

# FAKT Brake Testing



AUTOMOTIVE&MORE



# Dear business partners,

for more than 20 years FAKT has designed and developed solutions for a wide range of different test scenarios and applications.

Since 2004, we have been operating an inertia brake dynamometer for testing and measuring a wide variety of brake systems and their components. Beyond that we have introduced high-speed measurements with airstream simulation, as required for professional racing.

The range of services covers certification measurements (E90) for standard braking systems, development tasks, quality investigations and special services for motor sports such as Formula 1 or Formula E.

In order to increase the long-term success of our customers with our services and products, we have recently invested in an additional, state-of-the-art brake test stand.

Our many years of experience and profound knowledge of customer requirements are incorporated into this test stand. In addition to „usual“ tests, noise and vibration tests and, coming soon, emission measurements on the brake systems can now be carried out.

Thanks to special analysis methods, brake noises can be reproduced precisely and thus investigated more easily. The brake housing is completely decoupled from the drive and carrier systems of the test bench in order to reduce natural vibrations and noise.

Both test benches are **TISAX approved** and prototype safe.

## Our previous range of services for brake-testing includes the following services:

- Flywheel mass simulation for passenger cars
- Homologation measurements according to EG ECE-R90
- High-speed measurements with airstream simulation for motor sports
- Route simulation (e.g. Nürburgring)

Due to the new acquisition of the second flywheel mass test bench we will be able to extend our services to the following measurements:

- flywheel mass simulation car, SUV, truck (7,5t)
- NVH measurements
- Assembly of complete axes possible
- Emission and particle measurement
- Environmental simulation:
  - climate chamber -40°C - +60°C
  - air humidity 15 - 90%
  - water and salt shower
- 90 preset cycles for homologation measurements

## What can we do for you?

- we are looking forward to a future cooperation!

# FAKT's new inertia brake dynamometer – the perfect fit for the future

The manufacturer LINK specialized early on in localising brake noise on the test bench with suitable peripherals and has since developed a worldwide reputation for this. In future, particle and fine dust measurements will also become important components in brake tests.

We at FAKT decided recently in supplementing our product and service portfolio. We are now able to carry out the entire range of NVH tests - with the help of the installed climate chamber, even under different environmental conditions. Due to the generously designed test cell, even entire axles can be assembled.

## Tech Specs (selection)

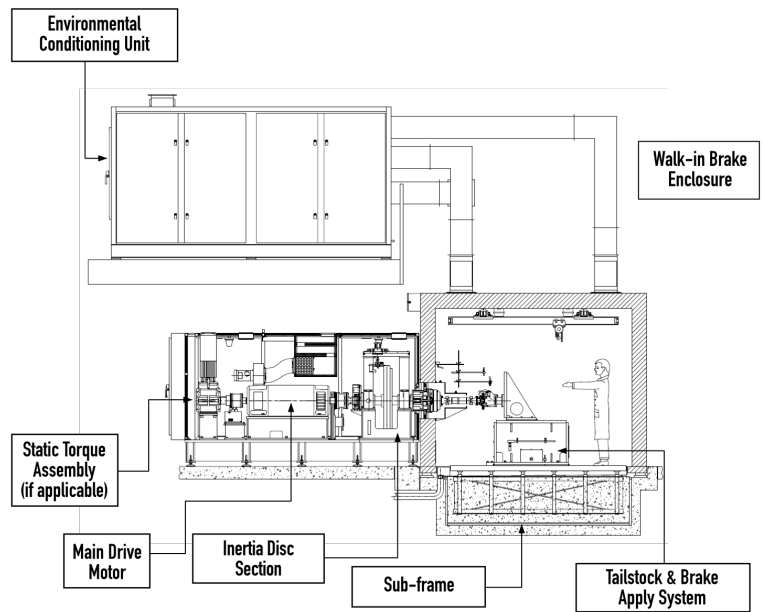
- Speeds up to 3,000 rpm
- Drive unit with 185 kW output (short term up to 200 kW)
- Torque short-term up to approx. 2,300 Nm
- Brake pressure up to 207 bar
- Maximum brake pressure rate 1,037 bar/s
- Climate chamber: -40°C - +60°C
- 15% - 90% relative humidity
- Inertial mass simulations of passenger cars, SUV up to small trucks (7.5 t)
- TISAX accreditation: prototype-proof



Installed new inertia brake dynamometer: Top left with environmental conditioning unit

## New Dyno - Technical Specifications

Drive power	up to 200 kW
Inertial masses	5 kgm <sup>2</sup> - 400 kgm <sup>2</sup>
Speed	0 - 3,000 rpm
Brake pressure	0 - 207 bar
Braking torque	10.000 Nm (± 0.02%)
Climatic chamber	3.2 x 3.2 x 2.5 m
Humidity (relative)	15 - 90%
Temperature range	-40°C - +60°C



Installed new inertia brake dynamometer: View into the walk-in NVH test arrangement

# FAKT's classic inertia brake dynamometer

## – wind speed simulations up to 300 km/h

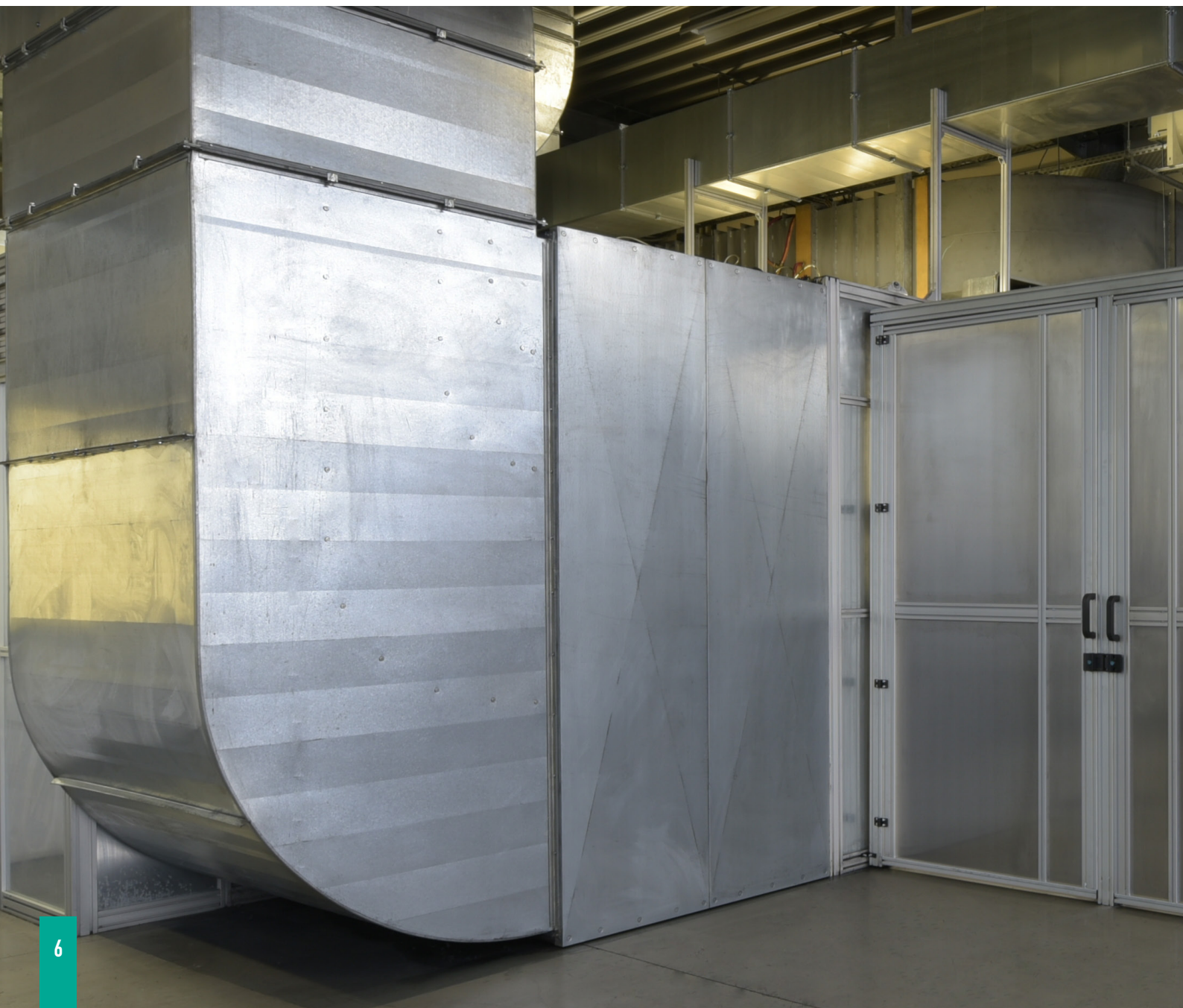
This test stand is mainly characterized by the specially developed airstream simulation.

### Tech Specs (selection)

- Speeds up to 300 km/h at 3,150 rpm
- Drive unit with 200 kW output
- Torque up to approx. 5,000 Nm
- Adjustable inertial masses
- Brake pressure up to 150 bar
- Brake cylinders can be replaced
- Wind speed simulation up to over 300 km/h
- Complete periphery - including motorsport

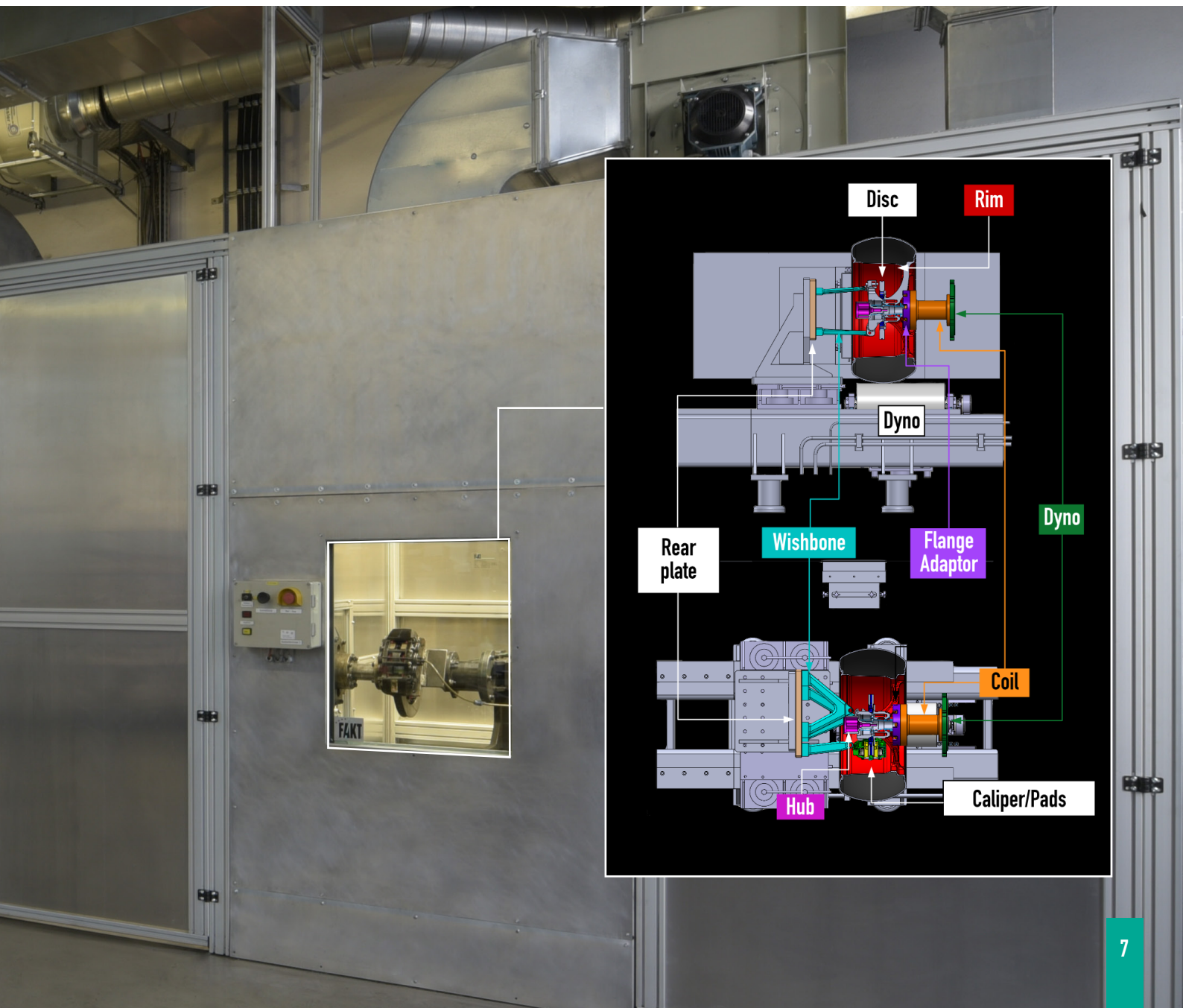
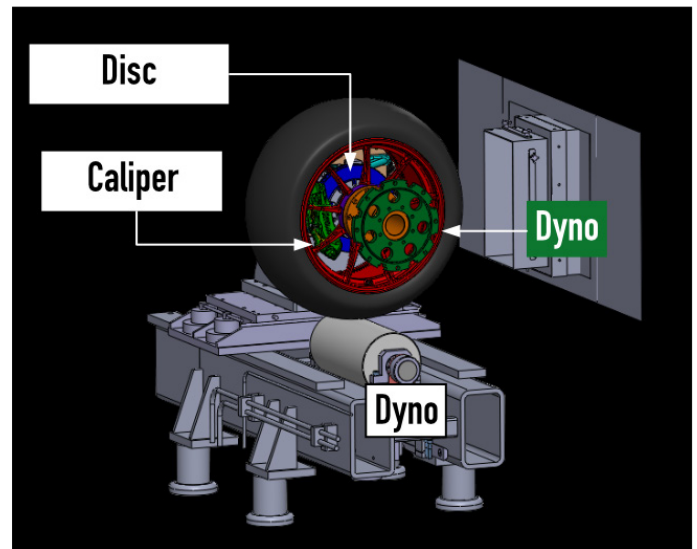
### Typical test scenarios (applies to motor sports)

- Carbon brake tests with aerodynamic impacts
- Simulation of entire race tracks with modifications
- Support in the development and further development of brake systems for motor sports and the associated parts such as brake cylinders, brake calipers, sensors, brake discs, pads, ventilation ducts, aerodynamic elements and even material selection
- Comparative tests of different development stages taking into account efficiency, wear, temperature or braking characteristics
- Overload, reliability and safety tests
- Preparation of brake performance diagrams and brake maps for motor sports engineers
- TISAX accreditation: prototype-proof



### Classic Dyno – Technical Specifications

Drive power	up to 200 kW
Inertial masses	8 kgm <sup>2</sup> – 185 kgm <sup>2</sup>
Brake pressure	0 – 150 bar
Braking torque	0 – 5.000 Nm
Measuring range temperature	0 – 1,300°C
Wind speed	0 – 320 km/h
Roller load	max. 8 KN
Roller speed	max. 16.000 U/min





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