
FINAL REDUCTION/TRANSMISSION SYSTEM

SERVICE INFORMATION----- 10- 2

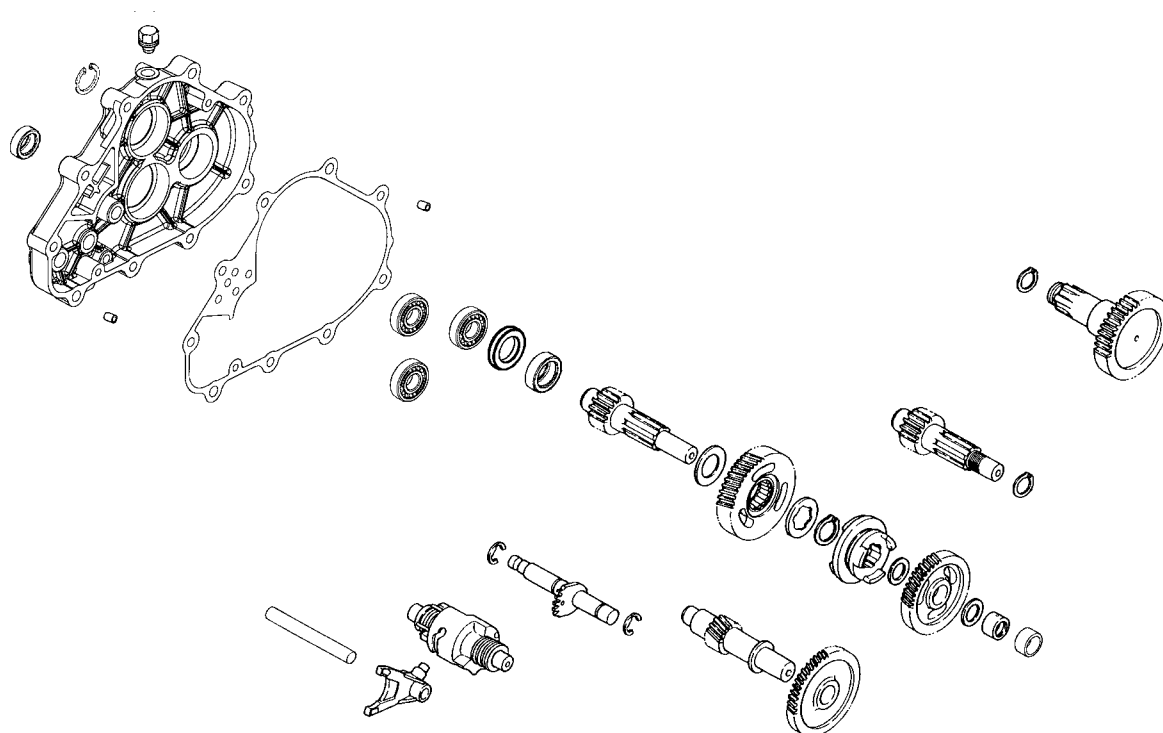
TROUBLESHOOTING----- 10- 2

TRANSMISSION CASE COVER----- 10- 3

TRANSMISSION----- 10- 5

SPEEDOMETER GEAR ----- 10-15

10.FINAL REDUCTION/ TRANSMISSION SYSTEM



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 (0.264 imp qt, 0.318 US qt)
 At disassembly : 0.4 liter (0.352 imp qt, 0.424 US qt)

TORQUE VALUES

Transmission case cover bolt 2.7 kgf-m (27 Nm, 20 lbf-ft)

TROUBLESHOOTING

Engine starts but motorcycle won't move

- Damaged transmission
- Seized or burnt transmission

Oil leaks

- Oil too rich
- Worn or damaged oil seal

TRANSMISSION CASE COVER REMOVAL

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

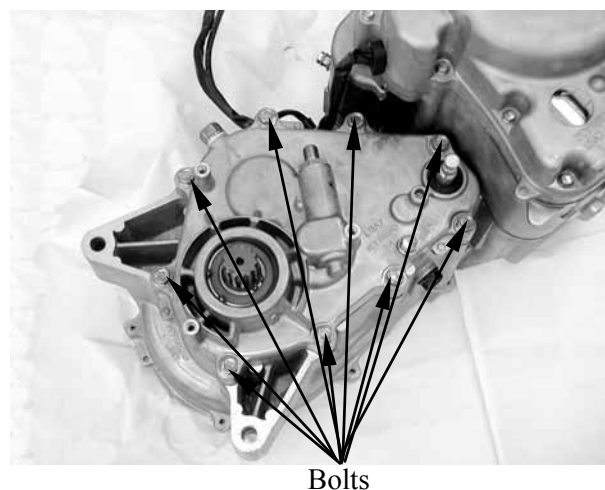
Remove the three bolts and then remove the drive sprocket cover (see page 6-3).

Remove the two bolts and then remove the washer and drive sprocket (see page 6-3).

Remove the bolt and then disconnect the drive shift arm from the shift shaft (see page 6-3).

Disconnect the speedometer cable (see page 6-3).

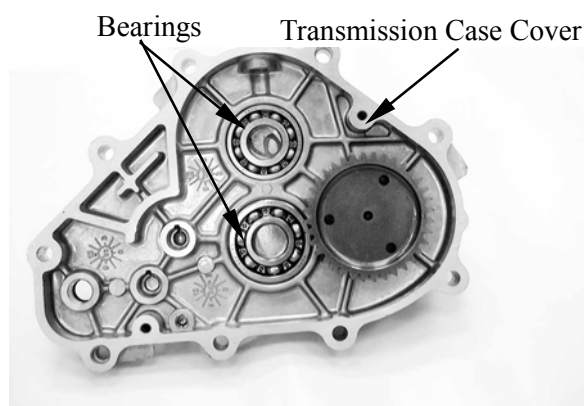
Remove the transmission case cover attaching bolts.



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.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

TRANSMISSION CASE COVER DISASSEMBLY

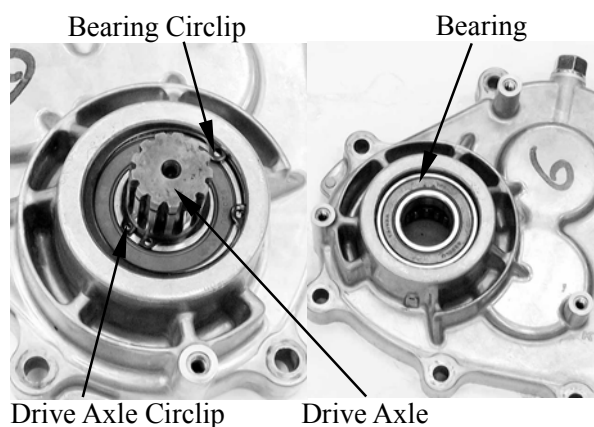
Remove the drive axle circlip.

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.



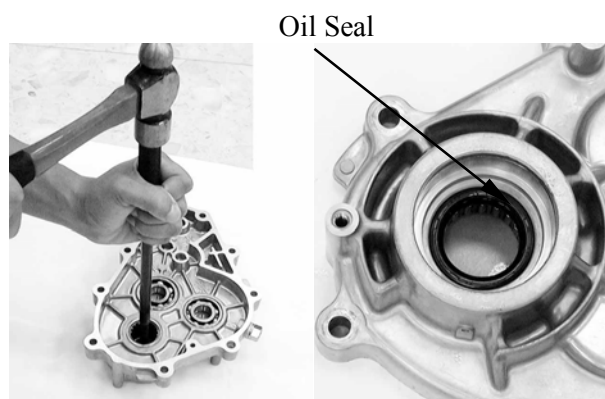
Inspect the drive axle gear teeth for wear or damage.



Remove the bearing to expose the oil seal.

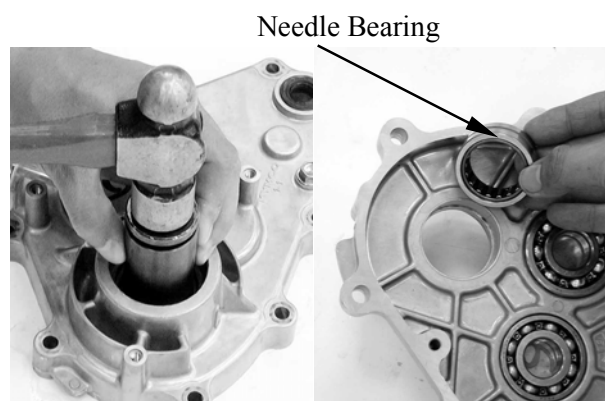
Inspect the oil seal for wear or damage.

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



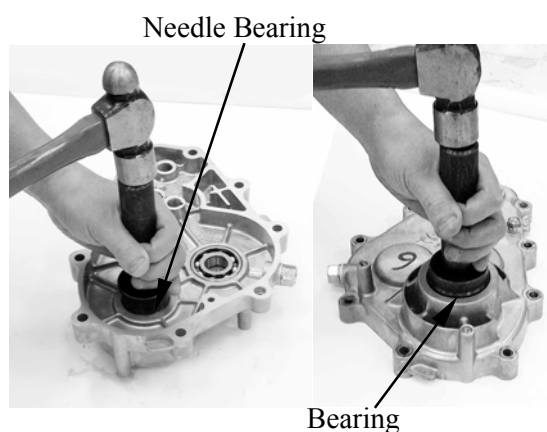
10.FINAL REDUCTION/ TRANSMISSION SYSTEM

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

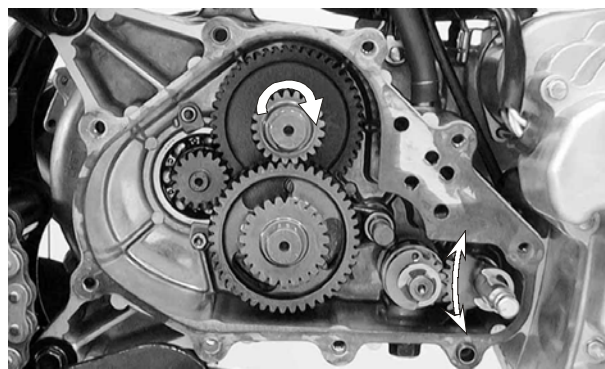
Install the needle bearing.
Install the oil seal and bearing.
Install the bearing circlip.
Install the drive axle and drive axle circlip.



TRANSMISSION REMOVAL

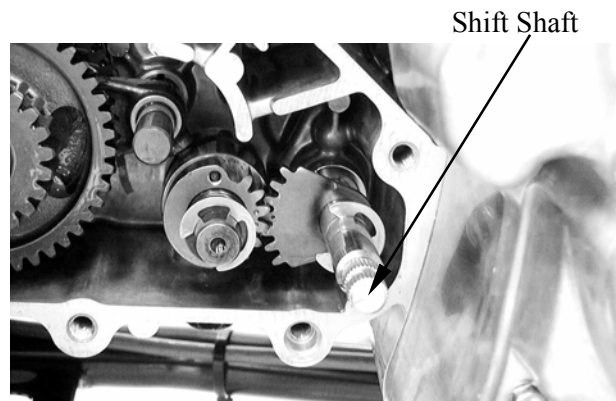
Remove the transmission cover. (Refer to the “TRANSMISSION CASE COVER REMOVAL” in the chapter 10)

Check the transmission operation.
Unsmooth operation → Repair.

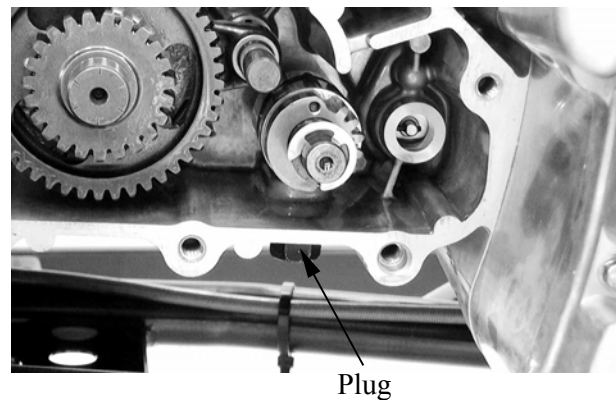


10.FINAL REDUCTION/ TRANSMISSION SYSTEM

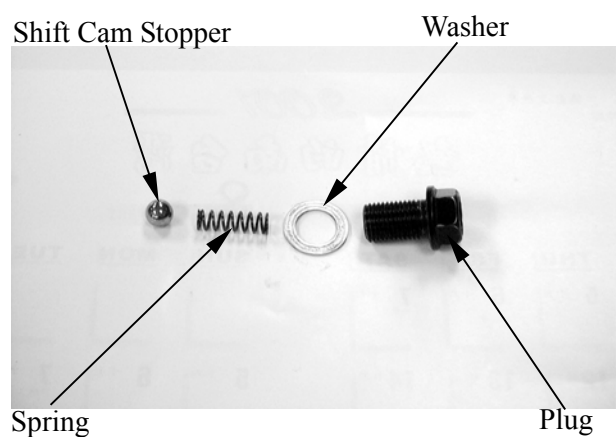
Remove the shift shaft.



Remove the stopper plug.

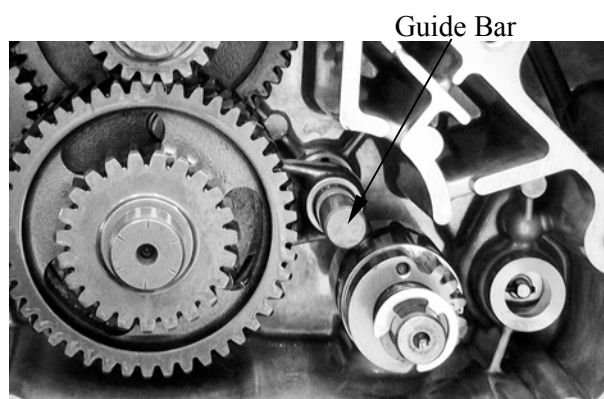


Remove spring, washer and shift cam stopper.

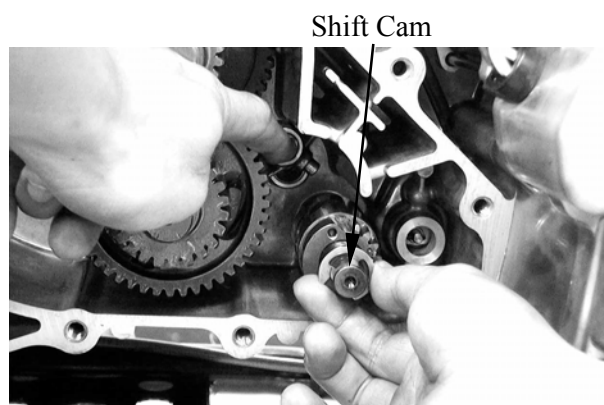


10.FINAL REDUCTION/ TRANSMISSION SYSTEM

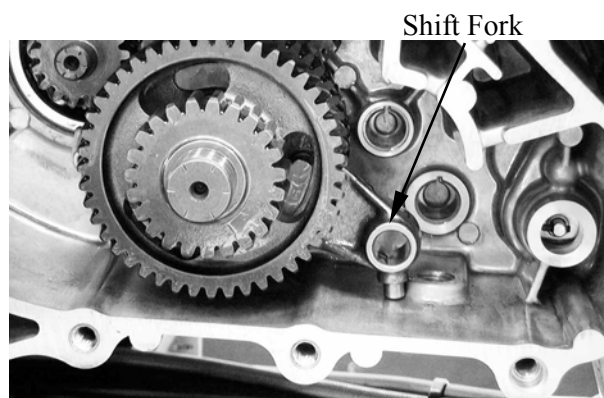
Remove the transmission guide bar.



Remove shift cam.



Remove the shift fork.



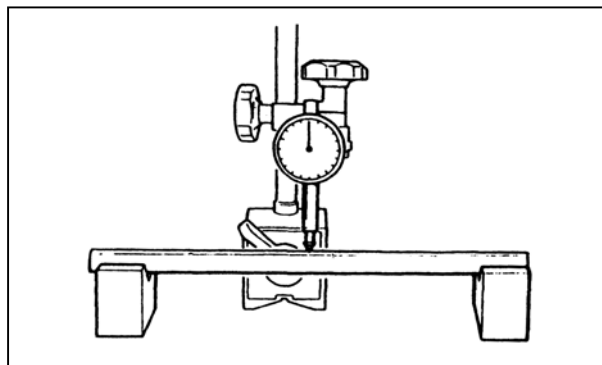
10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Measure the guide bar runout.
Out of specification → Replace.

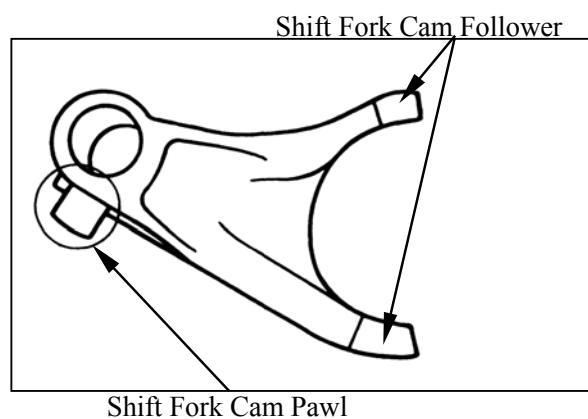
Service Limit:

Less than 0.03 mm (0.0012 in)

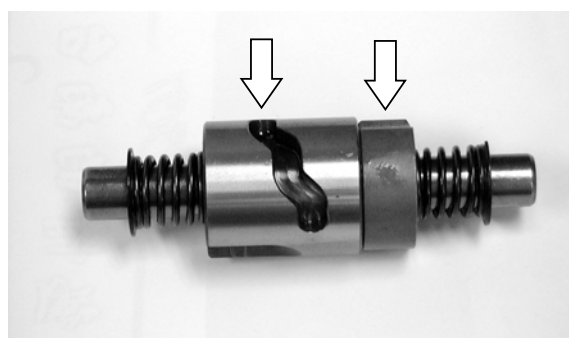
* Do not attempt to straighten a bent guide bar.



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

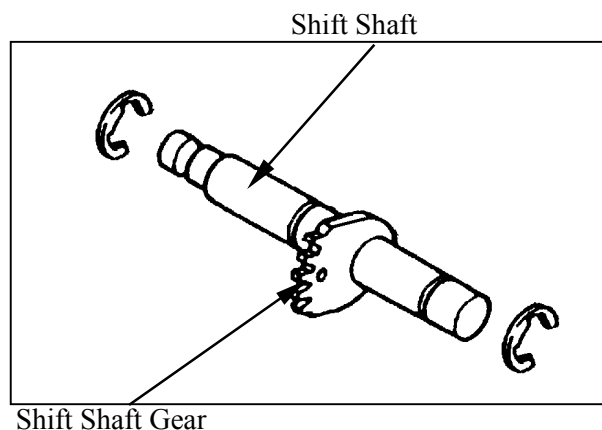


Check the shift cam groove and shift cam gear.
Wear or damage → Replace.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Inspect shift shaft gear.
Damage → Replace.
Inspect shift shaft.
Damage/bends/wear → Replace.

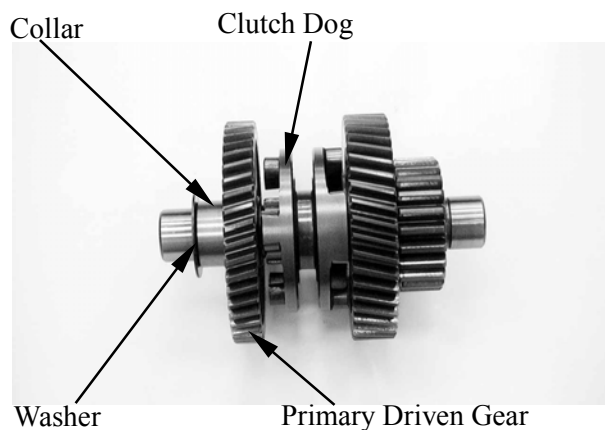


Remove the main axle.

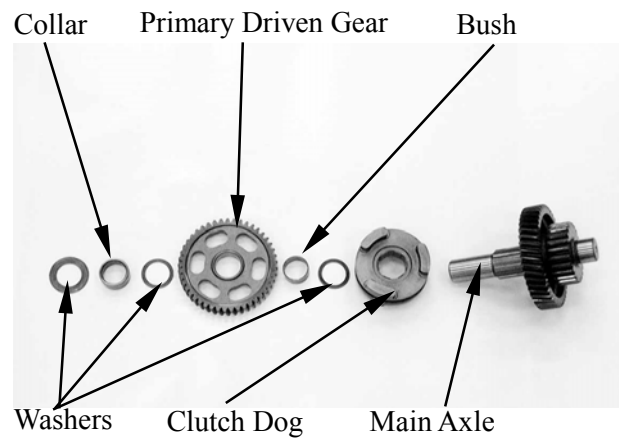


MAIN AXLE DISASSEMBLY

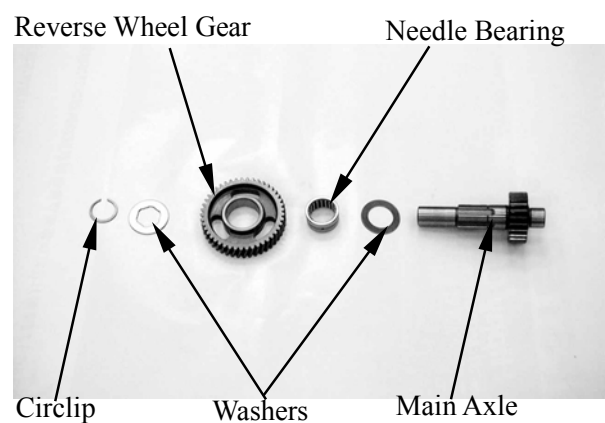
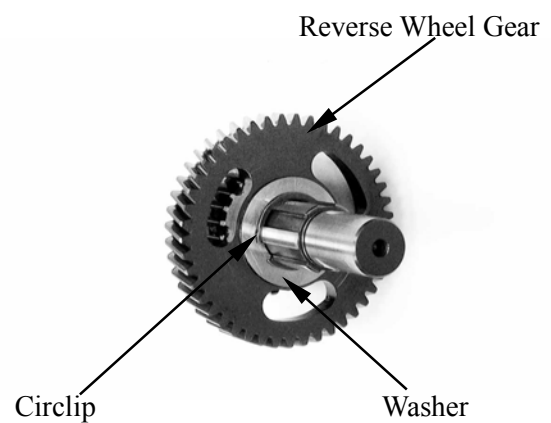
Remove the washers, collar, primary driven gear, bush and clutch dog.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM



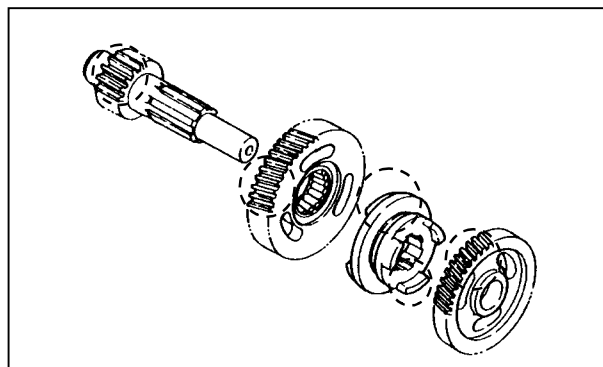
Remove the circlip and then remove the washers, reverse wheel gear and needle bearing.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

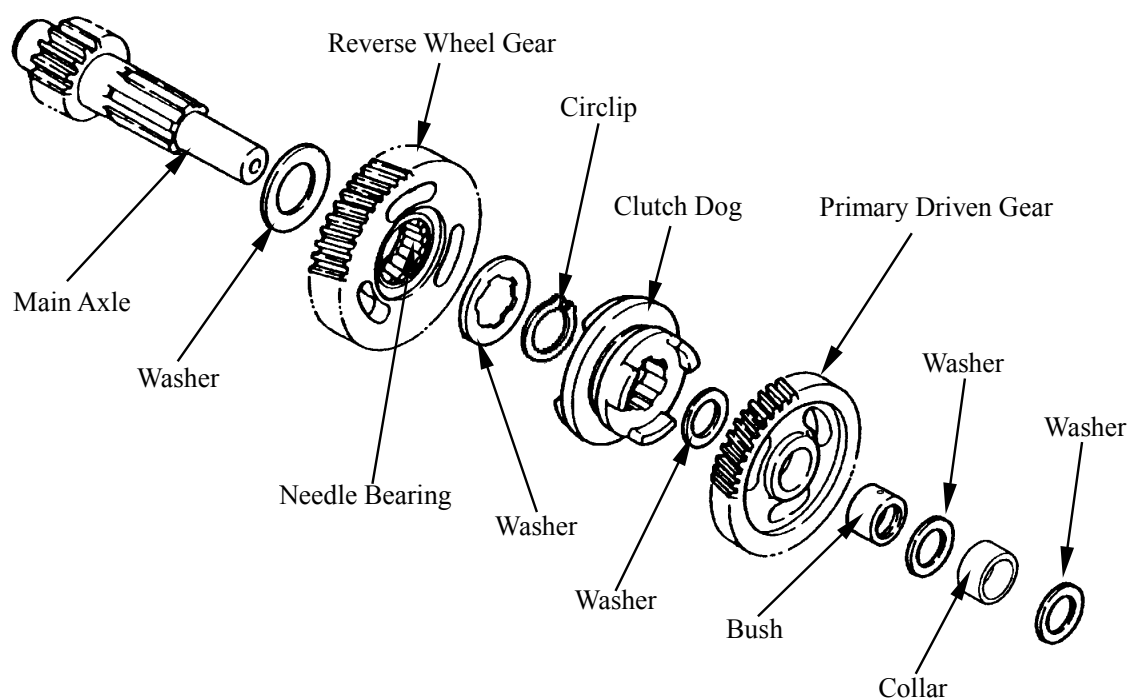
Inspect the gear teeth.
Blue discoloration/pitting/wear → Replace.

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



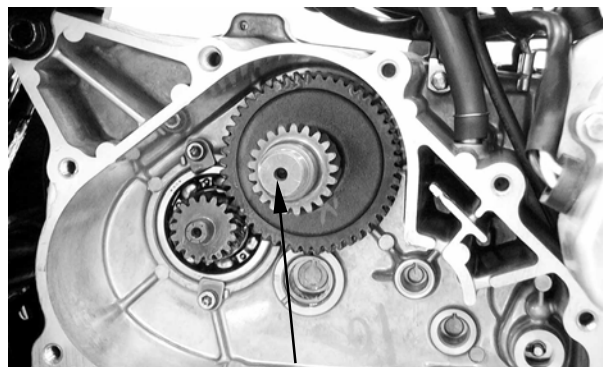
MAIN AXLE ASSEMBLY

Reverse the “MAIN AXLE
DISASSEMBLY” procedures.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Remove the counter axle.



Counter Axle

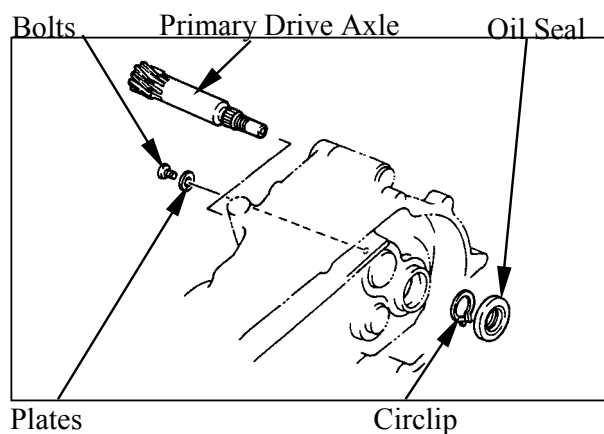
Inspect the gear teeth.
Blue discoloration/pitting/wear → Replace.



PRIMARY DRIVE AXLE REMOVAL

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

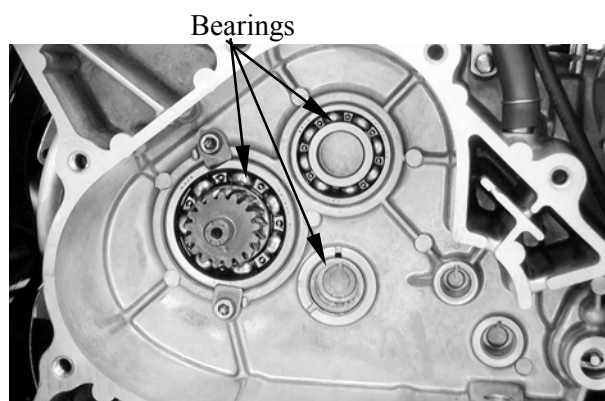
Remove the oil seal, circlip, bolts and plates.
Remove the primary drive axle.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

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.



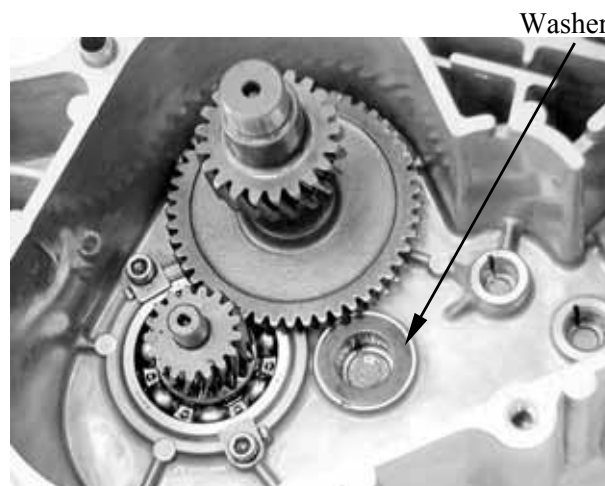
INSTALLATION

Reverse the “TRANSMISSION REVOVAL” section procedures.

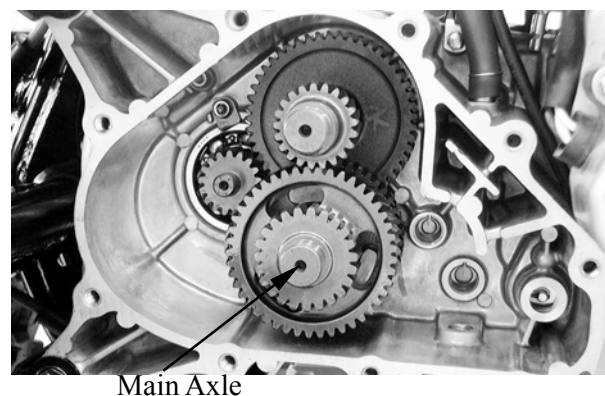
Install the main drive axle. (Reverse the “MAIN DRIVE AXLE” procedures.)

Install the counter axle.

Install the main axle washer.



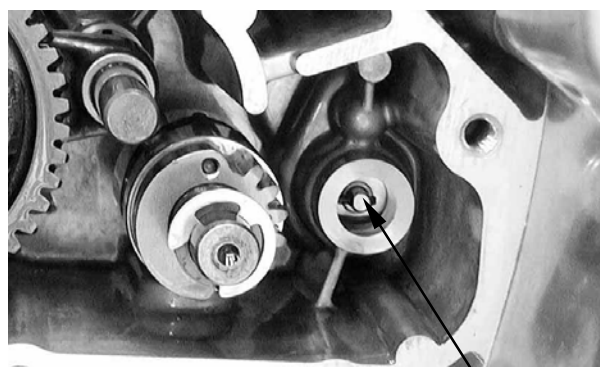
Install the main axle.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Install the shift cam.
Install the shift fork.
Install the guide bar.
Install the shift shaft.

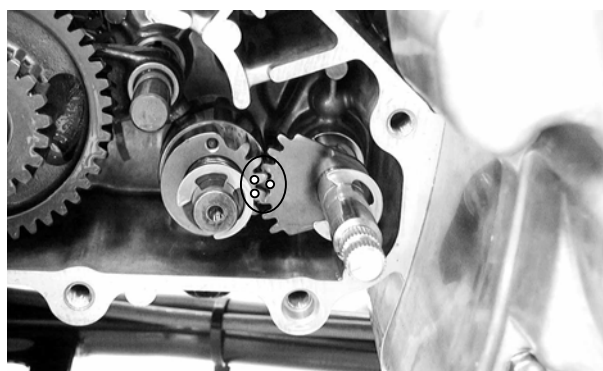
- ★ Make sure that the lever on the gear change switch correctly engages with the locating slot on the shift shaft.
Align the mark on the shift shaft gear with the mark on the shift cam gear.



Gear Change Switch

Install the shift cam stopper and tighten the plug.

Torque: 4.8 kgf-m (48 Nm, 35 lbf-ft)



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: 2.7 kgf-m (27 Nm, 20 lbf-ft)

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#

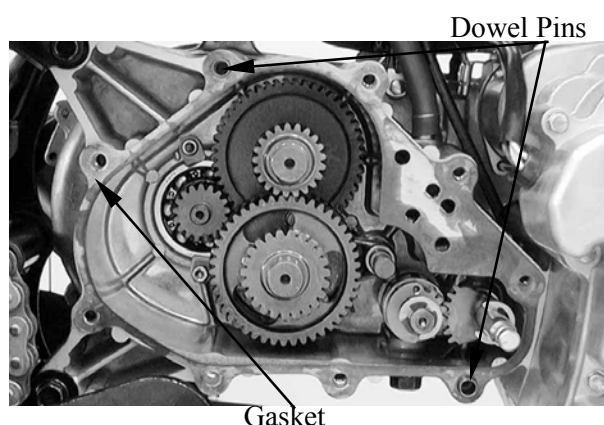
Oil Capacity:

At disassembly:

0.4 liter (0.352 Imp qt, 0.424 US qt)

At change:

0.3 liter (0.264 Imp qt, 0.318 US qt)

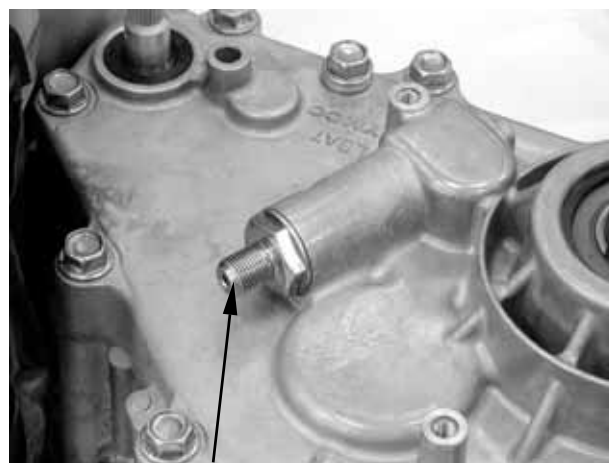


SPEEDOMETER GEAR

REMOVAL

Disconnect the speedometer cable (see page 6-3).

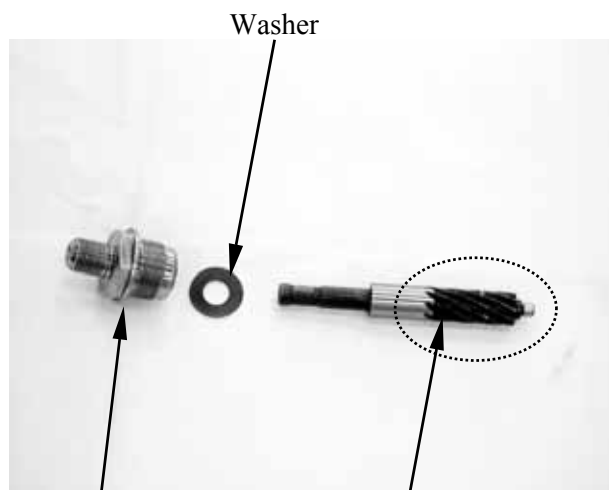
Remove the speedometer gear plug, washer and speedometer gear shaft.



Plug

INSPECTION

Inspect the speedometer gear teeth.
pitting/wear → Replace.



Plug

Speedometer Gear

Remove the transmission case cover (see page 10-3).

Inspect the speedometer driver gear teeth on the main axle.

Pitting/wear → Replace.



10.FINAL REDUCTION/ TRANSMISSION SYSTEM

Inspect the oil seal for wear or damage.
If any defects are found, replace the oil seal
with a new one.



Oil Seal

INSTALLATION

Reverse the “REMOVAL” procedures.