Wagonmeister

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Thanks for purchasing a Wagonmeister, replacement fuse panel. This instruction sheet will help you upgrade your 240 to blade style fuses in about an hour.

We highly recommend that the battery be disconnected for ANY electrical work on any vehicle. Wagonmeister is not responsible for damages caused by shorting of wires or circuits during the installation process. No modifications to the electrical system are required for this item to be installed. It is a direct swap for the original panel in all late ’78, and later 240s, with 16 position panels. We offer a modified version, to replace the earlier, 12 position panel as well. If your wiring or installation has already been modified, it should not affect this installation. If you have power supply, outbound load wiring, or components that have been damaged by overheating, this product will not address those problems. Damaged wiring attached to your current fuse panel must be repaired before beginning installation of this fuse panel.

Please exercise appropriate caution whenever working on your car’s electrical system.

We have performed this installation on both an ’82 vehicle, and a 91 vehicle. This tutorial includes the extra steps involved with removing the knee bolster, part of the SRS (supplemental restraint system) on 240s 90 and up. Both installations are in U.S. market vehicles. While the installation can be done with the kick panel in place, it is our opinion that this complicates the process considerably. Also, in this tutorial, we demonstrate a modification to the kick panel that will simplify installation on later cars, and is a must for earlier cars, with the floor well ventilation system on the left (left hand drive cars).

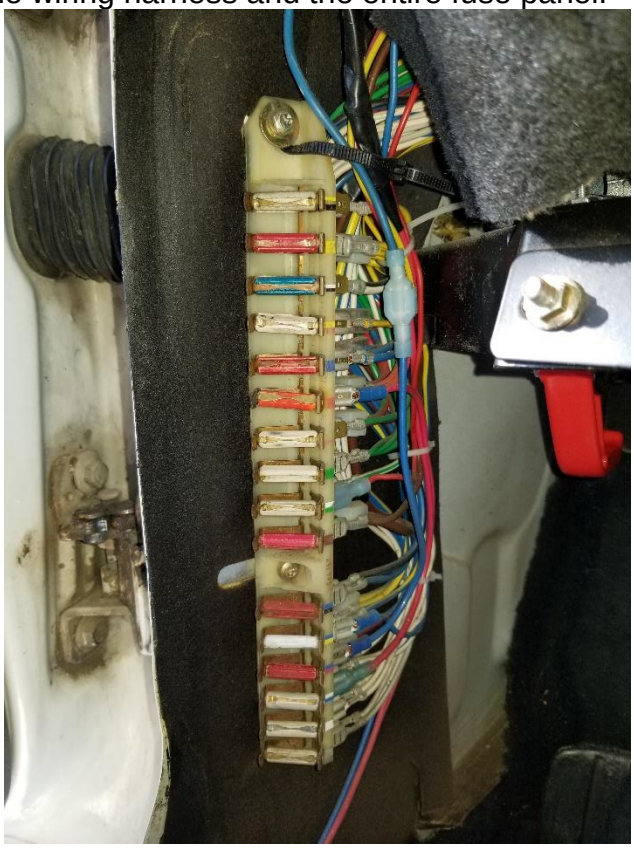
Pictured is a fuse panel with all three optional, additional positions installed.

Step 1, the bolts for the knee bolster are under these caps, remove them, then use a Torx wrench for the bolts.

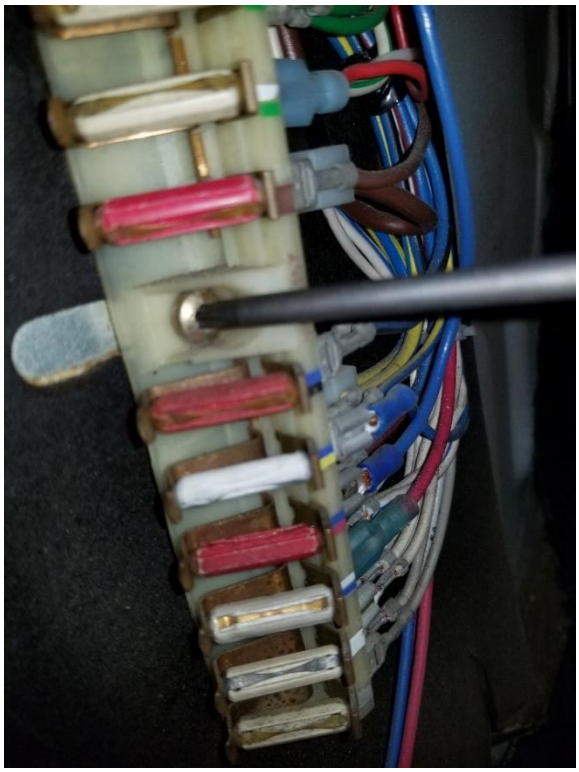
Step 2, regardless of year, the kick panel is held in by a single, snap in fastener, way up under the dash, near the top of the panel. Remove it. A trim tool is handy for this. Early cars will have the foot well vent on the kick panel. Remove the pedal pad by pushing out the pin, then pull off the pad.

Step 3, Remove the sill cover and the windlace around the door opening perimeter. Removing the windlace, you'll find the small, gold, metal clips, that attach the edge of the kick panel to the A pillar's edge. Hint: They may be stuck inside the windlace.

Step 4, remove the kick panel. This will expose the wiring harness and the entire fuse panel.



Step 5, unscrew the old fuse panel from the bulkhead and snip any and all cable ties.



Before continuing—IMPORTANT!

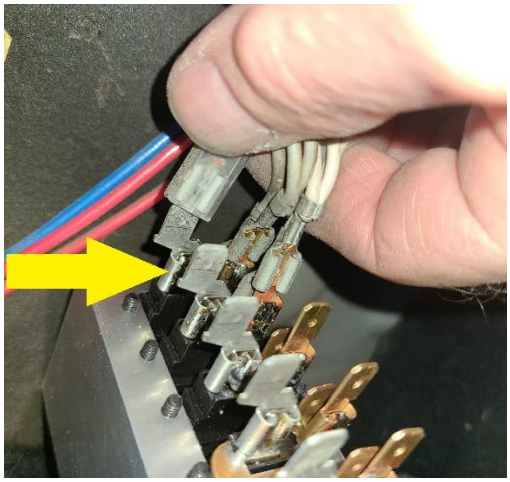
On the kick panel, behind the fuse panel, there should be a dark brown/black cardboard insulating sheet. This is shown in the above pictures. This is primarily a draft insulator, to keep noise and outside air from entering the passenger compartment, where the door hinges attach to the A pillar. It is also electrical insulation. It prevents a fuse panel terminal, that may have come loose, from contacting the metal of the car's body, next to the panel. This is of more importance for the new panel, as the supply side terminals are offset towards the kick panel. Often this insulation has been removed, if the door hinges have been adjusted or replaced. If yours is missing, fashion a new one from heavy cardboard. Roofing material is a good moisture barrier too. Anything is better than bare metal here! Do NOT proceed until this area has been covered.

Step 6, begin transferring wires, one circuit at a time, from the old panel to the new. The square end of the new panel is the bottom. The end with the angle cut is at the top. The configuration for the new terminals is NOT the same as the original panel. Please pay close attention to the following instructions:

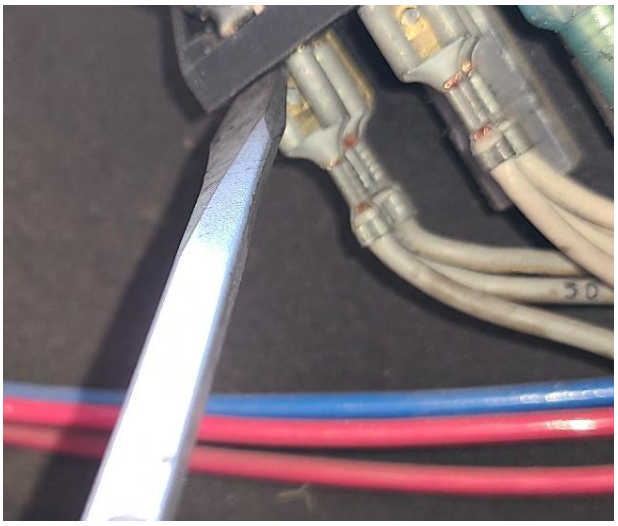
- On your old fuse panel, the supply (input) to each position is the terminal CLOSEST to the car's outer wall, on which the panel is mounted. These are HOT wires. If you have NOT disconnected your battery, there is a high risk of shorting during repositioning. CAUTION!
- The two terminals on the interior edge of the old panel are the LOAD wires. These are outbound to the various functions and accessories.

- We recommend transferring each position completely, supply and load, before moving to the next position. Make note of each circuit, by number, as you proceed, and double check all wires before moving on.
- As you continue to move wires, the entire assembly is LESS flexible. Be very cautious not to BREAK any terminals by bending or flexing them.

Supply Terminals



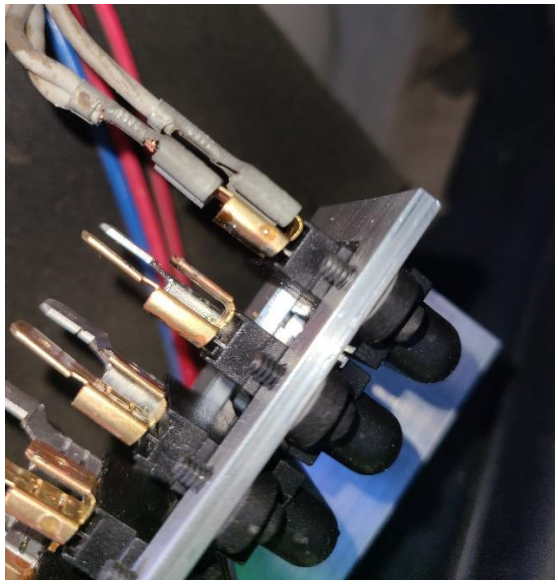
Wires on your old fuse panel may be very tight, or very worn and loose, nearly falling off. Tight terminals can be pried loose with a screwdriver, or wiggled off with a needle nosed pliers. Either will give you leverage.



If any of your old connectors, from the car's harness, are loose, now is the time to crimp them shut, so that they grab your new panel's terminals tightly. Don't CRUSH them! Too tight, and you will not be able to install them. Examine each one carefully for cracks. If you find one loose, and it will not tighten down, there is a good chance it is cracked. Cut it off and replace it before continuing.

The LOAD terminals on the new fuse panel are the gold, double lug, male spade terminals, on the right (inner) edge of the panel. Most 240 positions will have two load connections, or one. Some

are unused. As you move along, swapping wires, you MUST pay close attention to positions. If you swap a load wire to the wrong supply, you may lose function of one or more items.



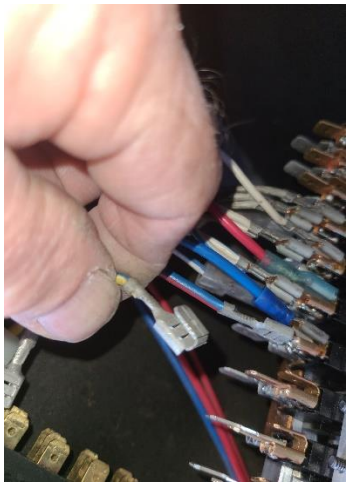
VERY IMPORTANT

The load side terminals on the panel are easily bent, as they are copper for best conductivity. Make certain your load connector terminals are not crimped closed, or you may bend/damage the terminal when attaching the load connector. Wiggle each load connector onto the panel terminal carefully, until it is fully seated.

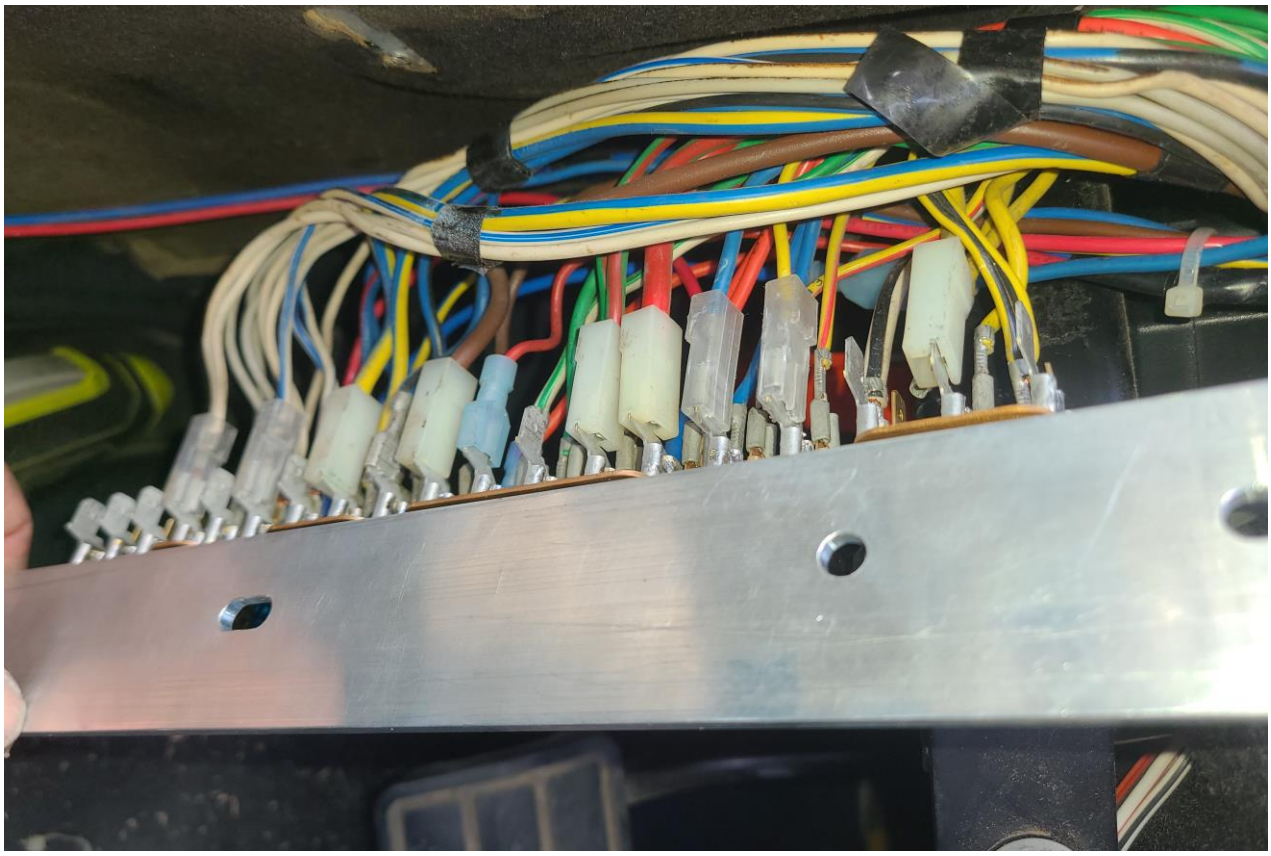
Continue transferring circuits, supply and load, position by position, until all wires have been located. Additional tips:

- We like to start at the bottom of the panel and work up. Topmost wires are shorter, so less wiggle room “up there”—leave those for last.
- Turbos, and some earlier cars, with dealer added seat heaters, or other accessories, you may find that two load terminals was insufficient on a particular position. It’s not unusual to find that a “piggyback” terminal was added in, giving three load positions. Wagonmeister does NOT recommend using piggyback connectors on the new panel. To provide room for additional circuits, the positions are closer together. A piggyback connector may cause load connectors from two different positions to come in contact with each other. Better solutions below! Read on please.

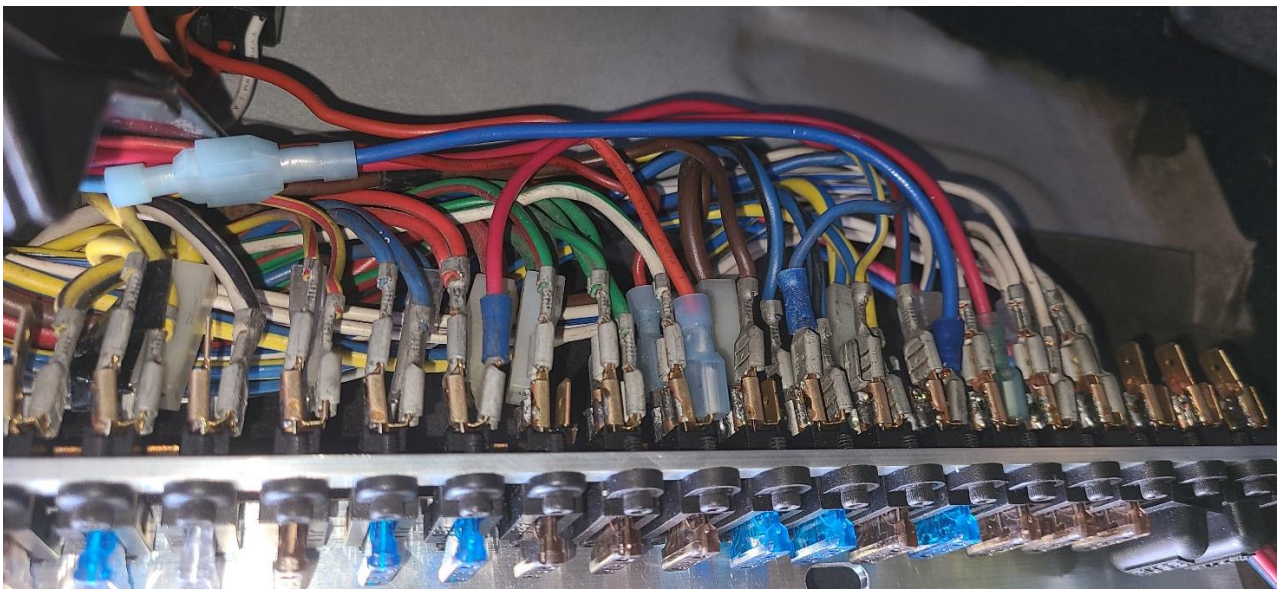
Piggyback Terminal



Completed SUPPLY (left) side of the panel. Note that most supply terminals, the hot terminals, the connector is insulated from the factory.



Load (right) side of the panel. Note the proximity of the connections. If you have bent any of the terminals, such that they are very close to each other, straighten them now. As you move the panel for attachment to the kick panel, wires may be pulled, causing terminals to touch.

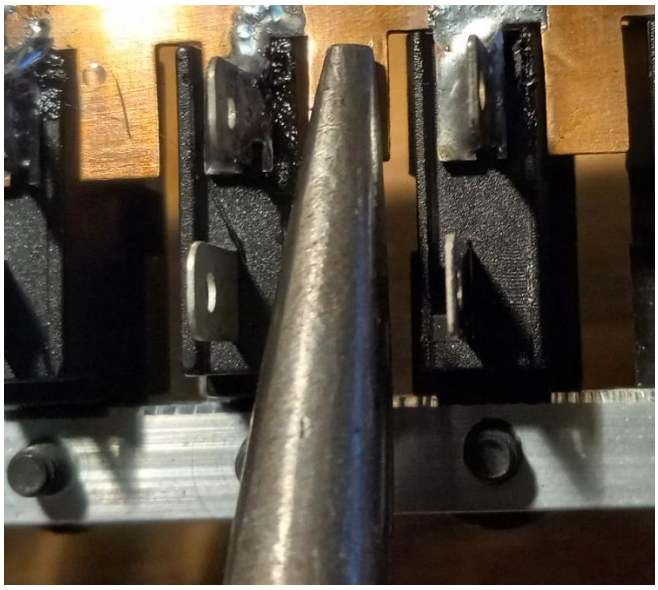


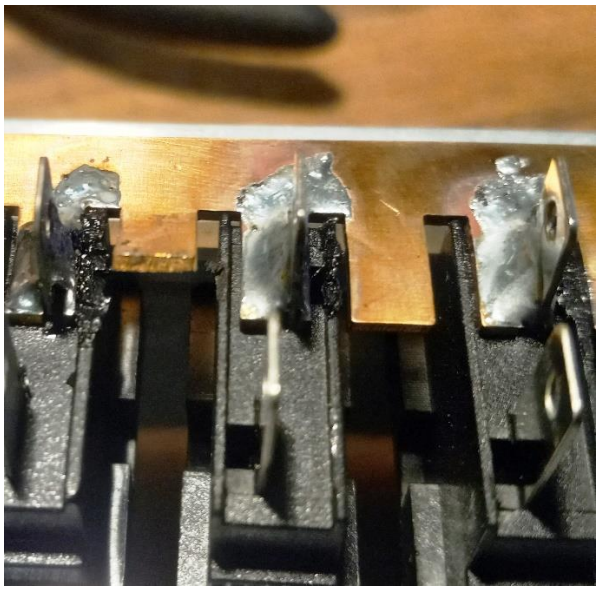
Additonal circuits installation

If you opted for additional circuits/fuse holders, in your Wagonmeister panel, the next task is how to power them. We can do this for you, or you can do it yourself, from the panel (or from elsewhere).

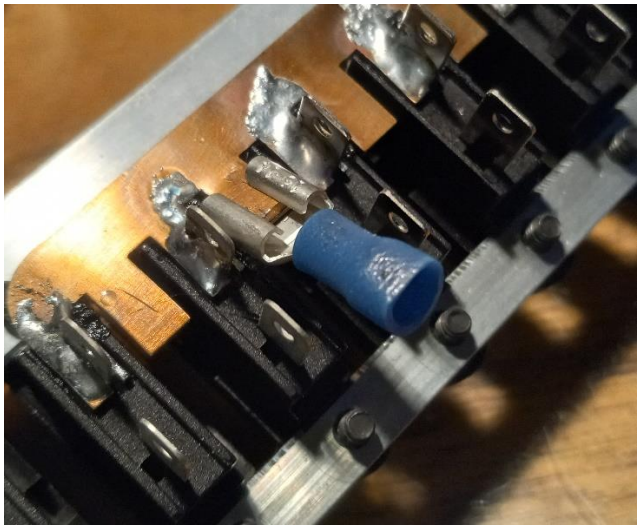
If you choose to power your additional circuits from the panel, this can be done by tapping into the busses on the back that create the various “groups”. Fuses 1 through 3, buss #1, are ignition hot. Fuses 6 through 10, buss #2, are full time hot—battery circuits. 11 to 13, buss #3 are ignition hot. Fuses 15 and 16, buss #4 are parking/instrumentation hot. You need to decide if you want your additional fuse(s) to be powered from one of these options. If so, tapping in is easy and fast.

In this picture, a needle nosed pliers is being used to bend one of the tabs on buss #2 upward. These tabs are, essentially, male spade terminals. (Please note, this panel does not have its connector terminals soldered in yet). Grasp the desired tab and bend upward, taking care not to break the solder joints. 15 degrees is more than enough.





With the buss’s tab raised, you can slip a standard, ¼” female spade terminal onto the tab. Wire that connector to the supply side of the desired accessory fuse holder. Remember to check for proper wire gauge for the amperage you plan to run in that fuse holder. Shown is a 14-16 gauge terminal.

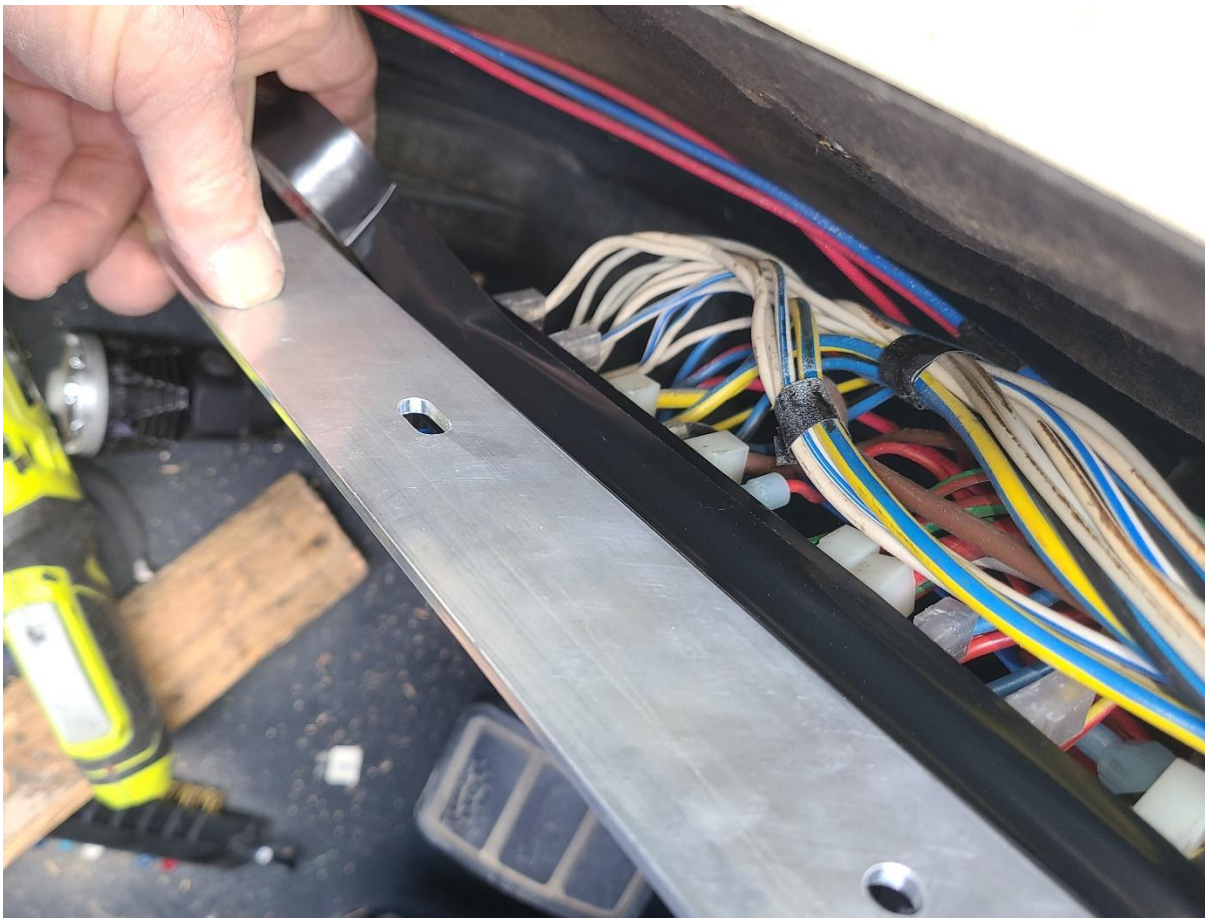


Step 7, Attaching the fuse panel to the car

Your new fuse panel is longer and deeper than the original panel, or our previous, ATC panel. The extra depth not only allows for more secure sockets, but allows for the use of the re-settable, ATC breakers offered, which are much taller. There are THREE different mounting setups, required for the various years. For the 75 through early 78 cars, that use the 12 position panel, installation is covered further along in the instructions. Installation also varies slightly for the late ’78 through 89 cars, as compared with to SRS cars, 90-93.

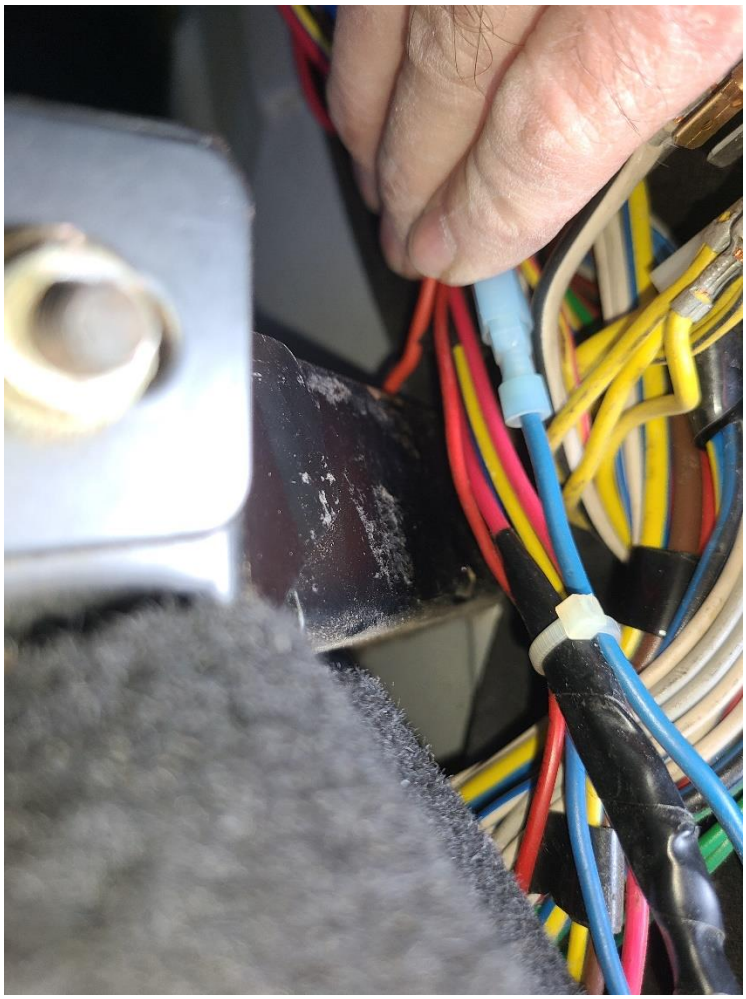
- Your fuse panel has five mounting holes, 1 through 5, starting at the top, including the slot.
- For vehicles from late ’78 through ’89, you will use the top hole, #1, and the lower area of the slot.
- For vehicles from ‘90 through ’93, all SRS cars, the panel mounts higher. Use hole #2 and hole #5.

Before attaching the fuse panel, we recommend one more additional safety step. In the picture below, the entire connection area of the fuse panel—all the terminals and connectors, has been wrapped with two turns of standard, vinyl, electrical tape. THIS IS NOT A REPLACEMENT FOR A MISSING KICK PANEL DRAFT PANEL/INSULATOR. It’s simply extra insurance. Highly recommended.



Place the fuse panel against the kick panel and align the appropriate holes for your year. Use the original screws to attach the panel. Snug them down until the panel is against the kick panel, no need to fully tighten them right now. The holes allow for some adjustment. Once the kick panel has been placed in position, you may want to adjust the panel slightly for alignment with the little reinforcing rib that crosses the access opening. SRS installation shown here, using hole #2. Insert the top screw first, then arrange your harness as necessary to install the lower screw.

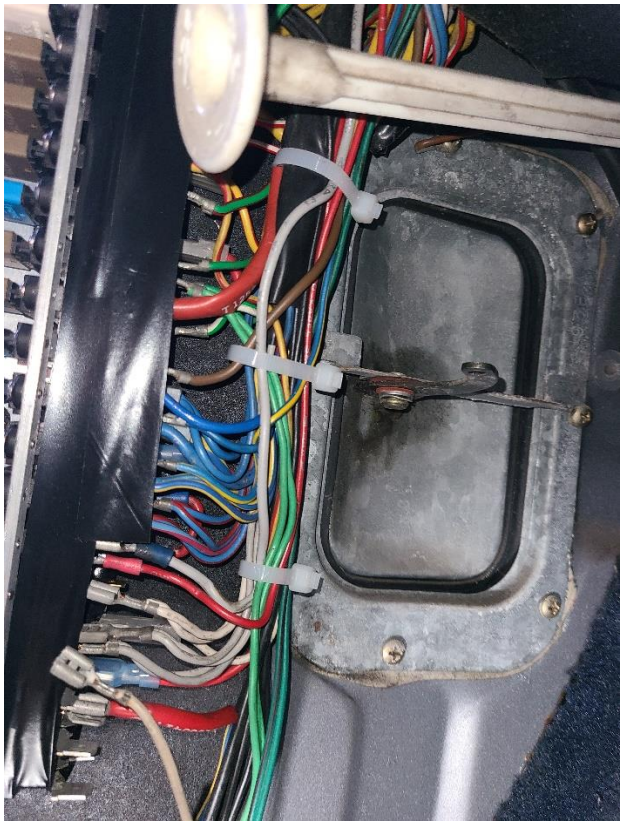
Now is the time to do any housekeeping. Replace and/or add any cable ties necessary, to keep your harness neat and tidy. More importantly, you want to bundle the harness as close to the back of the fuse panel as possible. On later cars, SRS vehicles with the knee bolster, the bracket will complicate things at the top. You will need to work the harness so it clears. Don't worry, plenty of room in the area above the panel.



The area that requires more work is BEHIND the fuse panel. Or, rather, toward the front of the car. Cars that have no fresh air duct here, the kick panel can be installed without any major modification. Keep in mind the fuse panel is MUCH deeper. Everything is moved towards the front of the vehicle to allow clearance for the re-settable breakers. The later, SRS kick panel will install over this greater depth with only one modification required. The hole at the top front corner for the retaining button must be slotted. This allows the kick panel to simply bow outward and cover the deeper fuse panel. See picture below.

Retainer button hole, oval'ed for clearance

While this solution works for the later cars, it's not ideal. It will NOT work for earlier cars, with the fresh air duct in the kick panel. In the following picture, the panel has been installed in an '82 turbo. Even with the harness bundled, it's close to the vent and the actuator lever. Larger issue, the harness and panel push the kick panel out so far, that the actuator lever hangs up on the kick panel. That won't do.



Modifying the kick panel

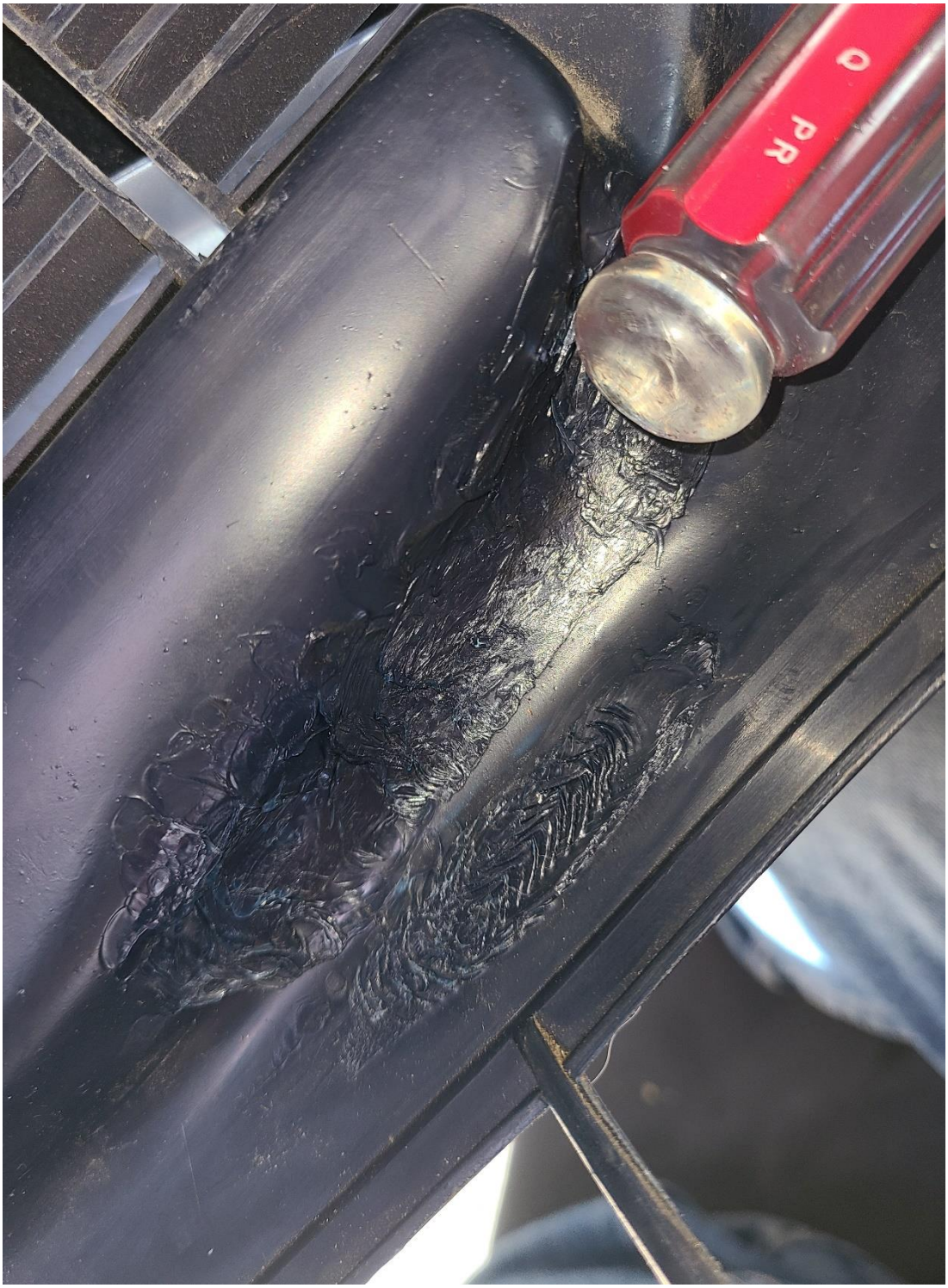
The solution is a minor reforming of the kick panel, to provide more clearance for the harness, in its new position. We recommend this for ALL vehicles, with or without the fresh air vent. It makes for a cleaner installation, and provides clearance for the connection area of the panel, and for the harness, without causing strain on the connections.

You will need a clean, smooth work surface, a heat gun, and a large screwdriver handle, or similar tool with a nice, rounded end. 1", to 1 1/4" diameter works fine. That is your forming tool.

Place your kick panel face down on your work surface. Use your heat gun to heat the INSIDE of the kick panel. You want to heat the entire vertical area of the panel, to the right of the door opening. Some tips on plastic forming:

- You are softening the plastic, so it can be reshaped. Don't melt it!
- Don't rush. Don't concentrate on one area, spread the heat gradually
- Stop often and check your progress. Reshape a little at a time.
- Make your modification in stages. If you heat too much, or try to form one small area too aggressively, too quickly, the plastic will wrinkle, or crack. Patience is the key.

Partially completed reforming. You need MORE room at the top, where there are more wires. Not much more room at the bottom, where there are fewer wires. Test fit a few times to be sure. You are simply creating a larger space, adjacent the door opening, for clearance.

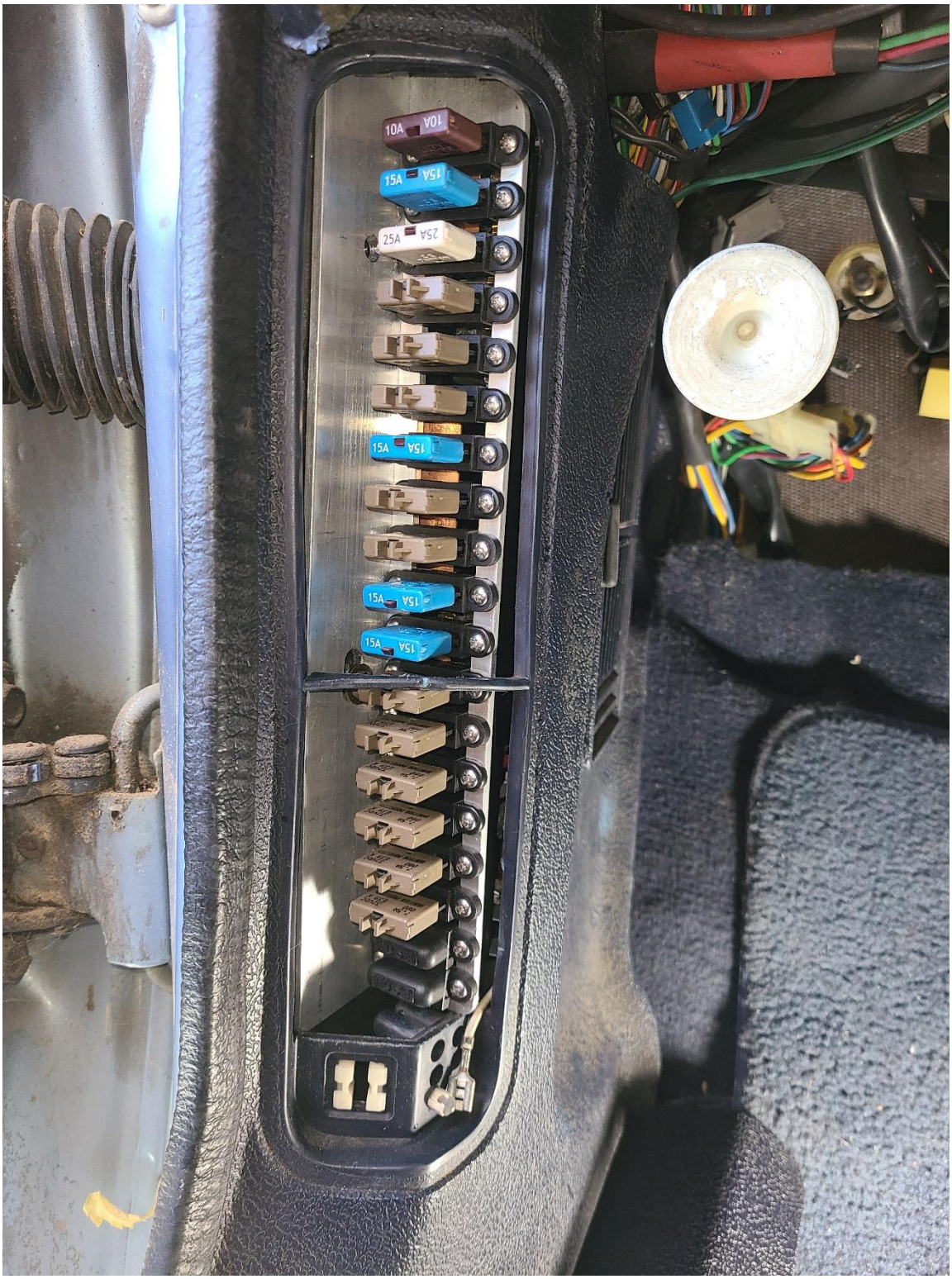


About halfway done here. A little too aggressive on the heat at the very top, and you'll see the wrinkle. With patience, we worked that out, and extended the widened area down about another four inches from what you see here.

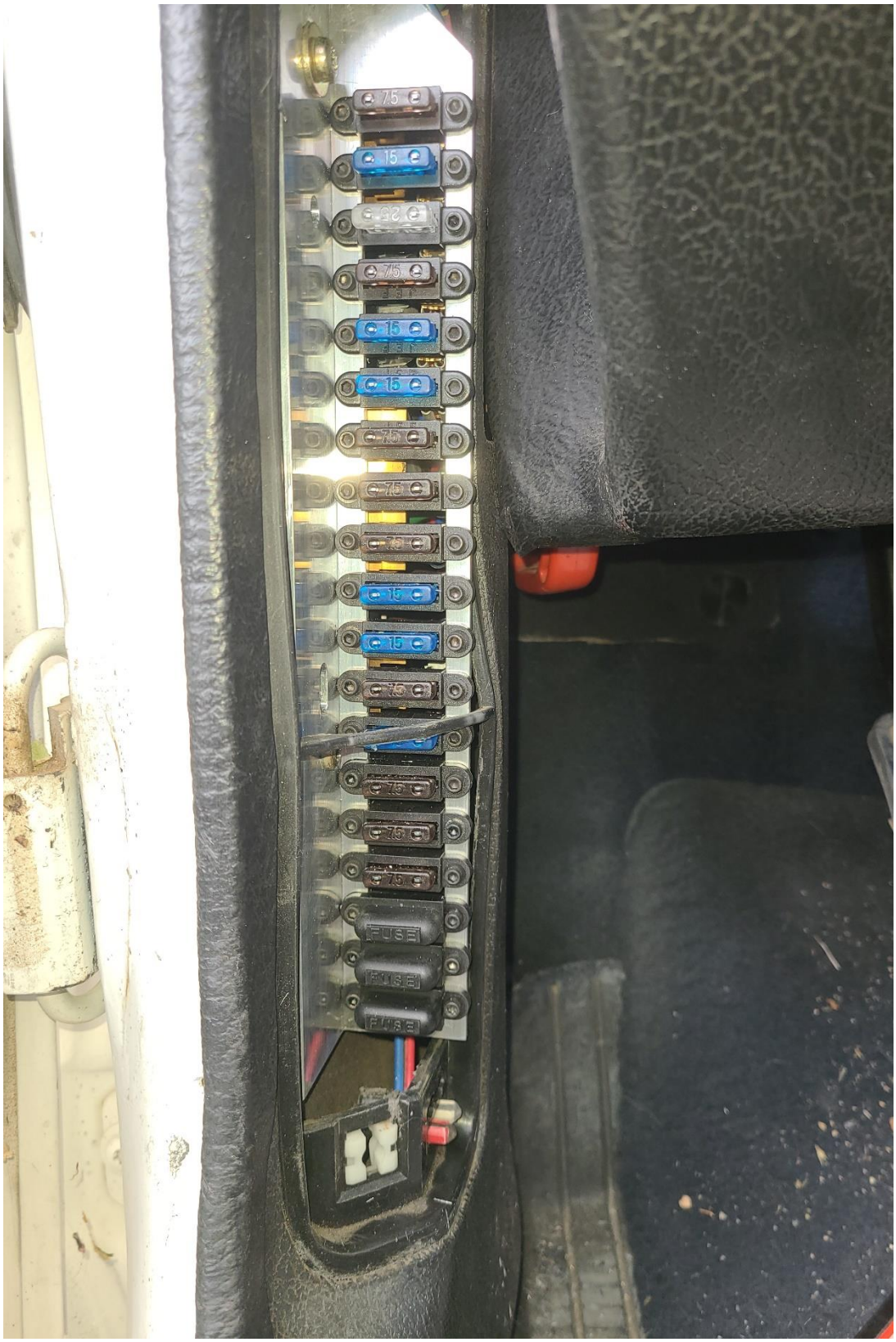
Final result. Smooth, clean, plenty of clearance, and the fresh air duct works perfectly.

Page 16, Fuse Panel Installation

This is the ’82 installation. Note that the support rib is being forced out of place by breaker number 12. The fuse panel needs to come up some, and the holes allow for this. It will also allow the #19 additional fuse holder to clear the bottom of the door. Adjust your fuse panel and kick panel accordingly. YES! The door clears the breakers, once installed.



Installation in the ’91 SRS vehicle. The kick panel requires far less reforming on these cars, if you choose to do it, as the fresh air duct is not an issue. Top area still needs some shaping here.



Finished SRS installation. You can see that the unused duct opening is pushed inward some. Not an issue. We reformed this panel just enough to clear the harness and make sure the door surround was straight.

Both of these installations were done with the fuses, or breakers, in place, to facilitate positioning and measurements during prototyping. We suspect most people will install fuses after the panel is in place, up to you. If you choose to do it with the fuses in—please disconnect your battery!.

The biggest complaint we had about the previous model was the fuse holders themselves. Not very positive, not very secure. These fuse sockets are VERY secure. The offset receptacles assure that each fuse tail is held securely in place, with NO play at all. Also, as they are recessed, they are less prone to moisture and dirt issues. Next complaint was terminals coming loose from the base. Not happening here! Everything is locked and soldered in place, and the fuse holders are bolted to the bracket.

A fuse removal tool is supplied with standard, ATC fuses. Breakers do not use the tool, as there is no place to grasp. Remove breakers by rocking them back and forth while pulling. A pliers works just fine too, be careful not to crack the breaker housing. When installing the fuses or breakers, you'll find they need to be angled just slightly, to catch the offset receptacles.

Installing your new fuses or breakers

Please note that the same fuse amperage values as the old torpedo fuses had are NOT available. We do NOT recommend running any fuse of significantly higher amperage rating in any circuit of the fuse panel. A fire may result from installing a higher rated fuse than is spec'd for the circuit. Your fuse panel door will have the rating for each circuit listed next to the position. Example: For 8 amp circuits, we supply 7.5 amp fuses and/or breakers. If your circuit continually blows that fuse, for the ½ amp variance, there's a problem with the circuit, not the fuse. The ATC fuse assortment includes 10 amp and 20 amp fuses for circuits that may have additions.

Breakers are provided on a custom basis. We recommend the same value breaker for each circuit, as the ATC fuse provided in the basic kit. The customer is welcome to specify exactly which values you wish—they do not arrive installed, and it is up to the installer to match the proper value to the circuit. Wagonmeister is NOT responsible for any damages to wiring, components, or vehicles, resulting from faulty wiring, or customer's components, or incorrect installation of fuses, breakers, or this panel, or from installation of incorrect amperage fuses or breakers on a circuit.

If you live in a very humid area, or the fuse panel area is subject to a lot of moisture, it is still a good idea to use dielectric grease to prevent corrosion. This panel and these fuses are much more secure and provide a greater contact surface—a big bonus.

This installation tutorial will be modified shortly for the early, 12 position installation.

Thanks for purchasing Wagonmeister products!