

Timing Chain

Special Tool(s) / General Equipment

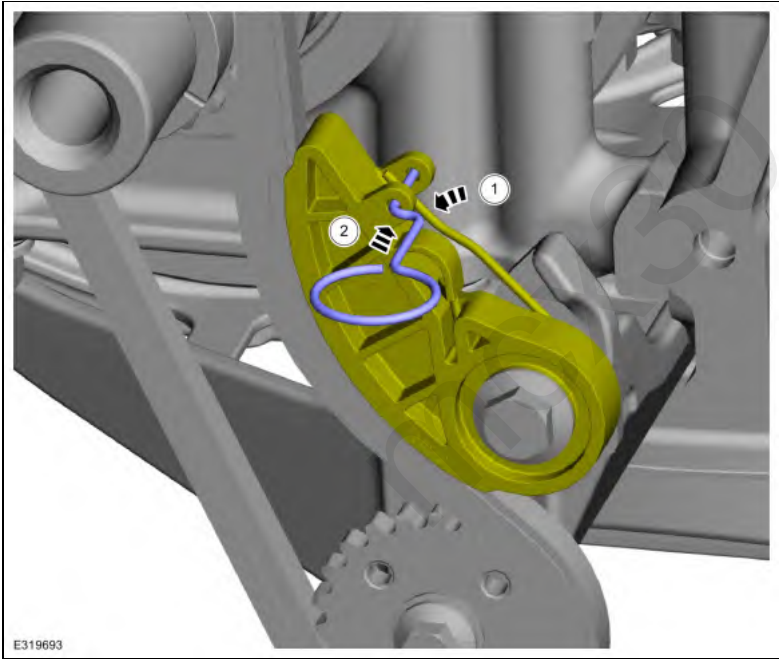
 E318529	303-1661-03 7.3L OVC Bolt
 E318528	303-1702 7.3L VCT Locking Tools
1/2 Inch Square Drive Breaker Bar	

Removal

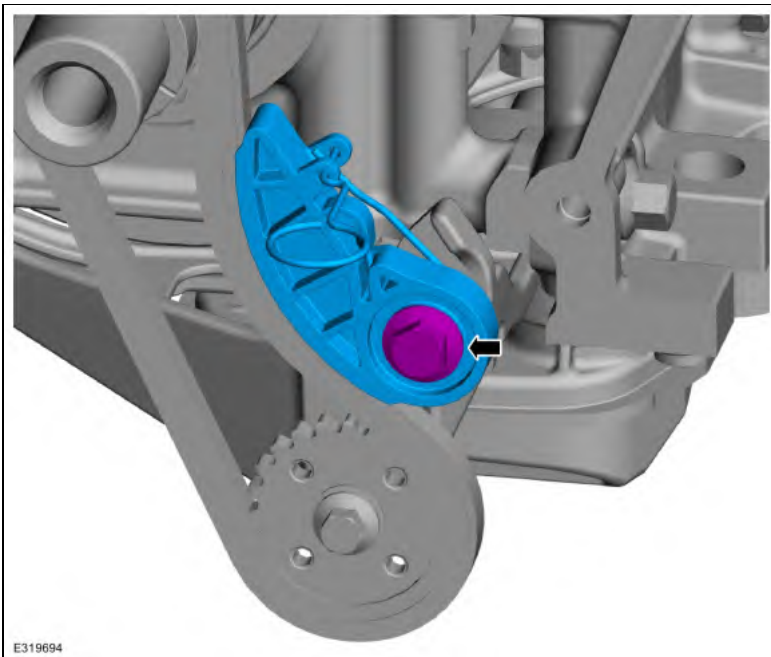
1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).
2. Remove the engine front cover.
Refer to: Engine Front Cover (303-01C Engine - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).
3.

1. Position the spring.

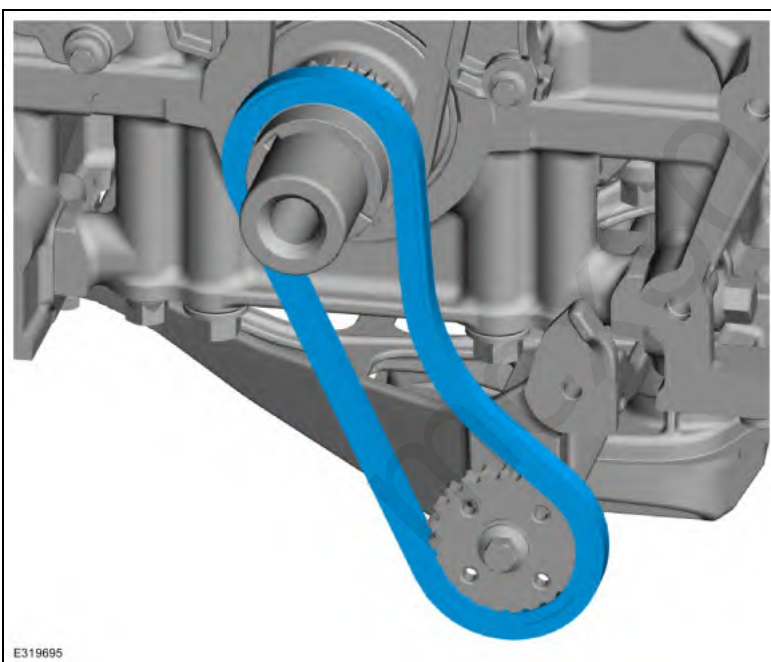
2. Insert a locking pin to secure the spring to the oil pump drive chain tensioner.



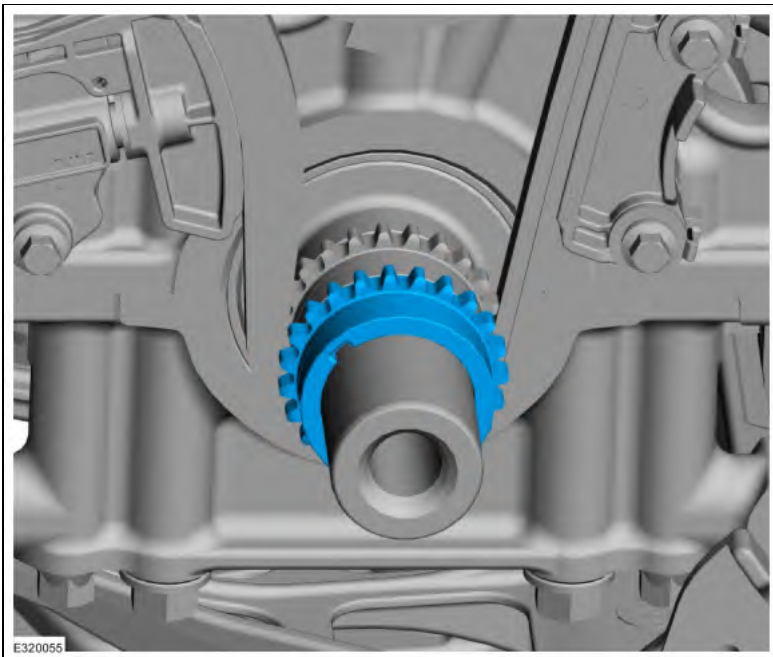
4. Remove the bolt and the oil pump drive chain tensioner.



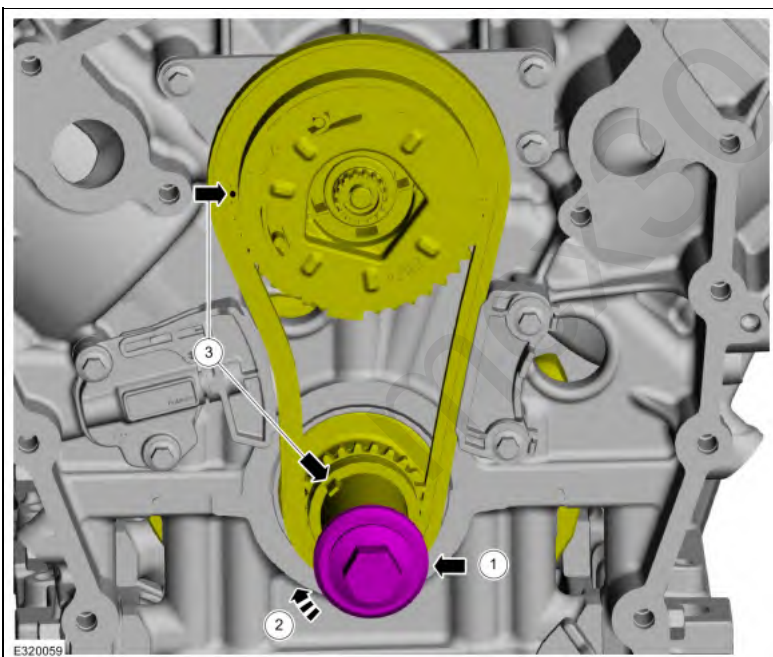
5. Remove the oil pump drive chain.



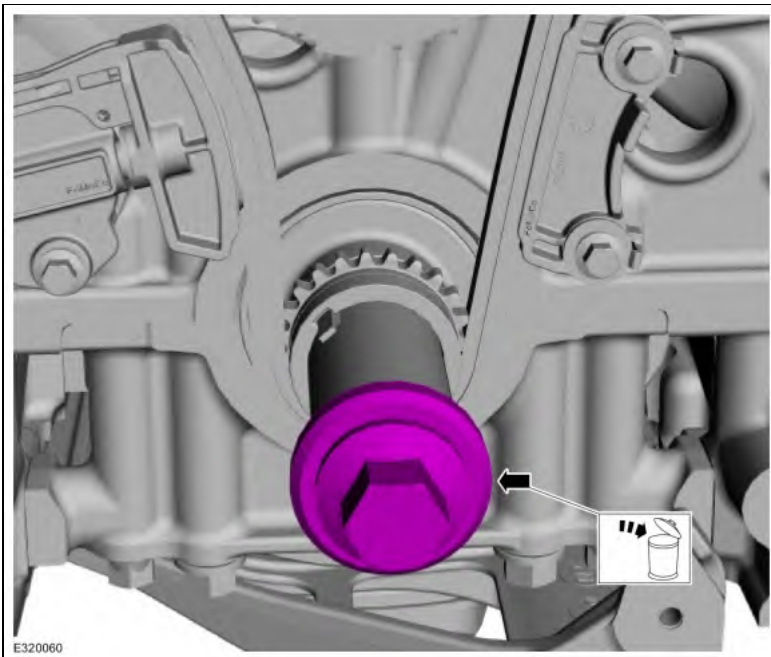
6. Remove the oil pump drive chain sprocket.



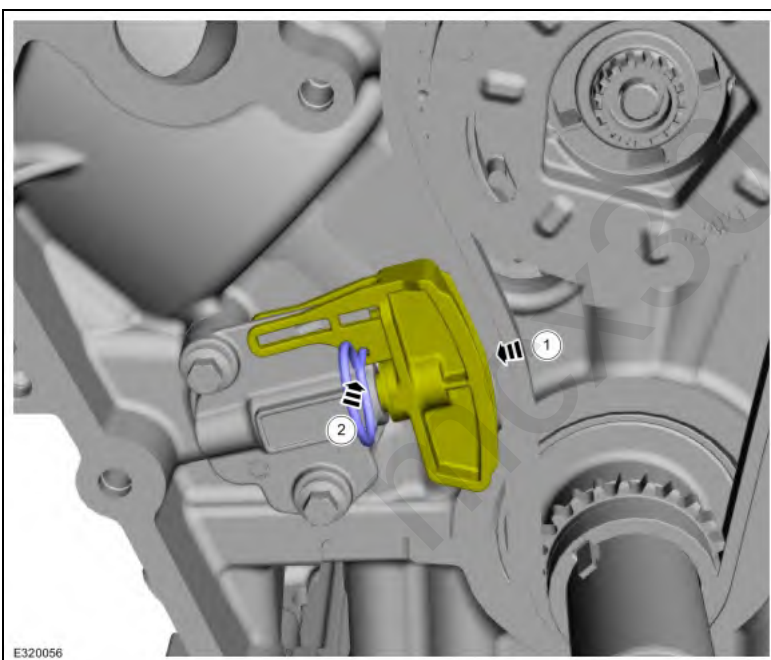
7.
 1. Install the original crankshaft pulley bolt.
 2. Rotate the crankshaft clockwise until the keyway (3) and the VCT unit timing mark (3) are aligned as shown.



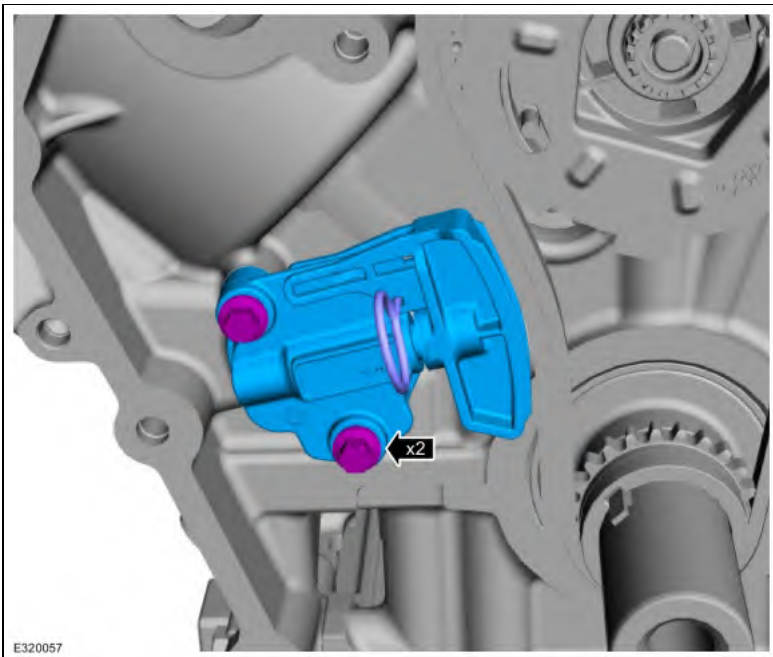
8. Remove and discard the original crankshaft pulley bolt.



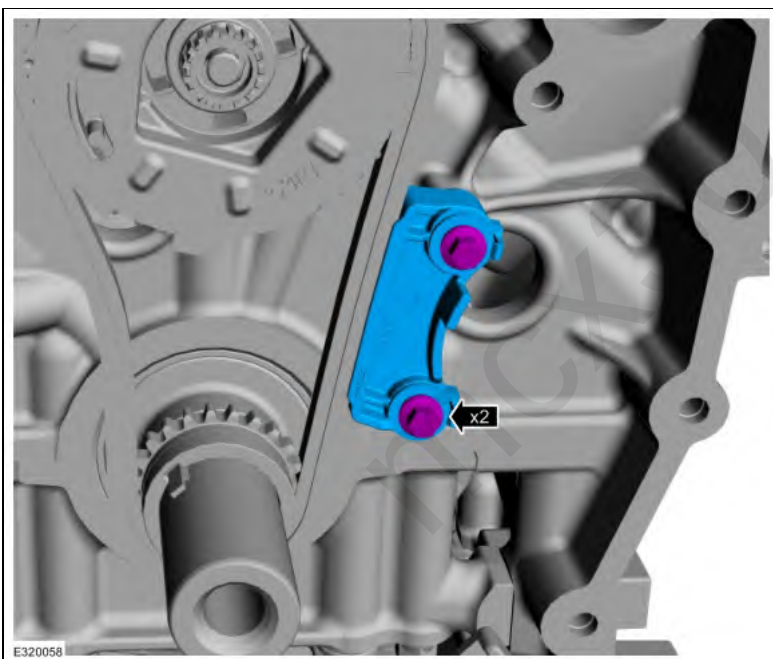
- 9.
1. Depress the timing chain tensioner plunger.
 2. Insert a locking pin to secure the timing chain tensioner plunger in the retracted position.



10. Remove the bolts and the timing chain tensioner.



11. Remove the bolts and the timing chain guide.

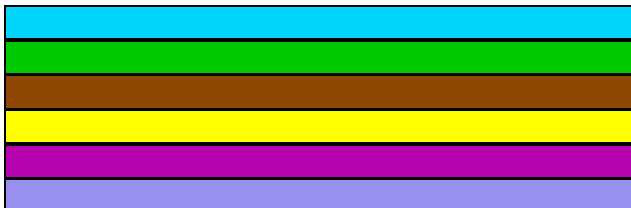
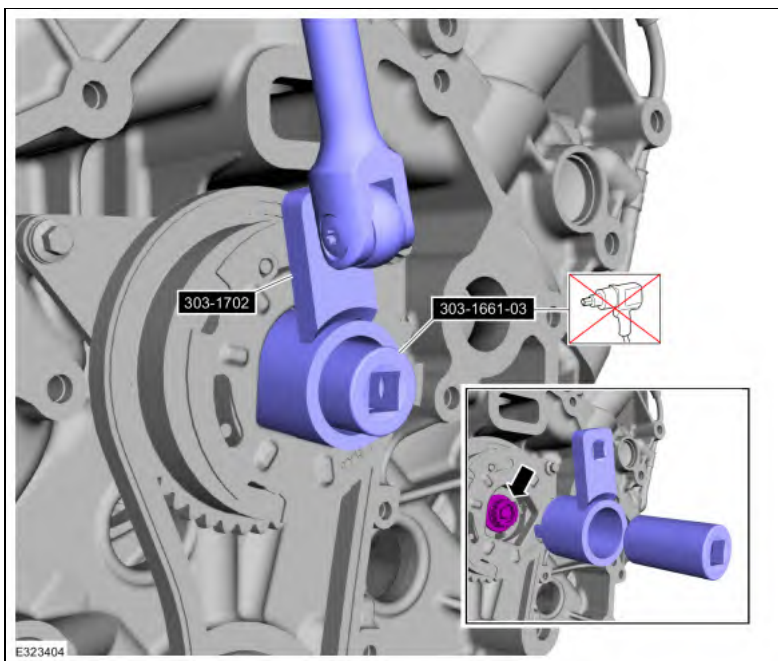


12. **NOTICE: Do not use power tools to remove the VCT valve.**

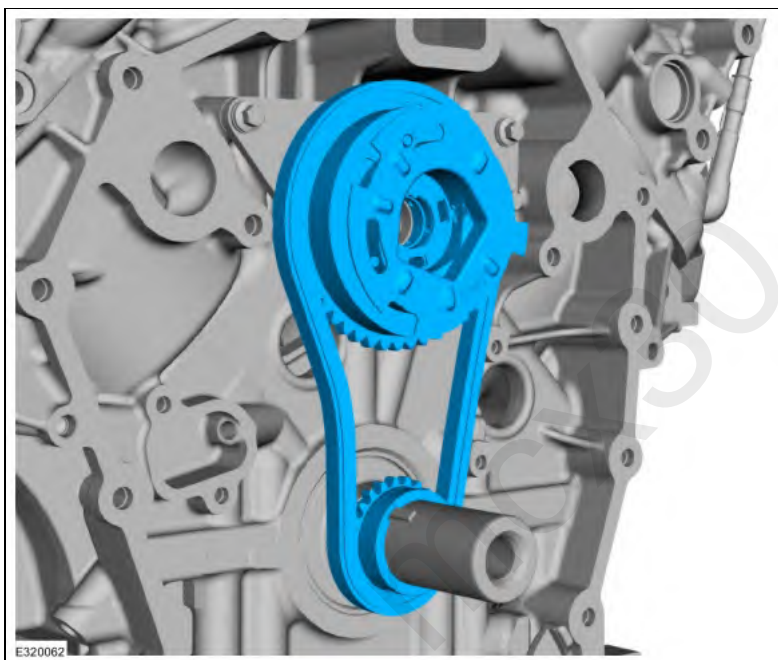
Using the special tools, remove the VCT valve.

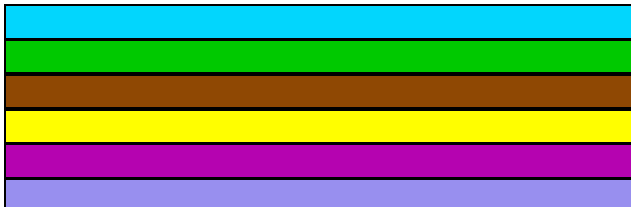
Use Special Service Tool: 303-1702 7.3L VCT Locking Tools , 303-1661-03 7.3L OVC Bolt.

Use the General Equipment: 1/2 Inch Square Drive Breaker Bar

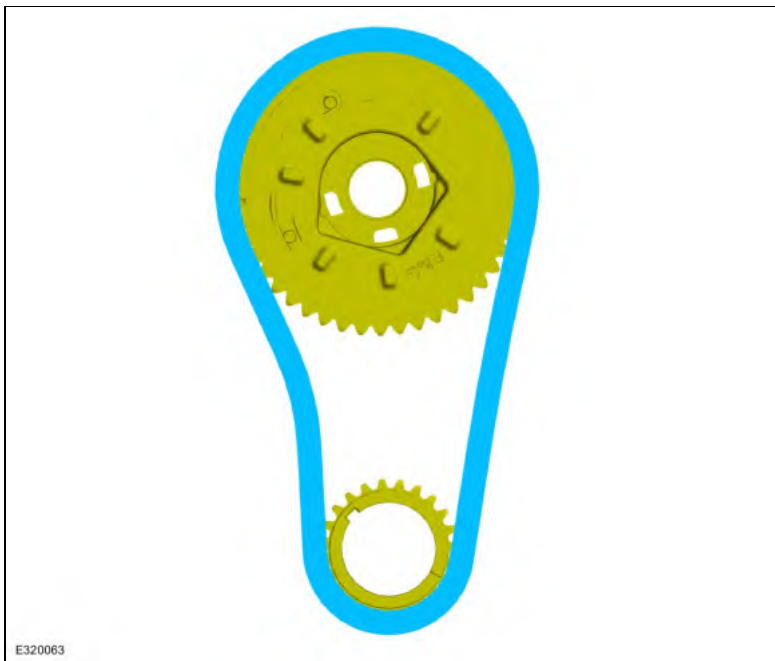


13. Remove the VCT unit, the timing chain and crankshaft sprocket together.



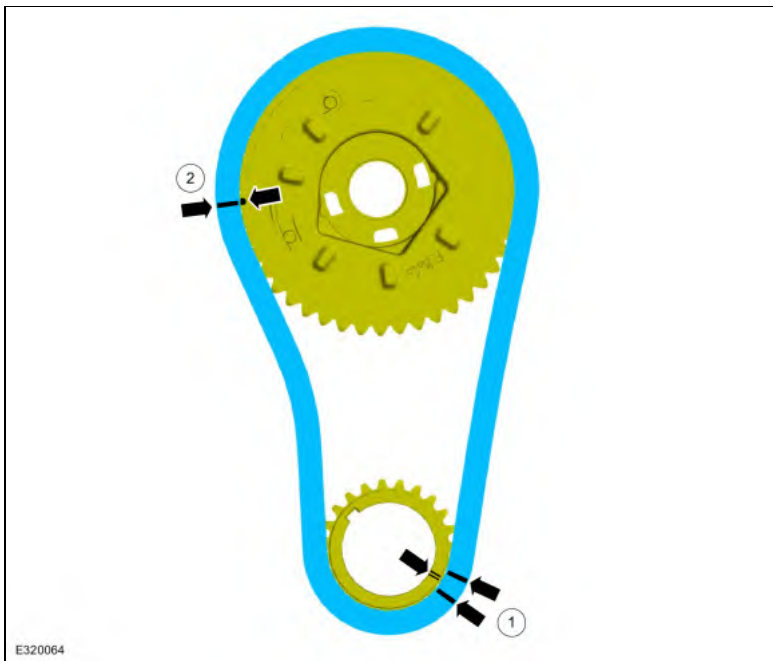


14. Separate the timing chain from the VCT unit and the crankshaft sprocket.



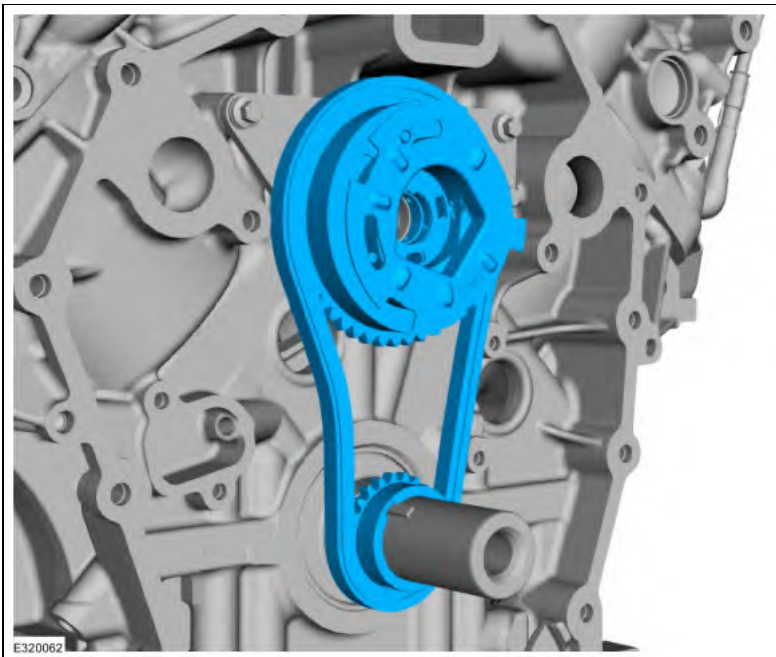
Installation

1. Install the timing chain onto the VCT unit and the crankshaft sprocket.
 1. Align the timing mark on the crankshaft sprocket in between the 2 marked links on the timing chain.
 2. Align the timing mark on the VCT unit with the marked link on the timing chain.

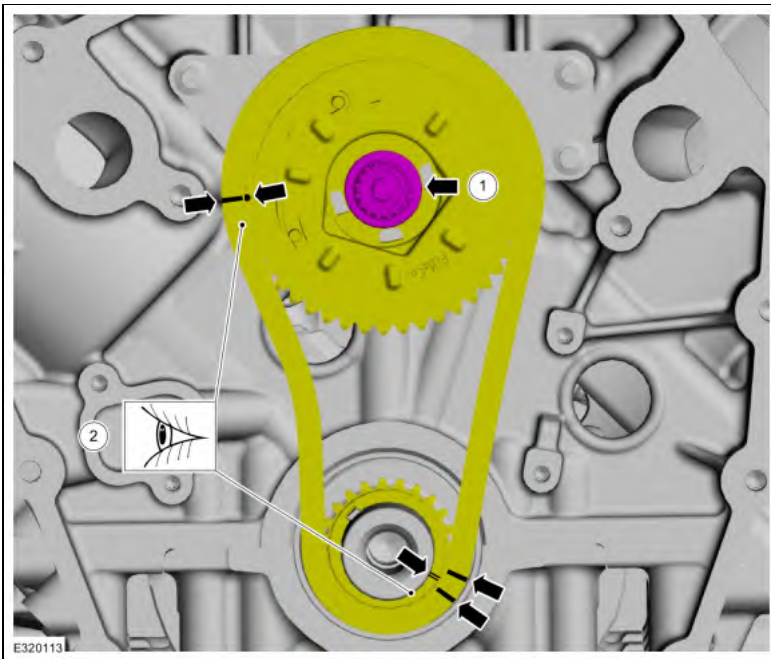


2. **NOTE:** The VCT unit must fit flush against the camshaft.

Install the VCT unit, the timing chain and crankshaft sprocket together.



3.
 1. Install the VCT valve finger-tight.
 2. Verify the timing marks are still aligned. If the marks are not aligned, remove the timing components and repeat the previous 2 steps.



4. NOTICE: Do not use power tools to tighten the VCT valve.

Using the special tools, tighten the VCT valve.

Use Special Service Tool: 303-1702 7.3L VCT Locking Tools. , 303-1661-03 7.3L OVC Bolt.

Use the General Equipment: 1/2 Inch Square Drive Breaker Bar

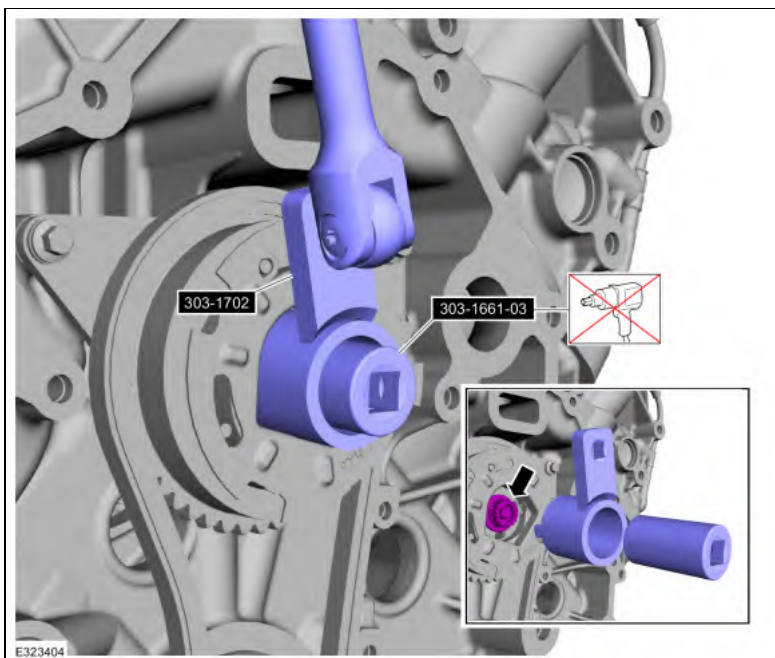
Torque:

Stage 1: 52 lb.ft (70 Nm)

Stage 2: Loosen: 90°

Stage 3: 41 lb.ft (55 Nm)

Stage 4: 35°

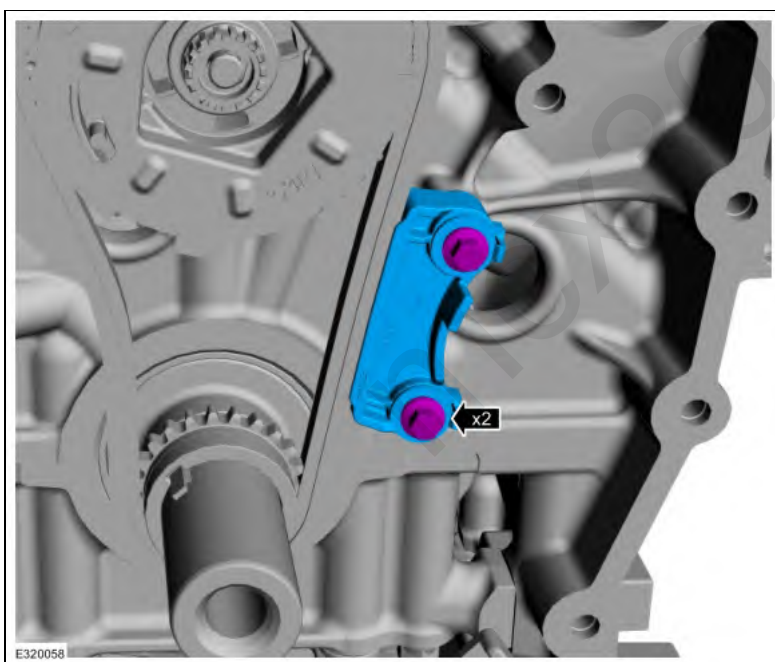


5. Install the timing chain guide and the bolts.

Torque:

Stage 1: 89 lb.in (10 Nm)

Stage 2: 45Â°

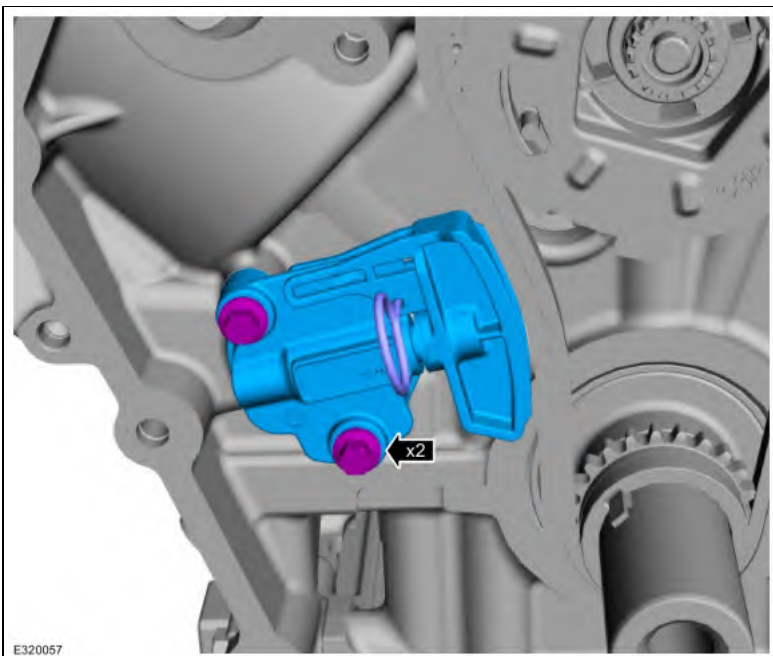


6. Install the timing chain tensioner and the bolts.

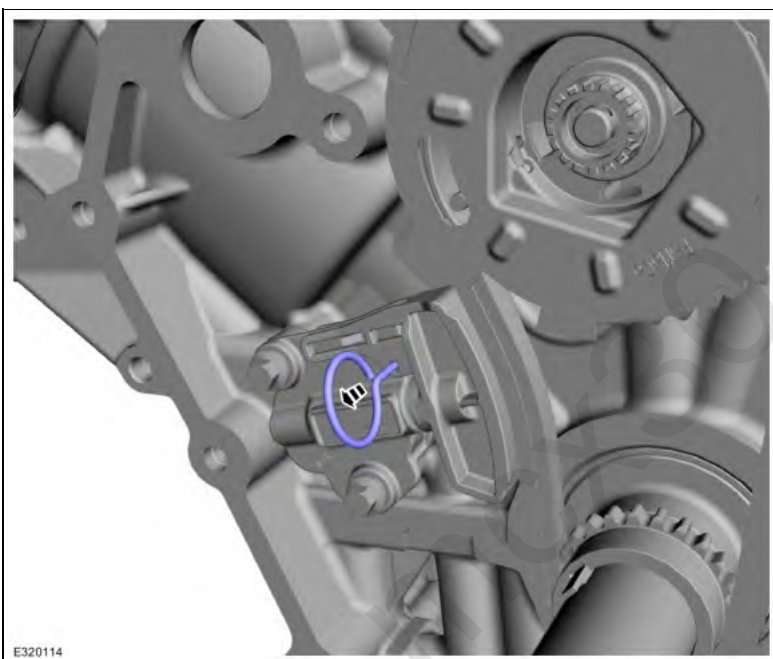
Torque:

Stage 1: 89 lb.in (10 Nm)

Stage 2: 45Â°

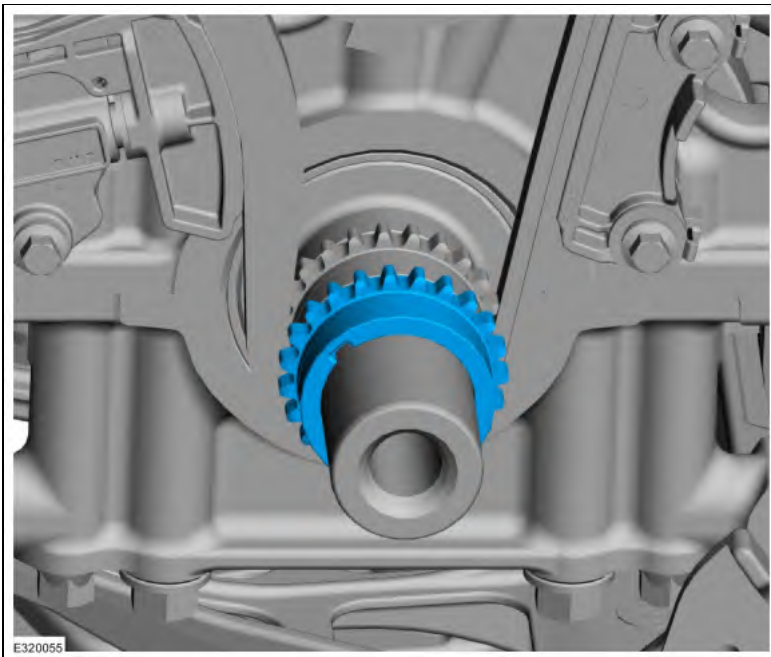


7. Remove the locking pin to release the timing chain tensioner plunger.

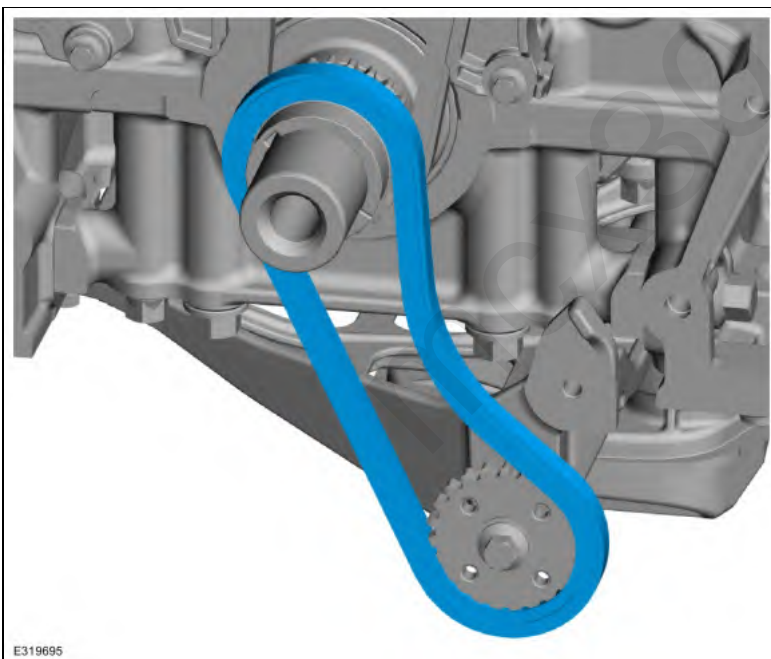


8. Install the oil pump drive chain sprocket.

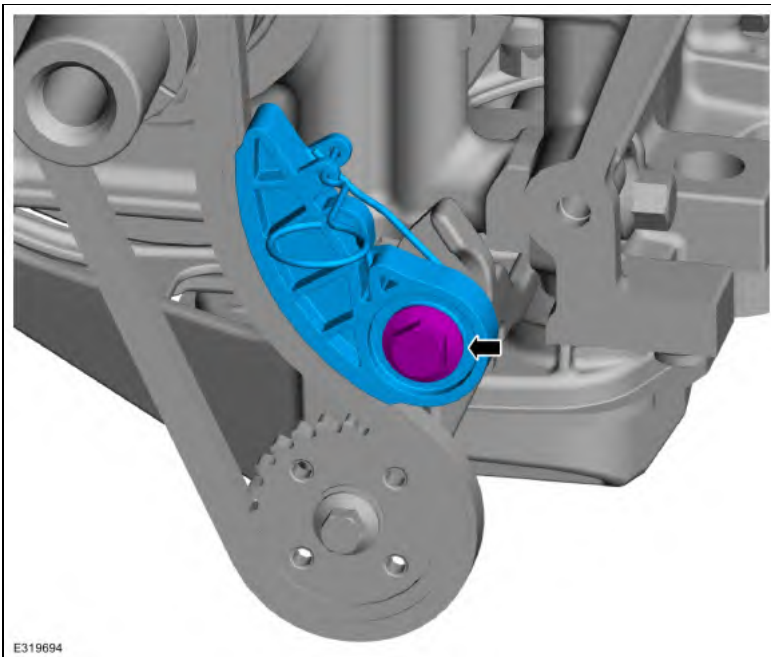




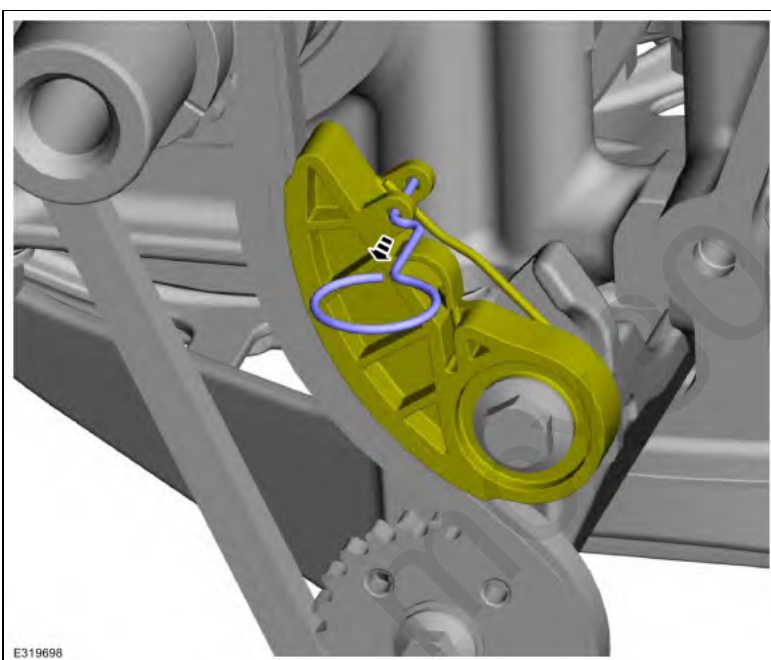
9. Install the oil pump drive chain.



10. Install the oil pump drive chain tensioner and the bolt.
Torque: 89 lb.in (10 Nm)



11. Remove the pin to release the spring.



12. Install the engine front cover.
Refer to: Engine Front Cover (303-01C Engine - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).
