



www.OdometerGears.com

Porsche 911 Gear and Pod Odometer Repair

<http://efinnegan.com/Porsche/Repair%20Maintenance%20and%20Miscellaneous%20info/odometer-rebuild.htm>
<http://p-car.com/diy/odometer/>

Please read the first few steps carefully as these are our most common questions we receive after a client has performed a repair and the odometer still does not work.

The reason the original gear or gears have failed is that they are made of urethane and lubricated with petroleum grease. This combination breaks down the urethane into a waxy substance which flakes and breaks away. This will also leave a waxy film and deposits on the shafts, gears, housing and peg on the pods.

** Work smart, meaning have a clean area to work and the proper tools to perform the repair. General tools that will be needed depending on the vehicle are small standard screwdriver, small Phillips screwdriver, assortment of torx drivers, diagonal cutters (dikes), 1/4" socket set are just a few of the items that may be needed.*

** No grease is needed with the new gears. Our gears are made using Celcon® which has graphite mixed into the material and does not require any additional lubricant.*

**** Make sure that you have blown the speedometer and odometer assembly clean with high pressure compressed air. Even if you think that you have found all of the broken pieces you still need to perform this step.***

**** Wipe the area around the gears, any shaft or shafts that the gears may ride on, the motor shaft and the peg on the pod that the small gear spins on clean, using a clean cloth and rubbing alcohol. Any residue left over from the old gears can allow the new gears to stick and not allow the odometer to work.***

**** On units that use a gear and pod combination: install the gears into the housing first and then install the motor assembly. Before installing the screws that secure the motor and circuit board use a small standard screw driver and rock the tenths digit of the odometer up and down. This will help to seat the gears into place and allow the motor assembly to seat fully.***

How to repair a broken odometer

Contributed by: Brian

After way too long of not having a working odometer and not wanting to shell out around \$200 bucks for someone else to do a simple job, I finally got around to fixing my Speedo/odometer unit.

DIFFICULTY: ~3 on a scale of 1 to 10. (Easier than an oil change on a 993.)

TIME to COMPETE: ~2 hours

COST: \$25 + \$4 USPS shipping (As of 6/2005)

RISK: Cost of new or used Speedo if you break this one.

DOWNTIME: You can drive your car without Speedo. No cruise control or speed controlled wing. (I think.)

TOOLS REQUIRED: Small (jewelers) regular screwdriver, small Phillips screwdriver, small to medium regular screwdriver.

BEERS REQUIRED: I drank 3... But was regulating a new keg... Old Dominion Ale. Very nice.

PROBLEM:

Your speedometer works, your odometer quit. Chances are your drive gear has given up. The popular story is that you hit the trip meter reset while the car was in motion. While it is entirely possible that that particular event was the event that caused the actual failure, the root cause lies at the VDO factory. The tiny, little, 15 tooth planetary gear that drives the odometer and trip meter from the Speedo sensor has turned into a soft jell like rubber over the years due to excessive heat and a corrosive oil lubricant that has turned that essential gear into mush. The separation of a couple teeth from that gear has been inevitable.

Your repair choices consist of sending it to a reputable Speedo shop and dump a couple hundred bucks into a rebuild and be sans Speedo for at least a week, or give it a run yourself. Replacing the gear is NOT that difficult. No crazy tools are needed. No special skills are needed. But it is risky. The most finicky point of the rebuild is dealing with removal and reinstall of the needle pointer onto its shaft. The shaft of the needle is tiny... very tiny. Break that and you are looking at replacing your Speedo. These aren't cheap Speedo's... the broken gear is.

NOTICE: This DIY procedure will NOT help you change the mileage on your odometer. The main assembly holding the numerical wheels in place is not easily opened. You will not be able to roll your odometer forward OR back. Trust me... I tried. I wanted to add a bunch of miles to get back to reality, but there is no easy way to get the numbers freewheeling. Furthermore, tampering with the mileage on your odometer is illegal... or something like that.

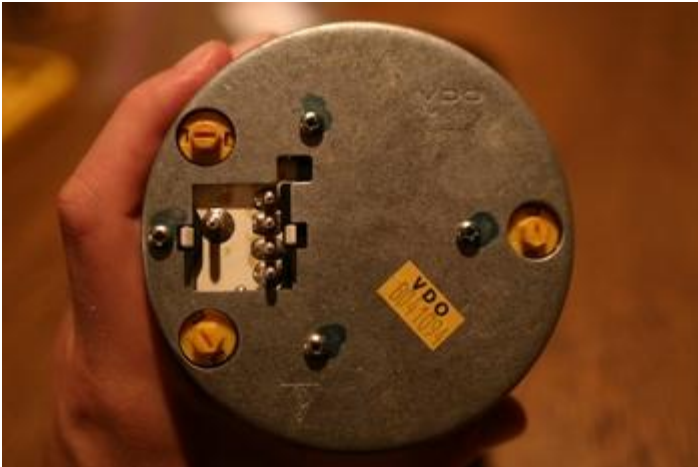
Anyway, I did this on my first attempt with relative ease and great success. Your results may vary. Don't attempt at home... unless you are willing to accept the risk of ruining your gauge.

STEP 1: Odometer Removal.

Using a cloth covered screwdriver, gently pry the speedometer out from your dashboard. The rubber ring around the edge comes out too so get under that with the flat screwdriver and pry out. Do NOT use the neighboring gauge as a leverage point. The black trim ring is very easily scratched. Once you get it started you should be able to get your hands on it and pull it out. Unplug the connector and head to a clean work area.

STEP 2: Disassembly

TRIM RING: Remove the rubber gripper retainer ring. Remove the 4 screws from the back of the unit.



Now the soft metal trim ring needs removed by gently prying around the entire edge of the assembly to bend/lift the edge over the lip of the outside housing. This isn't pretty, but go slow. Be careful not to scratch the ring beyond the lip. You won't see what you have done to it once the rubber retainer goes back on so don't worry about chewing it up a little bit. Keep slowly prying around the edge until it can be pulled out.



STEP 3: Trip meter reset button removal

There is a thick post over the thin post of the reset button. Support the button assembly below and pull the top off. This will take some pressure, but be sure to brace the assembly from below so you don't pull too hard on the lever where it clips to the drive gears.

Note where the shaft gets thinner... that is where it separates.



STEP 4: Speedometer needle removal

DO NOT PRY UP ON THE NEEDLE TO REMOVE! This is the trickiest part of the job. The needle is pressed onto a shaft that is extremely thin. It feels like a pretty tough metal, but you need to be careful here. Do not pull straight up. **Do not put any torque on the shaft.** Grip the speedometer needle at the center and rotate counter-clockwise, you may have to gently lift the needle above the needle stop, until it hits an internal stop. Gently continue to rotate the needle while also gently applying a small amount of upwards tension at the same time. The friction is all that is holding the needle to the shaft. Keep turning and applying a small amount of upwards tension until the needle comes off. **Do not force it.**

Note: See how small the shaft is:





STEP 5: Disassembly

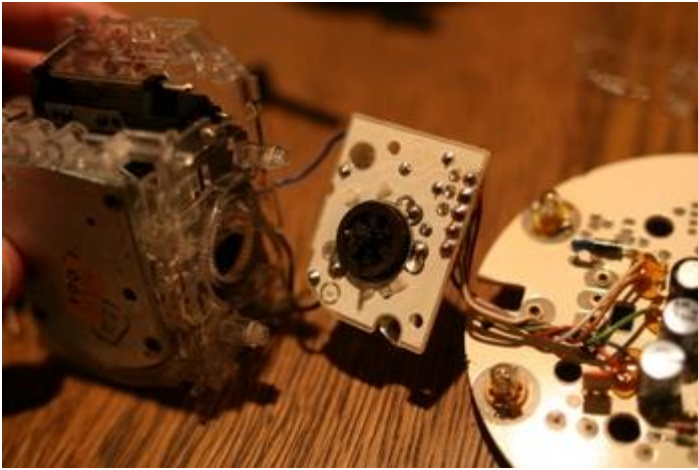
You've come this far, there is nothing stopping you now. Take the two screws out of the faceplate.



Remove the circuit board.



Remove the motor.



STEP 6: The guts

Once the motor comes out, you will get to the drive gear and pod. Inside the pod is going to be your broken gear. Replace it with your new gear.



See the broken gear - and its yellow decay - compared to the new gear.



STEP 7: Reassembly

This is completely reverse of everything else. Nothing is too tricky. Continue to take your time paying particular attention to the needle shaft. When reinstalling the Speedo needle, make sure you gently push down evenly on the center hub of the needle. Once it is in firm enough, use the stop points at max speed and 0 mph/kph to realign the needle with 0. Once everything is back together, also gently recompress the trim ring around the back of the Speedo housing. You could use a black permanent marker to cover any scratches. Plug the unit back into the dash and reinsert into your gauge opening. Hopefully all is now re-recording miles.

PARTS and BACKGROUND INFO:

The new gear cost me \$25 as of this writing in June, 2005. I found the gear at <http://www.odometergears.com/>. Jeff Caplan at Odometer Gears is a top notch, class act. I called there looking for help in isolating the part and he gave me spot on directions on how to get into the Speedo, what to watch out for, and what to do once in there. Once I got things figured out, he had a new part in the mail that same day. You can call him at 757-593-3478 or email him at sales@odometergears.com. My car is a '95 993 but I think all 964's, 968's and 993's will use the same 15 pin gear found when you hit the "Porsche" link at their web site at <http://www.odometergears.com/>. Check with him first if you aren't sure.

Again, this is a VERY easy job. Not easy like a tire change - but only because you are dealing with a delicate instrument. If you have big, clumsy hands, you might want to forego this exercise and send it to a pro. If you can be gentle with this, you should be ok.



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