



Electric Motor Testing Tip of the Week

revolutionizing *electrical* reliability

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DC Motors: Epic Fail?

A question that we tend to get a lot in technical support deals with DC machines.

When performing PIs, they sometimes end up having weird chart patterns, or lower PI ratios. If this happens, I always ask where they are testing from. If it is the MCC, I tell them to go test the motor itself to ensure that the motor is the problem, and not the attached cabling. I have seen a few times where the motor tests fine, but the cabling going to it is cracked and contaminated due to carbon dust from the machines getting in from years and years of accumulation.

Tested from motor leads, and PI still looks bad? **Inspect the motor.** Also, you can observe your minimum requirements to see if the machine can still be in service.

Consider the following:

- Is it dirty?
- How are the brushes?
- Is there a concentration of carbon dust build up on the machine?
- Is the insulation damaged?
- Does the insulation flake?

Anyway, it is time to clean that machine. Ensure that if you use any solvents, they are rated and safe for use around the commutator. It would be unfortunate to accidentally damage it!

To clean the commutator, use a piece of canvas. If need be, you can also use a flex-abrasive stone (kind of like a giant eraser for use on DC Commutator).

Finally, if it is TOO dirty, the use of LOW pressure air is authorized. Keywords are **LOW-pressure air**. You do not want to further embed particulate into the insulation or blow insulation off the armature.

After a thorough cleaning, if the RTG/PI readings do not improve, then it is time to tell the boss the bad news.

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.

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