

5R55W AND 5R55S TRANSMISSION FIX

The following instructions and fixes were developed after plenty of research, design, and reasoning into the following issues with the Ford/Mercury Mountaineer 5R55W transmission.

Instructions

Warning: This should not be attempted by anyone without reasonable experience working on vehicles or reasonable mechanical ability. I am not a mechanic but am what I would classify as a very handy person. I do general work on my vehicles, this being the most involved I have done. I am not responsible for any undesirable outcome on your vehicle. All I can tell you is I did this on my vehicle with some general planning the 1st time in about 4 hours and it fixed my problem and it performing to about a 99% success rate with my customers.

Recommended Tools and Supplies:

1. Car Lift (This can be done on stands but it will be a bit of a pain).
2. Full set of metric wrenches box and open.
3. Metric Socket set with 3/8" standard drive
4. Long socket extensions
5. Impact Wrench and or 3/8" air socket drive.
6. 3/8" universal
7. Large Snap Wring Tool but recommended to us a good 6" needle nose pliers with narrow tips.
8. Large pry bar around 18"-24"
9. 12" – 15" rubber bungee cord.
10. Small block of wood 1" thick 2" long.
11. Small flat screw driver or o-ring pick.
12. 13/64 drill bit
13. Channel lock pliers, possible long handled right angle needle nose pliers.
14. 5/8 90-120° Counter Sink tool.
15. Transmission Jell or Sil-Glyde (Can be purchased from Napa, or other auto stores).
16. 19mm open end wrench or adjustable wrench.
17. 1/4" square socket.
18. Shorty 3/8" drive ratchet recommended but not needed.
19. Torque Wrench (Capable of 120 in-lbs (10 ft-lbs)) for recommended band adjustment.
20. WD40 and or some type of liquid wrench spray for rusted bolts.
21. Anti-Seize
22. Drain Oil Pan
23. Work light.
24. Rags
25. New Transmission Filter and Fluid (If fluid change is done)
26. New servos with machined grooves and o-rings.

Note: There may be more or different tools needed depending on your situation and capabilities but these should be sufficient. You will always run into "I Wish I Had A???" which would make the job easier. Also, there is a point in this procedure that having an additional set of hands will make life easier but item 9 works just as well.

Step by Step

Note: I have plenty of pictures of the fix on my website that are not incorporated into the directions yet. <http://www.fordservoboretransmissionfixsolution.com/>

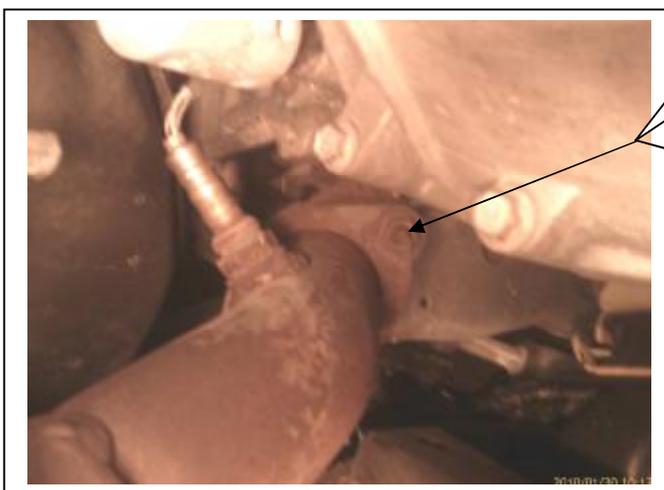
This fix can also be performed without removing any of the converters but you do need to remove the upper heat shield. This requires a little more reaching around, but will reduce your work to 2-3 hours. Your choice on how much room you feel comfortable with but this is an excellent option. Also, the y-pipe can be cut and only one side removed. Then the pipe can be spliced together with a band clamp.

Converter Disassembly

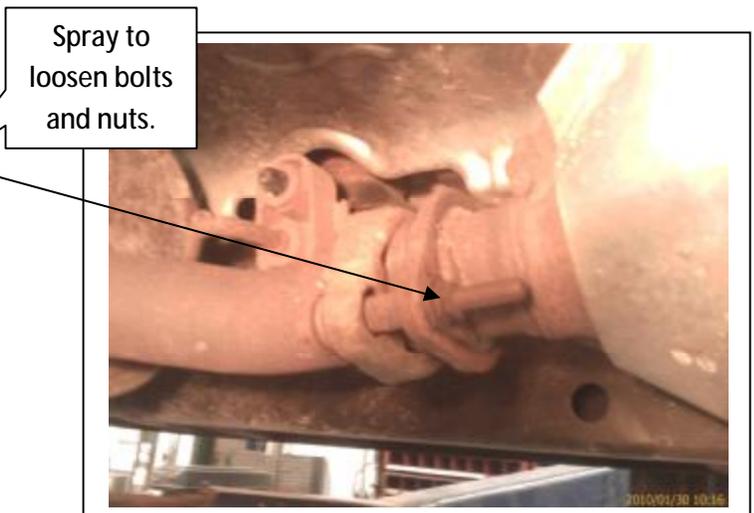
1. Get the vehicle up on a lift and or up on stands. Make sure it is safe and secure, and use jacks stands for added safety. **Warning:** If you are doing this on stands make sure to use jack stands also, and set the parking brake and block the wheels. **Note:** I did not try this myself on stands to access a level of additional difficulty, but the room required is sufficient on stands and it has been performed successfully by some of my customers.

NOTE: When removing the servo caps, currently my directions state to use either a snap ring tool or a needle-nose-pliers. I think the needle-nose-pliers work best. It has been suggested that you would not have to remove the "y" pipe if you use a long handled right angle needle-nose-pliers. I have not tried this myself but if you can try to get the caps off 1st using this method it would save a lot of time

2. Spray the nuts and bolts on the catalytic converter at the manifold on both sides, and at the jointed where they meet the muffler (See Pictures 1 & 2).



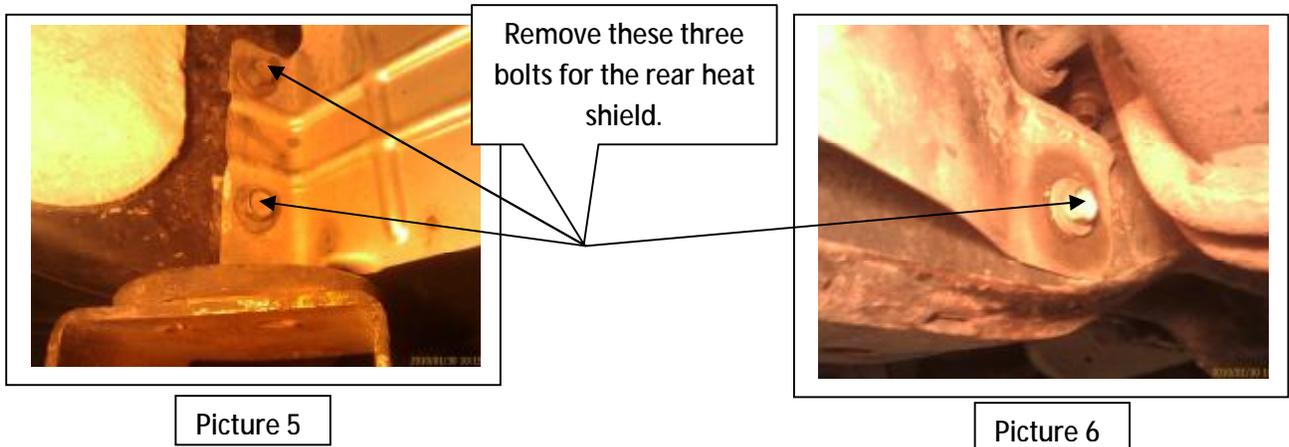
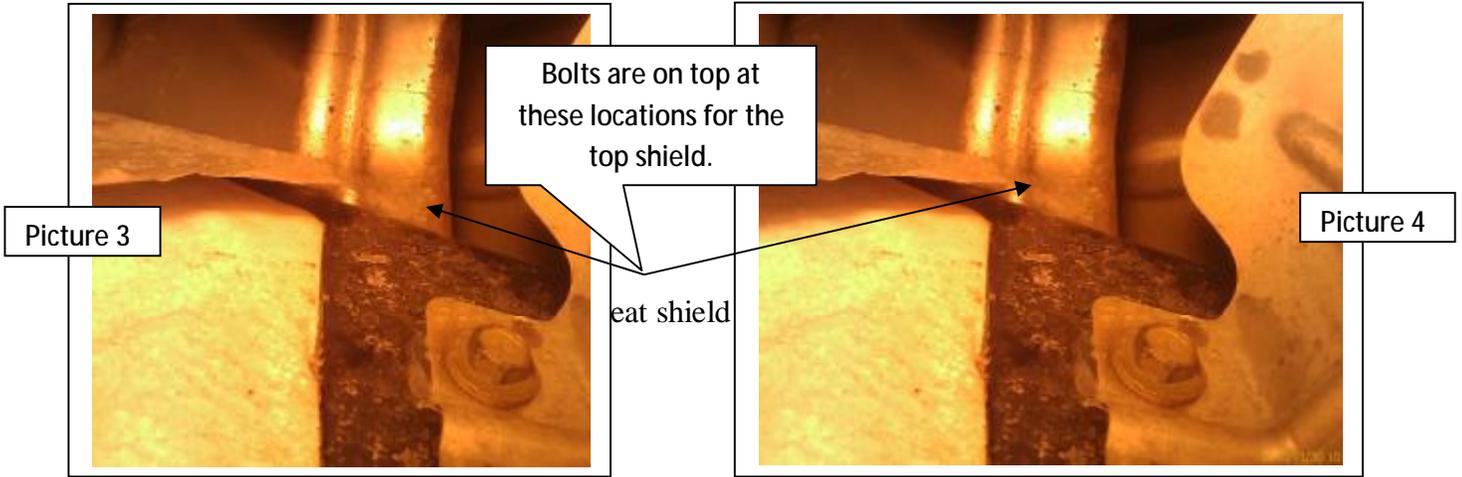
Picture 1



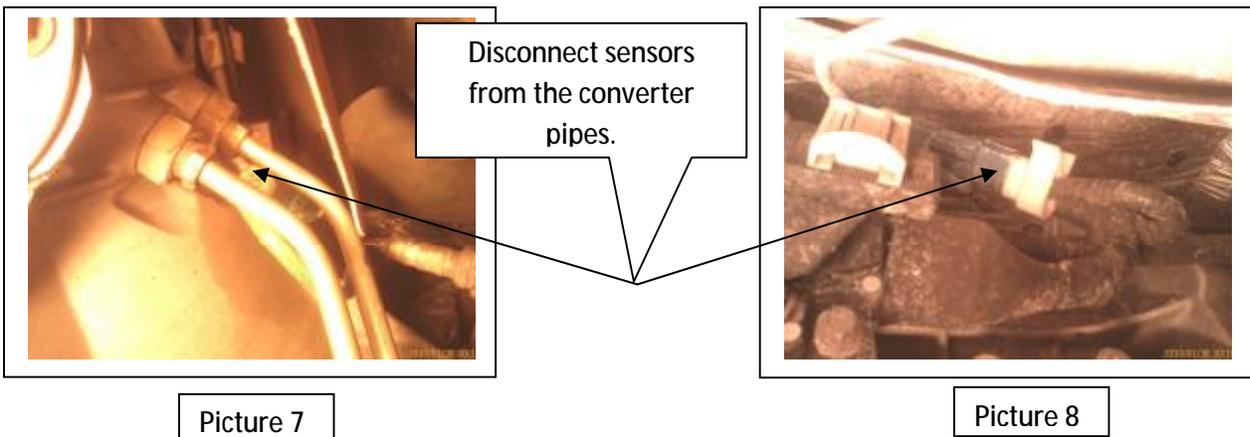
Picture 2

Spray to
loosen bolts
and nuts.

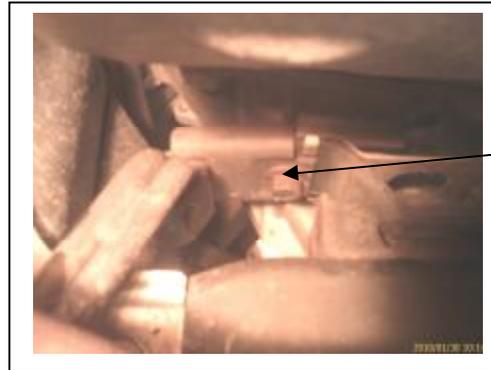
3. Remove the bolts from the top heat shield and leave in place loose until the converter is dropped (See Picture 3 and 4).



5. Disconnect the three oxygen sensor cables on the converter pipes and tuck them safely away (See Pictures 7 & 8). Note: There are three to disconnect one each near each manifold at the top, and one on the side of the transmission case.



6. Remove the bolt from the hanger (See Picture 10).



Remove
Hanger bolt
and bracket.

Picture 10

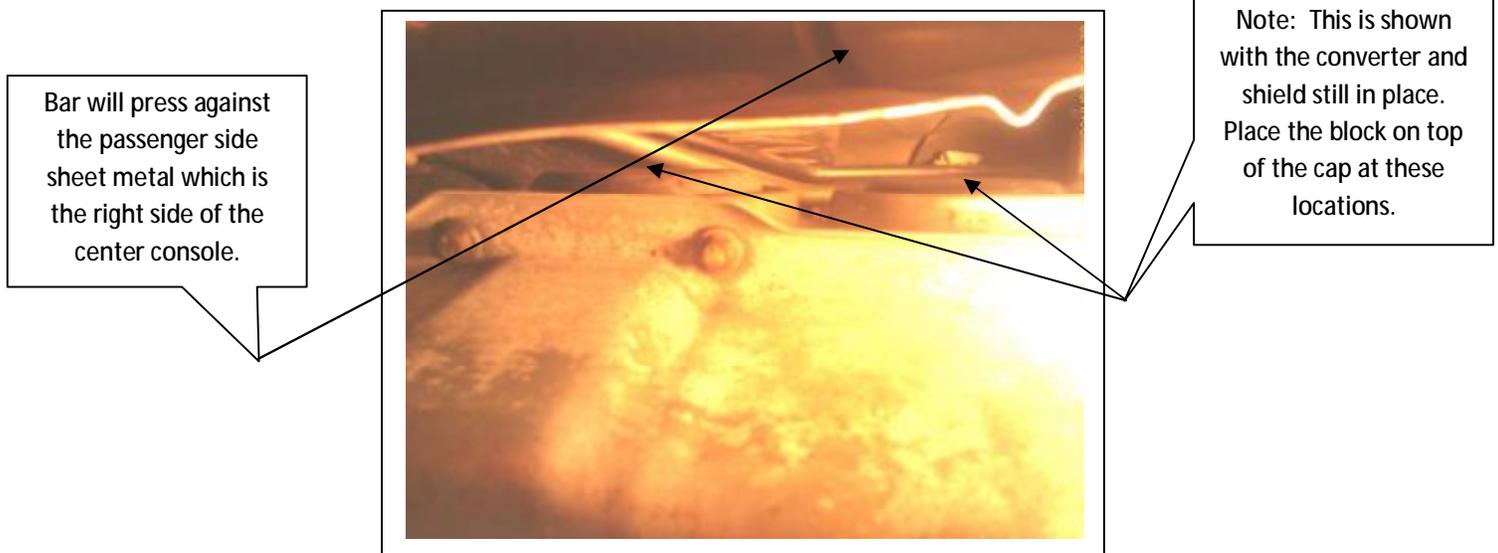
7. Remove the bolts from the converter in the locations mentioned in Step 2.
8. Disconnect and move the convert pipe assembly and remove the hanger from step 6 and the rotate the right side of the assembly down to give you clearance to the two servos.
9. Remove and set aside the top heat shield.

NOTE: If you are doing this all on stands, I will highly recommend that you remove the transmission cross-member and v-pipe completely to have better access. This will save you a lot of time. The other option for this is to cut the head pipe just where it crosses over under the transmission with a hack saw. Then you can purchase and install a 2-1/4" band clamp to join the halves back together. Either of these are good options.

Servo Removal and Installation

Note: This first step and the putting the covers back on is where the extra set of hands are useful. If you do not have a set of hands, what I tried is to take a piece of wire wrapped around the pry-bar and around the opposite side frame and tied it off to hold pressure. You have to treat it gingerly to keep from knocking it off the cap. You maybe use a bungee cord or twine.

1. Place the 1” block of wood on one of the servo caps and then insert a pry-bar between the wood and the sheet metal side of the passenger compartment. The cap and servo will compress together to relieve pressure on the snap wring (See Picture 11 for location to place the block).



Picture 11

2. With the large snap-ring tool or with a good needle nose, compress the snap wring.
Note: If the position of the notches in the ring are in a poor location to reach, rotate them into a better position while pressure is off of it. **Note:** You may have to put some side pressure towards the wall of the bore to keep a good grip on the snap-ring.
3. When you compress the ring, the opposite side should lift enough to get a very small screw driver or o-ring pick between it and the side wall of the bore.
4. Gradually work the screw driver around prying as you go until you can slide the screwdriver up and over the top of the cover. Once you are in that position carefully pry the snap wring out.
5. Place a drain pan under the area of the cover.
6. Once the snap-ring is out, you can remove the cover by rocking it back and forth and applying outward pressure. You can also use a flat bladed screwdriver to dig into the side of the cap and pry it out going from one side to the other in doing so. **Note:** You will get some fluid running out at this point but not more than a cup.
7. The servo may slide out easily at this point but if not, if you take a 13/64th drill bit and insert the smooth end into the bore, by putting a little side pressure on it, and slight prying pressure with a channel lock pliers, you can pull the servo out. **Note:** Any drill bit, or pin slightly smaller than the ID of the bore will work for this step. Keep the return spring for reuse.
8. In order not to cut the o-rings during installation of the new servos, the machined bores need to have a slight additional chamfer put on them. Take your counter sink tool and

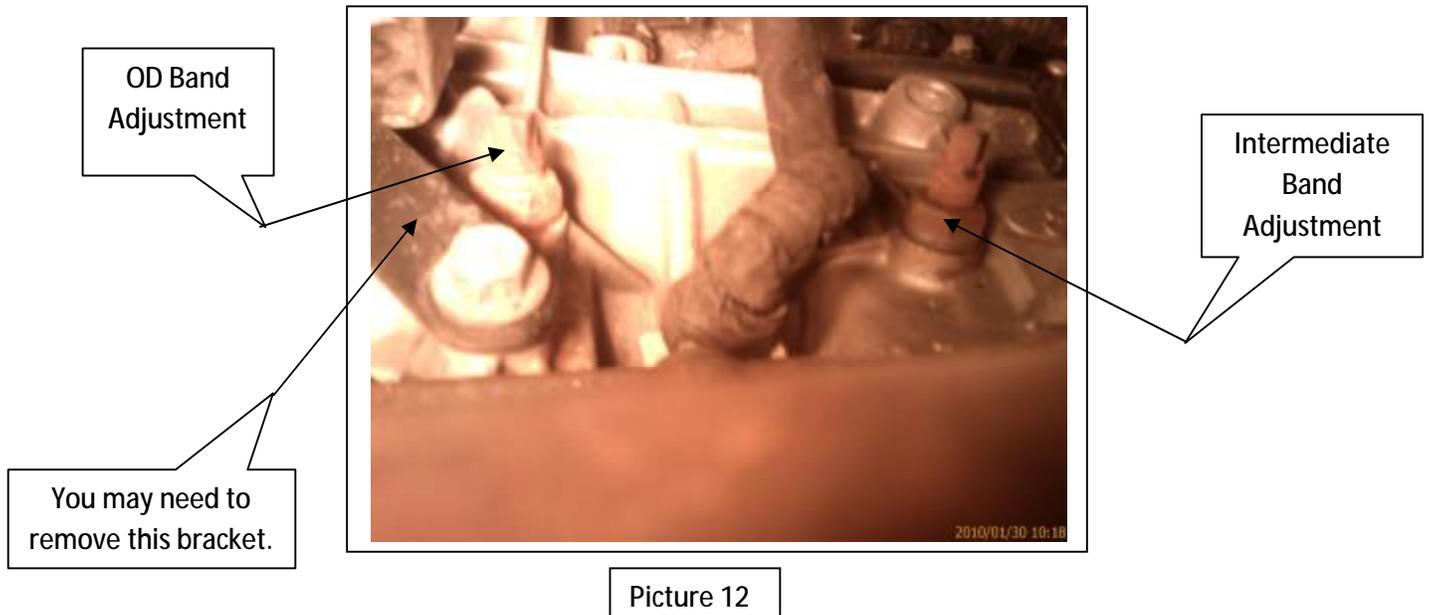
put a liberal amount of transmission jell or Sil-Glyde on it. This is to help catch the aluminum that will come off during this step. **Note:** This can be done by hand but if you have a small right angle air ratchet or drill you can use that also. Turn the tool by hand in the bore with reasonable pressure for a total around four full rotations. **Note:** The size is hard to measure and breaking any of the sharp edge will be sufficient. If you don't have any gel which is the consistency of light-weight grease, I would recommend using a piece of emery paper to break the edge. That way you will have dust instead of chips and if that ends up in the transmission the filter will pick it up.

9. Remove the tool and check the bore with your little finger and try to remove any residual chips. You can plug the bore with your finger and blow out the rest of the cavity.
10. Making sure the servo cap is clean; apply a liberal amount of transmission gel or Sil-Glyde to the seal on the cap, and onto the side of the servo seal. Also apply some to the o-rings and shaft of the servo. At minimum apply transmission oil to the parts for lubrication during installation.
11. Pre-Assemble the servo into the cap.
12. **Make sure to re-install the return spring on the new servo shaft at this point.**
13. Insert the assembly into the bore in the case until you feel resistance at the 1st o-ring.
14. Put the snap ring over the cap, and place the pry-bar with or without the block of wood into the same location as in step 1, and force the servo into the bore until you can see the full snap-ring groove. **NOTE: Make sure when you apply pressure that you push directly in line with the bore. Not doing so may put enough force on the piston to break it loose from the press fit onto the shaft. If that happens, you can press the parts back together and peen the edges of the rod to hold it on. This will not affect the performance of the part once it is installed.** At this point you can temporarily release pressure.
15. **Note:** This is where the extra set of hands comes in handy again as mentioned in the beginning of this section. Using the same procedure as step 1, compress the servo and cap until you can see the full groove for the snap-ring. A 15" rubber bungee cord works well here also if you have just one set of hands. Put the bungee around the pry bar and hook it into a hole on the opposite side frame.
16. Place one end of the snap ring around the cap and into the groove. Hold the closed end with one hand and insert the split side 1st. Collapse the ring with a needle nose, and push down the opposite side with a screw driver until it seats. You may have to work it in more with a screw driver, and or pry it out into the groove by placing the screw driver between the cap and ring. **Warning: Make sure to check that the ring is fully seated if you want to avoid the obvious.** **Note:** This step takes a little bit of finagling . You may have a tool or better idea to do this but I did not.
17. Repeat the steps for the other servo.

Band Adjustment

I highly recommend a band adjustment at this point. Given that the bands have been slipping a lot because of the servo issue, they are probably worn and will need adjustment. Also, you should consider inspecting and replacing them if necessary.

1. Spray the adjustment bolts with WD40 or other to help loosen them up. Wire brush the threads if you can (See Picture 12).



2. With a 19mm wrench or other appropriate tools, loosen the lock nut on the band.
3. Then with the ¼” square drive or wrench, turn the lock not out enough so you can turn the bolt in until you feel slight resistance on the band.
4. Attach the torque wrench and turn in to 120 in-lbs. Next mark a spot on the bolt or nut with a Sharpie. Then turn the adjustment bolt out two full turns and with the same wrench, hold the adjustment bolt and turn the lock nut in until tight. Recommended tightness for the nut is 40 Ft-lbs.
5. Repeat this procedure for the other band.

Re-Installing the Converter

1. Apply anti-seize to all the bolts (Recommended Step as you may have to take them out again in a few years.)
2. Install the upper heat shield.
3. Install the rear heat shield.

4. Install the hanger onto the post on the tube.
5. Position and install the converter on the right side, then the left making sure the hanger bracket is positioned over the cross member.
6. Install hardware and tight the connection from the converter to the muffler/exhaust.
7. Reconnect all the sensor connectors.

That is it! You are ready for a test drive. Note: A short break in period may be necessary, so don't be discouraged if 100% of the problem doesn't disappear immediately. Most if not all of the symptoms should go away right away.

Note: I highly recommend that you wait for 100 miles or so and then replace the transmission filter and fluid. That will give any particles that may have dislodged a chance to get caught in the old filter. Also with all the slipping on the bands I would expect the fluid will be ready for changing. But as long as the vehicle is up in the air feel free to change the fluid and filter right away. You will need 4-5 quarts of the proper transmission fluid to complete that job and I recommend a new filter. The pan has a fill level pipe at the bottom that when it is open, fluid will overflow into it when it is at the proper level. Make sure that the vehicle is level during filling, and you will need a fill pump to do the job.

Disclaimer: This is not an OEM designed fix. This fix will alleviate or eliminate the symptoms listed above. There may be more underlying issues with your vehicle which will cause similar or different symptoms, so this fix is not a guarantee that your particular symptoms will be resolved with this fix. I am not liable for anything working as described and each individual's circumstances and or abilities may give different results both positive and or negative.