

REMOVAL AND INSTALLATION: CRA..**REMOVAL AND INSTALLATION: TIMING BELT (ENGINE - 1.6L ECOBOOST (132KW/180PS) - SIGMA)**

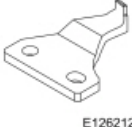
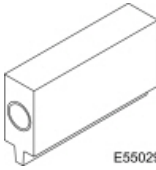
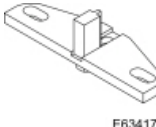
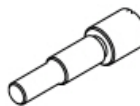
303-01A Engine - 1.6L EcoBoost (132kW/180PS) - Sigma

2015 Escape

Removal and Installation

Procedure revision date: 04/24/2015

Timing Belt**Special Tool(s) / General Equipment**

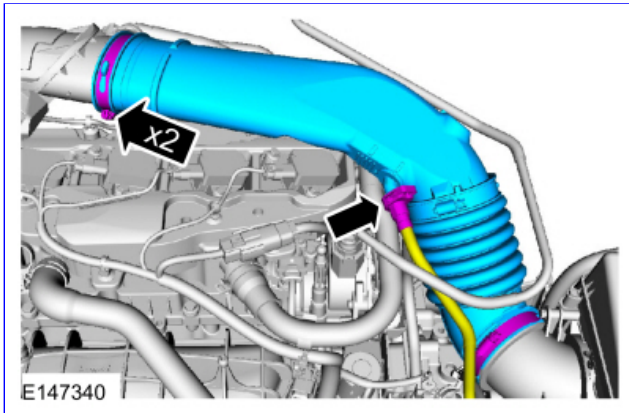
	303-050 (T70P-6000) Lifting Bracket, Engine
	303-1097 Locking Tool, Variable Camshaft Timing Oil Control Unit TKIT-2010B-FLM TKIT-2010B-ROW
	303-1502 Lifting Device Engine TKIT-2012A-FL TKIT-2012A-ROW
	303-1550 Alignment Tool, Crankshaft Vibration Damper TKIT-2012A-FL TKIT-2012A-ROW
	303-290B-18 Adapter for 303-290B TKIT-2012A-FL TKIT-2012A-ROW
	303-393-02 Adapter for 303-393 TKIT-2012A-FL TKIT-2012A-ROW
	303-393A Locking Tool, Flywheel TKIT-2012A-FL TKIT-2012A-ROW
	303-748 Locking Tool, Crankshaft TKIT-2010B-FLM TKIT-2010B-ROW
	303-F072 Support Bar, Engine
Trolley Jack	
Wooden Block	

Removal

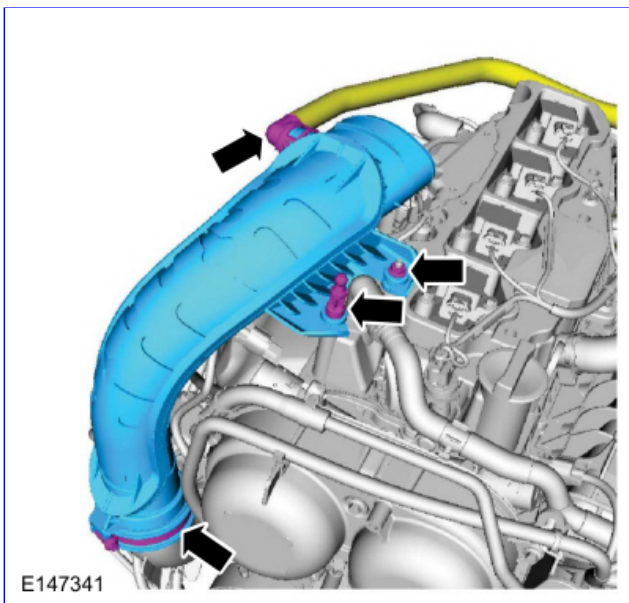
NOTE: Do not loosen or remove the [crankshaft pulley](#) bolt without first installing the special tools. The [crankshaft pulley](#) and the crankshaft timing sprocket are not keyed to the crankshaft. Before any repair requiring loosening or removal of the [crankshaft pulley](#) bolt, the crankshaft and camshafts must be locked in place by the special service tools, otherwise severe engine damage can occur.

NOTE: 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.

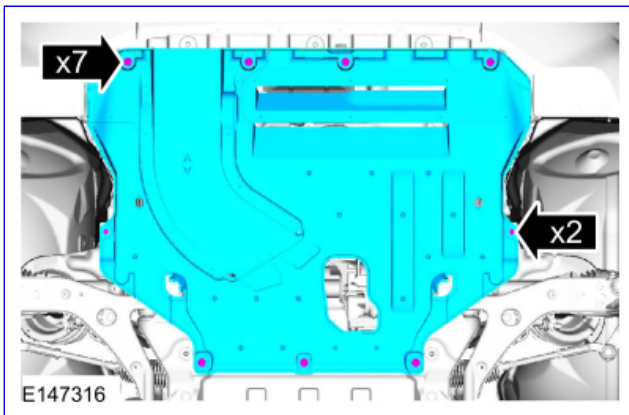
1. Refer to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Description and Operation) .
2. Refer to: [Cowl Panel](#) (501-02 Front End Body Panels, Removal and Installation) .
- 3.



4.



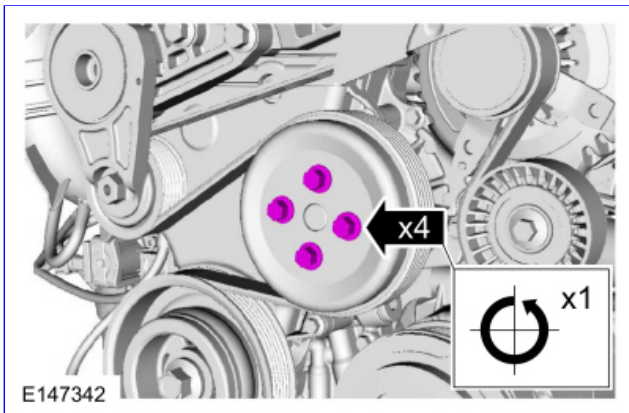
5. Remove the following items:
 1. Refer to: [Degas Bottle](#) (303-03A Engine Cooling - 1.6L EcoBoost (132kW/180PS) - Sigma, Removal and Installation) .
 2. Remove the RH front wheel and tire.
Refer to: [Wheel and Tire](#) (204-04A Wheels and Tires, Removal and Installation) .
- 6.



7. Remove the RH front fender splash shield.

Refer to: [Fender Splash Shield](#) (501-02 Front End Body Panels, Removal and Installation) .

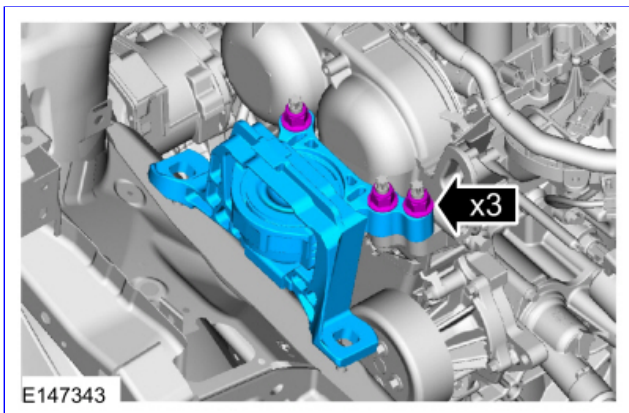
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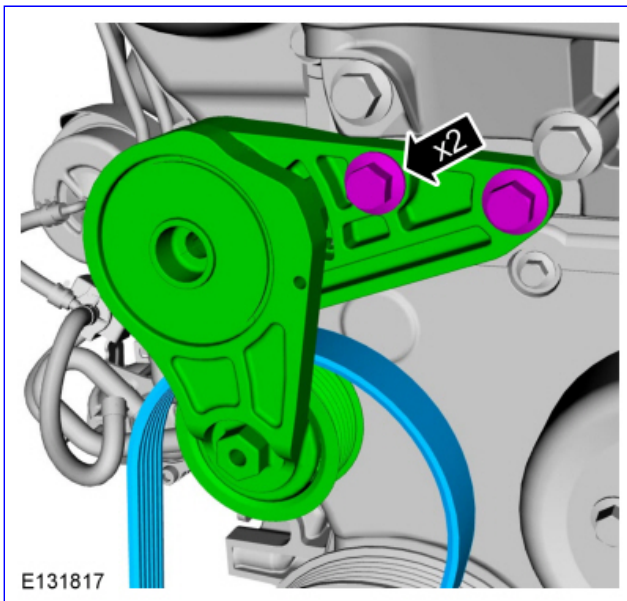
9. Remove the following items:

1. Refer to: [Starter Motor](#) (303-06A Starting System - 1.6L EcoBoost (132kW/180PS) - Sigma, Removal and Installation) .
2. Refer to: [Generator - 1.6L EcoBoost \(132kW/180PS\) - Sigma](#) (414-02 Generator and Regulator, Removal and Installation) .

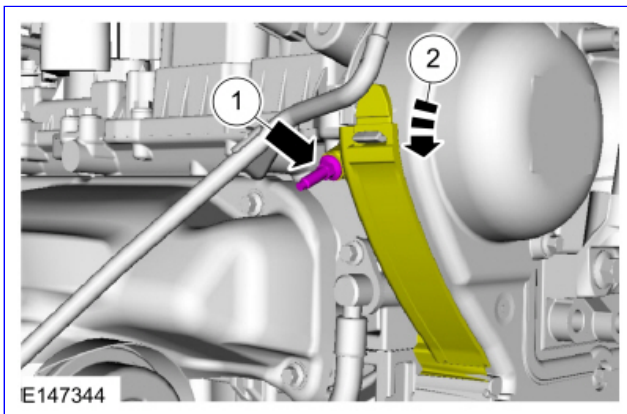
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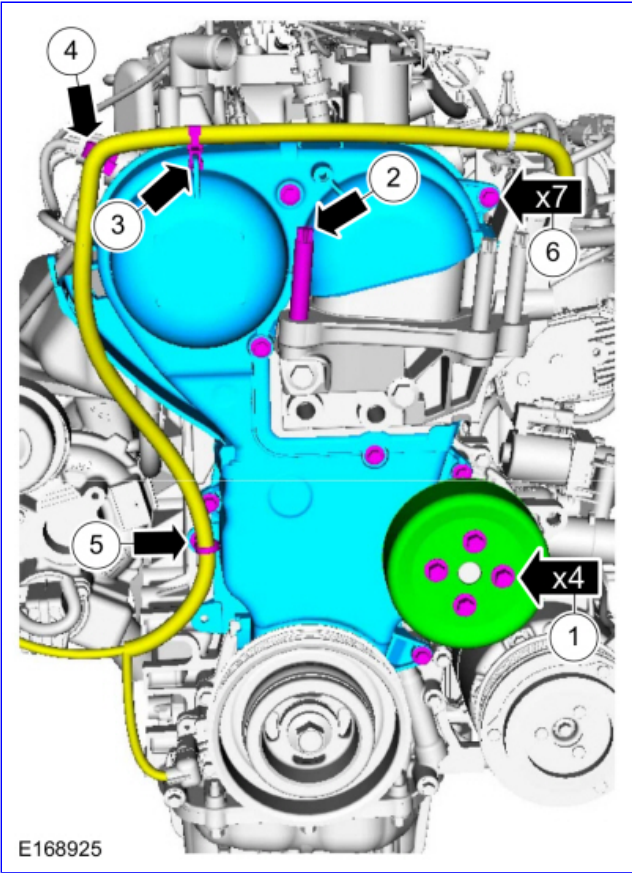
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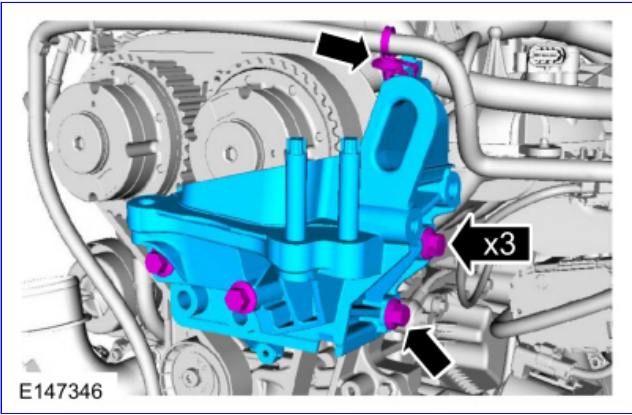
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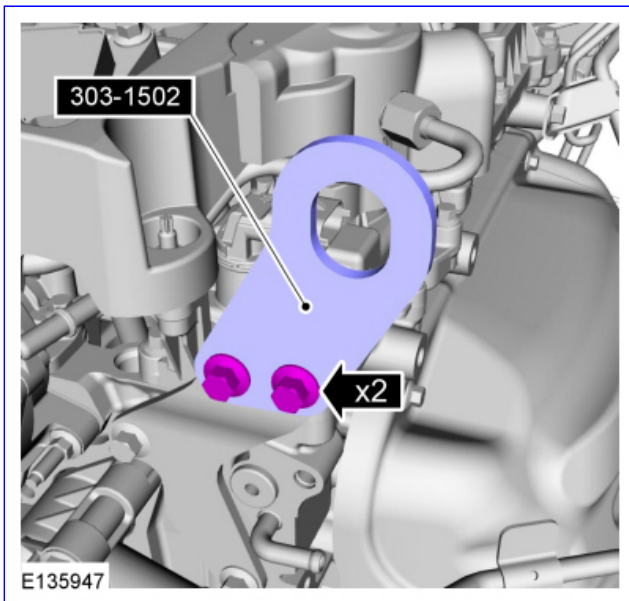
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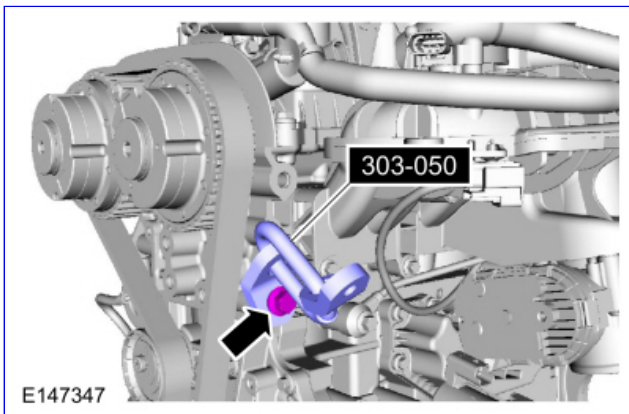
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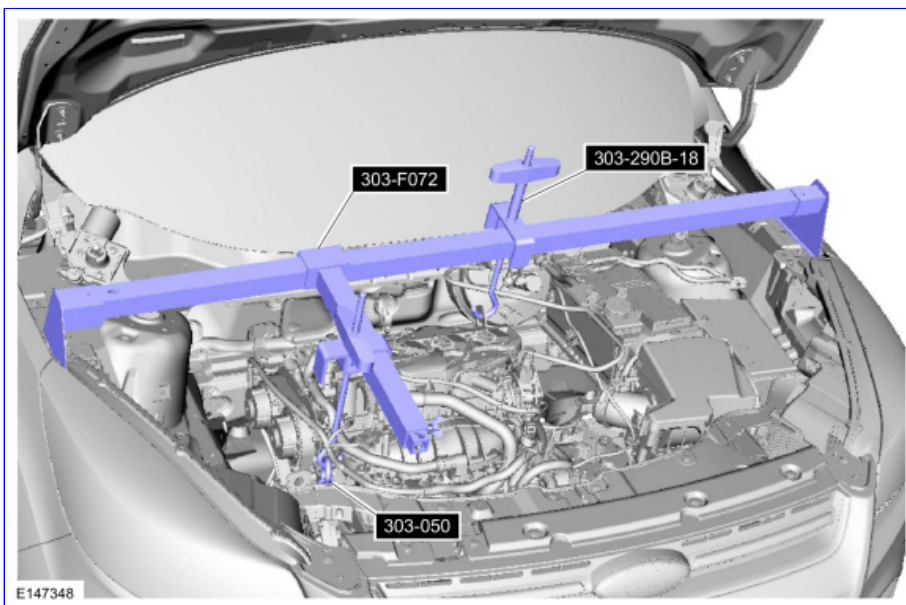
15. Install Special Service Tool: 303-1502 Lifting Device Engine .



16. Install Special Service Tool: 303-050 (T70P-6000) Lifting Bracket, Engine .

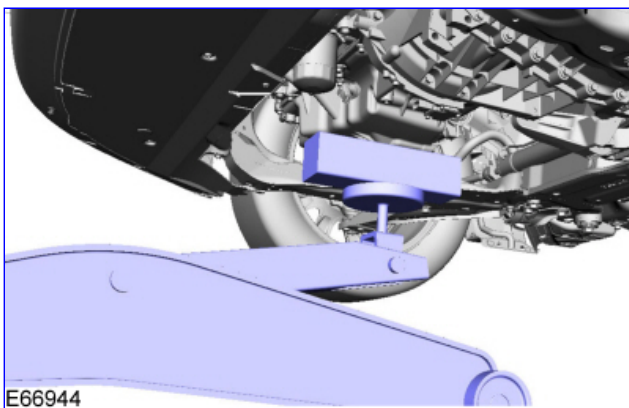


17. Install Special Service Tool: 303-F072 Support Bar, Engine . , 303-290B-18 Adapter for 303-290B .



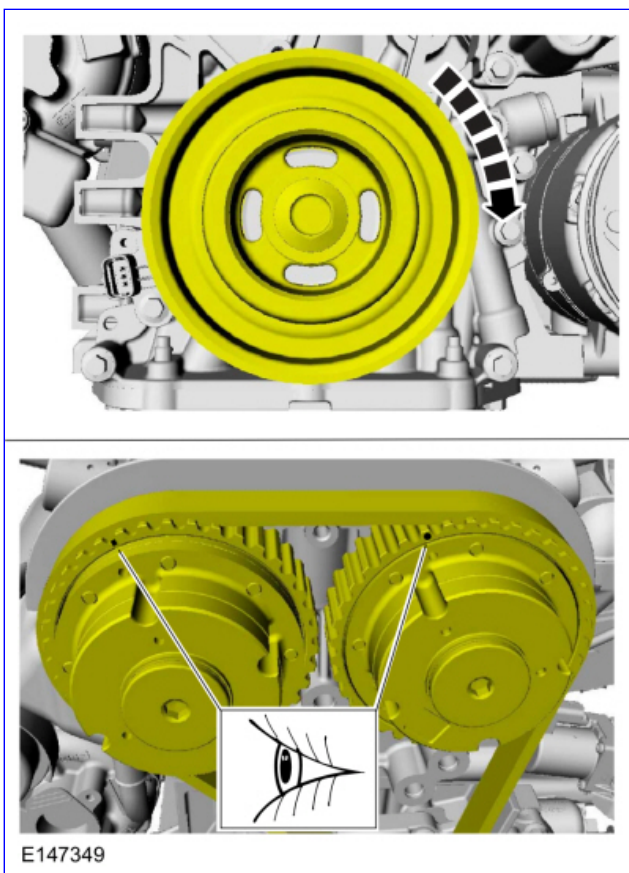
18. Remove the following items:

- o Use the General Equipment: Trolley Jack
- Use the General Equipment: Wooden Block

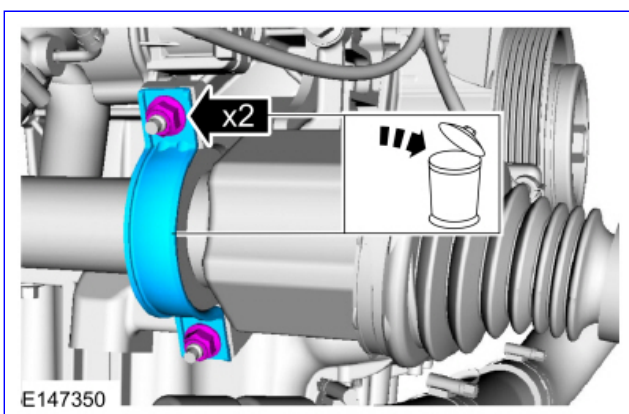


19. **NOTICE:** Only rotate the crankshaft in a clockwise direction.

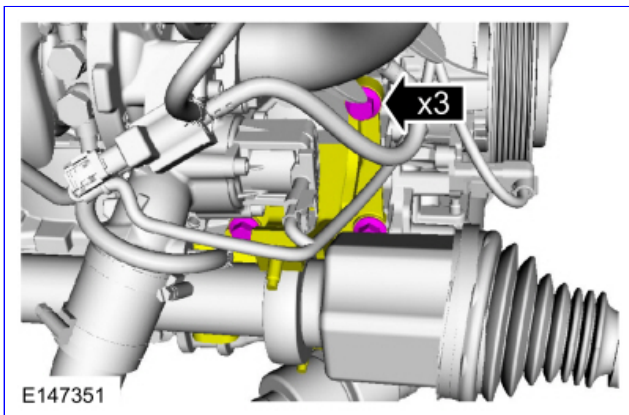
11 o'clock position.



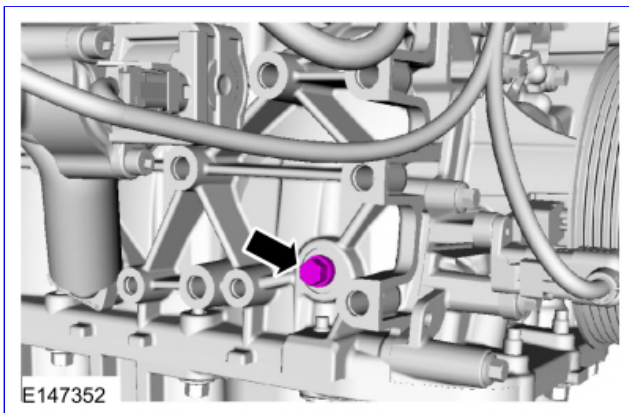
20.



21. **NOTE:**It may be necessary to rotate the halfshaft to remove the front lower bolt.

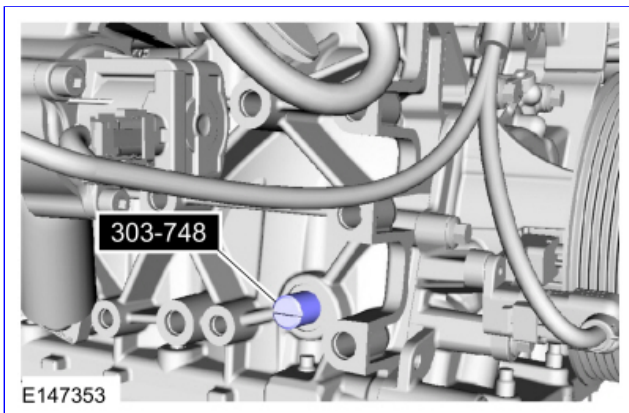


22.



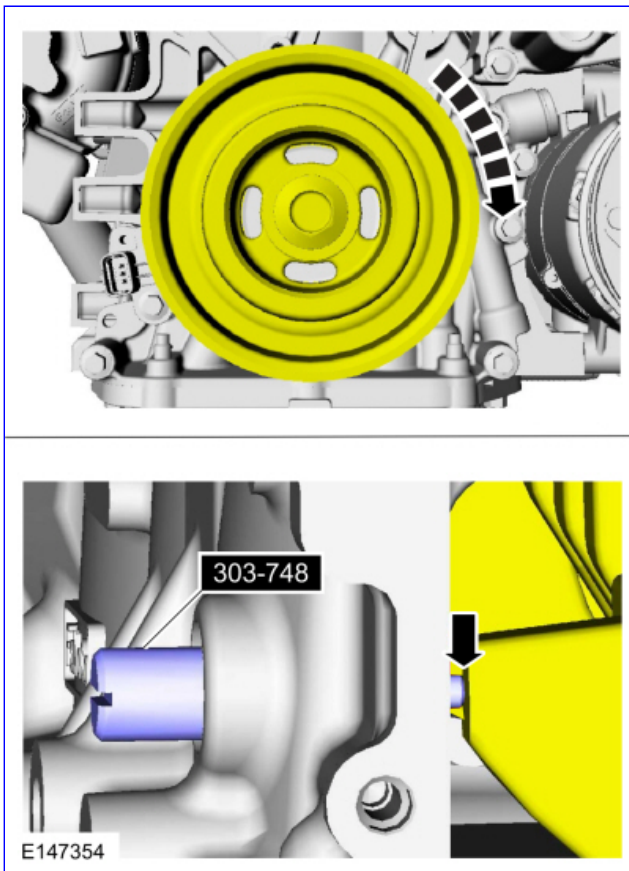
23. **NOTE:**The Crankshaft TDC Timing Pin will contact the crankshaft and prevent it from turning past TDC . However, the crankshaft can still be rotated in the counterclockwise direction. The crankshaft must remain at the TDC position during the crankshaft pulley removal and installation.

Install Special Service Tool: 303-748 Locking Tool, Crankshaft .

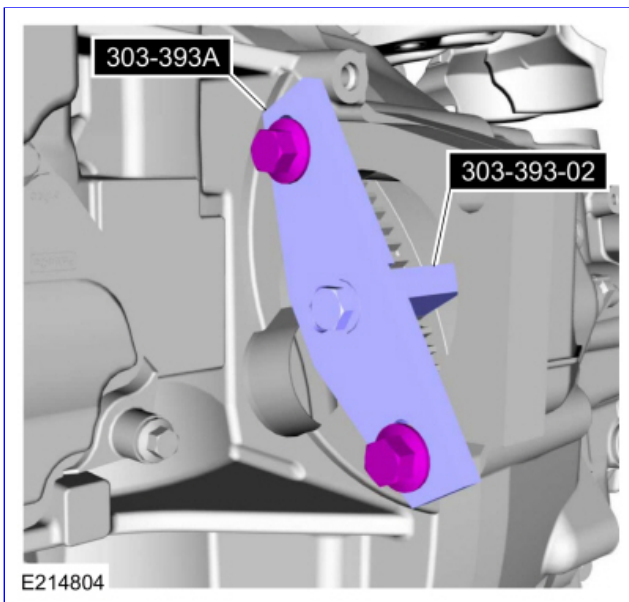


24. **NOTE:**Only rotate the crankshaft clockwise direction.

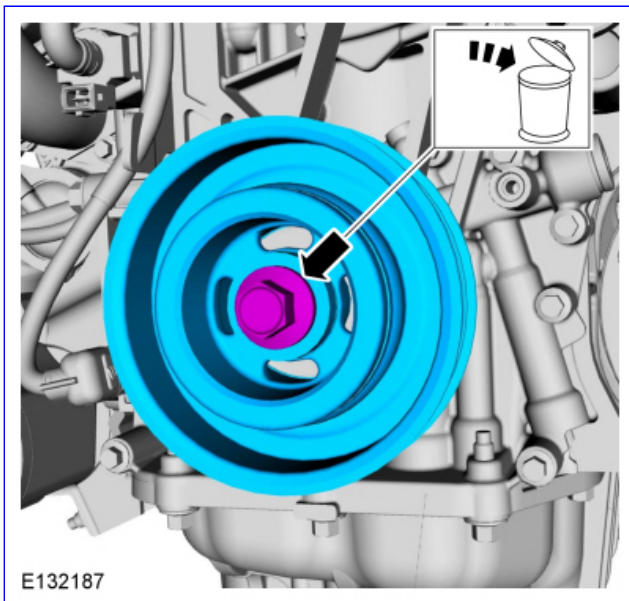
Rotate the crankshaft slowly clockwise until the crankshaft balance weight is up against the TDC Timing Pin. The engine is now at TDC .



25. Install Special Service Tool: 303-393A Locking Tool, Flywheel . , 303-393-02 Adapter for 303-393 .



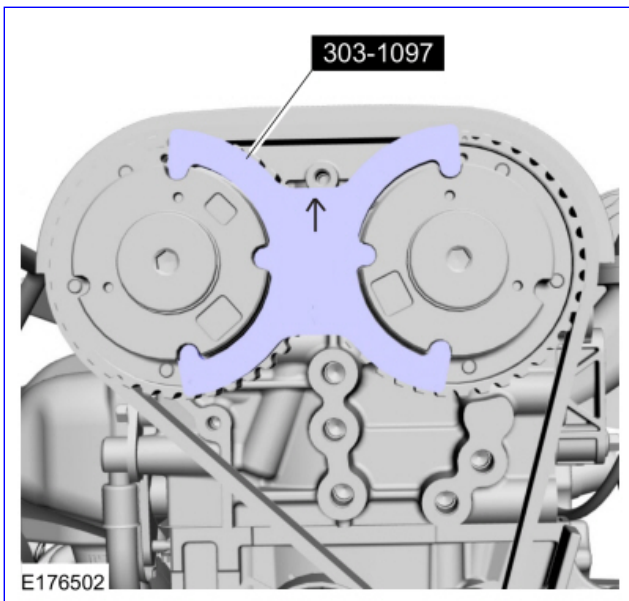
26.



27. **NOTE:**The timing mark of each VCT unit must be at the 12 o'clock position.

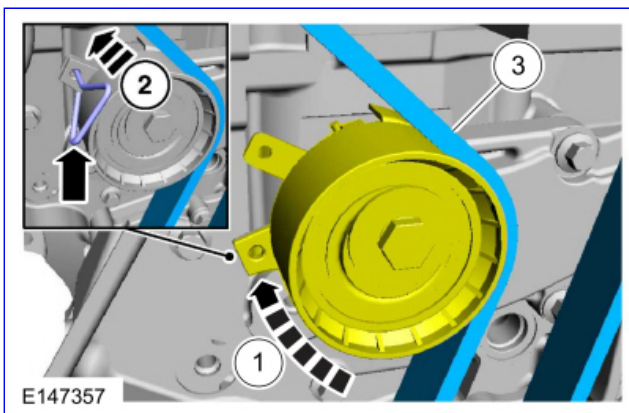
NOTE:It may necessary to rotate the camshafts slightly to install the special tool.

Install Special Service Tool: 303-1097 Locking Tool, Variable Camshaft Timing Oil Control Unit .

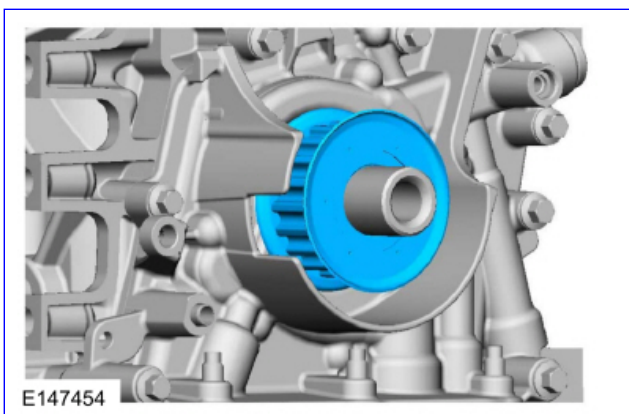


28. **⚠ WARNING:** The timing belt tensioner spring is under load. Extra care must be taken at all times when handling the tensioner. Failure to follow this instruction may result in personal injury.

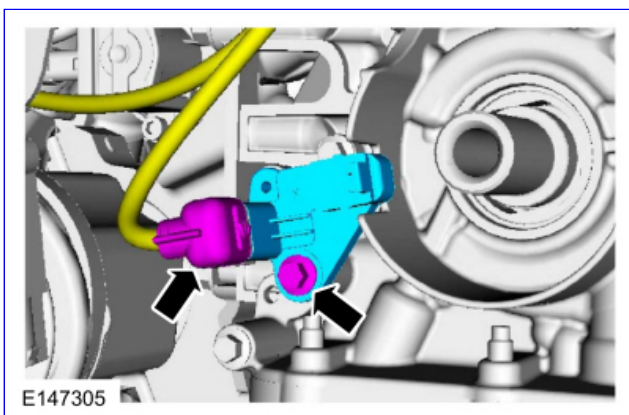
NOTE:Install a holding pin.



29.

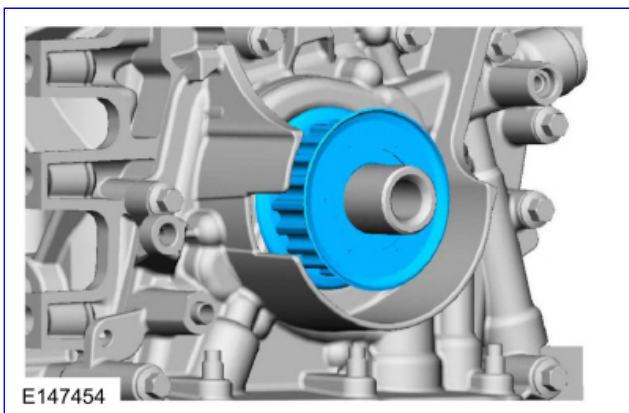


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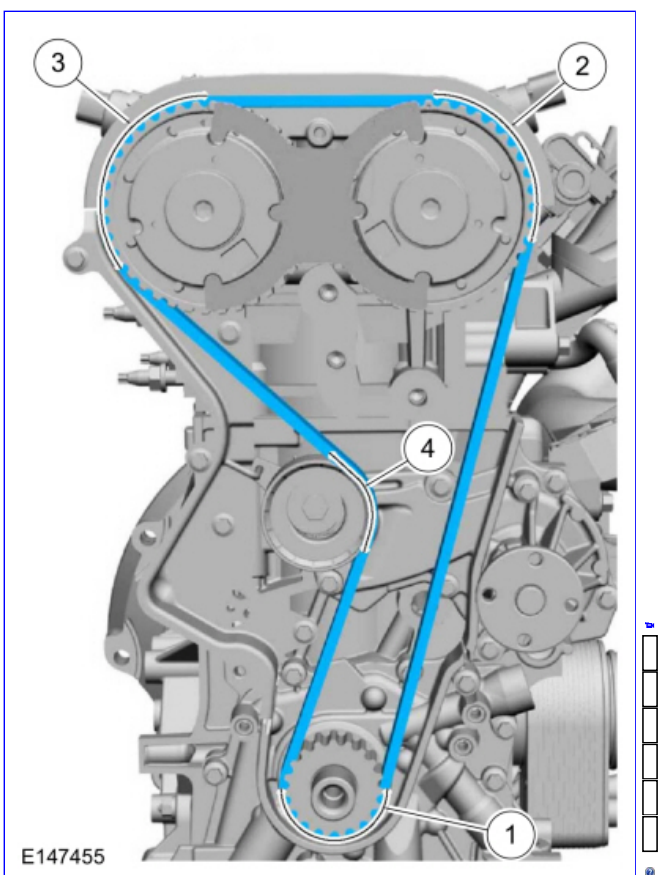


Installation

1. **NOTE:** Before installation, clean and inspect the sprocket for any damage. If damage is evident, replace the sprocket. If no damage, the sprocket is to be reused.

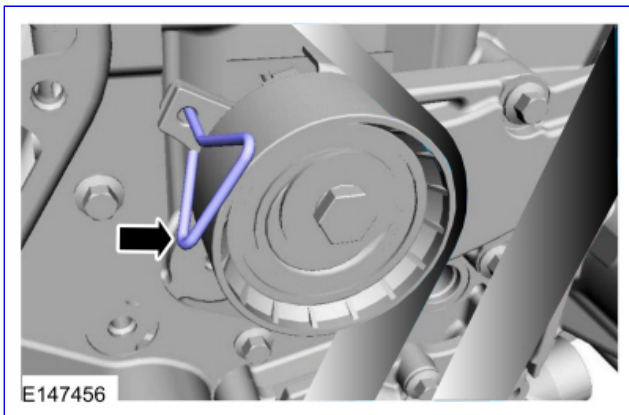


2.

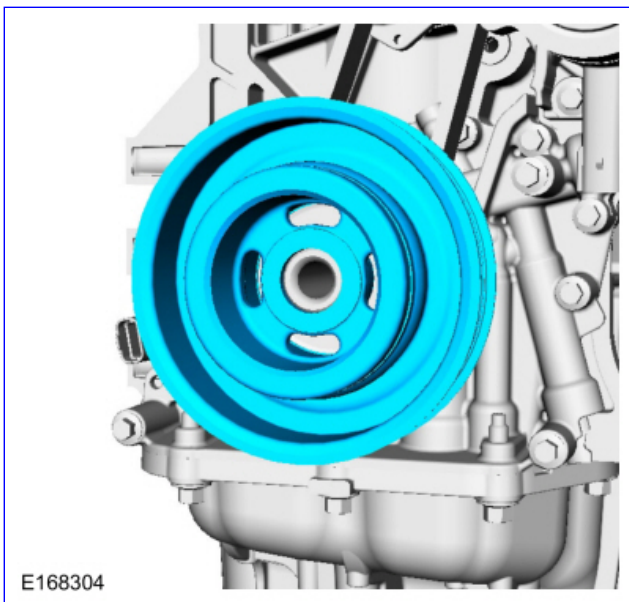


3. **⚠ WARNING:** The timing belt tensioner spring is under load. Extra care must be taken at all times when handling the tensioner. Failure to follow this instruction may result in personal injury.

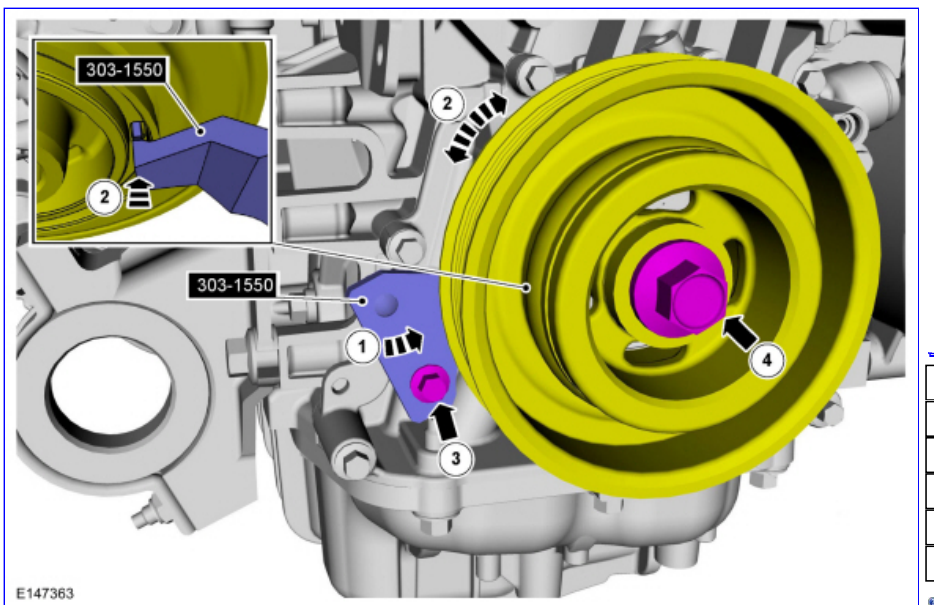
Remove the holding pin.



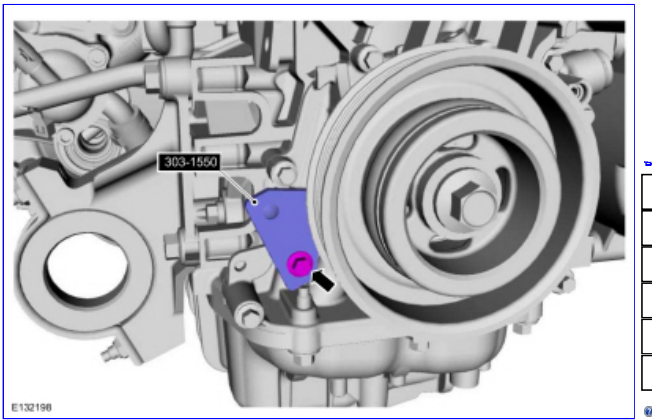
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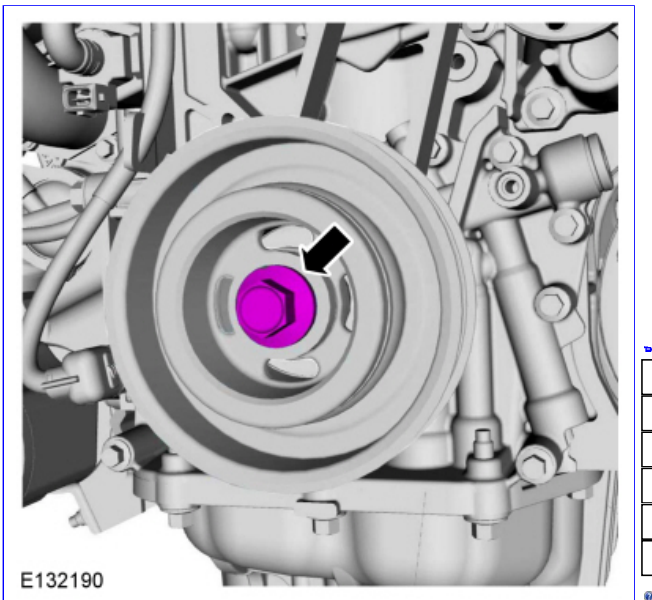
5.
 1. Install Special Service Tool: 303-1550 Alignment Tool, Crankshaft [Vibration Damper](#) .
 2. Rotate [crankshaft pulley](#) to align the Special Tool:
Use Special Service Tool: 303-1550 Alignment Tool, Crankshaft [Vibration Damper](#) .
 3. Finger tight at this stage.
 4. Using a new bolt, finger tight at this stage.



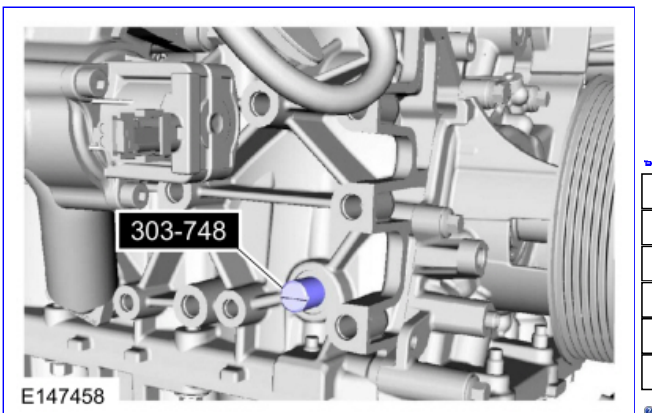
6. Remove Special Service Tool: 303-1550 Alignment Tool, Crankshaft [Vibration Damper](#) .



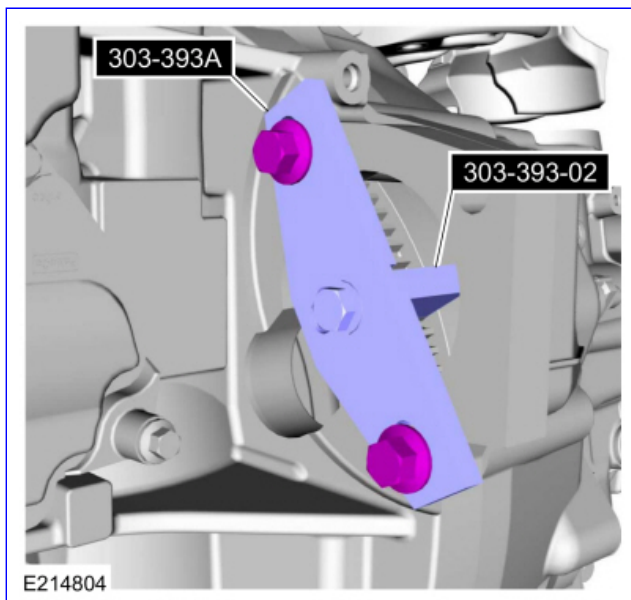
7. Torque :
Stage 1: 74 lb.ft (100 Nm)
Stage 2: 90°
Stage 3: Wait 2s
Stage 4: 15°



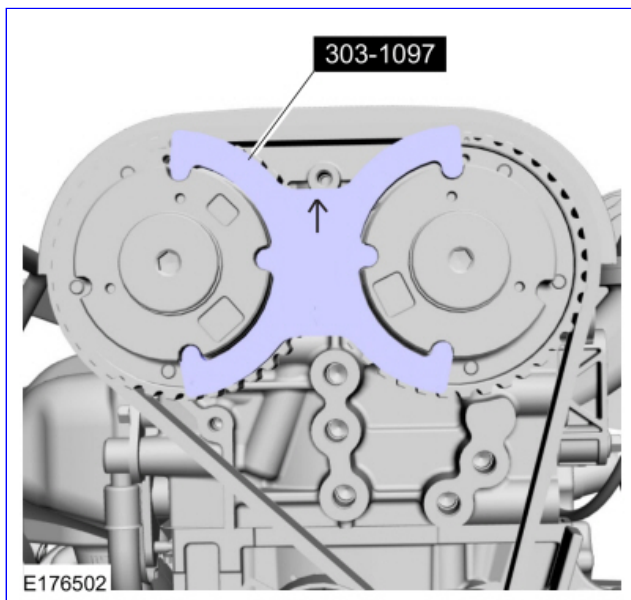
8. Remove Special Service Tool: 303-748 Locking Tool, Crankshaft .



9. Remove Special Service Tool: 303-393-02 Adapter for 303-393 . , 303-393A Locking Tool, Flywheel .



10. Remove Special Service Tool: 303-1097 Locking Tool, Variable Camshaft Timing Oil Control Unit .

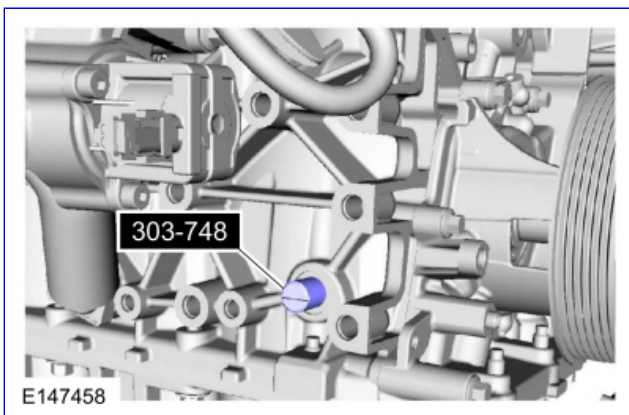


11. **NOTE:** Only rotate the crankshaft in a clockwise direction.

Rotate about 1 3/4 turns.

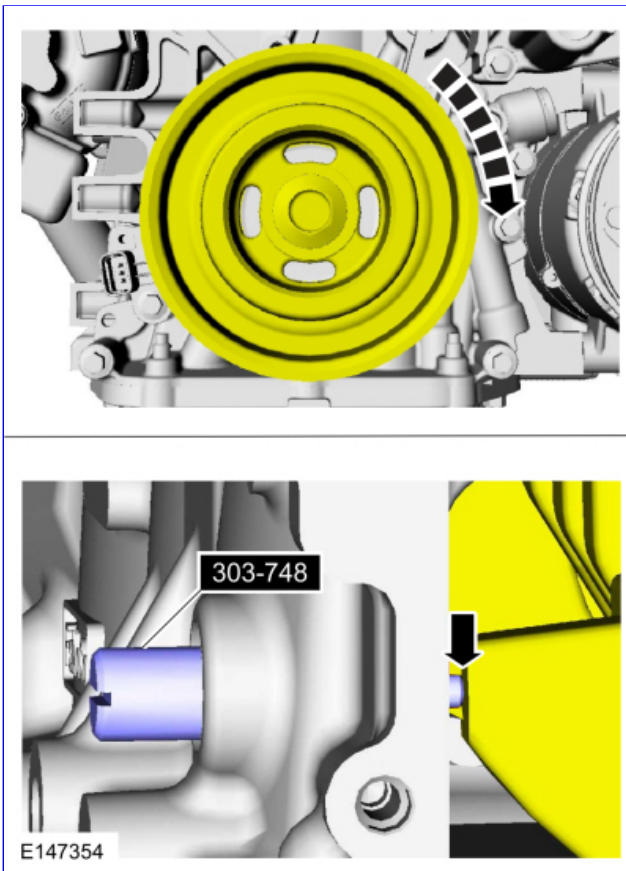


12. Install Special Service Tool: 303-748 Locking Tool, Crankshaft .



13. **NOTE:** Only rotate the crankshaft in a clockwise direction.

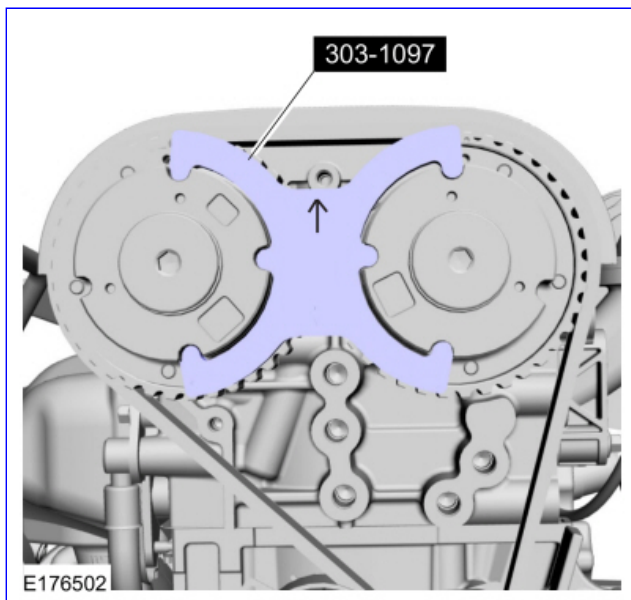
Rotate the crankshaft slowly clockwise until the crankshaft balance weight is up against the crankshaft locking tool. The engine is now at TDC .



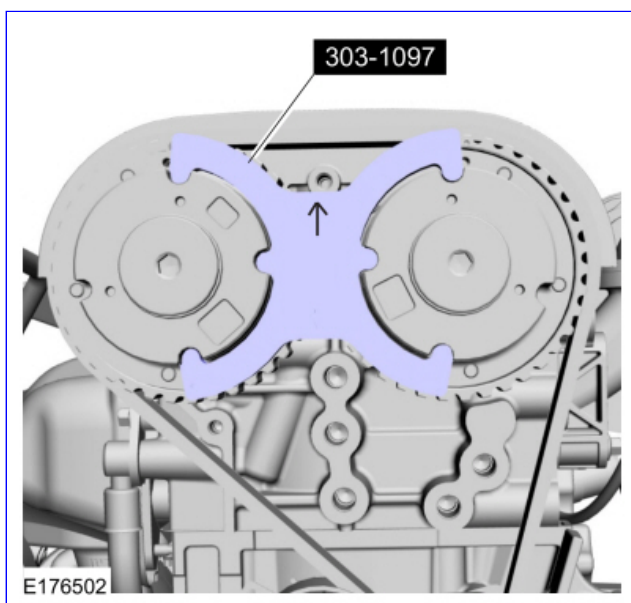
14. **NOTE:** The timing mark of each VCT unit must be at the 12 o'clock position.

NOTE: It may necessary to rotate the camshafts slightly to install the special tool.

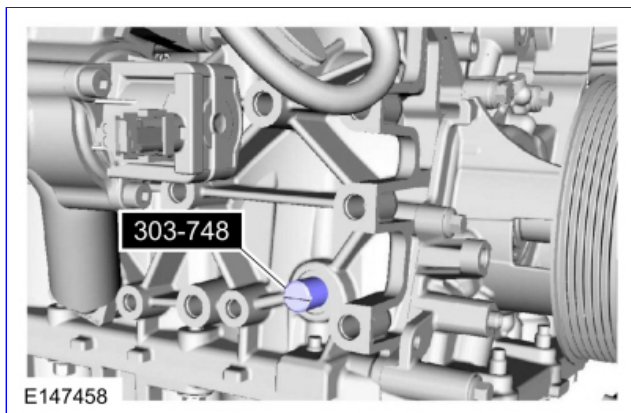
If the special tool cannot be installed, repeat the adjustment according to the preceding steps.
Install Special Service Tool: 303-1097 Locking Tool, Variable Camshaft Timing Oil Control Unit .



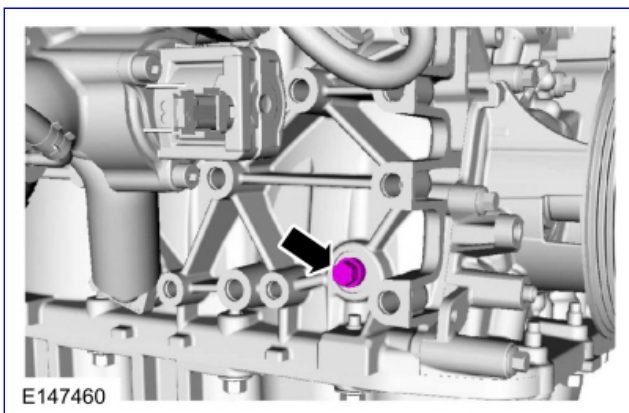
15. Remove Special Service Tool: 303-1097 Locking Tool, Variable Camshaft Timing Oil Control Unit .



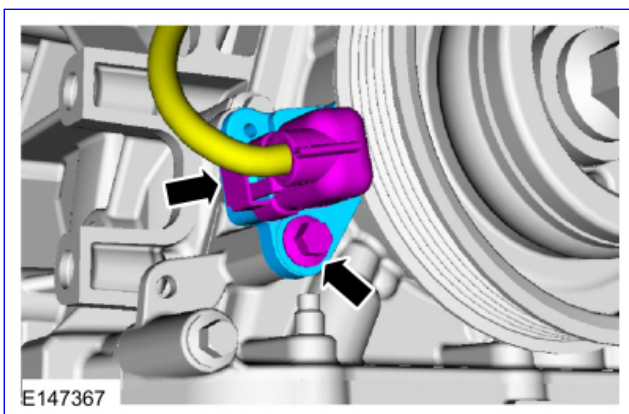
16. Remove Special Service Tool: 303-748 Locking Tool, Crankshaft .



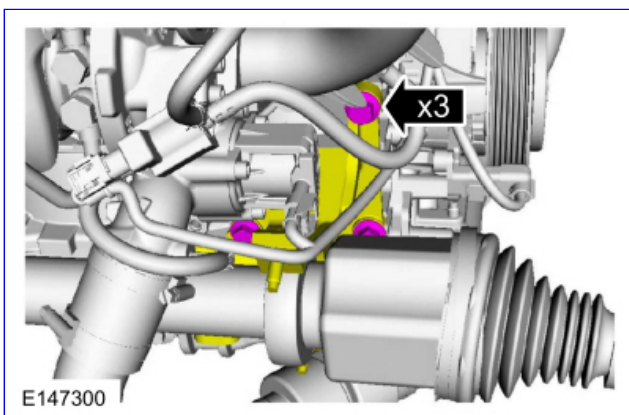
17. Torque : 177 lb.in (20 Nm)



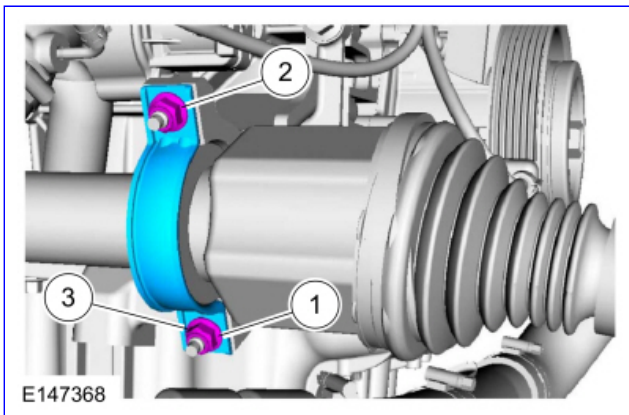
18. Torque : 89 lb.in (10 Nm)



19. Torque : 35 lb.ft (48 Nm)

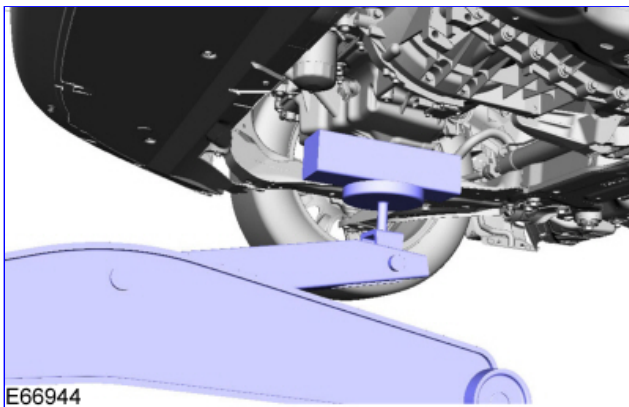


- 20.
1. Torque : 44 lb.in (5 Nm)
 2. Torque : 18 lb.ft (25 Nm)
 3. Torque : 18 lb.ft (25 Nm)

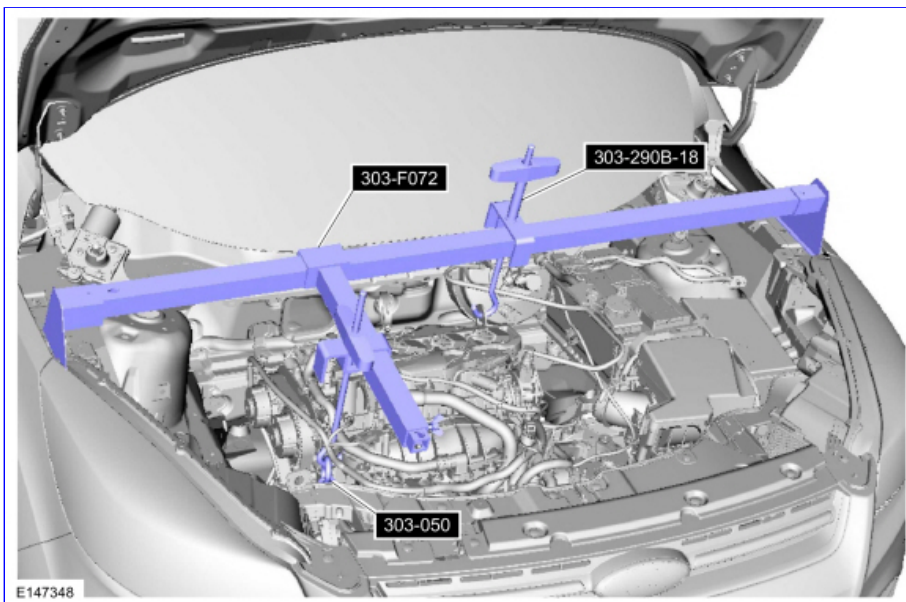


21. Install the following items:

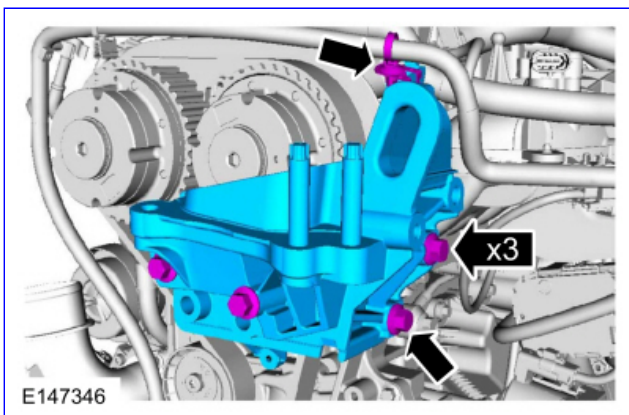
- o Use the General Equipment: Trolley Jack
- o Use the General Equipment: Wooden Block



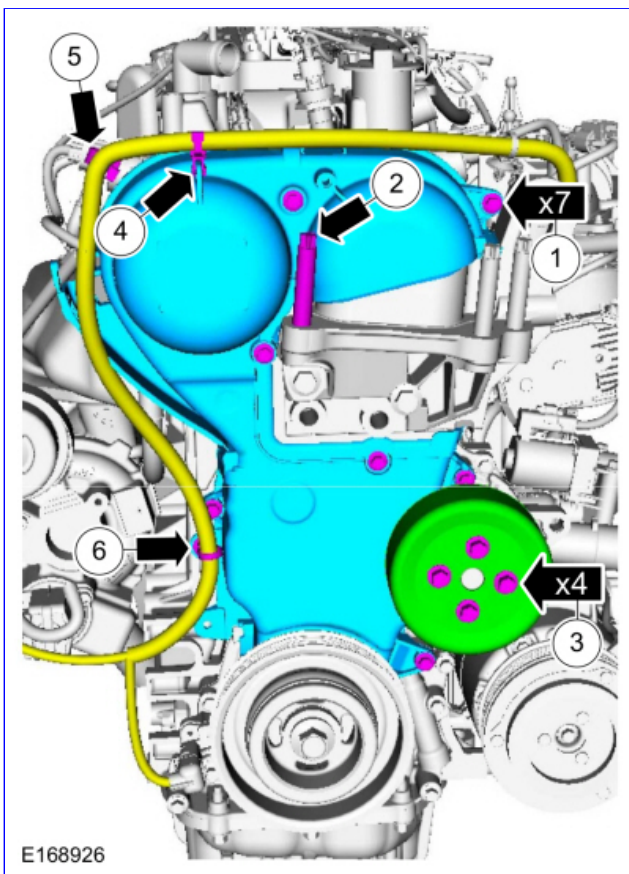
22. Remove Special Service Tool: 303-F072 Support Bar, Engine . , 303-290B-18 Adapter for 303-290B . , 303-050 (T70P-6000) Lifting Bracket, Engine .



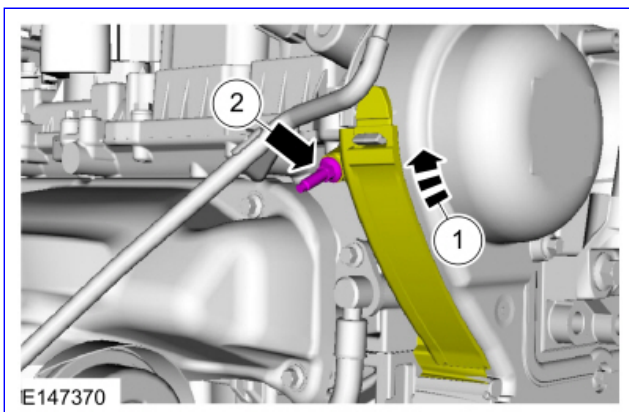
23. Torque : 41 lb.ft (55 Nm)



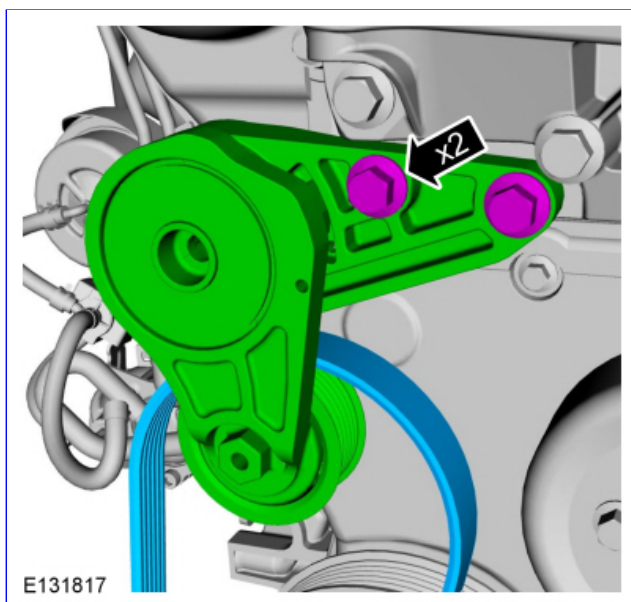
- 24.
1. Torque : 89 lb.in (10 Nm)
 2. Finger tight.
 3. Finger tight.



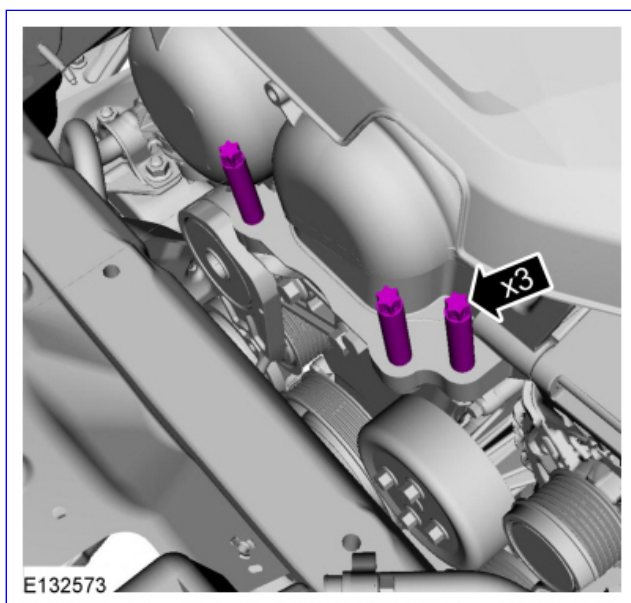
25. Torque : 89 lb.in (10 Nm)



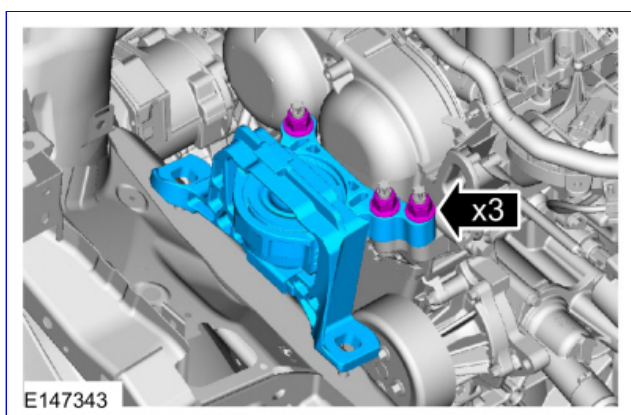
26. Torque : 35 lb.ft (48 Nm)



27. Torque : 89 lb.in (10 Nm)



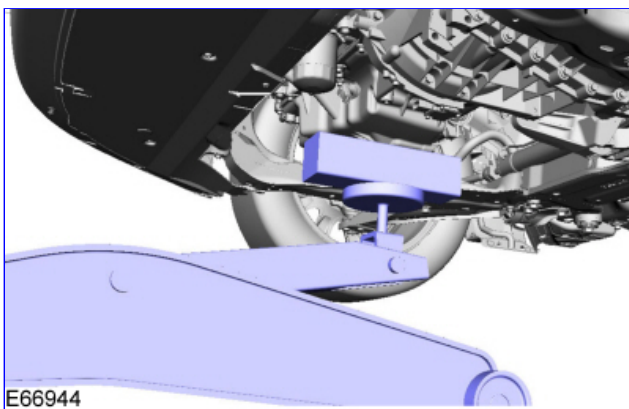
28. Torque : 59 lb.ft (80 Nm)



29. Refer to: [Generator - 1.6L EcoBoost \(132kW/180PS\) - Sigma](#) (414-02 Generator and Regulator, Removal and Installation) .

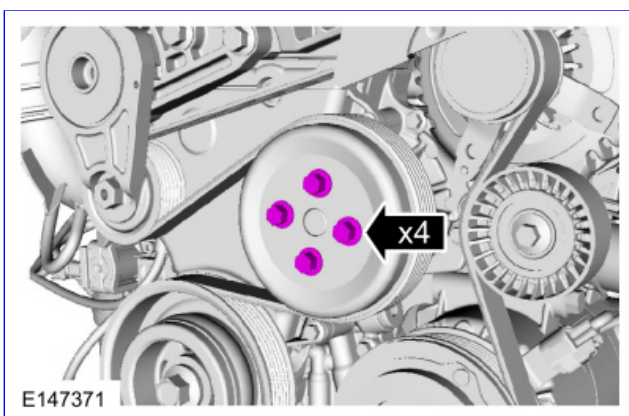
30. Remove the following items:

- o Use the General Equipment: Trolley Jack
- Use the General Equipment: Wooden Block



31. Refer to: [Starter Motor](#) (303-06A Starting System - 1.6L EcoBoost (132kW/180PS) - Sigma, Removal and Installation) .

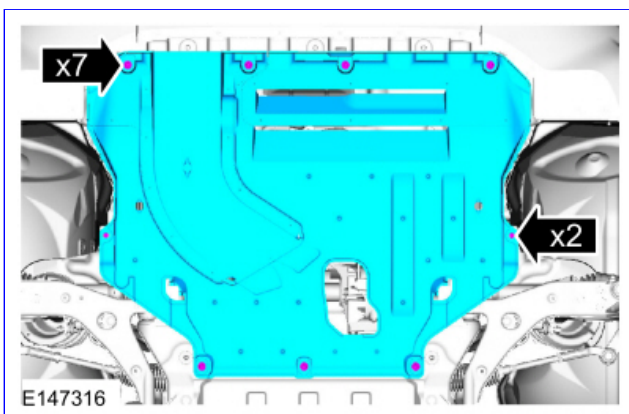
32. Torque : 177 lb.in (20 Nm)



33. Install the RH front fender splash shield.

Refer to: [Fender Splash Shield](#) (501-02 Front End Body Panels, Removal and Installation) .

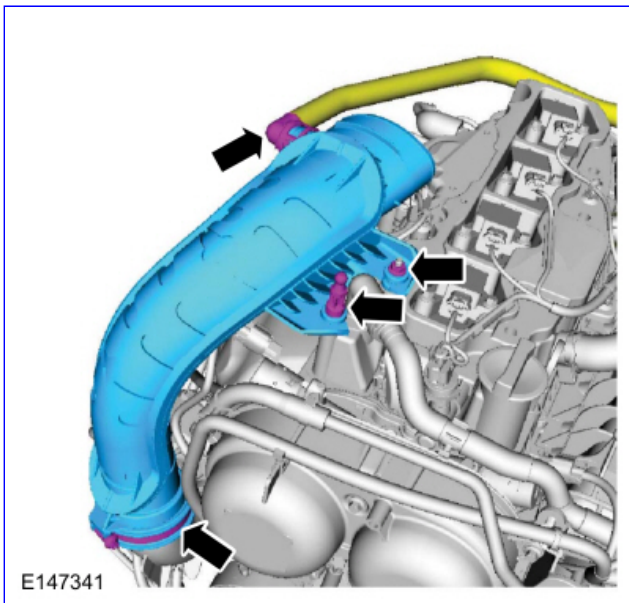
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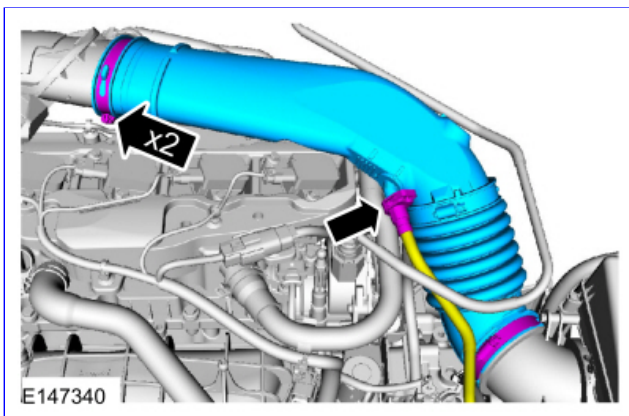
35. Install the RH front wheel and tire.

Refer to: [Wheel and Tire](#) (204-04A Wheels and Tires, Removal and Installation) .

36. Torque : 44 lb.in (5 Nm)



37. Torque : 44 lb.in (5 Nm)



38. Refer to: [Degas Bottle](#) (303-03A Engine Cooling - 1.6L EcoBoost (132kW/180PS) - Sigma, Removal and Installation) .

39. Refer to: [Cowl Panel](#) (501-02 Front End Body Panels, Removal and Installation) .

40. After completing the repairs, perform the Misfire Monitor Neutral Profile Correction procedure.

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