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 PAGE 1 OF 9 Page Rev. Date: 10-30-19  
 P/N: 715543-231

## TJ 231 CABLE SHIFTER

### KIT CONSISTS OF:

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>
2	303305	BARREL- CABLE TJ
1	303303	SHIFTER BODY BARREL RETAINER
2	303312	BUSHING- IGUS 3/8"
2	303313	HEIM JOINT- FEMALE 1/4-28
4	303341	BOLT-1/4-28X5/8 BHCS
2	303343	Access plug
1	303344	Pivot Dowel Pin (Ground) 2.25"***
15"	303345	Sealant - Butyl Tape
1	303346	BOLT-1/4-28X5/8 SHCS
1	340610	RETAINER- CABLE SHIFTER BARREL
3	340615	Bolt - 1/4-20 X 5/8"*** BHCS"
3	42R617	BOLT 1/4-20 X 3/8"*** BHCS"
1	42R700	Shifter Box- TJ pivot housing
2	42R701	PIVOT PIN MOUNT
1	42R702	BOTTOM COVER
1	42R703	HANDLE MOUNT- DRIVER SIDE
1	42R706	Shift knob - NP231
1	42R708	Lever - T-case NP231
1	42R709	SPRING- WAVE
1	42R725-1	SHIFTER CABLE- 2"*** TRAVEL "
1	42R726	HEAT SHIELD-FIREPROOF SLEEVE 1/2"
3	42R735	BOLT 1/4-20 X 1"*** HHCS"
4	42R745	PLUG 7/16 BLACK
1	715543A	CABLE SHIFTER SHIFT HOUSING CABLE PLUG
1	715543B	CABLE SHIFTER HANDLE SPACER
1	715543C	TJ CABLE T/C SHIFTER BRKT
3	722514	NYLON LOCKNUT 1/4-20
1	723753	F.H.C.S. 3/8-161 1/4

### NOTE:

The bell crank linkage is removed with the installation of this kit. Without the bell crank, the shift lever pattern is reversed inside the vehicle. The stock Jeep has the shift handle positioned in "2WD" all the way forward. With the new cable shifter installed and the new shift handle positioned all the way forward, the transfer case would be in "4WD Low" which is reverse of stock.

We have included a new shifter knob that has the new correct shift pattern.

**Note: we offer shift knobs labeled for the Tera Low kit with 2WD Low.**  
 P/N 42R711- FITS NP241OR  
 P/N 42R712- FITS NP231

### Tool List:

- FULL SET OF HAND TOOLS INCLUDING:  
 6 mm ALLEN WRENCH  
 16 mm DEEP SOCKET  
 8mm HEX BIT SOCKET  
 3/8" DRIVE RATCHET  
 15/16" WRENCH  
 5/32" ALLEN WRENCH
- 3/8" TORQUE WRENCH
- STUBBY 9/16" WRENCH REQUIRED, RATCHETING RECOMMENDED.

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The Igus bushings must be **pressed** into the shift handle. A arbor press or a light hand with a hammer works well. Once the bushings are installed the pivot pin gets installed through the handle.



Install the wave washer and spacer, then the pivot pin mounts.



Once both pivot pin mounts are installed. The pivot pin should be flush with the outside edge of the pin mounts. Install the handle assembly into the shifter housing making sure the handle is pointing forward or in the same direction as where the cable will be mounted (see photo).

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Secure the pivot pin mounts to the shifter housing using 3 of the B.H.C.S and the one S.H.C.S(see 2nd photo on row 3). Remove the double nuts and flat washer from one side of the cable and slip the heat shield over the cable. One of these nuts & flat washers gets discarded.



Install the cable barrel retainer (make sure it is orientated correctly) and thread the cable barrel on to the cable.



We have switched from a metal plug to a rubber plug 9/6/24



Thread the heim joint to the cable end and before mounting to the shifter housing install the extra cable barrel plug. Retain the cable assembly to the shifter housing with the 3 B.H.C.S. Line the heim joint with the handle and install the P/N 303346 bolt through the access hole in the shifter. We have provided plugs for these once the fasteners are tight. The shift knob uses a flat head P/N 723753 bolt that recesses into the shifter handle and can be installed now or during assembly into the vehicle.

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### **Disassembly/Preparation For Assembly:**

1. Use an Advance Adapters Uni-Raise (PN: 15-1000) (See *Figure 1*) or some other device to support the transmission pan to support its weight. Take **caution** to avoid denting the pan and damaging the transmission.
2. Remove the four M10 foot-mount nuts from the crossmember.
3. Remove crossmember and any aftermarket skid plates.
4. Remove front drive shafts. not mandatory but helps to access the transfer case and linkage parts.



Figure 1: Uni-Raise

### **Interior Disassembly/Reassembly:**

1. Remove the cup holder if it is removable, depending on the style of your console. (See *Figure 8*)
2. Remove the transmission shift handle by grabbing firmly and pulling straight up until it pops off.
3. Using a small flat head screw driver, remove the transmission shift indicator cover. Once it pops loose you must disconnect the light on the bottom side of the cover to completely remove it. (See *Figure 9 and 10*)
4. Use a 10mm socket to remove the two console bolts located under the cup holder and under the shift indicator panel.



Figure 8: Cup Holder Removal



Figure 9: Transmission Shift Indicator

5. Move transfer case handle to 4wd-Low and then pull the console out.



Figure 10: Indicator Light

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6. Using a flathead screwdriver, remove the wire loom connector clip from the transfer case shifter bracket. (See *Figure 11*)
7. Using an 8mm socket, remove the five transfer case shifter bracket bolts. Make sure to save these bolts as they will be reused.
8. Using a straight screw driver or a pry bar, pry the linkage rod from the floor shifter assembly. (fig 11A) Also pry the linkage rod from the stock transfer case lever.(fig 11B)
9. Using a 10 mm socket, remove the four bolts securing the shifter pivot assembly. (See *Figure 12*) You will have to lift up the carpet to get to these bolts. The bracket will fall when the bolts are removed if it isn't held. Seal the bolt holes with the four supplied black plastic plugs.



Figure 11: Remove Wire Loom Connector Clip



Figure 11A



Figure 12: Shifter Pivot Assembly Bolts



Figure 11B

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10. Remove the transfer case shifter and the linkage by lifting it up and out through the floor. (See Figure 13)
11. Remove linkage assembly and remove the bracket from the front of the transfer case. The upper bolt can be accessed through the shifter hole in the floor board if needed. (Fig13A & 13B)
12. Take the new shifter housing and apply butyl tape around the perimeter of the shifter box.
13. With the aid of another person, install the shifter box assembly ensuring that the transfer case cable is routed under the transmission cooler line.
14. Route the new cable along side the transmission.
15. Bolt the shifter box assembly down using an 8 mm socket and the 5 stock OEM bolts removed previously.



Figure 13: Remove Shifter Linkage

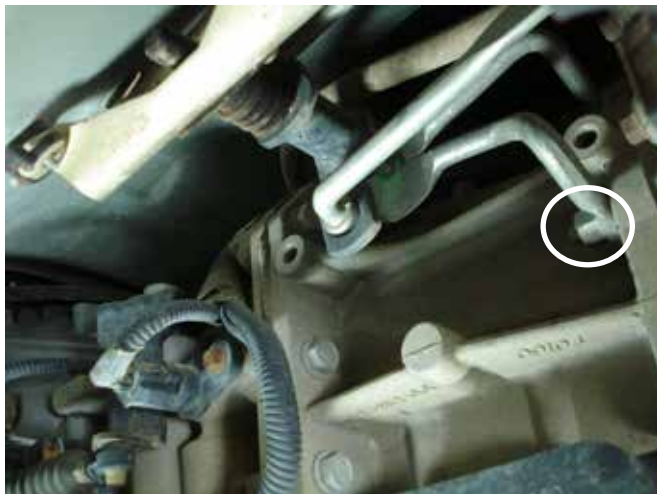


Figure 13A & B

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16. Move the transmission shifter into the "Neutral" position with the new handle in the vertical position. Point the front of the console towards the passenger side, then rotate the console counterclockwise as you maneuver it down over the handle and transmission shifter. Bolt the console down using a 10mm socket and the two bolts removed earlier. Install the shift indicator back on to the console making sure to plug in the indicator bulb before snapping it back in to place. (See *Figure 17*)
17. Install the new shift knob using the supplied 3/8-16x1-1/4" flat head cap screw.



Shifter Box Assembly  
w/ T-Case Cable

### **Shifter Box Assembly End Cable Adjustment:**

1. Rotate the transfer case cable barrel until the center of the knob is 1" from the console when in its lowest position. (See *Figure 21*)
2. Tighten the three 1/4-28x5/8" bolts that retain the cable barrel retaining clip. (See *Figure 22*)
3. Using a 15/16" wrench, tighten the 5/8" jam nuts on the shift cables.
4. Bolt on the bottom cover of the shifter box using the supplied 1/4-20x3/8" button head cap screws. **NOTE:** Make sure you start all 3 before final tightening. Use RTV for a water tight seal.



Figure 17: Console Install



Figure 21: 1" from console



Figure 22: Tighten Retaining Clip

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### **Transfer Case Installation and Transfer Case Shifter Cable Gear Box End Adjustment:**

1. Bolt the transfer case shifter bracket to the front of the transfer case where the stock bracket was bolted.
2. Route the transfer case shifter cable through the transfer case shifter bracket hole with a jam nut on both sides of the bracket and then completely thread the heim joint on to the end of the cable and tighten the jam nut. This cable should already be routed under the transmission cooler lines.
3. Remove the transfer case shift lever.
4. Install the new supplied shift lever with the original nut (use a medium strength thread locking compound on the threads) and see *Figure 29* for correct lever orientation. Torque to 20 ft-lbs.
5. Adjust the transfer case shifter cable by adjusting the two 5/8" nuts so that the heim travels an 1/8" past the shift lever for both directions of travel.
6. Attach the cable shifter heim to the previously installed shift lever (See *Figure 29*) using the supplied 1/4-20x1" hex head bolt and a nylock hex nut.
7. Check the position of the lever through the console, adjustments can be made by adjusting the cable barrels below the shifter box assembly. The transfer case shift lever should change to approximately .125" from the console after installation and final adjustment.



Figure 29: New Transfer Case Shift Lever Orientation

Note: shift knob shown is labeled for a NP241. The NP231 should be

- 4L
- N
- 4H
- 2H



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The 715543C bracket will need to have one of the cable barrels installed (303305) and then retained with the retainer mount 340610 and hardware 42R735 & 722514. This new assembly mounts to the transfer case studs as shown here in the photo's.



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