

POWERBOX FOR MOBILE WORKING MACHINES



THE FULLY INTEGRATED ELECTRIFICATION SOLUTION FOR
EMISSION-FREE DRIVES FOR WORKING HYDRAULICS

FLEXIBLY CONFIGURABLE FOR ALL SIZES OF VEHICLE



DEVELOPED BY EXPERTS AND SUPPLIED READY-FOR-CONNECTION

The PowerBox was designed and developed jointly by a team of electrification experts from HAWE Mattro and a team of hydraulics experts from HAWE Hydraulik. It was conceived in the first instance for controlling loading cranes, but is now finding applications in lifting platforms, construction machines and municipal trucks.

Because all the drive and control elements are fully integrated into a single ready-for-connection box, installation and commissioning by the vehicle manufacturer or truck superstructure builder can be performed quickly and without requiring technical skills. The concept can be flexibly configured to suit the manufacturer's requirements for each specific vehicle, including direct integration of individual assemblies into the vehicle. The PowerBox is supplied ready cabled and fully charged for immediate use.

FLEXIBLY CONFIGURABLE – THE HAWE ELECTRIFICATION CONCEPTS

When the vehicle concerned retains its internal combustion engine but the mobile working machine is electrically driven, we call this a hybrid solution. This offers the flexibility of a conventional drive for travel to the working site. Thereafter the work functions can be performed with zero emissions and zero noise.



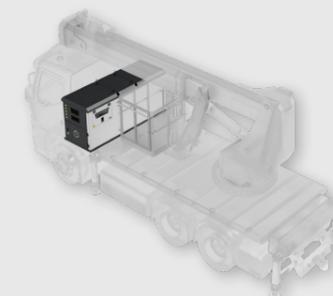
SEPARATE INSTALLATION

The components are installed individually and connected with cables on the vehicle chassis. On request you can receive all the necessary components as a package or receive only selected components from the HAWE range.



SEPARATE MINI-POWERBOX

The motor-pump unit and the battery system are designed and supplied as separate mini-PowerBoxes. These are ready for immediate installation and minimize the costs of installation. The division into in 2 separate boxes offers great flexibility of arrangement within the vehicle, to match the availability of space.



INTEGRAL POWERBOX

The integral PowerBox contains all the components in a compact space-saving package for quick and easy installation on the vehicle chassis. The battery packs are inserted using the well-proven quick-change system and can be removed individually without removing the unit. The PowerBox contains everything from the battery through to the hydraulic supply. This then allows automatic operation.

POWERBOX

CONTAINS EVERYTHING NECESSARY FOR EMISSION-FREE OPERATION



THE BATTERY PACKS

offer very high energy density and an in-built intelligent battery management system (BMS). They are designed for continuous operation and a long working life.

A QUICK-CHANGE SYSTEM

designed for each individual battery pack ensures that the battery pack can be changed in less than 1 min. The connections for delivery of the high operating current and exchange of data are established when the battery is inserted.

THE POWER DISTRIBUTION UNIT

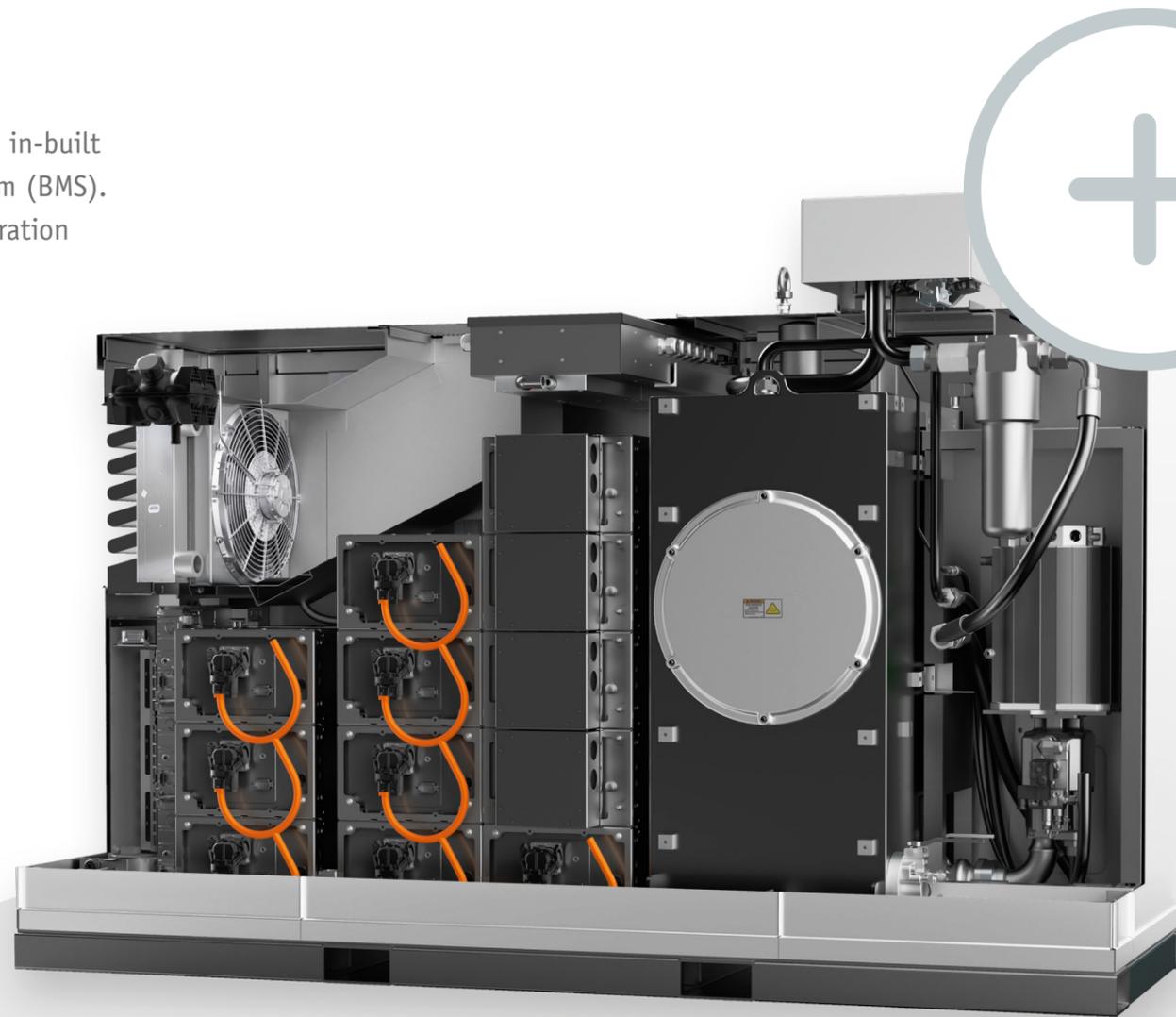
ensures central distribution of power and connects the consumers to the battery. At the same time it safeguards the individual consumers.

THE HYDRAULIC DRIVE

is incorporated as a compact unit which saves space and optimizes the efficiency of the electric drive without compromising performance in any way.

THE ASSOCIATED CHARGER UNIT

is supplied pre-configured with suitable plugs. HAWE Mattro performs parameterisation in the factory to suit the installed battery pack, so it is ready for immediate use.



- + SPACE-SAVING
- + READY FOR IMMEDIATE USE
- + HIGH-QUALITY WORKMANSHIP

THE MPU (MOTOR-PUMP UNIT)

is the interface between the electrical drive and the working hydraulics. The HAWE product range includes a wide choice of variable pumps and fixed displacement pumps.

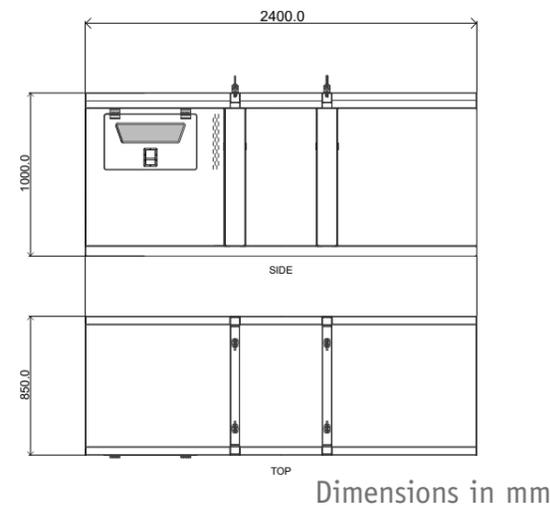
THE INVERTER

is perfectly matched to the Motor-Pump Units installed by HAWE. For even more efficient operation of the selected combination of motor and battery. The HAWE experts will select suitable components for you from the variety available on the market.

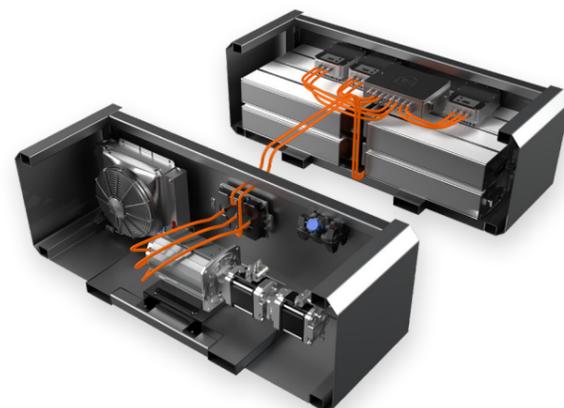
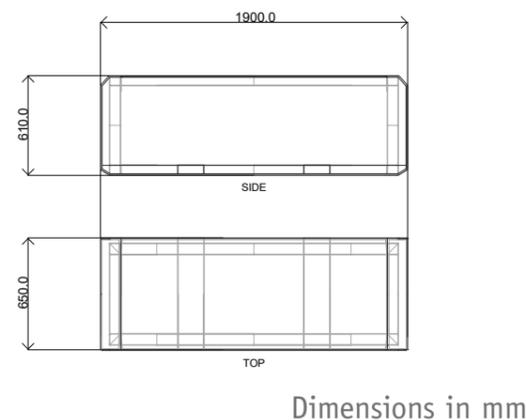
TECHNICAL DATA

The PowerBox is available in a range of sizes. Versions customized to individual customer requirements can be developed on request. The size is governed generally by the size of the vehicle chassis, the power requirements of the working hydraulics and the required duty cycle.

EXAMPLES OF THE DIMENSIONS OF AN INTEGRATED POWERBOX:



EXAMPLES OF THE DIMENSIONS OF A SEPARATE POWERBOX (MOTOR-PUMP UNIT + BATTERY PACK):



THE HIGH-PERFORMANCE BATTERY PACKS FROM HAWE MATTRO

The lithium-ion battery packs from HAWE Mattro are installed in the PowerBoxes as energy storage for emission-free operation. They are available for a range of performance data and include as standard an integral intelligent battery management system (BMS).



| Battery pack | EP44 | IEP014 | EP94 |
|--------------------------------|-----------------|-----------------|---------|
| Size (L x W x H in mm) | 435 x 307 x 182 | 727 x 307 x 182 | |
| Nominal voltage | 50.4 V | 50.4 V | 100.8 V |
| Maximum voltage | 58.8 V | 58.8 V | 117.6 V |
| Minimum voltage | 35 V | 35.0 V | 70.0 V |
| Continuous discharge current | 220 A | 220 A | |
| Energy content | 4.4 kWh | 12.0 kWh | 9.4 kWh |
| Cell temperature (discharging) | -20 to 55°C | | |
| Cell temperature (charging) | -20 to 45°C | -20 to 45°C | |
| Weight | 32.0 kg | 64.5 kg | 58.5 kg |
| Communication | CAN bus | | |
| Protection class | IP65 | | |

* Integral electric heating allows the cells to be warmed up to a temperature greater than 0°C so that charging can commence.

In addition the well-proven plug connector system for the battery pack greatly simplifies management of the duty cycle of the electrically powered vehicle and working hydraulics. When the battery pack requires charging, the existing battery pack can simply be removed and replaced with a spare charged battery. This takes only a few minutes and eliminates stand-still times. In addition this offers flexibility for charging the battery packs at convenient times at the depot or on site.

FIND OUT MORE ABOUT
HAWE MATTRO BATTERY
PACKS!



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