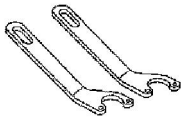


Water Pump: Service and Repair

Coolant Pump

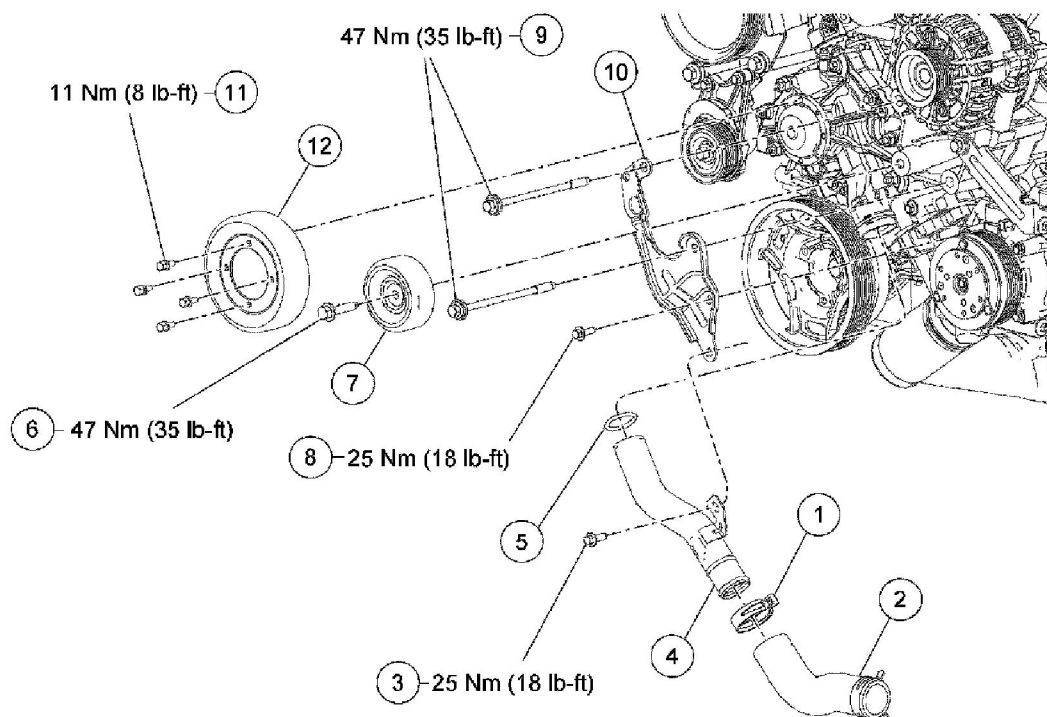
Special Tool(s)

 ST2337-A	Engine Lift Bracket Set 303-D095 (D94L-6001-A)
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Special Tool(s)**Material**

Item	Specification
Motorcraft Premium Gold Engine Coolant VC-7-A (in California, Oregon and New Mexico VC-7-B, in Canada CVC-7-A) or equivalent (yellow color)	WSS-M97B51-A1

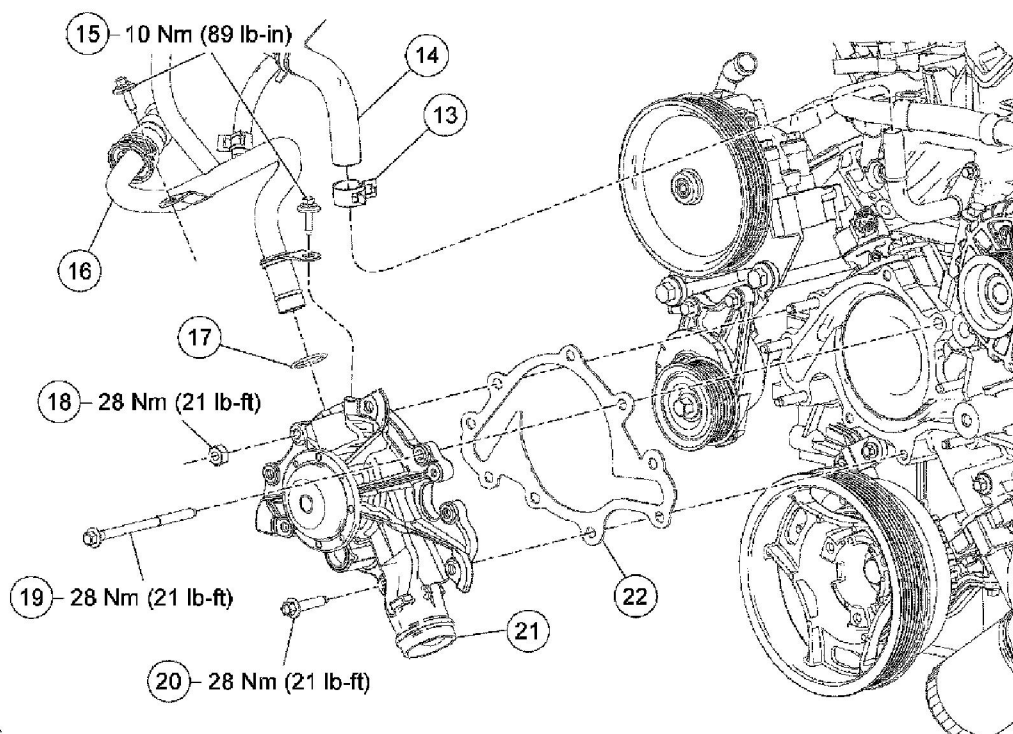
Material



N0001795

Item	Description
1	Clamp
2	Lower radiator hose
3	Coolant pump inlet pipe bolt
4	Coolant pump inlet pipe
5	Coolant pump inlet pipe O-ring seal
6	Idler pulley bolt
7	Idler pulley

Item	Description
8	Generator bracket brace bolt (2 required)
9	Generator bracket brace bolts (2 required)
10	Generator bracket brace
11	Coolant pump pulley bolt (4 required)
12	Coolant pump pulley

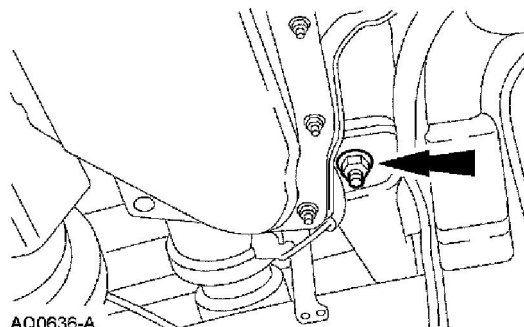


N0001796

Item	Description
13	Clamp
14	Coolant bypass hose
15	Coolant pump outlet tube bolts
16	Coolant pump outlet tube
17	Coolant pump outlet tube O-ring seal
18	Coolant pump-to-engine front cover nut (5 required)
19	Coolant pump-to-engine front cover bolt
20	Coolant pump-to-engine front cover bolt (3 required)
21	Coolant pump
22	Coolant pump gasket

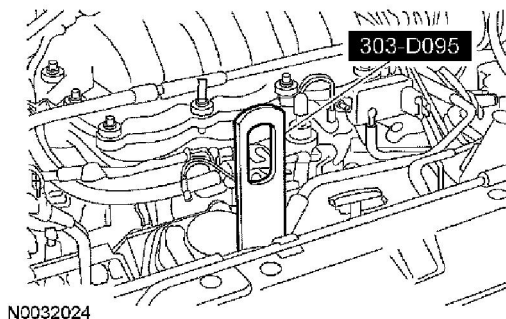
Removal

1. With the vehicle in NEUTRAL, position it on a hoist.
2. Drain the cooling system.
3. Remove the accessory drive belt.

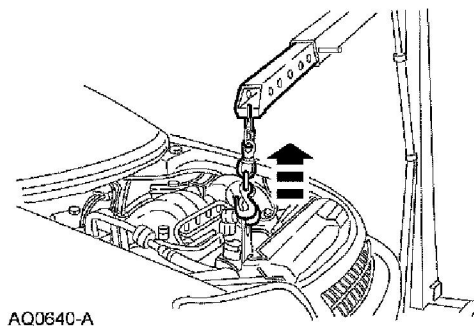


4. Remove the engine mount nuts.
^ To install, tighten to **90 Nm (66 ft. lbs.)**.

5. Disconnect the lower radiator hose from the coolant inlet pipe.
6. Remove the coolant pump inlet pipe bolt and the coolant pump inlet pipe.
7. Remove and discard the coolant pump inlet pipe O-ring seal.
8. Remove the bolt and the idler pulley.
^ To install, tighten to **47 Nm (35 ft. lbs.)**.
9. Remove the 2 RH generator bracket brace bolts.
^ To install, tighten to **25 Nm (18 ft. lbs.)**.
10. Remove the 2 LH generator bracket brace bolts and the generator bracket brace.
^ To install, tighten to **47 Nm (35 ft. lbs.)**.



11. Install the special tools to the exhaust manifold.



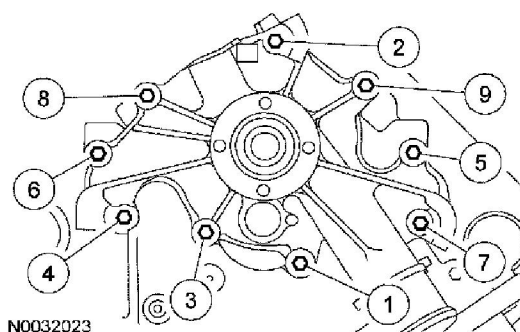
12. Attach the engine lifting equipment and raise the engine **127 mm (5 inch)**.
13. Remove the 4 coolant pump pulley bolts and the coolant pump pulley.
14. Disconnect the coolant pump bypass hose from the bypass tube.
15. Remove the 2 coolant pump outlet tube bolts and the coolant pump outlet tube.
16. Remove and discard the coolant pump outlet tube O-ring seal.
17. Remove the 5 coolant pump-to-engine front cover nuts.
18. Remove the 4 coolant pump-to-engine front cover bolts.
19. Remove the coolant pump.
^ Discard the coolant pump gasket.

Installation

1. Position the coolant pump to the engine.
^ Install a new coolant pump gasket.
2. **NOTE:** Do not tighten the coolant pump nuts and bolts at this time.

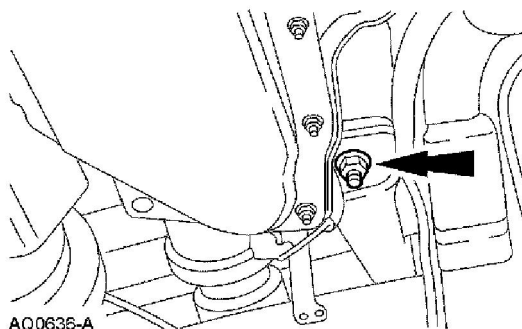
Install the coolant pump-to-engine front cover bolts.
3. **NOTE:** Do not tighten the coolant pump nuts and bolts at this time.

Install the coolant pump-to-engine front cover nuts.



N0032023

4. Tighten the coolant pump-to-engine front cover nuts and bolts to **28 Nm (21 ft. lbs.)**.
 - ^ Tighten in the sequence shown.
5. Install the coolant pump outlet tube O-ring seal.
 - ^ Lubricate the new O-ring seal with clean engine coolant.
6. Install the coolant pump outlet tube and the 2 coolant pump outlet tube bolts.
 - ^ Tighten to **10 Nm (89 inch lbs.)**.
7. Connect the coolant pump bypass hose to the bypass tube.
8. Install the coolant pump pulley and the 4 coolant pump pulley bolts.
 - ^ Tighten to **11 Nm (8 ft. lbs.)**.
9. Install the generator brace and the 2 LH generator bracket brace bolts.
 - ^ Tighten to **47 Nm (35 ft. lbs.)**.
10. Install the 2 RH generator bracket brace bolts.
 - ^ Tighten to **25 Nm (18 ft. lbs.)**.
11. Install the idler pulley and the bolt.
 - ^ Tighten to **47 Nm (35 ft. lbs.)**.
12. Install a new coolant pump inlet pipe O-ring seal.
 - ^ Lubricate the O-ring seal with clean engine coolant.
13. Install the coolant pump inlet pipe and the coolant pump inlet pipe bolt.
 - ^ Tighten to **25 Nm (18 ft. lbs.)**.
14. Connect the lower radiator hose to the coolant inlet pipe.



AQ0636-A

15. Lower the engine and install the engine mount nuts.
 - ^ To install, tighten to **90 Nm (66 ft. lbs.)**.
16. Install the accessory drive belt.
17. Fill and bleed the cooling system.