

## INTRODUCTION

Tests for carbon brushes are spelled out in three documents which serve as industry standards. The first is NEMA publication CB1, which specifies dimensions, tolerances, and procedures for testing brush properties. Secondly, there is IEEE publication #116 (equivalent to AIEE #504), which contains much duplication with the NEMA standard, but goes into more detail on some tests. The difference seems to be that the NEMA document is concerned primarily with QC, whereas the IEEE document deals with industry standardization, to obtain data to be published in catalogs which will be meaningful compared with data from other companies.

The third document is publication MIL-B-3743, which spells out results that the aforementioned tests should yield for brushes sold for military applications. While it is not mandatory that these specifications be met for non-government work, they are in many instances the only guidelines we have for certain properties. Hence, we try to adhere to them as indicators of brush quality.

This manual is not intended to be a substitute for the other three, but rather to supplement them in two important areas. First, it relates the test descriptions to the specific equipment we own, providing detailed operating instructions for our equipment. Secondly, it details precautions to be taken to prevent errors that have cropped up in the past due to the peculiarities of our equipment.

Each article contains references to the documents and paragraphs which contain the complete description of the test in question. Before proceeding with a test, you should read and understand the paragraphs cited, in addition to the information in this manual.

The best way to assure error free testing is to fully understand the principles involved in making that test. While I realize that this understanding does not come about overnight, I do encourage you to ask any questions you might have about the specifics of a test or the reason for doing a test the way we do.

