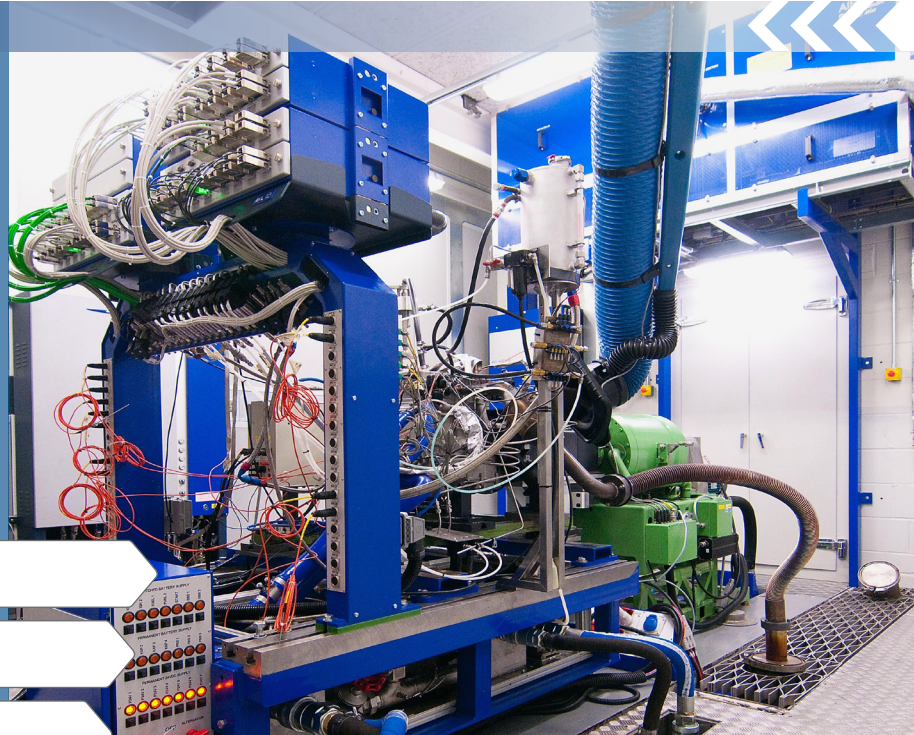


MAHLE Powertrain Engine Build & Test



12 test cells and 5 test rigs

48V - 800V test infrastructure

18 build bays



Engine Build

MAHLE Powertrain's highly skilled team are experienced in building prototype engines and rig assemblies from single cylinder to V12 units. The engine build facility is equipped with:

- Incoming logistics using SAP BoM management
- Goods-in inspection / quality checks
- Temperature controlled metrology area, traceable to UKAS, for component measurement
- Mitutoyo scanning CMM
- 18 x engine build bays with computerised documentation / build records
- Ability to screen off engine build bays to provide confidential build areas
- Machining and fabrication support
- Instrumentation fitting for temperature, pressure, vibration and strain
- Hot test stands for integrity checking
- 3 stage component wash

Contact us:

powertrain@mahle.com

© MAHLE Powertrain Ltd. 2019

MAHLE Powertrain Ltd.

Costin House, St. James Mill Road
Northampton, NN5 5TZ United Kingdom
Tel. +44 (0)1604 738 000

MAHLE Powertrain LLC.

14900 Galleon Court
Plymouth, MI 48170 USA
Tel. +1 734 738-52 01

www.mahle-powertrain.com

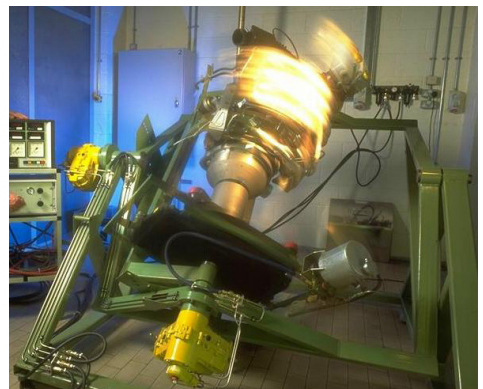
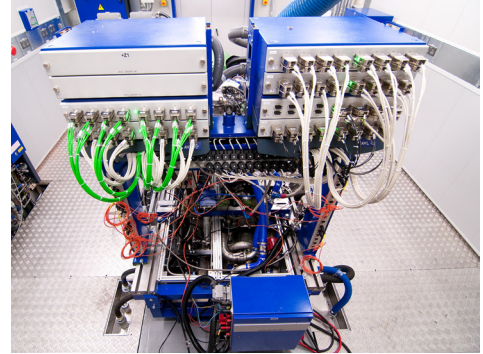
MAHLE Product Information 08/2019



Engine and Rig Testing

MAHLE Powertrain has an extensive range of facilities to develop IC and electric powertrains. The engine test cells are multi-fuel capable (for gasoline, diesel, bio-fuel and CNG, highly configurable with up to 700kW absorption available and can operate on a 5 day, 3-shift basis.

- E-machine / range extender test cell
- 12 Performance & Economy (P&E) engine test cells in total:
 - 4 x motoring cells; 8 x steady state cells
 - Each cell contains:
 - Horiba MEXA gaseous emissions measurement
 - AVL combustion pressure measurement
 - AVL fuel flow measurement
 - 5 deg C chilled fluid cooling loop
 - Automated DoE capability
 - HBM torque flanges
 - 4 x rapid pallet change cells
 - Combustion air temperature / humidity control
 - Barometric compensation unit
 - Particulate emissions using Cambustion DMS500's / AVL CPC's
 - AVL 250kW battery simulator
 - 48V supplementary power supplies
- Dedicated pre-rigging area / hot test cell
- Other equipment for mechanical systems development
 - Oil aeration
 - High speed camera
 - High speed data acquisition
 - Valve motion
 - Real time piston temperature
 - Oil analysis
- Dedicated test rigs for:
 - Port flow
 - Friction measurement
 - Valve motion
 - Engine tilt for lubrication / breather system development



Contact us:
powertrain@mahle.com

MAHLE Powertrain GmbH
Einsteinring 5
85609 Aschheim, Germany
Tel. +49 89 962915-0

MAHLE Powertrain Ltd.
13.210-877
Jundiaí / São Paulo, Brazil
Tel. +55 11 4589-0400

MAHLE Automotive Technologies (China) Co., Ltd.
No. 1299 Huan Cheng Bei Road, Fengpu Industrial Park
201 401 Shanghai, Fengxian District, China
Tel. +86 21 5136-0595

