ATP

automotive testing papenburg

Engineering

Engineering services

ATP's engineering department offers a variety of services to support and perform testing services for passenger cars and commercial vehicles at the Proving Ground in Papenburg.

Services

- Benchmarking
- Test activities according to ATP customers' specifications (test management, implementation and evaluation)
- Instrumentation
- Providing all necessary support staff / workshop service
- Prototype service
- Seminars / Proving Ground Driving License

Complete vehicle test competence

- ADAS (Advanced Driver Assistance Systems)
- Noise measurement (DAkkS)
- Aerodynamics, aeroacoustics
- Structural durability and fatigue, WSG applications
- Brake testing
- Durability testing
- Electric and electronic
- Vehicle dynamics
- Vehicle safety
- Noise and exhaust emission
- Homologation
- Corrosion
- Misuse testing
- NVH (noise, vibration, harshness)
- Tire testing (DAkkS)

Test equipment

- Climatic chamber
- Four-wheel dynamometer
- Measurement equipment
- Miscellaneous equipment

ADAS

We will be pleased to support you with your testing projects concerning driver assistance systems - for more safety and comfort on the road.

Range of services

- Distance control
- Emergency brake assistant
- Lane change assistant
- Blind spot assistant
- Lane keeping assistant
- Attention assistant
- Highbeam assistant
- Electronic parking assistant
- Speed limit assistant
- Accident detection / passenger protection
- Tire pressure monitoring system

ADAS-Targets

- EuroNCAP Vehicle Target EVT including tow system
- 4activeSB – System (cyclists- and pedestrian protection)
- AB Dynamics Guided Soft Target (GST)
- AB Dynamics Steering, braking and accelerating robot

Measurement equipment

- Racelogic VBox / Video VBox
- Oxford RT with dGPS base
- AVAD3

Noise measurement

By using various measuring techniques and methods we are able to offer a comprehensive service package for noise measurement.

DAkkS accredited services*

- For measurement of pass-by noise emitted by accelerating vehicles in accordance with ISO 362-1 and UN-R51 (without Annex 4)
- Stationary vehicle measurement according to ISO 5130 and UN-R51 (without Annex 4)
- Pass-by noise measurement emitted by rolling vehicles in accordance with UN-R117 (only Annex 3)

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Other services

- For measurements by accelerating vehicles according to UN-R41, UN-R138 etc.
- Simultaneous measurement of both vehicle sides
- Online calculation of average values and scatter band
- Speed and position measurement by radar
- Integrated weather station
- Monitoring of boundary conditions, wind and background noise
- Telemetric transfer of rpm, point of acceleration and an additional microphone signal
- One-man operation possible by using a remote control system
- Qualified driver service

* ATP meets the most stringent quality management system for Accredited Testing Laboratory according to DIN EN ISO/IEC 17025 (details are listed in the database of accredited bodies www.dakks.de/en by entering the number D-PL-20534-01-00).

Brake testing

In the field of brake testing, we are pleased to support you with our expertise.

Range of services

- Brake pad testing, e.g. AK Master
- Brake system testing
  - AMS-test (Auto, Motor and Sport)
  - High speed fading test
  - Brake power distribution test
  - Water sensitivity test
- Brake power testing
  - Braking distance and deceleration
- Comfort testing
  - Noise and vibration behaviour
- Wear testing
  - Durability testing on test tracks and / or public road
- Testing of electronic control systems
  - ABS, EBD, ESP etc.
- Homologation testing
  - UN-R, ADR and FMVSS
- Evaluation emergency brake assist

Measurement equipment

- Racelogic VBox
- Honeywell Fameas EO-compact version
- Various sensors

Durability testing

An ATP core competence is the planning, management and implementation of durability testing of components and systems either on site or on other locations all over the world.

Range of services

- Project planning and implementation
- Driver services (qualified personnel)
- Separate workshops
- Test vehicle maintenance, repair and updates by experienced staff (mechanics, technicians, engineers)
- Organisation and completion of all necessary procedures of durability programs on test tracks or public roads (e.g. exhaust emission tests, fuel analysis, chassis measurements etc.)
- Reporting according to customers‘ requirements
- 24 hours/day and 7 days/week

Durability tests (examples)

- Proving ground compressed durability test
- „Hockenheim“ durability test
- Public road durability test
- High speed durability test
- Corrosion durability test
- Fuel durability test
- Hot and cold climate durability programs
- Durability testing with alternative drive concepts (electric, hybrid, gas-powered or fuel-cell vehicles)
- Durability testing and endurance testing of emission systems

Climatic chamber

For thermal testing of vehicles or components our climatic chamber from Weiss Umwelttechnik GmbH provides reliable results.

Test space dimensions

- Height approx. ca. 4.000 mm
- Width approx. ca. 5.000 mm
- Length approx. ca. 7.000 mm

Maximum vehicle dimensions

- Height (door) approx. ca. 2.580 mm
- Width approx. ca. 3.000 mm
- Length approx. ca. 6.800 mm

Work area temperature

- Temperature range – 40 °C to + 120 °C, discontinuously
- Temperature constancy +/- 1 K (temporary)
- Cool down rate + 120 °C to – 40 °C, approx. 0,5 K/min. on average
- Heat up rate - 40 °C to + 120 °C, approx. 0,5 K/min. on average

Work area climate

- Humidity control at temperatures between 10 °C and 90 °C
- Humidity range adjustable from 5 to 95 % relative humidity

All information above refers to a test vehicle with a weight of 2,000 kg (passenger car).

Test stands

Performance test stand

The four-wheel performance test stand is used for power measurement.

- Manufacturer: MAHA LPS 3000
- Measurement: Performance measurement with constant rpm, speed and traction

  Graphic and numerical display of wheel, loss and engine performance, as well as torque

  Display of three performance measurements in the background

  Performance curves individually displayable and hideable

  Display of speed, rpm and oil temperature during the power measurement

  Extrapolation of engine performances according to DIN 70020, EWG 80/1269, ISO 1585, JIS D 1001, SAE J 1349

Shock absorber test stand

The shock absorber test stand is used to measure shock absorber characteristics.

- Manufacturer: SPA-Aerofoils
- Technical Data: 7.5 kW electric drive
  Test speeds from 12 to 2,500 mm/s
  Strokes 12.5 – 100 mm
- Displays: Force vs. position, force vs. velocity, hysteresis, force and position vs. time
- Measurements: VDA (German procedure) or freely programmable step tables or single shot

Spring test stand

The spring test stand is used to determine the spring rate (force vs. position) and F1 – L1 values.

- Manufacturer: Lippold, Germany
- Technical Data: Manual test stand
- Electric drive: 400 mm screw jack
- Velocity: v = 0.5 to 15 mm/s
  Kistler Piezo measuring sensor,
  max. 15,000 N with 1 N resolution

Measurement technology

Simulation software for body and wheel absorption.

Measurement equipment

Within the scope of engineering projects we can provide a wide range of measurement equipment.

Equipment

- Universal data recording system IPEtronik to record analog and digital signals, also designed for the connection from CAN Bus signals or multiple measurement channels to accommodate strain gauges, and/or transducers to record temperature signals, accelerations etc.
- GPS based measurement equipment Vbox by Racelogic in various designs on behalf of driving performance, vehicle dynamic data and brake performance etc. also in combination with recording video data and recording of additional data, such as analog signal transmitters or temperature sensors
- 2D DTS measurement system on behalf of driving performance data
- Datron measurement steering wheel to record steering angles and steering forces up to 50 Nm
- Datron Correvit speed measurement system up to 300 km/h
- Fluke hand-held oscilloscope for in vehicle use
- Measurement equipment for ADAS (see page ADAS)
- Miscellaneous hand-held multimeters for various measured values
- Miscellaneous acceleration sensors, cable potentiometer, light barriers, etc.
- Calibration devices for electrical signals
- WSG applications equipment workshop
- Various fluid quantity meters for measuring fuel consumption (also for commercial vehicles)

Misuse testing

Our engineering team performs tests for vehicle occupant protection systems.

Following modules are currently installed

- **Concrete kerb modules**
  height adjustable, rectangular and triangular
- **Steel beem**
  160 x 80 mm, fixed
- **Gutters (pothole)**
- **VDA lane change**
- **Gravel cluster**
- **Ramp**
  350 mm
- **Curbstone**
  for threshold testing
- **Steep curve**
  up to 49° inclination (rollover)
- **Artificial wild deer**
  75 kg
- **Adjustable embankment**
  height 450 mm
- **Railway crossing**
- **Vehicle towing**

Further devices can be provided upon request.

Tire testing

Tire tests are an essential part of tire development. For this purpose we offer several engineering services for subjective and objective evaluation.

DAkkS accredited services*

- Wet braking according to UN-R117 (Annex 5 without 2.1), EU 1222/2009, ISO 15222 and ISO 23671
- Rolling noise measurement according to UN-R117 (only Annex 3) and EU 1222/2009
- Evaluation and compiling a test report

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Additional services

- Wet braking on various surfaces with different friction coefficients such as several sorts of asphalt, concrete or granite plates
- Dry braking on asphalt
- Longitudinal and transverse aquaplaning test
- Measurement of rolling resistance according to ISO 28580, UN-R117, EU 1222/2009
- Customized rolling noise measurement
- Several options for subjective testing (wet and dry handling)
- Wear durability testing
- Winter tire testing
- Run-flat tire testing according to OEM specifications
- Rim-Roll-Off
- Potholetest
- Finabel-Test

A selection of rims and vehicles are available for testing purposes. Moreover, we will be pleased to respond to your special requests.

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Wheel alignment platform

The wheel alignment platform is for measuring and adjusting the axle geometry.

Four-poster hydraulic vehicle lift

- Manufacturer: Nussbaum 4.65 H
  Weight capacity 6.5 t
  Lift height 1,920 mm
  Usable platform length approx. 5,100 mm
  One axle lift 2.6 t capacity
  Turn table

Measurement system

- Manufacturer: Geolines 670 xD
  Software Snap-on
  Windows based software incl. database system
  Caster
  Kingpin inclination
  Toe in – toe out
  Camber etc.

Miscellaneous equipment

In order to complete our service portfolio, further equipment is available.

Brake test stand

The brake test stand is for measuring brake torque and pedal force.

- Manufacturer: MAHA

Four wheel drive control system	
Max. weight per axle	3,000 kg
Driving power	2 x 3 kW
Test speed	5 km/h
Measurement range	0 to 6 kN
Track width	780 to 2,200 mm

Vibration generator

The vibration generator is for detecting vibration induced noises and resonances.

- Manufacturer: MAHA

Track width	880 to 2,200 mm
Stroke	9 mm
Frequency	5 to 50 Hz
Axle load	1,100 kg

Workshop service

Our experienced mechanics, technicians and engineers support your activities 7 days a week and 24 hours a day.

For engineering projects as well as instrumentation we offer our fully equipped mechanical workshop.

Production of parts according to samples or drawings on request.

The workshop is equipped with

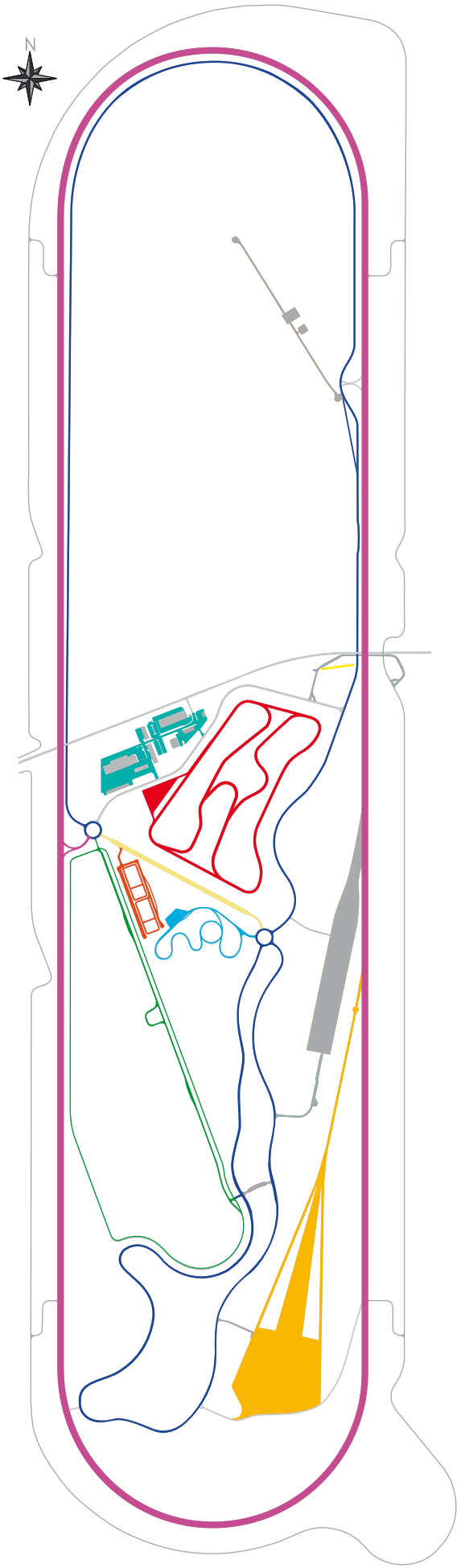
- 3.5 t / 6.5 t hoists
- Four portable truck wheel lifts
- Tire workshop with mounting equipment and wheel balancing machine
- Portable wheel load scale systems
- Various standard tools

A number of fully equipped hand and power tool chests are available on request.

The machine-shop is equipped with

- Universal lathe
- Drilling machine with automatic feed
- Universal milling machine
- Welding equipment MIG/MAG and TIG
- Belt grinder
- Metal circular saw
- Metal bending bench, width 1,200 mm

Facility overview



High Speed Oval (ORK)
Braking Tracks (BMK)
Durability Road (DLK)

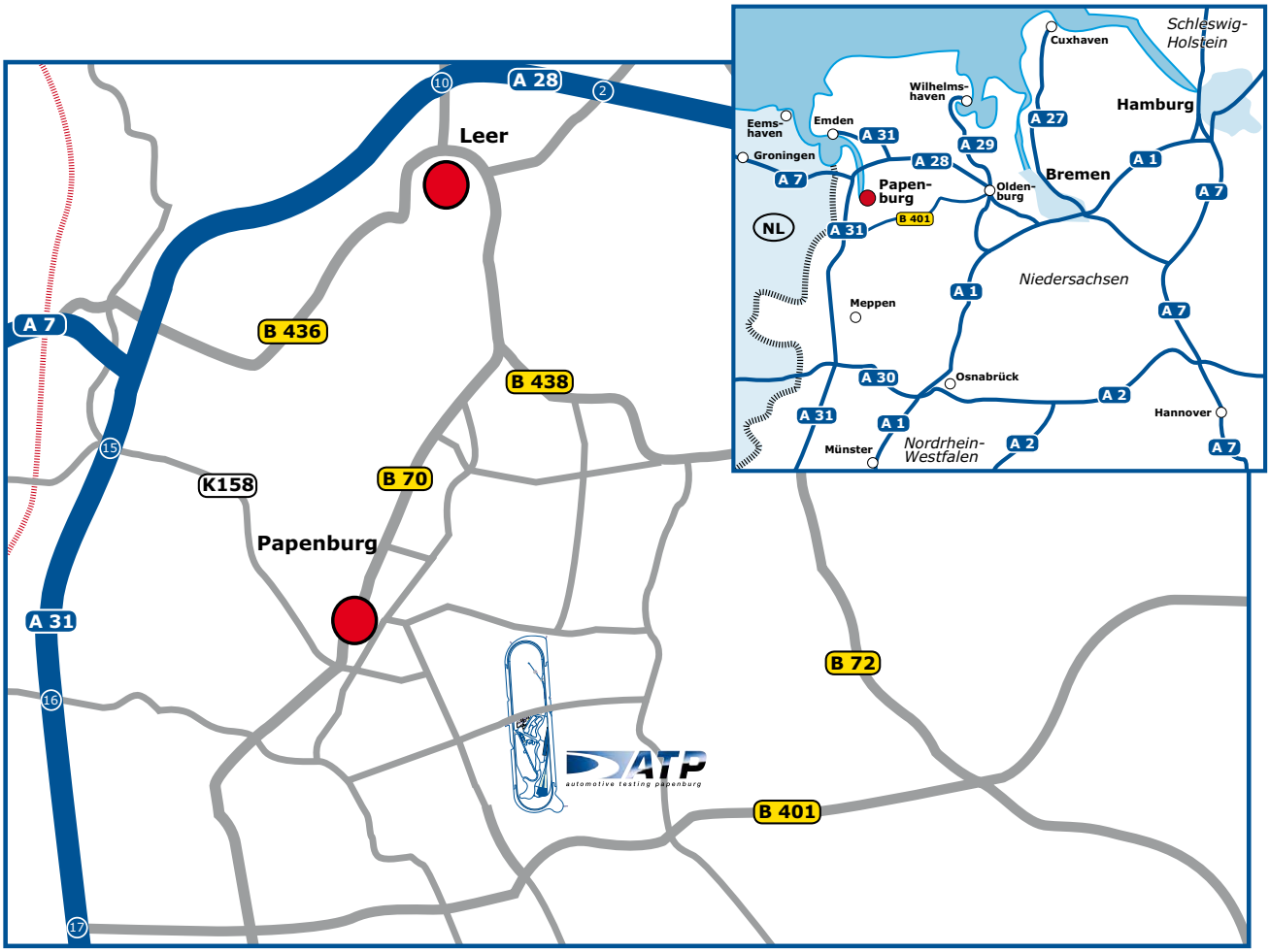
Vehicle Dynamics Area (FDY)
Wet Handling Track (NHK)
Acoustic Track (AKS)

Handling Track (HAK)
Hill Sections 12/18% (STS)
Hill Sections 5/8% (STS)

Gravel Track (NAT)
Banked Road (SFB)
Rough Road (SWS)

Twist Road (TWI)
City Durability Road (CDP)
Administration and Workshop Area (HBZ)

How to find us:



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