Press release

Progressive measurement solution: Patent application for faster and more precise results

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**Measurement along the path of contact und waviness analysis**

**Waviness on tooth flank surfaces is a significant factor in noise developing in gearboxes. Liebherr-Verzahntechnik GmbH has therefore filed for a patent for a new measurement method, which produces more precise and meaningful results with less labor required.**

The currently established standard in gear measuring technology to determine waviness is based on tooth flank surface topography measurements using vertical and horizontal measuring lines. However, this method does not always produce definitive results as it does not realistically represent the actual overlap ratios between toothed gear and mating gear or grinding worm. This is where the new method from Liebherr-Verzahntechnik GmbH comes in: Now the measurement is performed along the actual contact paths, that is diagonally across the entire tooth flank.

**Contact paths instead of profile lines**

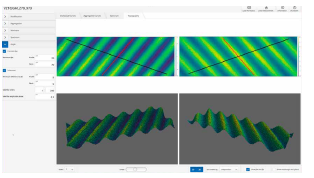
Measuring along the contact paths allows data to be gathered in less time using fewer measuring points. This then indicates the overlap ratios precisely.

**Waviness analysis completely revised**

Parallel to this, waviness analysis has also been completely revised in the “LHInspect” software. The measuring curves of the individual teeth can now be evaluated as a closed curve over the tooth circumference and the waviness helix axle can be determined. Tooth modifications such as crowning or reliefs can be directly included in or removed from the calculation. Furthermore, initial trials with artificial intelligence (AI) are showing promising signs for the future of waviness analysis.

The new measuring path filed for a patent, along with the revised waviness analysis will enable considerably faster, more accurate and meaningful evaluations of gear surface quality. This is highly significant for gear manufacturing, end processing and quality analysis. A software prototype will be presented at the EMO in September.

Photos



screenshot\_evotion\_AWA\_GUI 2

Visualization of the helix angle of waviness with the new analysis function of LHInspect  
  
  
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