

trak | uplift

Motive Power solutions
for every challenge





Power is our passion ...

You are looking at the results of 90 years' work. 90 years of passion for innovative solutions for mobile power supplies – 90 years of German engineering skill and the aim of never being satisfied with what we have already achieved.

This is only possible thanks to the employees, who continuously support us along this path. Together with our business partners, we have continued to push the limits forwards and ensure that the impossibilities of yesterday have now become a jointly achieved reality.

Only through our partnership with you, we are able to create the perfect symbiosis of economically optimised solutions and state-of-the-art technological products.

With our structure of nearly 2000 employees at more than 20 locations around the world, we are always close to you and keep our finger on the pulse of pioneering innovations.

Flexibility in the design of your projects and extremely reliable products are our every day aims. With highly available local service we have ensured a thorough understanding of your special challenges for decades.

If you expect more than just a product but a competent partner who is always at your side, HOPPECKE is the right choice for you.



Motive Power

Our solution for your requirements

Requirements for modern intralogistics are changing at an increasingly faster pace. Increase in production output, improvement of the speed of work and general saving of costs and resources are essential for every company. It is therefore important for processes to be speeded up by the use of efficient energy solutions which are optimally tailored to your requirements.

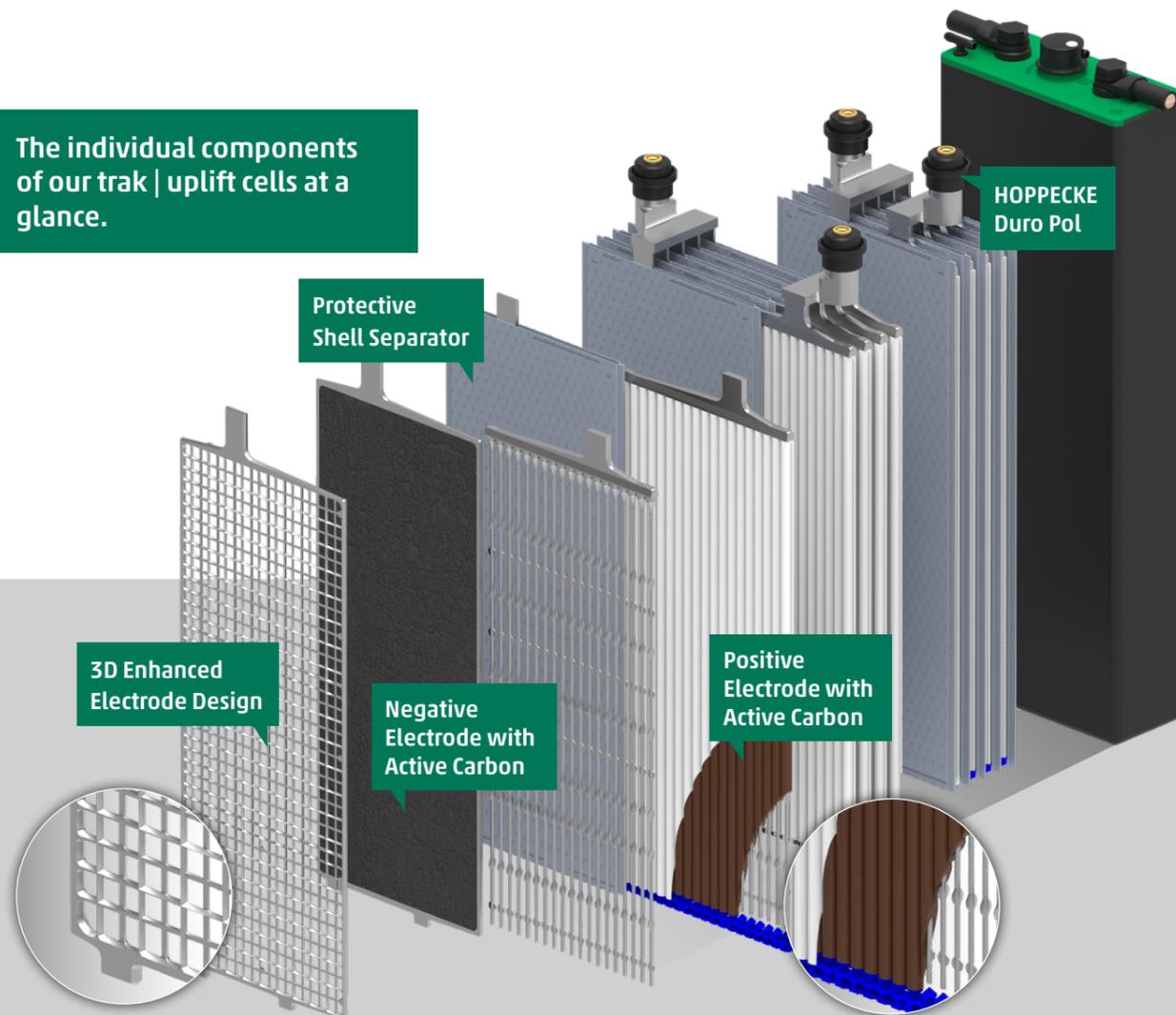
This is a top priority for HOPPECKE. The new motive power batteries from the trak | uplift series represent the cutting edge of our development and are based on decades of experience. The batteries require little maintenance, increase energy efficiency and reduce operating costs. This is made possible by the HOPPECKE HPzS tubular plate technology (DIN format).

An essential component of trak | uplift batteries is the new Active Carbon. This specially matched active material in combination with further innovative developments such as 3D Enhanced Electrode Design and the Protective Shell Separator ensures longer service life as well as increased power output.

Depending on the application, we supply our motive power batteries in various configurations: from the entry-level model trak | uplift up to the trak | uplift iQ system which includes an intelligent controller unit. Especially long service life is ensured with the use of our separately obtainable charger.

trak | uplift
available at
short notice!

The individual components
of our trak | uplift cells at a
glance.



trak | uplift

Excellent cost effectiveness



If you wish to minimise investment costs and optimally utilise your budget, but also want to use top quality motive power batteries, our trak | uplift batteries are your optimal solution.

The heart of all trak | uplift batteries is the new Active Carbon. Precisely matched active materials enable higher current discharge characteristics as well as improved fast charging capability. In combination with the optimised active area ratio of the new 3D Enhanced Electrode Design, Active Carbon ensures increased service life for cyclic applications.

In single shift operation trak | uplift batteries demonstrate their durability and economy. The Protective Shell Separator effectively protects against short circuits as a result of deposits of free active material on the negative electrode. A pole feed-through with a labyrinth system specially developed for the daily requirements of industrial trucks withstands even the highest mechanical strains and ensures reliable operation and reduced maintenance.

The trak | uplift battery is now available as a cost-optimised basic solution which is designed so that additional components such as trak | air electrolyte circulation can be retrofitted at any time. Customised or vehicle-specific adaptations are of course possible at any time.



The advantages trak | uplift

- ▶ Active Carbon ensures improved fast charging capability
- ▶ The Protective Shell Separator effectively prevents short circuits due to massing
- ▶ Can be retrofitted with trak | air or other components at any time
- ▶ Rapid availability
- ▶ Universal use
- ▶ High quality – low procurement costs
- ▶ Ultimate service life in systems with HOPPECKE chargers



trak | uplift air

Optimal availability and fast charging

CONFIGURATION



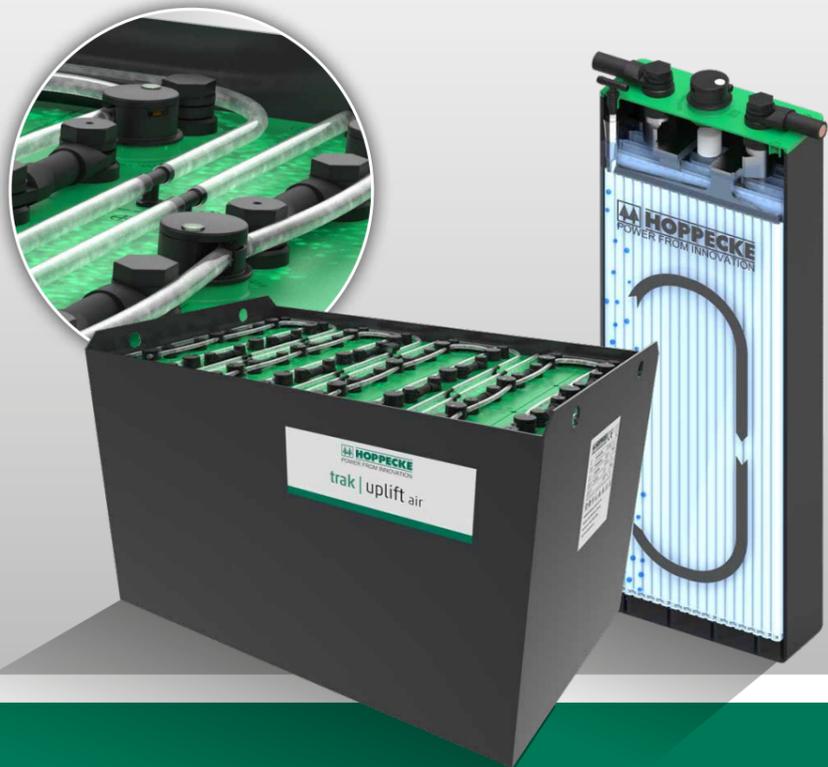
Upgrade your trak | uplift battery with high quality trak | air components and profit from many benefits such as lower energy and water top-up costs with ultimate battery availability through reduced charging times.

HOPPECKE trak | air electrolyte circulation prevents acid layering by means of blown in air. In comparison with other mixing methods this has the highest level of effectiveness with the least load on the plate set and eliminates potentially necessary weekend equalisation charges.

For you, this means that fewer replacement batteries are needed, and the general extension service life is extended. As intensive overcharging is no longer necessary with trak | uplift air the cycle lifespan is also increased.

Due to the significant reduction of energy consumption you save money in operation and also ensure a higher availability of your battery system. This reduces downtimes, so that you can plan your logistics better.

In combination with a HOPPECKE charger, the batteries are charged gently and efficiently. The charger detects excess or low pressure in the air supply and automatically switches to an alternative charging mode as necessary. Together with the possibility of rapid charging for demanding 24/5 shift operation this results in the fail-proof trak | air control concept.



Battery cell electrolyte circulation on trak | air and innovative pole feed-through.

The advantages trak | uplift air

- ▶ Reduced charging times
- ▶ Increased service life
- ▶ Reduced energy consumption
- ▶ Reduction of water consumption by up to 65 %
- ▶ Efficient and lifespan extending charging characteristics in the HOPPECKE system
- ▶ Intermediate charging without intensive equalisation charging possible
- ▶ Full charge guaranteed through pressure-monitored adaptive charge factor adjustment

trak | uplift save

Robust and low maintenance

CONFIGURATION



reduces these costs with the aid of innovative technology.

Maintenance costs for conventional lead-acid batteries primarily result from topping up with water, cleaning the surface of the battery and checks for damage. The new trak | uplift save battery

Encapsulation with the robust Save-Tray including the battery cover provides protection against physical damage and reduces battery soiling in daily use.

Together with the trak | aquafill top-up system, the separators which are equipped with Antimony Protection considerably reduce water consumption.

As a system solution with a trak | charger HF premium from HOPPECKE, trak | uplift save batteries maximise charging intervals through safe charging and are therefore almost completely maintenance-free.



The advantages trak | uplift save

- ▶ Minimum water consumption
- ▶ Protection against physical damage due to incorrect handling
- ▶ Extended service life
- ▶ Reduced control activities

trak | uplift save+

Optimum protection against dirt

CONFIGURATION



fore ideal for use in especially dirty environments.

Enclosed in the extremely tough and durable Full Protection Tray with closed cover, the all new trak | uplift save+ provides an optimal protection against external influences and is there-

Clean Surface Technology – a combination of Duro-Pol and Full Protection Tray – prevents leakage currents due to conductive contamination of the surface with dirt or electrolyte residues.

In combination with a trak | charger HF premium you achieve the highest level of protection of your investment and further reduce both general costs as well as annual maintenance costs in comparison with trak | uplift save.



The advantages trak | uplift save+

- ▶ Extended maintenance intervals
- ▶ Maximum service life
- ▶ Optimally protected against contamination
- ▶ Improved protection of investment
- ▶ Prevents leakage currents



trak | uplift iQ

Smart Charging and controlling function

CONFIGURATION



trak | uplift iQ is the highest configuration level of the new trak | uplift family. It is equipped with trak | collect, the most intelligent battery controller presently available on the market. This unique communication unit for lead-acid batteries measures all the relevant data and provides it in a network.

The highest possible energy efficiency is achieved by combining the new trak | uplift iQ with a trak | charger HF premium with adaptive charging curve. The Smart Charging function ensures minimum consumption of water and energy and is therefore especially investment-friendly.

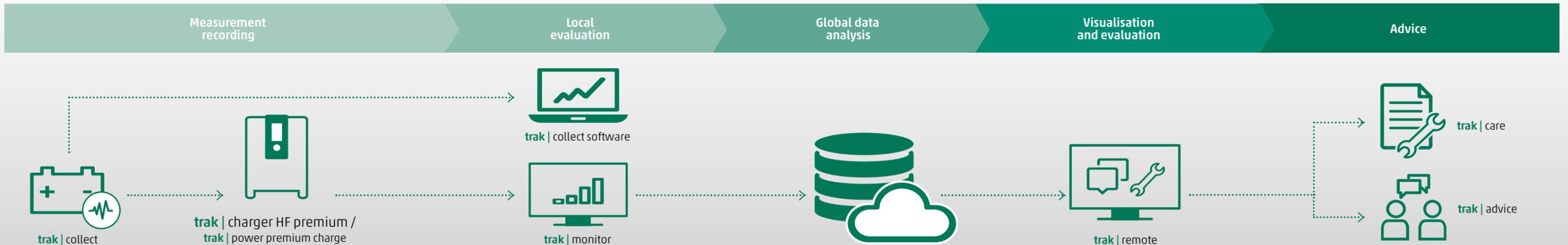
With the aid of the Advice Satellite you always have the current battery status in view. This small measuring unit is connected to the base and shows the battery state with LED. It gives visual signals such as prompts for servicing to increase vehicle availability and operating reliability.

trak | uplift iQ is Fleet Ready. This means that it communicates with the battery environment (e.g. charger, PC and vehicle) and transfers battery data. These data help to professionalise both battery and fleet management.

The Pro Reporting function of trak | uplift iQ generates usage analyses which are saved by the battery for local reports or are communicated in a web-based remote monitoring system for the planning and efficient controlling of logistic processes. With up to five communication interfaces the options for use are extremely versatile. This contributes to improved economy.

With the aid of Pro Reporting trak | uplift iQ generates:

- ▶ Cycle curves for all relevant values
- ▶ Graphs of charging state and energy throughput etc.
- ▶ Chronological lists of all exceptional incidents
- ▶ Summary of individual data in fleet reports



The advantages

trak | uplift iQ

- ▶ Ultimate charging efficiency
- ▶ Increased transparency and professionalism for battery management
- ▶ Precise planning of new investments
- ▶ Improved operating reliability and productivity
- ▶ Increased versatility
- ▶ Option for considerably improving efficiency and effectiveness
- ▶ Improved vehicle availability





Accessories and options at a glance

Add-ons

trak | aquafill*

The semi-automatic water top-up system trak | aquafill enables fast and reliable top-up of electrolyte and an optimum fill level.

trak | aquafill is simple to use and saves time and costs. The mechanical float control makes it impossible to overfill the cells, which minimises the risk of injury due to electrolyte burns. The system consists of a water trolley with a pump or a storage tank, water top-up connectors, connection hoses with hose clips and a quick-release coupling. All trak | uplift batteries can be upgraded with trak | aquafill.

trak | aquacheck*

With the trak | aquacheck electrolyte level display, the fill level is visualised with LEDs. The reliable sensor can be positioned at various points of the battery or in the field of view of the battery plug socket depending on the field of use. trak | aquacheck helps to prevent the battery from drying out and therefore failing. The durable design and compatibility with trak | uplift batteries makes trak | aquacheck a permanent companion over the entire service life of the battery.

* Inclusive for configuration level 3 and above.

Customised extensions possible.

trak | charger HF premium

With the new trak | charger HF premium HOPPECKE provides a future-proof solution, which in many details has decisive advantages over other chargers. Automatic recharging of all forklift trucks can be implemented regardless of the state of discharge.

trak | charger HF premium charges your batteries gently and efficiently, and can be easily integrated into battery monitoring systems to collect, evaluate and visualise all of the data from the network. Whether for electrically powered goods and warehouse logistics in industry or in commercial environments, optimal networking ensures the greatest possible efficiency and sustainably protects the environment.

By individual adjustment of the charging specification depending on the field of application, an optimum charging strategy can be developed. Automatic compensation charges at the optimum time ensure a longer service life. In combination with trak | uplift products and intelligent networking, potential savings of up to 30 % can be achieved. Therefore the trak | charger HF premium is a secure investment in reliability and efficiency.



trak | monitor

Networked chargers

With trak | monitor you have all power and consumption data in view: Information about the all of the chargers and batteries in the company are provided on a central computer and can be easily evaluated. This provides the greatest possible transparency and decisions can be made on the basis of real-time data. You also have access to the control of ventilation and can monitor the production of hydrogen. Battery replacements in your fleet can also be optimally controlled with the trak | monitor system. This ensures equal use and a long service life for your batteries. In addition, you also avoid unnecessary charging.

- ▶ Always the right battery – fully charged batteries in good condition
- ▶ Support for battery changes – quick and safe
- ▶ Equal use – no under-use or over-use
- ▶ The battery can cool down sufficiently after charging
- ▶ "Best Charged" function option

trak | remote

The measurement data, recorded by the trak | charger HF premium, can then be transmitted to the new, central trak | remote system. Vehicle pool and rental fleet operators, service technicians as well as vehicle manufacturers can efficiently plan and control logistics processes involving the deployment of electrically powered forklift trucks, which results in greater economic efficiency. By including HOPPECKE service technicians in your processes, immediate response to messages is possible. By means of secure remote access to the systems via a VPN link, interruptions to production can either be avoided in advance or remedied immediately.

There is no need to wait for a technician, and if necessary, spare parts are more quickly available on-site, which saves valuable time. HOPPECKE offers attractive long-term contracts for trak | remote, which sustainably reduce your costs.





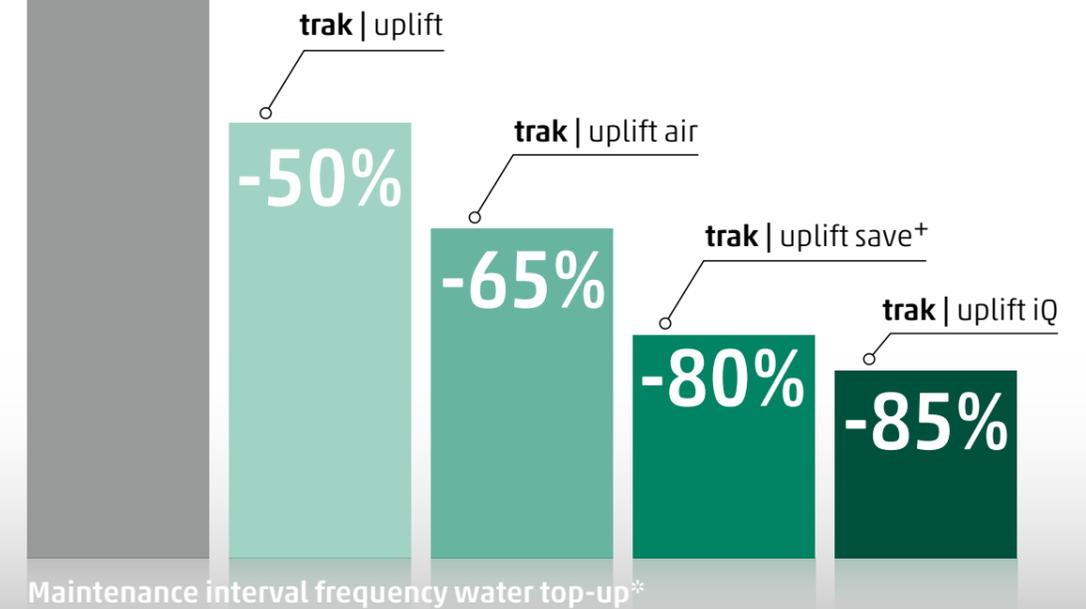
In comparison trak | uplift configuration levels

	Field of application			Charging capability			Special ambient conditions	
	Single shift operation	Multiple shift operation	Shift plus operation (24/5)*	Normal charging	Rapid charging	Intermediate charging	High or low temperatures	High dust and dirt levels / Outdoor
trak uplift	✓	●		✓			●	
trak uplift air	✓	✓	✓	✓	✓	✓	●	
trak uplift save	✓	✓	✓	✓	✓	✓	●	●
trak uplift save+	✓	✓	✓	✓	✓	✓	●	✓
trak uplift iQ	✓	✓	✓	✓	✓	✓	●	

* With trak | systemizer rapid ✓ Suitable ● With restrictions

Low maintenance with trak | uplift batteries

Standard
The electrolyte level of a motive power battery must be checked regularly. If the electrolyte level is too low, the active lead material can dry out and harden, resulting in permanent damage. In comparison with conventional lead-acid batteries, batteries from the trak | uplift family have considerably longer top-up intervals. Even the first stage reduces the necessary top-up frequency by 50 %. Less top-up requirements also means longer maintenance intervals and therefore lower operating costs. Optimum water saving is achieved by the combination of trak | uplift iQ and a trak | charger HF premium with Smart Charging function.



* Max. servicing intervals can only be achieved in combination with a trak | charger HF premium and an appropriately adjusted charging curve. The standard corresponds to charging with CF 1.2.

HOPPECKE system solutions Our innovations for your success

We are not just a supplier of motive power batteries and electrical drive systems, we also supply energy. Our energy concepts and energy solutions have an integrated design and are tailored to your individual requirements. Use our expertise, for example to reduce your investment costs through modular structures and flexible energy systems to optimise your vehicle fleet and achieve energy savings.

HOPPECKE system solutions offer you many advantages: They reduce your operating costs, increase energy efficiency, reduce maintenance effort and extend the service life of your vehicles, machines and equipment. HOPPECKE monitoring and management solutions are already digital and connective. They collect and manage battery data and derive specific actions and measures. With innovative HOPPECKE battery technology you can network your systems and locations.





Rent or buy?

Focused on TCO optimisation – **trak | rent**

Do you want to fully concentrate on your logistics without investing a large amount of capital in your own motive power batteries? Or do you need a short-term bridge due to seasonal conditions? In both cases it can be more worthwhile to rent batteries rather than to buy.

trak | rent offers you a suitable energy solution at a fair rent, quickly, dependably and available on call at all times. Reduce your operating expenses with improved performance and quickly expand your capacities at short notice.

Reduce your investment costs by renting your batteries, chargers and equipment. No matter whether used or new.

Starting from
3,33
Euro per day

Refurbishing

Ease the strain on your budget. HOPPECKE professionally refurbishes your used batteries and chargers. If required, we can also offer you refurbished equipment for purchase.

Purchasing

We take over your old batteries and chargers at the best prices.

Fast

Our extensive portfolio of battery and charger types ensures high availability and fast response times. This enables you to cover peak demands at short notice.

Plannable

From transportation to the annual battery service (water top-up optional) all work is covered, so that deployment planning is simplified and you can fully concentrate on your core business.

Versatile

Optimally adapt the number of batteries which are in use to your actual requirements.

Transparent

Thanks to our trak | collect battery controller, the monthly rental is transparently oriented to your usage scenario.

High quality

The risk of failure is reduced to a minimum by the use of original spare parts and maintenance by trained HOPPECKE service personnel.

Our service makes the difference

Under the heading "Lifecycle Services" we offer you far more than just products. From the initial idea, to consultation, installation and ongoing service up to disassembly and recycling, you have HOPPECKE professionals at your side, who make processes simple and transparent and ensure the smooth operation of your company in every situation.

Hotline and technical support

Extensive European service network with more than 250 experts at 15 locations, who are always available – by telephone or on site. International Key Account Management for internationally operating partners.

Analysis and advice

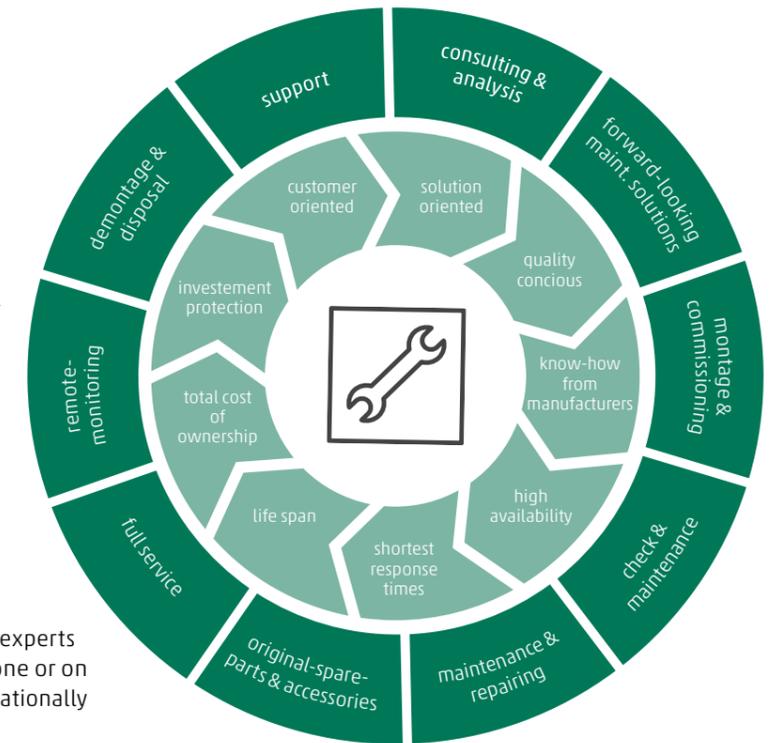
Technological and application advice on site. Process, optimisation, safety and efficiency analyses by certified HOPPECKE professionals. Target group oriented instruction and training for every application.

Monitoring

By linking your systems to the HOPPECKE Remote Service Portal, you integrate our technicians directly into your system environment. In this way, your systems are optimally monitored; HOPPECKE professionals respond proactively to any abnormalities and remedy these immediately.

Installation and commissioning, disassembly and recycling

Our installation teams are professionals in their field and not only ensure simple installation and maintenance according to schedule, but also provide complete turnkey solutions. I. e. complete installation, acceptance and handover to you.



And of course, when the time comes, proper and legally compliant disassembly, including recycling and documentation (certified according to ISO 9001/2008, ISO 14001 and ISO 50001).

Testing, maintenance and repair

With regular servicing, you extend the service life, reduce down times and ensure permanent functional safety. This ensures smooth operation, compliance with all legal regulations and protects your investment.



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