

GMC CENTRAL VACUUM MOTOR BUSHING REPAIR

DAN SMITH OCTOBER 2024



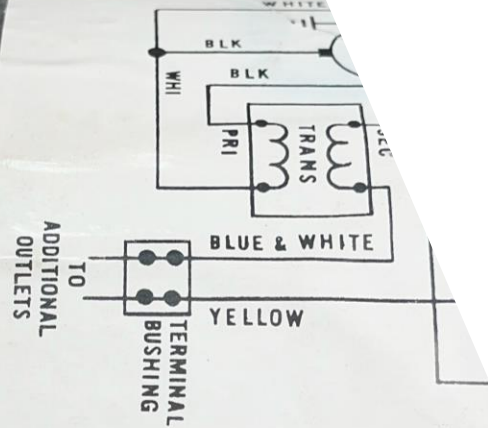
MOTOR BUSHING REPLACEMENT WITH BALL BEARING

Benefits

- Worn bushings make a squealing noise. This creates a poor electrical contact to the motor through the two commutator brushes. The worn bushing creates a higher commutator brush wear rate and higher heat during operation that can damage the motor. These motors are no longer available.
- The ball bearing replacement is low cost and is easy to do with some simple tools. The tools are a small and large slot screwdriver, ¼ inch socket, extension, socket wrench, C-clamp and rotary grinding tool (Dremel)
- The repair time is about an hour

Step-by Step Instructions

1. Remove four screws on cover
2. Remove motor strap screw
3. Wiggle motor housing to free the black seal at the air inlet
4. Slide out vacuum motor assembly and face the seal side inside the vacuum housing

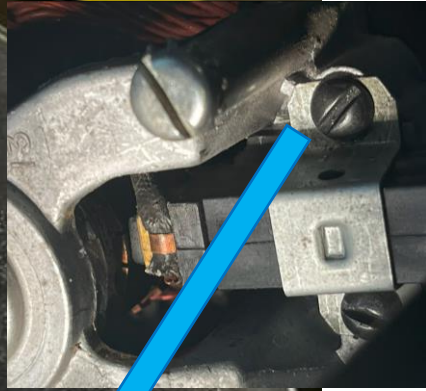
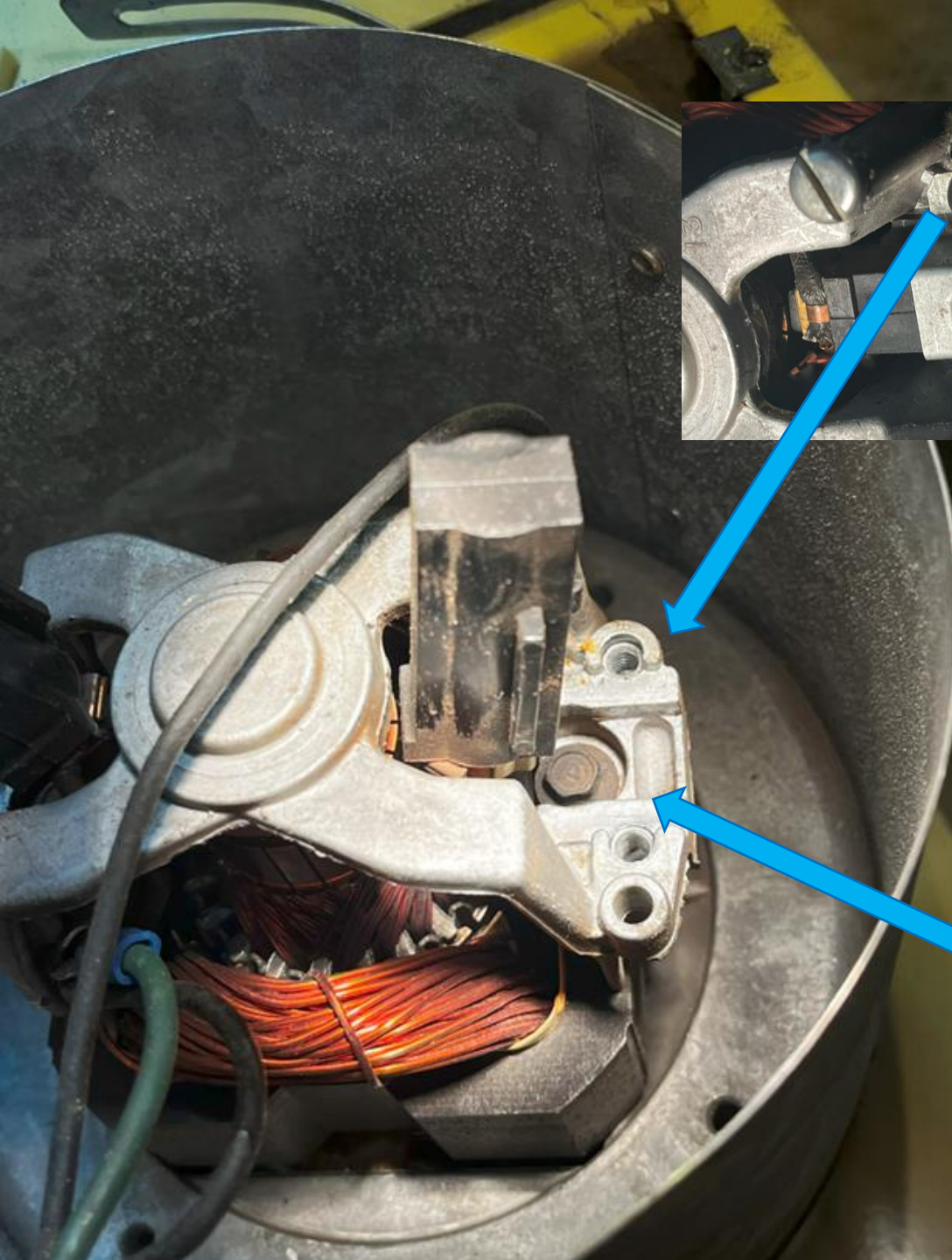


[Commutator \(electric\) - Wikipedia](#)

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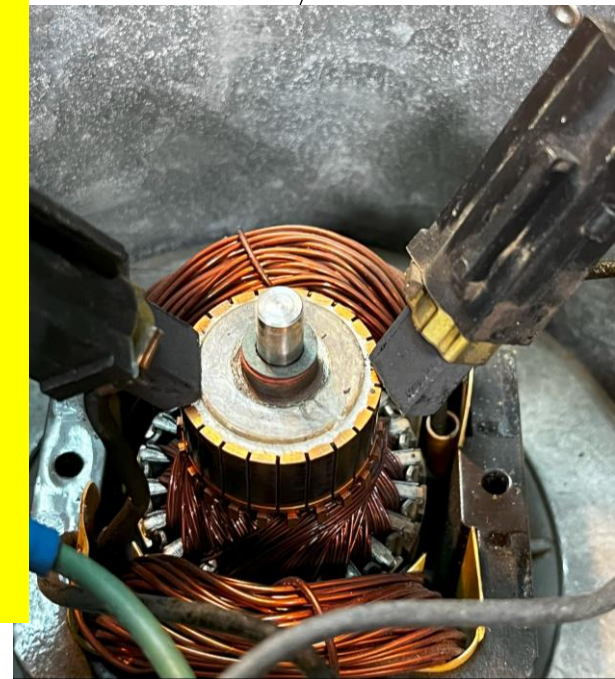
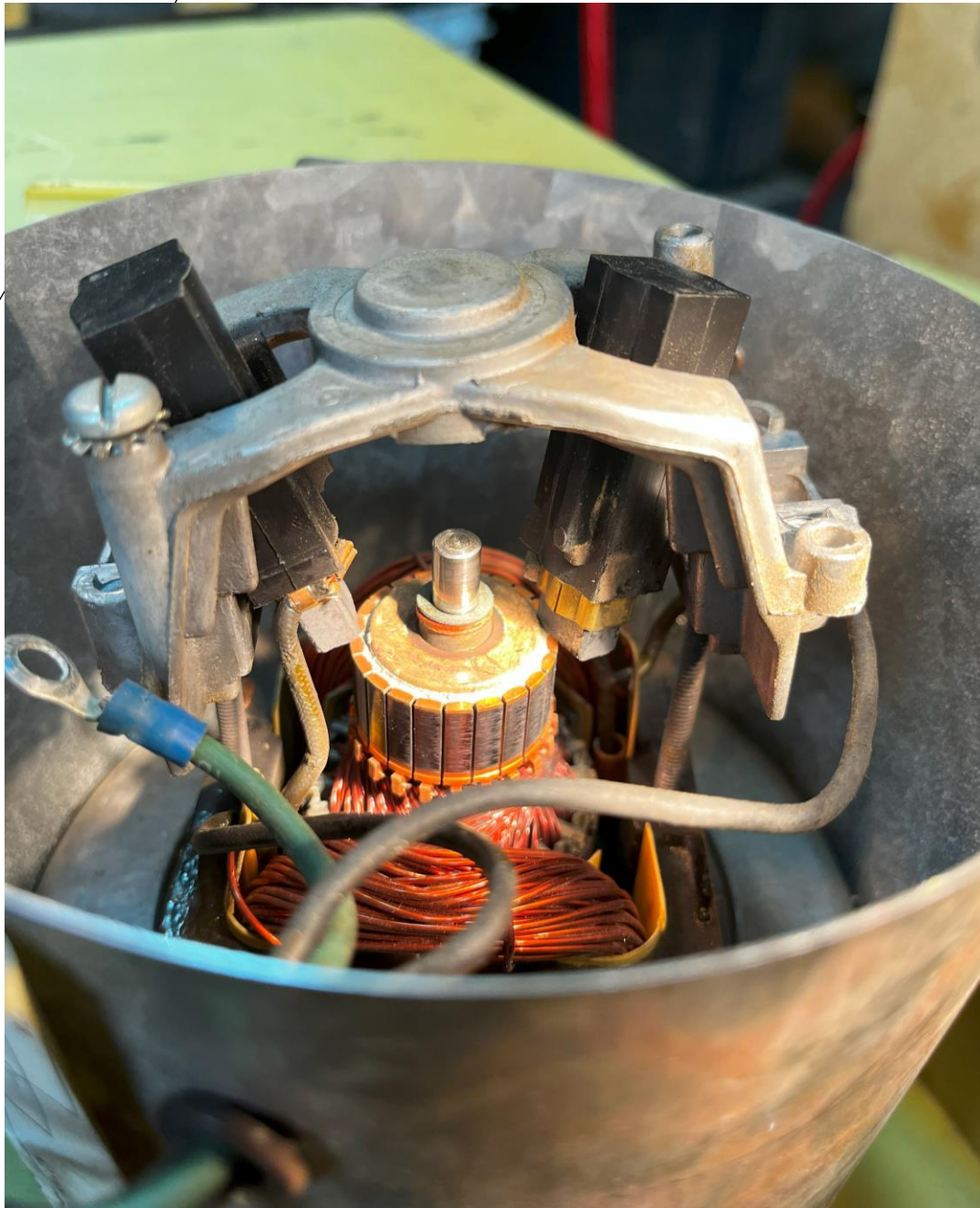
5. Remove commentator two U-clamps and four screws.
6. Rotate the commentator housings to expose the armature support attachment screws. Remove the two screws with $\frac{1}{4}$ inch hex socket attached to a $\frac{1}{4}$ inch size extension and socket wrench.



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7. Remove ground wire screw and wire from the armature support and reinstall screw to indicate the armature support orientation for reassembly.
8. Lift the armature support off the armature and commutator while sliding the commutator brush housings through the opening in the armature support.
9. Note: the black wire may need to be pulled through the grommet to provide clearance for the armature support. The commutators are brittle and fragile. Care must be taken to compress the commutators into the spring-loaded housing.



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10. Remove the bushing cover from the armature support by grinding away the deformed metal that retains the cover.
11. After grinding a screwdriver can be used to pry the cover off. Be careful not to deform the cover because it will be reused.
12. Remove the bushing, bushing centering plate, and felt washer.
13. Install the ball bearing, see URL. R4AZZ Deep Groove Ball Bearing ID 1/4"×OD 3/4"×Width 9/32" Double Metal Shielded

[FOCMKEAS R4AZZ 10 PCS Deep Groove Ball Bearing ID 1/4"×OD 3/4"×Width 9/32" Double Metal Shielded Ball Bearing Chrome Steel P0 Z2 Bearing for Industrial Machine, Power Tools and Mechanical Equipment: Amazon.com: Industrial & Scientific](#)

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14. Install two R15 size Buna-n elastomer O-rings between the bearing and the armature support as a centering space, see URL or local hardware store.
15. Install the bushing cover and C-clamp to seat the cover in position. Retain the cover with silicone sealer or other type of adhesive to hold the cover and O-ring spacers in place.

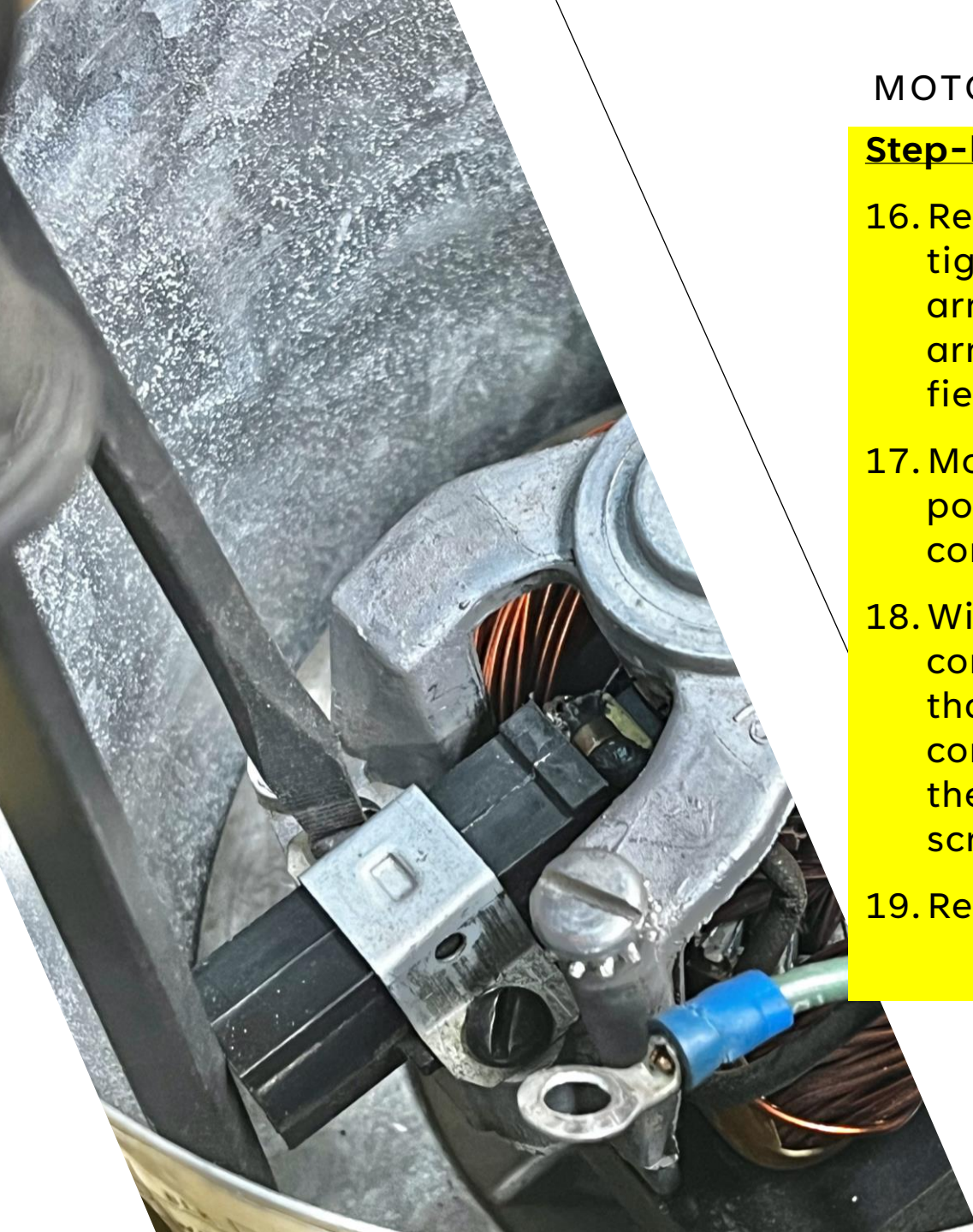
[XBVV 419 PCS Universal Metric O-Ring Kit, 32 Sizes Buna-N 70A Rubber O Ring Assortment Set for Various Car Auto Faucet Plumbing Pressure Washer Air or Gas Sealing Repair Resist Oil and Heat: Amazon.com: Industrial & Scientific](#)



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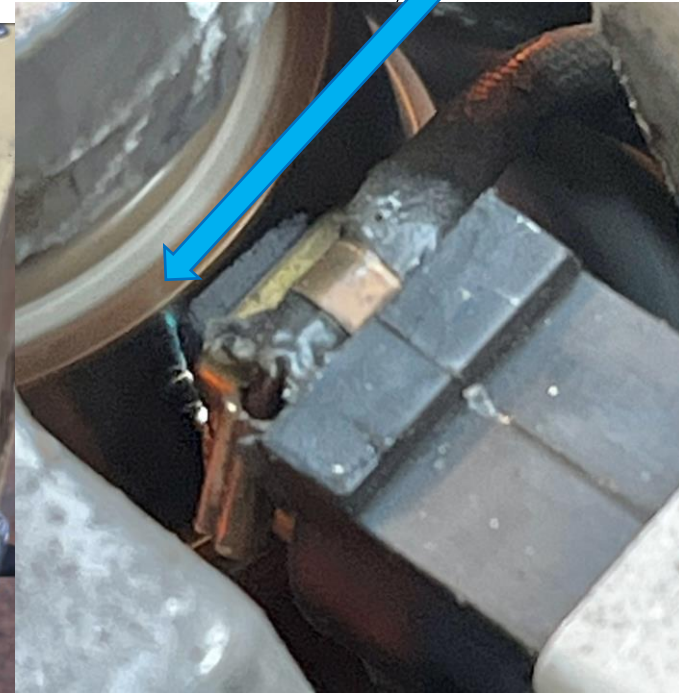
16. Reinstall armature support screws and tighten with socket wrench. Turn armature with your finger to verify the armature is free from contact with the field coils.
17. Move the commutator housings into position and loosely install the commutator U-clamps and screws.
18. With a screwdriver, compress the commutator brush into the housing so that about a 1/16 of an inch of the commutator brush is exposed beyond the brass collar, then tighten U-clamp screws.
19. Reinstall ground wire



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20. Verify vacuum inlet seal is positioned and does not block the inlet. Install vacuum motor into the housing and align the motor strap and screw hole ,then tighten the screw.
21. Install cover, bridge low voltage tags to run motor for 5 minutes. This is to break in repositioned commutators. Looking through the air exhaust port, verify visually that the commutator arc or sparks are minimal. After running the vacuum, the exhaust port should be only warm to the touch





THANK YOU FOR YOUR ATTENTION QUESTIONS?

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