

TOYOTA MOTORSPORT GmbH
FULL-CAR ROAD SIMULATOR (MTS 329)

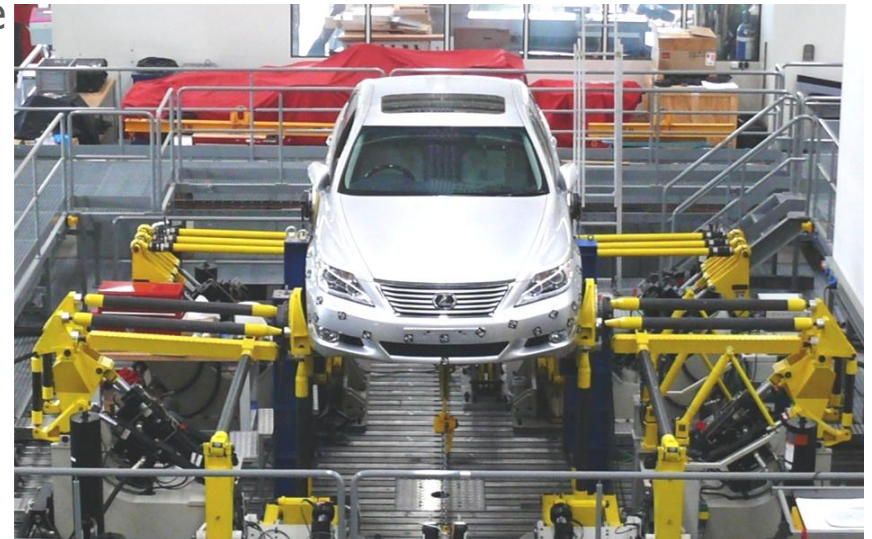


The full-car road simulator (MTS 329) at Toyota Motorsport GmbH is part of our 2,000m² testing facility, where over 200 separate specialist tests can be carried out.

The 329 at TMG is a rare commercially-available example of this MTS-manufactured rig, designed primarily for realistic road load application.

Six degrees of freedom at vehicle spindle gives control over vertical, lateral, longitudinal, brake/drive torque, camber and steer forces.

Its maximum operating frequency is 50Hz and an additional four actuators can simulate downforce.



In floating body mode, all 29 channels deliver accurate full-vehicle stress distribution analysis of non-maneuvring events, while semi-floating mode uses up to 14 channels for single axle suspension and partial vehicle body tests, including brake simulation. Fixed body mode, using as many as 15 channels, allows single axle suspension testing, including braking and cornering simulation.

A combination of sensors and high-tech imaging techniques provides in-depth analysis of component deformation to either increase kinematic performance or confirm structural reliability.



FULL-CAR ROAD SIMULATOR (MTS 329)



Full-car stress distribution analysis

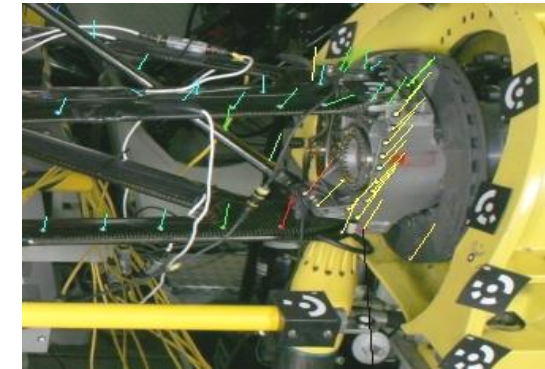
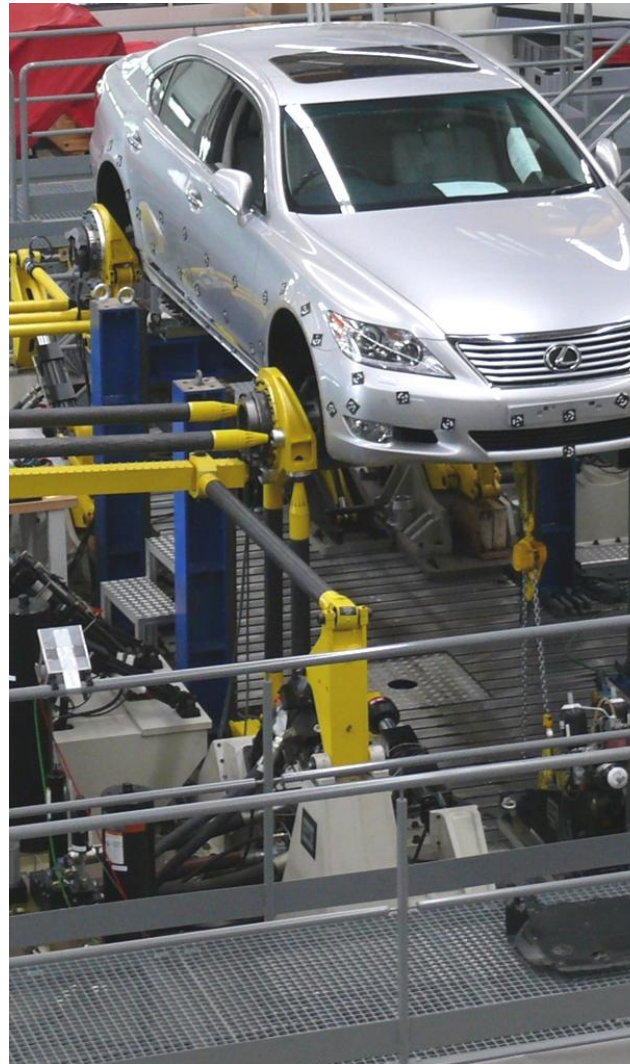
Front or rear suspension and sub-system testing

Front or rear axle fatigue analysis

Elasto-kinematic analysis of various components

Suspension and wheel deformation studies

Component and assembly proofing for various purposes



3D optical deformation measurements

Visualisation of component deformation under load

Exceptionally accurate simulation models after iteration process

Adaptable to virtually any car

Full-car or single-axle modes

Functions with actual or synthetic track data



SIX DEGREES OF FREEDOM - VERTICAL, LONGITUDINAL & LATERAL

Vertical Input (front)	
Dynamic Spindle Force/Moment	75 kN
Spindle Displacement	300mm
Spindle Velocity	6 m/s

Vertical Input (rear)	
Dynamic Spindle Force/Moment	63 kN
Spindle Displacement	300mm
Spindle Velocity	7 m/s

Longitudinal Input	
Dynamic Spindle Force/Moment (front)	30 kN
Dynamic Spindle Force/Moment (rear)	22 kN
Spindle Displacement	300mm
Spindle Velocity	2.5 m/s



Lateral Input (front)	
Dynamic Spindle Force/Moment	30 kN
Spindle Displacement	200mm
Spindle Velocity	2.5 m/s

Lateral Input (rear)	
Dynamic Spindle Force/Moment	22 kN
Spindle Displacement	200mm
Spindle Velocity	2 m/s





SIX DEGREES OF FREEDOM - STEER, CAMBER & BRAKE/DRIVE

Steer Input (front)	
Dynamic Spindle Force/Moment	6.9 kNm
Spindle Displacement	44°
Spindle Velocity	400°/s

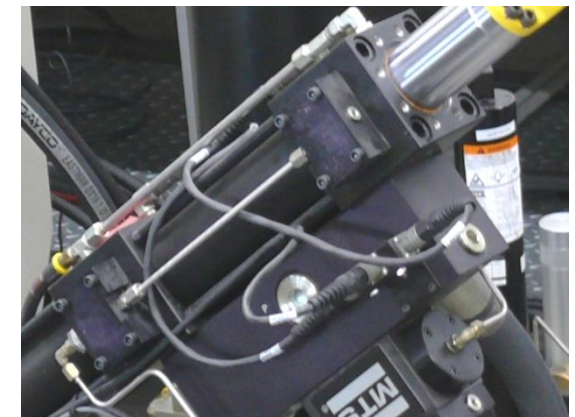
Steer Input (rear)	
Dynamic Spindle Force/Moment	3.8 kNm
Spindle Displacement	16°
Spindle Velocity	400°/s

Camber Input	
Dynamic Spindle Force/Moment	7 kNm
Spindle Displacement (front)	30°
Spindle Displacement (rear)	16°
Spindle Velocity	400°/s



Brake/Drive Input (front)	
Dynamic Spindle Force/Moment	6.2 kNm
Spindle Displacement	30°
Spindle Velocity	400°/s

Brake/Drive Input (rear)	
Dynamic Spindle Force/Moment	7 kNm
Spindle Displacement	35°
Spindle Velocity	700°/s





TOYOTA MOTORSPORT GmbH
THE HOME OF HIGH PERFORMANCE

For a detailed discussion on how to extract the full potential of your project through use of TMG's MTS 329 rig, contact us for a no-obligation consultation.

As a multi-national company we have representatives speaking all major European languages and several more besides, while discretion and client confidentiality come as standard.

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