

## Replacing a Failed Heated Seat Element

A common ailment in urS cars is failed front seat heater elements. This is a guide to replacing a bad heating element. **Warning:** This is not a quick or simple procedure. Allow a full day and make sure you have all the parts and tools on hand before you begin. Take your time, be patient, and be gentle. Read this guide all the way through before you begin. Consider the condition of the outer bolster before you begin; both the leather cover and bolster cushion are available separately from Audi and are very easy to replace while repairing the seat base heater.

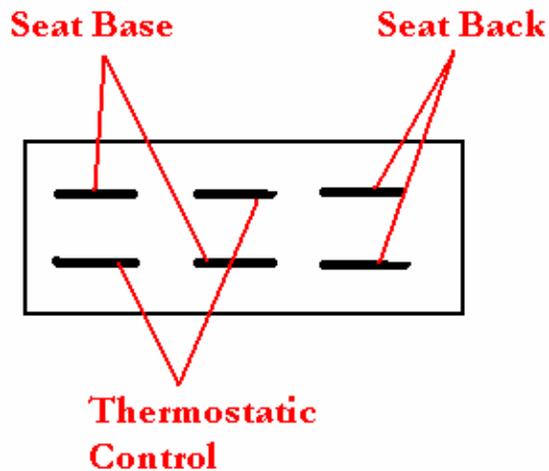
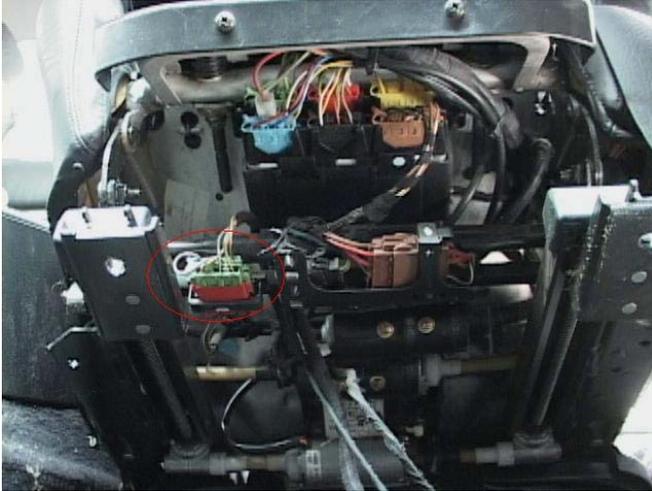
### Verifying that the element is bad:

That first step to any repair job is verifying that the part to be replaced is actually the source of the problem. While it is true that most heated seat failures are the result of a failed element, and most failed elements are in the seat base (rather than the back), there is little joy in completing this complex, timing-consuming, and expensive repair only to find that your butt is still chilly. The only time when testing is not necessary is when the heater is still working but has developed a “hot spot” where one area gets much hotter than the rest of the seat; failure here is certain, and ignoring this warning can result in a black hole burned through your leather. It is also much more likely that the driver’s seat will fail than the passenger’s. This write-up will assume the work is being performed on the driver’s seat; the passenger’s is the same idea, but most locations are reversed.

To determine whether one of your elements has burned out, each must be “ohmed out” or tested for continuity. This is a simple test, but it does require an ohmmeter. In simple terms, an ohmmeter measures resistance. A working seat heater element will read some resistance; a broken element will read infinite resistance, or open circuit.

### To test:

Find the red plastic plug under the seat behind the driver’s right ankle (this may be black on some early cars). The plug houses six wires, two are for the back element, two are for the base element, and two lighter gauge wires for the thermostatic control which is embedded in the base element. In the photo below, the seat has been unbolted and tilted backwards. It is not necessary to do this to get to the plug.



Unplug the wires. In the picture above, the green portion is the main harness; the red is the seat harness. The red should remain clipped to the bottom of the seat. Bentley is (at best) confusing as to which wire is which, so the best bet is to detach the red plug from the bracket that holds it to the seat bottom. Turn it around so that you can see the 6 wires going in. Note that as they exit the plug from the rear, they enter two plastic tubes or looms; two should be together in one plastic casing, four in the other. The two go to the seat back, the four to the base. Use the ohmmeter to test the two seat back element wires for continuity. Now look at the remaining four wires, two are heavier gauge; these are the base/bottom element wires. Test them with the ohmmeter. The diagram above shows the pin configuration of the red plug in my S6.

If both elements are healthy, you should read some resistance at both. By “some resistance” I mean more than if the meter probes are suspended in the air but less than if they are touched directly together. If infinite resistance is read at one element but not the other, the element with infinite resistance is bad. If infinite resistance is read at both elements, you are either extremely unlucky, or you are doing something wrong. Test a working seat to make sure you (and your meter) are testing correctly.

Ok, assuming you've found a bad element, let's fix it...

**Tools required:**

Hog ring pliers and about 2 dozen hog rings (common upholstery tool)

Wire cutters

28 Torx socket and ratchet

Phillips screw driver

Regular screw driver

Jeweler's screw driver

6 mm allen head socket and driver

Needle nose pliers

Staple gun

Spray adhesive trim cement

**To repair a burned out back element (poor man's version):**

The back element can be bypassed if you can live with just base heat. Go back to the six wires coming out of the back of the read plug. Locate the casing that shares only two wires. Cut the two wires, strip the ends that remain attached to the red plug, and connect them together with a butt connector or twist and tape. Since the two elements are connected in series, a failed back element opens the circuit and neither element works. Using this bypass, you allow current to flow only to the bottom element.

**To repair a burned out back element (rich, crazy, or anal retentive man's version):**

Unfortunately for you, this write-up does not cover this repair. My back element is still healthy, but I will do the write-up when it fails – I fall into the AR category. However, if you are replacing a failed back element, much of this write-up will help with seat removal and disassembly, so read on...

**To repair a burned out base element (poor man's version):**

Sorry, no free lunch here. See the rich man's version.

**To repair a burned out base element (rich man's version):**

Step one: buy a new heater element. I know, you read somewhere else that the element can be repaired. It can...as a matter of fact, it can be repaired over and over again. Unless you plan on making this an annual event, buy a new element. You are already saving a ridiculous amount of money by doing this yourself; spend some money on the element. You can live without 22 inch wheels and 15 series tires for another few months.

First the seat has to come out of the car. Make sure you park the car with plenty of room to open the doors as wide as possible with extra space to maneuver the seat away from the car. The seat is heavier than you might expect.

The seat is held in by two bolts at the front. The rear floats in two tracks. Start in the rear; remove the two plastic trim pieces on the tracks. The inner track trim has a hidden screw under a plastic cover. The outer has a visible screw.



The front bolts are trimmed with two plastic covers. To remove the covers, press down and slide them toward the front of the car.

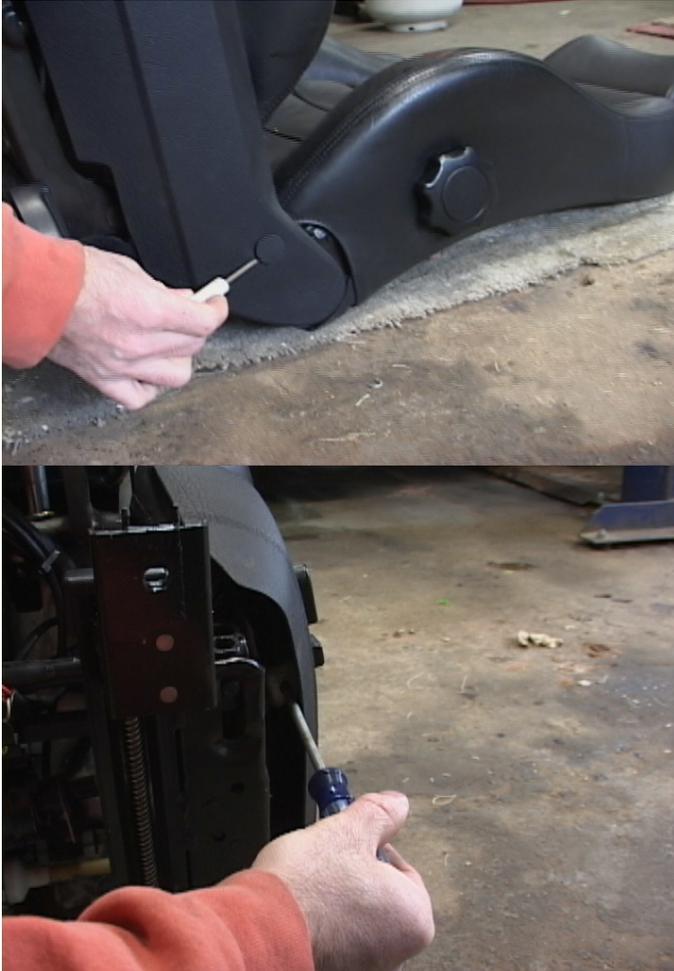


Remove the two mounting bolts (6 mm hex heads). Pull the front of the seat up, tilting it toward the rear to expose the wiring. Detach all the wires so that the seat can be removed. Make a mental note of the routing of the wires so you can get everything back together correctly.

Once wiring is clear, slide the seat backwards until the rear mounts clear the tracks, then lift the seat out of the tracks, and pull it out the front door. This sounds much easier than it is; the carpet tends to fight you, and it might be a struggle to get the seat off the tracks. Also, the rear mounts are greased, so try to remove the seat without setting it down on the carpet. Brake Cleaner will take the grease out of the carpet, but it is easier not to mess it up in the first place. This, by the way, is an excellent time to vacuum under the seat.

Lay the seat on its back on a large piece of cardboard or some carpeting. To remove either element, the base and back must be separated.

The seat controls and plastic trim along the outer side of the base are attached by two screws, one near the back of the seat under a plastic cover and one screwed up from the bottom near the front. Remove both screws. Using a flashlight, look under the seat to see where two plastic tabs on the trim fit into slots in the seat base. Push the trim panel against the side of the seat and upward to release the tabs and remove the panel. Be gentle but persistent. Sometimes a poke or two with a long regular screwdriver helps release the tabs. Once the trim lets go, unplug the wires that go to the seat controls and remove the trim and controls.





The black plastic trim on the inner side is clipped into three holes, then a plastic plug is inserted into each hole to keep the fit tight. To remove the trim, the plugs must be removed. Two are easily pushed through with a small screwdriver; the third is not so easy. It can be pushed almost all the way through, but still may not go. I drilled a small hole in it, inserted a drywall screw and pulled it out. Failing this, just force it through. Pop the trim off.





Time to separate the back and the bottom: just the two frames will be separated; the wires will remain connected.

On each side there is a torx 28 bolt and a clip that holds the two halves together. (On early cars, the torx bolts are Phillips head screws.) Remove the bolts first, then the clips. The bolts are coated with blue locktite; you may need a chisel to turn them. Stand the seat up, have a helper support the back so it doesn't fall over, and pry the brackets off the two posts where the clips were. Note the routing of the wires on the outer side of the seat. Carefully separate the two halves and lay the backrest down on the ground behind the base. You may need to clip the wire tie on the outer side to allow more slack in the wires to lay the backrest down.





Now the seat base cushion must be removed from the frame. Start by removing the upholstery on the adjustable leg support at the front of the seat. The leather has a heavy piece of material sewn to its perimeter. This material and edge of the leather is folded over at the perimeter of the plastic base and tucked into a slot. Press down on the cushion to compress it, and pull the leather out of the slot. Work your way around until the pad and leather are free. It is OK to leave the pad attached to the leather.



Now look at the rear of the base. Remove the two plastic sleeves from the posts where the torx bolts used to live. Loosen the 17 mm bolt that attaches the seat belt receptacle to the base and remove the plastic guard that is also attached to the torx bolt post. Slide the heavy cloth material and the leather off the post.

At the rear of the seat base, the leather is tucked in to the base using the same method used on the adjustable leg rest. Untuck the leather.

The last remaining obstacles to removing the cushion from the base are three hog rings located at the front of the seat and the wiring. Cut the rings to free the cushion, then cut the four wires (the new element will have these wires attached, and by cutting them it will make it much easier to route the new wires and lock the connectors into the red plug).



So now the cushion and leather are free of the base. If you are also replacing the side bolster, remove the hog rings and replace it now.

Find a clean area to work on to disassemble the pad and the leather.

Flip the cushion upside down and remove the 40 or 50 staples that attach the leather to the base.



Peel the leather back and flip the cushion over again. Starting at the front, peel each section back to reveal a row of hog rings; there are three per row. Cut the rings to remove the leather cover.



Once the leather cover is removed, you will be looking at the element, still stuck to the cushion. Bentley suggests sticking the new element on right over the old, but a better method is to remove it (or as much of it as possible). It comes off easily, and the new pad won't stick to the wispy white stuff if you try to leave it.



The new element is self adhesive. Working one section at a time, peel the backing and stick it to the cushion. Attempt to stick it in the same position that the original was. Route the wires through the slit or hole at the rear of the cushion.



Ok, from Bentley we all know that “installation is the reverse of removal” but there are a few other helpful bits of information you need. Begin the reassembly by reattaching the leather cover to the cushion. Replace the rows of hog rings. Some folks suggest using zip ties. Zip ties will work, but the longevity of zips ties is unknown, and if by now there is now way in hell you want to do this again, use hog rings.



Once you've hog ringed the leather cover back onto the top of the cushion, flip the cushion over on its back again. Time to replace the staples in the bottom: Professional upholsters use different methods to do this. The funky staples that came out are ideal, but were not available locally, so some pros recommended glue, others "normal" industrial staple guns staples. I used both aerosol trim cement and 14 mm normal staples. Stretch the leather over the cushion and stick/staple it in the same place where it was removed from.



Replace the cushion on the seat base frame. Be sure to route the wires through the hole in the base. Installation here really is the reverse of removal: three hog rings up front, tuck the leather in the rear and around the leg rest, loop the leather and other cloth over the torx bolt posts.

Reassemble the rest of the seat. Again, it helps to have a helper when attaching the back to the base.

Before the seat can go back into the car, the wires from the new element need to be inserted into the red plug. Tilt the seat onto its back again and route the new wires under the seat and up to the plug following the same path the old ones did.

Replace the wires in the plug one at a time so you don't screw up. The back of the plug (where the wires enter) opens like a clamshell. I don't have a photo, but it is not difficult to figure out. Once the back is open, look in the front at each connector in the plug. There is a small tab on each terminal that can be bent down with a jeweler's screwdriver to release the terminal and allow it to slide out the rear. Slide each new terminal in until it clicks into place. Again, do one at a time following the color codes on each wire. Replace all four, and snap the clamshell shut. Re-attach the plug to the base of the seat.

Replace the seat in the car, reattach all wires and replace the plastic trim on the front bolts and rear tracks. Use some Brake Cleaner to remove stray grease from the carpet.

Enjoy the comfort that can only come from having a warm tush in the dead of winter 😊