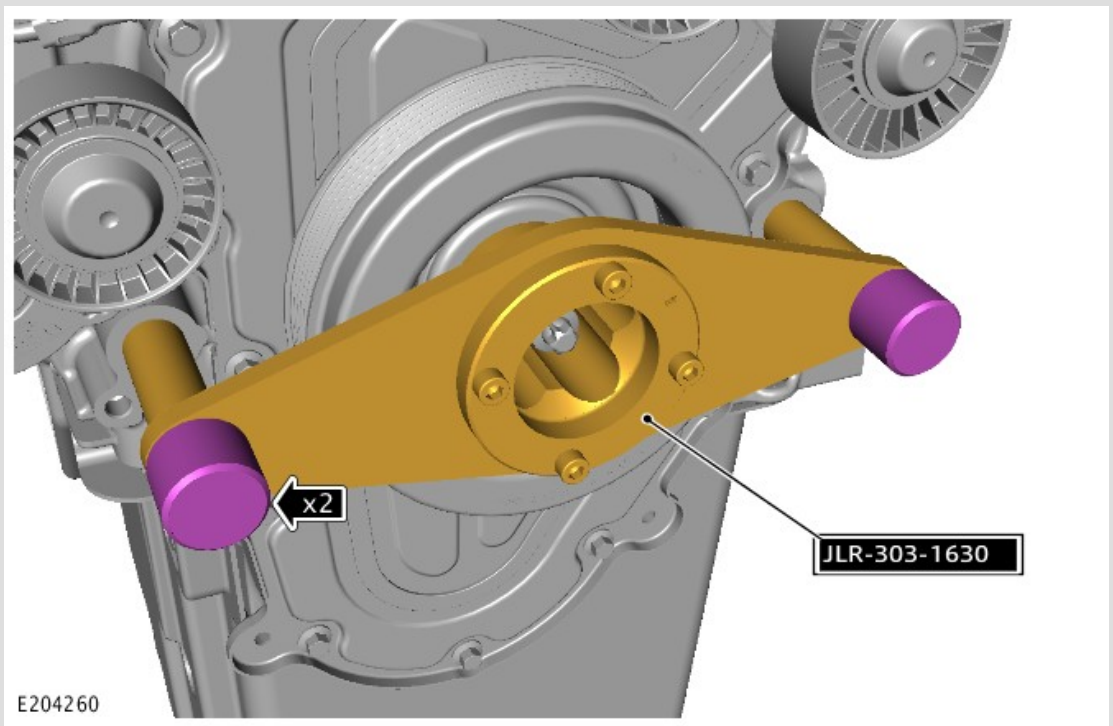
  Special Tool(s): JLR-303-1636

19.



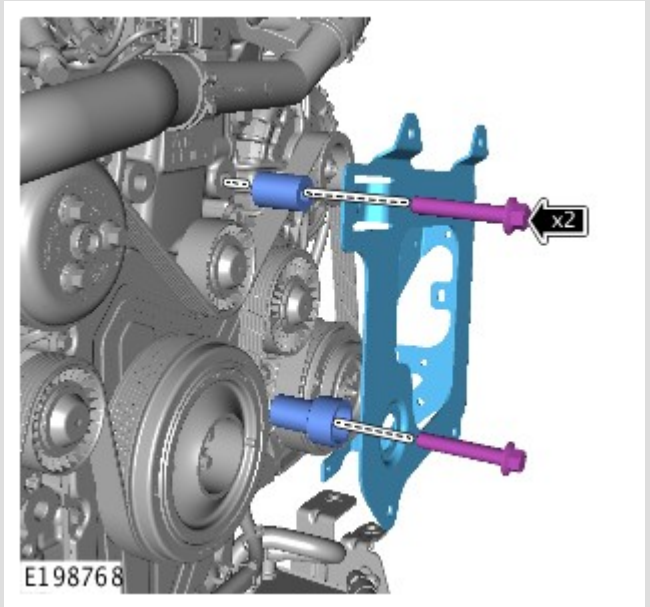
- Remove the 2 special tool bolts.
- Remove the special tool JLR-303-1635.
  Special Tool(s): JLR-303-1635

20.



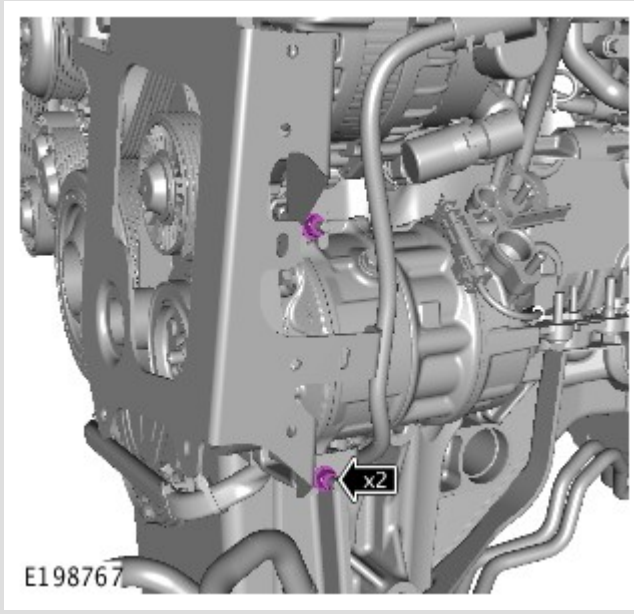
Remove the special tool JLR-303-1630.
Special Tool(s): JLR-303-1630

21.



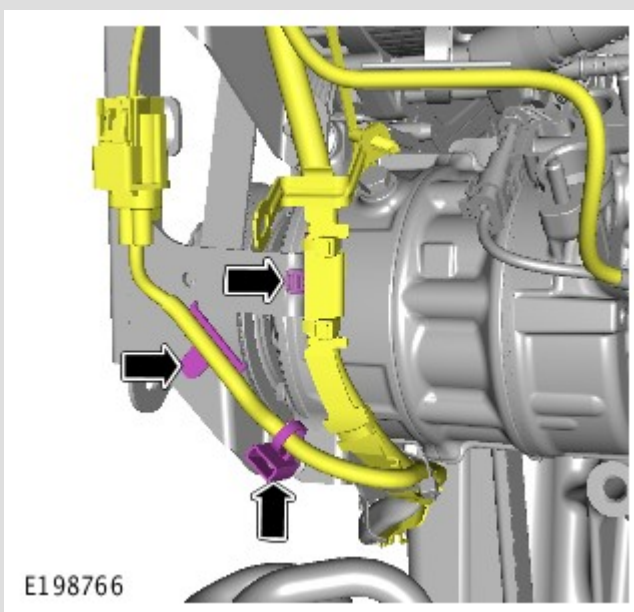
- Install the charge air radiator bracket.
- *Torque:* **47 Nm**

22.



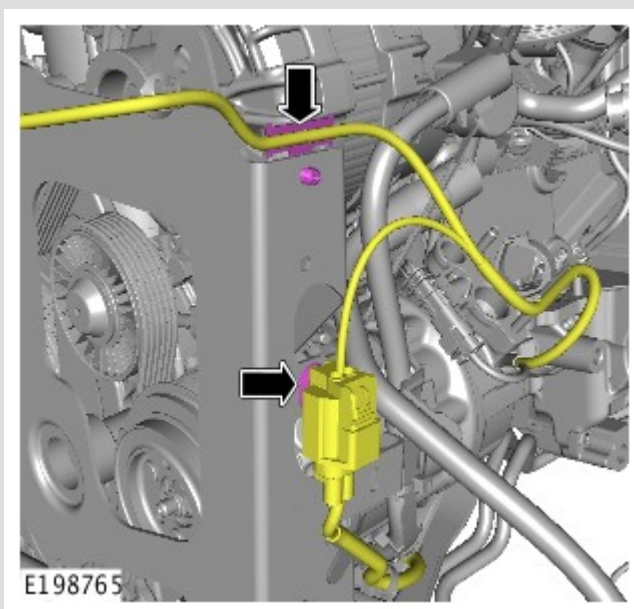
- Install the 2 nuts.
  Torque: **10 Nm**

23.



Install the 3 clips.

24.



Install the 2 fir tree clips.

25.

Install the charge air radiator.

Refer to: Charge Air Cooler (303-12 Intake Air Distribution and Filtering - INGENIUM I4 2.0L Petrol, Removal and Installation).

26.

Install the lower timing cover.

Refer to: Lower Timing Cover (303-01 Engine - INGENIUM I4 2.0L Petrol, Removal and Installation).

27.

Install the upper timing cover.

Refer to: Upper Timing Cover (303-01 Engine - INGENIUM I4 2.0L Petrol, Removal and Installation).

28.

Connect the startup battery ground cable.

Refer to: Startup Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

29.

Install the hood.

Refer to: Hood (501-02 Front End Body Panels, Removal and Installation).

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2018.0 F-PACE (X761), 414-01

BATTERY, MOUNTING AND CABLES

STARTUP BATTERY DISCONNECT AND CONNECT (G1898506)

GENERAL PROCEDURES

86.15.15	STARTUP BATTERY DISCONNECTION AND RECONNECTION PROCEDURE	ALL DERIVATIVES	0.00	USED WITHINS	

NOTES:

- Some variation in the illustrations may occur, but the essential information is always correct.
- Removal steps in this procedure may contain installation details.
- If a new battery is installed, the battery monitoring system (BMS) must be reset using Jaguar approved diagnostic equipment.

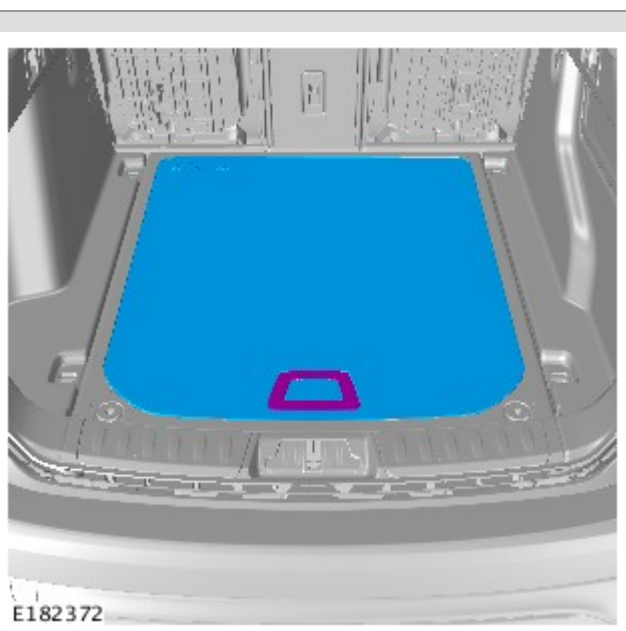
1.

Refer to: Battery and Battery Charging Health and Safety Precautions (100-00 General Information, Description and Operation).

2.

Obtain and record the audio unit preset radio frequencies.

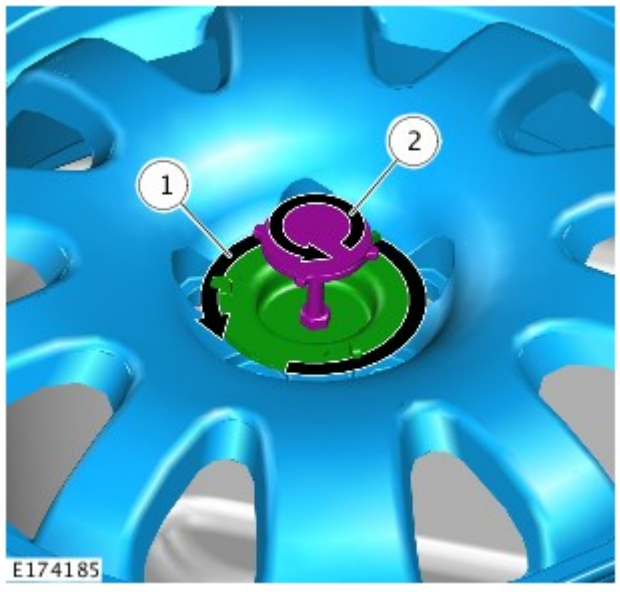
3.



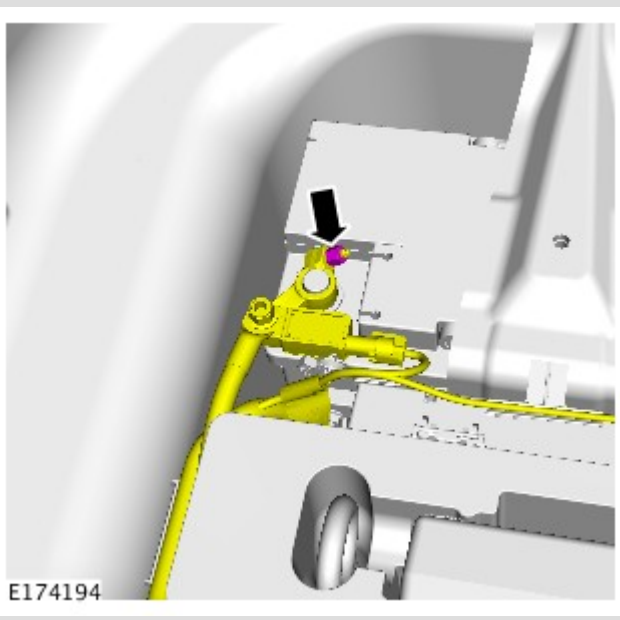
4.

NOTE:

If equipped.

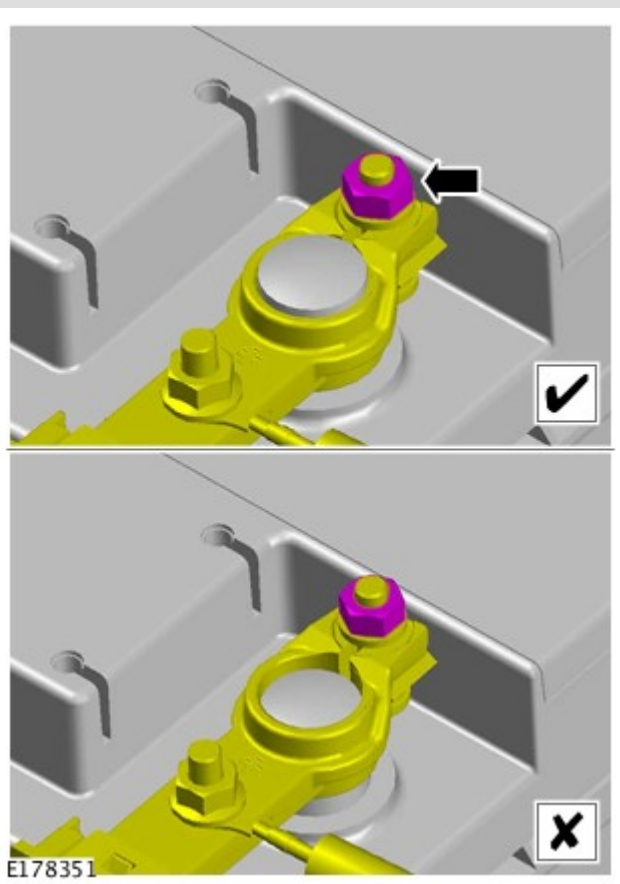


5.



Torque: **6 Nm**

6.



7.

CAUTION:

Make sure the battery monitoring system (BMS) electrical connector is connected to the module, before installing the BMS on to the battery terminal.

To install, reverse the removal procedure.

8.

NOTE:

This step is only necessary when installing a new battery.

Using Jaguar approved diagnostic equipment, reset the battery monitoring system (BMS).

9.

Door Window Motor Initialization

10.

Enter the audio unit preset radio frequencies.

11.

Reset the clock to the correct time.

12.

Start the engine and allow to idle until the engine reaches normal operating temperature.

13.

Switch the engine off.

PUBLISHED: 26-MAR-2018
2018.0 F-PACE (X761), 100-02

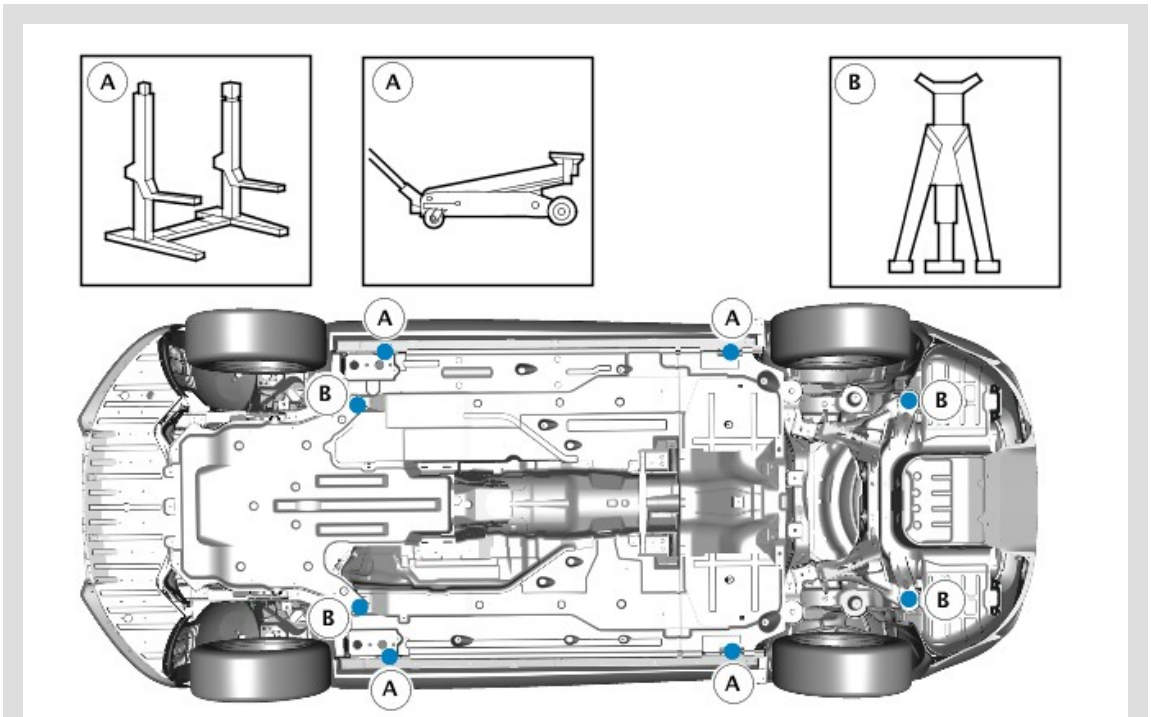
JACKING AND LIFTING

DESCRIPTION AND OPERATION

LIFTING AND SUPPORT POINTS

CAUTIONS:

- Do not allow the hoist adapters to contact the steering linkage, suspension arms, stabilizer bar, rear subframe stabilizer brackets or to compress the lower suspension arm stabilizer bar insulator. Damage to the suspension, exhaust and steering linkage components may occur if care is not exercised when positioning the hoist adapters of two-post hoists prior to lifting the vehicle.
- Never use the differential housing as a lift point. Damage to the differential housing and cover may occur.
- When using a floor jack, a cushioned pad must be utilized to avoid body damage.

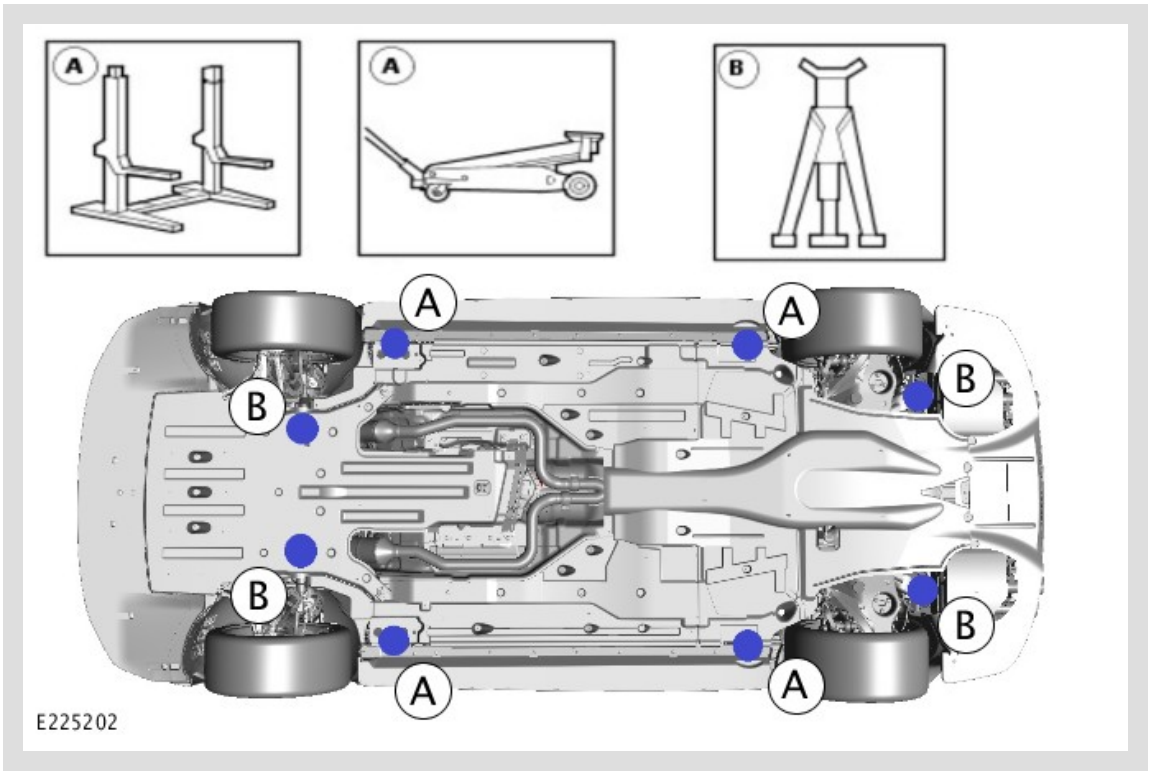


- **(A)** Twin-post hoist and floor jack points
- **(B)** Axle stand support points

LIFTING AND SUPPORT POINTS (PROJECT 8)

CAUTIONS:

- Do not allow the hoist adapters to contact the steering linkage, suspension arms, stabilizer bar, rear subframe stabilizer brackets or to compress the lower suspension arm stabilizer bar insulator. Damage to the suspension, exhaust and steering linkage components may occur if care is not exercised when positioning the hoist adapters of two-post hoists prior to lifting the vehicle.
- Never use the differential housing as a lift point. Damage to the differential housing and cover may occur.
- When using a floor jack, a cushioned pad must be utilized to avoid body damage.



- **(A)** Twin-post hoist and floor jack points
- **(B)** Axle stand support points (engine undershield must be removed to access the front axle stand support points)

VEHICLE RECOVERY

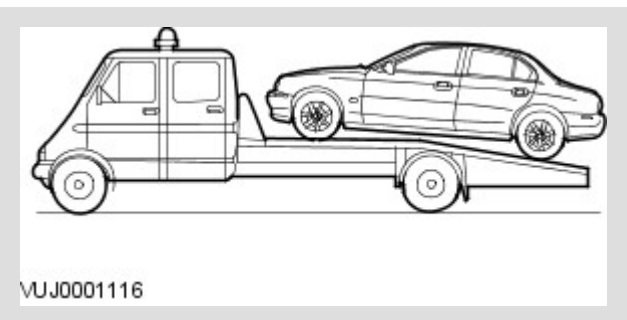
NOTE:

Prior to vehicle recovery, make sure that the vehicle keys are available and the security system is disarmed.

Vehicle recovery methods are:

- By flat-bed transporter.
- By rear suspended tow.
- By rear suspended tow.

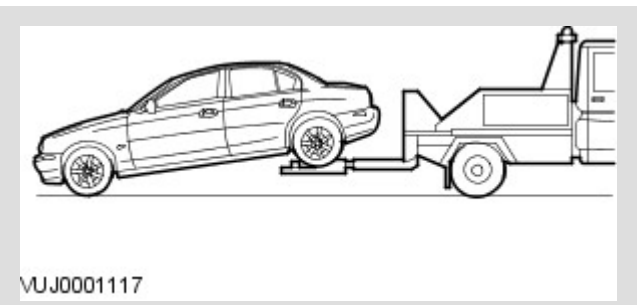
TRANSPORTER OR TRAILER RECOVERY



When the vehicle is being recovered by transporter or trailer:

- The parking brake must be applied and the wheels chocked.
- The gear selector lever must be in Neutral. Do not select Park on automatic transmission vehicles, as the parking lock mechanism may be damaged by the forward and backward rocking motion of the vehicle.
- The vehicle must be securely tied down to the transporter or trailer.

REAR SUSPENDED TOW



When the vehicle is being recovered by rear suspended tow:

- The ignition key must be removed from the ignition switch to lock the steering.
- The rear wheels must be correctly positioned in the lifting cradle and securely tied down.

EMERGENCY TOWING

WARNING:

If the engine is not running, the steering will become heavy and the force necessary to effectively apply the brakes will be greatly increased.

CAUTION:

A vehicle with a defective transmission must be towed by rear suspended tow.

When the vehicle is being towed on its own wheels:

- Local regulations for the towing of vehicles must be followed. In some countries the registration number of the towing vehicle and an **On Tow** sign or warning triangle must be displayed at the rear of the towed vehicle.
- The gear selector lever must be in Neutral.
- The ignition switch must be in position II to release the steering lock and make the direction indicators, horn and stop lamps operate.
- A distance of 0,8 km (0.5 mile) must not be exceeded.
- A speed of 48 km/h (30 mph) must not be exceeded.
- The tow rope must be attached to the front towing eye.

ENGINE - INGENIUM I4 2.0L PETROL

UPPER TIMING COVER (G2030666)

REMOVAL AND INSTALLATION

12.66.21	TIMING BELT /CHAIN COVER - UPPER - RENEW	2000 CC, INGENIUM PETROL	1.90	USED WITHINS	

GENERAL EQUIPMENT

EQUIPMENT NAME
2 post lift

PART(S)

STEP	PART NAME	QUANTITY
Installation Step 1	Timing chain cover gasket	1

REMOVAL

NOTE:

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

1.

Raise and support the vehicle on a suitable 2 post lift.
Refer to: Jacking (100-02 Jacking and Lifting, Description and Operation).
General Equipment: 2 post lift

2.

Disconnect the startup battery ground cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

3.

Remove the engine cover.
Refer to: Engine Cover - INGENIUM I4 2.0L Diesel (501-05 Interior Trim and Ornamentation, Removal and Installation).

4.

Drain the coolant system.
Refer to: Cooling System Partial Draining and Vacuum Filling (303-03 Engine Cooling - INGENIUM I4 2.0L Petrol, General Procedures).

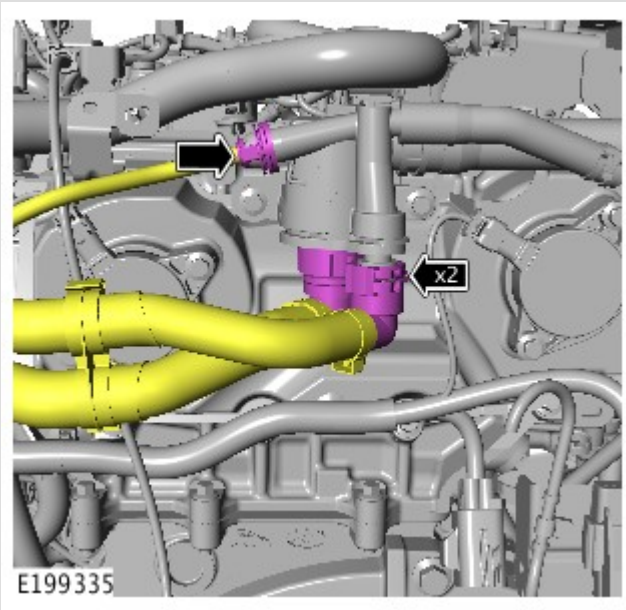
5.

Remove the left side secondary bulkhead panel.
Refer to: Secondary Bulkhead Left Panel - INGENIUM I4 2.0L Petrol (501-02 Front End Body Panels, Removal and Installation).

6.

CAUTION:

Be prepared to collect escaping coolant.

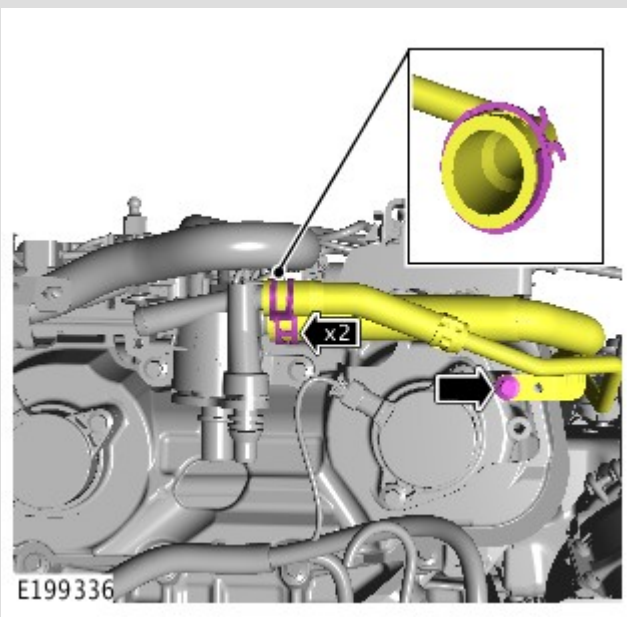


- Release the 2 coolant pipes from the underside of the coolant separator.
- Release the coolant pipe from the left side of the oil separator.

7.

CAUTION:

Be prepared to collect escaping coolant.

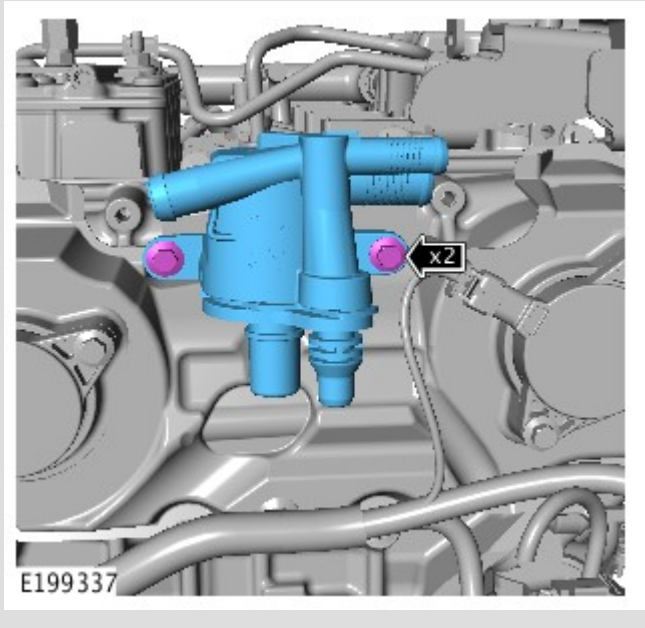


- Release the 2 coolant pipes from the right side of the coolant separator.
- Release the coolant pipe bracket from the upper timing cover assembly.

8.

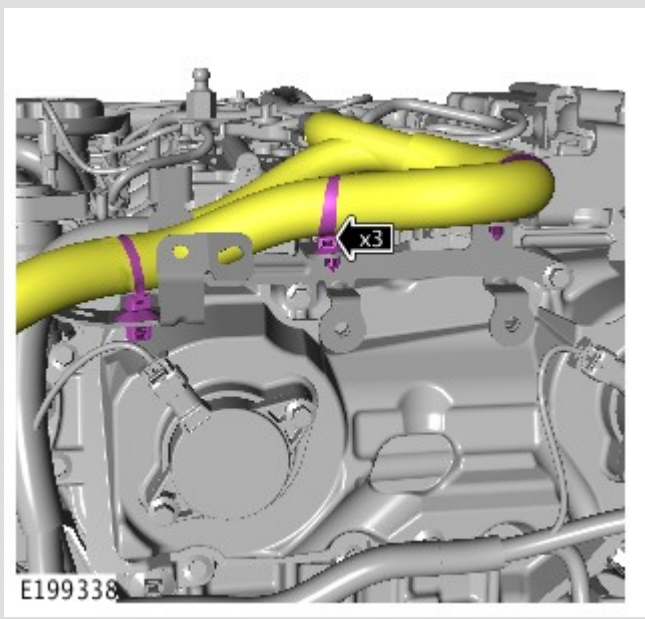
CAUTION:

Be prepared to collect escaping coolant.



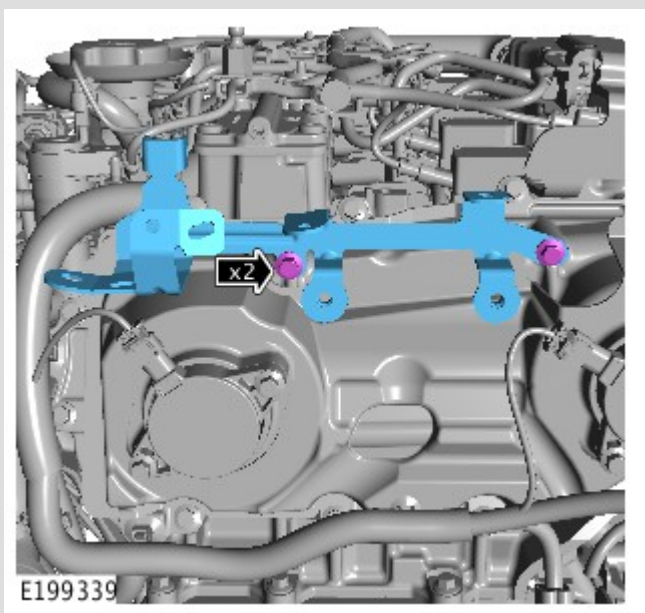
Remove the coolant separator.

9.



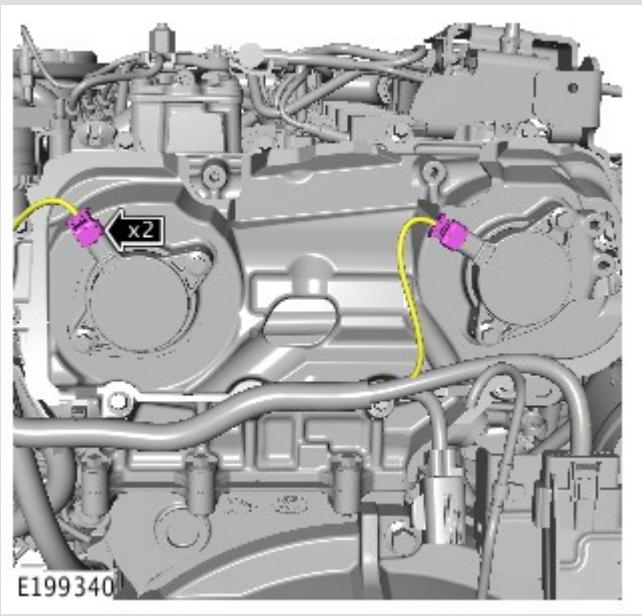
Remove the 3 clips and release the upper wiring harness from the support bracket.

10.



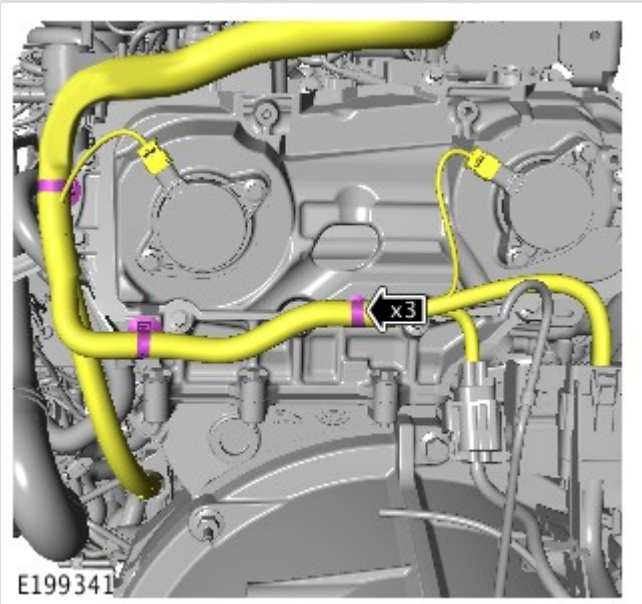
Remove the upper wiring harness support bracket.

11.



Disconnect the 2 electrical connectors from the variable valve timing solenoids.

12.

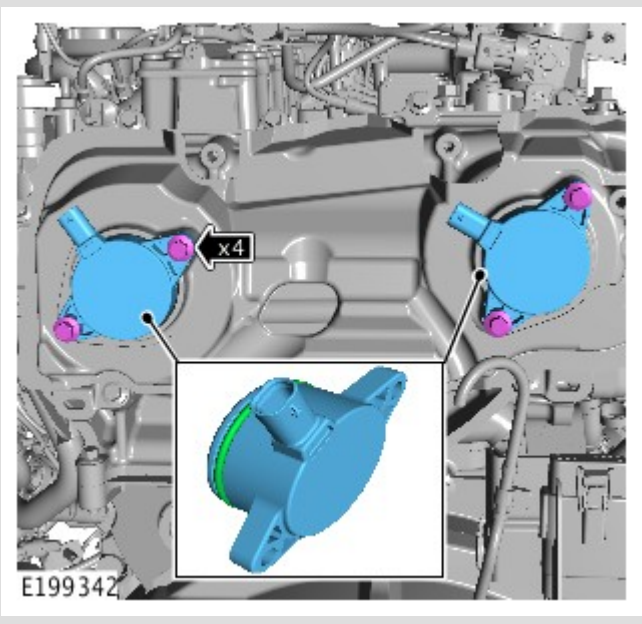


Remove the variable valve timing wiring harness from the 3 clips.

13.

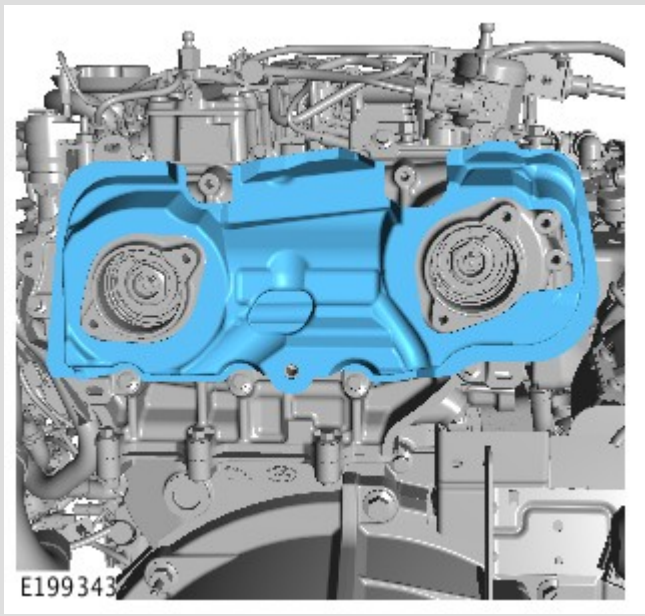
CAUTION:

Inspect the O-ring seals, install a new component if damaged.



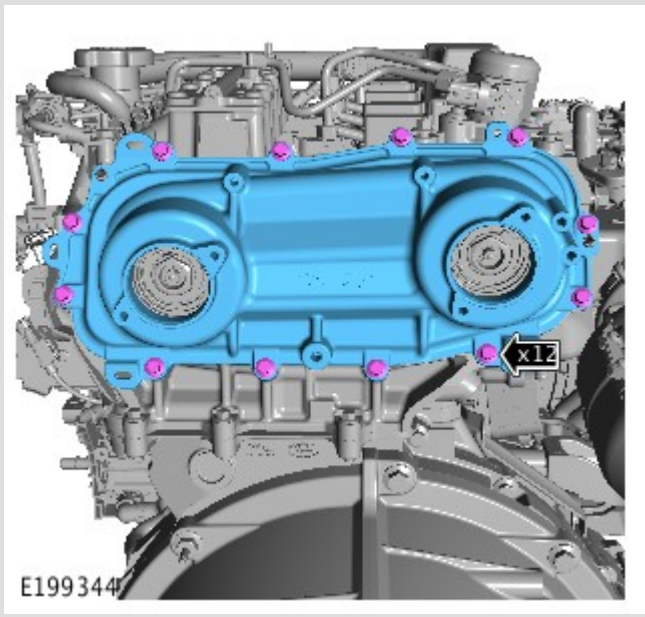
Remove the variable valve timing solenoids.

14.



Remove the Noise, Vibration and Harshness (NVH) pad.

15.

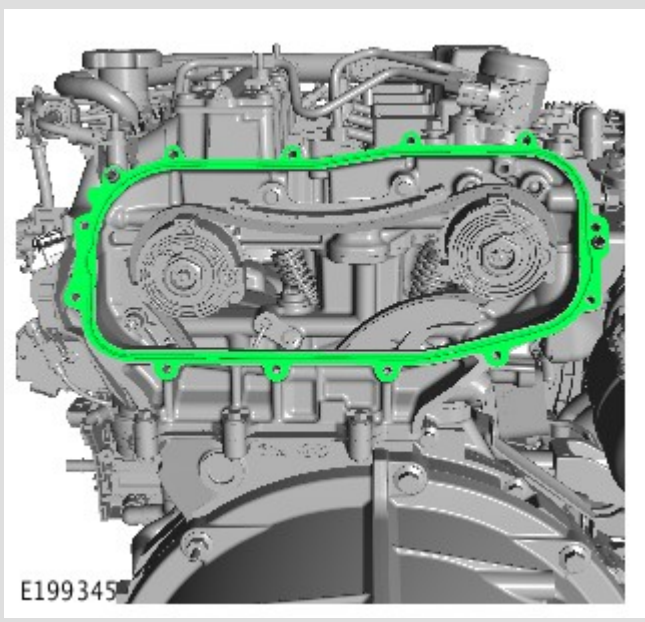


Remove the upper timing cover.

16.

NOTE:

Remove and discard the gasket.



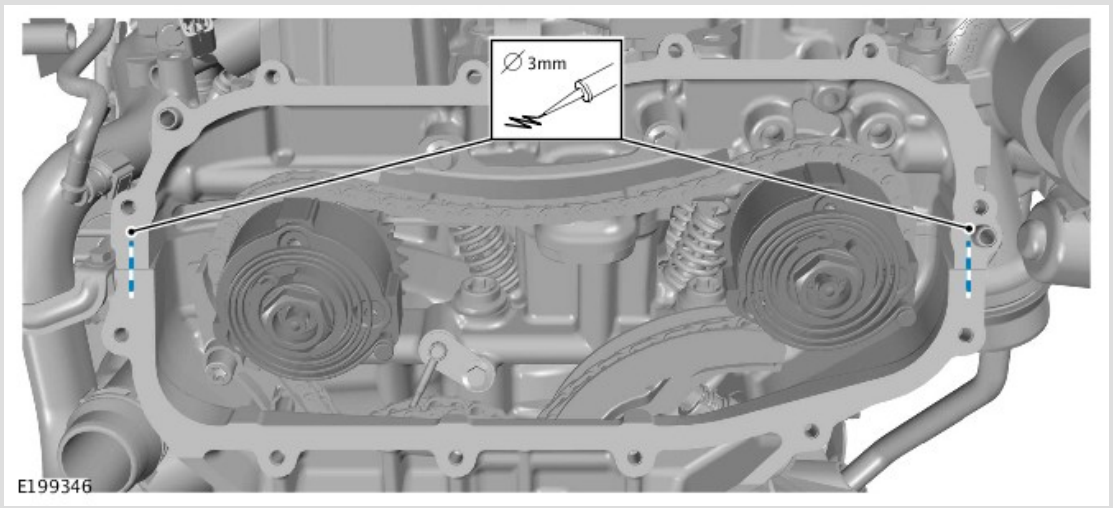
Remove the upper timing chain cover gasket.

INSTALLATION

1.

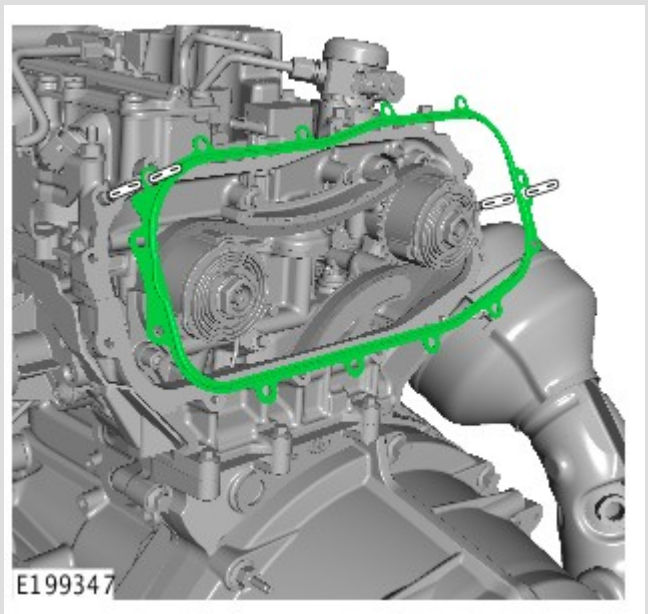
NOTE:

Make sure that a new gasket is installed.



Apply a 3mm diameter bead of RTV sealant to the upper timing chain cover gasket in the position shown.
Refer to: Specifications (303-01 Engine - INGENIUM I4 2.0L Petrol, Specifications).
Renew Part: Timing chain cover gasket Quantity: 1 .

2.

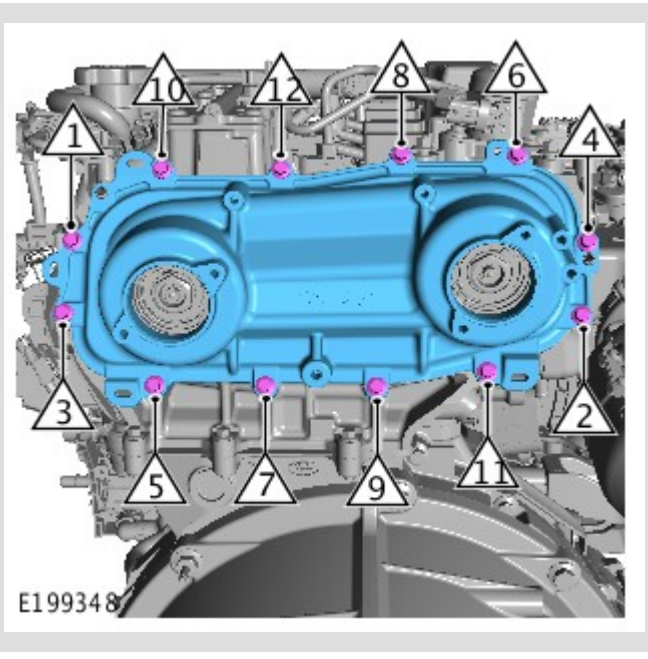


Install the upper timing chain cover gasket.

3.

CAUTION:

Install the component in the sequence shown.



Install the upper timing cover in the sequence shown.
Torque:

- Stage 1: **5 Nm**
- Stage 2: **13 Nm**
- Stage 3: Loosen: **180°**
- Stage 4: **13 Nm**

4.

Install the noise, vibration and harshness (NVH) pad.

5.

Lubricate the variable valve timing solenoid bore with clean engine oil.

6.

CAUTIONS:

- Make sure that the area around the component is clean and free of foreign material.
- Inspect the O-ring seals, install a new component if damaged.

Install the variable valve timing solenoids.

Torque: **9 Nm**

7.

Install the variable valve timing solenoid wiring harness and secure with the clips.

8.

Connect the 2 electrical connectors for the variable valve timing solenoids.

9.

Install the upper wiring harness support bracket.

Torque: **10 Nm**

10.

Install the wiring harness onto the support bracket and secure with the 3 clips.

11.

Install the coolant separator.

Torque: **10 Nm**

12.

- Install the coolant pipe bracket onto the upper timing cover assembly.
- Install the 2 right side coolant pipes to the coolant separator.

13.

- Install the left side coolant pipe to the coolant separator.
- Install the 2 coolant pipes to the underside of the oil separator.

14.

Install the left side secondary bulkhead panel.

Refer to: Secondary Bulkhead Left Panel - INGENIUM I4 2.0L Petrol (501-02 Front End Body Panels, Removal and Installation).

15.

Fill and bleed the coolant system.

Refer to: Cooling System Partial Draining and Vacuum Filling (303-03 Engine Cooling - INGENIUM I4 2.0L Petrol, General Procedures).

16.

Install the engine cover.

Refer to: Engine Cover - INGENIUM I4 2.0L Diesel (501-05 Interior Trim and Ornamentation, Removal and Installation).

17.

Connect the startup battery ground cable.

Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

PUBLISHED: 01-NOV-2017
2018.0 F-PACE (X761), 303-12D

INTAKE AIR DISTRIBUTION AND FILTERING - INGENIUM I4 2.0L PETROL

CHARGE AIR COOLER (G1998338)

REMOVAL AND INSTALLATION

18.50.31	CHARGE AIR COOLER - RENEW	2000 CC, INGENIUM PETROL	1.20	USED WITHINS	

REMOVAL

NOTE:

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

1.

Disconnect the startup battery ground cable.

Refer to: Specifications (414-00, Specifications).

2.

Raise and support the vehicle on a suitable 2 post lift.

Refer to: Lifting (100-02, Description and Operation).

3.

Remove the air intake resonator.

Refer to: Intake Air Resonator (303-12E, Removal and Installation).

4.

Remove the engine undershield.

Refer to: Engine Undershield (501-02, Removal and Installation).

5.

Partially drain the cooling system.

Refer to: Cooling System Draining and Vacuum Filling (303-03G, General Procedures).

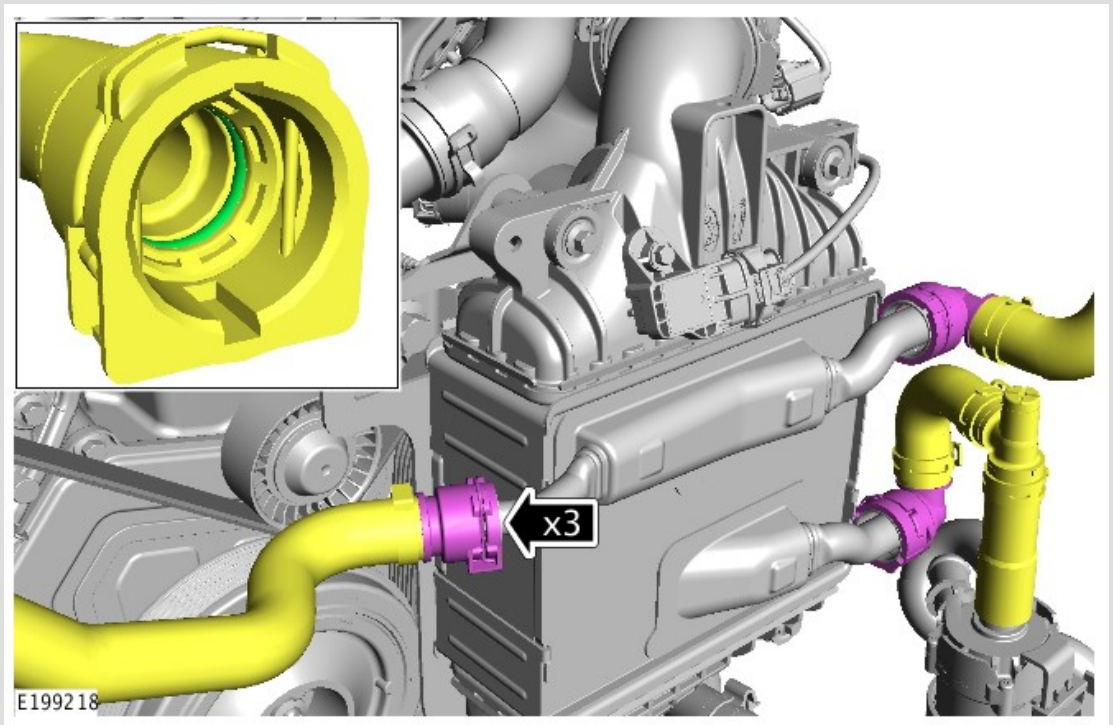
6.

CAUTION:

Protect the accessory drive belt to prevent engine coolant contamination.

NOTE:

Inspect the seals. Replace if damaged.

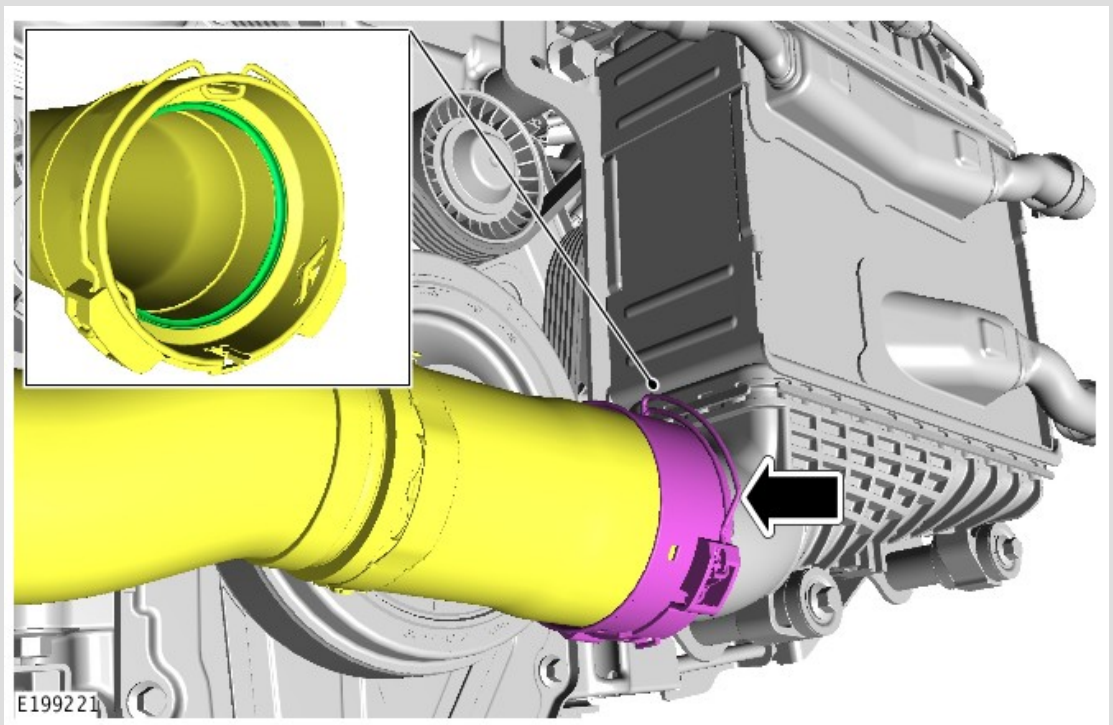


Disconnect the 3 engine coolant hoses from the charge air cooler.

7.

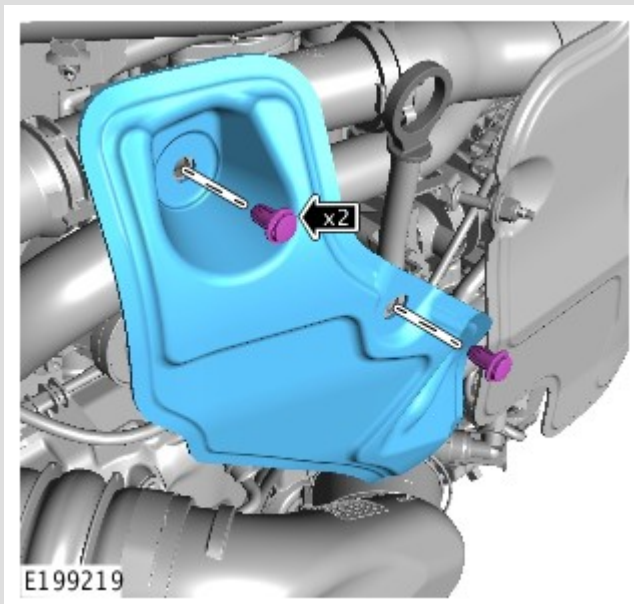
NOTE:

Inspect the seals. Replace if damaged.



Release the charge air cooler inlet pipe.

8.

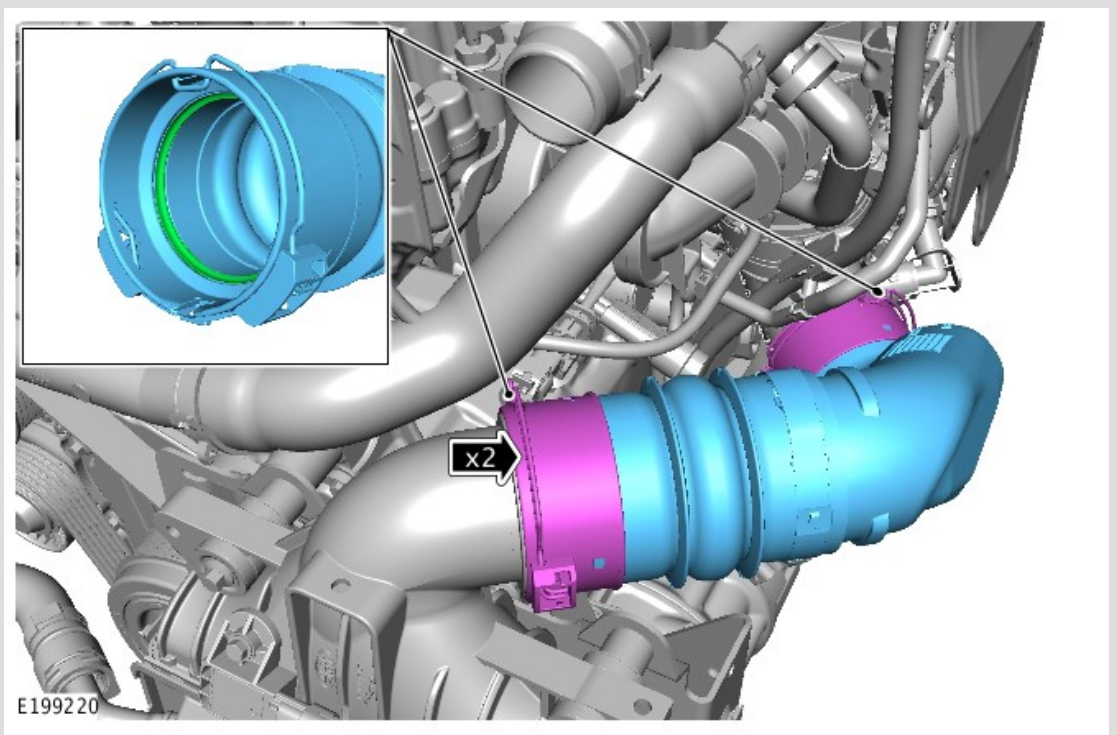


Remove the 2 retaining bolts and the Noise, Vibration and Harshness (NVH) material.

9.

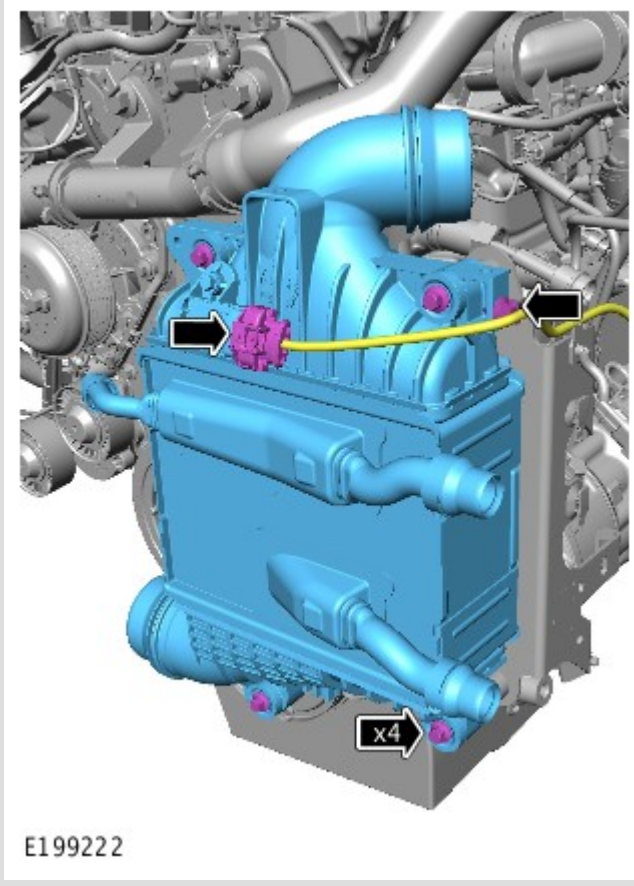
NOTE:

Inspect the seals. Replace if damaged.



Remove the charge air cooler outlet pipe.

10.

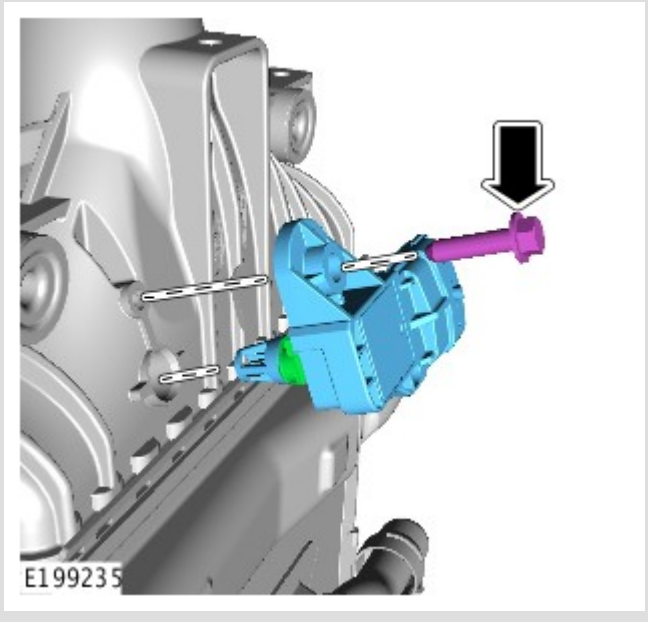


- Disconnect the electrical connector.
- Remove the 4 retaining bolts and the charge air cooler.

11.

NOTES:

- Inspect the seal. Replace if damaged.
- Do not disassemble further if the component is removed for access only.



Remove the retaining bolts and the charge air cooler temperature and pressure sensor.

INSTALLATION

1.

NOTE:

This step is only required if previously removed.

Install the charge air cooler temperature and pressure sensor and the retaining bolt.

Torque: **6 Nm**

2.

- Install the charge air cooler and the 4 retaining bolts.
  Torque: **10 Nm**
- Connect the electrical connector.

3.

Install the charge air cooler outlet pipe.

4.

Install the Noise, Vibration and Harshness (NVH) material and the 2 retaining bolts.

Torque: **9 Nm**

5.

Secure the charge air cooler inlet pipe.

6.

Connect the 3 engine coolant hoses to the charge air cooler.

7.

Vacuum fill the cooling system.

Refer to: Cooling System Draining and Vacuum Filling (303-03G, General Procedures).

8.

Install the engine undershield.

Refer to: Engine Undershield (501-02, Removal and Installation).

9.

Install the air intake resonator.

Refer to: Intake Air Resonator (303-12E, Removal and Installation).

10.

Connect the startup battery ground cable.

Refer to: Specifications (414-00, Specifications).

PUBLISHED: 25-AUG-2017
2018.0 F-PACE (X761), 501-02

FRONT END BODY PANELS

HOOD (G1914967)

REMOVAL AND INSTALLATION

76.16.01	HOOD - RENEW	ALL DERIVATIVES	0.60	USED WITHINS

REMOVAL

CAUTION:

Always protect paintwork and windows when removing exterior components.

NOTES:

- Removal steps in this procedure may contain installation details.
- Some variation in the illustrations may occur, but the essential information is always correct.

1.

NOTE:

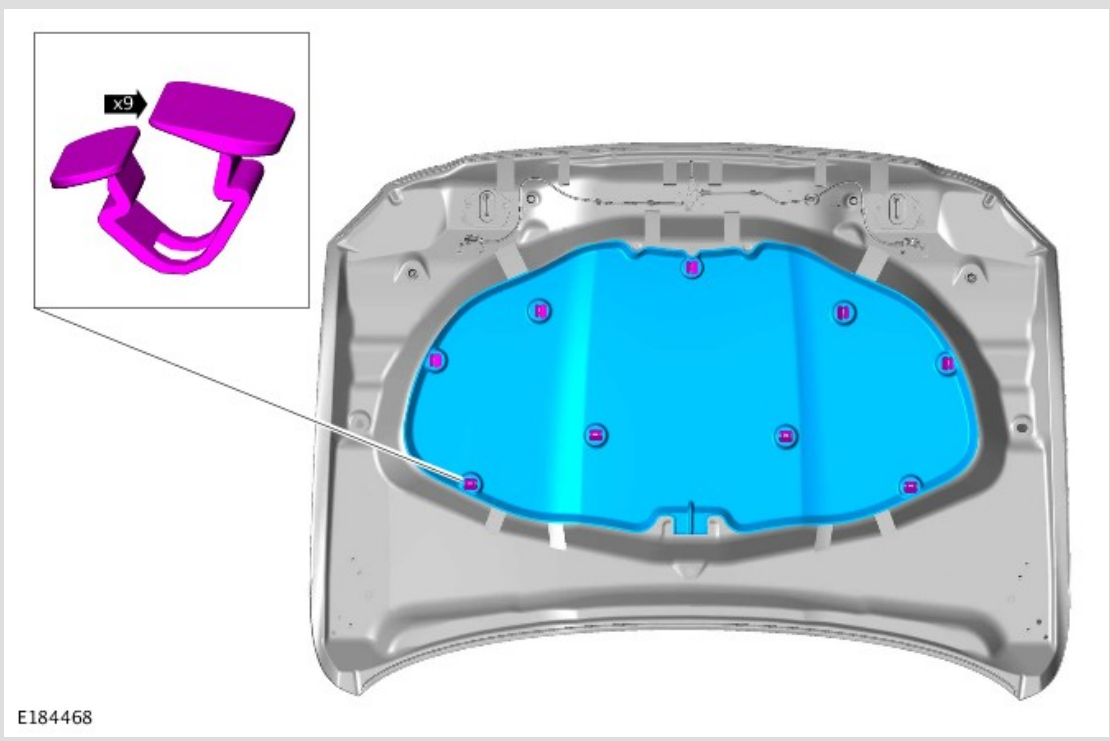
Mark the position of the component prior to removal.

Torque: **25 Nm**

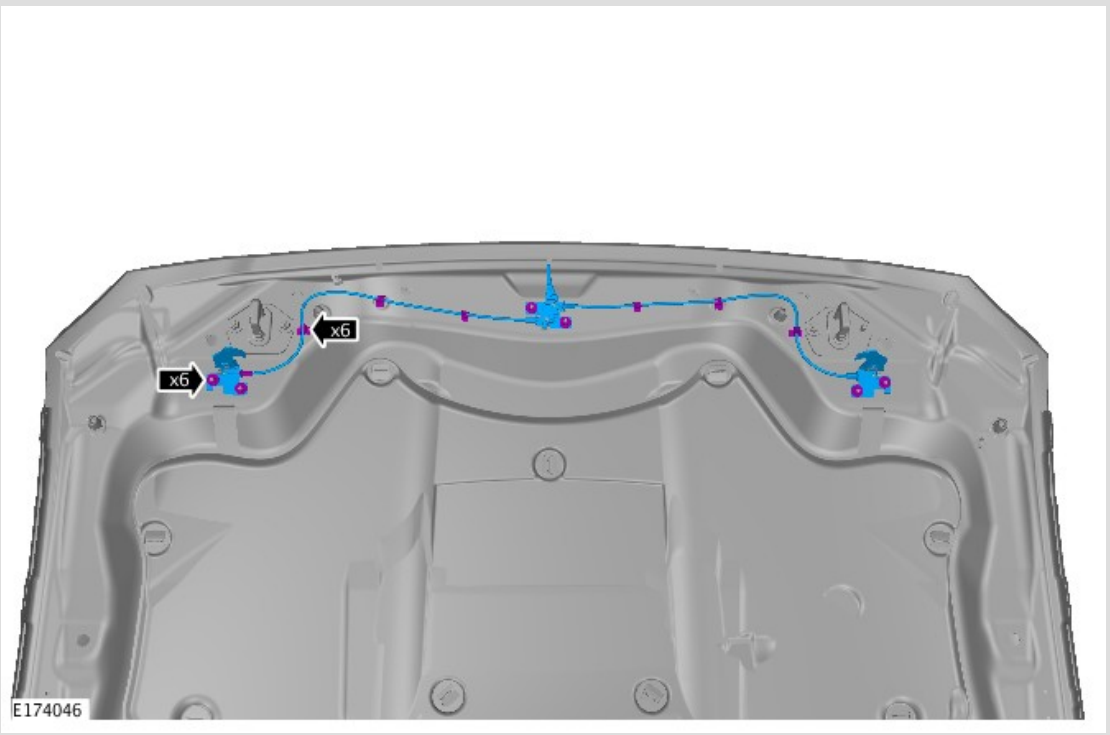
2.

NOTE:

Do not disassemble further if the component is removed for access only.



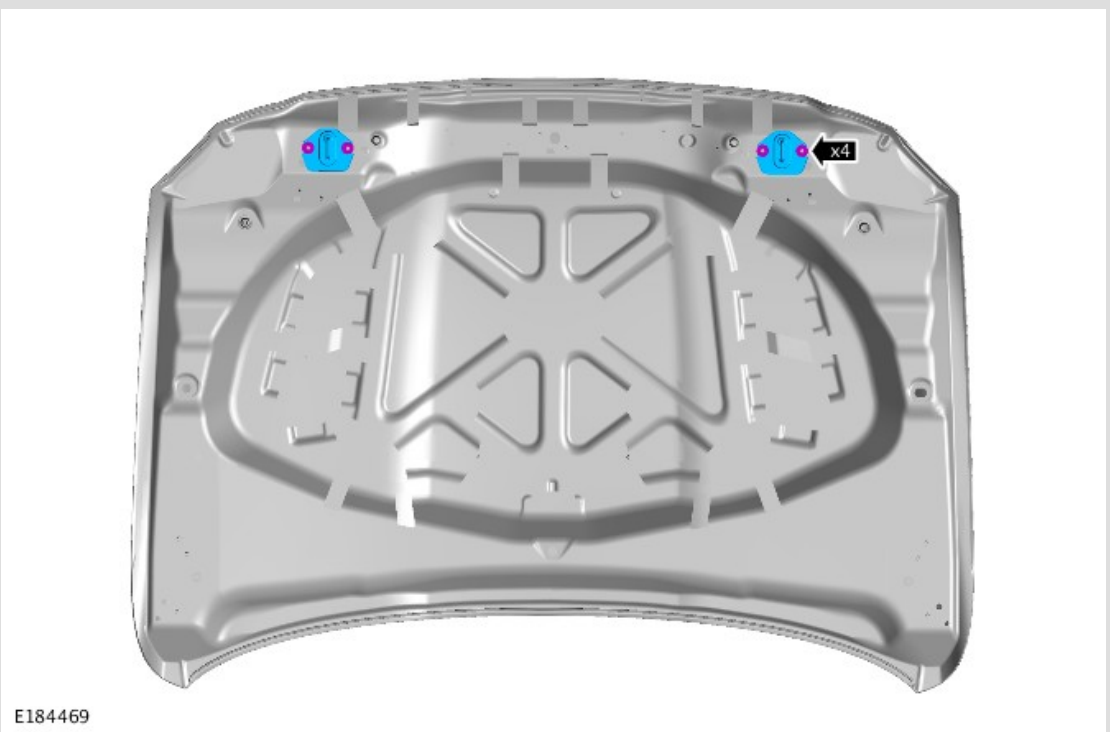
3.



Torque: **10 Nm**

4.

> **NOTE:**
>
> Mark the position of the component prior to removal.



Torque: **25 Nm**

5.

INSTALLATION

1.

NOTE:

Make sure that the component is installed to the marked position in the removal steps.

To install, reverse the removal procedure.

2.

Refer to: Hood Alignment (501-26, General Procedures).

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2018.0 F-PACE (X761), 303-01D

ENGINE - INGENIUM I4 2.0L PETROL

LOWER TIMING COVER (G1998105)

REMOVAL AND INSTALLATION

12.66.03	TIMING COVER - LOWER - RENEW	2000 CC, INGENIUM PETROL, 4WD	5.50	USED WITHINS	

REMOVAL

NOTE:

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

1.

Raise and support the vehicle on a suitable 2 post lift.

Refer to: Jacking and Lifting (100-02 Jacking and Lifting, Description and Operation).

2.

Disconnect the startup battery ground cable.

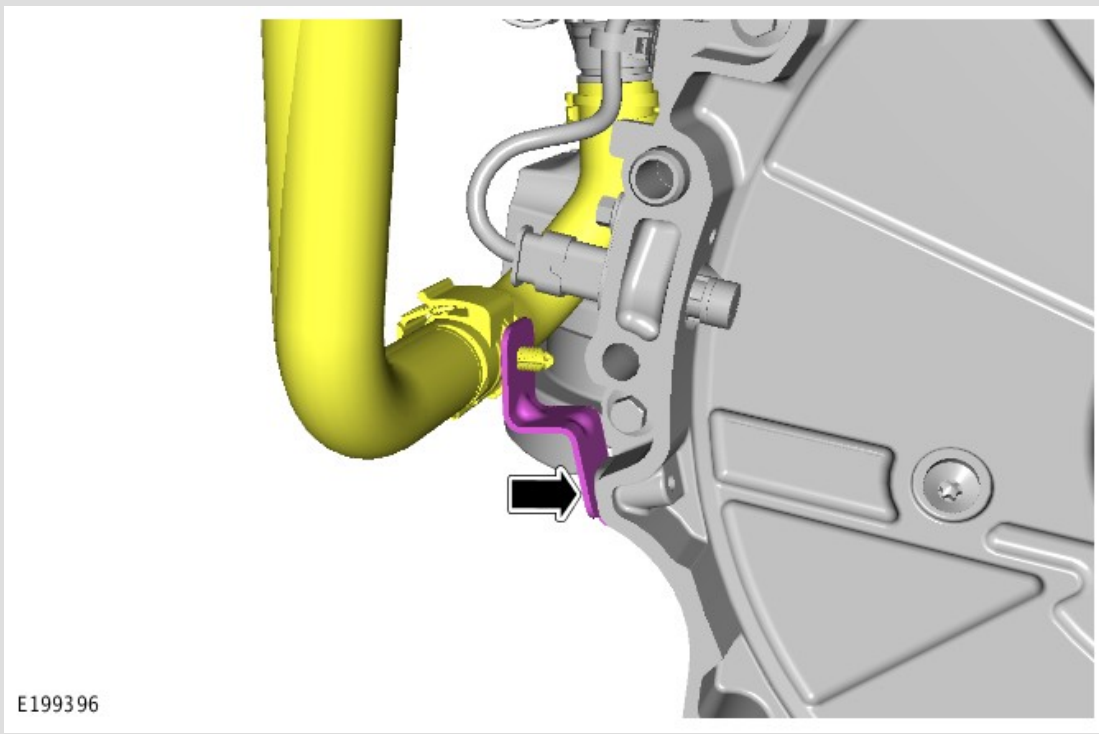
Refer to: Specifications (414-01 Battery, Mounting and Cables, Specifications).

3.

Remove the crankshaft rear oil seal.

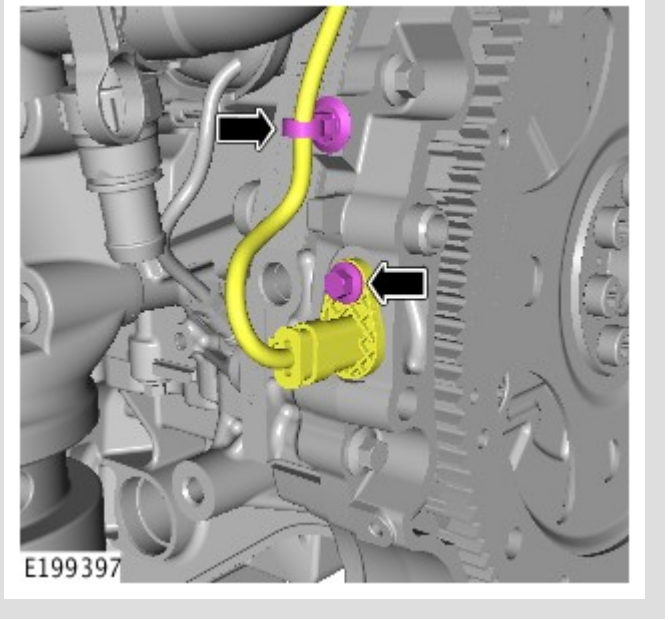
Refer to: Crankshaft Rear Seal (303-01D, Removal and Installation).

4.



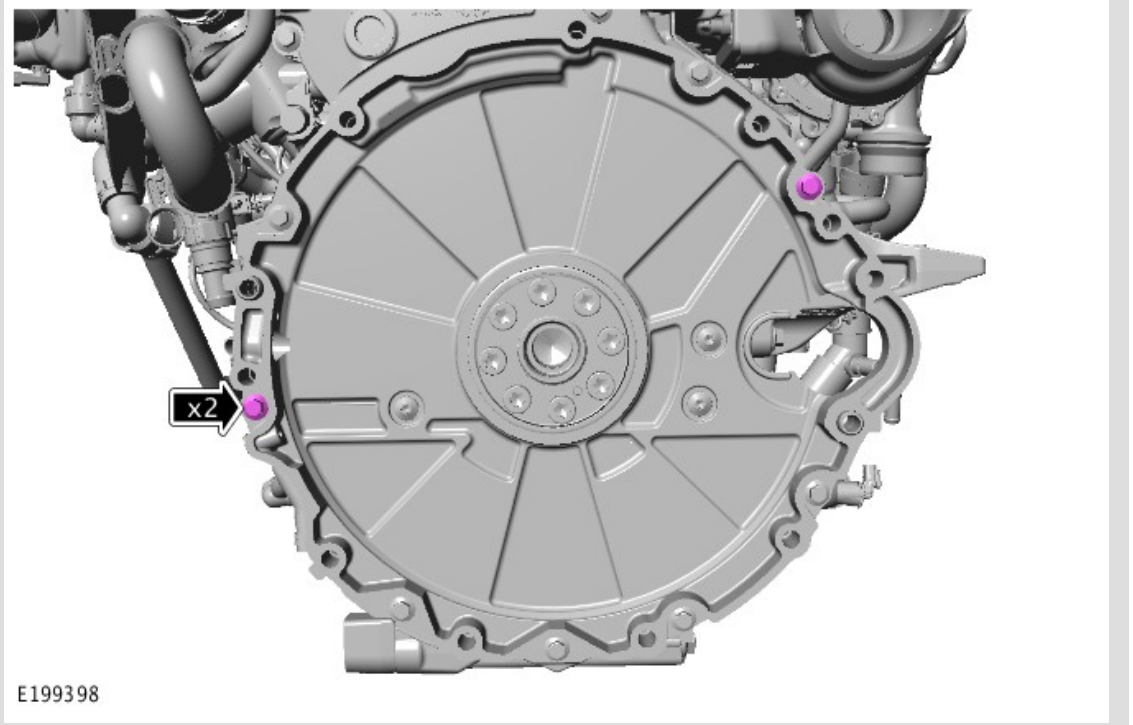
Remove the coolant pipe bracket.

5.



Remove the crankshaft position (CKP) sensor.

6.

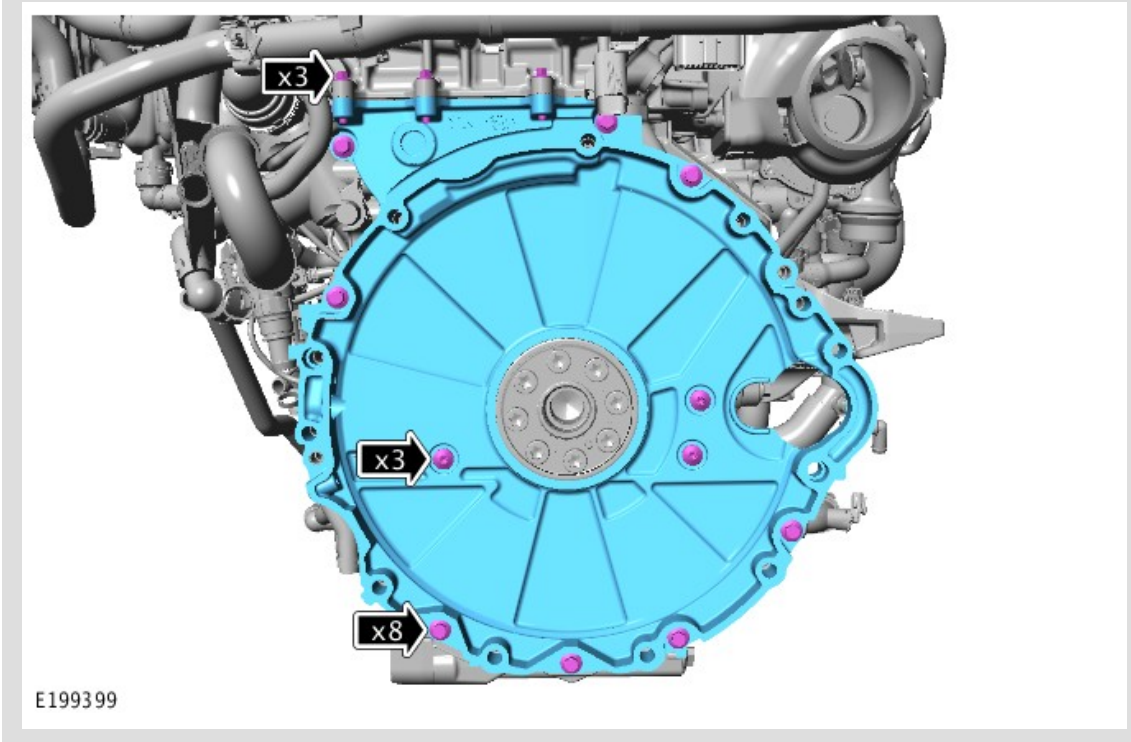


Remove the 2 dowel locating bolts.

7.

CAUTION:

Take extra care not to damage the surrounding components.

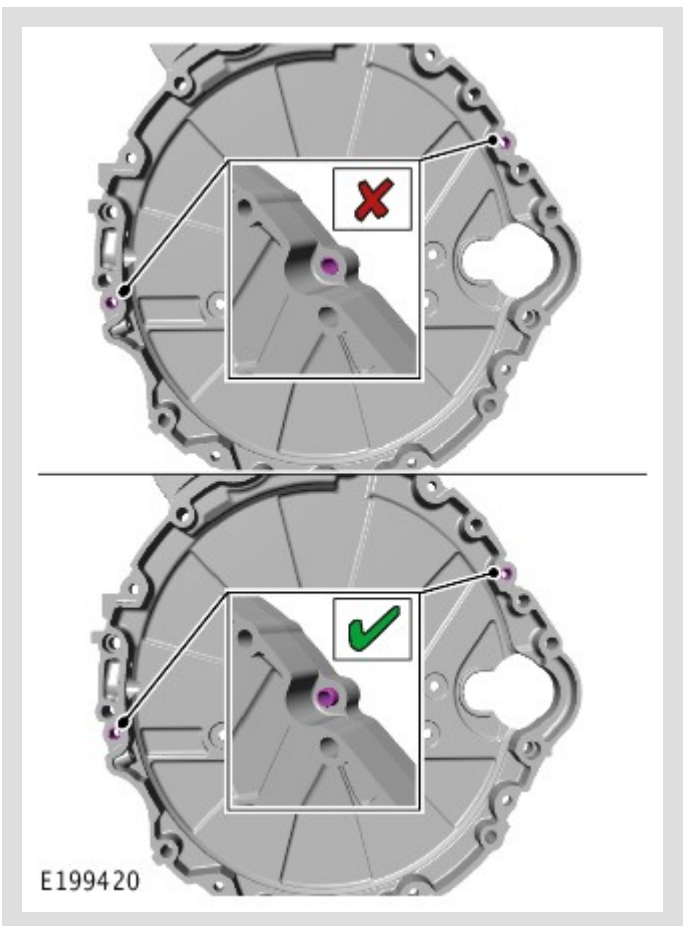


- Remove the remaining 14 bolts.
- Remove the lower timing chain cover.

8.

CAUTION:

Take extra care not to damage the surrounding components.



Using a suitable tool, position the dowels as shown in the illustration.

9.

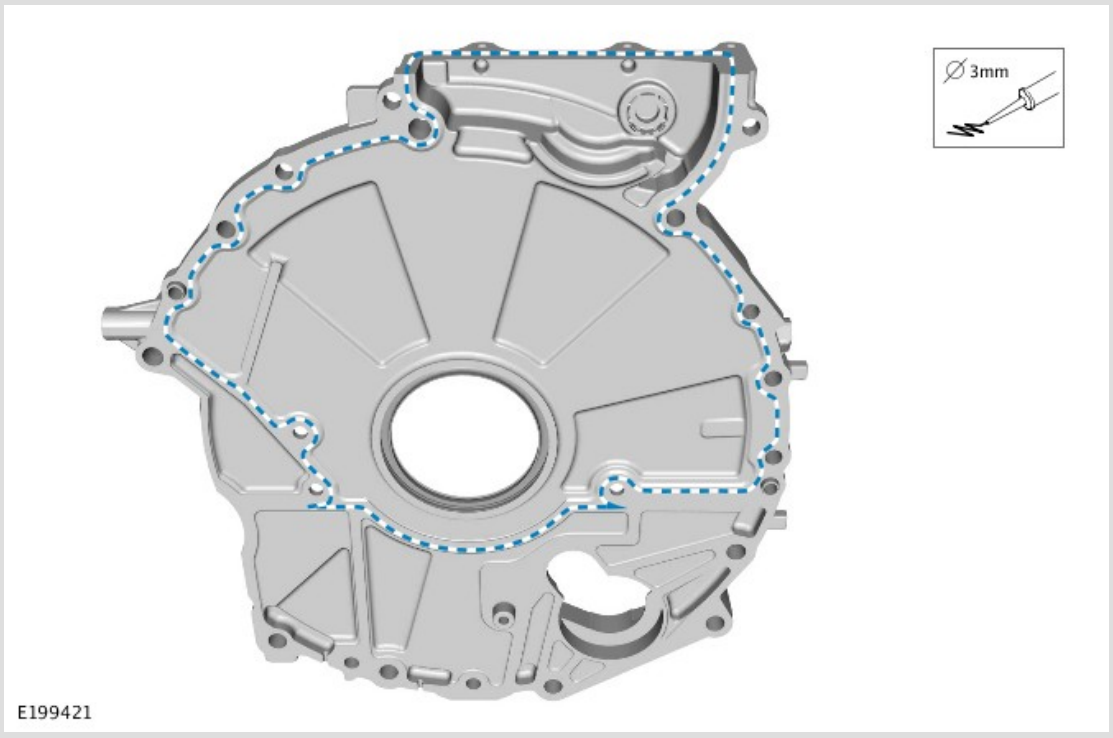
Using a suitable scraping tool, Make sure that all traces of the old sealant are removed from the mating faces.

INSTALLATION

1.

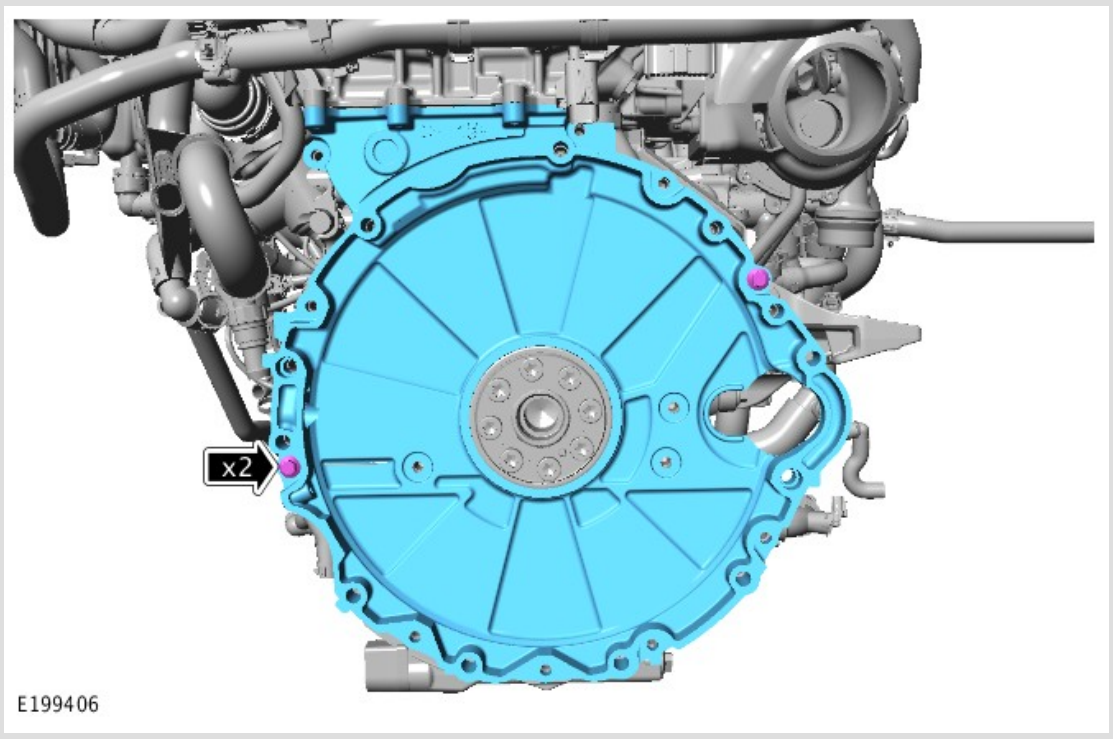
CAUTION:

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



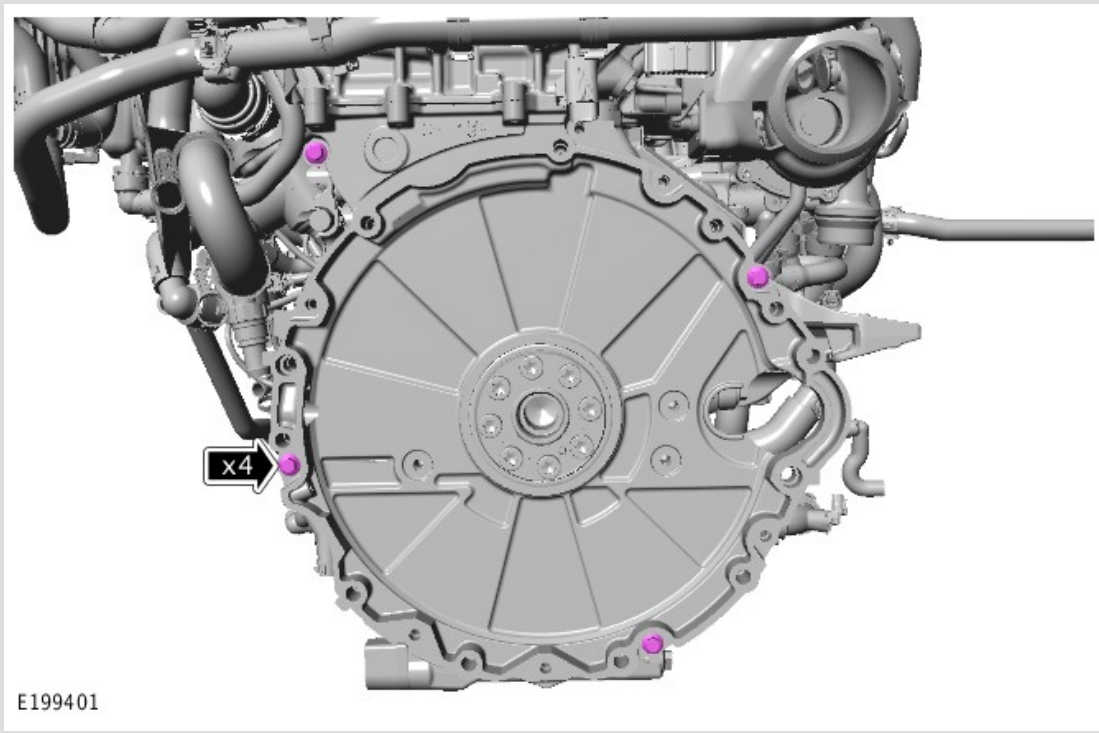
Apply a 3 mm diameter continuous bead of sealant, to the area shown.
Refer to: Specifications (303-01 Engine - INGENIUM I4 2.0L Petrol, Specifications).

2.



- Take care not to damage the cylinder head gasket when installing the lower timing cover.
- Make sure the locating dowels are installed correctly.
- Tighten the 2 bolts to allow the dowels to be pushed into the correct position.
  Torque: **5 Nm**

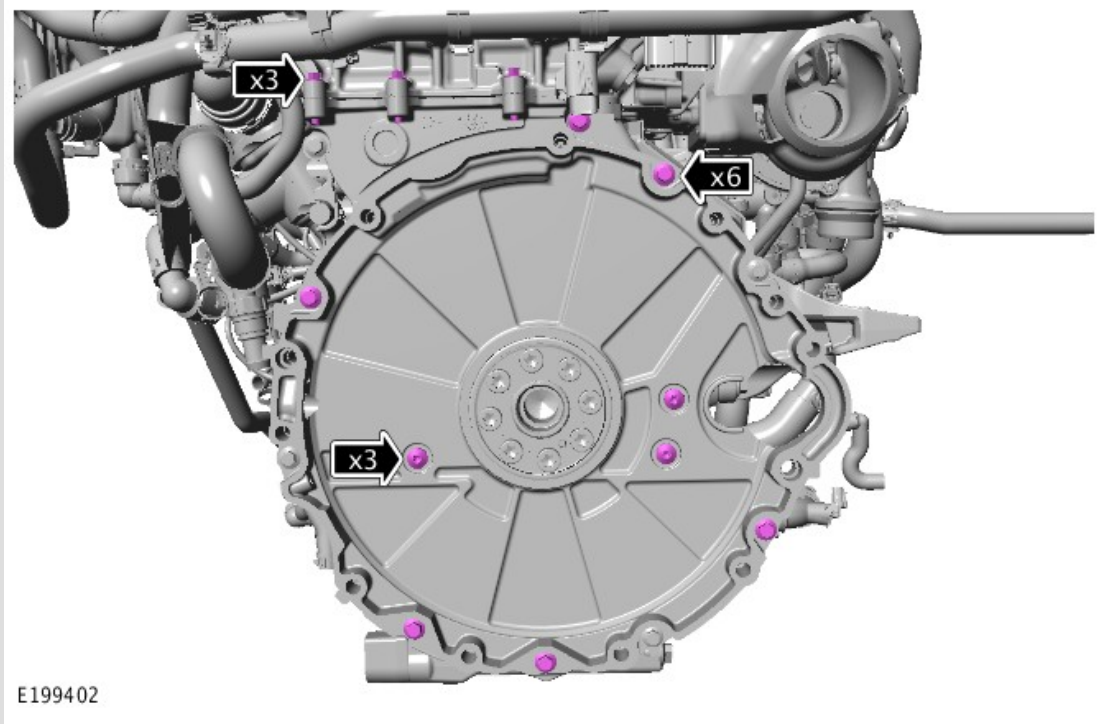
3.



Install 2 more bolts as illustrated and tighten the 4 bolts to the final correct torque.

Torque: **25 Nm**

4.



Install the remaining 12 bolts and tighten to the correct torque.

Torque:

- M8 x 35 bolts **25 Nm**
- M8 x 30 Torx bolts **25 Nm**
- M6 x 30 bolts **12 Nm**

5.

Install the crankshaft position (CKP) sensor.

Torque: **8 Nm**

6.

Install the coolant pipe bracket.

7.

Install the rear crankshaft oil seal.

Refer to: Crankshaft Rear Seal (303-01D, Removal and Installation).

8.

Connect the startup battery ground cable.

Refer to: Specifications (414-01 Battery, Mounting and Cables, Specifications).

9.

Lower the vehicle.