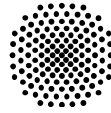


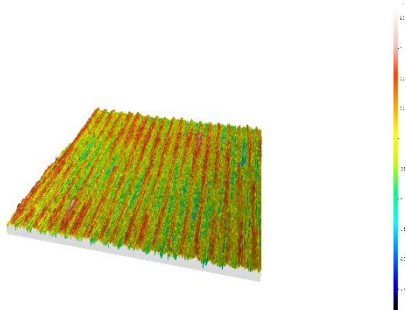
Research Project: Formation of Macro Lead

Representation and verification of the grinding process by a kinematics model

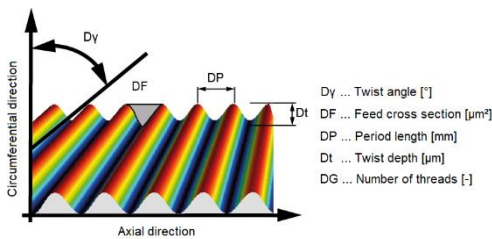
Contact: Georg Haffner, M.Sc.



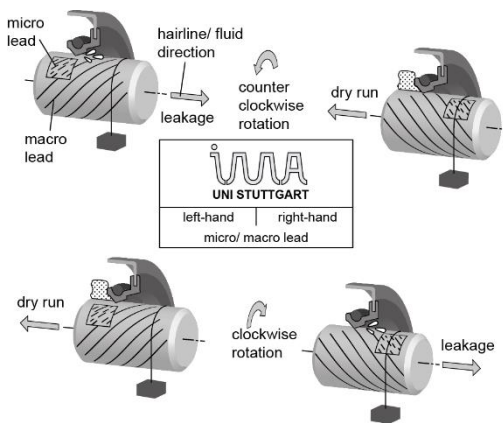
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Example macro lead surface



Macro lead parameters according to MBN 31007-7



Effects of lead on rotary shaft seals

Gefördert durch:



Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages



Motivation

The grinding process as a shaping process for the macro lead is very complex and contains many different parameters that can influence the shape of macro lead. The purpose of this work is to better understand the formation of macro lead by developing a kinematic simulation that can visualize the weighting of the different parameters.

Background

Macro lead is a functional risk for rotary shaft seals, as the sealing system is influenced by a rotation depending pumping effect based on the direction of rotation. This can lead either to leakage in one direction or to insufficient lubrication in the other direction. Both results lead to failure of the sealing system, which in turn leads to increased environmental stress and machine failure.

Expected Results

- Representation of the grinding process in a kinematics simulation
- Production macro lead free and macro lead affected surfaces
- More reliable statement about the suitability of surfaces as sealing counterfaces

Approach

- Development of a model with macro lead relevant parameters
- Grinding of shaft surfaces with determined parameters
- Investigation of the shaft surfaces and comparison with the simulation
- Functional tests on endurance test bench
- Adaption of the model