MAHLE Powertrain
Real Driving Emissions Centre

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MAHLE product information 01/2020

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.

Altitude testing capability

4 wheel drive chassis dyno

Full climatic simulation

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Once new powertrains are installed into vehicles, MAHLE Powertrain’s RDE Centre will have the capability of putting the vehicle through a wide range of test conditions in a controlled, repeatable environment.

MAHLE Powertrain’s RDEC is the UK’s only barometric vehicle test chamber which can apply altitudes of up to 5,000 metres, temperatures between -40°C and +60°C and road gradients to the entire vehicle. This allows a detailed insight into the powertrain’s capabilities in diverse environments, enabling robust assessment of the performance of the whole vehicle against real world operating conditions. The RDEC incorporates the latest HORIBA Vulcan 4WD chassis dynamometer and full emissions equipment, enabling testing to all worldwide standards.

A final validation of the development process involves carrying out certified real world drives, using MAHLE Powertrain’s PEMS (Portable Emissions Measurement System), on VCA approved routes that start and finish at the new RDEC situated in Northampton.

Whether it be a complete new powertrain development or integrating an existing powertrain into a new vehicle, MAHLE Powertrain’s highly skilled engineers are experts in both conventional ICE and electric powertrain design and integration and are on hand to support in all areas of the process where required.

The RDEC combined with full powertrain engineering service capabilities propels MAHLE Powertrain to the forefront of powertrain development worldwide.