

When is reinsulating a comm an option?

Usually if it has inserted risers, is a v-ring style commutator, and uses over 1000 pounds of copper.

There are, of course exceptions to this. If the commutator doesn't use quite that much copper, but it has a very thick or very wide copper bar, reinsulating may still be a great cost saving alternative.

What is replaced in a reinsulated commutator?

Typically, reinsulation refers to the replacement of segment mica between the bars, and replacement of the mica v-rings and mica tube. It should also include new risers, and any peripherals like lashing or wrapped caps.

Why would you want to reinsulate instead of refill?

Cost. Reinsulating a commutator typically doesn't save any labor hours, since each bar has to be cleaned thoroughly before re-use. However, if the comm uses a significant amount of copper, the material savings can quickly amount to several thousand dollars. On a smaller comm, however the material savings would be quickly outweighed by the disadvantages of reinsulating.

When shouldn't you reinsulate a commutator?

When there is limited brush life left, and when the copper is damaged in some way.

Check Points

Is there enough brush track?

Is the dovetail cracked?

Is there enough flat?

Are the dovetails bent?

If the copper has been overheated and annealed, it will no longer be re-usable. If the dovetails have been bent or cracked, a refill will be necessary. Finally, if there is insufficient flat on the interior of the comm to allow for removal of copper for reassembly, reinsulation would not be recommended.

How can you tell if reinsulating is possible?

For thorough inspection and final determination, the commutator will have to be entirely disassembled. While an external inspection will show the condition of the bars and the amount of brush life left, inspecting the dovetails and copper hardness requires individual bar inspection.

Can you reinsulate a solid riser comm?

Not typically, and not cost effectively. Solid riser comms are slotted, and the slots would need to be plugged to withstand the new compression for reassembly and subsequent machining. In addition, in reinsulating, in order to maintain brush diameter, mica thickness is increased. On a solid riser comm, this would also increase the riser diameter, and would change the slot depth and position.

What about glassbound commutators?

Glassbound comms are a totally different design. Since the copper shrinks to a mica wrapped hub, any additional removal of material would adversely affect the fit. In addition, once grooved for banding, the copper material remaining under the band is very thin, and unlikely to withstand compression.

