
C2 Headlight Motor Rebuild by Alann Boatright

Before we get started, a big thank you is in order for the Author of this article. His name is Alann Boatright from Bailey Co. Alann is an artist and owns his own business, Primal Wear, a cycling apparel company. He is in the process of writing a book about the restoration of his 63' SWC. Alann has 3 more chapters to write before he publishes. The 3 remaining chapters are: Maiden Voyage, First Showing, and last but not least....Handling The First Chip. Sounds like a great book Alann! Thanks again for allowing us to publish your tech article in our chapter newsletter....



01.29.04

This is a task I was dreading. The headlight motor rebuild, could send them off for \$128 per motor, or do it myself. I decided to do it myself after Gary C from Castle Rock, Colorado sent me a set of.....



....instructions via the web. I met him on the Corvette Forum. We started out by checking on the condition of the electric motor. First remove the retaining ring from the rotating knob as shown in the previous picture.,,,



Next, remove the two bolts that hold the electric motor casing together.

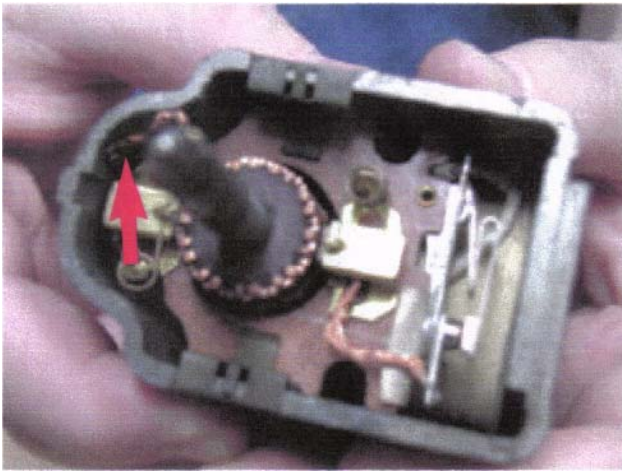


Pull the two sections apart. You may want to do this the opposite of how I show it here in case your "junk" wants to fall out. In my case it didn't, but it could have I suppose

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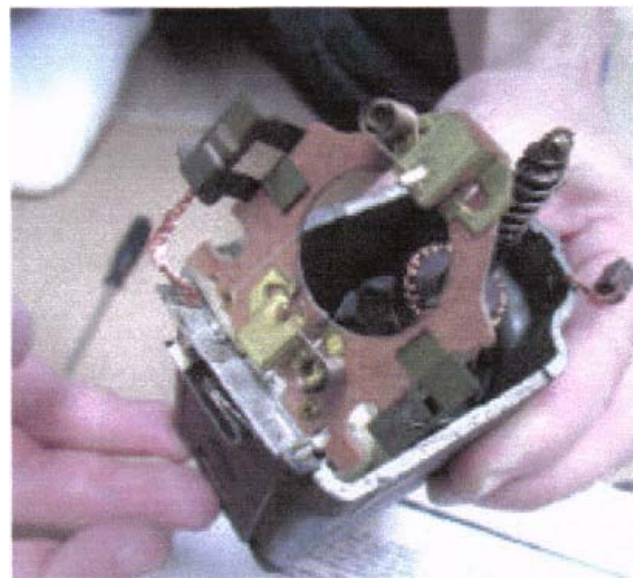
Here is a semi blurry shot of what you can expect to find inside. The arrow points to the brush that is soldered to the casing. Be careful not to break it off when removing the motor and other parts.



I show you this side of the housing because I can Made you look!



Remove the brush assembly by pressing up on the retaining clips as shown. Remember the one against the curved side is soldered to the housing

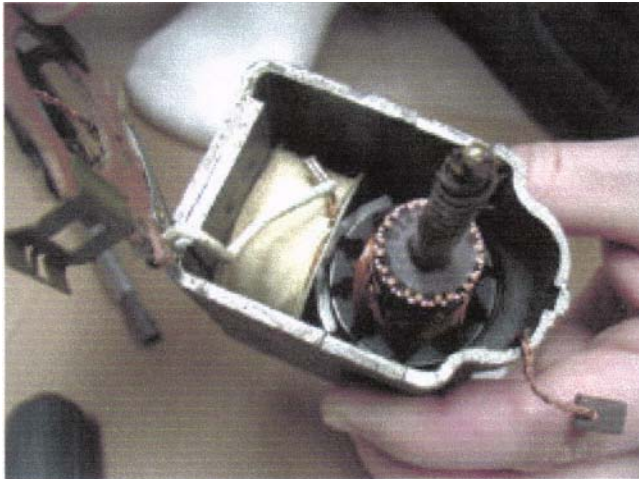


Do not fear the jack in the box brushes, they will spring out of their casing, but will stay attached via copper wire.

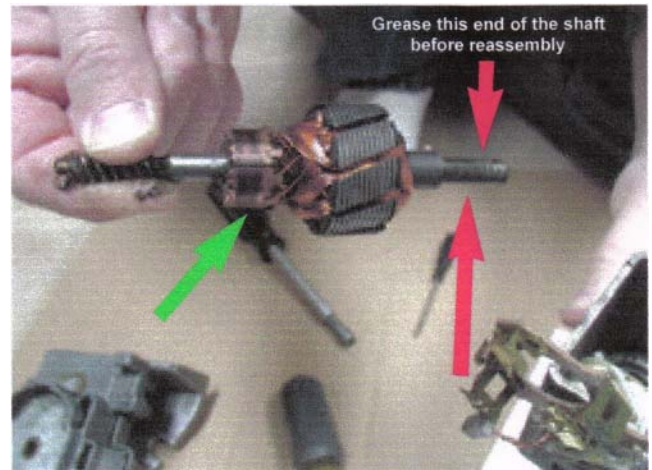
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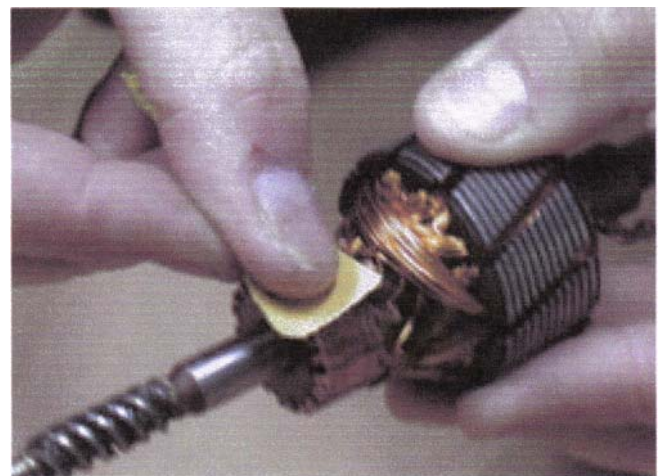
Once the brush assembly is out of the way you can remove the motor for inspection. If it is hesitant to come out **DO NOT FORCE IT**. Sand the end of the spindle that protrudes from the bottom of the casing (see arrow in next pic)



The reason for sanding the spindle is that corrosion may cause it to pull out of the bearing in the bottom of the housing and it is really hard to get it back in if it comes out. Notice the corrosion on the copper contacts (grn arrow)



Here is what is left inside the housing. If the part shown here is bad, you can start crying aloud. Nobody will think any less of you. GM no longer makes this part.



With really fine sand paper (I used 2000 grit) sand away any tarnish or corrosion on the contact area of the motor.

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Oooooohhh.....Aaaaaaa



Then clean any corrosion build up out of the scored lines on the contact area of the motor.



Next remove the four bolts that hold the gear section together. Most of the problems you are going to have are in here.

But, fear not....it is so easy it makes you want to file charges against those guys charging \$128 per motor to rebuild them.



Wa La! The gunk covered gears are now visible to the naked (or clothed) eye.

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This is the underside of the clam shell. Be sure to clean up all the old grease and goo because it may (IT WILL) contain bits and pieces of metal shavings.



You will find three washers, from left to right, 1 convex black metal washer, one thick silver metal washer, and one nylon washer. There are two gears. One shown here, and who knows what Kip has done with the other one.



You will find that most likely the teeth on your pot metal gear are now in the final stages of tooth decay and may even have gingivitis.

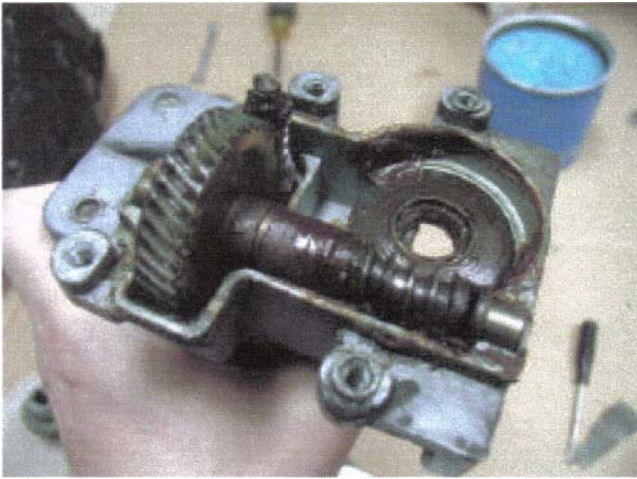


While the opposite side of the same pot metal gear is like brand spanking new. This is because the headlight movement from open to close only utilizes half of the gear's teeth.

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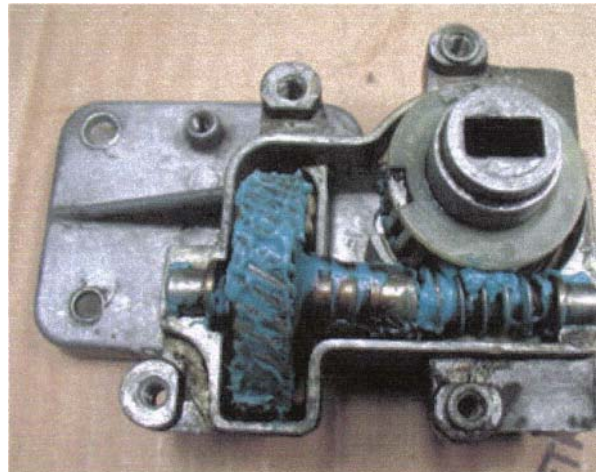
Note that the black curved washer faces curve up toward the removed pot metal gear. Next goes the silver metal washer, then the pot metal gear, then the nylon gear. Be sure to clean the old grease off of everything before reassembly.



At first I thought I was suppose to “flip” the gear 180 degrees which I soon found was not possible due to its construction. What you have to do, is rotate it in a circular fashion to put the bad teeth away from the worm gear.



Notice my really clean parts and housing. You will do well to clean your stuff thoroughly! After all cleanliness is next to godliness you know.

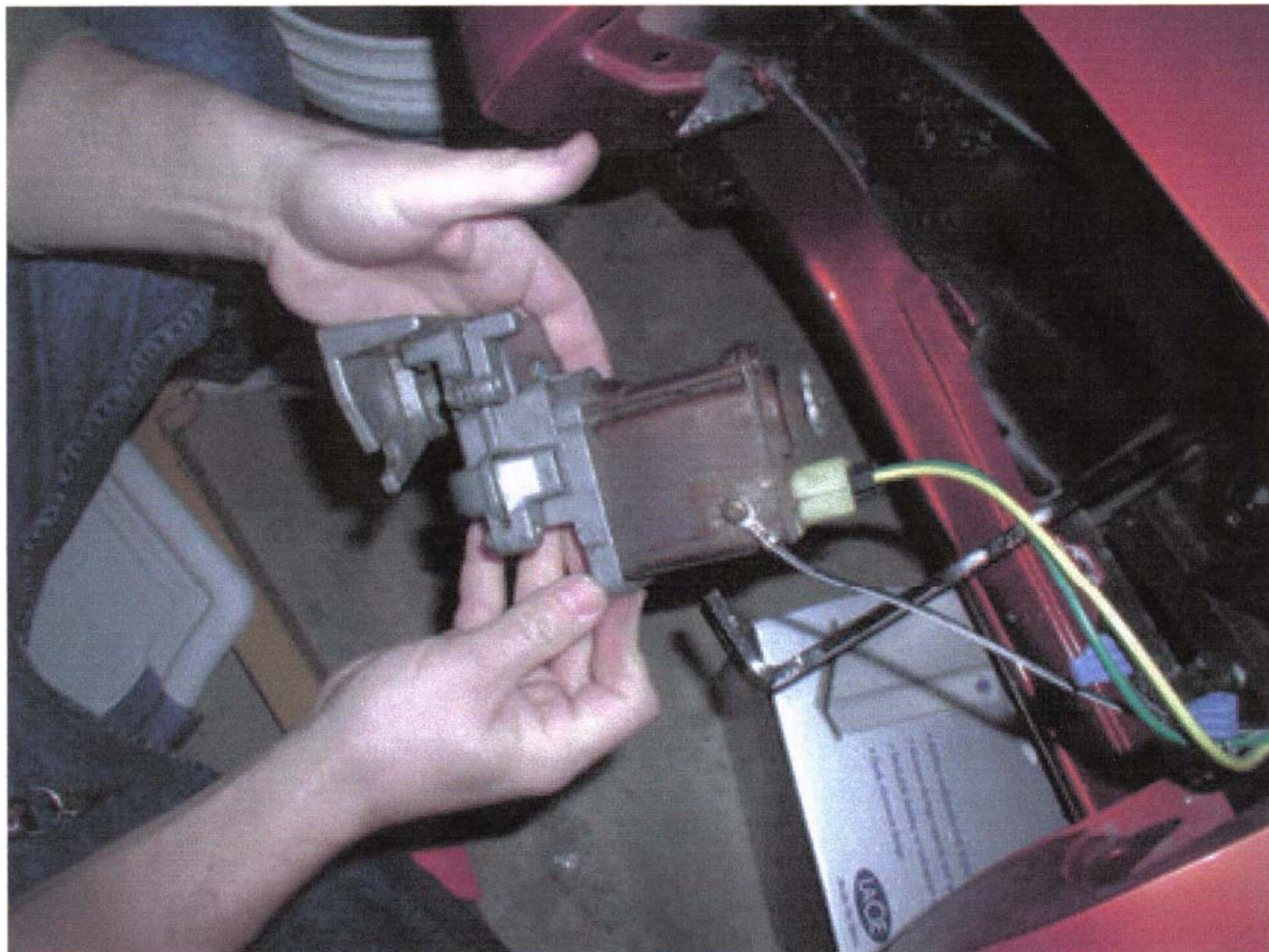


Grease it all, toss it back into the clam shell, seal it up. Mount it back to the motor portion (which you have already reassembled) and take it out to the car for a “test drive”.

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We took them out to the car and hooked them into the wiring harness for a quick test. They worked perfectly. One of the motors needed to be taken apart once again so that we could grease the bottom portion of the motor spindle where it passes through the bearing, but other than that it was far too easy to do.

In fact, the whole job was so easy to do that I actually had a difficult time falling asleep the night that I did my rebuild. I was so happy to have accomplished the task myself that I was wound up like a cheap watch and couldn't let it go. I wanted to get up and write it all down before I forgot. I wanted to sort through my pictures and even thought of making a short How To video. I dreamed about my headlights opening like switchblades upon demand.

I hope this has made your life easier. If you have any questions just drop me an eMail

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