

Step 1: Choose your LED Lights

Start by finding the rear bumper lights that you like (Ebay is a great source, but also I've seen them at iJDMToy, etc.). I opted to go with these more advanced lights that also tie into the blinker to give that real high end feel to the blinkers.

They are called "The Arrow" from EBay:

<https://rover.ebay.com/rover/0/0/0?mpre=https%3A%2F%2Fwww.ebay.com%2Fulk%2Fitm%2F302949344772>

TEST & VALIDATE:

Always be sure that your new LED lights work before going through all the work below 😊!!! Trust me from some lessons hard learned.



You can test them easily by touching the wires to a 12 volt source (e.g. the Car battery)! Just be sure to never accidentally touch the **black** negative wire to the positive terminal of the battery, or let any other wire short the black out with the positive on the battery....

I used alligator clips and some electrical tape to help me test them, since I didn't have an extra pair of hands... and more info. on the wiring diagram for "The Arrow" lights is below in **Step 7**.

If all goes well then your new LED lights should work just fine!



Step 2: Removing the Rear Bumper Cover

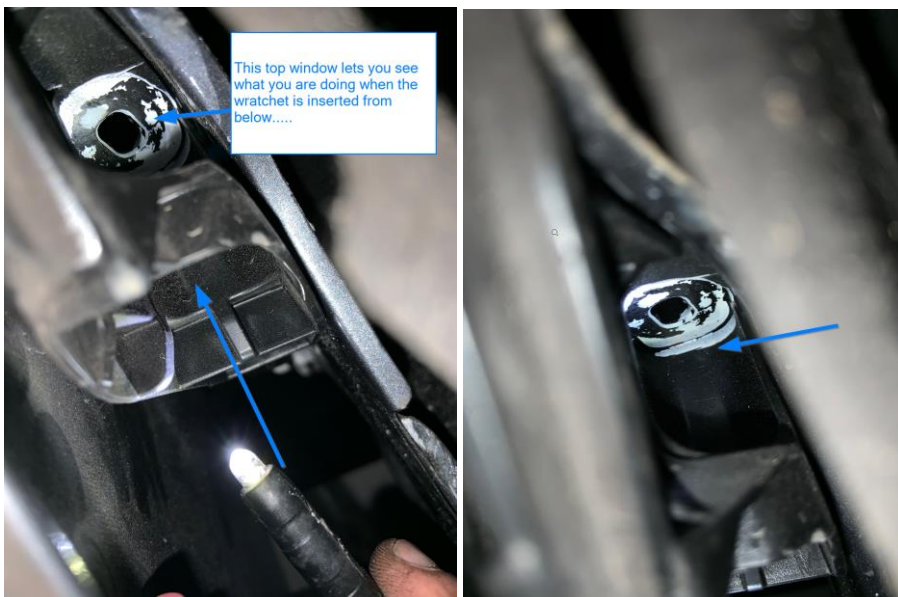
You will have to remove the bumper cover to swap the bumper reflectors -- my research and experience hasn't shown any other way due to the very snug fit of the plastic skid plate and the rear bumper.

This existing DIY was extremely helpful for me and worked exactly for the RC-F also!

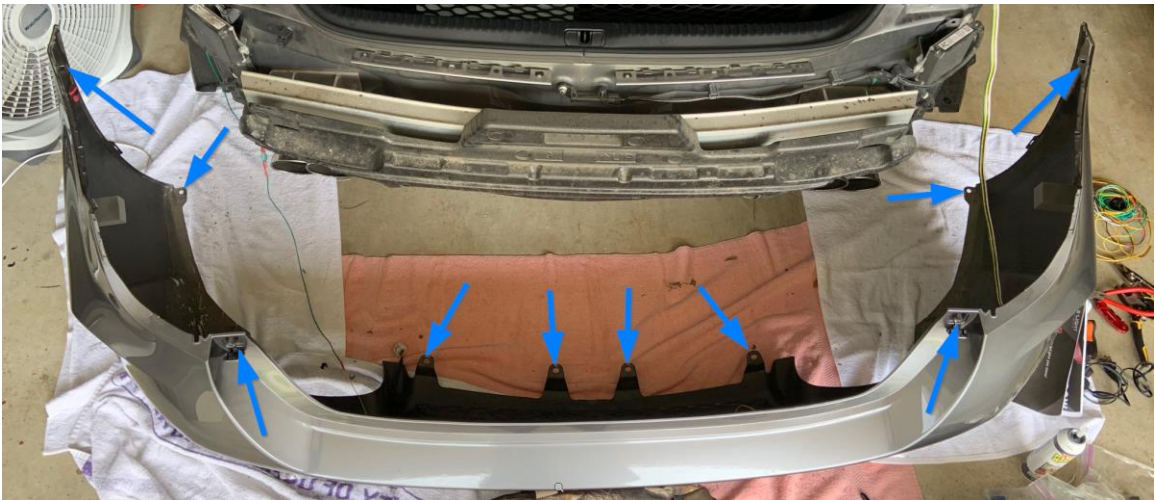
[DIY Rear Bumper Cover Removal](#)

As the above link recommends, you will DEFINITELY want to get a Blanket (or several towels as I had to use) to prevent any risk of scratching/marring of your bumper cover!!!

But, as an additional help I took some more pictures in case these also help anyone else doing it for the first time. The toughest part is accessing the concealed 10mm bolts on the side wings behind the rear wheel wells. By pulling back the fabric wheel well flaps you can see them with a flashlight, but what I found super useful was that there is actually a front facing window you can peek through as you guide the socket up onto the bolt.... Hopefully you can see that in the images:



Eventually you will have removed **six plastic fasteners**, and **four 10mm bolts**, as the **permanent holders**... the rest are just pressure clips! Here's a pic of the bumper cover removed with all key elements highlighted:



Step 3: Remove the Tail Lights

This is necessary because you'll have to splice/connect the wiring behind at least one – you'll need to connect the signal indicator/blinker wire behind both if you choose an LED light that supports this.

Building upon other useful DIY for the RC-F Tail Light LED Bulb upgrade – specifically this post here which greatly simplifies the original DIY:

<https://www.clubexus.com/forums/rc-1st-gen-2015-present/779736-diy-how-to-replace-taillight-bulbs.html#post8985861>

NOTE: If your LED upgrades do not have any signal indicator functionality (and assuming you aren't upgrading the LED bulbs of the tail lights/reverse lights at the same time), then you may only need to remove just one tail light and can wire all power, daytime running, and brake lights from just one light.

You can remove the two 10mm bolts from the trunk area, and gently pull/pop out the tail lights! Be Gentle because when they pop off they REALLY pop off with a lot of energy and you do run the risk of scratching your paint. Once you've done it once it's definitely not that hard, but it can catch you by surprise. The first time I ever did it I put a bunch of painters tape all around the light just to be extra safe.... And it was probably a good idea that I did that because it did rebound and hit the tape!



Step 4: Completely Disconnect the Tail Lights

You need to completely disconnect the tail light harnesses (which can be a real pain, but hey do come off. I didn't take any pictures of this step because the harnesses are pretty self-apparent, but can be annoyingly stubborn. Just get them off safely however you feel necessary.

Then safely stow the tail lights in the trunk (or wherever) for safe keeping!

Step 5: Remove the original OEM reflectors

I didn't take a detail picture here because it's pretty easy. There's a single screw in the back of each reflector that must be removed first. Then it's held in place tightly by a hinge lip on the opposite side of the reflector (opposite from the screw side). But it will probably just fall out . . . the hinge is key however for installing the new reflectors.

Step 6: Drill an appropriate sized hole through the bumper for the wires

The wires need to feed through the bumper to reach the taillights for connection. In my case there were 4 wires on each of the new lights, and they were sealed with hot glue so that took up a little extra space.

I test aligned the new LED's and marked the location of the wires with a small piece of painter's tape, and then drilled two small holes as pilot holes. Then I followed up with a ¼ inch hole, and then I widened them with 1/2 inch bit into larger holes, and then hollowed out between them to make ample enough room – precision isn't too necessary.

I did this incrementally to a) minimize risk of chipping paint (though that would be easy to glue/seal up behind the light if necessary, and b) to minimize risk of the Drill jerking and accidentally hitting the bumper cover paint.

You could also put some electrical or painters tape on the bumper where you plan to drill to help minimize risk. And, you could also drill from the back if you'd rather do that – honestly the thought hadn't occurred to me at the moment.



Step 7: Plan your wiring route . . .

For this my goal is simply to minimize the number of wires I needed to cut/splice . . . If your lights don't have any signal indicator functionality you could route them both to just 1 tail light and splice only on one side.

However, these have signal indicator capability so that slight complicated things and is the only reason that I had to remove both tail lights (vs just one in Step 3 above).

Each of these bumper lights has 4 wires as follows:

- Ground Wire: **Black**
- Daytime Running Light signal (DRL): White
- Brake Light signal: **Red**
- Blinker Indicator signal: **Yellow**



So I decided to share the signals for the first 3 (Ground, DRL, and Brake), and then only run the Blinker indicator to the other side. This mean I would have a total of 5 splices – 4 on one side and 1 on the other!



This also meant that I could use a basic trailer harness as a quick disconnect and one single quick clip as the disconnect on the other side.

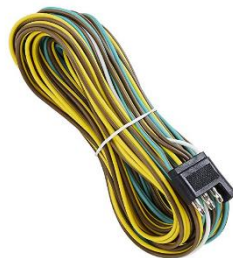
So I split the wires (pulling the yellow to separate it and routed all the shared wires to the Passenger side tail light – I don't know why, but that just felt like the best flow . . . more art than science 😊

This is the quick disconnect Harness I picked up at Wal-Mart for \$5 (you can't beat their prices for cheap Trailer wiring – trust me I've checked . . . electrical wiring can be pricey but the Amazon & Wal-Mart Trailer wiring kits are a perfect way to get all the automotive quality wiring you need for small projects for ~\$15-\$20).

I had a little left-over trailer wiring from my last project a while back, but if you don't have a few feet of Green wire (in addition to this harness), or just need wiring in general, just pick up a "Trailer wiring kit" to get quality electrical wire on the cheap!

[Amazon link to some wire on-the-cheap...](#)

[Wal-mart link to some wire on-the-cheap](#)



Step 8: Connect the shared wires together with the quick disconnect harness

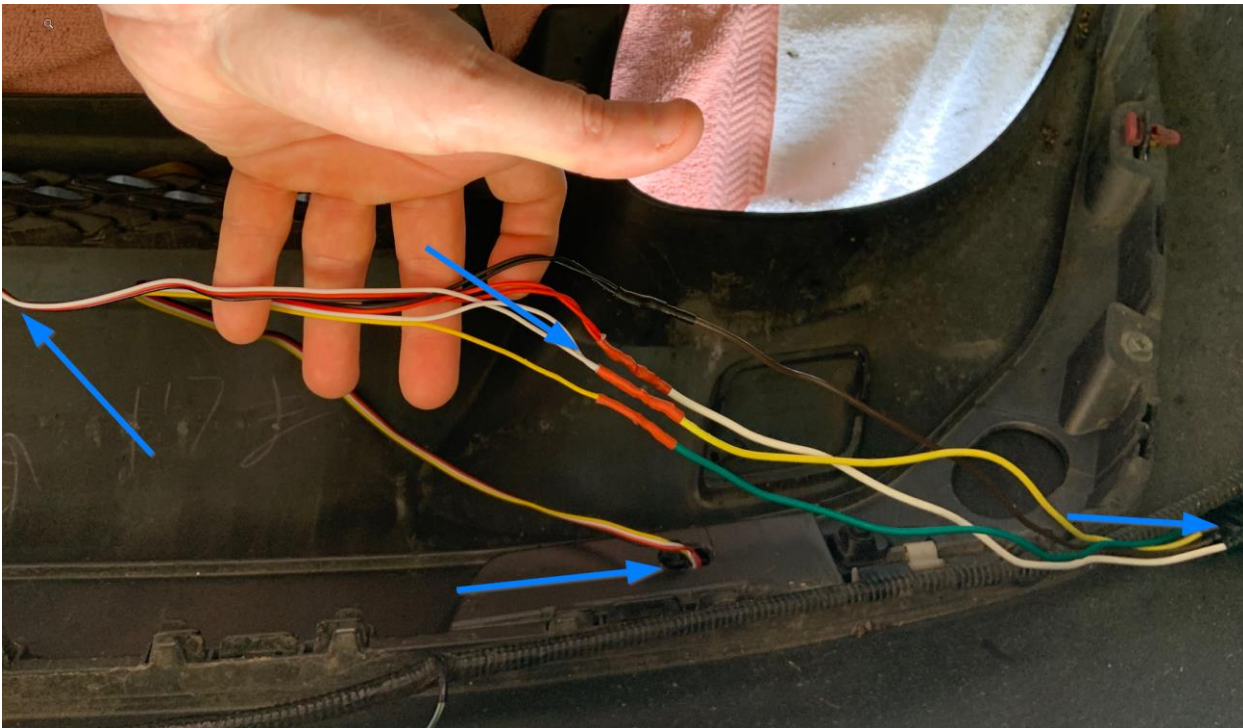
I pulled the 3 shared wires from the drivers side over and routed them along (nothing permanently zip tied yet, just routed to ensure I had enough (but not too much) length....

Then I spliced them together. Here is where I twisted, soldered, and used heat shrnk tubing to secure all of my connections. But, this part is totally up to you depending on your level of OCD and concern for weather corrosion, etc. (If you live up north near salt I'd highly recommend going the extra steps)... But you could just use crimps, and cover it all with some Silicone (Flex Shot is what I used).

This part is easy because you just match each color to color from the bumper lights, but as they mate up to the quick connection the colors will change.

That's where I decided to make the disconnect harness colors match up intuitively to the colors of the RC-F OEM wiring, and then mapped those to the wiring needed for the bumper lights.

Here's the final image of these connections at the bumper, and the mapping is below:



Step 8: Connect/splice the quick disconnect harness to the OEM wiring

The wiring signals on the RC-F behind the Tail Light are as follows:

- Ground Wire: **Black**
- Daytime Running Light signal (DRL): **Yellow**
- Brake Light signal: White
- Blinker Indicator signal: **Green**

I know this can get confusing, but all that's needed is to make sure the wires match up..... yes, if you go purchase wire with exactly the same colors this would be a whole lot easier . . . but, for some reason my OCD is perfectly fine with this



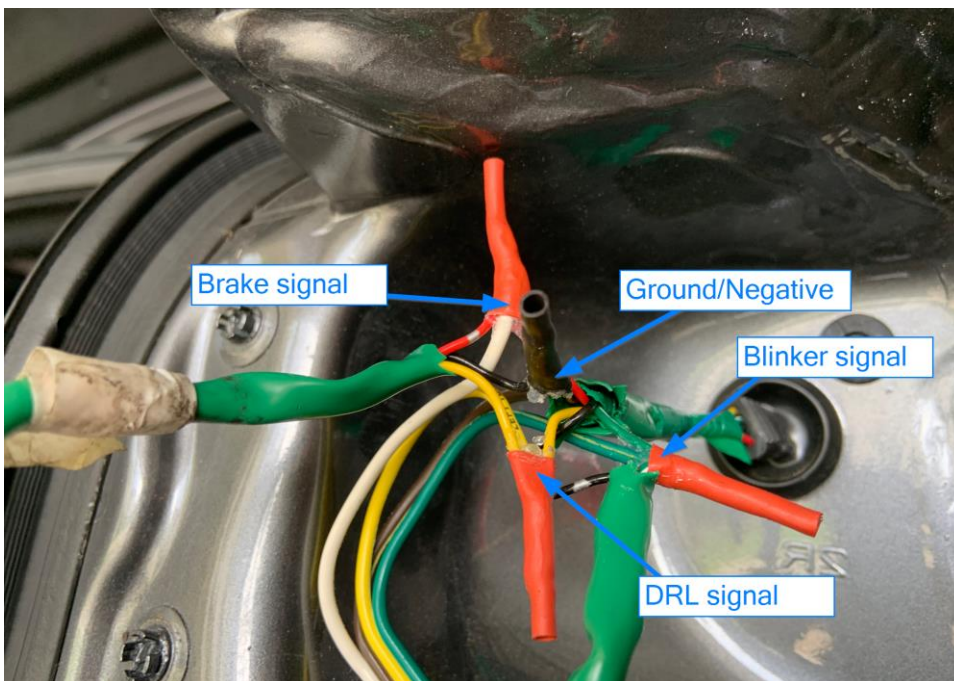
Therefore the final mapping for my wiring connections end-to-end is:

Bumper LED light → Harness → Tail Light OEM Wiring

- Ground Wire: **Black** from light → **Brown** on Harness → **Black** OEM wiring
- Daytime Running Light signal (DRL): White from light → **Yellow** on Harness → **Yellow** OEM wiring
- Brake Light signal: **Red** from light → White on Harness → **Red** OEM Wiring
- Blinker Indicator signal: Yellow from light → **Green** on Harness → **Green** OEM wiring

Note: There are two blacks in the OEM wiring, and both are negative to support the different lights. I chose to only cut the one wire on the blinker for the signal (and did the same on both sides). Therefore I cut three wires on the other harness that went powers the Lexus “check” original brake lights.

Here is the spliced connections behind the passenger side tail light, where you can see the Harness wiring mated with the OEM Wiring:



I chose to cut each wire on the OEM harness and then splice the quick connect harness into them by twisting all together (tightly). Then I soldered each and ever connection and finished it with shrink wrap and some silicone (Flex

Shot) to fully waterproof them (on that note, I let the Flex Shot dry over-night because I decided to wrap up for the day and put all back together the next day).



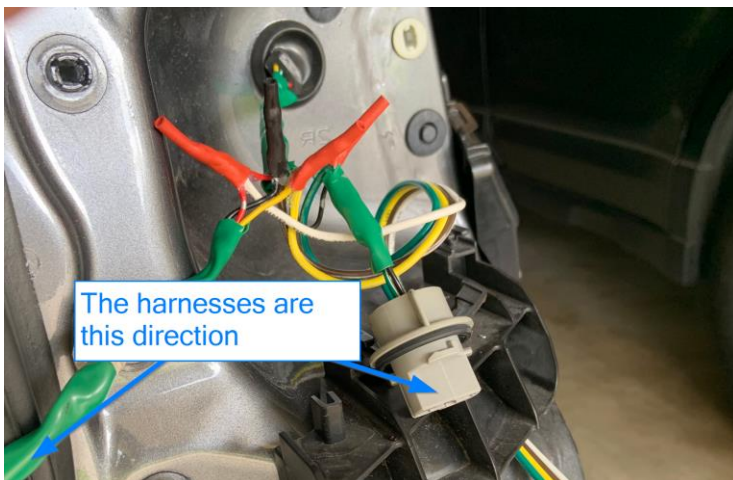
But, you could just as easily chosen to just crimp the splices with something like these that are readily available on Amazon, or at Lowes/Home Depot.... Part of me wishes I would have simplified and just used these, and then pumped some silicone at the base to seal them up!

I am NOT a fan of these Scotchlok inline splices because I have had them fail multiple times . . . so I **do not recommend these** or their similar T-taps . . . but that's just my opinion based on my personal experience with many car & boat stereo, lighting, amplifier, etc. installations.



Feel free to use whatever you are comfortable with 😊!

Here's another couple views of the OEM splice connections:



Step 9: Connect the Drivers side Blinker/Indicator Signal

Now we just need to splice one more connection on the driver's side for the driver's side blinker/indicator signal.

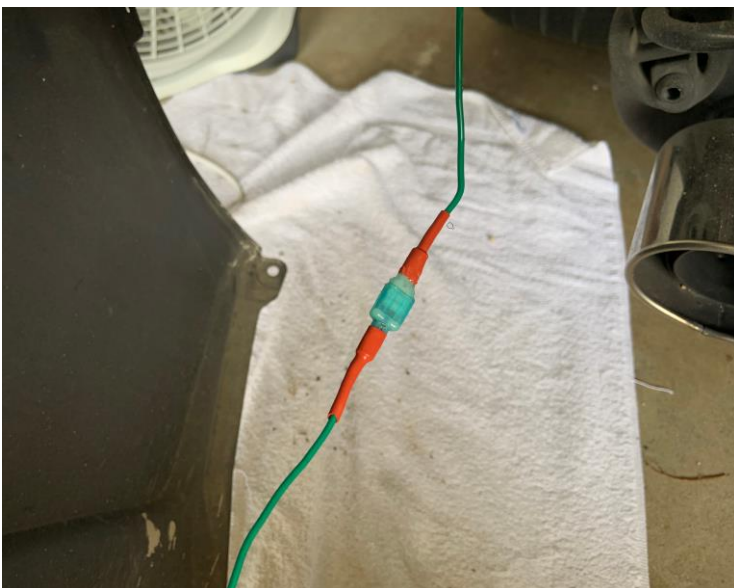
Because the wires from the Light are quite small gauge, I decided to cut it shorter and then attach a larger signal wire (mainly for strength in case it gets yanked on. I did this just as I did the harness wires running to the other side:



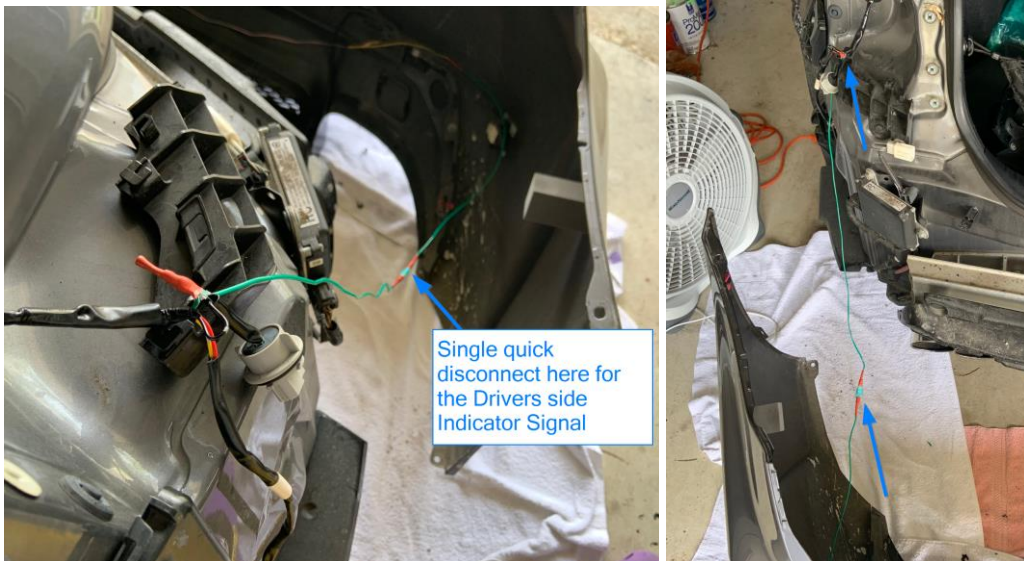
As before I converted the yellow signal indicator wire from the Light to a Green wire to match up with the OEM wiring so this is exactly as it was on the passenger side:

- Blinker Indicator signal: Yellow from light → **Green** on Harness → **Green** OEM wiring

Then I also inserted a single quick disconnect clip on the end of the Green Wire... (these are the only crimp based connections that I used):



Finally I spliced the indicator signal wire into the Green signal wire of the OEM wiring at the driver's side tail light:



Step 10: Test & Validate!

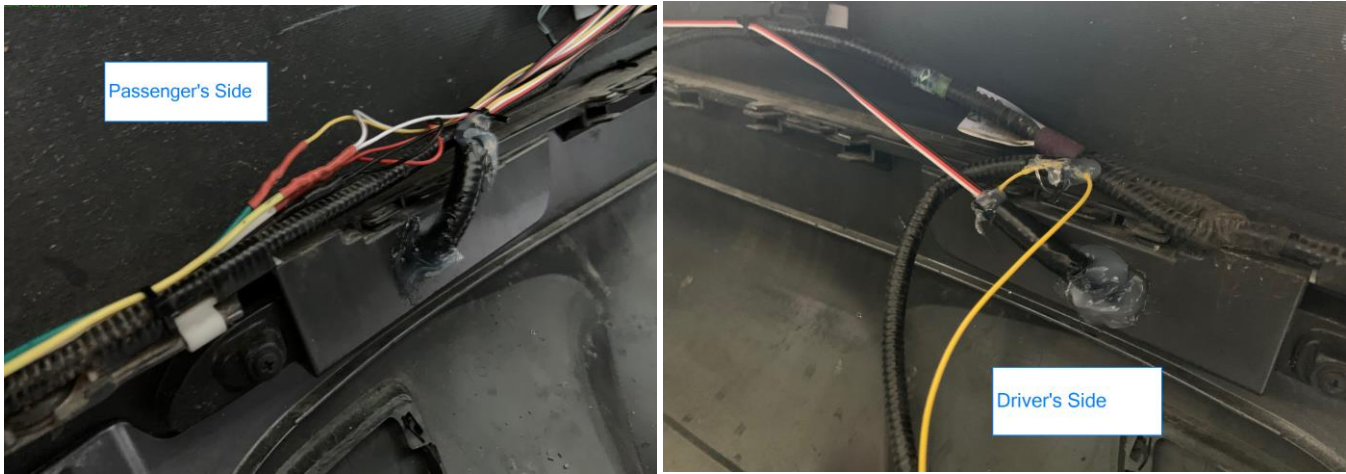
At this point you should be able to connect the harness and test/validate everything is working as expected. If not . . . then get your multi-meter out and check connections based on what is not working. This isn't something I can get into depth on in this DIY.... But mine fired up and worked perfectly!

To test the brake lights I just placed a cover over the bumper lights so that I could see the light more clearly go from dimmer to brighter (DRL to Brake light intensity) when I quickly tapped the breaks.

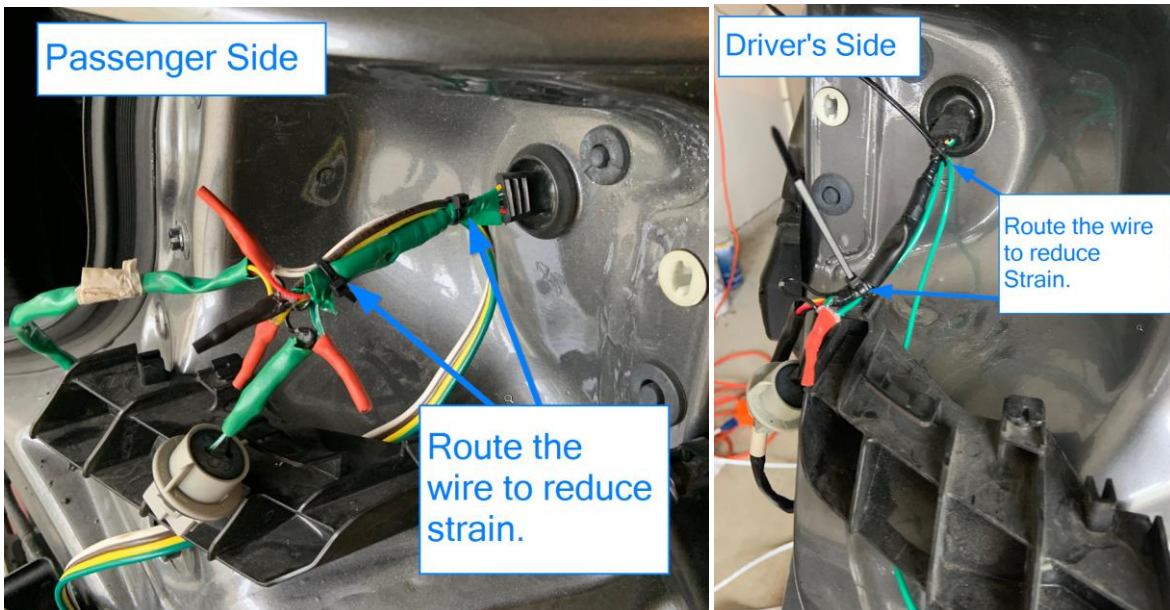
Step 11: Route and Secure the Wiring

We can't just leave all the loose wires to jostle around all the time.... So now we need to route and secure the wires. But, we're getting so very close to putting this all back together!

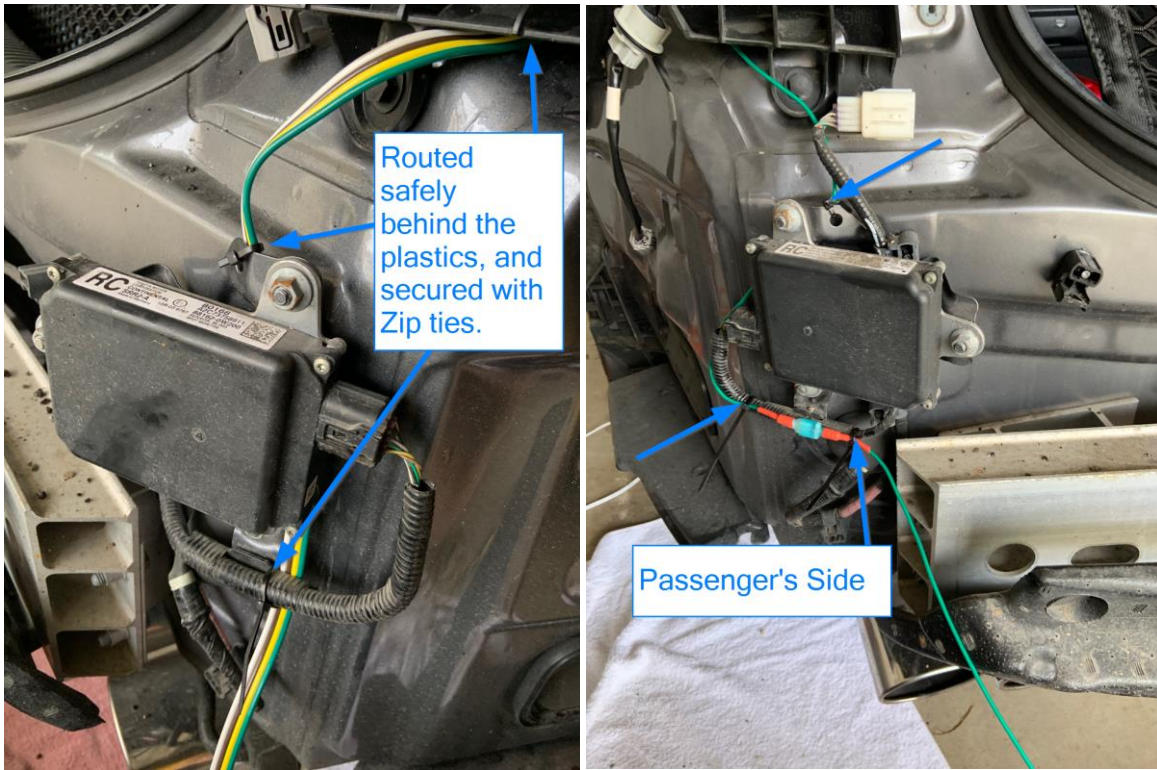
At this point I realized that the thin wires from the lights might rub and get cut by the (sort sharp) edges of the holes I drilled. So I decided to put some split loom tubing (3-inch piece) around the wires, and then taped it all up. Finally I securely sealed it up with silicone (man I love Flex Shot!) . . . so I feel quite confident that there's no more risk of abrasion:



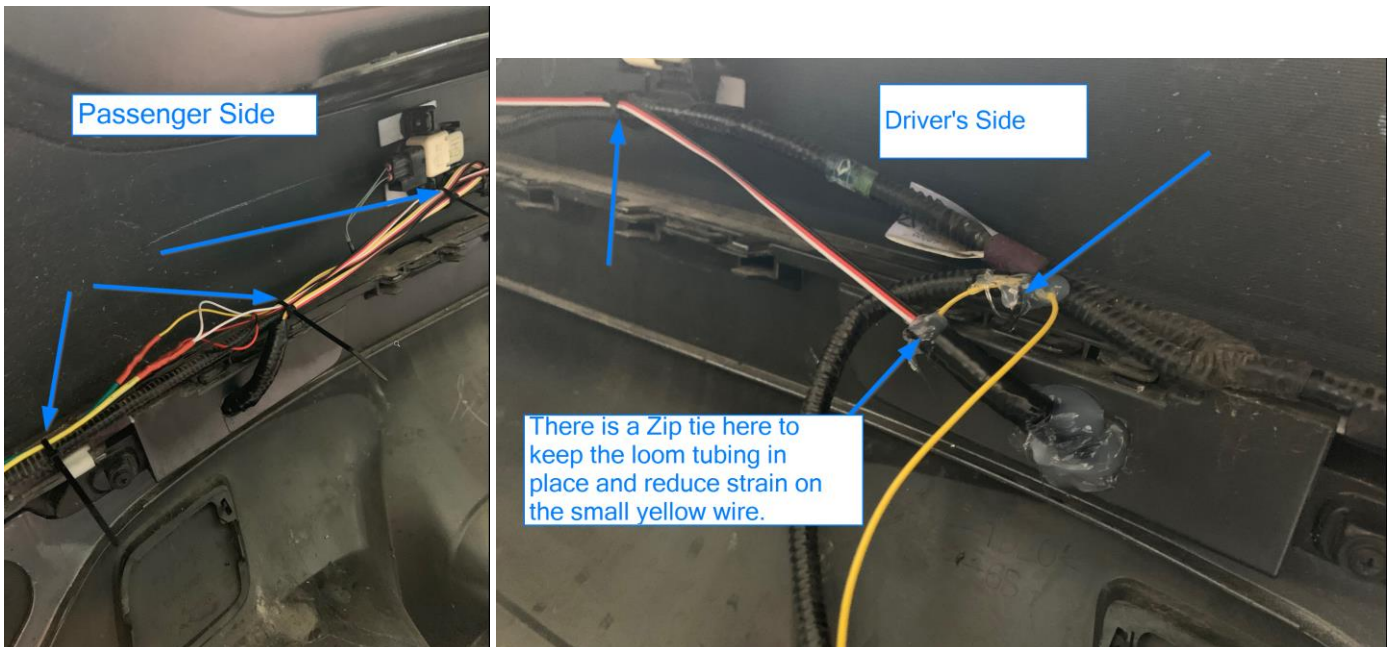
Then I proceeded to route my wiring and secure it with ZIP ties, first down from the Tail Lights:



Run the wires behind the plastic rail and the metal brackets that hold the radar BSM (I'm guessing):



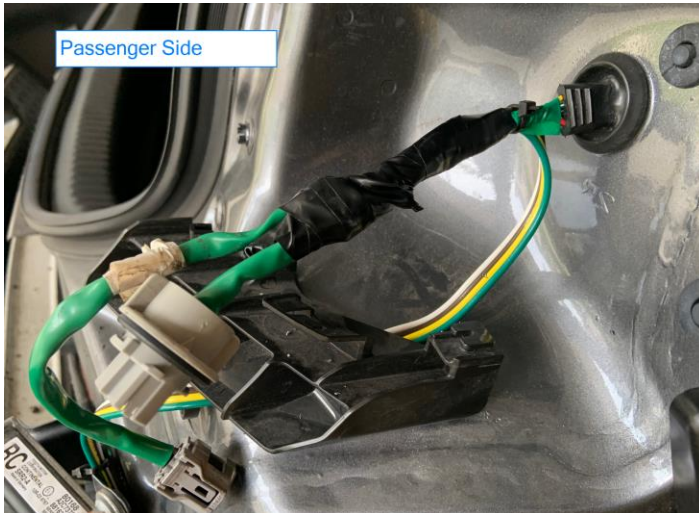
And then secure all the wires across the bumper by tethering the wiring to the existing split loom tubing of the radar sensor wiring; which is mounted very securely – Thanks Lexus 😊.



Step 12: Tape up the Splices to be extra safe and get back that OEM wiring look 🤪

No we haven't forgotten about our Splices . . . they need to be taped up and that'll get us that OEM wiring look again. I gently folded my splices backwards to lay them flat against the main wiring – in a way that will **reduce any strain**, not to add any strain!

Then I started wrapping one of the splices with electrical tape, then kept going in loops and once it was all covered I'd add in the next splice, and so-on until it was all taped up extremely securely into one contiguous wire . . . and it looked pretty clean!



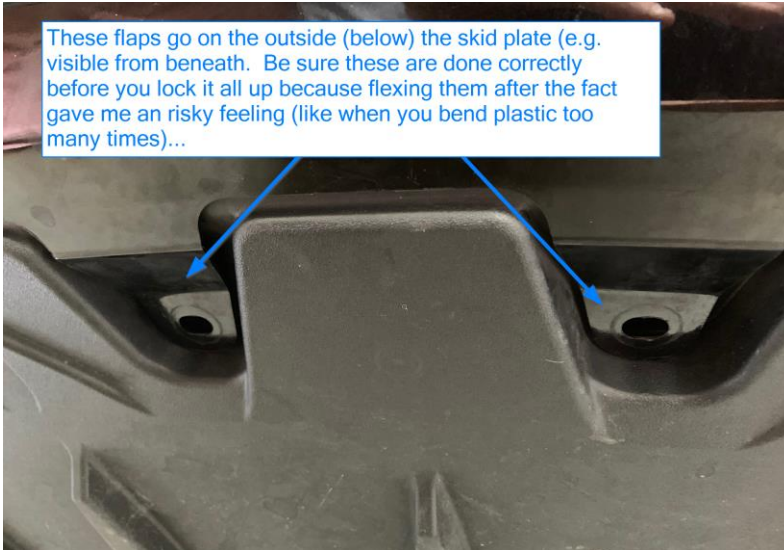
Step 13: Put the bumper cover back on...

First re-attach the Bumper by reversing the steps from before (and in the aforementioned DIY):

1. Lift it gently from the center and align the center with the trunk, and mate the concealed lip of the bumper up to the concealed rail!
 - a. It's tough to see in the image but the concealed lip will go into this rail... be careful to align them correctly -- this is the hardest part of putting it back together.
 - b. I found it easier to rest the cover on the rail and carefully align the outer sides (left & right) and gently push in (don't lock it until you're sure the alignment is right)... and then sort of pry the difficult parts of the lip in-between the clips slowly from the outside in!
 - c. There is a strange clip near the center that is the most difficult and appears as though it would always block the entrance, but once the outer sides line up it surprisingly did slide over that difficult clip.
 - d. Another thing that was hard (by myself) was getting the left & right sides to stay above the plastic rail pieces that are right below the tail lights on both sides... the cover has to go above those, while trying to slip the hidden lip into the metal rail along the back.
 - e. It's more art than science here, as you've gotta figure it out. Though a pair of helping hands would probably help, I was able to do this on my own . . . eventually!
 - f. Sorry I don't have any more pictures, but I hope the above descriptions are somewhat helpful . . . and do refer back to the original [DIY Rear Bumper Cover Removal](#) here too



2. Once the Rail is set then you can gently snap in all of the top pressure clips and around both wings . . . ensuring they all clip.
 - a. NOTE: This is where I almost messed up! You NEED to check the alignment of the bottom flaps with the skid plate at the bottom now that the bumper is holding itself up! The security flaps from the Bumper Cover should be on the outside (below) the skid plate – mine accidentally went above and it was kinda scary trying to flex them back into place after the fact!

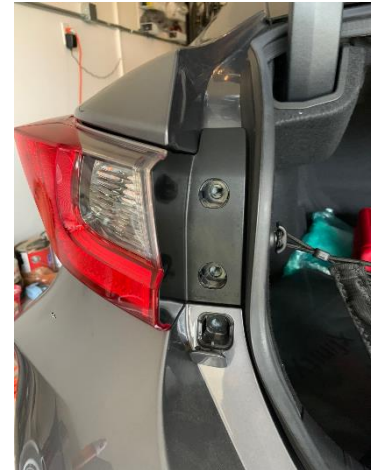


- b.
3. Next up are the hidden bolts that we removed from the wings behind the wheel well carpet. Just reverse the instructions above, and use a light to view through the hole as you slide the socket into place with one hand (because obviously the other hand is holding the wheel well carpet back)....
 - a. Yeah you could really use a third hand for that flashlight right about now 😊!!!
 - b. **NOTE: These bolts do not actually lock very tight...I found mind just kept spinning (though they were secure).... So I would NOT try and overtighten, they are really just hand tighten only!**
4. Ok now push in the clips in the wheel well and put the carpet wheel well guard back into place!
5. Finally you can put all the plastic fasteners back in place, and the last two 10 mm screws that go back up near the tail light assemblies.

Step 14: Reassemble the Tail Lights

This process is pretty simple..

1. Just re-attach the wiring harnesses (however you got them off safely is fine).
2. Secure the wire to the assembly again (that white tape part that goes back between the plastic squeeze clamps).
3. Gently slide the Tail Lights back into place and ensure the clips align and slide into place on the sides...
4. Now gently push the light back into position and the pressure security holders will pop back into place!
5. Finally put the 10mm bolts back into place to secure it in the trunk.
 - a. **NOTE: These bolts do not actually lock very tight...I found mind just kept spinning (though they were secure).... So I would NOT try and overtighten, they are really just hand tighten only!**



Step 15: Enjoy our new Bumper LED Lights!

Phew... that wasn't soo bad was it? Ehm . . . well it took me wayyy longer than I expected to type this all up . . . so I truly hope it helped!

