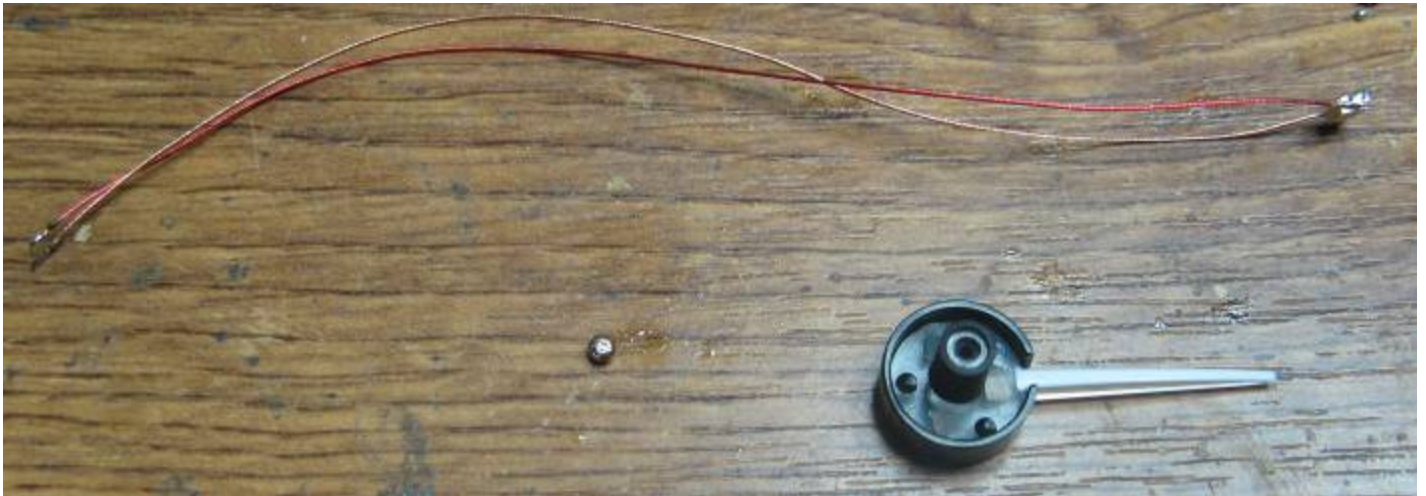


BMW E46 instrument cluster needles fade-in and fade-out

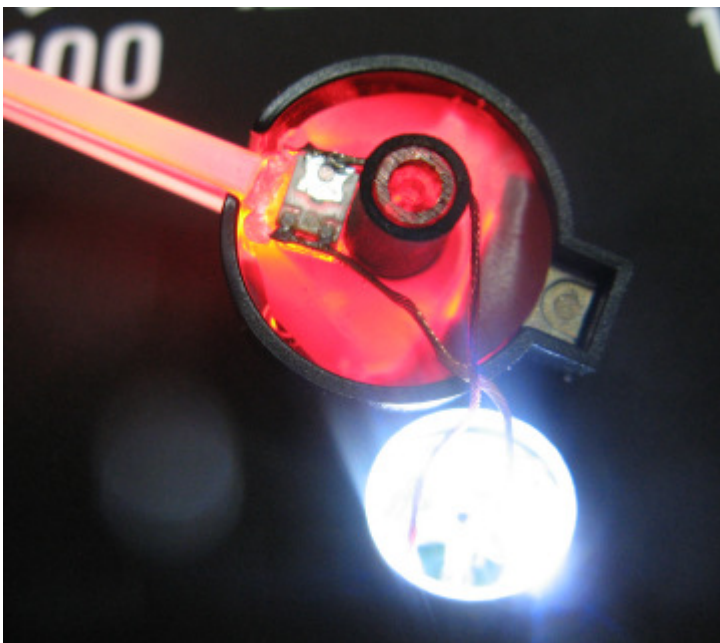
Simple, install under each needle PLCC LED, in my case RED, 6000mCd / 120mA.

Next thing is to wire them up, i used wires from old handsfree set, where You can get two „naked“wires.

These wires are isolated, hard to solder, but if You start soldering from the end where the wire was cut, the isolation goes away.

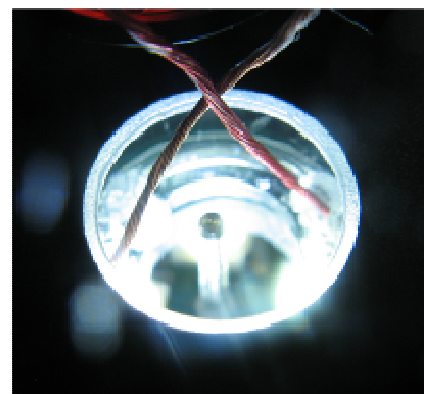


As You can see above, there is tube on the neck of the needle, to prevent the white color going in and making the needle looking pink 😊



Next thing is to put some red or black tape inside the needle, also to prevent the white color going in and making the needle pink 😊

You have to drill some holes because the wires could not go beside the motor shaft

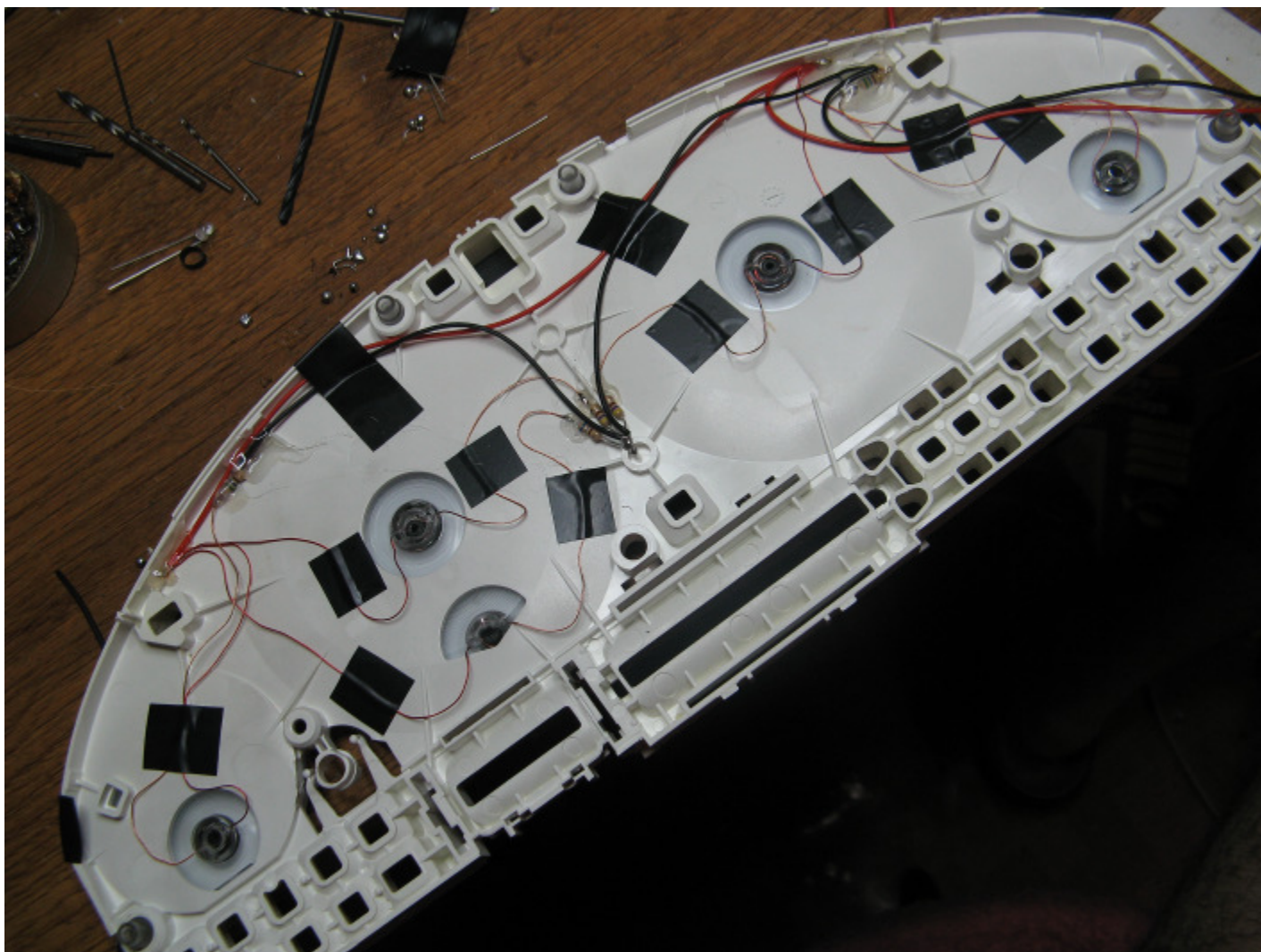


Next You have to be patient, leave some wires under the platine so the needles now hangs up on the wires.

I left cca 1,5cm of wurd under the needle, then i fixed the needles with tape to the platine and turned around and then i fixed the wires on back side.

Always leave some wires as You see on the picture so when You will turn the needles before You put them back on the shafts, the wires will „settle“ and will not brake the motor. This is very hard to do, to find the right position where the wires should be under the platine...You need to try :D

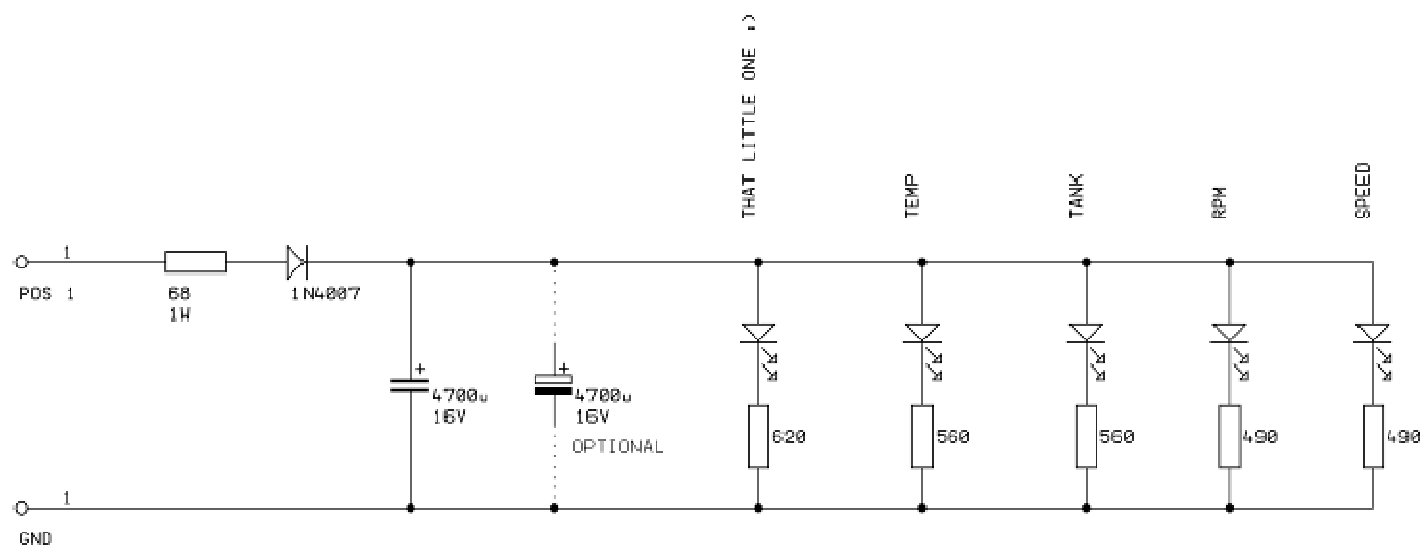
Next i did the wiring with resistors, fixed them with the „hot glue“ and black tape.



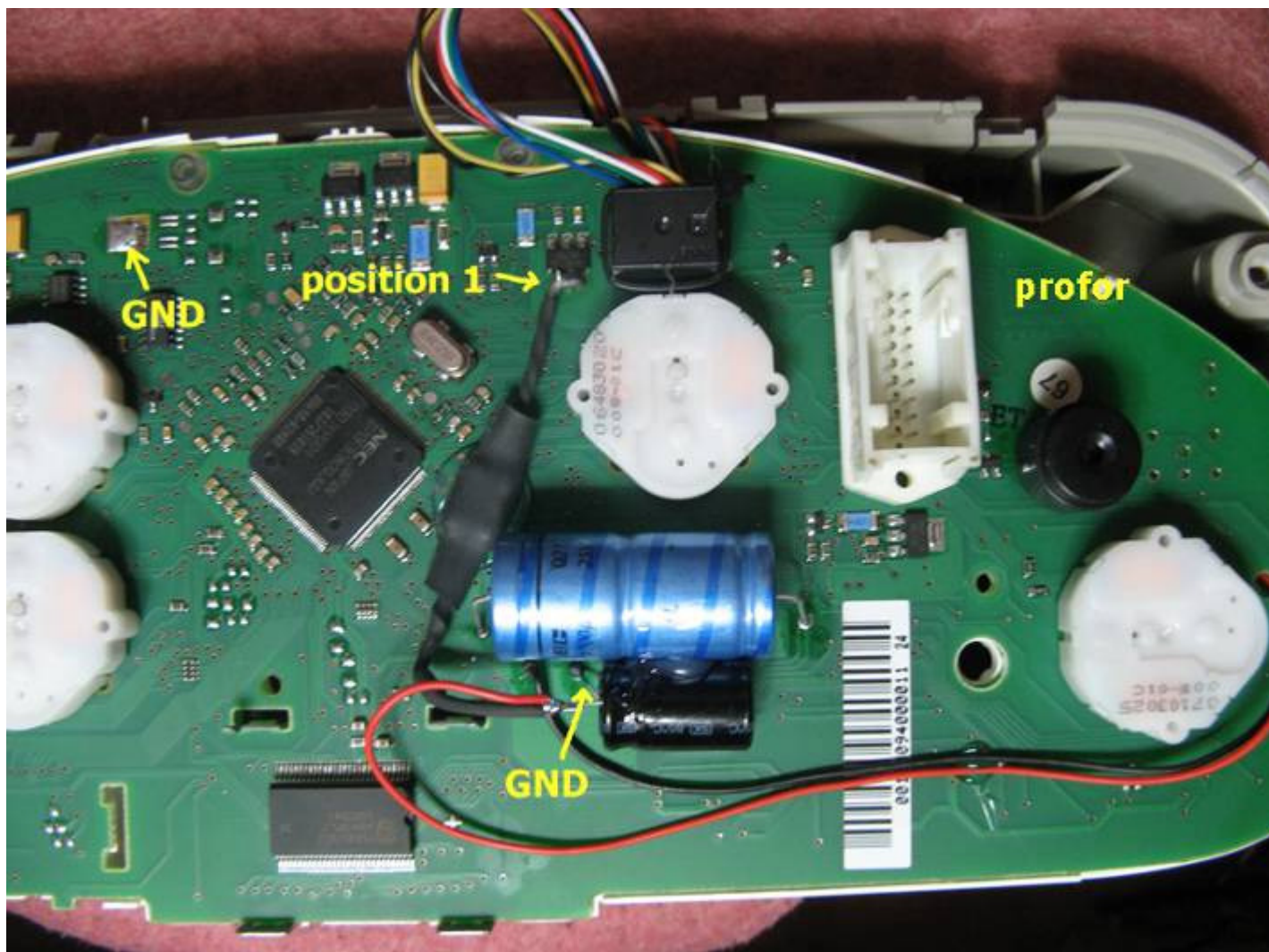
To get the wires thru PCB i used one hole in PCB beside tank gauge ☺

Next was to find transistor which is supplying the LED's with power. The position 1 on next picture is „output“ of the regulator for original backlight. One remark, max voltage there is 5V, regulation (dimming) is done by PWM at frequency of cca 250Hz.

So this is schematic diagram of „fade“ circuit



So plus pole You have to solder onto transistor, minus pole on one of GND's and then You have to fix it somehow ☺ You dont have to worry about max temperature of capacitor You will use, the original one (blue) has max temp of 85°C so standard capacitor will be okay.



Next thing is to assembly it back, put the needles back, find the zero point, turn them to right so You will be able to feel if the wires are affecting the needles or not. If not, everything is fine ☺

Hope this how to will help You ☺

Profor 2010