

ROUGH COUNTRY

ERBOX61920

RAM 19-UP 1500 CREW CAB POWER BOARD BOX KIT

Thank you for choosing Rough Country for all your vehicle needs.

Please read instructions before beginning installation. Check the kit hardware against the kit contents shown below. Be sure you have all needed parts and know where they go. If question exist, please call us @1-800-222-7023. We will be happy to answer any questions concerning this product. Check all fasteners for proper torque. Check to ensure for adequate clearance between all components. Periodically check all hardware for tightness..



Torque Specs:

Size	Grade 5	Grade 8	Size	Class 8.8	Class 10.9
5/16"	15 ft/lbs	20ft/lbs	6MM	5ft/lbs	9ft/lbs
3/8"	30 ft/lbs	35ft/lbs	8MM	18ft/lbs	23ft/lbs
7/16"	45 ft/lbs	60ft/lbs	10MM	32ft/lbs	45ft/lbs
1/2"	65 ft/lbs	90ft/lbs	12MM	55ft/lbs	75ft/lbs
9/16"	95 ft/lbs	130ft/lbs	14MM	85ft/lbs	120ft/lbs
5/8"	135ft/lbs	175ft/lbs	16MM	130ft/lbs	165ft/lbs
3/4"	185ft/lbs	280ft/lbs	18MM	170ft/lbs	240ft/lbs



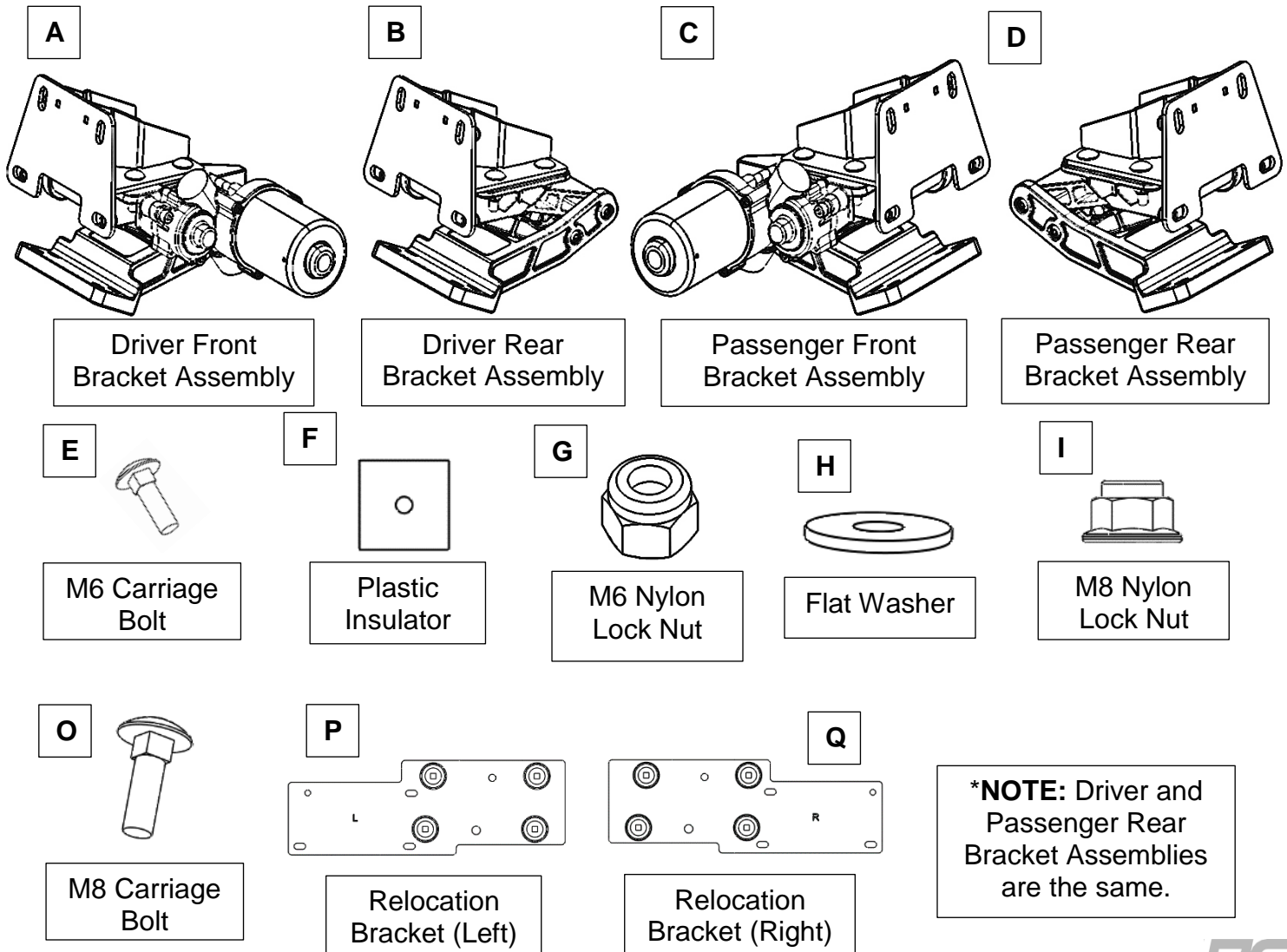
INSTALLATION INSTRUCTIONS

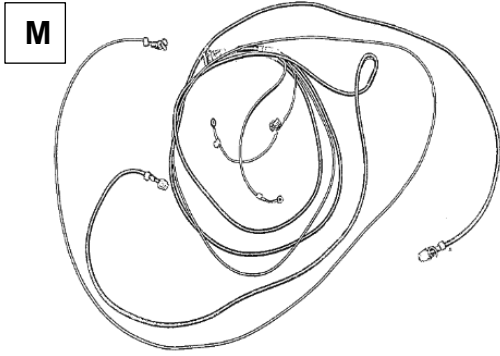
Mechanical PARTS LIST:

Qty	Item Description	Qty	Item Description
2	Running Boards	16	6-1.0x20mm Carriage Bolts
1	Driver/Left Front Linkage Assembly	16	6mm Nylon Lock Nuts
1	Passenger/Right Front Linkage Assembly	16	6mm x 16mm x 1.6mm Flat Washers
1	Driver/Left Rear Linkage Assembly	12	8mm x 24mm x 2mm Flat Washers
1	Passenger/Right Rear Linkage Assembly	24	8-1.25x30mm Carriage Bolts
1	Electronic Materials Package	36	8mm Flange Nylon Lock Nuts
1	Passenger Side Relocation Bracket	8	Plastic Retainers
1	Driver Side Relocation Bracket		
4	Steel Mounting Bracket		

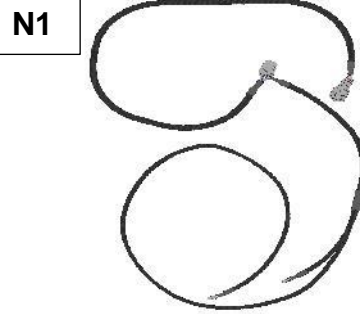
Electronic Materials Package PARTS LIST:

Qty	Item Description	Qty	Item Description
1	Main Harness	1	ECU
4	Magnetic Switches	4	LED lights
1	LED Y-Harness (280mm)	1	LED Y-Harness (1200mm)
4	Magnets and Adhesive Prep Kit	15	Zip ties

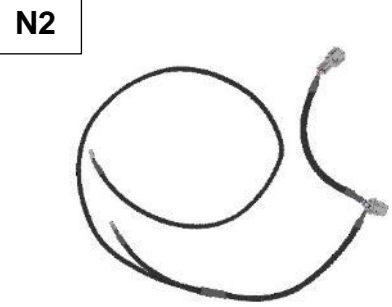




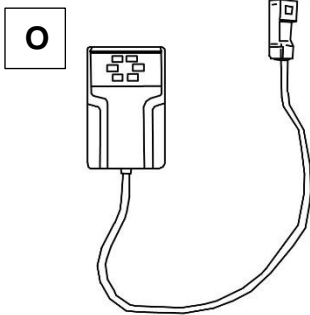
Main Harness



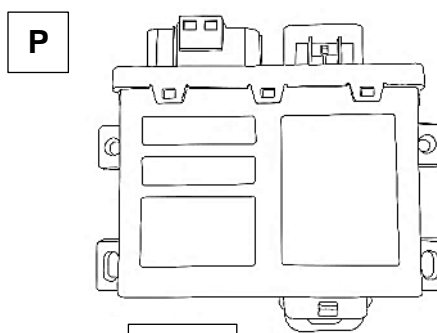
LED Y-Harness (1200mm)



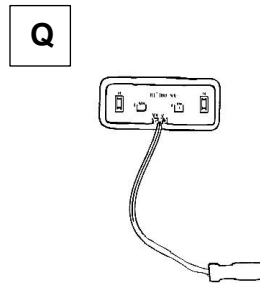
LED Y-Harness (280mm)



Magnetic Switches



ECU

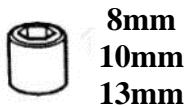


LED Lights

TOOLS REQUIRED



Ratchet



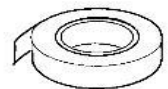
Socket



Extensions



Wrenches

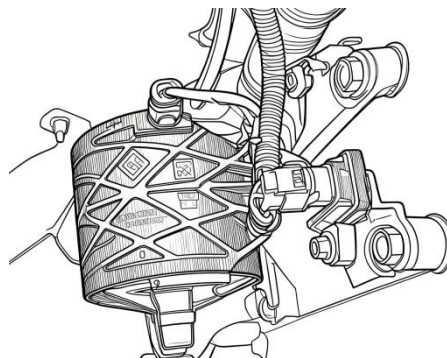


Electrical Tape

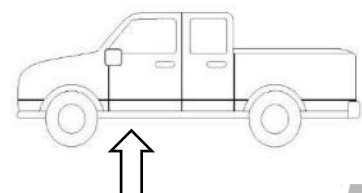
1A Locate body frame on underside of vehicle and identify whether there is a ATMM module. Be sure to check both Driver and Passenger Sides. Some vehicles may not have ATMM modules from the manufacturer.

If vehicle has ATMM Modules, **follow Step 1A**. If vehicle does not have ATMM modules or Mass Dampers on front part of body frame, **proceed directly to Step 1B** instead.

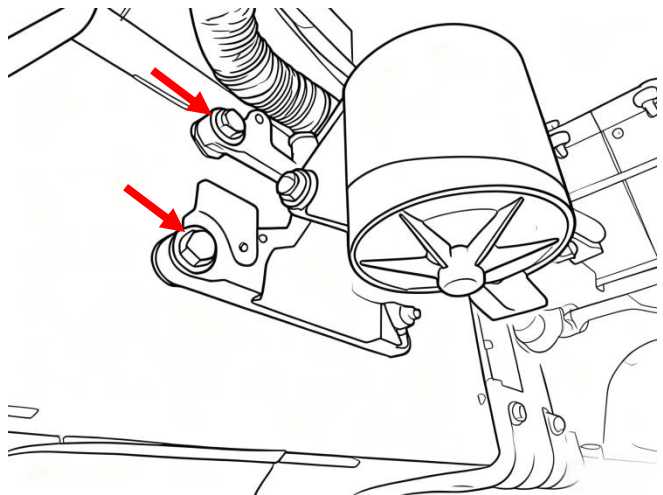
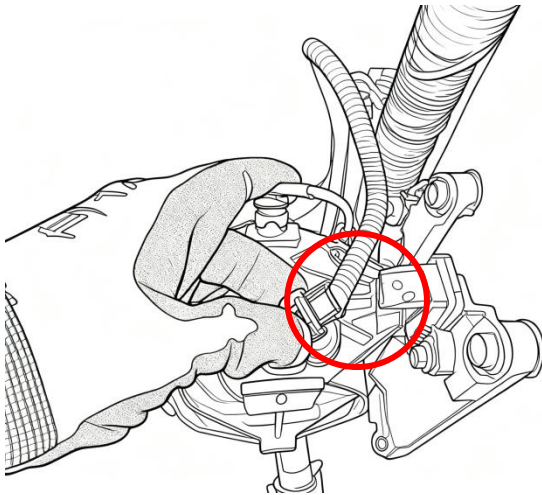
***WARNING:** Removing ATMM may cause excess vibration and noise when driving.



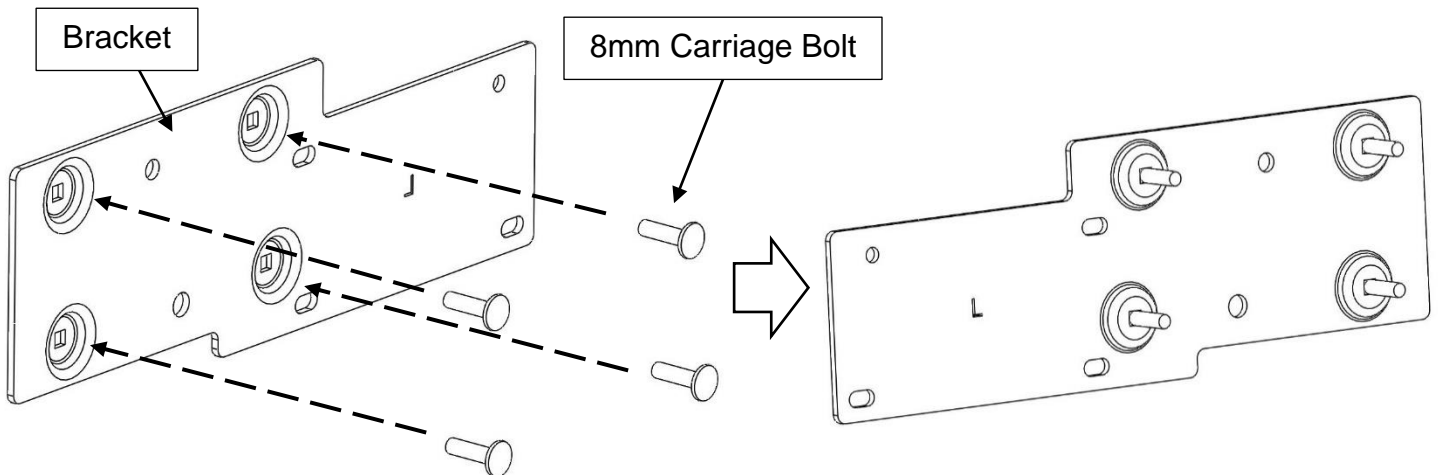
ATMM Module is meant to dampen vibrations on frame.



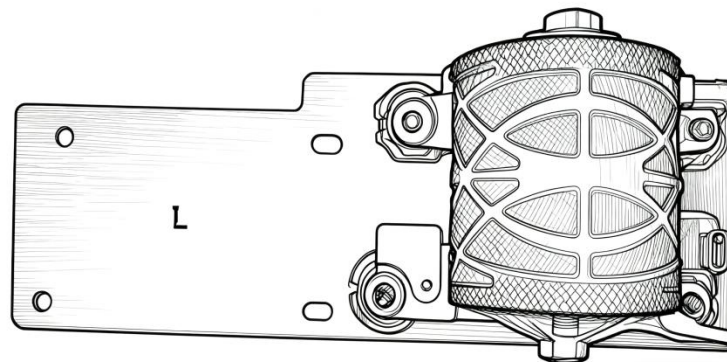
Locate Driver Side ATMM module on frame. Unplug ATMM module. Remove ATMM module from frame by unbolting fasteners.



Locate Relcation Bracket (Left) (P) and M8 Carriage bolts. Insert M8 Carriage bolts (O) through the square holes on the Relcation Bracket (P) and secure using Plastic Insulators (F). This will keep the carriage bolts from falling out of the holes on the bracket.



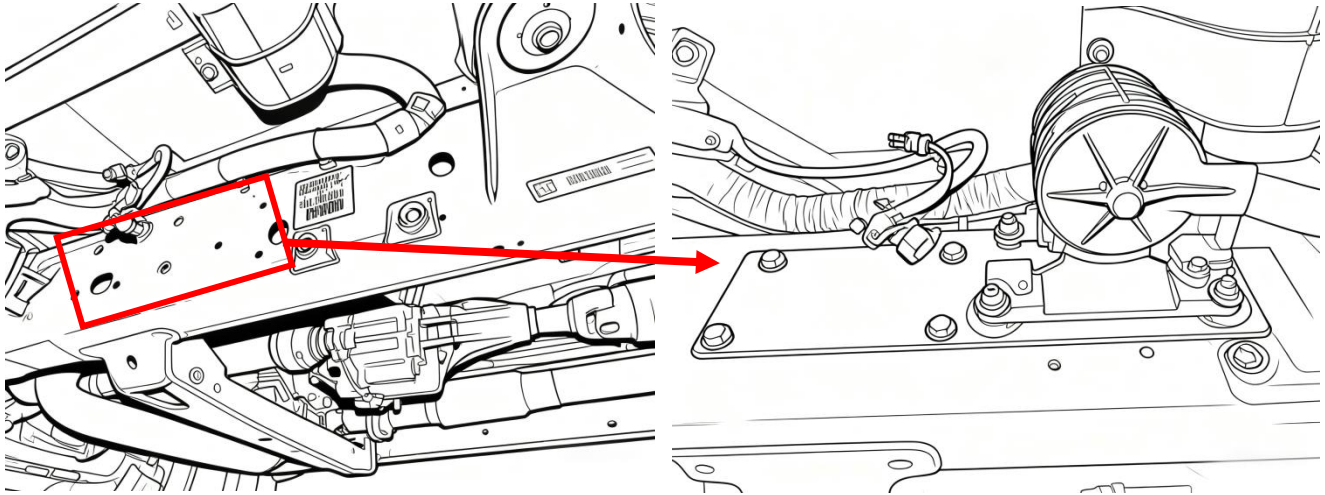
Mount the ATMM onto the relocation bracket and loosely secure into place using the provided M8 Nylon Lock Nuts (I).



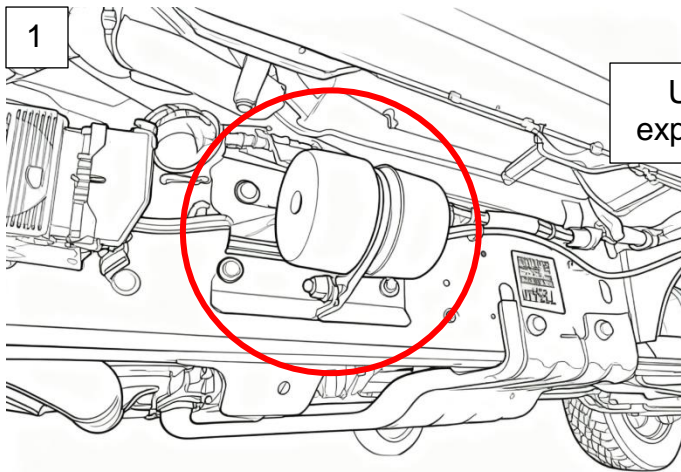
Mount the Relocation Bracket (P) onto the vehicle's Driver Side frame where the ATMM was using the OE flanged bolts. Be sure to fasten all hardware fully.

The angle of cylinder housing of the ATMM can be adjusted by loosening the pivot bolt.

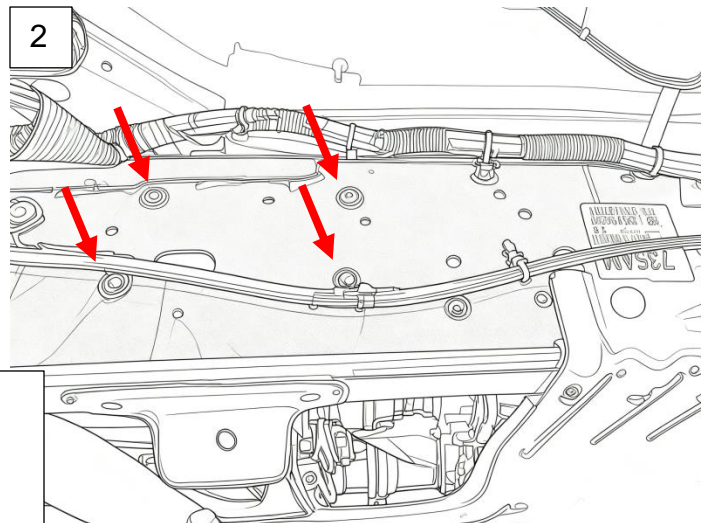
Repeat step for Passenger Side.



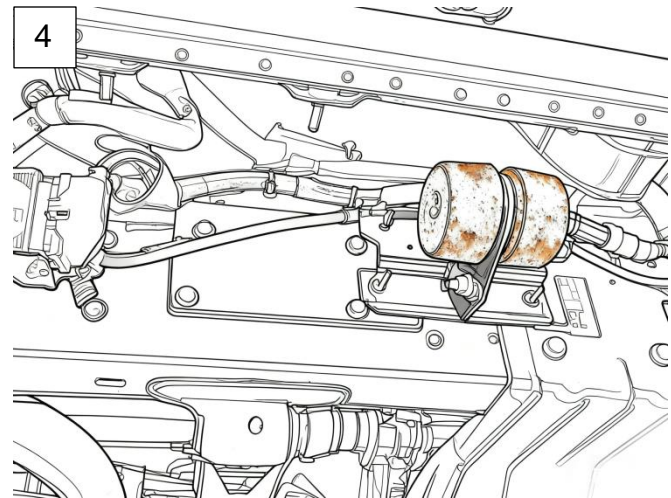
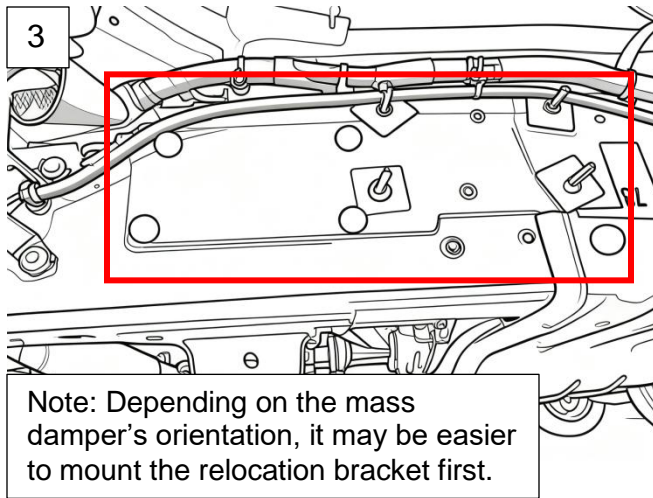
Some vehicles will have a Mass Damper instead of an ATMM. Follow the same steps and relocate the damper using the relocation brackets. Note that some vehicles will only have a mass damper on one side of the vehicle. Whenever that is the case, simply use the one appropriate relocation bracket.



Unbolt the passive mass damper to expose 4 threaded inserts on the frame.

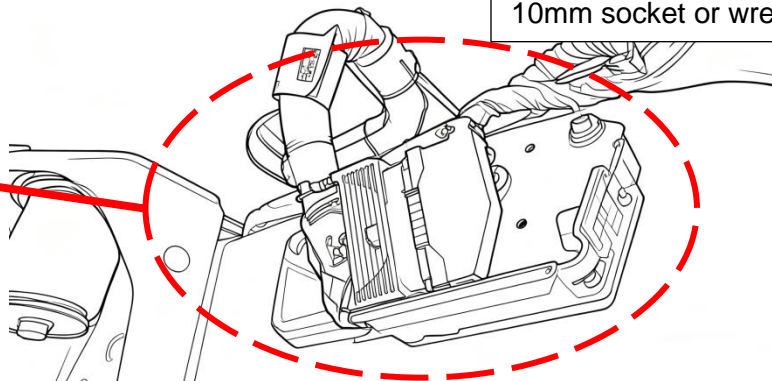


Secure the Carriage Bolts onto the Relocation Brackets first using the plastic retainers and then mount the Relocation Bracket to the frame.



On some vehicles like the TRX, an OE module plug may be in the way. If so, unbolt the plug's bracket from the frame. Then remove the plug from the bracket. Plug may be located at the front or rear.

OE plug bracket



Note: OE plug bracket has 3 bolts. Unfasten them using a 10mm socket or wrench.

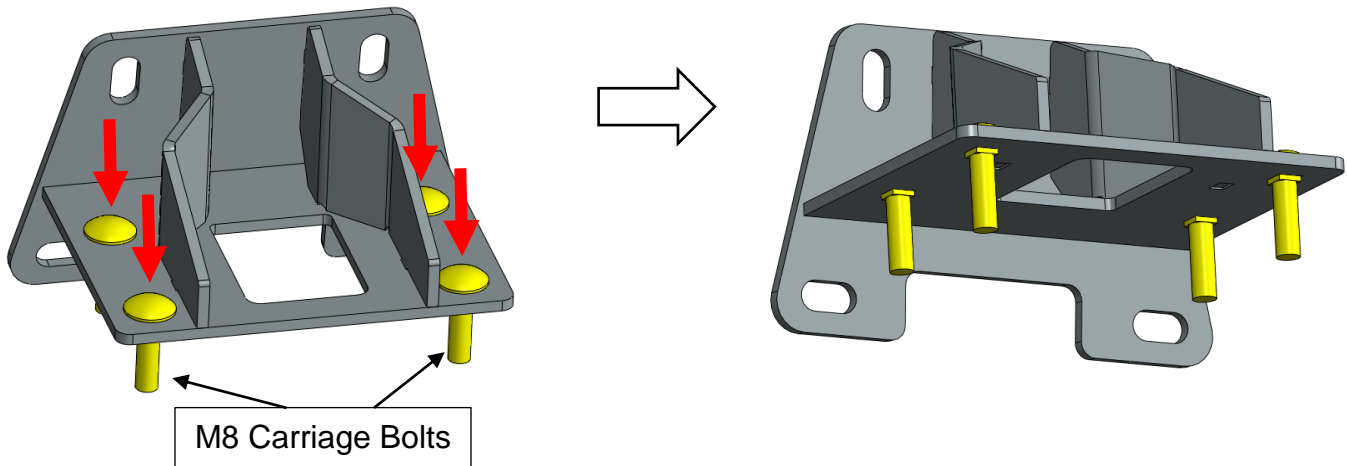
Once removed, re-secure the OE plug to the frame or other OE harness, out of the way of the components using zip ties.

1B

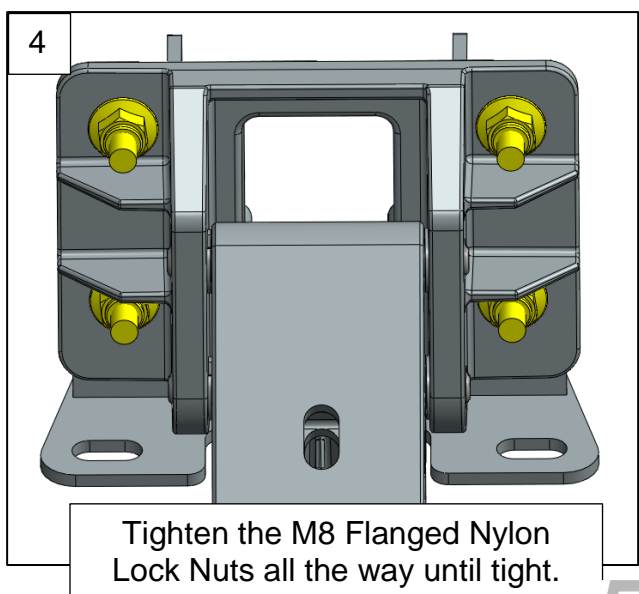
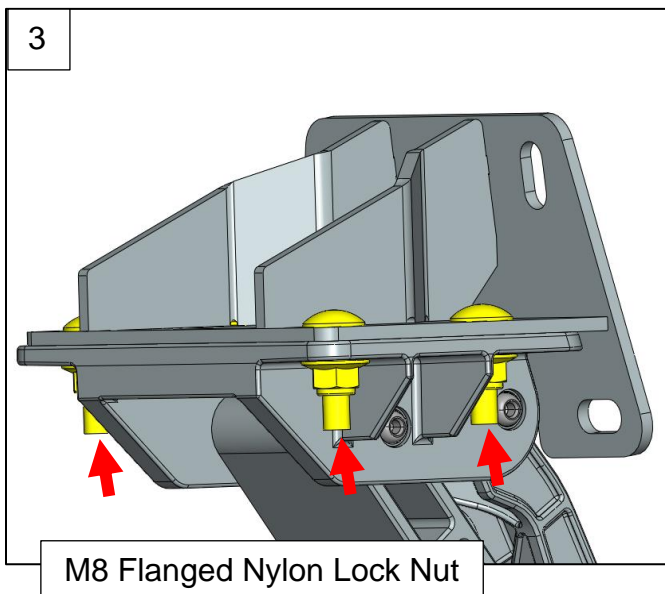
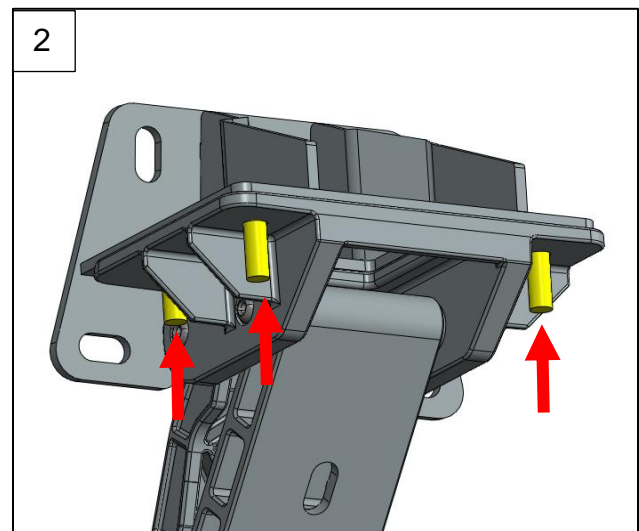
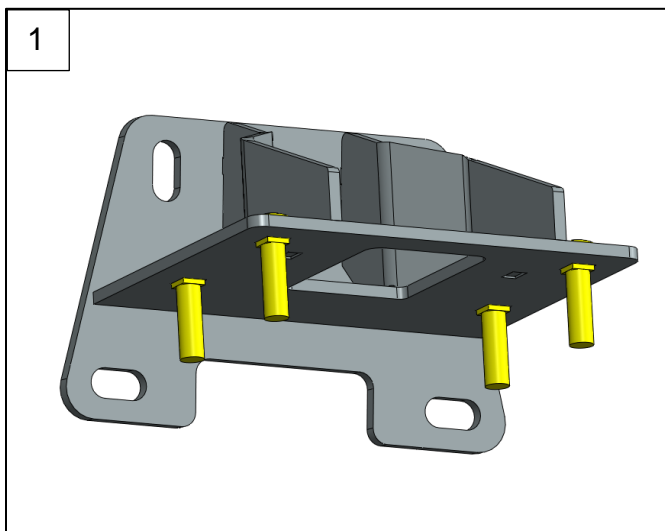
Take the mounting brackets and attach them to the linkage arms.

First, insert the M8 Carriage Bolts into the square slots on the brackets so that the threads are pointing downwards. (see next page for illustrations)

Insert M8 Carriage Bolts downwards.

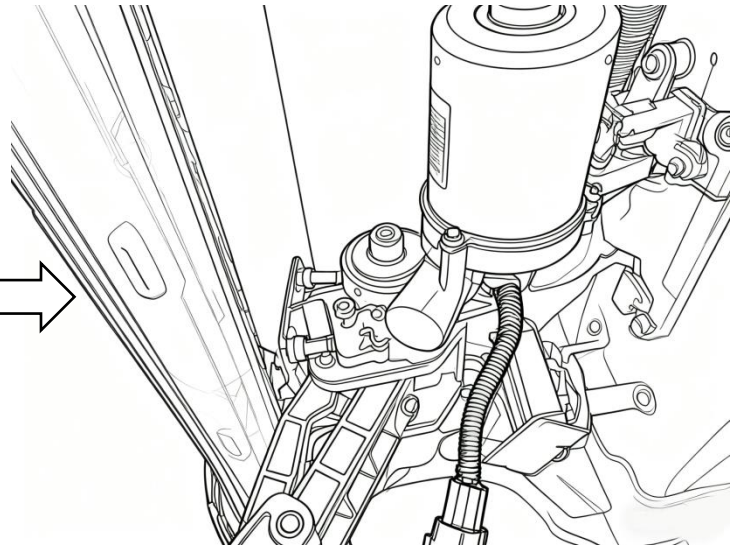
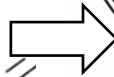
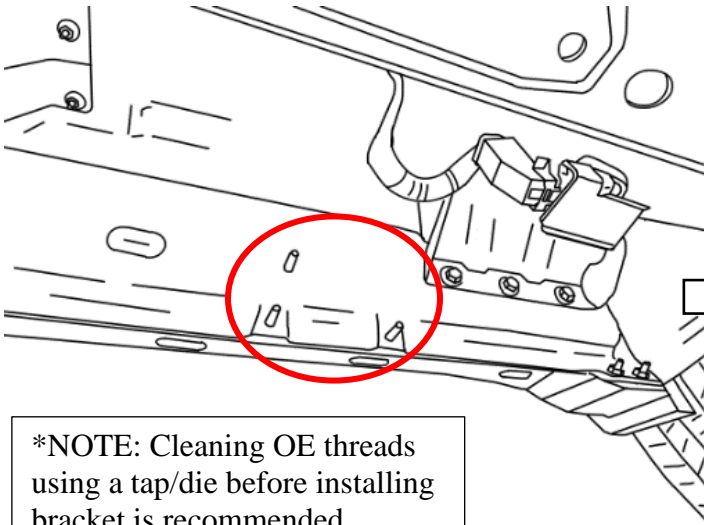


Next, use the M8 Flanged Nylon Lock Nuts to fasten the aluminum linkage arms to the brackets. There are 4 fastening points on each bracket.



2

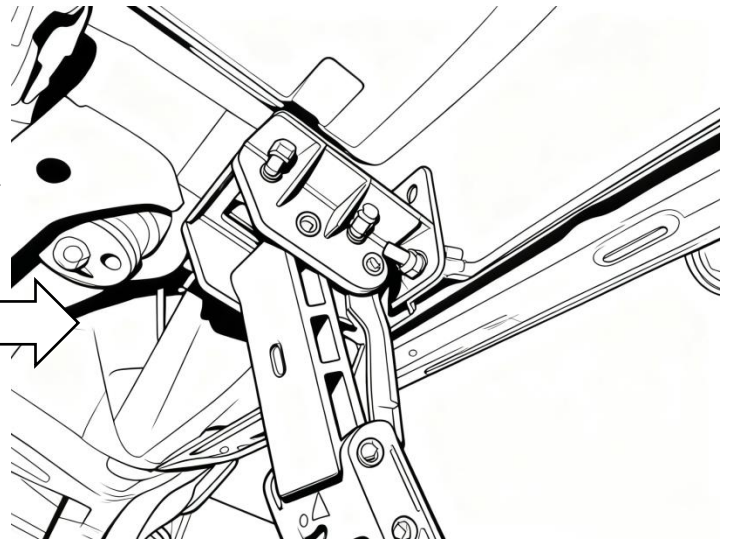
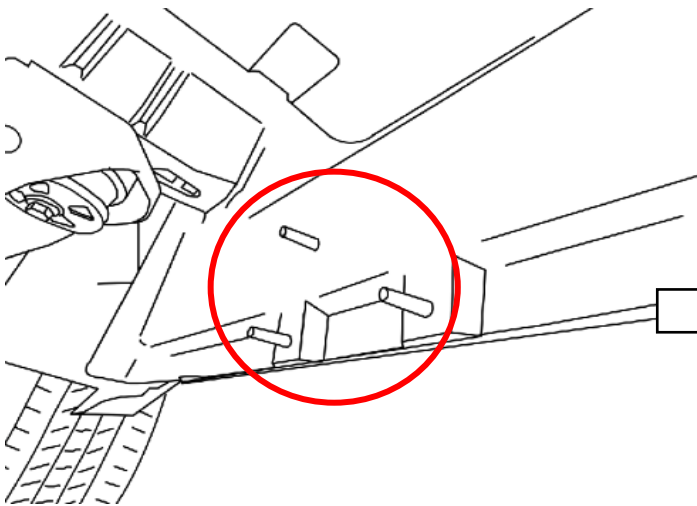
Next, line up front mounting bracket slots to the studs and place Driver Side/Left Front Bracket Assembly (A) onto rocker panel. Then fasten Nylon Lock Nuts (I) and washers (H). Do not tighten all the way yet. If the vehicle has Mass Dampers that are in the way, remove the mass damper before installing the bracket assembly.



*NOTE: Cleaning OE threads using a tap/die before installing bracket is recommended.

3

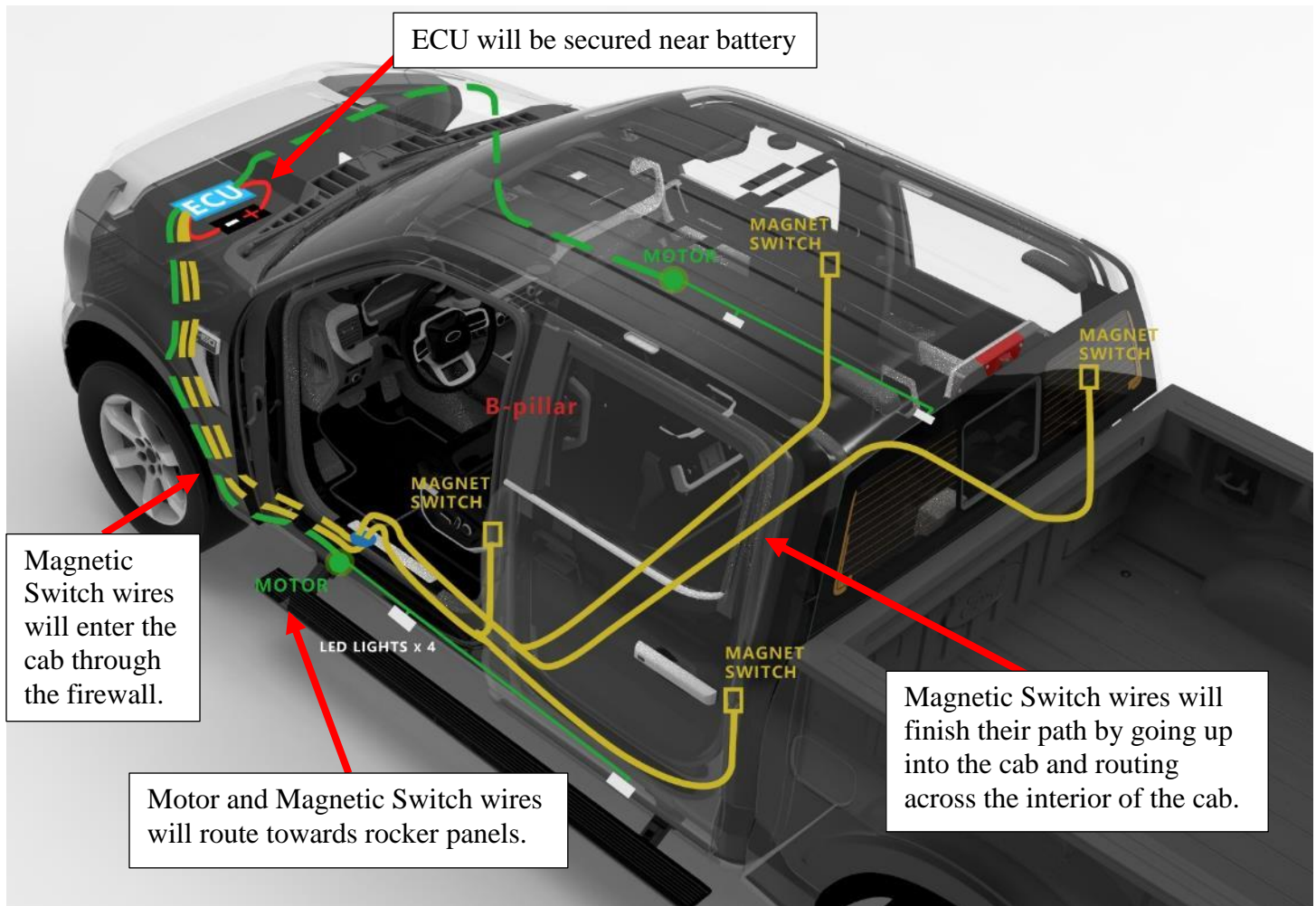
Locate rear mounting points. Next, line up rear mounting bracket slots to the studs and place Driver Side/Left Rear Bracket Assembly (B) onto rocker panel. Then fasten Nylon Lock Nuts (I) and washers (H). Do not tighten all the way yet.



4

Repeat steps 1 – 3 for the Passenger Side.

In general, the routing of the wires will follow the basis of the graphic below. The legs of the Main Harness for the motors labeled "Passenger Side" will route towards the Passenger Side of the vehicle, and the legs labeled "Driver Side" will route towards the Driver Side of the vehicle.



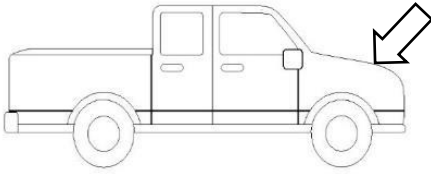
The general steps for the routing method are detailed in steps 8 to 16. However, it is important to note that the Passenger Side Magnetic Switch wires route into the cab via the same grommet/plug in the firewall as the Driver Side Magnetic Switch wires.

Once the Passenger Side Magnetic Switch wires are routed into the cab, they need to be routed along the inside, across to the Passenger Side of the cab and up to the doors like pictured in the graphic above.

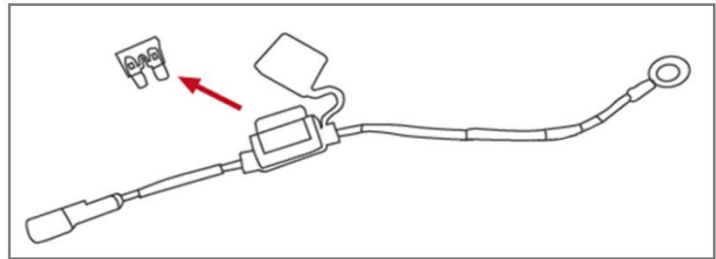
*NOTE: Continue to next step for more details.

6

Start from the engine compartment by opening the front hood of the vehicle. Locate the Battery and its terminals (positive/negative). Remove the 25A fuse from the fuse box that comes with the main harness (M).



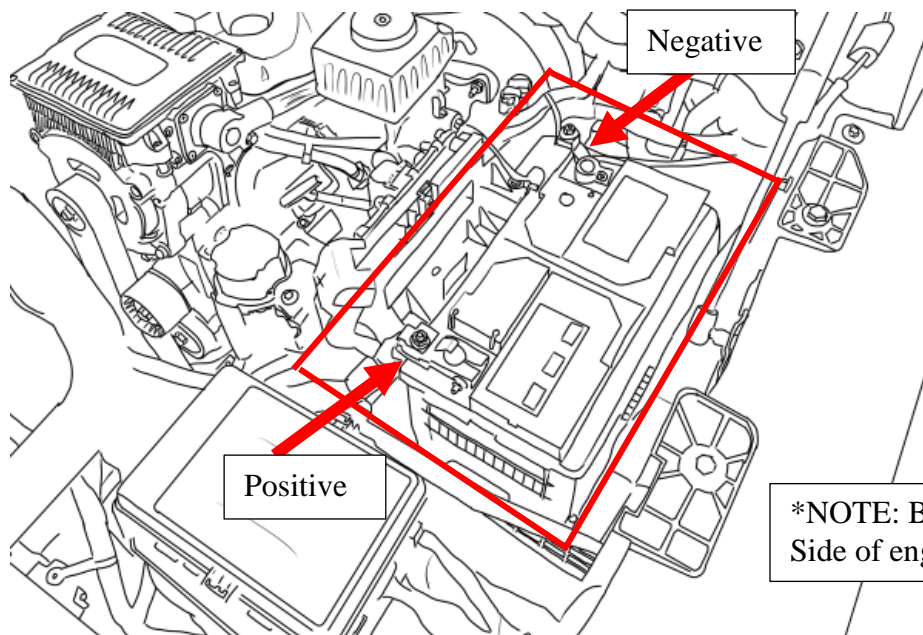
***WARNING:** Keeping the fuse connected to the fuse box may result in electrical sparks and risk of shorting when working with the battery.



Open fuse holder cap and remove fuse

7

Connect the positive power lead on the main harness (J) to the positive battery terminal. Connect the negative lead to the negative battery terminal. Make sure both power leads are fully secured. Connect the ECU (M) to the main harness.

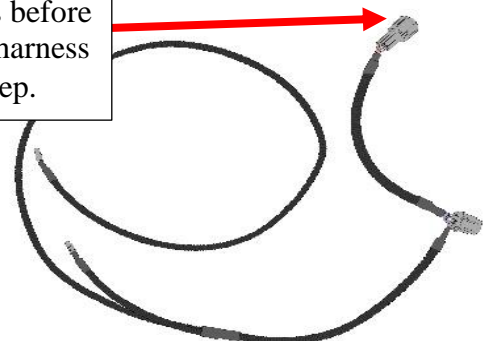


***NOTE:** Battery is on Driver Side of engine compartment.

Connect the Long LED Y-Harness (K1) to the Driver-side branch of the main harness.

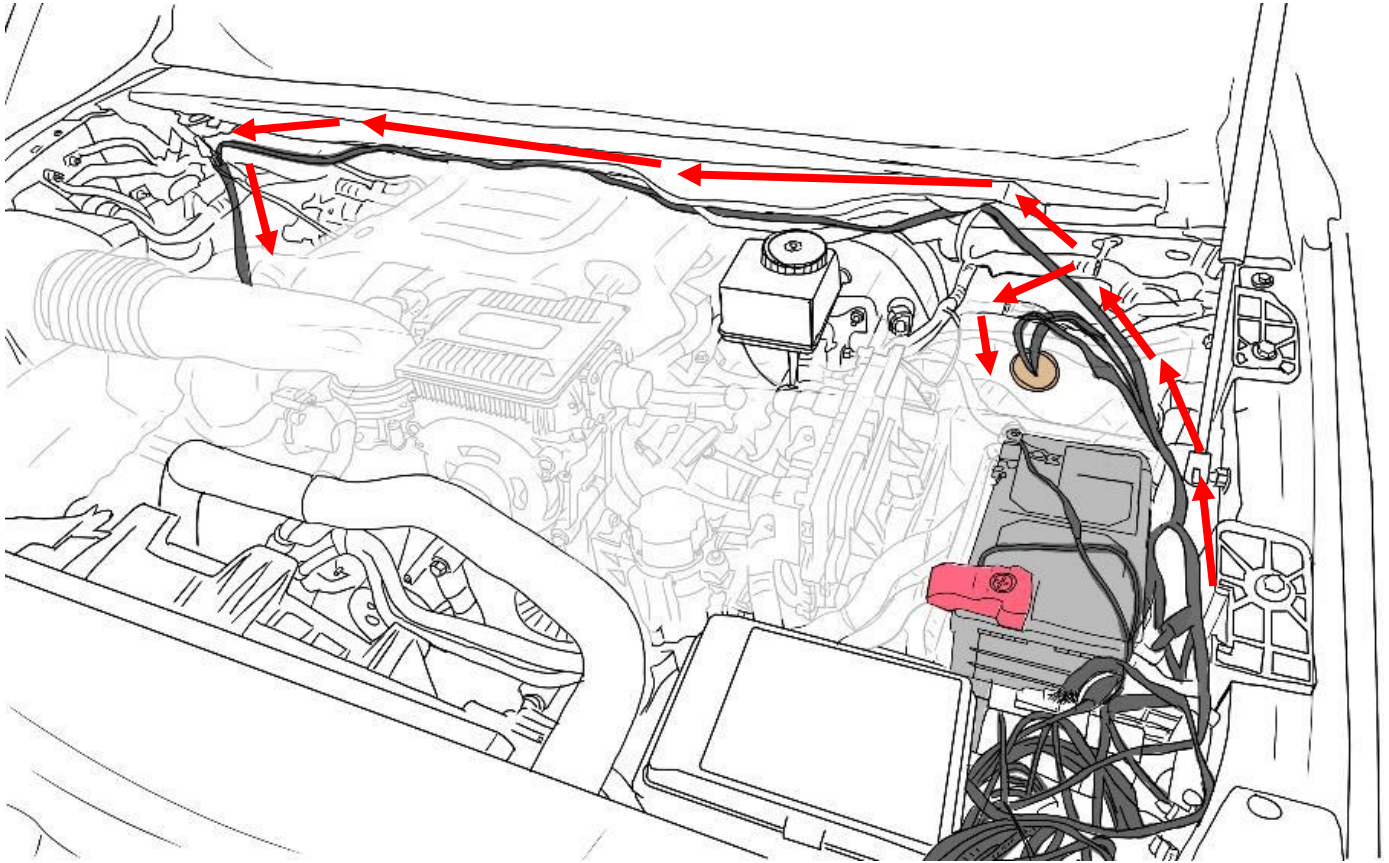
Connect the Short LED Y-Harness (K2) to the Passenger-side branch of the main harness.

Connect leads before routing main harness legs in next step.

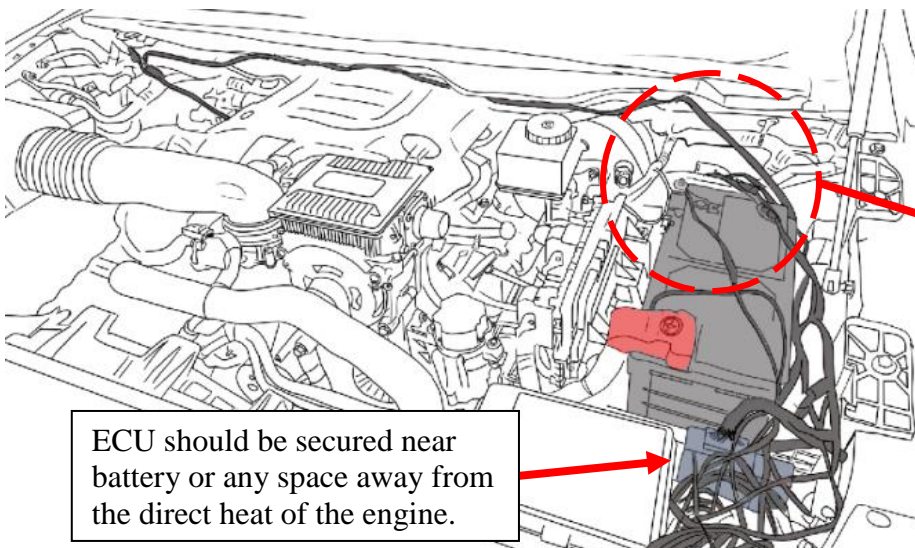


Route the main harness (J) around the battery, up along the rear of the engine compartment. The longer motor Driver-side branch of the main harness must route down the backside, against the fire wall, and down past the steering column towards the vehicle frame. **Be sure to avoid contact with the steering column.**

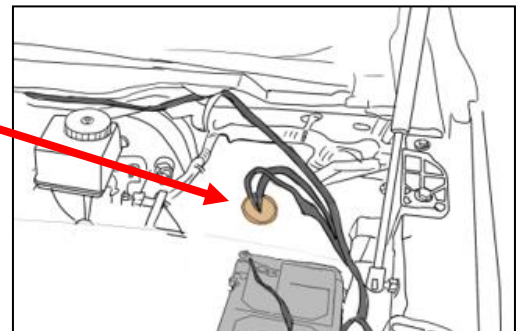
Route the shorter motor (marked "Passenger-side") leg of the harness down the Passenger-side wheel well. **Be sure to avoid contact with any moving or hot engine components.** Attach and secure the main harness (J) with supplied cable ties.

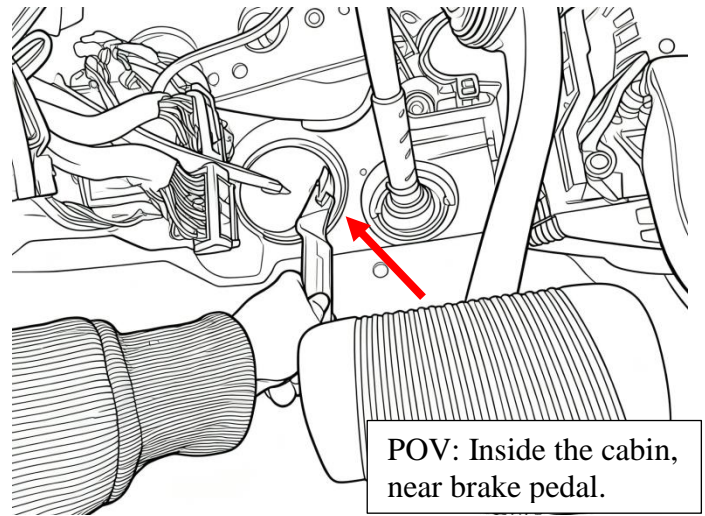
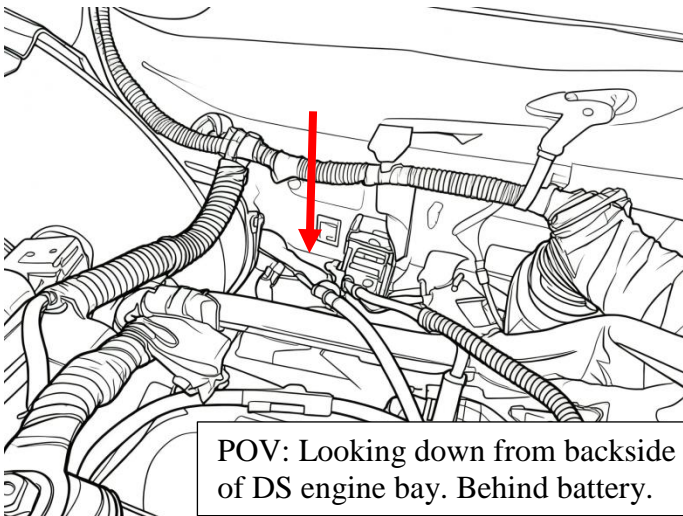


Route the Magnetic Switch wires through the double-sided rubber boot against the backside of the engine bay firewall. The boot can be clearly seen from the inside of the cabin. **Be sure to avoid contact with the steering column.**

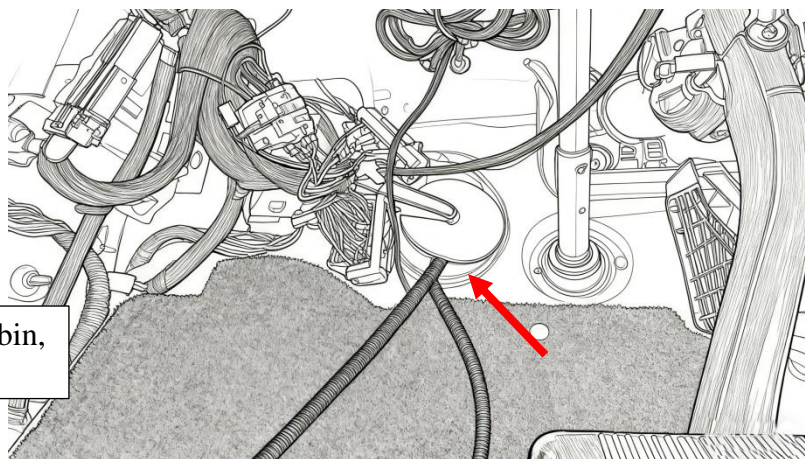


ECU should be secured near battery or any space away from the direct heat of the engine.



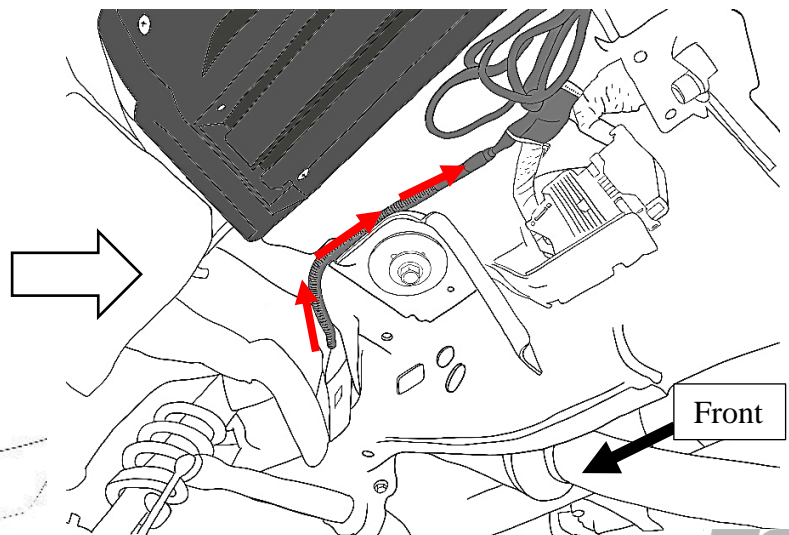
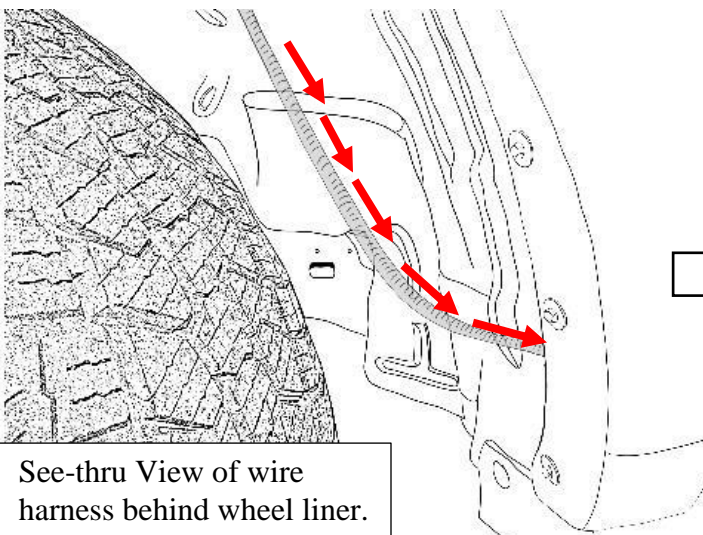


Inside the cabin, the rubber boot access is located under the steering wheel, behind the brake pedal. A pry-tool is recommended when peeling back the boot flap from the inside of the cabin. It is advised to finish routing the Magnetic Switch wires before attempting to bundle any extra length.

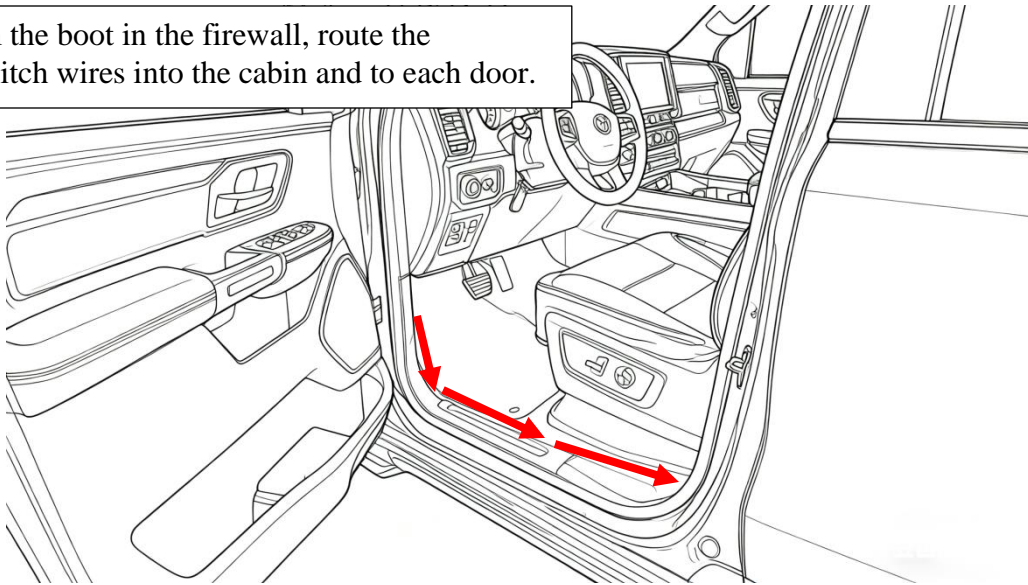


9

Route the motor wires of the main harness (J) through the engine bay and **behind the Driver-Side wheel well liner**, then to the Drive-side frame.

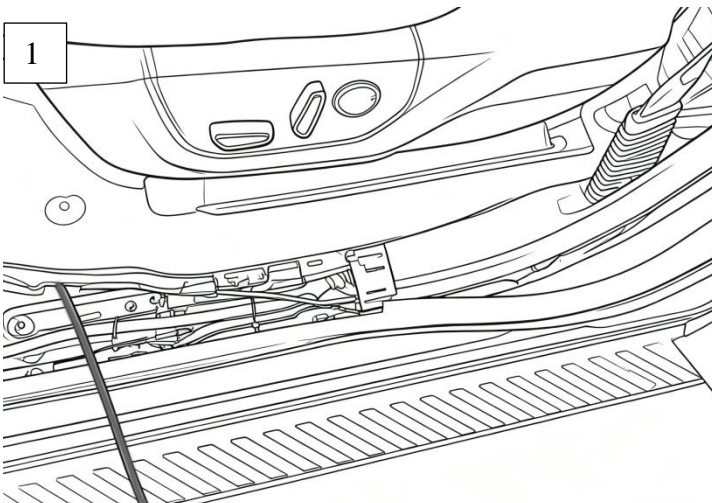
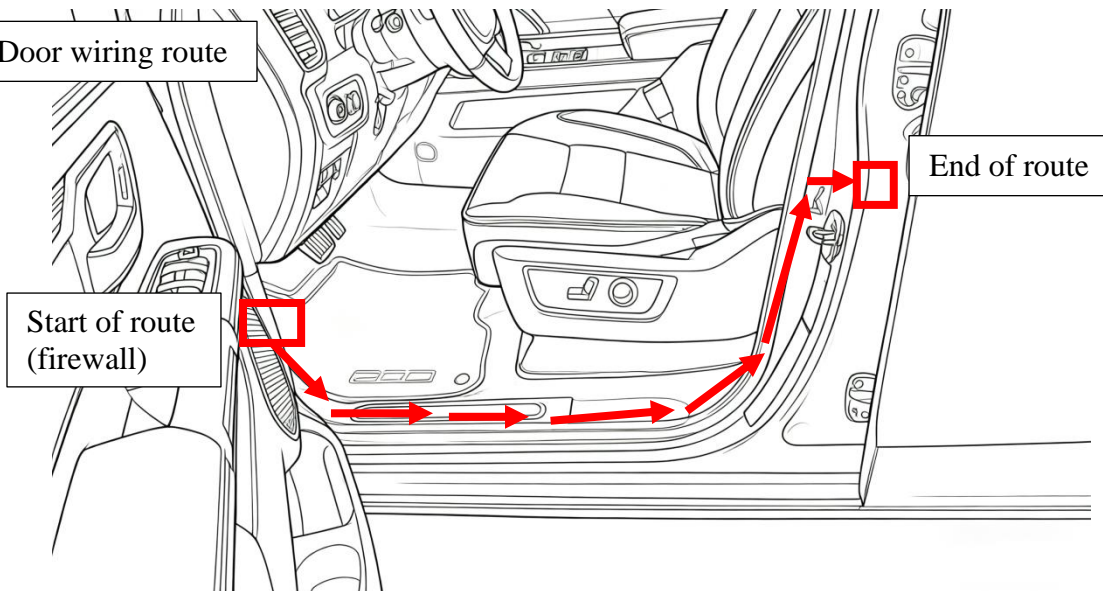


Starting from the boot in the firewall, route the Magnetic Switch wires into the cabin and to each door.

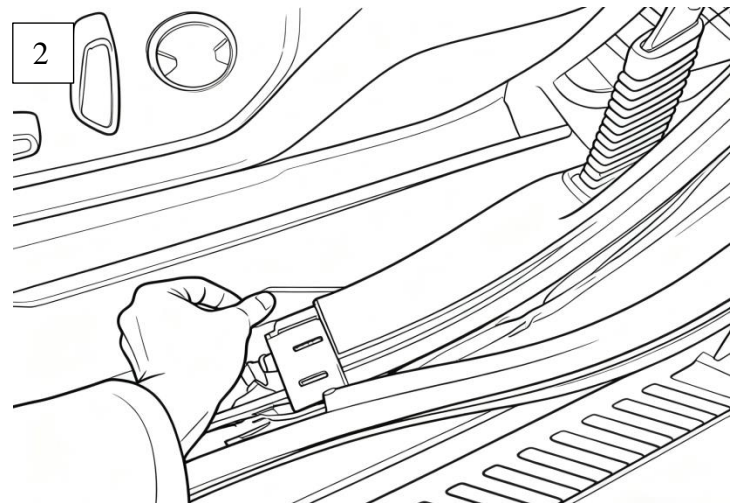


Starting on the front door, take the shorter signal wire and route it up through the underplating and weather seal of the panels up to where the door latch striker is.

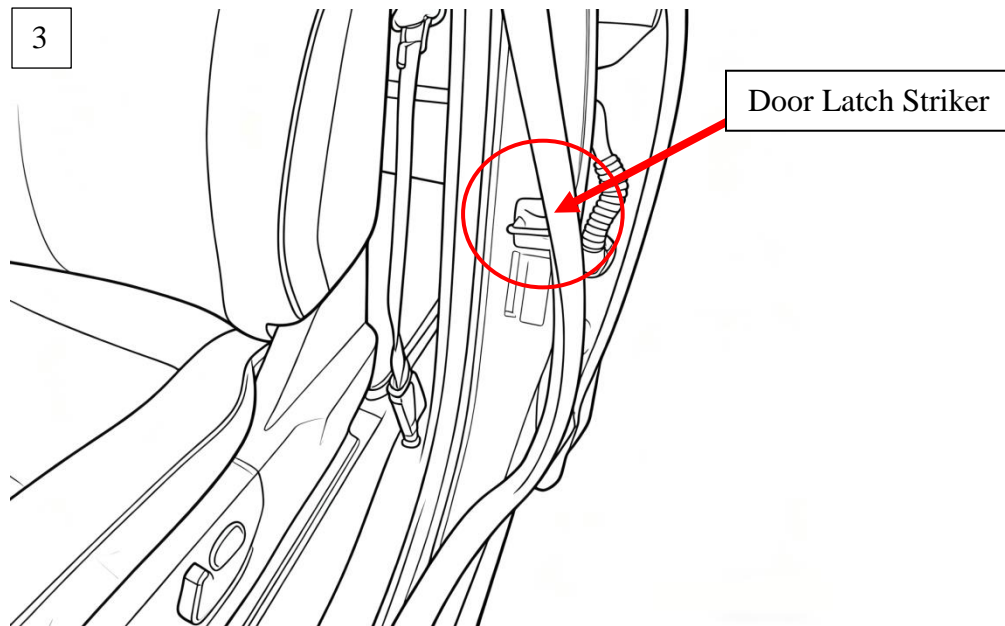
DS Front Door wiring route



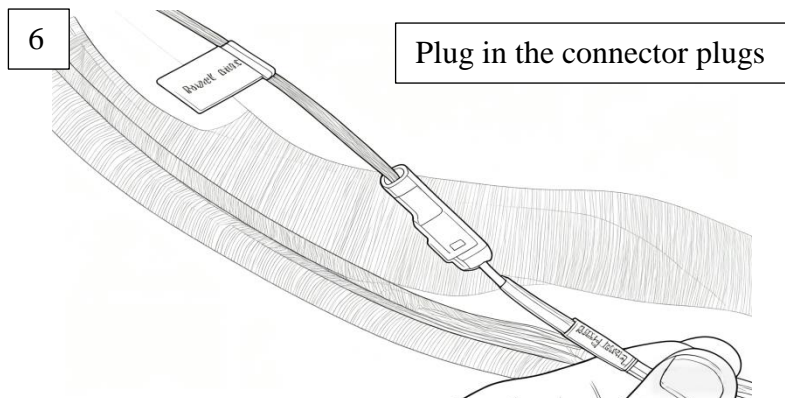
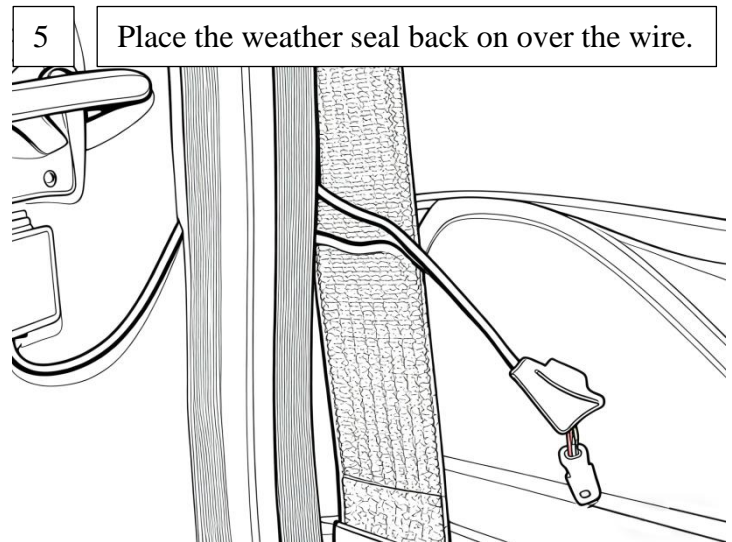
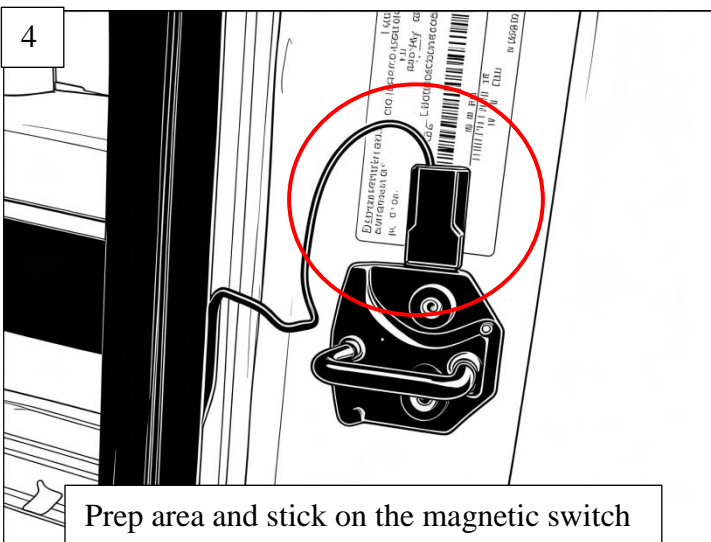
Insert the wire into the revealed spaces underneath



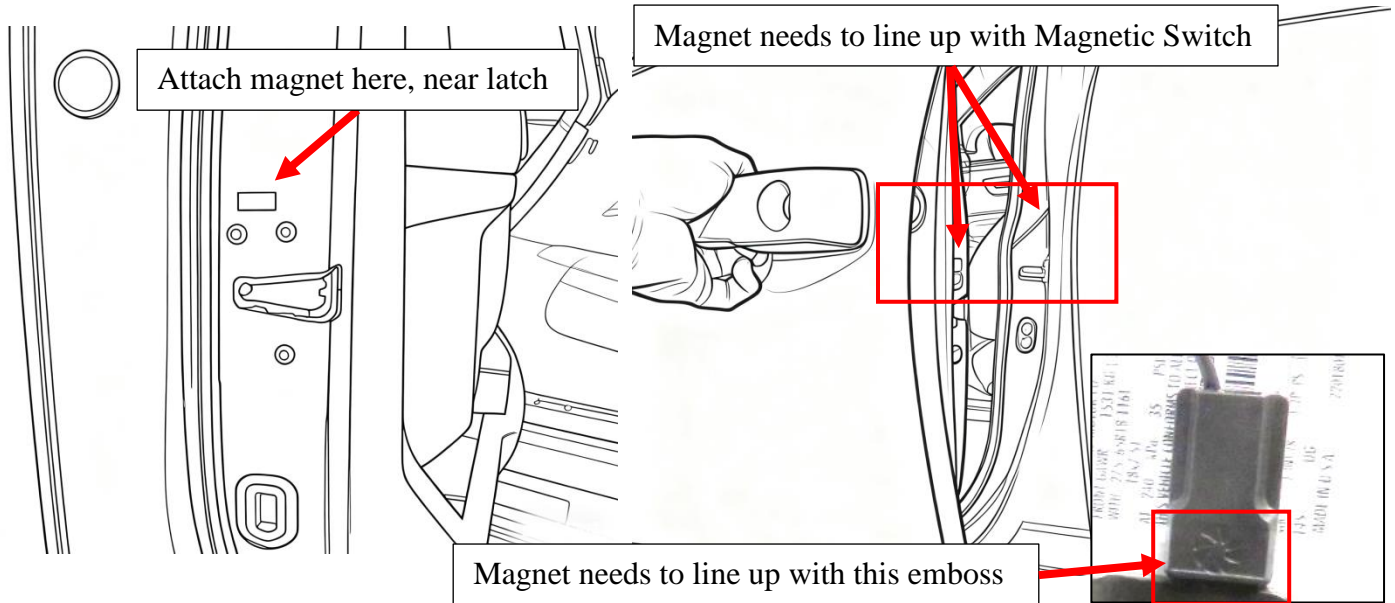
It is recommended to go under the plastic paneling.



After routing the signal wire near the striker, attach the magnetic switch to the B-pillar just above or below the striker. Be sure to clean the area using alcohol wipes and a clean cloth to ensure maximum adhesion to the surface. Then connect the signal wire plug to the magnetic switch plug.



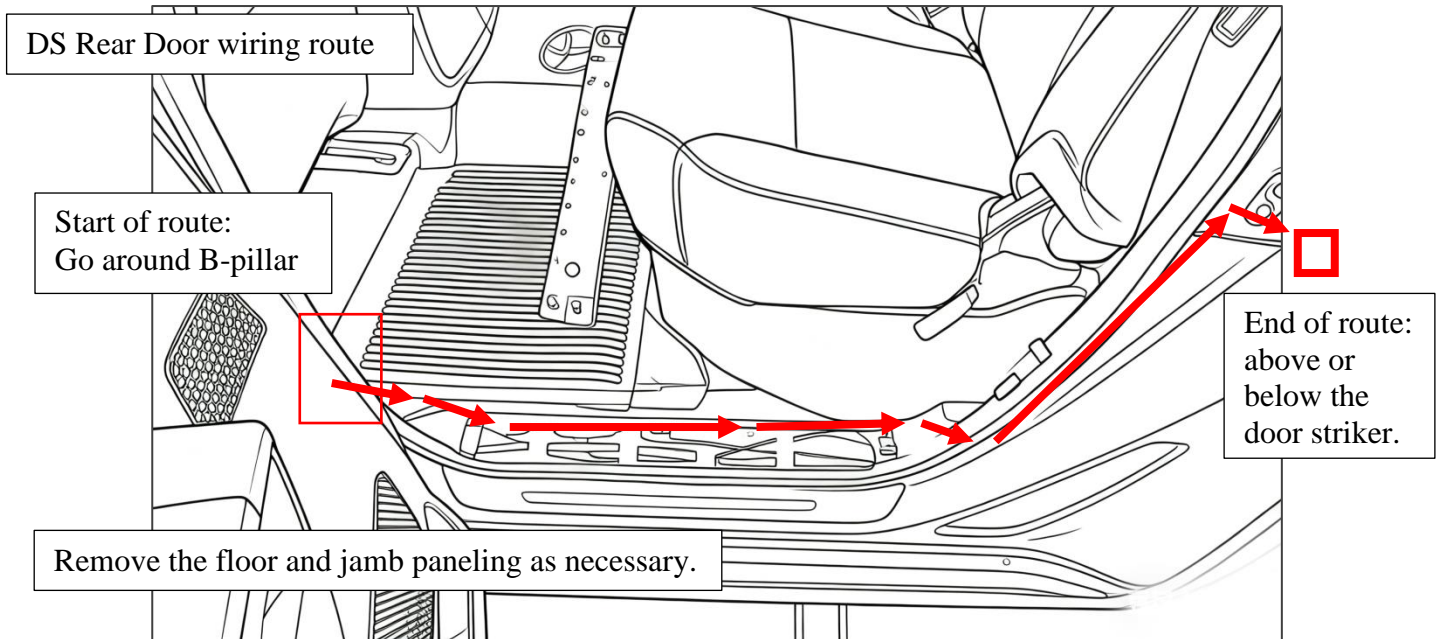
Then, take a magnet and place a provided 3M adhesive patch on one side. Take the newly prepped magnet and line it up with the magnetic switch on the door side. When closing the door, the magnet needs to align with the rectangular emboss of the magnetic switch to properly activate. Attach this magnet to the corresponding position.



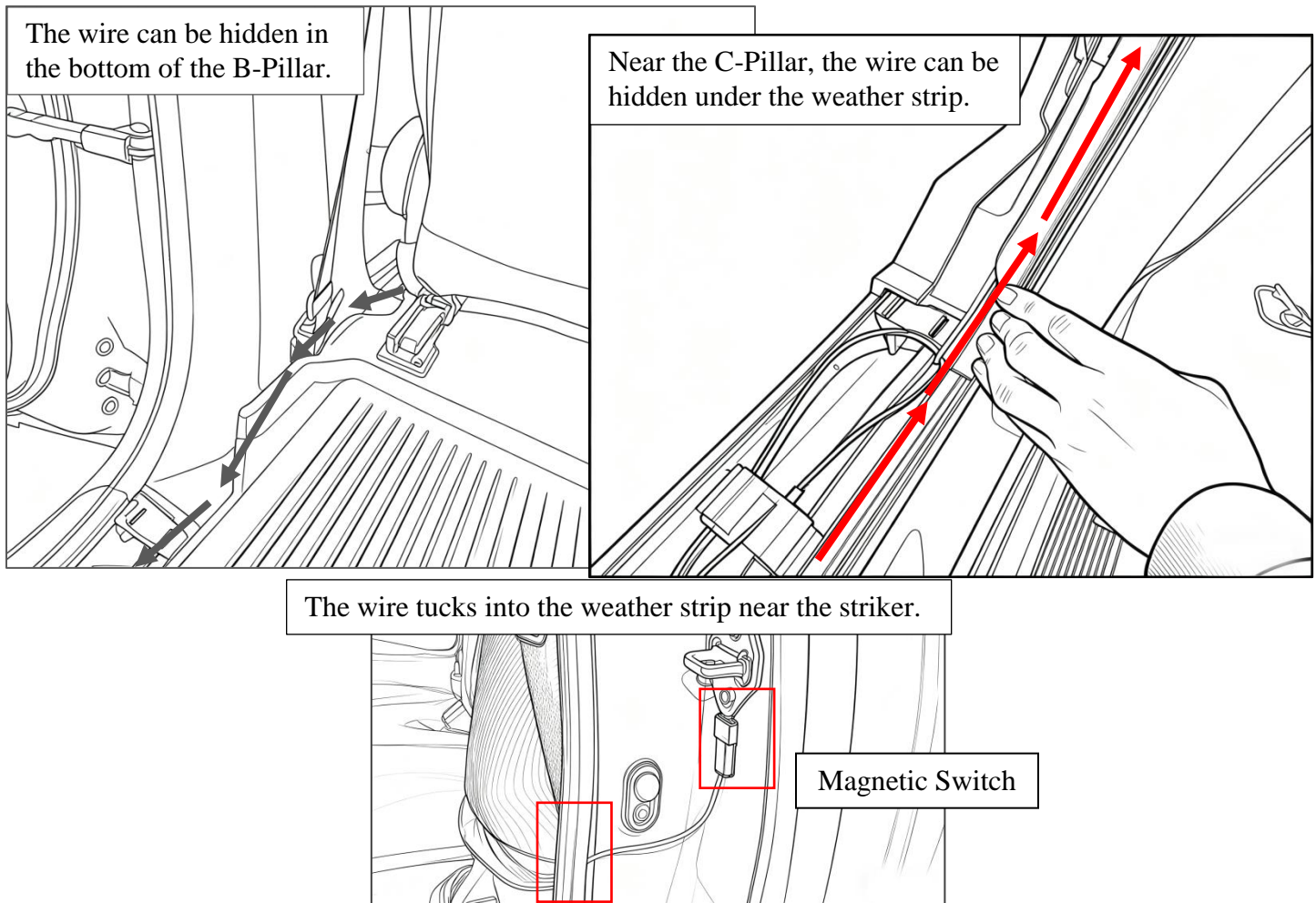
10

Next, do the same procedure to the Driver-Side rear door too.

Route the longer signal wire following this path. Be sure to give enough length and slack to the wire to reach the door striker while hiding the wiring under the plastic panels.

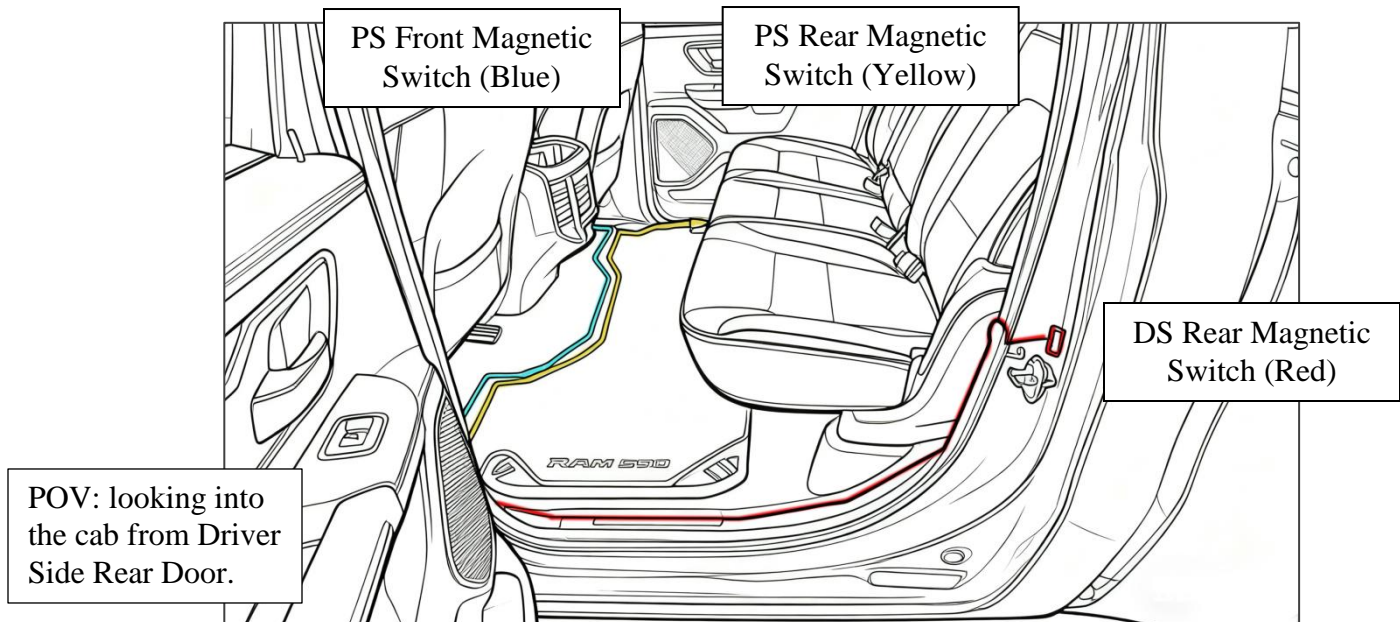


To effectively route the wire while hiding it, it is advisable to remove some of the interior plastic paneling around the B-Pillar and C-Pillar. See pictures below for reference:



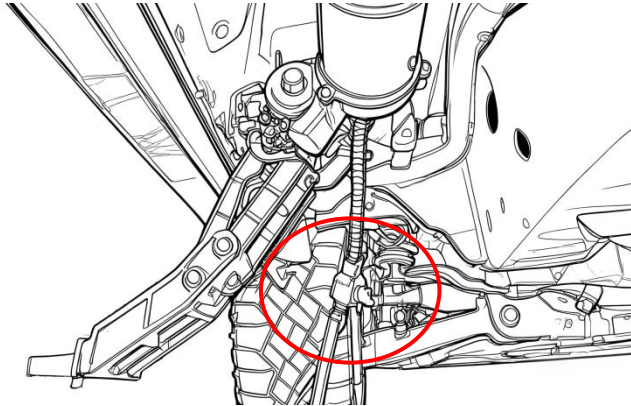
11

Next, follow the same procedure in steps 9 and 10 for the Passenger Side too. This time, route the Passenger Side Magnetic Switch Wires across the interior over to the other side. The illustration below shows the general paths of the Magnetic Switch wires as colored lines.



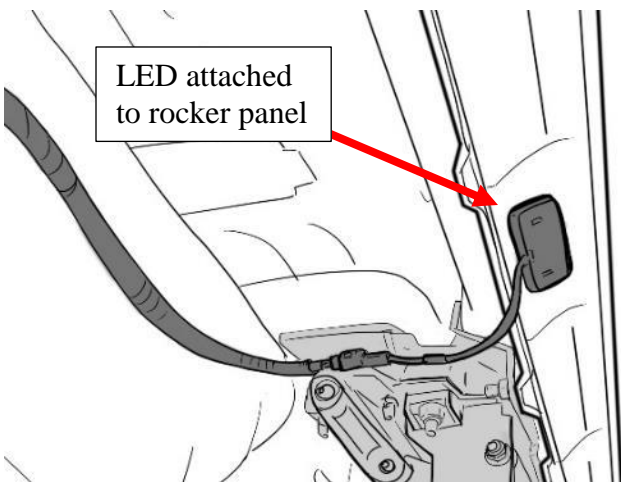
Attach the main harness (M) to the LED Y-Harness (N). Then attach the LED Y-Harness (N) to the motor on the Driver Side. Repeat for Passenger Side. The shorter LED Y-Harness should connect to the motor that is on the same side as the ECU.

Driver side



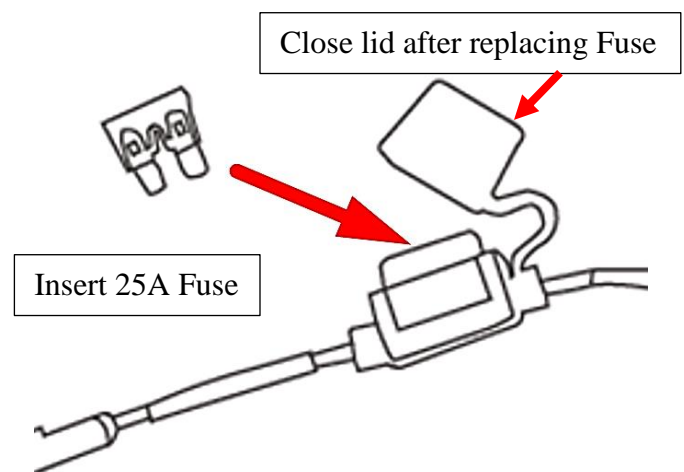
Plug in LED lights (Q) into LED Y-Harness (N) and attach them to the bottom of the rocker panel. Use provided 3M double sided adhesive tape on back of LED light (Q). Replace Fuse into Fuse Box.

LED attached
to rocker panel



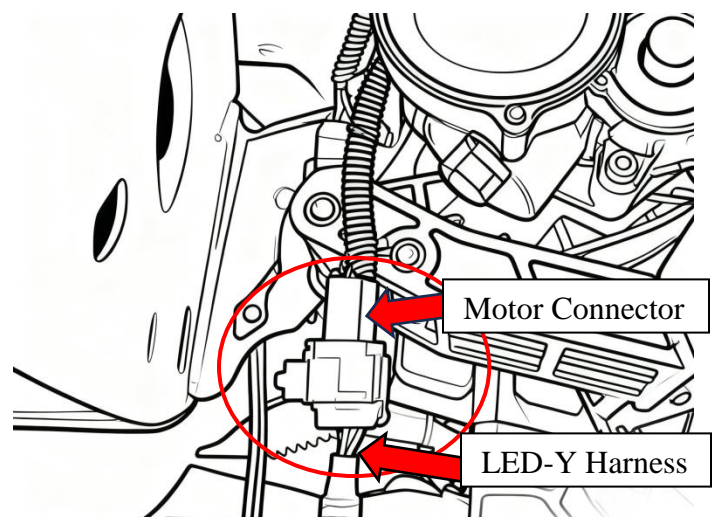
Close lid after replacing Fuse

Insert 25A Fuse



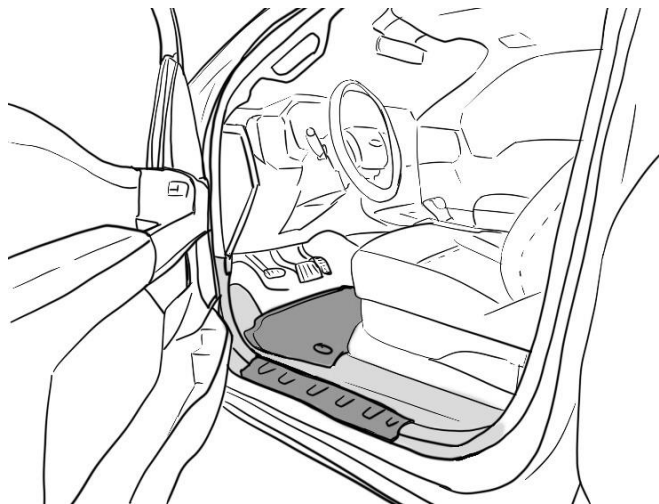
Check to make sure the harnesses on the Driver Side/Left Front Bracket Assembly (A) and Passenger Side Front Bracket Assembly (C) are connected to the main harness (M) via the LED-Y harnesses (N).

*NOTE: The linkage arms on the front bracket assemblies will not move unless both motors are connected.



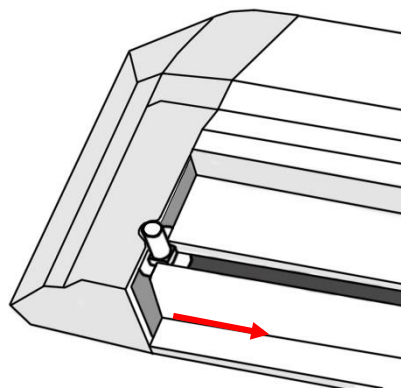
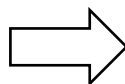
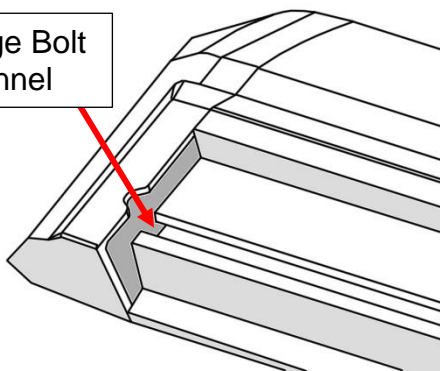
Seal the grommet with RTV Silicone Sealant.

Hide wires and reattach the kick panel with the carpet fully unfurled in its original position. Reattach the door sill panel and check to make sure there are no obstructions or potential snag points around the brake pedal area.

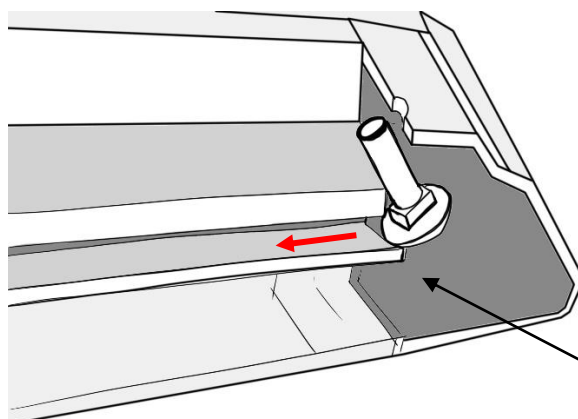


Prepare the power step boards. Locate the end of the boards and slide the M6 Carriage Bolts (E) into the channel on the underside of the board. Insert a total of 4 carriage bolts (E).

Carriage Bolt
Channel



Use the notch in the board's end caps to feed the bolts into the channel.

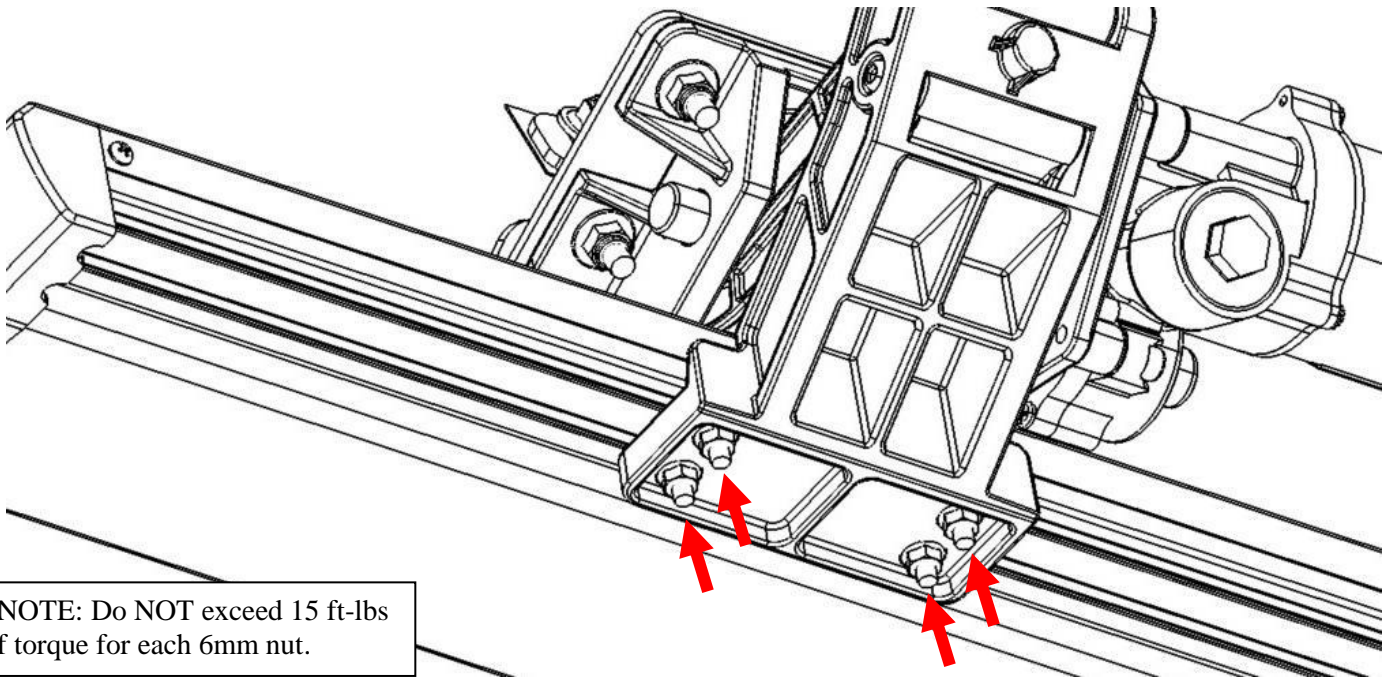


Section view of
underside channel

- 17** Perform a function check by closing the driver side front door and opening it again. The front bracket assembly (A) motor should activate the linkage arm and move it into the down or “deployed” position.

After deploying linkage arms, unplug motor connector from the LED-Y harness (to cut power to the linkage arms), while front door is open, to hold deployed position for running board installation.

Line up the carriage bolts (E), under the power step boards, with the slots on the linkage arms (A & B). Insert the 4 carriage bolts (E) into the slots on front and rear linkage arms. Adjust board to desired position. Moderately hand tighten the 6mm Flat Washers + 6mm Nylon Lock Nuts (G) onto the carriage bolts.



Once the board is adjusted, plug in the motor connector to the LED-Y harness (to return power to the linkage arms), making sure that the door remains open. Proceed to open and close doors several times to deploy and retract the steps to settle the steps into their natural alignment. After cycling the step, tighten all hardware on the board and brackets.

Some further adjustment may be required for desired step position. Repeat for passenger side.

- 18** Perform system check and troubleshooting. If board is making irregular movements or noise, readjust the boards as follows:

a) With board deployed loosen 6mm nuts under board.

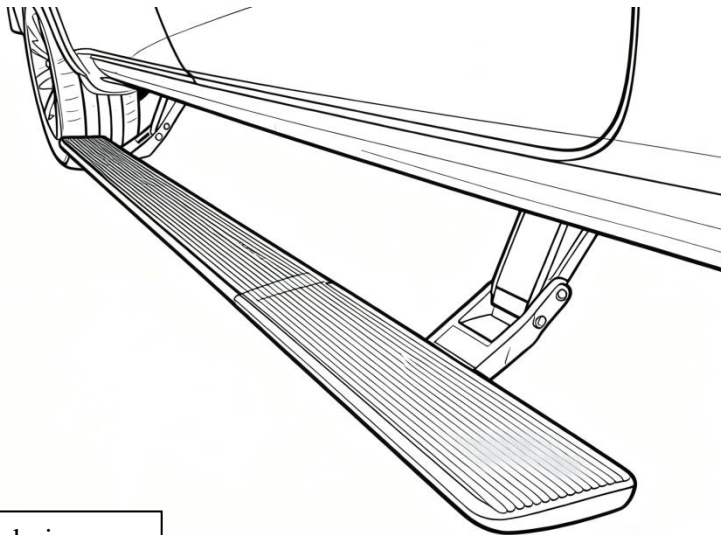
- b) Leave the nuts slightly less than snug.
- c) Open and close door several times for board to settle into position.
- d) With the step in the deployed position, gradually tighten flange nuts while alternating between each. Do not over tighten.

If board is making abnormal noise or the motion is binding, repeat steps “a” through “d”.

Note: If the above method does not resolve the issue, the brackets mounting to the vehicle may not be aligned properly with the vehicle. In this case, remove the board and realign brackets before attempting steps “a” to “d” once again.

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Reinstall any remaining trim panels if necessary. Check and make sure all hardware is fully tightened. Perform a final system check. Finish.



*NOTE: If board does not move during troubleshooting, check the wire connections and magnetic switch positioning.

FINAL REMARKS

- Ensure there are no debris or obstacles preventing the power steps from operating.
- Open and close each door on both sides to ensure that power steps are operating correctly.
- Check and ensure that all electrical connections are properly connected.
- Check and ensure that the magnetic switches are lined up correctly and that they directly face each other when the door is closed.
- Check and ensure that the magnetic switches fully adhere to a clean surface.
- Conceal the magnetic switch wiring as best as possible underneath the door sill and along the weather seal.
- Recheck that all mounting hardware is tight.
- Adjust mounting brackets or running board to enable smooth operation even after having stepped on the deployed boards.

MAINTENANCE AND CARE

- Periodically clean the linkage arms and motor of any dirt or debris that may accumulate.
- Avoid spraying the motors directly with high pressure liquids.
- Avoid damaging the power steps.
- Ensure power step ECU is not exposed directly to water to prevent degradation.
- Ensure wiring is properly tucked away and concealed from mechanically moving parts and exposure to high heat or very low temperature conditions.
- Periodically recheck that all mounting hardware is tight
- Do not overload the running board.
- Readjust running board if necessary.

WARNING AND SAFETY

- Do not use boards as a rock slider or as skid protection.
- Do not use solvents, chemicals, oils, or corrosive liquids on power steps. If the power steps encounter these substances, clean the power steps as soon as possible. Mild detergent and water is recommended.
- Do not obstruct the power steps in any way during operations of deployment and retraction.
- Do not rely in any way on the components of this product to keep occupants within the vehicle or to protect against injury or death in the event of an accident.
- Do not sit/stand on the running board for long periods of time.
- Do not jump on power step board or rest heavy objects on boards or subject power steps to excessive force.
- Do not step on plastic end caps of the boards. Failure to do so may result in injury.
- Do not place bodily appendages between running board and the vehicle body. Please mind the gap between the vehicle and the board.
- Do not allow children to use power steps without adult supervision and proper operation. This is not a toy. Improper use may result in injury.

- Remove the fuse on the power lead on the main harness before doing electrical troubleshooting to avoid risk of shock or injury. Make sure the motors do not have power before working on mechanical adjustments to avoid injury.

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