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Tip Of The Week

February 2, 2010

New Year's Motor Tip, Part Two

In last week's tip about our New Year's resolution to improve reliability for electric motors, the need for proper storage of electric motors was identified. Let's look a little deeper.

When a motor is not properly cared for during storage damage to its bearings may occur. The two main failure modes that occur are false brinelling and static corrosion.

False brinelling occurs when vibration from passing warehouse machinery results in the bearing's rolling elements vibrating against the raceway in a single location. Over time this vibration can remove small bits of metal. This type of wear appears as evenly spaced marks lining up with the spacing of the rolling elements.

Static corrosion occurs when either vibration or the weight of the rotor shaft resting on the rollers forces out the grease between the rollers and the bearing raceway. The problem is compounded if the grease has little or poor corrosion inhibitors. When the film is no longer present between the metal surfaces, galvanic corrosion occurs leading to rust deposits on the machined surfaces.

Prevention is as simple as ensuring the bearings are properly greased prior to being placed in storage. The type of grease and date should be tagged to the motor. The motor itself should be placed on a vibration absorbing material such as wood. Finally on a routine basis the shaft of the motor should be rotated to ensure the grease is redistributed and maintains a corrosion preventing film

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.