Measurement of the seal geometry and seal ring wear within seconds

Automatic Wear Evaluation:
- evaluation with the IMA-program IMA-Sealscanner® Viewer
- complete wear width plot with min. + max. identification

Wear Width Plot
- wear width [mm]
- filter: sgolay
working principle:
• optical detection of the seal ring contour by means of a laser-scanner
• a deflecting mirror allows to detect the inner contour precisely
• 10,000 profiles are recorded during a 360° rotation, so the whole circumference is scanned within 10 seconds

Measurement:
• fast set-up of measurement
• intuitive operation
• automatic functions for batch processing of a large number of seal rings

Evaluation:
• various possibilities for analysis and visualisation of measured data
• automatic evaluation of wear width and sealing edge diameter
• definition of individual parameter sets for standardized tests procedures
Evaluation-software: IMA-Sealscanner® Viewer

- feature based software
- fast and operator independent evaluation
- protocol for each evaluation
- automatic estimation of the inner diameter by referenced seal holder
- measuring of inner diameter
- display of minimum and maximum wear width
- all types of rotationally symmetrical parts can be measured
- pumping aids can be measured (for evaluation separate software required)

Further possible Applications:

- grinding wheel
- clutch disc
- crown wheel
Benefit from the measurement device development driven by the research activities at the fluid sealing group at the Institute of Machine Components of University of Stuttgart

Technical Data IMA-Sealscanner®

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement duration for a 360°-scan</td>
<td>10 sec.</td>
</tr>
<tr>
<td>Measurement range axial</td>
<td>15 mm</td>
</tr>
<tr>
<td>Resolution axial</td>
<td>16 µm</td>
</tr>
<tr>
<td>Measurement range height</td>
<td>20 mm</td>
</tr>
<tr>
<td>Resolution height</td>
<td>0.41 µm</td>
</tr>
<tr>
<td>Detectable inner diameter</td>
<td>25-200 mm</td>
</tr>
<tr>
<td>Number of profiles in circumference</td>
<td>10,000 ... 30,000</td>
</tr>
<tr>
<td>Measurement frequency</td>
<td>1000 Hz</td>
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<tr>
<td>Measured points per profile</td>
<td>1024</td>
</tr>
<tr>
<td>Data format</td>
<td>*.sdf (DIN EN ISO 25178-71)</td>
</tr>
<tr>
<td>Data export:</td>
<td>PNG/ SVG/ CSV/ PDF</td>
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<tr>
<td>Wave length</td>
<td>405 nm</td>
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<tr>
<td>Laser class</td>
<td>3R</td>
</tr>
<tr>
<td>Switch cabinet (H x W x D)</td>
<td>600 x 600 x 400 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>150 kg</td>
</tr>
</tbody>
</table>

A Cooperation between:

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