

attaching bolts. Secure each shift rod to its respective lever with the spring washer, flat washer, and retaining pin.

6. Insert the speedometer cable and driven gear in the extension housing and secure it with a capscrew and lockwasher.
7. Remove tool T61L-7657-A from the extension housing. Align the reference marks and slide the

front universal joint yoke onto the output shaft and into the extension housing. Connect the rear universal joint to the axle pinion flange and torque the nuts to specifications.

8. Fill the transmission to the proper level with the approved lubricant.
9. Adjust the clutch pedal free travel and the shift linkage as required.

DISASSEMBLY AND ASSEMBLY

TRANSMISSION

Disassembly

1. Mount the transmission in a holding fixture and drain the lubricant by removing the lower extension housing bolt.
2. Remove the capscrews that attach the cover to the case. Remove the cover and the gasket (Fig. 4) from the case.
3. Remove long spring that retains the detent pin in the case (Fig. 9). Remove the detent pin with a small magnet.
4. Remove the capscrews and lockwashers that attach the extension housing to the case. Remove extension and gasket from the case.
5. Remove the capscrews and lockwashers that attach the front bearing retainer to the case. Remove the front bearing retainer and gasket from the case.
6. Remove the lubricant filler plug from the right side of the case. Working through the plug opening, drive the roll pin out of the countershaft with a 1/4-inch punch (Fig. 5).
7. Tap the countershaft from the rear of the case with a dummy shaft to remove the expansion plug from the countershaft bore at the front of the case.
8. Hold the countershaft gear with a hook and with the tool shown in Fig. 6, push the countershaft out the front of the case. The countershaft (cluster) gear and thrust washers (Fig. 18) can now be lowered to the bottom of the case. Remove the countershaft from the rear of the case.
9. Remove the snap ring that secures the speedometer drive gear on the output shaft. Slide the speedometer drive gear off the shaft. Remove the speedometer drive gear lock ball from the shaft.
10. Remove the snap ring that holds the output shaft bearing on the shaft. Remove the bearing from the case and shaft as shown in Fig. 7.
11. Place both shift levers in the neutral (center) position.
12. Remove the set screw that secures the first and reverse shift fork to the shift rail. Slide the first and reverse shift rail out through the rear of the case.
13. Slide the first and reverse synchronizer forward as far as possible, and rotate the first and reverse shift fork upward. Then lift it from the case.
14. Move the second- and third-speed shift fork to the second-speed position for access to the set screw, and remove it from the fork. Rotate the shift rail 90 degrees (Fig. 8).

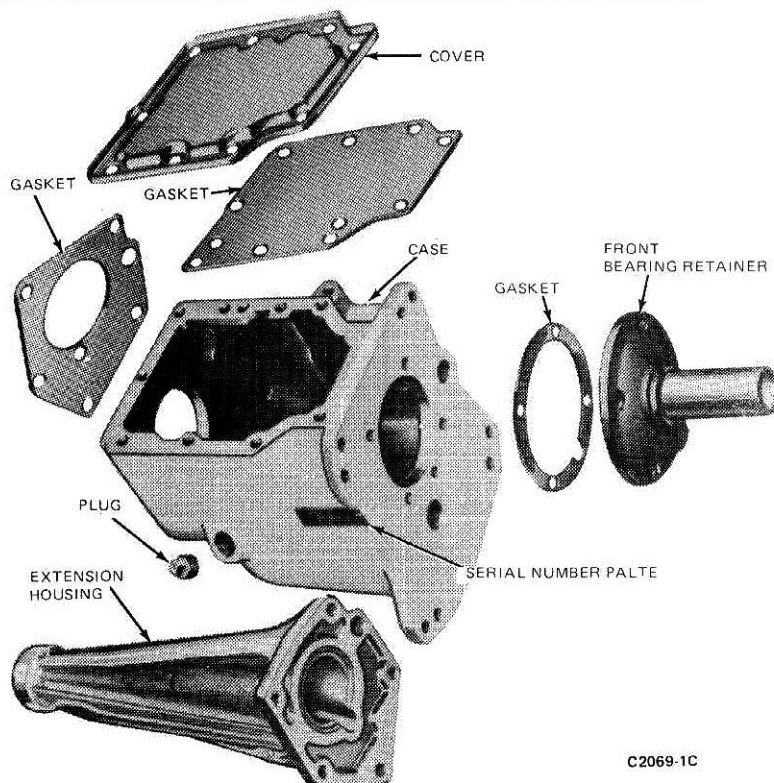


FIG. 4 Transmission Case and Related Parts—Typical

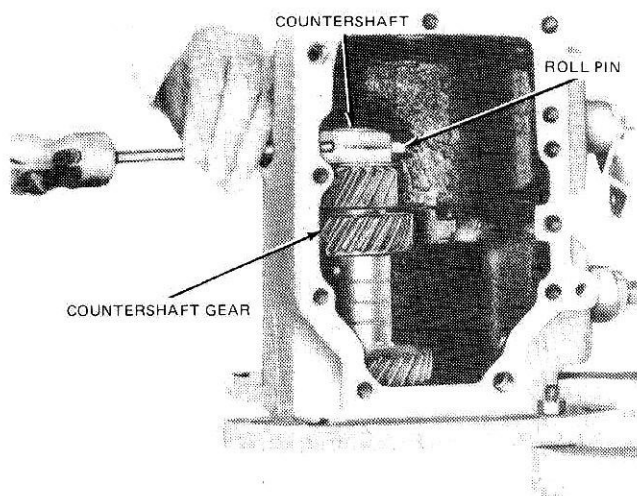


FIG. 5 Removing Countershaft Roll Pin

15. Tap on the inner end of the second- and third-speed shift rail to remove the expansion plug (Fig. 9) from the front of the case. Slide shift rail out of case.

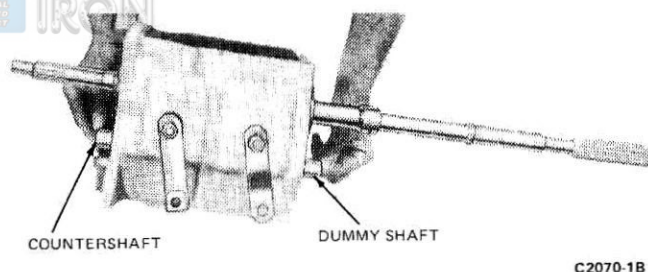


FIG. 6 Removing Countershaft

16. Pull the input gear and shaft forward to separate the input shaft and gear from the front of the case.
17. Rotate the second- and third-speed shift fork upward, and lift it from the case.
18. Carefully lift the output shaft assembly out through the top of the case.
19. Remove idler gear shaft, driving from the front of the case.
20. Lift the reverse idler gear and two thrust washers (Fig. 10) from the case. Lift the countershaft gear, thrust washer, and dummy shaft from the case. Remove detent plug and spring from the bottom of the detent hole.
21. Remove the snap ring from the front of the output shaft, and slide the synchronizer and the second-speed gear (Fig. 11) off the shaft.
22. Remove the next snap ring and tabbed thrust washer from the output shaft. Then slide the first gear and blocking ring off the shaft.
23. Remove the next snap ring from the output shaft. The first and reverse synchronizer hub is a press fit on the output shaft. To eliminate the possibility of damaging the synchronizer assembly, remove the synchronizer hub, using an arbor press as shown in Fig. 12. **Do not attempt to remove or install the hub by hammering or prying.**

Assembly

NOTE: If shift lever and seals are to be replaced, do so at this time. See Section on Sub-assemblies, Shift Lever and Seals.

1. Coat the reverse idler gear thrust surfaces in the case with a thin film of lubricant and position the two thrust washers in place. Tabs go in slots in the case.
2. Position the reverse idler gear and shaft in place. Align the gear bore and thrust washers with the case bores and install the reverse idler shaft.
3. Measure the reverse idler gear end play with a feeler gauge. End play should be within specification. If the end play is not within specification, replace the thrust washers. If the end play is within limits, leave the reverse idler gear installed.
4. Lubricate the output shaft splines and machined surfaces with transmission lubricant.
5. The first and reverse synchronizer hub is a press fit on the output shaft. To avoid damaging the synchronizer assembly, install the synchronizer hub with the teeth end of the gear facing toward the

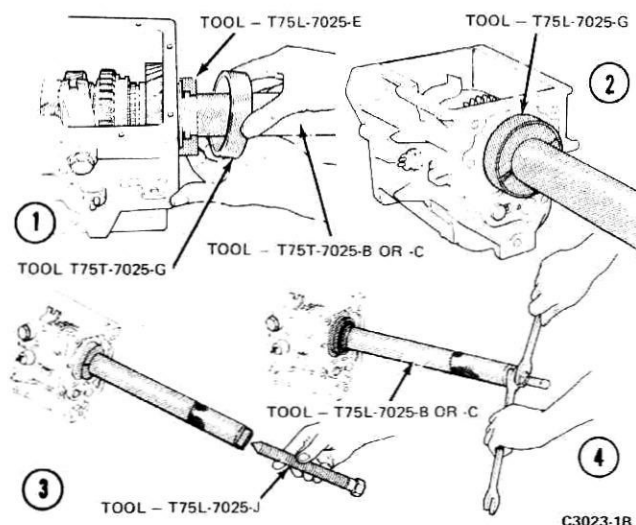


FIG. 7 Removing Input or Output Shaft Bearing

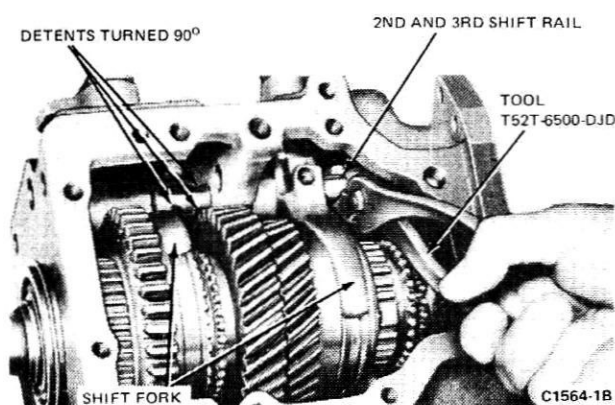


FIG. 8 Rotating Second- and Third-Speed Shift Rail

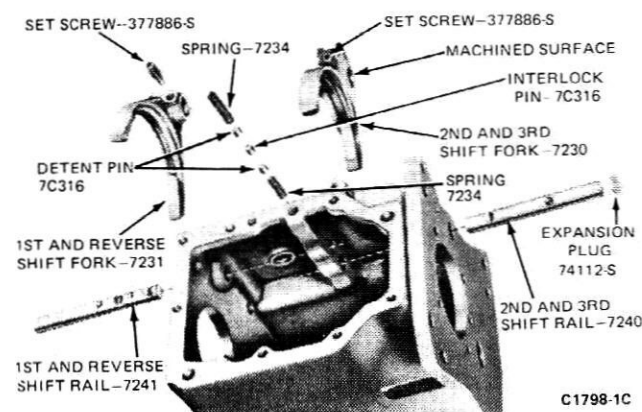


FIG. 9 Shift Rails and Forks Disassembled

rear of the shaft, using an arbor press as shown in Fig. 12. **Do not attempt to remove or install the hub by hammering or prying.**

6. Place the blocking ring on the tapered machined surface of the first gear.
7. Slide the first gear onto the output shaft with the blocking ring toward the rear of the shaft. Rotate