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In Tank Fuel Pump Replacement

By Alan Trimble, BATauto.com Associate Editor

In the days before fuel injection, fuel pump replacement was a relatively easy task. The fuel pump was typically mounted on the side of the engine, usually in an easily accessible location. These pumps were mechanically driven by the engine and typically easy to replace.

Unlike the cars of old, most modern cars use tank mounted, electrically powered fuel pumps. These pumps can be a chore to change, depending upon the design of the car or truck.

Is this a job you can handle, or should you leave it to a shop? The answer to that question will depend greatly on your skill level and your level of comfort working with fuel.

Follow along as we replace the fuel pump and sender assembly in a 2002 Ford Mustang.

1. We'll begin with the reason for pump replacement. This particular car came in to the shop with the check engine light on and the fuel gauge reading "EMPTY", despite having a full tank of fuel.

A diagnostic scan revealed DTC P0460 was set in memory. Following the Pinpoint Test in the Factory Service Manual led us to the fuel level sender. A test of the sender showed that it was electrically open in the 'full' position. The sender on this model is integral with the fuel pump assembly, so we ordered a new fuel pump & sender assembly.

2. We began by disconnecting the negative battery cable. This should be the first step in any repair that will involve working with or near any electrical circuit that could be 'live'.



3. We removed the fuel cap and the 3 screws that secure the filler neck to the car's body.



4. We then opened the trunk and removed the two trim panel retainers.



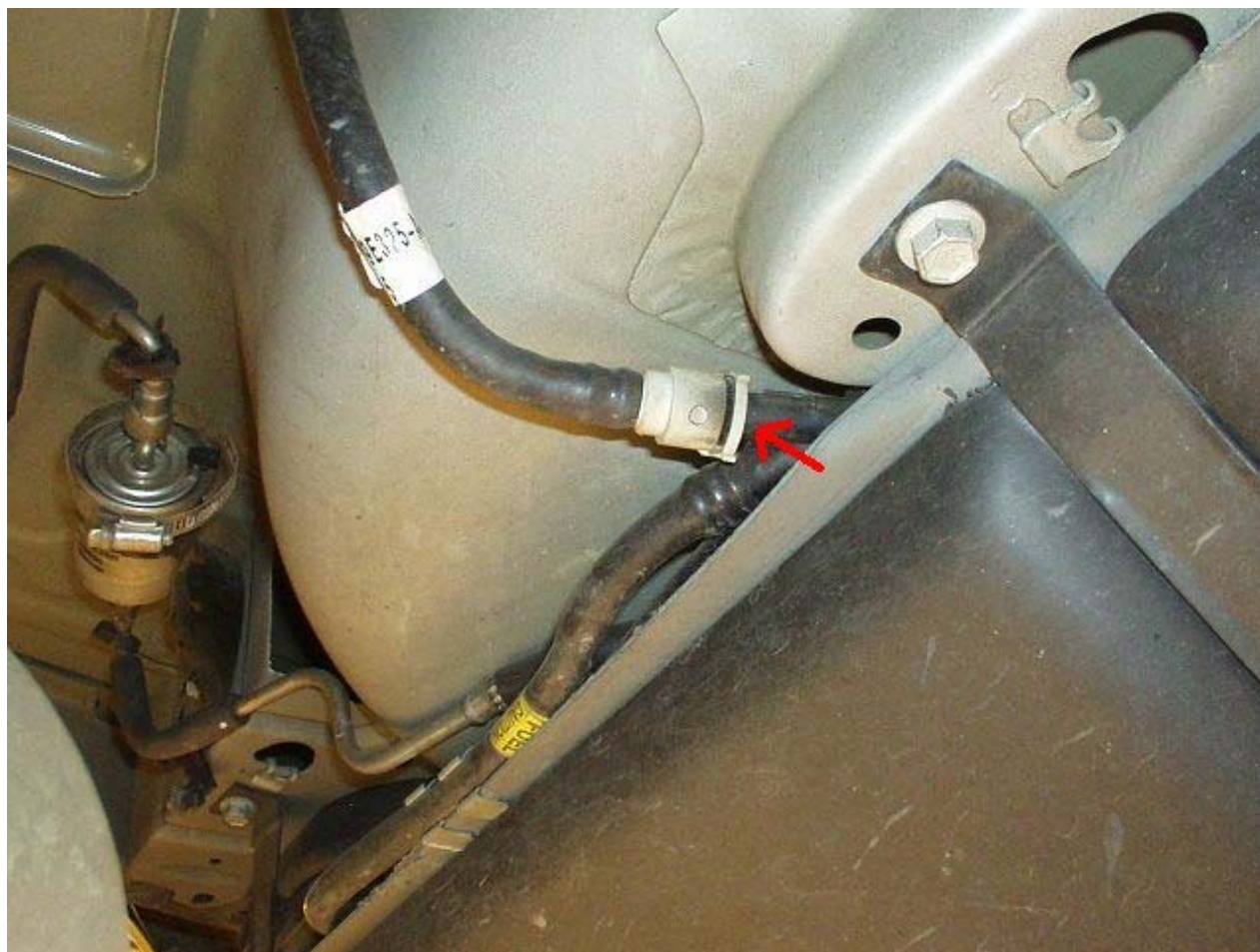
5. With the trim panels pulled back, we can access the 3 screws that hold the fill pipe grommet to the trunk floor. We remove these 3 screws to allow the fill pipe to drop down as the tank is lowered.



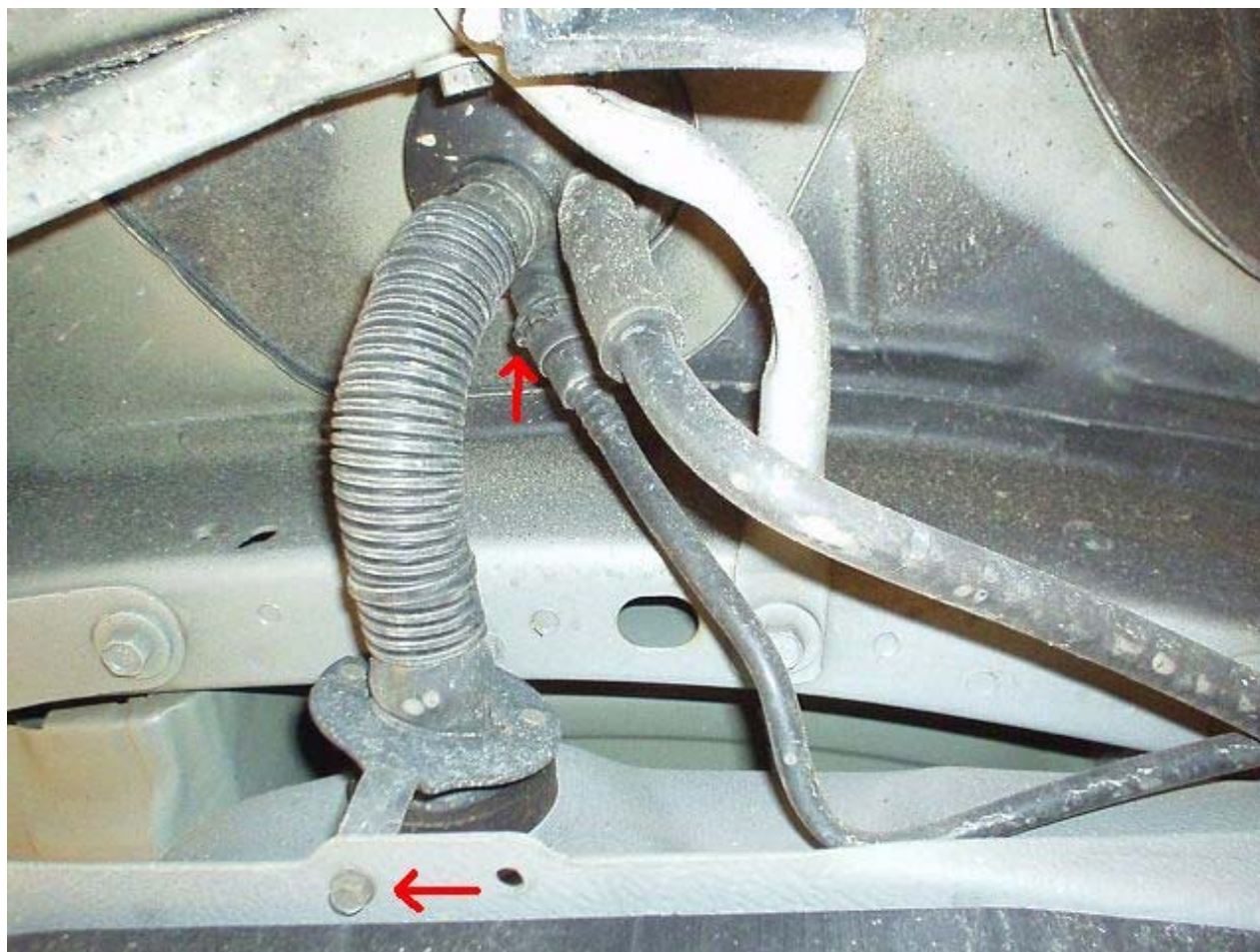
6. We then raised the car on a hoist to gain access to the tank. Seen here is the fuel pump/sender electrical connector. This connector must be disconnected and freed from the trunk floor.



7. Depress the yellow retaining clip and pull the EVAP hose from its fitting. Gently pull the second EVAP hose from its fitting (seen here already disconnected).



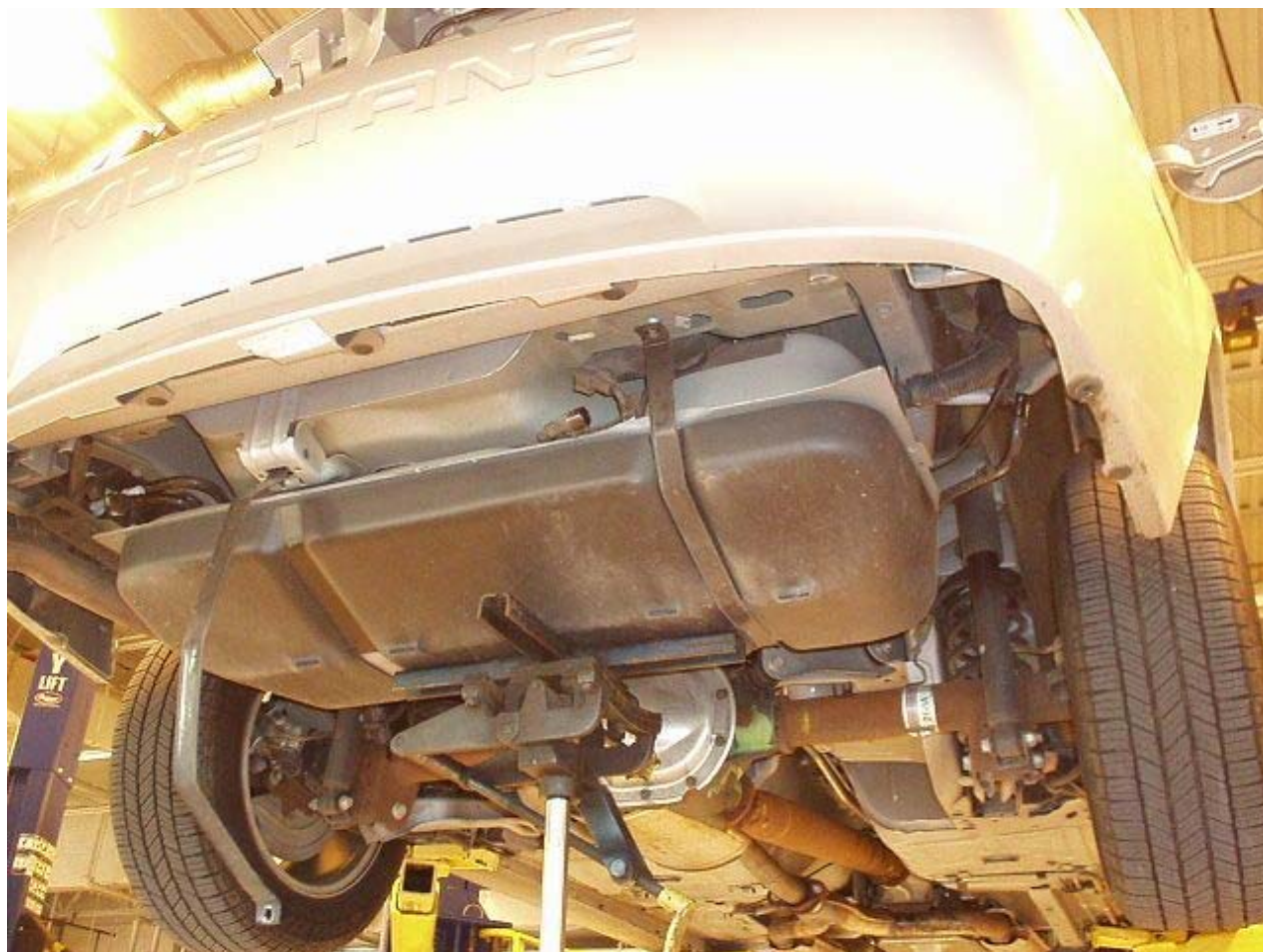
8. Remove the third evap hose by grasping the two white tabs (see arrow) and squeezing them, while simultaneously pulling the hose from its fitting.



9. Shown above are the filler neck, filler vent & overflow tube. Remove the filler neck retaining screw (see arrow) and knock the retainer to one side. Pry the black plastic clip from the filler vent (see arrow) with a small screwdriver. Discard the clip as it is not reusable. New clips are available from your Ford dealer or from the HELP! section at your local auto parts store. Remove the rubber overflow hose from the plastic overflow tube.



10. Shown above is the fuel feed line from the pump/sender assembly to the fuel filter. Note the fuel line release tool already installed. Remove the fuel line from the filter with the release tool.



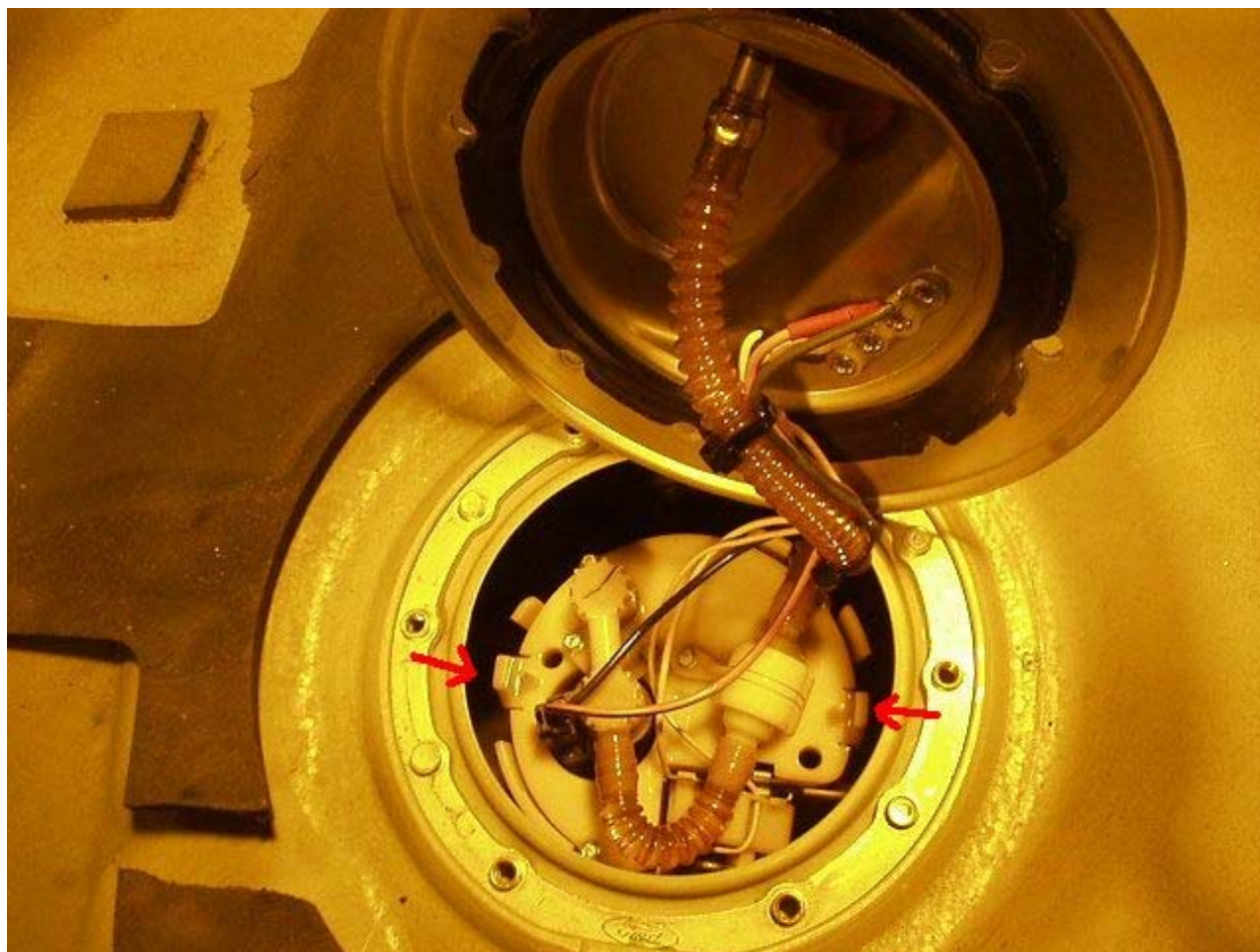
11. At this point you must support the tank with a suitable jack. You can then remove the 3 fuel tank mounting bolts. Install a safety chain or strap (not shown) to prevent the tank from slipping off the jack as you lower it. The tank must be simultaneously lowered and pushed to the driver's side of the car to allow the filler neck to clear the fill pipe grommet.



12. The fuel fill pipe contains an anti-rollover valve that prevents fuel spillage in the event of a collision. This valve also prevents removing the fuel from the tank when it is installed in the car. Once the tank is clear of the fill pipe, a hose can be inserted in to the fill pipe opening and the tank can be drained. We used a Gas Buggy for this purpose. DIYers can use a manual siphon pump and approved storage containers. **NEVER SYPHON BY MOUTH!**



13. The tank is then lowered to working height. Remove the electrical connector from the Fuel Tank Pressure sensor and remove the fuel feed line from the tank unit using a fuel line release tool.



14. Remove the screws that retain the top of the pump/sender assembly. With the screws removed, the pump & sender are now visible. Squeeze the two tabs on the pump module (see arrows) and lift upward to remove the pump and sender assembly.

15. Installation is basically the reverse of the removal procedure. Be sure to fully seat the pump module in the tank. You will hear it 'click' in to place. Lubricate the fill pipe grommet with lithium grease to prevent damage when installing the tank.

16. Refill the tank with fuel and check for leaks. Check fuel pump and fuel gauge operation.

Now you know what is involved in replacing a tank mounted fuel pump. Only you can decide if you have the skills and tools necessary to complete the repair. It is important to keep in mind that procedures and equipment requirements vary from model to model. The Service Manual will detail the tools, equipment and procedures required for your particular car. You can then decide if you're up to the task.

Your feedback is GREATLY appreciated!! Please email your comments to: [Contact Us](#)

DISCLAIMER:

The above information is offered as a GUIDE ONLY. Always follow all safety precautions and other procedures as outlined in the Factory Service Manual.

Extinguish all sources of ignition when working with fuel. ALWAYS wear appropriate eye protection.

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