

*Maintenance free energy*

**Traction batteries  
Fiamm Motive Power  
energy dry**



# Fiamm Motive Power Traction batteries

Maintenance free energy with reduced charging time  
(8 hours at 60% DOD)

The Fiamm Motive Power energy dry is a new valve regulated gas recombination battery with gelled electrolyte, accepting up to 80% DOD/C<sub>5</sub>. This range is suitable for use in forklift trucks, pallet trucks, electric vehicles, floor cleaning and sweeping machines and automatic transport systems. The cells have an enhanced capacity compared to most other maintenance free batteries on the market. In combination with the high frequency Fiamm Motive Power Premium HF flex or Fiamm Motive Power Premium HF com allowing a short charging time in 8 hours at 60% DOD and in 12 hours at 80% DOD, the full benefit of its high performance can be used in an optimised way. The Fiamm Motive Power energy dry battery range is available in DIN and BS dimensions. It meets the dimensions of the standards DIN/EN 60254-2 and IEC 60254-2.

## Features

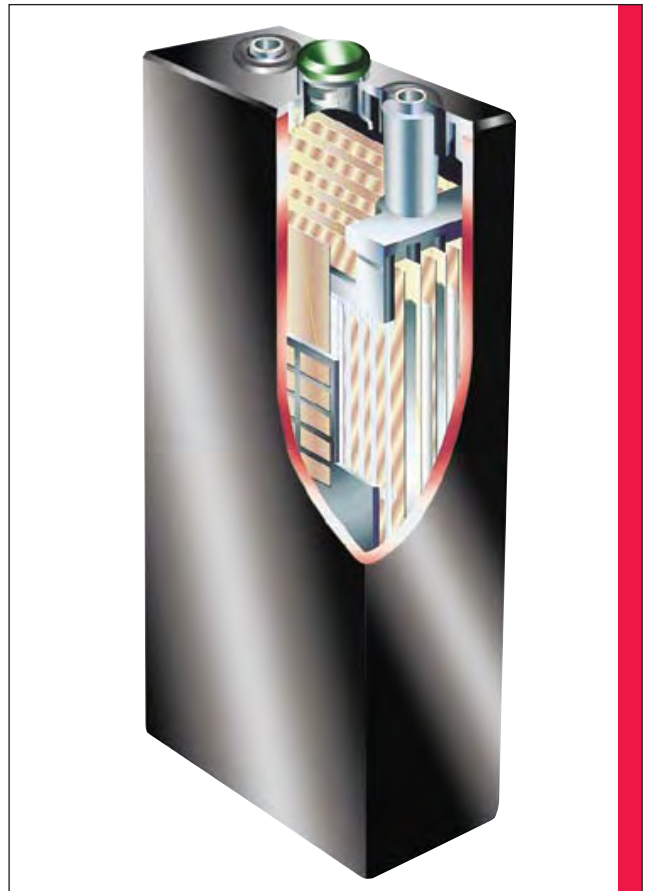
The gelled electrolyte of the Fiamm Motive Power energy dry battery is based on a highly dispersed mixture of sulphuric acid, water and silica. It not only prevents any acid leakage, but also ensures that there is no stratification of the acid during cycling.

## Maintenance free

The Fiamm Motive Power energy dry battery is maintenance free over the whole operational life; water topping up is not required. Through the internal oxygen circulation and the special charging regime, the very low gas emission permits decentralised charging of the truck or equipped machine, or makes the use of a simplified charging room possible. From this significant cost benefits arise, because of low investment and operational costs.

## Benefits

- No water topping up necessary over the complete battery life
- Depth of discharge up to 80% of the nominal capacity C<sub>5</sub> for a 12 hour charging time and up to 60% of the nominal capacity C<sub>5</sub> for a 8 hour charging time
- No risk of spillage, utilises gelled electrolyte
- Gentle and safe 8 hour charge for 60% discharge C<sub>5</sub> or 12 hour charge for 80% discharge C<sub>5</sub>, thanks to Fiamm Motive Power chargers.
- The highly effective charging profile of the Fiamm Motive Power Premium HF flex and Fiamm Motive Power Premium HF com chargers ensures a full charge with low charging factor and avoids damaging overcharge.
- Decentralised charging safeguarded through low hydrogen emission. Thus reduction of investment costs.
- The system Fiamm Motive Power energy dry and Fiamm Motive Power Premium HF flex or Fiamm Motive Power Premium HF com guarantee a high energy efficiency and make energy cost savings of up to 30%.



## Construction

The traction battery Fiamm Motive Power energy dry is the result of considerable research and development effort and combines the features of a valve regulated battery with

## Field of applications

For applications with low or normal duty in one shift operations (6 days max. a week) on these trucks:

- Pallet trucks (24V, 36V, 48V)
- Order pickers (24V, 36V, 48V)
- Pallet stackers (24V, 36V, 48V)
- Counterbalanced trucks 24V, 36V, 48V with the limits of capacity 420 Ah max\* and 1.8 T max.
- Retractable mast trucks and cleaning machines under condition of a technical study and approval

Fiamm Motive Power energy dry

Fiamm Motive Power energy plus

Fiamm Motive Power energy plus with electrolyte mixing

Low duty

Normal duty

Heavy duty

\*For higher capacities a technical study by the Fiamm Motive Power technical team must be carried out and approved.



*energy dry*

the robust design of a traction cell with tubular positive plates (PzS type). Alloy (lead calcium with tin for the positive plate), the active mass and separator are adapted for the performance requirements of the battery. The valve of the Fiamm Motive Power energy dry cell has pressure working range with low tolerances and ensures a highly efficient internal oxygen circuit. This specific design allows a high gas recombination rate, preventing any premature electrolyte dry out. Through this, the optimum life cycle for maintenance free batteries can be achieved.

### Cell connectors

The cells are joined by fully insulated flexible and halogen free connectors. The bolton connectors allow cells to be replaced or moved without excessive work and the use of heat welding equipment.

### Charging

Fiamm Motive Power has developed for their high frequency chargers, Fiamm Motive Power Premium HF flex and Fiamm Motive Power Premium HF com, a specially designed charging regime, which ensures a safe and gentle full charge of the Fiamm Motive Power energy dry battery with a low charging factor. With these chargers, charging time can be reduced to 8 hours with 60 % DOD. On the weekend automatically 8 hours after the end of charge an equalizing charge is actuated. A complete charge shall be carried out every working day. Through the high efficiency of the Fiamm Motive Power Premium HF flex and Fiamm Motive Power Premium HF com, additional energy cost savings can be realised.

### Definition of application fields

#### 1. Low Duty

- Single shift with light operation and discharge lower than 60% C<sub>5</sub>
- Electrolyte T°C about 30°C

#### 2. Normal Duty

- Single shift with discharge up to 80%
- Electrolyte T°C about 30°C



**European Headquarters:**

**EnerSys EMEA**  
EH Europe GmbH  
Löwenstrasse 32  
8001 Zürich  
Switzerland  
Phone: +41 44 215 74 10  
Fax: +41 44 215 74 11

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