

11. Slide on the 5th gear (flush side on last).
12. Slide on the 2nd gear and the thrust washer.
13. Make sure all circlips are seated correctly in the main shaft grooves.
14. Make sure each gear engages properly with the adjoining gears where applicable.

5-Speed Transmission Countershaft Disassembly/ Inspection/Assembly

Refer to **Figure 57** for this procedure.

1. Slide off the thrust washer, 1st gear and the 1st gear bushing.
2. Slide off the 3rd gear.
3. Remove the circlip and slide off the splined washer.
4. Slide off the 4th gear and the 5th gear.
5. Clean all gears in solvent and thoroughly dry.
6. Check each gear for excessive wear, burrs, pitting or chipped or missing teeth. Make sure the gear lugs are in good condition (**Figure 55**).

NOTE

Defective gears should be replaced. It is a good idea to replace the mating gear on the main shaft even though it may not show signs of wear or damage.

NOTE

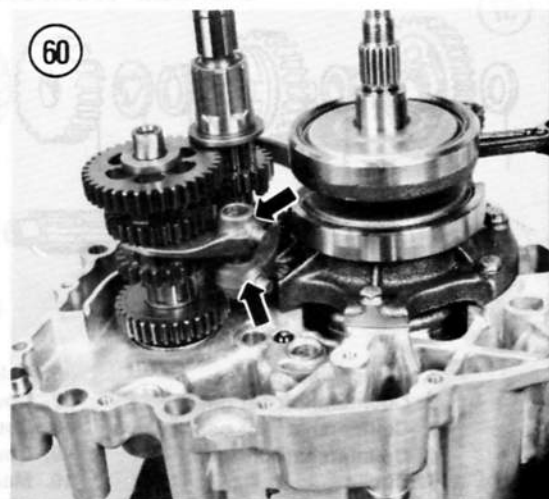
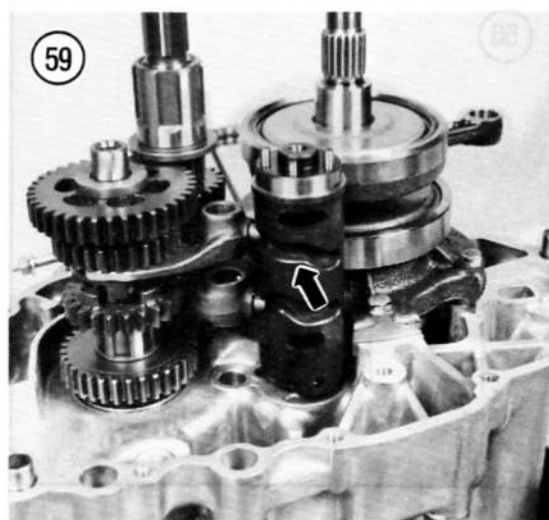
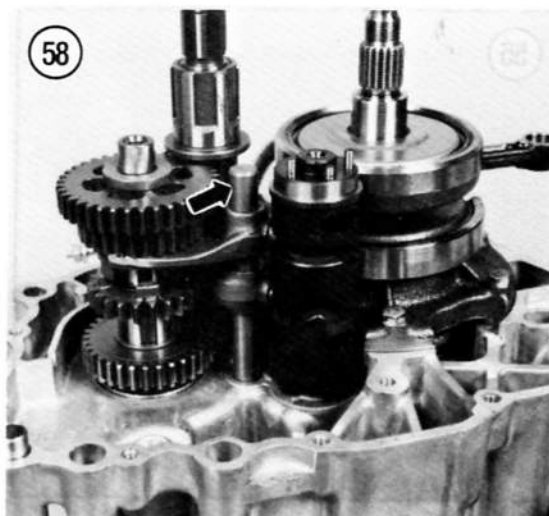
The 2nd gear is part of the countershaft. If the gear is defective, the shaft must be replaced.

7. Make sure all gears and the gear bushing slide smoothly on the countershaft splines.
8. Slide on the 5th gear (engagement lug side on first).
9. Slide the 4th gear into place (flush side on first).
10. Slide on the splined washer and install the circlip.
11. Slide on the 3rd gear.
12. Position the 1st gear bushing with the shoulder side on first. Align the oil hole in the 1st gear bushing with the oil hole in the shaft and slide on the bushing. This alignment is necessary for proper oil flow.
13. Slide on the 1st gear and the thrust washer.
14. Make sure all circlips are seated correctly in the main shaft grooves.
15. Make sure each gear engages properly with the adjoining gears where applicable.

GEARSHIFT DRUM AND FORKS

Removal

1. Perform Steps 1-7 of *Crankcase Disassembly* in Chapter Four.
2. Withdraw the shift fork shaft (**Figure 58**).



3. Remove the shift drum (Figure 59).
4. Remove the shift forks (Figure 60).
5. Wash all parts in solvent and thoroughly dry.

Inspection

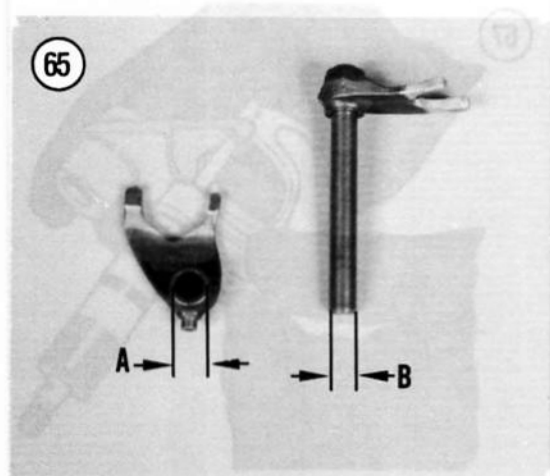
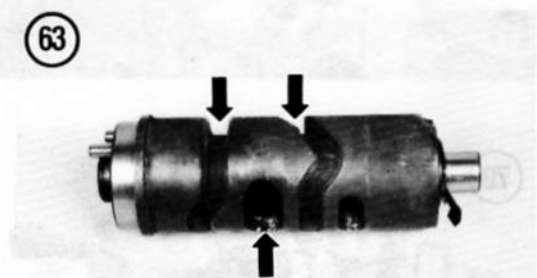
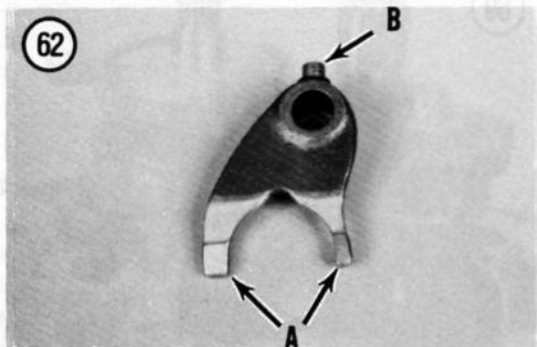
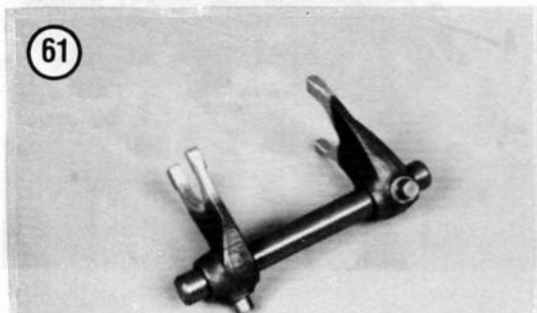
Refer to Table 2 for shift fork and shaft specifications.

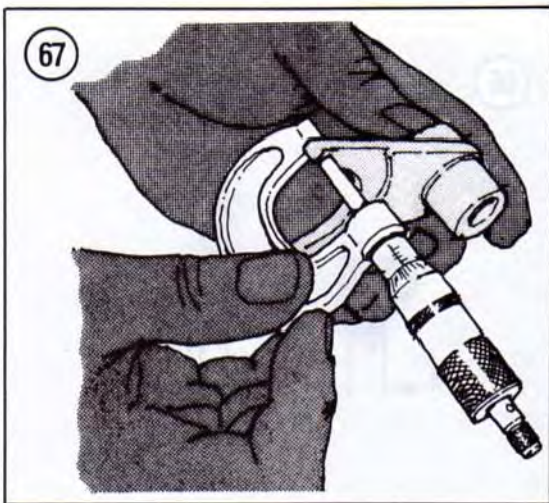
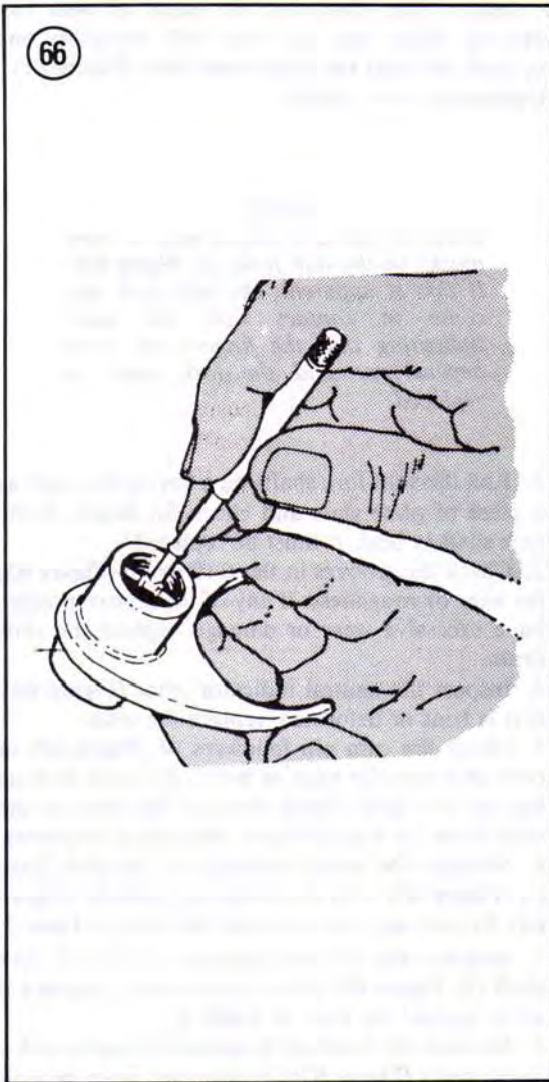
1. Inspect each shift fork for signs of wear or cracking. Make sure the forks slide smoothly on the shaft and that the shaft is not bent (Figure 61). Replace any worn forks.

NOTE

Check for any arc-shaped wear or burn marks on the shift forks (A, Figure 62). If this is apparent, the shift fork has come in contact with the gear, indicating that the fingers are worn beyond use and the fork must be replaced.

2. Roll the shift fork shafts on a flat surface such as a piece of plate glass and check for bends. If the fork shaft is bent, it must be replaced.
3. Check the grooves in the shift drum (Figure 63) for wear or roughness. If any of the groove profiles have excessive wear or damage, replace the shift drum.
4. Inspect the neutral indicator rotor (Figure 64). If it is bent or deformed, replace the rotor.
5. Check the cam pin followers (B, Figure 62) in each shift fork for wear or burrs. It should fit snug but not too tight. Check the end that rides in the shift drum for wear or burrs. Replace as necessary.
6. Measure the inside diameter of the shift forks (A, Figure 65) with an inside micrometer (Figure 66). Replace any worn beyond the limit in Table 2.
7. Measure the outside diameter of the shift fork shaft (B, Figure 65) with a micrometer. Replace if worn beyond the limit in Table 2.
8. Measure the width of the gearshift fingers with a micrometer (Figure 67). Replace any worn beyond the limit in Table 2.





Installation

1. Coat all bearing and sliding surfaces with new engine oil or assembly oil.
2. Install the 2 shift forks into the grooves (A, **Figure 68**) in the transmission shaft assemblies.

NOTE

Be sure to install the shift forks as shown in B, **Figure 68** and that the shift drum cam pins align (C, **Figure 68**).

3. Install the shift drum; align the neutral switch indicator rotor with the switch in the crankcase. Properly mesh the shift fork guide pins into the grooves in the shift drum (**Figure 69**).
4. Install the shift fork shaft (**Figure 70**). Make sure it seats completely.
5. Perform Steps 7-16 of *Crankcase Assembly* in Chapter Four. Make sure the crankcase gasket surfaces are completely clean. Apply a light coat of non-hardening gasket sealer to one side of the gasket.

Table 1 CLUTCH SPECIFICATIONS

Item	Standard	Wear limit
Friction disc thickness	3.0 mm (0.1181 in.)	2.6 mm (0.1024 in.)
Clutch plate warpage	—	0.2 mm (0.0079 in.)
Clutch spring free length	36.2 mm (1.452 in.)	33.1 mm (1.3031 in.)
Outer housing ID	26.000-26.021 mm (1.0236-1.0244 in.)	28.04 mm (1.0252 in.)
Outer guide OD	25.959-25.980 mm (1.022-1.023 in.)	25.9 mm (1.02 in.)
Outer guide ID	20.000-20.021 mm (0.7874-0.7882 in.)	25.05 mm (0.986 in.)

Table 2 GEARSHIFT FORK AND SHAFT SPECIFICATIONS

Item	Specification	Wear limit
Shift fork inner diameter	12.000-12.018 mm (0.4724-0.4731 in.)	12.05 mm (0.4744 in.)
Shift fork finger thickness	5.00-5.07 mm (0.1969-0.1966 in.)	4.70 mm (0.1850 in.)
Shift fork shaft outer diameter	11.976-11.994 mm (0.4515-0.4722 in.)	11.96 mm (0.4709 in.)