



www.OdometerGears.com

The following is a list of common solutions to problems that we receive phone calls on after odometer gear or gears have been replaced:

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, housing and peg on the pods.

1. 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.
2. 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.
3. For VDO and MotoMeter units: the E1 gear is the gear that attaches to the stepper motor that drives the odometer. The original gear material would not allow the gear to hold firmly to the shaft and turn the odometer. This is why they molded the gear around the brass bushing. You need to remove this bushing in order to install the new gear. **(You are going to deform the bushing so that it can be removed. Wear safety glasses because the bushing can break and fly off)** with side cutters (dikes, wire cutters), squeeze brass fitting where small gear was across the diameter with a firm handshake grip. Then turn the shaft two clicks and repeat with a firm handshake grip. Put the tool down and remove the brass bushing with fingers. If it does not remove with your fingers, repeat using the side cutters until it comes off. **DO NOT USE ANY TOOLS** to pull the brass bushing off as this could damage the motor.
4. Make sure that you have blown the speedometer and odometer assembly clean with high pressure compressed air or compressed air in a can. If using the can of compressed air be sure to use the entire can to blow all areas clean. **Even if you think that you have found all of the broken pieces you still need to perform this step.**
5. 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.
6. 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

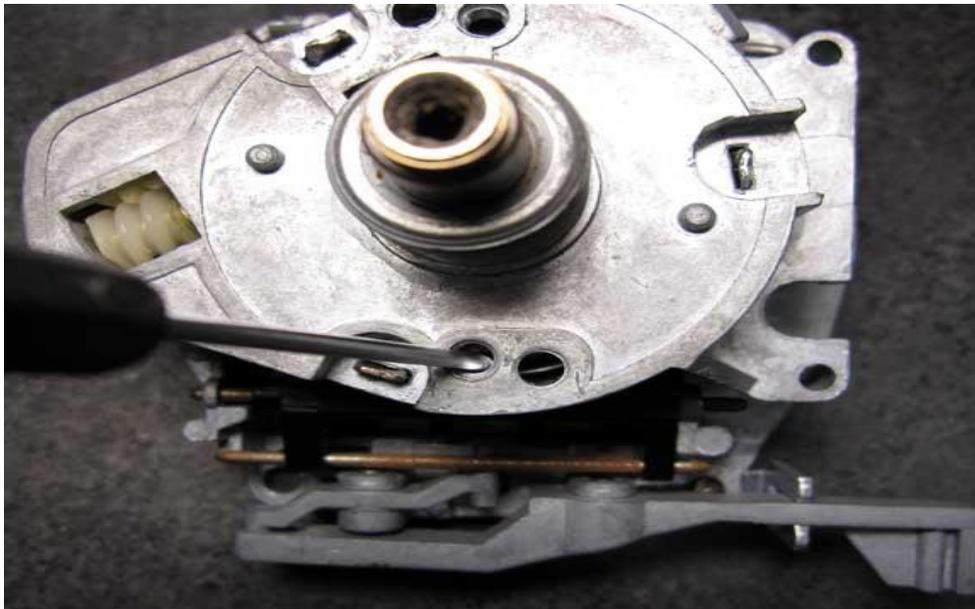
use a small standard screw driver and rock the tenths digit of the odometer up and down. This will help to seat the gears into place and allow the motor assembly to seat fully.

7. On some units you will need to remove the speedometer needle {Porsche, Mercedes 129 and 140 chassis and mechanical speedometers}.

Speedometer needle removal:

DO NOT PRY UP ON THE NEEDLE TO REMOVE!

Cable driven units: **Do not** pull straight up or at an angle. **Do not** put any torque on the shaft. The speedometer needle sits on a needle stop you will need to gently lift the needle above the stop and see where the needle points. Place a small piece of tape at the edge of the speedometer where the needle points to. From the rear of the speedometer install a small standard screwdriver between the speed cup and housing (see picture). This will lock the internal part of the speedometer. Rotate the speedometer needle left to right until the needle comes off.



Electronic units: 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 or at an angle. **Do not** put any torque on the shaft. Rotate the speedometer needle counter-clockwise until you feel the needle stop, this is the internal stop. Gently continue to rotate the needle counter-clockwise 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.