



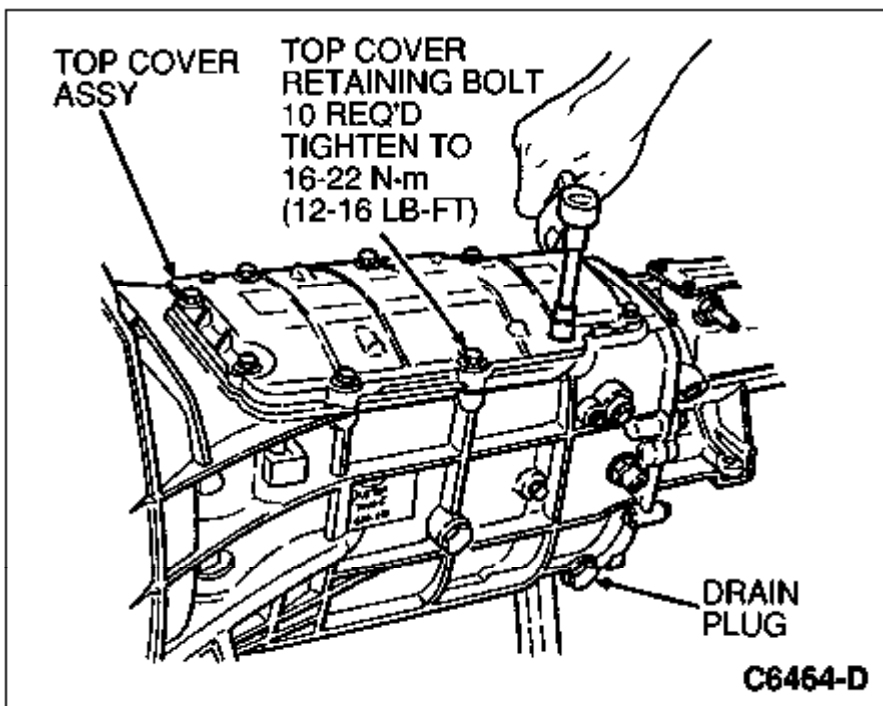
## Transmission -- Disassembly

### Tools Required:

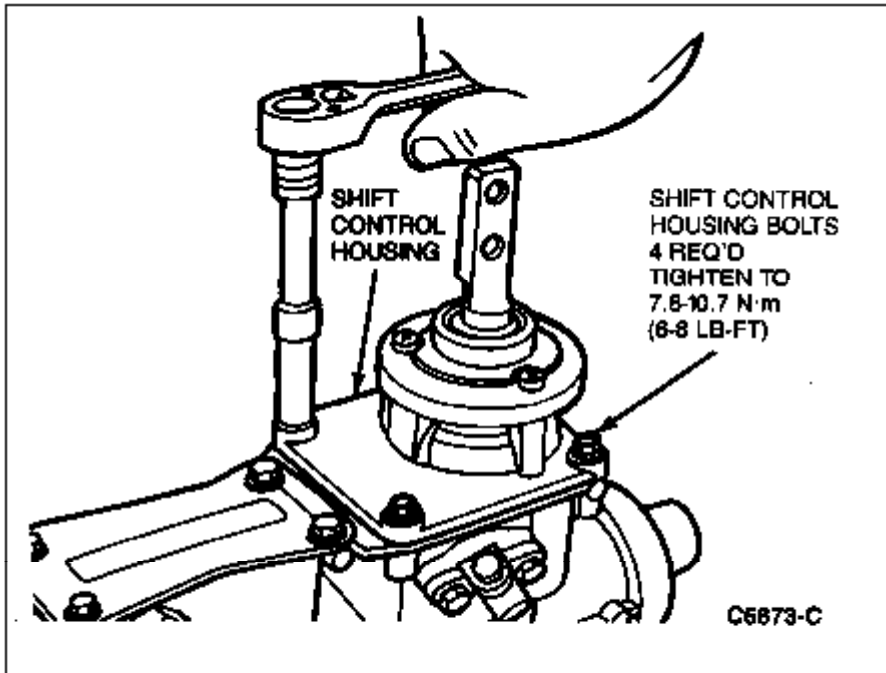
- Impact Slide Hammer T50T-100-A
- Extension Housing Seal Remover T74P-77248-A
- Locknut Staking Tool T77J-7025-F
- Bearing Puller T77J-7025-H
- Puller Ring T77J-7025-J
- TOD Forcing Screw T84T-7025-B
- Remover/Replacer Tube T85T-7025-A
- Mainshaft Locknut Wrench T88T-7025-A
- Bearing Race Puller T88T-7120-A

### Disassembly

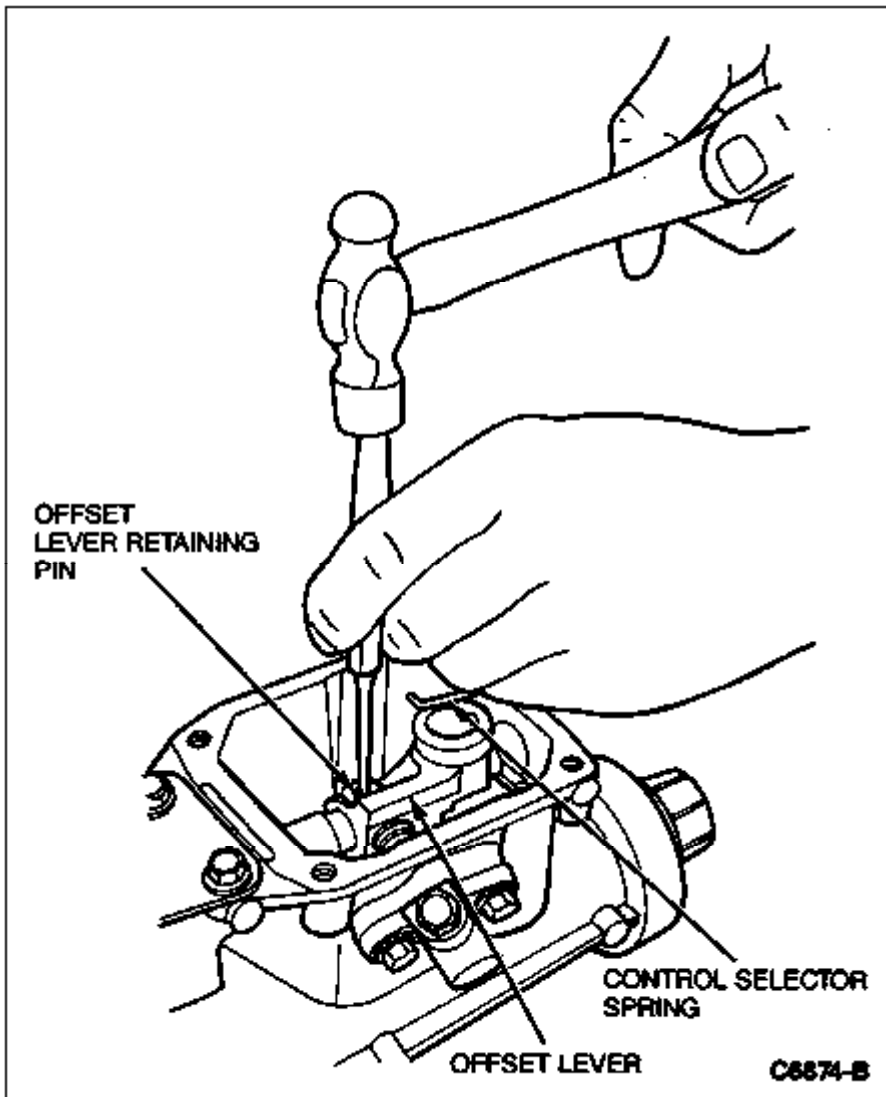
1. Using a 24mm wrench, remove transmission drain plug and drain transmission.



2. Using a 10mm socket, remove four shift control housing bolts and pry up gently on the housing.



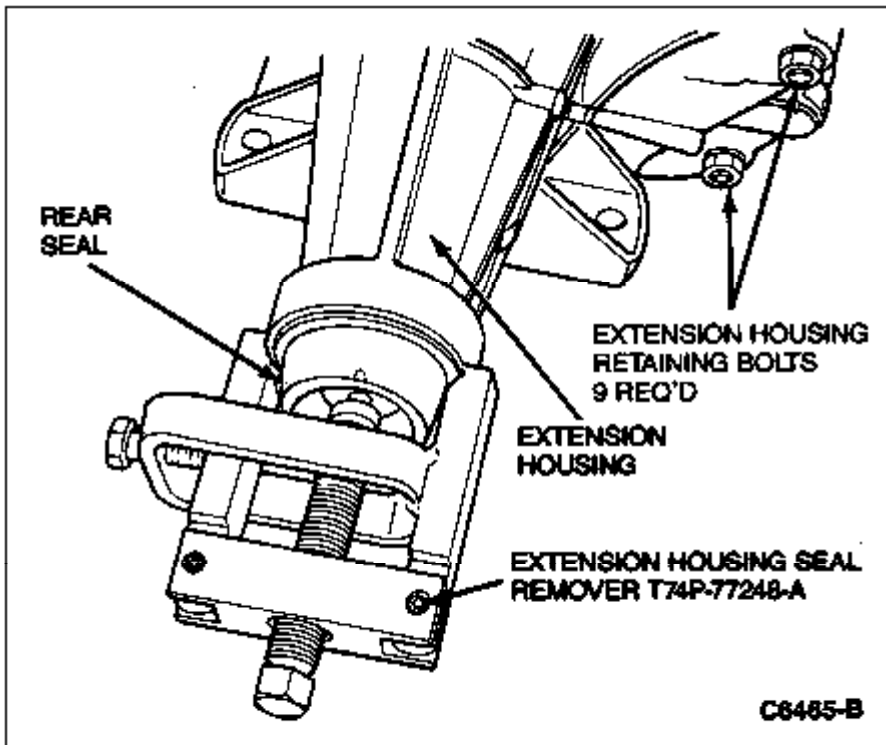
3. Using a 5/32-inch punch and hammer, remove the offset lever retaining pin located in the extension housing. Retrieve offset lever retaining pin using a pencil magnet.



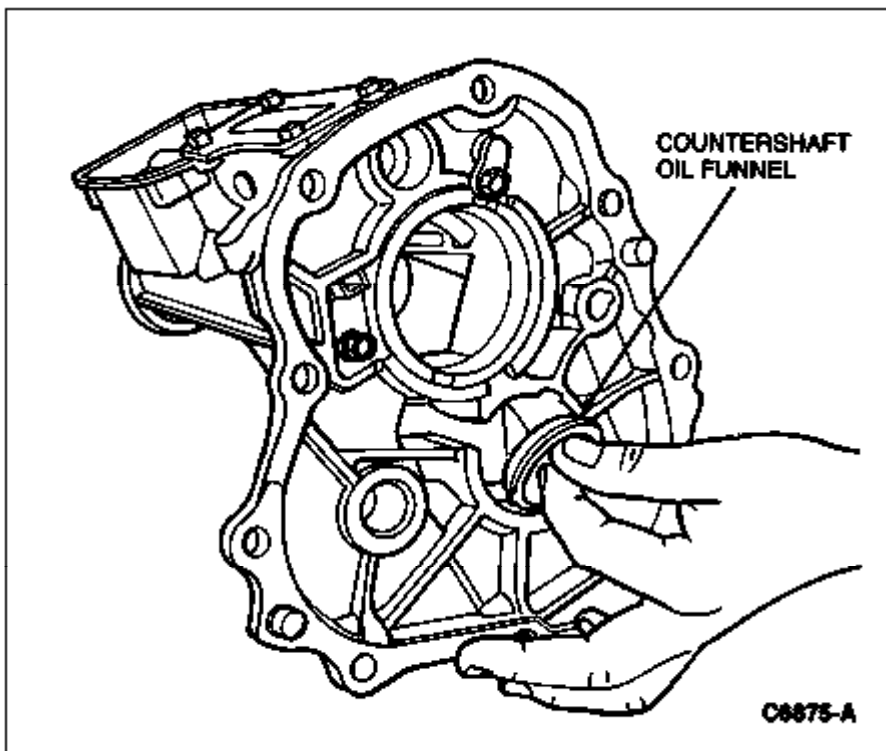
**NOTE:**

If it is necessary to remove rear seal from extension housing, extension housing must remain installed to transmission case. Remove extension housing rear seal using Extension Housing Seal Remover T74P-77248-A.

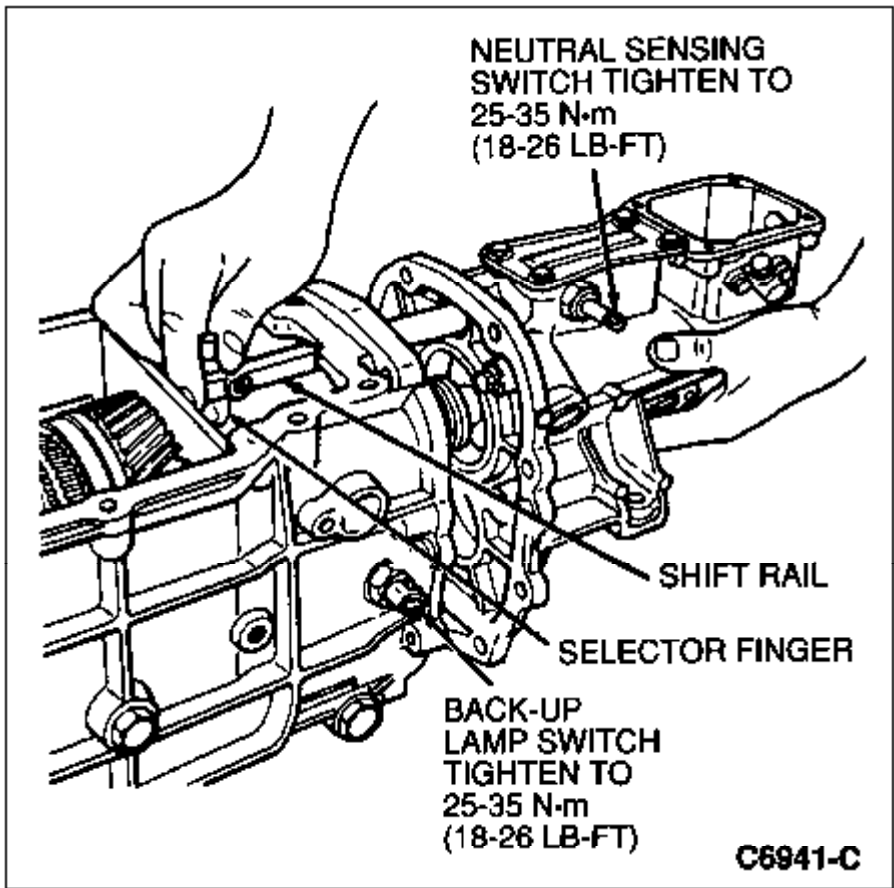
4. Using a 14mm socket, remove nine extension housing retaining bolts. Pry gently at locations provided on extension housing and transmission case. Remove extension housing from case.



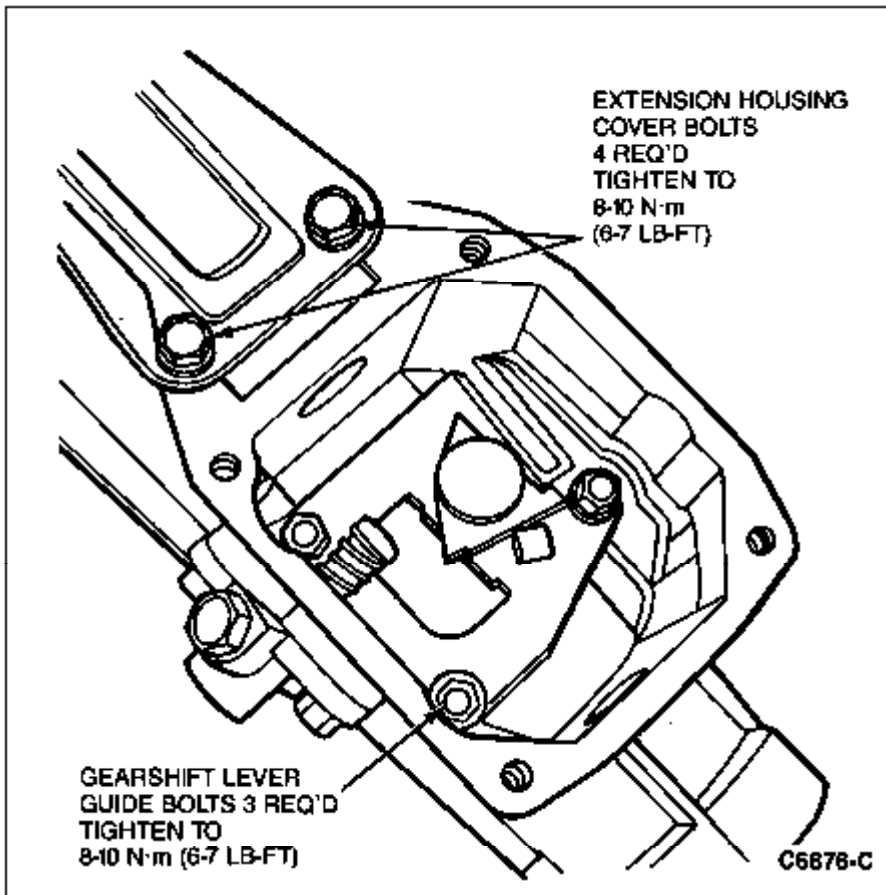
5. Remove countershaft oil funnel by hand. Note position of tabs for assembly.



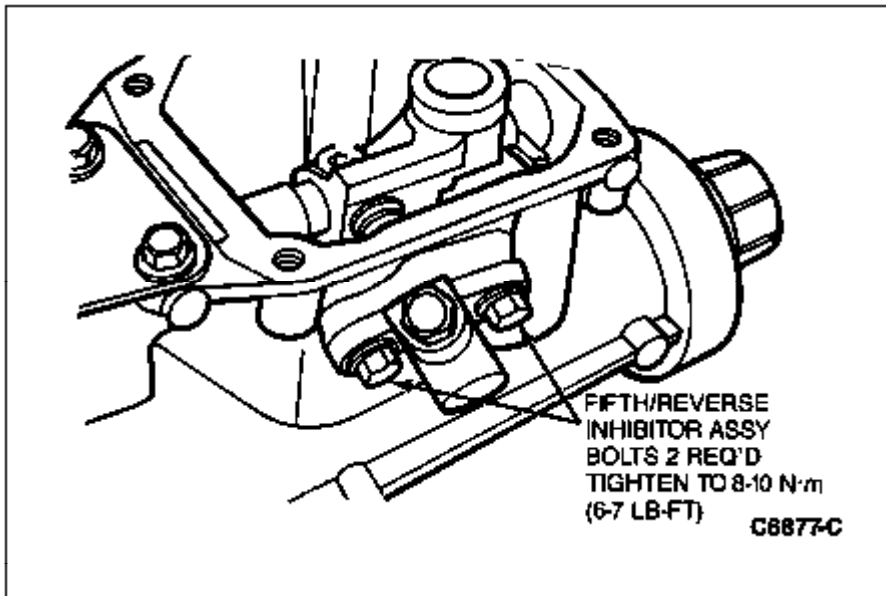
6. Using a 12mm wrench, remove 10 top cover assembly retaining bolts. Remove top cover assembly. Refer to illustration following Disassembly, Step 1.
7. Remove neutral sensing switch using a 22mm (7/8 inch) socket, if required.
8. Remove backup lamp switch using a 22mm (7/8 inch) socket, if required.
9. Remove shift rail and selector finger assembly from transmission case.



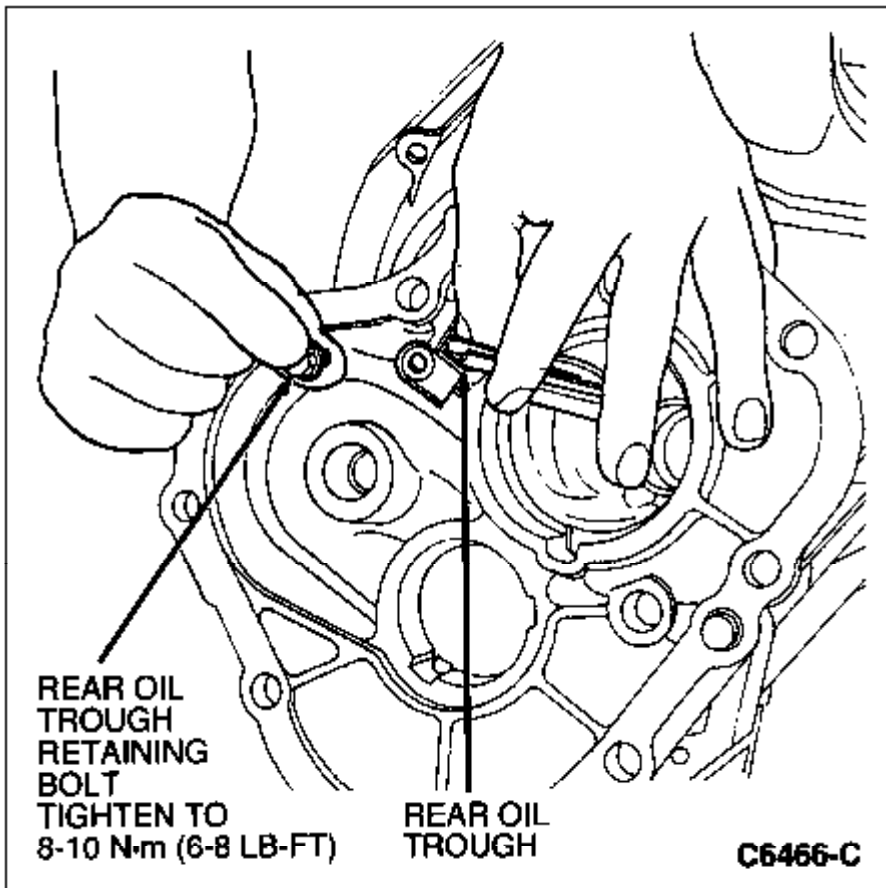
10. Remove offset lever and control selector spring from extension housing.
11. If necessary, remove gearshift lever guide using a 10mm socket to remove three bolts.



12. If necessary, remove fifth/reverse inhibitor assembly using a 10mm socket to remove two bolts.



13. If necessary to remove shift rail bushings, remove bushing retaining rings. Using a 10mm socket, remove four extension housing cover bolts and pry cover up gently. Using a hammer and suitable tool, tap bushings free from case.
14. If necessary, remove rear oil trough from extension housing using a 10mm socket. This oil trough provides lubrication to the extension housing bushing.

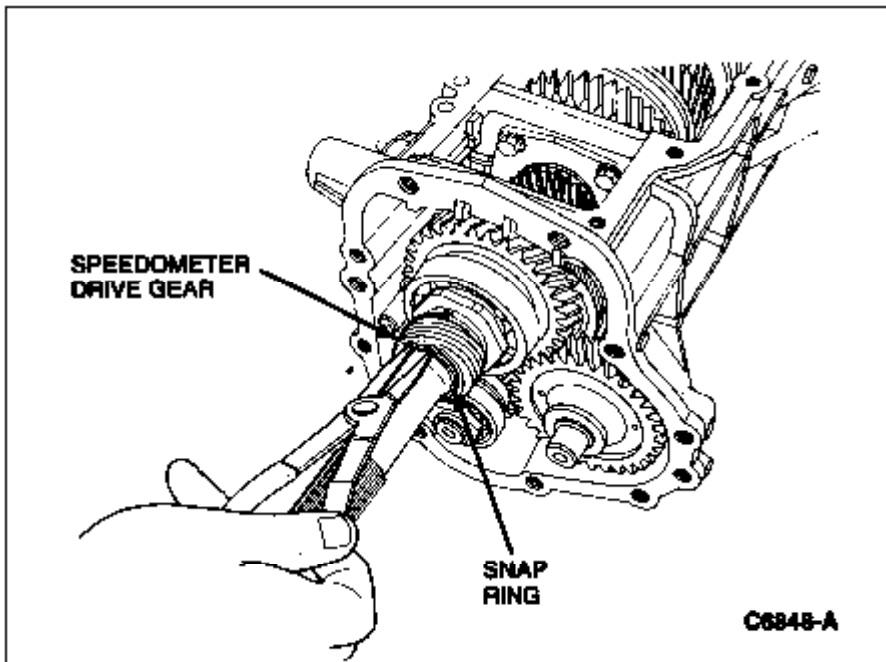


15. Remove and discard anti-spill oil seal from output shaft.
16. Remove the speedometer snap ring, drive gear and steel ball.

**NOTE:**

For reference during assembly, observe and record speedometer drive color.

Green--E8TZ-17285-C (8 teeth RH)

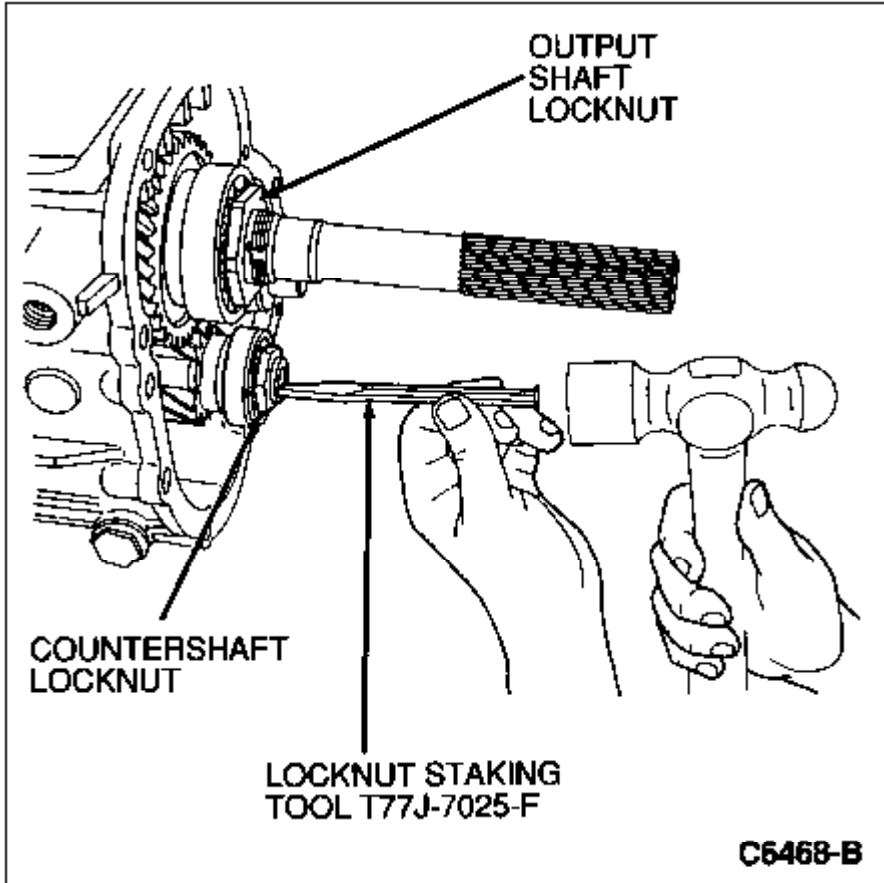


17. Lock transmission into first and third gears.

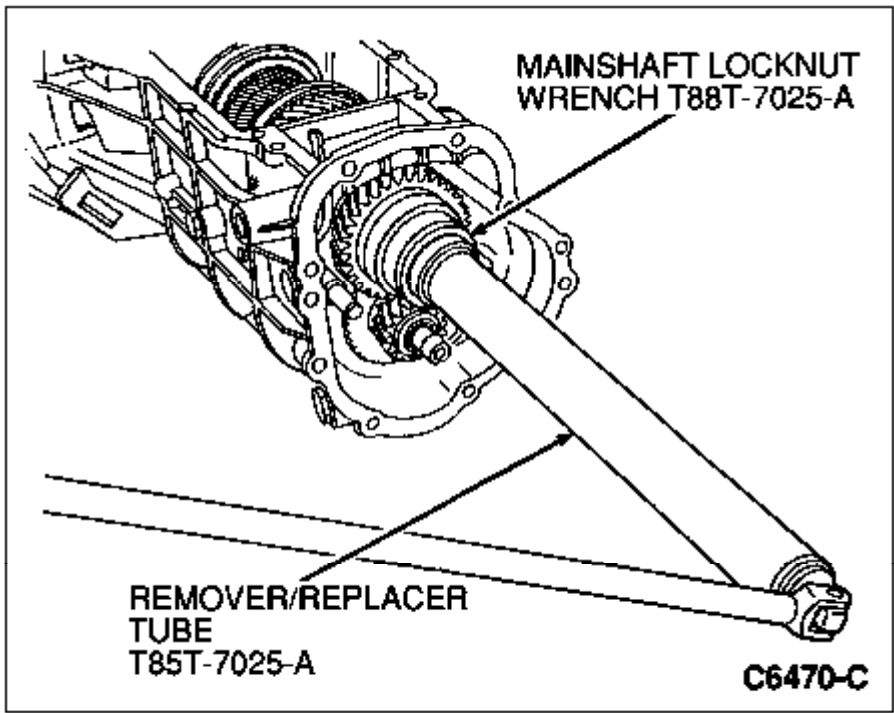
**CAUTION:**

**Staked areas of locknuts must be fully released or damage to shaft threads will result.**

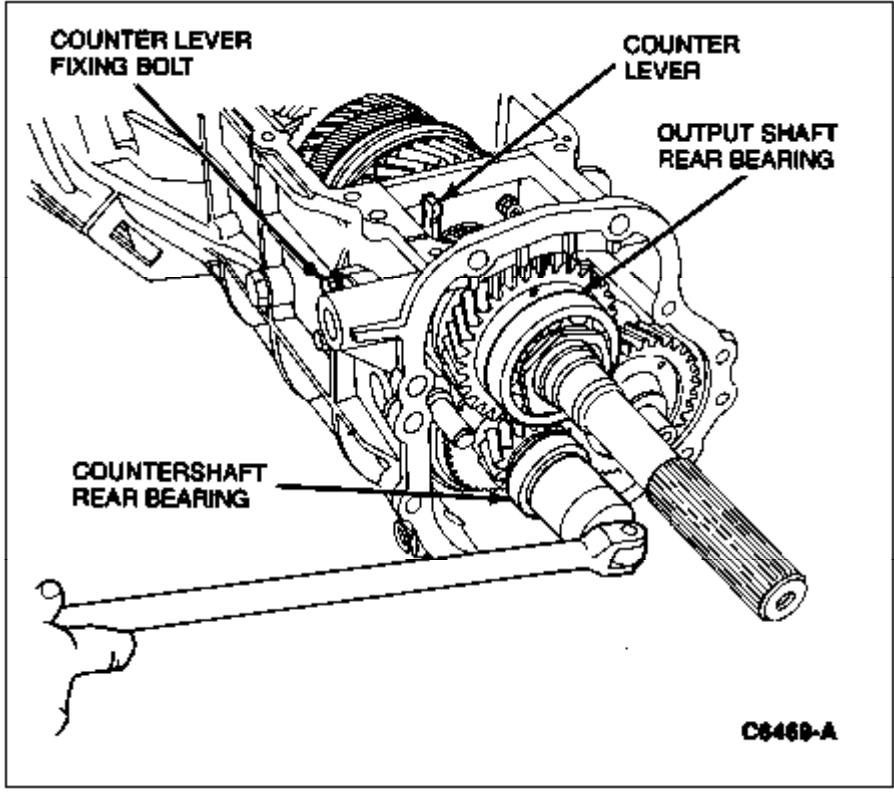
18. Using Locknut Staking Tool T77J-7025-F, release the staked areas securing output shaft and countershaft locknuts.



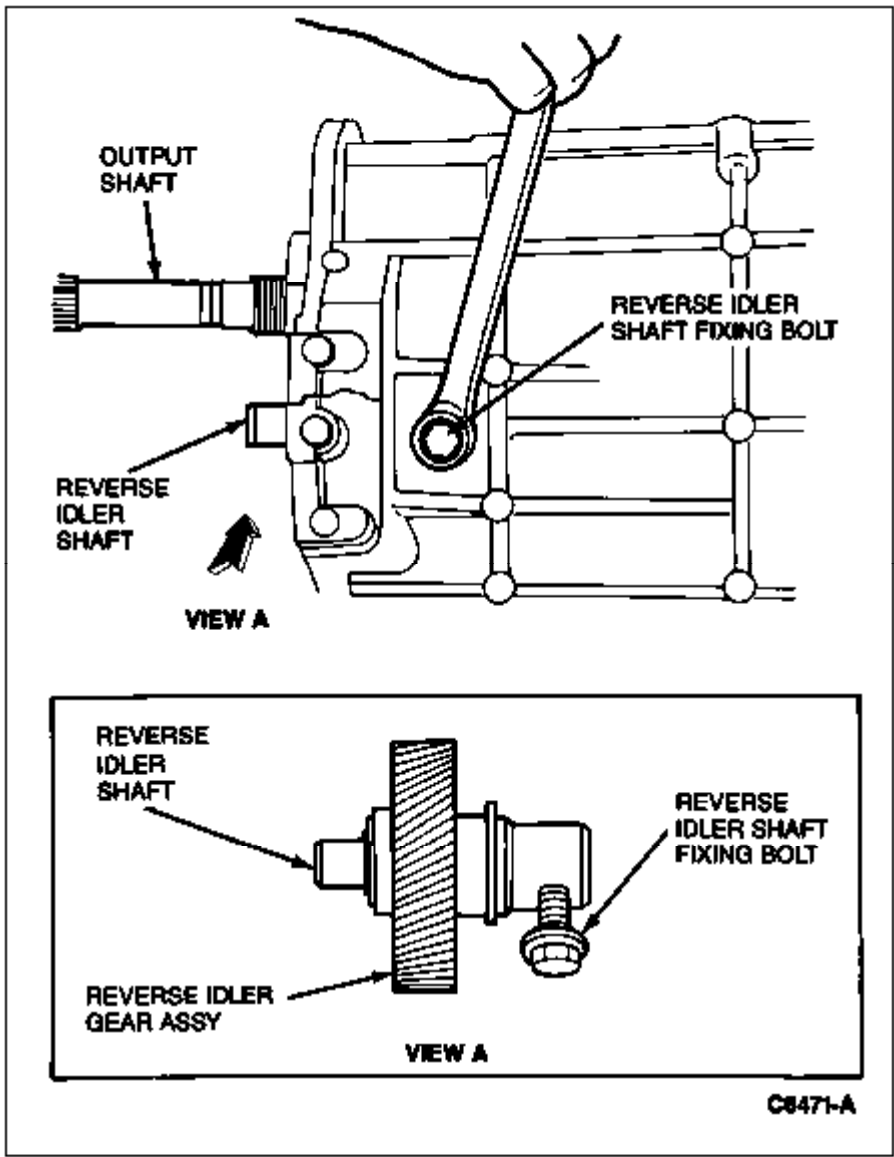
19. Using Mainshaft Locknut Wrench T88T-7025-A and Remover/Replacer Tube T85T-7025-A, remove and discard output shaft locknut.



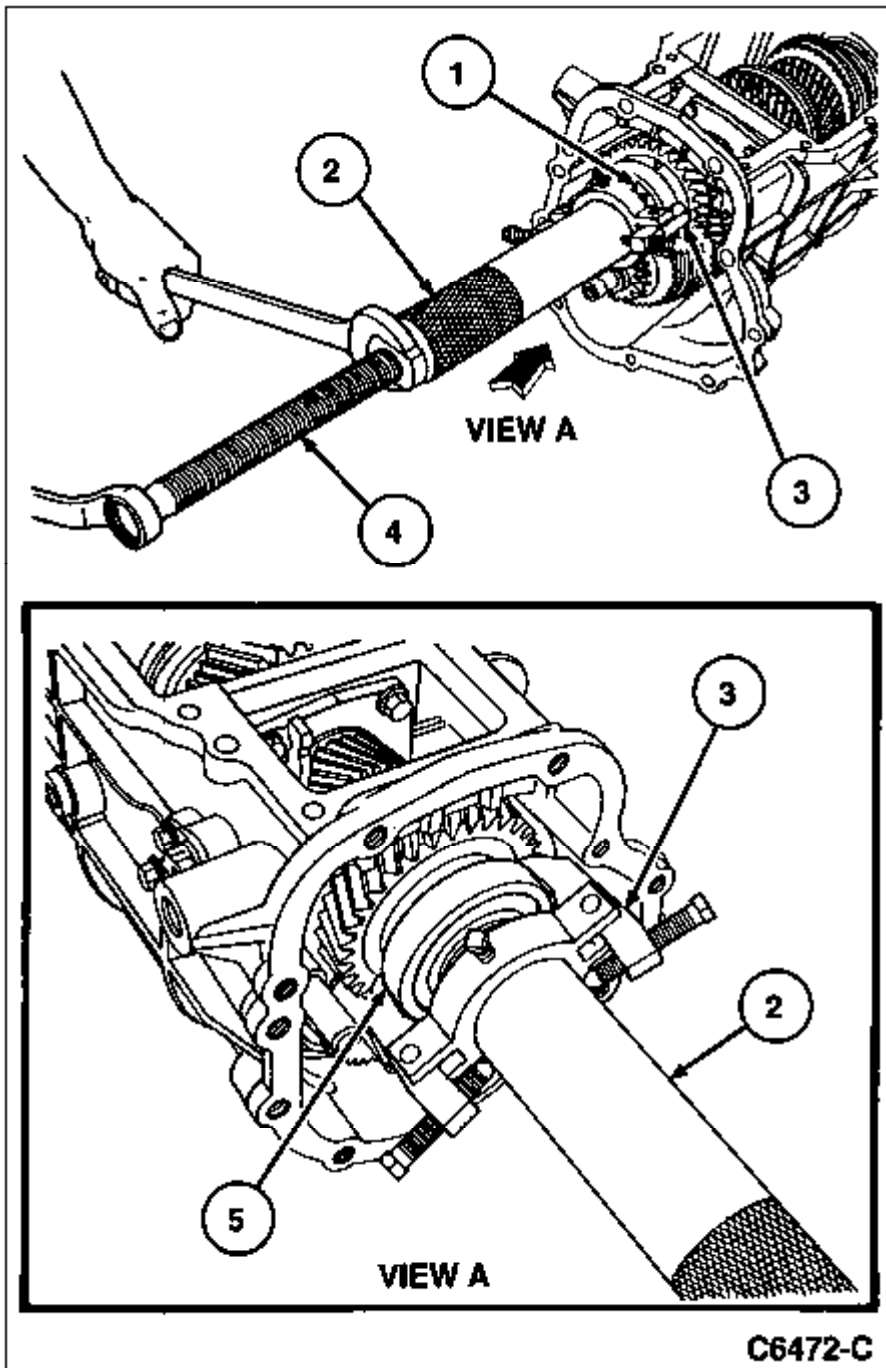
20. Using a 32mm socket, remove and discard the countershaft rear bearing locknut. Remove the countershaft bearing and thrust washer.



21. Using a 17mm wrench, remove reverse idler shaft fixing bolt and washer. Remove reverse idler gear assembly by grasping and pulling rearward.



22. Remove output shaft rear bearing from output shaft using Remover/Replacer Tube T85T-7025-A, TOD Forcing Screw T84T-7025-B, Bearing Puller T77J-7025-H, and Puller Ring T77J-7025-J.

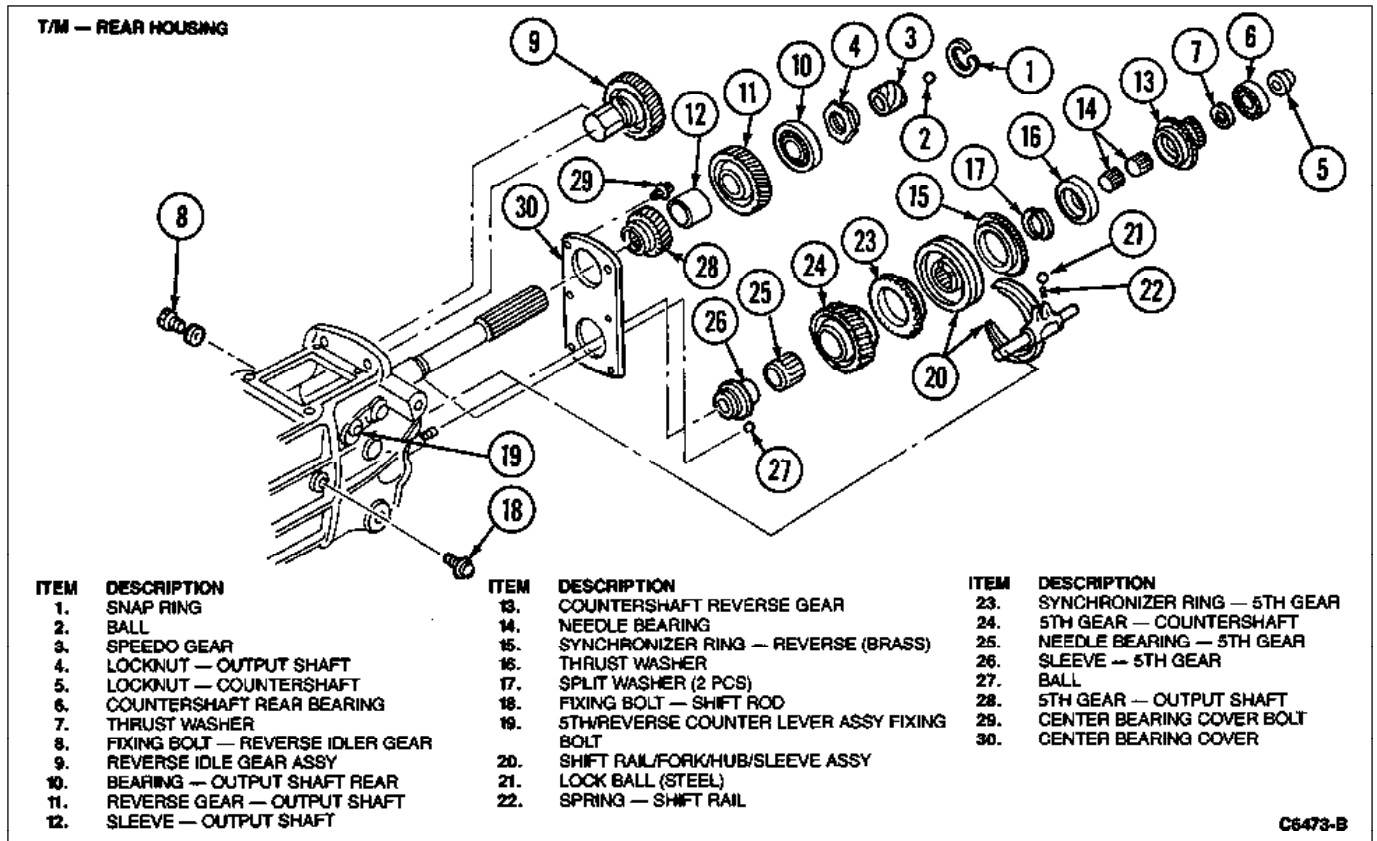


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Item	Part Number	Description
1	T77J-7025-J	Puller Ring
2	T85T-7025-A	Remover/Replacer Tube
3	T77J-7025-H	Bearing Puller
4	T84T-7025-B	TOD Forcing Screw
5	-	Output Shaft Rear Bearing

23. Remove reverse gear from output shaft by hand.

24. Remove sleeve from output shaft.
25. Remove counter reverse gear with two needle bearings and reverse synchronizer ring (brass).



26. Remove thrust washer and split washer from countershaft.
27. Using a 12mm wrench, remove fifth/reverse shift rod fixing bolt.
28. Using a 10mm wrench, remove the fifth/reverse counter lever assembly fixing bolt and inner circlip. Remove counter lever assembly from transmission case.

**NOTE:**

Do not remove the Torx® nut retaining the counter lever pin at this time.

29. Remove the following parts as an assembly:

- Fifth/reverse synchronizer hub and sleeve assembly (countershaft)
- Fifth/reverse shift fork and rail
- Fifth gear, fifth gear bearing assembly (two piece) and fiber-lined blocker ring

**NOTE:**

Do not separate steel ball and spring (removed from shift fork groove) unless necessary.

30. Remove fifth gear sleeve and ball using a magnet.

31. Remove fifth gear from output shaft by hand.

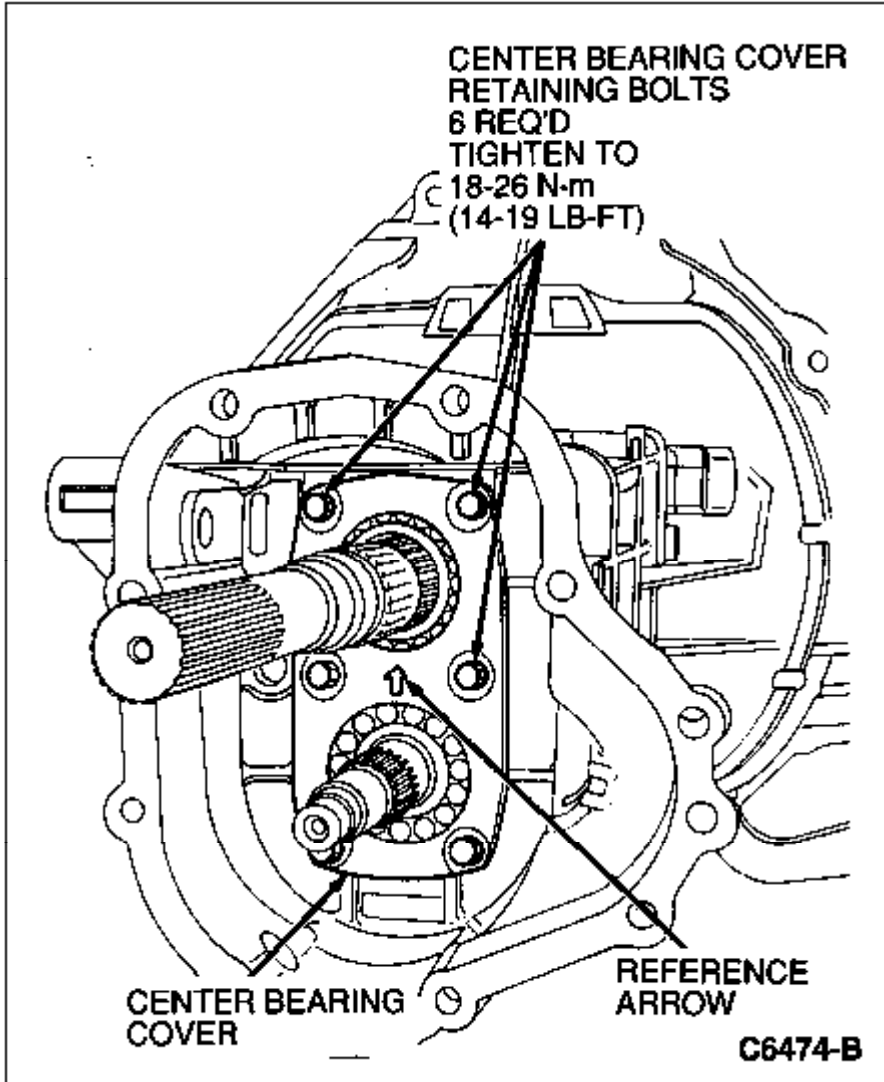
**NOTE:**

For reference during assembly, observe that the longer of the two collars on fifth gear faces forward.

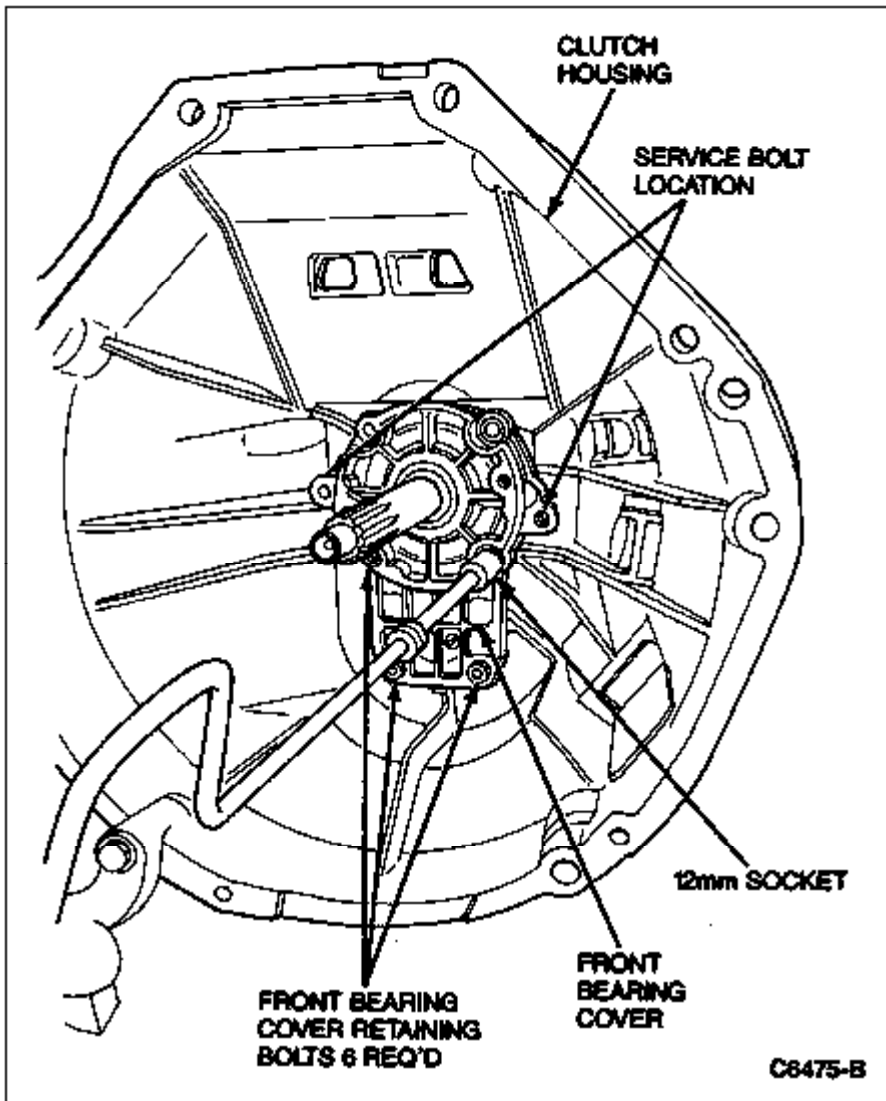
32. Using a 12mm socket, remove six center bearing cover retaining bolts. Remove center bearing cover.

**NOTE:**

For reference during assembly, observe that reference arrow in middle of center bearing cover points upward. Observe that flanged side of center bearing cover faces inward.



33. Using a 12mm socket, remove six front bearing cover retaining bolts.



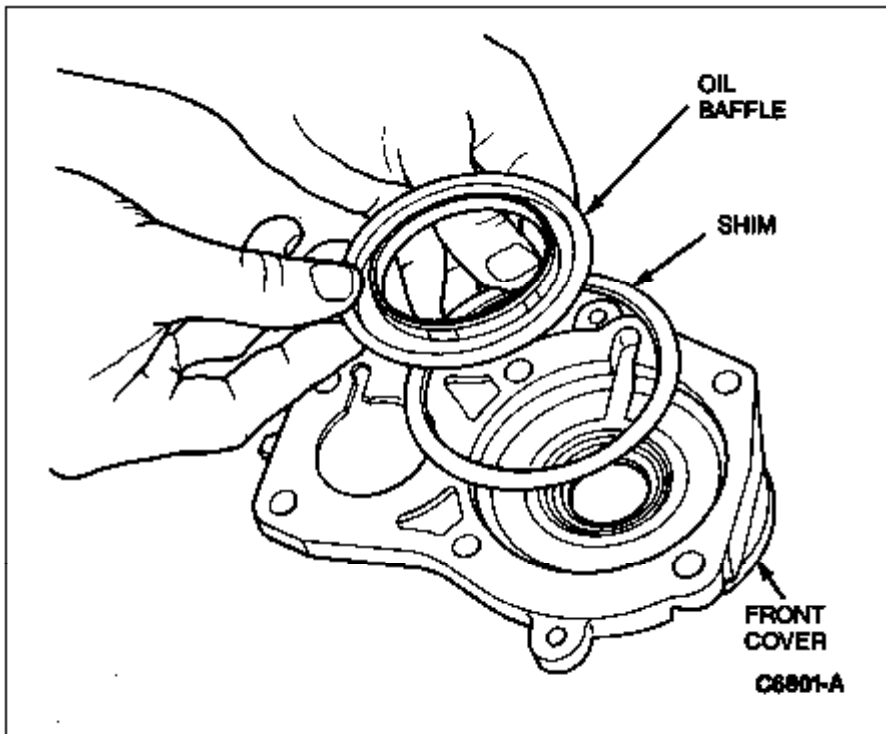
**NOTE:**

Bolts threaded into service bolt locations will bottom out and lift front bearing cover away from transmission case.

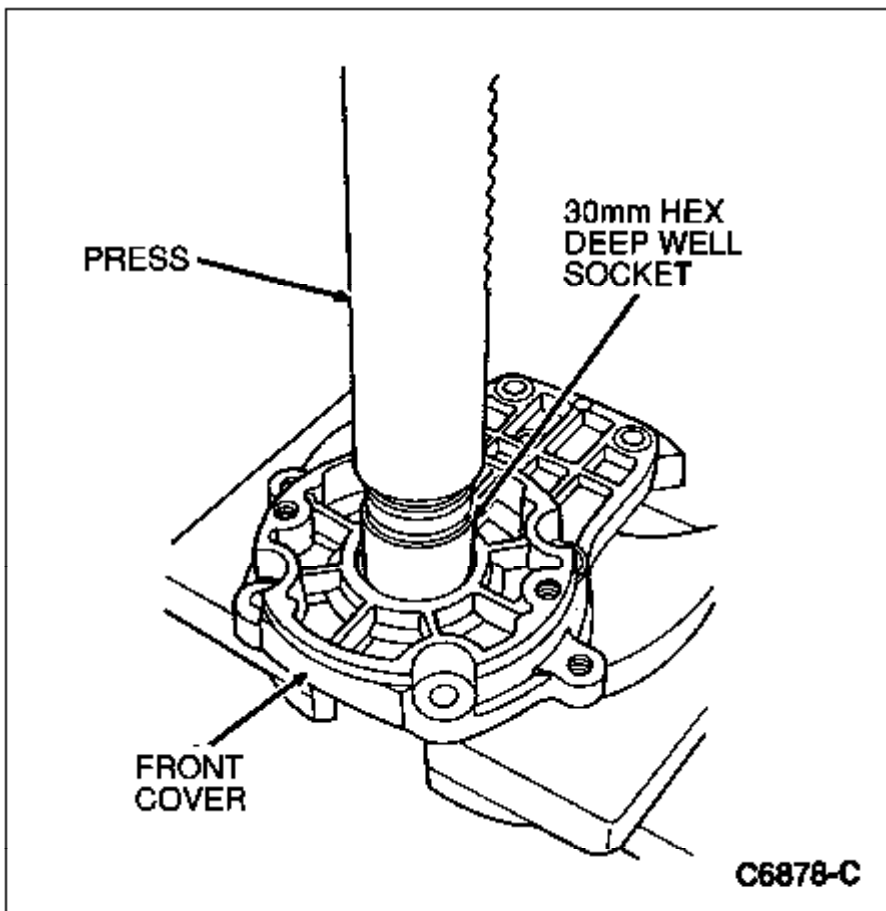
34. Remove front bearing cover by threading two of the originally installed retaining bolts into the front bearing cover service bolt locations (nine o'clock and three o'clock). Alternately tighten bolts until front bearing cover can be lifted away by hand. Remove and discard front bearing cover oil baffle.

**NOTE:**

Do not remove plastic scoop ring from input shaft at this time. Remove plastic scoop ring only if the input shaft bearing is to be replaced. If removed, the plastic scoop ring cannot be reused.



35. If necessary, press out front cover seal using a 30mm hex deep well socket and an arbor press.



36. Using a 10mm socket, remove front oil trough retaining bolt and oil trough from upper transmission case.

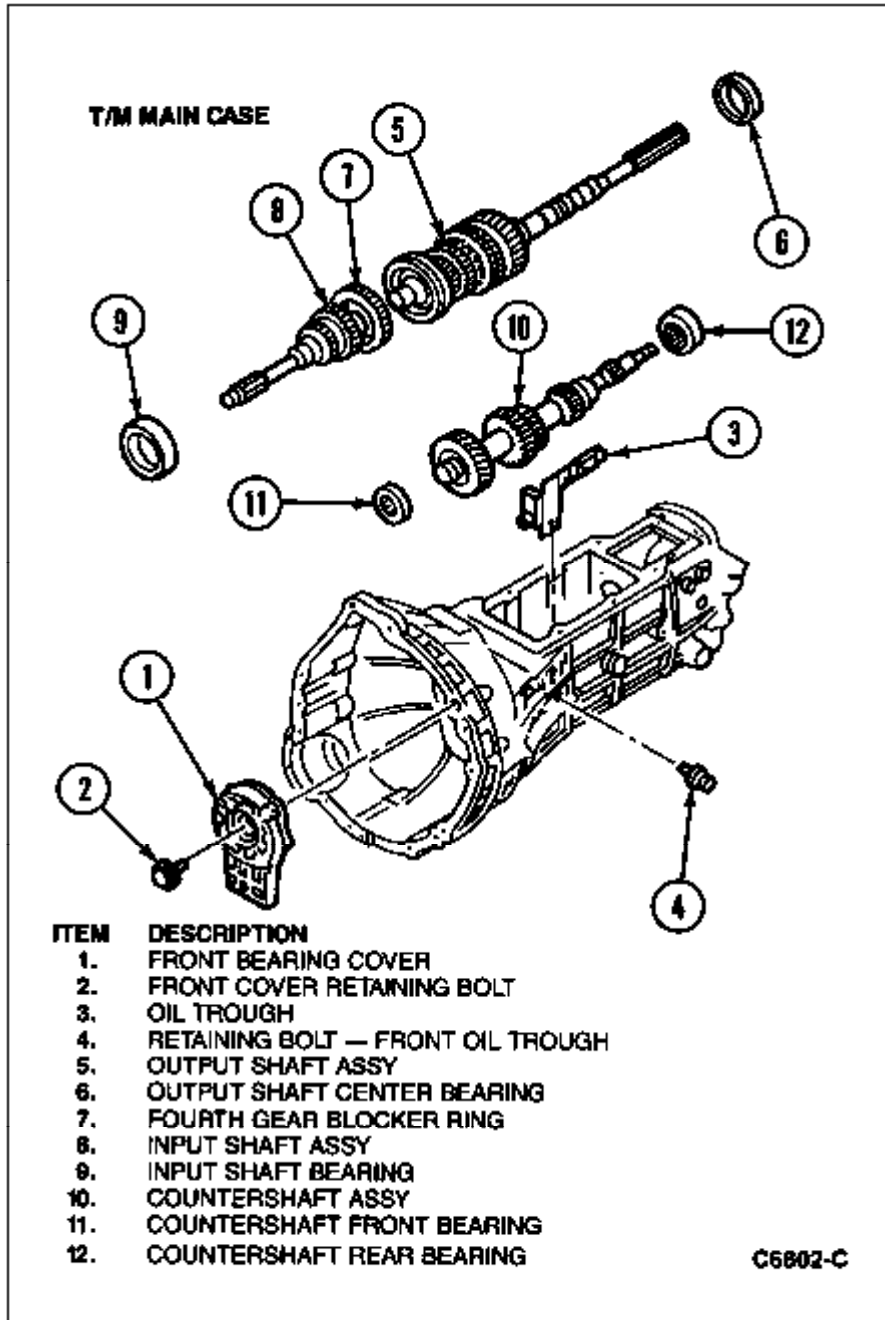
37. Pull input shaft forward and remove input shaft bearing outer race. Pull output shaft rearward and

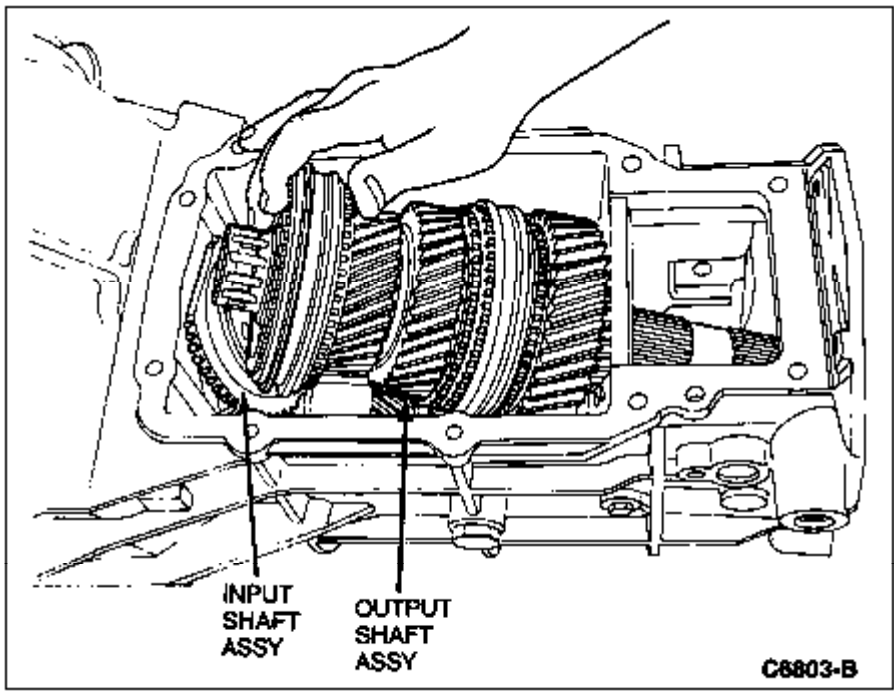
remove bearing outer race.

**CAUTION:**

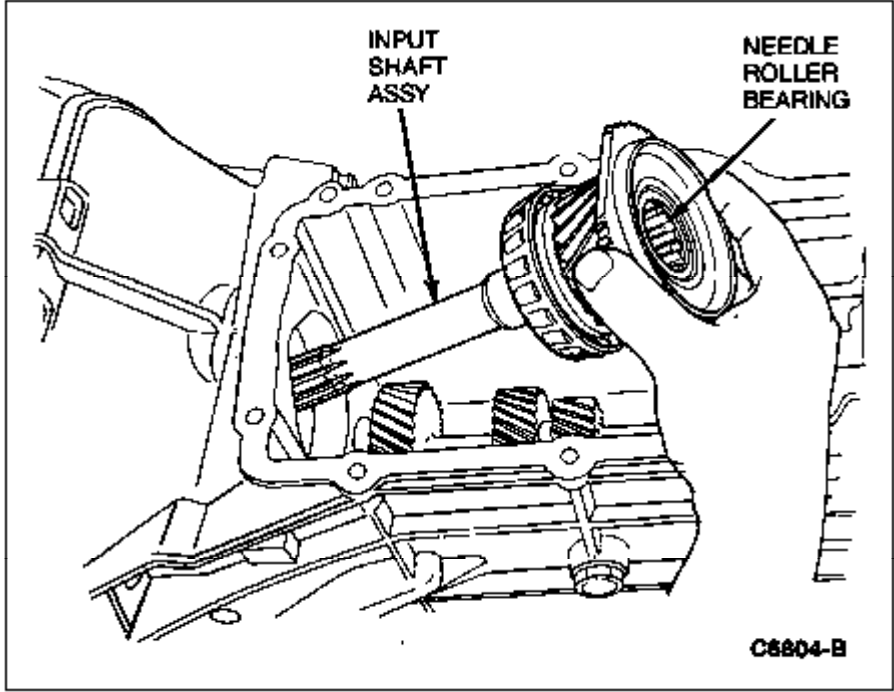
**Tap gently during bearing removal. A forceful blow can cause damage to bearing or transmission case.**

38. Remove countershaft bearing outer races (front and center) by moving countershaft forward and rearward. Pull countershaft rearward far enough to permit tool clearance behind front countershaft bearing. If necessary, remove front countershaft bearing using Bearing Race Puller T88T-7120-A and Impact Slide Hammer T50T-100-A.
39. Pull input shaft forward with flats facing top and bottom and separate it from output shaft assembly. Incline output shaft upward and lift it from transmission case.

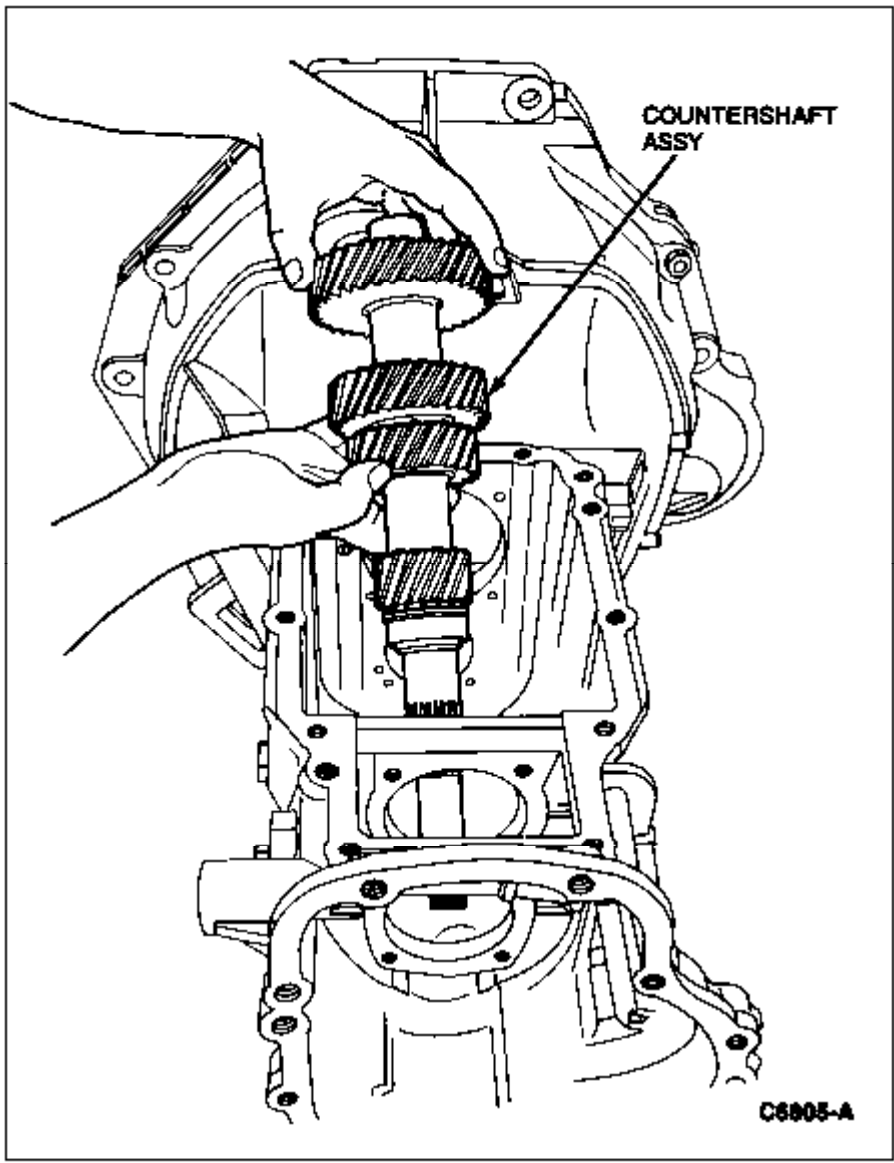




40. Remove input shaft from transmission case.



41. Remove countershaft through upper opening of transmission case.



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