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GEARBOXES NOISE REDUCTION BY APPLYING A FLUOROPOLYMER COATING PROCEDURE

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Abstract

Every day, millions of people are exposed to noise at work and to all the associated risks. It is a clear fact that the noise is an important problem in the industrial areas and moreover it becomes a significant issue in a wide range of other non-industrial environments as well.
The current trend in the construction of gearboxes, regarding the speed increasing, favors the increase of the dynamic loads, which are accompanying the operation of equipments. The dynamic contact phenomena like the friction, collision and shock are generating vibration in a wide frequency spectrum. Vibration transmitted via the housing to the environment creates a complex acoustic field around the gearbox. The acoustic field characteristics depend on the energy sources of the vibration and the acoustic properties of the environment where the gearbox operates. This fact explains why the noise has become a basic indicator for assessing the quality of gearboxes. Thus, the decrease in produced noise has lately become a priority, being one of the important methods against the environmental pollution.
The purpose of this paper is to present an innovative method that aims to reduce the gearbox noise by applying a fluoropolymer coating procedure on the gear teeth.

Key words: environmental pollution, fluoropolymer coating procedure, gearbox, noise reduction

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