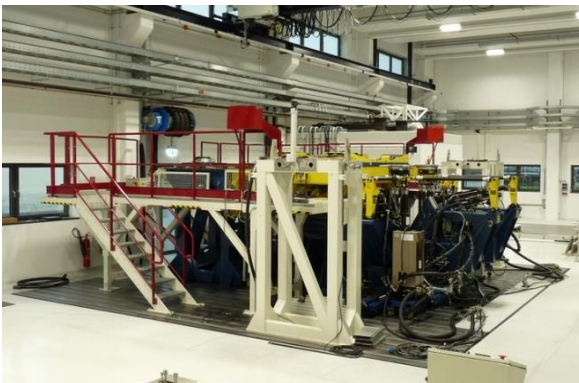


## 09\_Suspension Motion Simulator



### Main Application

- static and dynamic K&C Measurements
- Reproduction of dynamic Driving Maneuvers
- Simulation of decomposed Driving Maneuvers
- Parameterization and Validation of the Simulation Models

### Vehicle Requirements

maximum permissible Vehicle Weight	3,5 t
Track Width	1065 - 1900 mm
Wheelbase	1500 - 4000 mm
maximum Dimensions	6000 x 2500 x 3000 mm (L x W x D)



### Input Signals

- Sinus
- Triangle
- Rectangle
- Ramp
- White Noise

### Operating Range

Direction	Route Control		Force Control	
	Quasistat. up to 5 Hz	at 30 Hz *	quasistatic	at 30 Hz *
X	±100 mm	±5 mm	±4 kN	±750 N
Y	±100 mm	±5 mm	±4 kN	±750 N
Z	±100 mm	±5mm	±15 kN	upon Request
Rotation around Z	±5 °	±0,7 °	±200 Nm	±25 Nm

\* Operating Range may change depending on the Load and Mass on the Platform.

### Measured Values, Measuring Ranges and Tolerances

With the Aid of an optical Measuring System (GOM ARAMIS SRX), Position changes of the Rim (6 DOF) and the Body/Fender (6 DOF) as well as the Platform (6 DOF) are measured:

Measuring Principle	optical, contactless
Accuracy	±0,04 mm
Real-Time Output	yes
Number of Measuring Points (N)	3..256
Measuring Frequency	1000 Hz

All Forces, all Moments and 4 Movements are measured on the movable Platforms:

Measurement	Range	Overload	Tolerance	Resolution	Linearity	Hysteresis
Fx	±20 kN	±50 kN	±25 N (by 0 kN) ±1 % (0-4 kN)	12 N	±0,3 % FS	±0,3 % FS
Fy	±20 kN	±50 kN	±25 N (by 0 kN) ±50 N (0-4 kN)	12 N	±0,3 % FS	±0,3 % FS
Fz	20 kN	200 kN	±40 N (0-2 kN) ±2 % (2-15 kN)	25 N	±0,3 % FS	±0,3 % FS
Mx	±2 kNm	-	-	2 Nm	±0,3 % FS	±0,3 % FS
My	±2 kNm	-	-	2 Nm	±0,3 % FS	±0,3 % FS
Mz	±2 kNm	-	±5 Nm	1,5 Nm	±0,3 % FS	±0,3 % FS
Displ. X	±100 mm	-	±0,5 mm	-	-	-
Displ. Y	±100 mm	-	±0,5 mm	-	-	-
Displ. Z	±100 mm	-	±0,5 mm	-	-	-
Rot. Z	±5 °	-	±0,3 °	-	-	-



### **Characteristics**

- 20 additional analog Inputs for further measured Variables (Acceleration, Temperatures, Steering Angle on Steering Wheel, etc.)
- Measurements possible with fixed and freely oscillating Vehicle
- Oscillation Foundation : 350 t