

# 1

After disassembling the engine, before opening the crankcase block, measure and note the axial clearance value of:

- MAIN SHAFT (move the shaft right and left side)



- COUNTER SHAFT (move the shaft right and left side)



- GEAR SHIFT DRUM (move the drum right and left side)



# 2

DISASSEMBLY RIGHT CRANKCASE and remove transmission shafts and gearshift drum.

- CHECK THE WEAR OF THE GEARSHIFT FORKS

If they are worn (see photo), replace the complete gearshift drum or the gearshift forks.



- REPLACE BOTH COUNTERSHAFT TRANSMISSION



### MAIN SHAFT AXIAL CLEARANCE ADJUSTMENT

- Axial clearance measured before disassembly less than 0.5mm  
No intervention

- Axial clearance between 0.6 and 0.8mm.

Add to the standard washer a second washer  $\varnothing 17 \times \varnothing 24 \times 0.3\text{mm}$  between the 4th gear and the clutch bearing side.

EXAMPLE: measured clearance 0.7mm, add washer tk. 0.3mm. Final clearance 0.4mm.



- Axial clearance measured bigger than 0.8mm.

Add a washer  $\varnothing 17 \times \varnothing 24 \times 0.3\text{mm}$  between the 4th gear and the bearing clutch side and a washer  $\varnothing 12 \times \varnothing 18 \times 0.2\text{mm}$  between the gear shaft and the flywheel side bearing.

EXAMPLE: measured clearance 1mm, add a washer tk. 0.3mm side and a washer tk. 0.2mm flywheel side.  
Final clearance 0.5mm.



# 4

### COUNTER SHAFT AXIAL CLEARANCE ADJUSTMENT

- Axial clearance measured before disassembly less than 0.5mm  
No intervention

- Axial clearance measured between 0.5 and 0.8mm.  
Add a washer  $\text{\O}17 \times \text{\O}24 \times 0.3\text{mm}$  between the gear shaft and the sprocket side bearing.  
EXAMPLE: measured clearance 0.7mm, add a washer tk. 0.3mm. Final Clearance 0.4mm.



- Axial clearance measured 0.9 and 1.1mm.  
Add to the standard washer, a second washer  $\text{\O}15 \times \text{\O}26 \times 0.5\text{mm}$  between the 4th gear and the roller bearing on the clutch.  
EXAMPLE: measured clearance 1mm, add a washer tk. 0.5mm clutch side. Final clearance 0.5mm.



**ATTENTION:** In this case, replace the 1mm thick washer above the starter gear with a  $\text{\O}15 \times \text{\O}26 \times 0.5\text{mm}$ .





### 4.1

- Axial clearance measured between 1.2 and 1.5mm

Add a washer  $\varnothing 17 \times \varnothing 24 \times 0.3\text{mm}$  between the gear shaft and the sprocket side bearing and a second washer  $\varnothing 15 \times \varnothing 26 \times 0.5\text{mm}$  between the 4th gear and the roller bearing on the clutch side.

EXAMPLE: measured clearance 1.3mm, add a washer tk. 0.3mm sprocket side and a washer tk. 0.5mm clutch side 0.5mm.



ATTENTION: In this case, replace the 1mm thick washer above the starter gear with a  $\varnothing 15 \times \varnothing 26 \times 0.5\text{mm}$ .



- Axial clearance bigger than 1.5mm

The right crankcase (clutch side) must be replaced.

With the new crankcase and all bearings correctly assembled, check the axial clearance of the main and counter shafts and if necessary adjust the clearance following the indications of the previous points.

# 5

### GEARSHIFT DRUM

If the axial clearance measured before disassembly is bigger than 0.5mm, add a washer  $\varnothing 13 \times \varnothing 19 \times 0.3$ mm between the gearshift drum and the left crankcase (sprocket side).  
EXAMPLE: measured clearance 0.7mm, add a washer tk. 0.3mm. Final clearance 0.4mm.



# 6

### ENGINE REASSEMBLY

After completing steps 2-3-4-5, reassembly the engine applying the torque value indicated in the attached manual, we suggested the replacement of the engine gaskets.

For maintenance done at 40 hours it is suggested to complete replace the two shafts.