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Camshaft Rear Seal (12.13.06)

Special Service Tools



Camshaft Seal Remover
303-1118



Camshaft Seal Installer
303-1119



Camshaft pulley holding tool
303-1145/1



Camshaft pulley bolt remover
303-1145/2

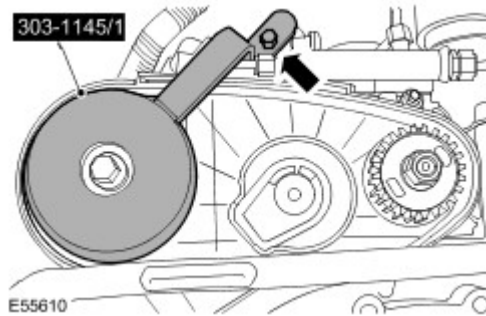


Camshaft pulley bolt socket
303-1145/3

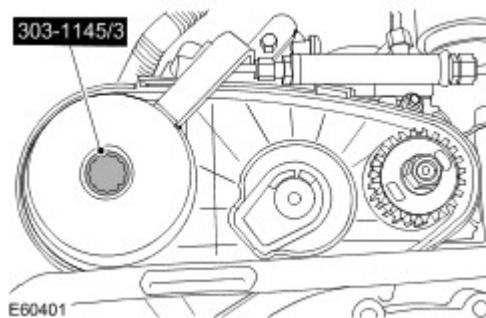
Removal

1. Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
2. Remove the fuel injection pump belt. For additional information, refer to [Fuel Injection Pump Belt \(12.10.27\)](#) (Section 303-05)
3. Install the special tool to the camshaft rear pulley.

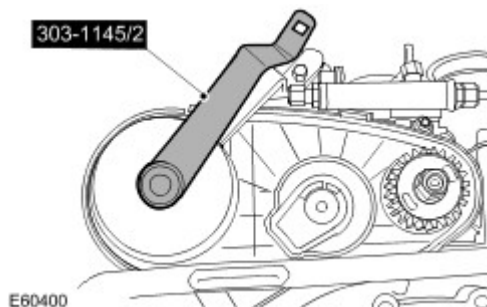
- ▶ Rotate the crankshaft to align the special tool to the engine lifting bracket.
- ▶ Install the special tool retaining bolt.



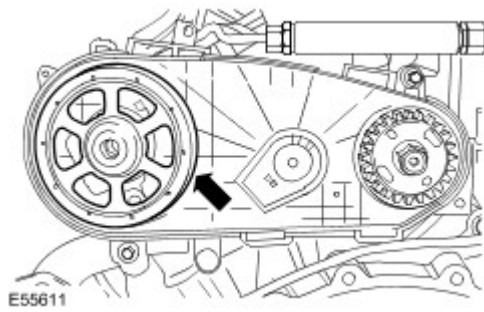
4. Install the special tool to the camshaft rear pulley retaining bolt.



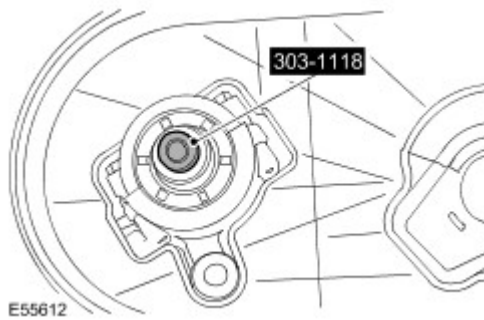
5. Using the special tools, remove and discard the camshaft rear pulley retaining bolt.
 - ▶ Rotate the crankshaft clockwise to retain the camshaft rear pulley.




6. Remove the special tools.
7. Remove the camshaft rear pulley.

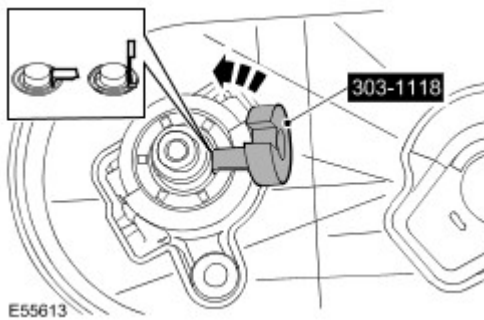



8. Install the special tool to the camshaft.



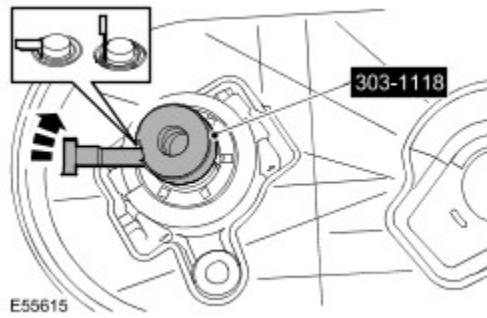
9.  **CAUTION:** Make sure the special tool is correctly seated behind the camshaft seal. Failure to follow this instruction may result in damage to the special tool.

Install the special tool into the camshaft rear seal.

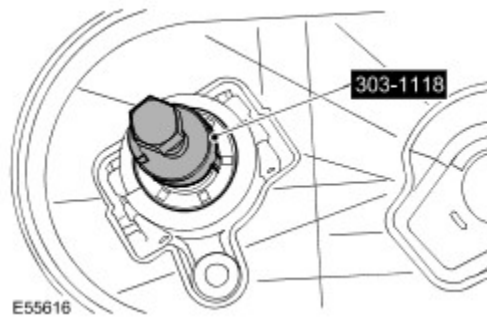


10.  **CAUTION:** Make sure the special tool is correctly seated behind the camshaft seal. Failure to follow this instruction may result in damage to the special tool.

Install the special tool into the camshaft rear seal.

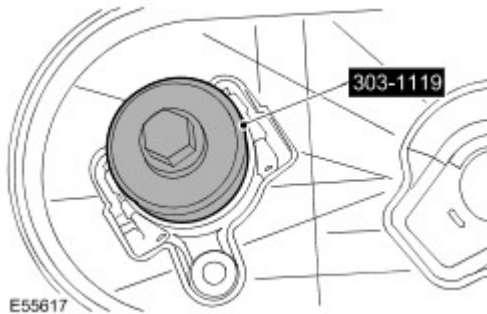


11. Using the special tool, remove and discard the camshaft rear seal.

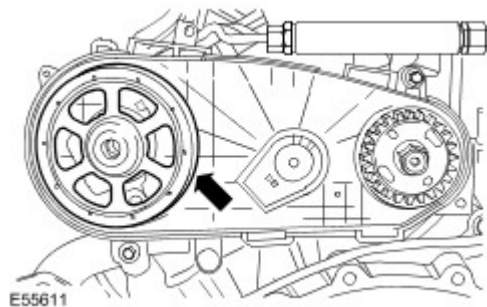


Installation

1. Using the special tool, install the new camshaft rear seal.

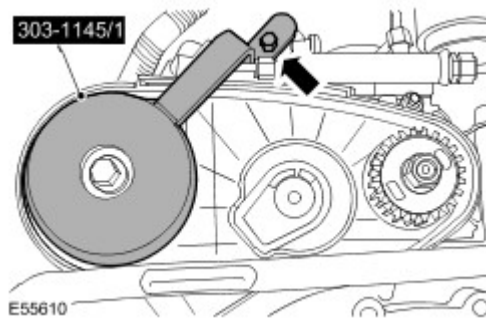


2. Install the camshaft rear pulley.
- ▶ Apply loctite 242 to the new camshaft pulley bolt.
 - ▶ Install a new camshaft pulley retaining bolt.

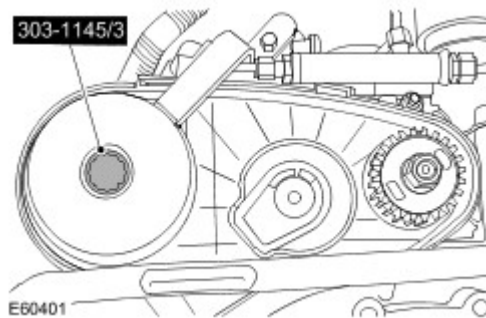



3. Install the special tool to the camshaft rear pulley.

▶ Install the special tool retaining bolt.



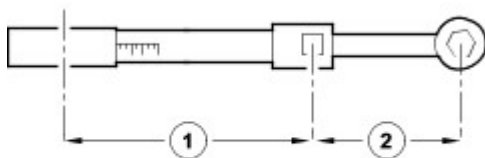
4. Install the special tool to the camshaft rear pulley retaining bolt.




5.  **CAUTION: Make sure the torque wrench setting procedure is followed correctly. Failure to follow this instruction may result in damage to the vehicle.**

Calculate the setting for the torque wrench.

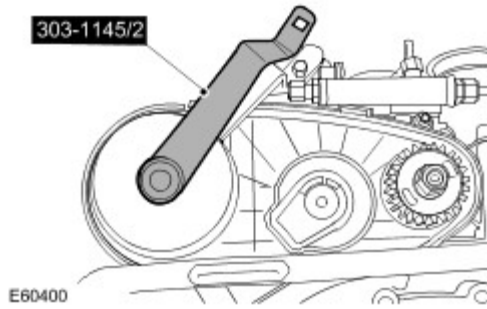
- ▶ Stage 1: Multiply the required torque by the effective length of the torque wrench (1).
- ▶ Stage 2: Add the effective length of the special tool (2) to the effective length of the torque wrench.
- ▶ Stage 3: Divide the total of stage 1 by the total of stage 2.
- ▶ Stage 4: Set the torque wrench to the figure arrived at in stage 3.



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6.  **CAUTION: Make sure the torque wrench setting procedure is followed correctly. Failure to follow this instruction may result in damage to the vehicle.**

Using the special tools, tighten the camshaft rear pulley retaining bolt to 40 Nm (30 lb.ft).



7.



CAUTION: Make sure the torque wrench setting procedure is followed correctly. Failure to follow this instruction may result in damage to the vehicle.

Using the special tools, tighten the camshaft rear pulley bolt a further 75 Nm (56 lb.ft).



Rotate the crankshaft counter-clockwise to retain the camshaft rear pulley.

8.

Remove the special tools.

9.



CAUTION: Install a new fuel injection pump belt. Failure to follow this instruction may result in damage to the vehicle.

Install the fuel injection pump belt. For additional information, refer to [Fuel Injection Pump Belt \(12.10.27\)](#) (Section 303-05)

10.

Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)