2002-2006 Jeep Liberty Front Door Power Window Regulator Repair Kit

Thanks very much for purchasing this Steiger Performance window regulator repair kit! This kit is primarily designed to work on any Jeep Liberty built prior to February 26, 2006. This covers all 2002-2005 Libertys as well as some 2006 and 2007 models. (Please visit our web site for complete build date and compatibility information.) Part number SP13003 is for the right front window and SP13004 is for the left front window. In addition to the repair bracket and this installation guide, you should have received a T-20 Torx tool as well as two small machine screws with two flat washers, one lock washer and one nut each. *(You only need one of these machine screws but two are included because those parts are small and easy to lose.)*

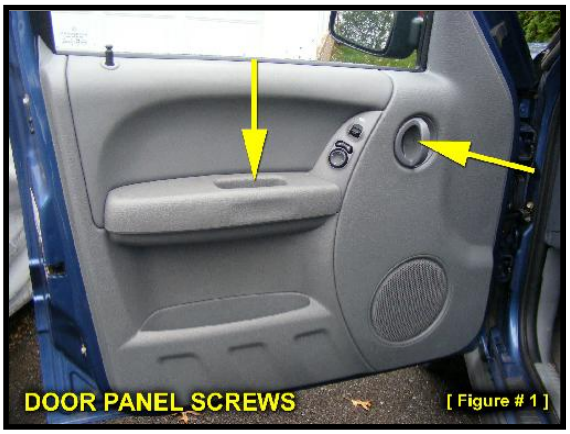
If you run into any problems or have questions or comments regarding this repair, please feel free to contact me via e-mail at *jon@steigerperformance.com* or by using the contact form on the web site. A copy of this installation guide is available in Adobe PDF format on the Steiger Performance web site at http://www.steigerperformance.com

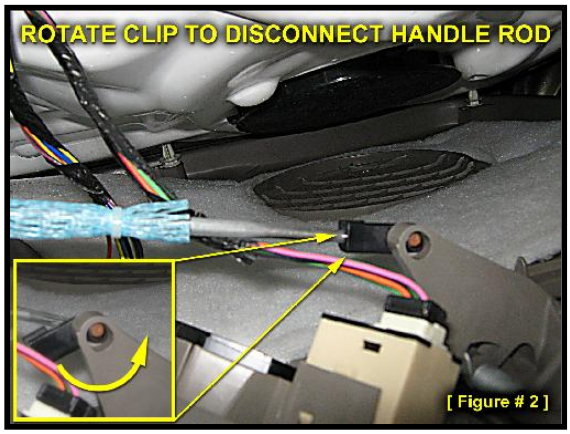
Tools required: T-20 Torx tool (included), 10mm hex socket or wrench, pliers, small flat head screwdriver, Phillips head screwdriver, hammer. Tape or a wedge would be helpful to hold the window up while you remove the regulator from the door. You also need a drill, grinder, file or chisel to remove a small rivet.

(Note: For a diagram showing the window regulator parts referred to in this document, please see Figure 6 on the second page.)

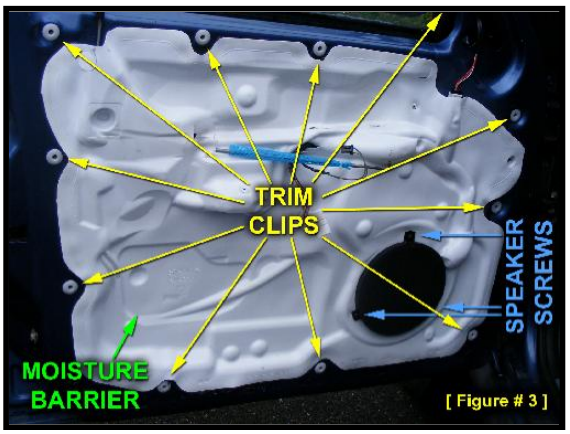
Before beginning this repair, I recommend holding the window switch in the "down" position for several seconds (or until the motor stops) and then hold it "up" for 1-2 seconds. If you hear any grinding or other unusual noises while doing this, release the switch immediately and do not continue to operate the motor. The reason for operating the switch is to feed the spiral cable back inside of the guide rail. (When the window bracket breaks, there is usually a piece of plastic that remains attached to the end of the spiral cable. If this piece has fed into the main tube, it is possible for it to become stuck and difficult to remove by hand, but the window motor often has enough power to push it back into the guide rail where it belongs. Operating the switch in the "down" position will accomplish this. The reason for reversing it back up for a couple of seconds afterwards is to lift the spiral cable up several inches, making sure it is out of the way so that the window can be lifted high enough to gain access to the window bracket clips.)

The first step is to remove the door panel. There is a Phillips head screw in the armrest grab handle and another behind the door handle. *(Figure 1)* The screw behind the door handle is hidden by a small cover which you will need to gently pry out using a small flat head screwdriver. After removing both screws, you can disengage the door panel trim clips by working your way around the edge of the door panel, pulling it away from the door. You may need to pry something under the edge to get it started. Auto parts stores sell a special tool that is designed for this purpose but a flat head screwdriver will also work. (If you use a tool of some type, be careful not to scratch or chip your paint.) There are eleven trim clips running around the perimeter of the panel - their locations are shown in *Figure 3*. Once you have pulled all of them loose, you can lift the panel slightly to allow the top lip to clear the window slot.

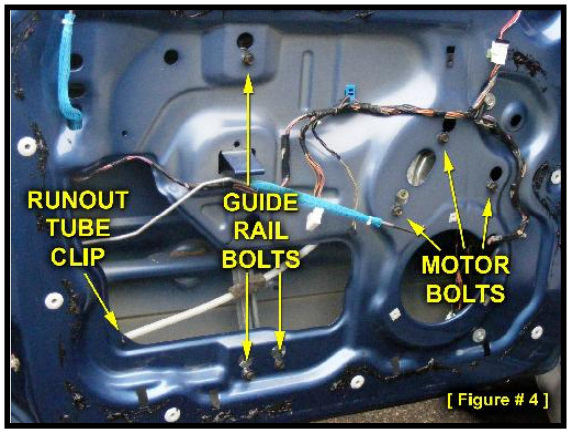




You should now be able to pull the panel far enough away from the door to reach behind it and disconnect the inside door handle actuating rod. To do so, simply unclip and rotate the plastic lock which will allow the metal rod to slip down and out of the hole. *(Figure 2)* Unplug any electrical connectors from the back of the switch module and then lift the door panel up off the door lock knob and set it aside. Remove the three Phillips head screws holding the speaker in place *(Figure 3)*, pull it away from the door, disconnect its electrical connector and then set the speaker aside.

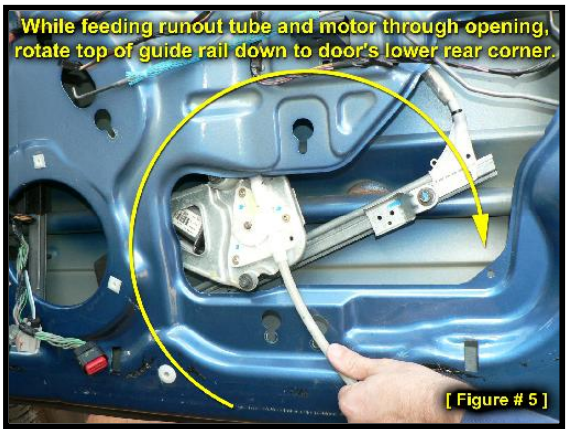


The moisture barrier *(Figure 3)* is glued to the door using a non-hardening, tar-like sealant. You can remove the moisture barrier by simply peeling it away from the door. Go slowly so that you don't rip the barrier and be careful not to get any of that sticky adhesive on your nice clean upholstery! Once you have peeled off the moisture barrier, lay it somewhere out of the way with the adhesive side facing up. (If the adhesive becomes contaminated with dirt or dust, this will reduce its effectiveness and make it more difficult to stick the barrier back on later.)



Reach inside the door and lift the window up a bit so you can reach the two small metal clips in the white plastic window bracket. Using a flat head screwdriver or a hook tool, pull each clip to the side to remove it from the bracket. Be careful not to lose the clips – you will need to re-install them later. After removing the clips, you can disengage the glass from the window bracket. Raise the glass all the way to the top of the door and secure it by using tape or a wedge. (If you use tape, masking or painter's tape works best for this because it does not leave a sticky residue behind. Run a few strips from the inside of the glass over the top of the door frame to the outside of the glass. Taping the front and rear edges of the glass to the window frame will also work.)

There are six bolts holding the window regulator in place: one at the top of the guide rail, two at the bottom and three on the window motor. Their locations are shown in *Figure 4*. Loosen these bolts – you don't need to remove them completely, just backing them out several turns is sufficient. Reach through the speaker opening and disconnect the electrical connector from the motor by sliding the red lock on top to the side and then squeezing the locking tab at the top rear of the connector while pulling the plug and socket apart. On the bottom edge of the large opening in the door, the runout tube is clipped to a hole in the inner door skin using a plastic anchor. *(Figure 4)* Disconnect it by squeezing the prongs of the anchor together and pushing it through the hole.



Slide the guide rail and motor up in their slots and allow their bolts to slip through the holes at the top of those slots. Pull the end of the runout tube through the large door opening and then rotate the window regulator and lay the guide rail down on the bottom of the door such that the top of the guide rail is as far to the bottom rear edge of the door as possible. *(Figure 5)* You should now be able to thread the rest of the runout tube, the motor and the main tube through the opening such that the only part still inside the door is the metal guide rail. At this point, you can pull the guide rail out as well. The next step is to disassemble the regulator.

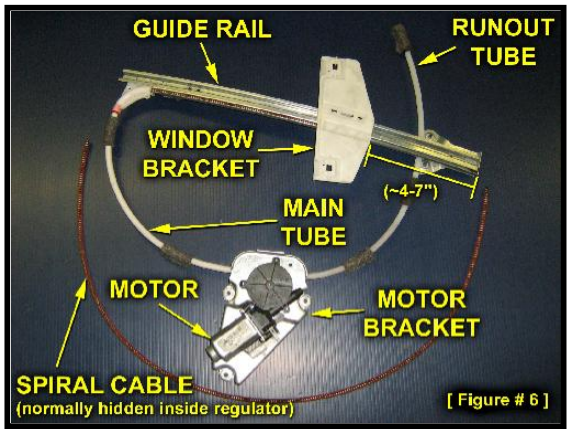
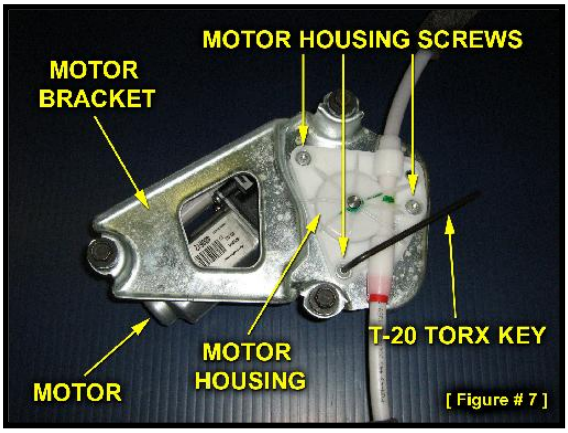
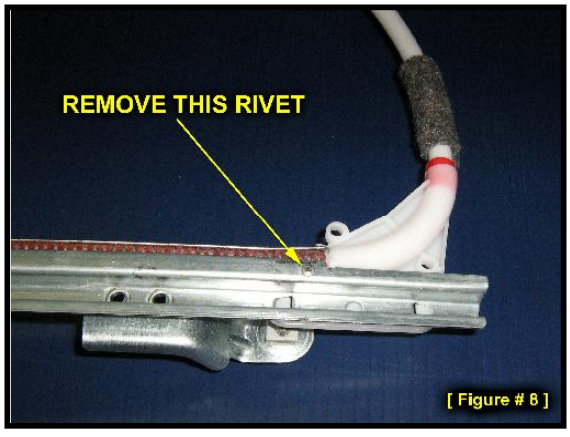


Figure 6 shows what the window regulator assembly looks like when removed from the vehicle. Various parts of the regulator are labeled for your reference.

(For now, ignore the 4-7" measurement in Figure 6. It will not be relevant until you reach Figure 14.)



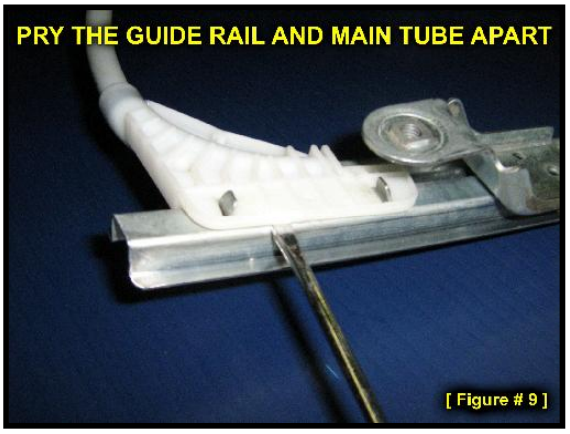
Use the Torx tool provided in this kit (or a T-20 Torx driver) to remove the three motor housing screws *(Figure 7)* then set the motor and the motor bracket aside.



At the top of the guide rail (where the main tube attaches) you will find a small rivet. *(Figure 8)* Remove the head of this rivet. You can use a drill, grinder, cutoff wheel, Dremel® tool or even a hand file. A quick removal technique is to put the sharp edge of a chisel against the side of the head of the rivet and strike with a hammer. Whatever method you use, be careful to only remove the head of the rivet itself; do not damage the metal guide rail.

Flip the guide rail over and bend up the two tabs that hold the main tube to the guide rail. Once you have done this, you should be able to separate the main tube from the guide rail. When bending the metal tabs, do not straighten them any further than is necessary to separate the guide rail from the main tube. These tabs can only be bent back and forth a few times before the metal will fatigue and they will break off.

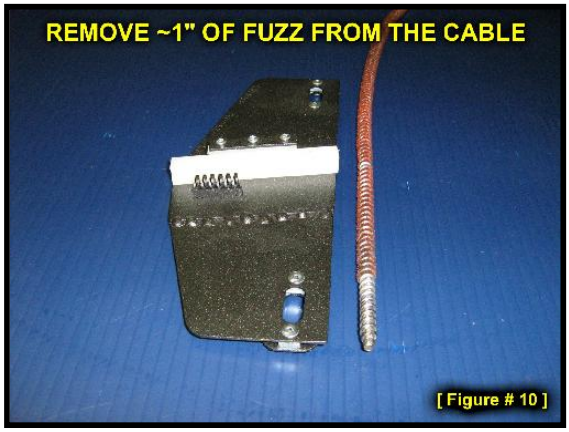
You may find it helpful to pry the main tube and guide rail apart using a small screwdriver as shown in *Figure 9*. Be careful not to damage the plastic. Pull the spiral cable out of the guide rail and main tube. Remove any bits of plastic which might be attached to the end of the cable.

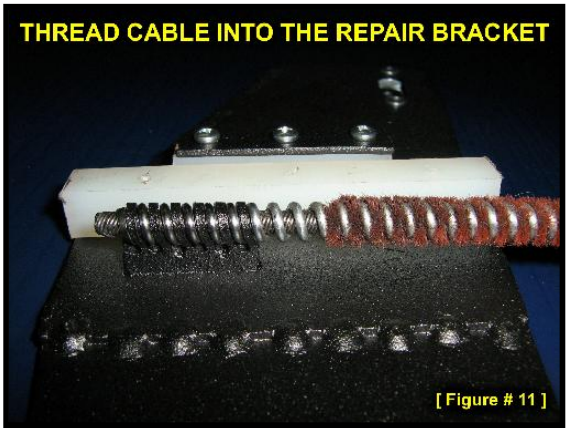


Note: If you cannot remove the spiral cable because it is stuck in the main tube, use a pair of pliers or vise grips to grab the end of the cable that is sticking out of the runout tube and rotate the cable in a counter-clockwise direction to unscrew the cable from the broken plastic piece. After the cable is free, you can use it to push the broken plastic piece out of the main tube.

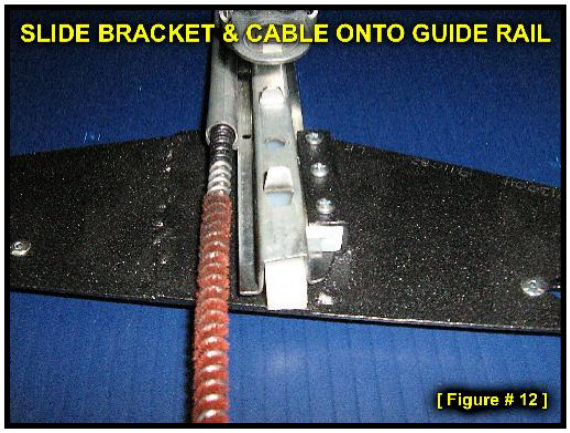
In the previous step, you removed the head of a small rivet. At this point, you can use a hammer along with a small punch (or one of the machine screws included in this kit) to press out the body of that rivet. Press from the side of the rivet where the head used to be. (If you look at this part of the main tube, you will see that one side of the curved elbow portion has a number of ribs cast into it but the other side has none. Lay the main tube on your workbench such that the ribs are against the surface of the bench (facing down) and then press down on the rivet with your punch. The side of the main tube that is facing up in *Figure 9* should be facing down while you press the rivet through.)

Remove approximately 1" of the "fuzz" from one end of the spiral cable (it does not matter which end). A wire wheel mounted on a bench grinder works great for this, but it can also be picked out with a pair of tweezers if necessary. A properly prepped cable is shown in *Figure 10* at right, along with the replacement bracket.





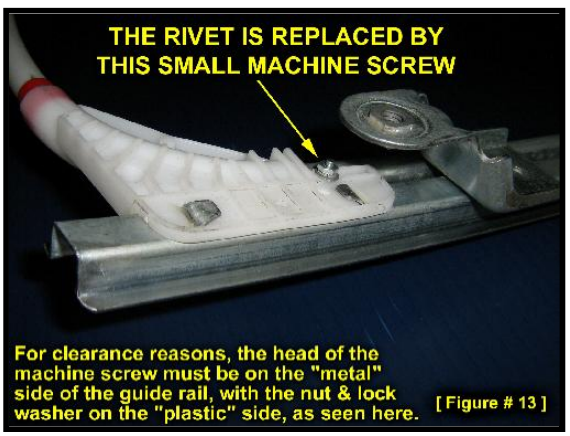
Screw the spiral cable into the replacement window bracket included with this kit as shown in *Figure 11* above. The end of the cable should extend approximately 1/8" beyond the end of the last loop in the bracket. If you do not thread the cable in far enough, the bracket will hit the bottom of the guide rail when you lower the window, which could damage it. If you thread the cable through too far, the window will not be able to lower all the way. If the cable does not thread easily into the bracket, try the other end of the cable, or you can file down the very tip of the cable a bit.

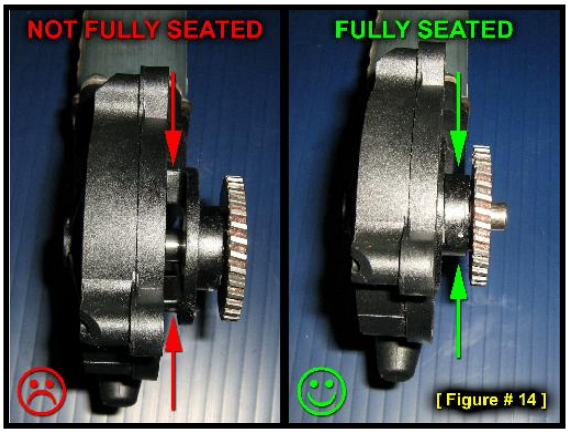


Slide the broken plastic bracket off the guide rail and install the replacement metal bracket as shown in *Figure 12*. The cable rides in the round channel, the nylon block in the middle of the bracket rides in the square channel and the nylon slot rides on the edge of the guide rail.

Move the bracket back and forth in the guide rail by pushing and pulling on the spiral cable to ensure that it moves smoothly, with no binding. This is a good time to clean the guide rail, if necessary. If there is a sticky residue in the channels, I use brake cleaner to remove it, but soap and water will work too (be sure to dry it thoroughly afterwards). Lubricating the rail is usually not necessary, but if you would like to do so, try to avoid using "wet" products such as WD-40® because these will trap dirt and create gunk. I prefer to use a graphite based product for this purpose.

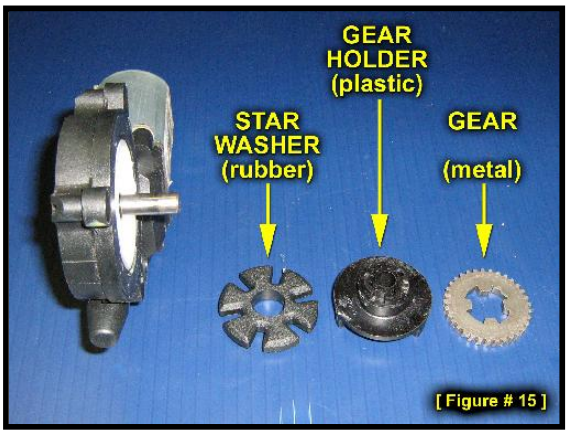
Move the bracket all the way down to the end of the guide rail and then insert the other end of the spiral cable into the main tube. Bring the main tube and guide rail together and then rotate the main tube so that the slots fit down over the tabs in the guide rail. Install the small machine screw (included in the kit) in the hole that was previously occupied by the rivet by placing one flat washer on the machine screw and inserting it from the guide rail side. Install another flat washer on the other side, then a lock washer and a nut, finger tight. Bend the two metal tabs down and then tighten the machine screw. It is important that the machine screw be installed as shown in *Figure 13*. The head must be on the metal guide rail side and the nut on the plastic main tube side. If you install this screw backwards, the window bracket will hit it when you try to raise the window.





In order to ensure that the window bracket can be accessed through the hole in the door after the regulator is re-installed, position it such that the bottom of the window bracket is between 4 and 7 inches from the bottom of the guide rail (see *Figure 6* on the second page of this guide). Using the three Torx screws, reattach the motor to the motor housing, making sure to sandwich the metal motor bracket between the two. If you are not sure about the orientation of the motor, bracket and housing, you may find it helpful to study *Figure 7*. (Note: The window regulator pictured in *Figure 7* is for a left front door, so if you are working on the right front, bear in mind that your regulator will be a mirror image of the one shown in the photo.) If the gear has fallen off the motor shaft, put it back in place. The metal gear connects to a plastic piece which has three "legs" on it. These legs must mesh with a rubber "star washer" at the bottom of the motor shaft in order for the plastic piece and gear to be fully seated. *Figure 14* shows what the gear should look like when it is properly installed in the motor, as well as an example of what it looks like when the gear is not fully seated.

Figure 15 to the right is provided in case your motor has become disassembled further than it needed to be, and you are not sure how to put it back together. Pictured from left to right are the motor, the rubber "star washer", the plastic gear holder and the metal gear itself. From left to right is also the order in which these items go into the motor. The rubber piece goes in first. The three legs on the bottom of the plastic gear holder slip into the slots of the rubber star washer and the metal gear goes on the plastic holder. During disassembly of the regulator, if you simply set the motor and the motor bracket aside you will not have to worry about this step. This info is provided just in case any of these parts have fallen out of your motor.



You are finished with the repair of the regulator and now it's just a matter of re-installing it in the door by reversing the procedure you used to remove it. Put the regulator back in the door, tighten the bolts on the guide rail and motor bracket, plug the motor back in and reconnect the runout tube clip.

Before attaching the glass to the bracket, verify that the two ball studs at the bottom of your window are perpendicular to the repair bracket – you may find that they are angled up slightly. If so, grab each ball stud with a pair of pliers and gently bend them down until they are horizontal. To connect the glass to the bracket, you can insert a ball stud into the window bracket opening and install the clip from the side or you can put the clips on the bracket first and then snap the ball stud into place by pushing it through the already installed clips. (Use whichever method seems to be the easiest for you.) *Figure 16* shows how the glass attaches to the replacement bracket by using the metal window clips from the original bracket.

At this point, you may want to run the window all the way up and down a few times. This step is optional, but if there is a problem of some kind, it is better to find it now rather than after you've completely re-installed the door panel. After you are satisfied that all is well, route the door handle and electrical connector(s) through their openings in the moisture barrier then stick the top rear locating indent of the barrier into place followed by the top front locating indent and finally the rest of the barrier. Make sure that the barrier completely covers the drain holes at the bottom of the inner door skin. Plug in the speaker and screw it into place. Plug the electrical connector(s) back into the switch module on the door panel, lower the panel down over the lock knob, reattach the door handle rod and then snap the panel into place. Re-install the armrest and door handle screws then replace the door handle screw cover. Congratulations – you're done! ☺