Water Less® –
Less Watering – More Customer Benefits

Traction batteries Fiamm Motive Power Water Less®

EnerSys®
Power/Full Solutions

Fiamm Motive Power Traction Batteries Water Less®

Less is More – More Benefits

EnerSys is focused on rapid innovation and new products get to market fast. Our whole team is driven by the desire to build the best energy solutions and works closely with our customers and suppliers to identify development opportunities. Fiamm Motive Power Water Less® is a new efficient traction battery with state-of-the-art technology and appealing features.

Water Less® provides more flexibility and more time due to longer topping up intervals of 4, 8 or 13 weeks depending on charging technology. This means reduced labour costs for topping up batteries – up to 60 % (with Fiamm Motive Power 50 Hz chargers) and up to 75 % (with Fiamm Motive Power HF smart chargers). The Fiamm Motive Power Water Less traction batteries provide a high level of power and reliability for all industrial truck applications. Fiamm Motive Power Water Less range is at the leading edge of battery technology and brings added efficiency to your business. A low electrolyte level indicator fitted on the battery informs the user of the battery when water topping up is needed.

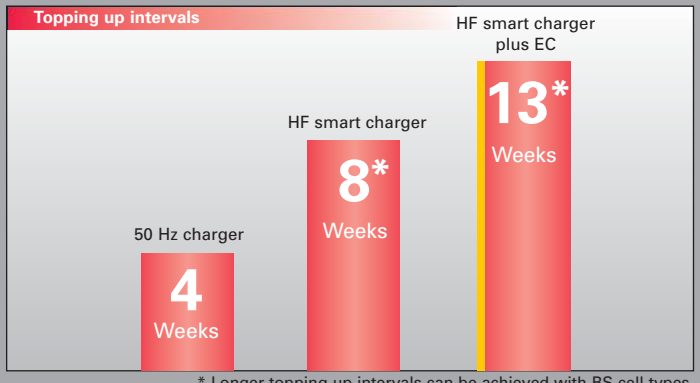
Water Less® Plug

Cell construction

All Fiamm Motive Power Water Less® cells use proven PzS technology. 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. Constructional specifications like a larger electrolyte capacity, a reduced prism height and new flip top plugs ensure added value for our customers. Fiamm Motive Power Water Less - Less is More. Less Watering - More Benefits.

Options

- **Fiamm Motive Power aqualevel:** The aqualevel water refill system makes it possible to top up all the cells from one central point through an integrated system.
- **Electrolyte circulation:** Most cell types (not available for BS cells 2 and 3 plates) Provides optimum performance and maximises battery service life in heavy duty operations.
- **Easyplus:** HF chargers (Premium HF com, Premium HF flex) are capable of communication with the battery. A led on the easyplus will indicate when the battery requires topping up. An added safety feature is that if the battery is not topped up when requested, the charger will not operate after a given number of cycles. The easyplus will provide data on the battery: identity, capacity, temperature, voltage.
- **Battery Fleet Management:** EnerSys has a solution that makes managing the battery fleet straight forward and affordable.



* Longer topping up intervals can be achieved with BS cell types

Charging

50 Hz charger; Charging Factor : 1.2 / HF smart charger; Charging Factor: 1.10 - 1.12

HF smart charger plus Electrolyte Circulation; Charging Factor: 1.07

Advantages

- **More Time:** Longer topping up intervals
- **More Flexibility:** Suitable for 50 Hz and HF chargers
- **More Savings:** reduced electricity cost when used with Fiamm Motive Power HF
- **More Duties:** Suitable for all applications
- **More Dimension:** Full DIN range; 4 BS sizes
- **More Capability:** Many options

Electrolyte circulation (EC) (see Options)

The Fiamm Motive Power 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.

More Flexibility

The charging technology must be tailored for the characteristics of the battery and the application. This is a crucial factor for the economic operation of the batteries. Fiamm Motive Power Water Less traction batteries are suitable for 50 Hz and HF smart chargers. The Fiamm Motive Power HF chargers adapt automatically to: capacity of the battery, voltage of the battery (Premium HF flex), depth of discharge of the battery. This means a high level of flexibility for the customer. The topping up intervals (based on 80%DOD C_5, 1 cycle per day, 5 days per week) can be achieved as follows :

- **4 weeks** with conventional 50 Hz chargers with a 1.2 charging factor
- **8 weeks** using Fiamm Motive Power HF chargers with a 1.10 - 1.12 charging factor*
- **13 weeks** when the battery is equipped with electrolyte circulation and when using Fiamm Motive Power HF charger with a 1.07 charging factor

* Contact Fiamm Motive Power if you have an existing HF charger.

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Water Less®

Definition of application fields

1. **Low duty**
   - single shift with light operation and discharge lower than 60% C_5. Electrolyte T°C about 30°C
2. **Normal duty**
   - single shift with discharge up to 80% C_5. Electrolyte T°C 30°C
3. **Heavy duty:**
   - Single shift with discharges of 80% C_5 and high discharging currents
   - Opportunity charging to augment the useable capacity
   - Multi-shift operation with or without battery changes
   - High ambient temperature

	Low duty	Normal duty	Heavy duty
Fiamm Motive Power energy plus			
Fiamm Motive Power energy plus with electrolyte circulation			
Fiamm Motive Power Water Less®			
Fiamm Motive Power Water Less® with electrolyte circulation			
Fiamm Motive Power energy dry			

FiAMM MOTIVE POWER®

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