



## Recommendation for Sanding Brushes

Many times the question has been asked – “Do I need to sand in new brushes”? The answer is a resounding – **YES!**

### Why is sanding recommended?

New brushes must match the curvature of the slip ring surface for optimum machine and brush performance. Current being passed through the brush must be distributed over the entire brush face, not just point or line contact. If adequate contact area is not provided, and the machine is run at full load immediately after installing a complete new set of brushes, localized heating of the brush material can result. This will lead to burning of the carbon and decomposition of the organic treatment in the brush material. Yes, the brushes will eventually wear in to match the curvature of the surface, but the arcing that occurs prior to being fully seated will cause arc damage (low spots) to the slip ring. This arc damage will only get worse with time, and could eventually lead to a flashover. Sanding the brushes will dramatically decrease the time it takes for the brushes to become fully seated.

### Sanding Procedure

A strip of 80 to 120 grit sandpaper or garnet paper is placed under one brush at a time, with the grit side toward the brush. Install the brush spring, and pull the sandpaper back and forth in a ‘shoe shine’ motion. The fit will not be exact due to the difference in diameter between the slip ring and the diameter with the sandpaper installed, but it will be close. It is preferred that the paper be pulled in the direction of rotation to avoid rocking the brush back and forth in the holder, but this is not always practical. However, the last motion should be in the direction of rotation. The brush should then be removed from the holder and all components cleaned of excessive dust. See Technical Bulletin “Slip Rings - Carbon Dust Removal”.

Sandpaper is available from many sources, one example is Norton Abrasives. Their website is <http://www.ind.nortonabrasives.com/>, where you can locate a distributor in your area.

### Pre-Radiused Brushes

If the collector ring diameter is known, a radius can be placed on the face of the brush that is approximately the diameter of the ring. Pre-radiused brushes do not match well enough to just install them and run without the risk of arcing. A radius allows for quicker seating of the brushes, but does not replace the sanding in process!

### PLEASE NOTE THESE WARNINGS

- All power should be off, locked out and tagged out before any work is performed on the machine. Refer to your facility’s Lockout / Tagout procedures.
- Safety glasses, a face shield and a dust mask should be worn to provide protection from flying dust and particles.
- Never use Emory Paper! The particles are conductive and quite abrasive and may cause excessive wear of the slip rings from particles that become imbedded in the brush faces.