

Introduction

We hope that the installation of your new transfer case shifter goes very smoothly and that you achieve the improved results with your Jeep® that you intend. This guide covers the installation of our NP231 cable shifter assembly on Jeep New Process / New Venture 231 transfer cases as found in the Jeep TJ Wrangler vehicles, as well as the Jeep XJ Cherokee and other Jeeps that feature the factory, “dog-leg” floor shifter handle.

Despite whatever your experience with this type of work may be, we strongly advise you to read these instructions well and save them for future reference and parts numbers. Contained in these instructions are the requirements, tips, hints and tricks of performing these conversions, both in our own facility and information we’ve gained from discussing this upgrade with our customers. Put this information to good use. Failure to implement the practices and information in these pages may jeopardize the quality of your work, as well as the product warranty.

Benefits

One can expect that many individuals with NP231 transfer cases will be doing some wheeling, and many of these individuals have installed suspension lifts, body lifts, tummy tucks, powertrain conversions, etc. This shifter kit will not only provide superior shifting to the factory shifter assembly, but can adjust for nearly any modifications and variations as discussed.

Compatibility

This shifter has been designed and tested with Jeep TJ and XJ vehicles featuring the 231 transfer case, and is reliant on the Jeep factory shift lever assembly. If you have fitted another Jeep with a 231 transfer case, you’ll have to make accommodations by installing a TJ or XJ style shift lever assembly.

About Transfer Case Shifters

A trend of “dumbing down” transfer case shifters has long been in effect. Original Jeep transfer case shifters of the WWII era Dana 18’s were double stick versions. These were very simple, reliable controls that took some initial thinking on the driver’s part to figure out. Dana 20’s and some later Dana 18’s received a single lever to simplify operation. However, some Dana 20’s began to receive complex



Installing the NP231 Shifter Assembly

The Guide to

remote-style shifters that have aggravated many a Jeep in their operation as well

as reliability.

With the advent of the New Process chain driven transfer cases, a single shifter with a “Z-gate” design was introduced, ostensibly as a safety to keep the operator or any unrestrained occupants in the Jeep from inadvertently shifting the transfer case during operation. One major fault these systems have is the complex maze of linkage rods, joints and brackets that zig and zag their way, eventually arriving to the transfer case shift plate. Of note is the welcomed simplicity of the elegant design offered by New Process, in that the rotating action of the shift plate on the transfer case proper, works in a clean, smooth manner - when independent of the OEM linkages between the driver and the transfer case itself.

Our goal at Novak was to simplify the shifting mechanism through the removal of the problematic z-bar link-ages and their joints, and thus the clean and flexible cable design of the NP231 shifter kit.

Suggested Tools

Please note that you will need: • Conventional open and box end wrenches • Socket, hex (Allen) wrenches • Conventional socket set

Shifter Assembly Replacement

Preparation

Shift your transfer case into 2H.

We recommend that you remove the Jeep cross member for ease of installation as it will provide more working room. However this is not always necessary. If removing the cross member, be sure to support the transmission assembly with a floor jack and jack stand.

Shifter Linkage Removal

Remove the entire z-bar linkage from between the OEM shifter lever and the transfer case pivot lever. You will also remove the rubber grommet from the shifter pivot that is underside the lever and the rubber grommet from the transfer case pivot lever.



It is not necessary to remove the OEM shifter lever assembly from the tunnel, or to remove the console.

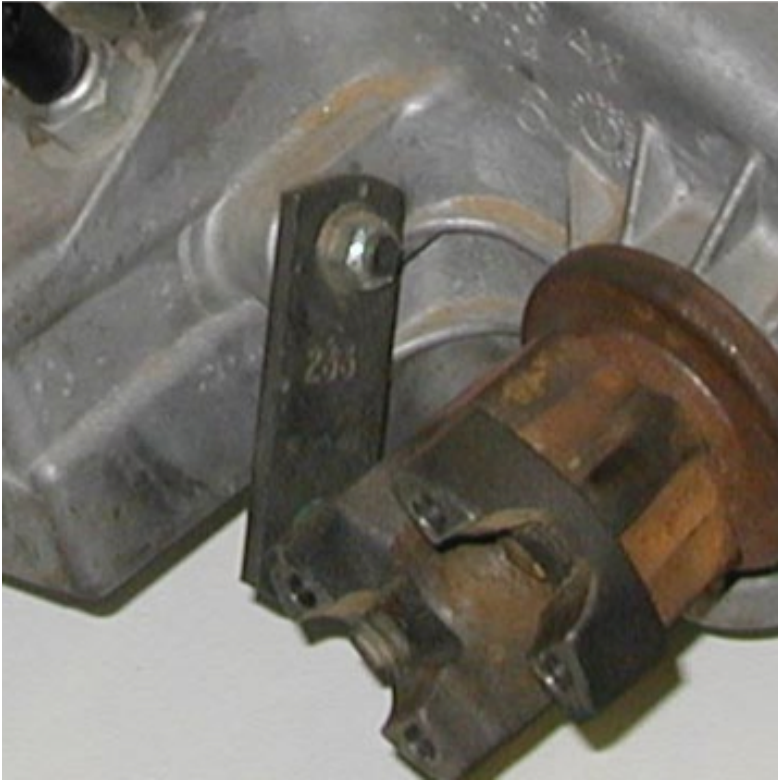
Factory Anchor Brackets Removal

The original linkage's body floor plate should be removed from the underside of the tunnel. You will need to lift your carpet to access these bolts.

Now, remove the factory transfer case anchor bracket by removing the two corresponding 3/8" adapter nuts (of six).

Factory Transfer Case Rotator Plate Removal

Remove the factory transfer case shift rotator plate. This is easily



done with a 9/16" box end wrench or socket wrench and a little prying or side force against the plate. Keep the factory nut for your installation of the provided Novak shift rotator plate.

Novak Shifter Installation Floor Bracket Installation

Install the provided floor bracket in the same location and manner as the original, using the provided, stainless steel button head bolts, washers and nuts. You'll notice the tabs on the new plate are bent so that it can only be oriented one way, with the hole tab facing towards the front of the Jeep.

Anchor Bracket Installation

Install the main "L" shaped anchor bracket. This installs on the same two transfer case adapter bolts that the previous bracket was removed from. You can use your existing fastening hardware (typically studs with nuts). Retighten and torque to 38 ft. lbs. or what one can comfortably tighten with a standard length 9/16" box end wrench.

Cable to Shift Lever Attachment

Verify that your transfer case is shifted into 2H and the shift lever is in the 2H position. washer from one side of the Spin the remaining nut so that it its threaded

adjustment range.

Without tensioning the shift cable or moving the shift lever, spin the cablehousing's nuts into position so that they sandwich the anchor bracket's tab. If you are confident that you didn't move the lever, tighten the two nuts against each other with an open end wrench. No adjustment will typically occur here.





Remove one nut and threaded cable housing. is about in the middle of Feed the cable rearward through the hole in the body anchor bracket.

Slip the washer over the threaded end and spin on the nut. Do not tighten this yet.

Now, install the cable's bearing end bolt through the shift lever plate and attach it using the provided nut and washers.



A smart alternative to installing the brackets first, and then the cable is as follows:

Before installing the brackets to your body and transfer case, insert the cable ends as described and spin on the nuts. You can then proceed to install the floor bracket and transfer case anchor bracket.

The cable's bearing end will sit outboard of the lever's pivot plate, as shown in the image.



Cable to Transfer Case Anchor Bracket Attachment

Spin one nut and washer off the opposite end of the cable. The cable should be pointing forward. Loop it rearward and feed the threaded housing into the hole in the tab on the transfer case anchor bracket. Don't kink your cable, but don't worry if you have a bend that looks tight. This is a high-grade and extremely low friction cable that can handle and operate for many, many years with as little as a 5" radius bend.

Now, slip the washer over the threaded end and spin on the nut. Do not fully tighten this yet.

Transfer Case Rotator Plate

Install the provided shift rotator plate angled in the down and forward position. Secure it with the factory lock-nut, torqued to ~30 ft. lbs. Remember: your transfer case should be in 2wd Hi, which angles the pivot in its most forward location available.

Clevis Installation

Remove the cotter pin and clevis pin from the provided clevis assembly. You will now spin the clevis onto the threaded cable end that is protruding through the anchor bracket. Spin it on while sighting upward to estimate alignment with the shift rotator plate's hole. Insert the clevis pin into the clevis and try to insert the pin through the rotator plate hole. Turn the clevis forward or back in 1/2 turn increments until the clevis pin can be inserted with *no tension* on the cable and rotator plate. It does not matter if the clevis is installed with its head inboard or outboard.

With the pin installed, insert the cotter key into the clevis pin and bend its ears enough to secure it.

Testing and Adjustment

You can now test shift your transfer case. This is best done with the wheels off the ground and the Jeep securely supported by jack stands. Shift into each range and mode





as you turn the drive shafts for shifting ease. Verify that the shift lever position corresponds with the detent positions in the transfer case.

Usually, very little adjustment is required. However, if it is required, you will only finely adjust the cable assembly at the transfer case anchor bracket, not at the body tunnel bracket. When you are satisfied that operation, make sure your fasteners are all tight.

Finishing

Reinstall any interior components you may have removed. Reinstall the skid plate, if you removed it and attach all factory components as before.

Conclusion

We have had great results with this shifter. When executed with care, this conversion can be a strong, enjoyable and reliable upgrade to your Jeep.

We strongly suggest that you keep these instructions for future reference. For questions concerning your conversion, contact us and we'll be pleased to answer your questions. There is no final word to our instruction packages.





