TRANSAXLE REASSEMBLY

1. Install output shaft bearing and race into case. See **Fig. 22** . Install oil slinger. Install 5th-Reverse gear selector plate and rod. See **Fig. 11** .
2. Install reverse idler gear as shown. See **Fig. 23** . Install differential and permanent magnet.
3. Prepare input and output shafts for installation as shown. See **Fig. 24** . Engage input and output shafts. Position gear selector forks as shown. Install rubber belt around selector shaft to aid in assembly. Insert input shaft about 2.0" (50.8 mm) into case and turn shaft slightly to the side. Insert output shaft until level with input shaft and engage gears again. Position input and output shafts in place and install selector shaft guide sleeve. Push guide sleeve down and install snap ring. Pull guide sleeve upward and install snap ring. See **Fig. 25** .

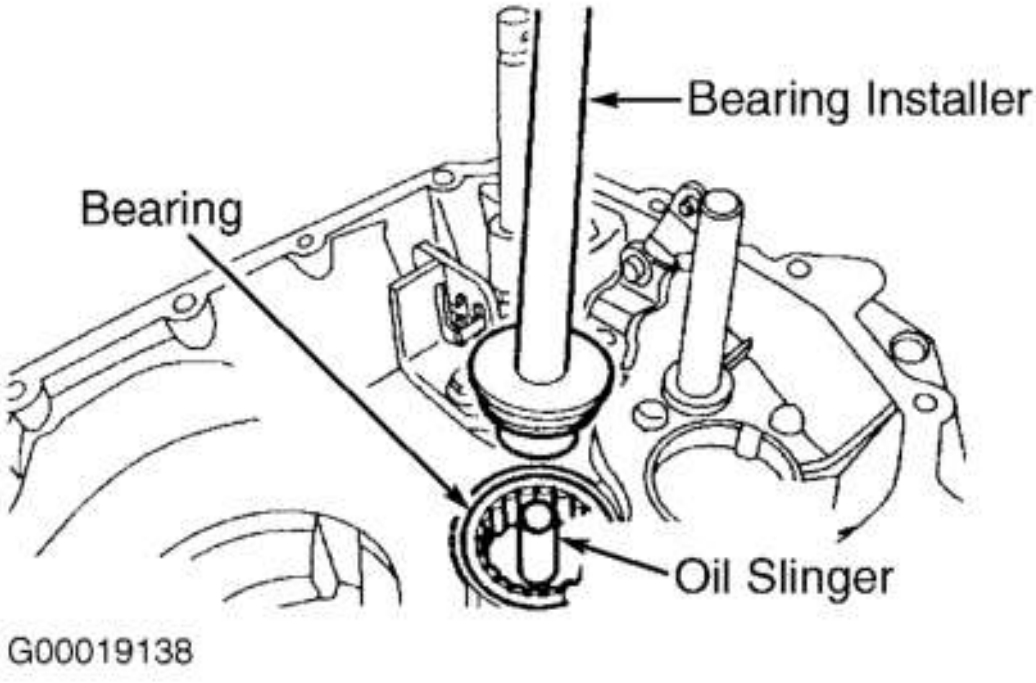


Fig. 22: Installing Output Shaft Bearing
Courtesy of FORD MOTOR CO.

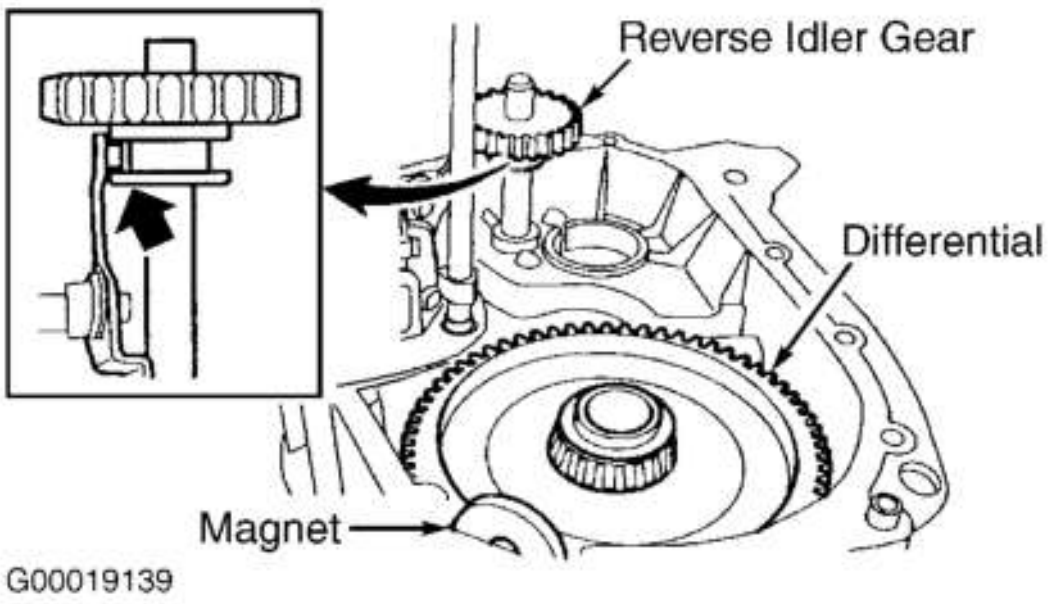


Fig. 23: Installing Reverse Idler Gear
Courtesy of FORD MOTOR CO.

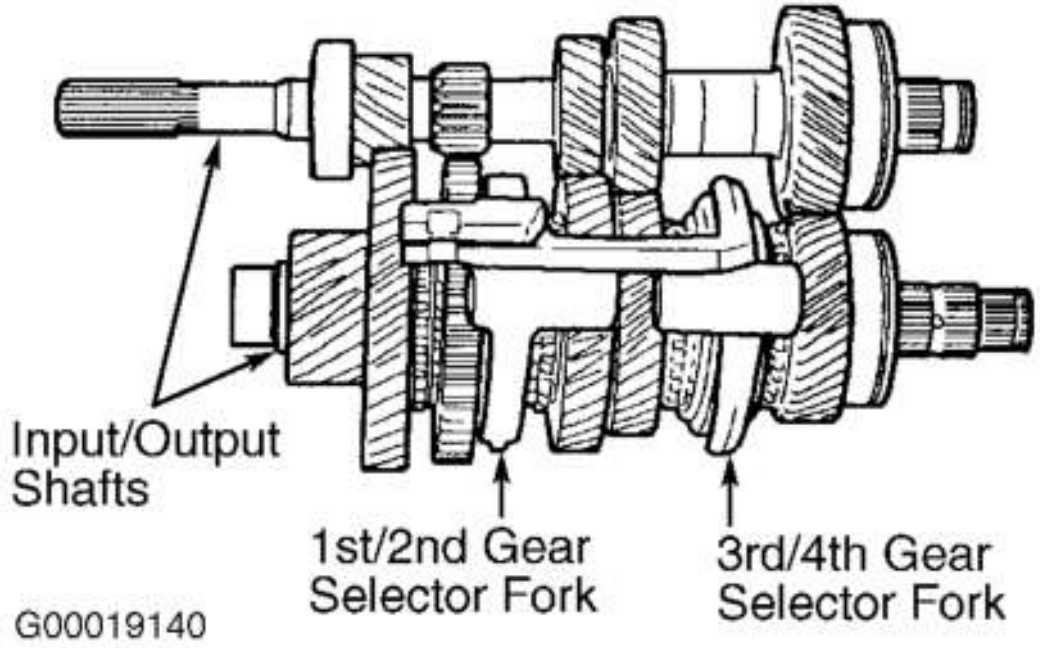


Fig. 24: Preparing Input & Output Shafts For Installation
Courtesy of FORD MOTOR CO.

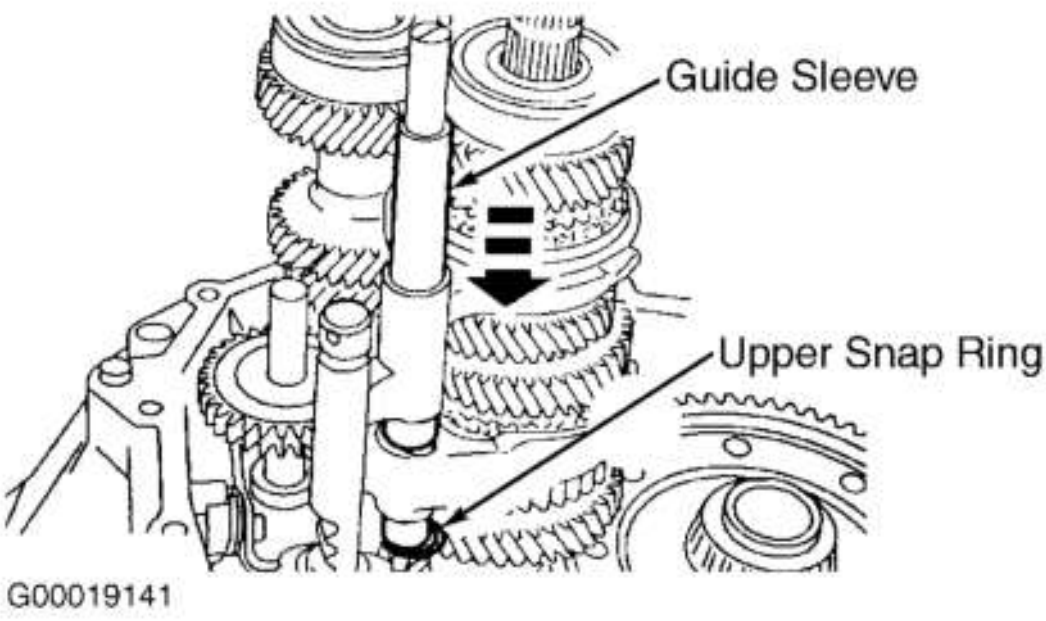


Fig. 25: Installing Selector Shaft Guide Sleeve
Courtesy of FORD MOTOR CO.

4. Manually place transaxle into 5th gear. Turn selector shaft clockwise until 5th-Reverse gear detent is reached, then push selector shaft downward. Install a .15" (3.8 mm) thick measuring shim and bearing race into transaxle housing and stake race into place using a hammer and punch. See **Fig. 26** .
5. Ensure transaxle housing mating surfaces are clean. Install Blanking Plugs (308-152) into both axle shaft openings. Assemble transaxle housings and tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Remove blanking plugs. Install Shim Selection Set (303-S217) and Valve Spring Compressor (303-350) to transaxle as shown. See **Fig. 27** . Install Dial Indicator and Holding Fixture (100-002) to transaxle as shown. See **Fig. 28** . Rotate differential ring gear at least 10 times to settle bearings. Zero dial indicator.

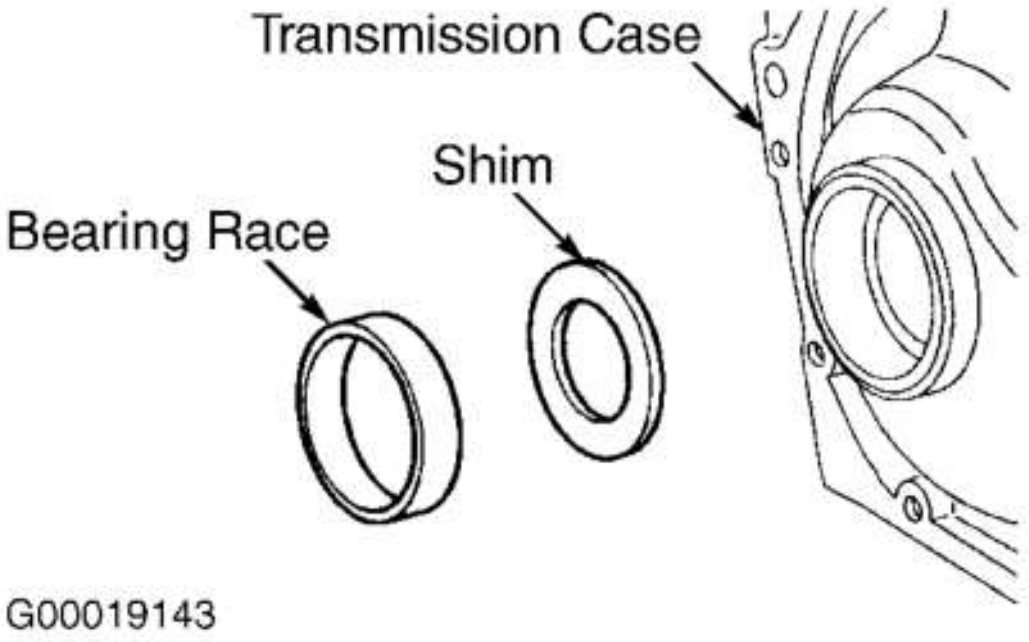


Fig. 26: Installing Bearing Race & Measuring Shim
Courtesy of FORD MOTOR CO.

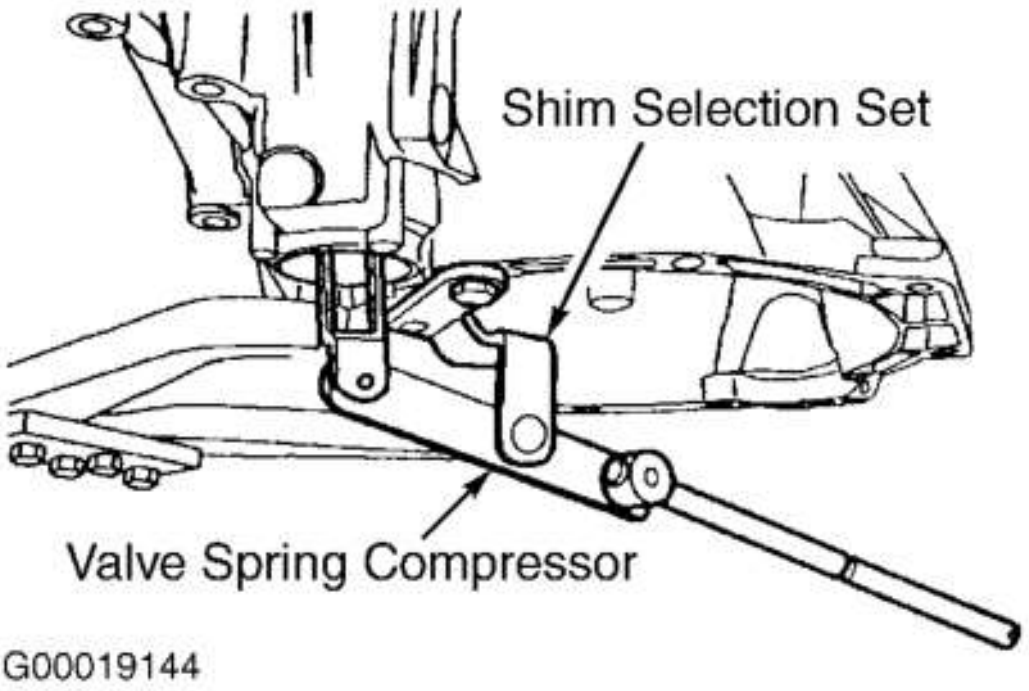


Fig. 27: Installing Special Tools
Courtesy of FORD MOTOR CO.

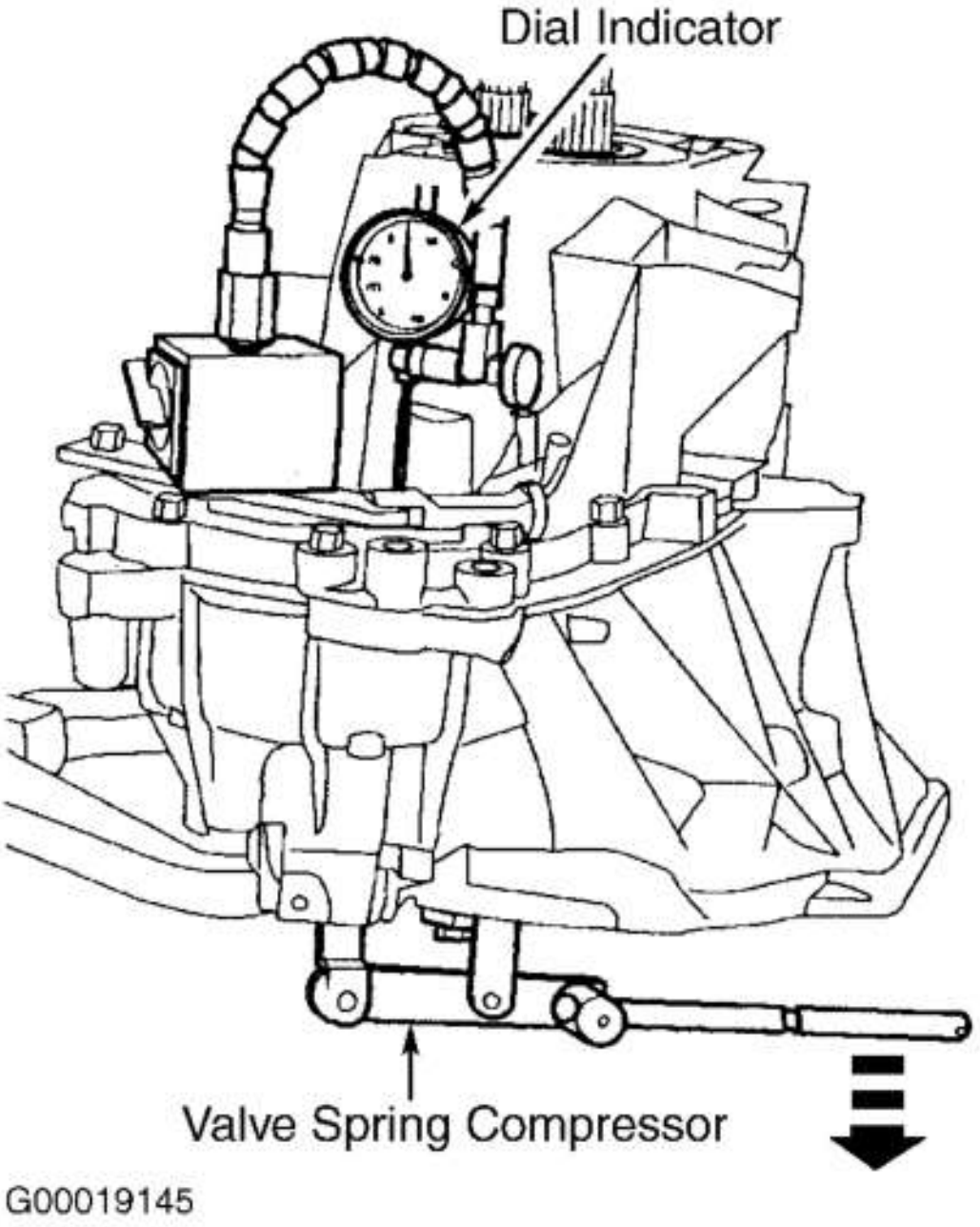


Fig. 28: Measuring Differential End Play
Courtesy of FORD MOTOR CO.

NOTE: The following measurements and calculations use metric system because adjusting shims are only available in increments of .10 mm. Adjusting shim thickness range from .10 mm to .70 mm thick.

6. Using valve spring compressor or appropriate lever, move differential to opposite side, and note dial indicator reading. See **Fig. 28** . Repeat this procedure 3 times, noting dial indicator reading each time.

7. Calculate an average for the 3 measurements taken. To determine thickness of adjusting shim to be used, add calculated average of 3 previous measurements, plus thickness of installed measuring shim (3.80 mm), plus bearing preload of .14 mm.
8. From that total, subtract 4.42 mm, the thickness of Belleville washers. Round this total up or down, depending on total. If total is .05 mm or less, round number down .05 mm. If total is .06 mm or greater, round number up to a whole number.
9. Example: 1st measurement = .73 mm + 2nd measurement = .74 mm + 3rd measurement = .72 mm = 2.19/3 = .73 mm average. Then add the average of .73 mm + 3.80 mm measuring shim thickness + .14 mm bearing preload, which equals 4.67 mm. Then subtract 4.42 mm, the thickness of Belleville washers from 4.67 mm - 4.42 mm = .25 mm. Finally, because the total is .25 mm, round .25 mm off to .20 mm, the total thickness for the required adjusting shims.
10. Remove all special tools. Separate transaxle housing sections. Remove bearing race and measuring shim. Install Belleville washers so inner diameters are touching. See **Fig. 29** . Install determined adjusting shim and bearing race. Using a hammer and punch, stake bearing race into place with punch marks on edge of housing.
11. Evenly apply silicone sealant to transaxle housing mating surfaces. Assemble transaxle housings and tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Using a wooden block and a screwdriver, install input shaft and output shaft bearing snap rings. See **Fig. 30** . Position NEW 5th gear housing gasket on transaxle. Align snap ring openings with gasket cut outs. Install blanking plugs in transaxle. Install 5th gear housing and tighten bolts to specification. See **TORQUE SPECIFICATIONS** .
12. Remove transaxle from holding attachment. Place transaxle on a press and support input shaft clutch splines on press. Using a suitable pipe, press 5th gear onto input shaft. Reinstall transaxle onto holding attachment.
13. Install 5th gear snap ring onto Input Shaft Snap Ring Installer (308-076), and install snap ring onto input shaft. Assemble 5th gear synchronizer if disassembled. See **Fig. 31** . Install 5th gear synchronizer unit with selector fork. Swivel drive plate upward and push 5th gear synchronizer down until it reaches drive plate. See **Fig. 32** . Install gear selector finger, but DO NOT tighten bolt. Install 5th gear synchronizer snap ring. See **Fig. 8** .

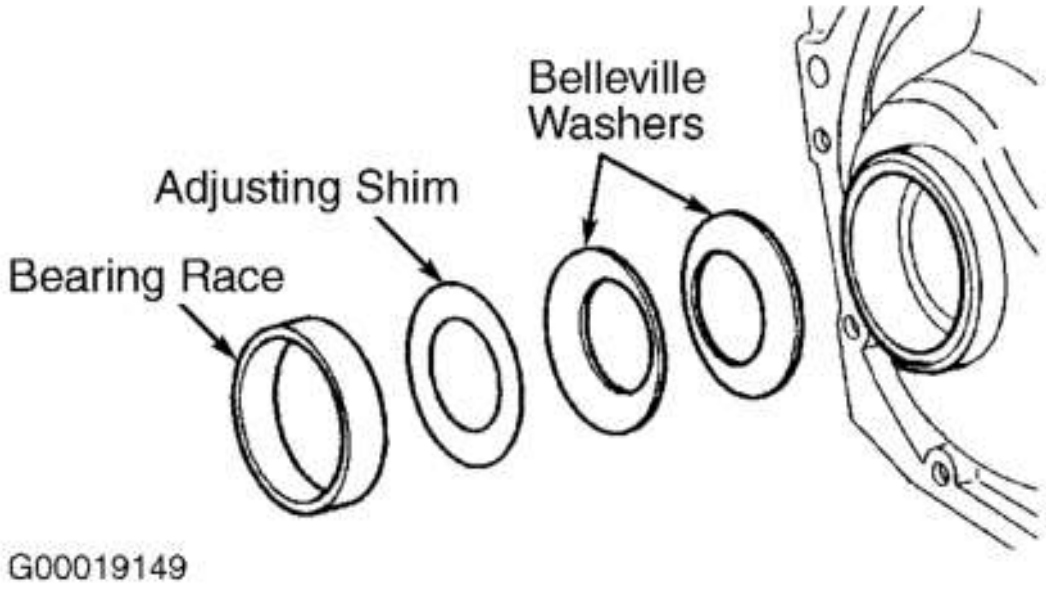


Fig. 29: Installing Adjusting Shim & Belleville Washers
Courtesy of FORD MOTOR CO.

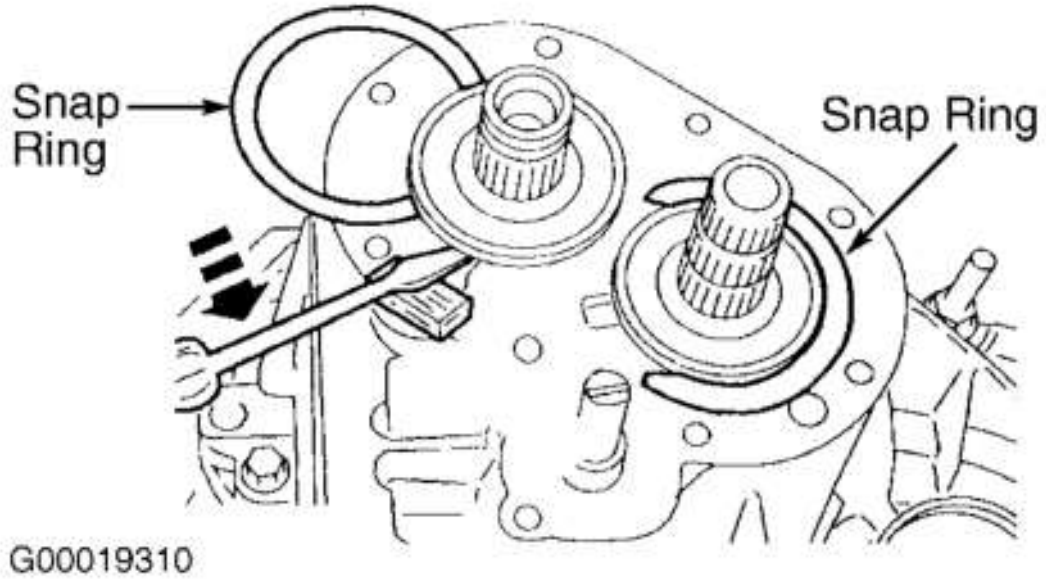


Fig. 30: Installing Input Shaft & Output Shaft Bearing Snap Rings
Courtesy of FORD MOTOR CO.

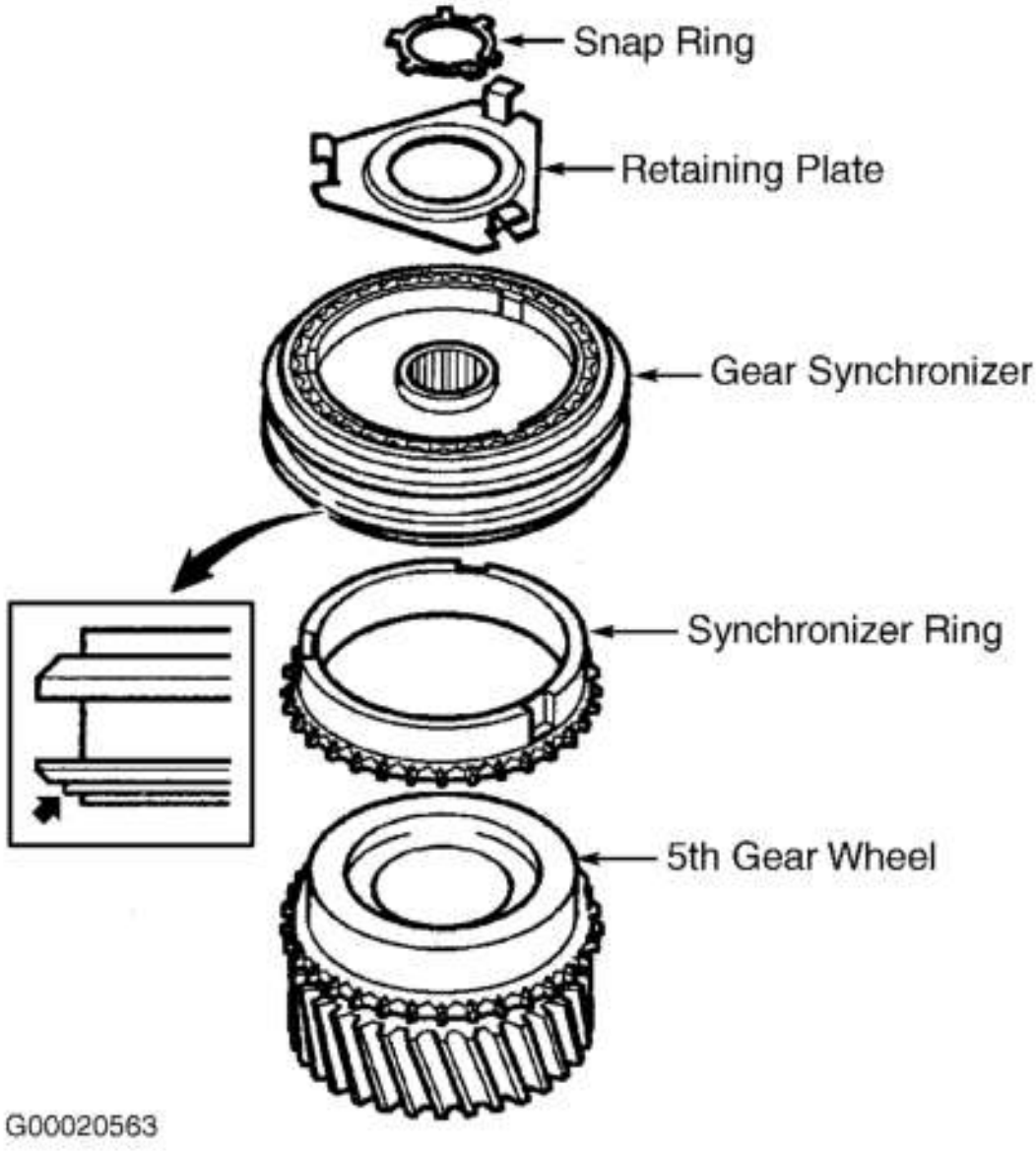


Fig. 31: Exploded View Of 5th Gear Synchronizer Unit
Courtesy of FORD MOTOR CO.

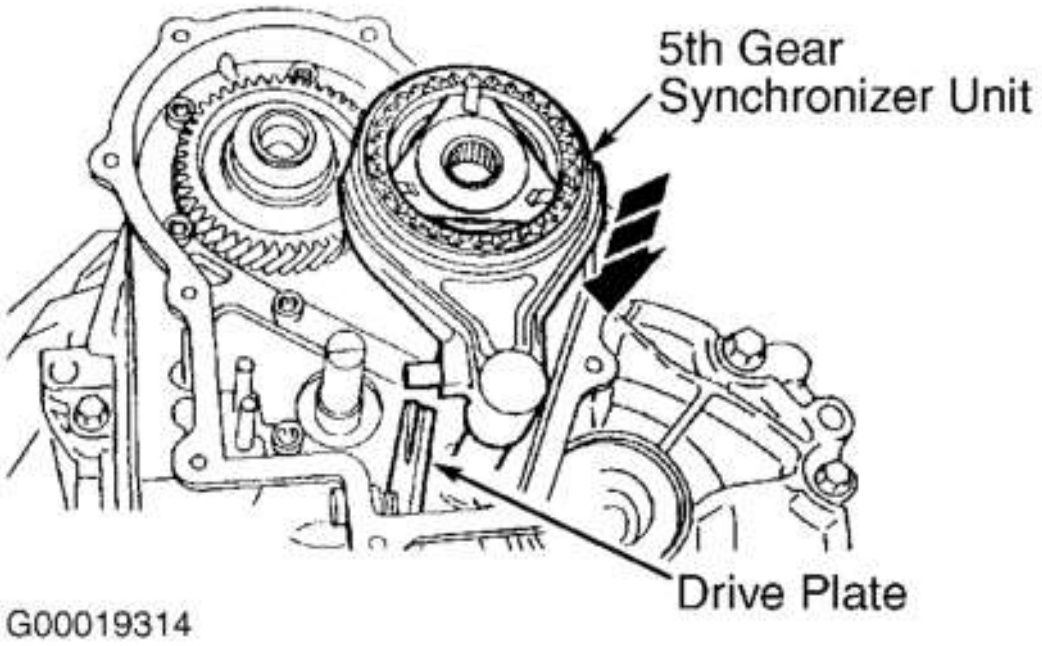


Fig. 32: Installing 5th Gear & Synchronizer Unit
Courtesy of FORD MOTOR CO.

14. Place transaxle in Neutral. Coat gear selector interlock screw threads with Loctite and install main interlock and 5th gear interlock screws. See **Fig. 33** . Install gearshift and selector cable bracket and tighten bolts to 15 ft. lbs. (20 N.m). Install rubber boot.
15. Place transaxle in 5th gear. Press selector fork and gear selector finger down together. Turn selector shaft clockwise as far as it will go, and then press selector shaft downward. Raise gear selector finger to eliminate end play, and tighten selector finger screw in this position to 13 ft. lbs. (17 N.m). See **Fig. 34** .
16. Apply silicone sealant to rear cover mating surface and install rear cover onto transaxle. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Using Axle Shaft Oil Seal installer (308-039), install input shaft oil seal. Install gearshift lever. Install gearshift cable cover. Install VSS. Place clutch slave cylinder over input shaft seal and install bolts. Tighten slave cylinder bolts evenly to specification. See **TORQUE SPECIFICATIONS** . Ensure oil seal is pressed into place.

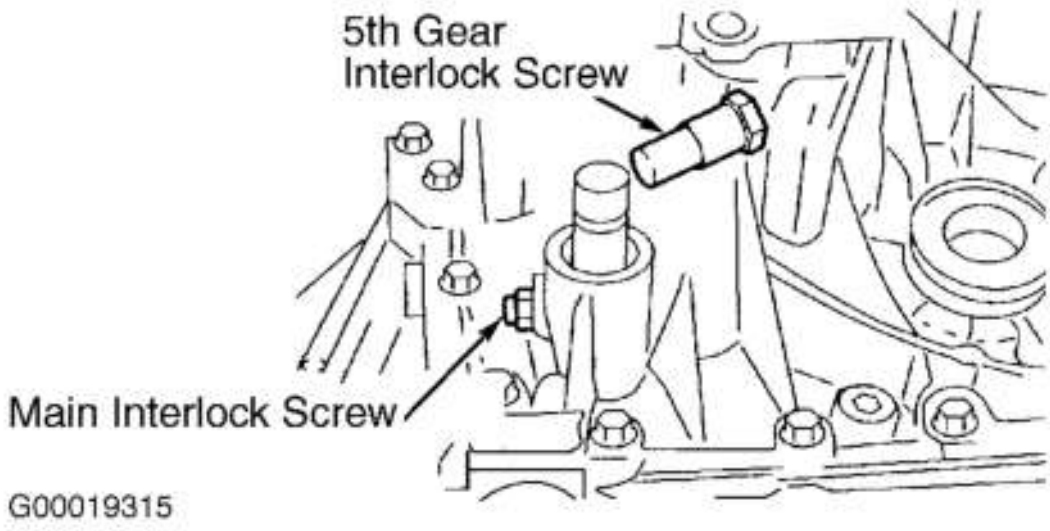
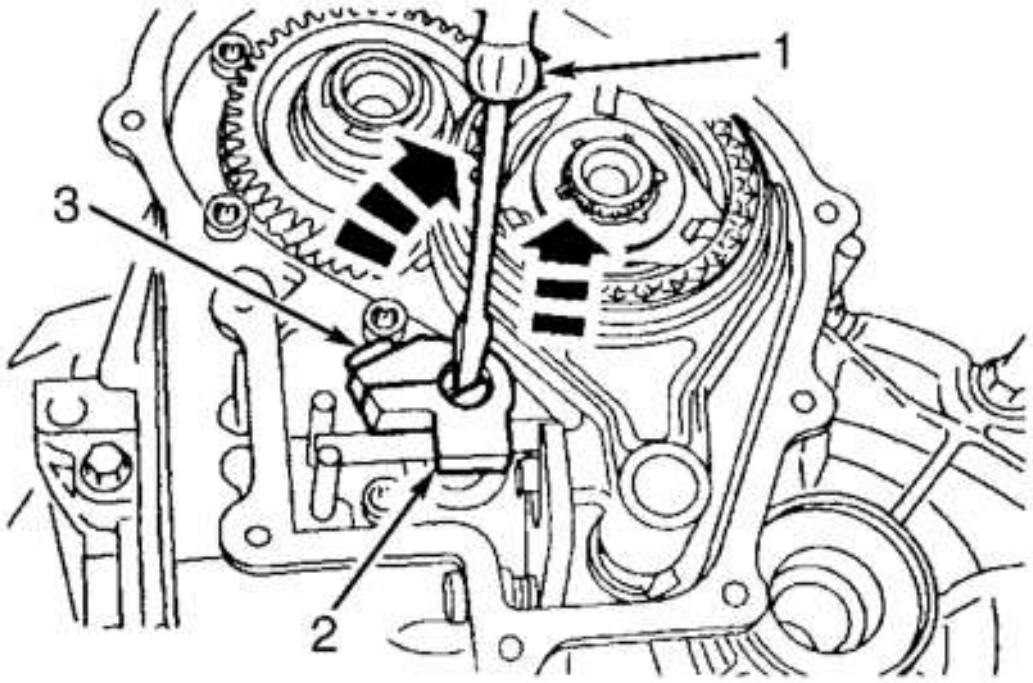


Fig. 33: Installing Selector Interlock Screws
Courtesy of FORD MOTOR CO.



1. Screwdriver On Selector Shaft
2. Gear Selector Finger
3. Selector Finger Bolt

G00019316

Fig. 34: Adjusting Gear Selector Finger
Courtesy of FORD MOTOR CO.