

REDUCE VOLTAGE IN COAL PRODUCTION MOTORS

INDUSTRY:
Power & Utility

APPLICATION:
Variable Speed AC Motor

COMPONENT:
Bearing

LOCATION:
Pennsylvania



BACKGROUND

A leading coal production company approached Nye about a motor at their truck load out that experienced bearing failures from fluting corrosion on the raceways. Fluting is caused by electrostatic discharge through the inner and outer bearing races. The bearing failure was occurring in a variable speed motor used to drive a conveyor belt via speed reducers. The motor runs 20-40 hours per week at a speed of 1600-2200 rpms, and uses open, deep groove ball bearings. The company had twelve motors with the bearing failure problem, leading to costly down times.

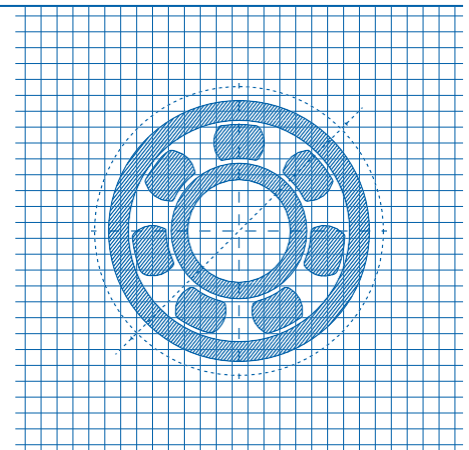
CHALLENGE

- Which grease can lower the induced voltage on the rotor shaft under 3 volts and stop the motor bearings from voltage-induced failure?

SOLUTION NYOGEL® 758G

A stiff, lithium soap thickened, light viscosity, ester grease.

- Electrically conductive
- Excellent performance in demanding bearing applications
- Good channeling abilities



RESULTS

The coal company tested NyoGel® 758G and found that the grease was able to lower the voltage induced on the rotor shaft from 17 volts down to .8 volts. After running for two weeks, the voltage reading was reading .31 volts without bearing failure. The hours until failure on the fan end bearing improved from the 400-450 range to over 1200 hours. The lubricant increased the life of the bearing by 300% and helped the motors achieve good mechanical performance.

Base Oil Properties	Conditions	NyoGel® 758G	Test Method
Chemistry		Ester / Lithium Soap	
Temperature Range		-40 to 150°C	
Kinematic Viscosity	100°C	6.6 cSt	ASTM D-445
Viscosity Index		140	ASTM D-2270
Grease Properties			
NLGI Grade		3	ASTM D-217
Oil Separation	24 hrs, 100°C	0%	ASTM D-6184
Evaporation	24 hrs, 100°C	0.18%	ASTM D-6184
Penetration	Worked (60x)	225	ASTM D-217

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Nye Lubricants is a leader in the innovation, formulation and provision of synthetic lubricants, enabling and improving breakthrough products and critical new technologies. We bring proven experience, deep technical knowledge and customer focus to solve our customers' toughest challenges, adding tangible value to products in a wide range of industries and applications.

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