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# Mercedes-Benz 129 and 140 Odometer Repair

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***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.***

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Once the speedometer is removed from the cluster.



Carefully raise the tip of the needle over top of the needle stop. Place a mark where the needle points on the very edge of the face of the speedometer and this is where you will need to line the needle back to after the repair is completed.



Grip the needle at the center pivot point and rotate counter clockwise, you will feel some resistance as you turn the needle. **DO NOT PRY UP OR PULL UP ON THE NEEDLE!** This is normal as you are using the internal stop to help remove the needle. It is like you are unscrewing the needle and it will start to feel loose the more you twist the needle. You will get to a point that it feels very loose and at this point give the needle a very slight pinch and this will release the needle.



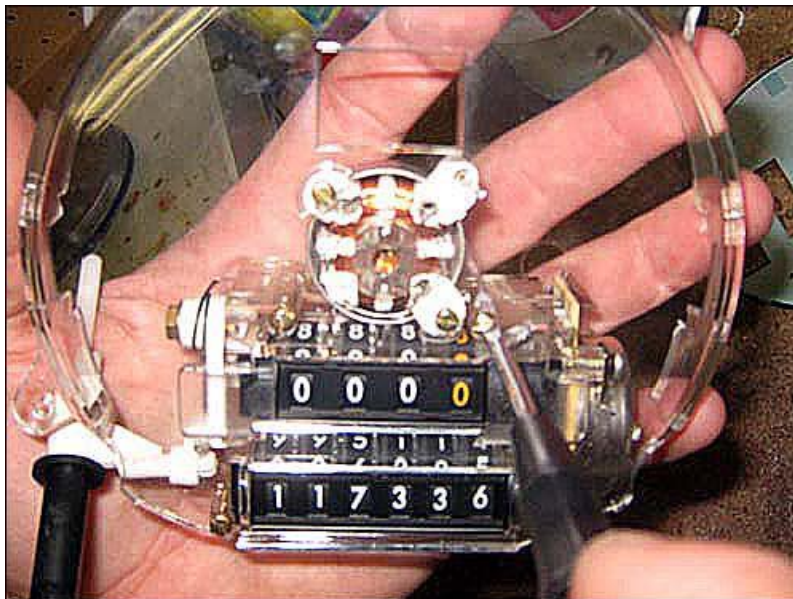
Next, start to peel the face plate off.



Once the face plate is mostly removed you will need to remove the needle stop. Place your fingers behind the numbered face plate around the needle stop. Apply upward pressure with one hand and you use the other hand to twist and pull out the stop. The plastic trim rings around the odometer and trip meter will pop out the same way.



Once the stop is removed you can remove the face plate. Be sure to place the face, face down on a soft surface. You will not need to use an additional adhesive to reinstall the face as long as you do not damage the glue. Use a small standard screw driver and remove the two screws that hold the face plate housing to the motor housing.



With the motor housing in hand, remove the two screws that secures the motor. You will see the broken gears. The smaller gear is a 15 tooth gear. The white plastic disc once you remove it will have a gear on the backside (this is what you will need a tooth count of before ordering to verify that you receive the correct pod). The tooth different tooth counts are 12, 15 or 16.



Remove old gears. Use shop air pressure to thoroughly blow out the odometer assembly to remove all old broken pieces (***Even if you see and remove the old broken pieces by hand make sure that you still blow the unit out with shop air.***) The majority of our phone calls are: I installed your gears and the odometer still does not work or it only works a few tenths of a mile and then stopped. In all instances they failed to thoroughly blow the odometer clean and go back to verify that nothing was left behind. Once they completed that step in **all** instances they repaired their odometer. You cannot use too much air or air pressure. Be sure to also blow and clean around the metal shaft that goes through the pod as this is the stepper motor and it also has a very tiny gear at the base of the shaft. Wipe grease from gear area, off motor and motor shaft. Install the new gears into the odometer unit. The new gears do not require any lubricant. Then place the motor back on the unit. Wiggle the 10/th's number dial to make sure the gears haven't locked up on each other.



Reverse order of steps to reassemble.

#### **To reinstall the needle:**

Place the needle on the motor shaft with the needle pointing to the mark you made on the face of the speedometer. Use both thumbs; press the needle straight down evenly at the pivot point. If you are not centered on your mark use the internal stop to help adjust. If you are too high rotate counter clockwise against the internal stop in small increments until aligned. If you are too low rotate the needle clockwise past the 160 mph mark and you will feel the internal stop, twist slightly past this stop in small increments and release the needle to see if it lines up with the mark. Once the needle is calibrated install the needle stop and gently lift the needle over the stop. Reinstall in the instrument cluster.



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