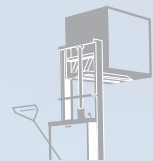
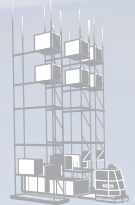


## The Solution!

**SOLUTIONS**





# The energy pack solution

## Energy pack



## Features of batteries

| Electrolyte                        | absorbed (AGM)   | Liquid   | Liquid   | Liquid  | Gel  |
|------------------------------------|--|--|--|---|--|
| <b>Water topping up intervals</b>  | N/A  | once a week every 4 weeks with electrolyte circulation   | once a week every 4 weeks with electrolyte circulation   | every 4 weeks with 50 Hz chargers<br>every 8 weeks with Hawker HF chargers (CF 1.12)<br>every 13 weeks with Hawker HF chargers (CF 1.07 and electrolyte circulation)<br>every 20 weeks - Water Less 20 battery range with Hawker HF charger (CF 1.04, electrolyte circulation and Wi-iQ®) | N/A  |
| <b>Aquamatic</b>                   | N/A  | standard accessory   | optional   | optional  | N/A  |
| <b>Electrolyte circulation</b>     | N/A  | optional   | optional   | optional  | N/A  |
| <b>Dimensions</b>                  | DIN  | DIN  | DIN-BS   | DIN-BS  | DIN-BS   |
| <b>Capacities C<sub>5</sub></b>    | 250 - 750Ah  | 276 - 1380 Ah  | 46 - 1550Ah  | 46 - 1550Ah   | 94 - 1120Ah  |
| <b>Charging time <sup>1)</sup></b> | less than 4 hours at 60% DOD C <sub>5</sub> with approved EnerSys® charger   | 7-14 hours with HF chargers (6-13 hours with electrolyte circulation)  | 7-14 hours with HF chargers (6-13 hours with electrolyte circulation)<br>7.5-14 hours with 50 Hz chargers (5.5-12 hours with electrolyte circulation)                                  | 7-14 hours with HF chargers (6-13 hours with electrolyte circulation)<br>7.5-14 hours with 50 Hz chargers   | 8*-12** hours with approved EnerSys charger<br>* 8 hours at 60% DOD C <sub>5</sub><br>** 12 hours at 80% DOD C <sub>5</sub>          |
| <b>Cost savings</b>                | <ul style="list-style-type: none"> <li>energy: up to 30% with LifeSpeed iQ™ and Life iQ™, HF chargers</li> <li>maintenance: no watering</li> </ul>   | <ul style="list-style-type: none"> <li>energy: up to 30% with Modular HF chargers</li> <li>maintenance according to duty level</li> </ul>  | <ul style="list-style-type: none"> <li>energy: up to 30% with Hawker HF chargers</li> <li>maintenance according to duty level or Aquamatic</li> </ul>                                  | <ul style="list-style-type: none"> <li>energy: up to 30% with Hawker HF chargers</li> <li>longer water topping up intervals according to charging technology and options</li> </ul>   | <ul style="list-style-type: none"> <li>energy: up to 30% with Hawker HF chargers</li> <li>maintenance: no watering</li> </ul>        |
| <b>Main advantages</b>             | <ul style="list-style-type: none"> <li>short recharge time</li> <li>opportunity charging suitable</li> <li>stable performance at high discharge rate</li> <li>operates in PSOC (partial state of charge)</li> <li>equipped with Wi-iQ®2, electronic device for communication with Life iQ and LifeSpeed iQ, HF chargers</li> <li>maintenance free</li> </ul> | <ul style="list-style-type: none"> <li>15% more power</li> <li>faster drive and lift speed</li> <li>1 hour longer run time for each charge</li> <li>design life of 1,800 cycles</li> </ul> | <ul style="list-style-type: none"> <li>available for all applications</li> <li>adapted to ionic mixing</li> <li>compatible with electrolyte circulation for very heavy duty</li> </ul> | <ul style="list-style-type: none"> <li>available for all applications</li> <li>high level of flexibility</li> <li>increased topping up intervals</li> <li>range of options including electrolyte circulation for very heavy duty</li> </ul>   | <ul style="list-style-type: none"> <li>decentralised charging</li> <li>simplified charging area</li> <li>maintenance free</li> </ul> |

<sup>1)</sup> batteries discharged at 80% C<sub>5</sub>




|  |  |  |  |  |
|--|---|---|--|---|
|  |  |  |  |  |
| Evolution™                                       | ■ ■ ■ ■   | ■ ■ ■ ■   | ■ ■ ■ ■  | ■ ■ ■   |
| Water Less® / EC <sup>2)</sup><br>Water Less® 20 | ■ ■ ■ ■   | ■ ■ ■ ■   | ■ ■ ■ ■  | ■ ■ ■   |
| Perfect Plus™ / EC <sup>2)</sup>                 | ■ ■ ■ ■   | ■ ■ ■ ■   | ■ ■ ■ ■  | ■ ■ ■   |
| IRONCLAD®  | ■ ■ ■ ■ ■   | ■ ■ ■ ■ ■   |  |   |
| Hawker® XFC™                                     |   | ■ ■ ■ ■ ■   | ■ ■ ■ ■ ■  |   |

## Features of chargers

| Charging characteristics | Profile adapted to battery technology   |  |   | Wa<br>Wsa<br>WoWa   | IWUla<br>IUla |
|--------------------------|---|--|---|---|---------------|
| Technology               | Microprocessor management, modular concept  |  |   |   |               |
| Capacities               | 46-1550Ah   | 46-1550Ah  | 250 - 750Ah for Hawker XFC<br><br>120 - 1550Ah for ionic or airmix charge<br><br>120 - 1250Ah Fast Charge   | 38 - 1550Ah   |               |
| Voltages                 | 12-24-36-48-72-80V<br>1 - 3phase  | 12-24-36-48-72-80V<br>1 - 3phase   | 72-80V<br>3phase  | 12-24-36-48-72-80V<br>1 - 3phase  |               |
| Aquamatic system         | optional  | optional   | optional  | optional  |               |
| Electrolyte circulation  | optional (above 2kW)  | optional   | optional  | optional  |               |
| Ionic mixing             | standard  | standard   | standard  | N/A   |               |
| Display                  | <ul style="list-style-type: none"> <li>LCD showing all parameters: total voltage, current, restored capacity, charging time, % of charge</li> <li>memorizations</li> <li>settings</li> </ul>  | <ul style="list-style-type: none"> <li>TFT 4, 3" showing all parameters: total voltage, current, restored capacity, charging time, % of charge, % of charge,</li> <li>memorizations</li> <li>settings</li> </ul>   | <ul style="list-style-type: none"> <li>LCD display, fitted with 5 colours, showing all charging parameters: total voltage, cell voltage, current, capacity restored, charging time, % of charge, time remaining</li> <li>memorization of parameters</li> </ul>  | LED or alphanumeric display for the state of charge.  |               |
| Main advantages          | <ul style="list-style-type: none"> <li>multi-technologies</li> <li>multi-capacities</li> <li>multi-voltages</li> <li>low harmonic distortion</li> <li>low weight and volume</li> <li>intelligent charging algorithm with automatic detection of the DOD%</li> <li>module redundancy</li> <li>easy service</li> <li>reduced energy consumption in idle (&lt;10W)</li> <li>optimised charging profiles</li> </ul> | <ul style="list-style-type: none"> <li>multi-technologies</li> <li>multi-capacities</li> <li>multi-voltages</li> <li>low harmonic distortion</li> <li>low weight and volume</li> <li>intelligent charging algorithm with automatic detection of the DOD%</li> <li>module redundancy</li> <li>easy service</li> <li>wireless communication with the battery via Wi-iQ® and Wi-iQ®2</li> <li>USB port</li> <li>ethernet capability</li> <li>reduced energy consumption in idle (&lt;10W)</li> <li>optimised charging profiles</li> </ul> | <ul style="list-style-type: none"> <li>multi-technologies</li> <li>multi-capacities</li> <li>multi-voltages</li> <li>module based technology</li> <li>reduced energy consumption</li> <li>delayed start of charge and programmed time of start</li> <li>low weight and volume</li> <li>intelligent algorithm with automatic detection of battery capacity and DOD</li> <li>wireless communication with the battery via Wi-iQ® and Wi-iQ®2</li> <li>USB port</li> <li>Ethernet</li> <li>real time clock</li> </ul> | <ul style="list-style-type: none"> <li>vented batteries application</li> <li>easy to understand diagnostics</li> <li>simple and reliable construction</li> <li>Ah balancing, charging factor optimisation.</li> </ul> |               |

<sup>2)</sup> EC = Electrolyte Circulation





Wherever you do business, EnerSys® can support you with motive power energy. The Hawker® branded battery range, matched chargers and systems provide trouble free performance under the most demanding service conditions. Our strategically located manufacturing plants are efficient and responsive with a culture of continuous improvement and added value for our business partners.

EnerSys has an enviable position in technology leadership and with significant investment in research and development we intend to stay at the leading edge in product innovation. The recently developed energy solutions: IRONCLAD®, Water Less® 20 and Hawker XFC™ batteries, Lifetech®, Life IQ™ and LifeSpeed iQ™ modular HF chargers have defined new benefits for our customers: faster recharge, more machine availability, lower operating and investment costs, reduced carbon footprint. Our team of development engineers is driven by the desire to build the best energy solutions and works closely with our customers and suppliers to identify development opportunities. Our bias for rapid innovation means we get new products to market fast.

EnerSys's integrated sales and service network is dedicated to providing our customers with the best solutions and after-sales support for their business. Whether you require 1 battery or a complete fleet of batteries, chargers, a battery handling system and a state of the art fleet management system, you can count on us. EnerSys is the world's largest industrial battery manufacturer and we are dedicated to being the best.



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[www.enersys-emea.com](http://www.enersys-emea.com)

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