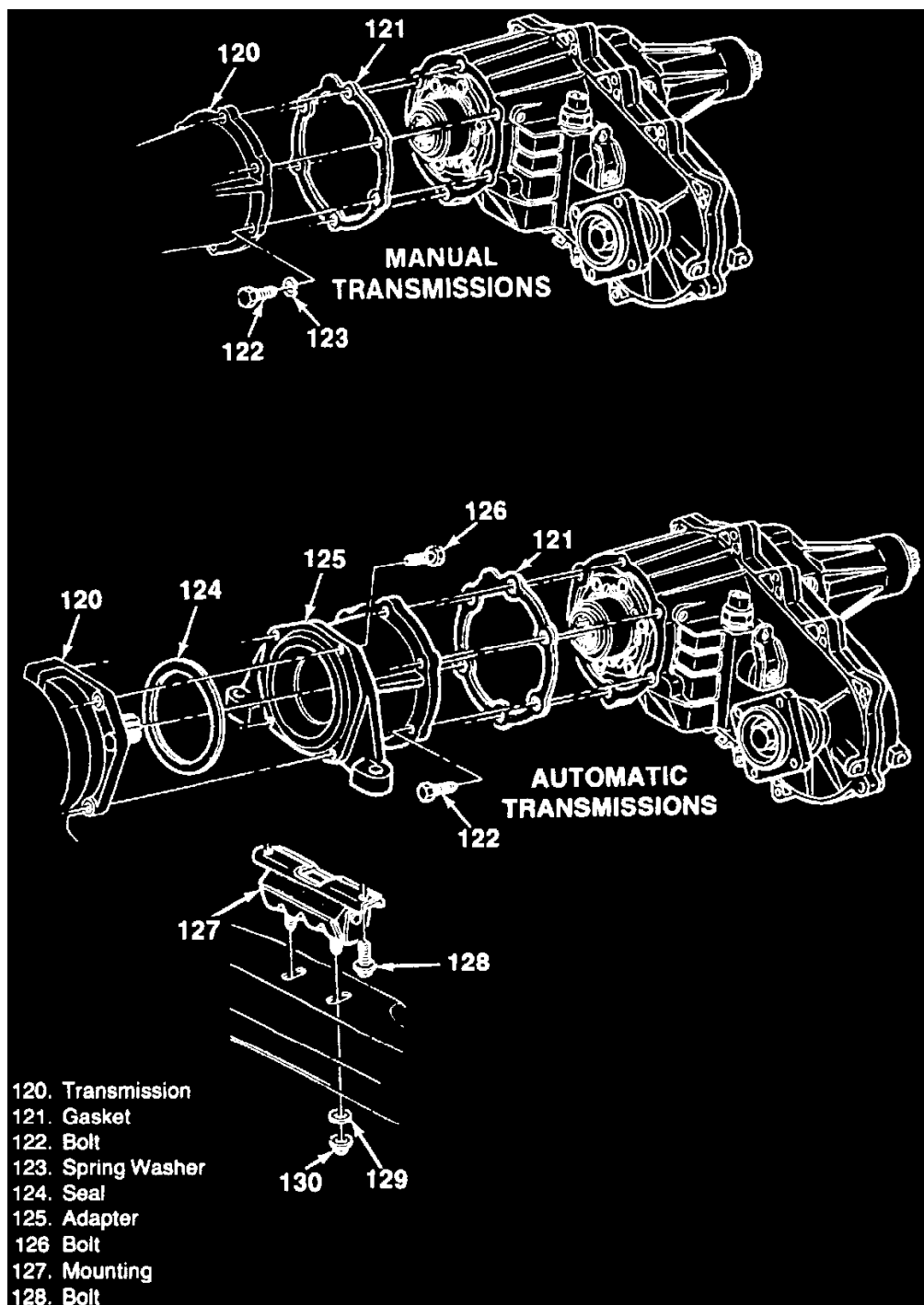


Transfer Case: Service and Repair New Process 241 (Manual Shift Transfer Case)

Transfer Case Replacement



Transfer Case Component Location

NOTICE: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

Remove or Disconnect

1. Negative battery cable.

^ Raise the vehicle. Support with safety stands.

2. Skid plate (if equipped).
 - ^ Drain the oil from the transfer case.
3. Front propeller shaft.
4. Left strut rod.
5. Rear propeller shaft.
6. Electrical connections at the transfer case.
7. Transfer case shift linkage at the transfer case.
 - ^ Support the transfer case with a jack.
8. Bolts (122) and spring washers (123) (if used).
9. Gasket (121).

Install or Connect

1. New gasket (121) to the transmission. Use gasket sealer to hold it in place.
2. Transfer case to the vehicle.
3. Bolts (122) and spring washers (123) (if used). Refer to Notice.

Tighten

- ^ Bolts to **33 N.m (24 ft. lbs.)**.
 - ^ Remove the jack from the transfer case.
4. Transfer case shift linkage at the transfer case.
 5. Electrical connections to the transfer case.
 6. Rear propeller shaft.
 7. Left strut rod.
 8. Front propeller shaft.
 9. Skid plate (if equipped).
 - ^ Fill the transfer case with the proper lubricant.
 - ^ Lower the vehicle.
 10. Negative battery cable.

Disassembly

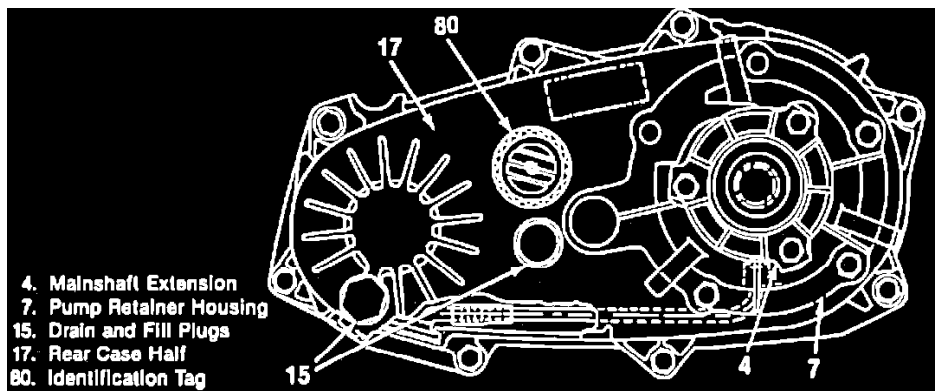


Fig. 17 Rear Case Half. New Process Models 231, 233 & 241 Transfer Cases

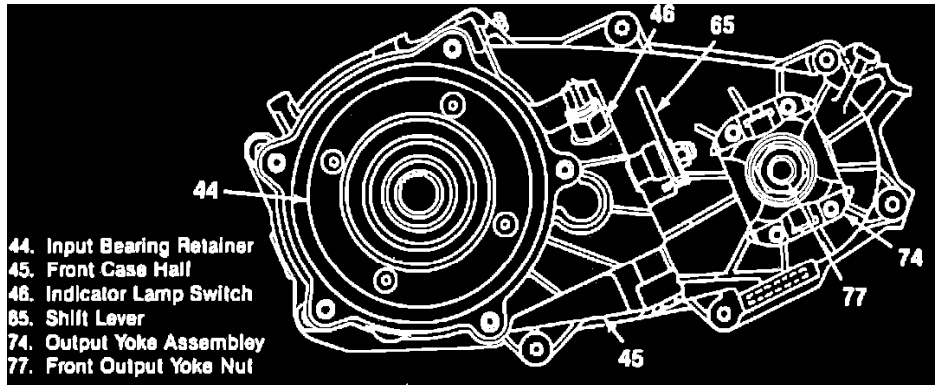


Fig. 18 Front Case Half. New Process Models 231, 233 & 241 Transfer Cases

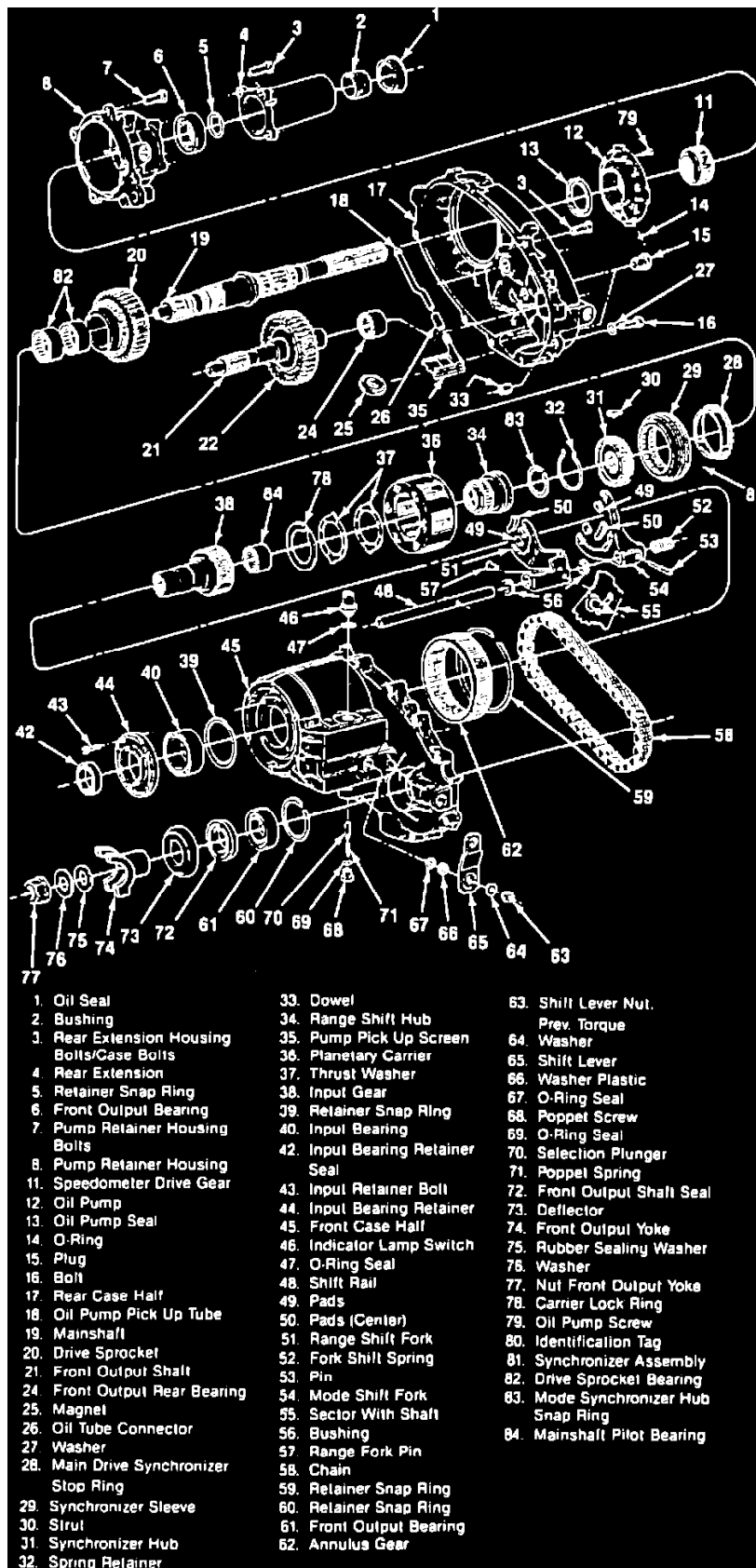


Fig. 19 Transfer Case Exploded View. New Process Models 231, 233 & 241 Transfer Cases

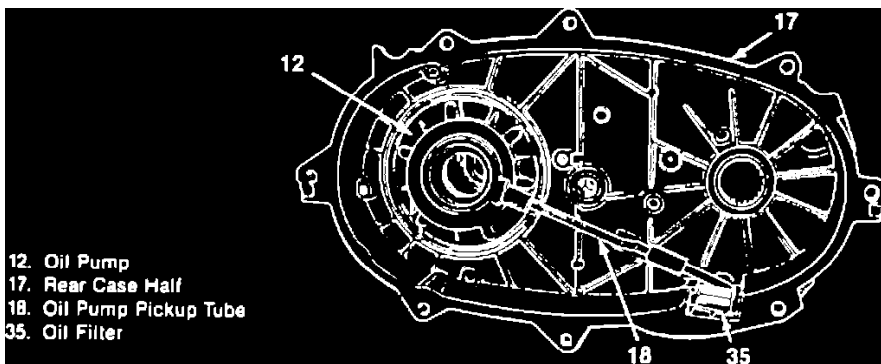


Fig. 20 Oil Pump, Pickup Tube & Screen. New Process Models 231, 233 & 241 Transfer Cases

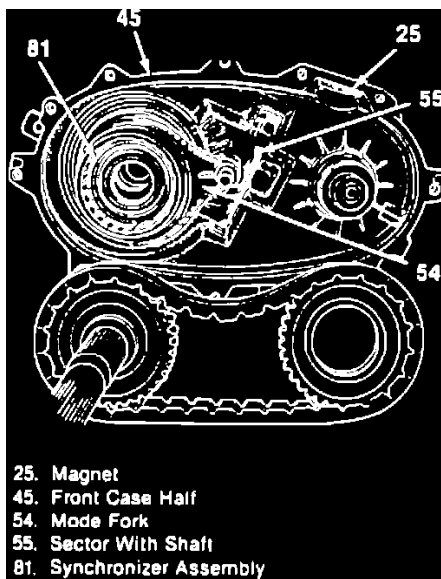


Fig. 21 Mode Fork & Shaft Assembly. New Process Models 231, 233 & 241 Transfer Cases

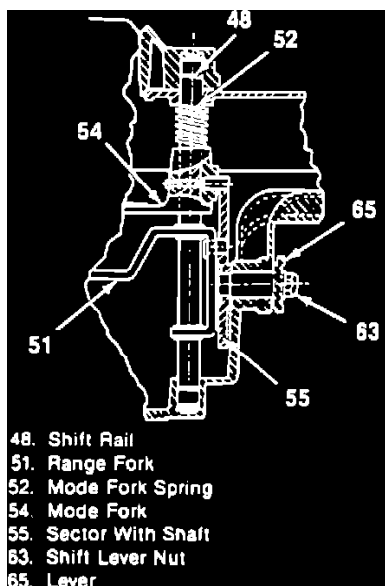


Fig. 22 Shift Rail Assembly. New Process Models 231, 233 & 241 Transfer Cases

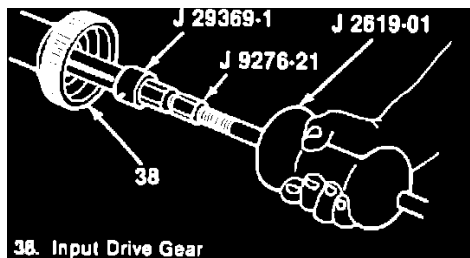


Fig. 23 Input Gear Bearing Removal. New Process Models 231, 233 & 241 Transfer Cases

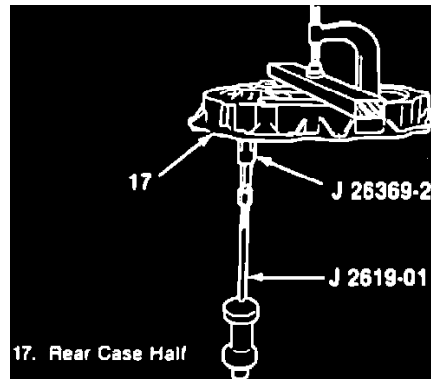


Fig. 24 Front Output Shaft Rear Bearing Removal. New Process Models 231, 233 & 241 Transfer Cases

1. Remove front output yoke (Models 231 and 233) or flange (Model 241) nut, washer, rubber sealing washer from front output shaft. **Refer to Figs. 17 through 24 during disassembly of transfer case.**
2. Remove indicator lamp switch and O-ring seal.
3. Remove poppet screw, O-ring seal, poppet spring and poppet plunger.
4. Remove rear extension housing bolts and rear extension.
5. Remove bearing retainer (snap ring) from mainshaft.
6. Remove pump retainer housing bolts, then pump retainer housing from rear case half.
7. Remove speedometer drive gear (Models 231 and 233) or speedometer tone wheel (Model 241) from mainshaft.
8. Remove case bolts from case halves. **The two longer case bolts go into doweled case holes.** Separate case halves by prying halves apart at slots cast in case ends. Do not wedge halves apart at any point on mating surface. Ensure that oil pump is not damaged when rear case half is removed.
9. Remove oil pump, pickup tube, O-ring and filter from rear case half.
10. Remove fork shift spring. At this time, remove retainer (snap ring) from front output shaft on model 241.
11. Remove mainshaft, chain and driven sprocket as a unit from front case half. Mode shift fork and shift rail will be removed with mainshaft.
12. Remove retainer (snap ring) from mainshaft.
13. Remove synchronizer assembly, then drive sprocket from mainshaft.

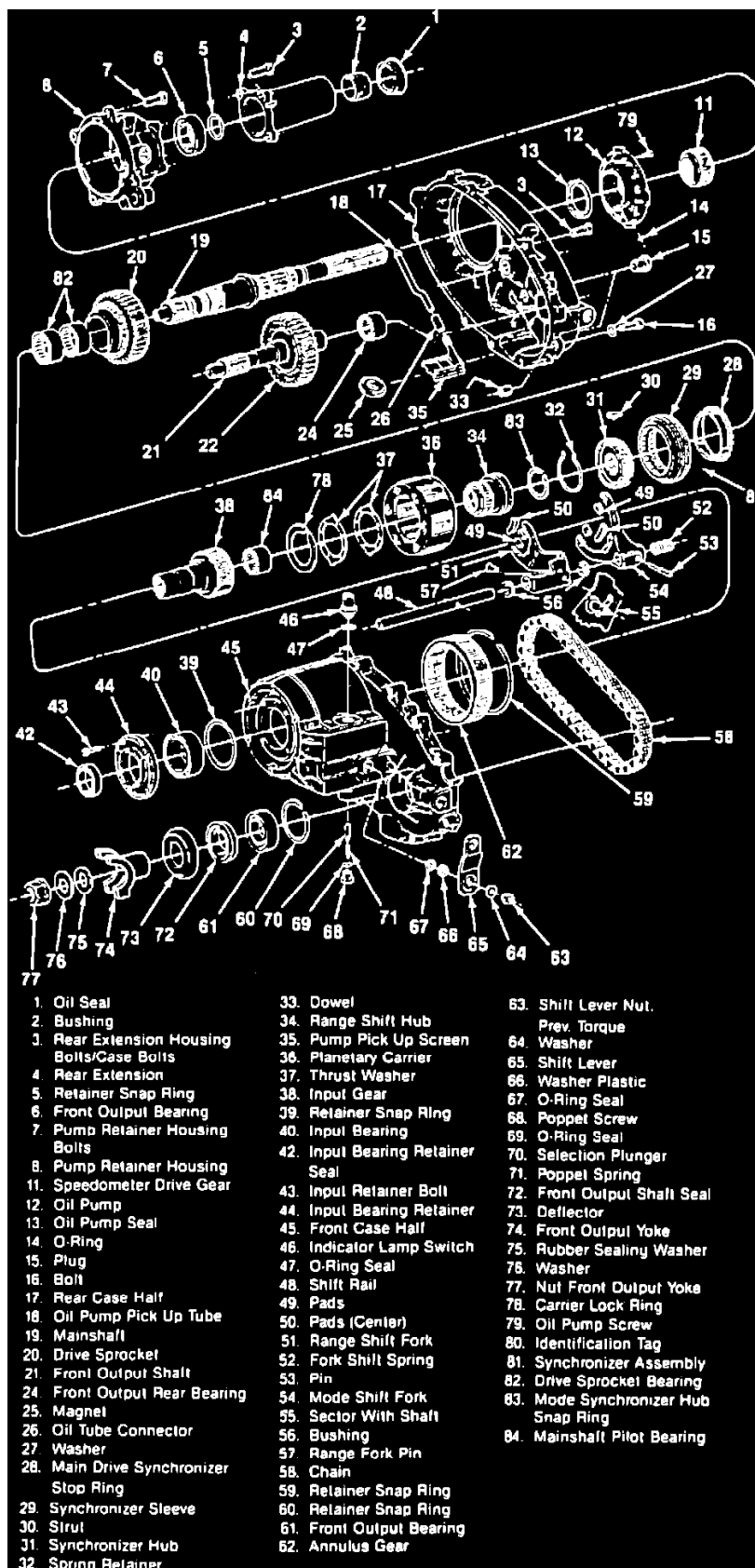


Fig. 19 Transfer Case Exploded View. New Process Models 231, 233 & 241 Transfer Cases

14. Remove range shift fork and range shift hub and sector with shaft from planetary carrier. It is necessary to rotate sector with shaft to provide clearance when removing fork (51), Fig. 19.
15. Remove shift lever nut, washer, shift lever, plastic washer and O-ring seal from front case half, then remove bearing retainer (snap ring).
16. Remove planetary carrier and input gear from annulus gear using soft faced hammer.
17. **On models 231 and 233**, remove input bearing from front case half using J-36370 and J-8092. **On model 241**, remove retainer ring (snap ring) from input gear, then remove input bearing from input gear using J-22912-1.

18. Remove drive sprocket bearings from drive sprocket. On models 231 and 233, use J-29170 and J-8092. On model 241, use J-29369-1 and J-2619-01.
19. Remove needle bearings from input gear using J-29369-1 (J-29369-2 for model 241). J-9276-21 and J-2619-01.
20. **On models 231 and 233**, remove front output shaft seal from front case half. On model 241, Remove front output bearing retainer snap ring.
21. **On models 231 and 233**, remove front output bearing retainer snap ring. On model 241, remove front output shaft seal from front case half.
22. Remove front output bearing from front case half using J-33790 on model 231 and 233, J-33832 on model 241 and J-8092 on both models.
23. remove seal from mainshaft extension housing and seal from input bearing retainer.
24. Remove front output rear bearing from rear case half using J-2619-01 and J-29369-2 on models 231 and 233. On model 241, insert J-29369-2 behind needle bearings and using J-2619-5, hammer the bearing from case.
25. Remove mainshaft bearing from oil pump retainer using J-33790.
26. Remove magnets from front case half.
27. Mark location of synchronizer hub and sleeve for reference during assembly.
28. Remove main drive synchronizer stop ring from synchronizer sleeve.
29. Remove spring retainer from synchronizer sleeve, then remove synchronizer hub from the synchronizer.
30. Remove oil pump screw from oil pump, then remove inner gear.

Assembly

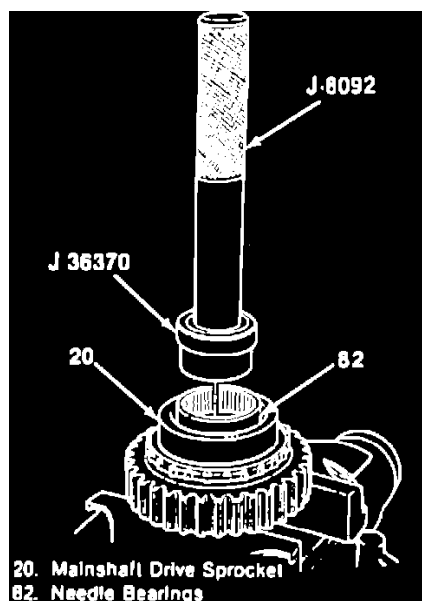


Fig. 25 Installing Needle Bearing To Front Drive Sprocket. New Process Models 231, 233 & 241 Transfer Cases

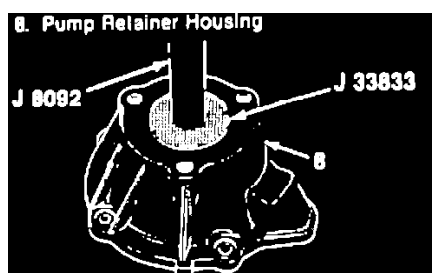


Fig. 26 Installing Pump Retainer Housing Bearing. New Process Models 231, 233 & 241 Transfer Cases

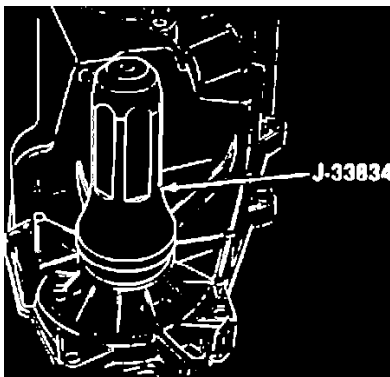
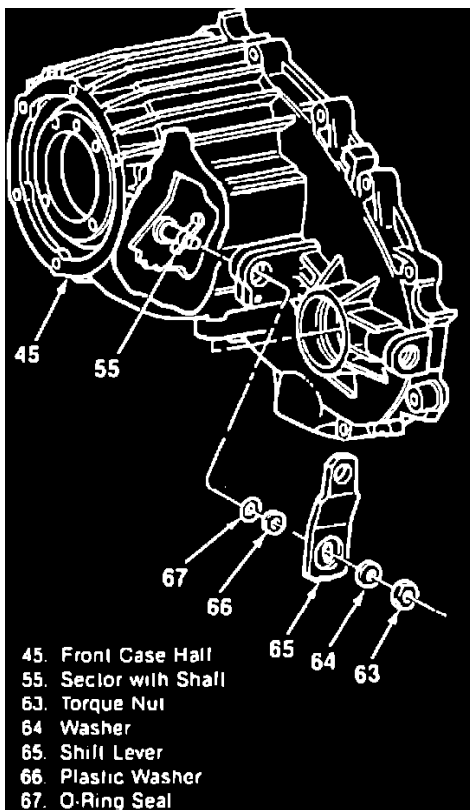
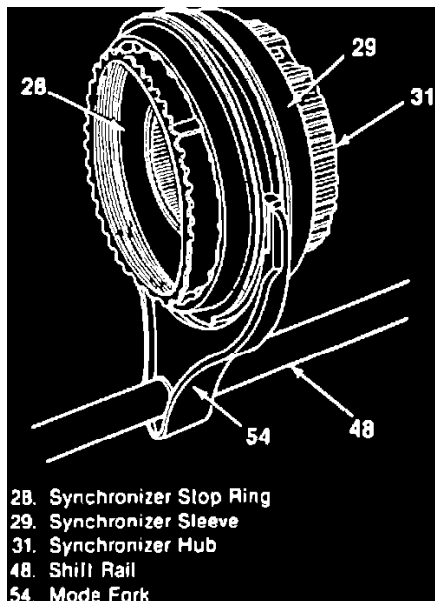


Fig. 27 Installing Front Output Seal. New Process Models 231, 233 & 241 Transfer Cases



- 45. Front Case Half
- 55. Sector with Shaft
- 63. Torque Nut
- 64. Washer
- 65. Shift Lever
- 66. Plastic Washer
- 67. O-Ring Seal

Fig. 28 Sector W/shaft. New Process Models 231, 233 & 241 Transfer Cases



- 28. Synchronizer Stop Ring
- 29. Synchronizer Sleeve
- 31. Synchronizer Hub
- 48. Shift Rail
- 54. Mode Fork

Fig. 29 Synchronizer Hub Assembly & Mode Fork. New Process Models 231, 233 & 241 Transfer Cases

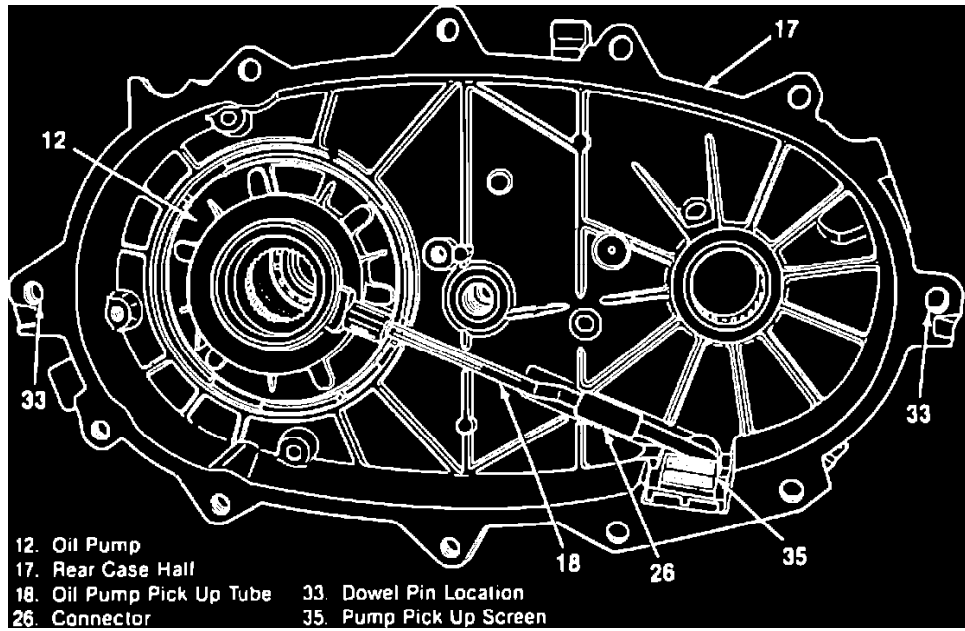


Fig. 30 Oil Pump Pickup Screen Doweled Case Holes. New Process Models 231, 233 & 241 Transfer Cases

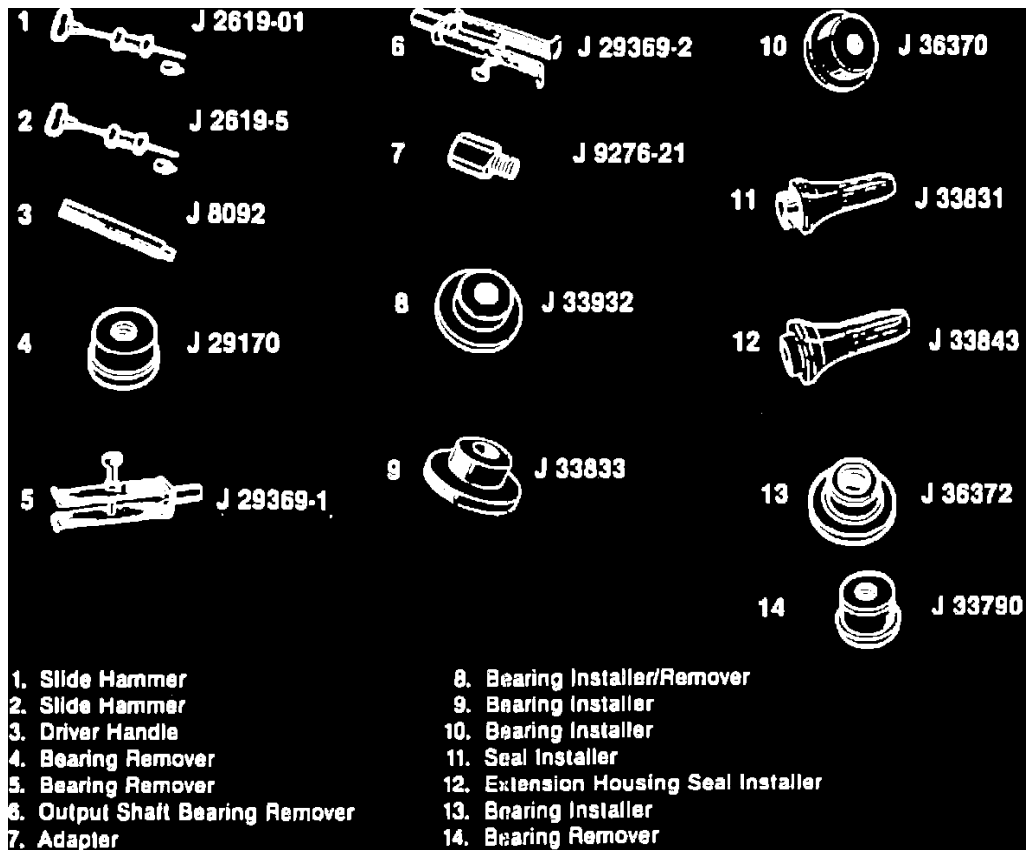


Fig. 31 Special Tools. New Process Models 231, 233 & 241 Transfer Cases

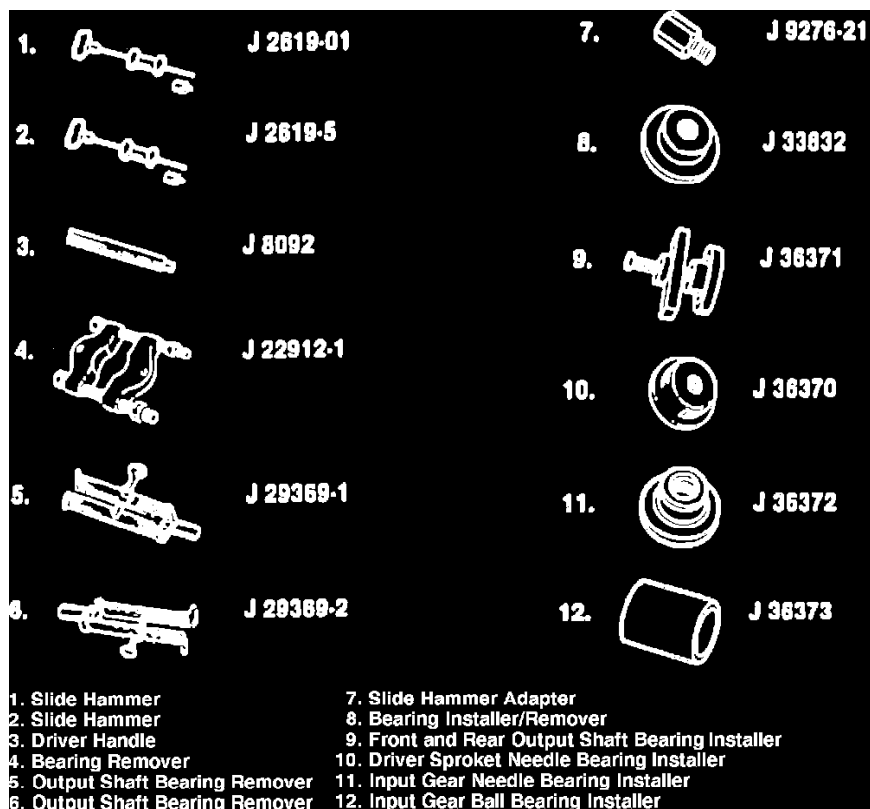


Fig. 32 Special Tools. New Process Models 231, 233 & 241 Transfer Cases

1. Install needle bearings to drive sprocket using J-36370 and J-8092. On model 241, ensure that sprocket is flush on synchronizer side. **Refer to Figs. 25 through 32 for aid in assembly of transfer case.**
2. Install needle bearings in rear case half using J-36372 and J-8092. Bearings must be flush with boss on case housing.
3. Install bearing to front case half using J-9092 and J-33833 (Models 231 and 233) or J-37371 (Model 241), then install retainer.
4. Install bearing to pump retainer housing using J-33833 and J-8092.
5. Install bearing to input gear using J-36372 and J-8092.
6. Install thrust washer, carrier lock ring and retainer.
7. Install bearing to front case half using J-36372.
8. Install oil seal to rear extension using J-33843.
9. Install input bearing retainer seal in input bearing retainer using J-33831.
10. Install front output shaft seal in front case half using J-33834.
11. Install magnet in front case half.
12. Attach synchronizer hub to synchronizer sleeve along with three struts, then align reference marks previously made.
13. attach spring retainer to synchronizer sleeve, then attach main drive synchronizer stop ring to synchronizer sleeve.
14. Install drive sprocket to mainshaft.
15. Place planetary input gear assembly into annulus gear using soft faced hammer.
16. Install bearing retainer (snap ring) to input bearing. On models 231 and 233, install input bearing to front case half.

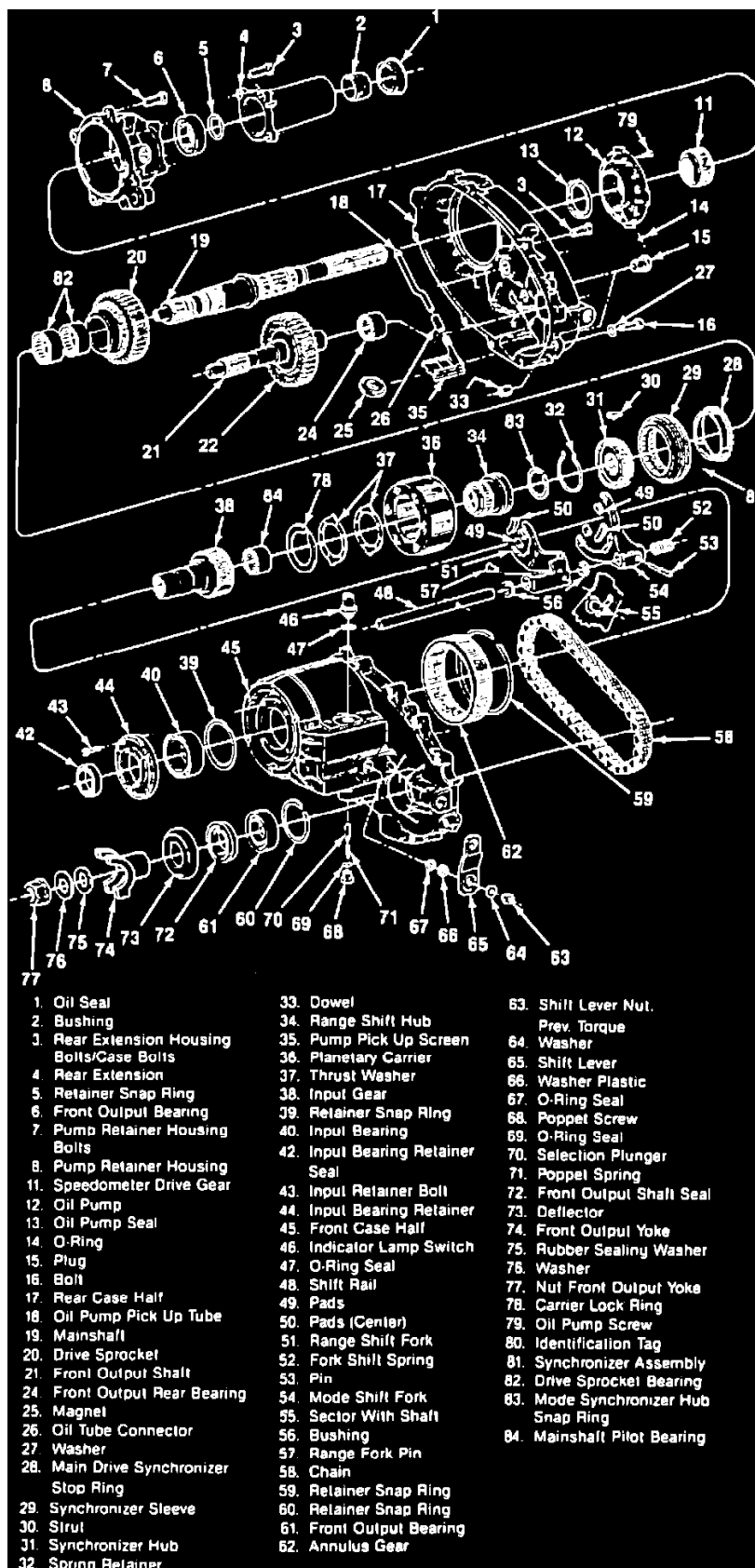


Fig. 19 Transfer Case Exploded View. New Process Models 231, 233 & 241 Transfer Cases

17. Install input bearing retainer bolts (43), Fig. 19 and input bearing retainer to front case half. Apply RTV or equivalent to bearing retainer mating surfaces. Apply Loctite 242 or equivalent to bearing retainer bolt threads. **Torque bolts to 14 ft. lbs.**
18. Install sector with shaft into front case half.
19. Install shift lever O-ring, plastic washer, shift lever, washer and nut to front case half. **Torque nut to 20 ft. lbs.**
20. Install range shift hub and range shift fork into front case half. Rotate sector to align range shift fork.
21. Install synchronizer assembly, mode shift fork and rail into front case half.
22. Connect front output shaft to chain, then connect drive sprocket and mainshaft to chain. Mainshaft, drive sprocket, driven sprocket and chain are

- installed as a unit.
23. Install fork spring onto mode shift rail.
 24. Install oil pickup tube, oil tube connector and pump pickup screen into rear case half, then install oil tube O-ring onto oil tube. **Damaging the O-ring during assembly may result in pump failure.**
 25. Attach oil pump to oil pick up tube. Apply RTV or equivalent to case mating surfaces.
 26. Place rear case over mainshaft and onto front case half. Ensure that oil pump is not damaged while rear case half is being installed. Install case bolts into case halves after coating bolt threads with Loctite 242 or equivalent. **Longer case bolts and their washers are placed in doweled case holes. Torque bolts to 23 ft. lbs.**
 27. Place input bearing retainer snap ring onto mainshaft.
 28. Install retainer snap ring, speedometer gear (Models 231 and 233) or speedometer tone wheel (Model 241) and retainer snap ring to mainshaft.
 29. Install rear extension housing and extension housing bolts to pump retainer housing. Apply RTV or equivalent to mating surfaces. Apply Loctite 242 or equivalent to extension housing bolt threads. **Torque bolts to 23 ft. lbs.**
 30. Install selection plunger, poppet spring, O-ring seal and poppet screw to front case half. **Torque poppet screw to 23 ft. lbs.**
 31. Install indicator lamp switch and O-ring to front case housing. **Torque switch to 17 ft. lbs.**
 32. Install front output flange, rubber sealing washer (75), washer (76) and flange nut. **Torque nut to 110 ft. lbs.**