

MAHLE Powertrain Real Driving Emissions Centre

Altitude testing capability

4 wheel drive chassis dyno

Full climatic simulation



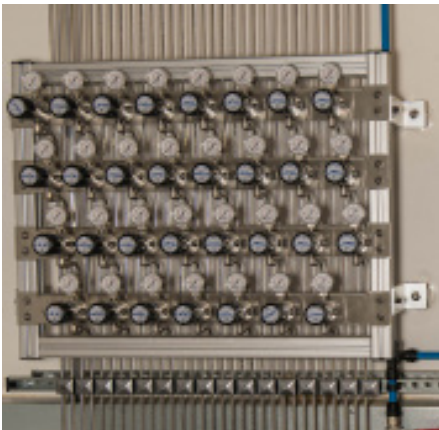
Taking control of RDE

As the world challenges the automotive industry to develop vehicle powertrains that meet the latest real world emissions targets, MAHLE Powertrain wanted to be in the best possible position to support its customers in that goal. This is why MAHLE Powertrain has built the world's first dedicated Real Driving Emissions Centre (RDEC).

The RDE Centre will focus on the complete development of new powertrain solutions from concept right through to reality. Engineers have faced the difficulty of carrying out development for RDE (Real Driving Emissions) in an unpredictable environment. Now MAHLE Powertrain has enabled its customers to take control and bring development back into controlled laboratory conditions where engineers can make valued decisions in their development processes.

The RDE Centre will focus on the complete RDE development process, starting with the latest in predictive analysis tools and vehicle simulation, allowing engineers to make conscious decisions on their powertrain hardware requirements, right at the start of their development program.

Validating those hardware choices and correlating analysis models, through steady state and transient engine testing will allow engineers to make informed decisions based on predictive vehicle behaviour before the need to build costly prototype vehicles.



>> Emissions sampling pipes

Contact Us:
Powertrain@mahle.com

MAHLE Powertrain Ltd
Costin House, St James Mill Road
Northampton, NN5 5TZ, UK
Tel. +44 (0)1604 738 000

MAHLE ZG Transmissions
Georg-Kollmannsberger-Straße 3
85386 Eching, Germany
Tel. +49 89 18 94 169-0

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

www.mahle-powertrain.com

Benefits

- The RDEC is the UK's only barometric vehicle test chamber
 - › Altitude capability up to 5,000 metres
 - › Climatic testing from -40°C to +60°C
 - › Road gradient simulation
- Detailed insights in diverse environments
- Robust assessment of vehicle performance in real world operating conditions
- Latest HORIBA Vulcan 4WD chassis dynamometer & full emissions equipment
- Testing to all worldwide standards



Summary

MAHLE Powertrain offers 4WD dyno testing with both full climatic simulation and altitude capabilities. This barometric vehicle test chamber is a one of a kind facility that extends MAHLE Powertrain's testing capabilities and puts them as one of the leading powertrain development facilities worldwide with highly skilled engineers that are experts in both conventional ICE and electric powertrain design. Whether it's integrating an existing powertrain into a new vehicle or completely new powertrain development.

Climatic / Altitude

Temp range, °C	-40 /+60
Temp constancy, K	+/- 1.2
Humidity, g/kg air	5.5/12.2 +/- 5%
Pressure range, mbar	540/1050
Max altitude simulation, m	5,000

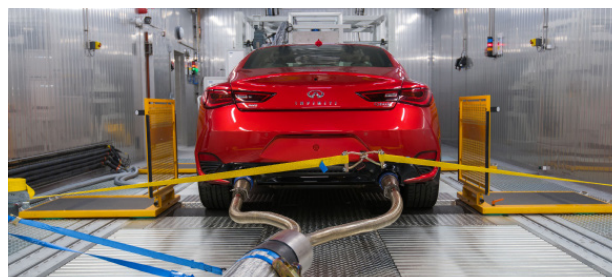
Test Specifications

Emissions	Euro 6c, US SULEV, China National 6
Max Speed, km/h	250
Max Force, N	6,400 (12,500) ¹
Max Power, kW per axle	230/230 (450/450) ¹
Mass limit per axle, kg	2,500

>> Overload 30 secs every 5 minutes

Development Process

- Steady state powertrain testing
- Powertrain system simulation
- Final validation process includes real world driving
 - › PEMS (Portable Emissions Measurement System) testing on VCA certified routes
 - › Tailpipe emissions are dynamically measured
- RDEC combined with full powertrain engineering service capabilities propels MAHLE Powertrain to the forefront of powertrain development worldwide



Contact Us:
Powertrain@mahle.com

MAHLE Powertrain Ltd. 2021

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
No. 1299 Huan Cheng Bei Road, Fengpu Industrial Park
201 401 Shanghai, Fengxian District, China
Tel. +86 21 5136-0595