



**HAWKER<sup>®</sup> FLEX<sup>™</sup>**  
**& HAWKER<sup>®</sup> FLEXPAK<sup>™</sup>**  
THE POWER OF PRODUCTIVITY



**HAWKER® FLEX™ and HAWKER® FLEXPAK™ Thin Plate Pure Lead (TPPL) batteries represent the latest addition to the industry's broadest and most comprehensive line of battery solutions for your operation. Suitable for a variety of applications and virtually maintenance-free, HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries provide superior flexibility and allow for frequent recharging. Cycle life increases exponentially with more frequent plug-ins.**



### **POWERFUL OPTIONS**

HAWKER® FLEX™ battery systems provide a range of motive power batteries (consisting of either 2 volt cells or monoblocs) that offer opportunity charging with no battery changing and virtually no maintenance. This will provide significant operational benefits at a lower cost of ownership compared to traditional flooded, gel, or air mixed batteries.

HAWKER® FLEXPAK™ batteries include an on-board charger for light-duty applications.

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### **VIRTUALLY MAINTENANCE-FREE**

HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries can eliminate routine maintenance and improve your bottom line:

- Forget about watering – forever.
- Forget about corrosion – forever.
- Faster battery availability due to short recharge times.
- Only one full charge and equalization per week.
- Stratification problems are virtually eliminated.
- Elimination of battery changing.
- Lower internal resistance resulting in higher charge acceptance.

### **FLEXIBILITY**

HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries provide exceptional flexibility. Use them whenever you want, and recharge them whenever you can – during breaks or at the end of the shift. HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries can even be put back into service before they are fully charged. They are the perfect power source for opportunity and fast charge applications and will go from 40 -80% state of charge within one hour with the appropriately sized HAWKER® charger with TPPL charge profile. All HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries are equipped with low voltage alarms (LVA) to automatically assist by alerting you when your battery should be charged.

Combining advanced battery design technology with robust materials and construction, HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries provide the flexibility you need to reduce operating costs associated with standard flooded batteries by being virtually maintenance-free. HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries are highly resistant to shock and vibration. They will literally change the way you work.

### **HAWKER® FLEX™ AND HAWKER® FLEXPAK™ BENEFITS**

Virtually maintenance-free, HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries feature a superior quality microporous glass mat separator with high electrolyte absorption and stability to enhance cyclic capability. Positive and negative plates are low impedance, high corrosion-resistant thin plate grids manufactured from pure lead in a unique process.



## Light-Duty and Medium-Duty Applications

HAWKER® FLEX™ AND HAWKER® FLEXPAK™ THE POWER OF PRODUCTIVITY

HAWKER® FLEX™ batteries are suitable for all types of light-duty and medium-duty applications:

- pallet trucks
- industrial utility vehicles
- automated guided vehicles (AGV)
- floor care/cleaning machines
- shuttle personnel carriers
- narrow aisle fork trucks



HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries offer optimized cycling performance and rapid recharging that conventional lead acid batteries – gel or flooded – simply cannot. When used with a HAWKER® approved charger, HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries offer a wide range of benefits:

- High energy throughput – up to 180% of C<sub>6</sub> per 24 hours for monoblocs and 160% for 2 volt cells.
- Long maintenance-free life cycle – up to 1,200 cycles at 60% DoD for monoblocs and up to 1,500 cycles for 2 volt cells at 60% DoD.
- Extreme shock and vibration resistance
- Environmentally friendly
- Minimum gassing: ideal for use in shops, public areas, and sensitive manufacturing areas.
- Recyclable
- Ideal for multi-shift operations
- Short recharge times – 40-80% state of charge in 35 minutes for monoblocs and 40-80% state of charge in 1 hour for 2 volt cells (with a HAWKER® approved charger).
- Ideal for partial state of charge operations with one full charge and equalization per week.
- Ideal for opportunity charging.
- Long shelf life (up to 2 years at 68°F).

### IDEAL CHARGING PARTNERS

The HAWKER® LifePlus™ MOD3, PTO™ MOD3, and LifeTech™ MOD1C chargers can utilize the TPPL battery profiles to optimize cycling performance and reduce charging times. HAWKER® modular high-frequency, smart chargers with TPPL profiles are ideal for use with the HAWKER® FLEX™ and FLEXPAK™ batteries:



#### LIFEPLUS™ MOD3 CHARGER

The LifePlus™ MOD3 high-frequency switch-mode IONIC smart charger offers six different charge profile options for operational flexibility. This charger allows the customer to choose between 2 factory set charging options:

(1) IONIC, opportunity, cold storage, and EVOLUTION (VRLA) profiles.

(2) TPPL 2V standard/fast and TPPL Bloc profiles



#### PTO™ MOD3 CHARGER

The PTO™ MOD3 high-frequency charger allows the user to choose between 2 factory set charging options:

(1) Conventional I-U-I, opportunity, and cold storage profiles.

(2) TPPL 2V standard and TPPL Bloc profiles.



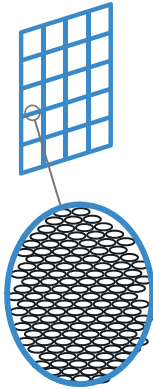
#### LIFETECH™ MOD1C CHARGER

The LIFETECH™ MOD1C modular high-frequency, smart chargers provide optimum charging, peak efficiency, maximum reliability, and non-stop power to meet the growing demands of our customers.

*HAWKER® FLEX™ and HAWKER® FLEXPAK™ batteries must be charged with a HAWKER® approved charger.*

For the right HAWKER® power solution to meet your needs, please call 1-877-7HAWKER for a HAWKER® representative in your area.

## TPPL (THIN PLATE PURE LEAD)



Artist rendering

TPPL batteries use a thinner grid design of high-purity lead. The TPPL design results in increased plate surface area within a battery – and that means more available power.

Highlights:

- Pure lead crystallography (fine grain structure) makes the grid far more resistant to corrosion.
- Pure lead grids with the same design life can be much thinner than cast lead calcium grids [Pb-Ca] or lead antimony grids [Pb-Sb].
- Very low internal resistance results in higher charge acceptance.

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With more than 85 years of motive power experience and innovation, HAWKER® offers a complete line of battery and charger motive power solutions. HAWKER® power solutions are designed to reduce environmental impact, lower operational costs, increase productivity, and improve customer operations.

For the right HAWKER® power solution to meet your needs, please call 1-877-7HAWKER for a HAWKER® representative in your area.

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 **HAWKER**® LEADING EDGE MOTIVE POWER SOLUTIONS

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