70% OF ELECTRICAL MAINTENANCE COSTS

in the USA are due to electric motors

FAILING.

The MAJORITY of these electric motor failures is due to

BEARING WEAR & DAMAGE!

1

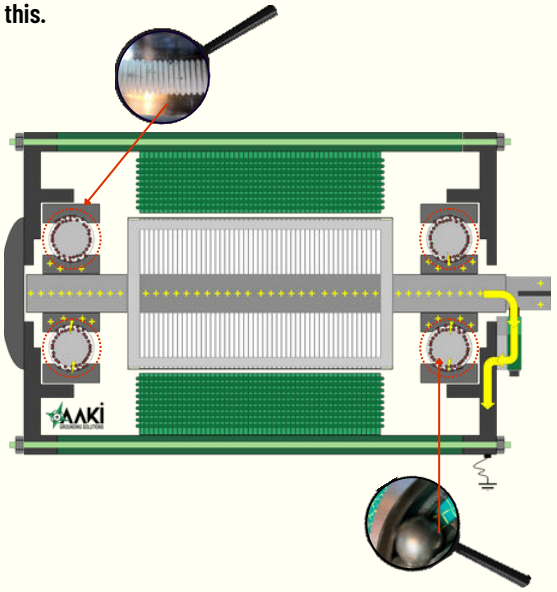
Variable frequency drives (VFDs)

- Variable frequency drives (VFDs) are useful tools for controlling the speed and torque of electric motors.
- VFDs allow motors to operate more efficiently and over a much wider operating range and are used in every
- industry, but they can also be a source of problems. VFDs feed the motor a pulsed waveform that loosely resembles a sine wave
- This "dirty" sign wave coming out of the VFD, and into your motor causes a subtle voltage to build up in the motor shaft.
- And like all electric currents, it is going to find a way to ground - ***usually through the motor bearings***

3

Frosted, fluted or Pitted Bearings

Frosted and fluted bearings are the result of the damaging effects of shaft voltages that can now be seen in the bearing. Early signs of this damage are blackened grease and a motor that "howls". It's only a matter of time before the bearings fail completely. Fluting looks something like this.



2

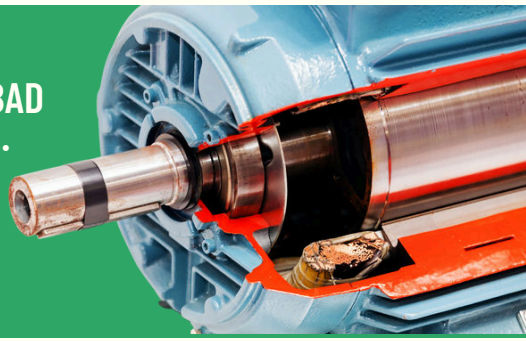
Shaft Voltages

One would tend to think that the shaft and housing of a motor are electrically connected. Afterall, they are held in place by a set of steel bearings. However, When there is a difference in voltage between the motor shaft and the housingYour tire with a slow leak of air may not go flat and leave you stranded on the side of the road today, but rest assured, that slow leak will eventually cause your tire to fail. Shaft currents work in the exact same way through a process called EDM. These voltages are looking for a way to ground and the easiest way for those currents to do just that is through your motor bearings, which can cause pitting, fluting, and other forms of damage. This damage will cause the motor to fail.

SO WHY IS THIS SUCH A BIG DEAL???

All Electric Motors are essentially made of of 2 parts:
A shaft spinning around internally within the motor housing, supported by 2 bearings on either on of the motor shaft allowing the shaft to spin in the smoothest way possible making the motor efficient and predictable in operation. So if your bearings begin to fail, your electric motor will soon fail.

IF THAT WASN'T BAD ENOUGH...



Shaft currents that are not directed back to a ground properly will go through not only motor bearings, but they will keep traveling downstream through all of the equipment tied to the electric motor. This puts pumps, fans, compressors, and any other type of inline equipment at risk. **Lack of motor shaft grounding may leave you responsible for far more than just motor bearings!**

HERE'S HOW TO PROTECT YOUR ELECTRIC MOTOR BEARINGS FROM SHAFT VOLTAGES

THE AAKI GROUNDING MODULE WAS BUILT WITH SIMPLICITY IN MIND.

Simply mount to any VFD powered electric motor using our patent pending flexmount(TM) bracket system and let our module protect your motor bearings.

WE ALSO OFFER CUSTOM BRANDING ON OUR GROUNDING MODULES

CHECK OUT THE FULL AAKI CORP VIDEO LIBRARY

All of the content & information you need to know about bearing protection and the Eddy Currents from your VFD damaging your electric motors.

BEARING PROTECTION EXPERTISE

PROBLEM DIAGNOSING &TROUBLE SHOOTING

VFD'S & EDDY CURRENTS

MOTOR SHAFT GROUNDING MODULE INSTALLATION GUIDES

CHECK OUT THE FULL AAKI CORP MSGM LINE

DISCOVER OUR SOLUTIONS AND EXPAND YOUR KNOWLEDGE ON EDDY CURRENTS

Thank you for your interest in our brochure on VFD induced shaft voltages and eddy currents causing bearing damage. We are excited to introduce you to our range of solutions that will help you better understand and prevent this poorly understood problem.

At Aaki Corp, we have been studying and developing solutions to VFD created bearing damage for many years. Our team of experts has conducted extensive research to create innovative products that will help you tackle this problem head-on.

To learn more about VFDs, shaft voltages, eddy currents, and all things grounding solutions, we invite you to check out our media library by scanning the QR code. Our media library contains a wealth of information that will help you deepen your knowledge and stay up-to-date with the latest developments in the field.

We take pride in our expertise and our commitment to delivering high-quality solutions to our clients. We are confident that our brochure will provide you with valuable information on eddy currents and how they can damage your bearings.

If you have any questions about our products or services, please do not hesitate to reach out to us. Our team is always ready to help you with any inquiry you may have.

Thank you for exploring our brochure and our motor shaft grounding line. We look forward to hearing from you soon.

Best regards,

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IF YOU'VE GOT VFD'S DRIVING YOUR ELECTRIC MOTORS...

YOU MAY HAVE BEARING DAMAGE?

DAMAGE CAUSED BY EDDY CURRENTS

AAKI
GROUNDING SOLUTIONS