

MAINTENANCE 143

Transmission or external shift mechanism damage, causing the transmission to misshift, overshift, and/or jump out of gear, brings about more damage to the transmission and also overrev damage to the engine itself. An improperly functioning transmission or external shift mechanism may be caused by the following:

1. Loose return spring pin
2. Broken or weakened return spring or shift drum positioning pin spring
3. Broken or weakened shift pawl spring
4. Damaged shift mechanism arm
5. Loose shift drum stopper
6. Bent or worn shift fork(s)
7. Worn shift fork grooves on gears D3, 04, and/or 05
8. Worn shift fork guide pin(s)
9. Worn shift drum groove(s)
10. Binding of shift drum positioning pin in the positioning bolt
11. Worn or damaged gear dogs, gear dog holes, and/or gear dog recesses
12. Improperly functioning clutch or clutch release
13. Improper assembly or missing parts

measure the backlash, set a dial gauge against the teeth on one gear, and move the gear back and forth while holding the other gear steady. The difference between the highest and the lowest gauge reading is the amount of backlash. Replace both gears if the amount of backlash exceeds the service limit.

Transmission noise results from worn or damaged shafts bearings, gear hubs or teeth, etc.

External shift mechanism inspection

Inspect the shift pawl spring, shift pawls, and return spring. Replace any broken or otherwise damaged parts.

Measure the free length of the shift drum positioning pin spring. If it exceeds the service limit, replace it with a new one.

Table 67 Shift Drum Positioning Pin Spring Length

Standard	Service Limit
32.3mm	30.7 mm

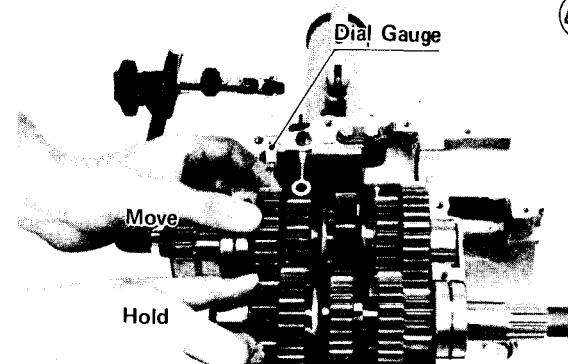


Table 68 Gear Backlash

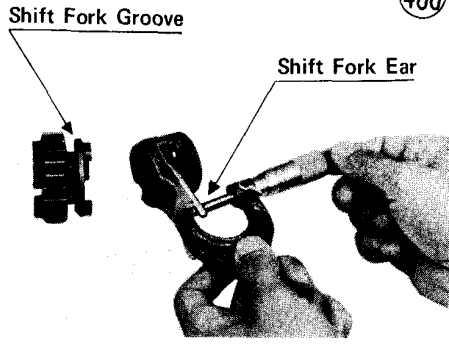
Standard	Service Limit
under 0.17 mm	0.25 mm

Shift fork bending

Visually inspect the shift forks, and replace any fork that could cause difficulty in shifting or allow the transmission to jump out of gear when under power.

Shift fork/gear groove wear

Measure the thickness of the ears of each shift fork, and measure the width of the shift fork grooves on gears D3, 04, and 05. If the thickness of a shift fork ear is under the service limit, the shift fork must be replaced. If a gear shift fork groove is worn over the service limit, the gear must be replaced.



Standard	Service Limit
4.9~5.0 mm	4.7 mm

Table 69 Shift Fork Thickness

Gear backlash

Standard	Service Limit
5.05~5.15mm	5.25 mm

Table 70 Gear Shift Fork Groove Width