

MC-9 MAINTENANCE MANUAL**SECTION 13**
TRANSMISSION

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MC-9 MAINTENANCE MANUAL

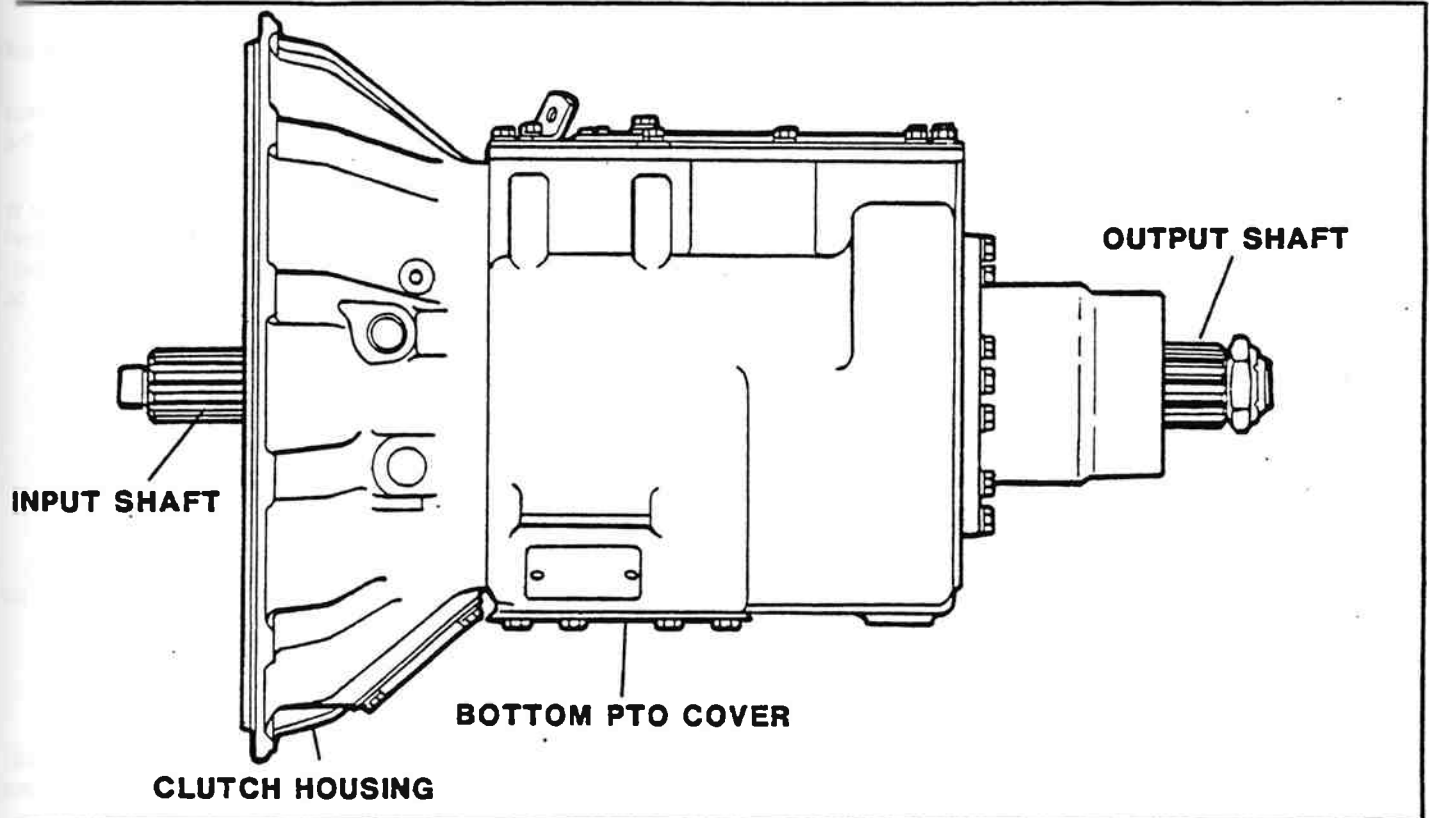


Figure 13-1. T-11605 Transmission.

5-SPEED MANUAL TRANSMISSION

The model 11605 transmission (figure 13-1) has five forward speeds and one reverse. Figure 13-2 shows the shift pattern. Twin countershafts divide the torque equally between shafts and gears. The countershafts are identical except for the PTO gears.

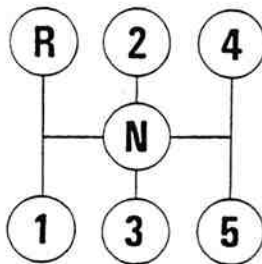


Figure 13-2. 5-Speed Shift Pattern.

The mainshaft gears are located axially by washers and held in position by the rotation of the countershaft gears. All gears have spur type teeth.

The mainshaft gears are clutched by internal splines in the hubs of gears. Sliding clutch gears with short, conical clutched teeth provide short, easy shifts.

The input shaft and drive gear are not integral and may be changed individually.

The transmission is splash lubricated by oil contained in the case. Two magnetic oil plugs are located on the bottom of the

case to collect any metallic particles that are present in the oil. The filler tube and dipstick are accessible through the left side engine compartment service door.

The Model T-11605F manual transmission, which is optional, is often installed in conjunction with drive axles having 3.33 or 3.85 gear ratios. This combination is for greater fuel economy. The transmission differs from the T-11605D in the first through fourth gear ratios; see specifications at the end of this section.

MAINTENANCE

A proper lubrication schedule is essential to ensure maximum performance of the transmission.

On new coaches, the "factory fill" lubricant should be changed between the first 3,000 and 5,000 miles (4,827 to 8,045 km). During initial operation tiny metal particles are freed from the mating surfaces of moving parts. The lubricant carries these particles through the transmission causing wear on all parts. When draining the transmission, remove all metal particles that are picked up by the magnetic drain plug.

Draining the factory fill lubricant before the first 5,000 miles (8,045 km) also prevents oil contamination caused by the differences between factory fill lubricant and the lubricant used by the operator for topping up the level.

At intervals of 5,000 miles (8,045 km) check the dipstick to ensure the oil is at proper level. Inspect for leaks. At intervals of 50,000 miles (80,450 km) the transmission oil should be changed.

TRANSMISSION OIL CHANGE

While the oil is warm, remove the magnetic drain plug at the bottom of the case to drain the oil. Thoroughly clean the plug before re-installing.

When refilling the transmission, refer to the chart (figure 13-3) to determine the correct type of lubricant. Factory fill is 22 U.S. pints (10.41 liters) of SAE-50 heavy duty engine oil.

Do not overfill the transmission as this will cause fluid to be forced out of the case through the mainshaft openings. Also, types and brands of oil should not be intermixed because of possible oil component breakdown and loss of lubrication protection.

RECOMMENDED LUBRICANTS		
Type	Grade (SAE)	Ambient Temperature
Heavy Duty Engine Oil MIL-L-2104C or MIL-L-46152 or API-SF or API-CD	50 40 30	Above 10°F (12°C) Above 10°F (12°C) Below 10°F (12°C)
Mineral Gear Oil with rust and oxidation inhibitor API-GL-1	90 80W	Above 10°F (12°C) Below 10°F (12°C)
Mild EP Gear Oil* MIL-L-2105 or API-GL-4	90 80W	10°F to 100°F (12°C to 38°C) -15°F to 70°F (-26°C to 21°C)
Multipurpose Gear Oil* MIL-L-2105B or MIL-L-2105C or API-GL-5	85W144 80W140 90 80W90 80W 75W	Above 10°F (12°C) Above -15°F (-26°C) 10°F to 100°F (12°C to 38°C) -15°F to 100°F (-26°C to 38°C) -15°F to 70°F (-26°C to 21°C) -40°F to 15°F (-40°C to 26°C)

* Mild EP gear oil or multi-purpose gear oil are not recommended when lubricant operating temperatures are above 230°F (110°C).

Figure 13-3. Lubricant Chart.

TRANSMISSION REMOVAL

1. Drain the lubricant from the transmission.
2. Disconnect the selector rod from the shift lever and from the pivot link rod by removing cotter keys and nuts. Refer to figure 13-4. Do not disconnect the linkage at the turnbuckle

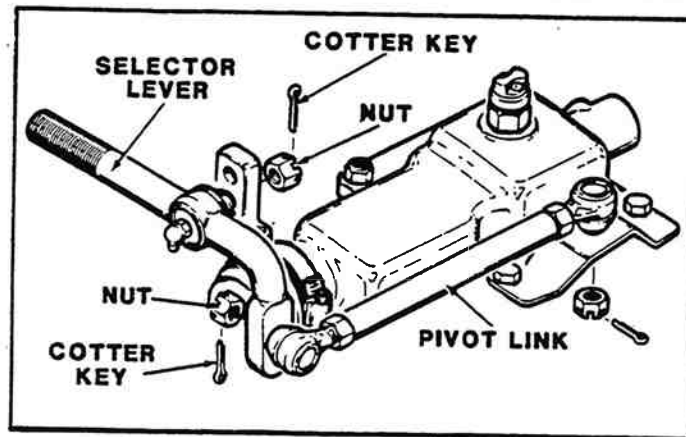


Figure 13-4. Disconnecting Shift Link.

which connects the selector lever to the linkage; doing so will result in misadjustment of the linkage.

3. Disconnect the external linkage from the clutch release arm to permit the release yoke to turn up and pull free of the bearing thrust pads.

4. A suitable sling or transmission jack should be used to properly maintain engine-transmission alignment when removing or installing the transmission. A transmission dolly is available through parts outlets or may be fabricated as shown on drawing 20-233. See Service Tools at end of this section.

CAUTION: Do not allow the rear of the transmission to drop down and hang unsupported in the splined hubs of the clutch discs. Failure to observe this caution will result in bending or distortion of the clutch friction discs.

5. Remove the mounting bolts and slide transmission on dolly away from engine while maintaining alignment.

DISASSEMBLY

Listed below are several disassembly techniques and procedures which will help the process go smoothly and help the overhaul to be successful.

1. Carefully wash and relubricate all reusable bearings as removed and protectively wrap until ready for use. Remove bearings planned to be reused with pullers designed for this purpose.

2. When disassembling the various assemblies, such as the mainshaft, countershafts, and shift bar housing, lay all parts on a clean bench in the same sequence as removed. This procedure will simplify reassembly and reduce the possibility of losing parts.

3. Remove snap rings with pliers designed for this purpose. Snap rings removed in this manner can be reused.

4. The input shaft can be removed from transmission without removing the countershafts, mainshaft, or drive gear. Special procedures are required. Refer to later page in this section for those procedures.

5. Provide yourself with a clean place to work. It is important that no dirt or foreign material enters the unit during repairs. Dirt is an abrasive and can damage bearings. It is always good practice to clean the outside of the unit before starting the planned disassembly.

6. Use restraint when applying force to shafts, housings, etc. Movement of some parts is restricted. Never apply force to the part being driven after it stops solidly. The use of soft hammers, bars and mauls for all disassembly work is recommended.

REMOVAL OF REMOTE CONTROL HOUSING

1. Turn out the two capscrews (13) and remove nuts (12) from the two studs (figure 13-5).
2. Lift the remote control housing from the shift bar housing

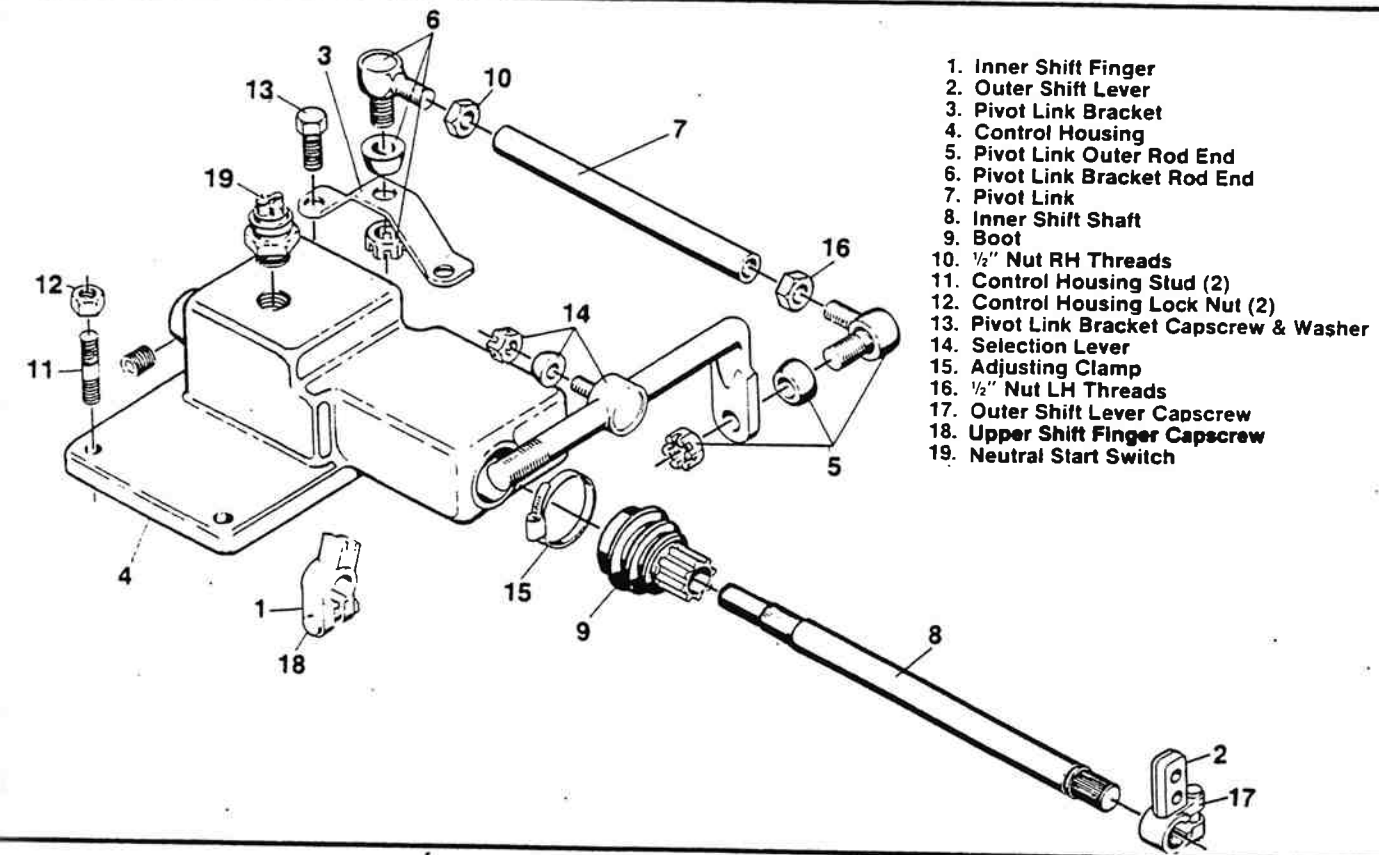
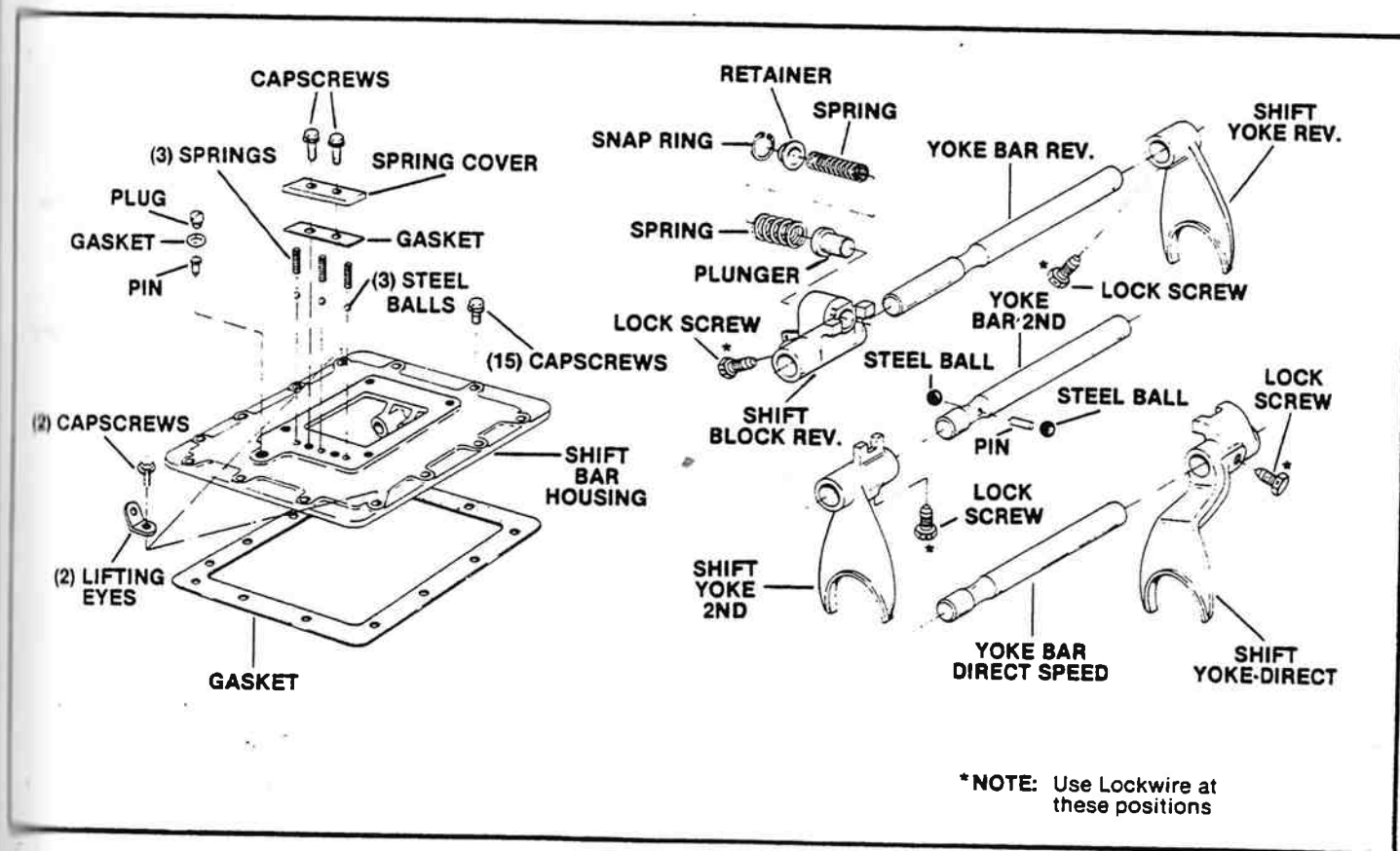


Figure 13-5. Remote Control Housing.



*NOTE: Use Lockwire at these positions

Figure 13-6. Shift Bar Housing.