



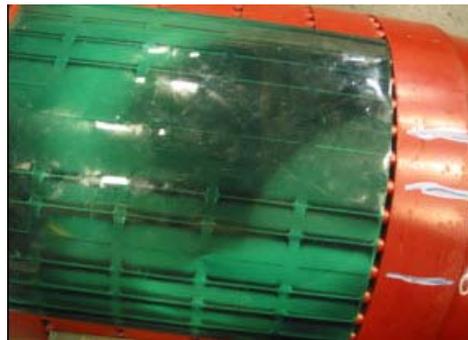
A Leader in Electric Motor Testing

Tip Of The Week

December 8, 2014

Magnetic Particles Find Broken Rotor Bars

PdMA Corporation offers six different field methods for identifying rotor bar defects. Once you have identified indications in the field of a rotor bar defect, what does the motor repair shop do to verify the rotor condition? One troubleshooting tool often available from your motor repair shop is the Magnetic Particle Test consisting of a magnetic particle sheet in combination with a growler to identify broken or cracked rotor bars. A growler is applied to a rotor that has been separated from the stator and frame of the motor. The growler induces current flow in the healthy rotor bars, but in the cracked or broken bars there is less or no current flowing. The magnetic particle sheet is really two sheets of translucent plastic sealed at the edges to contain a thin oil with iron particles suspended in it. The sheet is laid on the surface of the rotor as the growler induces current into the conducting bars. The loose particles are attracted and flow through the oil toward the magnetic field generated by the current flowing through the healthy bars. Broken bars are identified by the areas with little to no iron particles. See image.



Reference: *Technologies for Motor Manufacturing and Repair: Volume 2* by Jack R. Nicholas, Jr. and Geoffery Generalovic.

This will be our last Tip of the Week until January 2015. We wish you and your family a safe and happy holiday season.

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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