

## References

We are experienced in all major national and international racing series and in the development of production cars:

### Motorsports:

- Formula 1
- Formula 3
- Formula 4
- DTM
- GT Cars (GTE, GT3, GT4)
- Touring Cars (TCR)
- LMP (Le Mans Prototype)
- Rally Cars (WRC, WRX)
- CUP Cars

### Production Cars:

- High Performance Cars
- SUV's
- Damper development
- Benchmarking
- Basic research



## Component Testing

- 3 x 2 meter t-nut plate, on air springs, automatic leveling & 6 x 3 meter t-nut plate
- Component stiffness and life-cycle testing
- Chassis torsional stiffness tests

## Bushing Measurements

- Quasistatic & dynamic characterization
- Dynamic measurement up to 30Hz
- Axial, radial, torsional and conical characterization
- Durability tests



## SERVO HYDRAULIC 7-POST-RIG



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## Benefits

- Cost-effective optimization & analysis of the vehicle setup without any additional cost for track rental, worn parts & sensors
- Rig test planning and preparation support to get the best efficiency of your test days
- Automated analysis and evaluation with TRE's own software tool.
- Final testing report including results summary and suggested setup directions
- Absolute reproducibility without any weather-, driver- or wear influences

## Track Replay (7-Post-Rig)

- Track-Simulation on the rig
- Based on real recorded data
- Setup optimization for a specific track



## Basic Function 4- & 7-Post-Rig

- Vehicle will be excited vertically via hydraulic actuators: 4 wheel actuators and 3 chassis actuators to simulate aerodynamic loads as well as pitch/roll moments

## Optimization

- Optimization of mechanical grip
- Additional aerodynamic platform stabilization, focused on modern GT and Formula cars
- Matrix-Tests to evaluate the complete range of setup adjustments and their effects. Results can be used as an on-track setup tool

## Standard application

### Passenger Cars:

- Suspension tuning improving ride comfort, driving stability & component reliability
- Tests can be based on synthetic inputs or real road profiles

### Commercial vehicles:

- Optimization of vehicle variants and loading conditions
- Basic suspension setup as well as endurance runs on selected road profiles or synthetic excitations

## Technical Specifications

### 4 & 7-Post-Rig:

- Wheelbase 1600 – 4600 mm
- Track width 740 – 2600 mm
- $\pm 125$  mm – travel wheel actuator
- $\pm 150$  mm – travel aero loader
- Max. dyn. Force wheel actuator 36kN
- Max. dyn. Force aero loader 5kN in push- and 29kN in pull direction
- 72 analogue inputs for sensors

### Servo-Hydraulic Damper Test Machine

- 6 m/s - max. piston speed
- $\pm 100$  mm – travel
- Measurement and optimization of basic damper characteristics
- Measurement of friction- and temperature influences
- Track Replay based on real measured damper displacement signals

