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Tip Of The Week

October 5, 2009

Coefficient of Friction?

Carbon brushes are used to carry current from the DC power supply and the series windings to the commutator and armature circuit. They must be seated properly to allow for a low coefficient of friction and extended brush life. A high resistance at the brush surface may also result in an improper current density across the brushes. Normally the desired current density is 55-85 amps per square inch, however you should refer to the brush manufacturer for confirmation. Excessive current density will cause the commutator to run hot, blacken, and excessive brush wear will occur. If the current density is too low the commutator film will be removed, threading and sparking will occur, and brushes will wear rapidly often resulting in the need for a commutator resurfacing.

This is not a good thing.

So, after an overhaul or a periodic cleaning, it is a good idea to take a look at the wear on your brushes. If seating is required, see Tip of the Week, January 2, 2008 for a detailed description of the process.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or lou@pdma.com.