

## Trip & Odometer Failure:

If you own a 911 Porsche model type 964 or 993 and you haven't had your Trip /Speedometer fail...read on,



Figure No. 1

as you'll need this "How To" real soon!

## Problem:

Your speedometer is working, but you notice your odometer and trip odometer are not moving to record your mileage. Chances are the small 15 tooth planetary gear that drives the odometer has lost one or more teeth due to the long-term contact with the lubricant VDO used for this gear. The lubricant turns the gear into a



Figure No. 2

soft "jello-like" rubber where the slightest pressure from the trip reset breaks a tooth off the gear. Now what?

Well, with an evening's attention you can repair it yourself and save the time and cost to ship it off to specialty shop. Here's a step-by-step procedure to remove, repair and reinstall your speedo:

## Step No. 1: Odometer Removal

The speedo is friction fit into the dash with a rubber gasket around the speedo. I used a nylon non-marring tool from Eastwood ([www.eastwood.com/12-pc-trim-tool-set.html](http://www.eastwood.com/12-pc-trim-tool-set.html)), (Figures Nos. 1&4). If you don't have a non-marring tool, you'll use a cloth-covered flat wide-blade screwdriver to gently pry out the speedo by carefully working all edges. Do NOT use the adjacent gauge as a leverage point as the black trim ring is easily scratched and

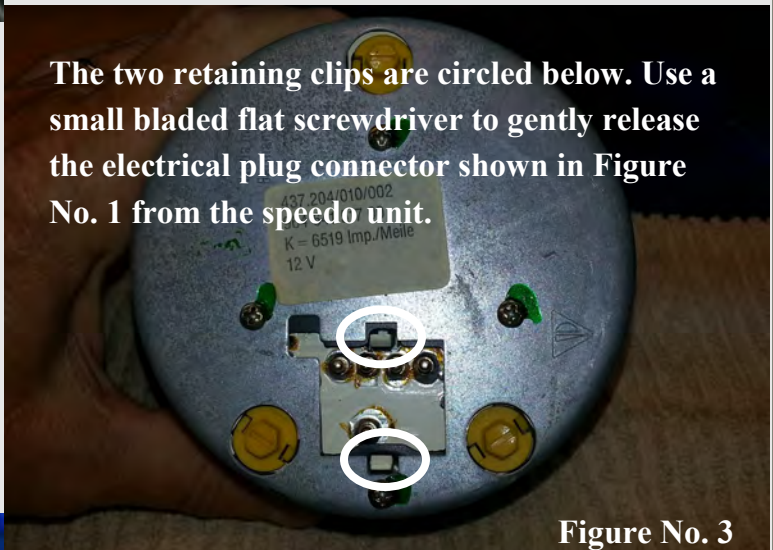


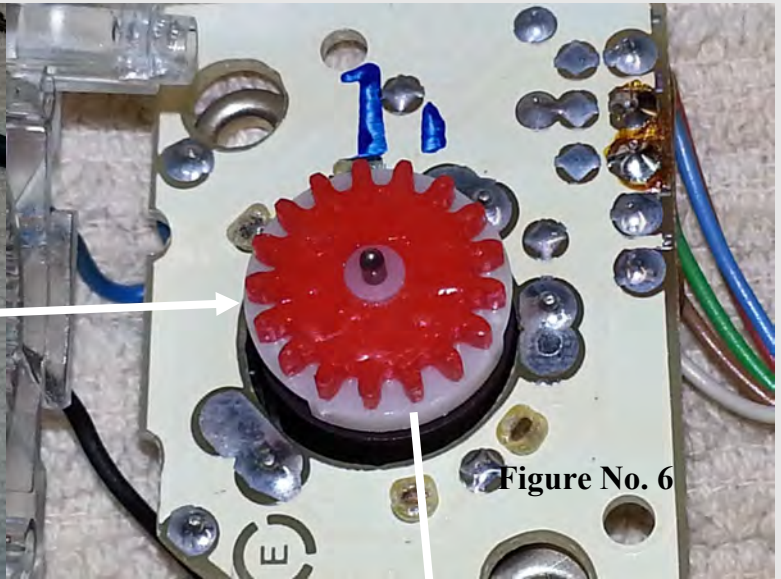
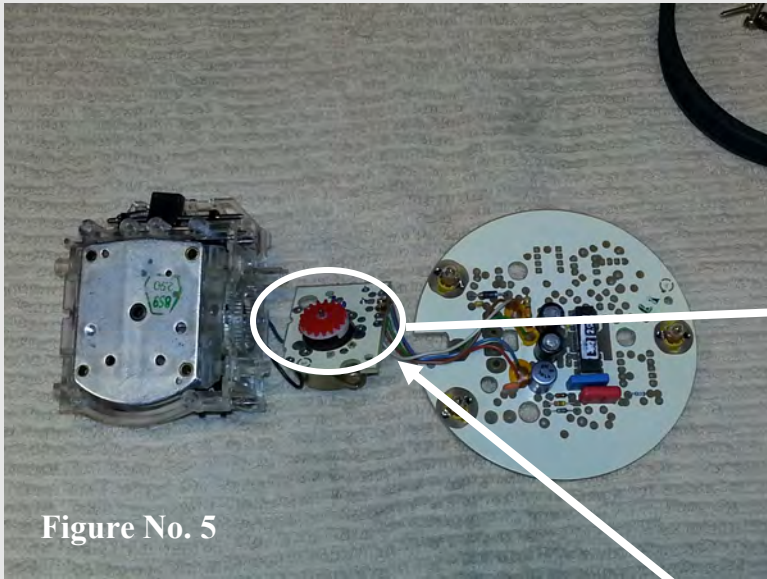
Figure No. 3



Figure No. 4



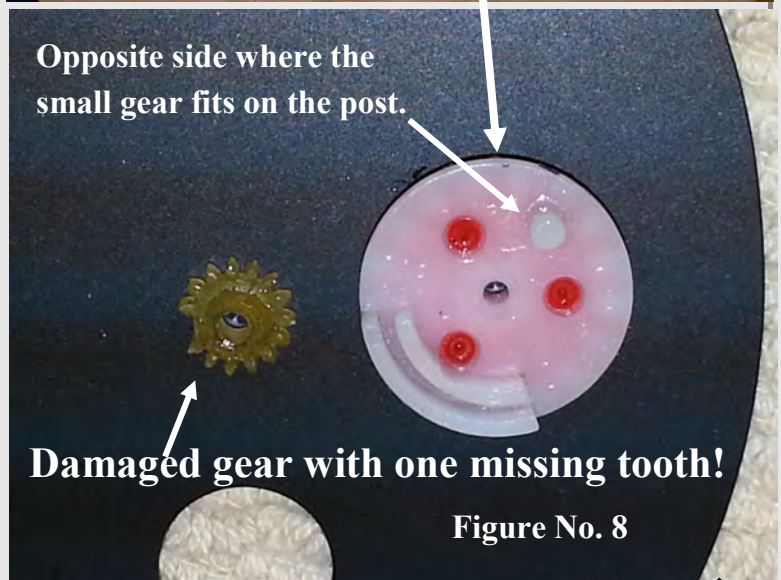
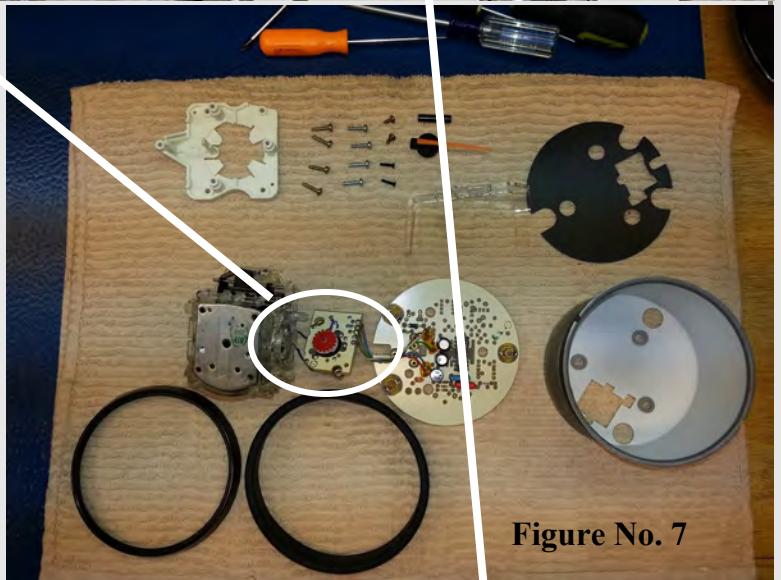
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and dented. Slowly work your tool around the outside perimeter to the speed gauge then use your two hands to wiggle the gauge back and forth until it's free of the opening. Do not pull to hard as there is an electrical plug connection at the rear of the speedo (Figure No. 3). Gently spread the two white retaining clips (Figure No. 3) at the rear of the speedo one at a time until the speedo is free from the cable. Now take the speedo to a clean work area.

## Step No. 2: Disassembly

Slid the rubber retaining gasket ring from the speedo. Remove each of the four 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 using a small flat blade screwdriver. This task must be done slow so that each rotation of your screwdriver lifts a small portion of the metal. Keep working around the entire metal retaining ring and be careful not to scratch the ring beyond the lip (Note: The metal edge that you worked on is not visible once you place the rubber retaining gasket back on the unit).





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Rear view of speedo



Figure No. 9

Front of speedo without lens and retaining ring



Figure No. 10

Keep slowly prying around the edge until you remove the front metal retaining ring.

### 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 (Figure No. 10).

### Step 4: Speedometer needle removal

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 HAVE to be careful here. Do not pull straight up. Do not put any torque on the shaft. Rotate the speedometer needle (Figure No. 12) clockwise until it hits a stop point then gently continue to rotate the needle while lifting up gently at the same time. The friction is all that is holding the needle to the shaft. Keep turning and prying until the needle comes off. Do not force it.

### Step 5: Disassembly

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

New (white) and old (brown) 15-tooth gear side-by-side for comparison. The old gear is soft as jello.

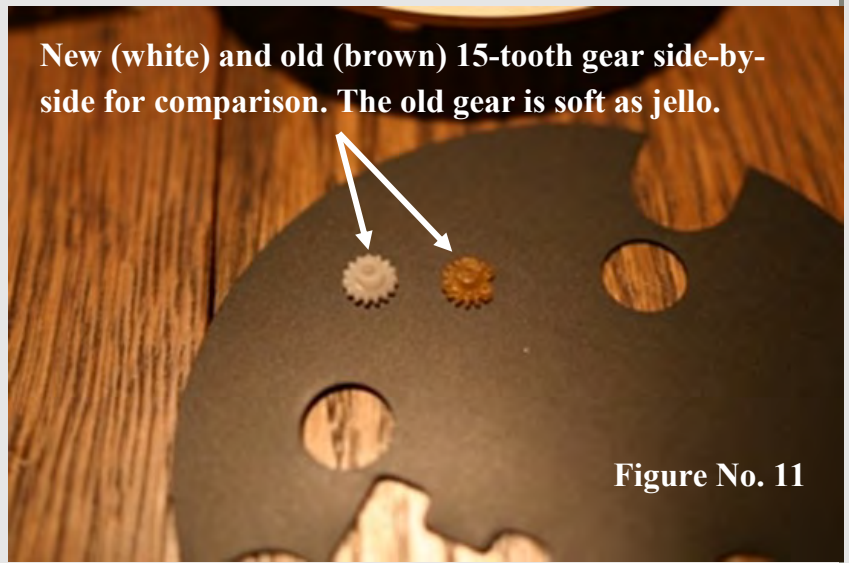


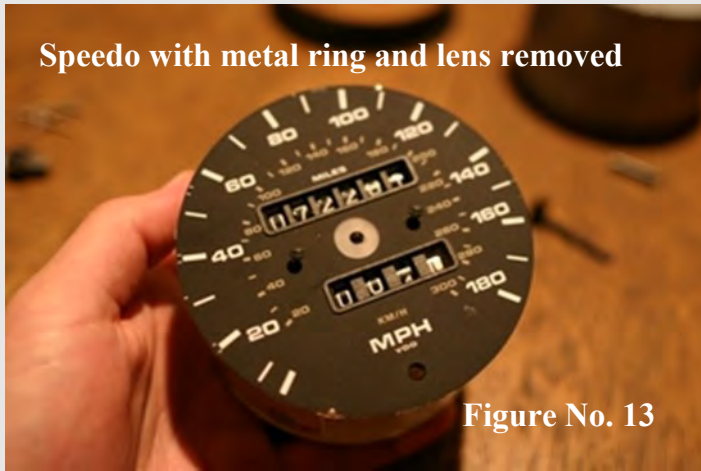
Figure No. 11

Speedo needle. Remove by center hub only, and NOT by needle.



Figure No. 12

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"Unstack" the speedo components (Figure No. 14). There are no wires to disconnect, as all internal components lift apart into a nice stack of three main elements.



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 rotate while gently pushing down. Never simply compress the needle onto the shaft. 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. Connect the electrical plug and insert the unit back into the dash opening. Use a little lubricant on the dash opening to assist with the reinsert. Hopefully all is now re-recording miles.

## Parts:

The new gear cost me \$25 and you can purchase it online from <http://www.odometergears.com/>. You'll need to count the teeth on the old gear before you order, as VDO made these gears with either 15 or 17 teeth. Mine was the 15-tooth variety.

This is a 3 out 10 task for complexity, so go order and fix your odometer!

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