INSTALLATION INSTRUCTIONS

POWER FOLDING MIRRORS

5TH GEN TOYOTA 4RUNNER

BY KTJO 4x4

The purpose of this kit is to add motorized functionality to the 5th Gen Toyota 4Runner Mirrors. This is accomplished by adding an actuator inside the mirror and using the provided harness to plug into the factory wiring through the driver's door and mirror adjust switch.

PRODUCT DETAIL:

Mirrors will automatically fold when you lock your vehicle with your key fob. Likewise, they will automatically unfold when you start your vehicle. When heading into a narrow parking space or garage, pressing the "FOLD" button on the side mirror control switch, just left of the steering column, mirrors will fold in towards the side windows. To put them back into driving position, pressing the "FOLD" button again will unfold the mirrors.

REQUIREMENTS:

This will require removing the spring in your hinge location of your OEM mirrors, as well as, a couple other parts to mount the actuator that is needed for this power folding feature. Kit is **NOT** 100% Plug-N-Play.

Kit Contents:

- 2x – Power Fold Actuator (A)
- 2x – Connection Plate (B)
- 1x – OEM Replacement Adjust & Fold Switch (C)
- 1x – OEM Switch Wire Harness (D)
- 1x – Power Fold Motor Wire Harness (E)
- 1x – Automatic Folding Mirror Control Box (F)
- 1x – Power Fold Motor Switch Extension Harness*
- All Hardware Included*

*Images not shown

Items You May Need:

- Dremel
- Removal Plastic Pry Tool
- Drill w/ 1/8" Drill Bit
- Phillips Head Screwdriver / Small Flat Head Screwdriver
- 10mm Socket & Ratchet w/ Extension
- Slip-Joint Pliers / Retaining Ring Pliers / 12" Bar Clamp / 11/16" Socket
- Add-A-Fuse / 3M Wire Taps / OEM Terminals / Wire Cutters
- Electrical Tape
- Cable Ties

LEGAL TERMS, LIMITED WARRANTY, TERMS AND CONDITIONS

The seller is not responsible for any issues that may arise due to, but not limited to improper installation, wiring or application that may result in personal harm, injury, death or damage and/or issues to device host(s) such home and/or vehicle, and/or anything related or within proximity to device host(s), not limited to human or human property thereof.

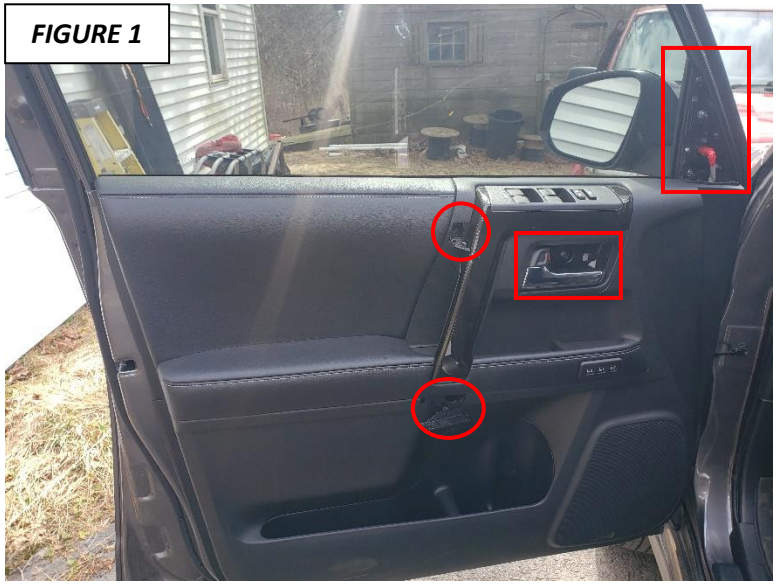
(1) Installation. The seller is not responsible for installing any products, exclusive or third party manufactured sold by them or for the harm suffered by any person as a result of installing it.

(2) No Liability. Seller is not liable for any loss or damage claimed by Customer or any third person to have been suffered or incurred as a result or, or related to, the device(s) purchased under this Agreement, regardless of the circumstances or form of action, including any bodily injury or death for which the seller is NOT liable for under products-liability law. Without limiting the generality of the foregoing, in no event will the seller be liable to Customer for any indirect, special, or consequential damages, regardless of the circumstances or the cause of action, particularly not for the value of a vehicle, or any other money damages in the event when a sold product has been returned for repair or replacement. END OF TERMS AND CONDITIONS

STEP 1: REMOVING THE FRONT DOOR PANELS

We're going to show you in detail everything to do on the driver side, but the passenger side is the same procedure. In order to remove the front door panels, there 6 steps to follow. Please note where you are going to want to remove screws that are behind the door handle, as well as a couple of other hidden items (FIG 1). Just follow the steps that are laid out before you and the door panel will come right off.

FIGURE 1



1. Using a Plastic Pry Tool, pop out the plastic/trim panel cover (FIG 2) that is behind the interior door handle. You will want to keep the door handle up while you use the pry tool and wedge it behind the plastic/trim panel cover. Using a Phillips Head Screwdriver, you'll want to remove the first hidden screw (FIG 3).

FIGURE 2

FIGURE 3

2. Using a Small Flat Head Screwdriver, pop the cover open (FIG 4) next to the driver panel grab handle from the top and pull down to reveal the second hidden screw (FIG 5).

FIGURE 4

FIGURE 5

3. Using that same Small Flat Head Screwdriver, pop the cover open (FIG 6) under the driver panel grab handle from the top and pull down to reveal the second hidden screw (FIG 7).

FIGURE 6

FIGURE 7

4. Remove the triangle pillar panel in the upper right corner of your door panel by just pulling it outward with your hand slowly (FIG 8). Start at one corner and slowly work your way to the top (FIG 9). Once you have the panel removed, make sure you remove the white tabs (FIG 10) and replace them back onto your panel, so they do not get lost (FIG 11).

FIGURE 8

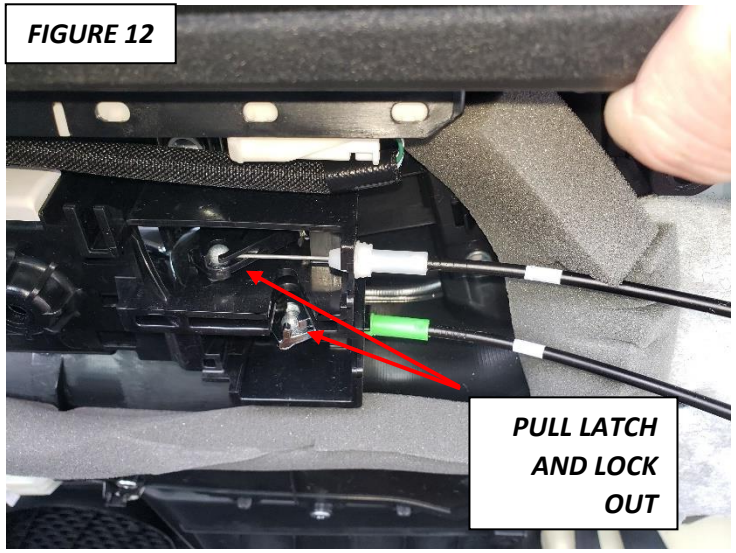
FIGURE 9

FIGURE 10

FIGURE 11

5. The door panel has a variety of tabs that are holding it in place. Removing the first tab is the hardest. Start at the bottom corners and then work your way around the rest of the door. After you remove the first tab, removing the rest of the door panel is easy. After you have pulled all the tabs out, lift the door panel up and out. Then reach down and through to disconnect the latch and lock on the panel (FIG 12).

FIGURE 12

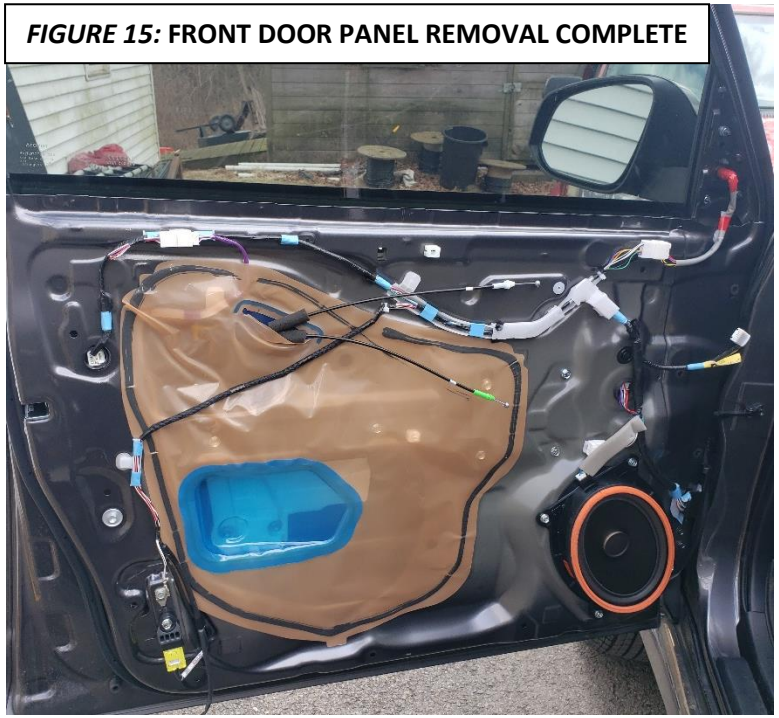


6. The final step in removing your front door panel that you do not want to forget about has to do with disconnecting your window OEM Connector

(FIG 13) and your OEM Courtesy Light (FIG 14). You do not want to forget about this final step unless you plan on ripping your light out.

FIGURE 14

FIGURE 15: **FRONT DOOR PANEL REMOVAL COMPLETE**



STEP 2: REMOVING THE SIDE MIRROR

1. Disconnect the mirror wiring harness (FIG 1). The harness has a little tab on the top (FIG 2). Push it down and disconnect the harness.

FIGURE 1

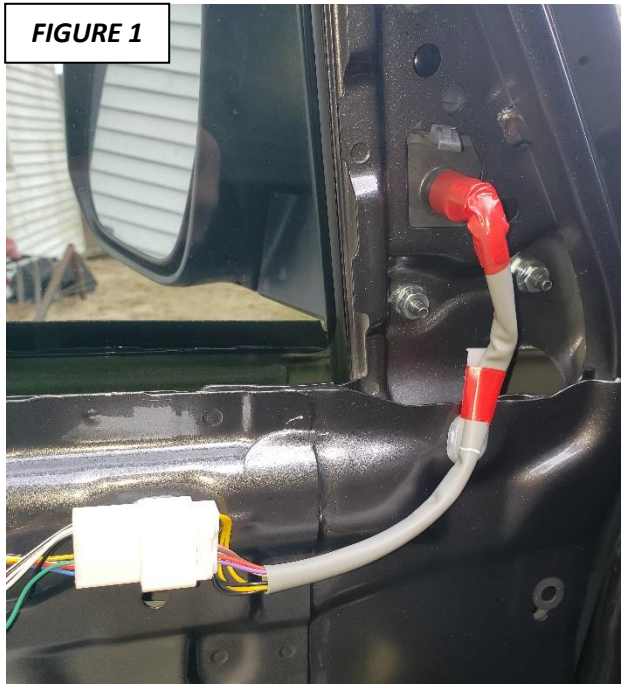
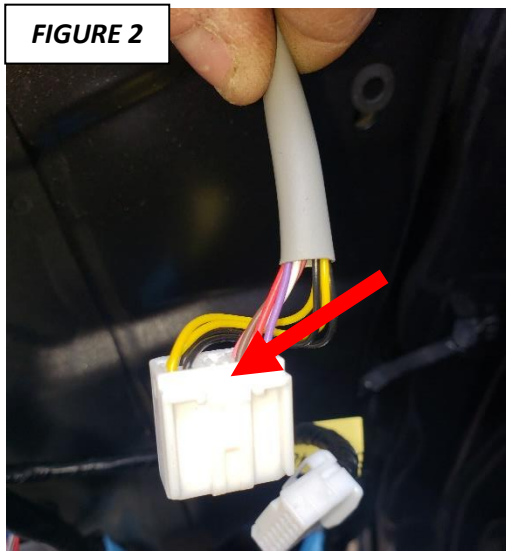
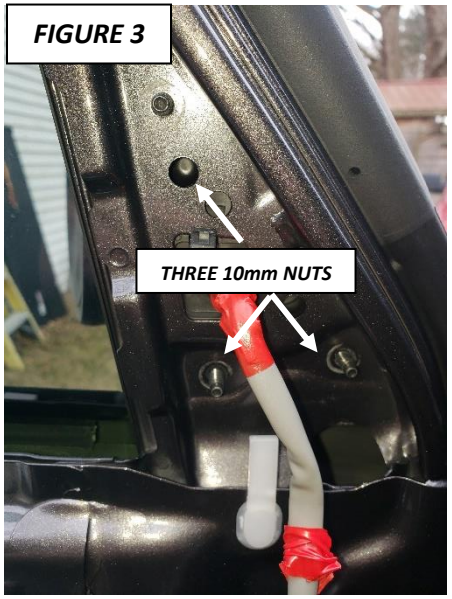


FIGURE 2



2. Using a 10mm socket and ratchet with extension or drill, remove the three 10mm nuts that are holding the mirror in place (FIG 3).

FIGURE 3



3. Using a Small Flat Head Screwdriver or your hand, reach in and release the tab that is still holding the side mirror in place (FIG 4). You also have a small little black tab in the corner that is connected to the mirror housing that needs to be removed as well (FIG 5, 6, 7, & 8).

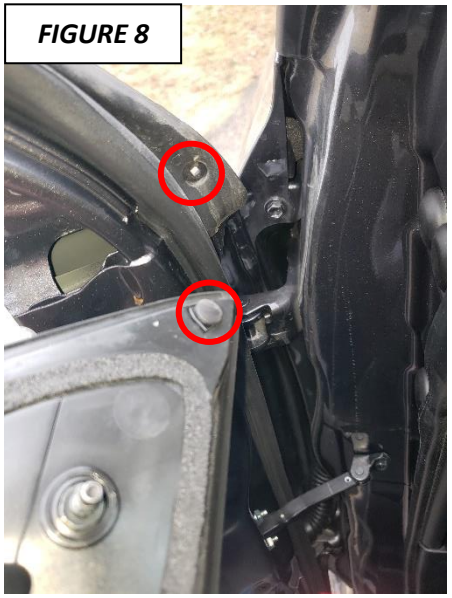
FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8



4. Remove the side mirror (FIG 9).

FIGURE 9: SIDE MIRROR REMOVAL COMPLETE

STEP 3: OEM MIRROR BREAKDOWN

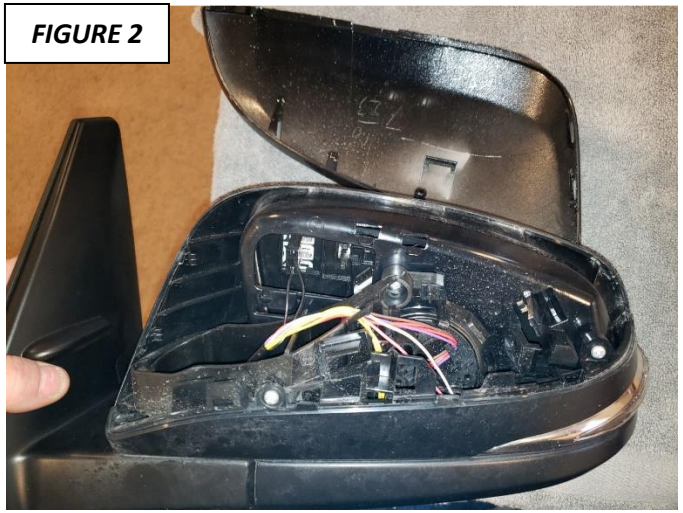
1. Using a plastic pry tool or your hands, remove the side mirror back cover (FIG 1). This sometimes can be a challenge (FIG 2).

Note

Be careful because when it does eventually come off, sometimes it goes flying.

FIGURE 1

FIGURE 2



2. Using a Phillips Head Screwdriver, remove the outer casing of the O2/O3 Connector (FIG 7). You will need this removed in order to get the wires through the hinges and ultimately through the Power Fold Actuators. You will notice on both sides (FIG 3 & FIG 4) there are small little notches that you will need to release in order to remove the wires from the Connector. Use the Screwdriver as shown in Figure 5 and Figure 6 and it will release both sides. It can be a bit challenging, but they do release. Once the outer casing is removed, set it aside until the very end of the rebuilding phase.

FIGURE 3

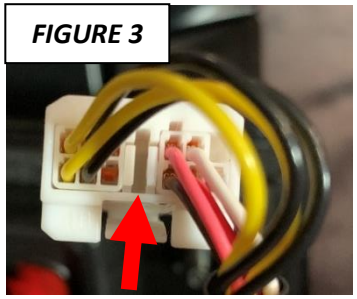


FIGURE 4

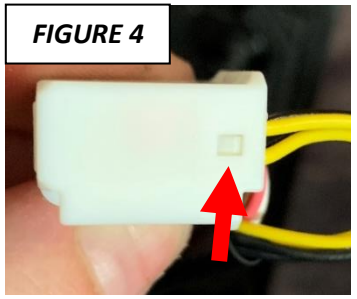


FIGURE 5

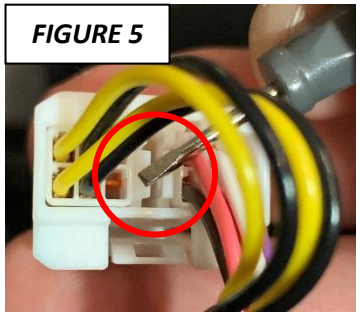


FIGURE 6

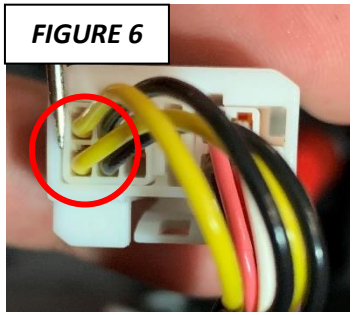
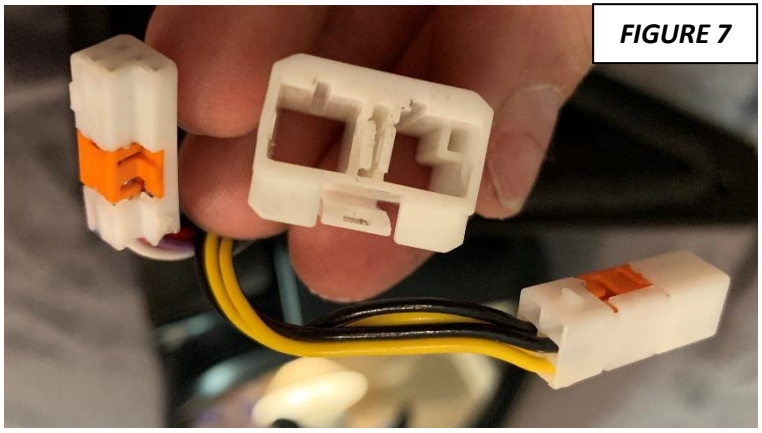


FIGURE 7



3. Continuing with the Wiring, remove the red tape that secures the wire harness to the inside of the mirror housing (FIG 8) so that you

are able to remove the wire harness all the way through the mirror and get it out of the way of the hinge area.

FIGURE 8

4. Remove the inner mirror mounting base plate by pulling the top part away from the main section of the mirror (FIG 9). This part comes apart extremely easy and it is only held in by little tabs on the inside (FIG 10). This allows for you to pull the wiring harness all the way through and then you can set the inner mirror mounting base plate aside for the remainder of the time until the very end of the rebuilding phase (FIG 11).

FIGURE 9

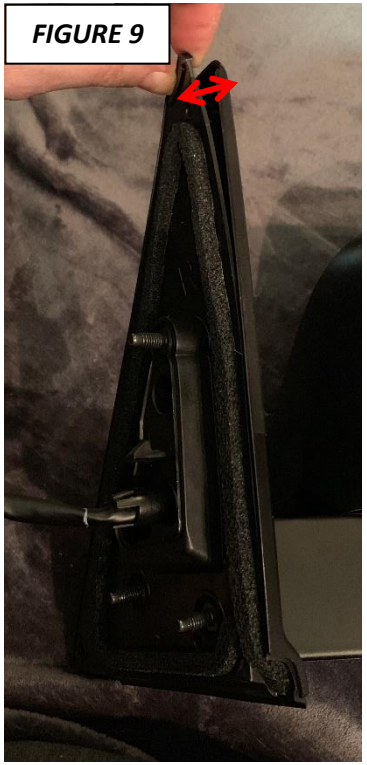


FIGURE 10

FIGURE 11

5. Next, you'll want to remove the inner bottom cover that hides the hinge and power wires. This cover just pops into place, so it is easy to remove. Use the exposed edge of the bottom cover (FIG 12) to create a small opening to pop the cover up and you can take it from there by using a Plastic Pry Tool (FIG 13) to pop the cover up the rest of the way. Once you have the Plastic Pry Tool in place, go ahead and just push it in (FIG 14) and the cover will just pop right off (FIG 15).

FIGURE 12

FIGURE 13

FIGURE 14

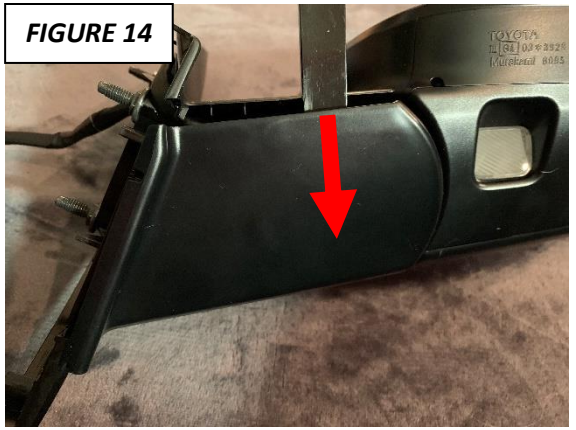
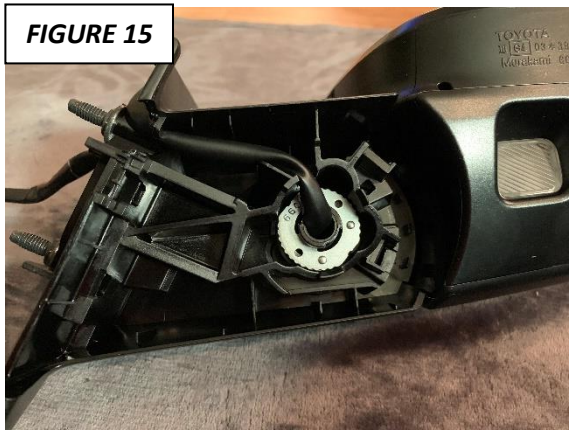


FIGURE 15



6. Now finish removing the Wire Loom the rest of the way through the hinge and up to the top of the mirror (FIG 16, FIG 17, FIG 18 &, FIG 19).

FIGURE 16

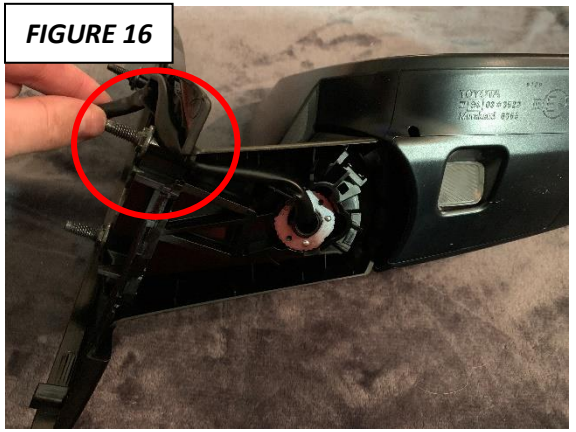


FIGURE 17

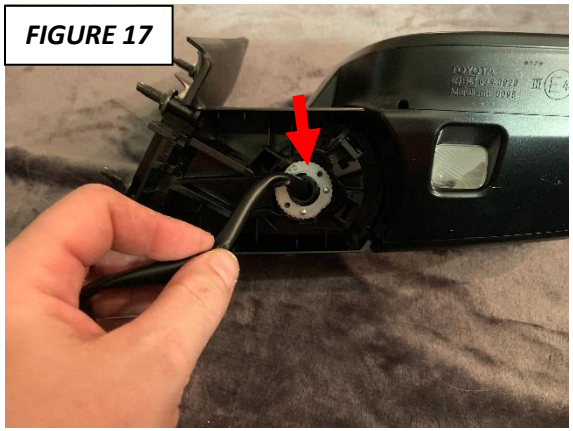


FIGURE 18

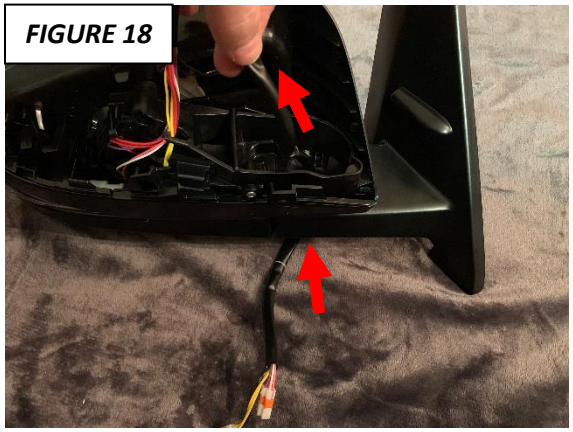
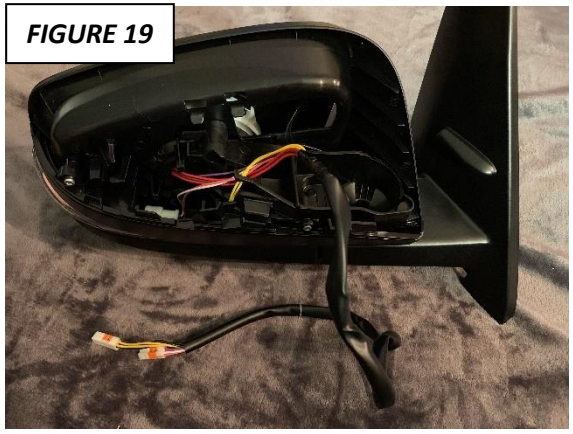


FIGURE 19



7. Separating the hinge depends on the Mirror you have as well. Like I have stated before, I have found out during this process that there are a variety of mirror hinges out there and they all have a different twist to them. For certain hinge styles, using a set of Retaining Ring Pliers will do the trick. While you are pushing down, you must also turn it to the left at the same time in order to release the spring (FIG 20, FIG 21, & FIG 22).

FIGURE 20

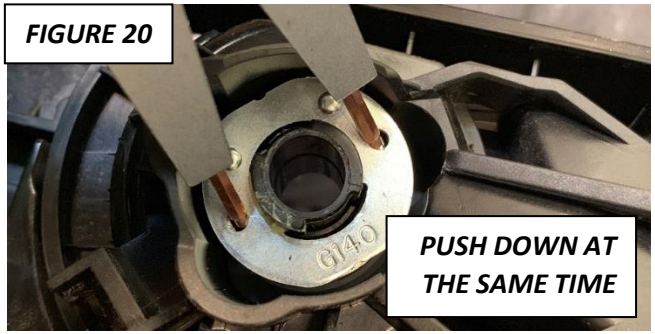
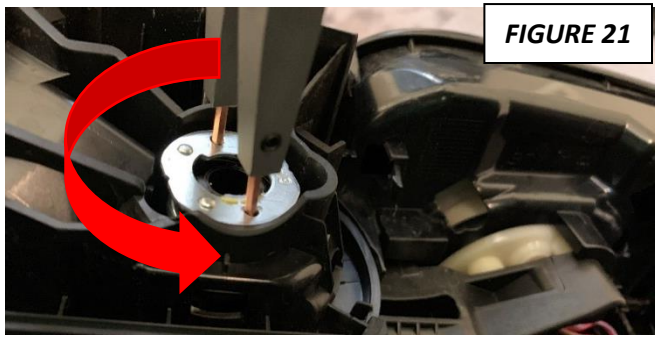
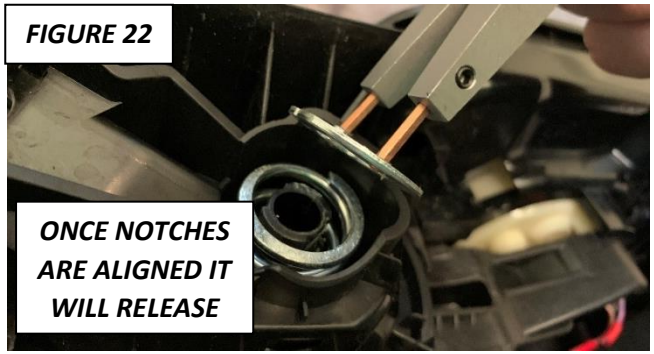


FIGURE 21



I like to think of it as righty-tighty, lefty-loosey.

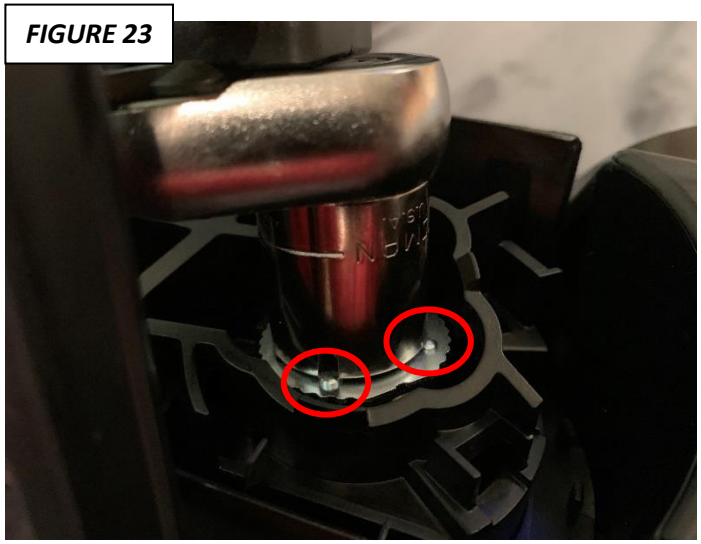
FIGURE 22

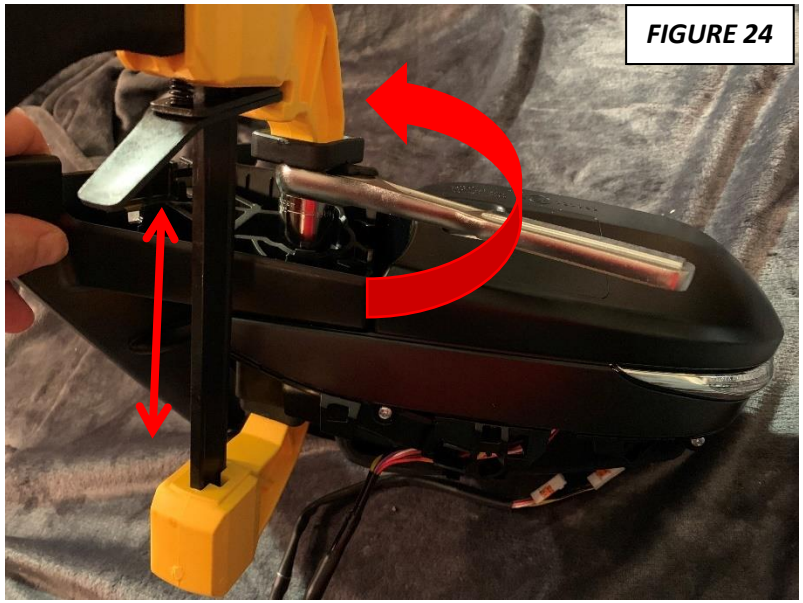


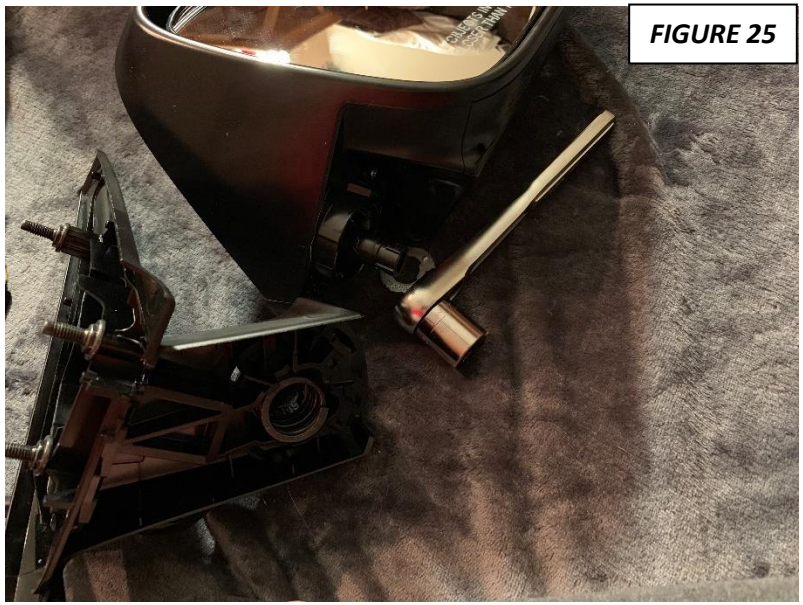
The other way I recommend releasing the spring is by using a 12” Bar Clamp and modifying two little notches out of a 11/16” Socket

that align with the two little notches on the cam-lock washer (FIG 23). Use the Bar Clamp to compress the spring, while you use the rachet to turn the washer (FIG 24). Once you have turned the cam-lock washer, release the Bar Clamp and you are done (FIG 25).

FIGURE 23







8. Remove the screw located on the bottom of the connection plate under where the spring was located while you are there (FIG 26) prior to disconnecting from side Mirror Housing. You will have one more screw to remove before you are able to fully disconnect the connection plate from the side Mirror Housing, but you are not able to get to it at this step.

9. Using a Phillips Head Screwdriver, remove the two screws that are holding the turn signal in place (FIG 27 & FIG 28).

FIGURE 27

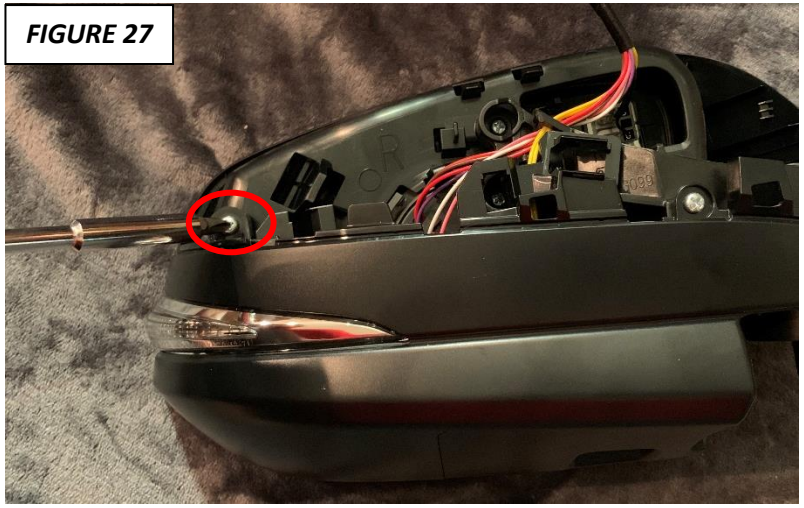
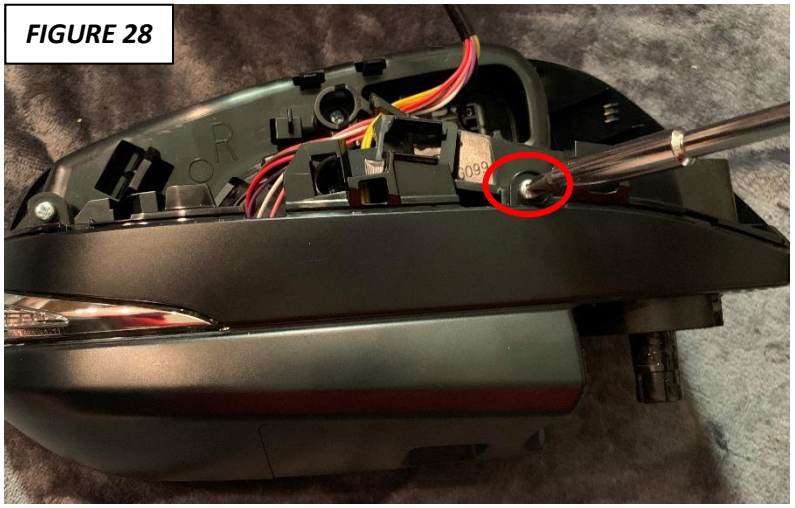


FIGURE 28



10. Now, because you have already removed inner cover, it will make it easier to remove the outer cover. To start, before you just pull, look for any wires that need to be removed and set aside (FIG 29). After that, it is simple. Tuck your fingers under the edge and while you are pulling upward with them, push downward with your thumb on the inner part of the mirror (FIG 30). It really doesn't take much force before the cover will pop right off.

FIGURE 29

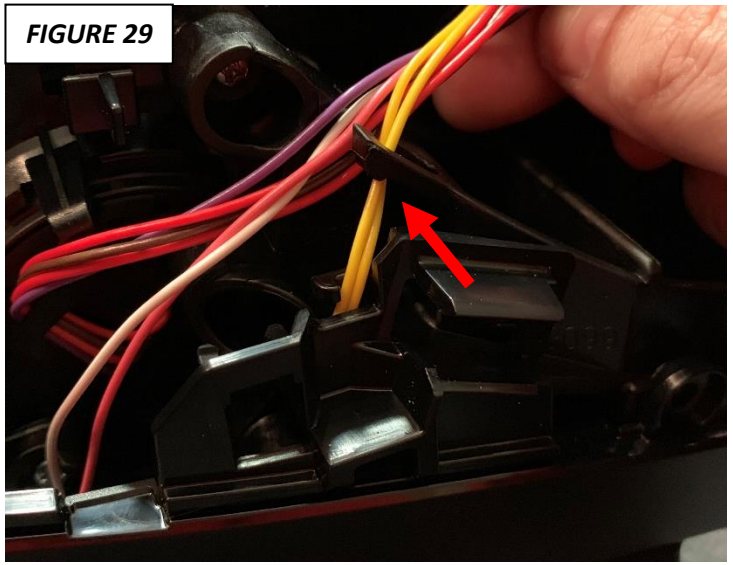
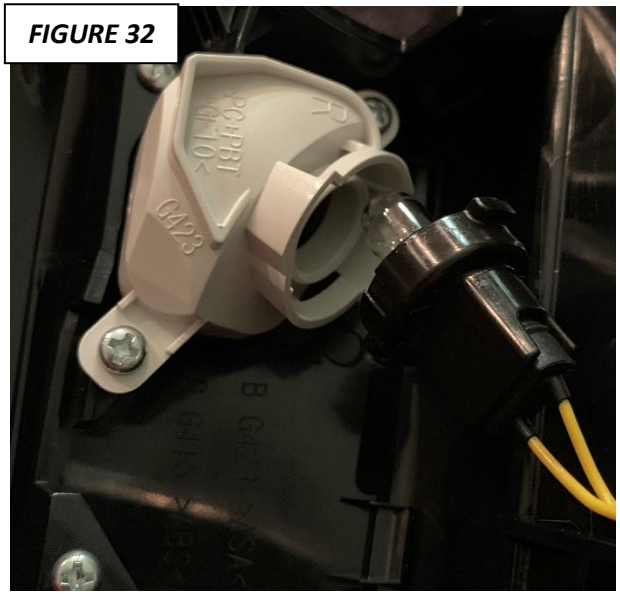


FIGURE 30

11. Remove the bulb housing from the Puddle Light in the outer cover (FIG 32). The easiest way to do this is by flipping the outer cover and then turning the bulb housing to the left. This allows for you to fully disconnect the outer cover from the mirror housing, so you can set it aside for the remainder of the time until the very end of the rebuilding phase (FIG 31).

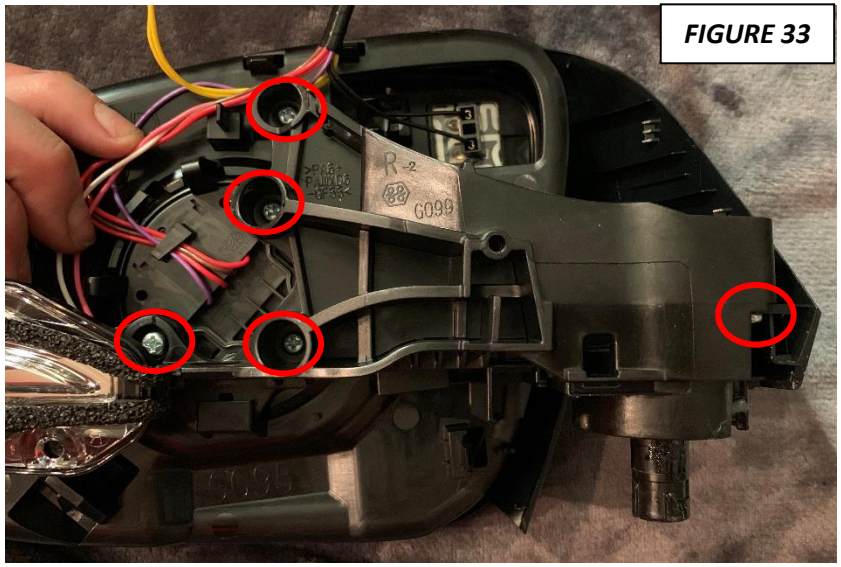
FIGURE 31

FIGURE 32



12. With the back of the mirror housing now wide open, using a Phillips Head Screwdriver, remove the 5 screws that are holding the connection plate in place (FIG 33).

FIGURE 33



13. Disconnect the rest of the wiring connectors and the front glass with the adjuster actuator can be set aside for until the beginning of

the building phase (FIG 38). First, start with disconnecting the turn signal connector. Use a Small Flat Head Screwdriver to push the tab in to release and detach the turn signal wiring harness (FIG 34 & FIG 35). Then use some pliers or something similar and grab ahold of the heater connector and detach it from the back side of the mirror glass (FIG 36 & FIG 37).

FIGURE 34

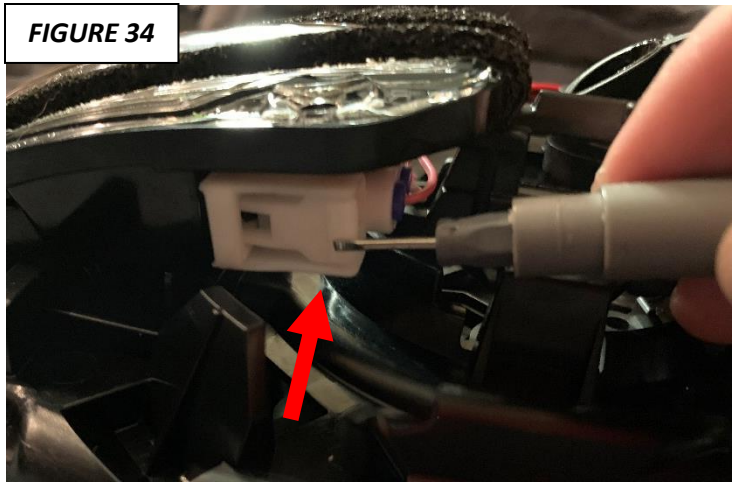


FIGURE 35

FIGURE 36

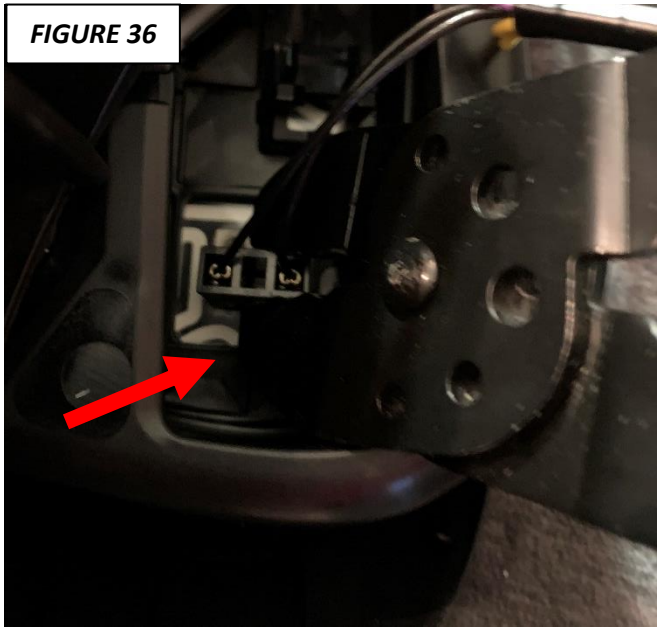


FIGURE 37

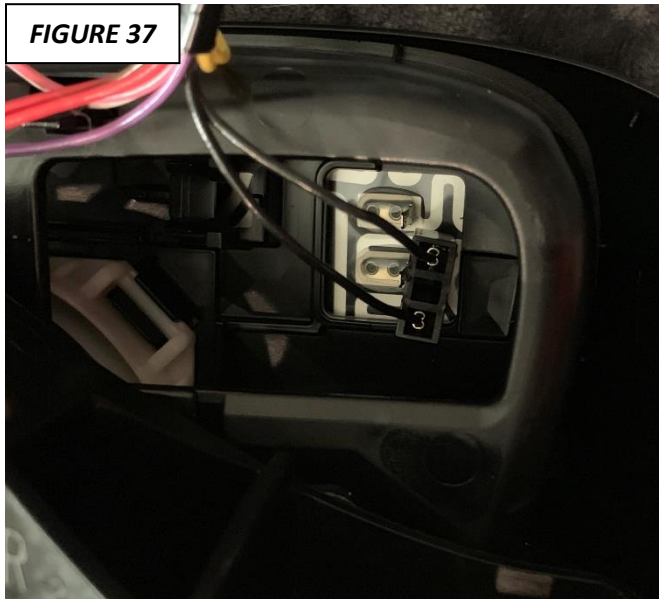
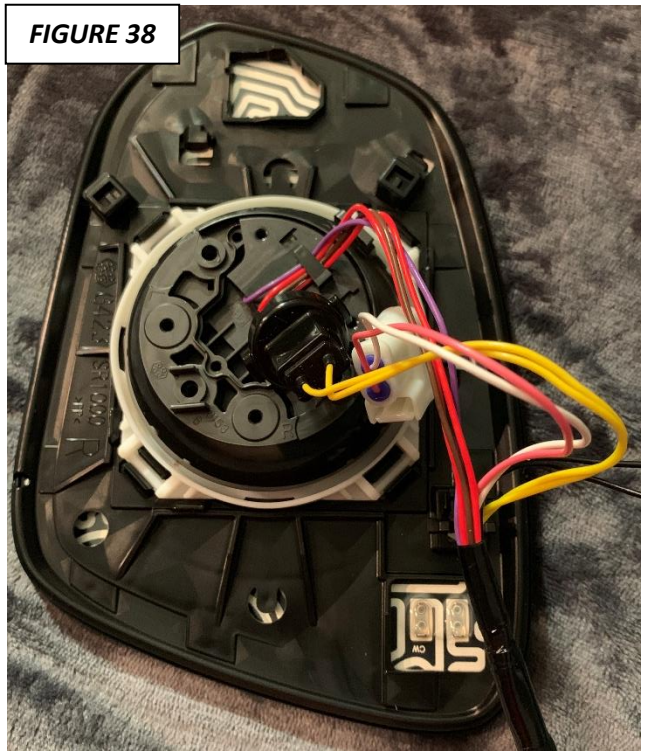


FIGURE 38



14. Remove the turn signal from the mirror housing by flipping the housing over (FIG 40 & FIG 41) and releasing the two tabs on the inside part of the housing (FIG 42 & FIG 43).

FIGURE 40

FIGURE 41

FIGURE 42

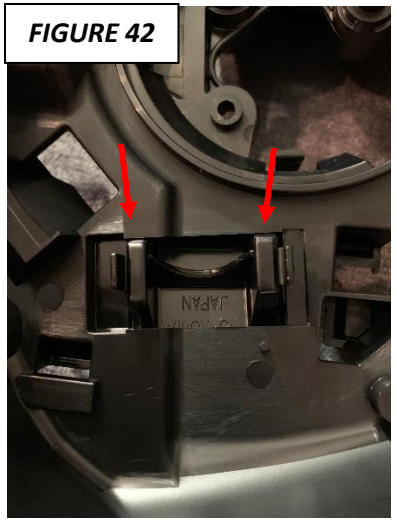


FIGURE 43

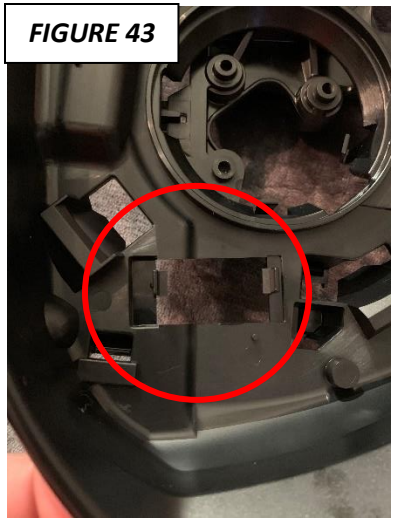
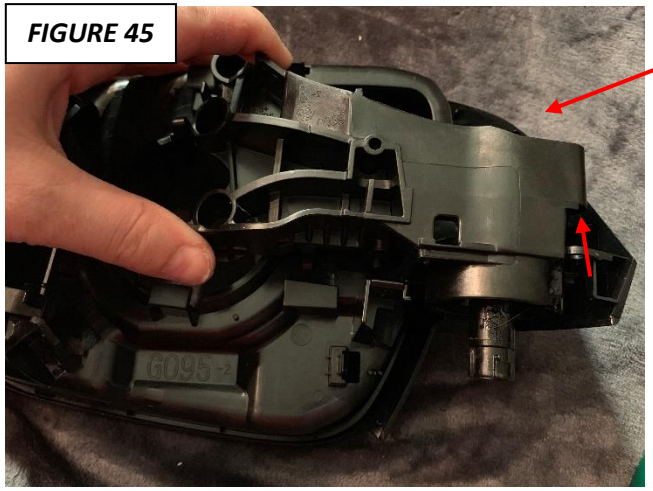


FIGURE 44

15. Remove the OEM Connection Plate by flipping the mirror housing back over. This is a two-step process: first step, you will need to push the connection plate up; and then the second step, you will

need to pull the connection plate outward to release it from the mirror housing (FIG 45 & FIG 46).

FIGURE 45



STEP ONE: PUSH UP

STEP TWO: PULL OUTWARD

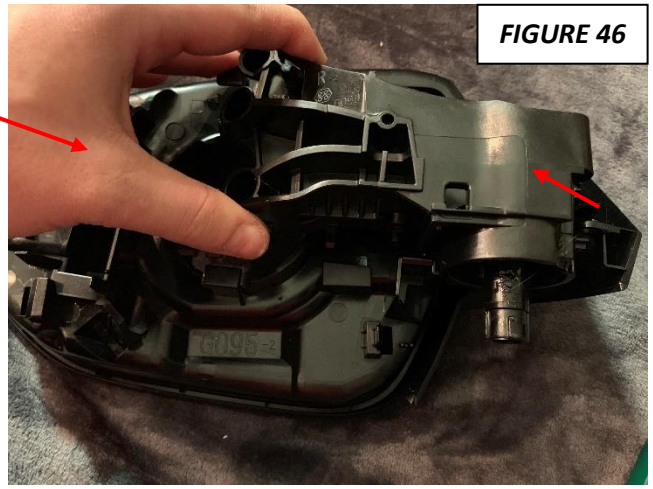


FIGURE 46

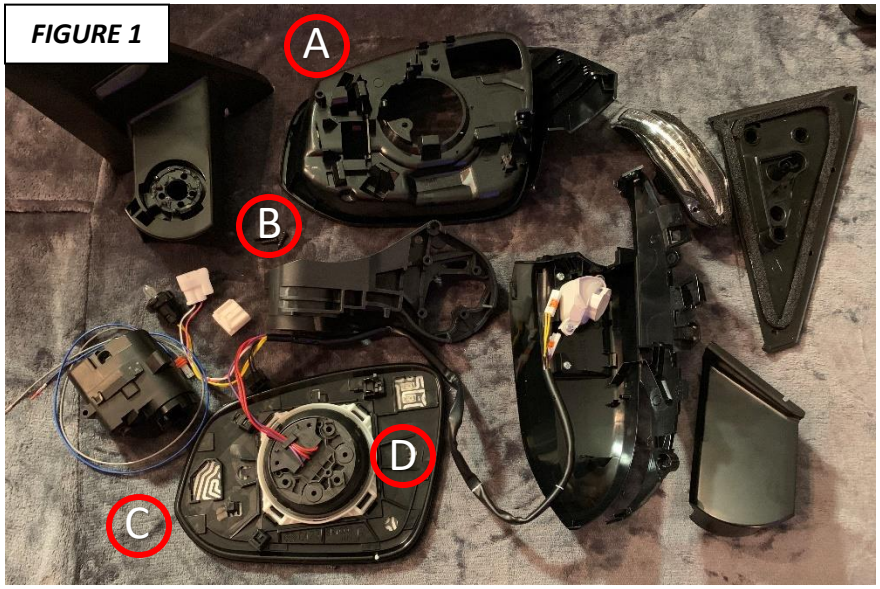
16. Done! You have now successfully taken apart your OEM Mirrors.

FIGURE 45: OEM MIRROR BREAKDOWN COMPLETE

STEP 4: OEM POWER FOLDING MIRROR REBUILD

1. Begin by grabbing your parts that are going to need modifying: Mirror Housing (A), Connection Plate (B), Glass Mirror (C), and Adjuster Actuator (D).

FIGURE 1



2. On the New Connection Plate there are a variety of areas that will need to be modified due to the OEM Actuator backing being different and not lining up quite exactly how we had hoped. However, we have made it work with just a few modifications. First, use a Dremel and cut off the two notches that hang out so that the OEM Bottom Outer Cover will be able to lay flat up against the New Connection Plate (FIG 2 & FIG 3). Next, flip the Connection Plate over and start with the first modification by using a 1/8" drill bit to drill a hole all the way through the Connection Plate (FIG 4, FIG 5, & FIG 6). By having a Dremel, it makes the following step easy. Grab your sanding tool and use it to sand down the two mounting holes flat. They sit too high and do not allow the OEM Adjuster Actuator from being able to sit low enough inside the Mirror Housing (FIG 7). Finally, use the cutting tool on your Dremel and follow the lines on your Connection Plate to cut the corner out to make room for your Turn Signal Connector (FIG 8 & FIG 9).

FIGURE 2

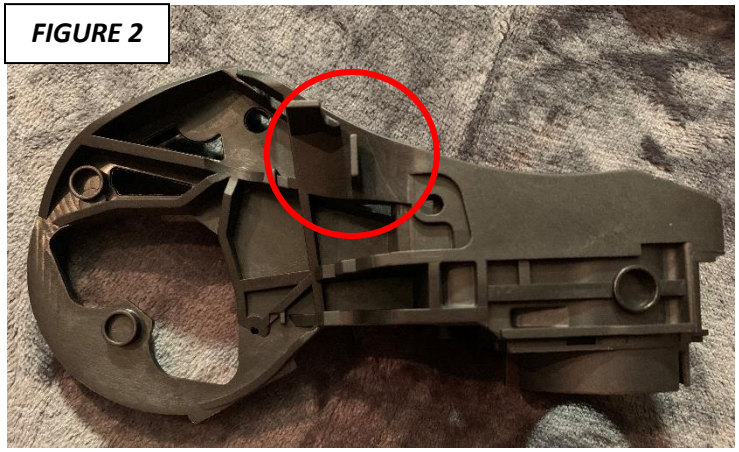


FIGURE 3

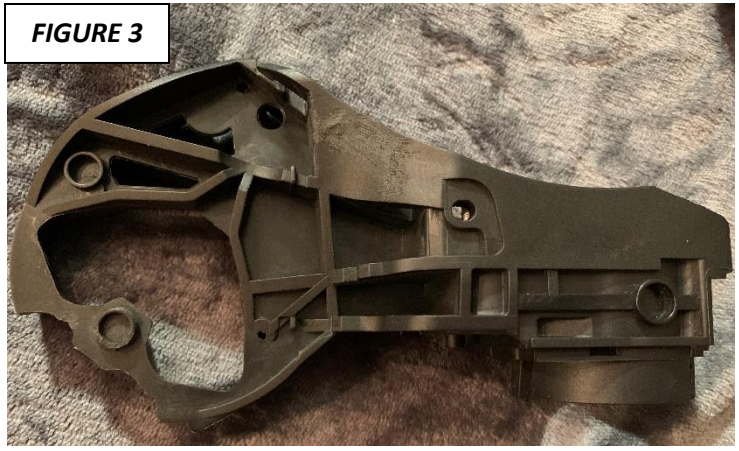


FIGURE 4

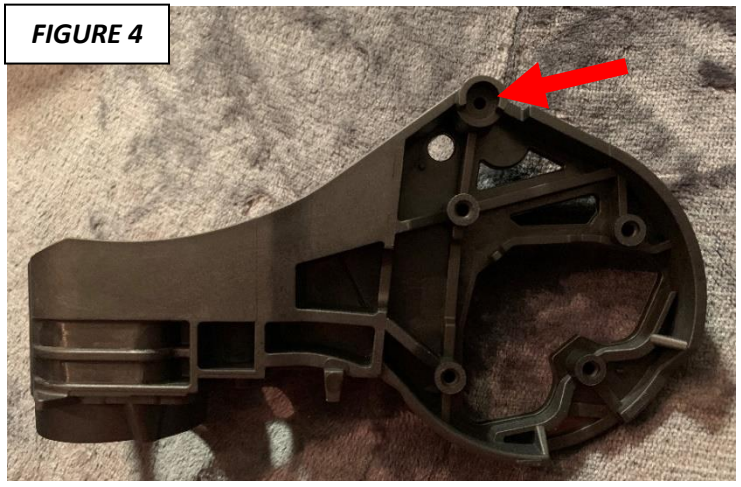


FIGURE 5

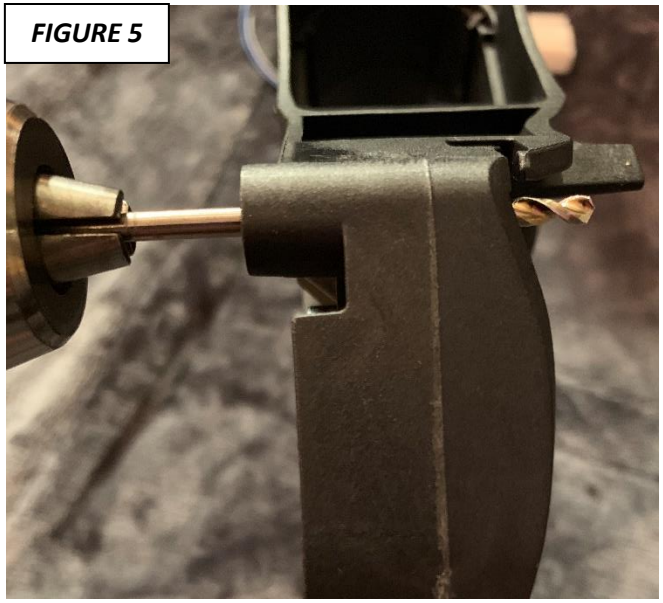


FIGURE 6

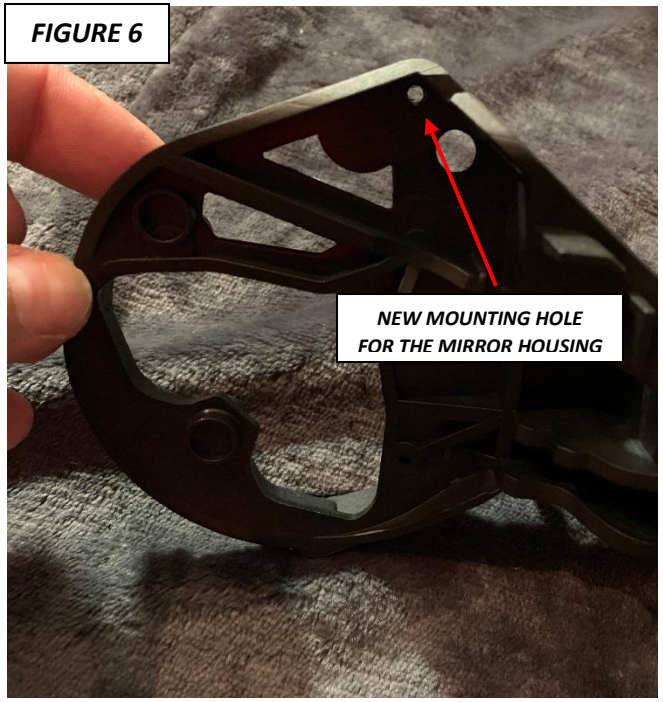


FIGURE 7

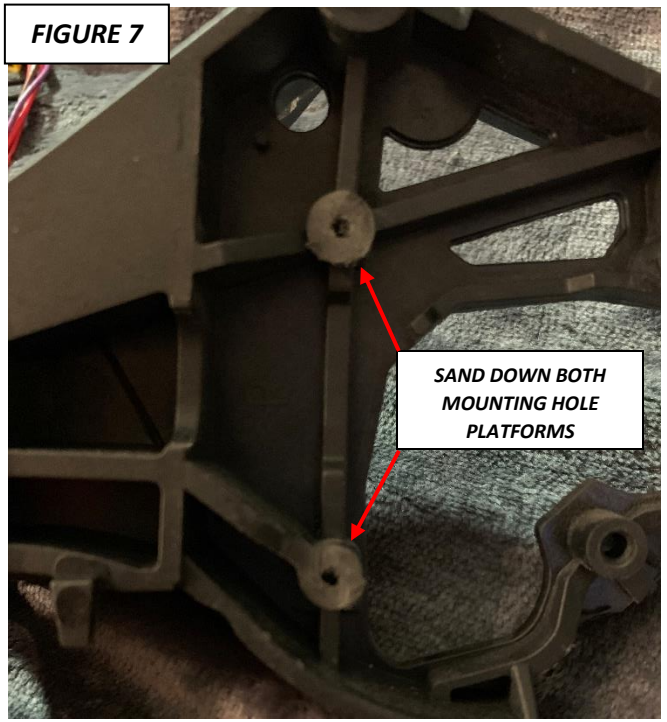


FIGURE 8

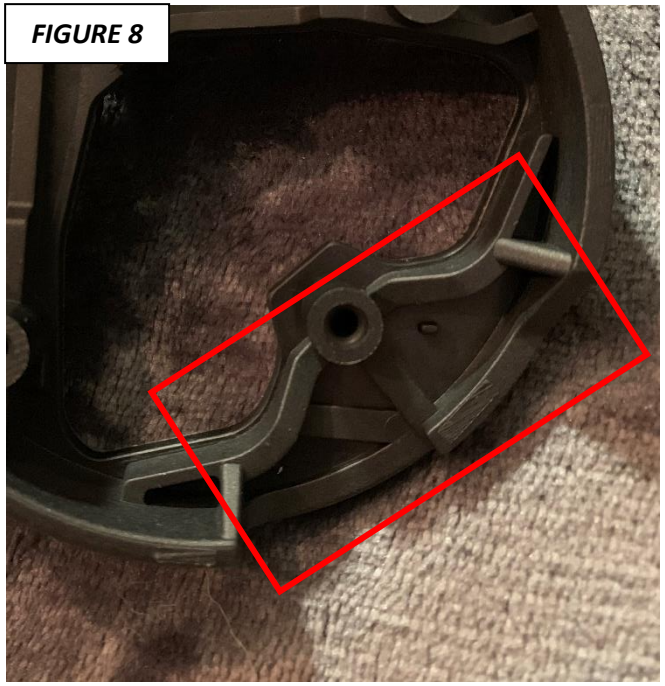
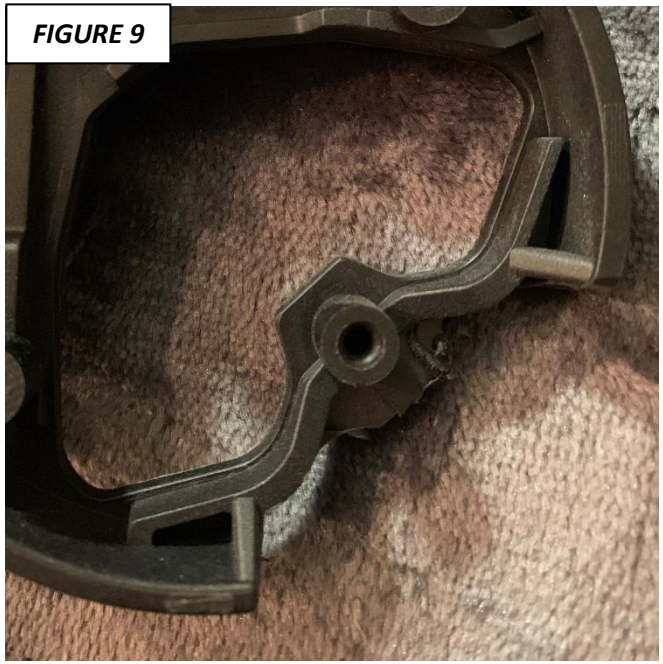


FIGURE 9



3. Next, we will grab the Mirror Housing. Modify the Mirror Housing to go from Figure 10 to Figure 11.

FIGURE 10

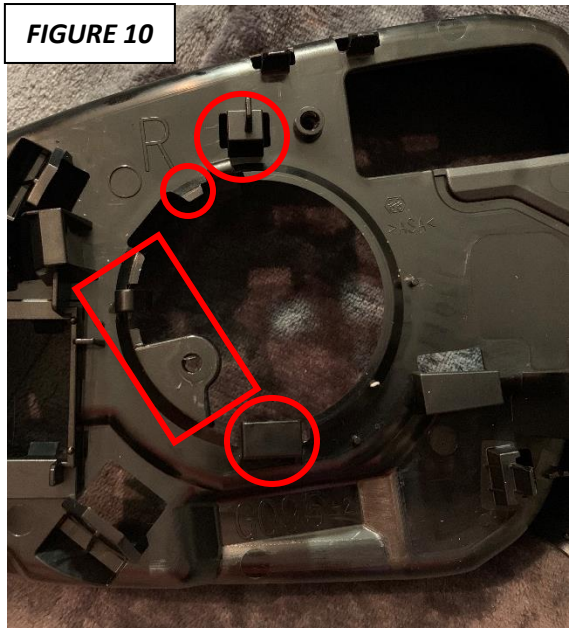


FIGURE 11

4. The last modifications can be done at the same time. Grab the Glass Mirror which currently still has the Adjuster Actuator on the back. Prior to removing it, go ahead and cut the little tab off the top which use to hold the 4 Adjusting Wires (FIG 12 & FIG 13). Remove Adjuster Actuator and there are three circles on the Glass Mounting Plate that need to be sanded down flat (FIG 14 & FIG 15). They are not needed and in order to rotate the Actuator to match up a mounting hole to the Mirror Housing, you will need to reconnect the Glass Mirror a different way (FIG 16).

FIGURE 12

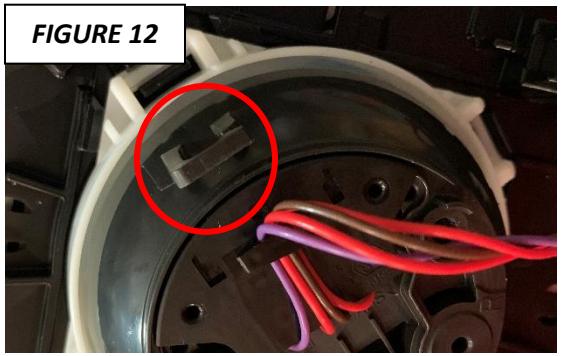


FIGURE 13

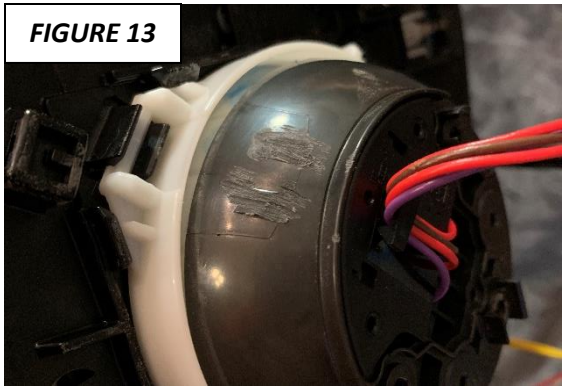


FIGURE 14

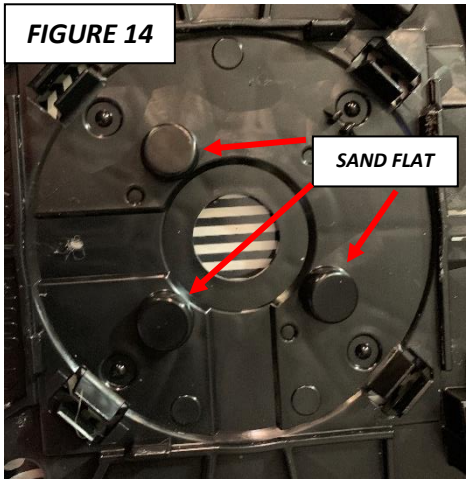


FIGURE 15

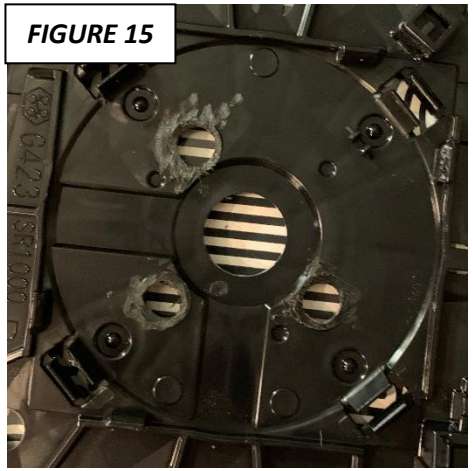
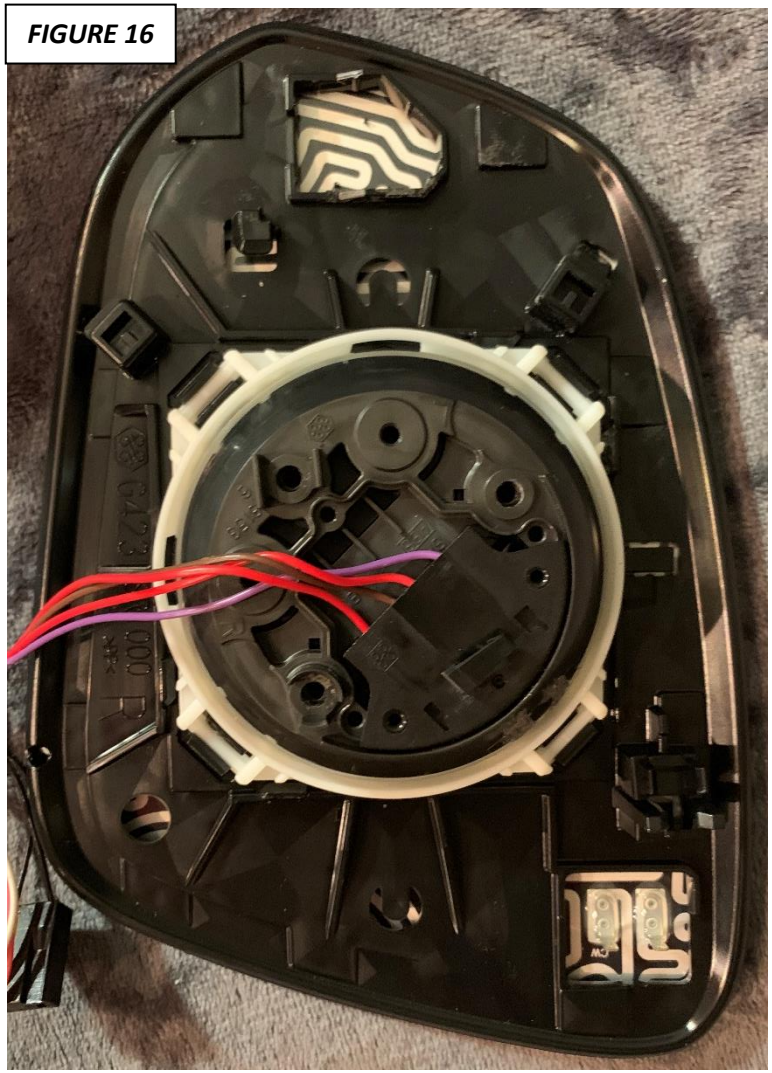
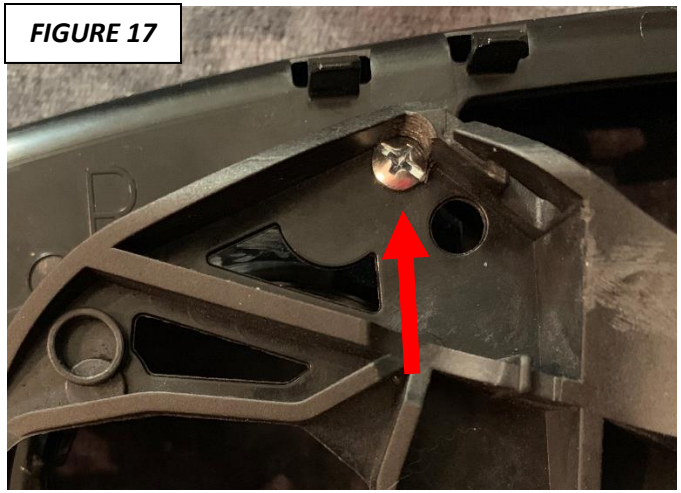


FIGURE 16



5. Let's Start Re-Building the OEM Mirrors into Power Folding Mirrors. In reverse order of what you just went through on the breakdown, you will now reconnect everything. I will not cover every detail, but I will highlight the some of the new areas. Using a Phillips Head Screwdriver, grab one of the new screws provided to you in your kit (long or short, depending on your preference) and screw it into your new mounting hole you made for the connection plate to mount to the mirror housing (FIG 17).

FIGURE 17



6. Using a 1/8” drill bit, drill a hole in the one mounting location that lines up with the OEM Adjusting Actuator (FIG 18 & FIG 19).

FIGURE 18

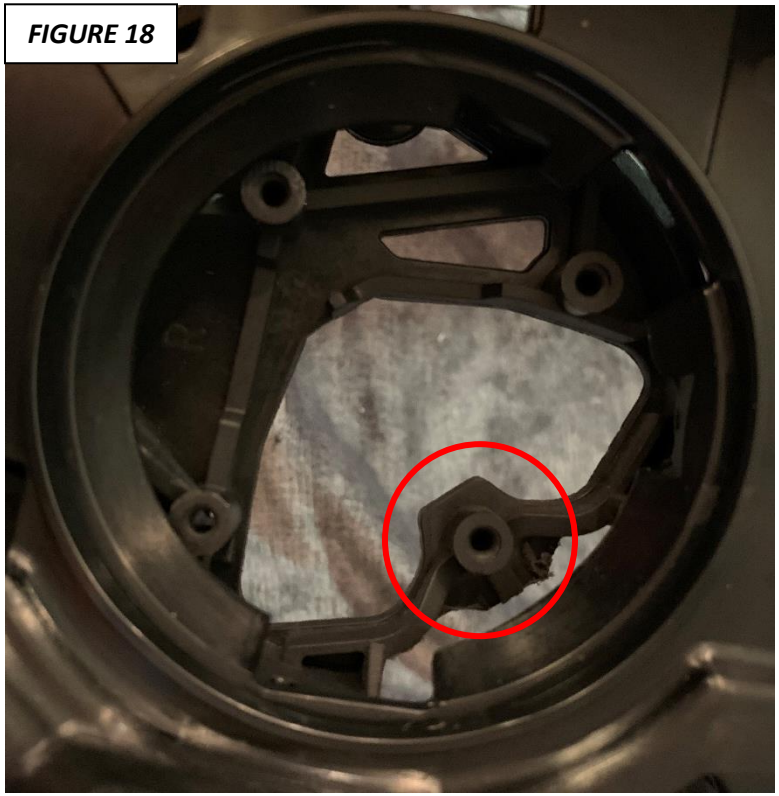
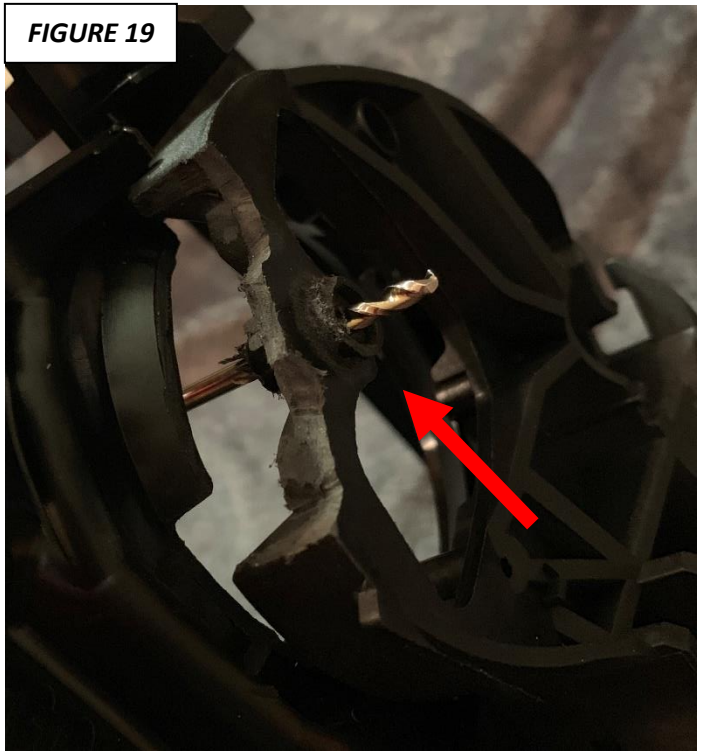


FIGURE 19



7. Using a Phillips Head Screwdriver, grab one of the new long screws provided to you in your kit and screw it into your new mounting hole you made for the connection plate to mount to the adjusting actuator (FIG 20). You should be able to flip your mirror housing over now and see that your glass mirror is mounted in its normal centered location; as well as, it is sitting down into the mirror where it should be (FIG 21).

FIGURE 20

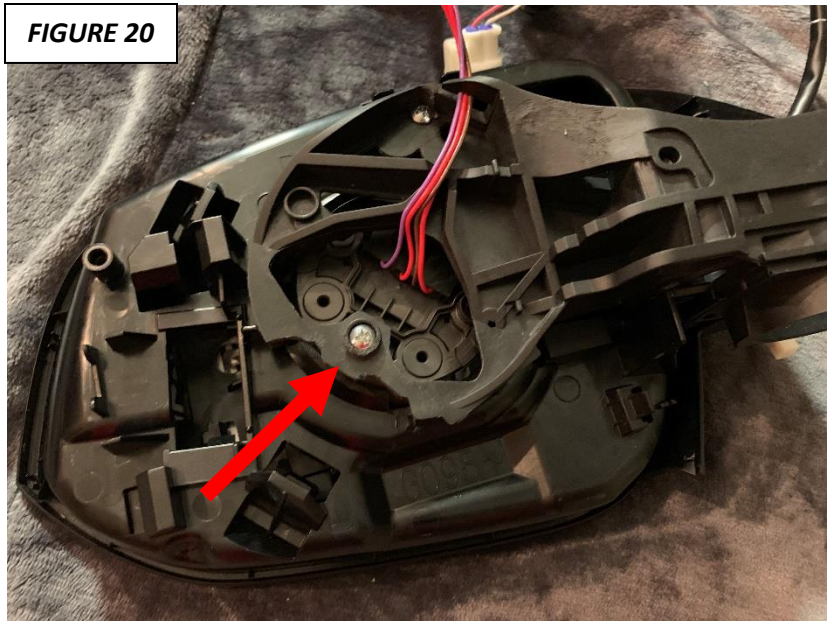


FIGURE 21

8. Install the Power Fold Actuator into the connection plate if you removed it. If you didn't remove it from the connection plate, make sure you removed the two screws on the bottom of the connection plate and using a Phillips Head Screwdriver, re-insert the two screws so that the mirror housing is connected to the connection plate as well (FIG 22 & 23).

FIGURE 22

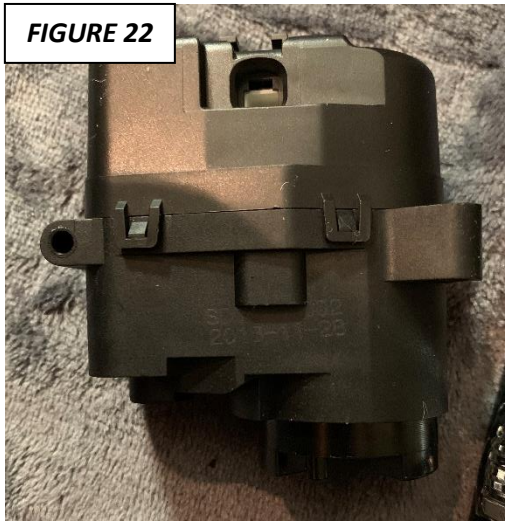


FIGURE 23

9. Route the Power Fold Actuator two wires through the OEM Wire Harness (FIG 24, FIG 25, FIG 26, & FIG 27).

FIGURE 24

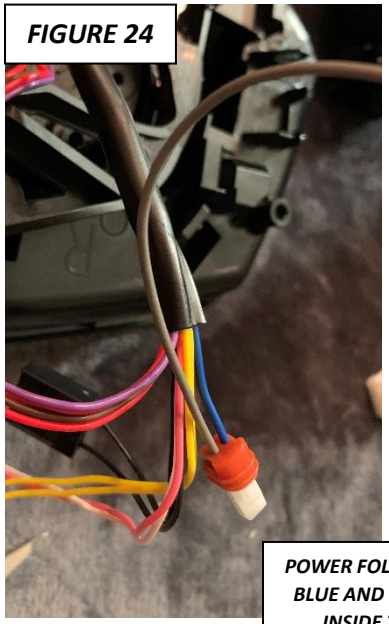
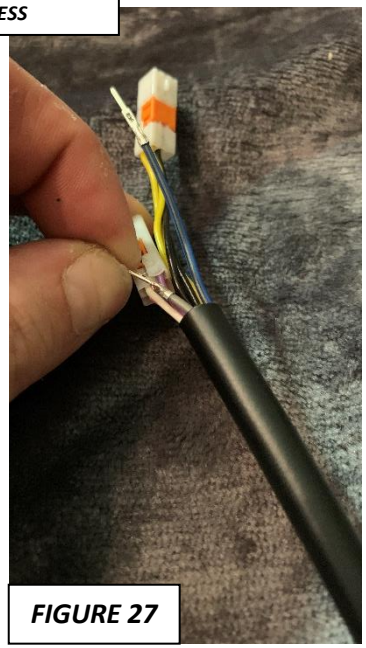


FIGURE 25

POWER FOLD ACTUATOR BLUE AND GREY WIRES INSIDE THE OEM HARNESS

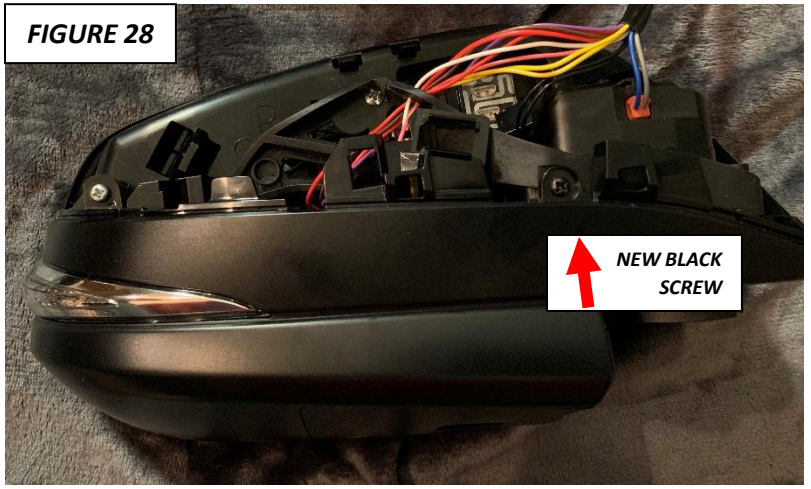
FIGURE 26

FIGURE 27



10. Re-Install the turn signal and lower outer cover. Make sure to re-connect the OEM Connectors while you are there for the turn signal and the puddle light. When you insert the two screws to secure the lower outer cover in place, make sure to use the new black screw provided for you that was already screwed into the New Connection Plate and into the Power Fold Actuator (FIG 28).

FIGURE 28



11. To make it look like a clean and professional wiring job, feel free to tidy up your wiring after you reconnect everything up top (FIG 29). Then, prior to running the wiring down through the motor and hinge, make sure to use the three screws that have been provided and are in the bottom of the Power Fold Actuator to secure your OEM Hinge to your Mirror Housing/Motor (FIG 30 and FIG 31).

FIGURE 29

FIGURE 30

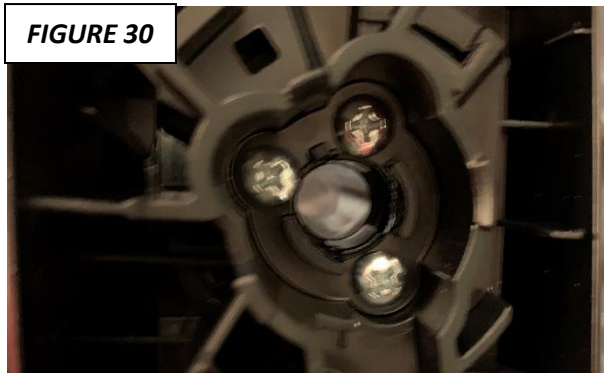
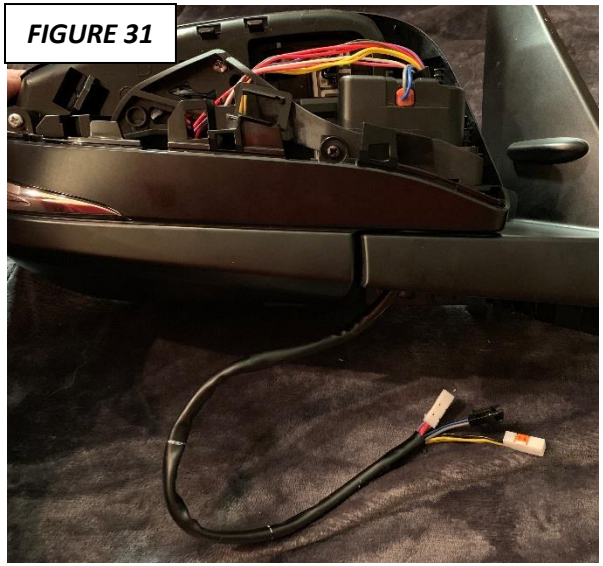


FIGURE 31



12. Grab the extension wire harness, connect the Power Fold Actuator blue and grey wires into the black connector (FIG 32 & FIG 33) and then disconnect the end of the connector (FIG 34). You can set the extension wire harness aside until you get to installing the wiring harness into the 4Runner.

FIGURE 32

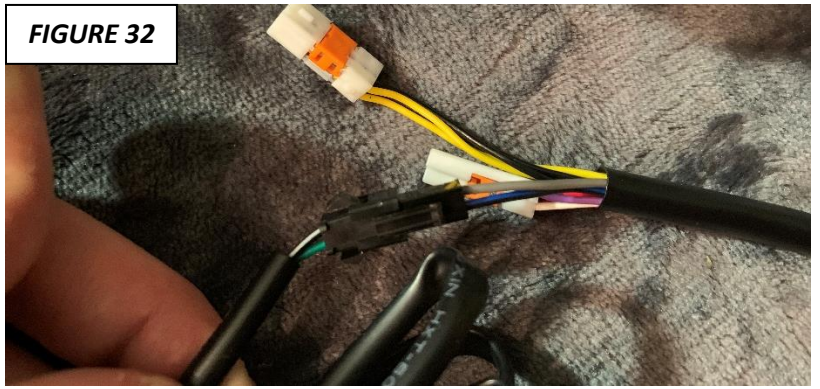


FIGURE 33

FIGURE 34

13. To finish rebuilding your OEM Mirrors, re-install your bottom inner cover (FIG 35) and the inner mirror mounting base plate (FIG 36). DONE!

FIGURE 35

FIGURE 36

FIGURE 37: **OEM POWER FOLDING MIRROR REBUILD *COMPLETE***

FIGURE 38: **OEM POWER FOLDING MIRROR REBUILD *COMPLETE***

STEP 6: INSTALLING THE POWER FOLD MIRROR WIRING HARNESSES

1. Begin by installing the mirrors back on the 4Runner (FIG 1). If you ran the New Power Fold Actuator wires and haven't installed the New Black Connector on the ends yet (FIG 2 & FIG 3), this is the time to do so (FIG 4). Run all the new wires into the Kick Panel.

FIGURE 1

FIGURE 2

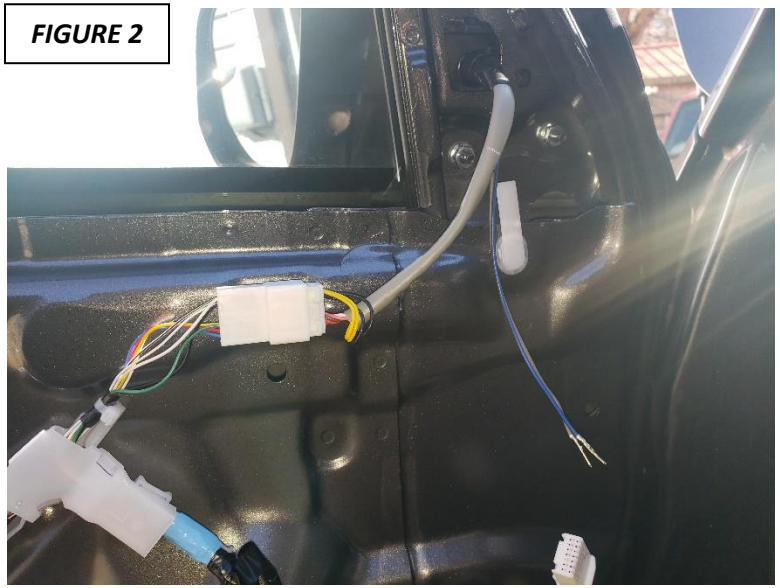


FIGURE 3

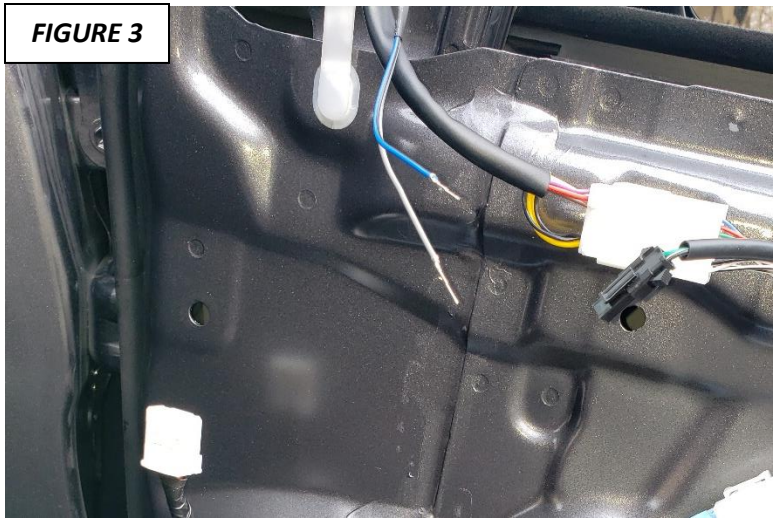
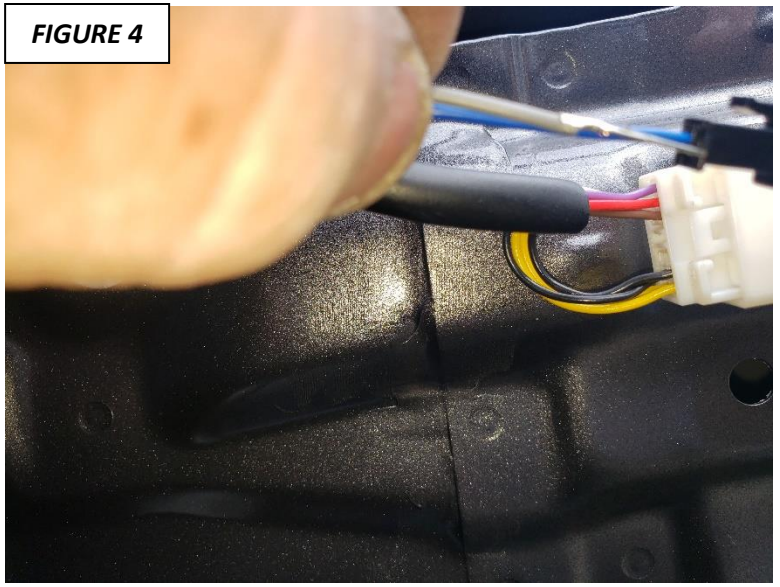
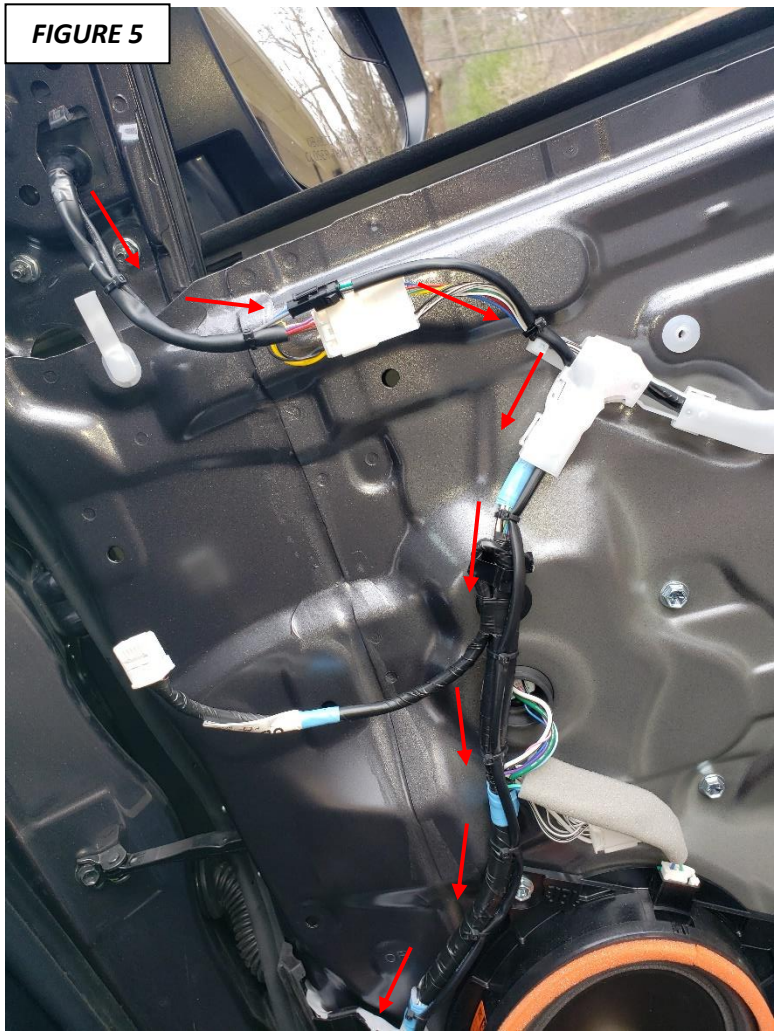


FIGURE 4



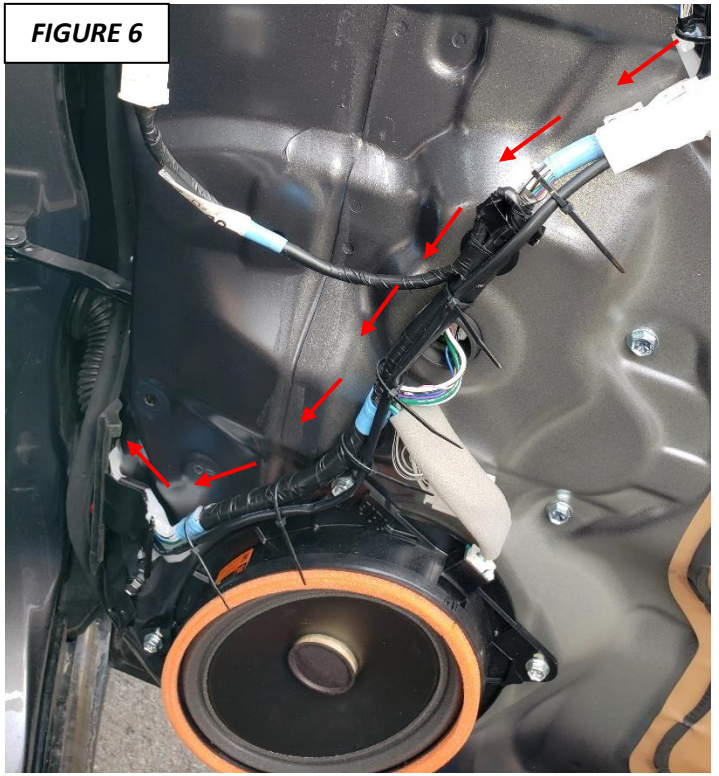
2. Using Cable Ties or Electrical Tape, route the extension wire harness down the door panel (FIG 5).

FIGURE 5



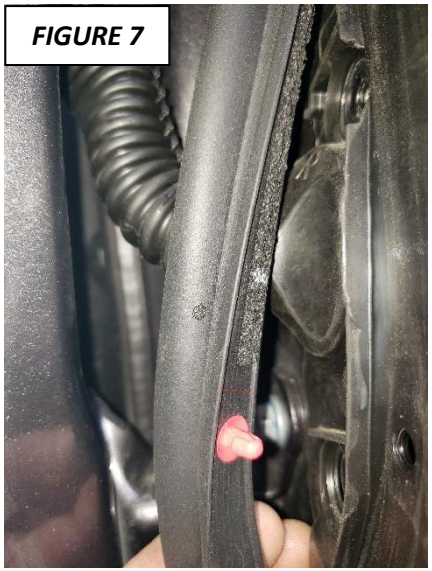
You are going to follow the OEM wire harness all the way down the door panel and to the weather-strip location on the inner part of the door (FIG 6).

FIGURE 6



3. Pull the weather-strip loose (FIG 7).

FIGURE 7



4. Remove these 10mm bolts on the door, pull the rubber grommet loose from the body side and it'll be easy to fish the extension wire harness into the kick panel area (FIG 8).

FIGURE 8

5. Route the passenger wiring across to the driver's side through the center and to the kick panel area where you will run the extension harness up to the Switch (FIG 9 & FIG 10). Once you have finished both doors, you can re-install both door panels in the reverse order you removed them.

FIGURE 9

FIGURE 10: **POWER FOLD WIRING HARNESS COMPLETE**

STEP 7: INSTALLING THE REPLACEMENT OEM ADJUST & FOLD SWITCH

1. Begin by laying the wire harness in front of you (FIG 1) and the New Switch (FIG 2 & FIG 3).

FIGURE 1

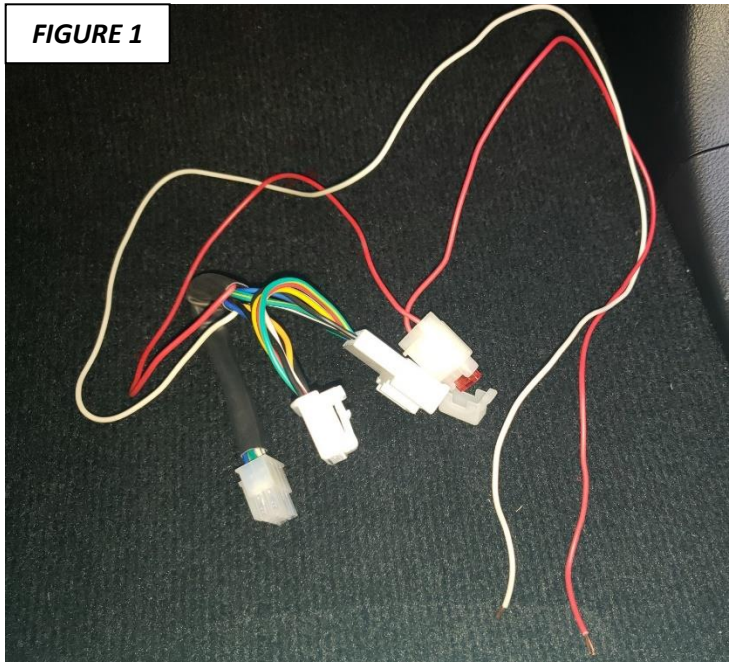
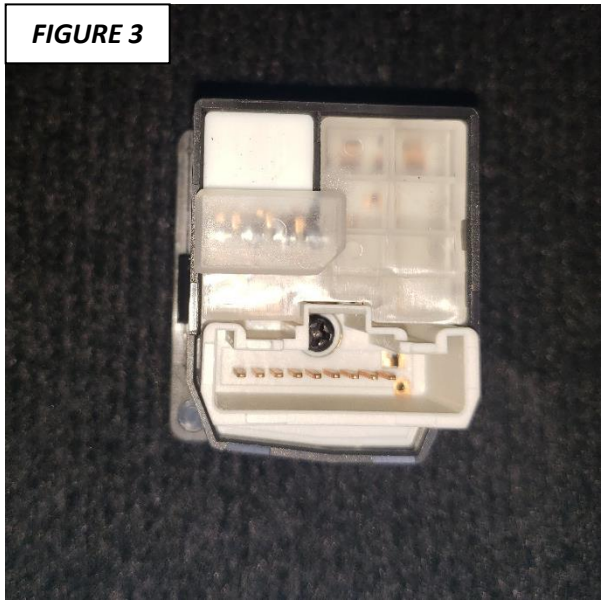


FIGURE 2

FIGURE 3



2. You should have two wires with terminals on the end from the Power Fold Extension Harness (FIG 4) that will connect directly to the OEM O1 Connector (FIG 5).

Note

Depending on your wire routing, you may need to add additional wiring on the extension harness to reach the OEM O1 Connector.

FIGURE 4

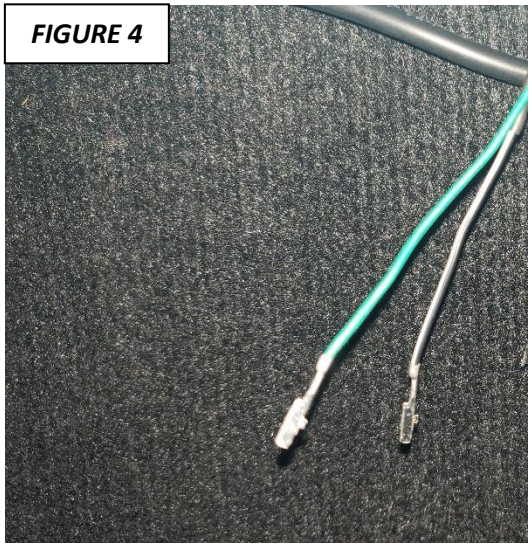
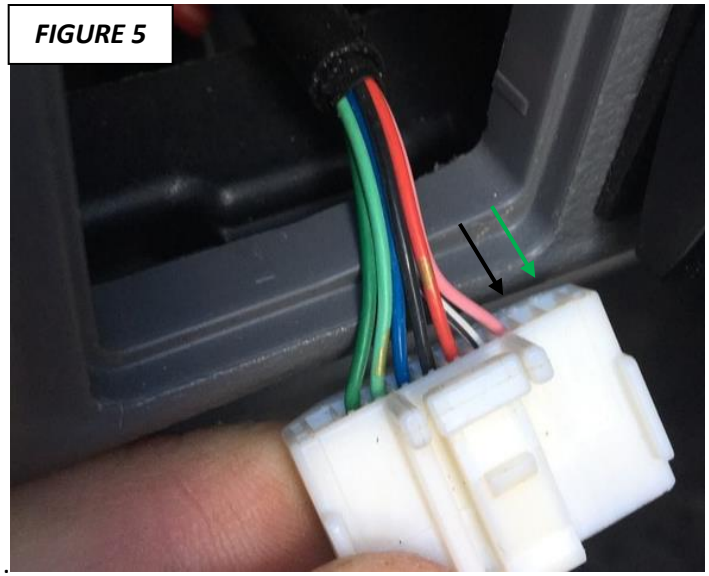


FIGURE 5



3. The easiest way to complete the wiring is to drop your lower dash panel (FIG 6, FIG 7, FIG 8, FIG 9 & FIG 10).

FIGURE 6

FIGURE 7

FIGURE 8

FIGURE 9

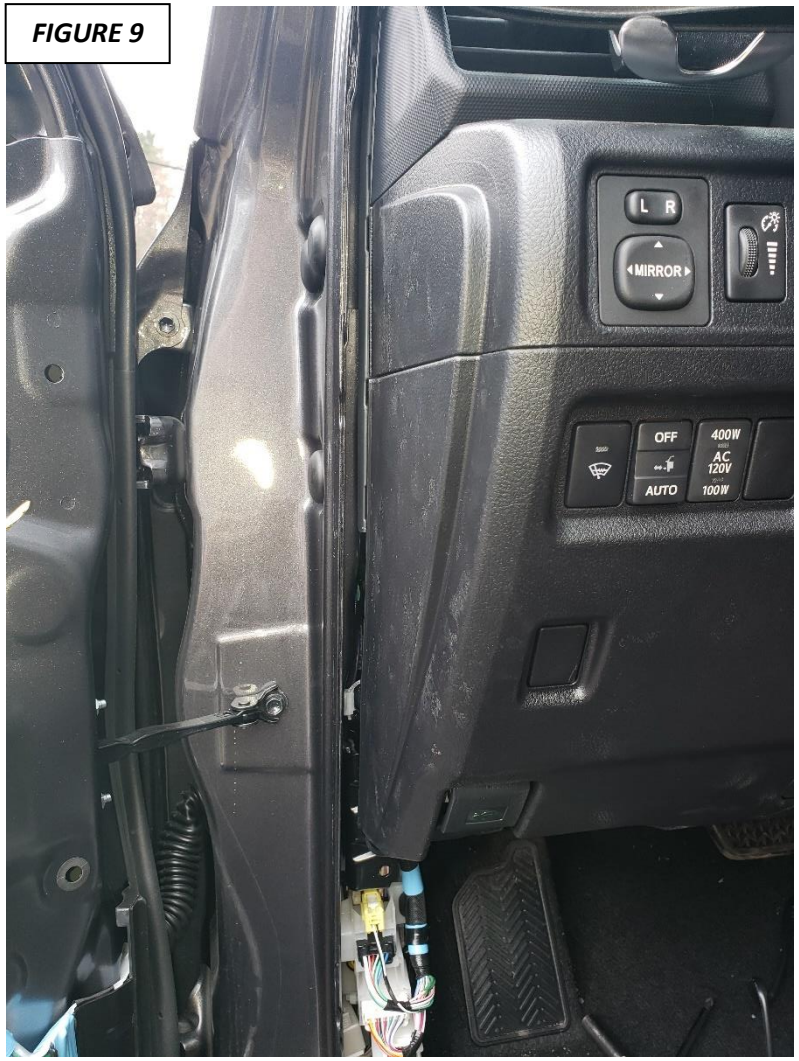


FIGURE 10

4. Disconnect and remove the OEM O1 Switch (FIG 11, FIG 12 & FIG 13).

FIGURE 11

FIGURE 12

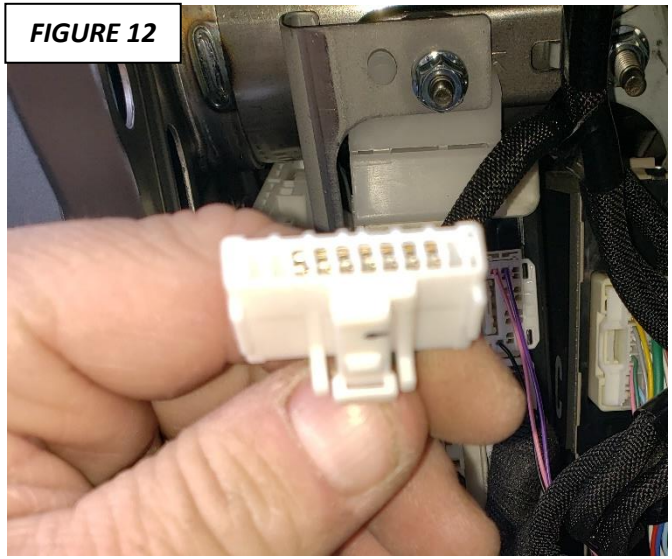
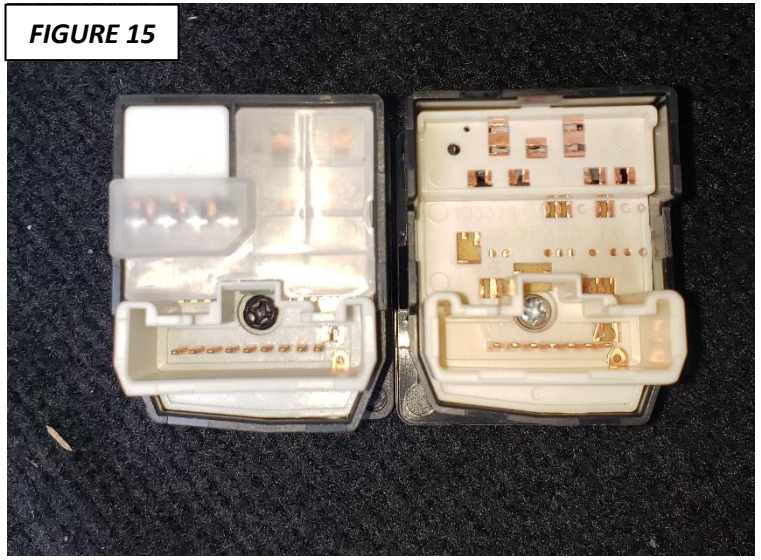


FIGURE 13

5. OEM Mirror Adjust Switch vs. Replacement OEM Mirror Fold & Adjust Switch (FIG 14 & FIG 15).

FIGURE 14

FIGURE 15



6. Extension Harness was a little short around the brake pedal. If this happens to you, using wire cutters, cut the two wires with the terminals on the end but leave enough room to reconnect right before the OEM O1 Mirror Switch (FIG 16 & FIG 17).

FIGURE 16

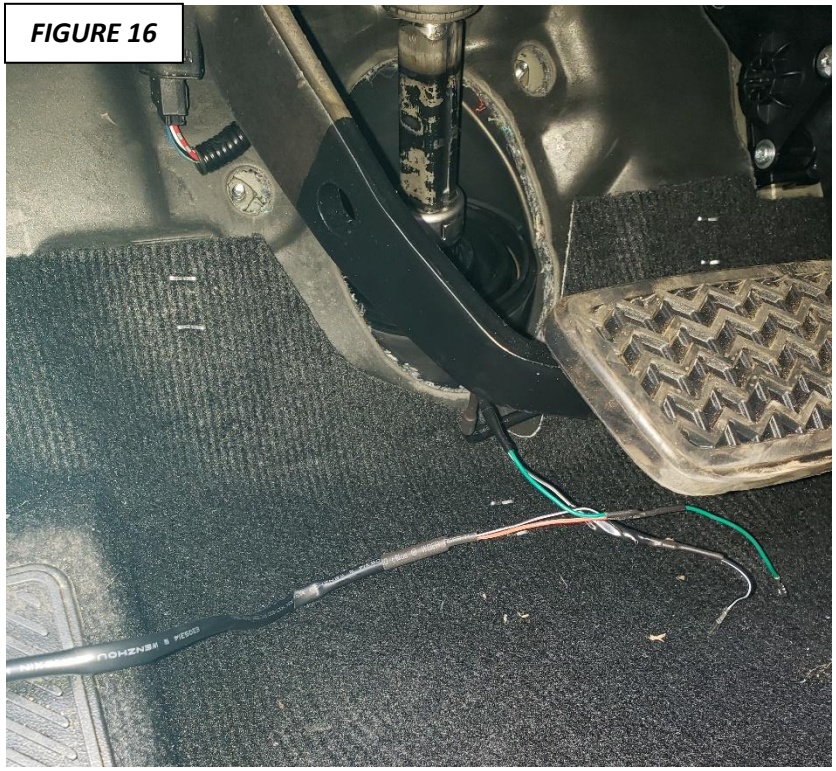
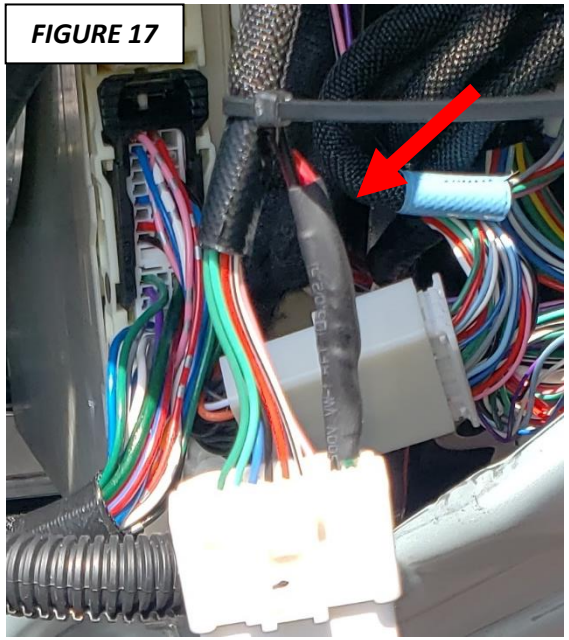
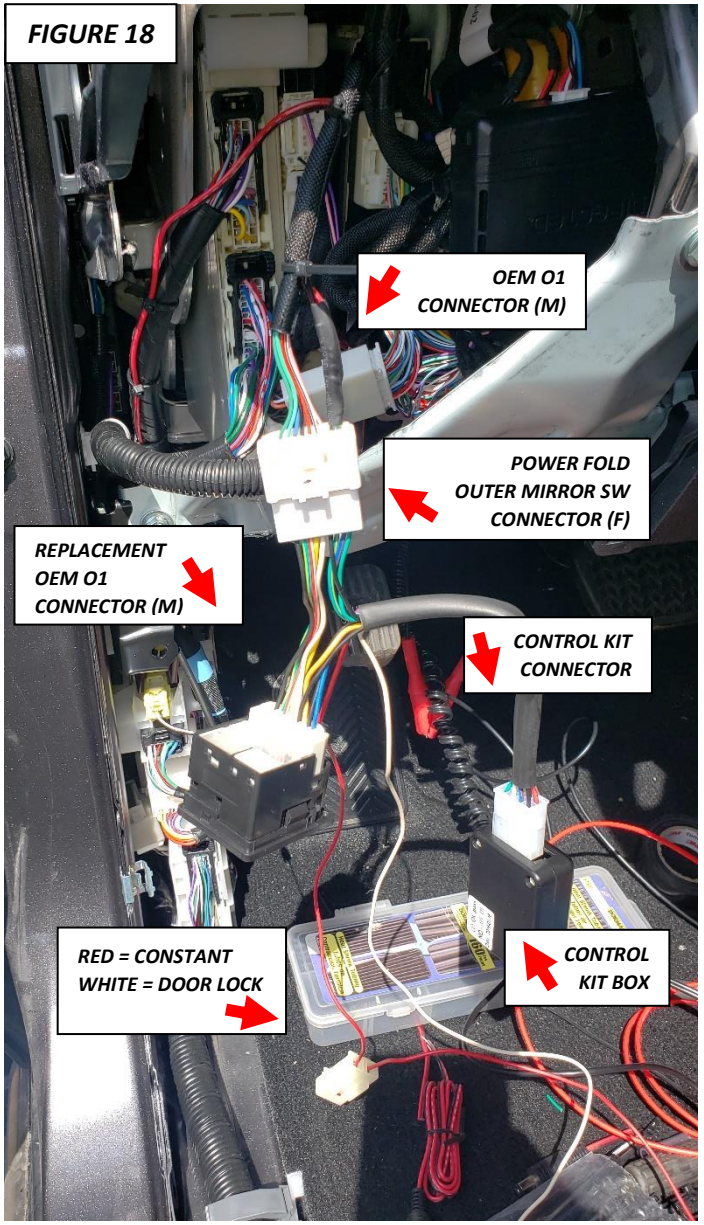


FIGURE 17



7. Connect Wire Harness to all Connectors and Control Kit (FIG 18).

FIGURE 18



8. Locate the OEM Connector in the Kick Panel to connect the White Wire to the Locking System (FIG 19) and decide which Constant Power Source you want to connect to for your Red Wire (FIG 20).

FIGURE 19

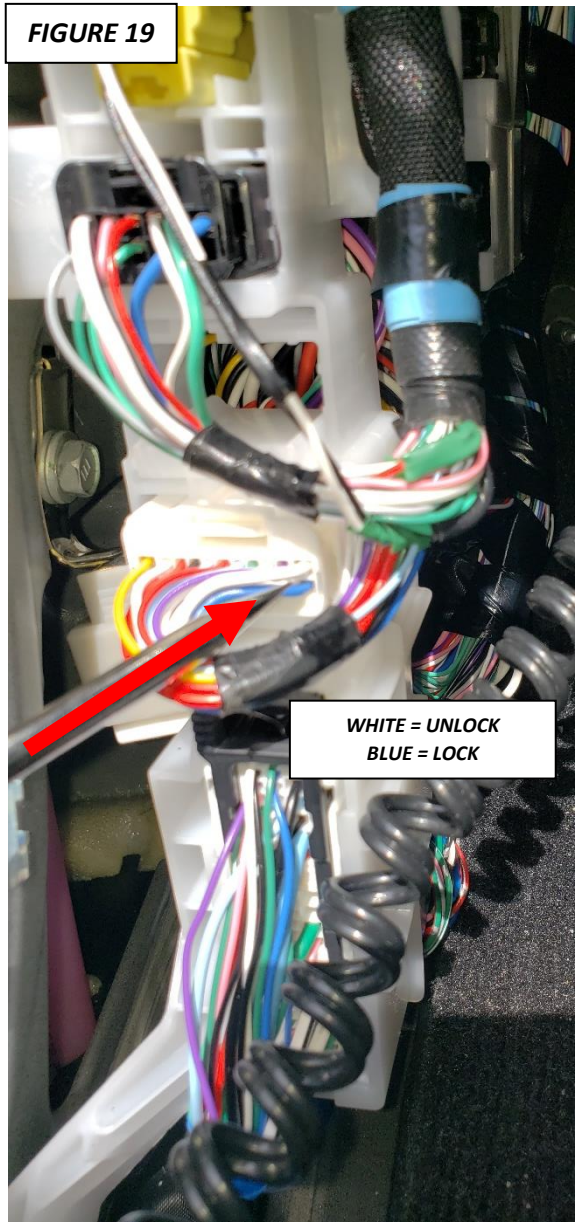
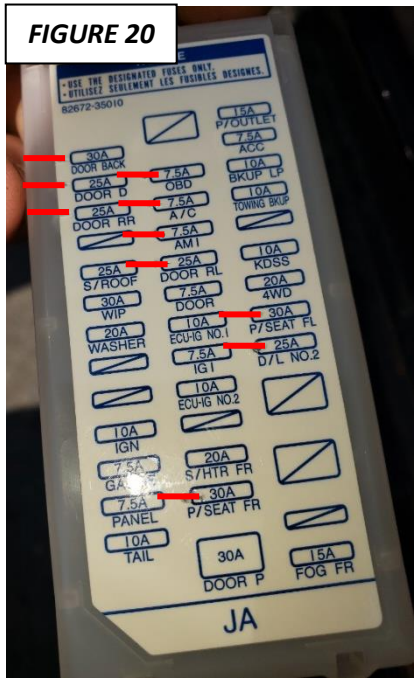


FIGURE 20



9. Push the lower dash panel back into place and re-install all the hardware in the reverse order. Test the system out and ENJOY!

FIGURE 21: **REPLACEMENT OEM ADJUST & FOLD SWITCH COMPLETE**

STEP 8: FINISHED PHOTO GALLARY