



Fitting instructions for

PAJ-GEN3-3.15 Auto & Manual Transfer Case

Extra Low Range gears for Mitsubishi series 3

Thank you for purchasing a product manufactured by Marks 4WD Adaptors. The following instructions are intended as a guide. It is recommended that you purchase a workshop manual pertaining to your model vehicle.

These instructions are based on the transmission (Gearbox and transfer case) having been already removed from the vehicle.

NOTE: Clean all parts thoroughly as you dismantle and modify the transfer case.

1. Remove the gear lever housing on top of the gearbox.
2. Using a pin punch, tap the roll pin out of the selector shaft.
NOTE: Don't drop the roll pin in the gearbox. Tap it just far enough to allow the selector to come free of the shaft. See photo below:



3. Remove the transfer case from the gearbox. See photo below:



4. Remove the transfer case top cover.

NOTE: Under the cover is a pair of gears used to drive the selector shafts , make sure you note the orientation of these gears along with gear selector positions. A number of ball bearings are also under each of the switches and should be removed using a magnet.



5. Remove the front cover by undoing the six M10 bolts.

NOTE: Line up the flats on the input gear so that one side is toward the idler shaft and the other is facing the top of the transfer case. See photo below:



6. Remove the selector fork and selector ring.

NOTE: The ring has a groove machined into the front face. When its re installed it must be correctly oriented, if it's not you will not be able to select gears properly. See the following photo.

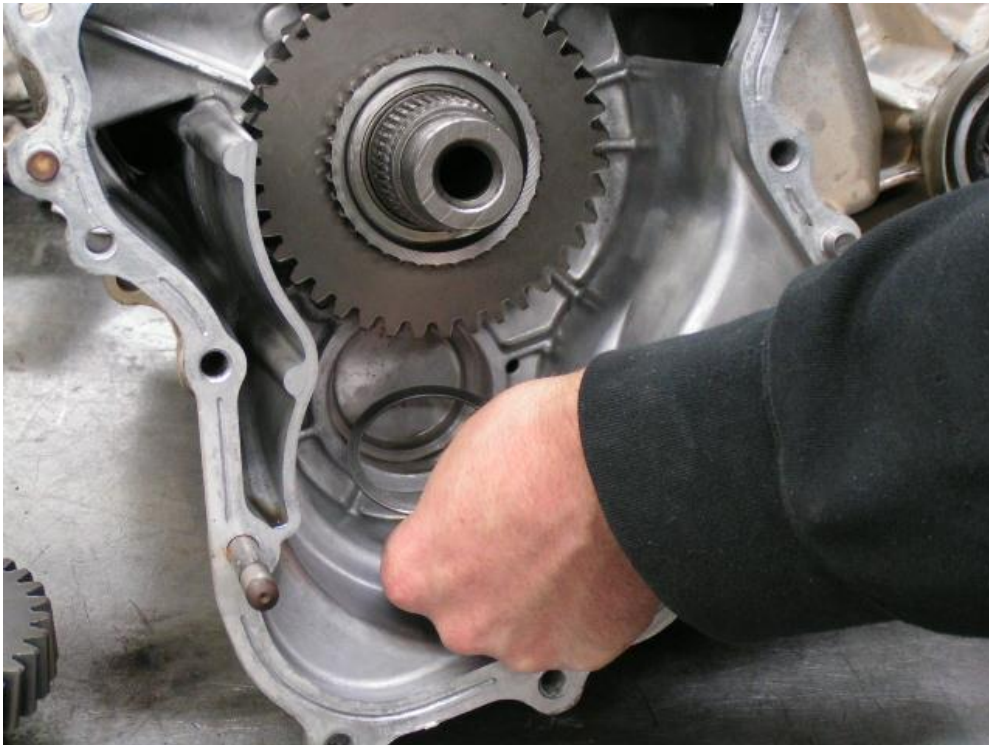


7. Remove the circlip holding the selector hub to the main output shaft. See the following photo.



8. Remove the idler shaft.

NOTE: Behind the idler shaft rear bearing are some shims, they prevent end float and must be re used. See the following photo:



9. Using the new gear as a guide, grind the bottom of the boss that supports the selector shaft in the housing.

NOTE: 1 about .5 to 1mm clearance is required between the case and the gear.

NOTE: 2 fully cover all of the holes and bearings to prevent contamination from grindings. See the following photo.

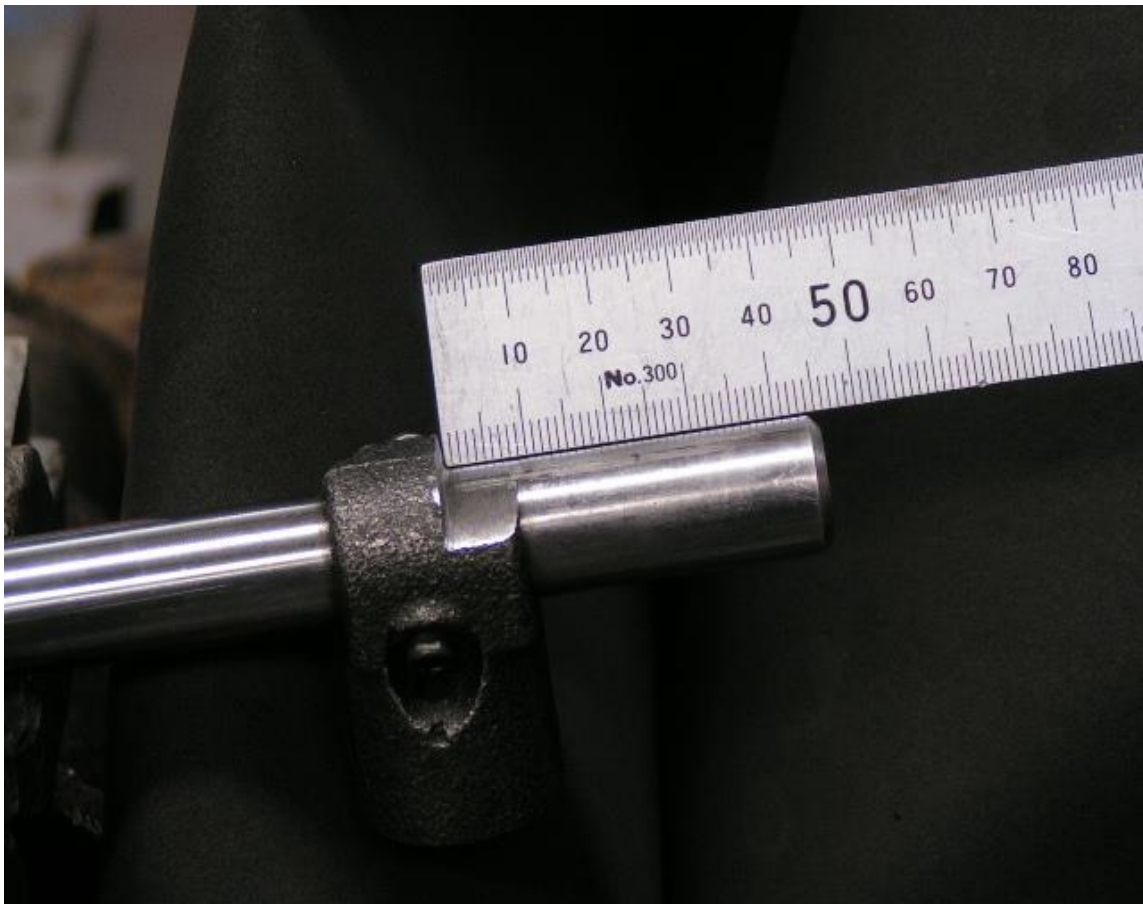




10. Remove the bearings from the old idler gear and fit them to the new one.
NOTE: Replace the bearings if required. See following photos.



11. The gear lever selector will need to be modified so that it will clear the output gear. See the following photos.





12. The gear selector can move up to 20 degrees from side to side. It's a good idea to allow a little extra clearance. See photos.



13. Remove the input shaft seal.
NOTE: This seal must be replaced as it will leak after being disturbed.
14. Remove the circlip on the input shaft in front of the bearing.
15. Press the input gear out of the input bearing.
16. Using a socket or a piece of tube as a drift remove the welsh plug in the old input gear.
NOTE: Be careful not to damage it as it is reused. Clean it thoroughly.
17. Find a socket or a piece of tube that fits inside the welsh plug, with some clearance.
18. Apply some Loctite to the outside of the welsh plug and refit it into the new input gear.



19. Slide the backlash eliminator over the input gear followed by the washer and the circlip. Then press it into the input bearing.
NOTE: lubricate the gear, backlash eliminator and the bearing bore before fitting.



20. Re install the circlip in front of the bearing.

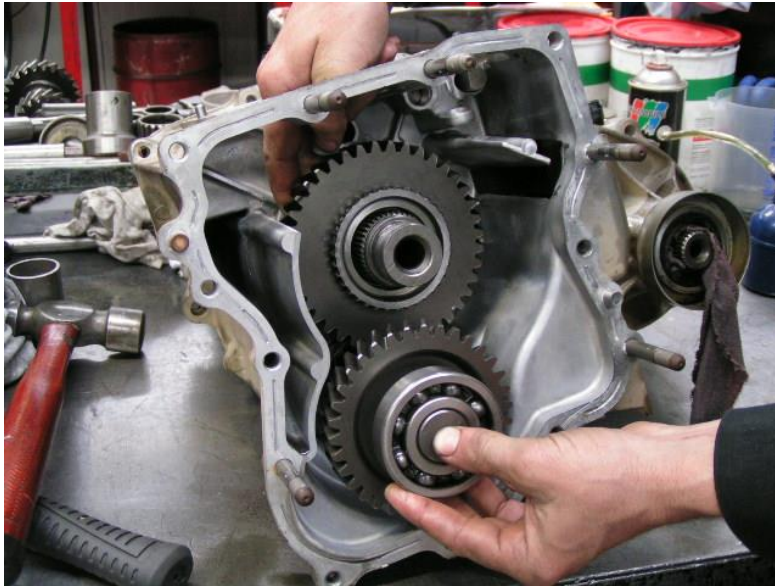


21. Slide the output gear onto the output shaft.

22. Slide the idler shaft into position.

NOTE: 1 Make sure you have reinstalled the shims in the rear bearing pocket and apply a smear of oil in the pocket.

NOTE: 2 you will need to slide the output gear forward enough to allow the idler gear to fit into place.



23. Fit the selector hub and the circlip. **NOTE:** Apply some oil to the output gear needle bearing and the gear thrust faces.

24. Fit the selector ring and the fork. You will need to slide the idler shaft forward a little to allow the ring to fit past the idler gear teeth.

NOTE: Fit the ring with the identification groove facing you. See the following photo.

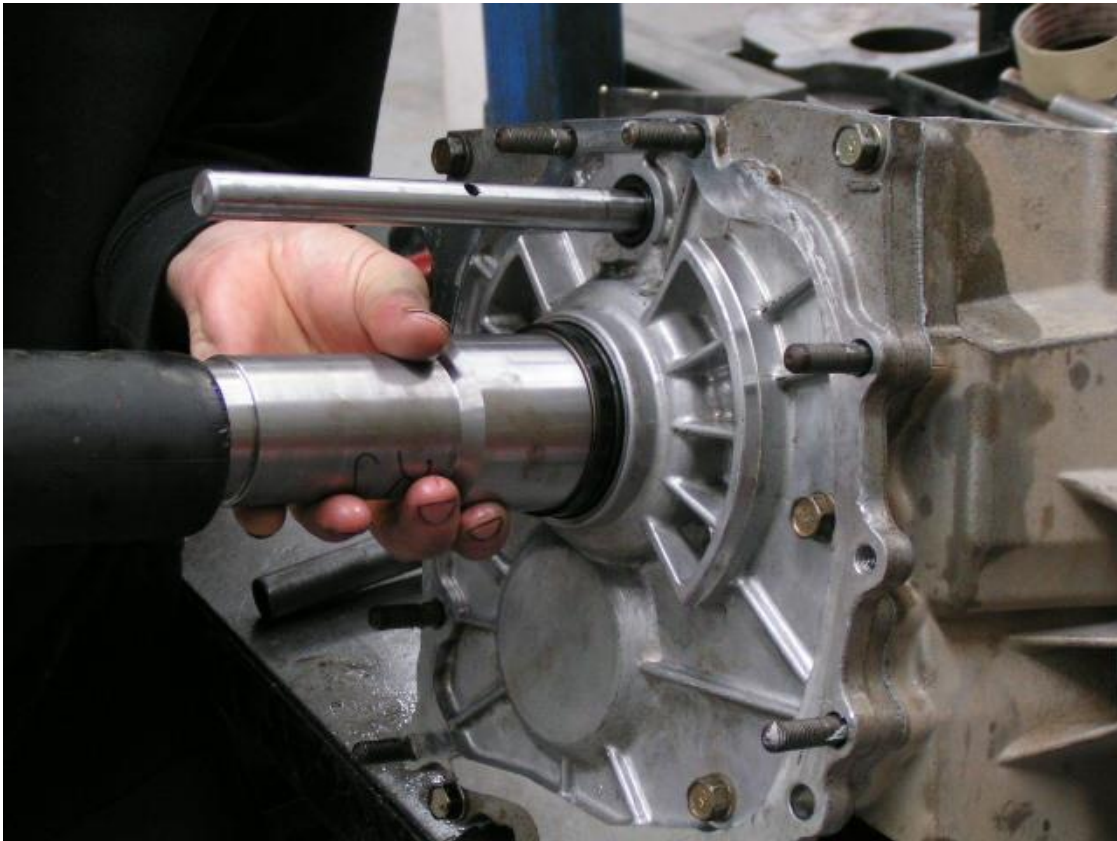




25. Fit the gearbox selector and shaft.
NOTE: Apply a smear of oil to the shaft and the hole in the housing before fitting.
26. Apply a smear of Threebond sealer to the front cover face.
27. Slide the input gear needle bearing into position.
NOTE: Apply some oil to the bearing needles and the idler bearing bore.
28. Align the flats on the input gear and fit the front housing. Secure it using the original bolts.
29. Apply a smear of grease to the inside of the transfer case input seal.



30. Fit the new seal using a suitable drift.



31. Reinstall the selector shaft balls and gears.

32. Apply a smear of Threebond sealer to the cover and fit it on the transfer case. Secure it with the original bolts.

33. Apply a smear of Threebond to the transfer case face and carefully slide the selector shaft into position at the same time sliding the gear selector over the end of the shaft.

34. Secure the transfer case to the gearbox with the original bolts and nuts.

35. Reinstall the roll pin in the gearbox selector.

36. Fit the gear lever housing.

NOTE: Use Threebond on the housing mating surface.

37. Lift the gearbox/transfer case assembly into position and connect the wiring. Check to make sure that the transfer case selects Hi/Low and 4WD correctly. If all is well continue the installation, if not rectify the problem.

38. Check the clutch operation after you have the bellhousing bolts in place.

39. Fill the gearbox and transfer case to the required level with the recommended oil. See your workshop manual for details.

40. Double check all bolts and wiring before road testing.

The components supplied in the kit are designed for specific type conversions. Modifications to any components without the written consent from Marks 4WD Adaptors will void any possible warranty or return privileges. Should you have any further questions that are not covered in the instruction sheet, please contact our sales department for assistance.



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