

## JEEP TJ & (XJ 84-01) ATLAS 2 SP. CABLE SHIFTER units built after 5/1/12

### KIT CONSISTS OF:

No.	Qty	Part No.	Description
1	1	302051-RLE	BASE- TWIN STICK MOUNT 42RLE
2	1	302080	STUD BOLT 1/2"-13 X 7 (XJ)
3	1	303120	SERRATED LOCK NUT 1/2" X 13"
4	1	303121	NUT- 1/2"-13 PLATED
5	1	303303	RETAINER- SHIFTER BODY BARREL
6	2	303305	BARREL- TWIN STICK CABLE
7	1	303307	ATLAS CABLE BRACKET
8	2	303309-1	CABLE-ATLAS SHIFTER 48 LENGTH 1 TRAVEL (green, purple or blue cables)
9	4	303312	BUSHING- IGUS 3/8"
10	2	303313	HEIM JOINT- FEMALE 1/4"-28
11	2	303316	OUTER NUT- CABLE RETAINER
12	2	303317	NUT- CABLE SHIFTER- JAM 1/4-28
13	1	303318	BLOCK- CABLE ADAPTER 42RLE ATLAS
14	1	303319	NUT- RETAINING CABLE 42RLE ATLAS
15	1	302454	CLEVIS PIN- 1/4 x 1"
16	1	302455	COTTER PIN- 3/32 x 3/4"
17	1	303308-B	TUBE- ATLAS SHIFTER EXTENSION 4.6"
18	1	303330	BOX- TJ CABLE SHIFTER ATLAS
19	1	303331	TJ CABLE SHIFTER HANDLE RIGHT
20	1	303332	LEVER- ATLAS CABLE SHIFTER TJ LEFT
21	2	303333	MOUNT- ATLAS CABLE SHIFTER TJ PIVOT
22	1	303334	TJ CABLE SHIFTER BOTTOM COVER
23	2	303335	KNOB MOUNT-CABLE SHIFTER TJ
24	1	303336	ALUMINUM KNOB TJ CABLE FRONT
25	1	303337	ALUMINUM KNOB TJ CABLE REAR
26	4	303339	BOLT- 1/4"-28 x .75" F.H.C.S.
27	3	303341	BOLT- 1/4"-28 X 5/8" B.H.C.S
28	2	303343	Access plug
29	1	303344	Pivot Dowel Pin (Ground) 2.25"
30	15	303345	Sealant - Butyl Tape
31	3	303346	BOLT- 1/4"-28 X 5/8" S.H.C.S.
32	2	303351	LOW S.H.C.S. 3/8"-16 X 1-3/4"
33	6	340615	BOLT- 1/4"-20 X 5/8" B.H.C.S.
34	3	723731	S.H.C.S. 3/8"-16 X 1" ZINC
35	2	42R726	HEAT SHIELD- FIREPROOF SLEEVE 24"

(FOR CABLES AROUND EXHAUST & OR TRANSMISSION COMPONENTS)



#### 42RLE Transmissions note:

42RLE Transmissions have some clearance issues with the tailhousing on one of the new shifter cables. If you have the 42RLE transmission, you will need to use the upper cable support hole on bracket 303307. This cable support hole moves the inside cable away from the transmission tailhousing gives you the needed clearance. We have included a shift rail link bar that provides the correct alignment of the Atlas shift rail to the new cable location on the 303307. The Atlas base mount 302051-RLE has been modified to clear the new link bar assembly. If you are using the link bar assembly, see the last page of this instruction sheet.

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**NOTE ON SHIFTING:** The Atlas Transfer case is a synchronized unit. The transfer case shifts best when the shafts are spinning. Note that when the transfer case is shifted when not in motion, the teeth may or may not be aligned. If the teeth are aligned, then the unit will slip into gear easily. If the unit does not slip into gear easily, then no amount of pulling on the handle will cause the unit to shift. The transfer case must be spun slightly and then it will shift.

This shifter will not fit the Allison transmission due to cable interference with the stock adapter housing.

Jeep XJ's may require a bit of trimming on the console bezel insert.

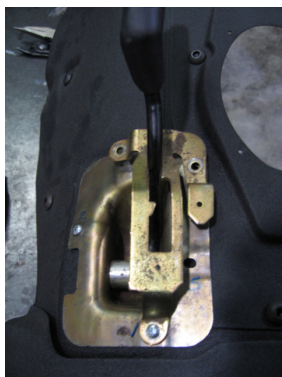


NOTE: We recommend temporarily protecting the shifter cables with rubber hose or duct tape when routing through the shifter floor hole as this will prevent damaging the outer cable housing.

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**NOTE: Refer to factory service manual for detailed disassembly instructions**

1. For Jeeps with factory automatic transmission the first step is to remove the shift button/spring detent assembly from the shifter handle. This can be done by using a small flat head screw driver to "pry off" the shift button end cap. To remove the handle, firmly grab and pull up until it releases from the shift lever.
2. Using the same flat head screw driver, remove the factory shift indicator assembly from the console. Carefully remove indicator light bulb assembly and set aside.
3. Depending on console style, you may have up to five bolts securing the console. Two piece consoles only require removal of two or possibly three bolts. One is located in the front cup holder possibly under the rubber insert. The second is found just to the right of the transmission shift lever. Although uncommon, a third bolt or plastic push pin is sometimes found on the front of the console under the carpet.
4. Maneuver the console so that the stock transfer case shift lever slips through the slot in the console. Remove console and set aside for later.
5. Remove five mounting bolts securing the stock transfer case shifter mount and save for later. These bolts will sometimes be hard to remove because of corrosion in the threads. Prior to removal, spray threads with a thread lubricant. This step will ensure that the threads of the factory "nut-serts" remain undamaged for installation of new shifter assembly.
6. With the five mounting bolts removed, pull the shifter assembly out of the floor far enough to access the nut.



**NOTE: If the stock shifter bolts are missing or have been discarded. Replace with five 10-32" X .625" bolts or screws and washers.**

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### ASSEMBLY

#### Transfer Case End: (see photo next pages)

Bolt the twin stick base to the transfer case with the 3/8"-16 socket head cap screws. Thread the 1/2"-13 all thread completely into the twin stick base. Install the 1/2"-13 jam nut. Tighten the jam nut against the twin stick base. Slide the extension tube and the extension tube bracket over the all thread and fasten with the 1/2"-13 serrated lock nut.

Remove one of the 5/8" jam nuts and slide the cable through the extension tube bracket. Loosely re-install the 5/8" jam nut to hold the cable in place. Remove the 1/4" nut from the cable end and discard. Slip the 303316 outer nut cap over the cable end and then thread the 303317 cable nut on to the 1/4-28 cable end. The cable nut must be set at a distance that when the cable end is inserted into the Atlas shift rail, the cable end bottoms out in the shift rail. The nut is then adjusted to the front face of the shift rail. Once the cable nut is adjusted correctly, slip the nut cap over the cable nut and onto the Atlas shift rail. Tighten the cap nut to retain the cable end to the Atlas shift rail. Use caution when turning the cap nut, making sure it does not turn the inner cable nut. Once the assembly is fastened together you should only see about 1/4" of the 1/4-28 threads coming out of the nut cap. Repeat this step on the second cable.

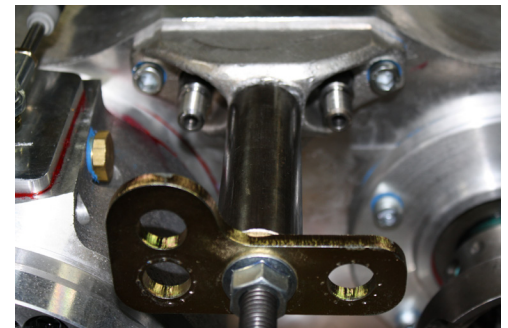
Once both cables are connected, the cable outer housing needs to be set to the cable mount bracket. Shift the transfer case into low range for this adjustment. The easiest way is to use a long punch and a dead blow hammer, set the punch (flat tip) on the nut cap and tap the punch lightly with the hammer. It should pop into the low gear ratio. Turning the yoke can confirm that you're in low gear. Once both shift rails are in low gear you can adjust the outer cable housing.

Loosen the large jam nuts on the cable. Apply some force on the outer housing of the cable pulling away from the transfer case. The cable is a 1" travel and the Atlas shift rail is .960". With the Atlas in low range and the outer housing of the cable extended entirely the other direction, you can now set the jam nuts to the extension tube bracket knowing that the travel of both components is correct. Repeat this on the second cable.

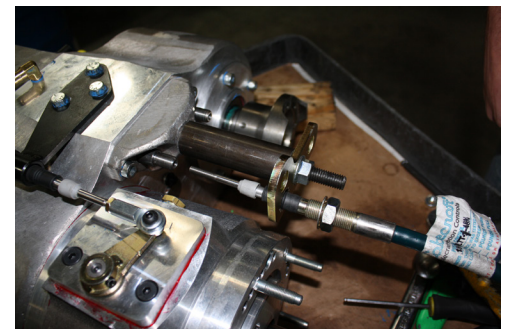
Shift the Atlas back into neutral so when you get to the shifter box assembly and handle orientation, it is easy to see the correct alignment.



New shift rails with clearance holes drilled



support tube and bracket installed

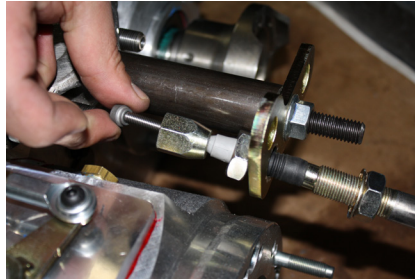


Cable being installed through the bracket

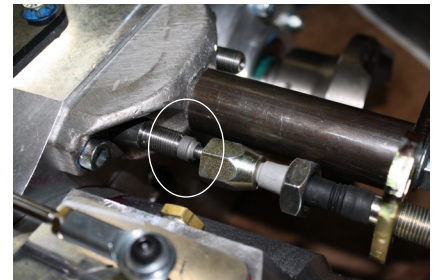
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Remove the 1/4" jam nut and install the nut cap over the cable.



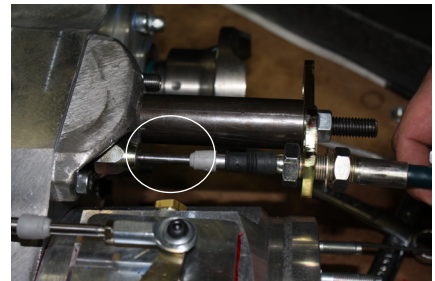
Install the cable nut on the cable threads.



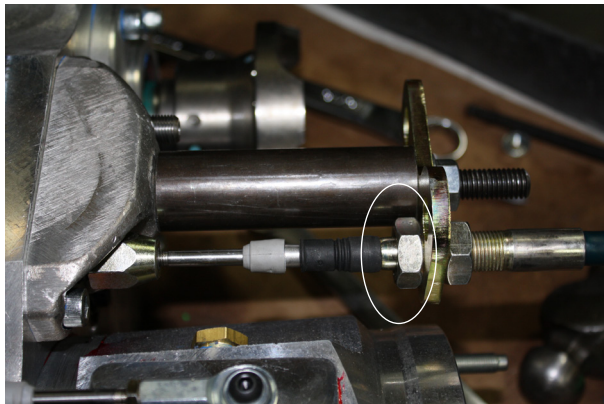
The cable should bottom out in the shift rail and the cable nut should be flush against the face of the shift rail.



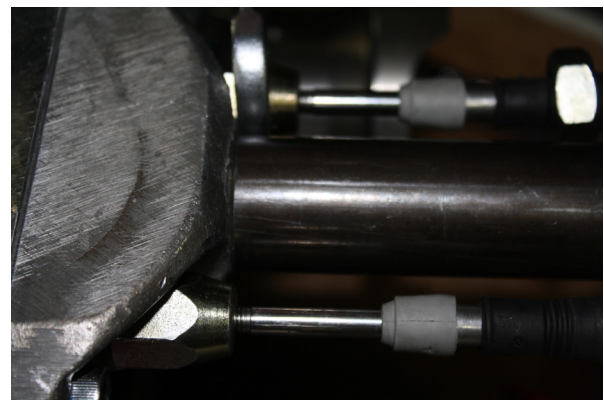
Once the cable nut has been adjusted, slide the nut cap over the shift rail and tighten to retain the cable to the shift rail. Shift the transfer case into low range (shift rail pushed inward) to set the outer cable housing.



The outer cable housing now needs to be set. Pull the outer housing away from the transfer case. The inner cable should be fully extended.



With the cable fully extended in this direction you will now need to secure the 5/8" jam nuts to the bracket of the transfer case. Since the cable has a bit more travel than the Atlas needs, we recommend to thread on (circled) nut first to the bracket and then give it one addition full turn which will pull the outer cable housing back slightly. Then snug the front nut. Once both nuts are snug to the bracket, tighten them with a wrench. Before moving up to the shifter box, shift transfer case back to neutral.



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### Shifter End:

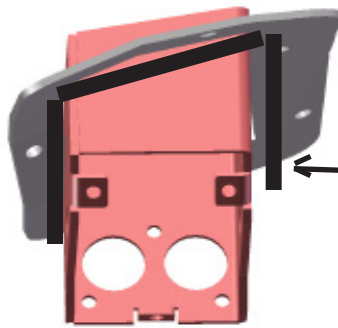
1. Remove 1 of the 5/8" jam nuts and the lock washer from each cable and discard.
2. Slide the Barrel Retainer plate over both shifter cables, then thread both cable barrels onto the shift cables.
3. Now thread the heim joints onto the shift cables inner rod and tighten the jam nuts. (This should look like the photos to the right.)
4. Using a mallet, hammer the pivot bushings into the shifter handles. Start the bushing into the handle, hold the handle with the bushing side down on the table, hit the top side of the handle with the dead blow hammer to install the bushing. Repeat for the remaining bushings.
5. Assemble the shifter body. See the last two pages for help on this.
6. Slide the heim joint to meet the tapped hole in the shift handle and insert the bolt from the bottom of the shifter box to secure the handles to the cables.
7. Slide the cable barrel retainer plate up the shifter body and fasten it with the 1/4"-20 button head cap screws (Note: Do not fully tighten these cap screws).
8. With the transfer case in neutral and the shifter box assembled, you will need to adjust the handles in the shifter box. Make sure the 5/8" jam nut is not tight against the cable barrel. By turning the cable barrel with a set of pliers it will move the outer cable housing inward or outward and thus move the handle forward or backwards in the shifter box. Since the cables are set correctly down at the transfer case and the transfer case is now in neutral. The goal is, the handles should be adjusted to create a 90 degree angle with the orientation of the handles to the top of the shifter box. When the shifter is adjusted properly, tighten the jam nuts and the cable barrel retainer plate screws.
9. Once adjusted install the bottom cover using the supplied button head cap screws and apply a bead of RTV silicone to seal the two.
10. Apply Butyl tape to bottom side of shifter box flange and slide the assembled shifter box down into the floor and secure using the stock bolts removed earlier.



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**\*\*\*NOTE:** Due to slight variations in the stock floor, the shifter box mounting holes may require enlarging to get everything aligned correctly.

11. If test shifting was successful, install one shift knob mounts onto the passenger handle and secure using the 1/4"-28 x 3/4" flat head cap screws and then reinstall the center console.
12. Install the second shift knob mount followed by the two 3/8"-16 x 1.5" shift knob studs (ALLEN END DOWN).
13. The aluminum shift knobs can be adjusted by tightening or loosening the studs with an allen wrench from the access hole.



Shifter box 303330

Note: Butyl tape applied to flange

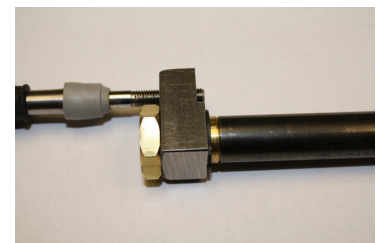
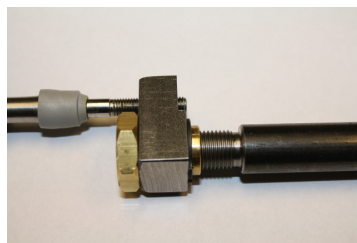
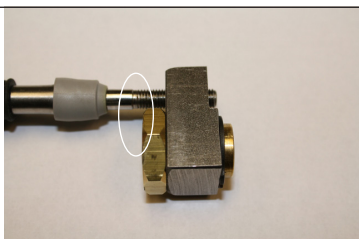
**Link bar installation:** The link bar provides the option of moving the shifter cable connection point on the Atlas shift rail. Some transmissions are extremely tight on the tailhousing clearance to the rear output shifter rail of the Atlas. This block allow an off set of .500". The installation on the cable is basically the same as mentioned in the assembly instructions, with just a few exceptions. One each of the nut cap and cable nuts will not be used.



The link bar consist of 3 parts and should be come assembled.

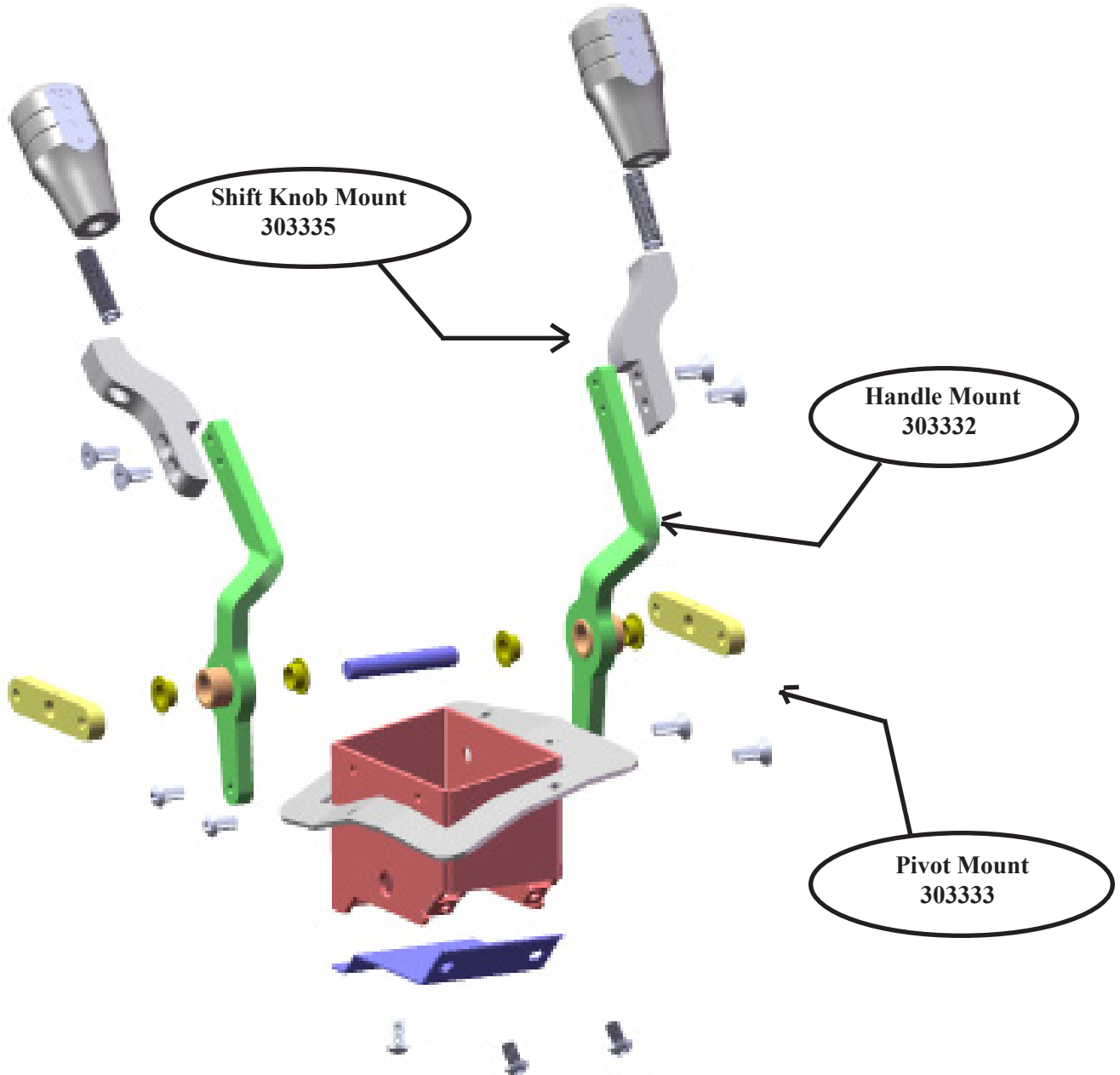
The front mount in the shifter kit has been machined for clearance on the link bar, and the 303307 cable support needs to be mounted like the photo shown. The cable is installed into the upper hole.

The link bar should be installed on the cable. Install so that approx. 1/4" of threads are past the brass nut (see photo).



This cable length should match the other cable on the front output. Thread the brass nut onto the shift rail and then follow the adjustment procedures on page 3 & 4.

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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 pin mounts. (note these photos show a assembly of a similar kit that uses the same mounting hardware but different handles)



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 handles are pointing forward or in the same direction as where the cable will be mounted (see photo). Secure the pivot pin mounts to the shifter housing using 3 of the B.H.C.S and the one S.H.C.S.