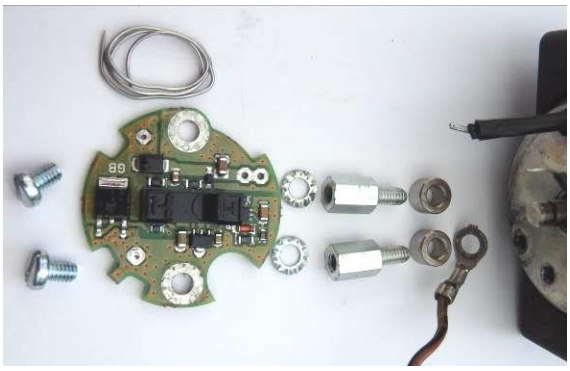
Manual for mounting DR_Bean fuelpump-modification-PCB



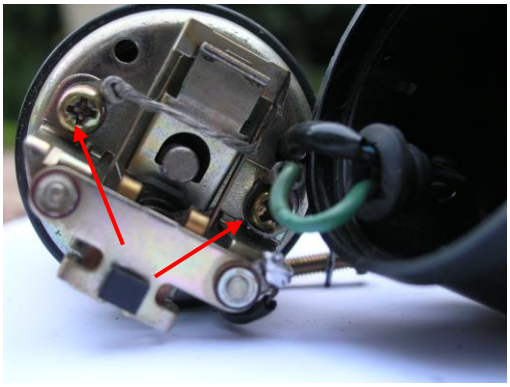
The image to the right shows all components of the fuelpumpkit you just received: 2x 5mm spacers, 2x threaded studs, 2 star/spring-washers, a printed circuit board (PCB), 2 screws and a piece of solder wire for electronics. The components are shown in the mounting order.

You also need:

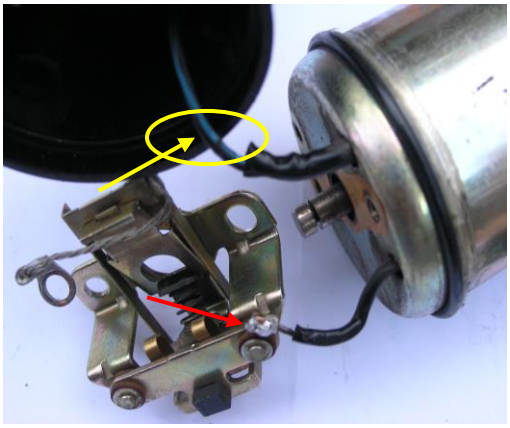
- This manual preferably printed!!
- Soldering iron (decent one, not a 100W soldering gun)
- wire cutter
- flat- and crosshead screwdriver
- wrench 7 (preferably a socket screwdriver 7)
- Loctite 243 or equivalent
- about 1 hour of time.

Please read the full manual first, and then start the modification step by step: **This is really the best order!** If you don't understand something or don't have the right tools, don't start but consult me (Dr_Bean) through any of the forums, and prepare first before you start.

1. Remove the fuelpump from the bike: See LC8- workshopmanual (forum). Bridge the fuel in/outlet with a short tube, or make sure the pump is really empty: The fuel could damage the new PCB during mounting and/or cause other dangers.



2. Remove the black plastic lid:
   - Unscrew the black cover with a crosshead screwdriver.
   - Slide the cover over the wire (with the outer-tubing) up till the plug, so as to have enough working space.
   - Cut-down the loose outer-tube of the cables roughly 4 cm: to create some working-space in the wires; take care not to damage the wires!!
   - Slide the small wire-rubber (grommet) as far as possible towards the plus side (use some WD40 if needed).



3. Unscrew the 2 small crosshead screws (red arrows) and remove the complete contactbreaker assembly (with the worn-out contacts). Also remove the paper bit below it.

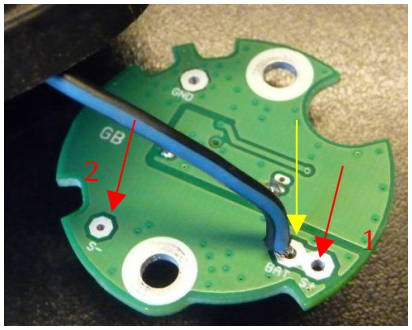
4. De-solder the small black wire coming from the pump, and remove it from the contactbreaker (red arrow). You can now keep your old contactbreaker-set with screws as spare.

5. Cut (!!) the blue-black wire, about 6-10 mm outside of the black isolation tube (+/- 25 mm / 1 inch from the pump): See yellow arrow and circle. Strip 2 mm insulation off each new cable-end.

Now start rebuilding it!:

6. Mounting the studs for the PCB:

   - See image to the right: The studs should be mounted in line with the center rod of the pump (the 3rd hole is for the screw of the pump cover).
   - Apply some Loctite to the threaded-end of the stud and put the 5 mm spacer over it.
   - Mount the ground cable at the side of the 3rd hole, with the cable facing opposite (staying inside the pump perimeter).
   - Tighten the studs **HAND**-tight (3 Nm) e.g. with a hand socket screwdriver –7: Do not over tighten them, the pump is thin metal!



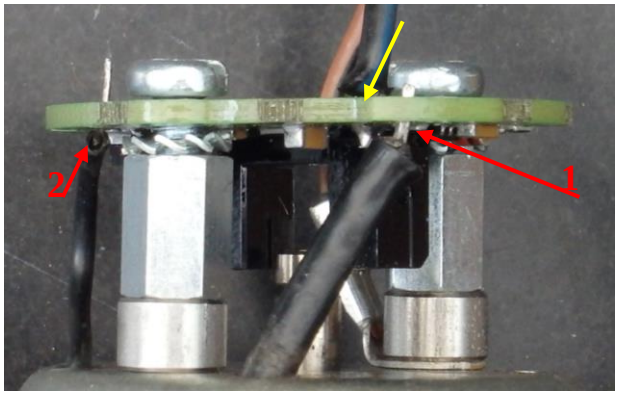
7. Insert the blue-black wire (coming from the plug) into the PCB hole marked '**BAT'.**

8. Solder the wire from the component-side of the PCB with some electronics tin (small bit included in your mounting set)

9. Mounting the PBC on the studs: it is convenient to place the pump in e.g. a large cup, mounting side facing up ☺ to hold it stable.

   - Put the PCB on the studs as the image to the right shows. The ground lead fits precisely in the small opening on the side of it.

   - Slide a start-washer between PCB and Stud and insert a screw through the PCB. Turn the screw into the stud, but do not tighten it. Repeat the same for the second washer and screw.



   - Now insert the short blue-black wire coming from the pump into the PCB hole (S+) just next to the blue-black wire coming from the other side, which you just soldered (red arrow-1).

   - Insert the black wire coming from the pump into the smaller PCB hole (S-) (red arrow-2)

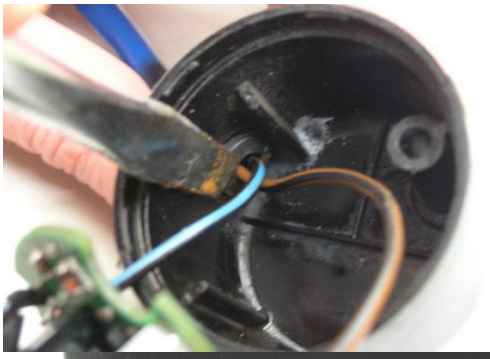
   - When the wires are inserted correctly, firmly tighten the 2 screws with a flathead screwdriver.

   - Now take your time and solder the 2 wires coming from the pump into the PCB: Make sure to let the solder flow into the wire hole properly!

Test: Now all the connections are made. You can hook up the pump for a quick check (Ignition OFF!) by connecting it to the fuelpump connector coming from your bike (NEVER connect the pump directly to the battery!!!). Make sure not to create any short with the pump and print!

Switch on the ignition (+killswicth): The pump should now run for 5 seconds making a plopping sound: When not… you maybe did something wrong! Take care: If you did something wrong, it could be you now blew-up the fuse for the fuelpump in the fusebox. Disconnect the pump, replace the fuse and restart reading this manual from the beginning to see what went wrong.

Mounting:

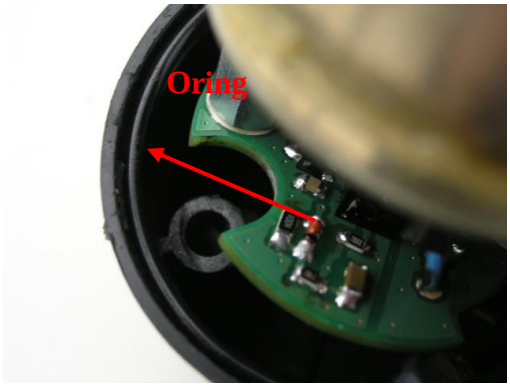


10. Remount the cap:

    The black plastic cap now has to go back over the PCB and the wires: This is all a bit tight fit, DO NOT use any force, when properly mounted it should all fit nicely (you can use some WD40 or similar to lube the wire and rubber to make it easier):

- Push the cap back over the cable, until you reach the small wire rubber (grommet). Push the small rubber grommet into the opening in the cap (e.g. with a blunt screwdriver), see picture (Yeah... really that wasn't my design!). Make sure you get it in properly, because if it isn't , the PCB won't fit inside and water may leak into the cap! From the outside you can see whether the rubber grommet is correctly placed, as seen in the picture →

- Now put the pump with print into the cap, carefully pulling the wires back through the grommet. The half-round gap in the PCB should go where the cap-screw goes: see picture!



- The ground-wire has to pass the PCB on the side: There is a small gap in the side of the PCB for this.

- Put the O-ring of the pump in the edge of the cap, if it isn't sticking on the outside of the pump

- Now push the cap completely over the pump and the O-ring. It should easily fit in place.

- Now insert the long screw of the cap and tighten it, hand-tight!

READY! Test the pump again, as described before. If all ok, remount the pump on the bike.
Finally: Although you could use sealing compound, I do not recommend this: It is not needed IF the O-ring and the rubber grommet are properly in place. In any case, do NOT use any acid-based silicone compound/cement (they smell like vinegar)!! This will damage the electronic components.