

DIY: Removing front Lock Carrier to "Service Position" By VW Vortex's darisd

This DIY describes how to move the front end of the MKIV forward to gain easy access to the front of the motor. This is especially helpful for VR6 equipped vehicles that have a tiny space between the radiator and the motor. Removing it completely is not easy for the home mechanic due to the AC system, but is not necessary for most procedures.

For the VR6, here are some procedures that require you to do this (or would help with):

- Crack Pipe or Thermostat housing replacement
- Alternator replacement
- Lower Intake Manifold replacement/removal

For all vehicles, you will need to do this to replace the AC condensor or the radiator.

The Bentley manual indicates in an illustration and procedure in section 50 (Body-Front) that there is a special VAG tool set (3411) that allows you to place the lock carrier into service position. This tool is not necessary if you follow this procedure, but might help. From what I can tell, these two "tools" are really just long bolts that screw into the same frame-end threads that the bumper bolts to. If you can find a very long set of bolts with the same thread style, more power to you. If you find them please post the dimensions and I will post them here.

Note that there are two variants of this procedure. I gave them descriptive names for reference later on:

- 1: Baby Steps Version: Just move it forward a few centimeters. This does not require you to drain the coolant. This is useful for replacing the water pump.
- 2: EXTREME Version: Move it forward a half meter or more. This requires you to drain your coolant. Be prepared for a mess.

Nomenclature is important here. There are two main structural members to the nose of your MKIV once you get past the end of the frame rails: the bumper (metal) and the lock carrier (plastic). For the purposes of this DIY, the lock carrier assembly refers to the total assemblage of the lock carrier, bumper, radiator, and AC condensor.

IMPORTANT NOTE: Do NOT just start unscrewing random parts of the lock carrier assemblage. This was probably intended to never EVER be disassembled by the engineers, as the alignments of the hood lock, lights, radiator, bumper, etc all depend on how these screws align.

I assume no risk from you following this procedure.

HEALTH NOTE: When working with coolant, I **STRONGLY** urge you to wear skin protection and eye protection. Latex or nitrile gloves are a must. I managed to get coolant splashed in my eye and ended up under the faucet for fifteen minutes. And remember to follow ALL local guidelines for disposing of used coolant. Once it is out of your car it is your responsibility. Remember that it takes about 100 mL of Ethylene Glycol per kilogram of body weight to kill a mammal. That is somewhere around 200 mL diluted to kill a cat. Not alot. Small child, same thing. Much less can produce other ill effects, such as kidney damage, liver damage, and urine crystals. Be careful. Do a google search for a MSDS on glycol if you have more questions, and see a doctor if you think you have poisoned yourself.

Tools required:

Flathead screwdriver (small, preferably smooth)

Torx tools (T25 and T30 I believe)

13mm socket and ratchet

Torque wrench

Something to contain and deal with coolant (large wash basin is great, with some one gallon milk jugs)

Stuff Required:

G12 to replace your coolant

Distilled or (preferable) Deionized water (available at aquarium stores)

ALOT of paper towels (2 or three rolls)

Parts Recommended:

O-Ring that seals the lower radiator connector (PN ????)

Screw-style Hose Clamps to replace the clamp-style ones that you remove.

1: Remove the two lower side grilles.

2: Remove the grille. See section 66 of the Bentley manual. First disconnect the hood release lever from the hood lock assembly. This is a plastic clip held together with a metal retainer. Move the retainer away from the lock assembly, then insert a small screwdriver into the gap and twist, then pull it towards the front of the vehicle until it is free. The grille is held in place by three plastic tabbed clips. There are two on each end of the grille at the top. Insert a small screwdriver into the gap between it and the bumper skin to unclip each of these two. The third is in the center and is easy to identify. Once it is unclipped it just pops off.



2: Remove the bumper skin. First pop the two side marker bulbs out of the housings. There are 4 torx screws in each wheel well (turn the wheels to access them or use a torx socket), five under the grille, and one behind each of the lower side grilles. Once they are off the skin will be free. It is very light and does not pose a danger: remove it and place in a safe location.

3: Remove the impact absorbing foam insert. It is not attached, just pull it free.

4: **EXTREME** Version: Remove the electrical connectors at the back of the headlights. The drivers side will require you to remove the plastic baffles that funnel air into the air box which are between the lock carrier and the battery box.

5: Remove the lower sound absorption panel (4 torx screws). This is the FRP panel below the oil filter.

6: EXTREME Version: Disconnect the plug for your hood latch sensor. This was behind the passenger side headlamp for me, it may be different for you.

7: EXTREME Version: Disconnect the lower radiator hose from the radiator. Begin by opening the system up to ambient air pressure by opening the overflow tank. Drain the coolant from the drain on the lower drivers side (see Gary's writeup on water pump replacement for pictures). Now disconnect the lower radiator hose (drivers side) by moving the metal clip straight up through its notches until it stops, and then pull the hose towards the rear of the vehicle. Be VERY careful doing this: there will be coolant that was not able to drain normally inside the lower hose, and considerable force was required for me to get mine off. Do yourself a favor and wear splash resistant eye protection if you have it handy. This image has the groove that the clip slides in pointed out.



On models with the auxiliary radiator on the passenger side, unclip the return hose leading to the auxiliary radiator.

8: Remove the two screws holding the plastic lock carrier to the fender panels. These are right next to the headlights.

9: Remove the four bolts holding the lock carrier to the frame rails. Expert advice: you would also be advised to mark the exact bolt locations and note how many, if any, spacer washers are where. You can mark the locations with off-color spray paint. **WARNING:** The lock carrier assembly will now not be attached to the vehicle, and only resting on the frame rail!



10: Support the lock carrier with a floor jack, and give it a extra centimeter or so extra push upwards to free it. Do not be alarmed, the lock carrier is still held close to the car by the lock cable.

11: **EXTREME** Version: Remove the lock cable. This will be necessary if you **REALLY** need to get access to the front of the motor, as if you are replacing the VR6 "crack pipe" (or just about anything on a VR). The cable is braided steel and has a metal ball on the end. Use needle nose pliers to grab the end of this cable and work it out of the gate that retains it in the lock assembly. Then remove the sleeve clip from the lock carrier.

12: **EXTREME** Version: Remove the upper radiator hose. The location will be slightly different from vehicle to vehicle. It will be on the drivers side again, behind the battery. You will probably have to move the lock carrier assembly out a tad to get clean access.

13: **EXTREME** Version: Unplug the radiator fans. To do this you will again have to pull the lock carrier assembly back a tad to get better access.

14: **EXTREME** Version: Unplug the coolant sensor on the radiator. This is on the drivers side tucked above the radiator fan plugs.

15: Enjoy! Now you can do this to your car (EXTREME Version)



NOTES: Be very careful with how far you move this assembly, as the AC system fittings could be damaged. Also, you can rest the assembly on top of the frame rails when you are not working on the car, and rest the hood on top of this, and it should not come off unless someone yanks on it.

Reassembly:

16: EXTREME Version: Attach upper radiator hose. Use a new screw-style hose clamp as it makes removing this hose so much easier.

17: Place the assembly on the frame rails and screw in the four 13mm bolts. DO NOT OVERTIGHTEN! They are only torqued to 15 ft/lbs (20 N/m).

18: EXTREME Version: Attach lower radiator hose. Replace the lower quick-clip radiator attachment o-ring.

19: EXTREME Version: Plug the three plugs into the radiator: two fans and the sensor.

20: EXTREME Version: Replace the hood release cable. First put the ball end through the gates, then pull back on the housing and clip the end onto the lock frame where you pulled it off (a centimeter to the drivers side).

21: EXTREME Version: BEFORE CONTINUING check the operation of the lock release. If you continue and have problems you will not be able to easily reach the internals of the lock, without doing something like pulling the motor from the bottom of the car, blowtorching a hole in the hood, calling your cousin Vinny who has been "fixing" locks for years, Etc. FIRST check that the release lever in the cabin is in the normal position, and pull on it to see if it is solid. Now drop the hood slowly and push to see if it wants to latch. Now pull it up a half meter and drop it. It should latch. Now check that you can release it from the cabin. All is now well.

22: Replace the bumper externals. Foam core first, then the bumper. The bumper clips onto the fenders and rests on the lock carrier at this point. Now screw the bumper in from the front, and last get the wheel well screws.

23: Replace the grills. For the center top grill, clip the hood catch release first, then clip the rest in the reverse as removal.

24: Close the hood and check the fit. Everything should be lined up exactly as before. If you are not happy, feel free to remove the bumper and adjust the positioning of the four frame rail bolts, or add washers under these bolts, rinse and repeat. **REMEMBER TO CHECK THE LATCH MECHANISM EACH TIME!**

25: **EXTREME VERSION:** Reattach the battery.

26: **EXTREME VERSION:** Refill the coolant. As indicated in the bentley manual, fill the reservoir and keep filling it until it hits and stays at the MAX mark. Start the car, let it run for a second or two, and stop it. Refill to the max again. Start it again and let it run until the fans come on. Now stop it and refill again if necessary. Repeat until the expansion tank is full to the max mark with the fans running. Let it cool all the way down and recheck the level (fill to the max mark).

Enjoy!