Research Project: Load Collectives

Generation of load collectives for testing rotary shaft seals

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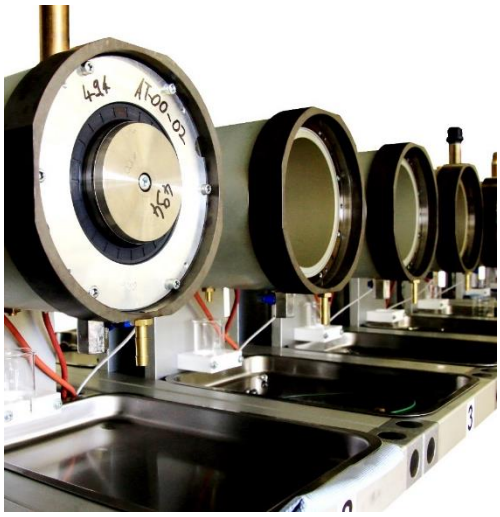
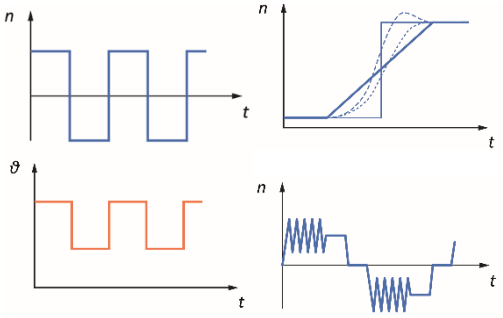
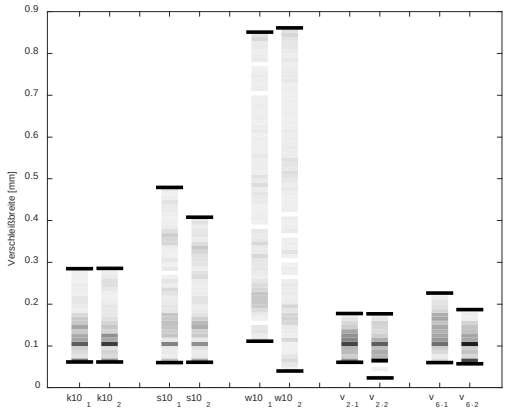


Endurance test runs



Generation/ evaluation of collectives



Wear evaluation of sealing edges

Motivation

To date, no simulation or lifetime prediction of elastomer rotary shaft seals is possible. Each seal must therefore be tested in suitable, application-related test runs, which incurs high costs.

Background

The FVA project series 696 deals in several individual research projects with the effects of thermal and dynamic loads on the rotary shaft seal sealing system. The formation of thermal damage and abrasive wear under progressive load is documented with extensive test series.

Expected results

- Understanding about simple and complex operating conditions at rotary shaft seals
- Guide to the creation and evaluation of load collective

Benefits for the selection of new sealing systems

- Derive individual, representative test cycles for RWDR from real load → Application-specific selection and testing of sealing systems

Benefits in product use

- Identify and avoid harmful load components in operation → Extend maintenance intervals, shorten downtimes

Approach

- Creation and continuous expansion of a damage catalog
- Development and application of a guideline for uniform assessment of damage at rotary shaft seals
- Complete consideration of all practice-relevant operating conditions

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