Mercedes-Benz Ponton Fuel Pump Rebuild

"My Experience"

Ray Ilich / February 17, 1997

After sitting for a few days or longer without starting, my 1959 Mercedes-Benz Type 220S Ponton sedan experienced a 30 second cranking time (three 10 second bursts) before it would even begin to fire. This prolonged cranking is hard on the electrical system, battery, starter, and the nerves of the owner.

I reasoned that the fuel must be draining back from the carburetors down the fuel line to the fuel pump. I don't know why fuel (if there is any) in the bowls of the carburetors isn't adequate to start the car. Perhaps it cannot be pumped out of the bowl until the air in the fuel line has been evacuated. I have not yet investigated carburetors. This reasoning led me to rebuilding my car's fuel pump. What do I know? I'm a computing consultant, and a shade tree mechanic.

At least two types of fuel pumps exist for the Mercedes-Benz Pontons. They are distinguished by the presence (or lack) of a priming lever. The earlier fuel pump has the priming lever, later fuel pumps do not. It may be argued that the fuel pump with the priming lever is superior, because the check valves can be replaced.

I rebuilt a leverless fuel pump, (which amounts to only replacing the diaphragm), but that did not solve my car's starting problem. Next I rebuilt a fuel pump with lever, and installed it in my car. So far I'm happy with the lever fuel pump. The following is what I know about rebuilding fuel pumps.

I regret not taking photographs of the fuel pump rebuild, but I plan to rebuild another, and then, I'll take some.

Fuel Pump Diaphragm Replacement Procedure

CAUTION: Avoid using a trouble-light, smoking, open flames, or any other source of ignition while working with exposed gasoline. Any sparks from static or electrical shorts can be disastrous. Have a fire extinguisher nearby. Proceed at your own risk.

1) Remove the two fuel lines from the fuel pump. Use two wrenches, one on the nut on the fuel pump, the other on the fuel line (use a flare nut wrench if available). The leverless fuel pump has a push-on connector on the supply side, and the lever pump has two threaded ports. Place a rag under the fuel pump to catch the gasoline that spills out of the lines.

2) Remove the fuel pump by unscrewing the two hex cap screws which are screwed vertically down into the fuel pump jointing flange or "cup." It is not necessary to remove the hex cap

screws, which are screwed horizontally into the engine block.

3) Remove the fuel pump by lightly pulling up. Wrap the fuel pump in the rag, since fuel inside the fuel pump will spill out of the ports. Turn the pump over to remove the remainder of the fuel. Clean/dry the fuel pump mounting "cup", which remains on the engine block. Discard the gasoline soaked rag in a responsible manner.

4) Remove the gaskets and mounting spacer. Remove the approx 1-1/2" spring that holds down the plunger by pushing up on the end, and pull it away from the plunger.

5) Open the fuel pump by unscrewing six screws located in the circumference of the pump. This will reveal the diaphragm. The diaphragm is held in place by a central shaft, which extends down into the cup.

Tip: Lightly clamp the fuel pump in a vice, to hold it for the next steps.

6) Remove the diaphragm by pushing down firmly on its metal center, and turning it slightly clockwise. This may take a while, you are removing the slotted end of the shaft from the plunger.

7) Thoroughly clean the disassembled fuel pump and the fuel pump mounting "cup" attached to the engine block with solvent.

For Leverless Pumps...

8) Remove the screw that holds down a small metal flap, which is a check valve, and clean this small chamber with a Q-Tip (cotton swab) and solvent. Mine had a little gunk (rust perhaps) trapped within. Reinstall this metal flap and screw keeping the same orientation. (Don't install it upside down.)

For Lever Type Pumps...

8) Remove the 10 mm hex nut holding the bell cover. Remove and replace the 1-1/2" gasket at the base of the bell cover. Remove the three small slotted screws, which hold the retainer over the check valves. Replace the two hexagonal check valves and springs. The check valves have two sides, a smooth side and a fabric side. The fabric side goes toward the spring. Install the small gasket and the check valve retainer by tightening the three screws, with their slotted washers. Verify the operation of the check valves by lightly pushing on them with a small tool, like a Q-tip.

For All Pumps...

9) Insert new diaphragm assembly into its chamber. Verify correct installation by moving the lever, which points into the engine block or the priming lever. The diaphragm should move accordingly.

10) Reinstall the fuel pump cover by turning the diaphragm to line up the holes, and reinstall the six screws lightly. When they're all loosely installed, pull on the lever to depress the diaphragm. Then snug the screws in several stages. Be sure the diaphragm is not folded in any way.

11) Pack the hollow space in the fuel feed pump and in the jointing flange with multipurpose grease. Wipe grease away from the gasket mounting surfaces.

12) Install fresh gaskets and spacer on the fuel pump mounting surface.

13) Reinstall the fuel pump onto the fuel pump jointing flange.

Tip: Press the fuel pump down and then inward to engage the shaft to its push rod. You may hear/feel the diaphragm move.

14) Reinstall the fuel supply line.

Option: To prime the fuel pump, slip a short section of garden hose over the fuel pump exit port. Apply vacuum to the hose and suck gasoline through the filter and into the fuel pump. This is optional, since I'm told the fuel pump does not need to be primed.

15) Screw on the fuel line leading to the carburetors.

16) Start the car. It may take 30 seconds of cranking, (three 10 second episodes) to pump fuel up the fuel lines to the carburetors.

17) Congratulate yourself on a job well done!

Note: Many Pontons, like mine, have had the fuel filter upgraded to a modern in-line filter. I installed a new Fram in-line fuel filter. Because this filter is translucent, I could see the gasoline level within. I was surprised to see an air bubble in the fuel filter that occupied 3/4 of the volume of the filter. I have been told to ignore the air bubble, it may get smaller, or go away as the car is run.

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