

Class-leading kinematics and compliance test machine

Suspension Parameter Measurement Machine (SPMM 5000e+)



The SPMM is the industry-leading vehicle kinematics and compliance (K&C) test machine that enables the collection of quasi-static suspension characteristics that are important to vehicle ride and handling performance.

This data is used for benchmarking, prototype vehicle design and provides the foundation of vehicle models used extensively in simulation including full vehicle driving simulators.

The unique all-electric moving body, fixed-ground design of the SPMM has proven over several decades to be efficient, accurate and exceptionally reliable providing the most faithful simulation of on-road vehicle behaviour.

The latest revision of the SPMM is tailored to meet the ever-changing demands of the automotive industry with a greater range of movement, a state of the art control system and the ability to accommodate larger vehicle sizes.



Moving body, fixed-ground plane design provides a faithful simulation of on-road vehicle behaviour



Proven pedigree with over forty installations globally



Exceptional accuracy Dynamic Arm Wheel Position Measurement System



Efficient software and rig design yields significant testing up time and test vehicle throughput



Fully programmable and easy-to-use control software running within Windows



Optional centre of gravity and moment of inertia test capability



One-click data export to popular modelling packages such as CarMAKER, Car SIM



Fully customisable MATLAB data processing and reporting suite



Low maintenance, servo-electric design



Extensive catalogue of options and accessories to meet your unique testing requirements

Specifications

Rig capacity

	Minimum	Maximum
Vehicle wheelbase range	1960mm	4540mm*
Vehicle track range	1100mm	2082mm
Vehicle mass	-	5000kg**
Rear wheelpan	400mm	600mm***

*When intermediate or secondary table extenders fitted

** 6800Kg if centrally loaded

*** With large wheelpan adaptor fitted

Dynamic Arm

Accuracy

	Sub range*	Accuracy (0-5Hz)	Resolution
Fore/aft (X) & Lateral (Y)	±10mm	±0.02mm	0.005mm
Vertical (Z)	±10mm	±0.02mm	0.005mm
Steer	±1°	±0.004°	±0.001°
Camber	±1°	±0.005°	±0.001°
Wheel spin	±30°	±0.01°	±0.003°

* Contact AB Dynamics for full range accuracy

Cross-talk

	Maximum cross-talk
Linear to linear	0.003mm/mm
Linear to rotation	0.0004mm/°
Rotation to linear	0.015°/mm
Rotation to rotation	0.003°/°

Body motions

	Range	Accuracy	Max velocity*
Bounce	±230mm	±0.15mm	140mm/s**
Roll	±10°	±0.02°	7°/s
Pitch	±8°	±0.02°	6°/s

*Maximum velocity available with dynamic option

**Upgradable to 280mm/s

Tyre contact patch motions

	Range	Accuracy	Max velocity*
Fore & aft (X)	±150mm	±0.15mm	100mm/s
Lateral (Y)	±150mm	±0.15mm	100mm/s
Powered rotational (δ)	±80° nominal	±0.02°	6°/s

Force measurement

	Calibrated range	Accuracy
Fore/aft (F_x) or lateral (F_y)	±1750N ±15000N	±5N ±30N
Vertical (F_z)	0->5000N 0->30000N	±5N ±30N
Steer moment (M_z)	±500Nm ±750Nm	±1Nm ±2Nm

Cross-talk

	Maximum cross-talk
Load to load	< ±0.1%
F_x or F_y to M_z	< ±0.0004 Nm/N
F_z to M_z	< ±0.0001 Nm/N



Dynamic Arm Measurement System



Servo-electric linear actuators



EtherCAT control system

About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

For more information:
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