

Figure 3-74. Measuring crankshaft alignment

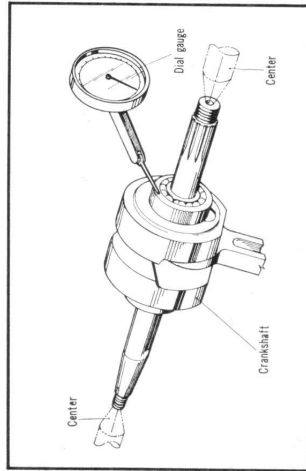


Figure 3-75. Measuring axial clearance

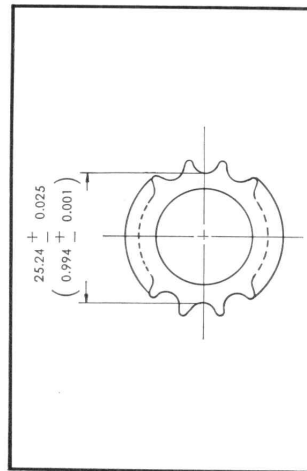


Figure 3-76. Timing sprocket teeth root contour

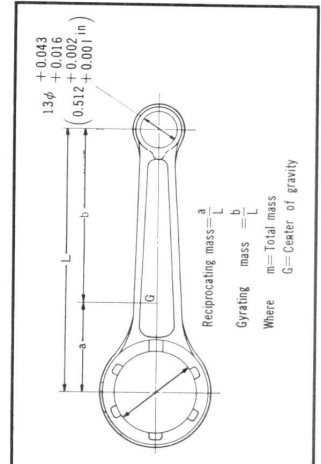


Figure 3-77. Connecting rod

with the piston can be removed as a unit from the left crankcase.

b. Inspection

- (1) Support the crankshaft on V blocks at both bearings and measure the amount of runout. (Fig. 3-74)

Total runout	Standard Value	Serviceable Limit
Left bearing web side	0.015 (0.0006 in.)	Replace if over 0.05 (0.0020 in.)
Right bearing web side	0.015 (0.0006 in.)	Replace if over 0.05 (0.0020 in.)

- (2) The clearance in the bearing is measured by fixing the crankshaft on centers and moving the bearing in the axial and vertical direction. (Fig. 3-75)

Axial clearance	Standard Value	Serviceable Limit
Clearance normal to axis	0.004-0.036 (0.0002~0.001 in.)	Replace if over 0.1 (0.004 in.)
Clearance normal to axis	0.010-0.025 (0.0004~0.001 in.)	Replace if over 0.05 (0.002 in.)

When the clearance in the axial direction becomes excessive, the crankshaft will move from side to side when engine is running and produce undesirable noises as well as causing uneven wear to the cylinder, piston and the timing gear. It will also shorten the life of the clutch.

If the clearance is too small, it will cause a decrease in the power output and shorten the life of the crankshaft.

- (3) Crank pin

Outside dia	Standard Value	Serviceable Limit
Interference	23.1 mm (0.91 in.)	Replace if under 23.045 (0.908 in.)
Interference	+0.012 (0.0005 in.)	
Interference	-0.002 (0.0001 in.)	
Interference	0.052 ~ 0.087 (0.0020 ~ 0.0034 in.)	

- (4) Left crankshaft sprocket root diameter. (Fig. 3.76)

Standard value → 25.24 ± 0.025 (0.994 ± 0.001)
Serviceable limit → Replace if under 25.19 (0.991 in)

- (5) Right crankshaft spline play

Standard value → 0.010 ~ 0.040 (0.0004 ~ 0.0020 in)
Serviceable limit → Replace if over 0.08 (0.0032 in)

- (6) Maximum crankshaft assembly runout

Standard value → runout at web outer surface 0.05 TIR (0.002 in)

- (7) Serviceable limit → Replace if over 0.2 (0.008 in)

Connecting rod small end I. D. (Fig. 3-77)

Standard value → 13mm + 0.043 + 0.016 (0.512 + 0.002 in)

- (8) Serviceable limit → Replace if over 13.1 (0.52 in)

Connecting rod small end to piston pin clearance

Standard value → 0.016 ~ 0.043 (0.001 ~ 0.002 in)

- (9) Serviceable limit → Replace if over 0.08 (0.0032 in)

Connecting rod small end deflection.

Standard value → 1.5 (0.060 in)

Serviceable limit → Replace if over 3.0 (0.120 in)

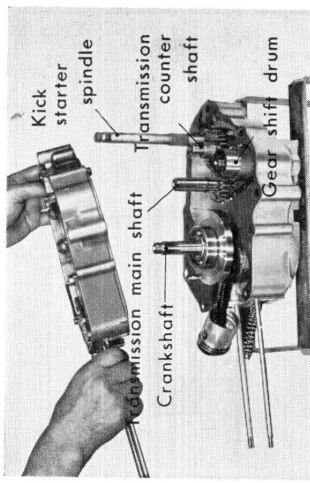


Figure 3-78. Assembling R crankcase

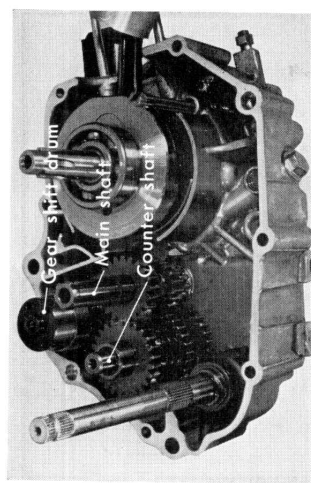


Figure 3-79. Transmission construction detail

- (10) Connecting rod large end

End play	Standard Value	Serviceable Limit
Bearing clearance <td>0.10-0.35 (0.004 ~ 0.014 in.)</td> <td>Replace if over 0.6 (0.024 in.)</td>	0.10-0.35 (0.004 ~ 0.014 in.)	Replace if over 0.6 (0.024 in.)
Bearing clearance <td>0-0.012 (0 ~ 0.0005 in.)</td> <td>Replace if over 0.05 (0.002 in.)</td>	0-0.012 (0 ~ 0.0005 in.)	Replace if over 0.05 (0.002 in.)

- (11) Connecting rod alignment

Parallelism	Standard Value	Serviceable Limit
Twist	0.10 (0.004 in.)	Replace if over 0.15 (0.006 in.)

c. Reassembly

- (1) Check to make sure that the gasket and the two dowel pins are installed on the left crankcase before assembling the right crankcase to it. (Fig. 3-78)

3.5 TRANSMISSION

The transmission receives the rotation which has been transferred from the crankshaft to the main shaft and through a series of gears, changes it to the desired speed and then transmits it to the sprocket mounted counter shaft.

The C50, C50M, C65 and C65M have a 3 speed transmission, whereas, the S50 and S65 have a 4 speed transmission. (Fig. 3-79, 3-80)

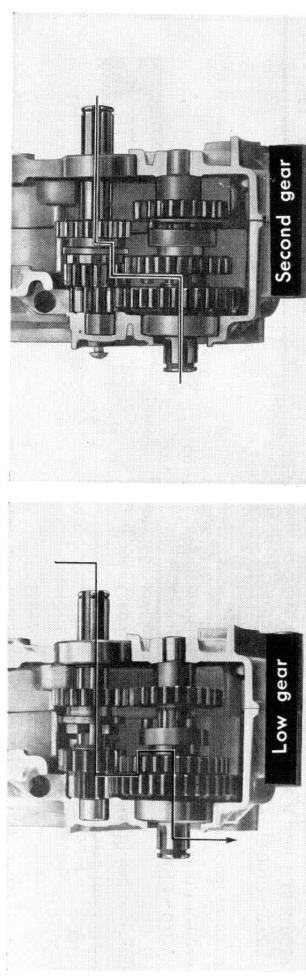


Figure 3-80. Gearing arrangement for C50, C50M, C65, C65M