



# Disassembling Mercedes W123 Antenna Motor

If your antenna motor is not working you might as well open it up to see why! If you're lucky it can be repaired by replacing an internal gear or other item.

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## INTRODUCTION

The antenna motors on W123 cars tend to fail for a few reasons. Chief among them are the antenna mast jamming up, seizing the electric motor, or the internal gears that move the shaft break from lack of lubrication.

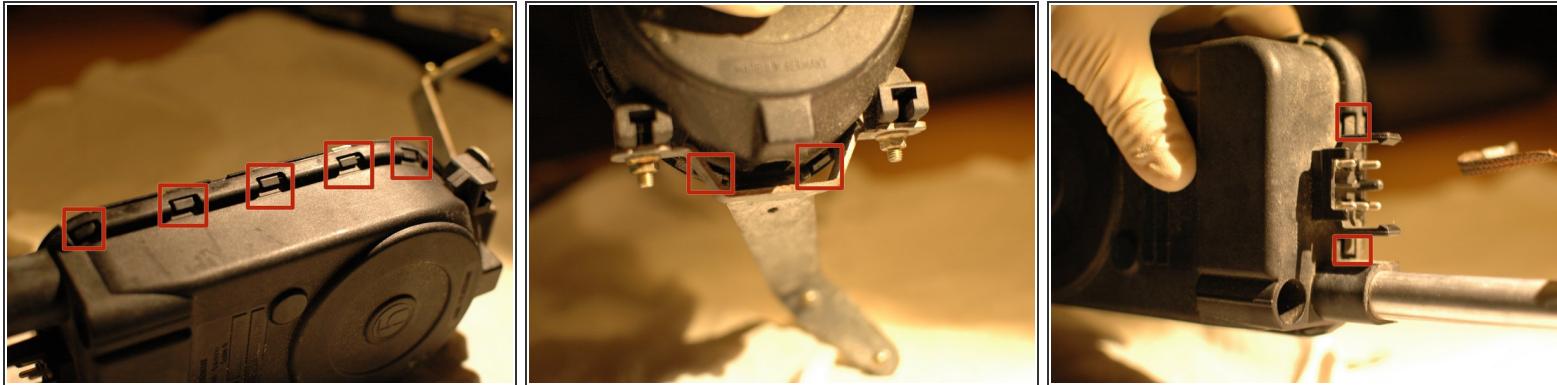
The motor used in this disassembly suffers from a jammed mast. After opening it, the plastic gears appear to be in good shape. They will be used to try and fix another motor that has a good mast, but likely broken gears, since the mast moves freely in the motor housing.

Learn to take your motor apart so you can diagnose its failure, and perhaps fix it.

## TOOLS:

- [Phillips #2 Screwdriver](#) (1)
- [Metal Spudger](#) (1)

## Step 1 — Antenna Motor



- Begin by un-clipping the motor housing cover.
- There are a total of fourteen clips. Five on each of the long side, and two on top and bottom of the housing.
- The plastic of the housing and lid is very durable, however the thin plastic where the clips enter is an exception. The odds are that you will crack some of these areas as you remove the lid. Do not fret, as the lid will stay closed even with just a few of the clips. The fact that there are fourteen speaks to the over-engineering at Mercedes Benz.

## Step 2



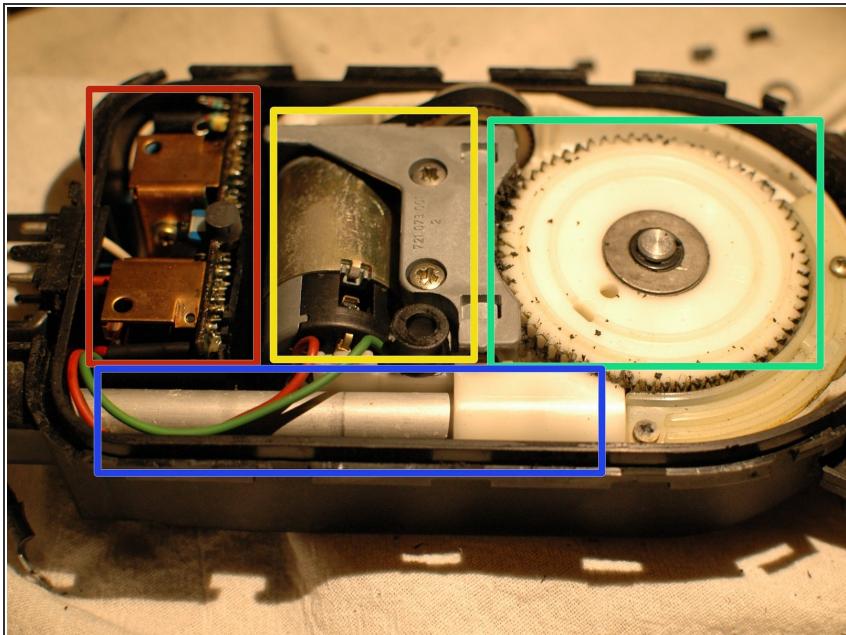
- As the clips come loose use a metal spudger to separate the cover from the body of the housing.
- It will eventually lift off and can be set aside.

## Step 3



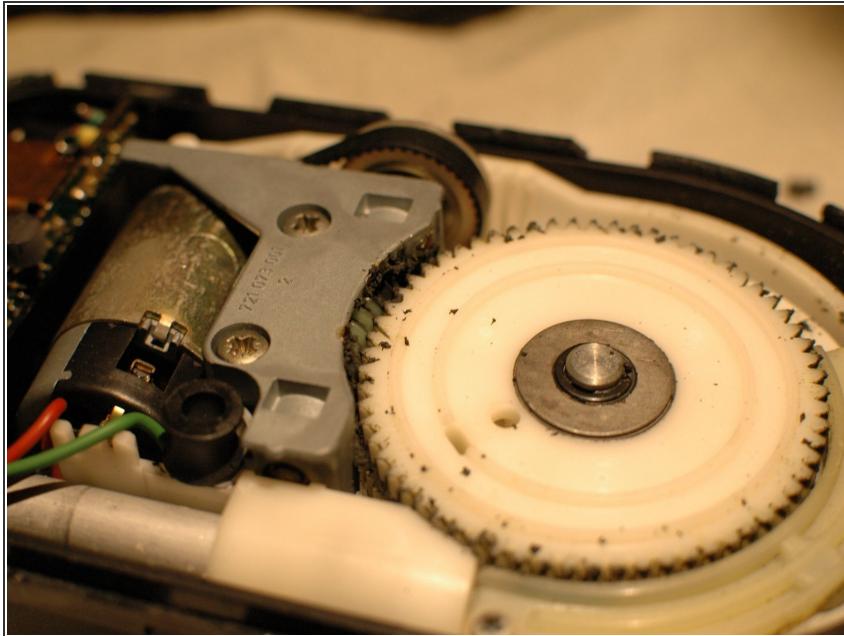
- Make note of the rubber seal that goes around the body of the motor in a channel, sealing the cover to the body. If this seal is old and dry rotted it will need to be replaced, or a proper liquid sealant will need to be used in its place, if the motor is being re-used.

## Step 4



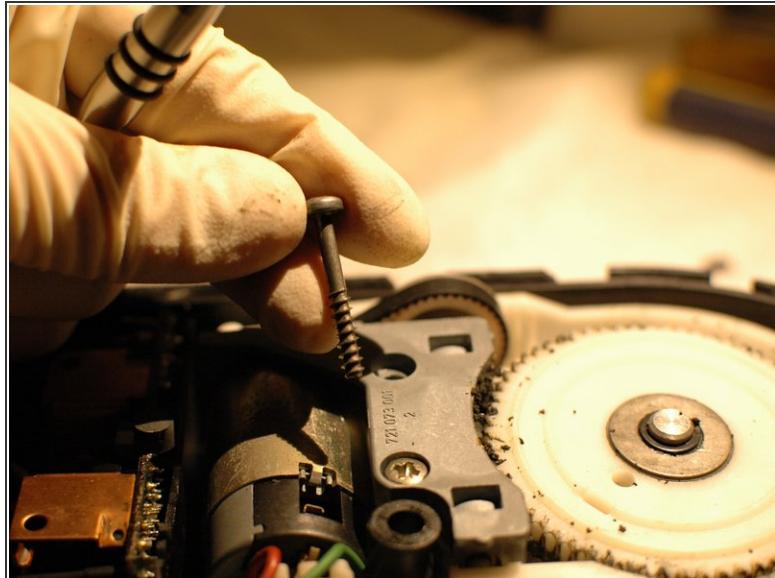
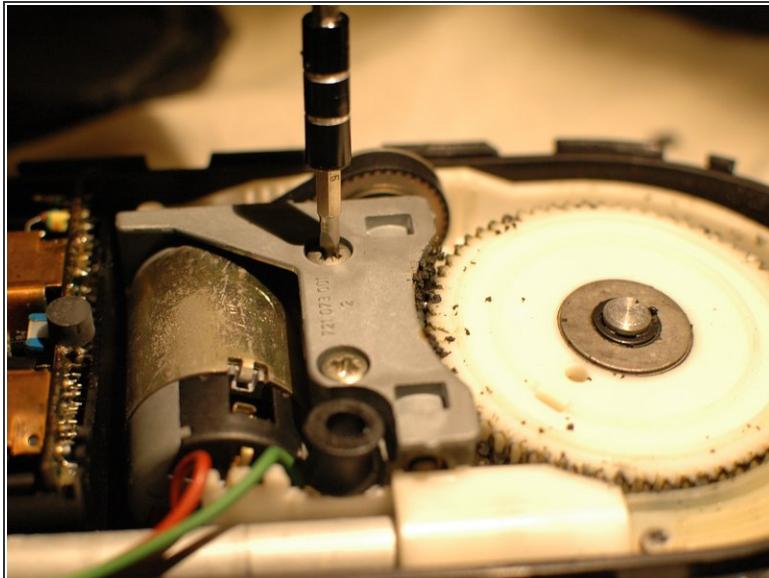
- The basic internal components of the motor are as follows:
  - Control board
  - Electric motor
  - Plastic drive gears
  - Antenna shaft
- To operate the antenna up and down, the electric motor turns in the appropriate direction which turns the worm gear. The worm gear turns the upper plastic drive gear. That spins the lower plastic gear which then moves the ribbed plastic cable inside the cable housing below the gears, all of which you will see later.

## Step 5



- You can see the accumulation of dirt and debris on these gears. If the antenna shaft had not seized it would only have been a matter of time before the gears wore or broke.

## Step 6



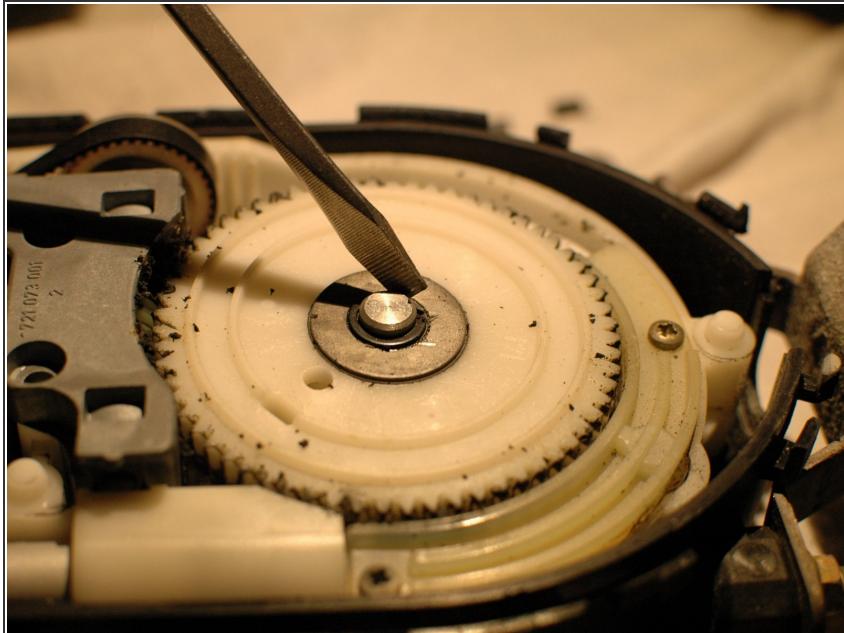
- Continue disassembly by unscrewing the two Phillips screws holding the electric motor in place.

## Step 7



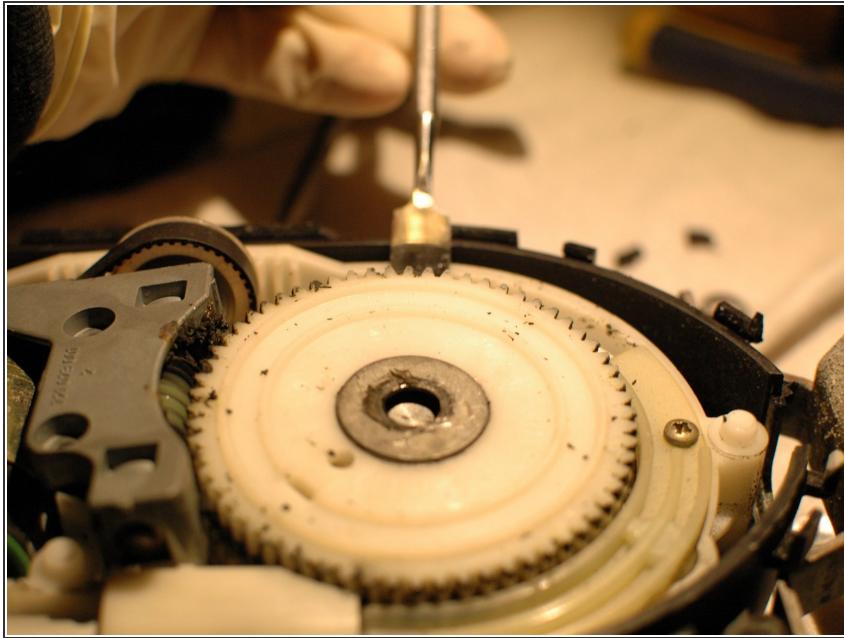
- Remove the two rubber buffers that keep the case cover separated properly from the motors and gears.

## Step 8



- Use a metal spudger or flat blade screwdriver to remove the c-clip holding the gears to the bushing and shaft.

## Step 9



- Use a metal spudger to gently begin lifting the gears from the shaft.

## Step 10



- As the gears begin to lift, the electric motor will likely pop loose. It can be rested off to the side; it is wired to the control board so it cannot be removed fully at this time.

## Step 11



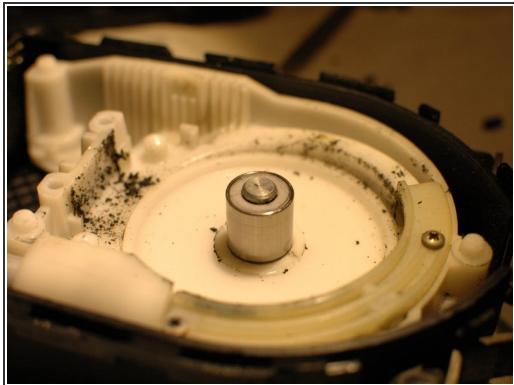
- Continue lifting the gears out of their housing until they are free.
- As you can see, there are actually two gears in the housing.

## Step 12



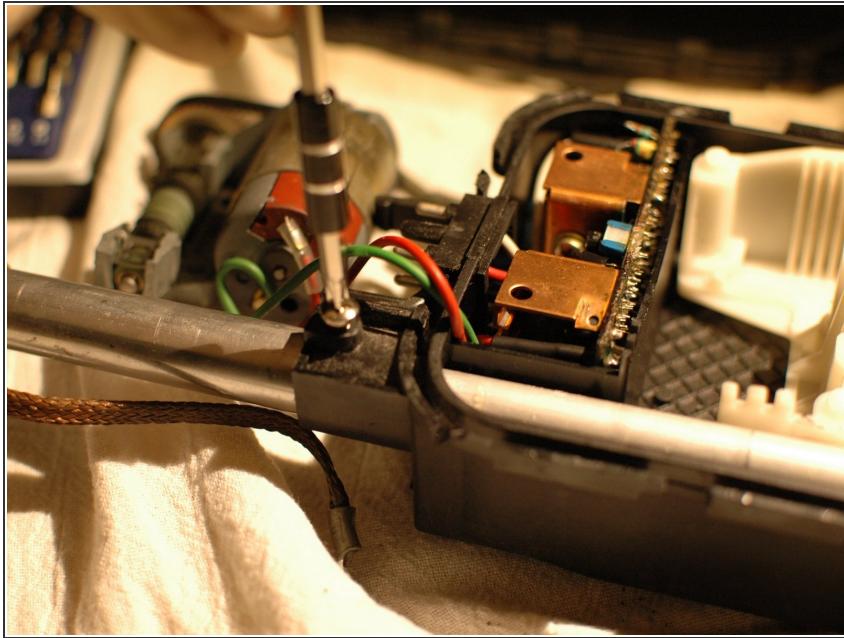
- The gears can be separated by simply pulling them apart with your hands.
- Make note of which gear is the upper gear, and of the alignment of the gears and the spring together.

## Step 13



- Lift the metal gear bushing up and off of the housing and set it aside.

## Step 14



- Unscrew the Phillips head screw that helps hold the antenna shaft to the body.

## Step 15



- Remove the outer sleeve on the shaft from the body by rotating it counter-clockwise.
- Once loose from the body it can be pulled up the antenna shaft and out of the way.

## Step 16



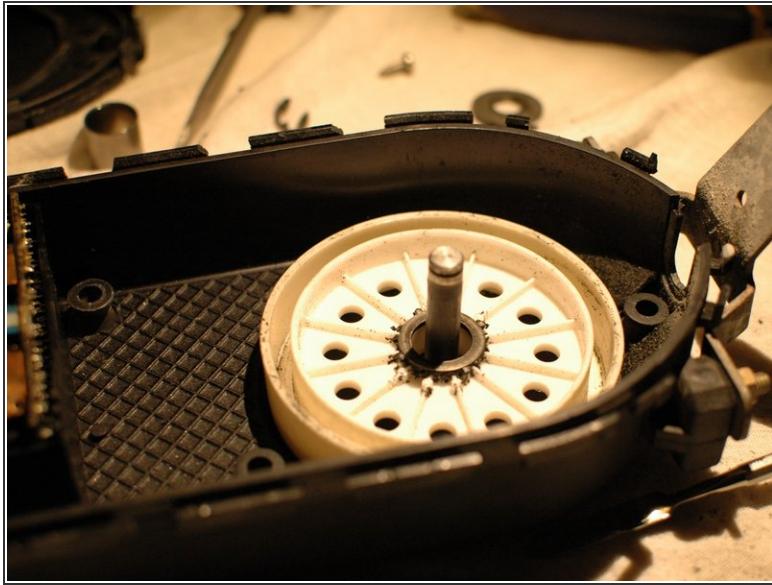
- Pull the ribbed plastic cable connected to the antenna shaft out of the body of the motor.

## Step 17



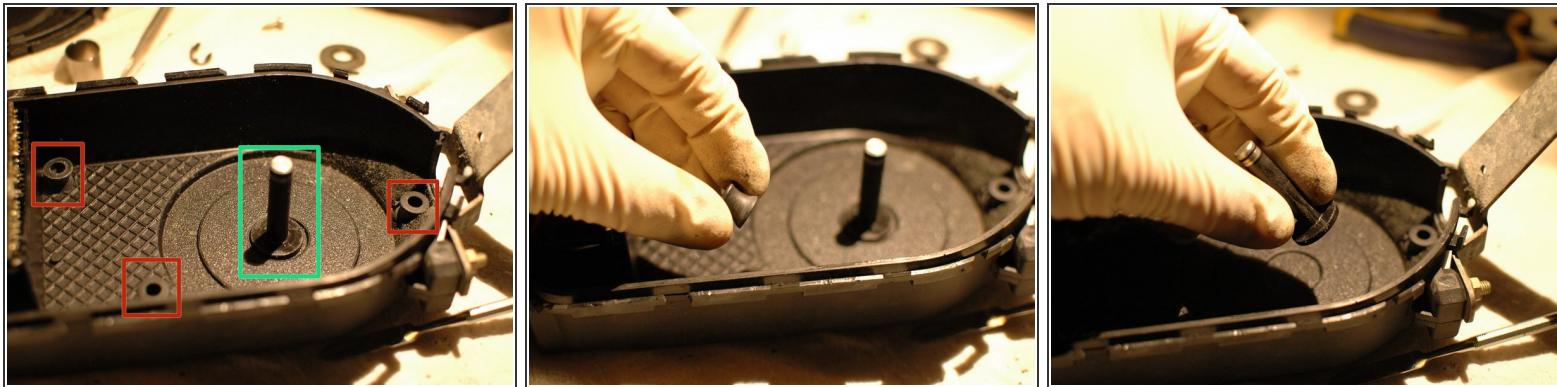
- Now you can remove the gear and cable housing. It seems to work best to rotate the housing up and in the direction of the antenna shaft opening before angling it up and pulling it out of the motor body.

## Step 18



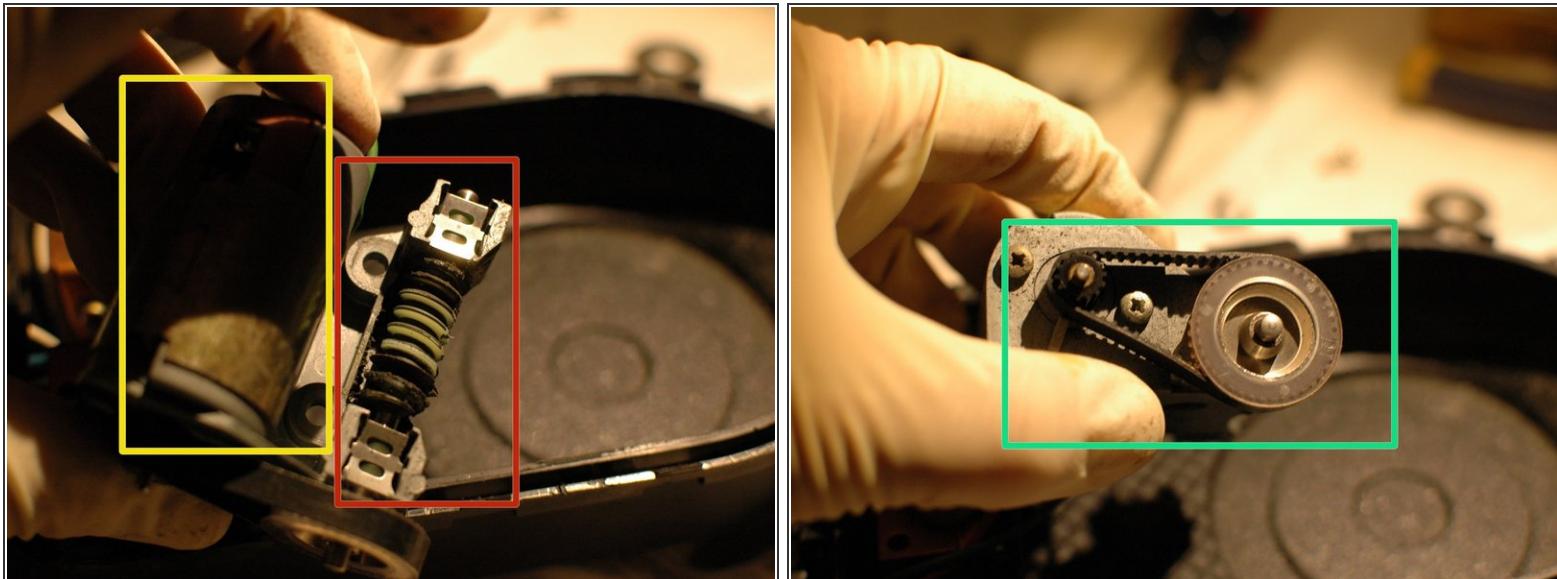
- This leaves the lower cable retainer in place.
- Lift it up and out.
- Note the thin metal washer at the center of this.

## Step 19



- Remove the three rubber buffers.
- Remove the gear shaft.

## Step 20



- You now have an empty motor housing, besides the control board.
- This disassembly does not cover the electric motor as everything is in plain sight.
  - Worm gear
  - Motor
  - Small belt driven pulleys for worm gear

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To reassemble your device, follow these instructions in reverse order.