

## 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.

**NOTE: One thing that is recommended is to do a band adjustment on your vehicle to make sure you do not have a broken or excessively-worn band. Also if you can do the adjustment and have similar adjustment left on the OD as is left on the IM the bands most likely are not worn bad-enough that they need to be replaced.**

### Instructions

**Warning: This should not be attempted by anyone without reasonable experience working on vehicles or reasonable mechanical ability. This work can be done by who we would classify as a very handy person. People who do general work on my vehicles will have no problem doing this work. We are not responsible for any undesirable outcome on your vehicle. All We can tell you is with some general planning it will take you about 2-4 hours and it is performing to about a 99% success rate with our customers.**

### **Recommended Tools and Supplies (Items in italics only required with assembly sleeves):**

1. *Car Lift or Jack Stands*
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. A good 6" needle nose pliers with narrow tips if you are pulling the pipe. *If you are removing just the upper and lower heat shields a narrow tip 90° long handle needle nose.* These two items will work great when the pipe is removed also.
8. Large pry bar around 18"-24"
9. 12" – 15" rubber bungee cord if the pipe is being removed.
10. Small block of wood 1" thick 1" long or so. The thickness of 1" is the most important. *If you are only removing the heat shields a shorter block will be required.*
11. *Small flat screw driver or o-ring pick.*
12. *#10 drill is the best but a 13/64 drill bit should work also.*
13. *Channel lock pliers.*
14. *Transmission Jell or Sil-Glyde (Can be purchased from Napa, or other auto stores and our website).*
15. *19mm box end wrench or adjustable wrench for band adjustment.*
16. *5/16" pipe/square socket for band adjustment or adjustable wrench.*
17. Shorty 3/8" drive ratchet recommended but not needed.
18. *Metric box end ratcheting wrenches work great for this job.*
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 and assembly sleeves.*

## Step by Step

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

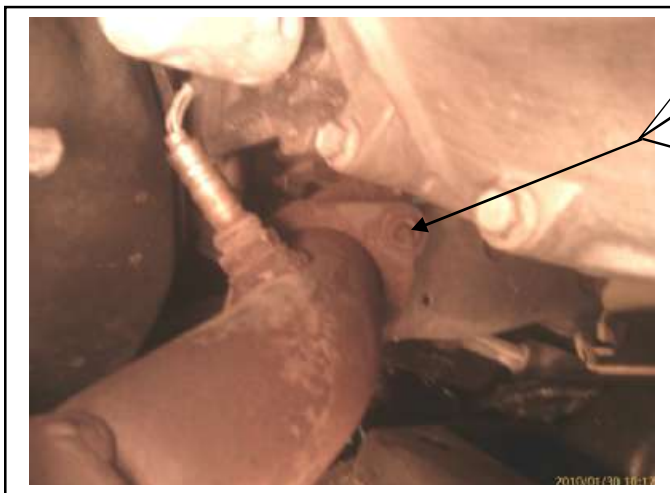
This fix can also be performed without removing any of the converters but you do need to remove the upper heat and lower shield. You need a long handled 90 degree needle nose for this option. Also, this requires a little more reaching around, but will reduce your work to 1-2 hours. Your choice on how 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 or temporarily patched and the welded.

### Converter Disassembly

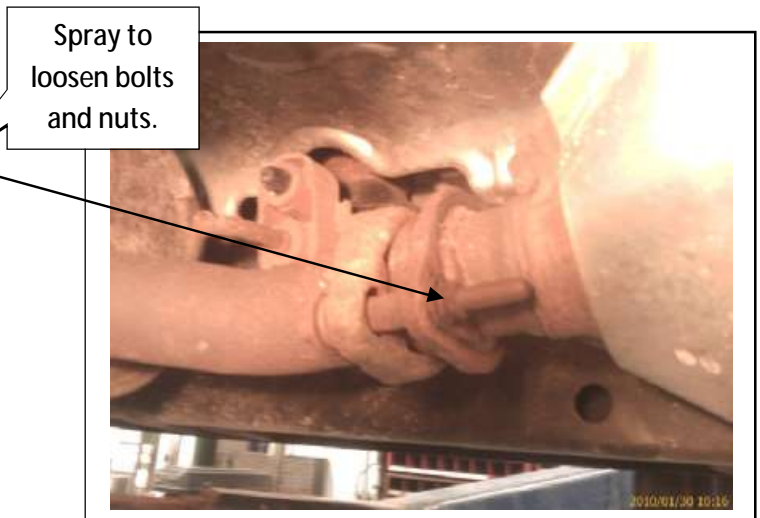
1. Get the vehicle up on a lift and or up on stands. Make sure it is safe and secure, and use jacks stands for added safety. **Warning:** If you are doing this on stands make sure to use jack stands also, and set the parking brake and block the wheels.

**NOTE:** When removing the servo caps we think the needle-nose-pliers work best. You do not have to remove the "y" pipe if you use a long handled right angle needle-nose-pliers.

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).

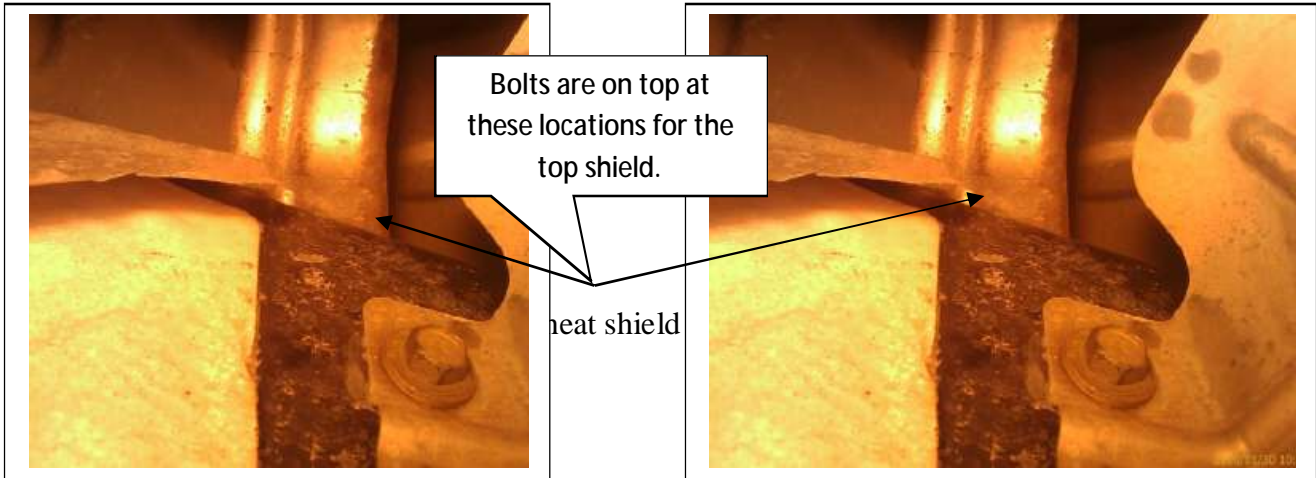


Picture 1



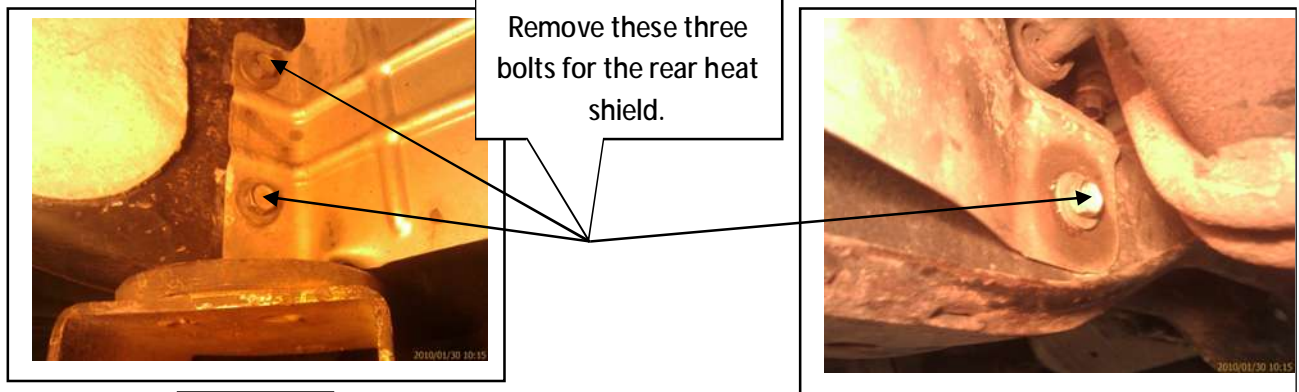
Picture 2

2. Remove the bolts from the top heat shield and leave in place loose until the converter is dropped (See Picture 3 and 4). This is the only thing you need to remove if you are not removing the pipe. Disconnect the O2 sensor by the heat shield before removing.



Picture 3

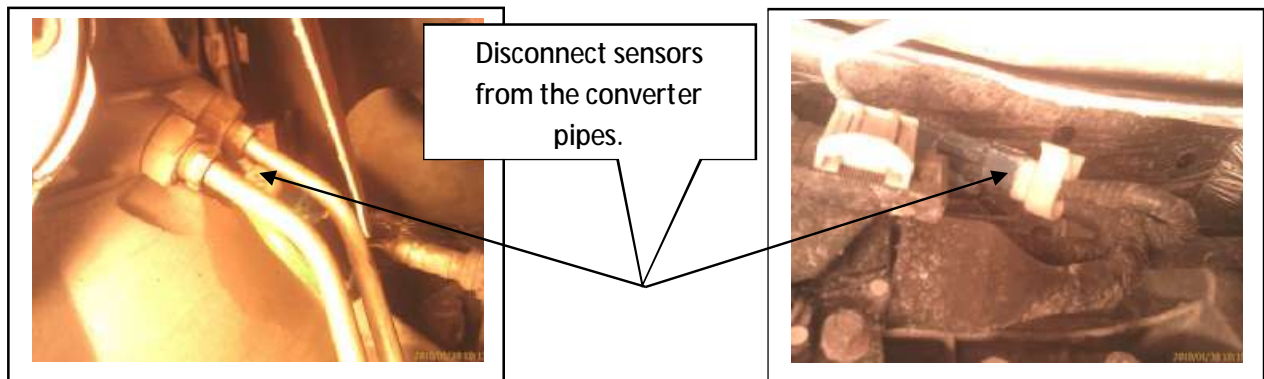
Picture 4



Picture 5

Picture 6

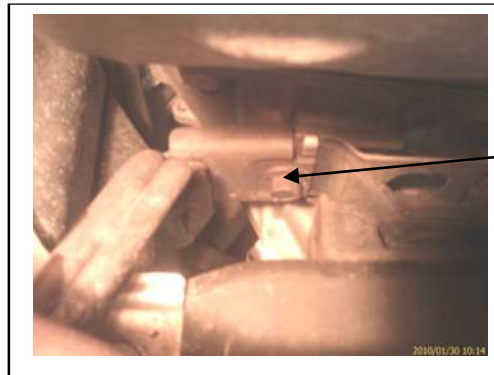
4. Disconnect the three oxygen sensor cables on the converter pipes and tuck them safely away (See Pictures 7 & 8). Note: There are three to disconnect one each near each manifold at the top, and one on the side of the transmission case.



Picture 7

Picture 8

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



Picture 10

6. Remove the bolts from the converter in the locations mentioned in Step 2.
7. 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.
8. Remove and set aside the top heat shield.

**NOTE: If you choose to remove the pipe for room that is your choice but it can be done by removing only the upper and lower heat shields. 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 or temporarily patch it and then have it welded. Either of these are good options.**

## Servo Removal and Installation

**Note:** This first step and putting the covers back on is where the extra set of hands are useful. If you do not have a set of hands, take a bungee cord wrapped around the pry-bar and around the opposite side frame and tie it off to hold pressure. You have to treat it gingerly to keep from knocking it off the cap. If you are not removing the pipe and only the upper heat shield, you can take a pry bar and a block of wood and push it between the fire wall and the converter it will hold pressure nicely.

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 a good needle nose, compress the snap wring. **Note:** If the position of the notches are in a poor location, 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 out. Then while holding the pressure on the snap-ring, slowly remove the pressure on the cap by releasing the pry bar. The pressure from the cap should push the top part of the snap-ring out and hold it out. Then with a small screw driver or pick you should be able to pop the snap-ring out from the side opposite the grooves. If this does not work, you can try prying snap-ring out while keeping pressure on the cap and on the snap-ring with a small screw driver or pick.



4. Place a drain pan under the area of the cover.
5. 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 ¼ cup.
6. The servo may slide out easily at this point but if not, if you take a #10 or 13/64<sup>th</sup> drill bit. The #10 is the best. Or you can try the short side of an allen wrench. Insert the smooth end or the drill 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. Or you can wiggle it up and down and pull on it by hand. There is a point in the bore that is worn and has a lip on it. The best way is to wiggle it in an up and down motion with outward pressure. **Note:** Any drill bit, or pin slightly smaller than the ID of the bore will work for this step. Do not pry with anything to try and get it out. The servo is pretty weak at the cross bore and you can break them off. Keep the return spring for reuse.



7. 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 shaft of the servo and to the ID of the bore. Pre-Assemble the servo into the cap. This is important to assure proper alignment when you are pushing it in and to avoid breaking the rod on the servo.
8. **NOTE: THE PLASTIC ASSEMBLY SLEEVE STAYS ON DURING INSTALLATION. DO NOT REMOVE.**
9. **Make sure to re-install the return spring on the new servo shaft at this point. If the spring will not fit over the sleeve do one of the two following. Hold the sleeve in place with a needle nose pliers and work the spring over the sleeve while keeping the sleeve in place. If it is too tight for that, remove the sleeve, put the spring on then press the sleeve back in place.**
10. Insert the assembly into the bore in the case until the plastic assembly sleeve contacts the bore.
11. 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 press 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 and use one full motion until it is all the way in. Not doing so may put enough force on the piston to break it loose from the press fit onto the shaft or break the servo. 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.** Continue to hold pressure on the assembly until you get the snap ring in. Don't hesitate to push really hard at the end to expose the snap ring groove.



12. **NOTE: Do not pull the servo back out at this point to check anything. It will catch on the worn lip in the bore and the cross port on the way out and split the o-ring.**
13. **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. Or if you only removed the upper heat shield, pry the bar and block between the sheet metal and the converter. If you only removed the heat shields, you can wedge the bar and block between the converter and it will hold in place.

14. 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 1<sup>st</sup>. 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. It is strongly suggested that you steepen the angle on the grooves of the snap ring with a file or a Dremel Tool. See the picture below. Test with the needle nose or snap ring tool you are using. You should be able to easily hold the snap ring compressed if done correctly. If you increase the angle on each side towards the cut in the snap ring it greatly improves the ability to hold the pressure on the snap ring. This also will aid in removal in the future if needed. See the picture below.



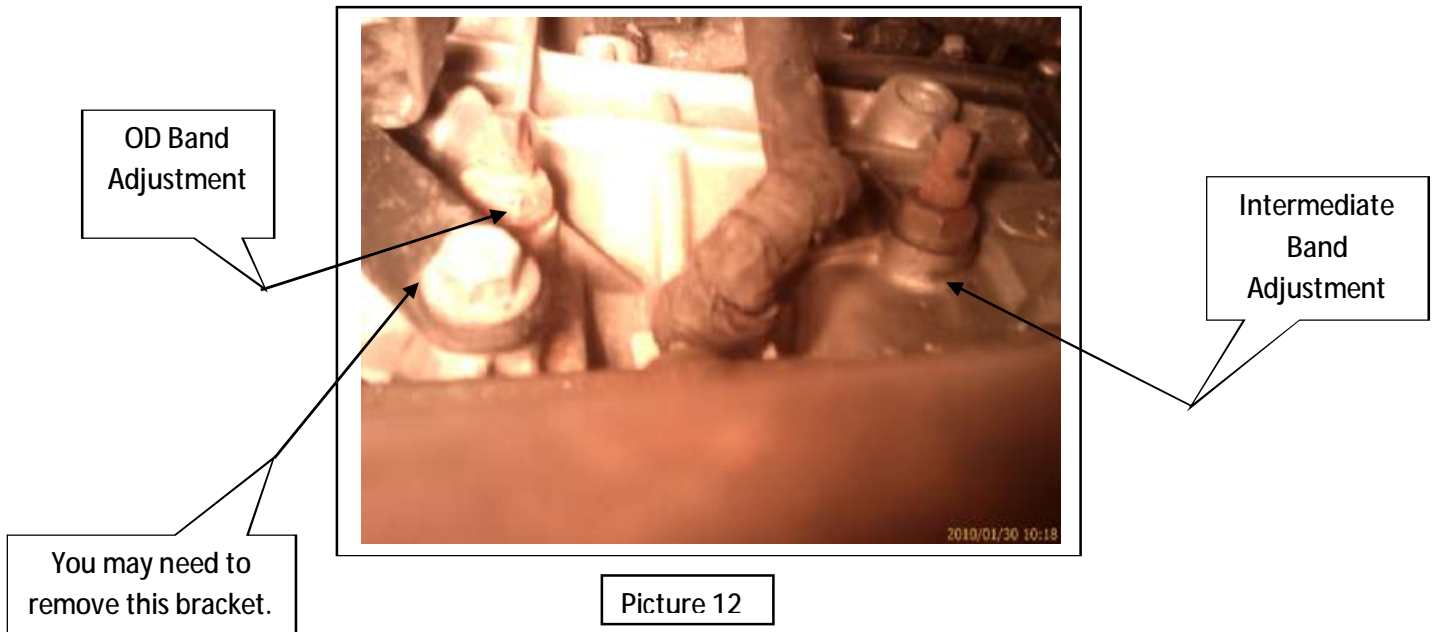
Modified to 90° from 45° needle nose, modified snap ring, and Dremel tool.

### **Band Adjustment**

It is highly recommend that you do 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.

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





1. With a 19mm wrench or other appropriate tools, loosen the lock nut on the band.
2. 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.
3. 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.
4. 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 but it may take 50-100 miles depending on how much shifting is taking place.**

**Note:** We 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 we 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 we 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. We are not liable for anything working as described and each individual's circumstances and or abilities may give different results both positive and or negative.