

Example of lead on the sealing counter face (SCF)

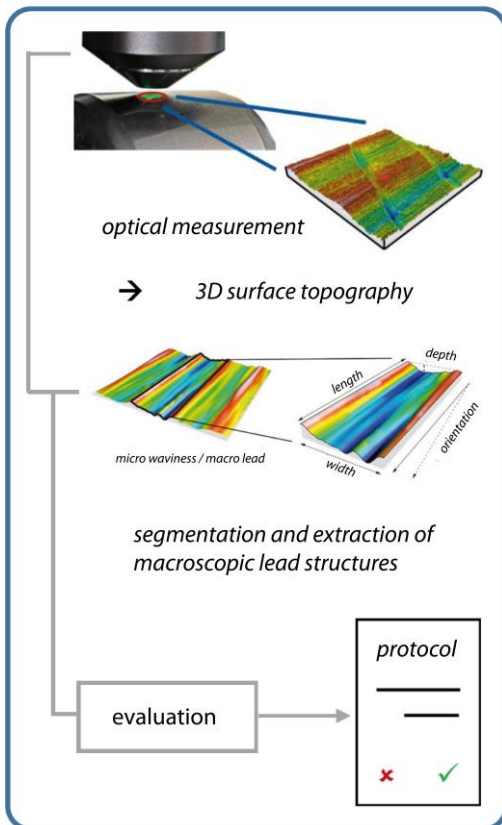
Motivation

Lead on ground sealing counter faces can cause the premature failure of rotary shaft seals and is often associated with high costs. In order to evaluate shafts for lead, the surface structure must first be measured and then analysed.

Background

A harmful form of lead is the so-called macro lead. For the analysis of macro lead a frequency-based evaluation method exists on the market, which is based on tactile measurement profiles distributed around the shaft circumference. However, due to its principle of operation, this method can give incorrect or unclear results. The lead evaluation can benefit from optical measuring methods that record the surface three-dimensionally with high lateral resolution and an equidistant measuring grid.

New Method



Schematic representation of the structure-based evaluation of lead on SCF

Expected Results

- Development of a structure-based 3D evaluation method for the analysis of macro lead, based on the data of optical measuring instruments
- Unambiguous description of macro lead structures without user influence
- Complete detection of macroscopic lead structures with optical measuring methods

Approach

- Development of algorithms for segmentation and extraction of evaluation-relevant structures on sealing counter faces
- Definition of new parameters for the description of macro lead
- Development of a suitable measurement method



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