

HOW-TO: replace your MK3 heater core

Monday, 01 September 2008

```
var gaJsHost = (("https:" == document.location.protocol) ? "https://ssl." : "http://www.");
document.write(unescape("%3Cscript src=" + gaJsHost + "google-analytics.com/ga.js"
type='text/javascript'%3E%3C/script%3E"));
```

```
try {
var pageTracker = _gat._getTracker("UA-356307-2");
pageTracker._trackPageview();
} catch(err) {}
```

This HOW-TO outlines my notes after spending a wonderful weekend replacing the heater core in my 1994 Jetta. Not the worst procedure I've ever had to do, but it does take time and needs a bit of thought.

Tools needed:

8mm
socket.. ¼" screwdriver-type handle is useful on this
10mm
shallow and deep sockets
13mm
socket
XXX
torx driver
Phillips
screwdriver
wire
cutters
¼"
drill bit and drill

Parts needed:

- new heater core

- a bit of coolant

- 2 new steering wheel bracket shear bolts (N 905 422 01)

- zip ties

- ¾ " plastic plumbing elbow as a temporary heater core bypass

- a couple of screw-type clamps... the factory spring clamps won't quite be tight enough

Some shortcuts that worked for me:

- NO NEED to drain the cooling system… just work quick to plug the heater hoses with a ¾ ” plumbing elbow

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NO NEED to vent/disconnect the air conditioning… with everything loose you can wiggle the heater core end of the heater box just enough to get the heater core out with the rubber part of the A/C hoses taking up the flex.

- NO NEED to remove the rebar. Loosening it and dropping the passenger side down is enough and saves some wiring disconnects on the driver’s side

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NO NEED to disassemble the heater box…as above, the secret here is to loosen everything and then pry carefully on the heater core side. Leave the heater box clips alone

!!

Under the hood:

disconnect

the negative terminal of the battery

remove

the two piece plastic gutter guard

remove

the windshield wiper arms and motor assembly

remove

the two heater hoses… working quickly, plug ‘em with a ½ inch plastic plumbing elbow as a temporary bypass

(air

conditioning) remove the vacuum hose in the middle of the two heater hoses

(air

conditioning) remove the two 10mm nuts securing the air condenser side of the heater box to the firewall.

These might be there for non-airconditioning boxes as well… dunno ‘cause I have air.

remove

the two 10mm nuts securing the heatercore side of the heater box. They are behind the metal heatshield glued to the firewall. One is

accessible thru a tab in the heatshield down by the tin heatshield for the brake line, the other you will find by prying the metal heat shield away from the firewall by where the heater hoses come out.

remove

the two 10mm nuts that secure the front of the dash to the rain

gutter. This is why you removed

the windshield wiper motor… one of them is blocked by the motor.

remove

the 10mm nut that secures the rebar to the firewall. This one is below one of the 10mm nuts that secures the dash by where the windshield wiper motor used to be.

Inside the car:

Remove the dashboard:

-
- remove the steering wheel, ignition switch cover, and both control stalks
- (diesel) unscrew the cold start knob bracket and loosen the cable from where it comes thru the dash.
I trimmed the bottom of the hole in the dash to make it easier during reassembly.
- remove all dash fascia: glove box, knee panels, dials, switches, cluster, etc etc etc. The heater controls do not need to be disconnected.. let 'em dangle.
- remove the plastic emergency brake housing
- remove the centre console.. I found I needed to remove the two 13mm nuts that bolt the emergency brake handle down so that I could push the handle out of the way… others seem to know how to wiggle the console out with the handle in place.
- disconnect all remaining wiring from behind the dash. This includes speaker connections, lighting connections to the passenger heater vent, and several grounds
- loosen all wiring secured by plastic wiring clamps attached to the dash or heater box. There are a bunch of them on a row below where the cluster sits, one by the headlight switch, and several on the passenger side.
I found the factory had looped the speaker wiring around the one of the two dash mounting brackets and I had to snip it. Note the wires zip-tied to the top of the blower fan assembly… snip snip goes the zip-tie.
- remove all remaining dash mounting bolts. These are 8mm bolts: several in the vicinity of the steering wheel, a couple under the centre console, and several by the passenger side. There are also one each on the extreme left and right lower sides of the dash, by the door jams.
- slowly and carefully, pull the dashboard out of the car… checking for wires that are caught etc. It is not a tight fit and should come out easily… if something binds stop and figure out why !!

Loosen the ReBar:

remove

the four big torx bolts that secure the sides of the rebar to the car…
they are accessible from the driver and passenger side door jam.

remove

the four 13mm nuts securing the reinforcing plate that goes between the
centre console hump and the rebar

remove

the two 13mm nuts that secure the front of the pedal cluster bracket to
the rebar.. this is the only part of the job where you may need to stand
on your head to see ‘em initially.

drill

out the two shear bolts that attach the steering wheel column to the
rebar… trust me, this is quicker than grinding them down or trying to grab
them with vicegrips

remove

(or snip) the braided copper ground clip on the passenger side of the
rebar

working

from the passenger seat, pull out

the rebar on that side and lower it to the floor

Loosen the Heater box:

remove

the two small black tubes that funnel heat into the centre console
channel… one Phillips screw each.

remove

the big white plastic plenum at the front of the heater box… two 10mm
plastic nuts

remove

the smaller black plastic plenum at the front of the heater box… one
Philips screw

cut

the big plastic ziptie that wraps around the entire heater box assembly on
the passenger side

Remove the damn heater core:

(air

conditioning) remove the rubber vacuum hose from the heater core

remove

the star screw on the center of the dash that keeps the sound damping in
place and then pull the sound dampening out of the way… you’re going to
need every inch.

using

a piece of broomstick, 2x2 etc, carefully pry out the heater-core side of
the heater box so you can access and remove the Philips screw that holds the heater core in place.. Go slow… this
is in fact a tight

fit. The plastic vent that blows

hot air at the drivers feet will want to bump against the rebar… you may

have to move the rebar out a bit further.

FINALLY: pry further on the heater box with your wooden stick and pull the old heater core straight up and out. Very very tight fit at this point as the hose connections will just clear the dash and window… nice if you obtain another set of hands for this one final step.

obtain a steam roller and run over the stupid heater core repeatedly while giggling insanely like Chief Inspector Dreyfus from the Pink Panther movies.

Notes on reassembly, which is of course pretty much the reverse of disassembly:

the leaking core probably filled the bottom of the heater box with coolant… I was able to reach in with several rags and mop it up. Prevents even more greasy steam on your windshield.

good idea to fill the new heater core with water as a test… I’ve seen at least one report of a new core leaking.. man would that suck or what… nobody should ever have to do this job twice ??!!

I had to remove the black plastic cover on the bottom of the new heater core to get it to fit… did a bunch of measuring and convinced myself that I had a slightly wrong part that would never fit down all the way. Some weather stripping tape was required to get the bottom to seal.

note the two black plastic sealing washers on the two studs that hold the dash to the firewall… according to the Bentley they’re very important and need to be there when you mount the dash back in place.

My hands were too large to fish up and reconnect the speakers, so I pulled the grill covers and speakers and fed the wires up to the top of the dash

Rattling dashboards are a pain.. make sure things go back together tight and secure all wiring within the stock clips or additional zip-ties

I found it helpful to reassemble big items like the heater box, rebar, and dash to the point I could loosely bolt on the firewall bolts and then work inside the car to push things in place, carefully checking for interference, etc. The final step would be to then tighten the firewall bolts.

I temporarily replaced the two steering wheel shear bolts with normal hexheads but promise yourself to order proper shear bolts from the dealer… according to the Bentley Service Manual they are designed to shear off in the event of an accident... sounds important to me! I filed flats on both of the new ones before installation so that they can be easily removed the next time... hopefully never.

the rebar has four adjustable spacers that the big torx bolts run thru.. donuts with grooves and a left-hand thread… looks like the factory uses them to get the rebar centred between the door pillars. One fell out as I loosened the rebar and it took a while to figure out what it was when I found it on the garage floor later.

run the engine for 3-5 minutes with the filler cap off, allow the engine to cool, and then top up the coolant.

on my

car the sound damping dropped down a bit after I have everything back together and rubbed against the top of the throttle lever.. causing me some anxious minutes during my test drive until I figured it out. If I had to do it again I'd use some weather-stripping adhesive or the like to glue the sound damping back in place very securely.