BUP
Cornering fatigue test
The cornering fatigue test serves for the continuous quality control of vehicle wheels.
BUP

Cornering fatigue test

The cornering fatigue test is performed as part of prototype technical-release testing and the continuous monitoring of vehicle wheels. The test parameters are determined by the applicable legal regulations and the required wheel loads of the wheel to be tested. Extended tests and special requirements of automobile manufacturers, wheel manufacturers and test organizations (e.g. TÜV) can be covered by the BUP of Alpine Metal Tech GmbH. The test serves for the continuous quality control of material and processing. Vehicle wheels are safety-relevant parts of automobiles and must therefore be subjected to regular testing.

YOUR ADVANTAGES

» Certified test machine manufacturer
   The measuring machines are accepted and certified directly at AMT Makra by the renowned German automobile manufacturers (BMW, AUDI, Daimler, Volkswagen, Porsche etc.).

» Test software
   Integrated BMW test modules with special switch-off conditions according to QV 36026 and the possibility of DAkkS calibration. Contains the switch-off criteria prescribed by TÜV for aluminum, magnesium and steel wheels.

» State-of-the-art software architecture
   The software can be used with Windows 10 and contains an option for connecting to databases (optional).

» High level of flexibility
   Nominal diameter of 10 to 38"; rim width of 3 to 26"; larger rim widths using special flanges available as an option.

» HMI
   Intuitive software – operator interface can be set in local language.

» MAKRA quick clamping system
   For a time-saving and easy change of wheels.

» Exhaust system (optional)
   Exhaust system for the testing of carbon wheels.
BUP760
Cornering fatigue test for passenger cars

In corner fatigue test machines by AMT Makra, the force transmission is produced with a rotating centrifugal weight. There are several machine types available for a wide range of wheel loads. The analysis of test results is carried out via the control processor. The test data required for documentation can be transmitted via networks or printed out. The design of the machine combines an ergonomic working height with a durable design. The choice of digital drive technology ensures low noise emission.
BUP1000
Corner fatigue test for trucks

The MAKRA test machine BUP1000 is used for stationary fatigue testing with a rotating centrifugal weight for truck wheels. The type BUP1000 is designed for maximum ease of operation. The size and shape of the clamping table allows the testing of wheels with a nominal diameter of 16 to 50” and a nominal width of 5 to 26”. The bending moment can be individually selected in the range from 3 to 80 kNm.
FEATURES

Resonance curve
The resonance curve is used to determine the critical range of resonance oscillations during the test procedure.

Quick clamping system
Diameter range from 10 to 28"; no change in the center of gravity of the centrifugal weight in the machine body.

Centrifugal compensation
According to the calculation of the bending moment by the software, the centrifugal weight is calculated and affixed at the corresponding position.

Test log
All wheel-specific parameters and the test results are recorded in the test log.

Tightening torque
The ergonomically correct working height ensures problem-free tightening of the wheel bolts with the torque wrench (with integrated data connection to the analyzing software).

Calibration unit
An electronic calibration device is available as an option.

Testing of carbon wheels (optional)
An optional exhaust system is available for testing carbon wheels.
<table>
<thead>
<tr>
<th></th>
<th>BUP760 7.5 kNm</th>
<th>BUP760 12 kNm</th>
<th>BUP760 16/20 kNm</th>
<th>BUP1000 35 kNm</th>
<th>BUP1000 80 kNm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test bending moment</strong></td>
<td>0.5 – 7.5 kNm</td>
<td>0.5 – 12 kNm</td>
<td>0.5 – 16/20 kNm</td>
<td>1.5 – 35 kNm</td>
<td>3 – 80 kNm</td>
</tr>
<tr>
<td><strong>Max. bending moment incl. threshold limit (10%)</strong></td>
<td>0.5 – 8.25 kNm</td>
<td>0.5 – 13.2 kNm</td>
<td>0.5 – 17.6/22 kNm</td>
<td>1.5 – 38.5 kNm</td>
<td>3 – 88 kNm</td>
</tr>
<tr>
<td><strong>Length of bending bar incl. wheel supporting flange</strong></td>
<td>760 mm</td>
<td>760 mm</td>
<td>760 mm</td>
<td>1000 mm</td>
<td>1000 mm</td>
</tr>
<tr>
<td><strong>Wheel, nominal Ø (others on request)</strong></td>
<td>10 – 28&quot;</td>
<td>10 – 28&quot;</td>
<td>10 – 28&quot;</td>
<td>14 – 38&quot;</td>
<td>16 – 38&quot; (max. 50&quot; with special clamping lever)</td>
</tr>
<tr>
<td><strong>Rim width (others on request)</strong></td>
<td>3 – 14&quot;</td>
<td>3 – 14&quot;</td>
<td>3 – 14&quot;</td>
<td>5 – 26&quot;</td>
<td>5 – 26&quot;</td>
</tr>
<tr>
<td><strong>MAKRA quick clamping system</strong></td>
<td>12 – 24&quot;</td>
<td>12 – 24&quot;</td>
<td>14 – 32&quot;</td>
<td>14 – 38&quot;</td>
<td>16 – 38&quot;</td>
</tr>
<tr>
<td><strong>Rotary test</strong></td>
<td>up to 2400 rpm</td>
<td>up to 2400 rpm</td>
<td>up to 2400 rpm</td>
<td>up to 2400 rpm</td>
<td>200 – 1500 rpm (others on request)</td>
</tr>
<tr>
<td><strong>Clamping table size</strong></td>
<td>1000 x 1000 mm octagonal</td>
<td>1000 x 1000 mm octagonal</td>
<td>1000 x 1000 mm octagonal</td>
<td>2100 x 2000 mm octagonal</td>
<td>2100 x 2000 mm octagonal</td>
</tr>
<tr>
<td><strong>Clamping table height</strong></td>
<td>935 mm</td>
<td>935 mm</td>
<td>935 mm</td>
<td>1550 mm</td>
<td>1550 mm</td>
</tr>
<tr>
<td><strong>Total weight</strong></td>
<td>1800 kg</td>
<td>1800 kg</td>
<td>1812 kg</td>
<td>4100 kg</td>
<td>4200 kg</td>
</tr>
<tr>
<td><strong>Power AC motor</strong></td>
<td>5.5 kW</td>
<td>5.5 kW</td>
<td>5.5 kW</td>
<td>15 kW</td>
<td>22 kW</td>
</tr>
</tbody>
</table>

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