

AVL E-Axle TS™ Quality Audit / Conformity of Production

Highest Flexibility. Complete Quality.

THE CHALLENGE

In view of ongoing electrification of the mobility industry, manufacturers are facing increasing industrialization and production volume demands. Therefore, the testing efficiency must be increased by keeping the quality high and the costs low.

THE SOLUTION

Based on deep knowledge in the design and development of e-powertrains we have developed the AVL E-Axle TS™ Quality Audit & Conformity of Production. The highly reliable and robust system enables testing of e-axles for passenger cars, light-, mid and heavy duty and commercial vehicles. The scalable system design combined with a small footprint allows an easy and smooth integration into the production environment.

With decades of experience in production testing AVL is your qualified and trusted partner. We are open to support you in all project phases, from concept phase with selecting the right system, through implementation with securing SOP. In addition, the product quality and production process are ensured throughout the entire operating phase.

THE ADDED VALUE

- Highest flexibility for various e-axle types through wide dyno power range and modular mechanics
- Easy system extension as production volume increases
- Small system footprint
- Containerized solutions fully function tested before delivery minimizes onsite activities and risk
- Minimized total energy consumption and grid connection costs

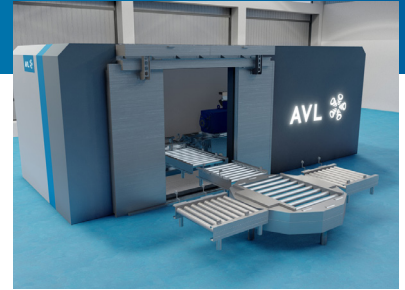
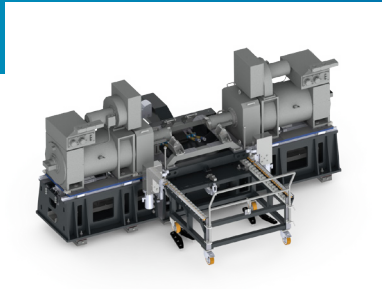
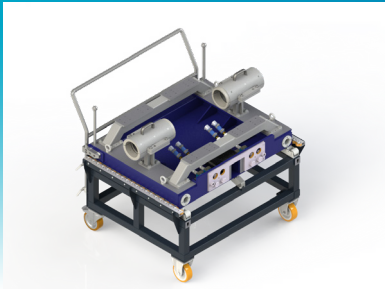
THE APPLICATION TESTS

Enabling a wide range of EoL tests:

- Performance, noise, vibration, harshness (NVH) tests
- Static & dynamic electrical tests
- Park lock tests
- Coolant and oil leakage check

In addition, typical QA tests are possible:

- Efficiency tests
- Durability tests
- Temperature tests
- Overload tests



MECHANICAL SET UP AND TESTING WORKFLOW

- Test system set-up: in/out
- System enclosure: fence, acoustic housing, container, brick & mortar
- Robust mechanical design for extended load tests
- No changes inside the testbed for testing various e-axle types

We provide various solutions for e-axle preparation, loading and test:

- Preparation/Rigging: manual or (semi-) automatic
- Loading: trolley, conveyor, robot or AGV
- Manual or automatic docking: HV, LV, measurement signals, fluids and shaft
- Fully integrated NVH data acquisition and evaluation system with easy expandable number of acoustic and vibration channels

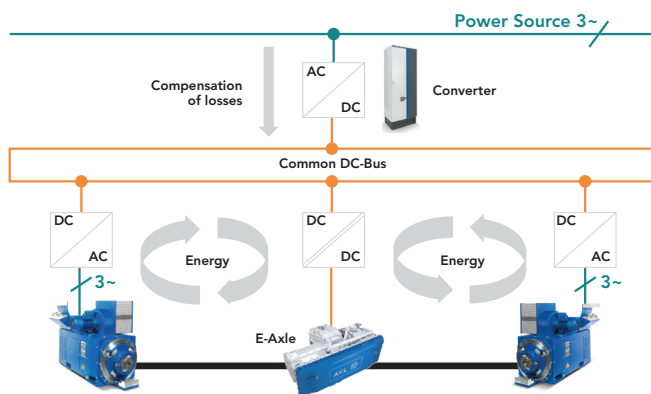
PLUG AND PLAY SOLUTION

- Containerized housing
- Completely assembled for plug-and-play installation
- Fully tested before delivery
- Minimized interfaces to production environment
- Small footprint
- Transferability in case of relocation
- Facilitates replication in different environments and areas

EFFICIENT ENERGY USAGE

In pursuit of sustainability, the total energy consumption and grid connection costs are reduced to a minimum:

- energy circulation between e-axle, dyno and DC source



Energy circulation via DC Link

FEATURES / COMPONENTS

Application	Aimed for extended test cycles
E-Axle handling	Manual or (semi-) automatic
Takt time	Typically, 15 - 30 minutes
Load unit per wheel	Up to 5000 Nm and 3000 rpm / up to 440kW
DC Power/source and sink	Up to 1.1MW / 1200 V / 2000 A
Test cell footprint	Containerized about 48 sqm incl. utilities
Automation	PUMA 2™ Production
UUT track width	Up to 1200 mm
Measurement variables (typ.)	Torque, speed, oil temp, coolant temp and flow, NVH, electrical signals
Oil handling	Oil filling and flushing, particulate measurement
Coolant	Fill and drain
Software	Flashing of control unit software
Rigging inspection	Monitoring camera

FIND OUT MORE

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November 2023, Classification Public