Testing services

Performance test bench

Bosch Engineering

BOSCH
Invented for life

PRODUCT BENEFITS

- Performance measurements as well as high-speed applications that cannot be replicated on the road
- Practical testing of components and component assemblies while operating the vehicle at maximum load
- Faster development time through high reproducibility thanks to automation technology
- Guaranteed fuel supply – including special fuels – thanks to on-site filling station

1 MW

Cooling system and headwind fan with a maximum air speed of 250 km/h deliver highly efficient vehicle cooling even at maximum capacity.

up to

310 km/h

that's the maximum speed at which vehicles can be safely tested.

TASK

Bosch Engineering GmbH's performance test bench makes it possible to measure performance and applications at high speeds. Whether testing vehicles or vehicle components, the facility allows for functional and long-term testing under full-load conditions, as well as measurements of energy efficiency and acceleration behavior. Reversing at speeds of up to 20 km/h, including incline simulations, and tests on electric vehicles are also possible on the performance test bench. In addition to performance measurements, we can also model driving cycles such as MNEFZ, FTP75, WLTP, RDE, street simulations, or even customer-specific driving cycles.

FUNCTION

The performance test bench is equipped to precisely determine engine performance in accordance with statutory requirements (DIN 70020, ISO 1585, etc.). Vehicles with a permitted total output of as much as 400 kW can also be tested under extreme conditions that cannot be duplicated on the road, at speeds of up to 310 km/h. To reproduce road resistance encountered on various road surfaces, our test bench features a headwind fan, and the roller can be kept at a constant temperature between +20 °C and +40 °C. Measuring technology of the utmost precision plus our many years of experience in analyzing results helps to develop and optimize cutting-edge vehicle systems.

TECHNICAL CHARACTERISTICS OF THE PERFORMANCE TEST BENCH

Climate conditioning	Roller temperature range: +20 °C to +40 °C
Vehicle conditioning	In the climate chamber upon request (–40 °C to +40 °C)
Headwind fan	Volume flow of up to 250,000 m³/h, wind speed up to 250 km/h, exhaust-gas extraction 12,000 m³/h
Driving cycles	MNEFZ, FTP75, WLTP, RDE, etc.; customer-specific cycles: speed-/time-dependent, speed-/route-dependent, incline-/route- dependent, street simulation (free travel, forwards and reverse)

ROLLER SET

Single roller	48" MAHA AWD single rollers
Power output	FWD: 220 kW, RWD/AWD: 400 kW
Max. speed	310 km/h
Wheelbase	1.8 m to 4.2 m
Flywheel	< 11,000 lbs
Axle load	max. 2,000 kg

UNTREATED EXHAUST-GAS EQUIPMENT

Analysis systems for untreated emissions	HC, CO_2, CO, NO_x, and CH_4
Emissions volume	Horiba PTFM 1000 for determining emissions volume

PARTICULATE MASS EQUIPMENT

Measuring technology	Determination of particulate level
Soot	Micro soot sensor
Opacity	Opacimeter

OTHER MEASURING EQUIPMENT

Electrical	Hioki 3193 for determining state of charge of high-voltage batteries

Bosch Engineering GmbH | Robert-Bosch-Allee 1 | 74232 Abstatt | Germany | Testcenter.BEG@de.bosch.com | **www.bosch-engineering.com**