

## Replacing a leaking heater core, Audi A6 2.5 TDi 2001

This is a very easy fix, with one exception: Getting the coolant pipes reattached to the new core without squashing the O-rings. That operation alone took me three hours, and at some points I seriously contemplated burning the car to the ground. But I did get it right in the end.

**Time:** 1-4 hours, depending on your luck with said O-rings

### Tools:



### Work steps, overview:

1. Disconnect and remove battery
2. Disconnect coolant hoses from heater core pipes
3. Blow coolant out of core and collect in ZipLock bag
4. Remove dash panel
5. Remove brake switch
6. Unclip accelerator connector
7. Remove heater core panel
8. Disconnect pipes from core
9. Slide out leaky core
10. Reassemble in reverse order

Practical hint: You may find yourself lying bent over the door sill for some time, fiddling with those damn O-rings. It helps to build a platform outside the car, like two pallets stacked, to keep your body level with the door sill, and also to pad the sill itself with something soft. Your ribs will thank you.

**Work steps, detailed:**

**1. Battery removal**

Remove the gasket and the tray over the battery bay. Unscrew the negative terminal, 10 mm, then the positive terminal, also 10 mm. Remember to note radio security code(s), if applicable. Unscrew battery fastener at the right side/bottom edge of the battery, 13 mm. Lift out battery.

**2. Hose disconnection**



Use clamp pliers or general purpose pliers to loosen the clamps and slide them back along the hoses. If you have hose clamps, now is a good time to clamp off the hoses, if not, you'll lose about a litre of coolant. Or stuff something into the hose openings afterwards. Slide the hoses off the pipes. Be careful, those pipes are made of aluminium foil and dents very easily.

**Hint:** This is also a good time to remove that rubber drainage bung under the battery that clogs and causes the car to flood, if you haven't already.

### 3. Coolant draining



To avoid a mess inside the car, I fashioned a foam adapter to my air gun and applied air into the top pipe, while collecting the coolant into a ZipLock bag from the lower pipe. Be really gentle on the trigger, and do not close the zipper all the way, else you'll make a mess anyway. This was quite effective, not a single drop was spilled inside the car.

#### 4. Dash panel removal



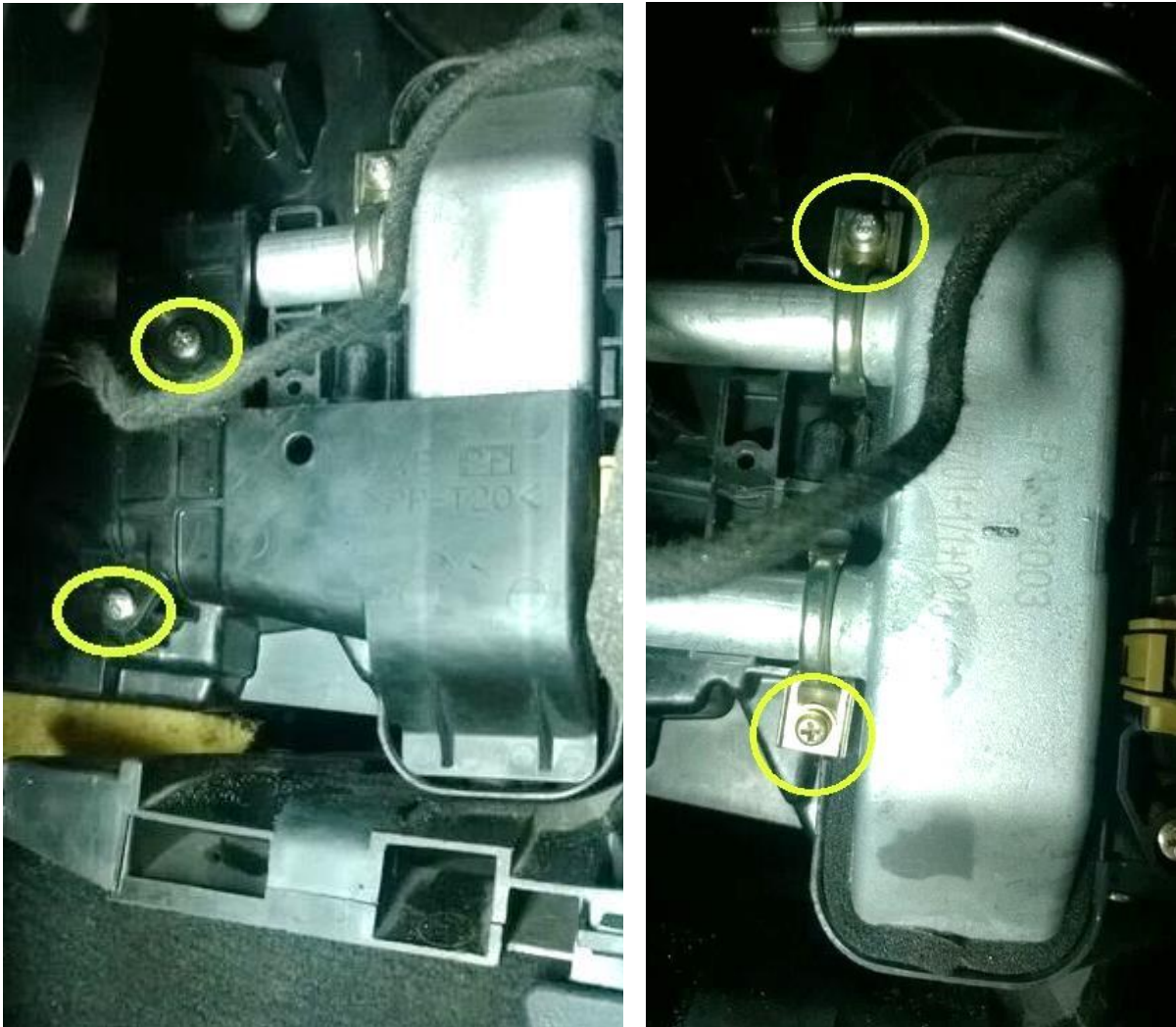
Remove the little panel above the steering column. It slides backwards, away from the instrument cluster. Unscrew the under dash panel, 4 bolts (8 mm hex). Unclip the OBDII-connector from the panel. Disconnect wires from the foot well light. Lift out panel.

#### 5. Brake switch removal



Disconnect plug. Note exact placement of the switch. Unscrew it (if necessary, hold the metal socket it sits in with the pliers).

## 6. Core removal



Disconnect the plug from the accelerator (grey cable on the above pictures). Remove the black plastic panel holding the core in place, two screws (Phillips). Loosen the clamps on the tubes into the core, again Phillips. Take a good look on how they sit; it's easy to put them back on just a little bit off. When it sits right, it's easy to pinch it all the way shut with two fingers.

Push back the pipes, and slide the core out of its housing. It may take a little bit of wiggling, but there is ample room to get it out.

## 7. Reassembly

The new core slides in quite effortlessly. The only challenge is to get the pipes to enter the core holes while keeping the O-rings in place.

Assemble the rest in reverse order, and remember to top off the coolant system (if clean, reuse the fluid in the ZipLock bag. Mine was not, and I also spilled some from the hoses, so I used new fluid). The heater will normally fill itself, no airing is required. Bubbling sounds from the heater (air trapped in the core) can be remedied with a bout of spirited driving.

## 8. Notes on those O-rings

By trial and error, I will postulate that the O-rings cannot sit on the pipe ends for assembly, like this:



From that position, it doesn't seem to be possible to make them enter the recesses in the core housing properly, and it is not possible to get the clamps to fit over the respective ridges.

So, the O-rings must sit in the core housing recesses, like this (one ring in place, one empty recess shown):



Now the pipe ends must be precisely positioned over the holes, then eased in through the rings. This is where it gets interesting. The tiniest little skewness makes the O-ring pop out on one side or get drawn into the core on the other side. Both the core and the pipes will have to be wiggled a bit about to make them mate properly.

To add insult to injury, the rings supplied with the new core were thicker and A LOT softer than the old ones, adding to the squashing problem. In the end, I had to reuse the old, harder and slimmer rings. Those, too, refused to pop in without resistance. Ultimately I used a very small metal file and some emery cloth to round off the pipe edges, then lubricated the rings with Vaseline.

You can tell without a doubt when it finally pops in correctly, it is very smooth. When that happens, get the clamp on immediately. Any backwards movement of the pipe will pull the O-ring out of the recess, and you are back to square one.

Good luck!

Authored by Espen J, Norway, 30.08.2016. Exactly no responsibility at all will be assumed for correctness, completeness, damages or problems arising from anyone being motivated by these personal musings.

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