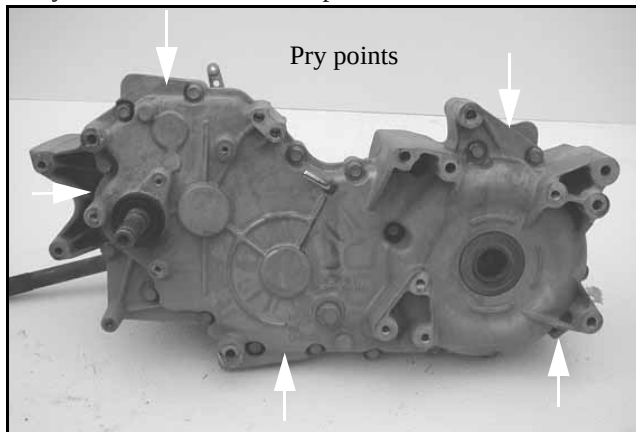


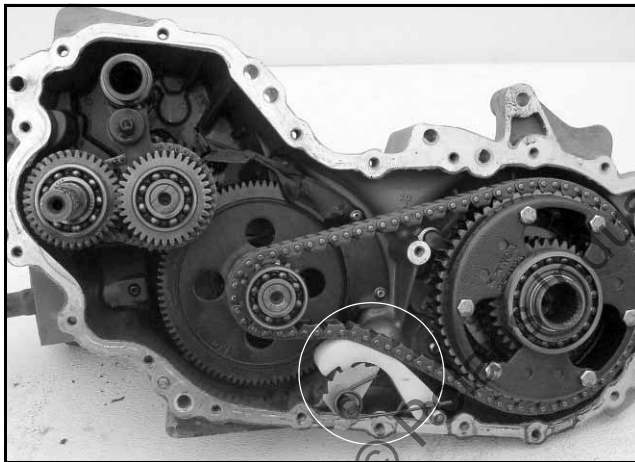
TRANSMISSION

10. Remove all cover bolts. Using suitable pry tools, remove the cover using the designated pry points. Tap cover with soft face hammer to remove. The pry points are indicated by the white arrows in the photo below.



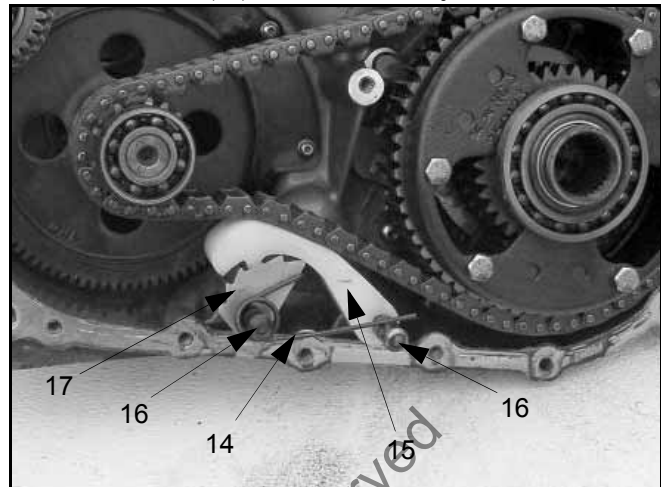
CAUTION

Do not pry on case half sealing surfaces. Use only the designated pry points on the transmission.

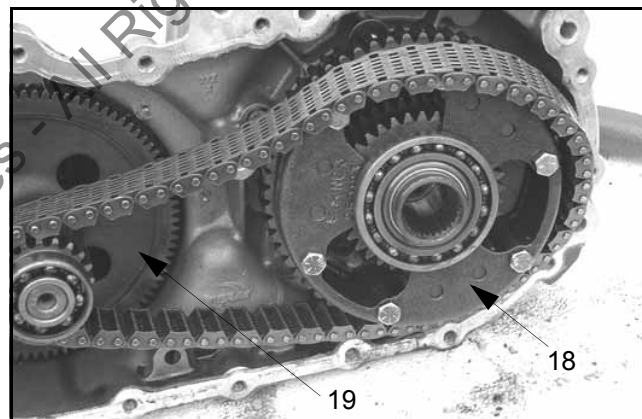


11. Note location of chain tensioner cam (17). If fully extended, chain is worn beyond service limit. Replace chain and chain tensioner shoe.

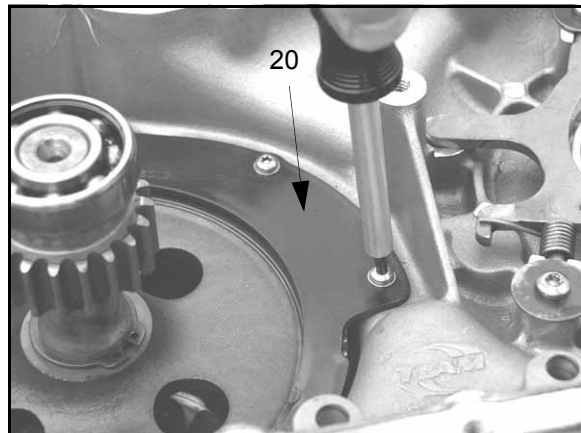
12. Remove the cam chain tensioner spring (14). Slide the cam chain tensioner shoe (15), pins (16), and cam chain tensioner cam (17) from the assembly.



13. Remove the differential gear (18) and chain by gently prying underneath or tapping the differential gear from the opposite side until it tips toward the output gear (19). **X2 and Touring** -The differential gear is connected to the shift fork and must slide backwards to clear the fork arms once the chain is removed.



14. Remove the T20 screws that secure the oil deflector (20) with a T20 hex socket or driver.



ENGINE

Crankcase Bearing Inspection



1. Remove the seal from the PTO side crankcase.
2. Inspect the crankshaft main bearings, balancer shaft bearings, and pump shaft bearing.

NOTE: Due to extremely close tolerances and minimal wear, the bearings must be inspected visually, and by feel. Look for signs of discoloration, scoring or galling. Turn the inner race of each bearing. The bearings should turn smoothly and quietly. The outer race of each bearing should fit tightly in the crankcase. The inner race should be firm with minimal side to side movement and no detectable up and down movement.

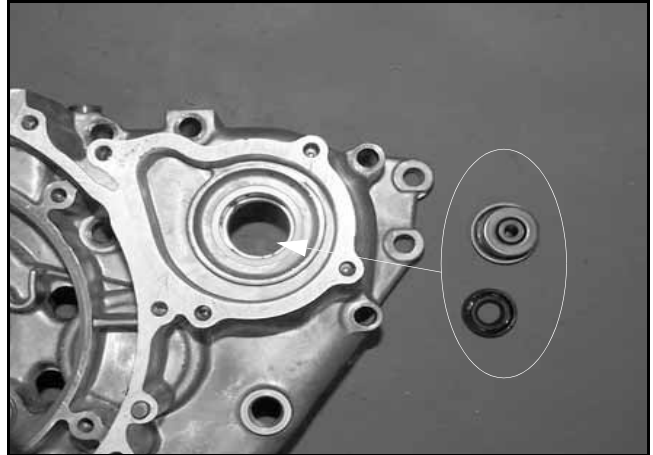
3. Support the crankcase and drive or press the main bearings out of each crankcase.
4. To remove balancer shaft bearings and pump shaft bearing use a blind hole bearing puller.

NOTE: Bearings are stressed during the removal process and *should not* be re-used!

Pump Shaft Oil Seal/Water Pump Mechanical Seal Removal (Engine Disassembled)

NOTE: The water pump mechanical seal can be removed without removing the engine. Refer to Water Pump Mechanical Seal Installation.

Replace the pump shaft seal and water pump mechanical seal whenever the crankcase is disassembled.



1. Remove the pump shaft bearing from the Magneto (right hand) side crankcase.
2. Pry out the oil seal, noting the direction of installation with the spring side facing IN (toward inside of case).
3. Drive the water pump mechanical seal out of the crankcase from inside to outside. Note: The new mechanical seal must be installed after the crankcases are assembled, using a special tool. See Mechanical Seal Installation.

Crankcase Inspection

1. Remove all traces of gasket sealer from the crankcase mating surfaces. Inspect the surfaces closely for nicks, burrs or damage.
2. Check the oil pump and oil passage mating surfaces to be sure they are clean and not damaged.