

How To: Change late-model manual passenger window to automatic

The operation is really quite simple if following the below guide, but as per usual:

You're fully responsible for the manner in which you perform this operation, and its outcome.

Moreover, this might take you one or two days, depending on your skills. Don't let any hurry ruin your wiring! Take your time.

Lastly, at the bottom of this How-To, I've attached two wiring diagrams. The first one contains the setup as-is in my late model Coupé with manual passenger window. The second one is the 'modified' version, after all changes have been made to make it work as an automatic.

I highly recommend you get familiar with the first one, and check if the identification of the wires check out on your car. As I haven't been able to find any official diagrams of the late model, I have no way of knowing if mine is any different from yours. They are bound to be identical, but it's better to be on the safe side here:

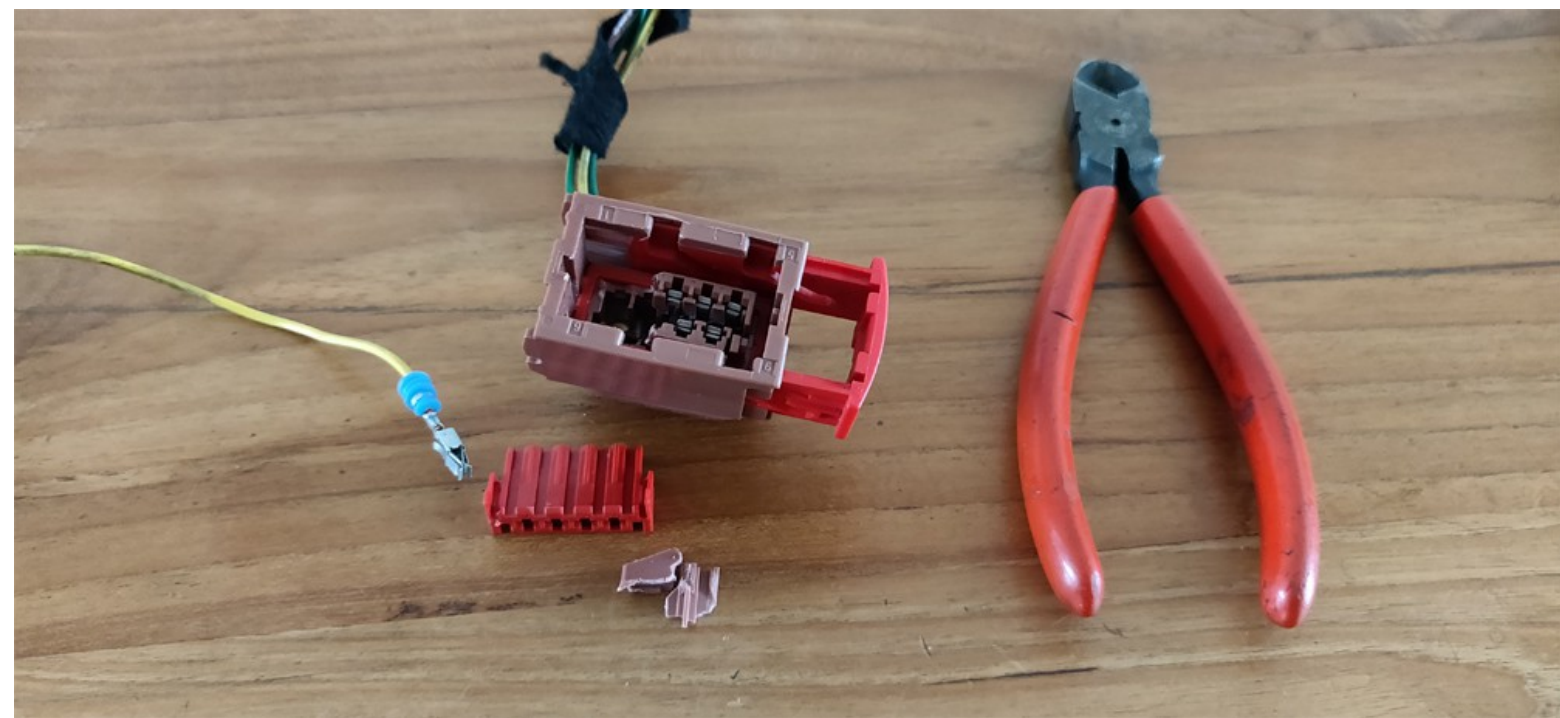
After taking off the door cards (as per instructions below), you should be able to remove some wiring tape and verify the wiring. Every wire in the Coupé has a letter/number combination printed on them every few inches. See if the pin numbers and wire identification match up with the first diagram. If so, continue on.

If not, you can use a multimeter and the first diagram to see if the connections are identical, regardless of the identification. In this case, do proceed with caution though. Even if all connections line up with what is pictured, it does not exclude the possibility of additional connections being present. It might be worth your time to check for such in your wiring loom.



Things you will need:

1. Automatic window switches.
2. A spare connector, taken from a window mechanism -OR- door lock. Any 406 should have these, as well as 607's if you have trouble finding any.
3. Aprox. 8m / 26ft of ~1mm / ~0,04inch / ~18 gauge wire.
4. Plenty of wiring tape. (Way more than pictured) How much exactly will depend on how you decide to repackage the loom.
5. A soldering station, and accompanying skills: Mine was 10 euros, it really doesnt have to be anything fancy.
6. Something you can use to pull a wire through the flexible hose in between door and body: **Must not contain any sharp edges**
 7. Wire stripper.
 8. Wire cutters or Scissors.
 9. Box cutter
 10. A multimeter
 11. Tools:
 - Torx 15, 20, 25, 30, 35
 - Security Torx 50 -OR- Torx 50 & a rotary tool to grind out the security pins of the bolts.
 - Inbus / Allen 5
 - Hex sockets: 10, 13, 16, 17
 - Flathead screwdriver (for prying)
 - Regular sized Philips screwdriver

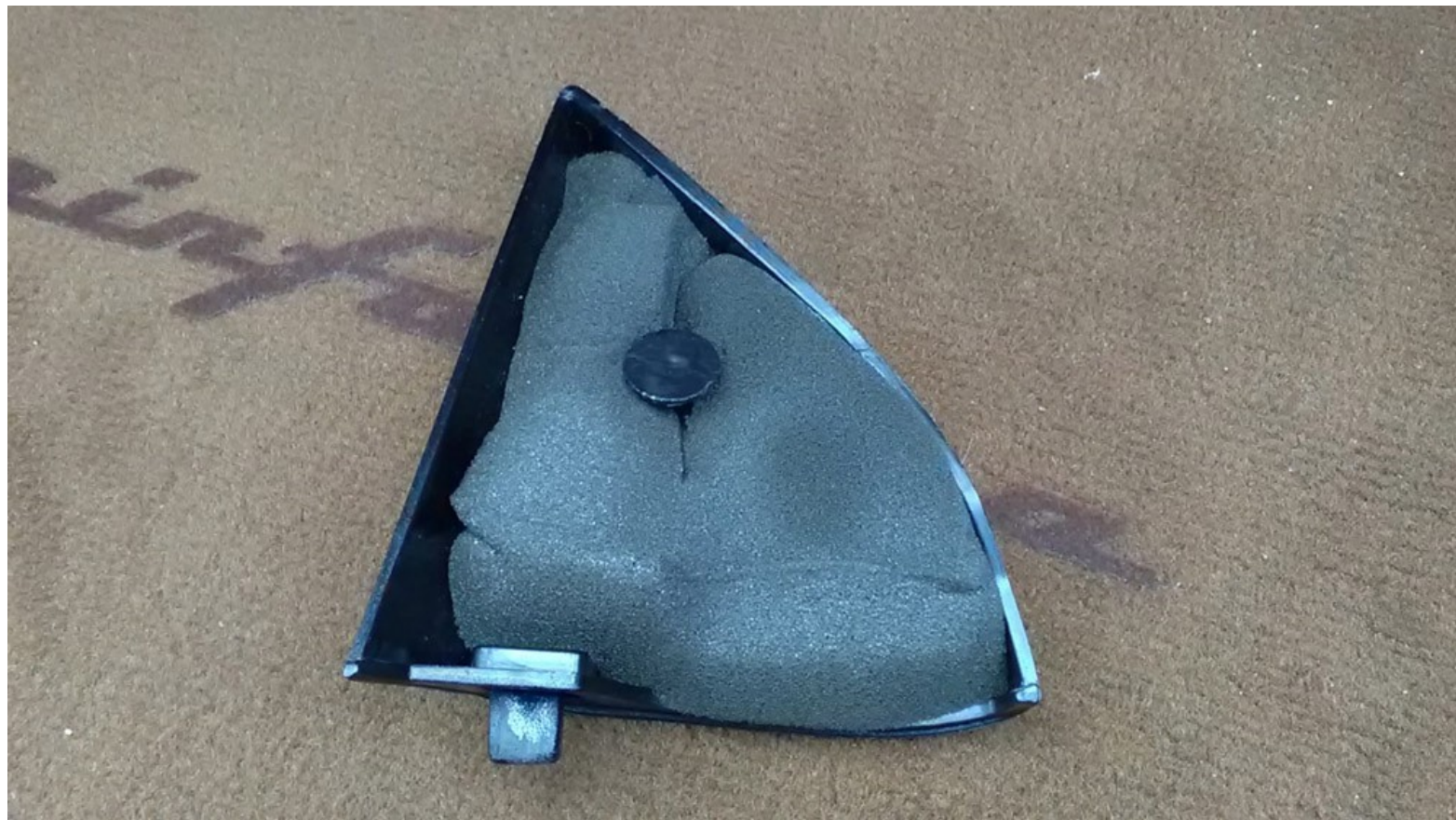


First, we'll prepare the pin we're going to insert into the window mechanism connector. Since we can simply push this in from the rear, the spare connector may be harmed in the process. I simply cut up the plastic surrounding the pins, as to extract the pin in perfect condition. Note the blue rubber part connected to the pin. Leave this, and a part of the wire connected, as it'll serve as a gasket for any water that enters the inside of your door.

Next, it's time for what is probably the bulk of work in this modification: Taking out some of the interior. And with some, I mean the door cards, seats and dashboard. I do suppose you can do this without fully removing the dash, but in my experience it's better and even faster later on to create some space to work with.



Now remove the screws, indicated by the red circles. One behind the black cap below the handle, one behind the top of the handle, and one behind the black cap in the top corner. Also remove the light in the bottom corner, the trim around the handle, the window switch and the black triangle trim piece on the back of the mirror. Be extra careful with this last one. It is secured by a pin that can be moved out of its place by sliding it upwards. It should be a little easier to do while the window is opened.



The rest of the door card is kept in place by plastic pins that can be pried/pulled off. It's best to start on the bottom and work your way upward.



Next, disconnect and remove the speaker. Four Philips screws keep it in place. Now you should be able to take off the grey insulation layer. If this has never been done in your car, you might have to cut along some parts that sandwich the material between part and door. Hopefully, yours doesn't look as gutted as mine. The inside of the door should now be visible, which looks like this:





Next, we'll remove the seats: Four bolts keep them in place. Start off by moving the seat forward, and remove the rear bolts. Now move the seat backward and remove the front ones. Disconnect all wiring and remove them from the car.



Underneath the seats are plastic covers, kept in place by some torx bolts (3 on driver's side, 2 on passenger's side). Remove these to get down to the carpet. Finally, disconnect the battery now to prevent any electrical issues from occurring.

Next up: Removing the dashboard. I won't go into detail on how to do this, as there's perfectly clear instructions in [this youtube video](#).

I will say that it's a good idea to prepare a few sheets of paper to move the removed bolts on to, allowing you to write down their location so it's easier to put it back together. Also, it might be a good idea to have someone help you take out the dashboard. It isn't crazy heavy, just hard to handle due to its size.

Now, with everything removed we can get to work on the wiring. Again, the full wiring diagrams are at the bottom of this How-To, but to reduce unnecessary complexity I'll only list what you should do here.

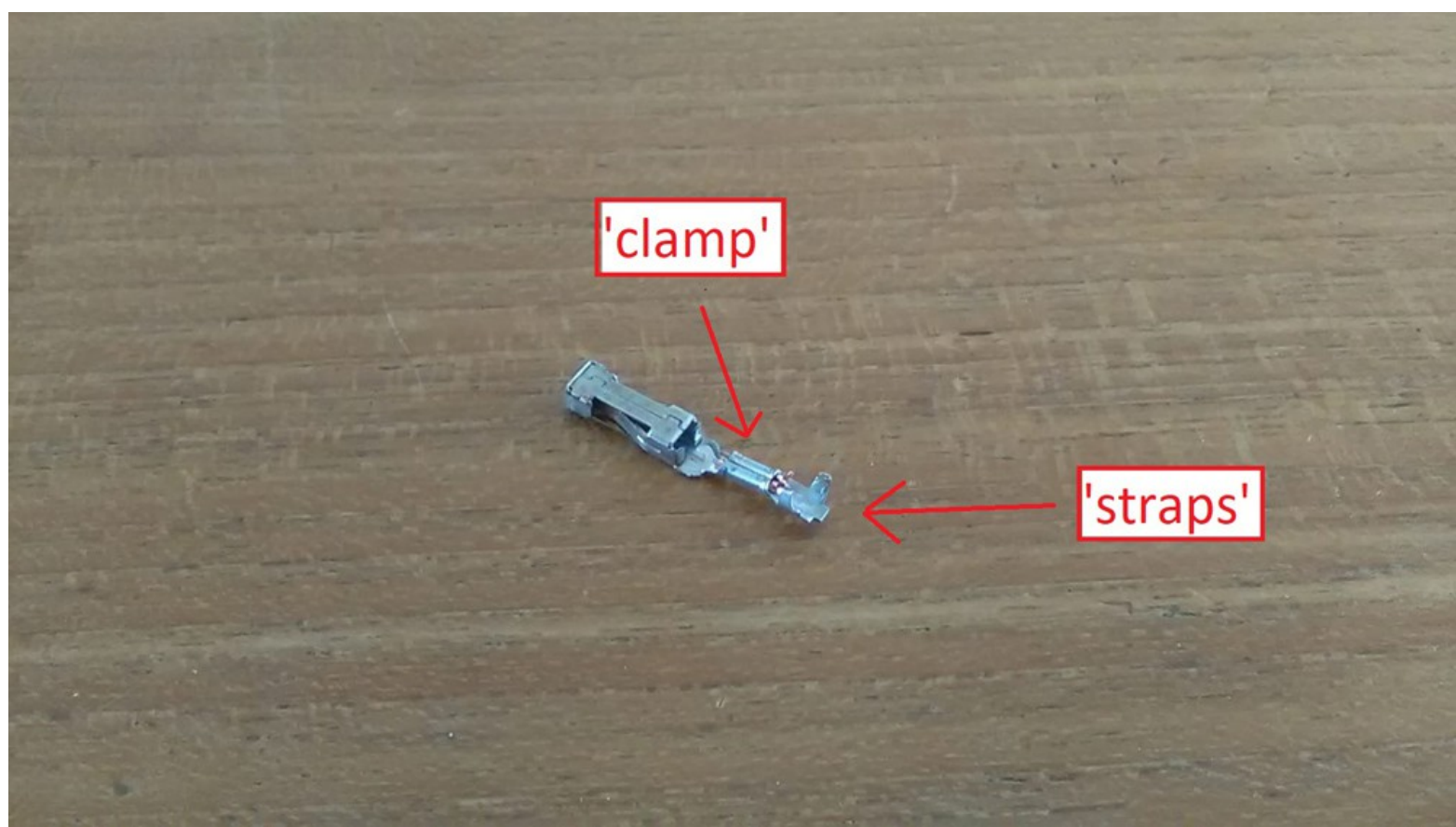


1	X	2	3
4	5	6	7

Looking at the window switch's connector **FROM THE BACK**, I've numbered the pins as follows (see picture). Note the X in my diagram; this is where the securing pin of the connector is. On the driver's side, you can already see quite clearly the differences between the automatic and manual connectors. Here, we'll be rearranging some of the pins already present, we'll cut some others, and make some new connections. Let's do it:

- Cut wires M601A (pin 6) & M601B (pin 1). They should both be connected to a wire junction, a few inches from the connector. It's best to cut them off there. Extract the pins that come out of the connector for later use.
- Remove the following pins from the connector: 3, 4 & 5. To clarify: pin 7 (wire 6061\$) stays put.
 - Insert wire 6173B (came from pin 5) into pin 1.
 - Insert wire M601 (came from pin 3) into pin 2.
 - Insert wire 6071B (came from pin 4) into pin 5.

Next, take out your box cutters, and remove the remaining wire from the two pins you took out previously. This is where the box cutters come in: My advice is to pry open the 'straps' at the far end, and cut the copper as close to the 'clamp' as possible. You should be left with something like this:



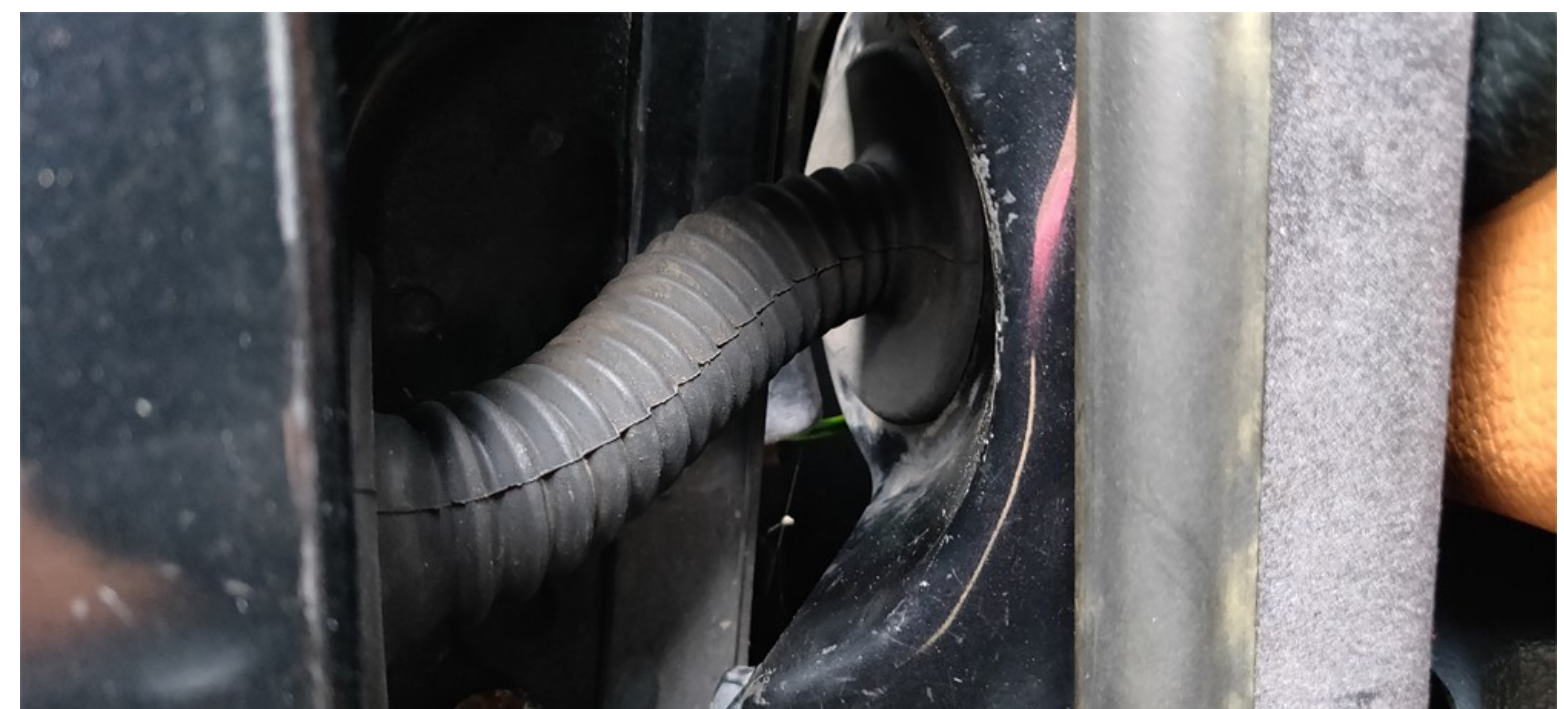
Take out your soldering station and new wire. Before doing anything, consider how you'd like to make the new connection. In my experience, the best way is to solder the wire on top of the pin's 'clamp' and use the 'straps' to secure it further, as per the image below:



Moving on, we'll have to cut off a short piece of 'jumper' wire, and solder that to one of the pins. About 3-4 inches should be plenty here. Next, solder the remaining length of the new wire to the other pin. Lastly, solder the exposed end of the 'jumper' wire to the other pin. You should now have both pins connected through the jumper wire, and the rest of the new wire coming out of one of the pins. Now:

- Insert the pin with only the jumper wire attached into pin 4.
- Insert the pin with both new wires attached into pin 6.

That's it for the drivers' side connector. Now for the nasty job of getting the new wire into the passenger's side door. How neatly you'd like to work here is up to you, but do remember that doing a better job here means your setup might last a bit longer. Personally, I wanted to do this properly, so I removed all of the wiring tape, tucked the wire into the loom and re-taped it afterwards. You could also just slap it on top, put a few tapes around it every few inches and call it a day. It's up to you.



Tip: Make sure you're working in a dry environment for the next bit. I had to find out the hard way that any rain or the like is quite inconvenient, as the cabin and doors are open to leaks for the time being.

Anyway, the wire has to go through the rubber hose/grommet first. I've found it to be the easiest to disconnect all wiring within the door to give you some space to work with. Now, you can pull off the rubber on both sides and move the loom out of the door area a bit, allowing you to straighten out the hose. This should make it easier to push or pull the wire through. Here, I used a piece of stiff, rounded metal wire that I gently pushed through from the rear, attached the new wire to and pulled it back through.

Be careful while doing this, as it's possible to damage the wiring loom if you decide to push and poke around too much. This is also why it's crucial to make sure that whatever you're using is rounded and doesn't have the ability to cut into any of the wires. Some lubrication might also be convenient here.

With the new wire now on the inside of the cabin, include it in the wiring loom by running it along the drivers' doorsill, under the seat area, along the passenger doorsill and repeat the process with the rubber hose on the other end again. The worst part is now over!

With the new wire now inside the passenger door, it's time to rearrange the wiring on this connector as well. Start off by cutting the newly routed wire to size, so it may fit into the connector comfortably. Save the excess wire you just took off. Next:

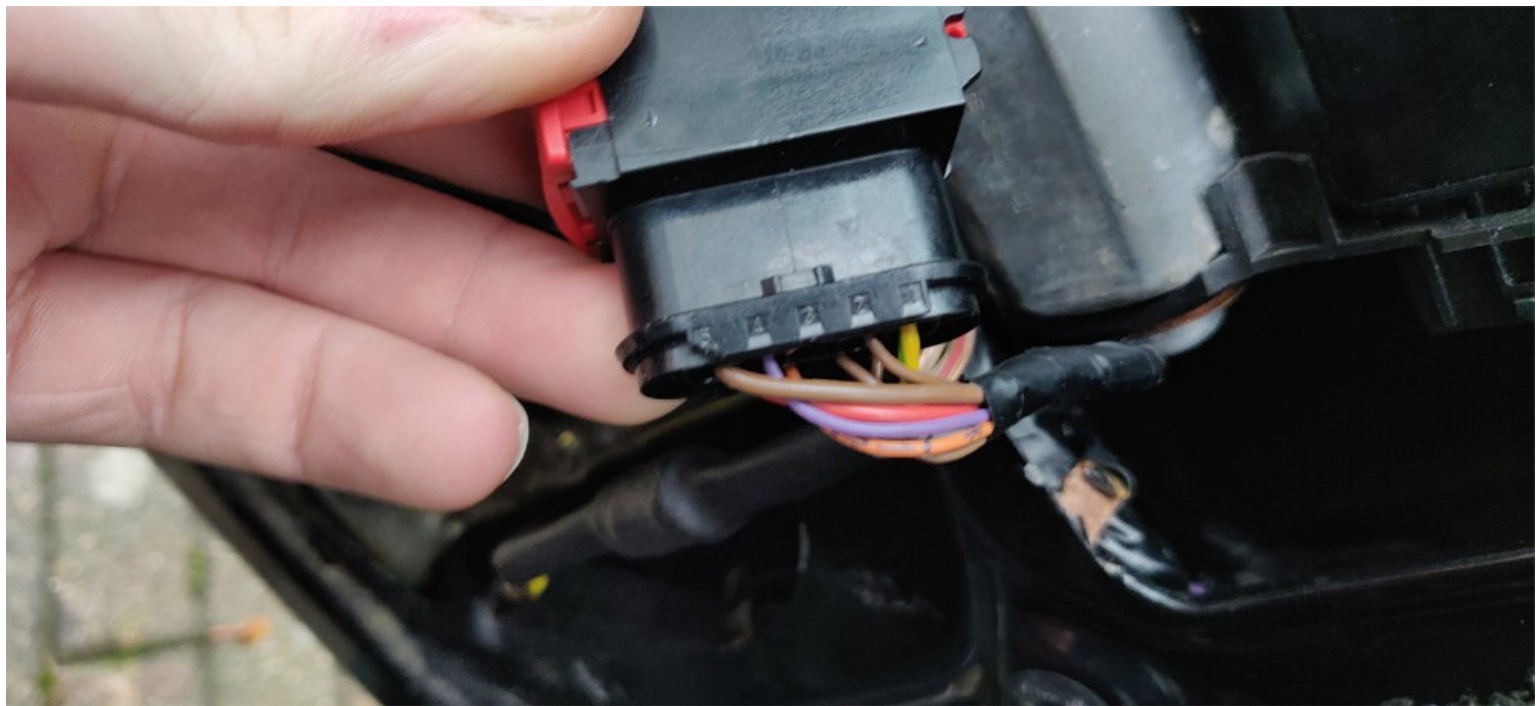
- Remove pins 1, 3, 4, 5 & 6 from the connector. To clarify: Pin 7 (wires 6061A & 6061S) stays put.
 - Insert wire 6173D (came from pin 5) into pin 1.
 - Insert wire M605 (came from pin 1) into pin 2.

Take out your soldering station once more, and make the following connections:

- Join wires 6071A & 6071B on a single connector. Insert into pin 5. Save the extra pin.
- Join wires 6061A & 6061S on a single connector. Insert into pin 7. Save the extra pin.

- Cut a few inches of jumper wire (just like before) and connect to one of the leftover pins. Insert into pin 4.

- Join the other end of the jumper wire, the newly routed wire and the whatever's left of the excess wire together on the other leftover pin. Insert into pin 6.



With the passenger side switch connector done, pry loose the connector of the window mechanism. The red tab on top is pushed upwards, while simultaneously pulling the connector off the mechanism. A black cap that shields the wires going into the connector can be pried off by pushing it upward. Note the numbers on the exposed end. Pin 3 is left open, and a rubber piece is inserted as end cap. Use a wire/pliers/screwdriver/needle/whatever to pry it out. Also (gently!) pry out the red clip on the inside of the connector.

Next, take the new wire coming out of the switch's connector and solder it to the pin you extracted at the beginning of the process. Make sure there's enough wire to put everything back together.

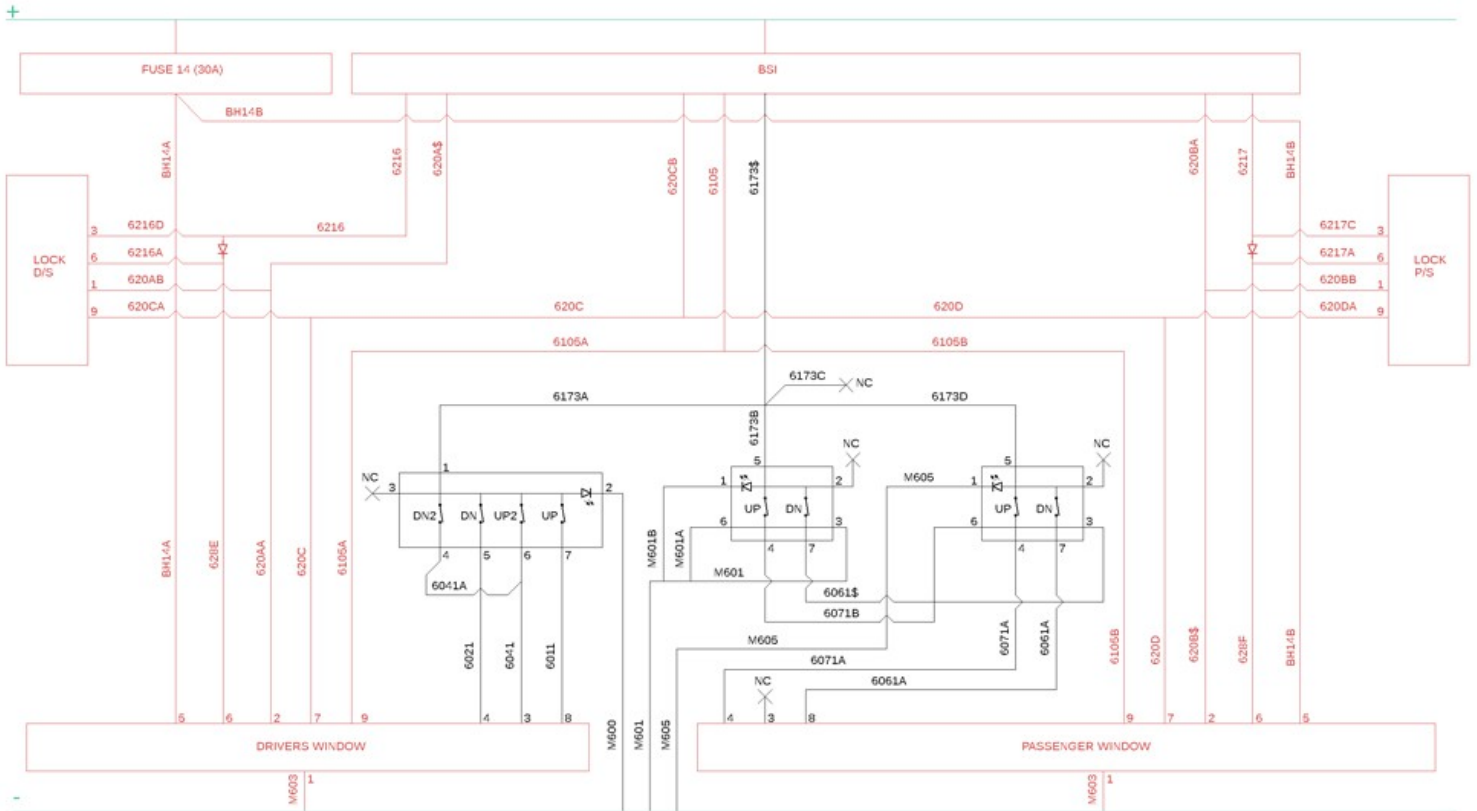
Lastly, orientate the pin properly and push it into the connector. Make sure the blue rubber bit has a proper seal. Push the red clip back into its place, as well as the black cap.

Finally, take out your multimeter and check if all connections work according to plan. I suppose this step could be considered redundant if you've done a proper job, but it can't hurt to be sure before you fire up your new setup. If everything checks out, plug in all connectors and test the system. Make sure to swap the manual switches for the automatic ones.

If the automatic function works as its supposed to, you can start taping up the wiring looms and putting the car back together. As always, installation is the opposite of removal.

Appendix: Wiring diagrams

The images below are the wiring diagrams I made concerning the original and modified setup respectively. Notice how the black part is a completely separate circuit from the automatic functions, such as the keyfob's remote windows-up. This is what allows us to change the wiring without running into any issues.



Note: Some of the wiring in this second diagram have no identification. These will be the wires we have to add ourselves.

