

Notes on my experience of replacing the fuel pump in an Audi A8 / S8 D2 platform vehicle

At the time of writing this commentary, the year is 2020. My advice to anyone attempting this job going forward, considering the plastic housing for the fuel pump delivery unit could be up to 25 years old, is to be very patient.

Don't rush, take your time, and perhaps heat up the plastic with a heater or hairdryer to make it more pliable and less brittle when attempting any prying, twisting or other forceful actions when taking the housing apart. Thank you MJ for this great tip.

I found that after these many years, the housing was most reluctant to 'give' in any way. The cap for the fuel gauge sender did not want to budge, the collar for the housing did not want to turn and the long bolt did not want to undo.

The sender cap is supposed to be removed using Audi special tool 2012A and the collar which holds the fuel delivery unit to the top of the tank by special tool 3342.

I have read articles online where people have used the handles of long nose pliers held by vise grips or channel lock pliers, or even screwdrivers to turn the sender cap the required amount (until the arrows line up) but this did not work for me. It would not budge. So I took measurements and made my own 'special' tool.



Parts needed:

Fuel pump - VDO brand - 4D0906091C - VDO number 405052002001Z

Fuel filter - Mahle (or any good brand) - 441201511C

Stainless steel hose clamps - 9-16mm

Washers for banjo outlet on pump housing - N0138128, 12x15.5x1.5 (2X)

Washers for fuel filter banjo - N0138149 14x18x1.5 (2X)



VDO SKU: VDO-405052002001Z

Audi Fuel Pump - VDO 4D0906091C

A8, A8 Quattro, S8

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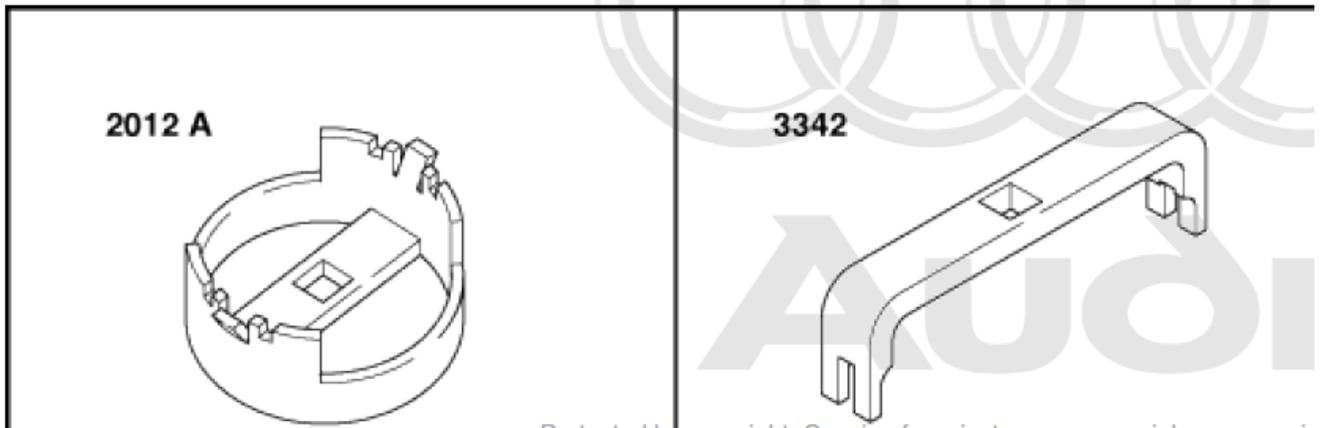
🔍 Make sure this fits your 👍 Yes this part will fit

Before i get to the special tools though, I thought I would mention that there was plenty of room in the boot for this special tool once the spare tyre and tool kit were removed! You can see my C4 Avant in the background too. Bonus.



Pictured below are the official version of the two special tools

3.6 - Removing and installing fuel delivery unit

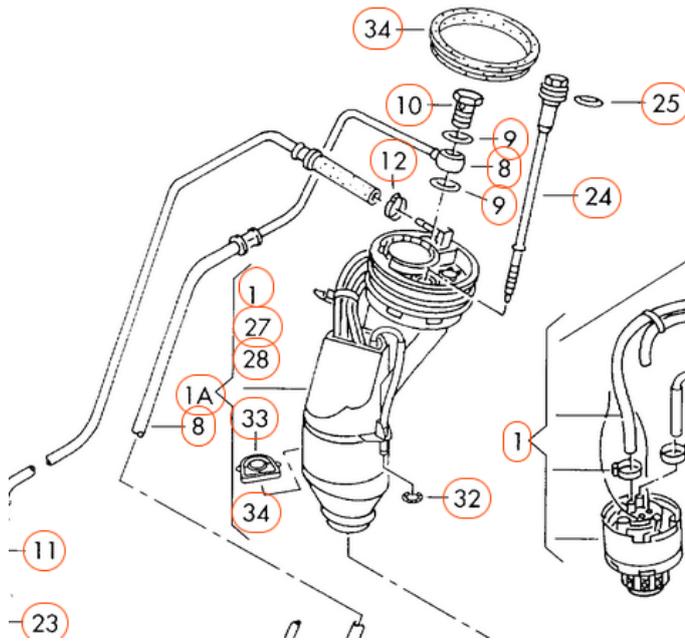


10mm bolts and nuts to suit mounted and spaced on a piece of slotted right angle metal of some description served as a DIY version of Audi special tool 2012A. A clockwise twist saw the cap released.



A mallet and a piece of firewood served admirably as a substitute for special tool 3342.

Gentle taps on the protrusions of the collar to make it travel anti-clockwise was good enough to loosen it so it could be removed by hand eventually.

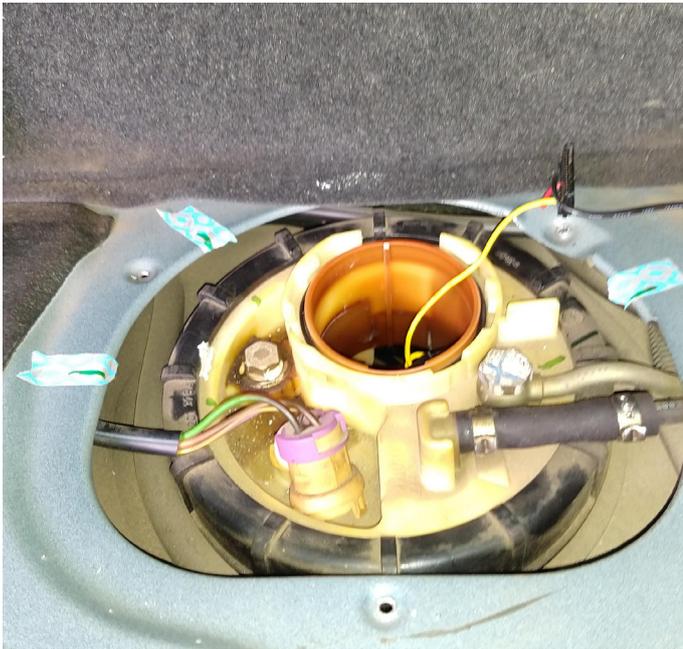


24 4D0201262A screw with sealing ring N 901 482 02
also use:

The 12" long bolt (number 24 in the diagram above) required a lot of torque to unfasten so I put a piece of galvanised iron pipe over the socket wrench handle so that I had more leverage and control over the motion of the wrench. I have read several stories of woe saying that the captive nut where the long bolt fastens to at the bottom of the fuel tank broke in its plastic housing and the bolt subsequently being unable to be released.

I wanted to avoid that. It made a heart stopping noise when it gave as it was!





I made some marks on the pump housing and on some tape stuck to the boot floor so that I could be sure that the pump housing was oriented correctly upon reinstallation. I am not sure it was necessary, as the housing can really only be in a certain position when seated correctly. It was reassuring though.

I also tied some wire to the connector for the fuel gauge sender so that it could easily be retrieved when it came time to reconnect it.

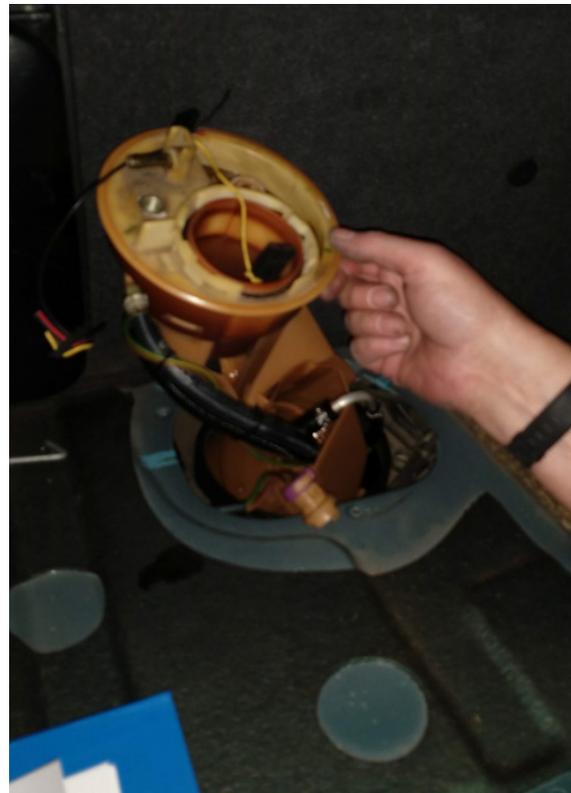
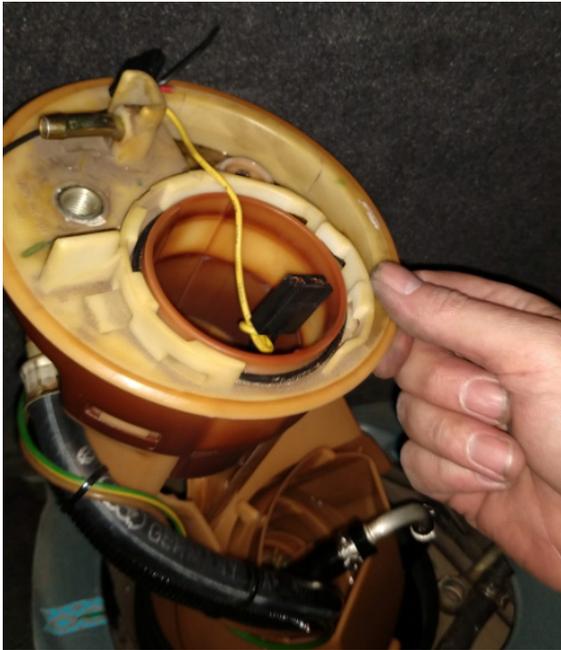


The collar which secures the pump housing to the top of the fuel tank is ready to be removed once the two fuel lines have been disconnected.

Once this is done, removal of the housing from the fuel tank is possible.



Lift the housing straight up whilst turning gently left and right. This releases the housing from the plate at the bottom of the tank. Then turn the housing anti-clockwise whilst lifting.



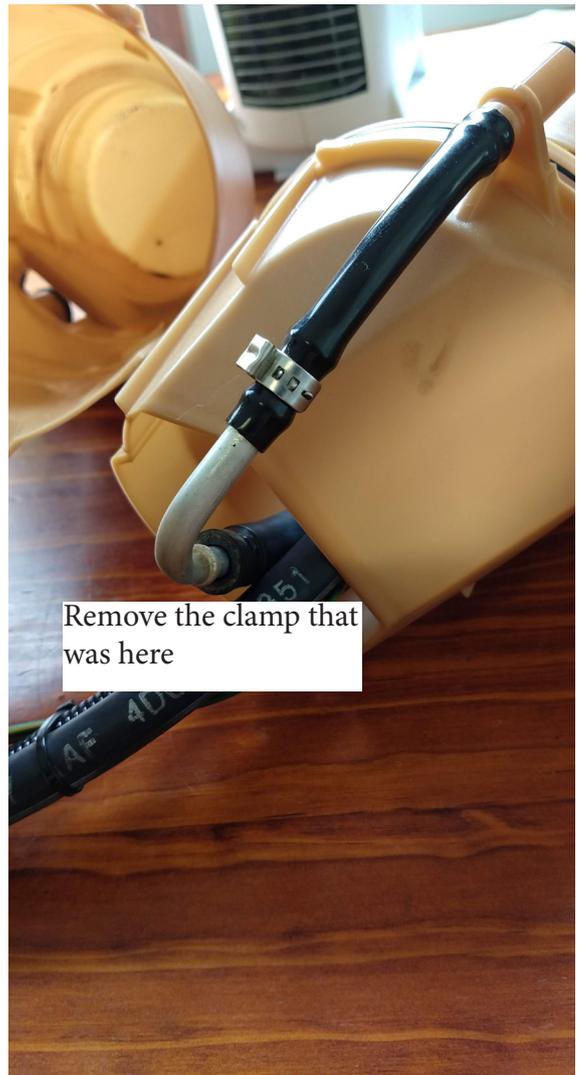
Eventually, the housing will be able to be lifted out of the tank. Have a bucket ready if the petrol tank wasn't empty!

Here is another tip. DO NOT celebrate with several whiskeys after you have removed the housing from the tank, or if you do, DO NOT take apart the housing until the next day, or you might not remember how it all came apart. Ask me how I know this...

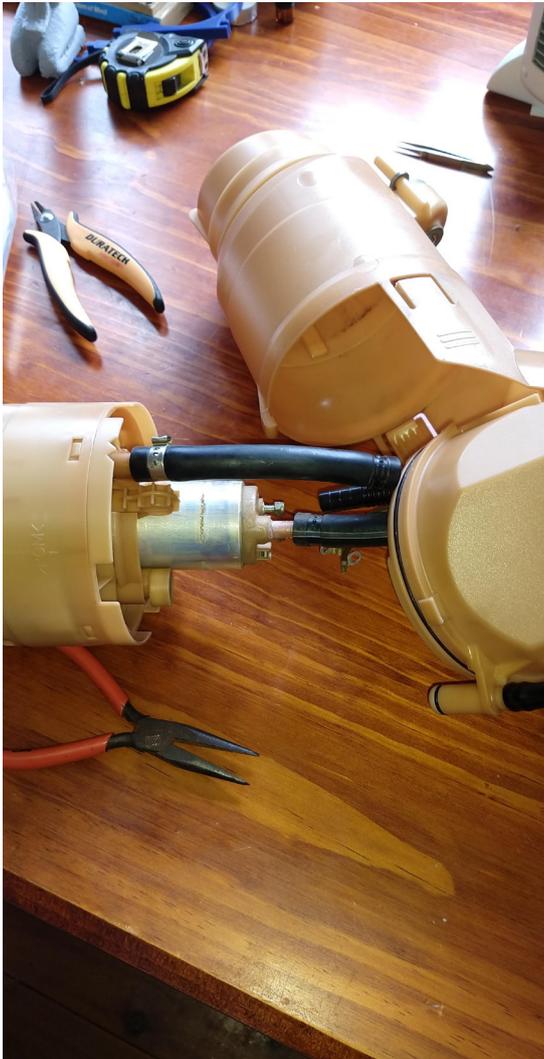
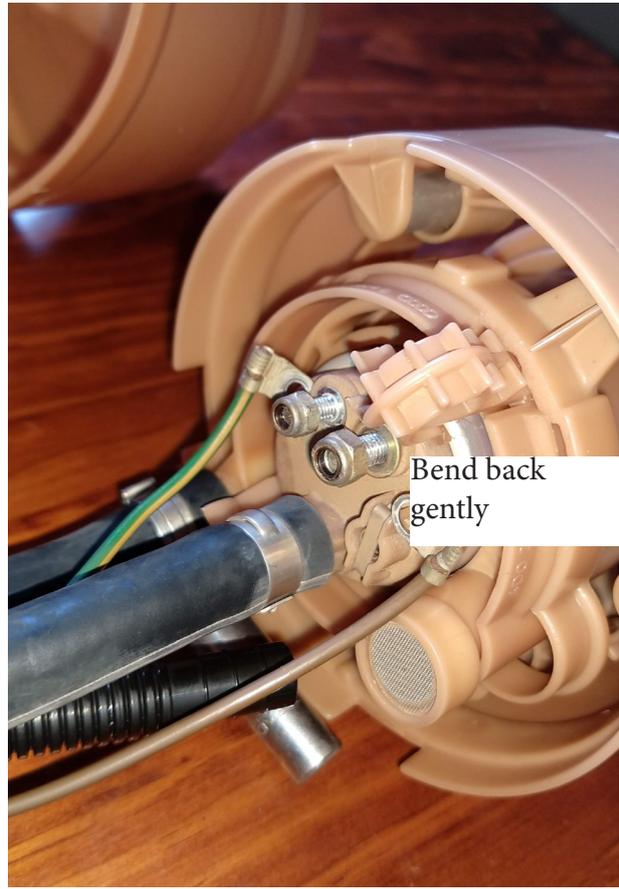
Worse still, you might break something, something plastic, something brittle, like the clip that helps to seal the upper housing to the lower housing. I didn't break anything but it was drunken luck, not skill!



You can't separate the two halves of the fuel pump enclosure until you remove a clamp from the metal boomerang shaped fuel connector that attaches to the hose coming from the fuel pump.



After you remove a clamp you can remove the hose coming from the fuel pump from the boomerang and then the upper housing can be slid away from the lower part thus allowing access to the fuel pump.



Bend the two retaining clips located on opposite sides of the fuel pump out of the way and the fuel pump can be withdrawn from the lower part of the housing by pulling on the hose attached to the pump spiggot. I found it to be a very tight fit so go easy, as you wouldn't want to break anything. Did i mention that already?

Install the new pump, connect the wires, put the hose clamps on and then reassemble the housing.

The fuel pump will only seat properly in one position. The two protrusions on the bottom of the pump locate it in the housing in a keyed fashion. The pump won't be able to be retained by the clips until this is achieved so you will know when it is seated properly.

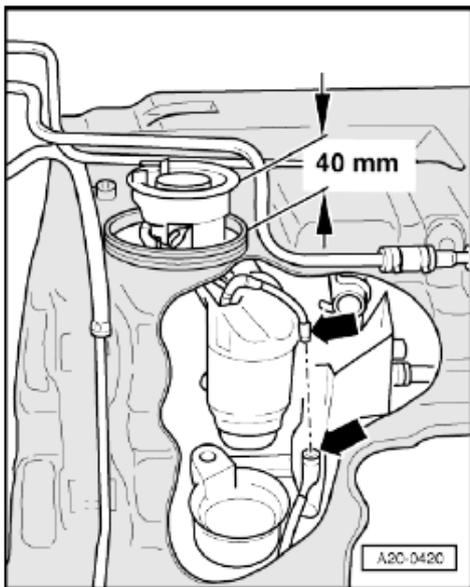
You can then lower the inner fuel pump lower housing into the outer housing. Again, this inner housing will only go in properly in one location. It was about now that I wished I had not disassembled the contraption whilst drunk. I could have at least had the foresight to mark the assembly with a texta so I could line it all up easily.

Once in, you can snap the upper fuel pump cover into the outer housing, aligning the catch that is subsequently retained by the clip on the outer housing slightly to its right. Push down with a blunt object all around the housing to make sure that the two halves meet completely all around as they need to be 'fuel tight' according to the instructions from Audi. There is an o-ring which is rebated into the upper cover that facilitates this. I sprayed it with silicone grease to aid installation. Once the two halves meet all of the way around, you can twist the upper and lower halves in opposite directions so that the catch moves into position under the clip, thus helping to seal the two halves. Now you just have to put the housing back into the tank.....

See down in the tank there? Line it all up and you are done.



Here is what you must achieve to ensure the housing has been located correctly.



- -> Press fuel delivery unit downwards.
- The output pipe from the fuel delivery unit to the suction jet pumps will then be pressed down into the funnel on the adapter plate -arrows-.

Notes:

- ♦ If the output pipe from the fuel delivery unit to the suction jet pumps is not pressed down into the funnel on the adapter plate, the suction jet pumps will not work and the fuel delivery unit will not seal against the adapter plate.
- ♦ If the baffle housing is not fuel-tight or the suction jet pumps are not working, the engine will cut out due to fuel starvation when the tank is still 1/3 ... 1/4 full.

Warning

Proper installation is only guaranteed if the following criteria are fulfilled:

- ♦ The flange of fuel delivery unit must sit level and not on edge of opening in fuel tank.
- ♦ The retaining bolt must easily be inserted into the bolt hole on adapter plate without catching, and it should be easily screwed into threaded bolt hole without snagging.

Now that I have it all back together and the car starting, I just have to drive around until the fuel tank is less than half full and see what happens. I will be carrying some fuel in the boot for the next week or so just in case, but fingers crossed, all should be well.

I may be imagining it but the car seems to run better now! Very snappy. I drove 80KM this afternoon and it was lovely.

One final observation - the ASR and the CAT lights both came on when the fuel pump died but they are gone now!