



ROCKCRAWLER

Installation Booklet Part # NP35100-24/30

Nissan TX-10 3.92:1 Transfer Case Gear Reduction Kit

Manufactured in the U.S.A. to exceed factory tolerances from the highest quality material. Complete kit includes all components to install in your stock case housing. Kit produces a 94 % (3.92:1) low range reduction from stock. Fits 86.5-2003 Nissan w/TX-10 Transfer Case. **Note:** CALMINI recommends a close inspection of and if necessary, replacement of all excessively worn bearings and seals not included in this kit. Refer to factory service manual for removal and re-installation instructions of assembled transfer case.



- ▲ 1. Kit Contains: Input Gear Shaft, Low Output Gear, Counter Gear, Counter Gear bearing, Bearing reducer ring, RTV Sealant, 2 Qts. Oil, Instruction Booklet.



- ▲ 2. Identify and remove transfer neutral position switch, check balls, check springs, and plugs. This is variable on different year models.



- ▲ 3. Remove speedo gear drive unit.

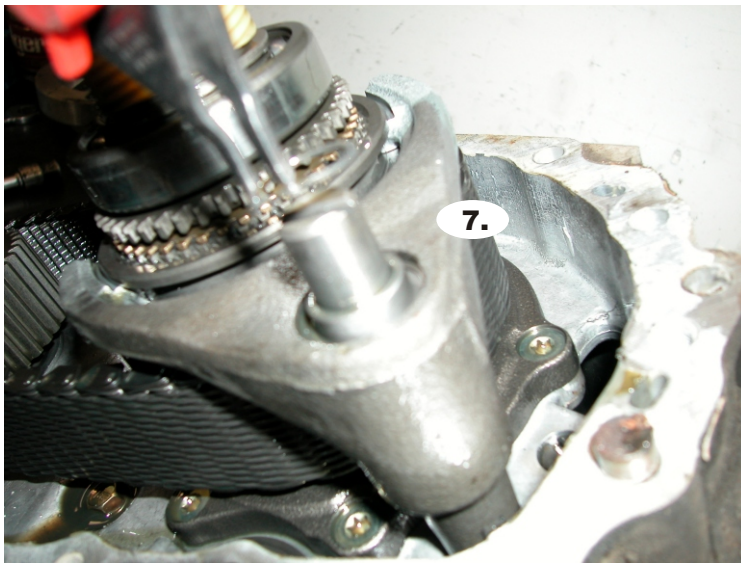
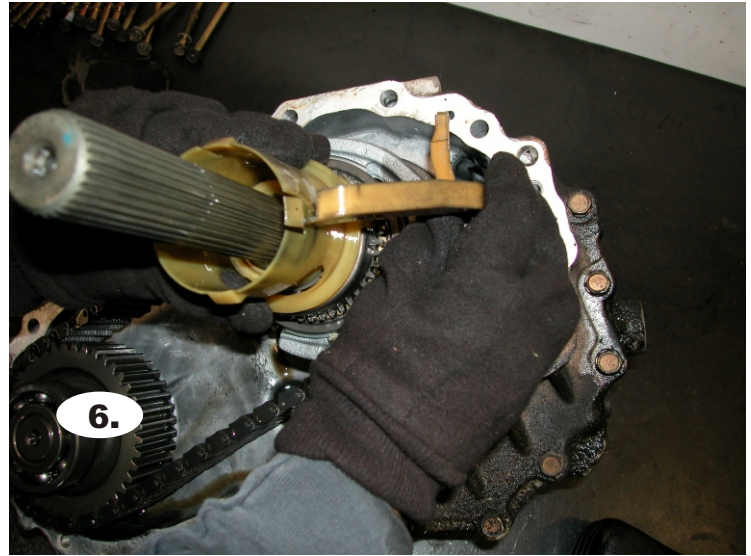


- ▲ 4. Remove bolts fastening rear case cover to middle case.



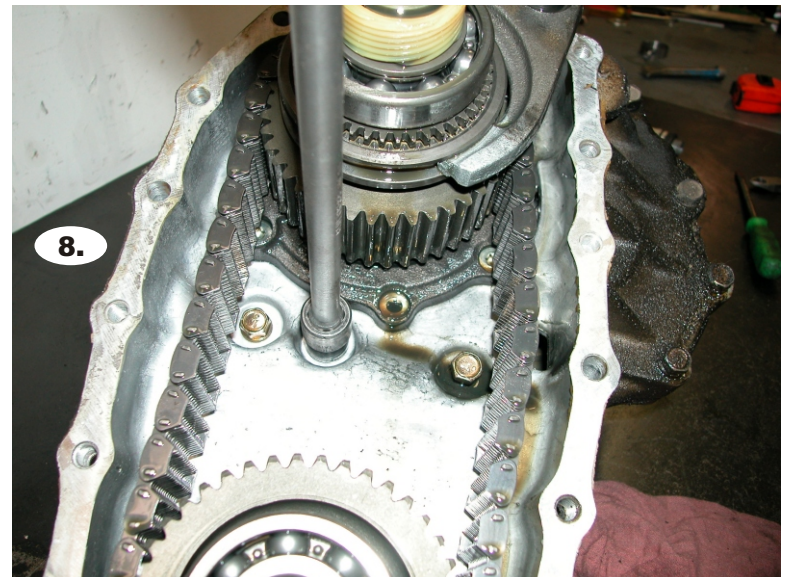
◀ 5. Next, use a large slotted screwdriver or similar object to lightly pry case halves apart.

6. Remove oil cover and oil gutter from rear output shaft. ▶

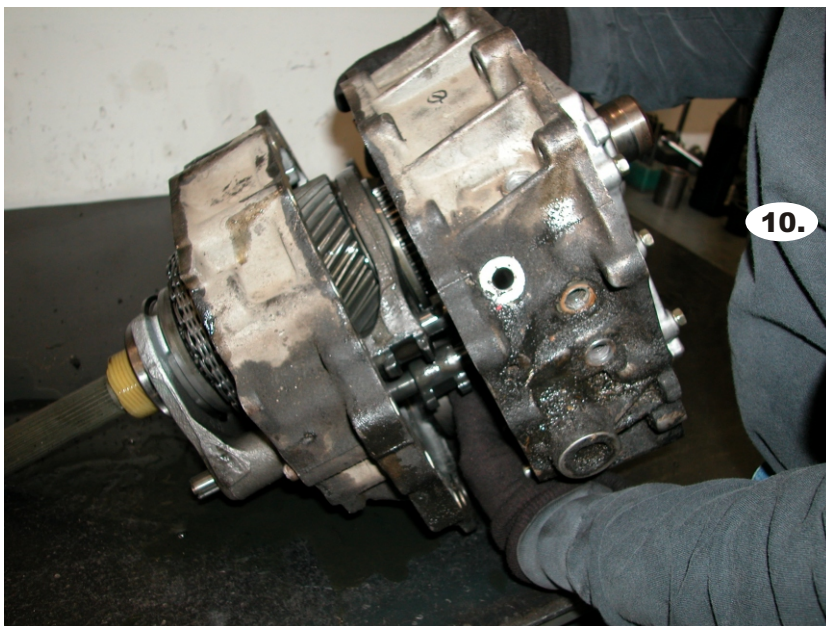


◀ 7. Remove snap ring and retainer ring from 2-4 shift rod.

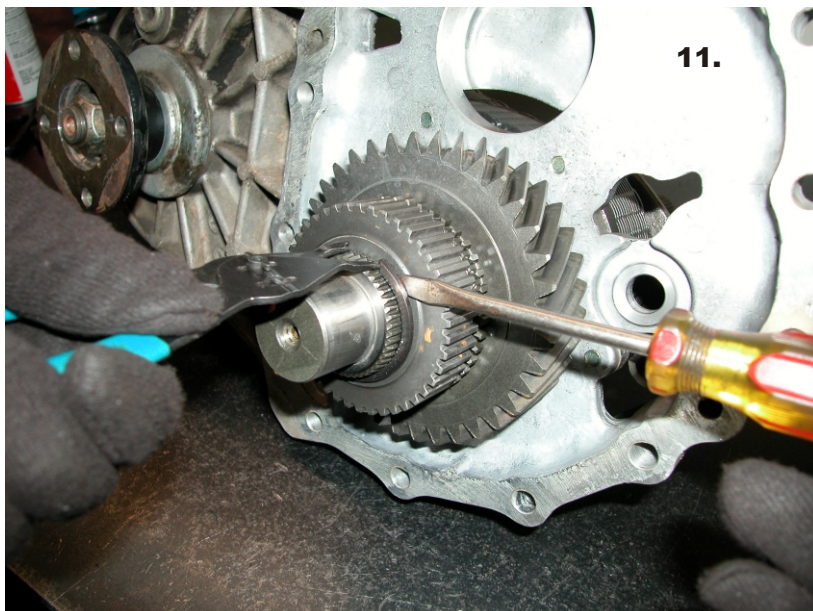
8. Remove bolts securing center case to front case. ▶



9. Remove outer bolts securing center case to front case then separate center case from front case.



10. Separate center case from front case.



11. Remove retainer clip and then remove clutch hub from main output shaft.



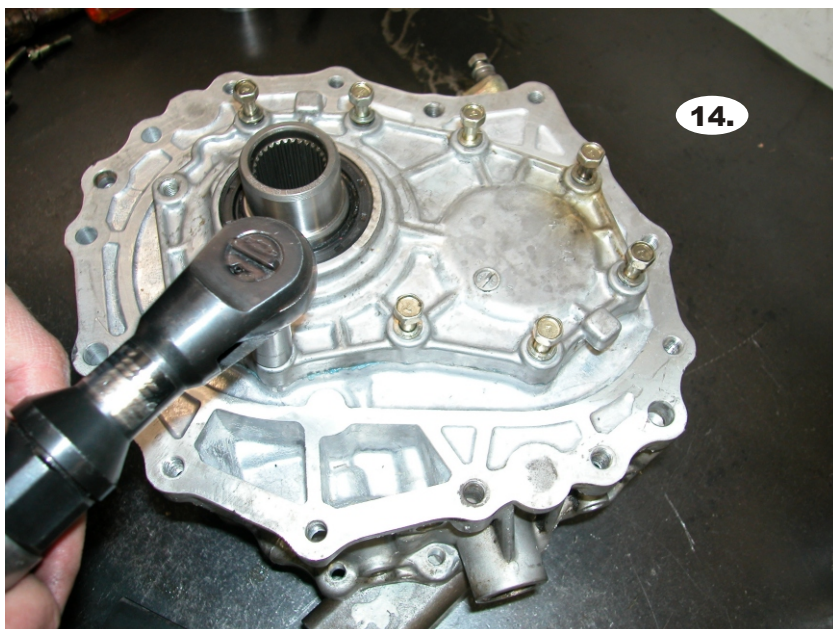
12.

◀ 12. Removal of the reduction clutch hub may require the use of a puller. Separate from main shaft and remove.

13. Remove low output gear and bearing from main shaft. ▶



13.



14.

◀ 14. Remove the front case cover.



◀ 15. Remove the input gear shaft from the case.

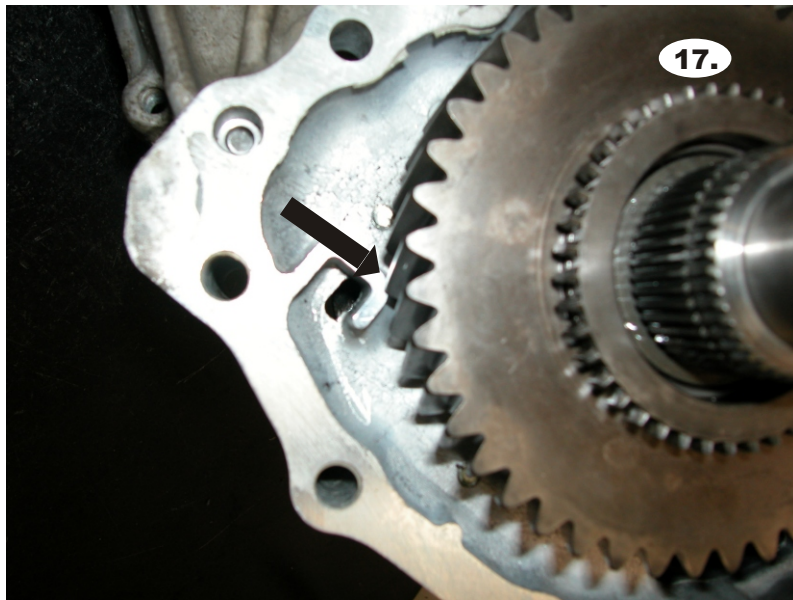
16. Remove the counter gear from the case. ▶



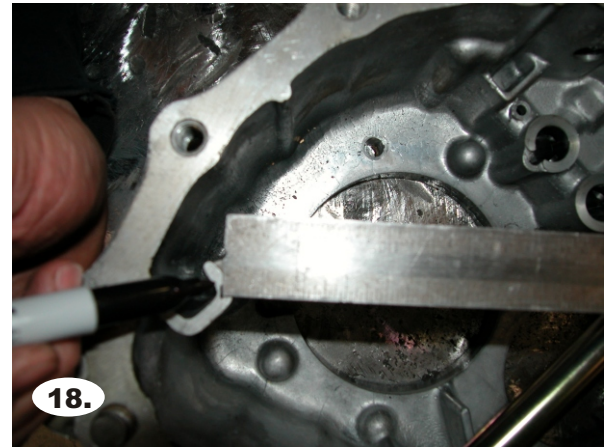
Stop and clean case inside and out before re-assembly

Modifications to Case Interior

Removal of material in 3 spots on the case and one spot on the shift fork is required to install the new larger diameter low output gear. This area of the case is tapered and gets thicker in diameter towards the interior of the case. The total amount of material removed will be .080" -.120" (less than 1/8") This is completed simply by using a cut off wheel or rotary file bit. By sliding the gear and inner bearing assembled onto the shaft into the case, you can gauge the proper amount to be removed. Remember, the required area of material removal is only the width of the gear face. Be sure to measure from the inside of the case wall outward. Be sure that the installed gear spins freely after removal of material. Remember the old adage: Measure twice and cut once. Remove **ALL** metal shavings from inside of case before reassembly. This operation should take 15-30 minutes total.



- ◀ 17. Check oil gutter clearance to new low output gear for material removal. Mark depth of cut with a black marker.



- ▲ 18. After marking cut depth, use a straight edge to draw a line at a 45 degree angle to oil gutter.



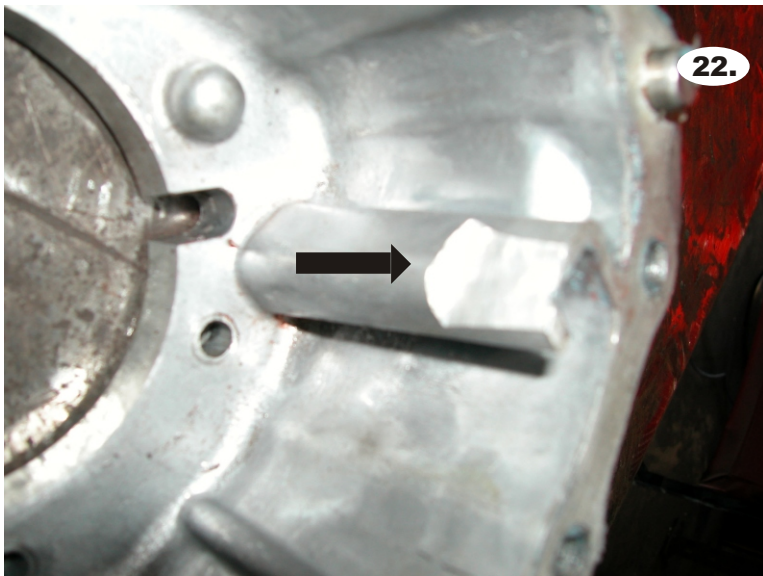
- ◀ 19. After marking cut depth, use a straight edge to draw a line at cut length. Approx 1 1/8".

20. **IMPORTANT!** Before ▶
cutting or grinding, move to
an area away from your
bearings and gears! Cut
vertically into the oil gutter at
your depth mark. The gutter
tapers and gets thicker as
you go down. Remember to
make a vertical cut and don't
break through the inner wall.
Cut down to your length
mark.



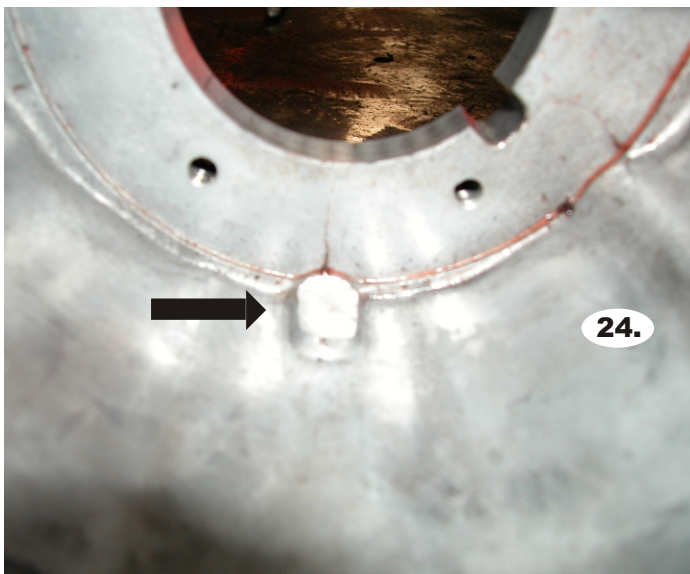
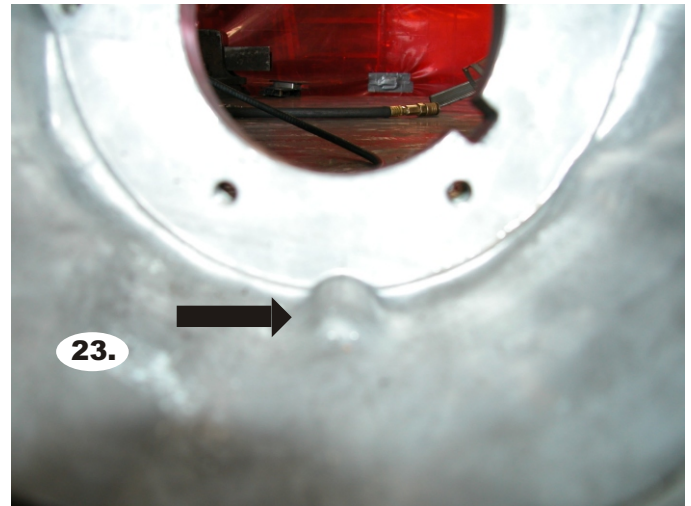


◀ **21.** The oil gutter travels through both sides of the center case. Do both sides of the case.



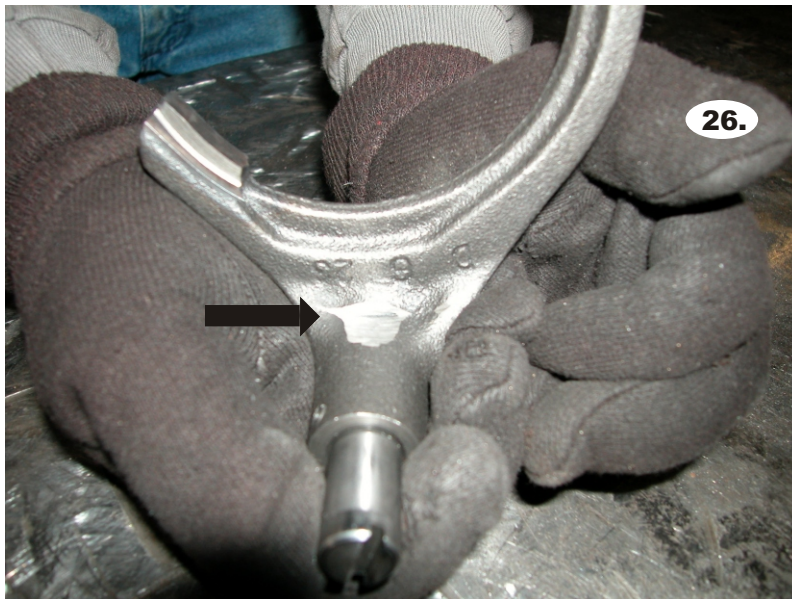
◀ **22.** This is what a proper relief cut should look like.

23. Next area to grind is bump located in front case next to large end of counter gear. ▶



◀ **24.** The inside of this bump in the case is drilled and tapped from the outside as a case bolt. Be careful not to take any more material than needed.

25. Again using the cut off wheel, cut notch in shift fork as shown. You are primarily squaring the radius in the casting.



26. Clearance cut on the shift fork should look like this. You are now done grinding. Case should now be cleaned **COMPLETELY** of any shavings or grit before assembly.

Re-assembly

27. Using a bearing splitter, separate and remove bearing from large end of counter gear.





28.

- ◀ 28. Press new supplied bearing on to small end of new counter gear. After inspecting old bearing from large end of old counter gear, install it on the large end of new gear.

- ▶ 30. Remove bearing retainer clip from old input gear shaft.



30.



31.

- ◀ 31. Separate bearing from input shaft using a bearing splitter.

32. Using bearing splitter and press, remove bearing from input shaft. ▶



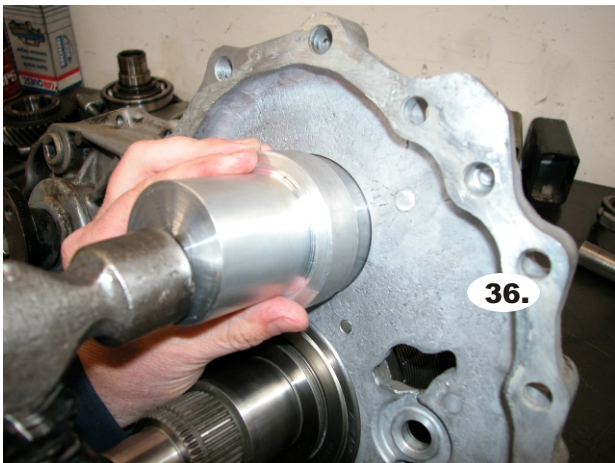
◀ 33. Press the bearing onto the new input gear shaft.



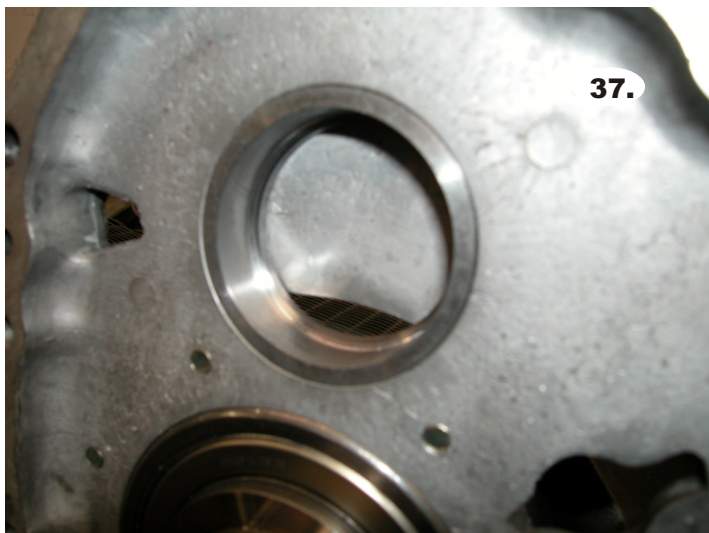
◀ 34. After pressing input shaft back into case, re-install input shaft bearing retainer clip.



35. Insert the counter shaft bearing reduction collar into the center case. The new, smaller bearing on the counter gear now slides into its reduced diameter. ▶

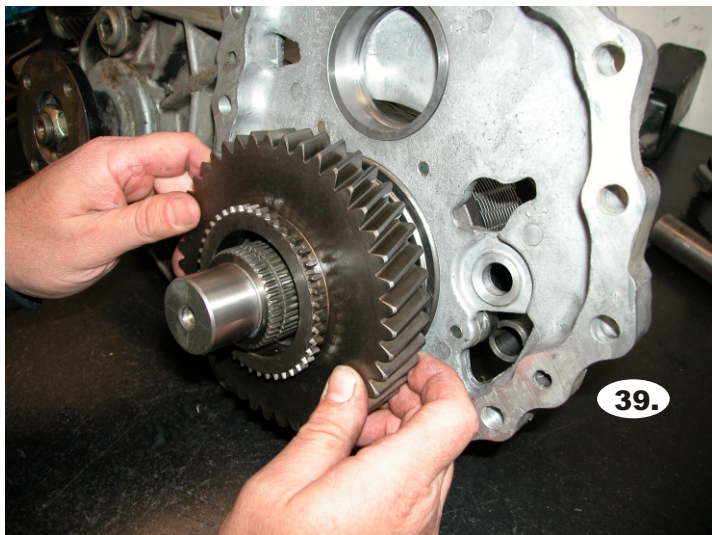
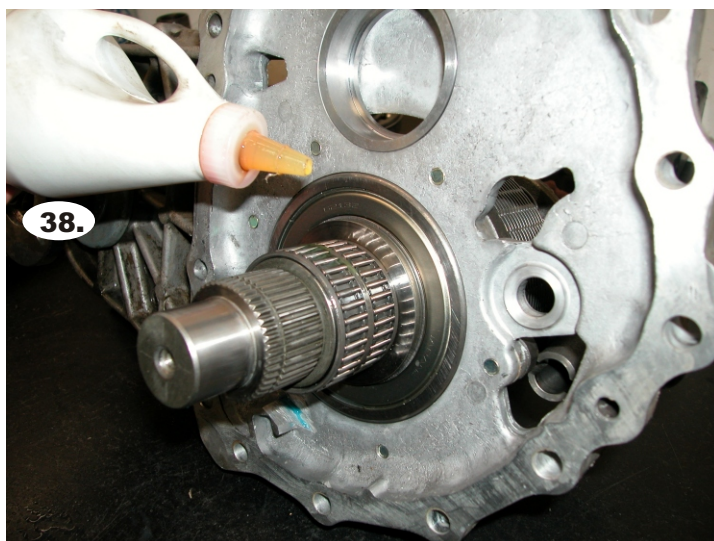


◀ 36. When inserting the counter shaft bearing reduction collar into the center case, seat the collar by tapping with an aluminum block or plastic faced hammer.



◀ 37. Reduction collar must be seated flush against the case.

38. Install needle bearing onto main shaft and ▶
apply some lube. Use 90wt. or grease.



◀ 39. Install new low output gear on main shaft.

40. Install High & Low ▶
hub on main shaft.

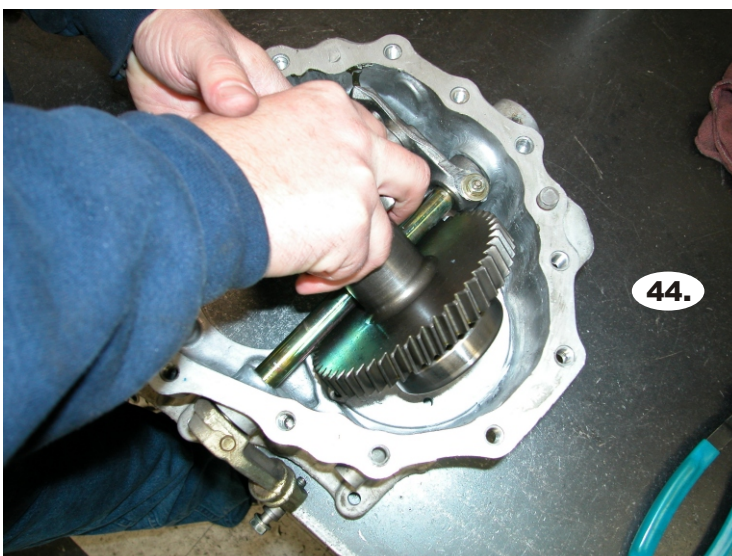
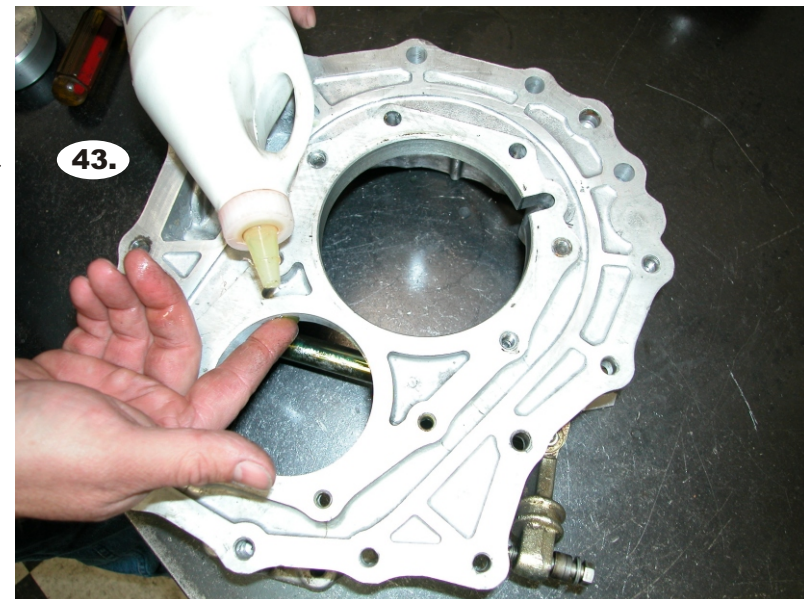


41. Re-install L&H Hub and check for end play. May require light tapping to install. ▶

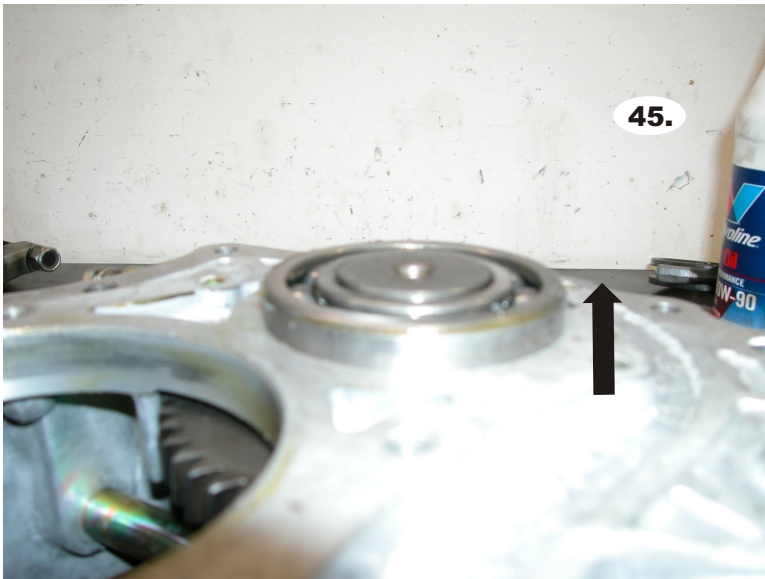


◀ 42. Re-install High & Low Hub retainer clip.

43. Lube case prior to installing new counter gear and new input gear into case. ▶

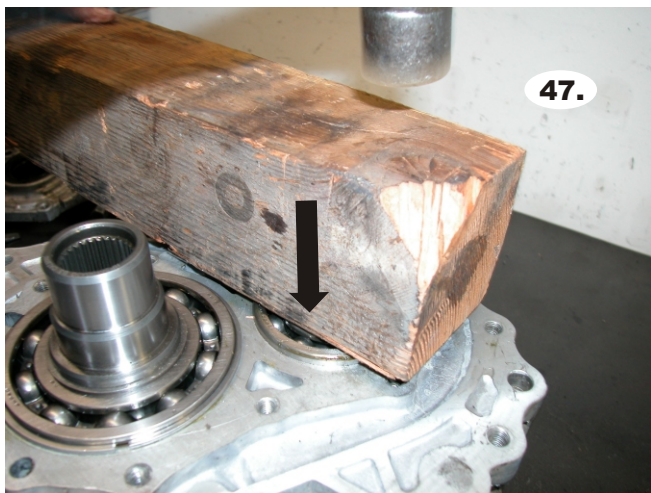
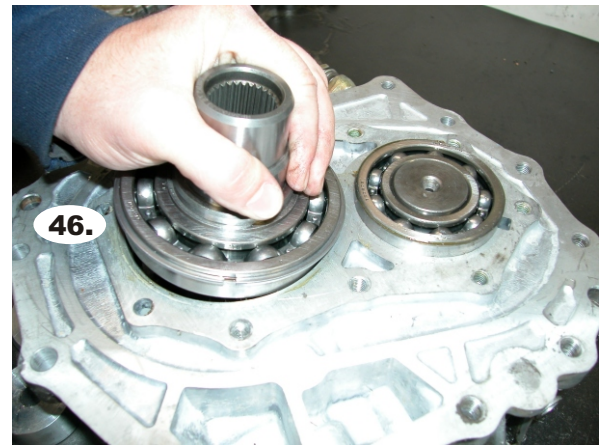


◀ 44. Install new counter gear assembly into front case.



◀ **45.** Push counter gear bearing past flush in case.

46. Re-install input shaft into case. Because the counter gear is larger than stock, the input gear is smaller. You will have to work the face of the clutch ring on the input gear past the face of the counter gear. Insert the input shaft on an angle as shown, and it will slide right into place.



◀ **47.** After inserting input gear shaft, knock (gently) or slide counter gear bearing head flush to case.

48. Apply a good coating of silicone, and re-install front case cover. Torque cover bolts to 12-15 ft-lbs.

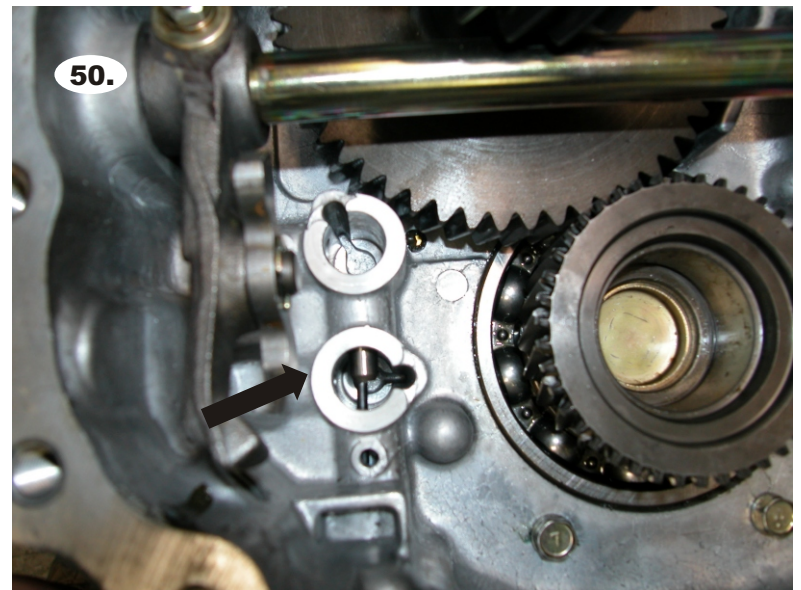




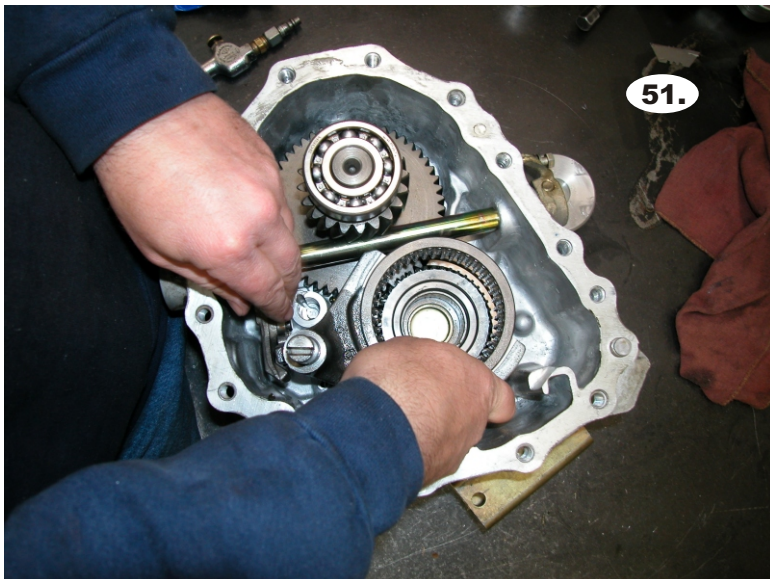
49.

◀ 49. Install interlock plunger pin, and center it in case between the 2 shift rail holes.

50. When installing the interlock plunger pin, make sure that it is in the case between the holes for the shift rails as shown. ▶

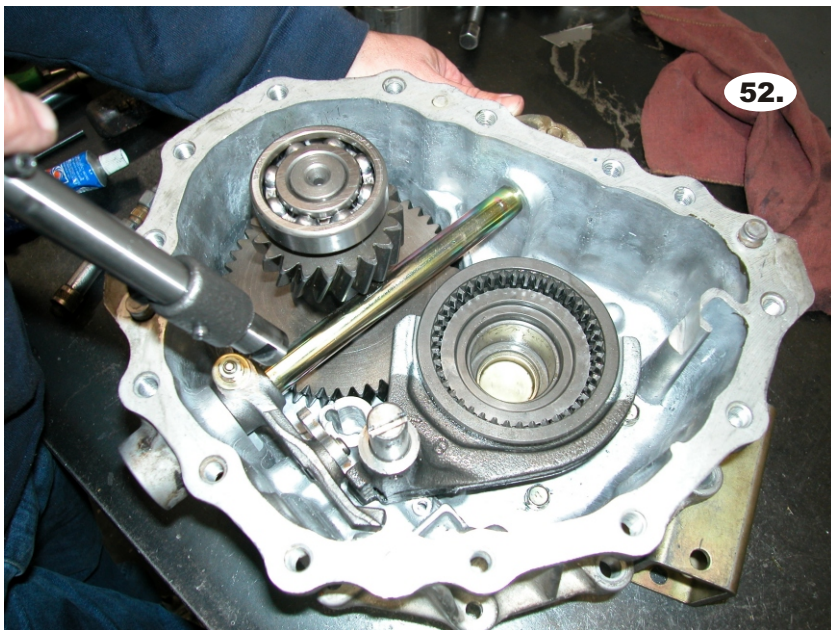


50.



51.

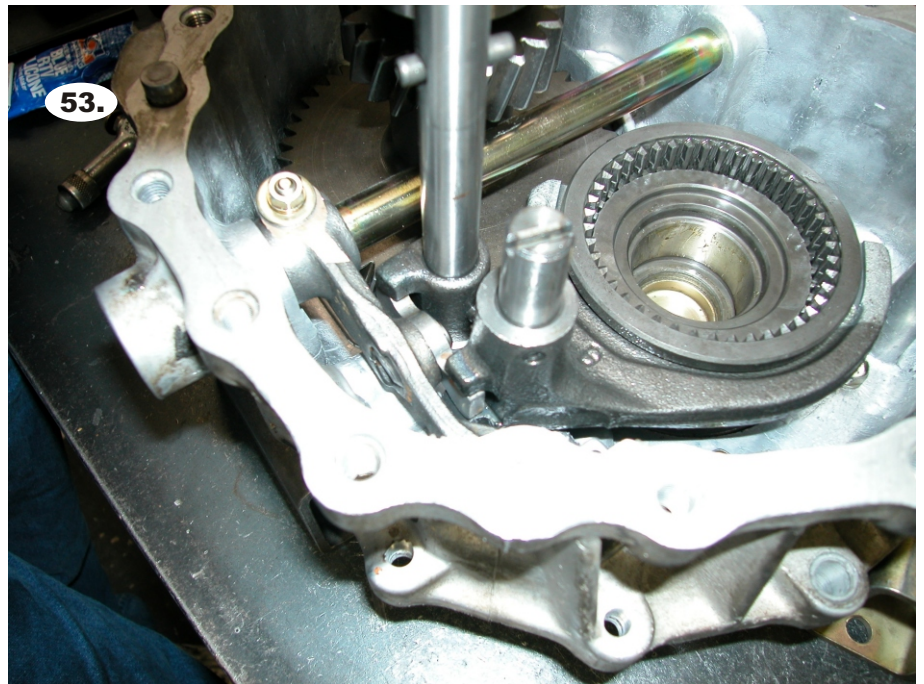
◀ 51. Install High & Low Range shift rod & fork.



52.

52. Re-install 2-4 shift rail.

53. 2-4 shift rail and High - Low shift rail installed.

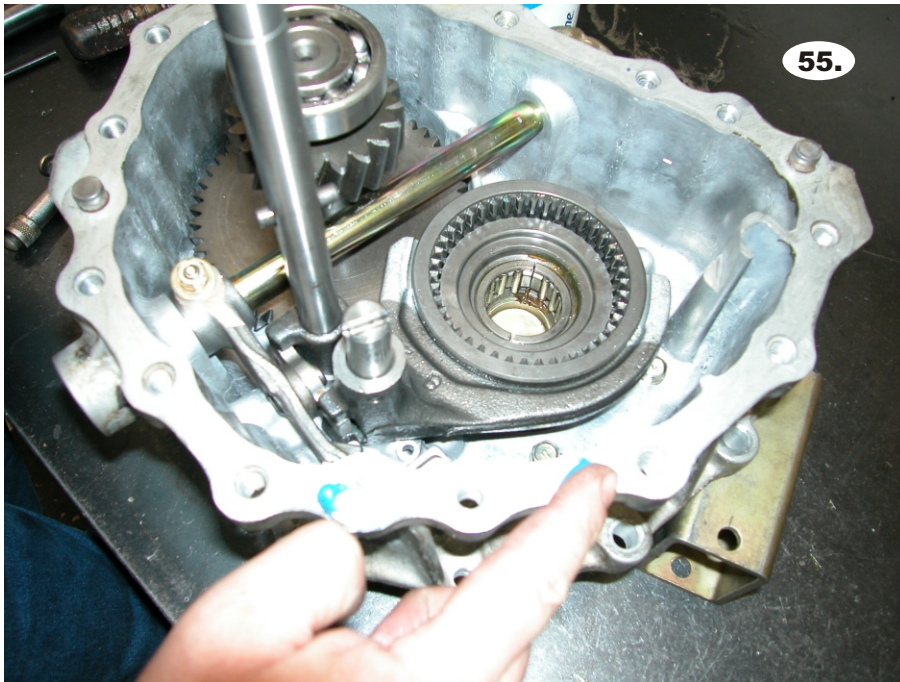


53.



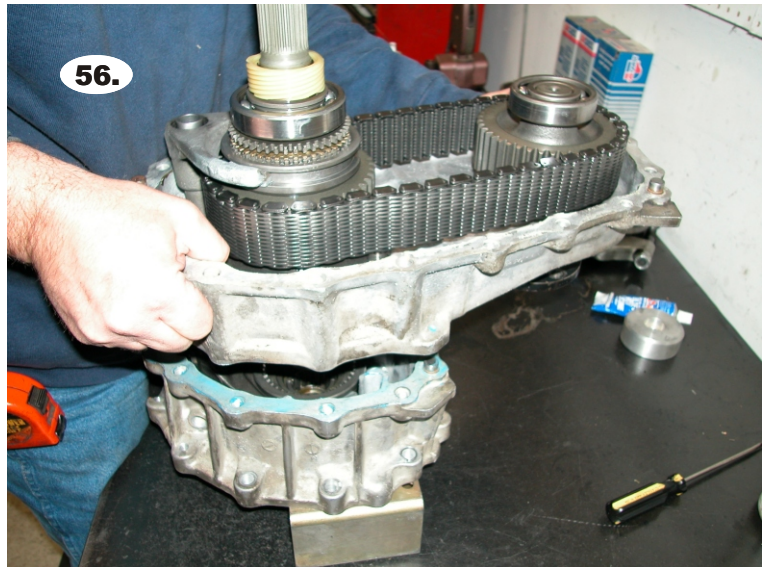
54.

◀ 54. Apply a good layer of grease into end of counter gear, and install needle bearing for main shaft.

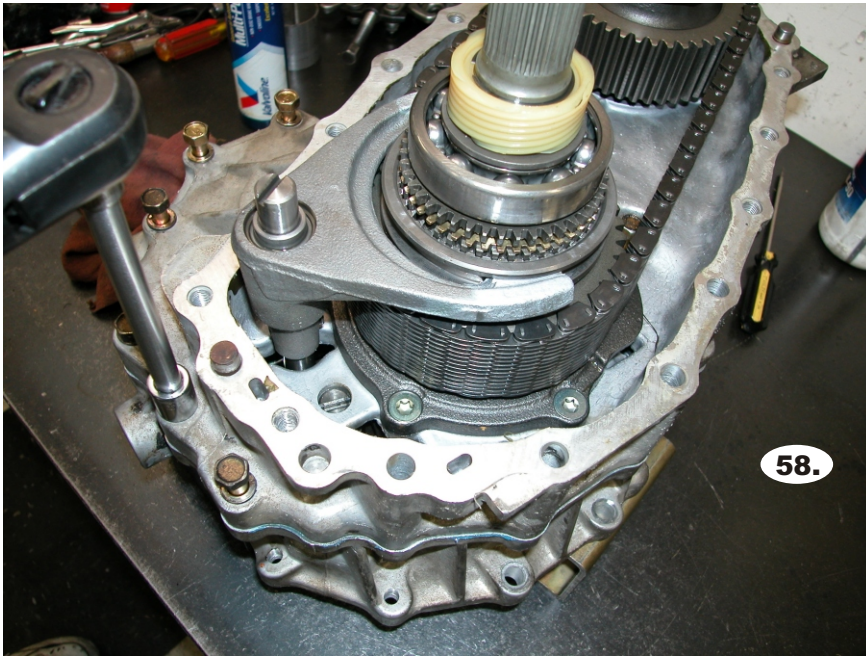


◀ **55.** Apply a coating of silicone prior to installing the center case.

56. Install center case and front case together. Rotating the main output shaft will align the clutch hub while mating cases.



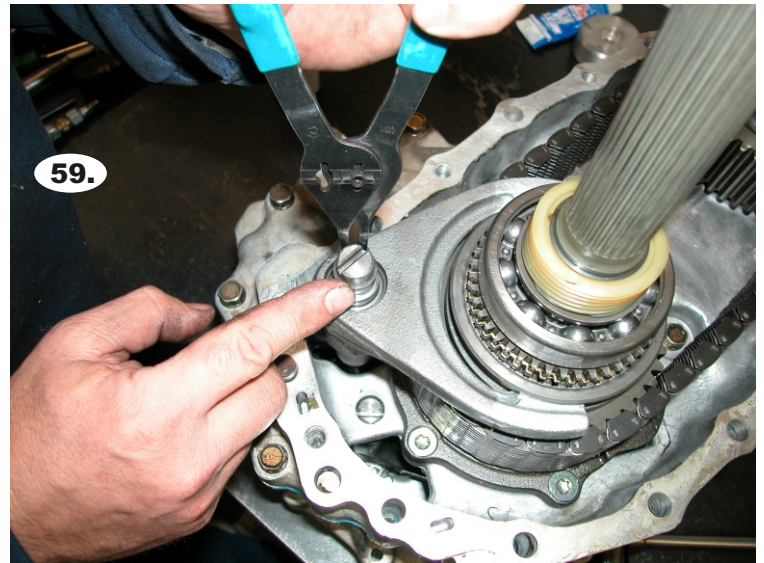
◀ **57.** Bolt case halves together. Tighten center bolts first. Torque to 25 ft-lbs.



58.

◀ **58.** Tighten outer case bolts. Torque to 25 ft-lbs.

59. Install snap ring on the 2-4 ▶
shift fork.



59.



60.

◀ **60.** Install oil gutter and cover.



61.

◀ 61. Apply a good coating of silicone to rear case cover.



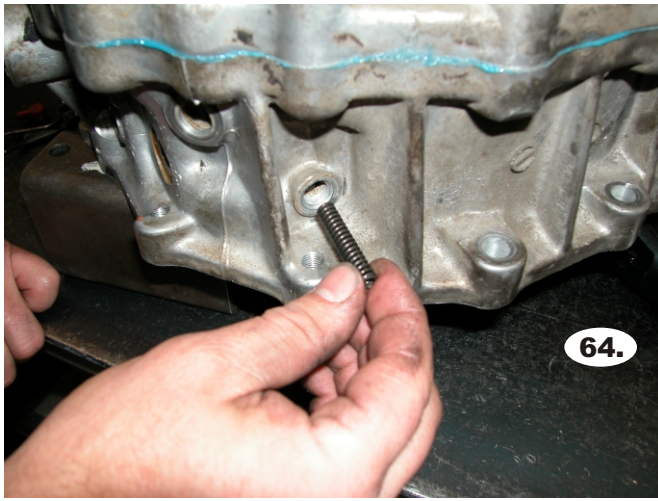
62.

62. Install rear case cover.▶



63.

◀ 63. Tighten rear case bolts. Torque to 25 ft-lbs.



64.

◀ 64. Install transfer neutral position switch, check balls, check springs, and plugs.

65. Install speedo gear drive into case. ▶



65.



66.

◀ 66. Completed case. Check for any open holes or plugs left out. Rotate input shaft by hand to check for any binding. You're ready for install.

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