Diesel raus Elektro rein!

MELA fit

Solutions for electrification of mobile machines – Electric Retrofit

KEY FEATURES

- Complete system kit with out-of-the-box-compatibility to other STW solutions
- Electric retrofit of trucks, mining machines, aircraft tractors, busses and similar vehicles with little mechanical modifications
- Gearbox and axle of vehicle remains for optimized driving quality
- Field tested components designed for longevity and harsh environments
- Homologated and certified system

TECHNICAL ATTRIBUTES

- Maximum power 300kW
- ready for 400V and 800V Systems
- IP6k9k / -40 … +85°C / ruggedized

COMPONENTS

- Battery and BMS
- Electric powertrain
- Control Units with management software
- Power Distribution Units
- Auxiliary systems
- Thermomanagement
- HMI
- System safety components
- Sensors

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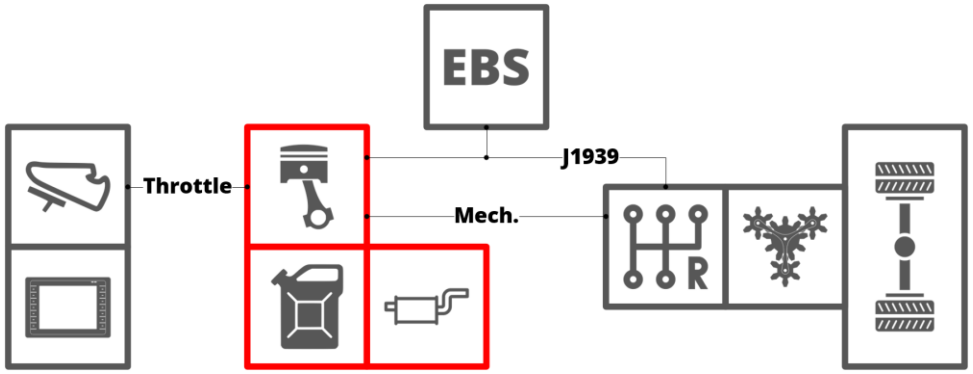
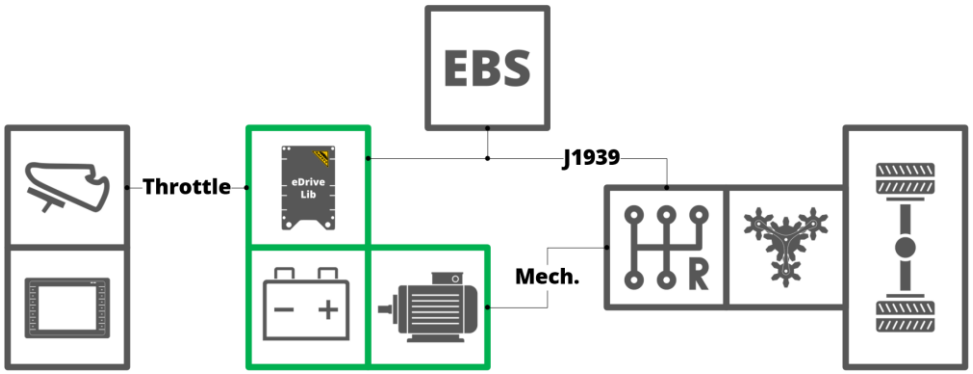
CLASSIC DIESEL ARCHITECTURE



MELAfit ELECTRIC ARCHITECTURE



ROAD MAP

MELAfit leads in 4 steps to your electric retrofit:

Requirement Engineering

Analysis of the vehicle´s drive cycle to determine power and capacity demands as well as environmental influences.

Concept Development

Defining size of electric motors and battery according to requirements and installation space. Charging concept is devised consistent with the drive cycle.

Retrofit

Removal of combustion engine, tank, exhaust pipe and exhaust treatment. Integration of HV battery, safety controller and electric motor. Organizing of vehicle homologation.

Operation

Support during initial operation and for any queries. Training of the relevant personnel. Provision of data transparency. Remote support during series operation.

APPLICATIONS

MELAfit is suited for all kinds of heavy-duty vehicles that require high power. This includes commercial vehicles such as busses and cargo trucks or specialised off-road equipment like mining machines, aircraft tractors and similar applications. STW resorts to its field proven and robust powerMELA components for the retrofit. Those enable continuous operation even in the harsh environment of off-road applications and withstand the influences of cold, vibrations and dust.
The existing axle and gearbox can remain in the vehicle and need not to be replaced, reducing the acquisition costs significantly. With the retrofit the vehicle loses nothing in terms of power and comfort – only emission of CO_2, NO_x and noise.

REFERENCE

The MELAfit system was homologated and certified during the public funded project “ELIAS” for the development of a battery-electric truck, facilitating further homologation and certification in new projects. Equipped with a 400kWh battery the truck at maximum load of 44to is able to achieve a range of 200km.

CUSTOMER BENEFITS

	50% and less acquisition cost compared to new electric vehicles → Depending on size of battery / range of vehicle
	Flexible and individual customizable solutions possible → Power, vehicle range, HMI and more can be adjusted according to customer demand
	Retrofit also for small lot sizes → Starting at lot size 1
	Revitalizing of older vehicles → Extend life span of older vehicles by exchanging the worn down parts with new long-living components
	Reduce operating costs → Maintenance and fuel costs are lower than that of vehicles with combustion engine
	No local CO2 emissions → Suitable for usage in inner cities
	No noise emissions → Suitable for usage at night
	Integration of data management systems → Realizing of fleet management and remote maintenance concepts
	Production availability → Fast and in large quantities available

TECHNICAL SPECIFICATIONS

	Up to 300kW power → More power possible with customized solutions
IP6k9k	IP6k9k → Usable even in harsh environments
	-40...+85°C → Problem-free operation even at sub-freezing temperatures
SAE J1939	J1939 compatible → For easy integration
400V 800V	400-800 V systems → Ready for 400V (passenger cars) and 800V (commercial vehicles) systems
	Recuperation mode → Feed braking energy back to the battery
A B C	High efficiency of up to 95% for electric motors → High quality components enable energy-saving operations
kg	Original weight → Even with installed batteries weight of vehicle is comparable to fully fueled version with combustion engine

COMPONENTS