



INSTALLATION GUIDE

Installation Guide for the Tera Low307 Low-Range Reduction Kit for the Isuzu Transfer Case (No Syncro) Part #002100000



Safety should always be the primary objective when making any modifications to your vehicle. Take every precaution to prevent accident or injury.

Please check that you have the appropriate components prior to starting work on your transfer case.

removal

1. Clean the outside of the Transfer Case Housing so that any foreign matter that is there will not get inside the case while it is apart.
2. Remove the Filler plug and Drain plug and drain the oil. Check the magnet on the Drain plug for any metal particles.
3. Remove Transfer Case from vehicle (see Isuzu shop manual)
4. For late automatics with electronic four-wheel drive shifters, remove the front wheel drive electric shift. (See the Isuzu Shop Manual for removal.)
5. Remove the 4 bolts on the high low shift unit and remove.
6. Remove the 9 bolts and the 2 stud bolts from the housing. NOTE: Mark the location where the 2 stud bolts were removed for assembly later.
7. Pry the Housing apart. NOTE: The 2 locating dowel pins and all the internal shafts (except the rear wheel drive shaft) stay with the front half of the Housing. There will be no changes made on the rear half of the Housing.
8. Remove the Snap Ring on the Input Shaft.
9. Remove the #6305 Ball Bearing from the Input Shaft.
10. Use a 3/16" wide X 3/32" thick tool to

- pry out the hammered in portion of the Nut at the key slot. Remove the Nut.
11. Remove the high - low speed Ball Detent Unit. (This is a 3/4" hex. fitting that is located on the outside of the housing inline with the shift rail shaft) Remove the hex. Fitting, Spring and Ball.

DO NOT leave the Ball in the hole, as it will fall into the rail shaft hole when the shaft is removed. NOTE: Do not remove the Ball Detent Unit for the front wheel engagement shaft.

12. Release the Snap Ring that is under the gear on the Idler Shaft. This is the Snap Ring that holds the Idler Shaft to the Housing. (This Snap Ring will remain loose around the Idler Shaft but will allow the Idler Shaft to move outward.)
13. Using a long eared pulley puller, pull off the low speed Clutch Drive Assembly. (The Drive Assembly includes the Low Speed Gear, Shift Ring, Splined Shaft Drive part, Shift Yoke and Shift Rail) NOTE: The Idler Shaft may have to be pulled up slightly to clear the Yoke's removal. NOTE: If the Roller Bearing and the Inner Bearing Sleeve pull up with the assembly, make sure

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that you do not loose the Inner Bearing Sleeve's Drive Ball that is located in the Input Shaft.

14. Remove the Idler Shaft. Pull up by hand.
15. Remove the Snap Ring on the Idler Shaft.
16. Remove the Ball Bearings from the idler shaft.

inspection

1. Check all of the Ball Bearings for wear and smooth running.
2. Check low speed gear's Roller Bearing for pits and wear.
3. Check the Inner Bearing Sleeve for pits and wear.
4. Make sure that all the gasket material is removed and remove all nicks and burrs on the mating surfaces of all the parts.

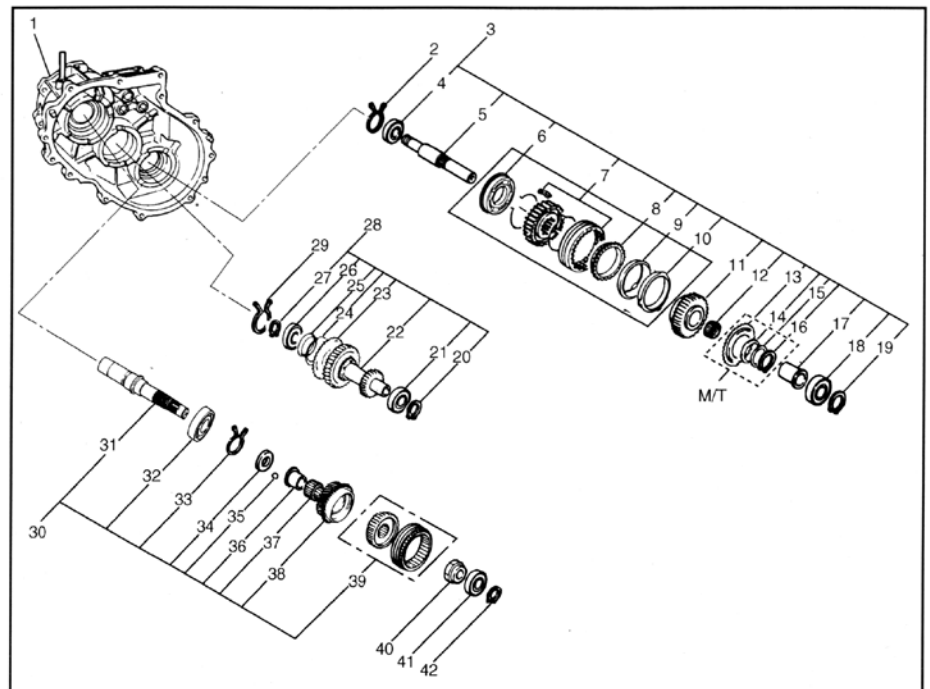
assembly

1. Lubricate the bearing surfaces on the Idler Shaft and press # 83 A4600 Ball Bearing and # 6306 Ball Bearing on the shaft to the shoulders.
2. Install the OEM Snap Ring on the Idler Shaft. (# 6306 Bearing)
3. Insert the assembled Idler Shaft in the front half of the housing.
4. If the Inner Roller Bearing Sleeve and Drive Ball had been removed, put some grease around the Drive Ball and place the Drive Ball in the hole in the Input Shaft that was made for it. Slide the Inner Roller Bearing Sleeve on the Input Shaft making sure that the Drive Ball is in its slot.
5. Assemble the Roller Bearing and the Low Speed Gear on the Roller Bearing Sleeve. Rotate the gear train to make sure that it turns free.
6. Remove the Roll Pins (One inside the other) from the Yoke and the OEM Shift Rail Shaft. Assemble the OEM Yoke on the Shift Rail TL 307-3 shaft. (NOTE: The rotation of the Yoke to centerlines of the Ball Detent must be the same as the original assembly.) Press in the Roll Pins.
7. Assemble the Yoke and Shift Rail Assy. into its hole, making sure that the vacuum activated shift shaft is correctly installed. Check to see if this assembly moves up and down freely.
8. Lift the Yoke Assy. up enough so that you can slide the Shift Ring on the Yoke, drop the Yoke so that the Shift Ring will engage with the Gear.
9. Using snap-ring pliers or long needle-nose pliers, put the snap ring in its groove in the Housing.

10. Press the Splined Drive Shaft Part on to the Input Shaft until it seats on the Inner Roller Bearing Sleeve. Rotate the gear train to make sure that it turns free.
11. Screw the OEM Nut on the Input Shaft and torque to 60 foot lbs. Stake the flange on the nut into the slot.
12. Press the # 6305 Ball Bearing on the Input Shaft and assemble the Snap Ring.
13. Assemble the high - low Ball Detent Unit. (Ball, Spring and 7/4" Hex. Fitting)
14. Check all shifting action and gear rotation.

15. Apply silicone sealer on both parts of the housing. Assemble the Housings and screw in the bolts, torque to 50 foot lbs. NOTE: Stud bolts to be installed where marked,
16. Bolt on the High - Low shift unit.
17. Mount the Front Wheel Drive shift unit. (See the Isuzu Shop Manual on how to install and to set the gear timing.)
18. Screw in the Oil Plugs
19. Assemble in vehicle, add oil. Torque all components to specifications.

Exploded View of the Isuzu Transfer Case



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| (1) Transfer Case (with oil seal) | (22) Counter Gear |
| (2) Bearing Snap Ring | (23) Sub-Gear (anti-lash plate) |
| (3) Front Output Gear Assembly | (24) Belleville Spring |
| (4) Ball Bearing | (25) Spacer |
| (5) Front Output Shaft | (26) Ball Bearing |
| (6) Stopper Plate | (27) Snap Ring |
| (7) 2WD-4WD Clutch Hub Assembly | (28) Counter Gear Assembly |
| (8) Block Ring | (29) Bearing Snap Ring |
| (9) Outside Ring | (30) Input Shaft Assembly |
| (10) Inside Ring | (31) Input Shaft |
| (11) Front Output Gear | (32) Ball Bearing |
| (12) Needle Bearing | (33) Snap Ring |
| (13) Sub-Gear (anti-lash plate) (M/T) | (34) Plate |
| (14) Belleville Spring (M/T) | (35) Ball |
| (15) Spacer (M/T) | (36) Bearing Collar |
| (16) Sub-Gear Snap Ring (M/T) | (37) Needle Bearing |
| (17) Bearing Collar | (38) Transfer Input Gear |
| (18) Ball Bearing | (39) High-Low Clutch Hub and Sleeve Assembly |
| (19) Bearing Snap Ring | (40) Lock Nut |
| (20) Snap Ring | (41) Ball Bearing |
| (21) Ball Bearing | (42) Bearing Snap Ring |



PRODUCT INFORMATION

MAINTENANCE INFORMATION:

It is the buyer's responsibility to have all suspension, drivetrain, steering, and other components checked for proper tightness and torque after the first 100 miles and every 3000 miles after that.

NOTICE TO INSTALLER:

The enclosed "Warning to Driver" sticker must be installed in the vehicle in driver's view. This sticker is to act as a constant safety reminder when operating the vehicle. It is your responsibility as the equipment installer to install the provided sticker and to forward the product instructions to the vehicle's owner for review. If a "Warning to Driver" sticker or product installation guide were not included in the kit, FREE replacement stickers and instructions are available by request. It is the installer's duty to ensure a safe and controllable vehicle after the modifications have been performed.

WARNING:

Neither the seller nor the manufacturer will be liable for any loss, damage, or injury directly or indirectly arising from the use of or inability to determine the use of these products. Before using, the user shall determine the suitability of the products for its intended use, and the user shall assume all responsibility and risk in connection therewith.

WARNING TO DRIVER:

This vehicle has been modified to enhance off road performance and has unique handling characteristics. Use in harsh environments can cause extreme stress on the components. Vehicle should be inspected after being off road to make sure that all the components are in working order and safe to travel on the highway. All fasteners should be checked so that they are at the correct torque specifications as the vibration and stresses from off roading may cause critical fasteners to work loose. Extra care should be taken to inspect the critical components, steering, and brake systems. During each oil change components such as arms, tie rod ends, etc should be greased and checked for excessive wear. Any worn components should be replaced. When returning to the pavement always set or restore tire air pressure to the factory recommendation and connect or engage any disabled sway bar mechanisms. Because of the higher center of gravity and larger tires, this vehicle handles and reacts differently than many passenger cars, both on and off road. You must drive it safely! Extreme care should be taken to prevent vehicle rollover or loss of control, which can result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers. Generally, braking performance and capabilities are decreased when significantly larger/heavier tires are used, especially when used in combination with transfer case low-range reduction kits. Take this into consideration while driving. Do not add, alter or fabricate any factory or aftermarket parts to increase vehicle height over the intended height of the TeraFlex product purchased. Mixing component brand is not recommended. TeraFlex Inc. will not be responsible for any altered product or any improper installation or use of our products. We will be happy to answer any questions concerning the design, function, and correct use of our products. It is ultimately the buyer's responsibility to have all bolts/nuts checked for tightness after the first 100 miles and then every 3000 miles. Wheel alignment, steering system, suspension and drive line systems must be inspected by a qualified professional mechanic at least every 3000 miles.

TERAFLEX PRODUCT WARRANTY:

Tera Manufacturing warrants TeraFlex Suspension products to the original retail purchaser to be free of defects in material and workmanship for as long as the original purchaser owns the vehicle on which products were originally installed.

Failure to complete regular maintenance (grease every 3000 miles) on TeraFlex FlexArms will void this warranty. All other conditions of the standard TeraFlex product warranty apply.

All TeraLow products are covered by TeraFlex's two (2) year warranty to be free of defects in material and workmanship for two years from date purchased.

Tera axles are covered by a 12-month warranty to be free of defects in materials and workmanship.

This warranty does not cover or include product finish, improperly installed or applied products, improperly maintained products, products or components used for racing or competition or damage due to abuse or neglect, products that fail due to the use of larger tire and wheel combinations.

All returns must be accompanied by an original invoice. It is the customer's responsibility to remove the product from the vehicle. Shipping charges are the responsibility of the customer. Tera Manufacturing will pay the return freight if the product meets the terms of warranty.

This warranty is for the replacement or repair of defective TeraFlex products only and does not include freight charges, labor charges for removal of or installation of TeraFlex or related products or components, costs incurred due to down time of the vehicle, or lost profits due to vehicle down time.

A returned goods authorization number (RGA#) must accompany any returned products. For more information please contact a TeraFlex customer service representative.

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