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Gauges out, Speedo repaired

👤 Willem Tell · ⌚ 43 minutes ago · 🗨️ None

Unwatch



Willem Tell

Active Member

Site Donor \$

43 minutes ago

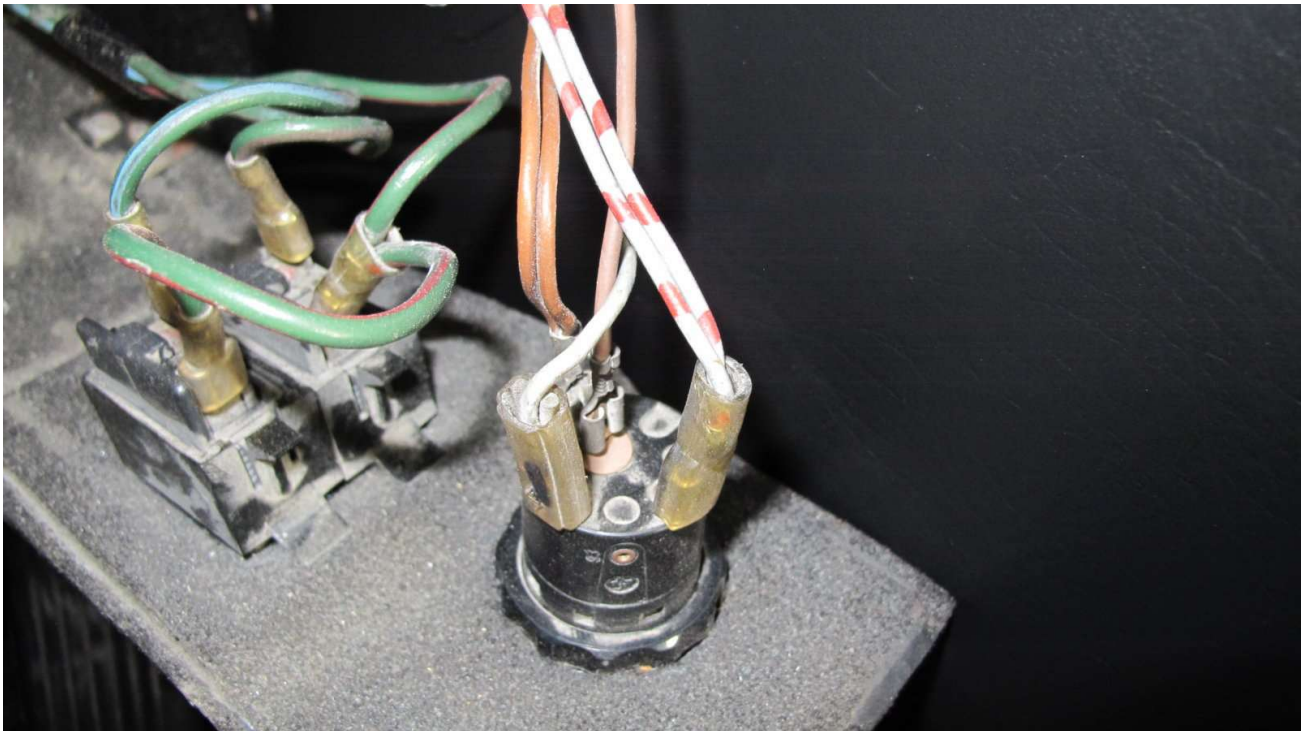
🔗 📌 #1

Hi All,

My speedo stopped working during a highway-speed jaunt a few weeks ago (stuck @ 80 KMH). Thanks to mthomson's write-up on dash removal, I summoned up the courage to take this on. Michael confirmed that he actually got his speedo out without pulling the whole dash, so I gave it a go.

I will include as many pictures as possible for those folks who pull a panel or gauge and miss a detail and need verification on connection pin-outs.

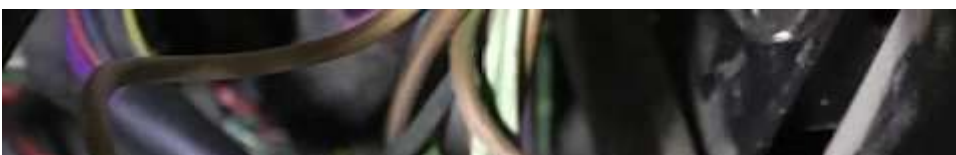
Pulling the panels left and right of the steering column. (right panel circuit breakers





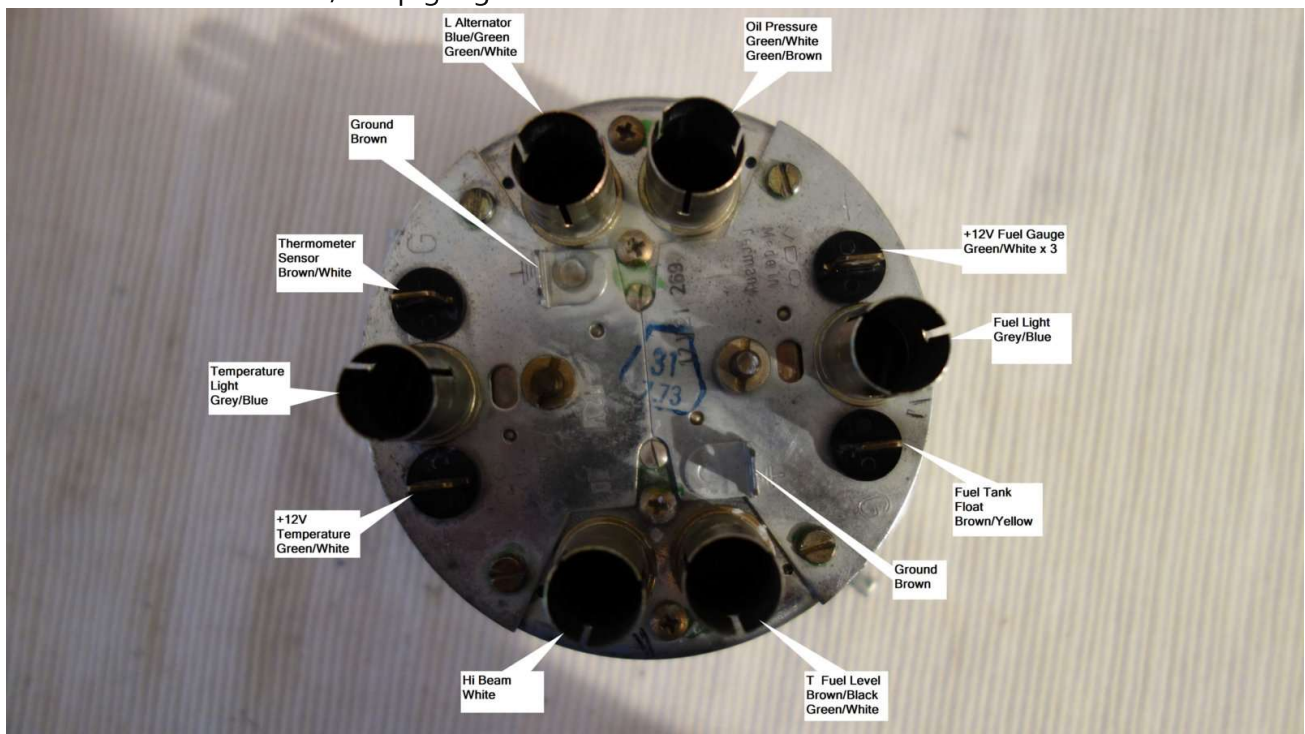
The knurled round nuts holding the gauges in place conveniently have a 7mm end facing out, so with much contorting to lay face-up, it is possible to get them started with a socket and take pressure off of the most accessible knobs on the lower side. It's only necessary to loosen the lower knurled nut. You can then rotate the gauge CCW to free it up from the wood panel.

Getting the fuel gauge out is easiest. There's plenty of room for that gauge to drop down and hang out of the way if it's the speedo you're looking to remove. If you disconnect the fuel/temp gauge, there are a number of connections. I disconnected one gauge at a time, and wrapped a rubber band around the connections to be able to distinguish them later.



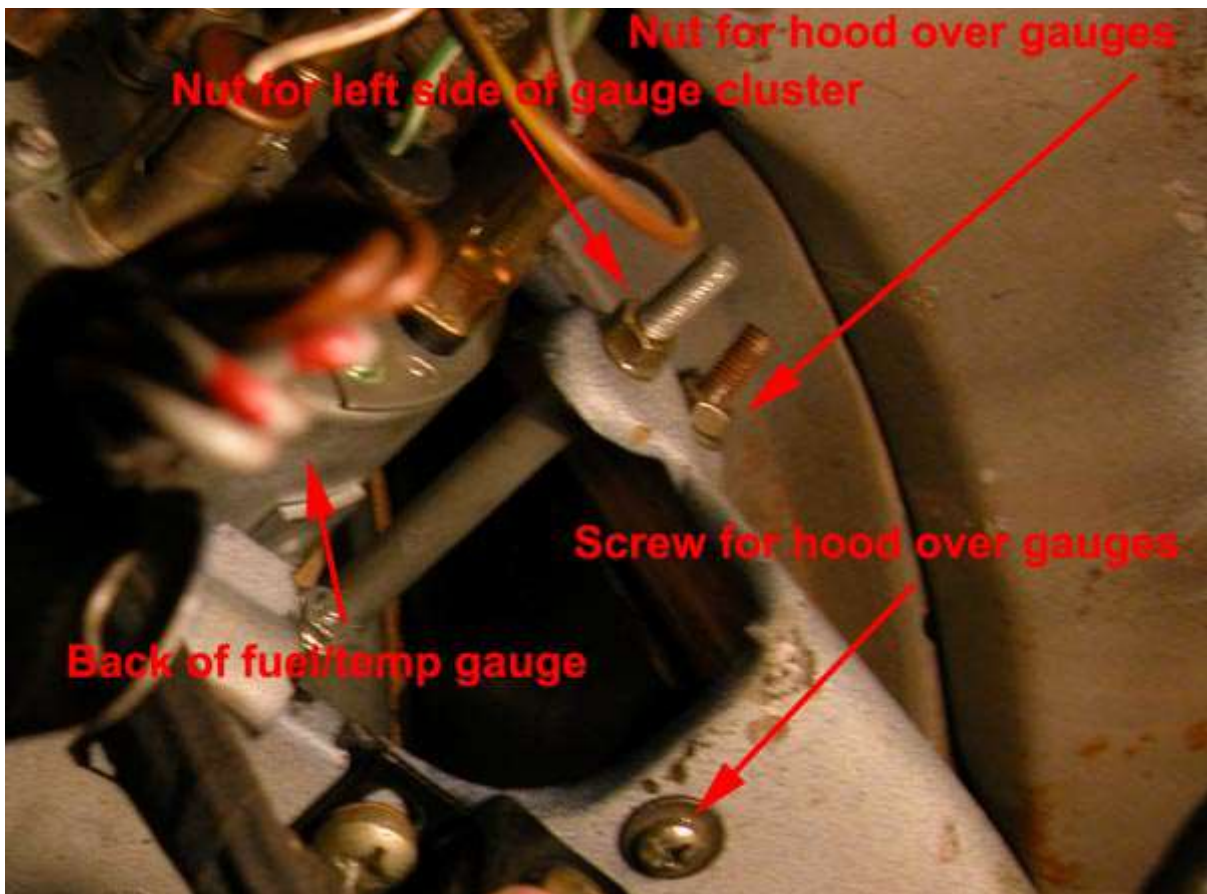


Connections for the Fuel/Temp gauge:

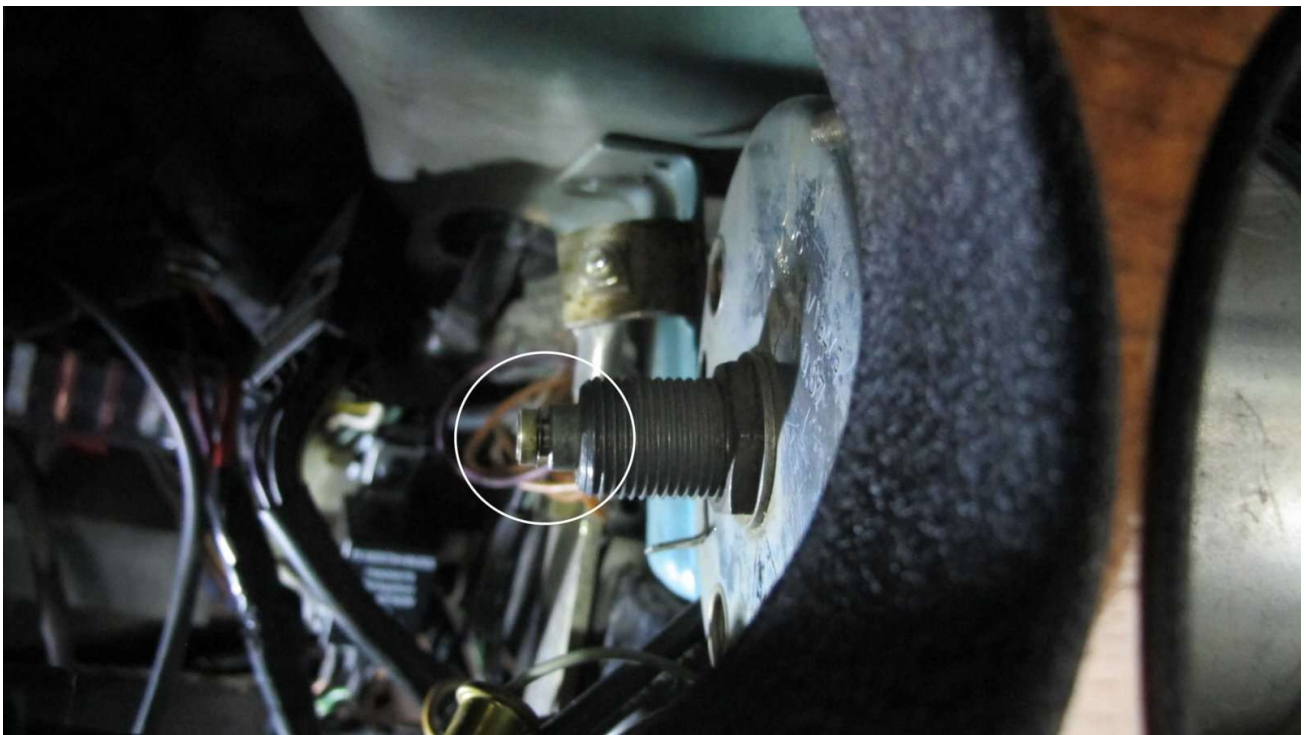


This image from mthompson was critical; if not for this, I would not have known to lift the hood and pull the wooden cluster face outward slightly:





I went after the speedo, and my speedo cable mounting nut was on pretty solid, but miraculously, I could sneak a medium channellock on there and break it loose. After loosening the lower knurled nut I could dismount the speedo. The failure mode was obvious before I even removed it; the shaft/weight in the speedo had become dislocated and caused the needle to hang up. There should only be 0.5mm of play there, max.



Having the speedo in hand, the shaft play was obvious:





The gauges on an E9 are different from those on a 2002, as they have rings formed around the body of the gauge, so they have to be coaxed off by deforming the ring. I used a hooked pick to start the process, but I mainly relied on my trusty bamboo chopstick.





This takes patience, working 'round and 'round to slowly deform the ring enough to slip it off to access the speedo:



I used a plastic cap to protect the needle when I removed the speedo from the body:



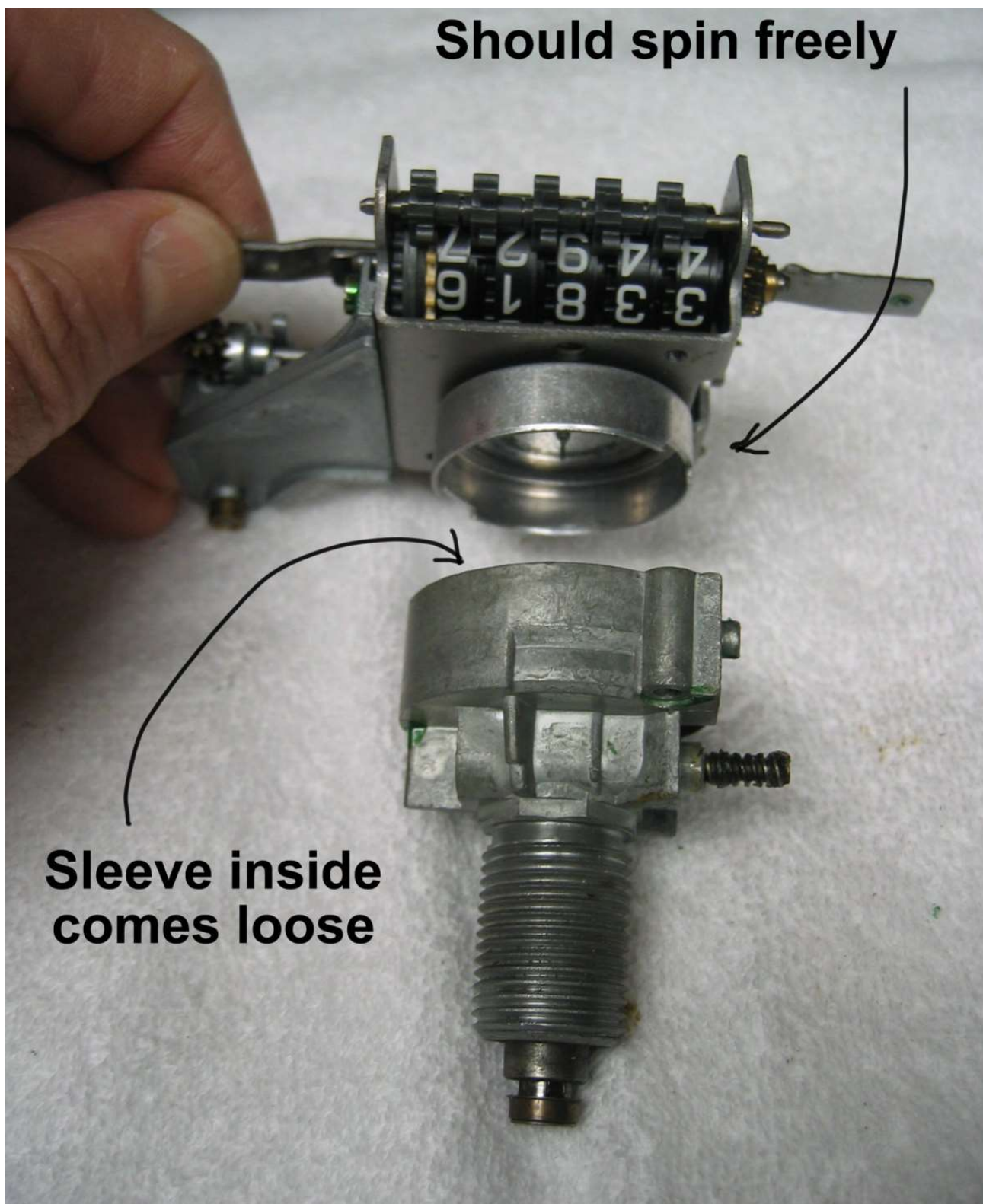


Sorry, but I forgot to take a photo of the the aluminum cup delicately attached to the needle with a light spring in between. The iron weight spins within the aluminum cup and creates magnetic eddy currents that cause the needle to deflect as the weight rotates. The faster the weight rotates, the more the cup/needle deflects against the spring.

This image is from PaulTWinterton on the BMW 2002 FAQ:

<https://www.bmw2002faq.com/forums/topic/242493-stickingerratic-speedo-needle-can-it-be-fixed/?tab=comments#comment-1340176>

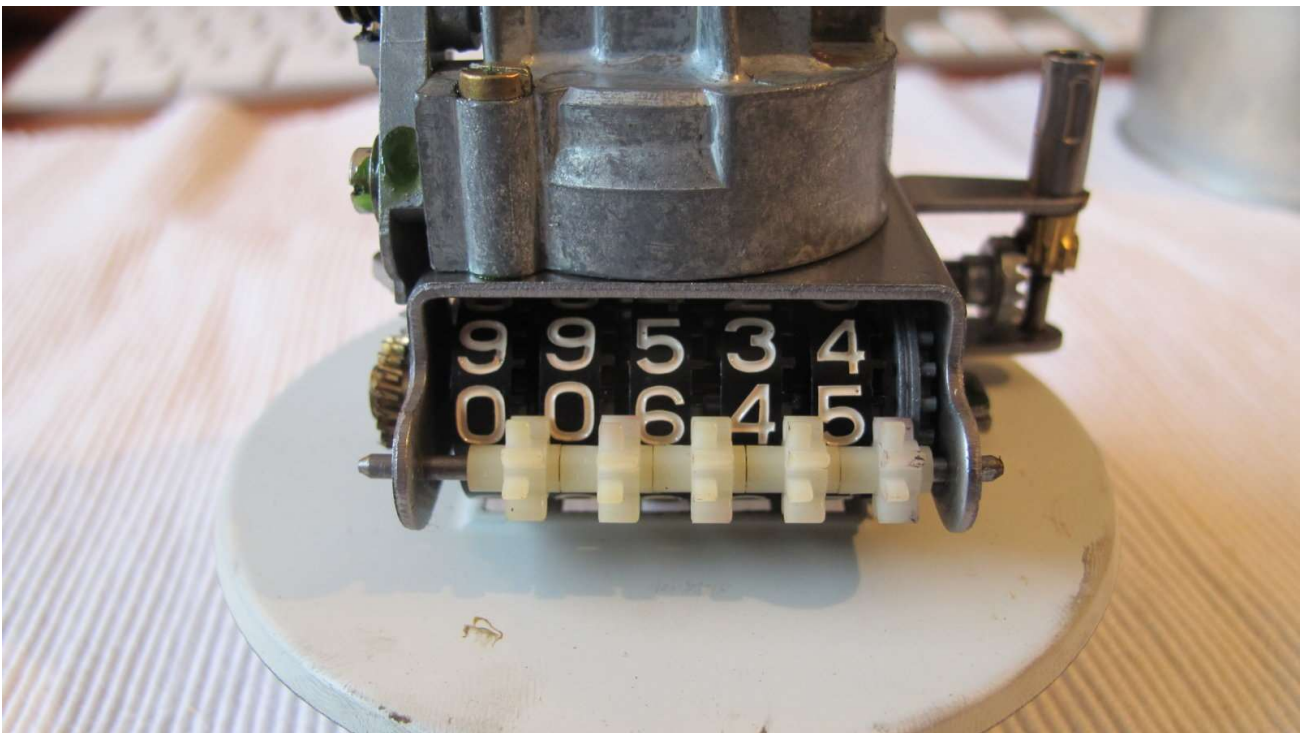
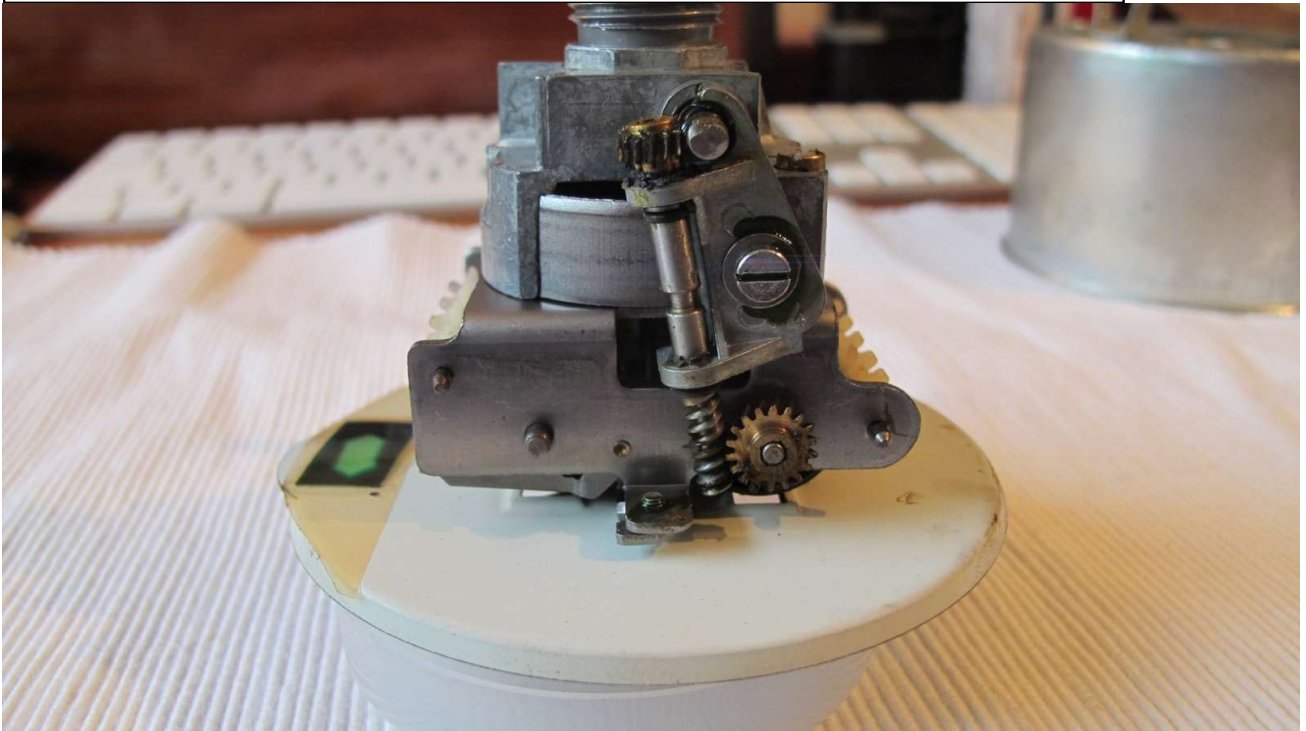


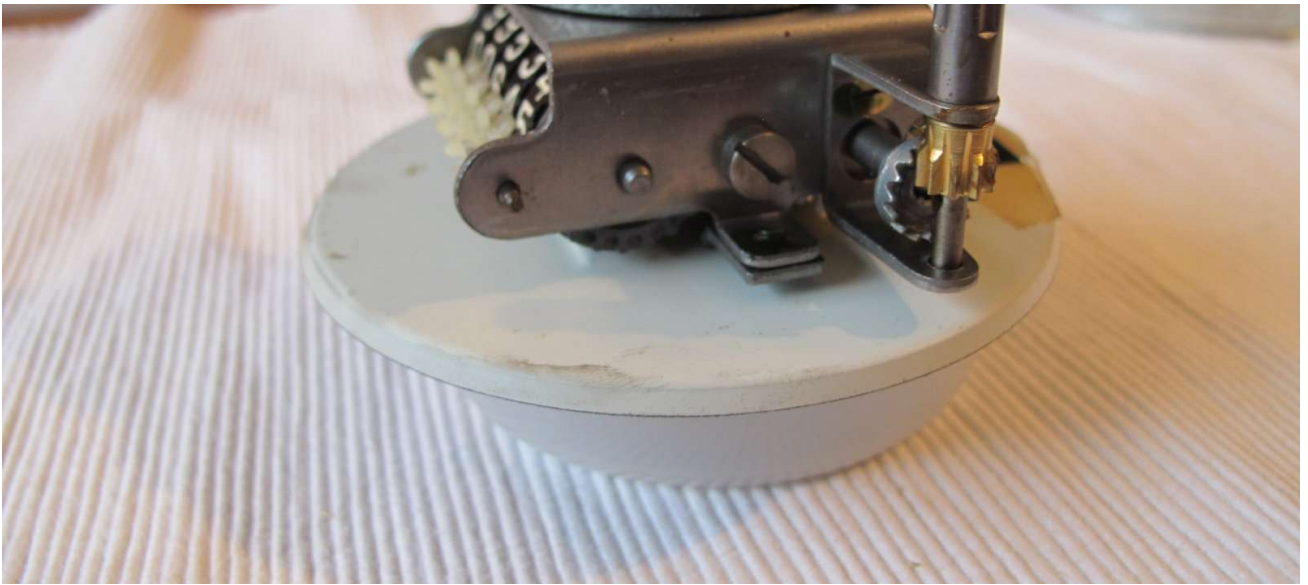


I followed this video from FunkyLaneO on the FAQ that shows how to repair the speedo:

SpeedoFix









Attachments



↩ Reply



Willem Tell

Active Member

Site Donor \$

<https://www.dropbox.com/sh/ynzk0gim0j7tyq/AAAtAvv00Dp30VQtrAa0m1ra?dl=0>

1972 BMW Inka 2002Tii "The Funmobile"

2 minutes ago

New #2

<https://www.dropbox.com/sh/aa2f38rv3thih2v/AAAr6hz2CrPEwmCPMDmu8t1Ka?dl=0>

1972 MBZ 280SE 4.5 "The Steffy Car"

https://www.dropbox.com/sh/5mihj0uwhuejqfn/AAD7VGJ5BjX:1aSqg_Qwxj1Xa?dl=0

2005 BMW 530i 40K miles...Why change for a new one?

Important note: Pay attention to how the speed odometer cable is routed so that you can route it the same way upon re-installation. This, and having the odometer cable pop out a few times caused the re-installation to be pretty trying.



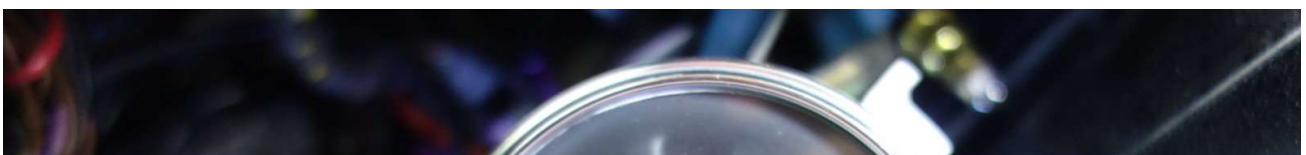


And make sure that the cable is seated correctly and the plastic mount fully seated when re-installing:





My Fuel/Temp gauge glass was so cloudy that I could hardly read the gauges:





This chrome ring is actually a bit more challenging than the speedo, but with patience, it yielded. It cleaned up pretty well:





I was encouraged by the results of these two gauges, so I decided to remove the tachometer and clock as well.







I didn't disassemble the clock, as it seems that somebody might have cleaned it in years past.

Interesting that my clock is different from Michael's. His is similar to a 2002 clock, mine has a metal body. It seems that they actually designed it so that the solder fuse could be repaired without disassembling the clock.





I noticed that this wire had been cut or broken, so I traced it out. It is the brown/grey wire from the brake fluid reservoir. It comes from the white connector behind the speedo. The brown cable with white connector is the e-brake line that appears to have been re-wired. It should also come through the same connector. They should join at the connector rear of the speedo, so I jumpered them together at this connector.





Unfortunately, the wire that was cut seems to be grounded somewhere on its path, so when I got everything back together, I found that it gave a brake fluid fault.

The brake fluid sensor itself is working correctly. By then I had all of the gauges installed and access to the connectors was blocked, so I ended up cutting the connection, but leaving enough wire to come back to it later.

Needless to say, I brushed and vacuumed all of these hard-to-reach areas while I had the gauges out, so all of that 45-year-old dust is gone!

All in all, a successful operation, so I buttoned everything up and treated myself to a nice drive in the mountains!

1973 BMW Turkis 3.0CSi "The Unicorn"

<https://www.dropbox.com/sh/ynzkbglholj7tyq/AAAttAVVOoDbSUVQtFAa8hnra?dl=0>

1972 BMW Inka 2002Tii "The Funmobile"

<https://www.dropbox.com/sh/aa2f38rv3thih2v/AAAr6hz2CrPEwmCPMDmu8t1Ka?dl=0>

1972 MBZ 280SE 4.5 "The Staff Car"

https://www.dropbox.com/sh/5mihj0uwhuejqfn/AAD7VGJ5BjX-1aSqr_Qwxj1Xa?dl=0

2005 BMW 530i "40K miles...Why change for a new one?"

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