

# To replace the brushes on your 1/2 HP motor.

1. Follow steps 1-4 on the included *To replace a motor on your power train* card to separate the motor from the gearbox.
2. Remove the through-rod nuts from the end cap.  
*Note: These are the two hex nuts to which the wires do not attach.* Pull the through-rods out from the shaft end of the motor.
3. Scrape the silicone from the seam around the motor barrel. Using two screwdrivers, pry the end cap off.
4. Clean the inside of the motor casing and end cap using a soft dry cloth.
5. To remove the brushes, slightly loosen the inside nut of the double-nut motor post on the outside of the end cap and pull out the U-shaped brush terminal on the inside of the cap.
6. Gently pull back brush spring using needle nosed pliers and pull the brush out. Repeat procedure for the second brush.
7. Clean the brush housings with fine emery cloth.
8. Gently pull back brush spring and push the new brush into the brush housing. Carefully, let the brush spring back into place behind the brush.
9. Reinstall the U-shaped brush terminals and tighten down the inside nut of the double nut motor post.
10. Lightly clean the commutator with fine emery cloth, being careful to sand with the direction of the bars.

11. Change bearings if necessary.
12. Replace the end washer into the end cap and re-install cap on motor, being certain to line up the notch in the motor shell with the prong on the end cap. Using your finger or a screwdriver, push and hold the brushes in their housings to get them over the copper commutator.
13. Fit a drinking straw over 1/4 inch of the threaded end of the through-rod. Insert the straw into the shaft end of the motor and slowly guide it through the end cap. Remove the straw and reinstall the hex nut. Repeat for the second rod.
14. Test run the motor.
15. Loosen the through rods and crack open the end cap enough to reseal the seam using GE silicone caulking or equivalent. Tighten the through-rods and wipe off any excess silicone. If the vent hole plug isn't in place, replace it.
16. To re-install motor, follow steps from the included *To replace a motor on your power train* card.

## Good Luck!

