RZESZOW UNIVERSITY OF TECHNOLOGY
Faculty of Mechanical Engineering and Aeronautics
Department of Mechanical Engineering

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THESIS ABSTRACT

Analysis of the Contact Region Geometry of the Cylindrical Convexo-Concave Novikov Gear

Author: mgr inż. Michał Batsch
Supervisor: prof. dr hab. inż. Tadeusz Markowski
Auxiliary supervisor: dr inż. Bogdan Kozik
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Abstract:

This thesis discusses issues connected with analysis, design, technology and test methodology of convexo-concave cylindrical Novikov gears with one line of action. It was divided into three sections:

- Section I (chapters 1÷6) – theoretical – provides an overview of literature concerning about such king of gears and description of mathematical model of Novikov gear mesh. Moreover the influence of gear parameters on contact region, kinematics and surface load capacity were obtained.
- Section II (chapters 7÷10) is focused on practical aspects connected with this king of gears such as designing the tools for convexo-concave gears machining, methods of lead modifying, gear teeth measurements and fatigue testing on power circulation test stand as well as description of wear of tested gear pairs.
- Section III (chapter 11) is the summary of the work and elaboration of conclusions resulting from it.

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