

trak[®] systems

Optimised Traction Energy systems



Motive Power Systems

Reserve Power Systems

Special Power Systems

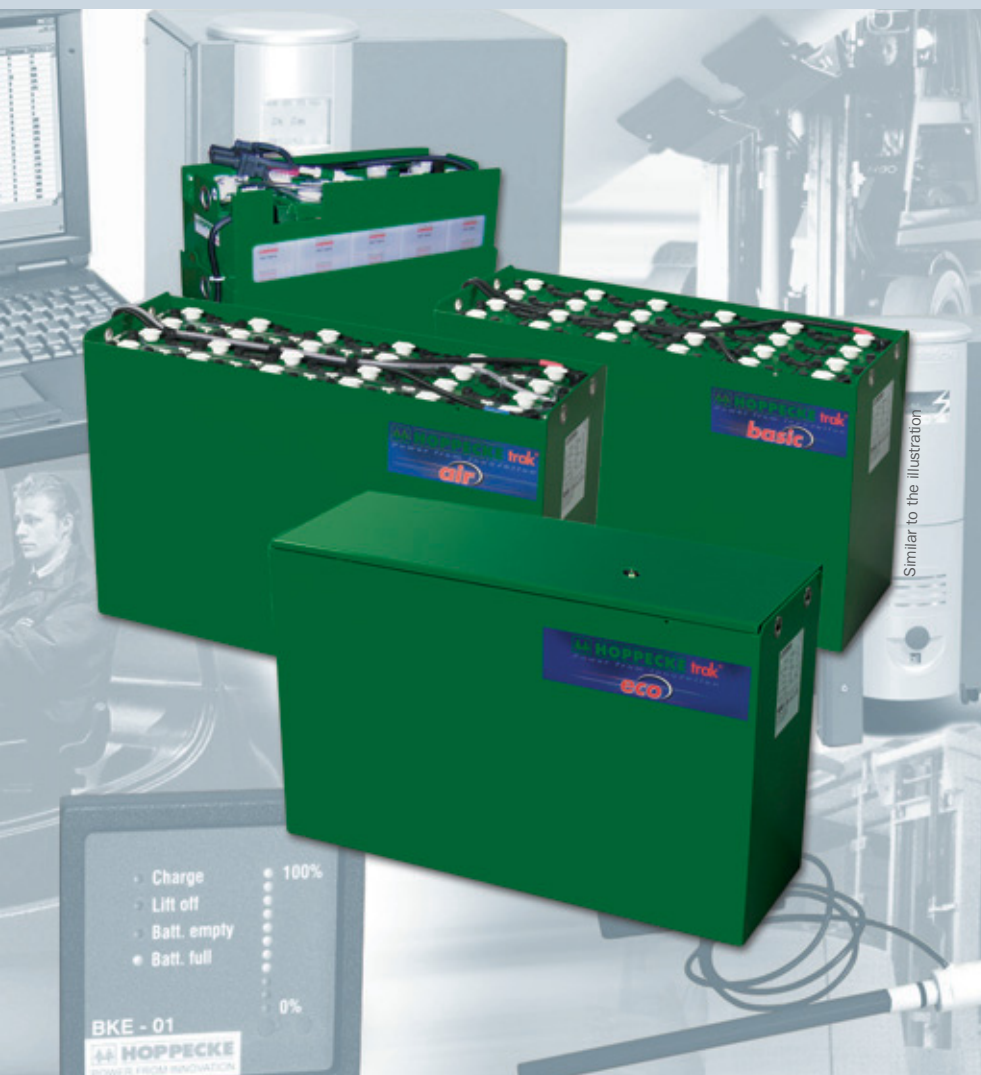
Service

Your benefits from HOPPECKE trak[®] systems

- The HOPPECKE trak[®] Q seal of quality
- High operating cost savings
- Excellent life-cycle costs
- The most suitable traction energy system for each application

Typical applications for HOPPECKE trak[®] systems

- Light-duty operation
- Normal operation
- Heavy-duty operation
- Shift-plus operation without equalising charges
- Continuous operation – 24/7



HOPPECKE

POWER FROM INNOVATION

HOPPECKE Traction Energy Systems

Traction with full power!

Without energy, both warehouse and production line come to a standstill. This leads to loss of sales and turnover, accompanied by unnecessarily high costs.

Our customers desire reliable, efficient and economical solutions. Our aim is to provide such solutions as part of a system, so that the best "total cost of ownership" is always achieved. From use in handling incoming and outgoing goods, in order-picking and in the high-bay warehouse, in production, and right through to the extreme conditions of use in cold stores, HOPPECKE traction energy systems meet the specifications of a wide variety of industrial applications, constantly offering you a high level of customer benefits through:

- A notable contribution towards lower maintenance and operating costs
- Excellent life-cycle costs
- Good reliability and safety in operation
- Outstanding properties in special conditions, e.g. continuous operation or use in extreme temperature conditions
- Use of two technologies – lead-acid (PzS, PzB) and FNC® (nickel fibre-structured)

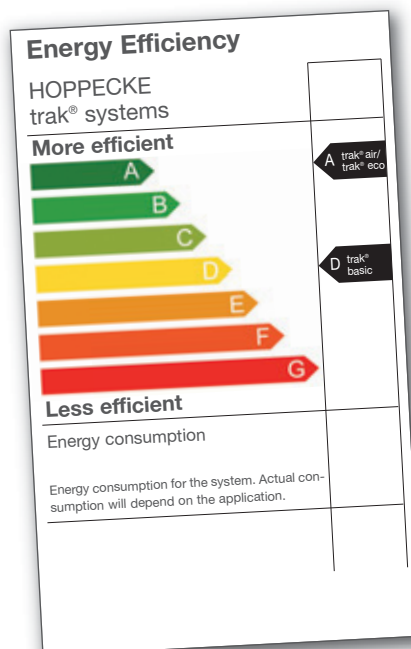
HOPPECKE Service with advantages for you!

Service protects against bottlenecks and failures. Batteries and chargers are not only important capital goods – they are also the motor of your logistics. To ensure the functional strength of your batteries and chargers on a

permanent basis, so guaranteeing your operating reliability and energy availability, regular professional servicing is absolutely essential. HOPPECKE battery and charger Service will undertake this responsible activity for you. You can then concentrate entirely on your core business.

HOPPECKE Service for Motive Power

- Prompt water refilling
- Careful cleaning
- Annual inspection
- Annual safety checks
- Rapid on-site help
- Competent systems advice
- Professional training



	trak® air	trak® eco	trak® basic*
Energy consumption	reduction by up to 30%	reduction by up to 30%	reduction by up to 15% compared with conventional systems
Water consumption	reduction by up to 70%	reduction by up to 70%	reference system
Water refill intervals	4 to 8 weeks**	8 to 25 weeks**	weekly

* reference system ** depending on cell type and application

trak[®] basic



trak[®] basic – Battery and charger



Your question:

How can I **minimise investment** costs while still being able to use a top quality battery system?

Our answer:

trak[®] basic provides the **ideal solution** in this case.

The solid and reliable trak[®] basic system comprises a high-grade HOPPECKE traction battery combined with the most suitable charger.

■ Investment costs:

- Low

■ Applications:

- Light-duty operation
- Normal operation
- Heavy-duty operation

■ Charging system:

- IU1a characteristic
- Proven charging system with optimised system assignment ensures reliable full charging

trak[®] air



trak[®] air – Battery and charger



Your question:

How can I **minimise operating costs, power consumption** and **battery handling**?

Our answer:

trak[®] air provides the **best solution** here.

The high-quality trak[®] air system comprises a HOPPECKE traction battery with electrolyte circulation and a regulated charger.

With its innovative system features, trak[®] air is a unique type of battery.

■ Operating costs:

- Low

■ Applications:

- Light-duty operation
- Normal operation
- Heavy-duty operation
- Shift-plus operation without equalising charges

■ Charging system:

- IU1a characteristic
- Regulated charging system with adaptive charge factor adjustment ensures reliable full charging even if the electrolyte circulation system is not working properly



The unique trak[®] air principle

trak[®] eco



trak[®] eco – Battery and charger



Your question:

How can I **minimise maintenance costs** such as **refilling water, cleaning and inspection**?

Our answer:

trak[®] eco offers the **perfect solution** here.

The low-maintenance trak[®] eco system comprises an encapsulated HOPPECKE traction battery and a high-grade HF charger.

With its innovative system features, trak[®] eco is virtually maintenance-free.

■ Maintenance costs:

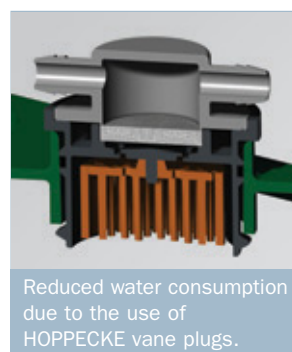
- Low

■ Applications:

- Light-duty operation
- Normal operation
- Shift-plus operation without equalising charges

■ Charging system:

- IULa characteristic
- Regulated high-frequency chargers with adaptive charge factor adjustment ensure reliable full charging even if the electrolyte circulation system is not working properly



Reduced water consumption due to the use of HOPPECKE vane plugs.



Permanent and easy checking of the electrolyte level using HOPPECKE AquaCheck[®]

trak[®] fnc

trak[®] fnc – Battery and charger



Your question:

How can I **utilise vehicles over 24 hours/7 days** without battery changeover?

Our answer:

trak[®] fnc offers the **unique solution** here.

The alkaline battery system comprises a HOPPECKE traction battery using FNC[®] technology combined with a regulated charger and a battery control unit (BKE).

The trak[®] fnc system stands out for its extremely high resistance to cycling, and the ability to operate in partly charged condition. trak[®] fnc is used wherever a lead-acid system reaches its limits.

■ Maintenance costs:

- Low

■ Applications:

- Continuous operation
- Can be charged and discharged at extreme temperatures down to -20°C

■ Charging system:

- IU1a characteristic
- Regulated charging system ensures extremely short charging time



BKE – HOPPECKE Battery Control Unit

Technical data:

Casing dimensions: W x H x D:
48x48x110 mm

Supply voltage: 18 – 120,0 VDC

Display: 4 LED's, LED Bar

Current measurement: +/- 100 mV via shunt

Front panel: Transparent, imprinted

Voltage measurement: 16 – 120 VDC

Interface: Infrared, frontal

Power consumption: < 2W



- Made in Germany

trak[®] Q: The quality standard for traction cells

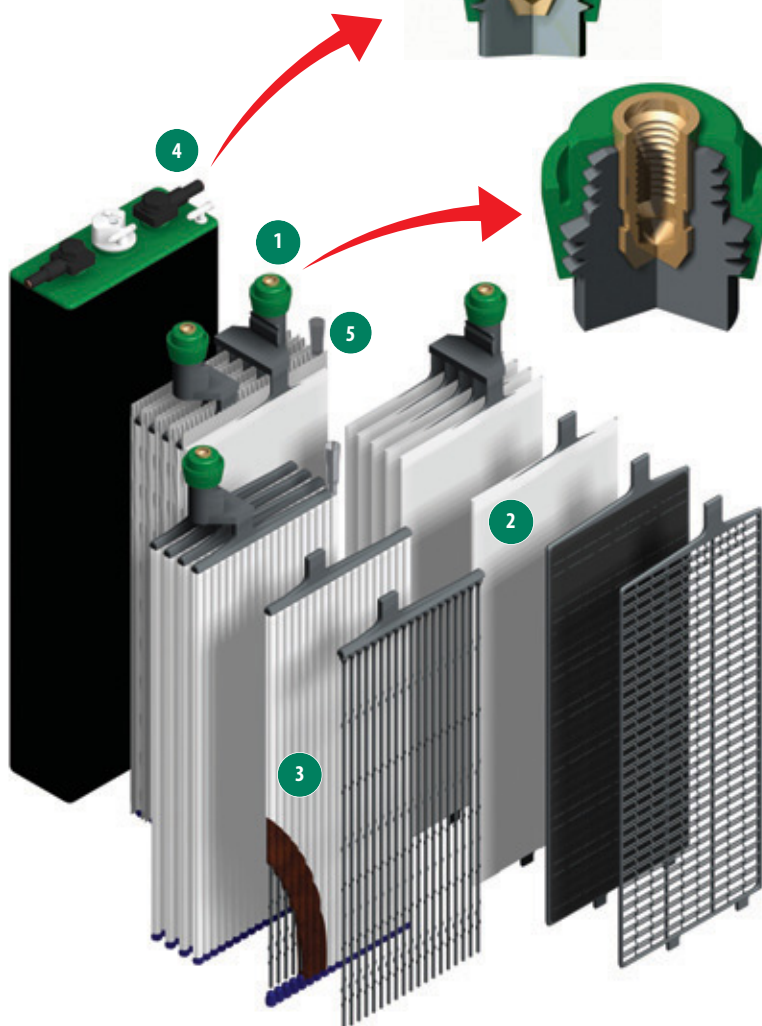
The use of top-quality parts and components and their perfect match with one another is the precondition for reliability and outstanding life expectancy in a traction battery.

trak[®] Q seal of quality guarantees you these properties.



trak[®] Q features:

- Unique HOPPECKE composite terminal with a tight connection between lead and plastic prevents downwards migration of electrolyte (1).
- Special polyester fleece pockets around the negative electrodes prevent short-circuits (2).
- High-grade, permanently elastic tubular gauntlets reduce loss of material (3).
- Fully sealed and insulated terminal-cell connector system prevents short-circuiting and corrosion of the external current conductor (4).
- General provision for trak[®] air electrolyte circulation (5).



trak[®] Q benefits:

- Long life expectancy
- Greater resistance to cycling
- No terminal corrosion
- Clean cell surface
- Maximum protection against short-circuits
- Good flexibility – easy scope for conversion to trak[®] air



Motive Power Systems



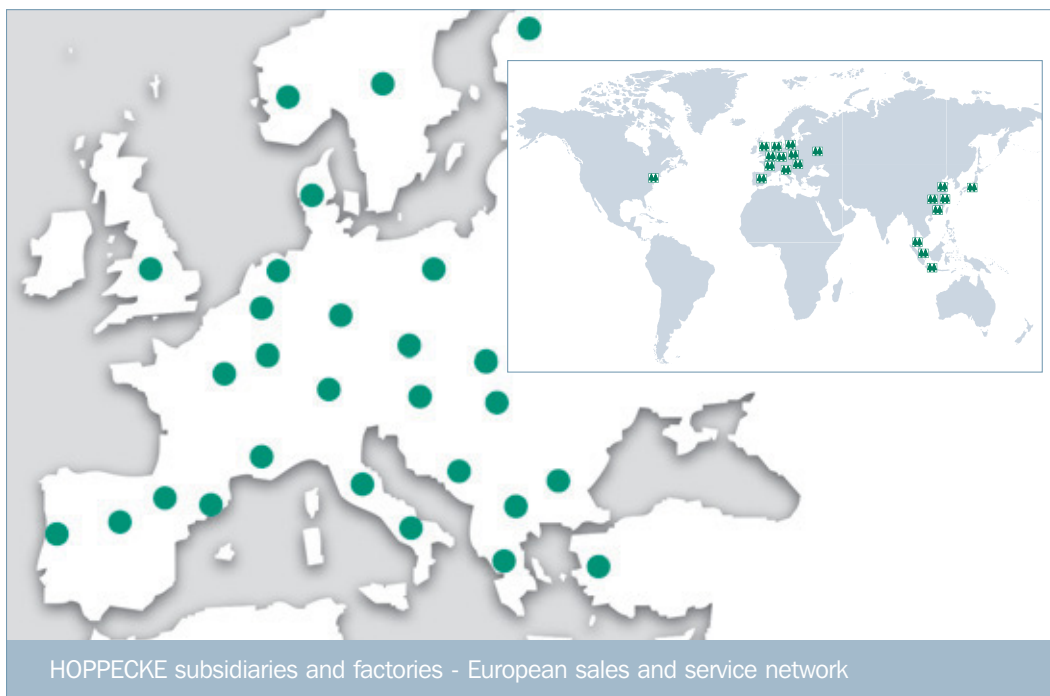
Reserve Power Systems



Special Power Systems



Service



Industrial batteries - Complete energy systems - Full Service

- Low-maintenance and no-maintenance batteries
- Innovative battery chargers based on the latest technology
- Battery accessories
- Battery management systems and software
- Battery changeover systems
- Battery/charger servicing
- Battery recycling
- Applications engineering and technology
- Battery room design
- Technical training and seminars
- Leasing
- Power by the hour

Your partner for sustainable energy solutions!

Further information on www.hoppecke.com

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