

TRANSFER CASE - NP/NV 242

1993 Jeep Cherokee

1987-96 TRANSFER CASES
Jeep - New Venture 242

Cherokee, Comanche, Wagoneer, Grand Wagoneer

IDENTIFICATION

Transfer case can be identified by an I.D. tag, located on rear case. I.D. tag provides model number, serial number and low range ratio. Date of manufacture is the serial number (I.D. number). This information is necessary when ordering parts.

DESCRIPTION

Model 242 transfer case is a chain-driven, 2-piece aluminum case, with full time operation. Torque input in 4WD high and low range is undifferentiated.

ADJUSTMENTS

GEARSHIFT LINKAGE

Remove shift boot and shift to 4L position. Loosen trunnion nut. Adjust trunnion and shift rod until rod fits freely. Tighten trunnion nut and remove shim.

TROUBLE SHOOTING

SYMPTOM DIAGNOSIS

Will Not Shift Or Difficult To Shift Into Gear

Check fluid level. Check linkage adjustment. Ensure transfer case external linkage is not binding. Internal parts may be worn or damaged.

Noisy In All Gears

Check fluid level. Ensure correct fluid is used. If fluid is okay, locate noise and check for possible internal mechanical problem.

Jumps Out Of Gear Or Noisy In 4WD

Transfer case not completely in gear; check shift linkage. Range fork damaged. Inserts are worn. Shift fork binding on shift rail. Low range gear worn or damaged.

Fluid Leaking From Vent Or Seals

Transfer case overfilled. Vent plugged. Output shaft seals are damaged or not installed properly.

Transfer Case Will Not Shift Through High Lock Range

Incomplete shift due to driveline torque load; momentarily release accelerator pedal to complete shift. Check tire pressure and tire wear. Vehicle overloaded; remove load and check shifting.

ON-VEHICLE SERVICE

FRONT OIL SEAL

Removal & Installation

1) Mark front propeller shaft and flange for alignment purposes. Remove front propeller shaft. Remove flange. Discard washer and nut. Using a screwdriver, carefully remove oil seal. Ensure seal contact surface is clean.

2) Apply ATF to seal lip and yoke seal surface. Install oil seal and flange with new washer and nut. Install front propeller shaft using alignment marks. Check transfer case fluid.

EXTENSION HOUSING OIL SEAL & BUSHING

NOTE: When replacing oil seal, DO NOT remove extension housing.

Removal & Installation

1) Mark rear propeller shaft and flange for installation purposes. Remove rear propeller shaft. Remove bolts and tap extension housing in a clockwise direction and remove extension housing. DO NOT pry on extension housing. Using a screwdriver, remove oil seal from extension housing.

2) Using bushing driver, replace bushing in extension housing. Install new extension housing oil seal. Apply silicone sealant to extension housing mating surface. Install extension housing. Reverse removal procedure to complete installation.

REMOVAL & INSTALLATION

TRANSFER CASE

Removal & Installation

1) Shift transfer case into Neutral position and drain fluid. Mark front and rear drive shaft for installation purposes. Remove front and rear drive shafts. Disconnect vacuum lines and speedometer cable. Remove rear crossmember.

2) Disconnect shift linkage. Support transfer case with a jack. Separate transfer case from transmission. Remove transfer case. To install, reverse removal procedure. Tighten bolts to specification. See TORQUE SPECIFICATIONS. Adjust shift linkage, if necessary.

TRANSFER CASE DISASSEMBLY

1) Remove drain and fill plugs. See Fig. 1. Remove front companion flange, washer and seal. Place transfer case in 4L position. Remove extension housing. See EXTENSION HOUSING OIL SEAL & BUSHING under ON-VEHICLE SERVICE. Remove rear bearing snap ring. Remove rear bearing retainer. Separate rear case from front case using prybars or screwdriver. DO NOT damage mating surfaces.

NOTE: DO NOT disassemble oil pump, replace as unit only.

2) Remove oil pump, pick-up tube and screen from rear case. Remove pick-up tube "O" ring from oil pump. Remove magnet from front case. Remove drive sprocket snap ring. Remove drive sprocket and drive chain.

3) Remove front output shaft. Remove shift lever from sector shaft. Remove shift detent plug, spring and plunger. Remove plug from low range fork lock pin access hole. Move shift sector until lock pin is aligned with hole. Remove lock pin with No. 1 screw extractor.

4) Remove shift rail from fork assembly. Remove mode fork and mainshaft as an assembly. Record mode sleeve position. Remove mode shift sleeve and mode fork assembly. Remove sleeve from fork. Remove

intermediate clutch shaft snap ring from mainshaft.

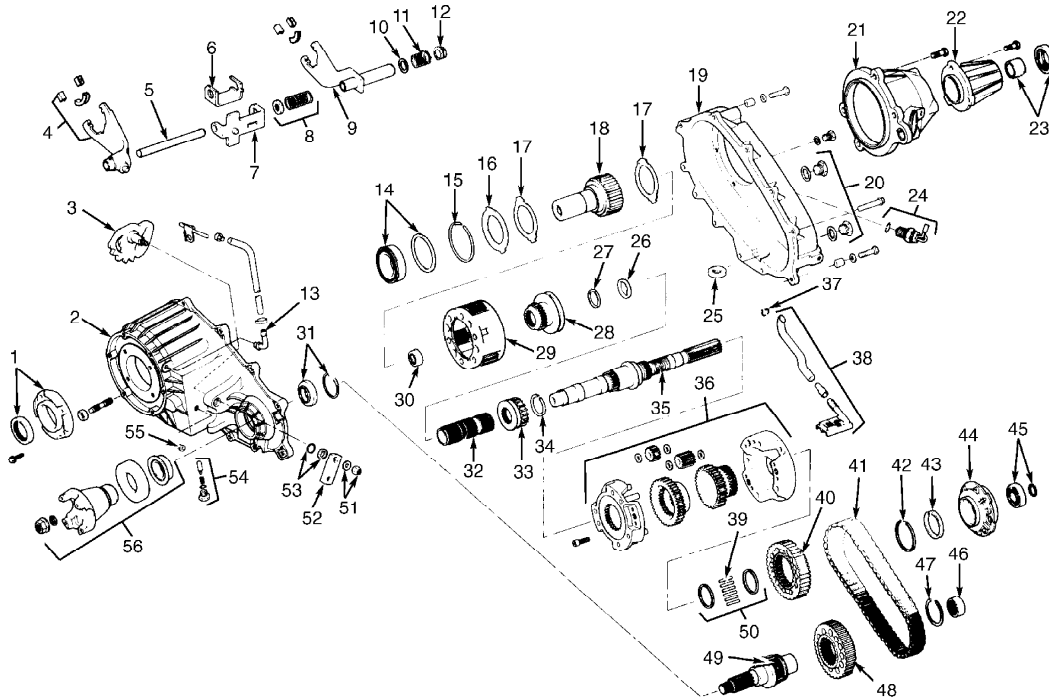
5) Remove clutch shaft thrust ring. Remove intermediate clutch shaft. Remove differential retaining snap ring. Remove differential assembly. Remove differential needle bearings and thrust washers from mainshaft. Remove low range fork and hub.

6) Remove shift sector. Remove shift sector bushing and "O" ring. Remove front bearing retainer. Remove input gear snap ring. Using a press, remove input and low range gear assembly from input gear bearing. Remove low range gear snap ring.

7) Remove input gear retainer, thrust washers and input gear. Mark differential halves for reassembly purposes. Separate differential halves. Remove planetary gear and thrust washers.

8) Record mainshaft gear and sprocket gear position. Remove gears. Remove front output shaft front bearing oil seal, snap ring and front bearing. Using a press, remove input gear bearing.

9) Using slide hammer and internal puller, remove input gear pilot bearing. Using slide hammer and internal puller, remove front output shaft rear bearing.



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|------------------------------------|----------------------------------|--|---|
| 1. Front Bearing Retainer & Seal | 16. Low Range Gear Retainer | 31. Front Output Shaft Front Bearing & Snap Ring | 44. Oil Pump |
| 2. Front Case | 17. Low Range Gear Thrust Washer | 32. Intermediate Clutch Shaft | 45. Rear Bearing & Snap Ring |
| 3. Shift Sector | 18. Input Gear | 33. Shift Sleeve | 46. Front Output Shaft Rear Bearing |
| 4. Low Range Fork & Inserts | 19. Rear Case | 34. Snap Ring | 47. Snap Ring |
| 5. Shift Rail | 20. Drain & Fill Plugs | 35. Mainshaft | 48. Driven Sprocket |
| 6. Shift Bracket | 21. Rear Bearing Retainer | 36. Differential Assembly | 49. Front Output Shaft Rear Bearing |
| 7. Slider Bracket | 22. Extension Housing | 37. Oil Pick-Up Tube "O" Ring | 50. Mainshaft Bearing Spacers |
| 8. Bushing & Spring | 23. Bushing & Oil Seal | 38. Oil Pick-Up Tube & Screen | 51. Shift Lever Washer & Nut |
| 9. Mode Fork & Inserts | 24. Vacuum Switch (If Equipped) | 39. Mainshaft Bearing Rollers | 52. Shift Lever |
| 10. Bushing | 25. Magnet | 40. Drive Sprocket | 53. Sector "O" Ring & Seal |
| 11. Fork Spring | 26. Thrust Ring | 41. Drive Chain | 54. Detent Pin, Spring & Plug |
| 12. Bushing | 27. Snap Ring | 42. Snap Ring | 55. Seal Plug |
| 13. Vent Tube | 28. Shift Sleeve | 43. Oil Pump Seal | 56. Companion Flange, Nut, Seal, Washer & Oil Slinger |
| 14. Input Gear Bearing & Snap Ring | 29. Low Range Gear | | |
| 15. Low Range Gear Snap Ring | 30. Pilot Bushing | | |

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Fig. 1: Exploded View Of Model 242 Transfer Case
Courtesy of Chrysler Motors.

CLEANING & INSPECTION

1) Clean all parts with solvent. Dry with compressed air. Replace all oil seals, "O" rings and snap rings. Check all parts for wear or damage. Replace all worn or damaged parts. Apply Dexron II to all parts before installing.

2) Inspect low range annulus gear inside front case. If gear is worn or damaged, replace case and gear as an assembly. Replace oil pump as an assembly if any part is damaged or worn.

NOTE: When installing bearings, ensure bearing bores are aligned with oil feed holes.

TRANSFER CASE REASSEMBLY

1) Install front output shaft front bearing, snap ring and oil seal. Install snap ring on input gear bearing. Using a wooden block and press, install input gear until snap ring is against case.

2) Install input gear pilot bearing. Assemble low range gear, thrust washers, input gear and retainer. Install low range gear snap ring. Ensure snap ring is seated properly in groove.

3) Start input gear shaft through the bearing in front case. Using a press, install input gear shaft through bearing. Ensure adapter is positioned properly before pressing shaft.

NOTE: Ensure proper size tool is used to press input gear shaft; wrong size tool can damage case and thrust washers and will move pilot bearing too far into gear bore.

4) Install input gear snap ring. Install front bearing retainer oil seal. Apply 1/8" bead of silicone sealant to front bearing retainer mating surface. Install front bearing retainer on front case. Install sector shaft "O" ring and bushing. Install shift sector.

5) Install detent pin, spring and plug. Install low range fork pads. Assemble low range fork and hub. Ensure low range fork pin is engaged in shift sector slot. Install differential sprocket gear in lower differential case. Install planet gears and new thrust washers on lower case pins.

6) Ensure thrust washers are positioned on top and bottom of each planet gear. Install mainshaft gear. Align marks on upper and lower differential case. Install bolts and tighten to specifications. See TORQUE SPECIFICATIONS. Install needle bearing spacer on mainshaft.

7) Using petroleum jelly to hold needles, install bearings on mainshaft. Install other spacer. Install differential assembly. Ensure all needle bearings are in place. Install differential snap ring. Install intermediate clutch shaft. Install thrust washer and snap ring. Install mode shift sleeve in mode fork.

8) Install mode fork assembly on mainshaft. Ensure mode shift sleeve splines engage with differential splines. Install mode fork and mainshaft assembly in case. If necessary, rotate mainshaft slightly to engage mainshaft with low range components.

9) Install mode fork pin into shift sector slot. Install shift rail. Ensure shift rail is seated in shift forks. Rotate shift sector so lock pin can be installed. Install lock pin so tapered end is in fork and rail. Install plug. Install shift lever and nut on shift sector shaft.

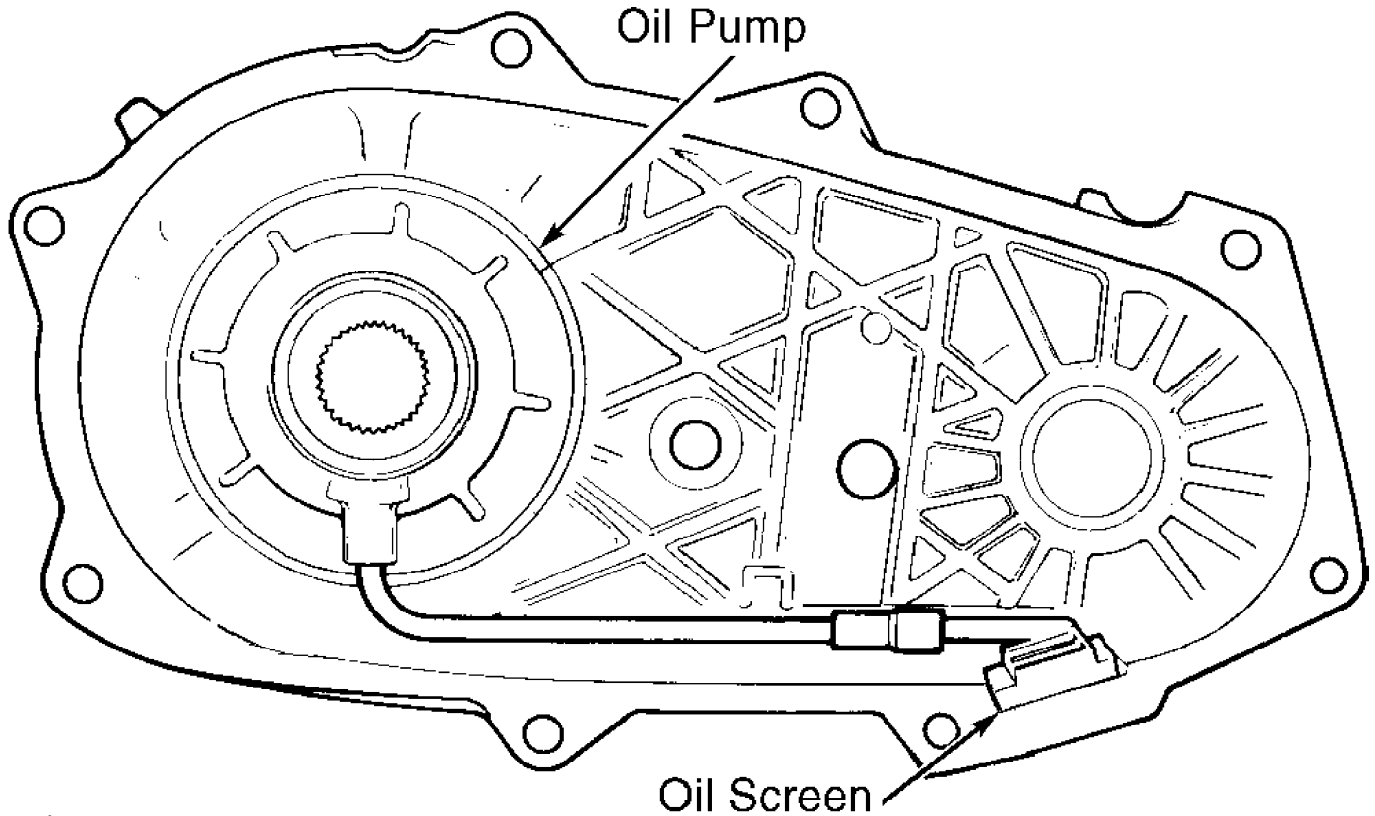
10) Install detent plunger, spring and plug. Install front output shaft. Install drive chain and sprocket. Install drive sprocket snap ring. Install front output shaft rear bearing.

11) Install oil seal in oil pump housing. Assemble oil pump gears in housing. Ensure oil feed hole is aligned with hole in housing. Install oil pump screws. Tighten to specification. Install

"O" ring in oil pump. Install oil pick-up tube and screen. Ensure screen is properly positioned. See Fig. 2.

12) Install magnet in front case. Apply 1/8" bead of silicone sealant to front case mating surface. Assemble case halves together. Tighten to specification. Ensure mainshaft splines are engaged with oil pump inner gear and a washer is used on bolts at dowel locations.

13) Install rear retainer bearing in retainer. Apply 1/8" bead of silicone sealer and install retainer to case. Install rear bearing snap ring. Install extension housing. Install front companion flange. Install vacuum switch and drain plug. Fill transfer case with Dexron II.



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Fig. 2: Identifying Oil Pump Screen Position
Courtesy of Chrysler Motors.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Application	Ft. Lbs. (N.m)
Companion Flange Nut	90-130 (122-176)
Detent Plug	14 (19)
Drain & Fill Plug	27 (37)
Extension Housing Bolt	26 (35)
Front Bearing Retainer Bolt	12 (16)
Front Case-to-Rear Case Bolt	26-34 (35-46)
Shift Fork Set Screw	15 (20)
Transfer Case-to-Transmission	26 (35)

