

Abstract Submitted
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Examining the Effects of Quenching Solution, Post-Treatment Heating, and Magnetic Fields upon the Wear Resistance of Wind Turbine Gearbox Bearings TAKUNDA JAKACHIRA, WHITLEY SAPP, HUNTER SOMERS, ANDREA WEST, CASEY WATSON, Millikin University, PETER PAULIN, 300 Below Inc. — We explore modifications to the basic cryogenic procedures utilized by 300 Below Inc. to strengthen 52100 steel – the type of steel used to manufacture wind turbine gearbox bearings. We consider the effects of using two different quenching solutions steel samples, additional heating of samples after 300 Below’s standard cryogenic treatment, and the application of both AC and permanent magnetic fields of various strengths to samples before and during the standard cryogenic treatment. We report on the wear-test performance of samples that have undergone these additional processes and compare them to the performance of control samples and samples subjected to the standard cryogenic treatment.

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