

First Aid kit application

This is the “First Aid Kit”

The purpose of this document is to describe the process of removing the ACU, installing the First Aid Kit Schrader valves and airing up the air springs to support the vehicle with the ACU removed. The vehicle may be driven like this, however the auto leveling and cornering control will not be present, care should be taken at all times.



To do this, we will first find the pressure regulator, the black air filter assembly with the gauge, under the hood of the Jeep. Image of pressure regulator on the right.

Make note of where the pressure gauge is reading before you disassemble, as you will want to turn the regulator back up to the pressure it reads, usually 100-120 psi.

Grab the black knob at the top of the regulator and give it a little pressure to turn it, if it doesn't turn you will need to lift the knob, to unlock it. It doesn't move far, grab the knob and lift with a quick jerking motion, the knob will quickly snap up, but only moves about 1/8 of an inch. Once it is unlocked, rotate the knob in a counter clockwise direction, this will release the pressure on the outlet side. By doing this, we can continue to use the air compressor in the Jeep to fill tires with the air hose, most importantly, we can use the hose to inflate the air springs with the first aid kits.



With the regulator pressure turned down, and the air springs likely have very little if any pressure in them, lets remove the 4 lines from the outlet of the ACU that go to the air springs.

BEFORE you do, however, lets mark them in some way so you know which one is number 1, 2, 3 and 4. You can wrap them with a piece of tape, and write a number on it to match the port. Sometimes (if the lines have a bit of oil in them) the tape unwraps, or the numbers wipe off with the oil, I have personally found this method to be nearly fool proof. Grab 10 zip tie wraps. Place 1 wrap on the #1 line, about 6 or 8" down from the fitting. This will stay on the line and easily identify this as port 1. Mark line 2 with 2 zip ties, 3 with 3 and 4 with 4.

NOTE: Line 1 is LEFT FRONT, Line 2 is RIGHT FRONT, Line 3 is LEFT REAR and Line 4 is RIGHT REAR

To remove the lines from the push in fittings, on the right you will see one of the elbow fittings on the ACU at the outlets for ports 1 thru 4.

Notice the 'Ring' that the arrow is pointing to? This ring is what holds the line into the fitting.



Push the line towards the fitting, the 'Ring' will likely move all the way to tight with the fitting body, at that point, grab the ring with 2 fingers as shown in the next image, and then pulling on the air line away from the fitting and the line should be released.

Please note: IF there is pressure on the line, be prepared for the noise of the air removing, but this pressure will also cause the ring to be harder to push towards the fitting.



Once the line is removed, we will place one of the first aid fittings on the end. But inspect the line before you do. IF there is a substantial dent in the nylon line where the oring inside the fitting is pushing on it to seal, this would be a great time to trim the line and make it better.

You can see in the image to the right, the arrow is pointing to an area that the oring has left an impression in the nylon line. Small impressions, not a problem, but a larger impression could cause a leak down the road. May as well correct it now.

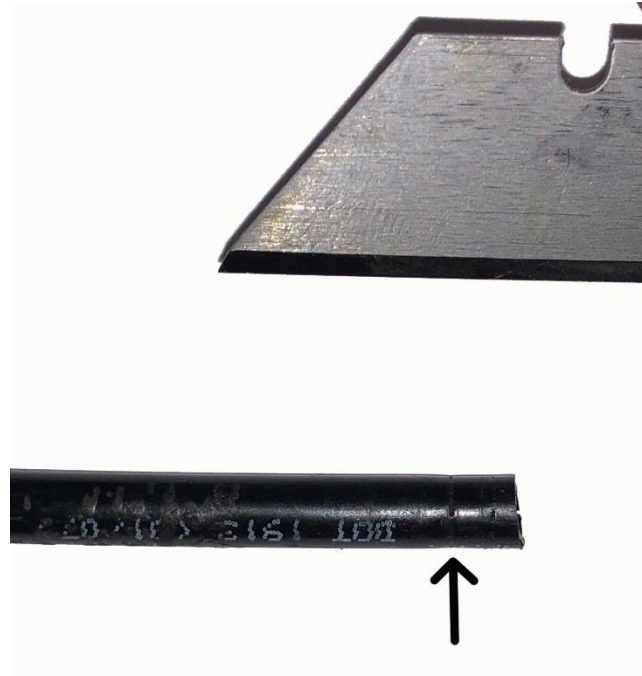
The correction process is simple, we have supplied cutting tools with the kits, but if you can't find it or don't have one, a utility knife will do.

DO NOT cut it with a scissors or any other type of cutting tool that compressed the line, as this will result in a line that will leak.

Use a straight blade and place the edge where the oring depression is, and simply cut it off as straight as possible. The straightness is not as important as a clean cut with no burrs.

Once the line is trimmed, if needed, the next part of the process is simple, push it in!

When it comes to removing these, the brass pieces are a bit more difficult to remove, but it's the same process. Again, make sure there is no pressure behind it and these will come off the easiest.



Now this is the tough part. The line that goes from the filter/regulator to the ACU, this line will have a check valve in it, just before the ACU. This valve will hold this pressure on the ACU side of the check valve and this will make the removal of the line from the fitting tough, as you will be fighting the pressure. Easiest way we have found is to hold the ring on the fitting on the side of the ACU, since the ACU is mounted (or should be yet) its easier to get the force necessary to get it to come apart. Compress the ring, pull the line. Due to the check valve there will likely be a quick burst of air coming out at this point as well.



Disconect the gray electrical connector from the ACU now. The silicone seal is a bit tight on some of them and you may have to press hard to get the locking tab to unlock. Some will have a red tab to lock the locking tab, you need to remove that first. We do not run the red part any longer, you do not need to reinstall that.

Now we should have the ACU fully disconnected electrically and from the 5 air lines, and lines marked to get them to go together in the same way they came apart. The ACU may be removed from the Jeep now. Leave the fittings on the ACU as we use them for testing.

To air the air springs up, since we turned the regulator off, you should be able to start the Jeep and the air compressor will fill the tank. Connect the tire filling hose and your ready to put air in the air springs.

Caution, you will need to fill each of the air springs evenly, otherwise you can get one front spring and one rear spring to support the vehicle, but the ride will be terrible as each air spring needs to be doing its share of the work.

We typically do this by starting with the 4 air lines and put 5 seconds of air into each of the air lines. 1 thru 4. When all 4 of them have 5 seconds of time, go back and do it again, 5 seconds at a time.

Eventually you will get enough air in the air springs to start lifting the jeep. The objective is to get the ride height about in the middle of the shock travel and get the right and left sides comparable to each other, so the pressure is nearly equal and the support is equal. Feel free to use a pressure gauge to get them equal, from side to side. Front to rear they will not be the same as the load from front to rear is different.

When you have the ride height where you want it, and you think each corner is equal, go push/bounce on the left front corner and then the right. If one feels softer, then you need to add more air to that corner. If each of the corners are responsive and feel like they have proper feedback, then your set. The airsprings should stay a that height now provided there are no leaks. You do need to be aware that there are a few things that will cause them to change. Things like temperature and elevation will result in the ride being taller or shorter, so it's not unlikely that after a long drive or if your elevation changes, you may need to adjust pressure if its riding to high or shallow.