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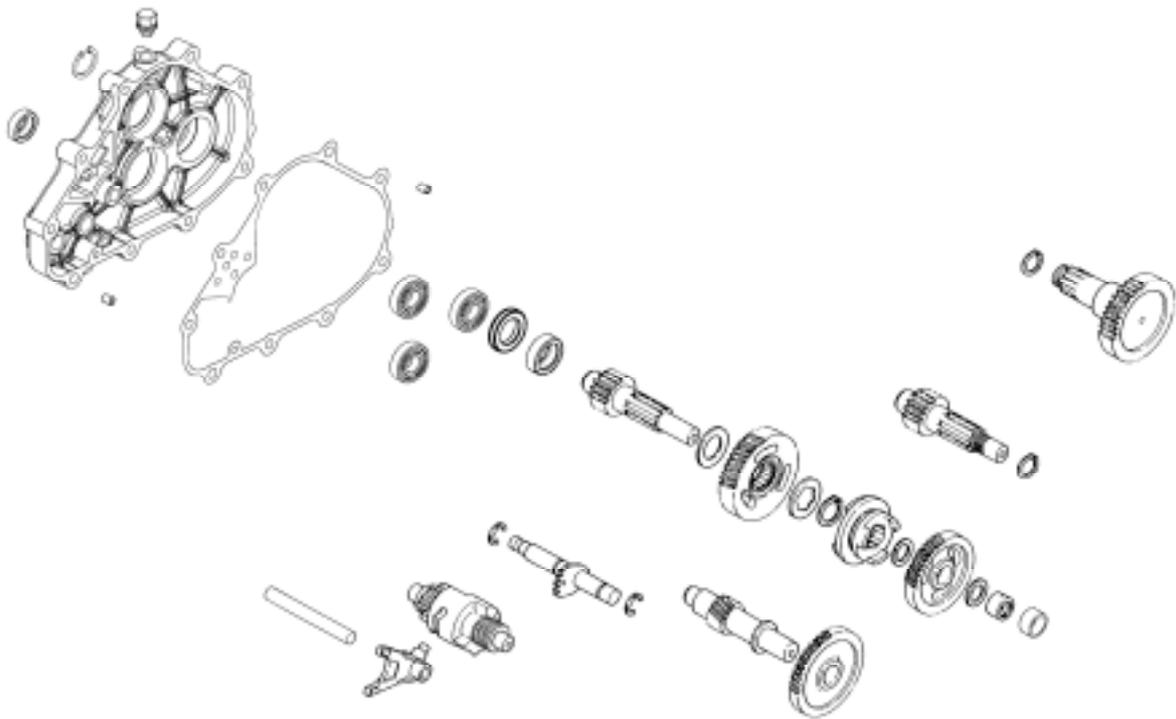
**FINAL REDUCTION/TRANSMISSION SYSTEM**

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# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

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# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

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## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The transmission system can be serviced with the engine installed in the frame.
- When replacing the drive shaft, use a special tool to hold the bearing inner race for this operation.

### SPECIFICATIONS

Specified Oil: GEAR OIL SAE 90#

Oil Capacity:       At change       : 0.3 liter  
                          At disassembly : 0.4 liter

### TORQUE VALUES

Transmission case cover bolt   2.4\_ 3.0kgf-m

### TROUBLESHOOTING

#### Engine starts but motorcycle won't move

- Damaged transmission
- Seized or burnt transmission

#### Oil leaks

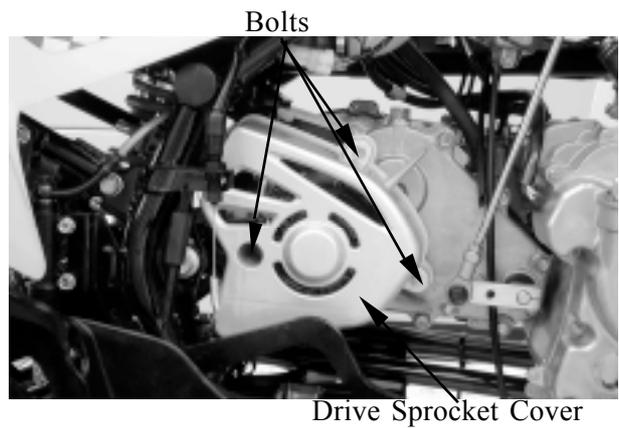
- Oil too rich
- Worn or damaged oil seal

# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

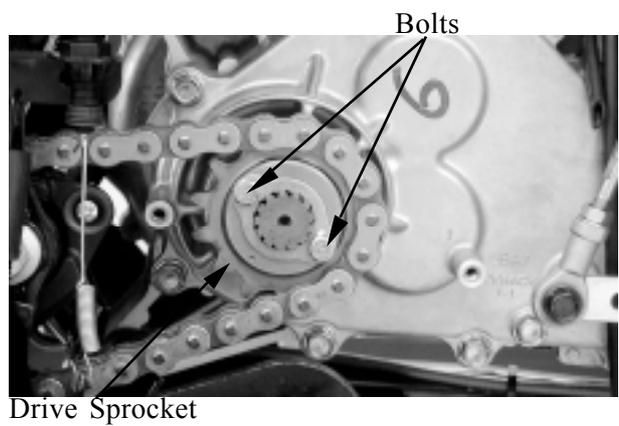
## TRANSMISSION CASE COVER REMOVAL

Drain transmission gear oil into a clean container. (Refer to the "TRANSMISSION OIL REPLACEMENT" section in the chapter 3)

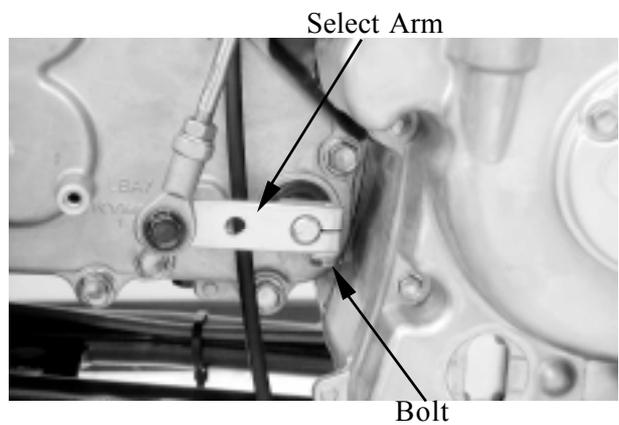
Remove the three and then remove the drive sprocket cover.



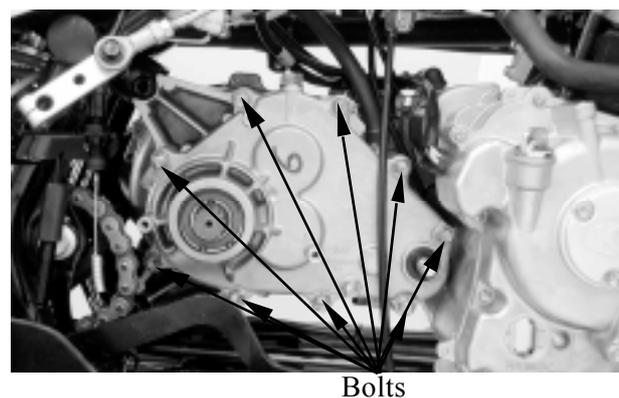
Remove the two bolts and then remove the washer and drive sprocket.



Remove the bolt and then disconnect the drive shift arm from the shift shaft.



Remove the transmission case cover attaching bolts.

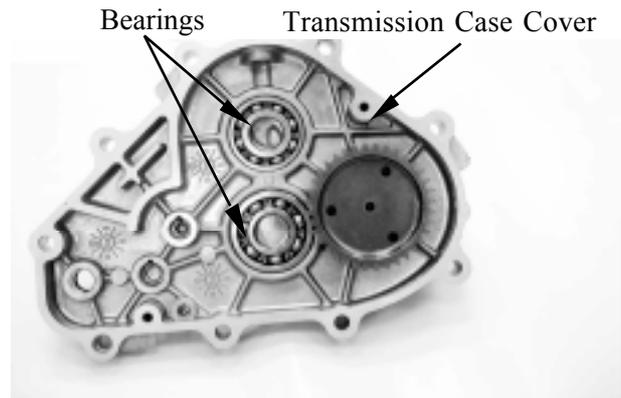


# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Remove the transmission case cover, dowel pins and gasket.

Inspect the bearings for allow play in the transmission case cover or the bearings turn roughly.

If any defects are found, replace the bearing with a new one.

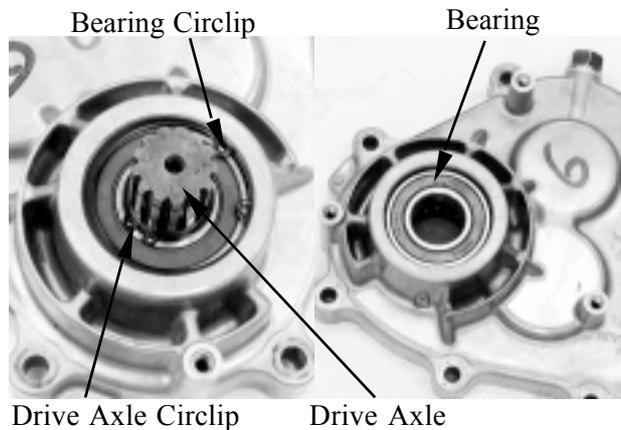


## TRANSMISSION CASE COVER DISASSEMBLY

Remove the drive axle circlip.

Remove the drive axle from the transmission case cover.

Remove the bearing circlip for remove the bearing.



Inspect the bearing for allow play in the transmission case cover or the bearing turns roughly .

If any defects are found, replace the bearing with a new one.

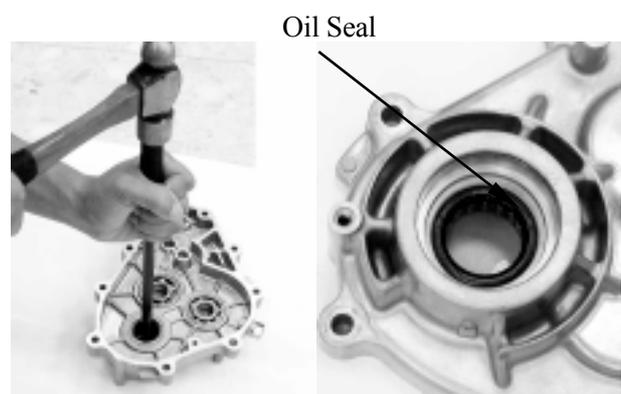
Inspect the drive axle gear teeth for wear or damage.



Remove the bearing to expose the oil seal.

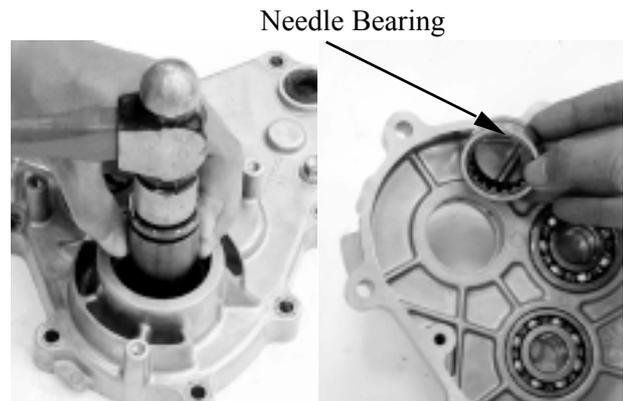
Inspect the oil seal for wear or damage.

If any defects are found, replace the oil seal with a new one.



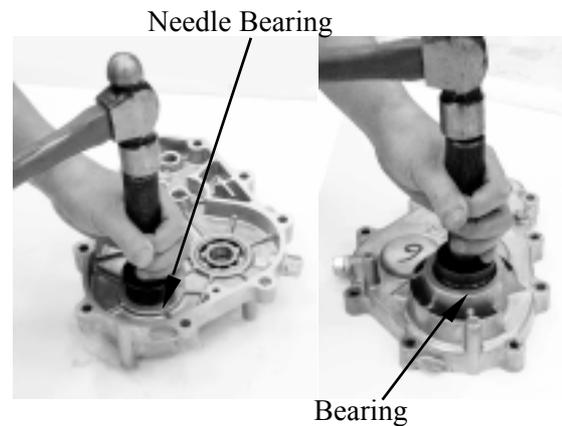
# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Inspect the needle bearing for allow play in the transmission case cover or the bearing turns roughly.  
If any defects are found, replace the bearing with a new one.



## ASSEMBLY

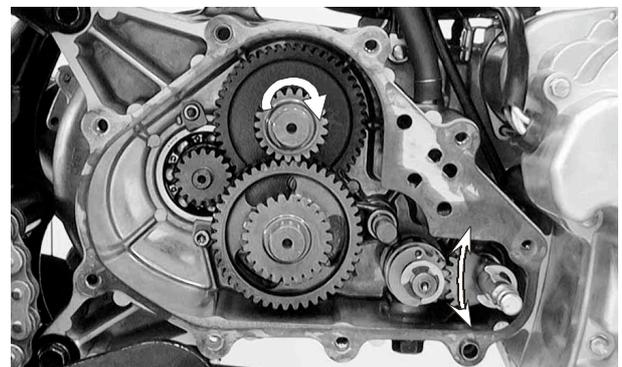
Install the needle bearing.  
Install the oil seal and bearing.  
Install the bearing circlip.  
Install the drive axle and drive axle circlip.



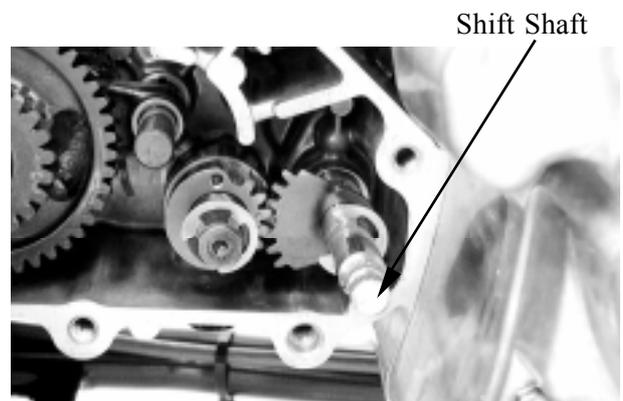
## TRANSMISSION REMOVAL

Remove the transmission cover. (Refer to the “TRANSMISSION CASE COVER REMOVAL” in the chapter 10)

Check the transmission operation.  
Unsmooth operation \_ Repair.

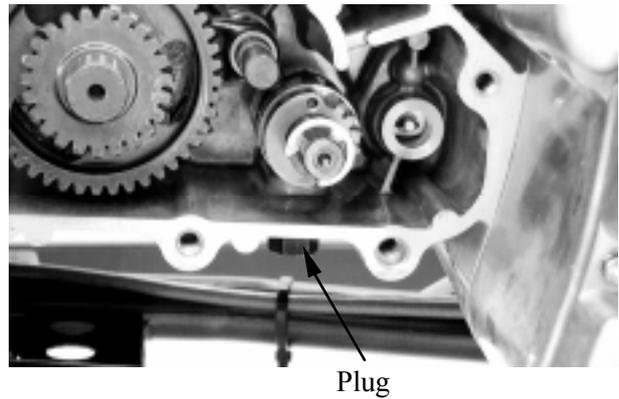


Remove the shift shaft.

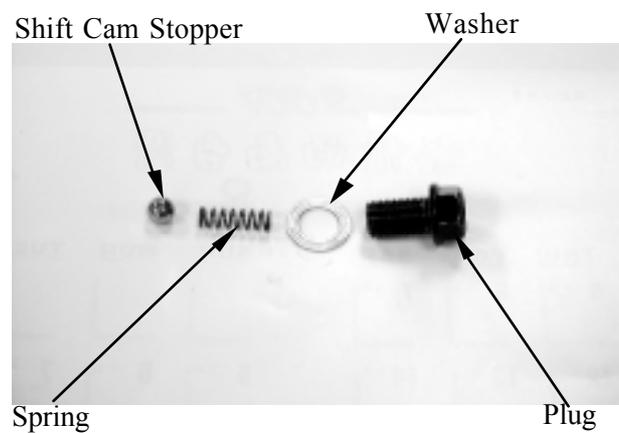


# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

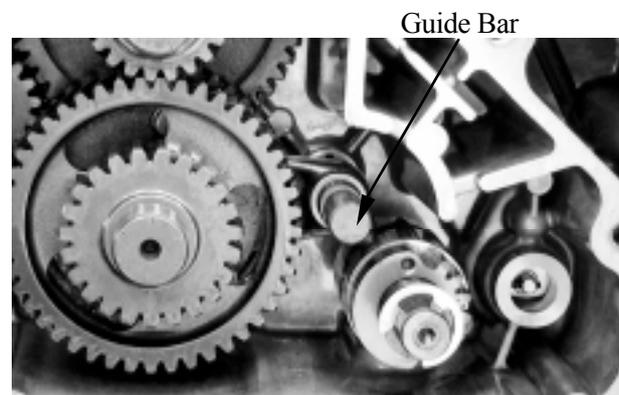
Remove the stopper plug.



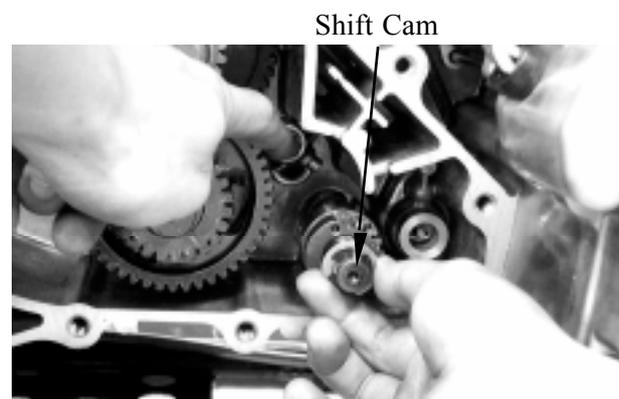
Remove spring, washer and shift cam stopper.



Remove the transmission guide bar.

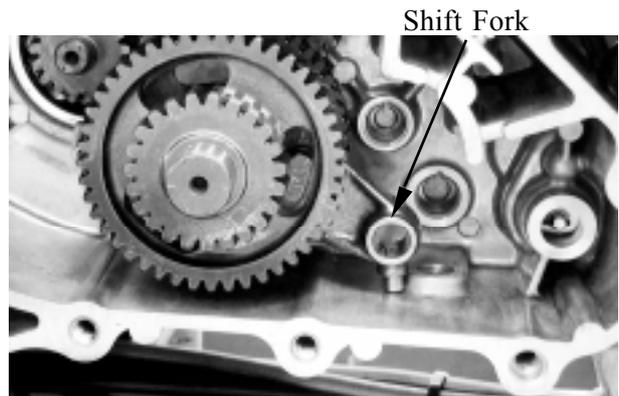


Remove shift cam.



# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

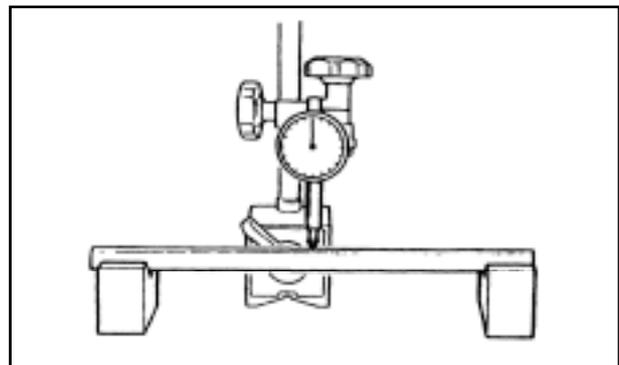
Remove the shift fork.



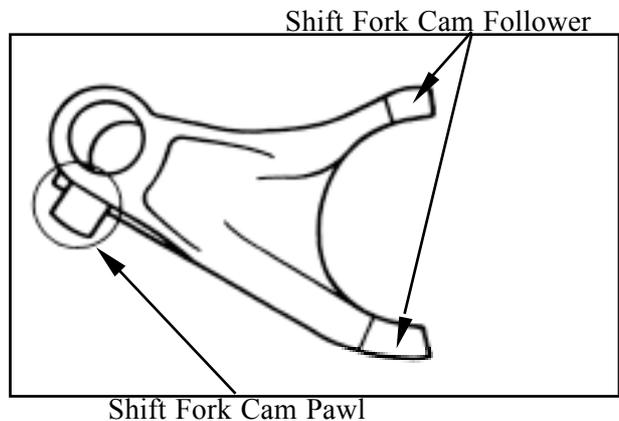
Measure the guide bar runout.  
Out of specification \_ Replace.

**Service Limit:** Less than 0.03 mm

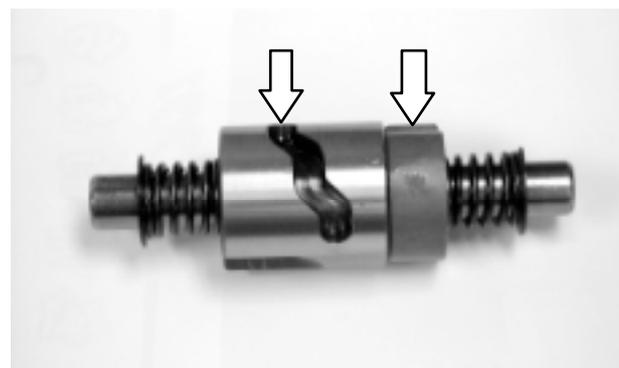
⚠ Do not attempt to straighten a bent guide bar.



Inspect the shift fork cam follower and shift fork pawl.  
Scoring/beads/wear \_ Replace.

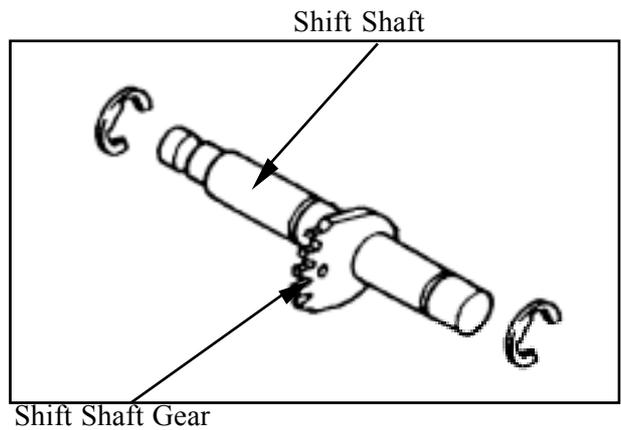


Check the shift cam groove and shift cam gear.  
Wear or damage \_ Replace.

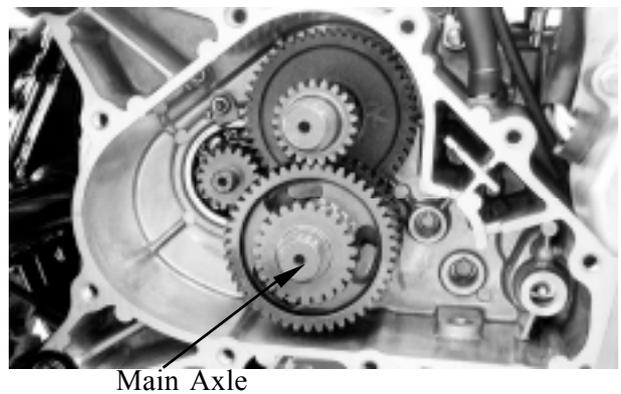


# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

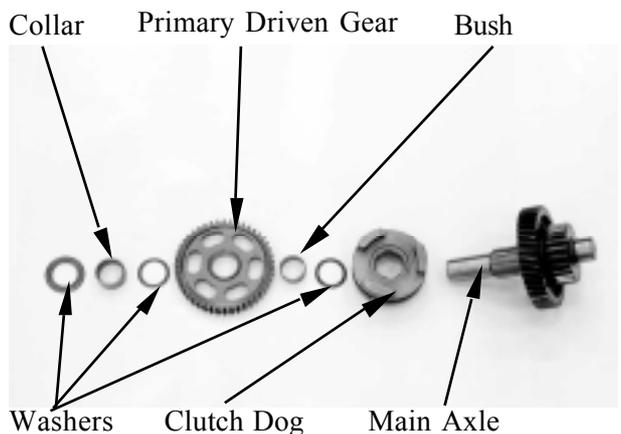
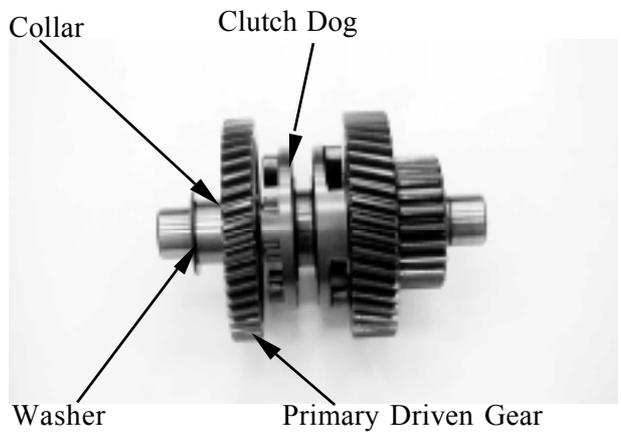
Inspect shift shaft gear.  
Damage \_ Replace.  
Inspect shift shaft.  
Damage/bends/wear \_ Replace.



Remove the main axle.

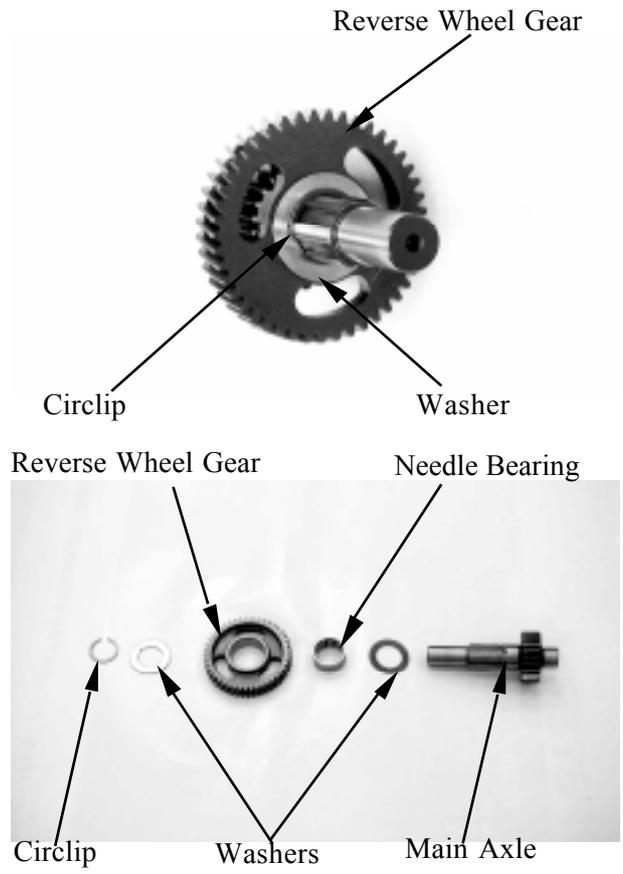


**MAIN AXLE DISASSEMBLY**  
Remove the washers, collar, primary driven gear, bush and clutch dog.



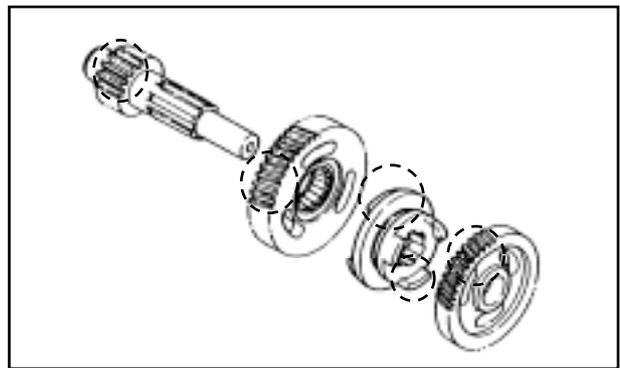
# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Remove the circlip and then remove the washers, reverse wheel gear and needle bearing.



Inspect the gear teeth.  
Blue discoloration/pitting/wear \_ Replace.

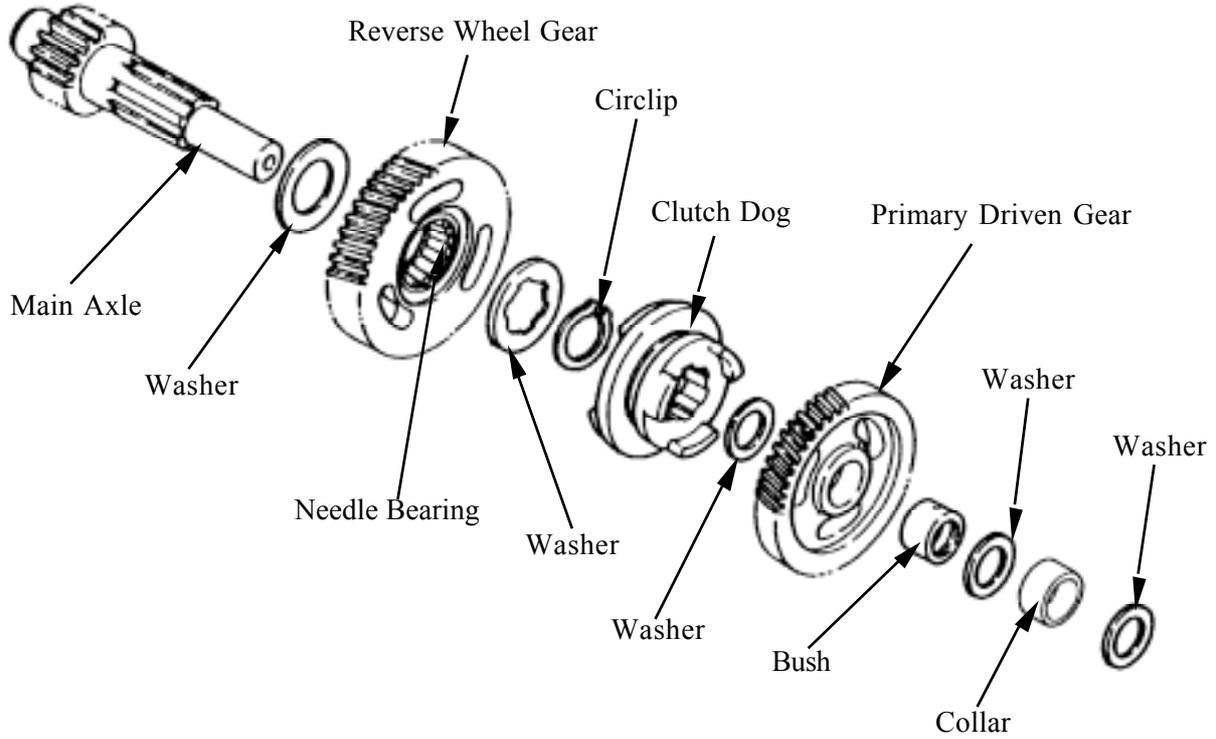
Inspect the mated dogs.  
Rounded edges/cracks/missing portions  
\_ Replace.



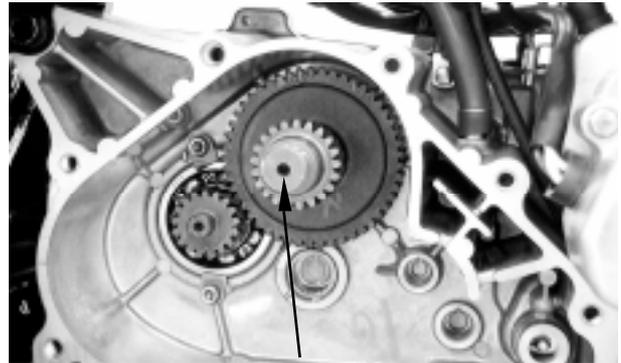
# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

## MAIN AXLE ASSEMBLY

Reverse the "MAIN AXLE  
DISASSEMBLY" procedures.



Remove the counter axle.



Counter Axle

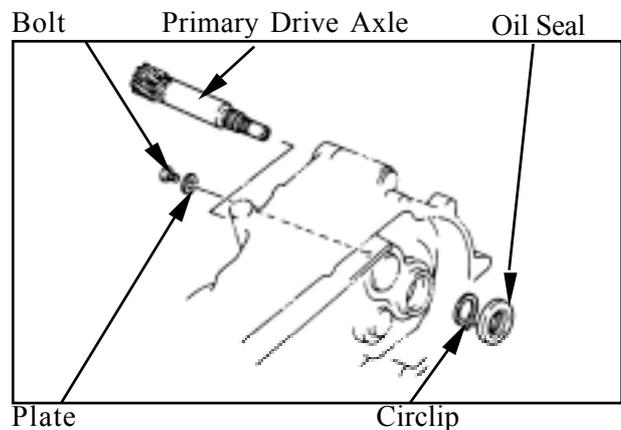
Inspect the gear teeth.  
Blue discoloration/pitting/wear \_ Replace.



### PRIMARY DRIVE AXLE REMOVAL

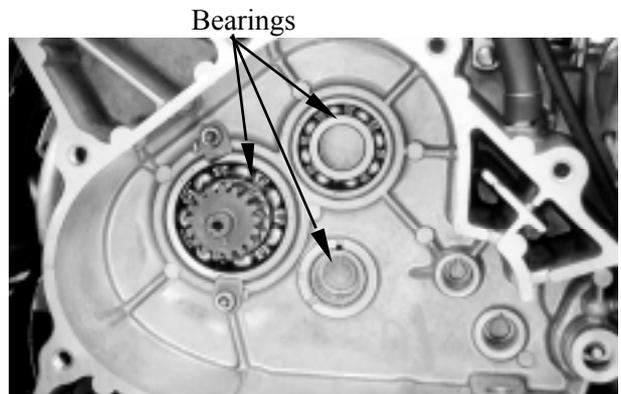
Remove the clutch/driven pulley. (Refer to the chapter 9)

Remove the oil seal, circlip, screw and plate.  
Remove the primary drive axle.



Inspect the bearings for allow play in the transmission case cover or the bearing turns roughly.

If any defects are found, replace the bearing with a new one.



# 10.FINAL REDUCTION/ TRANSMISSION SYSTEM

## INSTALLATION

Reverse the “TRANSMISSION REVOVAL” section procedures.

Install the primary drive axle. (Reverse the “PRIMARY DRIVE AXLE” procedures.)

Install the counter axle.

Install the main axle.

Install the shift cam.

Install the shift fork.

Install the guide bar.

Install the shift shaft.

- Make sure that the lever on the gear change switch correctly engages with the locating slot on the shift shaft.  
Align the mark on the shift shaft gear with the mark on the shift cam gear.

Install the shift cam stopper and tighten the plug.

**Torque:** 4.5\_ 5.0kgf-m

Install the dowel pins and a new gasket onto the right crankcase.

Install the transmission case cover and tighten the transmission case cover bolt.

**Torque:** 2.4\_ 3.0kgf-m

Fill the engine with oil and install the oil filler bolt. (Refer to the “TRANSMISSION OIL REPLACEMENT” section in the chapter 3)

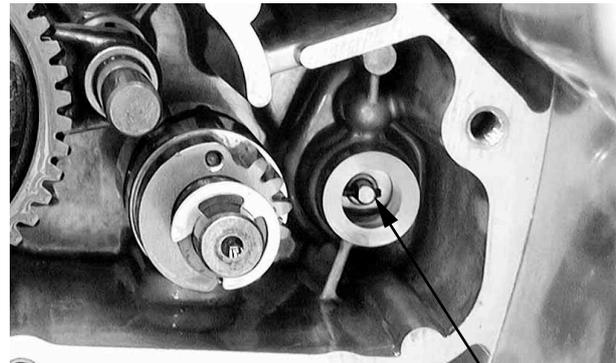
### Specified Gear Oil:

KYMCO SIGMA GEAR OIL 90#

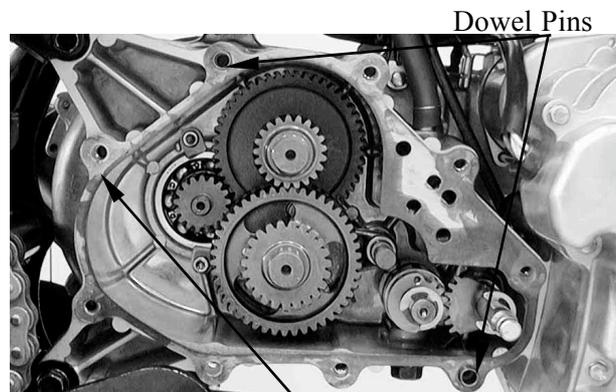
### Oil Capacity:

At disassembly : 0.4 liter

At change : 0.3liter



Gear Change Switch



Dowel Pins

Gasket