Check
The Mark of Quality

Universal Seat Heater
INSTALLATION MANUAL

Resistance Wire Construction

Manufactured in Troy, MI USA!

LIT-MAN-UNV-2 REV C

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Safety:

PLEASE READ BEFORE INSTALLING HEATING ELEMENT ASSEMBLIES!
[wear gloves]
[wear safety glasses]

DANGER

- IF ANY OF THE FOLLOWING SAFETY CONDITIONS CANNOT BE MET, DO NOT ATTEMPT PRODUCT INSTALLATION
- Circulation and or sensory compromised persons **SHALL NOT** use this system/product at any time. There is a High Risk of Thermal Burns.
- Never reinstall a heating element. Once the element has been removed it cannot be reapplied to the foam bun. There is a risk of a thermal event
- Check Corporation wire heating element assemblies are specific to each seat and are not to be cut.
- Some front passenger seats are outfitted with occupant detection sensors which are not compatible with any after-market seat heater.
- Heating elements should NEVER be installed onto foam where an occupant detection sensor is visible on the top surface of the foam, even if the heating element would not touch the sensor. Heating elements are to be placed onto foam bun only. The heating elements may adversely affect or cause the sensors or airbag system to not function correctly, thereby causing severe injury or death.
- Release paper must be completely removed. Failing to completely remove paper is a fire hazard and nullifies and voids warranty.

WARNING

- **Do not modify this product.**
- **Do not connect this product to factory seat heater parts**
- Remove paper adhesive liner from the cushion and back heating elements before installing them onto the foam bun. This is mandatory as the heating pattern is maintained by the adhesion of the heating elements to the foam bun of the seat. If the heating elements are not secured they could develop hot spots.
- The Heating elements must NOT be folded into seat listing channels except where cutouts were designed into the element. Do not fold the heating elements against themselves.

CAUTION

- CLOTH UPHOLSTERY

  If your upholstery is thin, and does not have at least 1/4” of foam sewn onto the backside of the upholstery, it is required that you apply a minimum of 1/4” thick layer of foam to the entire insert area between the heating element and the upholstery. This will eliminate read-through and make sure the temperature is at an appropriate level.

NOTICE

- The heating elements must be connected to switched or keyed ignition power only, to prevent battery drain when vehicle is off.
- Check and determine that the heating elements will fit under the seat trim covers in the desired areas. The listing channels or the Velcro hold-downs should line up with the cutouts in the heating elements. This is not important if the heating elements do not cross over a listing channel or Velcro hold-down. See Figure 1
- BONDED SEATS (UPHOLSTERY GLUED TO FOAM BUN)

  Never remove the cover of a bonded seat. The cover of a bonded seat cannot be installed again once it has been removed. If installation of a heating element assembly is to be attempted in this kind of seat, cut an opening in the foam bun large enough for the element to fit ½″ underneath the cover. A professional should only attempt this, as mistakes often result in the replacement of the seat foam and cover.

Power Requirements

- 12v automotive system (11 – 15 volts)

- Maximum power requirements vary by elements. For a seat using a cushion heating element and a back element, the range of power is between 49W (3.5A @ 13.8V) and 63W (4.5A @ 13.8V)

Product Specifications

- Temperature range measured at seat surface during normal operation **

  High 109°F (+/- 3 °F) or 42.7°C

  Low 101°F (+/- 3 °F) or 38.3°C

- Heating elements meet FMVSS 302 flammability requirements

- Connectors are indexed to prevent improper mating, including a quick disconnect

- New low profile element design reduces visibility through thin upholstery

** Performance varies with seat materials used and the density and amount of foam between the heating elements and the surface of the seat.

Required Skills

To effectively install your new seat heaters you will need the ability to perform the following tasks:

Remove an automotive seat and re-install to manufacturer specification

Remove and re-install seat upholstery

Remove and re-install plastic trim associated with the center console, instrument panel and seat frame

Create a 51/64” hole in plastic trim to mount the heater switch (can be accomplished using a 1” step drill bit or “Uni-bit”)

Disconnect the vehicle battery

Determine an effective 12V power source within the vehicle fuse panel using an electrical multi-meter.

Recommended Tools

Multi-meter capable of measuring volts, resistance (ohms) and continuity

Crimping tools capable of effectively securing fast-on connectors and ring terminals

Socket wrench and sockets

Open end wrench set

Screw drivers (Philips, straight blade and Torx)

Marker or pencil

Power drill

51/64” bit or 1” Uni-bit (Step drill bit)

Utility knife

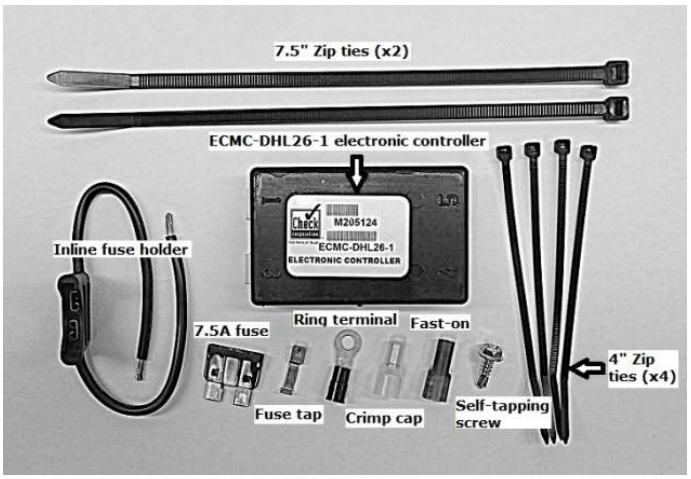
Hog ring pliers and hog rings (*may not be necessary depending on your vehicle’s upholstery attachment method)

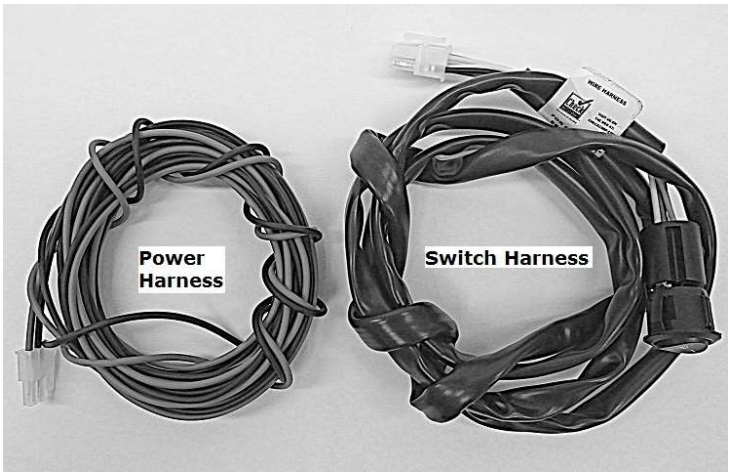
Heavy duty side cutters (for cutting hog rings)

Duct tape

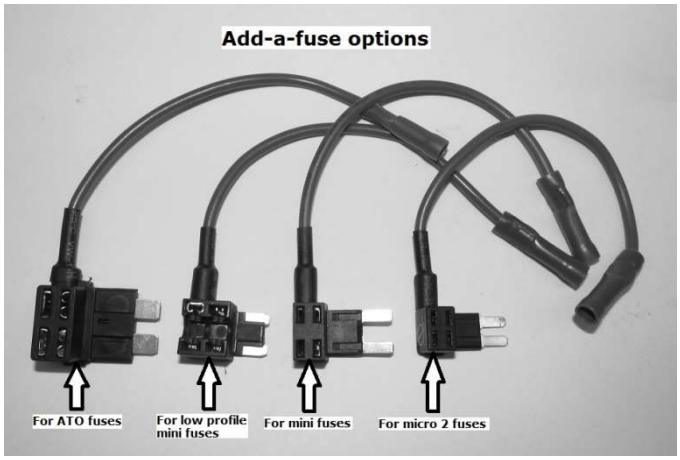
Tear resistant gloves

Standard Small Parts Inventory

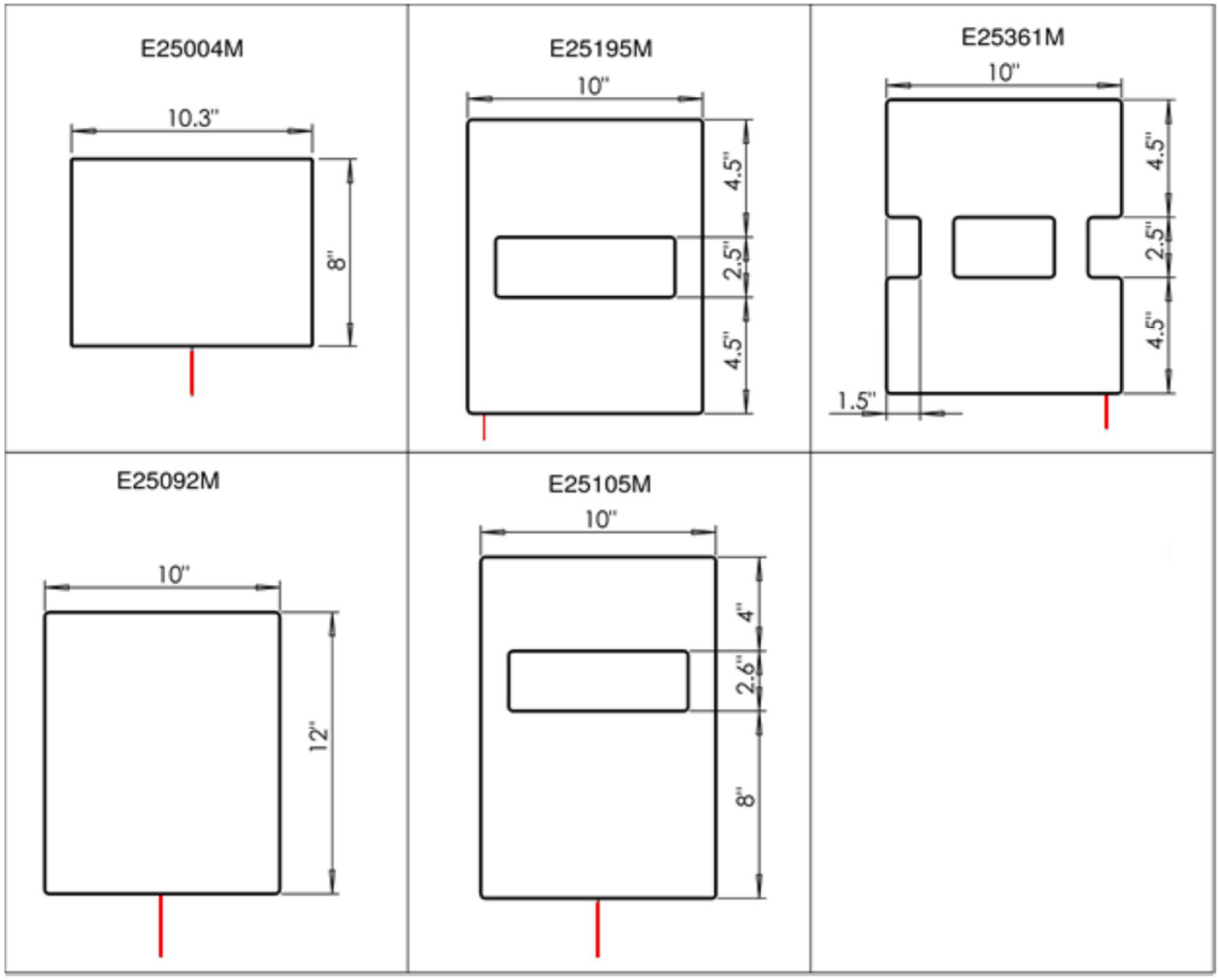




Optional Accessories



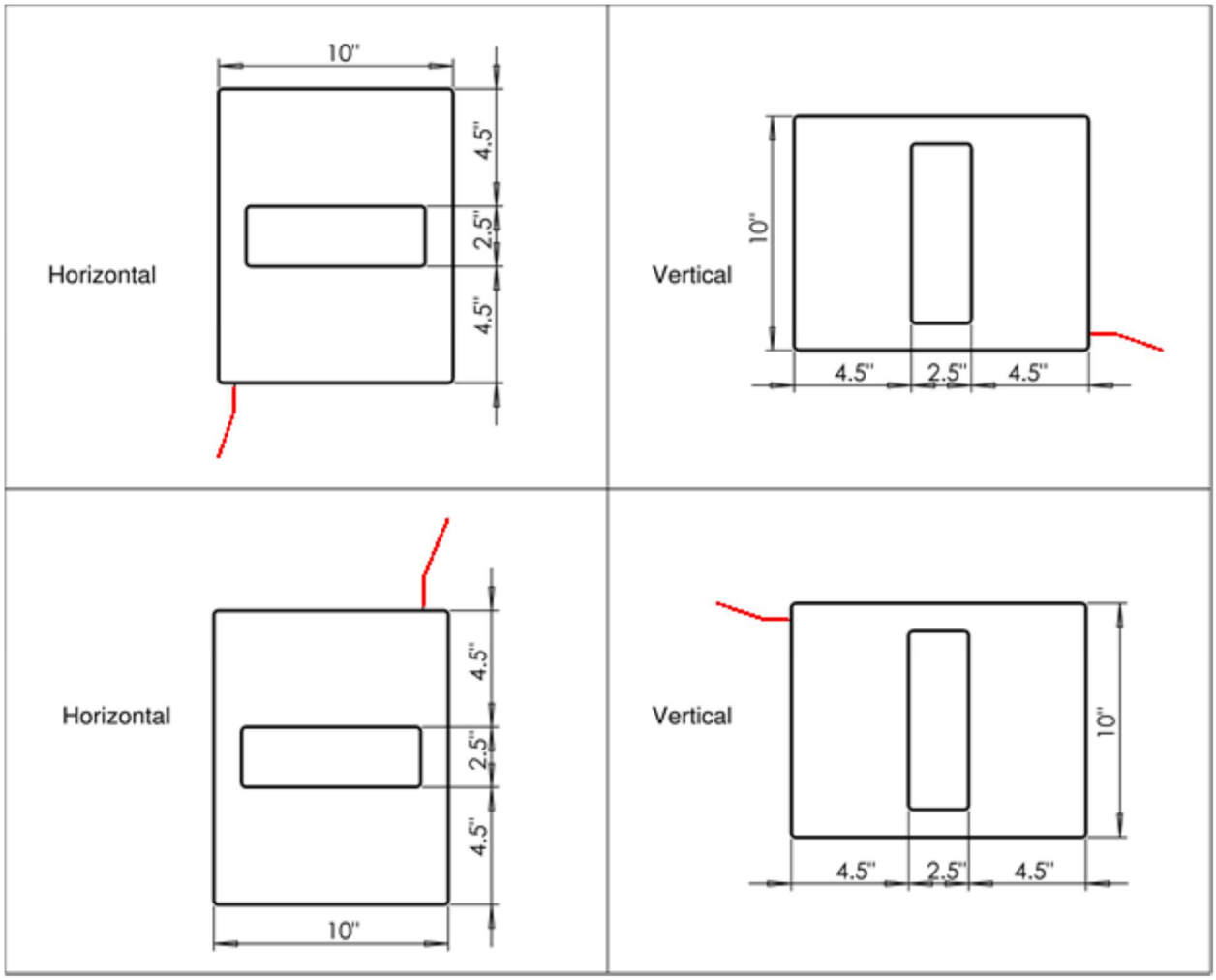
Heating Element Variations*



***See additional information about the versatile E25195M element on the following page)**

E25195M Installation Features

• The E25195 heating element is made to accommodate several different seat styling layouts. It can be installed so that the cut-out is aligned horizontally or vertically. When installing this element vertically, you may find it helpful to create a slit in the foam bun to conceal the element's wiring harnes.



Thank you for choosing a Check Corporation product! We hope you will find the instructions in this manual clear and easy to follow. Please take a moment to familiarize yourself with the contents of your kit and confirm that your heating elements fit the general contours of your seat. If you are confident that you have everything you need, proceed to the "Pre-testing" section below.

PRE-TESTING

Check Corporation products are thoroughly tested before shipment. Nevertheless, if you have access to a 12V DC benchtop power supply (PLEASE DO NOT USE A BATTERY CHARGER), it may prove helpful to test your new seat heater system before installing. Any problems related to shipping damage, etc., will be easier to identify while the system is still outside of the vehicle. Start by plugging the cushion element (if applicable) into port #1 on the ECMC-DHL26-1 electronic controller. Plug the back element (if applicable) to port #3 on the controller. Plug the switch harness into port #4 on the controller. Connect the power harness' red (+) and black (-) wires to the 12V DC power supply. Turn on the power supply and set to 12V DC. Plug the power harness into the port #5 on the controller. Move the heater switch to "High" (position II). The LED on the switch should be lit and green in color. If heat is detected within approximately 1 minute, disconnect the system and you are ready to begin the installation. If heat is not detected, wait an additional 30 seconds.

STEP-BY-STEP INSTALLATION INSTRUCTIONS

1. Park the vehicle on a level surface and engage the parking brake.

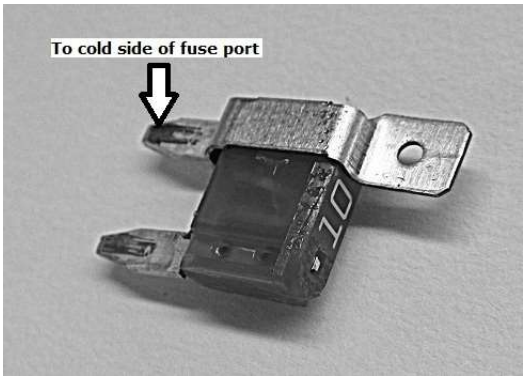
2. Locate your vehicle's interior fuse panel to determine an appropriate 12V DC power source.

It is imperative that your seat heater system draws its power from a "**switched**" source. A power source is considered "**switched**" if the flow of electricity begins **only** when the vehicle's ignition has been turned forward to the "**accessory on**" position or the motor has been started. *Utilizing a switched power source will help prevent battery drain and protect against overheating.*

*****If you have purchased an optional **"Add-a-Fuse" adapter** (pictured on pg. 5) refer to **Appendix A:** *"Installing an Add-a-Fuse Adapter (Part 1)"* on **Page 16** for **Steps 3-5**. Otherwise, continue below.

3. Locate a switched power source with an existing fuse rated for **AT LEAST** 10A. Accessory power or entertainment system fuses are usually good choices. If you are unsure how to determine a switched source, please see **Appendix B:** "*Finding a Switched Power Source"* on **Page 18** before proceeding.
4. Determine and record which side of the chosen fuse port is "hot" and which is "cold". If you are unsure how to do this, please see **Appendix C:** "*Determining the "hot" and "cold" sides of a fuse port"* on **Page 19** before proceeding.

5. Slide the gold colored **FUSE TAP** over either of the fuse blades and press firmly against the plastic body. Re-insert the fuse at its former location while ***making sure that the "tapped" blade is inserted into the "cold" side of the fuse port*** *(see picture below).* ****Note - If you are installing multiple systems using fuse taps, each seat must have its own switched power source with an appropriately rated fuse****.*



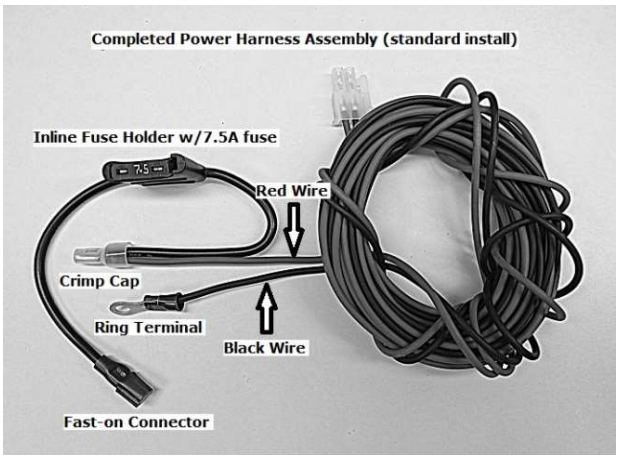
6. Determine where to mount the heater switch. The mounting surface should be flat and located in an area that is both accessible and minimally distracting for the driver or passenger. There must be room to accommodate the outside diameter of the switch (1"). There also must be a suitable amount of space *behind* the mounting surface to accommodate the switch/harness interface (pictured on page 11). 2" or more will be sufficient. The switch can be mounted just about anywhere on the dashboard or console that meets these criteria. *Mounting your switch to plastic seat trim is usually the least desirable option but can be used if no other suitable location is found*. In any case, keep in mind that the distance between the switch and the control module must not exceed the length of the switch harness (the control module will be mounted directly under the seat frame). Place a center mark where you will eventually drill the switch mounting hole.

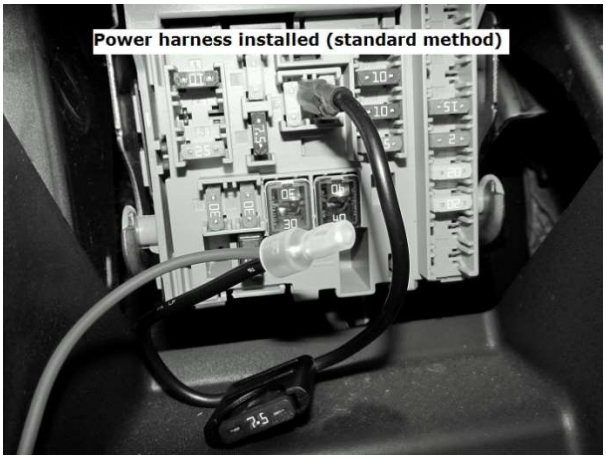
7. Remove the 4 bolts that secure the seat to the vehicle's frame. Do this before disconnecting the battery as you may need to access the seat's electronic controls (when applicable) to reach the bolts. Disconnect and isolate the vehicle's negative (ground) battery cable. Discharge any latent electricity by pumping the brakes a few times and then waiting five minutes for the system to discharge. It is important to do this before disconnecting any airbag harnessing.

8. Disconnect all harnessing attached to the seat and remove the entire seat from the vehicle. The edges of the seat frame are sharp and can produce damage to your hands and your interior trim. Wear gloves and apply duct tape to any edges of the frame that may come into contact with the trim while removing the seat. Place the seat in a suitable workspace.

If you are using an **Add-a-Fuse adapter**, refer to **Appendix A:** *"Installing an Add-a-Fuse Adapter (Part 2)"* on **Page 17** for **Steps 9-11**. Otherwise, continue below.

9. Locate the supplied *power harness*, *in-line fuse holder*, *7.5A fuse*, *ring terminal*, *crimp cap* and *fast-on connector (see page 5)*. Strip approximately 3/8" off of each end of the red and black power harness wires. Crimp the ring terminal to the power harness' black (ground) wire. For added strength, you may choose to wrap each connection with electrical tape (not included). Use the crimp cap to attach the red wire from the power harness to either end of the inline fuse holder. Crimp the Fast-on connector to the opposite end of the inline fuse holder. Insert the 7.5A fuse into the fuse holder. The fuse can be rotated and inserted in either direction.





10. The power harness is now ready to be installed. Attach the ring terminal from the black (ground) wire to the ground screw of the fuse panel. If a ground screw is not available, you may create a ground by drilling the provided self-tapping screw into the vehicle's frame and attaching the ring terminal from the power harness ground wire. **NEVER** drill through the floor! Plug the fast-on connector from the black in-line fuse holder onto the fuse tap that you installed earlier.

11. Route the wires inconspicuously so that the power harness connector will emerge directly under the seat frame. It is appropriate to make small openings in the carpet when necessary to facilitate routing. ****Caution – Be careful not to cut any wires that may already be running under the carpet**.**

12. Next, install the switch. Refer to page 22 for a dimensioned drawing of the switch opening. The final diameter for the switch hole is 51/64". Use a 1" step drill bit, also known as a Uni-Bit, to create the opening at the center mark chosen previously**. Care must be taken not to drill all the way through as this will create a 1" hole and be too big. Drill through enough to reach the ¾" mark on the drill bit. ¾" equates to 48/64", therefore you will have to remove slightly more material to allow the switch to be mounted properly. Note the 2mm notch centered on the right side of the hole. This notch will ensure proper graphic orientation and also keep the switch

from rotating. You can create the notch using a small file, Dremel rotary tool or other means.

****If you decide to use a standard drill bit to create the hole be careful not to distort the hole as standard bits have a tendency to "grab" thinner plastics.**

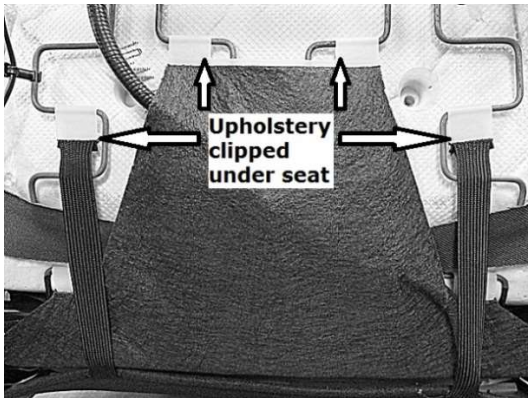


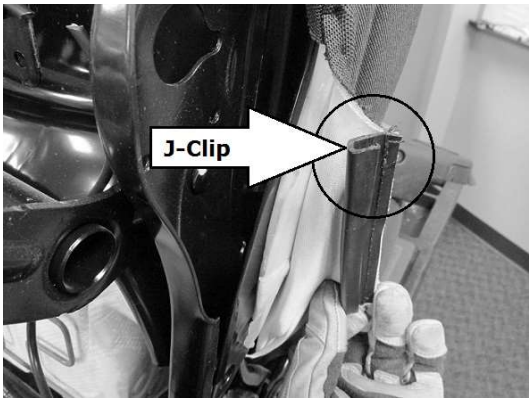
Note - Minor sanding or filing is often necessary to "dial in" the final size of the hole and notch. Just remember to move in small increments when increasing the diameter from ¾" to 51/64" using the Uni-bit or other means.

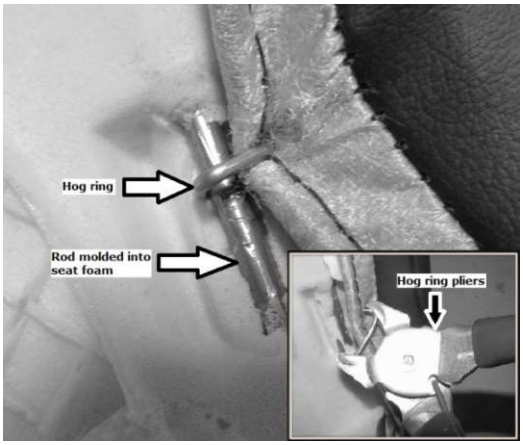
13. Disconnect the switch from the switch harness and route the harness through the back of the switch hole. Re-connect the switch, pressing firmly, and snap the switch into the mounting hole. Rout the switch harness inconspicuously so that it will emerge directly under the seat frame. Again, creating small openings in the carpet is often helpful.

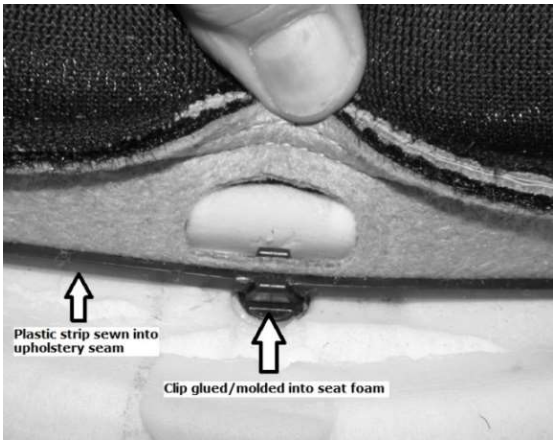
14. Next, remove the seat cover from the cushion foam. Some upholstery attachment methods you may encounter are pictured on the following page. Generally, you will need to start by unhooking "J-clips" that are sewn along the edges of the cover and clip to the underside and back of the seat frame. Be careful to use gloves during this step as the edges of the underside and back of the seat frame can be very sharp. You may need to remove one or more pieces of seat trim to access the J-clips. Edges may also be secured by zippers, hog rings or other means. It is not necessary to remove the back cover completely. Starting at the bite-line (where the cushion and back foam meet), detach just enough of the cover to expose the install area.

Examples of Upholstery Attachment Methods









Covers are generally secured to the foam buns along the *interior seams* by one, or possibly a combination, of three methods:

Velcro closure – This method includes a Velcro strip that is either molded into the foam bun or glued into the listing channel. Be careful to support the Velcro strip while pulling the cover apart from the foam bun to prevent tearing.

Listing Rods with Hog Rings – This method employs rods that are molded into the foam bun. The cover also contains rods sewn into the seams. The rods from the cover and those from the foam bun are tied together at various points along the listing channels using metal **"hog rings"**. The hog rings can be bent open and removed or clipped with a strong pair of cutters. ***Note – If necessary, zip ties may be substituted for hog rings when re-attaching upholstery.**

Plastic strips and clips - This method involves plastic strips that are sewn into the seams of the seat cover. These strips snap into small connectors molded along the listing channels. Again, care must be taken not to tear out the connectors from the foam bun while unclipping the cover.

15. Once exposed, check to make sure that the foam buns are intact and clear of debris. **IF THERE IS *ANY* OBJECT INSTALLED ON TOP OF THE FOAM BUN,**

STOP THE INSTALLATION. If the installation area is free from obstruction, you are ready to install your new heating elements.

Refer to figs A and B below for steps 16-18

16. Lay out your heating element(s) to confirm fit before removing the paper backing.

Normally, both the cushion and back elements will be oriented so that the wire harnesses route toward the "**bite line**" (where the cushion and back foam meet). The only exception to this is the ***E25195M element***, which can be placed in multiple orientations. See page 7 for further detail if you have chosen this element.

Keep in mind that cushion and back foam buns are constructed differently. Even though the same element may fit both, there will be slight variations in the way each is installed.

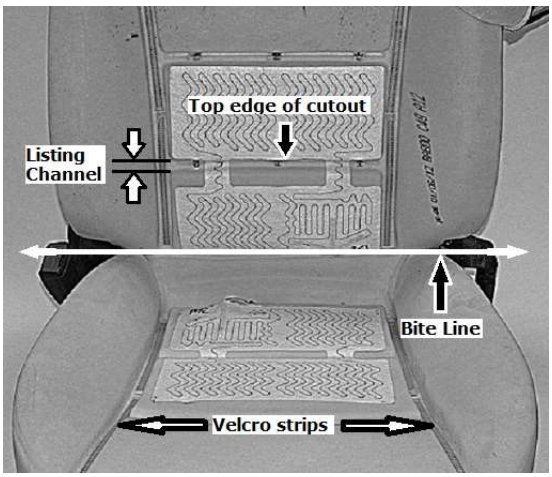


Fig A

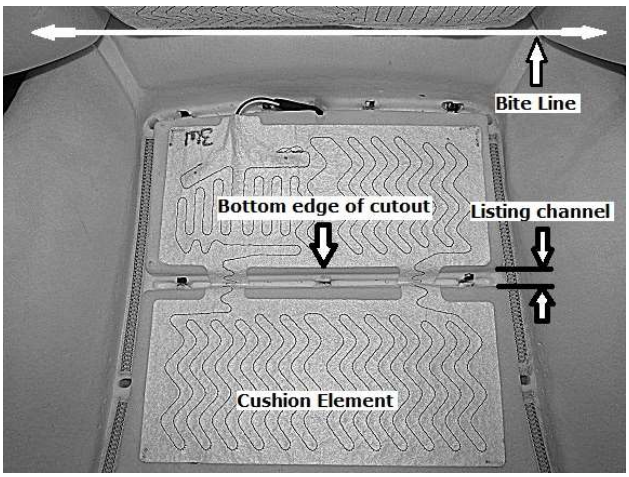


Fig B

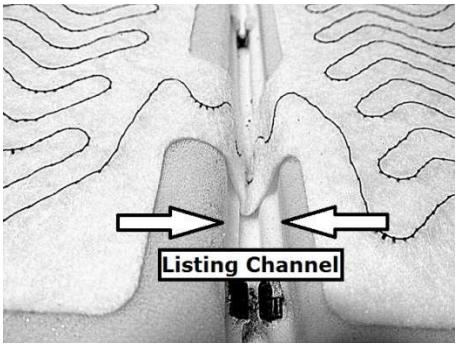
Notice the back element detail in figure A above. We needed to align the *top edge* of the element cutout with the *top edge* of the listing channel in order for the top section of the element to fit properly. If we would have started by lining up the bottom edge of the element cutout with the bottom edge of the listing channel, the top section of the element would have overlapped into the upper listing channel. The **ONLY** parts of a heating element that should ever be pressed into a listing channel are thin "bridging" sections designed into the element.

The cushion element (figure B) was different. The bottom edge of the element cutout (closest to the element harness) needed to be aligned with the bottom edge of the listing channel (closest to the bite line) for a proper fit.

Outline the final placement or your element(s) with a pen or marker.

16. Remove the adhesive backing and slowly press the element into place. You may choose to remove the adhesive backing little by little for more accurate placement.

As you move toward a listing channel (if applicable), press the **"bridging"** sections of the element down into the channel and up the other side, creating as smooth a contour as possible (see below).



Note - The listing channels shown in figs. A and B (previous page) are considered **"horizontal" listing channels. The **E25106** element (and the E25195M element when vertically aligned) are designed to accommodate a **"vertical"** (center) listing channel.*

17. Apply pressure to secure the element to the foam.

18. Once the elements are in place, tuck the harnesses behind the seat. You may decide to make a ½" deep slits in the foam to conceal the harnesses below the seat surface. This is necessary only if you are concerned about the possibility of seeing a slight rise in the seat cover material (a.k.a, "read through") where the harnesses extend out from the heating elements.

19. Re-install the seat covers using the appropriate attachment method.

20. Secure the electronic controller under the seat frame using one of the larger zip ties included with your kit. It may be secured to any structure under the seat as long as it does not limit or obstruct any moving parts.

21. Connect the cushion element (if applicable) to port #1 on the controller. Connect the back element (if applicable) to port #3 on the controller.

22. Place the seat inside the vehicle and re-attach all harnessing. Re-connect the negative battery terminal (do this before securing the seat to the floor as you may need to use the electronic seat controls to access the mounting bolts). Secure the seat, being careful to follow any applicable torque specifications.

23. Connect the switch harness to port #4 on the controller. Connect the power harness to port #5 on the controller. ***Note – The controller unit will recognize**

a fault condition and disable the system if the switch harness and at least one element are not plugged in when power is applied. Therefore, it is always a good practice to PLUG IN THE POWER HARNESS LAST.

24. Use the remaining zip ties to streamline any excess harnessing under the seat. **Remember to confirm that no seat functions are limited or obstructed**. ***If you are installing heaters into more than one seat, repeat the appropriate steps above*.**

25. Confirm that you are **ONLY** able to turn the heater system on when the vehicle's ignition is switched to the "accessory on" position or the motor is started.

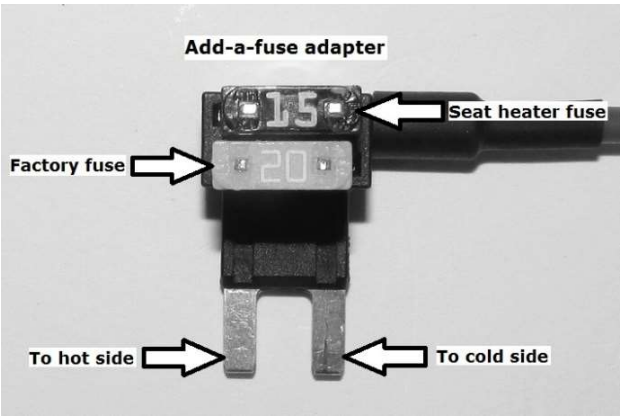
ENJOY YOUR NEW SEAT HEATER(S)!

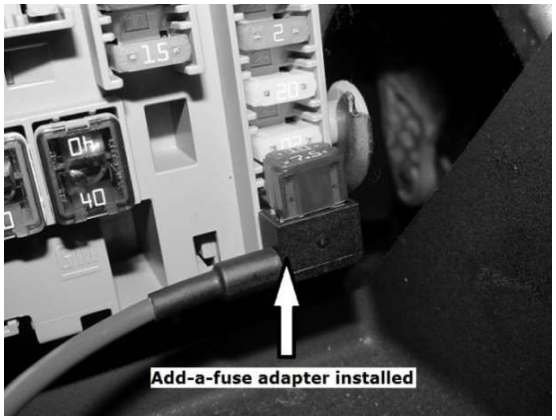
Appendix A:

Installing an Add-a-Fuse Adapter (Part 1)

The Add-a-Fuse adapter is meant to be used **instead of** the fuse tap. It can be used to power 1 or 2 seat heater systems. There are 4 variations of the Add-a-Fuse adapter to accommodate different fuse types (see page 5). The "mini fuse" version is pictured below.

***Note** - **You will have to make sure that the location you choose has enough room to accommodate the adapter oriented properly. The adapter must be rotated so that the "cold" blade of the adapter is plugged into the "cold" side of the fuse port (see picture below). The "cold" side refers to the fuse socket that is not electrically active until power is passed to it from the "hot" side through the fuse.**





3. Locate a switched power source with an existing fuse of **at least 10A if you are installing one system** and **at least 15A if you are installing two systems**. If you are unsure how to determine a switched source, see ***"Finding a Switched Power Source"*** on **Page 18** before proceeding to step 4 below.

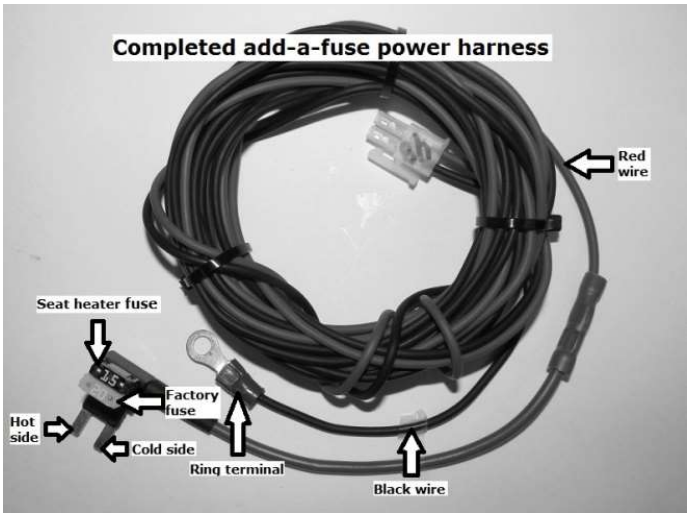
4. Next, determine the hot and cold sides of the chosen fuse port. If you are unsure how to do this, see ***"Determining the "hot" and "cold" sides of a fuse port"*** on **Page 18** in the main manual before proceeding to step 5 below.
Confirm that the adapter will fit (rotated properly). Experiment with different locations if necessary.

5. Next, insert the fuses into the Add-a-Fuse adaptor (pictured above). Note that the seat heater fuse included in your kit (***7.5A*** *for one system or* ***15A*** *for two*) is inserted into the port directly in line with the (red) hookup wire. The factory fuse (***at least 10A*** *for one system or* ***at least 15A*** *for two*) occupies the port closest to

the adaptor blades. Set the adapter aside for later installation and **continue with Step 6** on page 9.

Installing the Add-a-Fuse Adapter (Part 2)

9. Locate the power harness, Add-a-Fuse adapter and ring terminal.
****Note - You will not need the gold fuse tap, inline fuse holder or fast-on connector when using the Add-a-Fuse adapter.***
Strip approximately 3/8" off of each end of the red and black power harness wires. Crimp the ring terminal to the power harness' black (ground) wire. For added strength, you may choose to wrap each connection with electrical tape (not included). Crimp the red (power) wire of the power harness to the red wire of the Add-a-Fuse adapter.



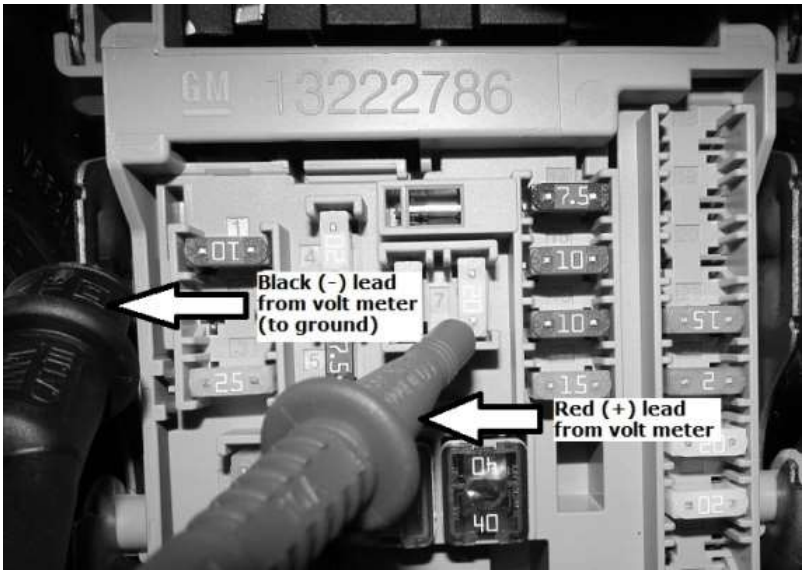
10. The power harness is now ready to be installed. Attach the ring terminal from the black (ground) wire to the ground screw for the fuse panel. If a ground screw is not available, you may create a ground and attach the ring terminal by drilling the provided self-tapping screw into the vehicle's frame. **NEVER** drill through the floor!

11. Insert the Add-a-Fuse adapter into the switched fuse port previously chosen. Be sure that the "cold" blade is inserted into the "cold" side of the fuse port. Route the harness inconspicuously so that the connector end will emerge directly under the seat frame. It is appropriate to make small openings in the carpet when necessary to facilitate routing. ****Caution – Be certain not to cut any wires that may already be running under the carpet**.** Continue with **Step 12** on page 10.

Appendix B:

Finding a Switched Power Source

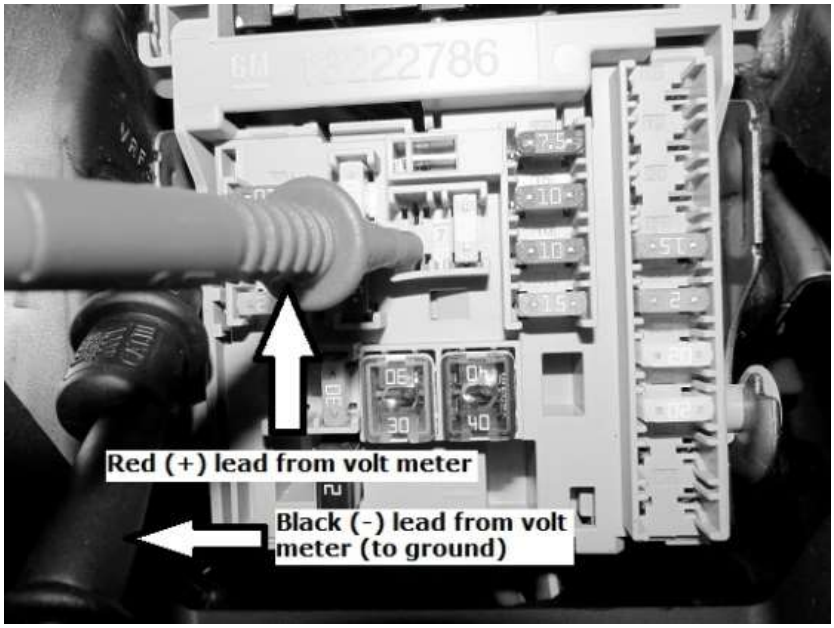
To determine whether a fuse is connected to a switched source you will need a volt meter (aka, multi-meter) set to display DC volts. The fuses that you will test have two exposed metal contacts on the back. ***With the vehicle ignition in the "accessory on"*** *position*, touch the ground screw of the fuse panel (or other metal surface connected to the frame of the vehicle) with the meter's black (-) lead. Simultaneously touch one of the fuse's metal contacts with the meter's red (+) lead (see picture below). Try this with a few different fuses to confirm that your meter is properly grounded and reading voltage. If after a few tries you cannot find a fuse that reads 12 volts, move the black lead to a different grounding location and try again. Once you are able to read voltage on several fuses, you can ***turn the ignition off and begin searching for an appropriate switched source***. This is a particularly important step so take time to confirm that the source you choose measures approximately 12 volts with the ignition "**ON**" and 0 volts with the ignition "**OFF**".



Appendix C:

Determining the "Hot" and "Cold" Sides of a Fuse Port

First, remove the fuse and turn the key to the "accessory on" position (do not start the motor). Set your volt meter to read DC volts. Next, touch the ground screw of the fuse panel (or other metal surface connected to the frame of the vehicle) with the meter's black (-) lead. Simultaneously touch one of the metal sockets that formerly held the fuse with the meter's red (+) lead. Do this lightly to avoid damaging the socket. If voltage is present (approx. 12V DC), you have determined the hot side. If there is no voltage (approx. 0 V DC), that is the cold side. Check both sides to confirm that there is one hot and one cold socket. **Be sure to notate the location of each**.



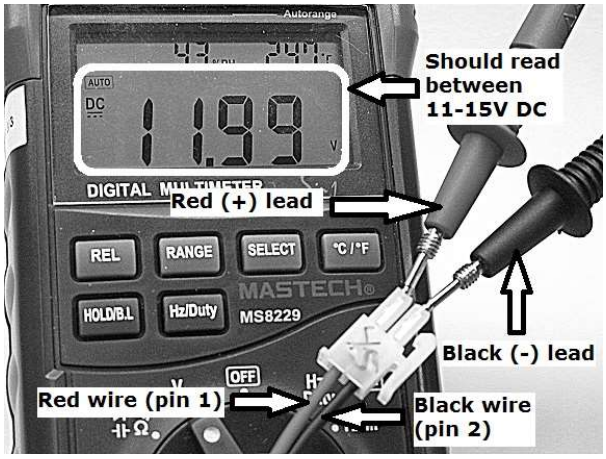
Appendix D:

Troubleshooting

If the system does not turn on/heat up, try one or more of the following:

• Turn the heater system and your vehicle ignition off. Disconnect the power harness from the controller. Wait 30 seconds. Re-connect the power harness and turn the ignition to the "accessory on" position. Re-check heat.

• Verify that the controller is receiving 11-15V from the fuse box. With the ignition on, use a multi-meter set to DC volts to measure voltage at the power harness connector (see below).



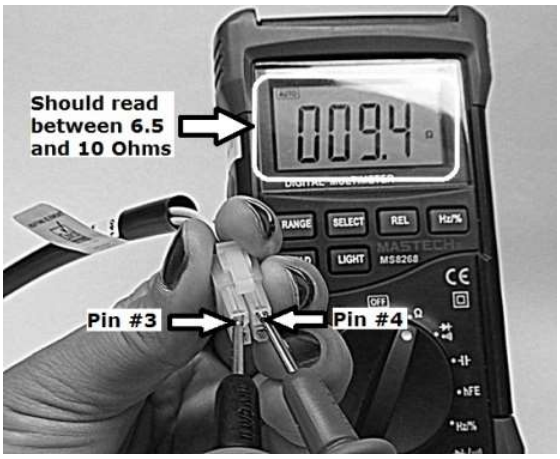
• Check the fuse(s) utilized during the installation.

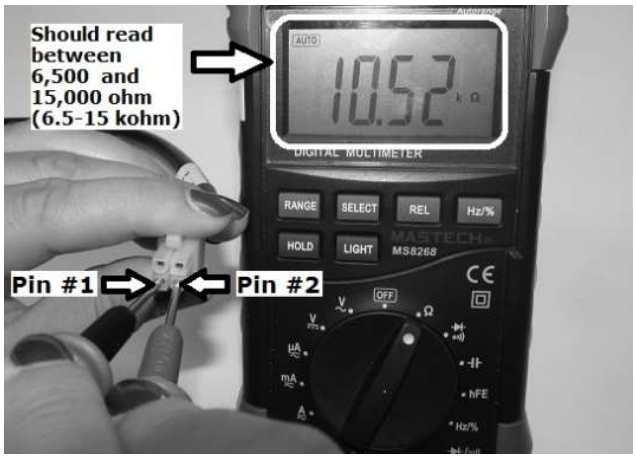
• Ensure that all connections are properly mated and that the 12V DC and ground wires are properly installed. (See seat heater wiring diagram on page 20).

• Check for a break in the heating element circuit. Carefully pull on the wires at each connector to verify properly seating.

Troubleshooting (continued)

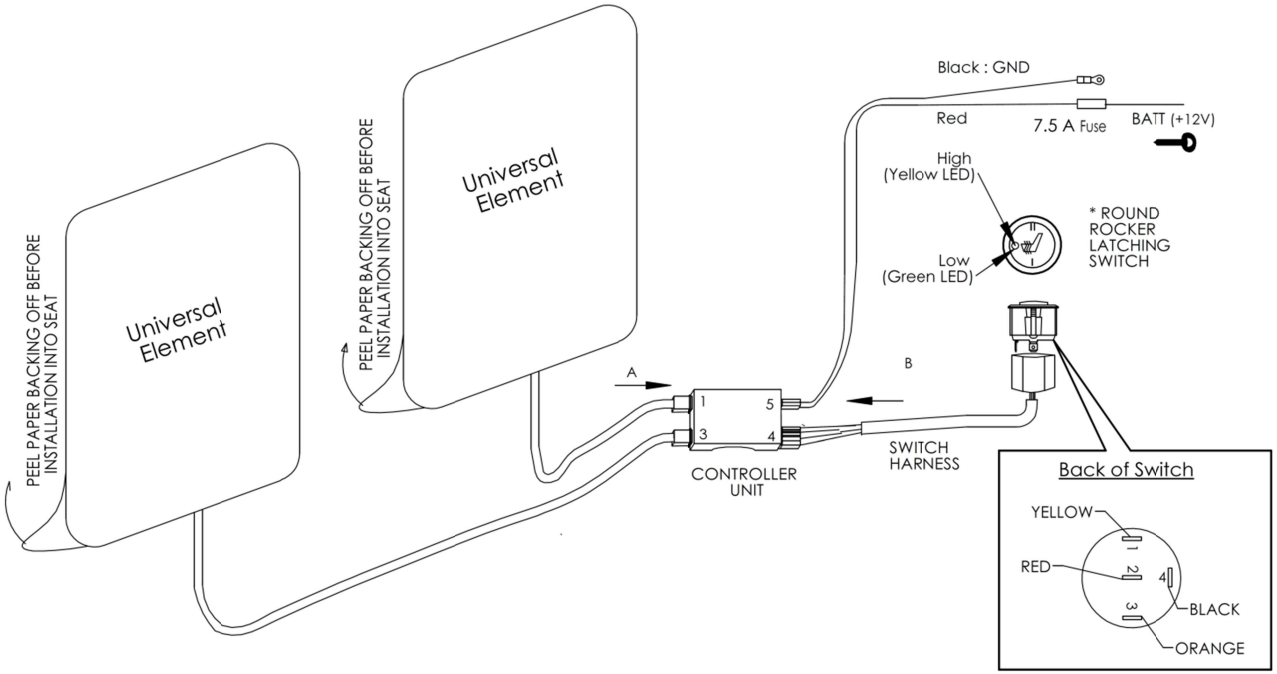
- Check the elements for continuity at the 4 pin connectors (see below).

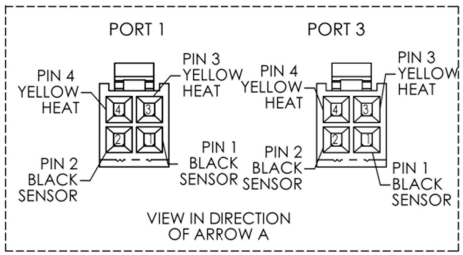


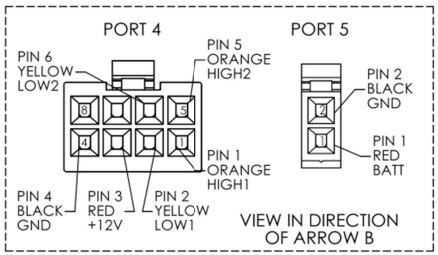


- Check for a poor ground connection

UNIVERSAL HEATER KIT WIRING DIAGRAM

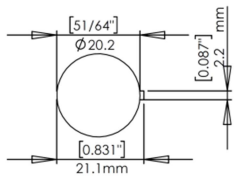






SWITCH OPENING
*** Round Switch**

1" UNIT-BIT (STEP BIT)



diagLIT-UNV-1-EC26 REV C 9/6/16

Check Corporation

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USA

Limited Warranty

This Product is warranted to be free from defects in manufacturing and workmanship and is guaranteed to work for three years from the date of manufacture. The elements have a year shelf life. This Limited Warranty covers the repair or replacement of the seat heater components only and does not cover any costs related to or damage resulting from the installation of the seat heater. Seat heaters must only be used in the seat applications for which they were designed, tested and approved by Check Corporation, and failure to properly install the designated seat heated product, or improper installation or misuse of any component, will void this Limited Warranty. Installer shall indemnify and hold Check Corporation harmless from any and all installations contrary to automobile OEM, automobile dealership, and Check Corporation issued instructions.

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