STANDARD
BATTERY
SOLUTIONS

HAWKER®
PERFECT PLUS™

THE EFFICIENT
BATTERY SOLUTION

HAWKER®

STANDARD
BATTERY
SOLUTIONS

perfect plus™

SUPERIOR
EFFICIENCY AND
RELIABILITY
INCREASED
CAPACITIES

THE HAWKER® PERFECT PLUS MOTIVE POWER BATTERIES PROVIDE A HIGH LEVEL OF POWER AND RELIABILITY FOR ALL INDUSTRIAL TRUCK APPLICATIONS, FROM SIMPLE SHIFTS WITH A LOW CAPACITY LOADING UP TO EXTREME HEAVY DUTY MULTI-SHIFT WORKLOAD

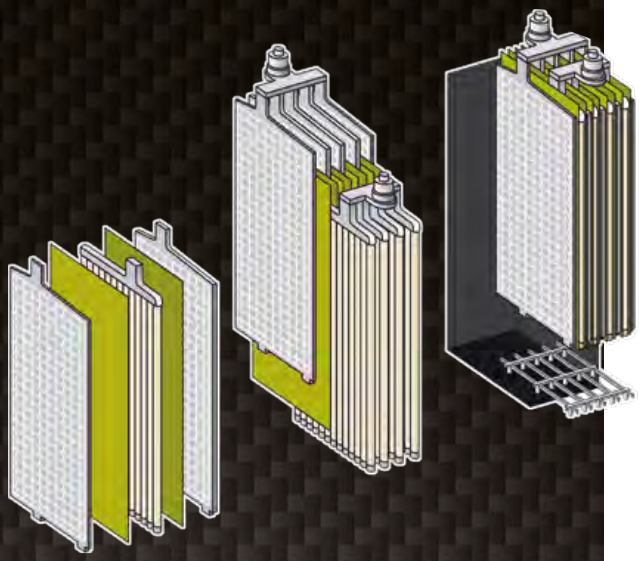
OPTIMISED SIZING

WHY "PLUS" ?

Compared to the former Perfect range, Hawker® Perfect Plus™ cells provide higher capacity and efficiency in discharge achieved by advanced components used in the construction of the positive plates. The sizing of the positive and negative plates has been optimised according to the volume available in the cell boxes.

ADDED EFFICIENCY

The process of filling the positive plates has been improved. All these technical enhancements have enabled an increase in the cell capacities while keeping the same exterior dimensions. The Hawker Perfect Plus range is at the highest technology level and has a very high efficiency. This improvement integrates the European harmonization of the DIN and BS ranges. This range meets the dimensions of standards DIN/EN 60254 and IEC 254-2.



CELL CONSTRUCTION

All Hawker® Perfect Plus™ cells use the robust tubular vented technology (PzS). The positive electrodes are diecast tubular plates (PzS) and advanced components used in their manufacture provide increased efficiency. The negative plates are flat pasted plates. The separator is of the microporous type. The cell box and lid are made from high impact, temperature resistant polypropylene and are heat-seal welded to prevent electrolyte leakage.

POWERFUL FEATURES

The special design of the terminals ensures that no electrolyte can leak from the cells. The cells are joined by fully insulated flexible and halogen free connectors. The bolt-on connectors allow cells to be replaced or moved without excessive work. Flip top plugs with electrolyte level markings are fitted. These allow adequate escape of charging gasses and provide a safe anti-surge baffle for the electrolyte during operation. Cells lids are equipped with holes for installation of electrolyte circulation system, these can also be used for temperature sensor tests.

WI-IQ® AND MODULAR CHARGER CONNECTIVITY

Wi-iQ® is a small electronic device that collects data from the battery: identity, capacity, temperature, voltage and current. It also gives an indication if the battery develops a voltage imbalance that requires service intervention. When used with our software program Wi-iQ Reporting Suite, a range of management reports are available. Modular chargers (Life iQ™ Modular range) are capable of communication with the battery via the Wi-iQ.

BATTERY FLEET MANAGEMENT

EnerSys® offers a solution that makes managing the battery fleet straight forward and affordable. BSI40™ and Lifenetwork iQ™ are the spearheads of battery fleet management, enabling charging room management and communication with state of charge monitoring. Totally customizable to your needs, these solutions will make your energy and facility management easy and efficient.

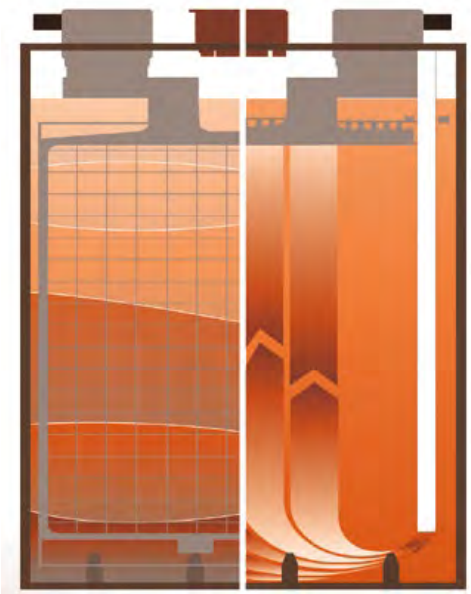
EVEN MORE APPLICATIONS

Hawker Perfect Plus batteries are suitable for use in the following Material Handling applications:

- Counterbalance trucks
- Reach trucks
- Pallet trucks
- Order pickers
- AGV/LGV

HAWKER® AQUAMATIC

The Aquamatic water refill system makes it possible to top up all the cells from one central point through an integrated system. The aquamatic vent plugs automatically ensure the optimum filling level and also allow the measurement of electrolyte specific gravity. The aquamatic kit can be expertly fitted at the factory and on site.



CHARGING TIME SHORTER

BENEFITS

Hawker® Perfect Plus™

- increased capacities in same dimensions
- higher running time and battery availability
- European harmonization of capacities and sizes in DIN and BS ranges

Hawker Perfect Plus with electrolyte circulation

- no electrolyte and temperature stratification during partial or complete charging process
- optimal charge acceptance by positive and negative electrodes and therefore uniform plate stressing
- charging time shorter by up to 30 % and energy savings of up to 20 % compared with conventional charging processes
- minimised gassing phase, reduced sludging and water consumption reduced by up to 70%
- temperature rise during charging is up to 10 °C lower, allowing use in warm ambient conditions
- more rapid battery availability for the same nominal charging current due to shorter charging time and therefore higher battery utilisation rate in multiple shift operation
- higher performance and longer battery service life in heavy operation particularly with opportunity charging
- longer maintenance intervals, lower maintenance costs.

HAWKER®

ELECTROLYTE CIRCULATION (EC)

Hawker electrolyte circulation system, using the AirLift principle, consists of a pipe system which is fitted in the cells. A diaphragm pump sends a low rate airflow into the cell which creates a circulating air stream inside the cell box. This system prevents electrolyte stratification and the battery charging is optimised. Electrolyte circulation provides optimum performance, reduces recharge time, helps keep the battery cooler and maximizes battery service life in more arduous operations.

DEFINITION OF APPLICATION FIELDS

1. Low duty
   single shift with light operation and discharge lower than 60 % C5. electrolyte T °C about 30 °C

2. Normal duty
   single shift with discharge up to 80 % C5. electrolyte T °C 30 °C

3. Heavy duty
   - single shift with discharges of 80% C5 and high discharging currents
   - opportunity charging to augment the useable capacity
   - multi-shift operation with or without battery changes
   - high ambient temperature.

1. LOW DUTY	1. NORMAL DUTY	1. HEAVY DUTY
IRONCLAD		
NEXSYS		
HAWKER EVOLUTION		
HAWKER PERFECT PLUS		
HAWKER PERFECT PLUS WITH ELECTROLYTE MIXING		
HAWKER WATER LESS		
HAWKER WATER LESS WITH ELECTROLYTE MIXING		
HAWKER WATER LESS 20		

ABOUT ENERSYS®

EnerSys®, the global leader in stored energy solutions for industrial applications, manufactures and distributes reserve power and motive power batteries, battery chargers, power equipment, battery accessories and outdoor equipment enclosure solutions to customers worldwide.

Motive power batteries and chargers are utilized in electric forklift trucks and other commercial electric powered vehicles.

Reserve power batteries are used in the telecommunication and utility industries, uninterruptible power supplies, and numerous applications requiring stored energy solutions including medical, aerospace and defence systems.

Outdoor equipment enclosure products are utilized in the telecommunication, cable, utility, transportation industries and by government and defence customers.

The company also provides aftermarket and customer support services to its customers from over 100 countries through its sales and manufacturing locations around the world

WHEREVER YOU DO BUSINESS, ENERSYS CAN SUPPORT YOU WITH MOTIVE POWER ENERGY.

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