

BMW 635CSi Fuel Sending Unit/In-Tank Fuel Pump Removal/Replacement

Cost: Depends on parts being replaced, if any.

Pros: Fairly easy repair, No more fuel smell after refilling, More accurate fuel gauge, Car actually starts (depends on malady)

Cons: You will smell like gas for a bit

Time: ~1.5 hours

I want to thank Peter Siposs who's instructions at <http://www.lexam.net/peter/carnut/635-fueltank.html> helped me with this project.

I started this project to try to correct problems with my gas gauge. I would never quite read full after filling up...and after I ran out of gas before the reserve light had lit, I decide to spend the \$100 or so and spring for a new fuel sending unit and set of gaskets.

However, Like many, I was also experiencing a strong gas smell after fill-ups. This is usually a condition of a leaking pre-pump gasket which I was planning to replace. Fortunately I was replacing other parts. As it turns out, my pre-pump gasket was not that bad and appeared to not be leaking. In my case, the leaking was probably caused by loose pre-pump attaching bolts. Therefore, if you are only trying to track down a fuel smell, and particularly if you know work was previous performed in this area, you may simply follow the instructions until the instruction advised otherwise.



The tools required for the job;

Some mild soapy water (Dawn works great for cutting thru the crud)

Screw driver

Socket wrench with 8mm head and extension

Canned air

Knife

Gummi-Pflege (82 149 407 015)

Contact Cleaner

Rags/Paper towels

My project entailed replacing the fuel sending unit (16 121 153 050) and pre-pump gasket (16 121 116 966)



If you will be changing the sending unit, make sure your new unit includes the sending unit gasket (16 121 150 391). If it did not include one, you will need to buy one separately.

Remove the 3 screws holding the fuel tank access cover in place. Set the screws, cover, and foam gasket aside.

If you are only tracking down a fuel smell, try tightening the six 8mm bolts securing the pre-pump to 52 in-lbs. If these bolts appear loose, simply replace the cover and see if the fuel smell is apparent next fill-up.

Otherwise, continue with these instructions.





Use the canned air to blow away any loose dust and dirt. Don't worry too much about cleaning the area, you will have opportunity for that later.

Remove the sending unit and pre-pump electrical connector in the direction of the red arrows. Disconnect the 2 fuel line screw clamps (blue arrows).

Have some rags at the ready as you will start spilling fuel as soon as you disconnect the fuel lines.

Move the electrical connectors and fuel lines out of the way. Be careful not to lose the smaller fuel line below the trunk floor.

Since you have all this gas spilled, might as well make good use of it and use it to help clean as much of the crud as possible from around the tank and pump assembly before opening the fuel tank.

At this point, you will want to make sure you have all your tools, screws and bolts, or anything else small enough to fall into the tank away from the opening. Any cleaning around the area should be finished at this time also.

Using the 8mm socket, remove the four nuts and washers holding the fuel sending unit in place.

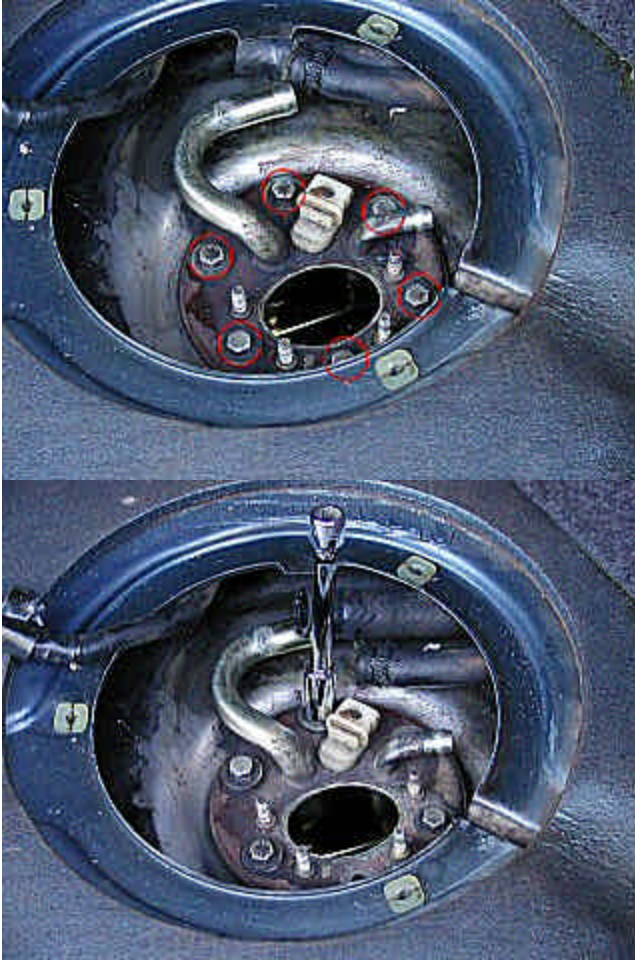




Slowly pull the fuel sending unit up. The sending unit will be full of fuel, and the space for the fuel to drain is small. Just let the sending unit sit as shown until the fuel stops leaking from the bottom. Set the sending unit aside on something that will absorb any remaining fuel that spills.

In comparing the new unit with the old one, it's easy to see how the older unit may have been giving me problems.





Remove the 6 bolts holding the pre-pump unit in place.

You really don't want any of these bolts falling into the opening! To reduce the chance of losing a bolt, I first loosened each of them about half way using the socket wrench. I then used just the socket head and extension, and hand loosened them the rest of the way. By slipping a finger under the washer for each bolt when loose enough, I was able to make sure the bolt stayed with the socket head once it was completely unscrewed.

Slowly pull the pre-pump up from the gas tank. The pre-pump will have some fuel in it, but most or all will leak out quickly.

In order for the pre-pump screen to clear the opening, you will have to lay the pre-pump over as shown to pull it completely free from the tank.

Set the pre-pump aside on something that will absorb any remaining fuel that spills.





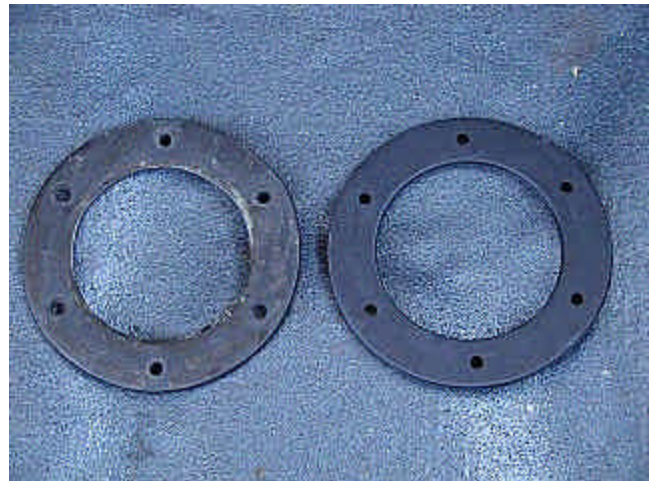
Inspect the fuel screen at the bottom of the pre-pump assembly. If the screen has particles, you can remove the screw holding the screen in place to remove the screen for cleaning.

Back-washing the screen, be careful not to damage it.

Inspecting the pre-pump gasket and comparing it to the new one, the old gasket didn't appear in that bad of shape.

Thinking back, I realized that the pre-pump bolts did seem to loosen rather easily. That combined with the fact that the pre-pump looks remarkably newer (as if it had been more recently replaced) brought me to the realization that the fuel leak and smell apparently wasn't caused by a deteriorating pre-pump gasket leaking fuel, but from the pre-pump bolts not being tightened adequately enough.

As mentioned above, if you are only trying to fix a fuel smell problem, simply tightening loose pre-pump bolts may eliminate the problem.



Put the pre-pump gasket in place, roughly lining up the holes.

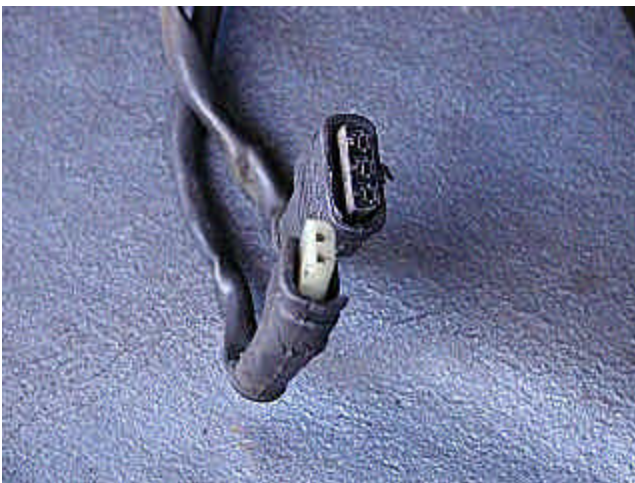


Replace the pre-pump assembly lining up the holes of the pre-pump assembly with the holes in the gasket.

Replace the 6 pre-pump bolts. Although you will still need to be careful not to lose any bolt in the gas tank, getting the screws of the bolt started into the gasket will hold the bolt in place and reduce the likelihood of losing one in the tank.

Tighten the bolts (in a crossing pattern) to 52 in-lbs.

Slide the sending unit in place and replace the washers and nuts. Tighten the nuts 16 to 18 in-lbs.



Inspect the electrical connections. Using the contact cleaner and other cleaning supplies, thoroughly clean the electrical connectors. The boots around the connectors are rubber. After cleaning them, applying Gummi-Pflege will help condition them.

Inspect the fuel lines. If the end are frayed, split or otherwise damaged, you may cut off the damaged end. Pull the fuel line taut so you can be certain there will be enough fuel line left to attach the line after your cut.



String the electrical connectors in place (the smaller electrical connector will not slide under the smaller fuel hose easily after its connected).

Slide the screw clamps over the appropriate hard fuel line connector. You should fully loosen the clamp first.

Attach the electrical connectors.

Slide the fuel lines over the appropriate connector. Slide the screw clamp over the hose and tighten.

At this point, start the car and check for any leaks.





When finished, simply replace the access cover and gasket and tighten with the three screws

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