ADVANCE ADAPTERS
SINCE NINETEEN SEVENTY ONE

P.O. Box 247, 4320 Aerotech Center Way
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Telephone: (800) 350-2223 Fax: (805) 238-4201

 Page Rev. Date: 04-05-18

P/N: Atlas Shifter Control

#	No.	Description	QTY
1	300384A	HOUSING- ATLAS SHIFT HOUSING	1
2	300381	SHAFT- ATLAS SHIFT RAIL REAR	1
3	300382	SHAFT- ATLAS SHIFT RAIL FRONT	1
4	300392	STEEL BALL- 3/8	6
5	723730	BOLT 3/8 -16 X 1.25" SHCS ZNC	3
6	301378A	SHIFT FORK ATLAS	1
7	301378B	SHIFT FORK ATLAS	1
8	300383	PAD-ATLAS SHIFT FORK	4
9	300386	SET SCREW-ATLAS SHIFTER FORK	2
10	300389	PLUG-EXPANSION INTERLOCK PLUG	3
11	300388	SHAFT- ATLAS SHIFT INTERLOCK	2
12	300922	FITTING-1/8 NPT BRASS 90 ELBOW	1
13	300396	PLUG-SOCKET SAE ORB #5 (3/16 hex)	2
14	300611	O-RING-ATLAS INDICATOR HOLE	2
15	300395	SPRING-COMPRESSION 93LB/IN	2
16	300362	BUSHING-SPRING DOWEL	2
17	300387	SEAL-ATLAS SHIFT RAIL	2
18	300397	PIN- SHIFT DETENT HI/LO LOCKOUT	2
19	300495	PLUG-REAR BEARING CAP	2
19	300364	POLLAK SWITCH	2

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There have been several updates/improvements to the rear shift block design
May 2012: The Atlas rear shift block was updated in the machining steps which changed a few items:

1. The shift rails became bio-directional or the same rails are used for left and right shifter controls.

2. The location of the Pollak shifter was moved to the bottom of the shift block and the thread size was changed.

3. The shifter indexing to the case was changed over to dowel pin and the brass bushing in the case were removed. Note the current shifter will still work on early cases with the brass indexing.

The drawing shows the Pollak switches, however, the standard housings use a steel plug, the Pollak switches are sold separately or come in some of the controller kits.

Shift control sub-assembly:

1. Apply spray lubrication to the inner bore of the shift rod detent holes.
2. Install lockout pill assembly into previously lubricated holes.
3. Install front shift rail (300382) into shift rail housing. Critical: Ensure that the three detent slots on the shift rail face the holes where detent balls and springs are installed. Note: the front rail has a small spot drill about a 1/4" back from the threads on the rail. This mark is an easy way to identify and make sure it is in the proper bore for the shifter configuration.
4. Position the front shift rail in the neutral shift position (middle slot). This will allow installation of rear shift rail.
5. Install rear shift rail (300381) into shift rail housing. Critical: Ensure that the three detent slots on the shift rail face the holes where detent balls and springs are installed.
6. Position the shift rail housing so that the shift detent holes face up.
7. Install shift detent ball (300392) into each detent hole of shift housing.
8. Install shift detent spring and lockout pin into each detent hole of shift housing. Ensure that each spring touches each detent ball.
9. Apply assembly lubrication into shift detent holes of shift housing.
10. Apply assembly lubrication on each shift detent o-ring (300482).
11. Install shift detent o-rings (300482) on each shift detent plug (302019).
12. Install each shift detent plug (302019) with ¾-inch socket. Torque to 12 lb-ft.
13. Install shift housing freeze plugs (300389) in shift housing.
14. Install steel plugs or Pollak shift switch

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Input dis-assembly from Atlas case:

Once the Atlas is removed from the vehicle, drain the oil. Remove the brass elbow on the top of the transfer case. Shift the unit into 4WD low range (both shift rods back into the case). Set the unit up-side-down on a work surface. Remove the 14 access cover bolts and the cover itself. The cover is sealed to the case, so it is a little tough sometimes to separate from the case. Note: the Atlas has used several different styles of fasteners over the years.

Once the cover is off, you will need to remove the cluster pin bolts from both the front and rear of the transfer case.

From the front of the transfer case, push the cluster pin out of the case. You should be supporting the cluster gear with one hand as you push out the cluster pin with the other.

Once the cluster pin is removed, you will need to remove the cluster gear from the case. Be careful so that the caged needle bearings do not fall out of the cluster. Set the cluster gear aside and remove the two thrust washers from the case. These washers fit between the cluster gear and the inside of the case.

With the cluster gear removed, you will now have access to the allen headed set screws that connect the forks to the shift rails. The allen size is 3/16 and these set screws do have loctite on them.

Remove the 3 allen bolts from the shifter housing that connects to the case and the assembly should be ready for removal. As you tap on the end of the shift rails make sure the forks are supported to allow the shifter assemble to be removed.

Input assembly to Atlas case:

The shifter control goes back to the case just the same as it came off. We do use RTV silicone on the surface between the shifter and the case, the silicon should be installed around the outer perimeter of the shifter control.

Insert shift rail housing sub-assembly into main housing. Align shift fork holes with corresponding shift rail. Wiggle the shift sub-assembly as you attempt installation.

Install three shift rail housing support bolts by hand. Torque to 30 lb-ft with ¼-inch Allen socket.

Position transfer case upside down on workbench so that the input shaft faces you. Attach shift rail rod ends (303055) to threaded ends of shift rails. Place both shift rails in the Neutral position.

Align each shift fork so that the retaining screws (300385) can be installed in each shift rail. Apply medium strength Loctite to the two 3/8-inch mounting screws (300385). Secure each shift fork to corresponding shift rail by hand and torque to 150 lb-in.

Test each shift fork to ensure bind-free operation. After testing, place both shifters in low range.

Reinstall the two cluster gear thrust washers into the Atlas case and set the cluster gear into the case.

Helpful hints for installing the Atlas cluster gear. Grease the back sides of the thrust washers and set the washers into the case. Ensure that the tabs of the thrust washers fit the slots of the Atlas case. The grease help hold the thrust washers in place while the cluster is installed. Install the cluster pin on one side just enough to hold one on the thrust washers in place. Slip your finger into the cluster pin hole on the opposite side to retain the other washer in place. If the washer falls down you will have to remover the gear and repeat the process. Many times the washer will fall half way down and prevent the cluster pin from going in.

After you succeed in the installation, do a visual check from the access pan to verify that the washers are in place.

As the pin gets closer to being fully installed, install the small o-ring on the cluster pin. The pin must be installed far enough through the opposite side of the case to expose the other o-ring groove to install the new o-ring and thereby properly sealing the Atlas transfer case.

Install the cluster pin bolts on both the front and back of the Atlas case to properly retain the cluster pin, preventing the pin from turning.

Install the new pan gasket and reinstall the 14 access cover bolts. Torque bolts to 17 ft./lbs. Before reinstalling the unit into the vehicle, check it for proper shifting. Reinstall unit as per the installation directions and fill with the recommended fluid.