

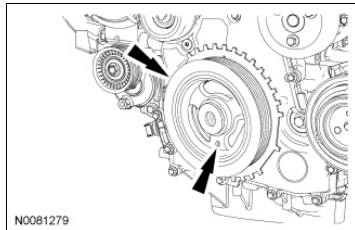
## Installation

### All vehicles

1. Install a new diamond washer.
2. **NOTE:** Do not install the crankshaft pulley bolt at this time.

**NOTE:** Apply clean engine oil on the seal area before installing.

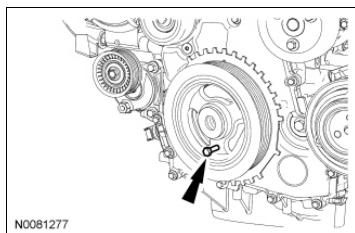
Position the crankshaft pulley onto the crankshaft with the hole in the pulley at the 6 o'clock position.



3. **NOTICE:** Only hand-tighten the 6 mm bolt or damage to the front cover can occur.

**NOTE:** This step will correctly align the crankshaft pulley to the crankshaft.

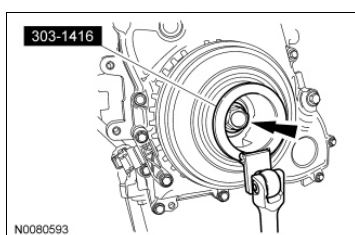
Install a standard 6 mm x 18 mm bolt through the crankshaft pulley and thread it into the front cover.



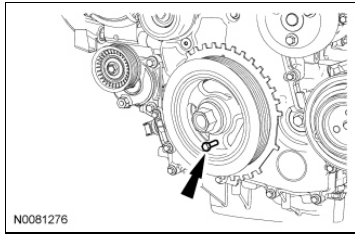
4. **NOTICE:** The crankshaft must remain in the Top Dead Center (TDC) position during installation of the pulley bolt or damage to the engine can occur. Therefore, the crankshaft pulley must be held in place with the Crankshaft Damper Holding Tool and the bolt should be installed using hand tools only.

**NOTE:** Do not reuse the crankshaft pulley bolt.

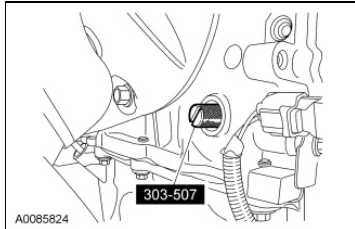
- Install a new crankshaft pulley bolt. Using the Crankshaft Damper Holding Tool to hold the crankshaft pulley in place, tighten the crankshaft pulley bolt in 2 stages:
- Stage 1: Tighten to 100 Nm (74 lb-ft).
- Stage 2: Tighten an additional 90 degrees (1/4 turn).



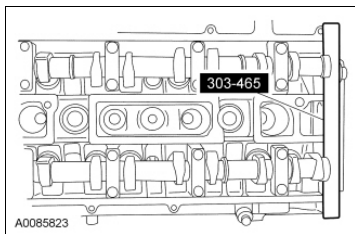
5. Remove the 6 mm x 18 mm bolt.



6. Remove the Crankshaft TDC Timing Peg.



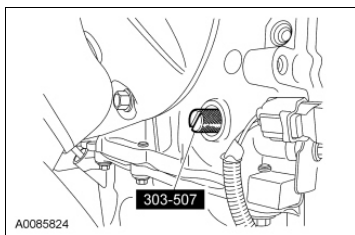
7. Remove the Camshaft Alignment Plate.



8. **NOTE:** Only turn the engine in the normal direction of rotation.

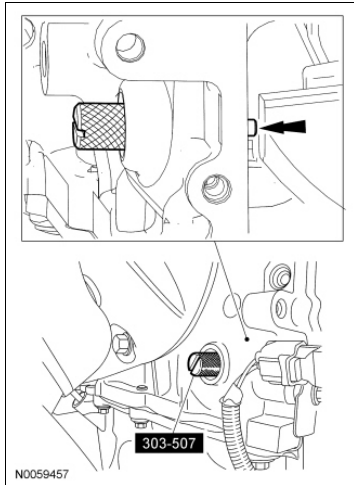
Turn the crankshaft clockwise 1 and 3/4 turns.

9. Install the Crankshaft TDC Timing Peg.



10. **NOTE:** Only turn the engine in the normal direction of rotation.

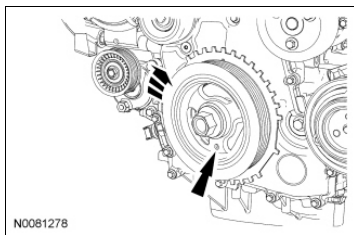
Turn the crankshaft clockwise until the crankshaft contacts the Crankshaft TDC Timing Peg.



11. **NOTICE:** Only hand-tighten the bolt or damage to the front cover can occur.

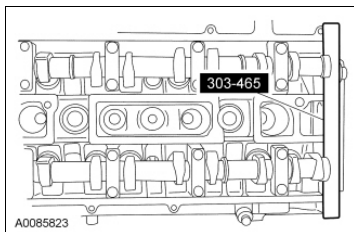
Using the 6 mm x 18 mm bolt, check the position of the crankshaft pulley.

- If it is not possible to install the bolt, the engine valve timing must be corrected by repeating this procedure.

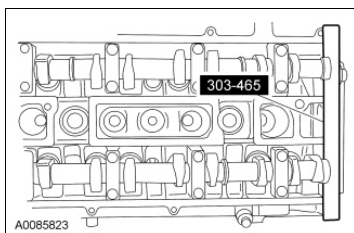


12. Install the Camshaft Alignment Plate to check the position of the camshafts.

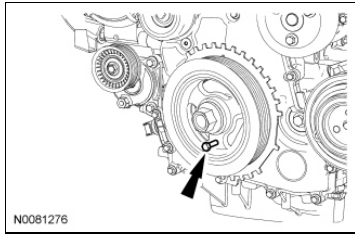
- If it is not possible to install the Camshaft Alignment Plate, the engine valve timing must be corrected by repeating this procedure.



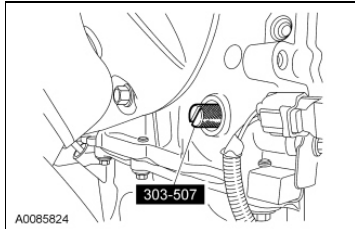
13. Remove the Camshaft Alignment Plate.



14. Remove the 6 mm x 18 mm bolt.

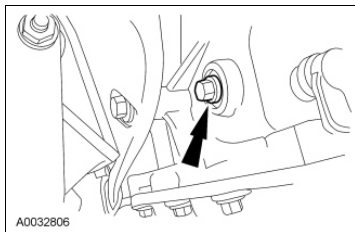


15. Remove the Crankshaft TDC Timing Peg.



16. Install the engine plug bolt.

- To install, tighten to 20 Nm (177 lb-in).



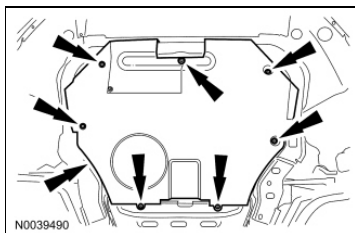
#### Automatic transaxle vehicles

17. Install the RH halfshaft and the 2 halfshaft carrier bearing bracket bolts.

- Tighten to 40 Nm (30 lb-ft).

#### All vehicles

18. If equipped, install the underbody cover and the 7 screws.



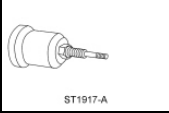

19. Install the accessory drive belt. For additional information, refer to [Section 303-05A](#) .

20. Install the valve cover. For additional information, refer to [Valve Cover](#) in this section.



**Crankshaft Front Seal**

## Special Tool(s)

	Installer, Camshaft Front Oil Seal 303-096 (T74P-6150-A)
	Remover, Oil Seal 303-409 (T92C-6700-CH)

## Material

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A

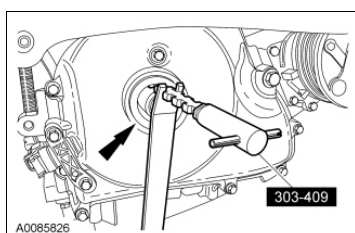
**Removal**

**NOTICE:** Do not loosen or remove the crankshaft pulley bolt without first installing the special tools as instructed in this procedure. The crankshaft pulley and the crankshaft timing sprocket are not keyed to the crankshaft. The crankshaft, the crankshaft sprocket and the pulley are fitted together by friction, using diamond washers between the flange faces on each part. For that reason, the crankshaft sprocket is also unfastened if the pulley bolt is loosened. 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.

**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.

1. Remove the crankshaft pulley. For additional information, refer to [Crankshaft Pulley](#) in this section.
2. **NOTICE:** Use care not to damage the engine front cover or the crankshaft when removing the seal.

Using the Oil Seal Remover, remove the crankshaft front oil seal.

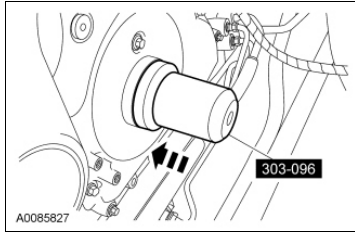


**Installation**

1. **NOTE:** Remove the through bolt from the Camshaft Front Oil Seal Installer.

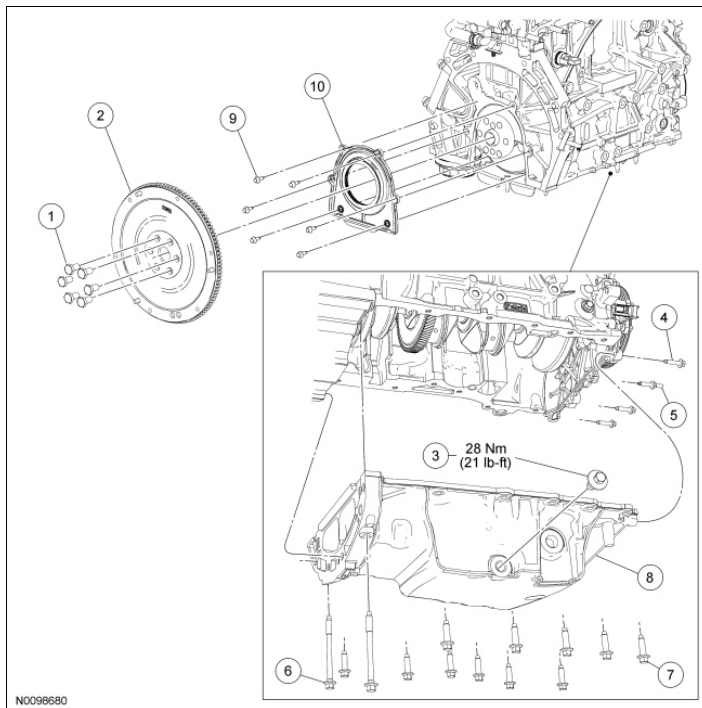
**NOTE:** Lubricate the oil seal with clean engine oil.

Using the Camshaft Front Oil Seal Installer, install the crankshaft front oil seal.



2. Install the crankshaft pulley. For additional information, refer to Crankshaft Pulley in this section.

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**Lower End Components -- Exploded View, Flexplate, Flywheel and Crankshaft Rear Seal**

Item	Part Number	Description
1	6379	Flexplate or flywheel bolt (6 required)
2	6K375/6K390	Flexplate or flywheel
3	6730	Oil pan drain plug
4	W500215	Engine front cover bolt (4 required)
5	940604	Engine front cover stud bolt
6	W706284	Oil pan bolt (2 required)
7	W500224	Oil pan bolt (11 required)
8	6675	Oil pan
9	W500212	Crankshaft rear oil seal with retainer plate bolt (6 required)
10	6K318	Crankshaft rear oil seal with retainer plate

1. For additional information, refer to the procedures in this section.





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## Flexplate

### Removal

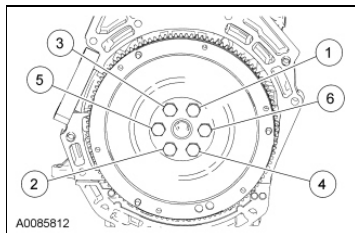
1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to [Section 100-02](#) .
2. Remove the automatic transaxle. For additional information, refer to the appropriate automatic transmission section.
3. Remove the 6 bolts and the flexplate.

### Installation

1. **NOTE:** Special bolts are used for installation. Do not use standard bolts.

Install the flexplate and tighten the bolts in the sequence shown in 3 stages.

- Stage 1: Tighten to 50 Nm (37 lb-ft).
- Stage 2: Tighten to 80 Nm (59 lb-ft).
- Stage 3: Tighten to 112 Nm (83 lb-ft).



2. Install the automatic transaxle. For additional information, refer to the appropriate automatic transmission section.
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