

Drivetrain and emissions of cars and motorcycles



Engine for the future

Fewer harmful substances, more performance

Making good engines into better engines: that is what drives the Institute for Vehicle Technology and Mobility (IFM). Because one thing is certain – as dynamic as progress is, problems grow just as fast. Classic fuels are drying up. At the same time, outdated technologies are accelerating the ecological downward spiral. If the environment does not want to fall by the wayside, we have to change our thinking. Together with manufacturers and suppliers, we are driving forward innovations on cars, motorbikes and light commercial vehicles as well as testing and evaluating low-emission and environmentally friendly vehicles and components.

So that new generations of vehicles emit fewer harmful substances than their predecessors, we offer you the latest testing technology. You also benefit from our wealth of experience that comes from taking millions of exhaust gas measurements.

The IFM is an accredited partner of numerous approving authorities at home and abroad. Together, we work on standards such as EG, ECE and TRIAS. Industry, authorities and administrative bodies benefit from this expertise and trust us when it comes to testing new cars, engines and components. From development and type approval testing to checking vehicles already on the road – we are there for you.

- Engine power, emissions and fuel consumption
- Measuring exhaust emissions in the lab and on the road
- Research projects
- Field studies
- Tests for European and international markets
- And lots more



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Mobilität



Put us to the test

Measuring, testing, researching, advising

- Measuring engine power, emissions and fuel consumption on cars, light commercial vehicles and motorbikes
- Determining exhaust gas components including particle number and particle size distribution
- Studying vehicles with spark ignition engine, compression ignition engine, gas drive (CNG/LPG) or hybrid drive
- Research projects for industry and government authorities for developing new test procedures/measuring methods, field monitoring (IUC), exhaust gas treatment systems, fuel quality, OBD performance, periodic monitoring (AU, AUK)
- Analyses about the effectiveness of exhaust gas purification systems (OTTO and DIESEL)
- Field studies about emission behaviour of vehicles on the road
- Determining road load (national and international test sites)
- Endurance runs to determine deterioration factors
- Tests according to US requirements (US EPA)
- Tests for non-European markets, e.g. Japan, India, Korea, Taiwan, Australia and South America
- Carrying out round-robin tests for quality assurance purposes
- Advice on national and international regulations (bodies in Brussels and Geneva)



Testing test equipment

- Advice on planning, setting up and operating performance roller dynamometers
- Studies on performance and exhaust gas roller dynamometers
- Testing exhaust gas measuring equipment
- Certification of measuring laboratories in accordance with DIN EN ISO/IEC 17025

Our test systems

- Latest measuring equipment for determining the exhaust gas emission behaviour and fuel consumption of cars, light commercial vehicles and motorcycles
- Three dynamometers with up to 300 kW, 200 km/h and 3,000 kg inertia in Essen
- CVS measuring technology with dilution air heater and thermostatic exhaust gas recirculation and exhaust gas collection
- Measurement of gaseous harmful substances in two lines (e.g. before and after catalytic converter)
- Fourier Transform Infrared (FTIR) spectroscopy for measuring non-regulated exhaust gas components
- CPC for determining the particle count according to PMP requirements (ECE set of rules)
- Engine Exhaust Particle Sizer (EEPS) spectrometer for measuring the number and size distribution of the finest exhaust gas particles during transient driving cycles
- PEMS – Portable Emission Measurement System
- SHED chamber for determining evaporative emissions (overall vehicle)
- Measuring gas-powered vehicles (LPG and CNG)



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