Combustion Engines
for
Cars and Commercial Vehicles
Engine Testing Facility for Cars & Commercial Vehicles

- Dynamic performance of commercial vehicles up to 800kW and of passenger cars up to 460kW
- Tandem brake power booster
- Choice of longitudinal or transverse setup
- Intake temperature control system
- Integration of Inca, diagnosis- and DoE-systems into the program systems (D2T-Morphee) using Asap3-and ASCII- interfaces
- Integration of the exhaust gas analysis and indication measurement equipment using AK- and Indicom interfaces
- Engine application (engine map optimization managed by computer systems / Cameo, calibration tool / Inca, ATI-Vision)
Indication Systems

- D2T Osiris (up to 16 channels)
- AVL Indimodul (8 channels)
- AVL Indiset (4 channels)
- Kistler $P_{\text{max}}$-meter (4 channels), peak pressure control with static evaluation
- D2T FFRM electronic rev-trigger via gear rim (60-2 impulses)
Exhaust Gas Analysis Systems (Excerpt)

**Exhaust gas analysis**
- FTIR (Sesam 4) **AVL**
- i60 2 lines **AVL**
- Mexa 7170 D **Horiba**
- Mexa 7100 H **Horiba**
- Pierburg 4000 **AVL**

**NH3-Slip**
- Mexa 1170 NH₃⁻, NO₂-analyzers **Horiba**
- LDS 6 NH₃ and H₂O **Siemens**
  (in-situ measurement)

**EGR-rate**
- EGR CO₂-measurement

**Partikele mass**
- Partial flow dilution system
  - Smart-Sampler SPC 472 **AVL**
  - PSS-20 Control System **MS4**
- Particle weighing apparatus acc. to the EPA 1065 regulations
- Pegasor Control System **MS4**

**Particle measurement**
- Mexa 2300 (particle measurement device) **Horiba**
- Pegasor Control System **MS4**

**Soot level /-concentration**
- Smoke Meter 415S, -HD **AVL**
- Micro Soot Sensor 483 **AVL**
- Opacimeter 439 **AVL**
Automation

Test bench automation system Morphée / D2T

- Data acquisition up to 20 Hz / parameter
  Special version up to 1 kHz / parameter
- Operating program in any given size
  Program specifications up to 50 Hz
- Integration of external measurement devices for all common bus systems
- Suspension measurement facility for 92 parameters and 6 regulating variables (flexibly expendable)
- All customer specific formulations and – designations directly available at the test bench
## Asynchronous Machines (Excerpt)

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<tr>
<th>Type</th>
<th>Performance [kW]</th>
<th>Torque [Nm]</th>
<th>N&lt;sub&gt;max&lt;/sub&gt; [1/min]</th>
<th>Inertia [kgm²]</th>
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