

# FATIGUE STRENGTH TESTING

## Fracture mechanics and fatigue behaviour

- Measurement of high cycle and long life fatigue strength (HCF & LLF)
- fatigue testing with resonance frequency to simulate material behaviour and failure in real life application
- high testing frequency (80 Hz)
- Flexibility regarding sample geometry, load condition, material

### OUR SERVICES

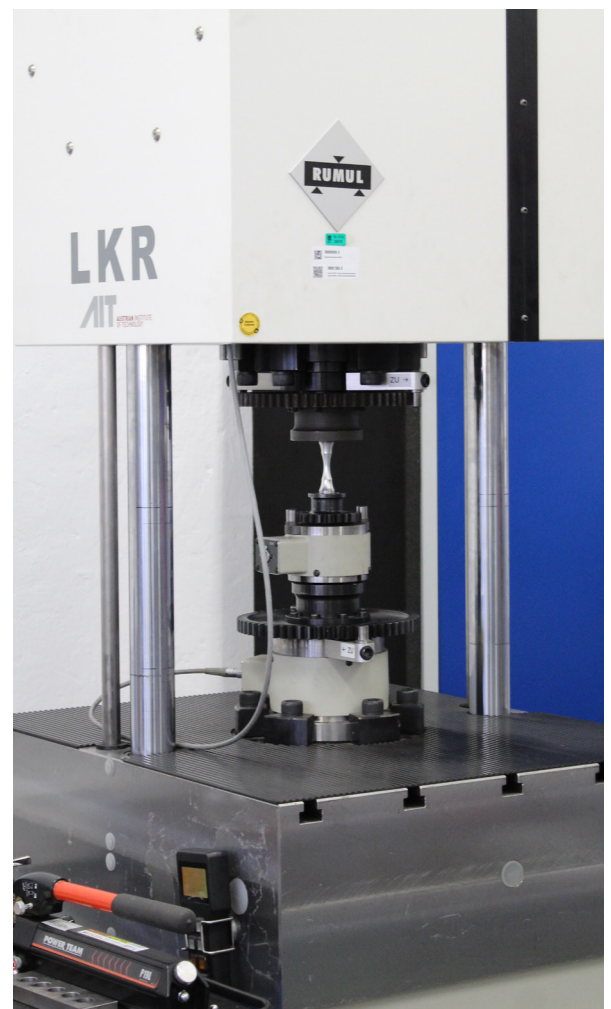
- Fatigue testing and Wöhler curves of standard and special samples, components
- Short test duration thanks to resonator testing machine (RUMUL Testronic)
- Detection of hardening and softening behaviour during the individual tests
- Tests at room and increased temperature
- Very small (<1 kN) to very large loads, at freely selectable load levels (tension/compression)

### EQUIPMENT

- Resonant testing machine 100 kN
- Resonant testing machine 20 kN

### TESTING METHODS

- DIN 50100: Dauerschwingversuch



TEST PROCEDURE	PERFORMANCE PARAMETERS	APPLICATION
Fatigue test in the range of high cycle and long life fatigue	<ul style="list-style-type: none"> <li>• Standard samples and components up to 560mm component height</li> <li>• Amplitudes: -100 to +100 kN</li> <li>• Test frequencies up to 140 Hz</li> <li>• Load ratio (R value) freely selectable</li> </ul>	<ul style="list-style-type: none"> <li>• Creation of Wöhler curves, release dates for newly developed alloys</li> </ul>
Fatigue testing at elevated temperature	<ul style="list-style-type: none"> <li>• Room temperature up to 900 °C</li> </ul>	<ul style="list-style-type: none"> <li>• Materials at real operating temperatures</li> </ul>

As a subsidiary of AIT **LKR Leichtmetallkompetenzzentrum Ranshofen GmbH** is pursuing a holistic research and development approach to lightweight construction in the vehicle sector - from new metal alloys and process technology to material-related structural design.



This makes LKR a powerful and independent partner for your development projects.

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