

500 Abarth - Seat Heater Installation

by Walter Forlini

The kits I installed were purchased from HSK - HeatedSeatKits.com. I went with their Innovative Heat II kits (#29789). Here's the link: <<http://www.heatedseatkits.com/heatedseatkits/iheat2/index.html>>. Total cost was \$180 for two kits, shipped. There are several similar looking kits available on eBay for less but I went with HSK because 1. they had a selection of kits, 2. they have a permanent web presence, 3. they warrant their product, 4. they state where their products are manufactured (Germany), and 5. they responded to my multiple email inquiries in a timely manner. The Innovative Heat II pads are made with carbon fiber filaments that can be cut and trimmed without affecting the heating capability of the pad. On the high setting, they get very warm.

Each seat kit includes two 9" x 16" pads with integrated temperature sensors and pre-attached adhesive strips; a 12 volt relay; a three-position switch; inline accessory fuse; insulated cables with heat-shrink on the connectors; and several zip-ties.

Additional tools/bits required for the install are philips and flat head screwdrivers, metric sockets, allen wrenches, Torx bits, a side cutter (strong enough to cut through hog rings), needle-nose pliers, a 20 mm drill bit, a razor blade or Xacto knife, soldering iron, solder and some heat shrink tubing. You'll also want about a three foot strip of hook & loop tape (aka Velcro - more on this later).

Instead of using the physically larger inline ATC fuse that comes with the heater kits, head over to your local auto parts store and purchase an ATM (mini) Add-A-Circuit kit (about \$7). The kit will allow you to tie in easily to the Abarth's fuse block and you won't need to keep track of any odd-sized fuses. You'll also want to buy a couple 15 amp ATM fuses. Here's what a Tap-A-Circuit looks like at Amazon: <<http://www.amazon.com/Bussmann-BP-HHH-ATM-Add-A-Fuse/dp/B000GKEXK2/>>

Decide where you want to mount your seat heater switches. I chose to mount the switches on either side of the hand brake lever. Mounted there, both switches can be seen and reached by the driver. Another option is further back on the center console between the hand brake and rear cup holders. If you've got skinny hands, you might opt to mount the switches on the sides of the seats facing the door panel. Here are examples of the different switch location options:





This is an outline of how the seat heaters fit. The seam around the bolsters on the seat bottom and back are formed and held in place with metal hog rings attached to wires embedded in the seat foam during manufacturing. You should only need to deal with the hog rings on the seat bottom (marked in blue). You'll be replacing the removed hog rings with plastic zip ties so you won't have to worry about shorting out the seat heaters or swearing about dropped and lost hog ties.

Behind the decorative racing stripe running up the middle of the seat back is a strip of hook and loop fastener which keeps the seat cover from puffing and sagging. There's no corresponding fastener strip behind the seat bottom stripe. I attached a strip of hook tape to the heater pads to mate up with the existing loops on the seat cover.

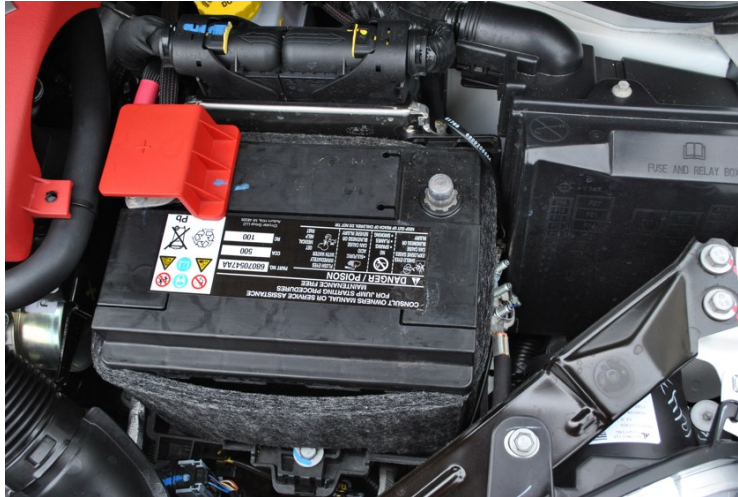
If you purchase the Innovative Heat II pads, their width will just fit between the seat's bolsters. One edge of each pad will need to be trimmed to fit the curvature of the seat's design (in green). Be sure to follow the instructions included with the kit before doing any cutting.

The passenger seatbelt/airbag sensor position is marked (in purple) to give you an idea of where it's located.

General (poorly-translated from German) installation instructions are available on the HSK web site:
<<http://www.HeatedSeatKits.com/installation.html>>

The Installation

1. The Abarth's seats are equipped with side airbags so disconnect the negative battery cable before starting this project. If you attempt to start the car while the seats are out of the car or airbags disconnected, the SRS (airbag) system self check will fail and throw an error light that will likely require a trip to your local studio. Note that your EVIC will lose the date, time and current A & B trip data when the battery is disconnected. Your radio stations and other vehicle settings should remain intact.

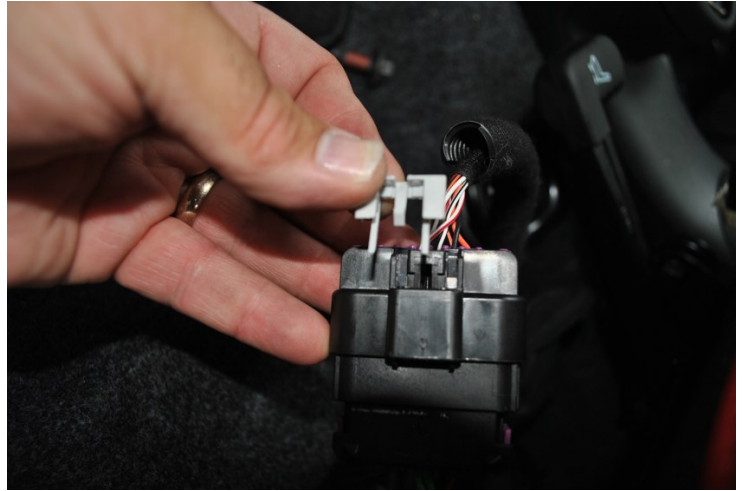
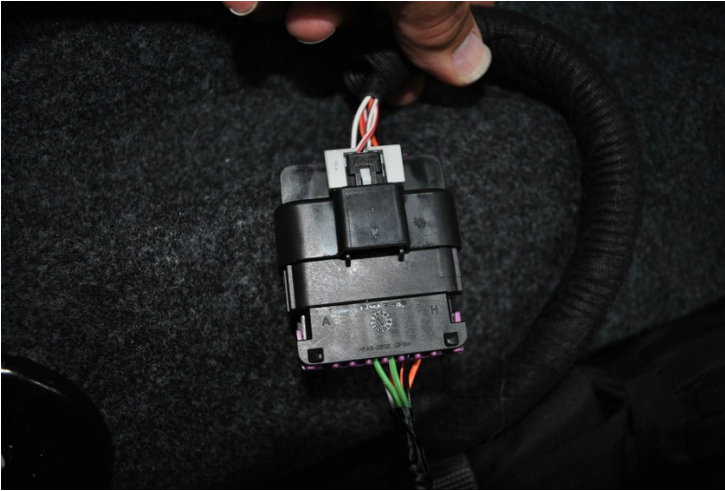


2. Remove the TireFit kit and jack from under the driver's seat and set them safely aside.

3. There are four bolts holding each seat in place. Two bolts at the front of the seat and two Torx bolts at the rears. At the outboard rear of each seat, there's an alignment pin/bolt that doesn't have to be removed. It's used to help get the seats lined up when you reinstall them.



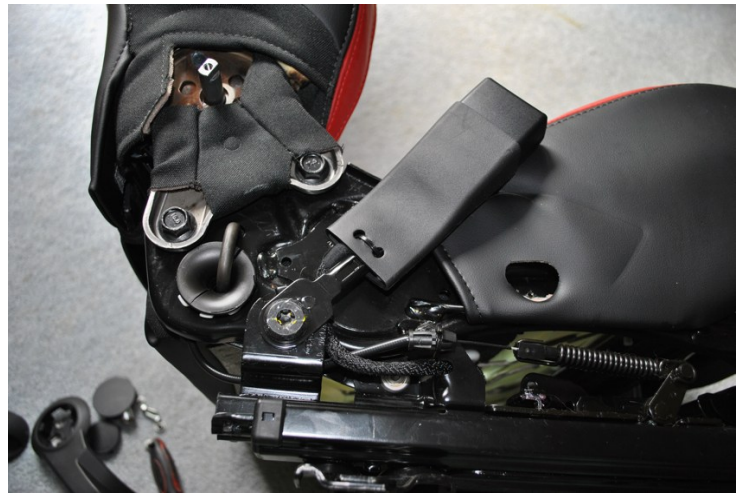
4. Before removing each seat, you'll need to disconnect the airbag wiring harness. On the passenger seat, the harness is at the back of the seat mounted to the floor. On the driver's seat, it's mounted on the seat frame in front. With the seats unbolted, you can tilt them forward or back for better access to the airbag wiring. Each connector has a white or gray plastic locking clip keeping the connector together. Carefully slide the lock clip off without breaking it and then pull apart the harness. Once disconnected, the seats can be removed from the car. Be careful when removing the seats so as not to mar the easily-scratched plastic door sills and door trim. You may want to cover the sills with masking tape if you're worried about scratching them.



5. Find yourself a carpeted area to work on the seats so you don't damage the leather or scratch up the rails. You're going to be manhandling and flipping the seats around quite a bit. Now is a good time to take some photos of your seats so you can remember what gets attached where.



6. Starting with the driver's seat, remove the plastic seat trim and adjustment handles. Don't forget to find the philips head screw on the back of the seat trim. The seat belt does not have to be removed. There are some round plastic caps (three on the driver's seat, two on the passenger's) that need to be popped off. Each is keyed to fit a specific hole so don't worry about mixing them up. The driver's seat is a bit tricky as there's a press-on clip at the front of the outboard plastic trim piece. If you yank this off, it will break. Instead, take a look from the bottom of the seat where you'll see a white plastic backing piece between the black trim and seat frame. It's best to spend a few minutes removing the four metal nuts holding the black trim piece to the white plastic piece while they're still attached to the seat. Yes, there are four nuts - one is hidden under the metal bracket and is difficult to remove. Chances are you will break one or more of the black plastic pins. If you do, a sheet metal screw can be used to secure the pieces when putting things back together. You do not need to dismantle the seat back from the seat bottom, just remove all the plastic trim on the lower sides of the seat.



7. Tackle the seat back first. The pad will be installed under the large flat semicircular area between the bolsters (see earlier diagram). Place one of the pads on the seat back with the cable towards the bottom and the tape facing the seat. Use a pen to trace the curve around the top of the pad. Follow the directions in the kit and cut the pad to fit the traced curve. Set the pad aside while you open up the seat back. You don't need to fully remove the cover from the seat back. Opening up just the bottom of the seat back will allow you to shove your arm (and the pad) up under the seat cover without much effort. On the rear of the seat back are two zippers that start under the flap near the lower edge. Undoing the zippers will reveal where the front and back of the seat cover attach to each other with a long plastic clip. Both parts of the clip are attached to the seat cover and can be pulled and slid until they come apart. Once unclipped, disconnect the yellow airbag connector and loosen the lower half of the seat cover from the cushion by shoving or pulling the front part of the seat cover through the gap between the seat back and seat bottom.

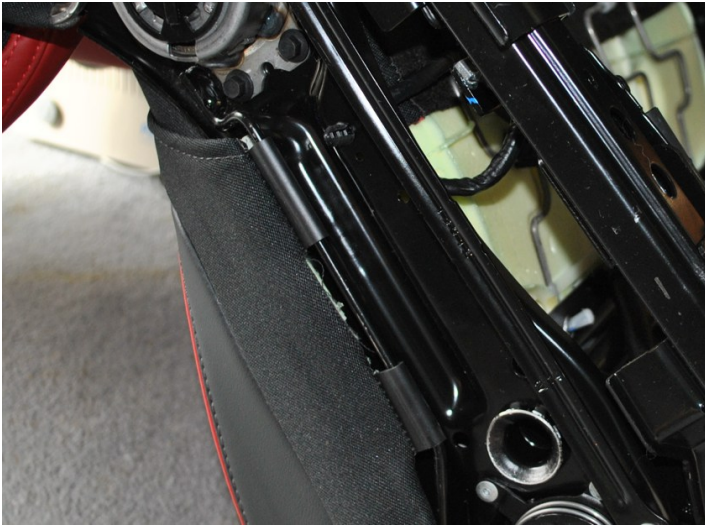
8. There's a strip of hook and loop fastener running up the center of the seat (behind the stripe) that is used to keep the seat cover from sagging. Insert your hand up under the seat cover and pull apart the fastener strip. Test fit your cut pad by maneuvering it up into the opening being sure to keep it straight. The pad's cloth cover will stick to the hook strip on the foam cushion. Trim the pad if needed to get a precise fit. I stuck an adhesive strip of hook tape running vertically up the middle of the heating pad to give the seat cover's fastener strip something to attach to. Follow the kit directions and carefully pull the protective film revealing the pad adhesive (best to pull a small bit at a time) and mount the pad under the seat back cover. Make sure you keep the pad straight and don't fold the adhesive over onto itself. Once correctly in place, press down on the pad and allow the adhesive to bond to the seat foam. Remove your hand from the seat interior and press down on the stripe running up the seat to attach the fastener strips.



9. Before closing the seat back up, take a look at the temperature sensor embedded in the heating pad. If it causes a lump in the seat cover, use the razor blade to carve a little cavity in the seat foam under the pad for the sensor to sit in. Start closing up the seat back, reversing the earlier steps and being sure to reconnect the airbag cable. Note the two holes in the bottom of the seat cover. The airbag cable passes through one and you can pull the heating pad cable through the other. If you take a close look at the back of the bottom cushion, you'll see two channels/pockets. The airbag cable runs through one and you can use the other to hide the heater cable run to the bottom of the seat.



10. With the seat back done, start on the seat bottom. The heater pad will be installed on the flat part of the seat bottom delineated by the horseshoe shaped bolster. Trace and trim the heating pad corners for the seat bottom as you did for the seat back. On the driver's seat, the power cable will be run around the front edge of the seat cushion. Being VERY CAREFUL not to cut yourself on the sheet metal used in the seat frame, start removing the cover from the seat bottom. You only need to remove the front part of the seat cover from the bottom cushion. There are plastic hooks on either side of the seat and a long plastic clip that runs the width of the seat under the front of the cushion and attaches the seat cover to a (sharp!) metal strip with four tabs. Give the clip a good yank and it'll come off without damaging anything. As you pull the seat cover up around the sides, you'll find it attached to the top of the cushion with several metal hog rings. Use your snips and carefully cut two hog rings from each side of the seat cover starting at the front. This will reveal another set of hog rings running left to right across the seat just behind the thigh support. Removing those hog rings will allow you access to the rear of the bottom cushion. **MAKE SURE YOU CUT ONLY THE HOG RINGS AND NOT THE WIRE IN THE CUSHION OR THE SEAT COVER!** (Ahem, Todd.)



11. After test fitting the pad, pull some of the tape from the rear half of the pad and attach the pad onto the rear part of the seat cushion. As illustrated in the instructions, the pad will need to be tucked into the channel running across the seat. Press the pad down into the channel and use a pen to mark where the hog rings originally held the seat cover to the cushion. Using a pair of scissors, cut small holes in the pad on the marks. It's O.K. to cut through the carbon fibers, just not the strips running up the sides of the pads. Instead of reattaching the seat cover with hog rings, you'll use strong plastic zip ties as they won't conduct electricity like metal hog rings. Preload the cushion with your zip-ties, making sure they poke through the holes you made in the pad for the channel. As on the seat back, carve out a little cavity for the heat sensor. Also carve out a small channel for the power cable where it runs around the front lip of the seat cushion. Halfway down the front edge of the cushion, poke a hole through the foam and pull the cable through to the backside. Pull the rest of the tape and complete attaching the pad to the seat cushion. Work the zip ties through the holes in the cloth/plastic strips of the seat cover and get them started. Use needle nose pliers to pull the zip ties tight, cut the tails and rotate the ties so the locks are hidden down in the channels. Position the foam cushion on the seat frame and reattach the front and sides of the seat cover to the frame using the attached plastic clip and hooks.

12. At this point, the seat covers should be back in place with two pad wires/connectors hanging out under the seat. Reattach the plastic seat trim and adjustment handles to the seat. Attach the two pad wires to the relay per the kit instructions and mount the relay to the bottom of the seat frame being sure to leave clearance for the TireFit kit and jack. Gather and zip tie the extra wiring to the seat frame with the exception of the cable for the switch. The switch cable and power connector need to be located at the front of the driver's seat near the airbag cable. This completes the driver's seat. Take a break and relax, knowing that you're still not even halfway done.

13. Tackle the passenger seat next by installing the heating pad with fastener strip in the seat back just as you did for the driver's seat. When you get to the seat bottom, remove two extra hog rings from each side of the seat to allow more of the cover to be lifted and revealing the passenger air bag sensor (see photo). The sensor is a thin film stuck to the rear half of the cushion. Be careful not to damage the sensor. You'll notice a hole towards the back of the seat cushion where the sensor wires are channeled to the bottom of the seat. Instead of running the passenger seat heating pad wire to the front of the seat (as you did for the driver), you can run it though this hole to the bottom of the seat (it's your choice). Using your pen and scissors, mark and cut an opening in the heating pad around the airbag sensor. Continue installing the heater pad and reattach the seat cover using zip ties just as on the driver's seat. Reattach the plastic seat trim and handles to complete the passenger seat. The power and switch wires for the passenger seat need to be gathered at the back side of the passenger seat (near the airbag cable).

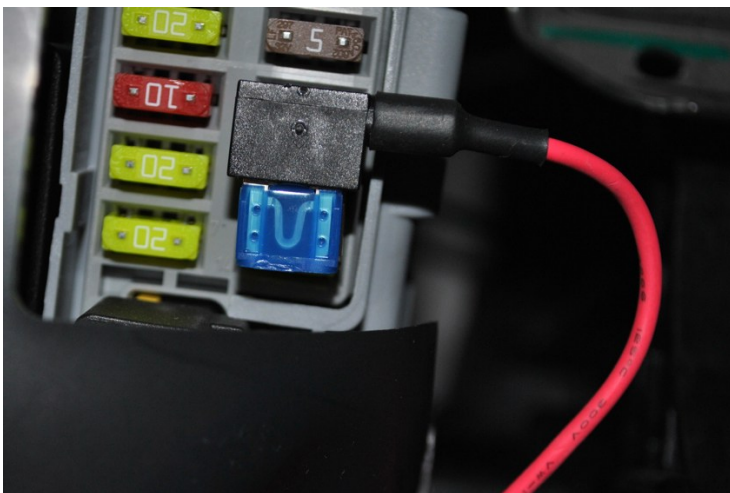


14. With the seats still out of the car, it's easier to remove the center console pieces. Grab hold of the rubber cup holder inserts and pull them out (both front and rear). This will reveal two 10 mm nuts under the front cup holder and one under the rear cup holder. There are U-shaped spacers installed with the nuts that you'll need to keep track of. Remove the nut and spacer in the rear cup holder and firmly pull the rear of the center console backwards until it unclips from the front half of the console. Take note of how far the front console piece inserts into the rear piece as it will affect how far forward you can safely install the heater switches. Remove the rear console from the car and once you decide where you want to mount the switches, use the 20 mm drill bit to create the switch holes. Place and snap the switches into the holes. If the switches are loose or easily rotate, use a little epoxy on the underside of the console to keep them in place.

15. Remove the two side panels in front of and below the shifter console. They're each held on with a single Torx screw and some clips. Remove the screws and give the panels a tug to free the clips. Remove the two 10 mm nuts in the front cup holder and the single 10 mm nut at the back of the console (under the front of the hand brake). Finally, remove the two Torx screws that were exposed when the side panels were removed to finally free up the forward console.

16. If you purchased your kits from HSK, the power leads will have a plastic connector between the raw ends and the relay (some of the eBay kits do not). With the seats completed, but still out of the car, start running your wiring. On the driver's side, there's a hole in the carpet near the front of the seat. Feed the raw ends of the power cable through that hole towards the openings in the carpet at the center of the car, leaving the plastic connector end in the area by the seat. Later on, you're going to need to feed the switch cable along the same path so it may be helpful to pull a string or piece of extra wire through the hole now to make things easier later. Pull the other power cable through the hole in the carpet at the rear of the passenger seat area and into the center of the car. Connect the black ground wires to a suitable point in the console area. There's a sensor bolted to the car body just forward of the hand brake that can be used as a grounding point.

17. Solder/splice and insulate the red wires together just forward of the handbrake leaving a several foot length of wire, long enough to run up to the fuse block. Run the wire below the carpet under the forward console area and beneath the carpet under the pedals finally emerging by the fuse block. Solder the Tap-A-Circuit on the end of the red power wire and attach it to a switched circuit in the fuse block. You can use the fuse location pictured in the photo as a guide. On my car, there was a brown 5 amp fuse in that location.



18. Reinstall the forward center console and side panels, hiding the power cable run. Place the rear console piece in place over the handbrake, but do not clip or bolt it in just yet.

19. Place the seats back into the car using the guide pins to set them in position (watch your paint!!) Don't bolt the seats in at this point. On the driver's side, pull the switch cable through the same opening in the carpet you used for the power wires. Do the same on the passenger side, pulling and concealing the cable under the carpet. Connect the heater power cables to the seats. Reattach the airbag cables on both seats being sure to use the white/gray plastic locking clips. Do this before reconnecting the battery!

20. Connect each switch cable to the corresponding switch under the center console. Use zip-ties to gather and tuck any excess wiring for the switches up inside the handbrake console ensuring the wires do not interfere with the functioning of the handbrake.

21. Reconnect the battery cable under the hood and follow the Tap-A-Circuit directions to figure out which slot should hold the accessory fuse. I used a 15 amp fuse for the seat heaters. At this point, you can turn the key to the accessory position, sit in the driver's seat and test your handiwork. Once sorted, insert the removed factory fuse into the other Tap-A-Circuit slot. Each heated seat draws approximately five amps when on the high setting. The gauge of the provided power wire is capable of handling the draw just fine so there's no need to use higher gauge wire. A 10 amp fuse is all that's needed (and maximum recommended for the Tap-A-Circuit), but inserting a 15 will handle any unexpected spike in current if you happen to switch both heaters on at the same time. Wired correctly, the heaters will only function when the key is in the ON position.

22. When done testing, reinstall the rear console and bolt the seats back into position. Secure the TireFit kit and jack (if you have them) beneath the driver's seat.

23. Start up the car, turn on your heated seats and reset the date and time in the EVIC. Congratulations! You're done! Enjoy your Abarth's heated seats!



Your completed installation should look like this - invisible except for the two new switches.

Special thanks to Teri, Tim and Todd (and their Abarths) for their help in refining these instructions.

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I am not responsible if you destroy your seats, set off your airbags, catch your car on fire, burn your buns, or do anything else.