Tire Testing Machines

Technology Solutions
Since 1933

TS Group

Testing Service GmbH
Testing Technology

TS GIM

TS SCHMID
AUTOVISION

TS ELINDO

Founded 2005
Engineering, construction, supply and commissioning of test stations for tires

Founded 1994
Engineering, construction, supply and commissioning of test stands for drive shafts

Founded 2010
Development and supply of optical testing equipment

Founded 1933
Engineering, construction, supply and commissioning of industrial furnaces
### End of line Tester

- Uniformity TBR / PCR
- Balancing TBR / PCR
- Run Out TBR / PCR
- Run Out OTR

### R&D Tester

- Rolling Resistance Test Machine
- NVH tester / Indoor Noise
- Force and Moment Test Machine
- Universal Tire Test Machine
- Plunger / Bead Unseating Test Machine
- High Speed Uniformity
- Cleat tester
- Dynamic footprint tester
- Endurance Test Machine
- Wear Test Machine
- Bead compression tester
- High Speed Test Machine
- High Speed Contur
- Additional equipment

### Aircraft Tire

- Dyno
- Stiffness tester
Tire Testing Machines

Our Production
Services and Products

- Construction
- Mechanical Production
- Electrical Assembly
- Automation and Programming
**Tire Testing Machines**

**Uniformity TBR / LTR / PCR**

**Functional principle:** Uniformity PC, Light Truck and truck and bus tires

**Application:** Standard Testing and OEM testing according to the test procedures of the automotive companies. Customized Uniformity, Balancing and Run-Out testing according to the tire manufacturers internal test standards:

- Tire radial, lateral and tangential (fore-aft) Uniformity
- Tire static and dynamic balancing
- Tire radial and lateral run out
- Conicity and Plysteer

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus tires

**Technical data:** Testing positions: 1 position

- Drum diameter: 0.856m, 1.6 m
- Measurement hub: diverse measurement devices
- Tire Loading: 1, 2, 2.5, 6.3 tons
- Loading principle: Hydraulic, electric
- Speed: 60 r/min

**Test standards:** - ISO 13328
             - SAE J332
Uniformity TBR / LTR / PCR
Balancing TBR / LTR / PCR

**Functional principle:** Balancing for PC, Light Truck and truck and bus tires

**Application:** Standard Testing and OEM testing according to the test procedures of the automotive companies. Customized Balancing and Run-Out testing according to the tire manufacturers internal test standards:
- Tire static and dynamic balancing

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus tires

**Technical data:**
- Testing positions: 1 position
- Measurement hub: diverse measurement devices
- Speed: (400 r/min)

**Test standards:**
- ISO 13328
- SAE J332
Balancing TBR / LTR / PCR
Tire Testing Machines

Run Out OTR / TBR / LTR / PCR / MC

**Functional principle:** Run-out for PC, Light Truck and truck and bus tires OTR Tires

**Application:** Standard Testing and OEM testing according to the test procedures of the automotive companies. Customized Run-Out testing according to the tire manufacturers internal test standards:
- Tire radial and lateral run out

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus tires

**Technical data:** Testing positions: 1 position
- Measurement hub: diverse measurement devices
- Speed: 60 r/min (400 r/min)

**Test standards:**
- ISO 13328
- SAE J332
Run Out OTR / TBR / LTR / PCR / MC
Aircraft Tire Dynamometer

**Functional principle:** Aircraft Tire Dynamometer

**Application:** Legal testing according to the test procedures of the different countries. Customized starting and landing testing to the companies test standards

**Test specimen:** Aircraft Tire

**Technical data:** Testing positions: 1 - 2 positions
- Speed up to 640 km/h
- Acceleration up to 12.5 m/s²
- Drum diameter: 1.707m / 2m / 2.9 / 3.048m
- Drum motor: AC Motor
- Wheel Loading: 1, 2, 5, 10, 15, 25, 40, 80 tons
- Loading principle: Hydraulic, electrical
- Speed: 50mm/mm
Aircraft Tire Dynamometer
Rolling Resistance Test Stand with Force and Torque Method

**Functional principle:** Rolling Resistance Tester for MC, PC, Truck and OTR

**Application:** Legal testing according to the test procedures of the different countries. Customized rolling resistance test to the companies test standards.

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus tires

**Technical data:**
- Testing positions: 1 or 2 positions
- Drum diameter: 1.707 m / 2 m
- Test methods: Torque and/or force method
- Drum motor: AC Motor
- Tire Loading: 1, 2, 5, 6.3, 10 tons
- Loading principle: hydraulic, electrical
- Speed: 120, 150, 250, 350 km/h

**Test standards:**
- ISO 28580, ISO 16377, ISO 9948, ISO 1816
- R 117, GB/T 29042-2012
- SAE J2452, SAE J1269, SAEJ1270
Torque method

Force method
Tire Testing Machines

NVH / Indoor Noise Tire Test MC

Functional principle: Indoor Noise Tester for PCR, Light Truck and TBR tires

Application: Noise testing according to the test procedures of the automotive companies and standard procedures.

Test specimen: Motorcycle, passenger car, light truck, truck tires noise tester

Technical data:
- Testing positions: 1 position
- Drum diameter: 1,707m / 2m and 3m
- Force measurement device: Measurement platform (optional)
- Tire Loading: 1, 2, 2.5, 6.3 tons
- Loading principle: Hydraulic, electric
- Drives: AC Motor
- Speed: 250km/h

Test standards:
- OEM and customer specific
NVH / Indoor Noise Tire Test MC
TS Wet Grip Test Machine WGT M

**Functional principle:** Indoor Wet Grip Tester for PC, Light Truck, Truck and Bus tires

**Application:** Wet Grip testing near to the test procedures of the SAE and ISO outdoor testing. Customized indoor wet grip testing according to the tire manufacturers internal test standards

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus tire

**Technical data:** Testing positions: 1 position

- Drum diameter: 3m, 4m
- Force measurement device: Measurement platform (optional)
- Tire Loading: 1, 2, 2.5, 6.3 tons
- Loading principle: Hydraulic, electric
- Drives: AC Motor
- Speed: 100 km/h
Indoor Wet Grip Tester

- Loading and acceleration
- Stabilisation
- Braking
Tire Testing Machines

Force and Moment measurement MC

**Functional principle:** Force and Moment tester for PC, Light Truck and TBR tires

**Application:**
SAE, ISO and OEM standard testing according to the test procedures of the automotive companies:
- Steady State Free Rolling Force and Moment Testing
- Dynamic Free Rolling Force and Moment Testing
- Slip Angle Sweep Tests
- Sinusoidal Slip Angle Tests
- Sinusoidal radial Deflection Tests
- Driving and Braking Force Tests with Spindle Drive
- (Slip Ratio Sweep Test) up to 6000Nm
- Longitudinal or Combined Longitudinal and Lateral Testing
- Residual Self-Aligning Moment Test

**Test specimen:**
Motorcycle, passenger car, light truck, truck tires

**Technical data:**
- Testing positions: 1 / 2 position
- Drum diameter: 1.707m, 2 m or flat belt
- Force measurement device: Measurement platform
- Tire Loading: 1, 2, 2.5, 6.3 tons
- Loading principle: Hydraulic
- Speed: 120, 150, 200, 350, 400 km/h
- Add. Parameters: Slip angle, camber angle, drive torque
- Drives: Electric or hydraulic

**Test standards:**
SAE J1106, SAE J1107, SAE J1987
Force and Moment measurement MC
Universal Tire Test Machine UTTM TBR / PCR

**Functional principle:** Stiffness Tester for MC, PC, Truck and OTR tires

**Application:** Legal testing according to the test procedures of the different countries. Customized stiffness testing to the companies test standards for:
- Tire radial, lateral, longitudinal and torsional stiffness
- Pressure Map
- Footprint Characteristic
- Loaded contour
- Bead unseating
- Plunger
- Electric conductivity
- Cleat testing (pitch cut test)

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus, agro and OTR tires

**Technical data:**
- Testing positions: 1 position
- Table: Measurement platform
- Tire Loading: 2, 10, 25, 80 tons
- Loading principle: Electrical
- Speed: 50mm/mm

**Test standards:**
- GBT 23663-2009, GBT 4502-2009
- ASM F1971
- SAE J2705, SAEJ2704
Universal Tire Test Machine UTTM TBR / PCR
Tire Testing Machines

Low / High Speed Uniformity Test Machines

**Functional principle:** High Speed Uniformity for PC, Light Truck tires

**Application:** OEM testing according to the test procedures of the automotive companies. Customized High Speed Uniformity testing to the tire manufacturers internal test standards:
- Tire radial, lateral and tangential (fore-aft) High Speed Uniformity
- Tire static and dynamic balancing
- Cleat testing
- Tire radial and lateral run out
- Concility and Plysteer

**Test specimen:** Motorcycle, passenger car, light truck, truck tires

**Technical data:**
- Testing positions: 1 position
- Drum diameter: 1,707m / 2 m
- Measurement hub: Kistler Measurement hub
- Tire Loading: 1, 2, 2.5 tons
- Loading principle: Hydraulic
- Speed: 250, 350 km/h

**Test standards:**
- ISO 13328, ISO 23671 SAE J2730, SAE J332, SAE J2731
Low / High Speed Uniformity Test Machines
Tire Testing Machines

**TS DFM**

**Functional principle:** Dynamic Footprint and Force and Moment Tester for PC, light truck, Truck and bus tires

**Application:** SAE, ISO and OEM standard testing according to the test procedures of the automotive companies
- 3d forces in the contact patch
- 2d movement in the contact patch
- 2d movement of the tire body
- Steady state force and moment
- Grip on different surfaces

**Test specimen:** Motorcycle, passenger car, light truck, truck tires

**Technical data:**
- Testing positions: 1 position
- Force measurement device: Measurement platform
- Tire Loading: AC Motor
- Tire Loading: 1, 2, 2.5, 6,3 tons
- Loading principle: Electric
- Speed: 1,2, 1,5, 2, 3,5, 4 km/h
- Add Parameters: Slip angle, camber angle, drive torque
- Drives Electric

**Test standards:**
- Customer specific
Dynamic Footprint Tester
Endurance / High Speed Test Machine

**Functional principle:** High Speed and / or Endurance Testing for PC, Light Truck, Truck and bus and OTR tires

**Application:** Legal testing according to the test procedures of the different countries. Customized endurance / High speed test to the companies test standards

**Test specimen:** Motorcycle, passenger car, light truck, truck and bus, agro and OTR tires

**Technical data:** Testing positions: 2/4/6 positions

- Drum diameter : 1,707m / 2m / 3m and 5m
- Drum motor: AC Motor
- Tire Loading: 1, 2, 5, 10, 15, 25, 40, 80 tons
- Loading principle: Pneumatic, hydraulic, electrical
- Speed: 120, 150, 200, 350, 400 km/h

**Test standards:**
- FMVSS 109 / 119 /139
- ISO 10231, ISO 10191
- SAE J1561, SAE J1633
- UN ECE R30, R54, R64, R75, R106, R108, R109
Endurance / High Speed Test Machine
Innovative Testing Solutions

**NEW:** Tire Footprint Sensor System

**NEW:** Tire Vibration detection

**NEW:** Tire Inside Temperature Measurement by TPMS

Tire test Rims
Innovative Testing Solutions

NEW: Tire Dynamic Growth

NEW: Tire Footprint Plate

Tire Slip and Camber Angle

Tire Slip Torque Test

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German Technology
Manufactured in Germany
not only engineered...

Quality certified by ISO 9001:2008

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