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 PAGE 1 OF 6 Page Rev. Date: 09-05-21
 P/N: 303009-72

ATLAS TRANSFER CASES CABLE SHIFTER units built after 5/1/12

KIT CONSISTS OF:

No.	Qty	Part No.	Description
1	1	302051	BASE- TWIN STICK MOUNT
2	1	302060	BOOT- TWIN STICK
3	1	302061	ATLEA KNOB STICKERS
4	1	302063	BOOT RING- ATLAS TWIN STICK
5	1	302080	STUD BOLT 1/2"-13 X 7 (XJ)
6	2	302083	TWIN STICK KNOB
7	1	302084	STICKERS KNOB (H-N-L)
8	1	303120	SERRATED LOCK NUT 1/2" X 13"
9	3	303121	NUT- 1/2"-13 PLATED
10	1	303301	HOUSING- TWIN STICK SHIFTER
11	2	303304	LEVER- TWIN STICK CABLE SHIFTER
12	1	303307	ATLAS CABLE BRACKET
13	2	303310	CABLE-ATLAS SHIFTER 72" LENGTH 1" TRAVEL
14	1	303310A	BOLT- SHOULDER 3/8" DIA. 5/16"TH x 3"
15	4	303312	BUSHING- IGUS 3/8"
16	2	303313	HEIM JOINT- FEMALE 1/4"-28
17	2	303316	NUT- CABLE RETAINER
18	2	303317	NUT- CABLE SHIFTER- JAM 1/4-28
19	1	303325	TUBE- ATLAS SHIFTER EXTENSION 4.25"
20	2	340617	BOLT- 1/4"-28 X 1" S.H.C.S.
21	1	722523	1/4" USS FLAT WASHER PLTD.
22	4	722546	#10 X 1" LNG SEALED SLF TPPNG SCREWS
23	1	723141	5/16"-18 NYLOC HEX NUT
24	3	723731	S.H.C.S. 3/8"-16 X 1" ZINC

The shifter body, handles, and pivot bolt were updated 11-10-11. These items retained the same part numbers, but will not fit as replacement parts for older shifter units. If a replacement handle or body is needed then you will need the new style components. The old pivot bolt can be obtained from McMaster Carr.

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We can offer a set of aluminum knobs which are labeled either way.



P/N 303152AA \$42.95 set
reverse pattern



P/N 303150AA \$42.95 each
standard pattern

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

NOTE ON THIS KIT: This kit is a universal-type cable shifter assembly. Mounting the shifter is left to the installer. The shifter can be mounted flush with the floor so that the cables exit underneath the floor, and the shift boot flange is bolted directly to the floor. Otherwise, the shift cables will need to be routed through the floor and the shifter bolted wherever you desire.

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.

***Note:** The first cable shifters used an shift rail adapter on the shift rail for coupling the cables to the Atlas. The shift rails were changed 7-1-07. This new style of rail is drilled and tapped to directly accept the threaded cable end and eliminate the shift rail adapter. We switched back to the adapters fittings 8-16-10 for ease of installation of the cable to the Atlas. Some shift rails still have the thread on the end of the shift rail. 3/15/12 newest shift rail to work with the new cable connection parts has a drilled clearance hole in shift rail. (see photo next page)

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ASSEMBLY

Transfer Case End: (see photo next page)

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.

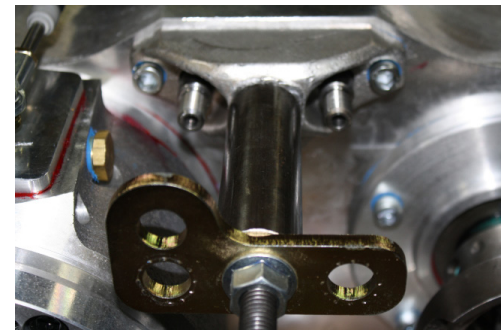
Once both cables are connected, the cable outer housing needs to be set to the cable mount bracket. Shift the transfer case into low range for this adjustment. The easiest way is to use a long punch and a dead blow hammer, set the punch (flat tip) on the nut cap and tap the punch lightly with the hammer. 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.

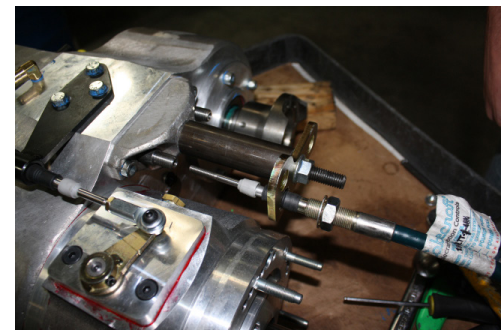
Shift the Atlas back into neutral so when you get to the shifter box assembly and handle orientation, it is easy to see the correct alignment.



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.



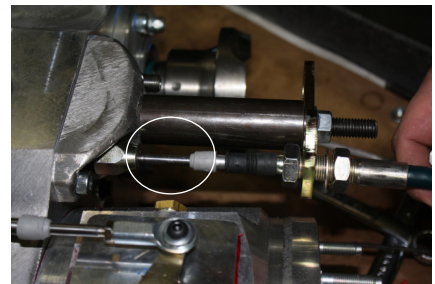
Install the cable nut on the cable threads.



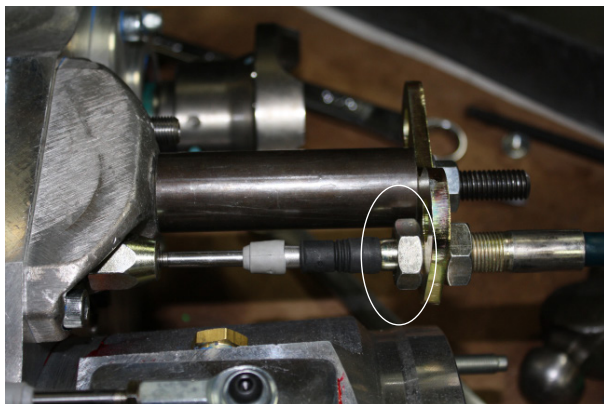
The cable should bottom out in the shift rail and the cable nut should be flush against the face of the shift rail.



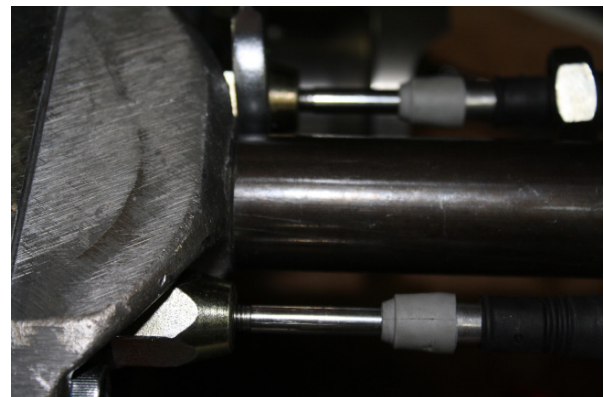
Once the cable nut has been adjusted, slide the nut cap over the shift rail and tighten to retain the cable to the shift rail. Shift the transfer case into low range (shift rail pushed inward) to set the outer cable housing.



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 Box End:

Note: We have manufactured two different designs to the shifter box in this kit. September of 2024 we have started the transition from the cable barrels that hold the cables to the shifter to a welded bracket that is part of the shifter box and retains the cables.

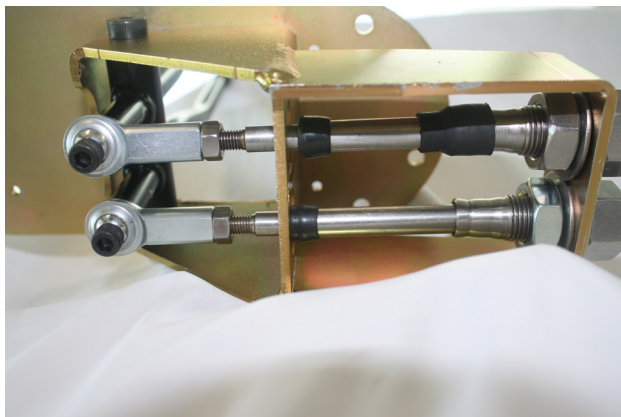
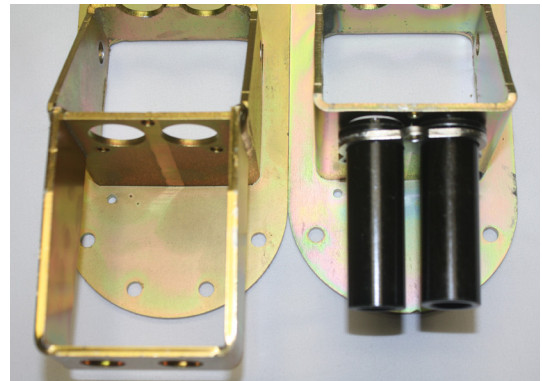
The old style is the one shown on the right and the new one shown on the left. Both of these boxes work the same, the new design just eliminates a few extra components. We have kits that may still have the old style box and therefore we will cover both installations

Old style:

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. install the retainer plate to the shifter box with the 3 screws. dont tighten until final assembly.

New style:

1. Remove 1 of the 5/8" jam nuts and the washer from each cable.
2. Slide the shifter cables through the holes in the bracket and then retain them with the jam nut and washer removed in step 1
3. Now thread the heim joints onto the shift cables inner rod and tighten the jam nuts, about a .250" of threads should be left on the cable to the heim. (This should look like the photo below.)



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Old & New Style:

- 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.
- Orient the shifter handles so they bend away from each other and slide the handles into the top of the shifter body.
- Insert the pivot shoulder bolt through the shifter body and the shifter handles. Fasten with the 1/4" flat washer and the 5/16" locknut.
- 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.
- With the transfer case in neutral and the shifter box assembled, you will need to adjust the handles in the shifter box.

Old Style:

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.

New Style:

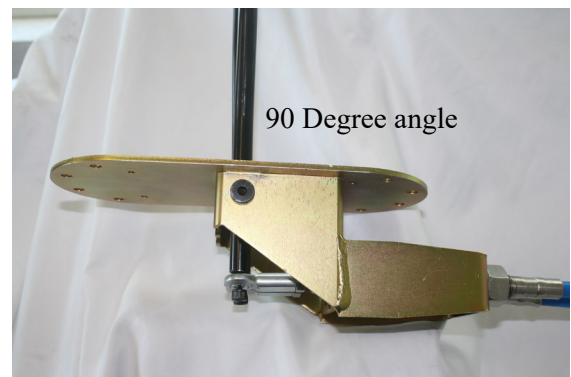
adjust the 5/8" nuts to move the handles forward or backwards in the shifter box.

Both Boxes:

- Ensure the Transfer Case is in Neutral.
- Adjusting the Handles: The goal is to position the shifter handles so they form a 90-degree angle relative to the top of the shifter box. This ensures proper alignment and smooth operation of the shift linkage.
- Cable Adjustment: With the handles in the correct 90-degree orientation, you can now adjust the cable ends. Loosen the jam nuts on the cable to allow for movement and adjustment. Ensure the cables are aligned to prevent binding.
- Securing the Cables: Once the handles and cables are correctly positioned:
 - Tighten the jam nuts to lock the cable adjustment in place.
 - For older-style setups, tighten the cable barrel retainer plate screws to secure the cables to the shifter box.

This process ensures the shifter handles have the correct angle preventing any issues during operation. Make sure everything is tightened securely but without overtightening, as this could damage components.

- Slide the shift boot over the handles and stretch it over the shifter body. Depending on how the shifter is mounted, you may want to bolt the shift boot through the shifter body. If the shifter will be flush mounted in the floor, you may bolt through the shift boot, shifter body and the floor with one set of bolts.
- Once the boot is in place, thread the 1/2"-13 jam nuts, and then thread the shift knobs onto the shifter handles.



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