

How to Trouble-shoot an Electric Rear Window Problem and Take Your Tailgate Apart

Contributed By: Michael Baxter

This is my stab at a procedure to fix problems with the electric tailgate window on Full-Size Jeeps (FSJs). There are a lot of variations on the problems that can occur with the tailgate. I'll try to cover as many as I can conceive.

When it comes to your FSJ's electric tailgate window, there are two distinct groups. Those who have had trouble and those who will have trouble. Below is my best guess at tools that are req'd.

Flat blade screwdrivers in various lengths

Philips screwdrivers in both #2 and #3 sizes

1/4" nut driver

T-25 tamper resistant Torx Head screwdriver (has a hollow tip)

Ball-peen hammer

Rubber hammer (helps when you feel like hitting it with the ball-peen)

Pliers including regular, needle nose and diagonal cutters

7/16 box-end wrench (shorter the better)

12V test light with a sharp tip

2 electrical test leads with alligator clips (at least 12 gauge wire)

Possibly a manual impact driver (kind you hit with a hammer)

A 12 inch piece of 12 ga. wire. either stranded or solid.

The electric tailgate window system works briefly like this: There are two circuit breakers in the fuse panel and they each power one of the two switches that operate the window motor. One switch is under the lock cover on the rear of the tailgate and the other is on the lower left of the dashboard. The switch in the back always has power and the switch up front only has power with the ignition switch in the On or Acc. positions. The whole system is grounded through the switch up front. In addition, we can also add the safety switch in the left upper side of the tailgate, the window motor, and the window regulator which actually moves the window up and down.

If your window works but, you're into S & M and you just want to take the tailgate apart for fun :-); start reading at "Taking The Tailgate Apart" below.

ELECTRICAL TROUBLE-SHOOTING

Hey, maybe it's the safety switch on the left side of the tailgate? You can skip this step if your window is stuck in the up position. In fact, you can skip right down to "Taking the Tailgate Apart." Once, it is apart, come back here and continue with these steps.

Since the safety switch is easy to get out, let's check it first. It is located in the upper left side of the tailgate. You can test the safety switch by removing the two screws, pulling it out, disconnecting the wire connector and shorting the two wires together somehow without letting them touch the body. I crimped two blade type connectors on to a short wire but, you can use a bobby pin if you can keep it from touching anything. Don't worry too much. If it does touch, one of the 30 amp circuit breakers will save the day.

With the switch bypassed, try to operate the tailgate window very briefly with the tailgate open. If the safety switch is bad, I recommend that it be replaced for obvious reasons. I have seen the safety switch bad on only one past occasion.

If the window still won't work after bypassing the safety switch, it's time to make sure you have power in back. Find a good ground for the test light and stab all the fat wires coming into the bottom of the tailgate. You should find 12V in one of the fat wires regardless of the position of the ignition switch. If you do not find voltage (assure you have a good ground on the test light), there is most likely a problem with the wiring. Since the rear window motor can get power from two separate power sources, the problem is most likely a big one too. In rare instances, you may have more than one problem. If you do have power back here you can jump down to "Taking The Tailgate Apart."

Okay, remove the left A/C vent extension from under the dash if applicable. It is held on with just one screw near the emergency brake release handle. Find a way to view the back of the rear window's front switch mounted in the dash board. Find the black wire and make sure it goes to a good chassis ground. The whole thing grounds through this wire and nothing will work if it is not connected.

Turn the ignition switch on. Ground the test light in a good spot and find the red wire on the back of the same switch. Stab it and check for power.

If you don't have power, the red wire goes first to the ignition switch and then to the lower 30 amp breaker in the fuse panel.

Note if neither switch will move the window and you don't have power on this wire, you should start looking for two separate problems. The upper circuit breaker powers the rear switch separately.

Okay, back to no power on the red wire. You should check for power at the lower circuit breaker 1st. It's a 30 amp breaker in the lower center of the fuse block. From there the wire goes to the ignition switch mounted on top of the steering column just where the column goes through the floorboard. Make sure the ignition switch is still on from the steps above and check the wire on both sides of the switch. No power on one side indicates a bad switch. No power on either side indicated wiring problem between fuse block and ignition switch.

If you do have power on the red wire, let's check the condition of the front switch. Find the brown wire on the back of the front switch and stab it while you move the switch to the up position. The test light should light. Now, find the tan wire and check it with the switch in the down position. If the test light fails to light in either of these cases, it indicates a bad front switch (rare). If the front switch is really bad, the window should still work using the rear switch in the tailgate.

If you didn't find power in the back where the wires go into the tailgate in the previous step and if everything works up front, then you have a problem with the wiring in between. As I mentioned before, it probably is a big problem too. Start tracing the wires from the back toward the front and look for disconnected plugs and severed wires.

Funny story: A friend of mine was making a hole with a hole saw once and when he finished, he pulled the hole saw out and inside the saw was a nice 2" section of the whole wiring harness for the rear of his car. So what's so funny? You should have seen the terrified look on his face!

If everything works up front and you have power in back, but nothing works; you are going to have to take the tailgate apart in order to find the problem. This is your lucky day.

TAKING THE TAILGATE APART

Whether the window is stuck in the up position or down position, first remove the carpeted panel if equipped (most were). Of course, this is easier with the tailgate open. Next, remove the inspection cover. It is the big panel in the middle of the tailgate.

IF THE WINDOW IS STUCK IN THE DOWN POSITION: You should feel lucky, at least you can open your tailgate: If you are feeling unlucky (window is stuck in the up position), move down to the next step.

There are clips on the two studs that secure the window's bottom channel to the regulator arms. Look towards the lower corners of the tailgate. You can also look through the glass and follow the regulator arms out to the studs. They are near inaccessible with the window all the way down :-(. You have to devise a gentle way of prying these clips off. If you are careful, you can reuse them. They can be reshaped with a ball-peen hammer and pliers if they survive (all of mine have so far). If you break one, they are available at the dealer for about \$1.30 ea. (part #J0980363). Once the clips are off, get the regulator arm's studs clear of the channel by jiggling the window up and down in the track and pushing the studs down with a screwdriver. Push the window up/out just a little ways. You can move down to "Continued."

IF THE WINDOW IS STUCK IN THE UP POSITION: There are clips on the two studs that secure the window's bottom channel to the regulator arms. Look up towards the top of the tailgate and you'll see the studs at the ends of the regulator arms. You have to devise a gentle way of prying these clips off. If you are careful, you can reuse them. They can be reshaped with a ball-peen hammer and pliers if they survive (all of mine have so far). If you break one, they are available at the dealer for about \$1.30 ea. (part #J0980363).

Once the clips are removed, support the window with one hand and use a screwdriver to push the studs out of slots in the bottom of the channel. Gently lower the window down into the bottom of the tailgate. You can now open the tailgate.

CONTINUED: You need to devise a way to support the window at tailgate level with the tailgate open and window pushed way out (garbage can, step stool, etc.). Push the window out as far as you can and then support it with whatever you devised.

Okay here comes the fun part. If you can see all six of the screws that fasten the regulator to the tailgate, this is still your lucky day. If this isn't your day. Consider having a beer and coming back to this project tomorrow: If you can see all the screws, then remove the screws (you may have to use Impact Driver) and move down to "Removing the Regulator."

If you can't see all six screws, you are going to have to remove the motor from the regulator before you can remove the regulator itself. There are three bolts that fasten the electric motor to the regulator. Get the 7/16" box-end and remove the bolts by reaching around to the bottom side of the regulator. Small hands and patients pay off big here. Optionally use the rubber hammer intermittently with the 7/16 wrench, but only if it makes you feel any better.

Okay, ***WATCH YOUR FINGERS***. *The regulator has a spring and it is taut. It will try to seek the window up position with a vengeance once you remove the electric motor.* Especially if the arms are near the window down position. Hold a regulator arm with one hand and be ready for a lot of spring pressure. Now, work/pry the motor loose. Let the regulator arms go up slowly until they find a place to rest. Then unplug and remove the motor.

Move the regulator arms back down until you can see all six screws that hold the regulator to the tailgate. There are holes in the gears and at some point all the screws will be visible (about half-way). While you hold the arms in this position, loosen all the screws that would NORMALLY be covered-up. This step takes 3 hands and a helper would be nice. If the screws are rusted/frozen, you may have to use the manual impact driver to get them loose. It is worth noting that you only have to turn the screws about 10 turns to get them loose.

Once those screws are removed, you can let the regulator arms go back up and then remove the rest of the screws.

REMOVING THE REGULATOR: There are threaded spacers underneath each of those screws and they should all stay attached. If you loosened some screws too much, the spacers will drop into the tailgate. Just collect them and put them in a safe place. You should have enough maneuvering room to work the regulator out of the opening in the tailgate. Since the tailgate is spring assisted, when you remove the regulator and it's weight; the tailgate will seek the heavens.

Back to the electrical trouble-shooting: Now, it has to be either the motor or the tailgate switch that is the problem. Take the motor to a good 12V source, such as the battery, for testing. Use the electrical test leads to connect the motor's wires to the battery. Since it is a reversible motor, it doesn't make any difference which wire goes to positive. I have yet to see a motor fail. But if it is dead, shop around at the local junk yards and the dealer before you buy.

Now that your tailgate is all over your garage or driveway; Murphy's law is, of course, at work here. If the motor works, lets test for the most likely problem and the hardest thing to get to in the whole system. The rear switch is a paddle switch and it is located behind the bracket that the regulator mounts on.

Lift up the spring-loaded lock cover over the key hole for the tailgate switch and you will see two tamper resistant Torx head screws. Those are the T-25 tamper resistant screws. Remove the screws and then remove the 3 Phillips screws below that and remove the whole lock assy.

Find the two screws that attach the switch bracket to the back of the regulator mount. They are directly under where the regulator used to be. You can use a 1/4" nut-driver to remove the screws. Fish out the bracket with the switch attached and take a good look at the paddle.

The paddle is plastic and has two little tits that secure it to the body of the switch. If one of those tits breaks-off, the paddle will be cocked and you will be able to see all the springs and carbon contacts. If the paddle it busted, the window won't work from the front or rear switch.

The switch is probably part #56003167 and alternately part #J5750087. One is the rear paddle switch and the other is the safety switch. I don't know which is which. It will set you back \$30-\$35. Say "thank you very much" to the nice man/lady behind the counter at the local Jeep dealer and add "you don't know how glad I am that it is still available."

While everything is apart, you can lubricate everything that moves. inside the tailgate pretty easily. I suggest something like spray style white grease. It will last a lot longer than WD-40 or Silicone. Just spray it on any joints in the linkage and on the inside of the latches. On the outside you can do the same. Lube all the joints in the stop straps, the outside of the latches, the brass anti-rattle dovetail cones and the spring loaded levers in the top of the strikers mounted to the body. A couple of drops of oil in the holes on the hinges won't hurt either. Installation is in reverse but, here are some notes about putting it all back together. Install the motor back on the regulator, put the screws back in their holes and install the threaded spacers on the screws while everything is still outside of the tailgate. To get all the holes lined-up, you can use the electric motor to turn the window regulator. Just plug the motor in and hold the safety switch with one hand while you operate the tailgate switch from below with the key or a screwdriver (depending on whether the lock is installed or not).

Once the regulator is installed; push the window back down, get the regulator arm studs back in the slots and put the clips back on. Run the window down and close the tailgate. Then run the window up until it gets about 1/2" from the top. and stop. How is the alignment? If it needs to be raised on one side, run the window back down and reopen the tailgate. Then run it about half-way up until you can see all the screws in the regulator. Loosen the screws and cock the regulator one way or the other.

As an add on to this procedure, it has been reported that the channel at the bottom of the window is often rusted out and in need of replacement. I haven't encountered this in dry Nevada but, I'll try my best to cover how to change the channel if required.

To remove the window from the tailgate you have to remove one of the weather strips (w/s) an the base of the window. First, I think you only need to remove one of them to get the window out. I can't think of any advantage to taking any particular one out as opposed to the other. But, I would probably remove the outer.

Find a piece of 12 or 14 gauge stranded wire about 12 inches long. Steel clad stuff like you buy at Radio Shack for TV antenna guy wire will work well. So will a piece of copper wire with the insulation removed. I can't think of any reason why a solid wire such as bailing wire wouldn't work either. It's just a little harder to manipulate.

If you are concerned about scratching the paint, put a couple of layers of masking tape down just outside of the w/s on top of the tailgate. This is so the clips you have already removed don't gouge the paint while you are working on the others.

Take a med. size flat blade screwdriver and pry out between the body and the w/s starting on one end. Look for the first clip by prying and looking between the back of the w/s and the body of the tailgate. The w/s is held in with metal clips that go through a slot in the body.

Find the first clip and insert the blade UNDER the clip. Come in from the side of the clip with shaft of the screwdriver as close to parallel with the top of the tailgate as you can get. Parts of your hand should be touching the top of the tailgate as you push the blade under the clip between the body and the w/s.

Twist the screwdriver a little to bend the clip away from the w/s. You need just enough room to slip the wire under the clip. Too little on the first twist is okay. You can always twist a little more (Isn't that a line in a Beatles' song?). Too much will break the clip although, I have never had it happen.

Curl the end of the wire a little and fish it under the clip. Pull-up gently on the wire. You should be able to get the clip free from the slot in the body. If it is stubborn and about half of them are, just work it gently. Pry the clip a little further with the screwdriver and try pulling-up again. Also, pushing the w/s piece towards the tailgate body from the window opening while pulling-up sometimes works wonders. The whole idea is not to pull-up so hard that you end-up bending the w/s when the clip breaks free.

Repeat for each clip. Once you get the thing out, bend all the little clips back. When you reinstall it, the back of the w/s should fit firm against the body.

Once the w/s is out, you can just pull the window straight out. Then stand the glass on end on a piece of carpet or just sit down on some carpet with the thing in your lap. Pry the channel off the bottom of the window as gently as you can, any way you can devise and using whatever tools necessary.

To install the new channel, some people have just glued it on with silicone or similar. I recommend getting the proper cork stuff at the dealer when you buy the replacement channel. Start on one end, fold the cork stuff over the bottom of the glass and pound the new channel on with the rubber hammer. Once it is on, you can slip the window back into the tailgate.

Here is what Ron Strouss with a 76 Wagoneer in Seattle, WA said about this step: "The new WX" (weather strip) "is pricey, but I think it's much better than the original stuff. The only touchy part was putting the new track on the bottom of the window. I was pounding the track with a heavy piece of metal to make it go on the window. I kept thinking the window would crack at any time. I suppose there's a better technique than the one I used.

"I ended up putting in a manual regulator and it works fine, but I question how long it will hold up. The threads for the handle crank don't look like they'll hold up under pressure. The guy who sold it to me gave me a warning that if the window binds at all I'll strip the threads. That's promising. Anyway for now it's working. "

All of the w/s for tailgate is available and most of it is very reasonable. There is one piece, which escapes me now, that costs around \$100; but the rest is inexpensive. It would cost you about \$300 to replace every rubber piece in and around the tailgate. That is what I have done on both my '79 Cherokee and my '79 Wagoneer. Much of the w/s was redesigned at some point in the '80s and is much better than the stuff installed before this time. In my opinion it is worth the expense.

Do you realize that the whole time you've been following this procedure the ignition switch has been on since, I forgot the step to turn it off? Unless you've been having way too much fun with this project, I know that switch is off. Go have a beer. And now it is time for me to have a beer!

Additional tips on the tailgate recieved via e-mail:

Jmaguire writes:

I have seen several cases where repeated slamming of the tailgate causes the safety switch to straighten slightly. If this is the case a replacement is not needed - simply take a pair of pliers and add a little more bend at the joint.

ericfa writes:

I have one contribution to the tailgate "how to". My window was stuck in the up position, but the motor was fine. I disconnected the motor at the connector about 1 ft away from the motor and connected two 8 gauge wires approx 10 ft long. Using these wires I could raise and lower the tailgate by applying 12vdc (swapping polarity to raise/lower). I secured the wires tightly with tie wraps so they would not fall off when the window was down. This came in real handy getting the screws to line up with the holes when removing the regulator! In a pinch you could run these wires up to a dash mounted switch and still use the tailgate while you are procrastinating.

Eric Faust '89 Grand Wagoneer

Eric J Christeson writes:

One pointer that I have is that the latches on a '77 Cherokee and an '81 Wagoneer are different and the latch mechanisms don't have the same bolt pattern, but the '77 latches can be "adapted" to fit the '81 tailgate :-)

-- Michael Baxter

From Reno, NV USA on 13-Jul-1998