

# Road-Load-Simulator



## Main Application

- static and dynamic Investigations of Axle Systems of Motor Vehicles
- Investigations with longitudinal and vertical Force Application at the Wheel Hub
- Determination of the Transmission Behavior from the Wheel Hub to the Connecting Points of the Car Body
- Validation Measurements by means of static Characteristic Curves, Step Excitations, Sinusoidal Excitations up to 25Hz, Follow-up Tests of arbitrary Road Profiles

## Technical Data

- Load Range:

Vertical	20 kN per Cylinder
Longitudinal	15 kN per Cylinder
Crosswise	15 kN per Cylinder
- Travel:

Vertical	max. +/- 135 mm
Longitudinal	max. +/- 30 mm
Crosswise	max. +/- 30 mm
- Accuracy: 0,01 mm
- Test Speed: max. 4 m/s

<p><b>Specimen</b></p> <ul style="list-style-type: none"> <li>• Motor Vehicle Axles</li> <li>• double Wishbone, McPherson Strut, Space Control Arm, trapezoidal Control Arm</li> </ul>	<p><b>Characteristics</b></p> <ul style="list-style-type: none"> <li>• with corresponding Adapters any Axles possible, also Front or Rear Axles</li> </ul>
<p><b>Measured Values</b></p> <p>Force:</p> <ul style="list-style-type: none"> <li>- Coupling Rods Suggestions left/right 3-axis (lengthwise, crosswise und vertical)</li> <li>- Top Mount left/right 6-axis</li> <li>- Sub-Frame 4 x 3-axis</li> <li>- upper Control Arm left/right 3-axis (optional Extension by DMS possible)</li> </ul> <p>Displacement:</p> <ul style="list-style-type: none"> <li>- Wheel Hub left/right 3-axis (lengthwise, crosswise und vertical)</li> <li>- Surface Mount Damper left/right 1-axis (optional Extension possible)</li> </ul> <p>Acceleration:</p> <ul style="list-style-type: none"> <li>- Wheel Hub left/right 3-axis (optional Extension possible)</li> </ul>	<p><b>Measurement Devices</b></p> <ul style="list-style-type: none"> <li>- Force Transducer: vertical/cross 20 kN, lengthwise 15 kN Accuracy Class: 0,1</li> <li>- Position Sensors: Measuring Length: 250 mm</li> <li>- Inductive Displacement Measuring System in the hydraulic Cylinder</li> </ul> <p>In addition, there is an extensive Range of Measuring Equipment in various Sizes and Accuracies of the Measurement of:</p> <ul style="list-style-type: none"> <li>- Force</li> <li>- Momentum</li> <li>- Displacement</li> <li>- Acceleration</li> <li>- Pressure</li> <li>- Temperature</li> <li>- elec. Current/Voltage</li> </ul>
<p><b>Devices</b></p> <ul style="list-style-type: none"> <li>• universal Test Bench Frame</li> <li>• Axle Mountings double Wishbone, trapezoidal Link, McPherson Strut</li> <li>• hydraulic Power Pack (p = 207 bar, Q = 300 l/min)</li> <li>• hydraulic Connection Unit (max. operating Pressure: 210 bar, max. nominal Flow: 190 l/min per HSM)</li> <li>• Pressure Accumulator</li> <li>• Cooling System</li> <li>• Hänchen hydraulic Cylinder with Pressure Accumulator (Pull/Pressure 320 bar, Piston - Ø 60 mm, Rods - Ø 50mm, Hub 270 mm)</li> <li>• MOOG servo Valves 2-stage</li> <li>• HBM Load Cell (20 kN)</li> <li>• MTS Load Cell (15 kN)</li> </ul>	
<p><b>Software for Control and Data Acquisition</b></p> <ul style="list-style-type: none"> <li>• MTS Multi-Purpose Testing (MPT) with Amplitude - Phase - Control (APC)</li> <li>• DIADem - mobile Measurement System from National Instruments</li> <li>• LABView - mobile Measurement System from National Instruments</li> </ul>	
<p><b>Available Supplies</b></p> <ul style="list-style-type: none"> <li>• electrical Connection 16 A (32 A if necessary)</li> <li>• compressed Air 6 bar</li> <li>• Cooling Water Temperature: 23 - 60 °C</li> </ul>	