



Ultra Stop W24 Air Park Brake Installation Instructions

1) Removing the old brake assembly.

- a) Chock the wheels and remove drive line.
- b) Remove hydraulic line to the J72 brake mounted on the back of the transmission.
- c) Remove the center bolt in the yoke. (keep it as it will be reused)
- d) Slide the yoke off of the transmission.
- e) You will see four allen head bolts holding the brake on the back of the transmission, remove those and pull the brake off of the transmission.

The allen head bolts mentioned were here, in these four holes.



(It's pretty heavy)

- f) You will be installing the new brake with these same bolts so do not discard them.

2) Install the new internal brake assembly.

- a) Now let's place the backing plate of the new brake up to the transmission and test fit it. (As seen below)
- b) You will notice that the arm for the brake assembly will slightly hit the transmission housing. (you want the brake arm to be at the top driver side)
- c) Where this touches it will need to be buffed away for a clearance of about 1/16".
 - i) Remove only a little at a time and test fit until you achieve 1/16" clearance.
- d) Once you have done step 2c, then get the four allen head bolts removed from the original brake. You will need to grind the head of the bolts slightly so that the cross bracket will clear once installed.
- e) It should look like the picture below once it is installed to the transmission housing.

These are some of the rear housing bolts that we can see here. In Section 4a I refer to the two that are on the top of the transmission for mounting the cable bracket.

These are the allen head bolts installed after they have been ground for clearance to the cross bracket.

Brake Arm location.

This is the cross bracket.



3) Drum and Yoke

- a) Before you install the brake drum and yoke, send it and the front driveline to the local driveline shop to have them connected together. (As the new yoke uses a different U-Joint then the driveline.)
- b) Once you have the driveline and yoke matched up you can install the new drum and yoke using the same center bolt and washer (using medium strength thread lock) removed in step 4. Shown Below



You can see the brake arm here that the cable is attached to in the next step.

Up top behind the drum is where the cable mount bracket is installed. As mentioned in 4a

4) Install the transmission cable mount bracket.

- a) There are multiple bolts holding the rear section of the transmission housing on around the diameter of it. We want to use the two top center ones to attach the new cable bracket. You can find it located in the new parts supplied. It is a fairly small black bracket with two holes that will line up with the top two holes mentioned.

- 5) Once the cable bracket is installed, you can now install the new cable into the bracket and attach it to the brake assembly arm using the supplied 1/2" pin, cotter pin, and washers.

6) Installing the new air actuator bracket.



This is the release tool. With the nut all the way tight the brake is released.

The cable nut attaches here. There should be slight slack in the cable once installed on the brake and the actuator with the brake release tool installed.

This is what we refer to as the front of the actuator.

This is the air solenoid.

This is the point the cable housing enters the bracket.

- a) Now you can install the Actuator in a location that is good for the coach you are working on, the main idea when mounting this bracket, is to have the new cable reach it and to keep it clear of heat. (If it is near a heat source like exhaust be sure to have a heat shield fully between the heat source and the actuator.)

- b) It can be mounted in any orientation using the four 3/8" bolts, nuts and washers provided. Again all we are looking for is that it will be able to have the new park brake cable just installed reach the actuator. (As an example I have mounted them on the inside of the passenger side frame rail just above the exhaust with the front end facing forward so the cable was routed up the frame rail right to the actuator. This was close to the heat of the exhaust so I made a heat shield for it. Be especially careful of the air line close to heat at all.)
- c) Once the actuator is installed you can attach the brake cable to it using a 3/4 end wrench. We want the cable to have just a small amount of slack in the cable.
- d) The actuator is shipped with the release tool installed, but not tight. This is the "Bolt" going into the back of the can on the actuator. Tighten this and it will hold the brake released. Once you have the cable installed and the drum and driveline on you can remove this release tool with a 3/4 end wrench, and at that point your brake is applied.

7) Installing the air tank.

- a) On the actuator you will find a solenoid with one 3/8" airline going to the "can" and another 1/4" fitting for an airline that will go to the new air tank.
- b) Get the new air tank and find a place to mount it under the coach, again away from heat and hopefully close as possible to the actuator.(The least amount of air line as possible is best.)
- c) Once you find the place you would like to mount the tank, you need to install the fittings supplied in the US02 box supplied. The air drain needs to go into the fitting that will be at the bottom of the tank.
- d) There are 2 plugs, one pressure protection valve, one drain valve and one tee fitting to be installed in the tank.



Always use thread sealant with any of the brass fittings or any fittings with pipe thread. DO NOT OVER TIGHTEN FITTINGS!

This is the air pressure switch that you will install on the actuator tee with the bushing.

This is already installed on the brake actuator.

- e) You can install these fittings in whatever way works best for where you mount the tank as long as the drain is at the bottom.
- f) You can now install the new air tank using the supplied bolts.
- g) You will be left with the Tee that has two places for 1/4 air line.
- h) Install an air line from one side of the tee to the fitting on the solenoid mounted to the actuator.
- i) The remaining side of the tee will be routed and connected to the compressor in the next section.

8) Installing air compressor.

- a) You will need to install the air compressor in one of the compartments close to a battery source.
- b) Keeping the air compressor in a compartment helps extend the life of the compressor.
- c) You will need to install the fittings shown below from the US02 kit on the compressor as shown below.



Wire Key for compressor relay and pressure switch

- Connect terminal 85 on relay to one side of pressure switch.
 - Connect other side of pressure switch to ground.
 - Connect terminal 87 on relay to red wire on compressor.
 - Connect terminal 30 on relay to silver terminal on circuit breaker.
 - Connect terminal 86 on relay to keyed power source. (You can use entry step for ignition source)
 - Ground black wire from compressor.
Connect gold terminal of circuit breaker to good battery supply. (Do not use a small wire, its best to run straight to battery and mount circuit breaker close to battery.)
- d) Now connect the air line from the tank to the compressor.
 - e) You can mount the air filter provided in a convenient location and connect it to the air filter intake on the compressor using the supplied air line with the compressor.

9) Wiring the coach to the new brake.

- a) Locate the hydraulic pump under the hood of the coach.
- b) Under the pump assembly you will find the park brake module, you will need to unplug that.
- c) There are two plugs on it we need to unplug the larger one. You will be using some wires from that plug in the next step. This plug is called C136

10) Find the two relay block in the kit. The single relay in the kit is for the install of the air compressor. We need the two that are attached together.

- a) Mount this in an area close enough to the plug of the module from section 13a to connect wires from the relays.
- b) Using butt connectors connect the relay pack to the wires as shown above.
- c) The wires are labeled as to where they go with tags on each wire off the relay block.
- d) The push/pull button relay is located either under the dash just above the diagnostic connector taped to the wire harness, or in the under hood fuse box.

11) Running the black four wire cable to the actuator.

- a) Locate the round four wire black cable in the kit.
- b) Run from the relay block in front back to the actuator assembly.
 - i) At the Actuator end of the black cable
 - ii) Connect the green wire to the green wire of the air solenoid on the actuator.
 - iii) Connect the yellow and white wires to the two terminals of the pressure switch on the actuator (Do not over tighten)
 - iv) The brown wire in the black cable will not be used.
- c) At the relay block end of the black cable
 - i) Connect the green wire to the wire labeled –Actuator Valve Green Wire-.
 - ii) Connect the yellow wire to an ignition source.
 - iii) Connect the white wire to the one labeled –Pressure Switch-.

12) Finishing up.

- a) Now that you have things installed it is good practice to make sure all the wires and air line is covered with convoluted tubing to protect from rubbing through.
- b) You should be able to turn the key of the coach to the on position and the compressor should start running.
 - i) The compressor will run for about 3-5 minutes until the pressure reaches 120psi.
 - ii) Once the compressor stops, you need to spray all fittings with soapy water to ensure there are no leaks no matter how small. (No leaks are acceptable they **must** be fixed)

13) Testing after verifying no leaks.

- a) Get into driver seat.
- b) Start coach.
 - i) Place your foot on the service brake.
 - ii) Pull the yellow park brake button.
 - iii) Put the coach into drive.
 - iv) Slowly remove your foot from the service brake and the coach should not move.
 - v) If your coach does not move place your foot back on the service brake.
 - vi) Now with your foot on the service brake, push the yellow park brake knob in and slowly release your foot from the service brake and your coach should move and the park brake light on the dash should go out.

14) Test Coach Slide and Leveler operation.

- a) Some coaches need a signal from the park brake that gets interrupted by installing this kit.
- b) If your slides and levelers do not operate after installation, check the brand and model number of your levelers, then call the number listed below. We will help you get them functional again.

15) If your coach does not do these things as they are listed..... then....Something is wrong. Double check your wires and connections. If it still does not function as listed please call 877-786-1576 for tech assistance.