

68-72 Pontiac GTO Dixco Tachometer

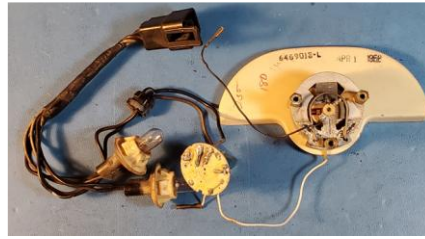
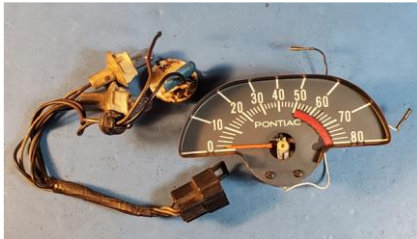
Reverse Engineering Document R1.0

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A customer sent me a Pontiac-branded hood-mounted Dixco-made tachometer that was supplied for 68-72 GTOs.



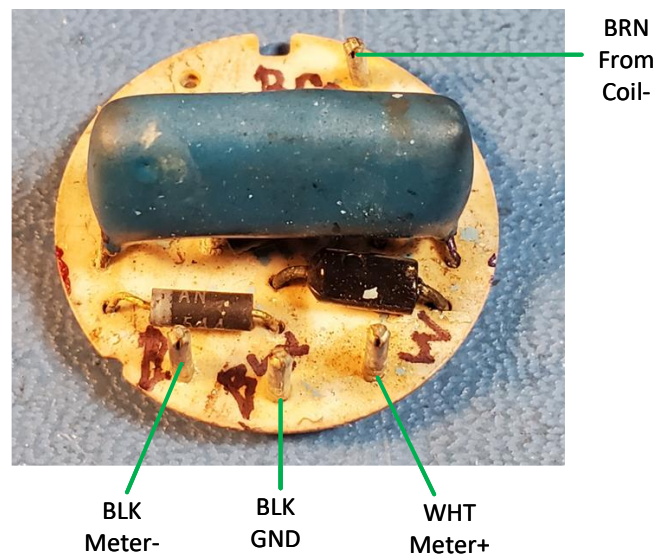
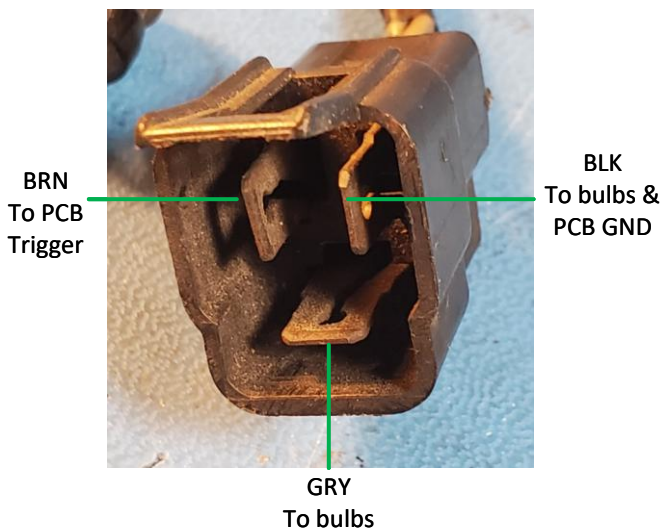
It appears to have been badly neglected for a lot of years and my customer had done a cosmetic restoration on it. It arrived with only 4 components on the original PCB. Here are photos of what I received:



The harness connector has 3 male pins, one for the 2 GRY wires to the two 158 T10 base illumination bulbs, one for the BRN wire from the coil negative terminal and one for the ground shared between the bulbs and the tachometer circuit. The BRN wire goes to a female pin that connects to the top male pin on the PCB. The BLK wire goes to a female pin that connects to the bottom male pin on the PCB and to both bulbs.

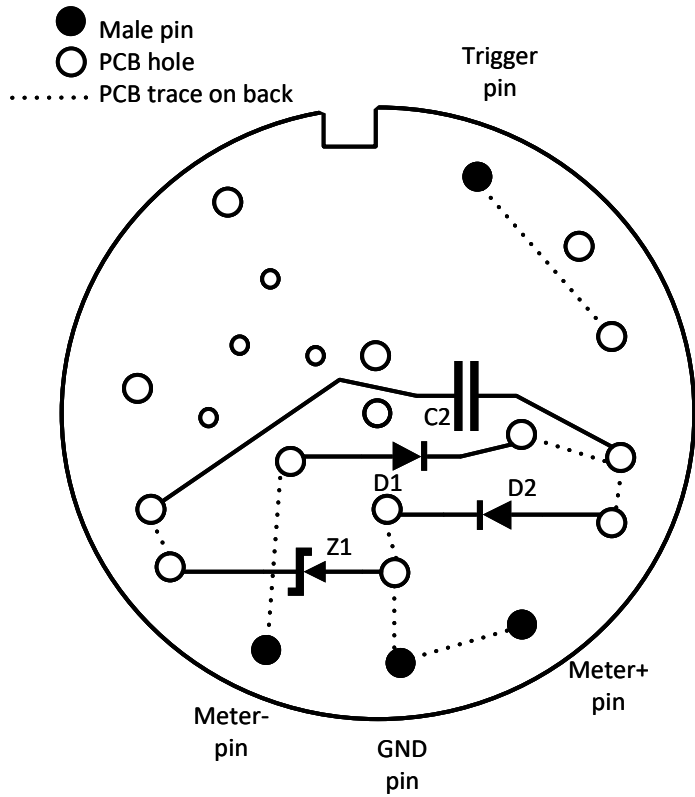
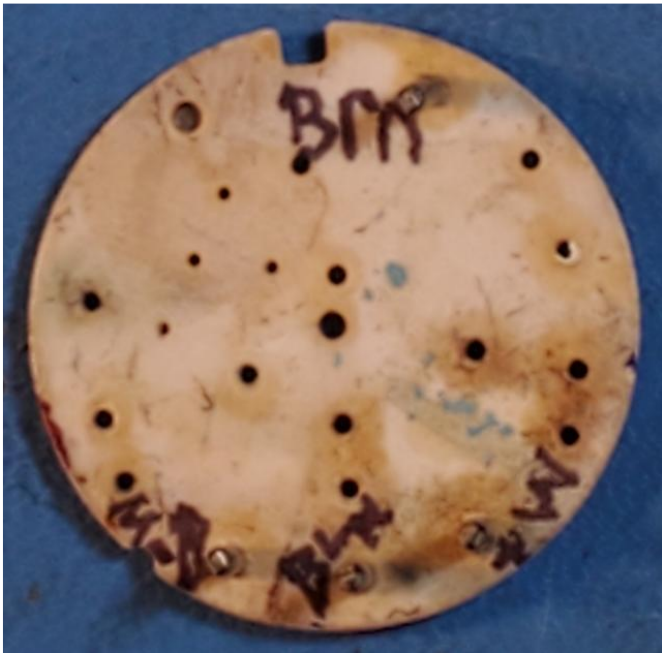
The meter has two wires coming from it with female pins on them, one WHT and one BLK. The BLK wire is the meter negative wire and goes to the male pin on the PCB that is just to the left of the center ground pin. The WHT wire is the meter positive wire and goes to the male pin on the PCB that is just to the right of the center ground pin. The meter has about 220 ohms of resistance.

The 4 components on the PCB were 2 silicon diodes (one of which was functional), a 6.2V Zener diode (non-functional) and a 0.33uF, 200V capacitor (which measured 0.1uF). That, plus the traces and wiring on the back of the PCB confirmed that the circuit used was the no-transistor Dixco circuit. The input inductor and resistor were missing. It also made it clear which male pins on the PCB were which.

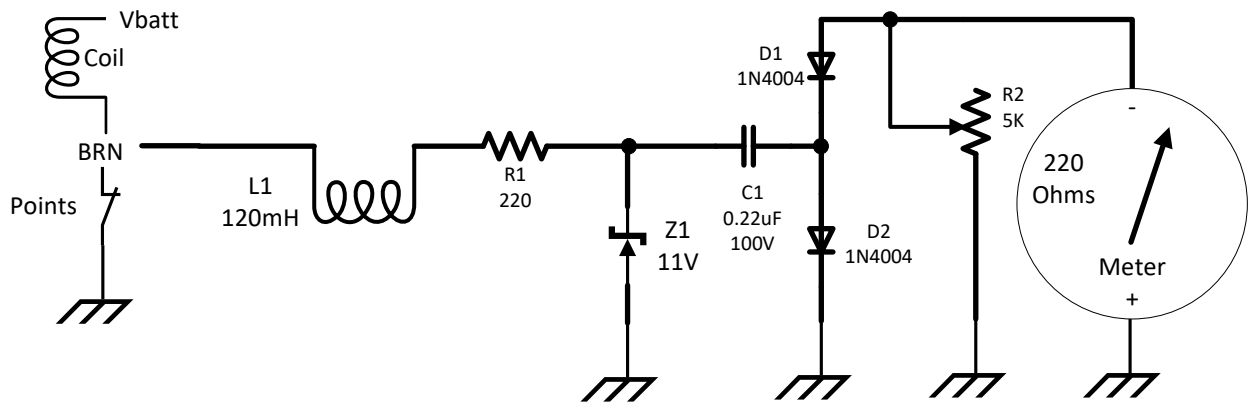


The following pages describe the PCB as I found it and how the replacement components were installed.

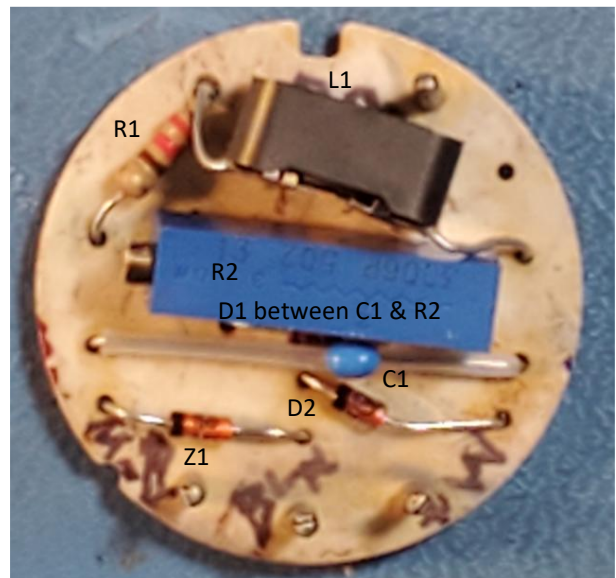
Here is a photo with the component holes along with a diagram that shows how the original components were installed.



Here are the schematics of the replacement circuit:



Here is the assembled PCB with the new components. The diodes and cap occupy the original positions:

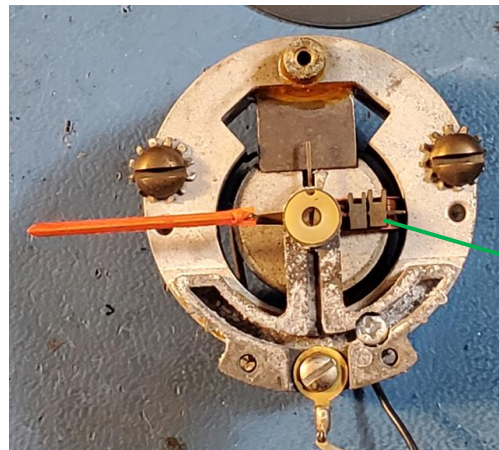


Here is a photo of the back of the PCB without anything installed. It shows many missing traces. The photo on the right shows the back of the PCB with the new components installed.



Testing with the new circuit showed that the tachometer could not be calibrated across the scale. I calibrated it at 4000 RPM and it read about 1000 RPM too high at the high end of the scale and about 1000 RPM too low at the low end of the scale.

Most Dixco meters are sealed in plastic, but this one is not. I finally asked the customer if he had repainted the needle. He said he had. The additional weight of the new paint on the needle was the culprit. I removed the face to see if there was an adjustable counterweight and there were 2.



Counterweights

Adjusting the 2 counterweights was a little tricky, but it was finally calibrated across the scale.

