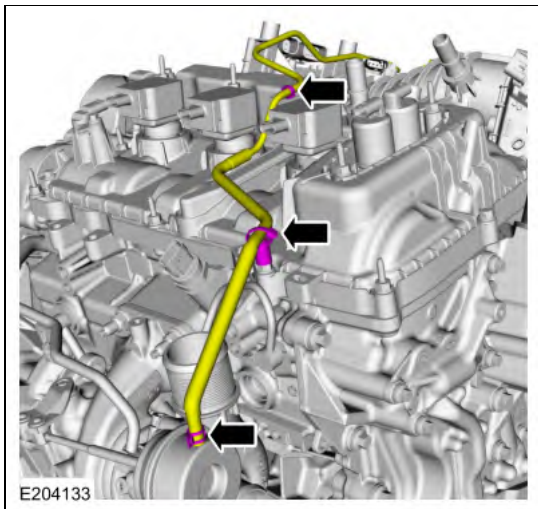


6.

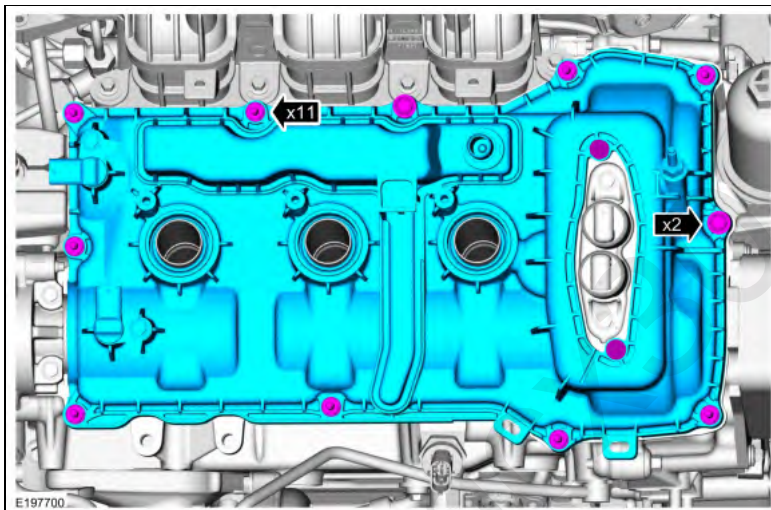
- Disconnect the TC vacuum supply tube.
Use the General Equipment: Hose Clamp Remover/Installer
- Detach the vacuum tube retainers.



7. Remove the RH coil-on-plugs.

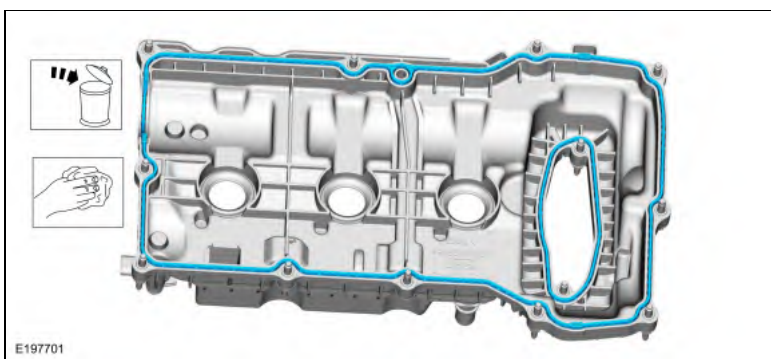
Refer to: Ignition Coil-On-Plug (303-07B Engine Ignition - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

8. Loosen the fasteners and remove the valve cover.



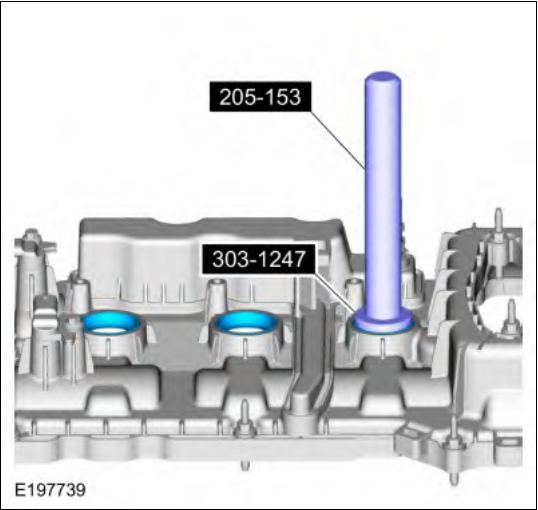
9. Remove and discard the gasket.

- Clean the valve cover gasket groove with soap and water or a suitable solvent.

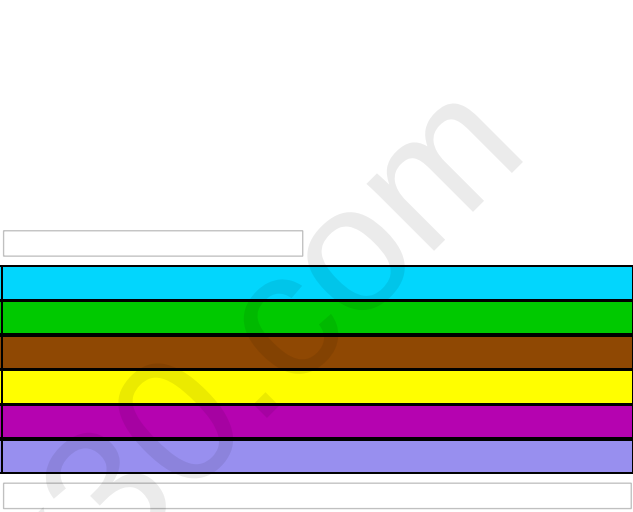
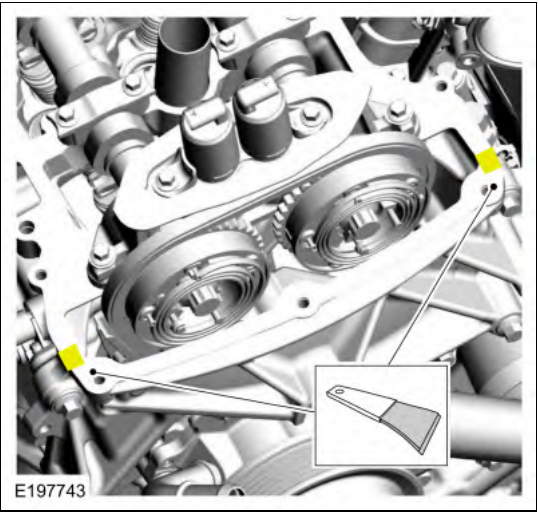


10. Inspect the spark plug seals. Remove any damaged seals using the special tools.

Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 303-1247 VCT Spark Plug Tube Seal Remover and Installer.

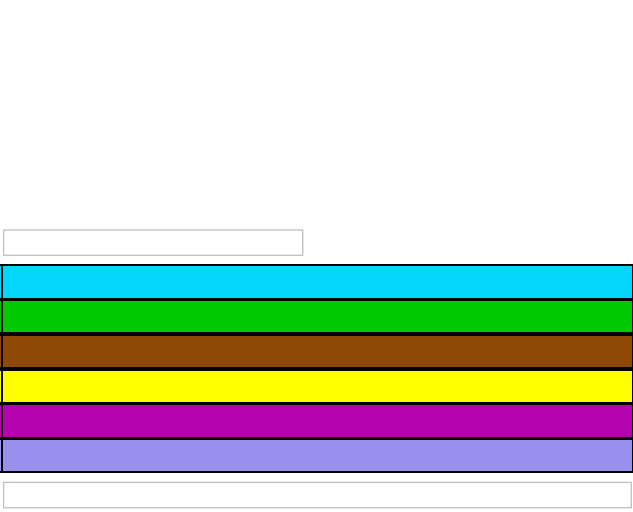
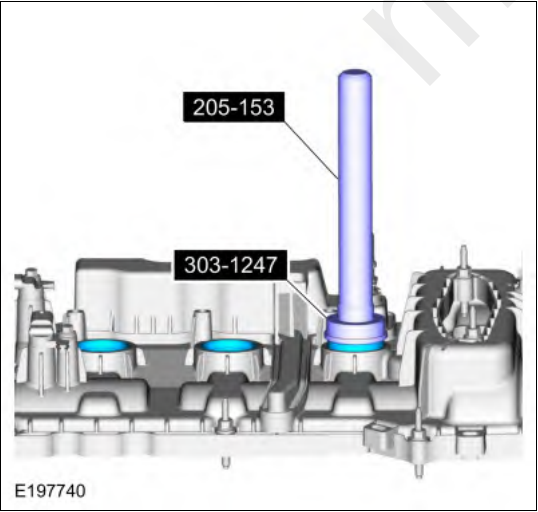


11. Clean and prepare the RTV sealing surface.
Refer to: RTV Sealing Surface Cleaning and Preparation (303-00 Engine System - General Information, General Procedures).

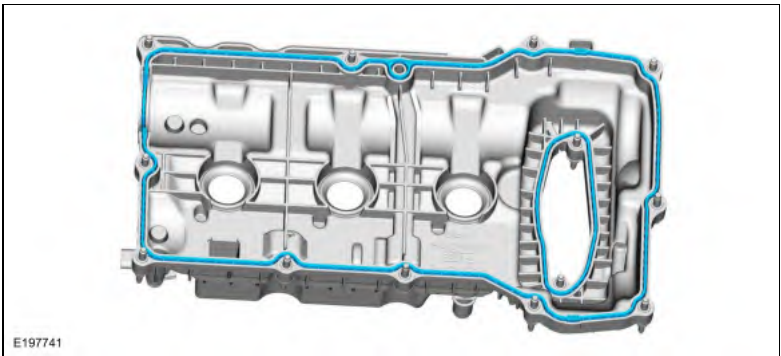


Installation

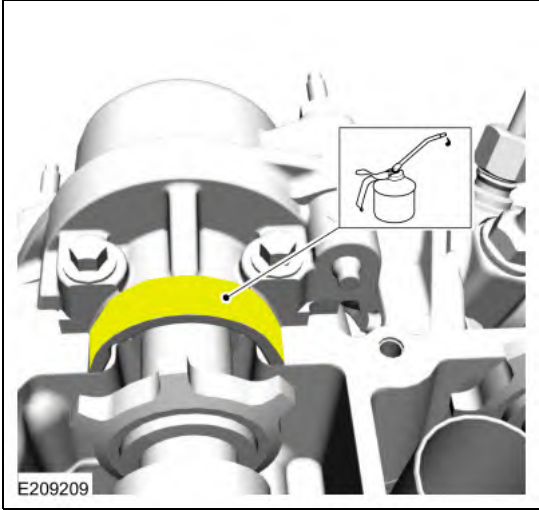
1. **NOTE:** *Installation of new seals is only required if damaged seals were removed.*
- Using the special tools, install new spark plug tube seals.
Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 303-1247 VCT Spark Plug Tube Seal Remover and Installer.



2. Install a new gasket.

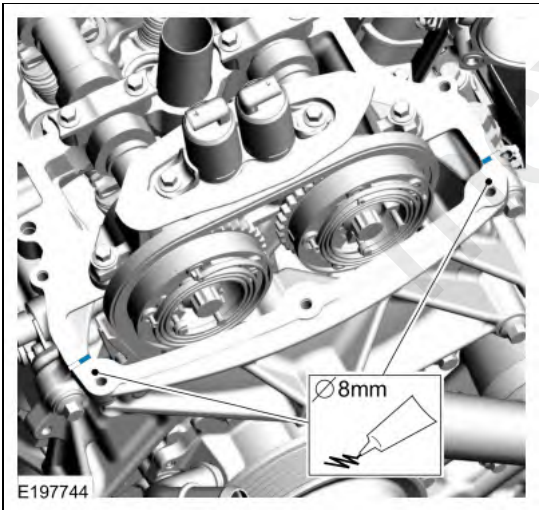


3. Apply clean engine oil to the surface.

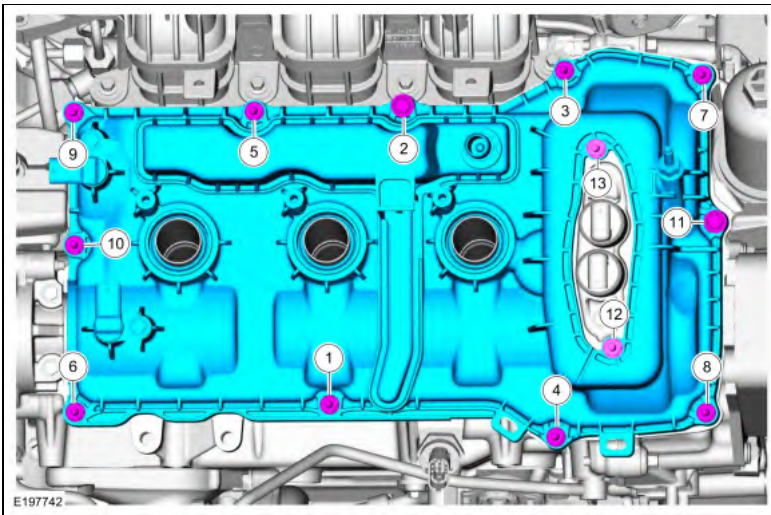


4. **NOTICE:** If the valve cover is not installed and the fasteners tightened within 10 minutes, the sealant must be removed and the sealing area cleaned.

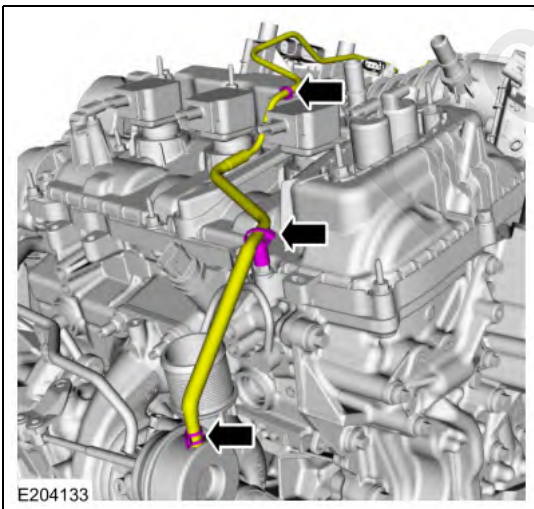
Apply an 8 mm (0.31 in) bead of Motorcraft® High Performance Engine RTV Silicone to the engine front cover-to-cylinder head joints.
Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)



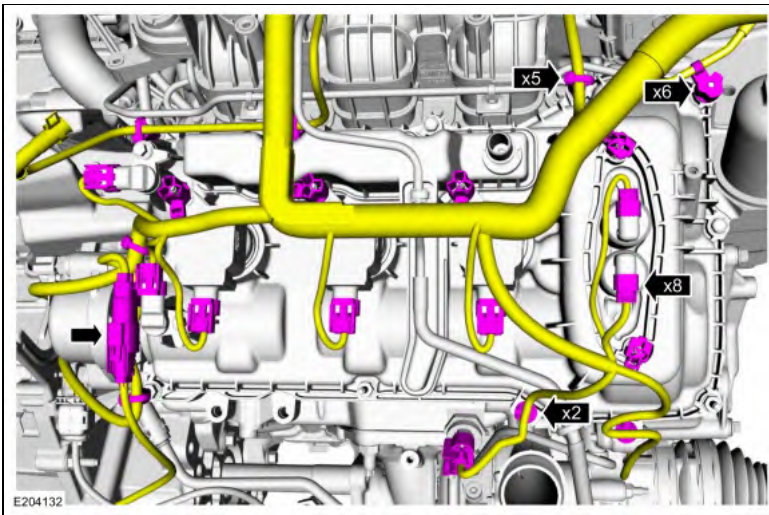
5. Install the valve cover and tighten the bolts.
Torque: 89 lb.in (10 Nm)



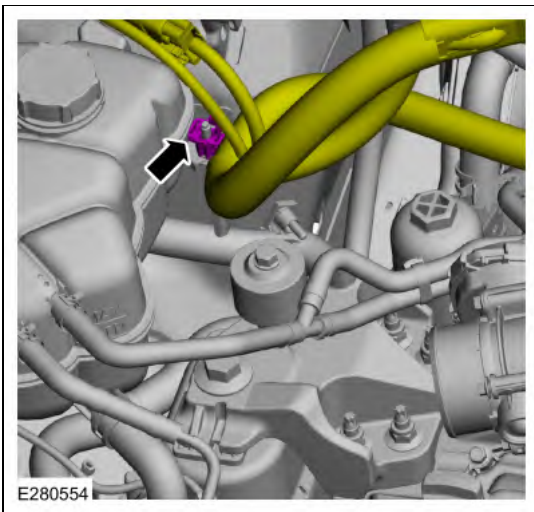
6. Install the RH coil-on-plugs.
Refer to: Ignition Coil-On-Plug (303-07B Engine Ignition - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
7.
 - Connect the TC vacuum supply tube.
Use the General Equipment: Hose Clamp Remover/Installer
 - Attach the vacuum tube retainers.



8.
 - Attach the vacuum tube and coolant tube retainers.
 - Connect the engine wiring harness electrical connector and retainers.

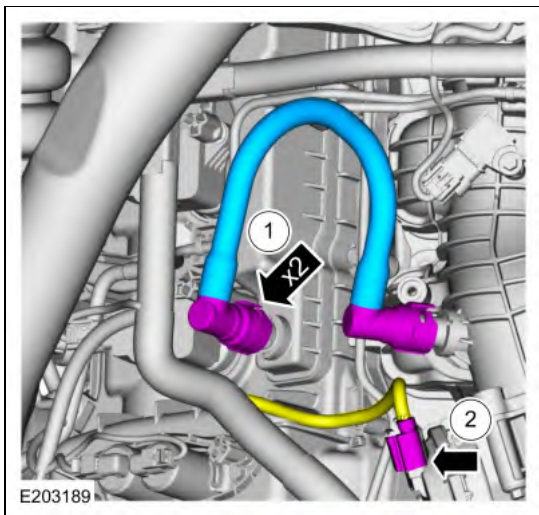


9. Attach the engine wiring harness retainer.



10.

1. Position the PCV tube and connect the quick release couplings.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)).
2. Connect the throttle body electrical connector.

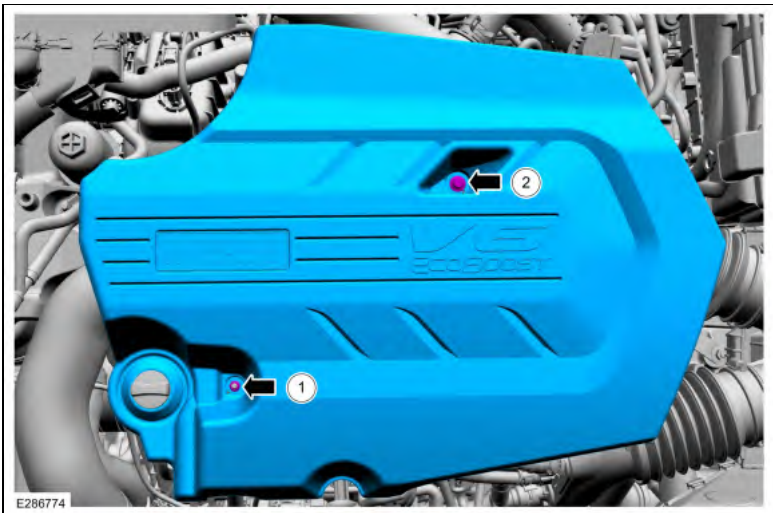


11. Install the following items:

1. RH charge air cooler intake pipe.
Refer to: Charge Air Cooler (CAC) Intake Pipe (303-12B Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
2. Refer to: Air Cleaner Outlet Pipe RH (303-12B Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

12.

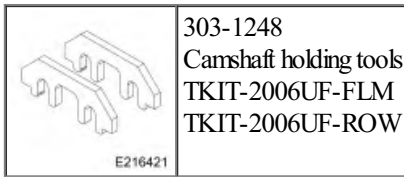
1. Install the engine appearance cover and the nut.
Torque: 42 lb.in (4.8 Nm)
2. Install the bolt.
Torque: 93 lb.in (10.5 Nm)



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Variable Camshaft Timing (VCT) Unit

Special Tool(s) / General Equipment



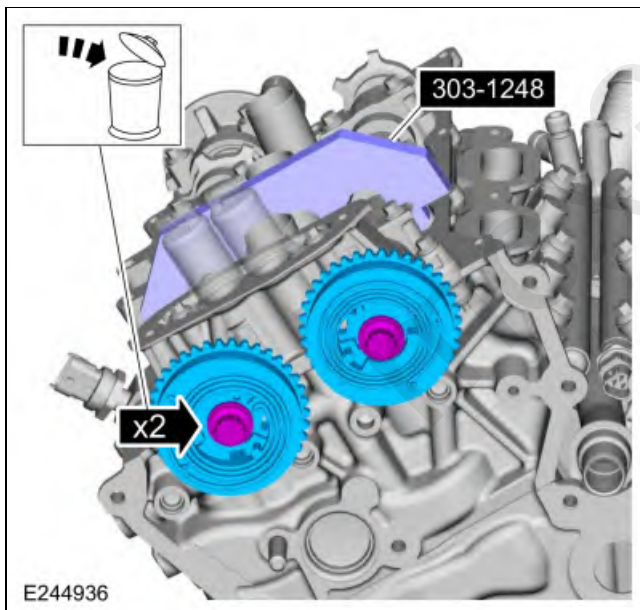
Removal

NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

NOTE: If the RH VCT units are being serviced at the same time as the LH VCT units, remove the RH VCT units first.

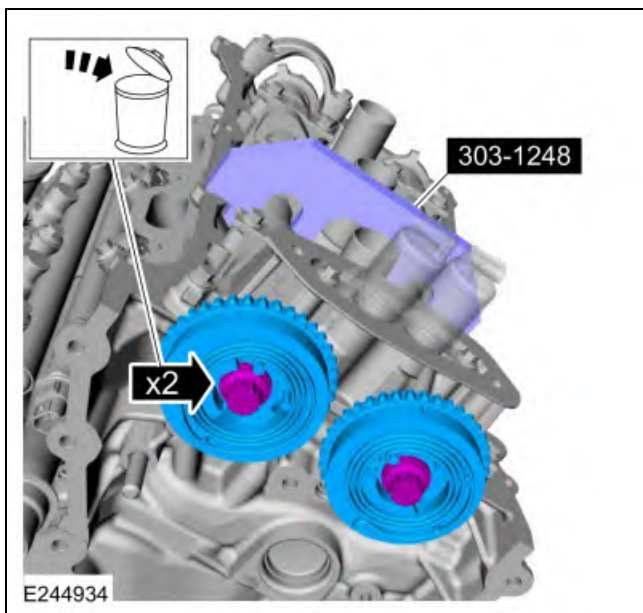
Right hand units

1. Remove the RH timing chain.
Refer to: Timing Chain (303-01B Engine - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
2.
 1. Install Special Service Tool: 303-1248 Camshaft holding tools.
 2. Remove and discard the VCT unit bolts.
 3. Remove the VCT units.



Left hand units

3. Remove the LH timing chain.
Refer to: Timing Chain (303-01B Engine - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
4.
 1. Install Special Service Tool: 303-1248 Camshaft holding tools.
 2. Remove and discard the VCT unit bolts.
 3. Remove the VCT units.



Installation

Left hand units

1. **NOTICE:** The VCT units have 2 timing marks on them, a triangle and a circle. For installation of the LH side the circle marks are used.

1. Install the VCT units. The **circle** timing marks on the VCT units will be at the 10 o'clock (intake) and 12:30 (exhaust) positions as shown in the illustration.
2. Install the new VCT unit bolts.

Torque:

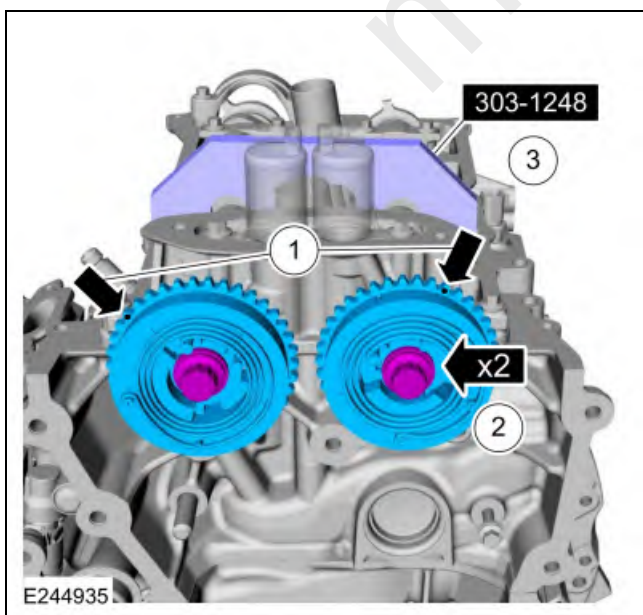
Stage 1: 30 lb.ft (40 Nm)

Stage 2: Loosen: 360°

Stage 3: 37 lb.ft (50 Nm)

Stage 4: 90°

3. Remove Special Service Tool: 303-1248 Camshaft holding tools.



2. Install the LH timing chain.

Refer to: Timing Chain (303-01B Engine - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

Right hand units