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Test Lead Condition

When using test equipment to determine the health and reliability of your electric motors, it is important to also verify the cleanliness of your test leads. Don't allow poor maintenance of your test leads, clips, and connectors to reduce the accuracy of the resistance measurement readings. During calibration of the MCE test equipment, PdMA technicians often find test leads with damaged clips or contaminated connectors from everyday usage in industrial environments. Test leads, clips, and connectors can be cleaned with an alcohol based product.

For the phase-to-phase resistance measurement, the advanced 4-wire bridge testing performed by equipment like the MCE, offers a reduced concern for test lead connections because the effect of a variable test lead resistance is minimized using the 4-wire design. However, contaminated connectors on test leads used for resistance-to-ground measurements on motors under the test voltage stress of 1000 - 5000 volts can be an issue. Especially when performing acceptance testing on new or refurbished motors. New and refurbished motors have resistance-to-ground readings in the thousands of Meg or Gigohm range. Some even reach the million Meg or Teraohm range. The MCE provides ranges high enough to measure these values, but to ensure accurate readings of resistance-to-ground at such high levels, perform visual inspections of your test leads and connectors to identify any deficiencies.

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.