

Mica V-Ring replacement procedure

When faced with a grounded commutator, mica v-ring replacement can offer a less expensive alternative to commutator refill. Ensuring that your staff are equipped to provide successful disassembly of the comm.

Following these steps will help you provide a tight commutator, fully cured and ready for operation.

Watch out for three things:

Overtightening: While the values provided may seem low, please use caution. If you have any questions, call ICC and we'll be happy to discuss your commutator specifically. Overtightening can bend the dovetails, resulting in bar movement, broken brushes, seized motors and overheated copper segment packs requiring remanufacturing or replacement.

Insufficient Closings: The guidelines for thermal cycles are provided to ensure a tight, solid commutator. These closings allow for proper seating of the copper and mica segment pack to the steel, in addition to curing the mica v-rings.

Contamination: It will never be easy to get a good test on a unit that has been in operation, but a thorough cleaning is imperative to ensure proper operation once the commutator is reassembled.

Bolt Diameter (gr. 8)	Torque (ft-lb)
5/16"	10-20
3/8"	25-30
7/16"	35-45
1/2"	50-60
5/8"	70-80
3/4"	90-125
1"	140-160

These values are typical for 4-8 bolt units. In general, longer bolts require higher torque, but decrease torque for higher bolt counts, fine threads, smaller bolt circle diameters, thin copper segments or for thinner or cast steel sections.

Easy Steps for Flawless V-ring Installation

1. Heat the commutator as a whole to 300°F. Band it tightly using glass tape, and cure until the tape is hardened.
2. Remove the steel caps.
3. Clean and sand the internal dovetail angles until the commutator is free of contamination.
4. Test bar to bar.
5. Carefully install new mica v-rings, uncured, and assemble the copper segment pack to the steel.
6. Hand tighten all bolts or nut.
7. Heat commutator in the oven to 275°F.
8. Remove from the oven and torque the unit while warm in a star pattern to the specifications provided.
9. Watch for even cap movement.
10. Heat commutator in the oven to 350°F, and ensure that the commutator remains at temperature for 4 hours.
11. Remove from oven and torque to specifications.
12. Cool to ambient temperature and torque again to specs.
13. Repeat hot and cold cycles (eliminating the initial warm close), Torquing at each stage.
14. Test bar to bar and bar to ground.
15. Band the v-ring extensions with glassbanding.

Disclaimer: ICC provides the above information in good faith but due to the wide range of quality of product and levels of experience, ICC is not responsible for the failure to achieve successful v-ring replacement through following the above instructions.