

1965 Corvette Vent Window Regulator Rebuild

1/11/04 by Rob McPherson

I am finally to the stage in my restoration project to put the doors back together. That is major progress! As I was sorting through the box of parts marked "Door Pieces", I pulled out the vent window regulators. They were very dirty and the shaft would not turn. Not good. You can go to your favorite Corvette parts source and find new repop units for over \$200 or you can do what I did, rebuild them. I am a true gear head at heart and the thought of taking the regulators apart was just too tempting to resist. I present here the "gear head" method to fix you '63 to '67 vent regulator.

The problem with my regulators was they would not turn without excessive force and there was a significant amount of backlash in the window crank shaft. Upon further inspection, the metal plate (attached with peened over studs) was loose on one and ready to fall off on the other. My theory is that the closing action creates thrust against the plate and over time pushes loosens the rivets (don't crank it closed so tightly!). In addition the input shaft was rusty.



To take the regulator apart, first remove the metal plate by drilling out the peened over studs. Remove just enough material to get the plate off. Now you can pull out the worm gear and washers. To get at the sector gear, you will need to remove the round metal plate. This is easily accomplished by bending back the deformed material with a pair of pliers. Remove the sector gear and washers. Now you can clean everything and inspect the individual pieces. Wire brush or bead blast the steel shaft but not the aluminum gear.



The problems I found are as follows: The grease was hard and gummy. The housing was slightly deformed evident by the bore where the sector gear plate fits not being round. The worm drive retaining plate was loose on the rivets creating excessive backlash. The sector gear had the last 2 teeth worn and deformed. No problem. We can fix this stuff.

Housing refurbishment: File down rivet studs to thickness of plate. Then drill and tap for #10-32 screws. I believe this will be a better solution than the original as the screws will not allow the plate to work loose over time. You can carefully squeeze the housing in vise to make sector gear bore round (approximately).

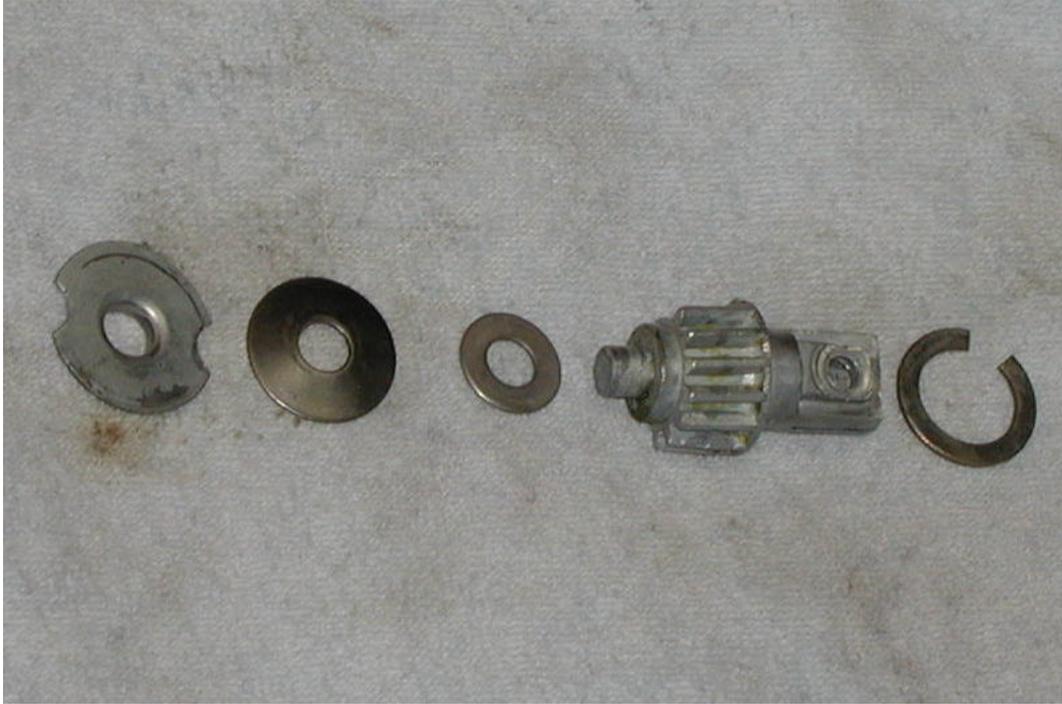


Sector gear refurbishment: I straighten the bent sector gear teeth using aluminum punch (1/4" aluminum rod) and a small hammer – this is not a precision gear! You cannot fix the tooth wear, but this should not create a noticeable issues with the rebuilt unit.

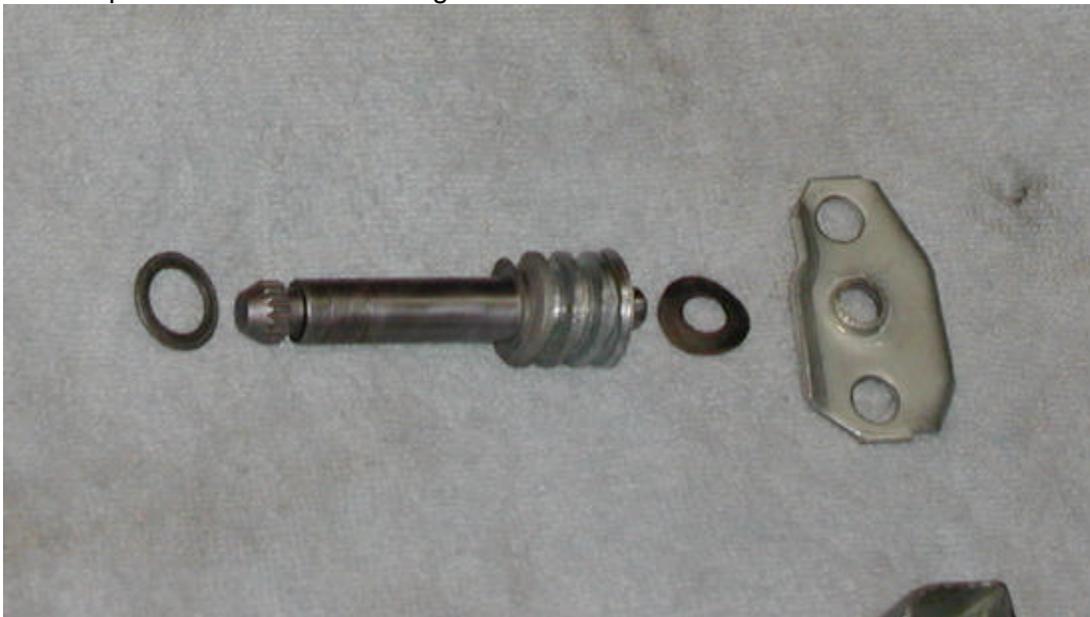


Now for assembly: Grease all gear teeth and bearing surfaces with lithium. Install sector gear, thrust washers and spring washers. Squeeze the assembly together lightly using 2 sockets in vise (just enough to compress the wave washer) and stake over the housing lip in 4 places with

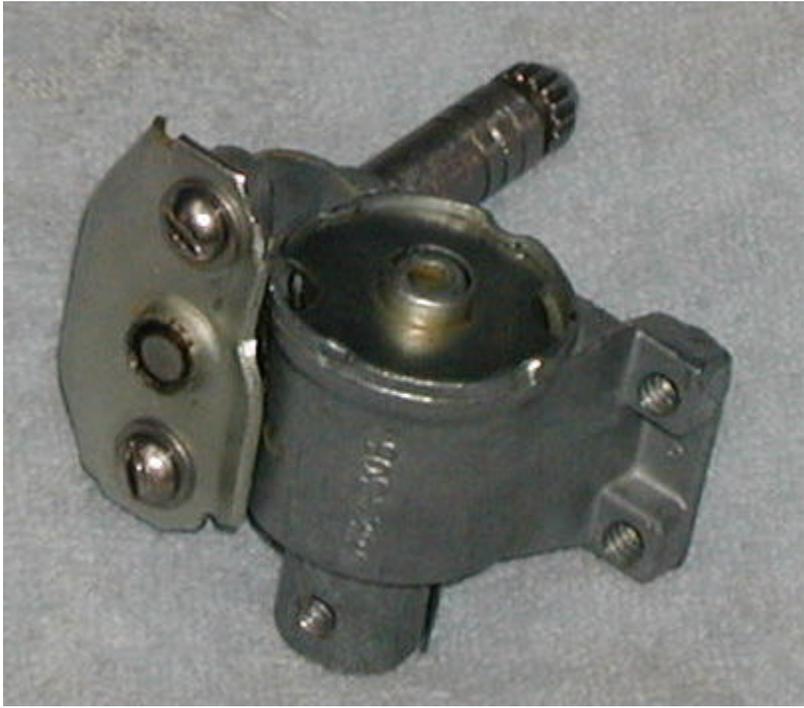
blunt punch or chisel. Make sure it turns freely – you can loosen it up with a tap on the end and a big diameter socket supporting the housing.



Install worm, thrust washers and spring washer in the housing meshing with the sector gear. Attach the plate with two #10-32 screws and flat washers. The screws should be tightened so that the plate contacts the housing. Use locktite on the screws to secure for the next 30 years.



Test the completed assembly for free operation throughout the full range. Attach the vent window crank for the appropriate operator feel. It should be like new... and you saved some money. Corvette Restoration is easy if you just buy all new or repop parts, but the real fun is fixing the original pieces.



Then there was the headlight motor gearbox and gear run out problem ...

