

Engine Front Cover

Special Tool(s) / General Equipment

Oil Drain Equipment

Materials

Name	Specification
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6

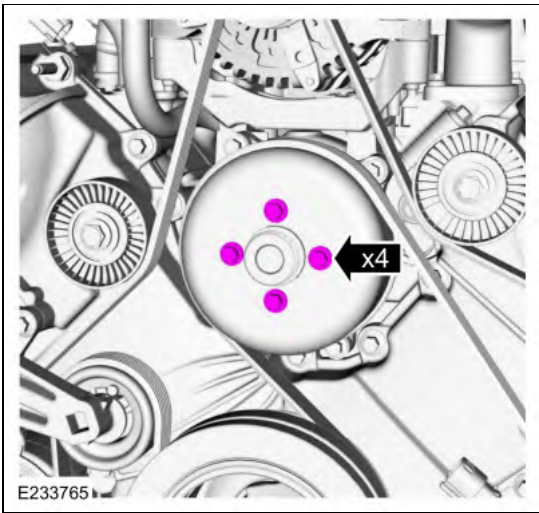
Removal

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.

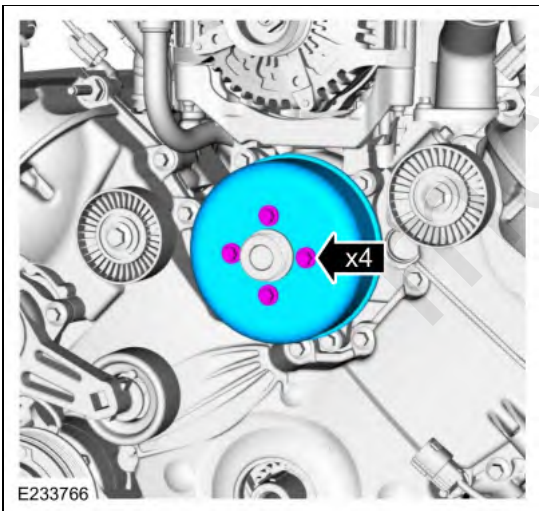
- With the vehicle in NEUTRAL, position it on a hoist.
Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).
- Remove the cooling fan shroud.
Refer to: Cooling Fan Shroud (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
- Remove the LH and RH variable camshaft timing (VCT) oil control solenoids.
Refer to: Variable Camshaft Timing (VCT) Oil Control Solenoid (303-14A Electronic Engine Controls - 6.2L V8, Removal and Installation).
- Remove the nuts and position the radio ignition interference capacitors aside.



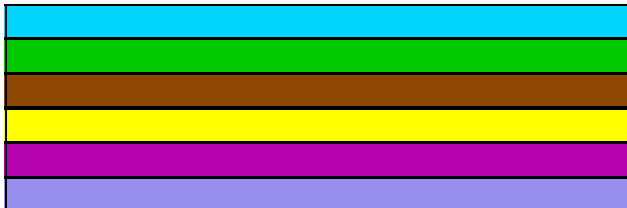
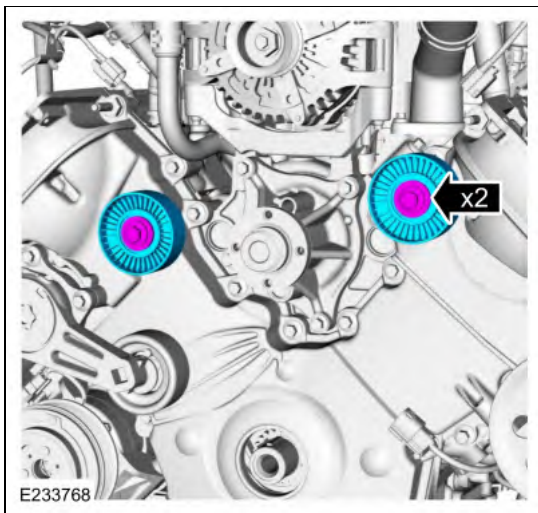
- Loosen the coolant pump pulley bolts.



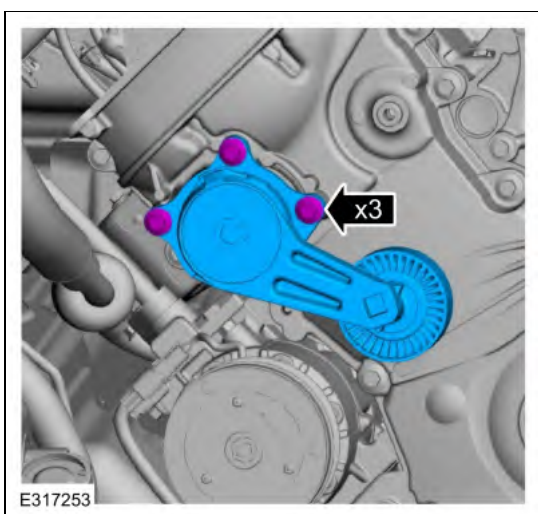
6. Remove the crankshaft front seal.
Refer to: Crankshaft Front Seal (303-01A Engine - 6.2L V8, Removal and Installation).
7. Remove the bolts and the coolant pump pulley.



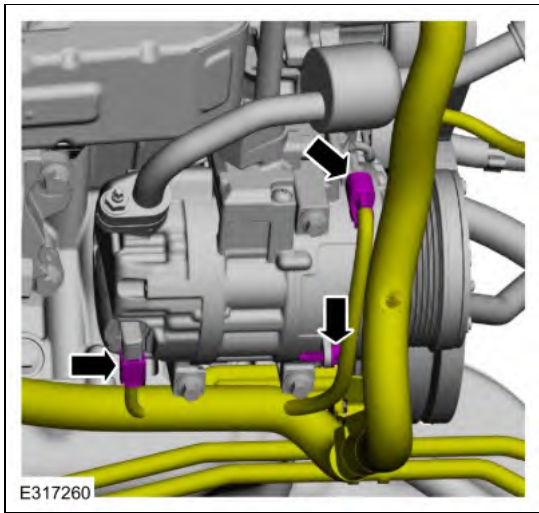
8. Remove the bolts and the accessory drive belt idler pulleys.



9. Remove the bolts and the accessory drive belt tensioner.

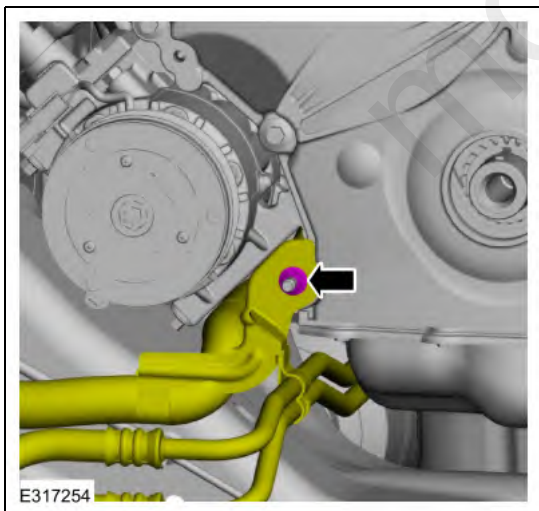


10. Disconnect the A/C compressor wiring harness electrical connectors and detach the wiring harness retainer.



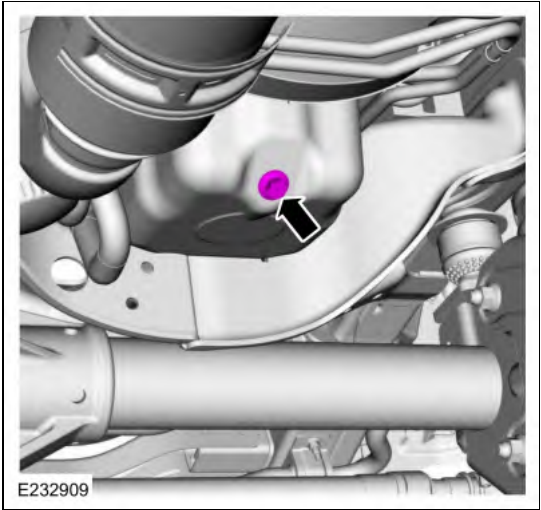
11.

- Remove the nut.
- **NOTE:** 6R100 transmission lines shown, 10R140 similar.
If equipped with automatic transmission, remove the transmission cooler lines bracket.
- Remove the starter motor wiring harness bracket.

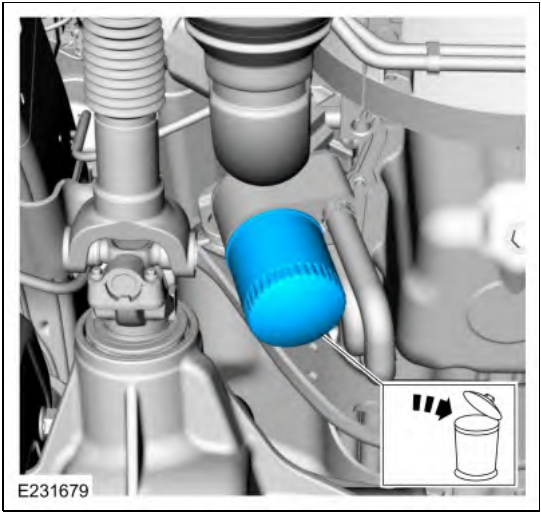


12.

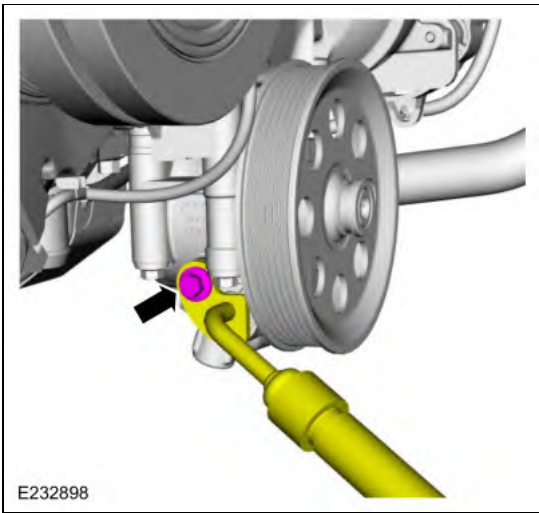
- Remove the drain plug and drain the engine oil.
Use the General Equipment: Oil Drain Equipment
- Install the drain plug.
Torque: 17 lb.ft (23 Nm)



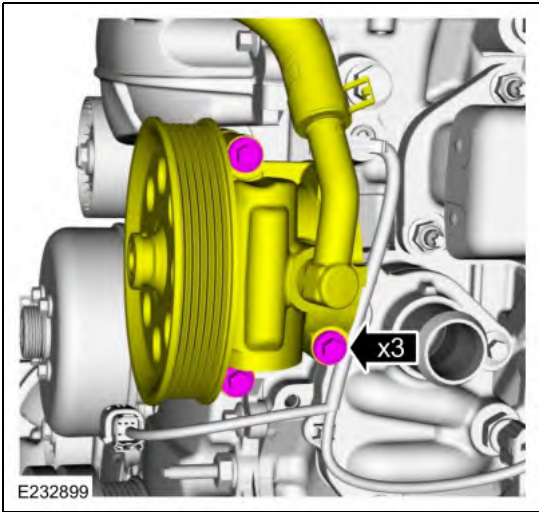
13. Remove and discard the engine oil filter.
Use the General Equipment: Oil Drain Equipment



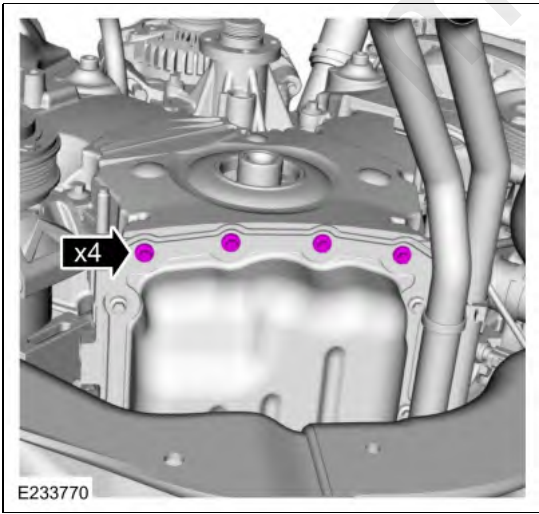
14. Remove the bolt and the power steering pump pressure line.



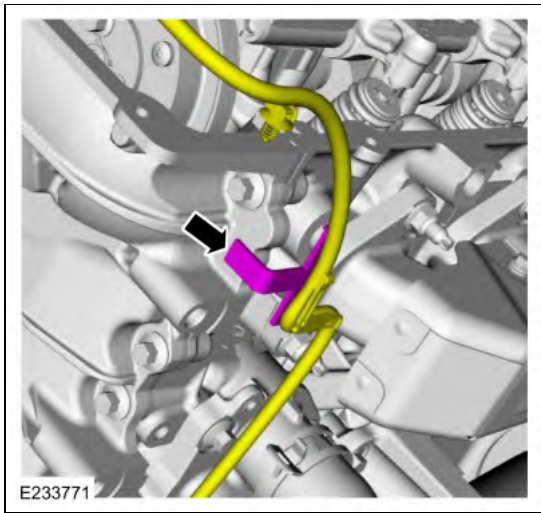
15. Remove the bolts and position the power steering pump aside.



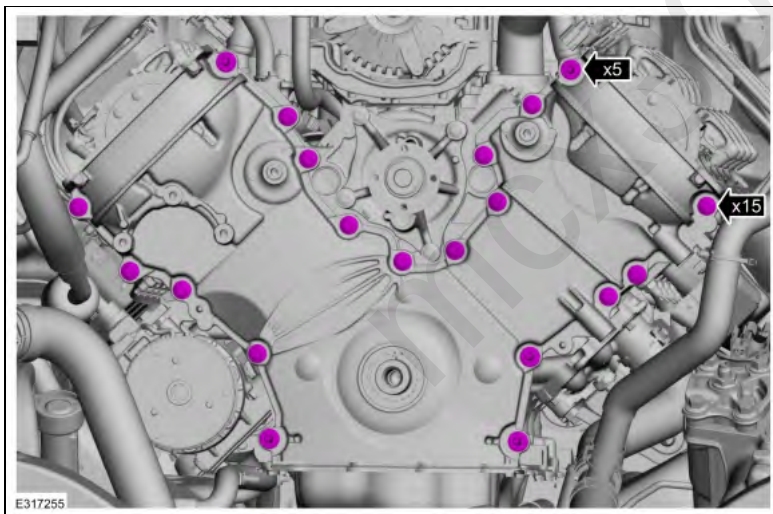
16. Remove the front oil pan bolts.



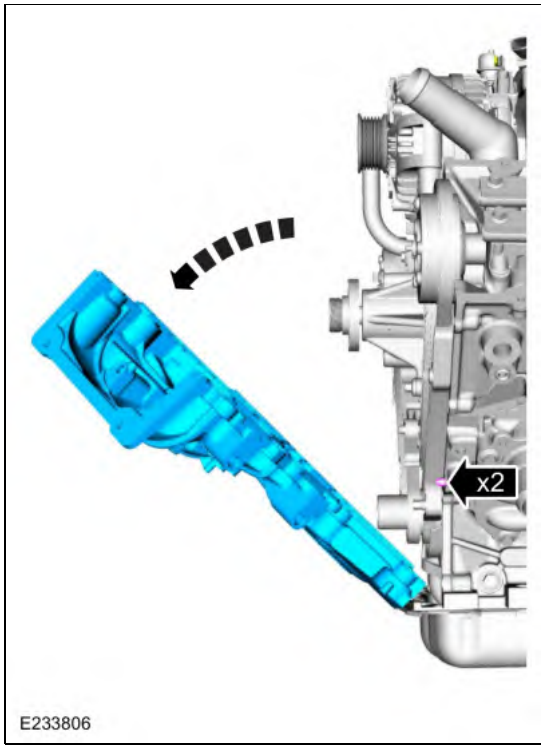
17. Detach the wiring harness retainer from the engine front cover.



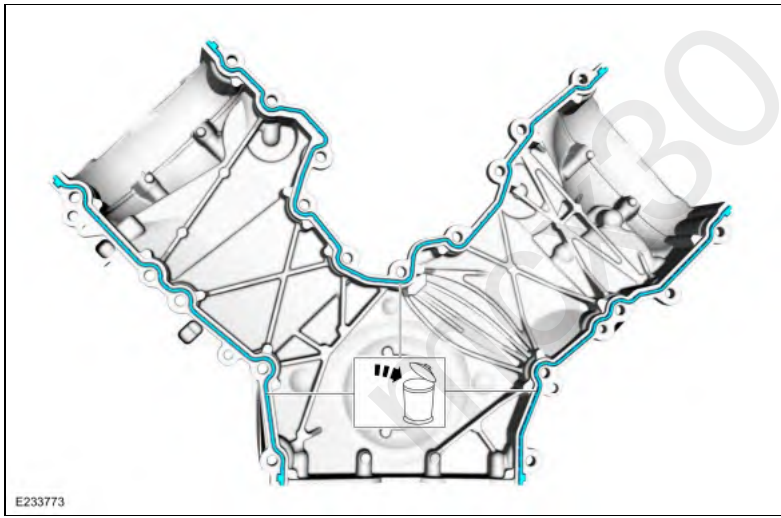
18. Remove the bolts and stud bolts from the engine front cover.



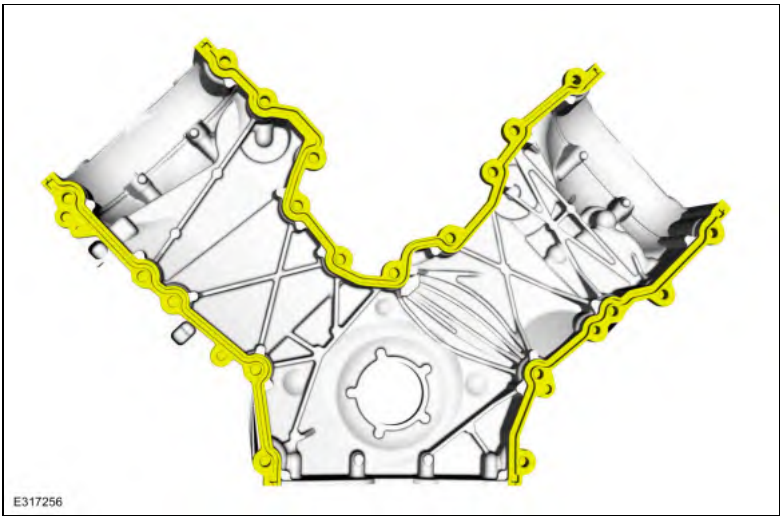
19. Remove the engine front cover from the dowels.



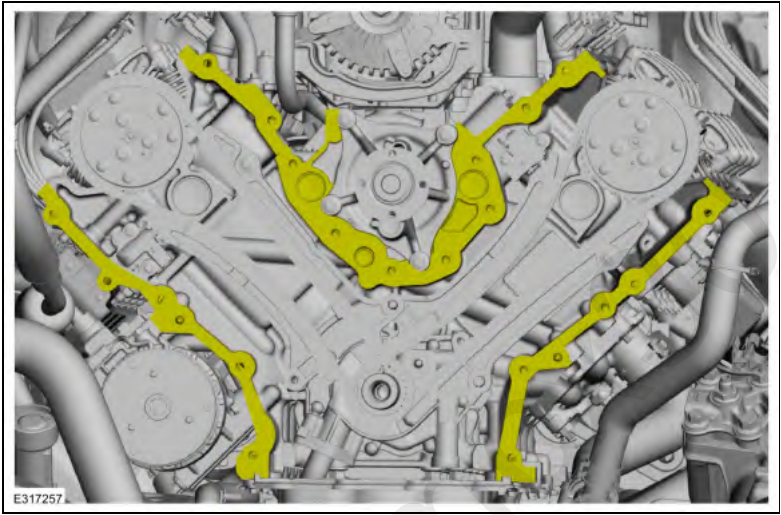
20. Remove and discard the engine front cover gaskets.



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

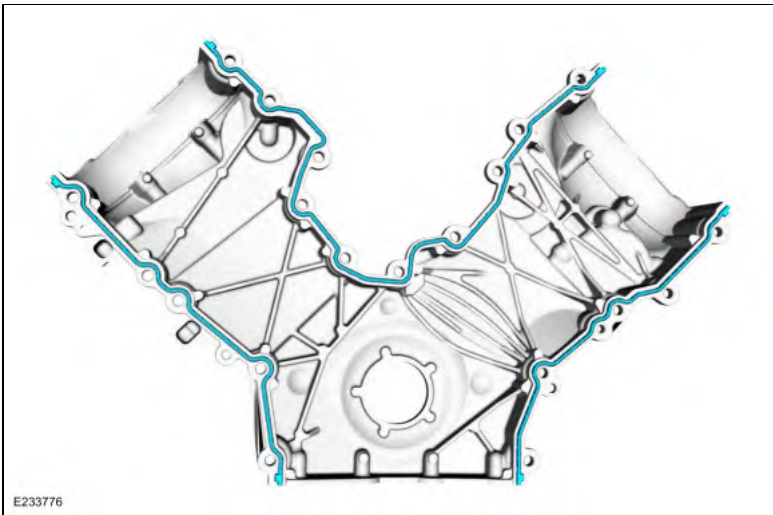


22. Clean and prepare the RTV sealing surface.
Refer to: RTV Sealing Surface Cleaning and Preparation (303-00 Engine System - General Information, General Procedures).



Installation

1. Install the new gaskets on the engine front cover.

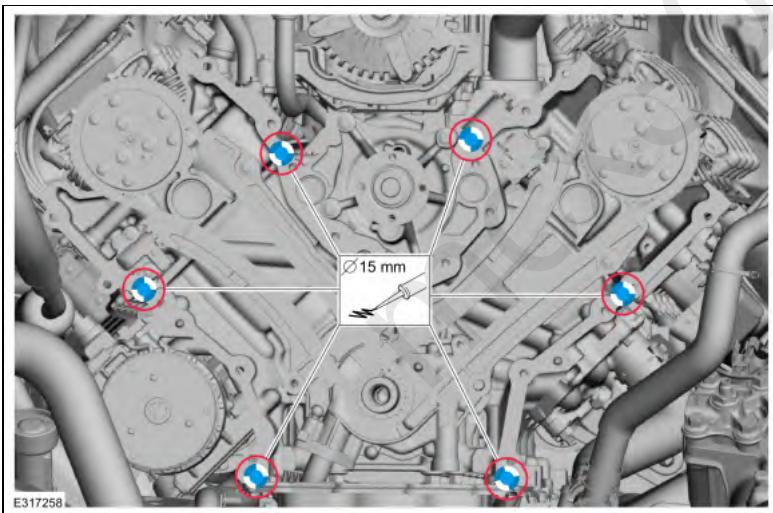


2. **NOTE:** If the engine front cover is not secured within 4 minutes, the sealant must be removed and the sealing area cleaned.

NOTE: Make sure that the engine front cover gaskets are in place on the engine front cover before installation.

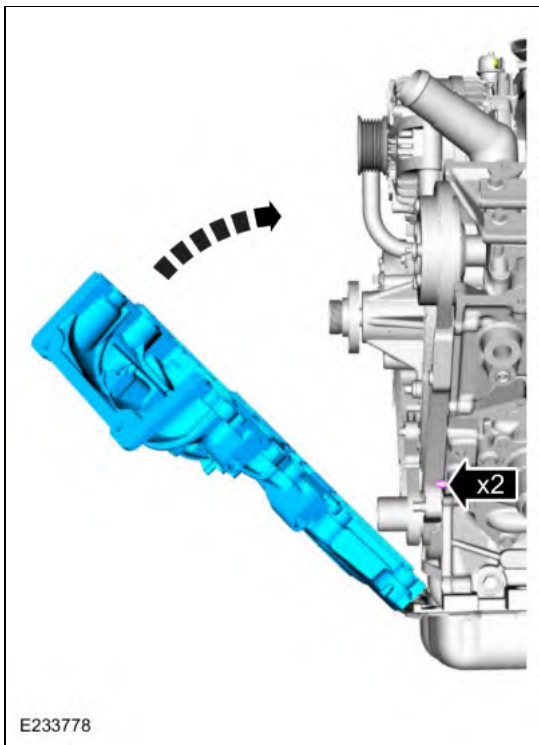
Apply a 15 mm (0.59 in) drop of silicone sealant at the cylinder head-to-cylinder block and cylinder block-to-oil pan joint areas.

Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)



3. **NOTE:** The engine front cover must be rolled into place, do not slide on pan gasket.

Install the engine front cover onto the dowels.



4.

- Install the engine front cover bolts and studs bolts finger-tight.
- Tighten the engine front cover bolts and studs bolts in sequence shown.

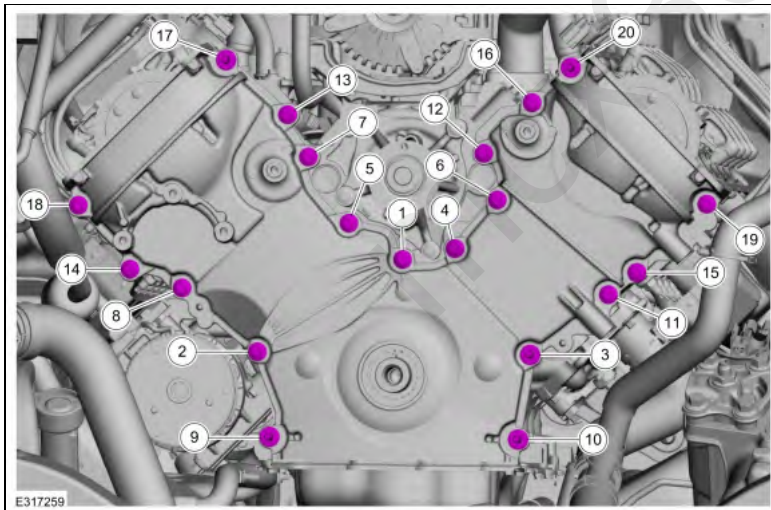
Torque:

Tighten bolts 1 through 20: 89 lb.in (10 Nm)

Tighten bolts 1 through 20: 177 lb.in (20 Nm)

Tighten bolts 1, 2, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 18 and 19 an additional: 30°

Tighten stud bolts 3, 9, 10, 17 and 20 an additional: 45°



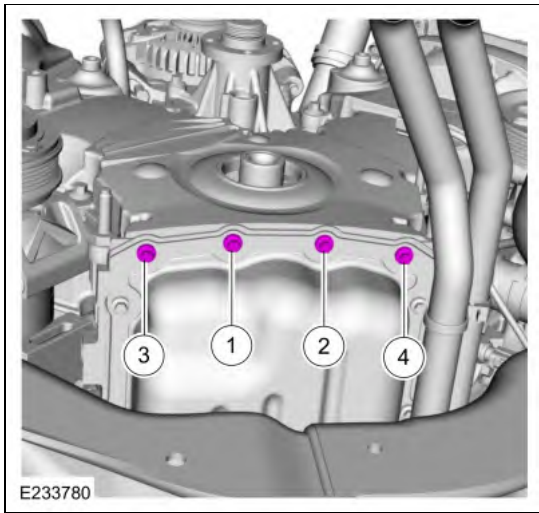
5.

- Loosely install the front oil pan bolts.
- Tighten the front oil pan bolts in sequence shown in 2 stages.

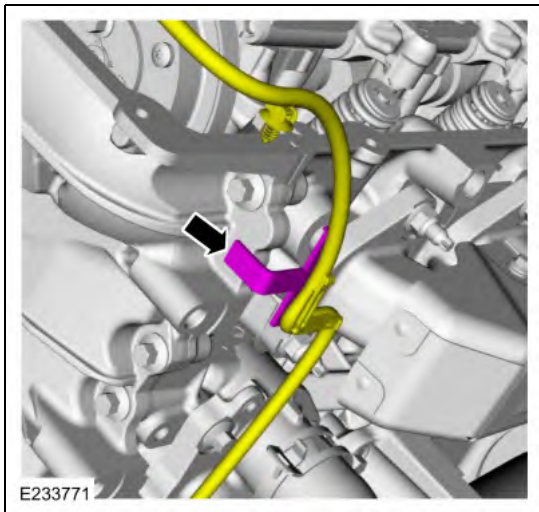
Torque:

Stage 1: 89 lb.in (10 Nm)

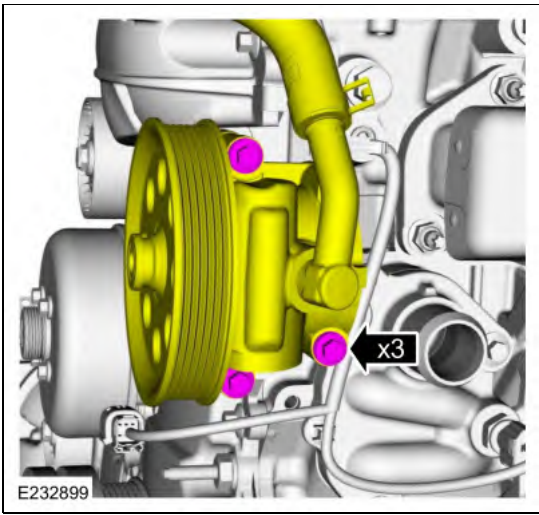
Stage 2: 45°



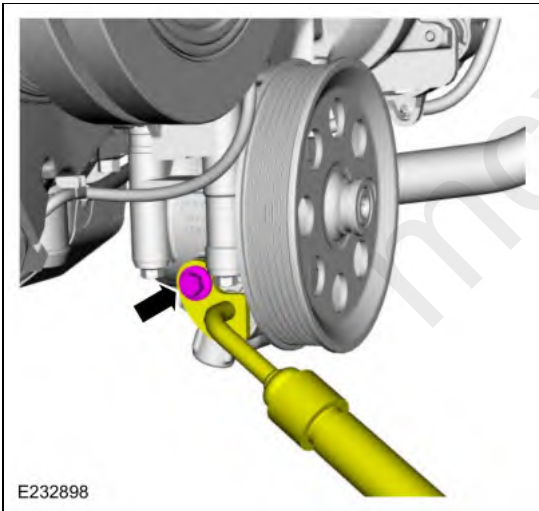
6. Attach the wiring harness retainer to the engine front cover.



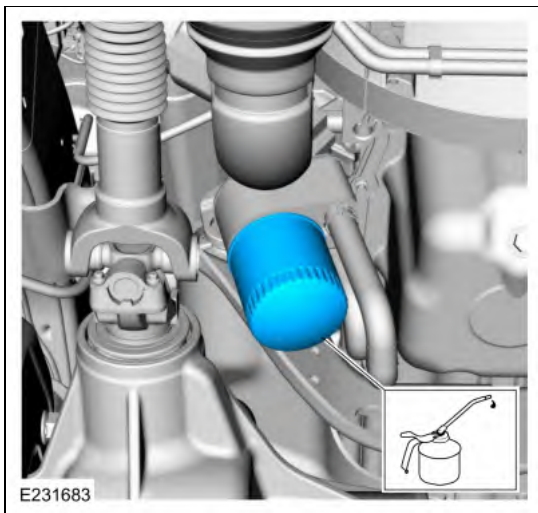
7. Position the power steering pump and install the bolts.
Torque: 18 lb.ft (25 Nm)



8. Install the power steering pump pressure line and the bolt. Torque
Torque: 18 lb.ft (25 Nm)

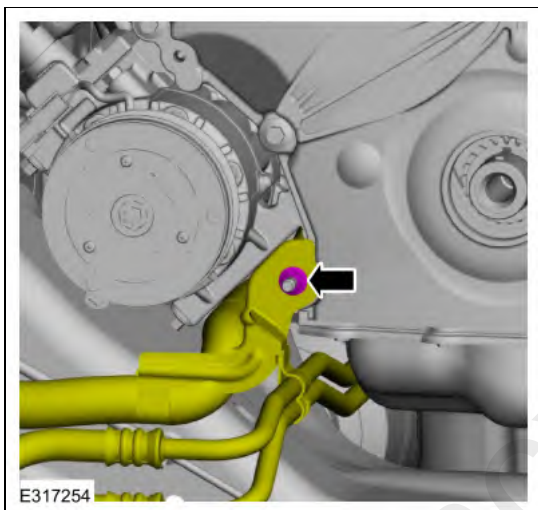


9. Lubricate the oil filter gasket with clean engine oil and install a new engine oil filter.
Torque:
Stage 1: 44 lb.in (5 Nm)
Stage 2: 180°

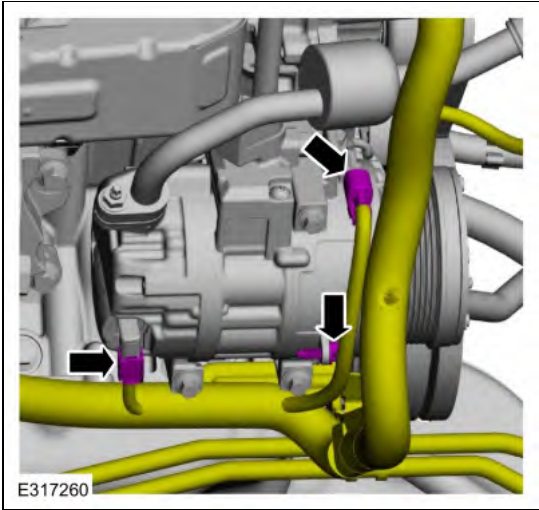


10.

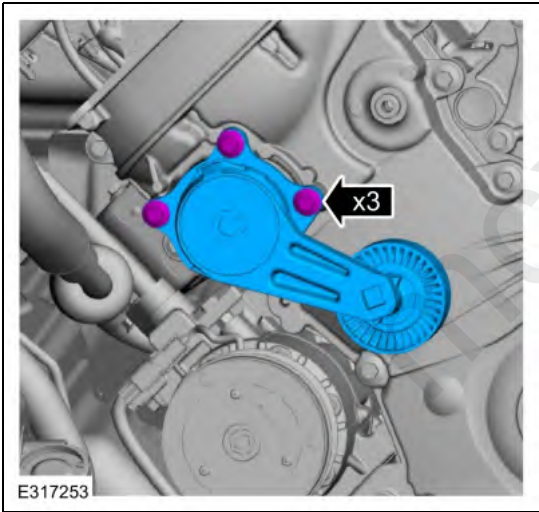
- Install the starter motor wiring harness bracket.
 - **NOTE:** 6R100 transmission lines shown, 10R140 similar.
- If equipped with automatic transmission, install the transmission cooler lines bracket.
- Install the nut.
- Torque: 18 lb.ft (25 Nm)*



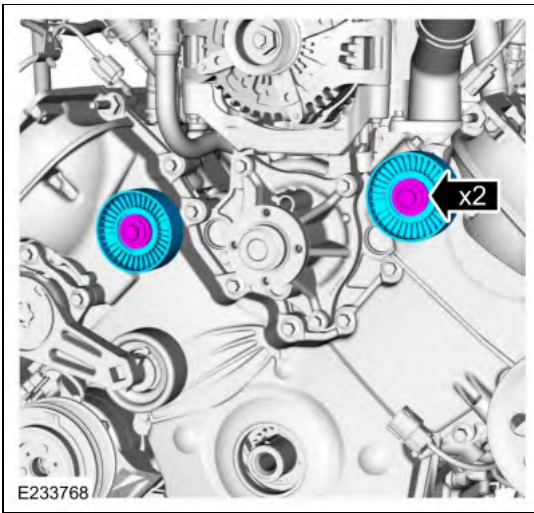
11. Connect the A/C compressor wiring harness electrical connectors and attach the wiring harness retainer.



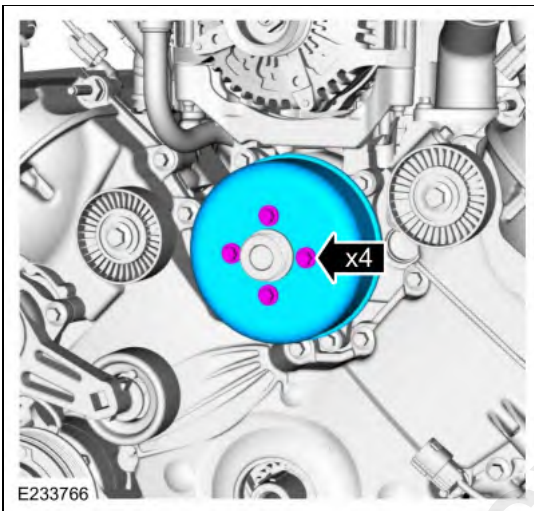
12. Install the accessory drive belt tensioner and the bolts.
Torque: 18 lb.ft (25 Nm)



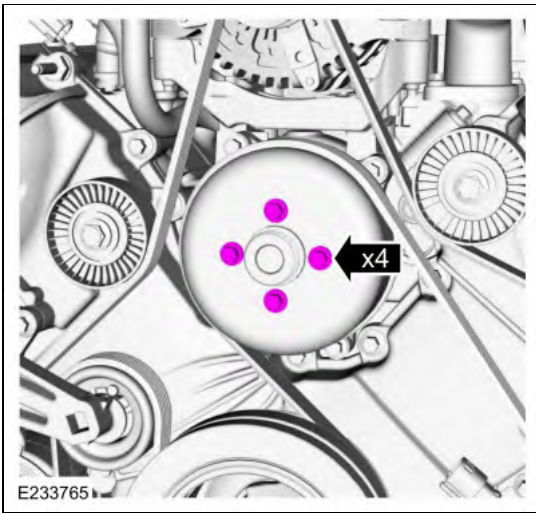
13. Install the accessory drive belt idler pulleys and the bolts.
Torque: 18 lb.ft (25 Nm)



14. Install the coolant pump pulley and the bolts finger-tight.



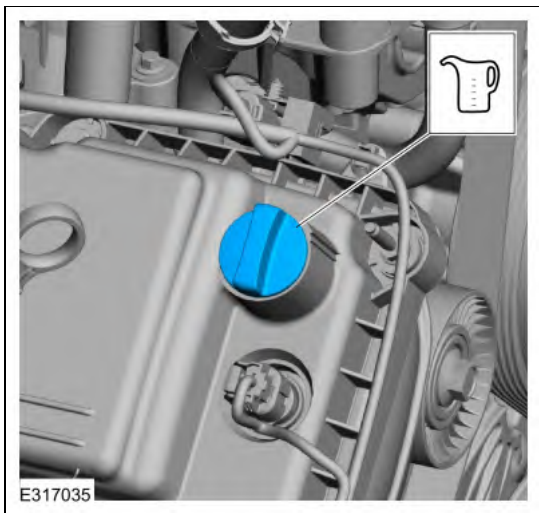
15. Install the crankshaft front seal.
Refer to: Crankshaft Front Seal (303-01A Engine - 6.2L V8, Removal and Installation).
16. Tighten the coolant pump pulley bolts.
Torque: 18 lb.ft (24 Nm)



17. Position the radio ignition interference capacitors and install the nuts.
Torque: 18 lb.ft (25 Nm)



18. Install the LH and RH variable camshaft timing (VCT) oil control solenoids.
 Refer to: Variable Camshaft Timing (VCT) Oil Control Solenoid (303-14A Electronic Engine Controls - 6.2L V8, Removal and Installation).
19. Install the cooling fan shroud.
 Refer to: Cooling Fan Shroud (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
20. Fill the engine with clean engine oil.
 Refer to: Specifications (303-01A Engine - 6.2L V8, Specifications).



21. Fill the power steering system.
Refer to: Power Steering System Filling (211-02 Power Steering, General Procedures).

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