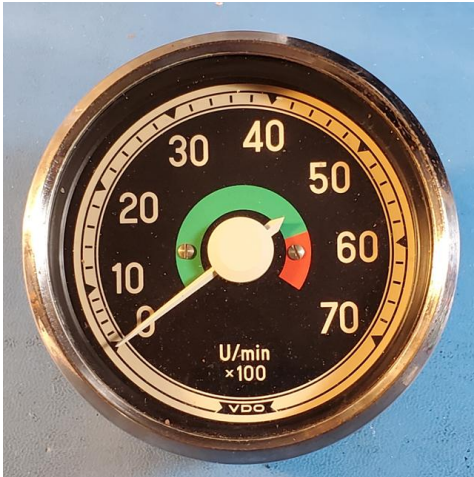


67 Saab Sonnet II VDO Tachometer Schematics

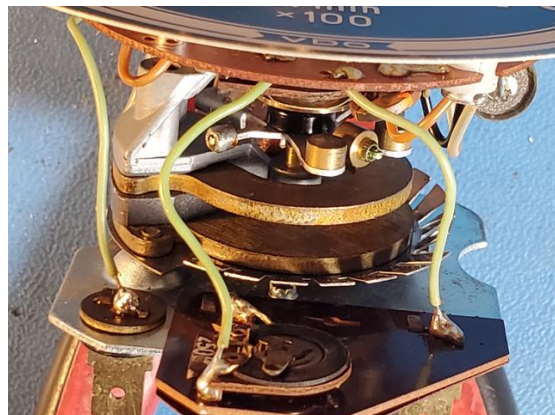
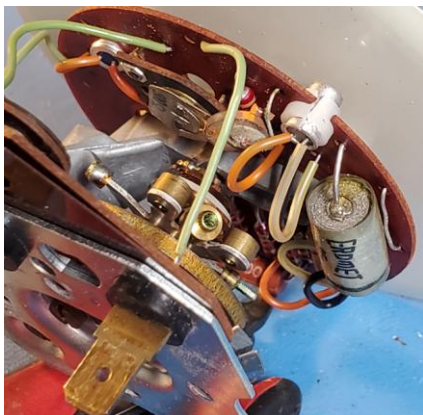
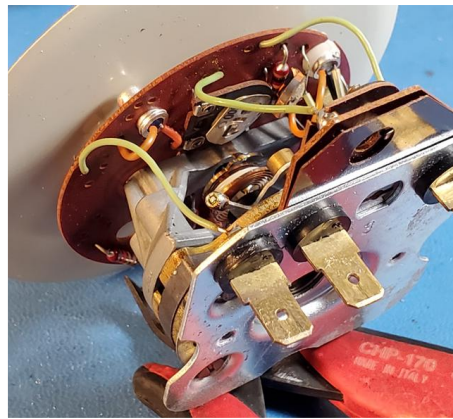
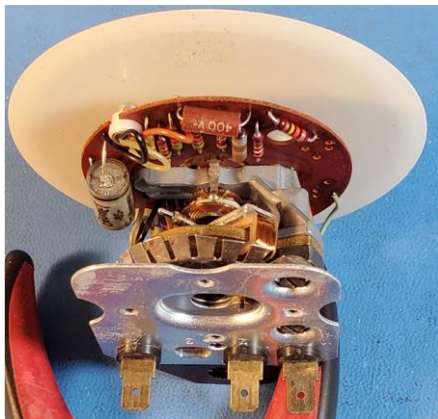
Rev 1.2

Mark Olson
Accutach Co.

I received a non-functional rare VDO tachometer from a customer who asked me to see if I could fix it. It was from a 1967 Saab Sonnet II with a 3-cylinder, 2-stroke engine.



Upon opening it up, it was clear that this tachometer would be difficult to work on. The PCB is tucked right up under the face making it very difficult to see the PCB traces and even the component markings.



It turned out that it was nearly impossible to even do a good job of reverse engineering this tachometer without removing the needle and the face to get access. I was able to somewhat reverse engineer it by lighting it so I could see the PCB traces through the board as well as getting small clipleads in to the needed component leads.

The schematics and component layout diagrams are on the last page.

There are two transistors configured in what appears to be a one-shot configuration. It was impossible to see the part numbers on the transistors. Based on the circuit, I surmise that they are PNP transistors, but I may be wrong. In-circuit, the diode tester reported a 0.2V diode drop across what I guessed is the EB junction, although it could be a CB junction of an NPN transistor. With a 0.2V drop, I am guessing that these are germanium transistors.

D1 is clearly a diode, but I could not see the polarity band on it, so I am just guessing as to its orientation. I may have gotten it backwards.

I am guessing that D2 is a diode since it is in a 2-wire case very similar to that of the transistors. However, it failed the diode tester, so if it is a diode, it had failed.

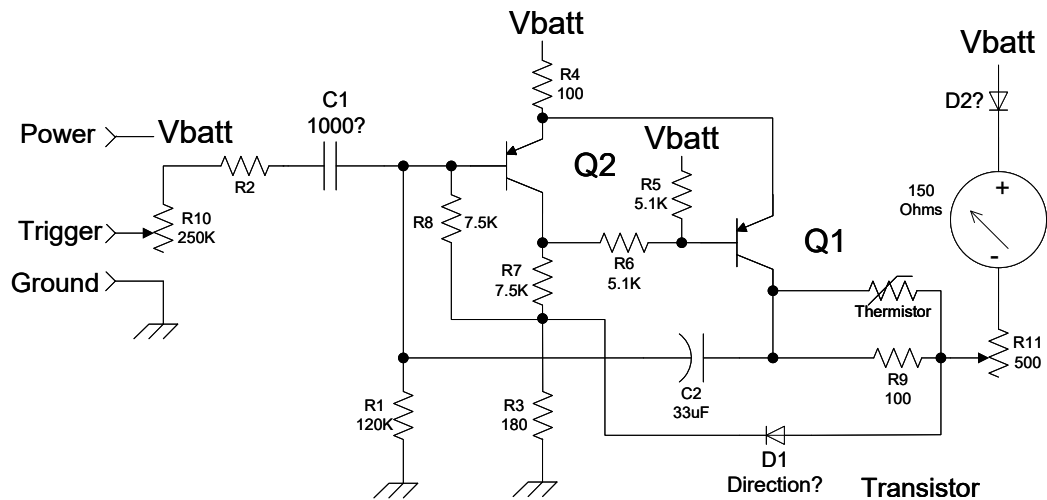
C1 is marked 1000, although no units, so I have no idea what it should be. C2 is marked 33uF. But both caps measured in the single digit nF range when measured in-circuit, which may not be accurate.

The ammeter measured 150 Ohms. Before I was able to try to characterize the meter, I accidentally screwed up the hairspring mechanism, eliminating any chance to repair this tachometer.

I had to refer the owner to Redline Gauge Works in Southern California. Redline replaces the electronics (including the meter) with modern electronics and a stepper motor, making the tachometer very reliable and accurate.

I hope this information is helpful for people who have Saab Sonnet II VDO tachometers or any other similar ones.

Mark Olson
Accutach Co.



Notes:

- Q1 and Q2 are Ge PNP transistors with 0.2V DB drop
- R10 not on PCB
- D1 direction is uncertain
- D2 is assumed to be a diode. It is in a metal transistor can with only 2 leads. Marked with "92" and Z7". Failed diode test
- Thermistor value unknown as colors are gone

