



Bulletin #: IMCTB-  
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 Rev: A  
 Date:  
 Affected Models:  
 VINs:

# Tech Tip

## Oil Pump Snap Ring

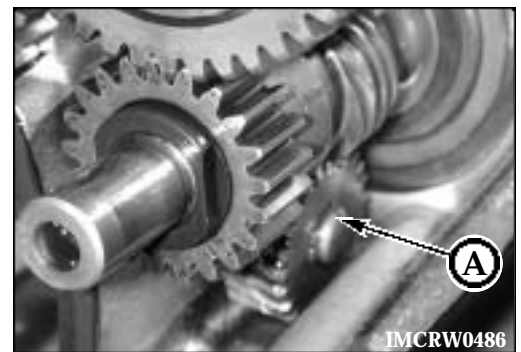
### Important

Read these instructions carefully and thoroughly before commencing work. If you do not understand the instructions or have questions, see your supervisor. If you are unsure of any of the procedures, please contact your Indian Field Service Manager (FSM).

### Oil Pump Snap Ring

If the oil pressure light comes on at speeds above idle, stop the engine immediately. It often indicates a low oil level or even diluted oil, but may also indicate a more serious problem. Check the oil level first.

Another possible cause is oil pump failure due to a stretched snap ring in the oil pump. The pump gear snap ring (A) may have been distorted during installation allowing the drive shaft key to slide out from between the gear and shaft. This will cause the oil pump gear to become disengaged, stopping oil from being pumped to the engine. Oil pressure will be lost, the oil pressure light will illuminate and shortly thereafter the lifters will “rattle” as they become starved of oil. The engine must be turned off immediately or severe damage will occur.



This Tech Tip provides information for checking the oil pump gear snap ring. To avoid stretching snap rings during installation, expand the ring by just enough to allow fitment over the shaft.

### Tools Required

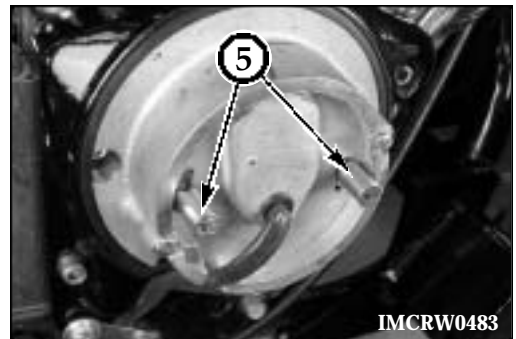
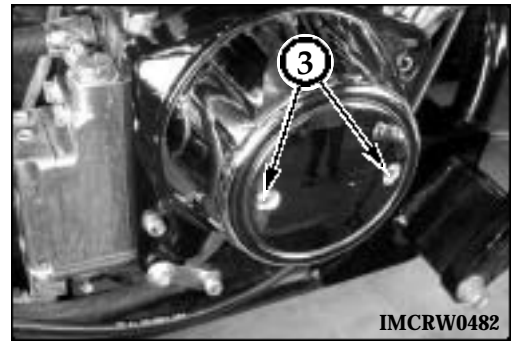
1/2" Socket	5/16" Socket	1/2" Wrench	3/32" Allen Wrench
3/8" Allen Wrench	Flat Bladed Screwdriver	Flashlight	
Cam Cover Puller			

### Materials Required

Blue Loctite 242
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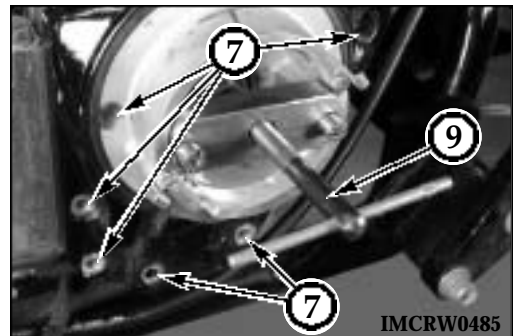
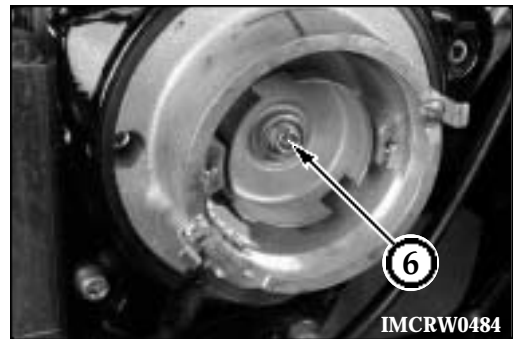
## Inspection

- 1 Using a 5/32" allen wrench, remove 3 allen head bolts and remove the seat (2 each side and one at the rear).
- 2 Using a 1/2" socket and wrench, remove the exhaust.
- 3 Using a 3/32" allen wrench, remove the ignition cover and gasket. Discard the gasket.
- 4 Turn the inner ignition cover counter-clockwise to disengage the two clips. Remove the inner cover, flangeless cover and gasket. Discard the gasket.
- 5 Using a flat bladed screwdriver remove the two screws securing the trigger plate.
- 6 Using a 5/16" socket remove the ignition rotor.



## Cam Cover

- 7 Using a 5/16" socket remove 6 screws securing the cam cover.
- 8 Place a drain pan below the crank case to catch the oil when removing the cam cover.
- 9 Using a "Cam Cover Puller" carefully remove the cam cover and drain the oil. Discard the gasket.
- 10 Using a flashlight inspect the pump gear snap ring and check the shaft key is in position.

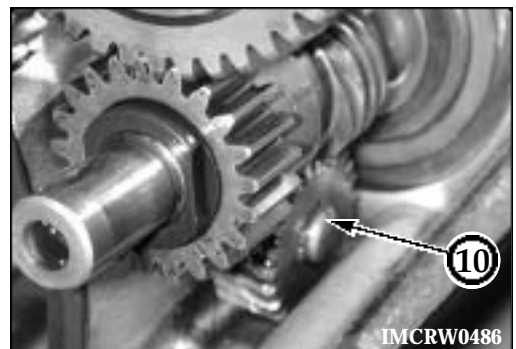


## Inspection

Rotate the gap in the snap ring so that it aligns with the shaft key. To prevent the key from slipping from the shaft, the gap in the snap ring must be smaller than the thickness of shaft key.

If the shaft key is not in position or missing the snap ring will need to be replaced.

**WARNING:** A missing shaft key must be found or severe damage to the oil pump will occur. Check the drain pan, the bottom of the crank case and the oil-uptake hole.



## Snap Ring Replacement

- 11 When fitting a new snap ring DO NOT over stretch the ring, expand it just enough to allow fitment over the shaft.

## Refit

Prior to refitting the cam cover check the alignment marks on the cam, breather gears and the pinion shaft are correctly aligned (B).

- 12 Fit a new gasket to the gear case and refit the cam cover.  
**NOTE: If difficulty is encountered refitting the cam cover, rotate the pinion shaft until the lifter pressure on the camshaft is released (raise the bike so that the rear wheel is off the ground).**

- 13 Clean the threads of the six cam cover screws and apply blue loctite 242 to the first 4 threads and refit. Secure the trigger housing harness with the retainer to the two lower left cam cover screws. Tighten all screws to 10-12 foot-pounds

- 14 Reposition the ignition rotor, aligning the tab in the slot in the shaft. Refit the screw and tighten to 6-8 foot-pounds.

- 15 Refit the trigger plate and refit the two screws finger tight.

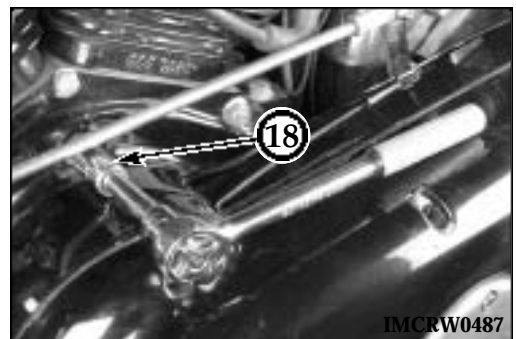
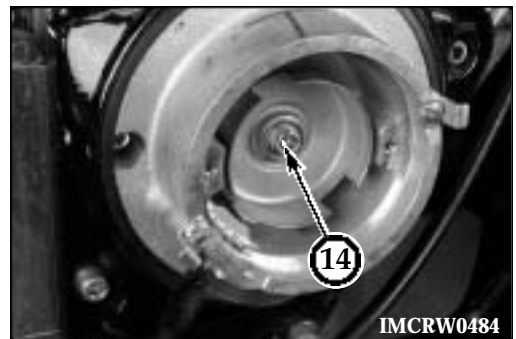
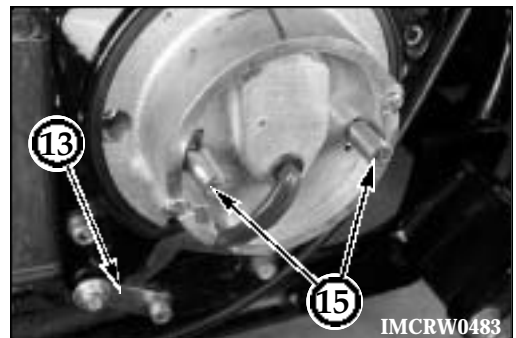
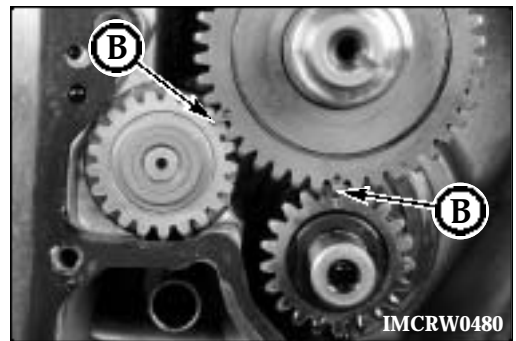
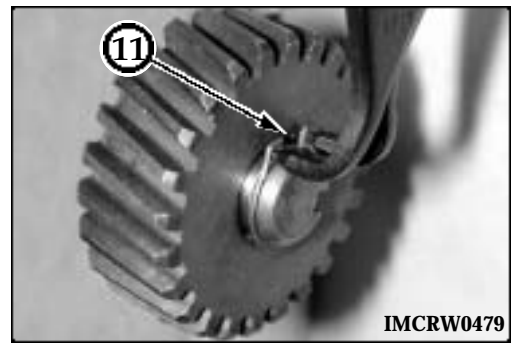
## Timing

Static timing that is incorrectly set (too advanced or retarded) can damage the engine.

- 16 Place a jack under the frame and raise the bike so that the rear wheel is off the ground.

- 17 Using a 13/16" socket, remove both spark plugs.

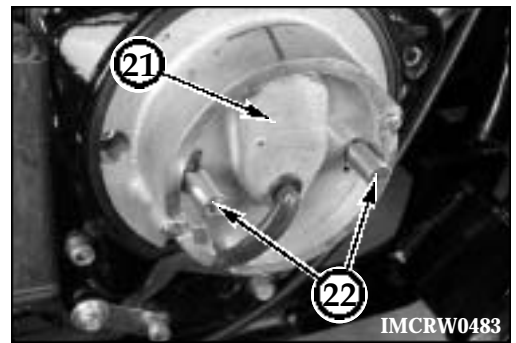
- 18 Using a 3/8" hex bit and ratchet, remove the timing inspection plug from the left side of the engine.



- 19 Place the transmission into 5th gear and rotate the rear wheel until the "T:F" mark on the fly wheel appears in the inspection hole. Align the "T:F" mark to the center of the hole.

**NOTE: Do not confuse the two marks on the flywheel.**

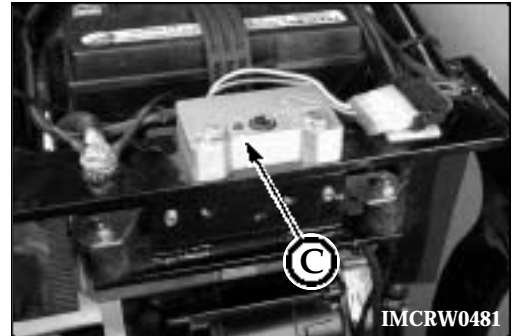
**"T:F" represents Top Dead Center for the front cylinder and "T:R" represents Top Dead Center for the rear cylinder.**



- 20 Turn the ignition key to the "ON" position.

- 21 Rotate the trigger plate fully to the right, then slowly turn to the left while watching the red LED on the ignition module (C). Set the trigger plate at the point where the red LED illuminates.

**NOTE: The red LED will remain lit if you continue to turn the trigger plate. It is important that the trigger housing is set at the moment the LED lights-up.**



- 22 With the timing set, tighten the two trigger plate screws to 10-14 inch-pounds.

- 23 Position a new gasket and the flangeless cover on cam cover and refit the inner ignition cover and twist to engage the tabs.

- 24 Clean the threads of the outer cover screws and apply Blue Loctite 242 to the first 4 threads. Position a new gasket and refit the outer ignition cover. Secure with the two screws and tighten to 10-15 inch-pounds.

