1988 - 1996 Corvette: Technical Instructions: Headlight Motor Gear Replacement

Below are instructions from Mid America Motorworks and Ecklers detailing the steps necessary to replace the headlight motor gear bushings on 1988 - 1996 Corvettes:

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88-96 HEADLIGHT MOTOR DELRIN BUSHING INSTALLATION INSTRUCTIONS P/N 29304

1. Remove headlamp motor from car.

2. Remove the gear housing cap by removing the three gear housing screws. (Fig. 1)

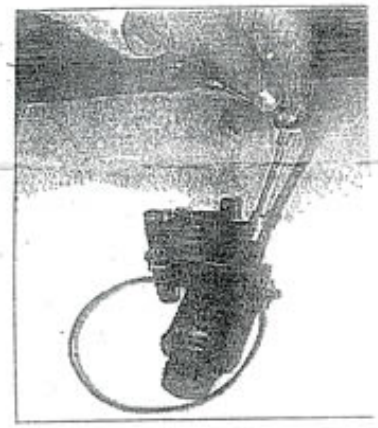

FIG. 1

3. Using a large slothead screwdriver, loosen the worm gear adjusting screw by 1 1/2 to 2 turns (remember the number of turns, **Do Not Remove**) (Fig. 2)

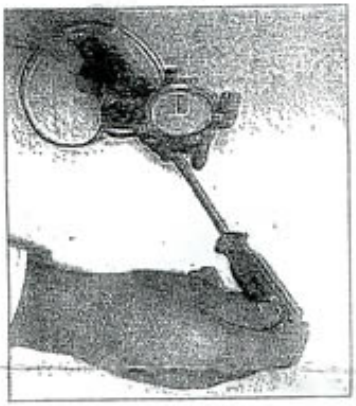

FIG. 2

4. Loosen, but Do Not Remove the two motor housing screws. **Caution: DO NOT completely seperate the motor housing from the gear housing – you may not be able to re-assemble it.** (Fig. 3)

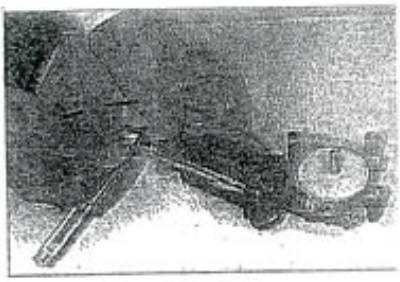

FIG. 3

5. With the motor housing now loose, wiggle the housing away from the plastic gear and pull the gear shaft upward to remove it from the housing. The resistance is caused by the interference between the worm gear and the plastic gear. **NOTE:** Use of pliers may be necessary. Be careful not to damage the shaft. (Figs. 4 & 5)

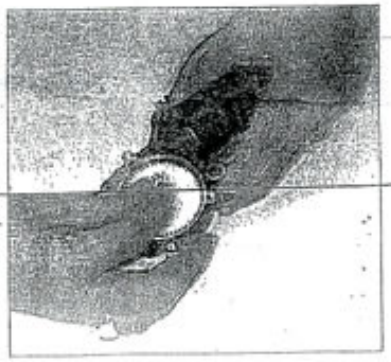

FIG. 4

FIG. 5

6. Clean housing, shaft, and gear of powdery residue and install the Delrin bushings in the triangular area of the plastic gear. (Fig. 6)

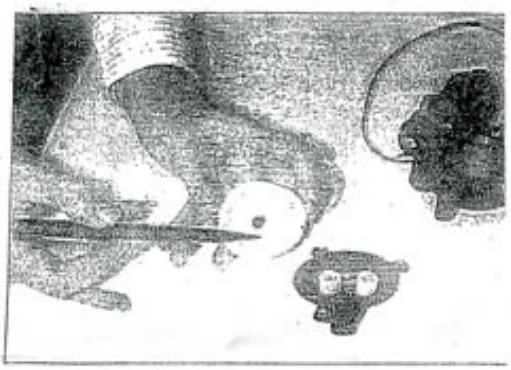

FIG. 6

7. Re-install metal shaft onto plastic gear. (Fig. 7)

Note: For easy installation of the gear back into the housing, use a sharp hobby knife to trim the flat ridge along the lower edge of several gear teeth so they will mesh with the worm gear. (Figs. 8 & 9)

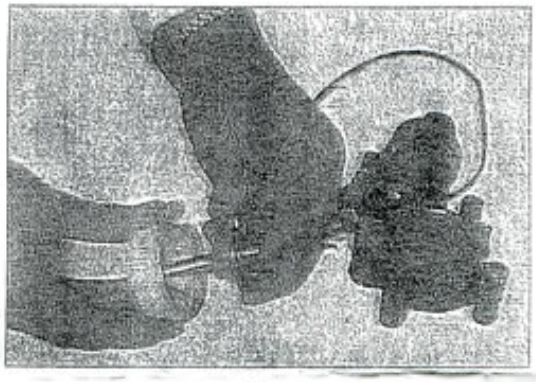

FIG. 7

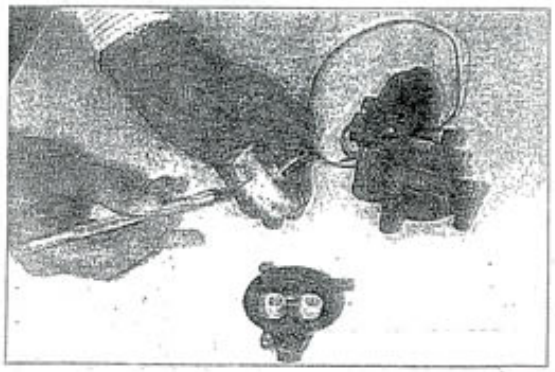

FIG. 8

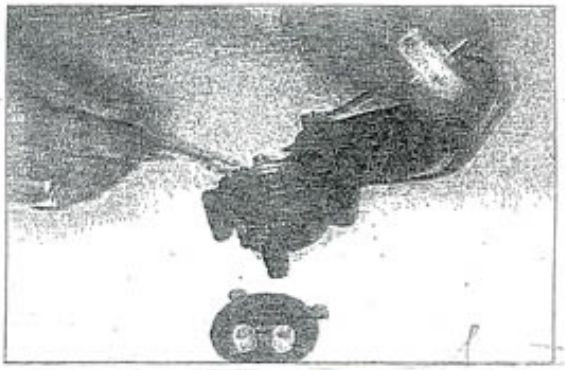

FIG. 9

8. Re-install gear back in housing.
9. Replace the housing cap and three screws.
10. Tighten the two motor housing screws.
11. Re-adjust the worm gear adjusting screw by tightening it to the exact number of turns it was loosened.
12. Re-install in car and test operation — You're Done!!!!

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Suggested Installation Instructions for 601-701, 1988-1996 Headlight Motor Gear Replacement Kit & 601-703, 1988-1996 Headlight Motor Gear Replacement Bushing Kit

Tools Required for Installation:
1/4" wrench, small flathead screwdriver, small hammer, small punch, 13mm wrench, T-30 Torx, shop towels, heavy grease.

NOTE: To remove headlamp motor from vehicle, you will need to follow corresponding service manual instructions or take vehicle to a knowledgeable service technician.

AFTER REMOVING HEADLAMP MOTOR FROM VEHICLE:
Helpful Hint: We recommend laying out a shop towel on your workspace. On this, arrange each part in order of removal. This will greatly simplify reinstallation.

Step 1. Separate headlamp motor from base fixture *(attached by a nut or a pin)* being careful not to damage motor shaft.

Step 2. Using 1/4" wrench, remove the 3 mounting screws holding the round cover plate. Carefully pry the cover plate off with a small screwdriver or knife – DO NOT DAMAGE THE GASKET, as it will be reused. Record the number of flat, metal shims on the motor's shaft, to be sure you reinstall the same amount.

Step 3. On some model years, the motor shaft cover plate will have a hole in the center allowing the motor shaft to protrude through the cover during normal operation. This will be considered "TYPE #1" for these instructions. Headlight motors with no hole in the round cover will be considered "TYPE #2" for these instructions.

REFER TO CORRESPONDING TYPE INSTRUCTIONS BELOW FOR GEAR/SHAFT REMOVAL.

TYPE #1: After removing the round cover plate, remove motor drive end by first removing the plastic cap end with a small screwdriver by prying at the base end, lightly. Next, remove the (2) 1/4" screws on the cover holding the motor drive gear in place. Then with the plastic gear in place hold the gear while removing the drive gear cover, making sure the gear does not move. With worm gear housing removed, there should be a few shims and a bearing; if not, the worm gear housing is probably stuck to the magnets.

NOTE: When reinstalling, you will install a shim, the bearing, and then the last shim on shaft. Noting brushes on shaft, release your hold on the plastic gear and pull worm gear out of housing. The brushes will pop out along with springs, allowing removal of gear and shaft.

TYPE #2: After removing the round plate/cover, the gear and shaft can be pulled out easily by pushing on the shaft. Again, count the number of shims on the shaft end when assembly is completely removed.

Step 4. GEAR AND SHAFT PREP: Clean all plastic dust/fiberous material out from gear and shaft housing. Generously grease gear, shaft, new bushings, and their housing.

Step 5. Place shaft bushings into motor gear. With new bushings in place, insert shaft into the motor gear until new bushings "seat" into place. Finally, apply FIRM pressure and tap the shaft until it seats fully into the gear.

Step 6. Reassemble headlamp motor by reversing disassemble procedure, while using grease to hold bearings and shims in place during reinstallation.

Step 7. Reinstall headlamp motor into vehicle.

NOTE: To accommodate close tolerances, slight sanding of bushings may be required in some installations.

Additional Material: For an installation article from Corvette Enthusiast magazine, please visit http://content.madirect.com/pdf/601701article.pdf

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