

Bosch Engineering Applications Test Center Performance and Engine Map Test Bench



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Invented for life



Technical equipment

Roller set

- ▶ 48" single roller test bench

Power

- ▶ Front-wheel drive 220 kW
- ▶ Rear/4-wheel drive max. 400 kW

Roller speed

- ▶ v_{\max} : 310 km/h

Inertia

- ▶ 2 wd < 8 500 lbs
- ▶ 4 wd < 11 000 lbs

Headwind fan

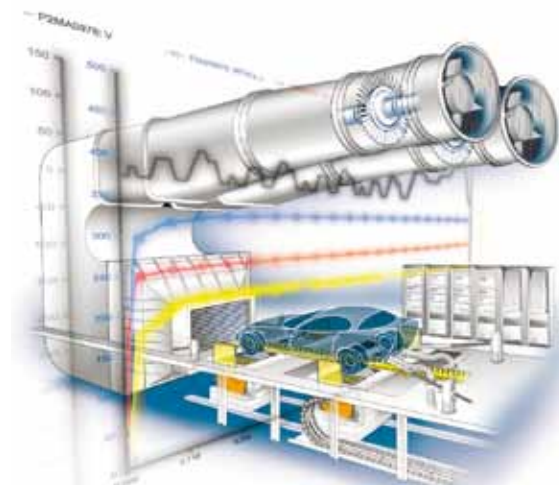
- ▶ Max. volume flow: 250 000 m³/h
- ▶ v_{\max} : 250 km/h
- ▶ Cooling power 1 000 kW

Performance Test Bench

Vehicle tests can be carried out on the performance test bench at speeds of up to 310 km/h and drive power of max. 400 kW. The head wind fan with a volume flow of up to 250 000 m³/h and a cooling power of over 1 000 kW provides the required cooling of the vehicle.

Scope of Application

The most important applications include performance measurements as well as high-speed applications. Additional application areas include engine map parameterization, functional tests and component testing. Measurement of energy efficiency and acceleration behavior as well as tests on electric vehicles complete the scope of application.



Other Equipment

Climate conditioning

- ▶ Temperature range: +20°C to +40°C

Exhaust, gas extraction

- ▶ 12 000 m³/h
- ▶ Suitable for double-flow systems

Maximum permitted vehicle dimensions

- ▶ Width: 2.5 m; length 8.4 m; height: 3.00 m
- ▶ Axle separation: 180 cm to 420 cm
- ▶ Max. axle load 2 000 kg

Prodes automation

- ▶ Stationary test runs
- ▶ Fully automatic stopping and assignment of data to engine maps
- ▶ Engine control interface

Determination of engine power according to statutory requirements

- ▶ DIN 70020
- ▶ ISO 1585
- ▶ As well as other standards

Driving cycles/height profiles

- ▶ Statutory driving curves
- ▶ Individual driving curves
 - Speed time-dependent
 - Speed distance-dependent
 - Climbing distance-dependent
- ▶ Road simulation (free travel)

Exhaust-gas measurement system

- ▶ Two untreated measurement systems (Mexa 7100)

Additional measurement systems

- ▶ Measurement of fuel consumption (KMA4000)
- ▶ Opacimeter
- ▶ Pitot flow sensor for determining the exhaust-gas volume stream,
- ▶ Micro-soot sensor (soot mass determination)

Driving Profile

In addition to the legally prescribed driving curves, various customer-specific cycles are used. Important examples are consumption measurement and driving performance investigations on electric vehicles in representative driving profiles.

Automation System

The test bench system enables the automated adjustment of engine control parameters. This procedure is used for application and optimization tasks.

Safe Test Operation

By means of various restraining options, all types of vehicle from cars and motorcycles to vans can be operated safely on the test bench.

Fuel Supply

Within the performance test bench, there is a refueling system available with four different fuel types (gasoline, diesel and special fuels), that is used in particular for engine map adaptation and component testing in the high-speed range.

Our Service

- ▶ Organization of the testing procedure
- ▶ Professional vehicle preparation
- ▶ Secure assembly halls for prototypes with access control
- ▶ Individual preparation and evaluation of the measurement results.

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