Table of Contents

Tools:

Required

- ¼” Ratchet
- T25 Torx Bit
- ¼” 4” Extension
- 3/8” 4” Extension
- 3/8” or ½” Ratchet
- 13mm socket (3/8” and/or ½” drive)
- 10mm socket (¼” and/or 3/8” drive)
- Flathead screwdriver (> 6” handle recommended)
- Phillips screwdriver (cordless power recommended for removing the screws holding down the fog lights and the turn signal lens, this will allow you to push in harder to avoid stripping, sometimes you just have to drill them out, they get very corroded over time.)

Recommended

- Cordless Drill
- Coolant tester
- Non-marring tape to protect fenders(I use Dr. Shrink “Preservation Tape” from boat shrink-wrapping)
- Air tools (½” impact gun, ¼” air ratchet, 3/8” air ratchet, blower, brake cleaner spray, etc.)

Overview:

I would say this is about a 4 hour job for the most part. This job in a nutshell entails removing the bumper cover then the lock carrier then separating the radiator from the condenser and pulling the radiator and fan assembly as a whole up and out. Separate the fan assembly from the radiator and swap the temp switch; then reverse all steps. Fill and burp the coolant and you’ll be all done.

Note: Always make sure you have the correct parts before starting the tear down, nothing’s worse then disabling a car only to find the wrong replacement parts. The correct radiator part numbers for all B4 Passat’s are as follows:

- VR6
  - **3A0 121 253C**
- TDI
  - **3A0 121 253AB**
- 2.0
  - **3A0 121 253T**
- Coolant - *I don’t recommend anything other than the OE coolant or the Pentosin branded equivalent.*
  - **ZVW 237 G12** (This is the part number for the official G12 gallon container, you’ll need the better part of a gallon on this job, especially if the user has been adding water each time they’ve had the light on. I would recommend checking the coolant in the reservoir prior to draining so you’ll know what concentration is in the block and then you’ll know what concentration to put back in to replace the lost coolant from this job.)

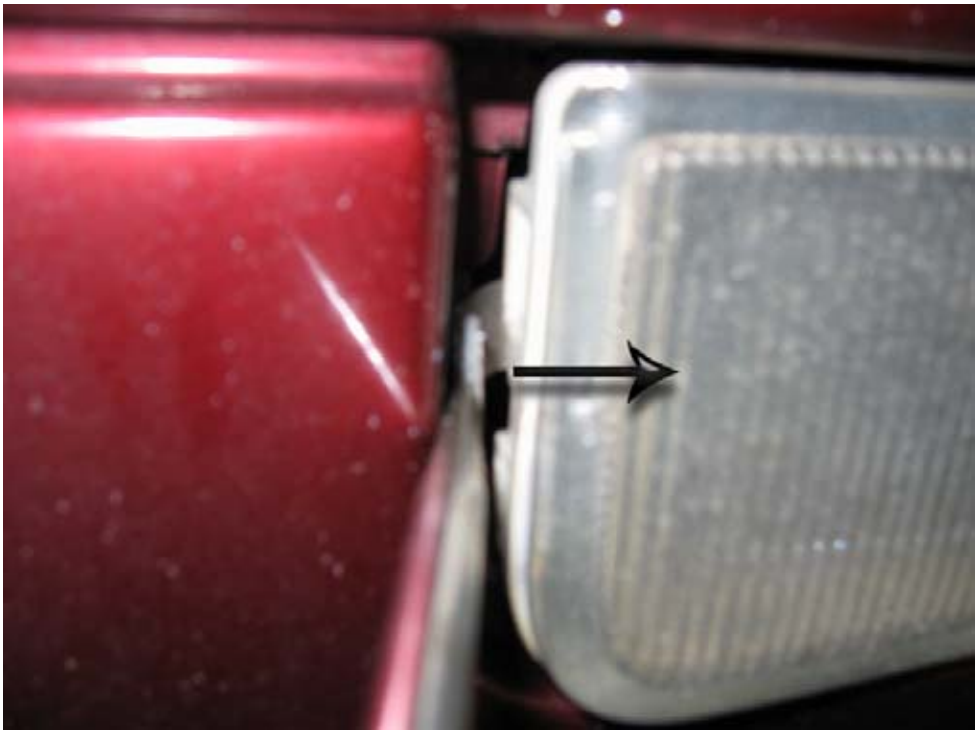
Details:

Remove Bumper Cover / Support Assembly

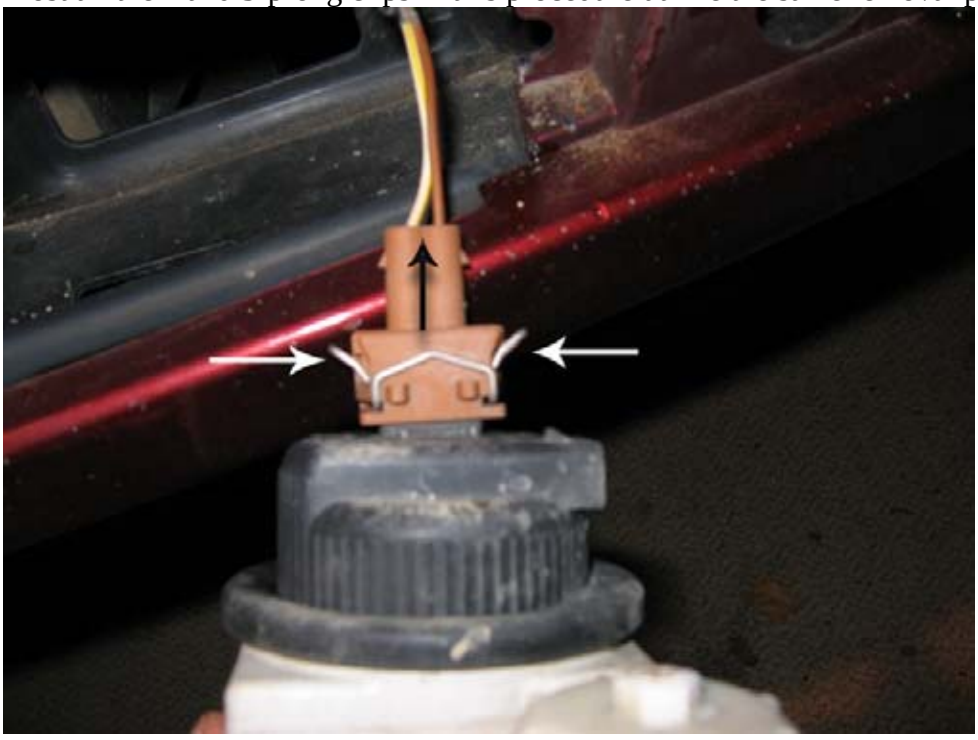
- 6 ea. T25 fasteners around the fender liner to the bumper cover.
- 2 ea. T25 fasteners to horizontal though the cover to the fender.

- Dummy Lens (Each side the same…Drivers side illustrated)
  - Utilizing a thin flathead screwdriver, find the Dummy Lens release tang, it's aligned with the small notch in the Dummy Lens housing (see illustration), release tang by applying force in the direction specified in the illustration. (NOTE: That foglight was broken before I got there, a new one will go in it's place upon re-assembly).

- Remove Foglight (release clip as illustrated)
  - Remove 3 Phillips screws (Cordless Drill recommended)
  - Release the tang on the inner side of the foglight housing by pressing in the direction illustrated.
  - Remove electrical connector.



Note: Most all the 2 and 3-prong clips in this procedure utilize the same removal process.



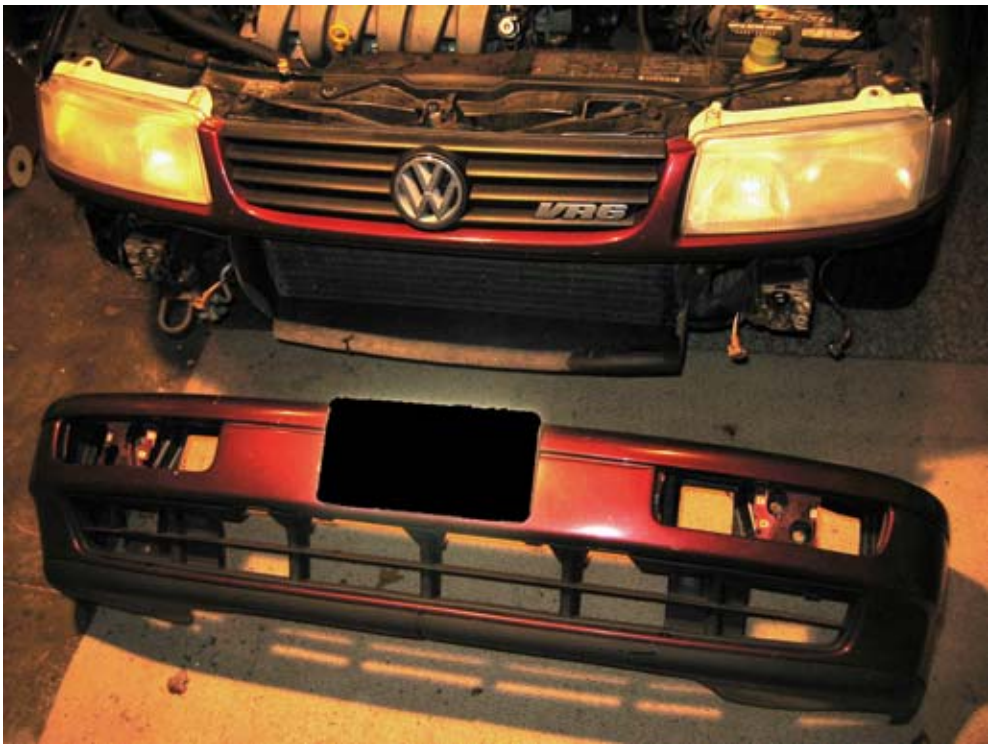
- Remove Turn Signal Lens
  - Pry turn signal lens from with force applied in the direction illustrated, the lower tab works best to get a flathead on the lens housing.

- Remove 2 T25 Torx fasteners under cover lights.

- 4 X 13MM fasteners (23Nm)

- Apply tape to the fender line where it meets the bumper cover area, this will prevent any damage to occur when removing the cover.
- Remove the ambient air temperature sensor if applicable (edit: add illustration(s))
- Pull the assembly straight out, make sure the wire connectors are all pushed in beyond the ridge created by the access holes as they will catch and your hands will be full, obviously repeat all the above steps for the passenger side prior to this step…

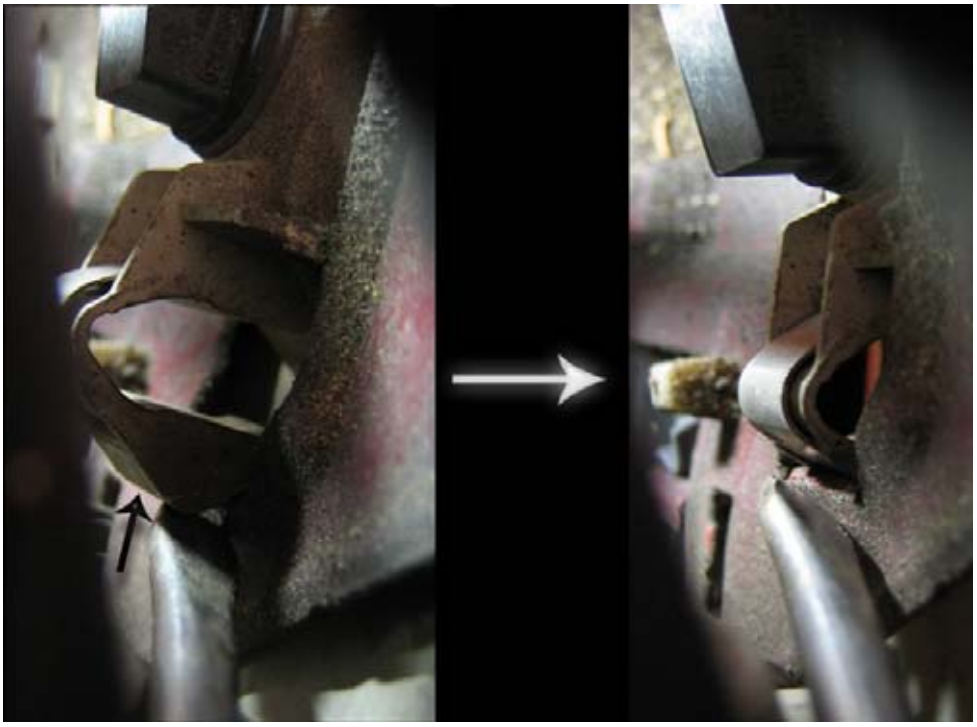
We're done with the Bumper Cover / Support Assembly…Set it aside and continue…



Remove Corner Lenses / Front Grill

- Remove Corner Lenses
  - Identify Access Hole

  - Insert Long Flathead screwdriver into access hole and release the corner lens holding clip.



- Remove T25 Torx Fasteners on each side of the grill trim frame.

- Release all Grill Clips
    - Remove all 4 clips by carefully pressing down on the tab far enough to pull the clip beyond it's stop, if you work across from one side to the other, you can get them all of at the same time, these tabs are old and may break so beware.
- Pull grill off as long as there isn't any tension, it's sometimes difficult to keep all 5 release clips released prior to removal of the assembly.

Remove Lock Carrier

- Remove 4 - 10mm support bolts under headlights. Note washer evidence marks left behind, these will help locate the clip properly upon re-assembly.

- Remove the 2 hood lock bolts and the 3 upper radiator support bolts(The long one is on the drivers side).

- Remove the hydraulic reservoir support band/bracket. Also, not required at this step but might as well remove the AC Line support to the radiator fan assembly. (this one get's stuck sometimes so you might want to hit it with some penetrant oil). The reservoir band lifts straight up when loosened enough.

- Remove the 4 10mm sheet metal screws on the top of the clip that mate with the fender.

- Remove the Phillips sheet metal screw holding down the air duct on the passenger side. (This may be a VR6 only step).

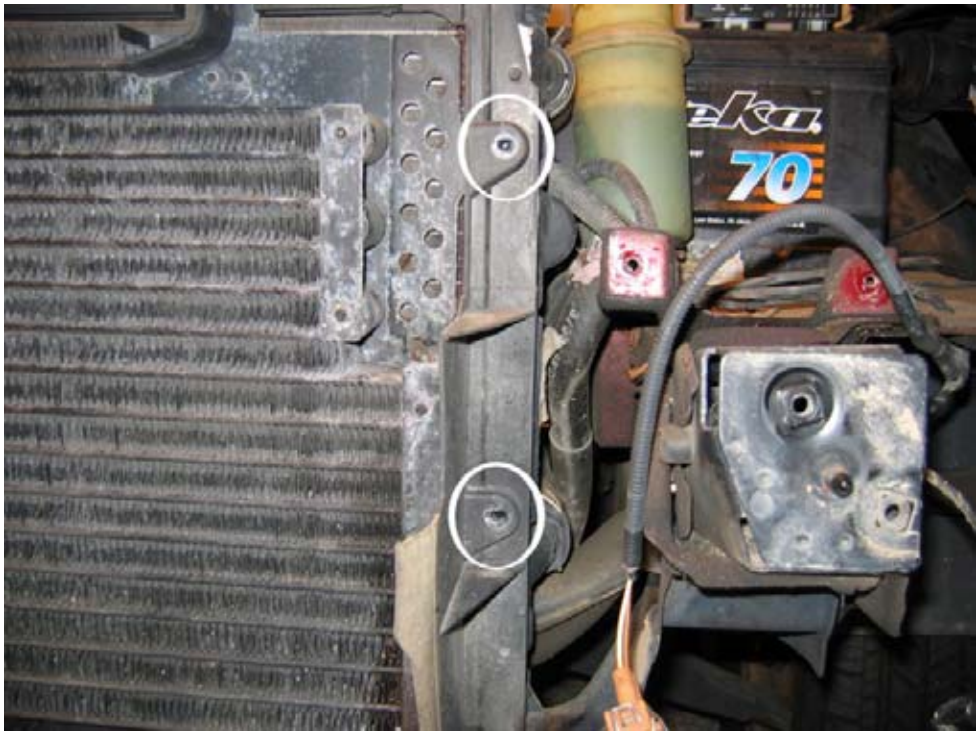
- Release the headlight electrical connectors from the headlights.
- Pull the assembly straight off.

We're done with the Lock Clip assembly… Set it aside and continue…

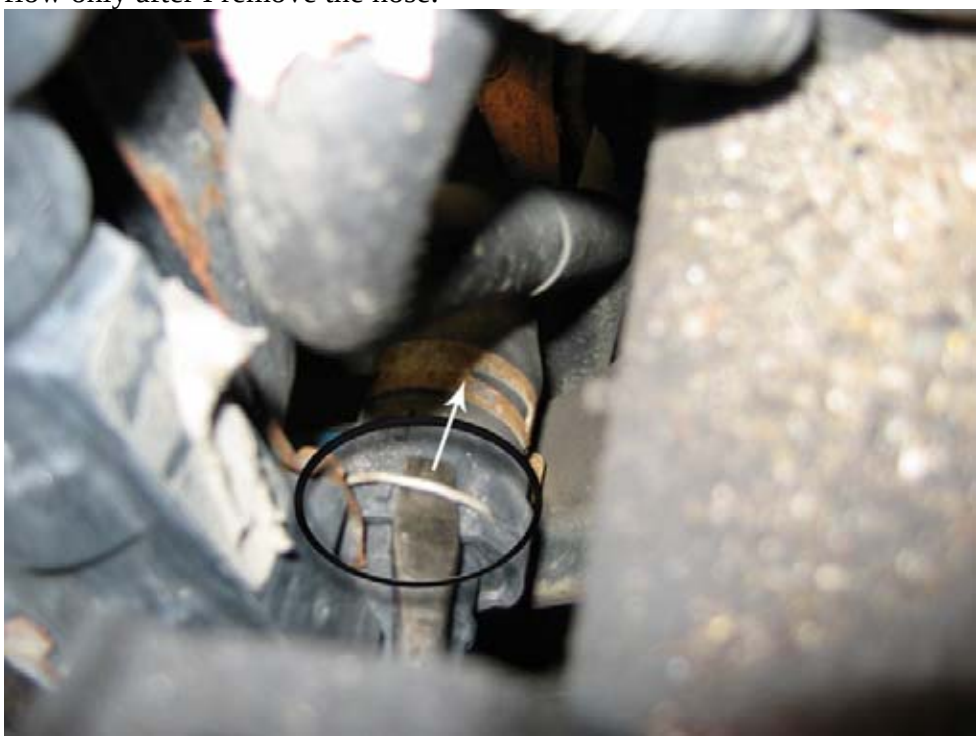
This is what you should be looking at after completing the above steps: (engine may vary!)

Separate Radiator Assembly from AC Condenser

- Remove the 4 screws attaching the air duct housing as well as the AC condenser to the radiator.



- Remove the clip and pull the lower radiator hose off. Yes, you need to have something to collect the coolant; I usually get this hose removed then remove the reservoir cap to speed up flow only after I remove the hose.



- Release Radiator Fan Harness Bracket

- Release Fan Switch Harness Connector

- At this point, the radiator assembly is completely free from everything else, it's a tight fit but you just need to angle the assembly just the right way and it will lift right through the opening between the AC lines / condenser / front subframe. Tilt and lift it up and out as an assembly, you may want to separate them in place but I find it easier to just pull it out as one.

At this point, we just need to swap the radiator portion of the radiator assembly…

- Here are a few pictures of what you'll expect to see with the old radiator and what the housing assembly looks like. The belt that powers the drone fan seems to last forever, the only issue I've seen is when the clips that hold the lip traversing the circumference of each fan opening break or when the housing corrodes around them and the blade starts hitting the lip. Typically something gives and usually the fan loses balance, or the plastic pieces start breaking and most often the belt is thrown. Typically, at least a couple of the clips that hold the lip are broken, this normally is OK, you need to use your own judgment in terms of reusing these parts.

You're halfway done, switch your ratchets and reverse all the above steps…

- NOTE: The replacement radiator didn't have the locking mechanism with O-ring as the OE radiator did, luckily the OE lower hose assembly allowed me to remove the female end of the locking mechanism and simply use the hose and existing clamp directly to the lower outlet of the radiator. I also had to make a small bend in the radiator fan housing so the hose would not rub, yeah it's not a perfect replacement but this radiator was less than half of what an OE boxed replacement would be and this was the only difference, I actually like the regular hose outlet better than the fancy locking one that's hard to reinstall…

- Once the radiator upper and lower hoses are connected you can go ahead and fill the reservoir, you may want to fill the radiator through the upper hose or you may want to just have the water pump circulate and fill the radiator, either way will work… Make sure you're refilling the system with the proper percentage of coolant for your region, 50/50, 60/40, etc. That might as well be another article somewhere else, besides it says what is best for your temperatures on the back of the coolant bottle. I usually error on the side of having higher percentages of coolant as it gets pretty cold in New England and the G12 coolant does very well in high percentages under hot ambient conditions. The only reason we don't run 100% coolant is that it has thicker viscosity and isn't as efficient with heat transfer than water so higher percentages may run a little hotter, this is all theoretical and most often doesn't make too much of a difference on a regular street car.

- I've omitted the coolant refill and burp procedure because I've seen other to-do's on that on the TDIClub and its pretty simple… You'll use ½ to ¾ of a gallon of coolant refilling from this job.

- Hope this helps…