

Technical specifications

High-speed Prime Mover

- Power nom./max.: 293 / 440 kW
- Speed nom./max.: 7.000 / 20.000 rpm
- Torque nom.: 400 / 575 Nm
- Excitation frequency: max. 600 Hz
- Rotor inertia: 0,063 kgm²

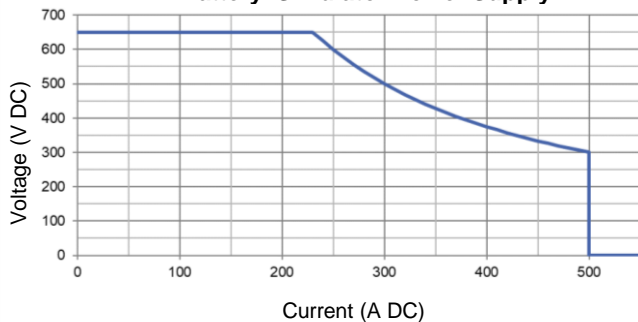
Wheel Dyno

- Power nom.: 2 x 240 kW
- Speed nom./max.: 1.000 / 2.500 rpm
- Torque nom./max.: 2.300 / 2.875 Nm
- Rotor inertia: 0,75 kgm²

Battery Simulator

- Output voltage max.: 650 V DC
- Power max.: 150 kW (approx.)
- Residual ripple: 1 V (peak to peak)
- Rise time: 0 to ± 500 A in 2 ms

Battery Simulator Power Supply



Contact

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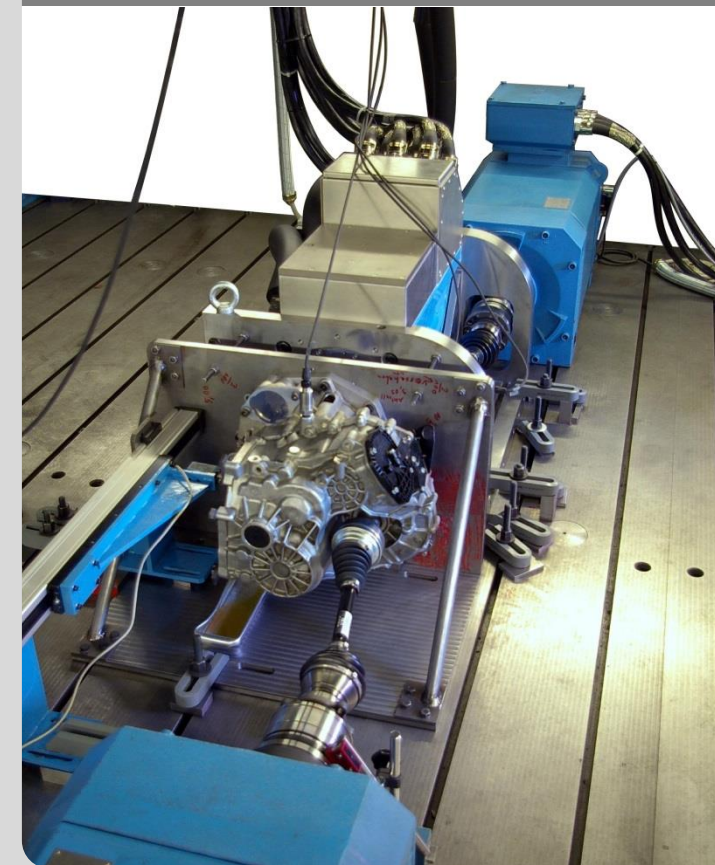
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eDrIL

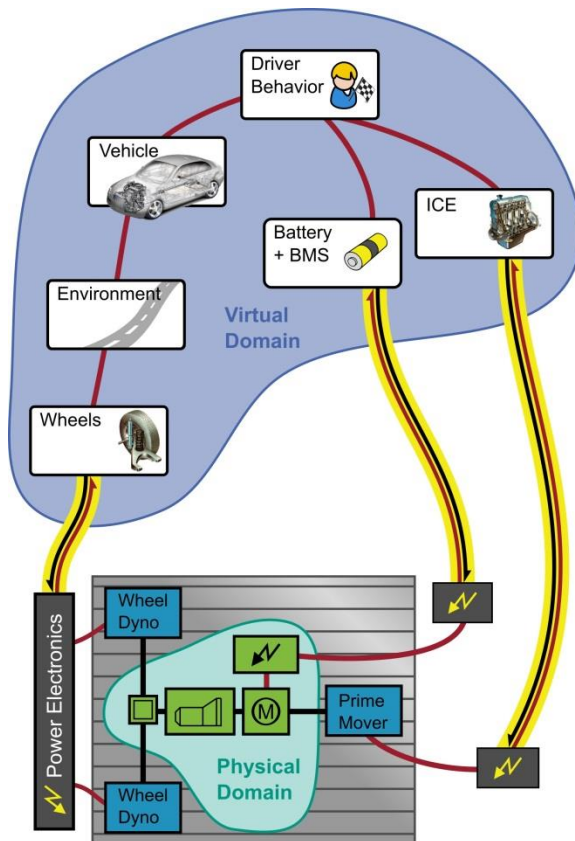
eDrive-in-the-Loop Test Bench

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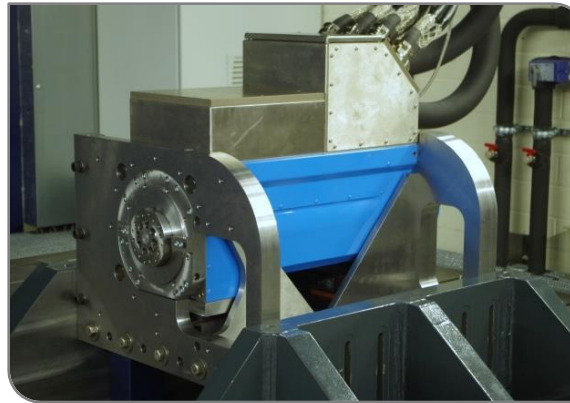


Validation Environment

Highly dynamic Test bench for investigation of conventional, hybrid or electrical drive trains



Physical and virtual domain in the validation environment of the eDrIL test bench



High-speed Prime Mover

Test Bench Control

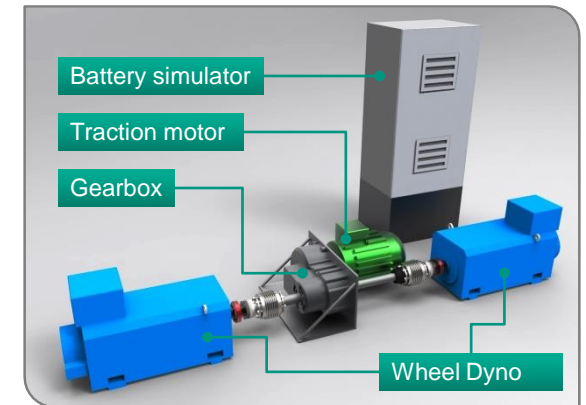
- Jäger ADwin-Pro II: Real time simulation of the drive train und digital signal processing
- Open and closed loop control using flexible MATLAB®/Simulink® models
- Automatic operation, e.g. for endurance tests
- EtherCAT Realtime-Ethernet for data transmission
- Various analogue und digital interfaces
- CarMaker® interface



Test bench setup with electric vehicle

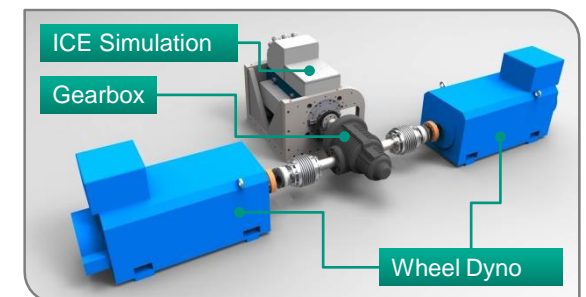
Exemplary Research Topics

- Drive train validation of electric vehicles with physical traction motor and gearbox as well as virtual battery simulation
- Traction motor investigation in Back-to-back configuration up to 20.000 min⁻¹
- Analysis of hybrid drive train with virtual internal combustion engine and battery simulation



Test bench setup for drive train validation of electric vehicles

- Investigation of the physical drive train of vehicles with internal combustion engine



Test bench setup for efficiency determination of conventional vehicle gearboxes