

SMCS - 1210

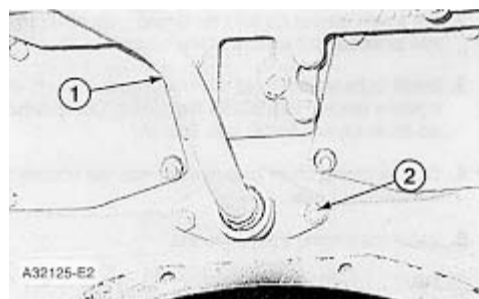
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Remove Camshaft

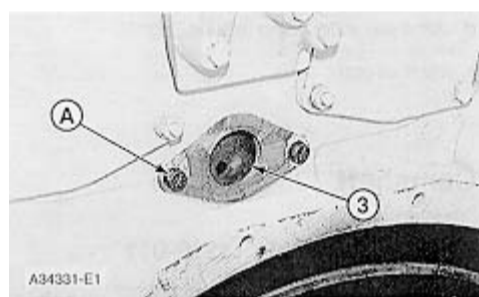
Tools Needed		A	B	C
	Bolt 5/16"-18 NC x 3/4 in. long	2		
	Washers 5/16"	2		
9S9082	Engine Turning Pinion		1	
1P0478	Driver Plate			1

Start By:

- a. remove timing gear cover
- b. remove valve lifters.



1. Remove turbocharger drain tube (1) and elbow from the flywheel housing. Remove two studs (2).

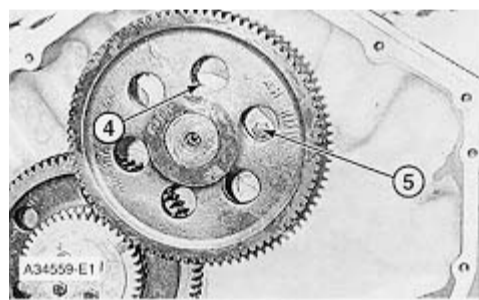


2. Turn the engine with Tool (B) until the bolts in the camshaft rear gear (3) are visible. Remove the four bolts.

3. Turn the engine until the "V" marks on the front timing gears are in alignment. Install Tool (A) through the flywheel housing and into gear (3).

NOTE: Tool (A) must be used to keep the rear camshaft gear in position when the camshaft is removed.

4. Tighten Tool (A) evenly to free the rear camshaft gear from the camshaft.



5. Remove two bolts (5) and plate (4).

6. Remove the camshaft and gear from the cylinder block. The weight of the camshaft is **58 lb. (26 kg)**.

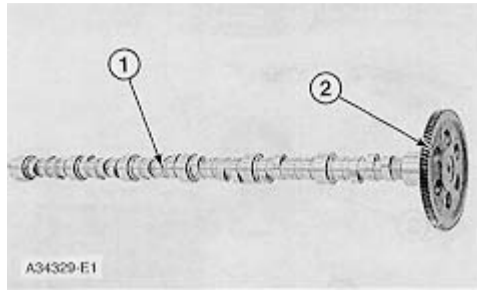
NOTICE

Be careful not to cause damage to the camshaft bearing as the camshaft is removed.

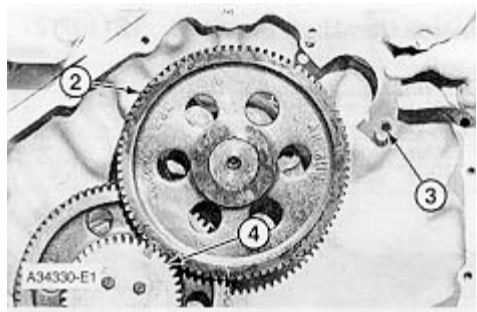
7. If necessary, remove camshaft gear with Tool (C) and a press.

Install Camshaft

Tools Needed		A	B	C
	Bolt 5/16"-18 NC x 1 3/4 in. long	2		
	5/16" Flat Washer	2		
9S9082	Engine Turning Pinion		1	
8T5096	Dial Test Indicator Group			1

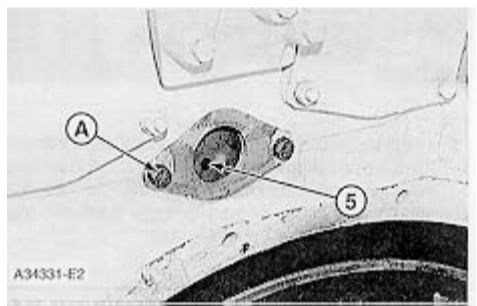


1. Heat gear (2) to a maximum temperature of **315°C (600°F)**. Install gear (2) on camshaft (1).

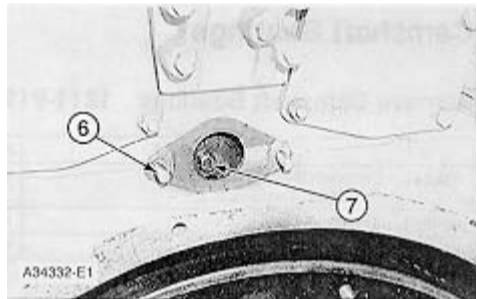


2. Put clean engine oil on the lobes and journals of camshaft (1) and on the camshaft bearings. Install the camshaft with the "V" mark on gear (2) in alignment with the "V" mark on gear (4).

3. Install plate (3) and bolts.



4. Loosen the two bolts from Tool (A) to make alignment of gear (5) and the camshaft. Install one bolt through gear (5) to hold the gear in position. Remove Tool (A).



5. Turn the engine with Tool (B) until all of bolts (7) are installed. Tighten the bolts evenly to **25 ± 4 N·m (20 ± 30 lb ft)**. Tighten the bolts again to **25 ± 4 N·m (20 ± 3 lb ft)**.

6. Check the camshaft end play with Tool (C). End play must be **0.10 to 0.25 mm (.004 to .010 in)**.

7. Install two studs (6) until they are extended **25.4 ± 1.5 mm (1.00 ± .06 in)** from the surface of the flywheel housing. Put **9S3263 Thread Lock** on the studs before installation.

8. Install the oil drain tube for the turbocharger.

End By:

a. install valve lifters

b. install timing gear cover

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