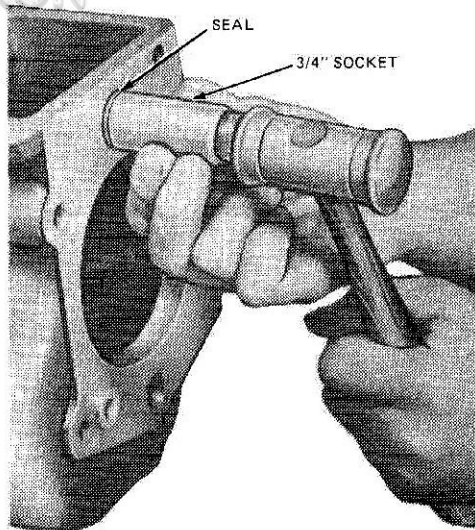
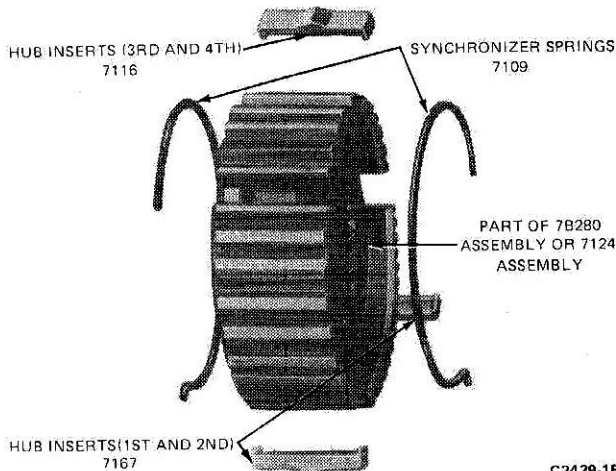




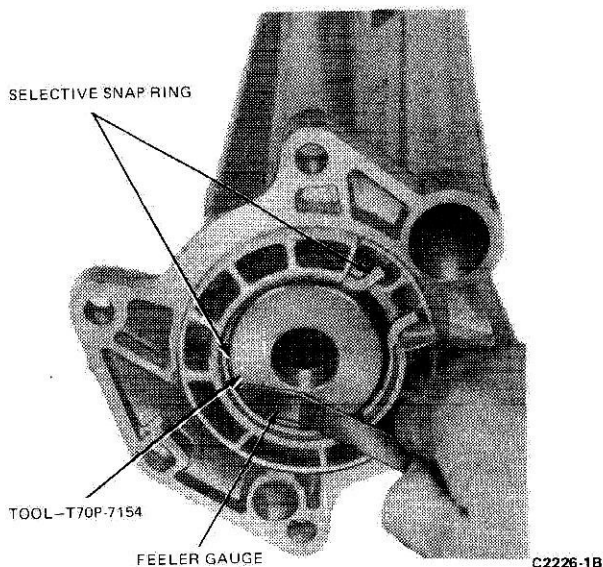
C2478-1A

FIG. 23 Installing Shift Rail Seal



C2429-1B

FIG. 24 Synchronizer Spring Installation



C2226-1B

FIG. 25 Determining Snap Ring Thickness

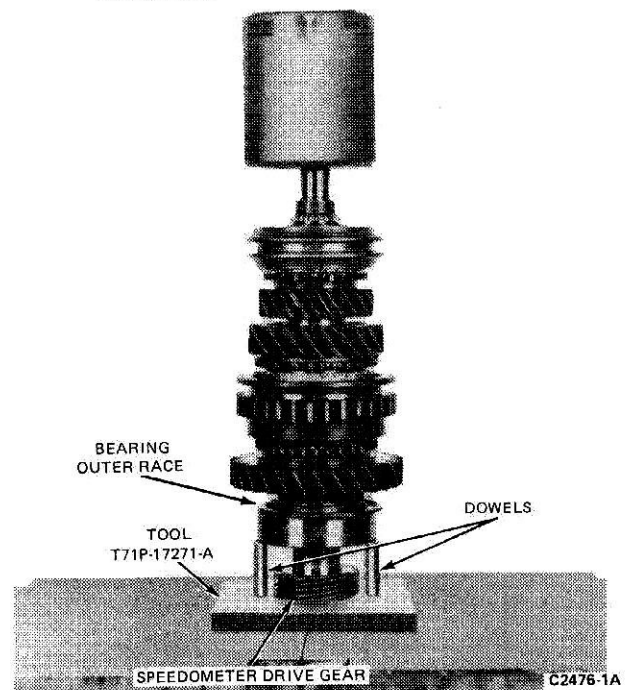
the output shaft gear journals prior to installation of all gears.

9. Position the third-fourth synchronizer assembly on the output shaft with the hub boss (small diameter) facing forward.
10. Retain the third-fourth synchronizer assembly to the output shaft with a snap ring. Pull up on the synchronizer assembly so that the snap ring is tight in its groove.
11. Apply C3RZ-19C547-B lubricant or equivalent to the cone of the input shaft gear and place the fourth gear blocker ring on the gear cone.
12. Press the speedometer drive gear onto the shaft with Tool as shown in Fig. 27 until the dowels just contact the bearing outer race. **The dowels must contact the bearing outer race to properly locate the speedometer drive gear on the shaft.**
13. Coat the bearing bore of the extension housing with C4AZ-19584-A grease or equivalent. Install the output shaft in the housing. It may be necessary to tap the shaft with a plastic hammer while holding the two

| Part No.    | Thickness | Identification       |
|-------------|-----------|----------------------|
| D1FZ-7030-A | 0.0679    | Color Coded - Copper |
| D1FZ-7030-B | 0.0689    | Letter - W           |
| D1FZ-7030-C | 0.0699    | Letter - V           |
| D1FZ-7030-D | 0.0709    | Letter - U           |
| D1FZ-7030-E | 0.0719    | None                 |
| D1FZ-7030-F | 0.0728    | Color Coded - Blue   |
| D1FZ-7030-G | 0.0738    | Color Coded - Black  |
| D1FZ-7030-H | 0.0748    | Color Coded - Brown  |

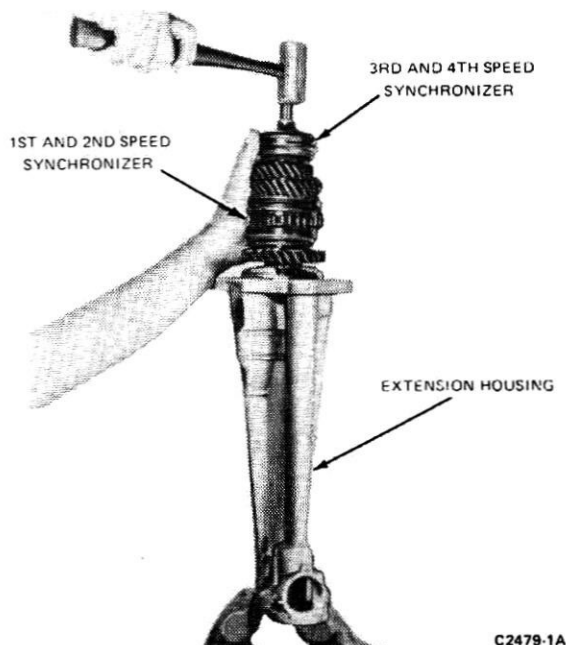
CC1004-1A

FIG. 26 Output Shaft Bearing Snap Ring Thickness



C2476-1A

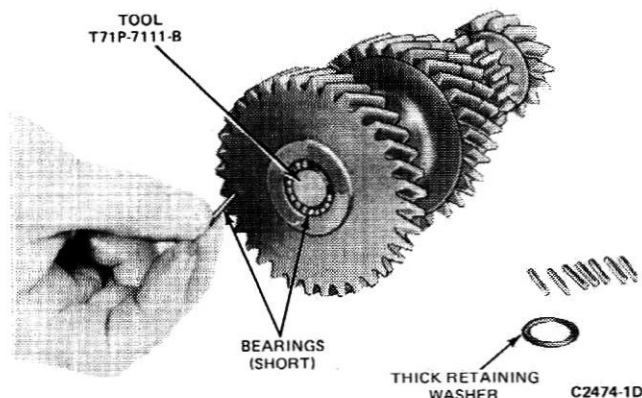
FIG. 27 Installing Speedometer Drive Gear



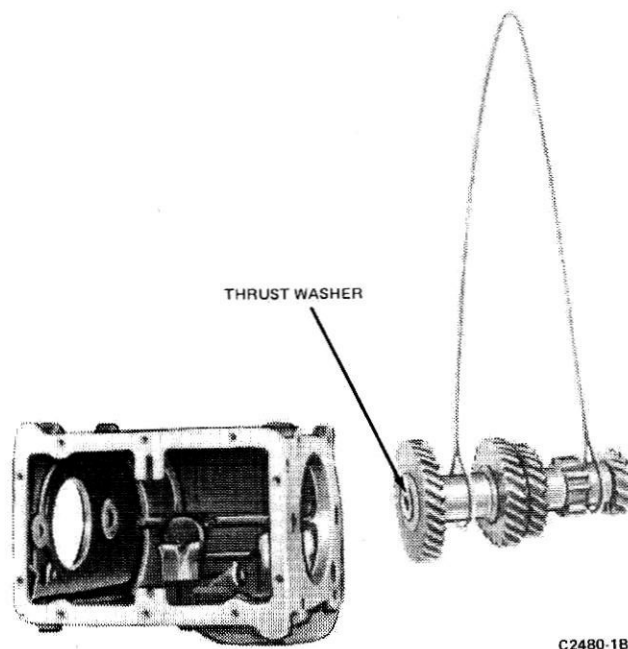
**FIG. 28 Installing Output Shaft in Extension Housing**

synchronizer sleeves firmly (Fig. 28) to prevent sleeve separation from the hubs. Secure it to the extension housing with the selective snap ring that was previously installed.

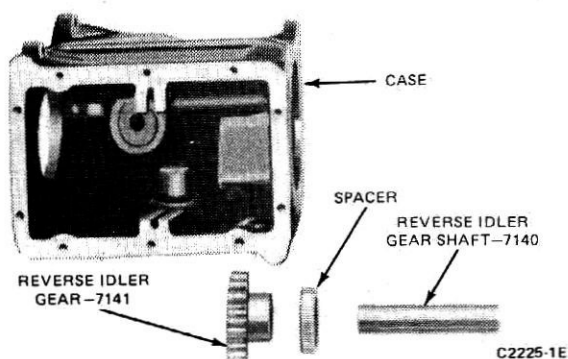
14. Press the bearing on the input shaft making sure that the snap ring groove is toward front end of shaft. Secure the bearing to the shaft with the thickest selective snap ring (Fig. 20).
15. Slide the dummy countershaft into the countershaft gear. Position a bearing retaining washer at each end of the dummy shaft. Coat the 42 bearings with lubricant. Load the 21 long bearings in the small end of the gear and the 21 short bearings in the large end of the gear (Fig. 29). Fit a retaining washer over each end of dummy shaft. Coat each thrust washer with grease and position one on each end of the dummy shaft. Make sure that the tabs are in the same relative position so they may engage the slots provided in the case when the gear is lowered into place. Loop a piece of rope or wire around each end of the gear (Fig. 30). Carefully install the countershaft gear and rope through the rear end of the case. Lower the gear into place being careful not to disturb the thrust washers and making sure that the tabs engage the slots in the case.
16. Apply C3RZ-19C547-B lubricant or equivalent to the reverse idler gear shaft. If the reverse selector relay lever was removed, position it on the pivot pin. Secure the lever on the pin with a spring clip. Hold the gear in the lever with the long hub toward the rear of the case (Fig. 31). Slide the reverse idler gear shaft into place, and install spacer. Seat the shaft in the case with a copper hammer.
17. Assemble the input shaft to the transmission case (covered in Step 28). If necessary, tap the outer race of the bearing with a copper hammer evenly and alternately until the outer snap ring is seated



**FIG. 29 Assembling Countershaft Gear**

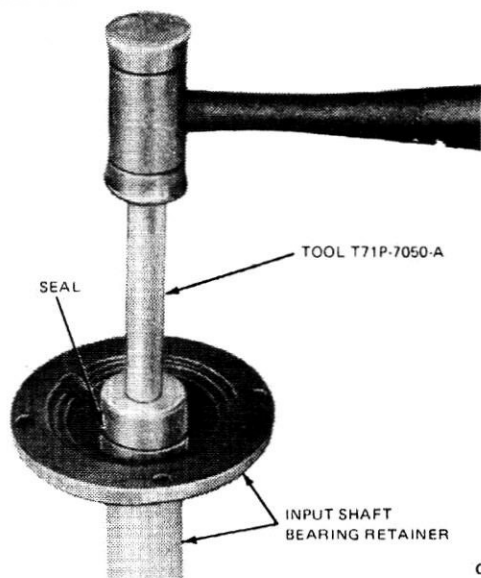


**FIG. 30 Removing or Installing Countershaft Gear**



**FIG. 31 Reverse Idler Gear Disassembled**

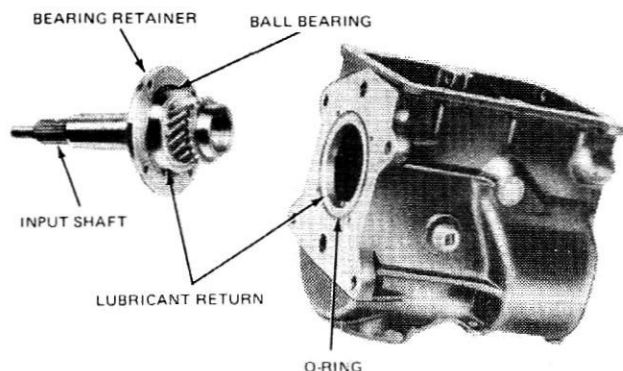
against the case. Do not tap on the input shaft. Tapping the input shaft will result in the load passing through the bearings and may damage the races and/or bearings.



C2473-1A

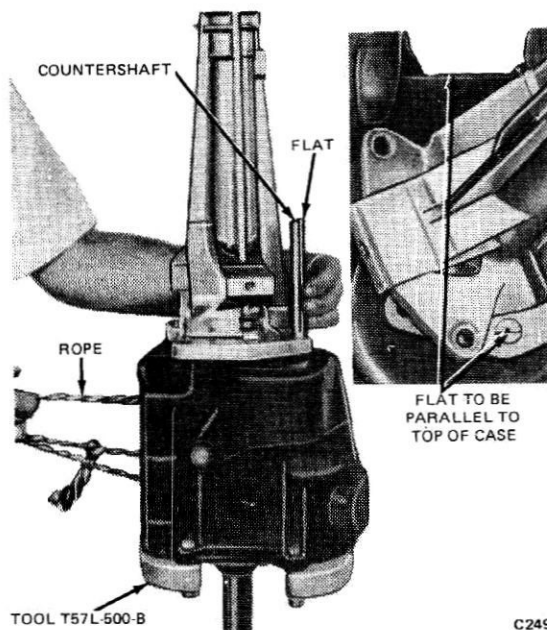
**FIG. 32. Installing Bearing Retainer Seal**

18. Position a new gasket on the extension housing.
19. Make certain that the input shaft pilot bearing is lubricated and installed in the shaft. Slide the extension housing and output shaft into place being careful not to disturb the third- and fourth-speed synchronizer.
20. Align the cutaway in the extension housing flange with the countershaft bore in the rear of the transmission case.
21. Lift the countershaft gear into place with the cord or wire previously installed, then slip the countershaft into position making sure that both thrust washers are in place. Make sure that the flat on the countershaft is toward the top of the case and in a horizontal position (Fig. 34), then tap it into the case with a brass hammer until the front of the shaft is flush with the case.
22. Rotate the extension housing to align the bolt holes, then install the attaching bolts loosely. Prior to tightening the extension housing bolts, make sure that the shift rail slides freely in the bore. If it binds, rotate the extension housing slightly to free the rail, then push the housing into the case. Apply sealer to the four attaching bolts. Torque the bolts to specifications making sure that the housing does not interfere with the reverse idler or countershafts.
23. Place the shift forks in the synchronizer sleeves. Position the interlock lever and install a new retaining pin. Lubricate shift rail oil seal and slide the shift rail through the extension housing, transmission case and the first- and second-speed shift fork. Position selector arm on the rail, then slide the rail through the third- and fourth-speed shift fork, then through the front of the case until the center detent is aligned with the detent plunger bore. Install a new retaining pin in the selector arm.
24. Install the detent plunger, spring, and plug with sealer as shown in Fig. 13.
25. Install a new access plug in the rear of the case (Fig. 35), if required.



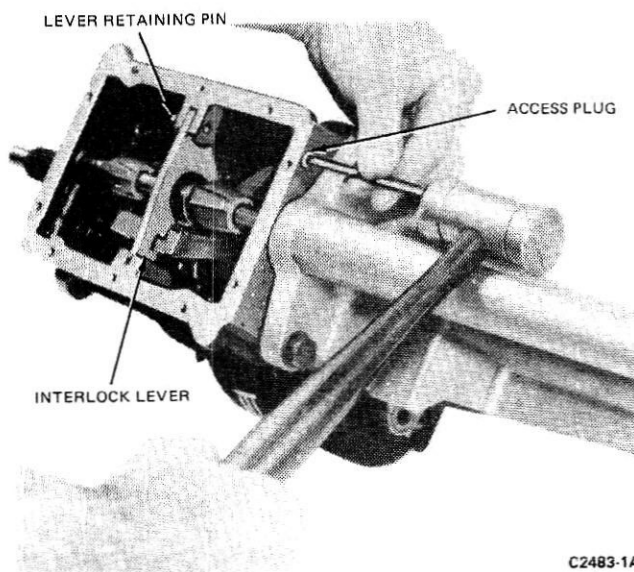
C2482 1A

**FIG. 33. Installing Input Shaft Gear**



C2490-1B

**FIG. 34. Installing Countershaft**



C2483-1A

**FIG. 35. Installing Interlock Lever Access Plug**