



**HORSE DENTAL  
EQUIPMENT**

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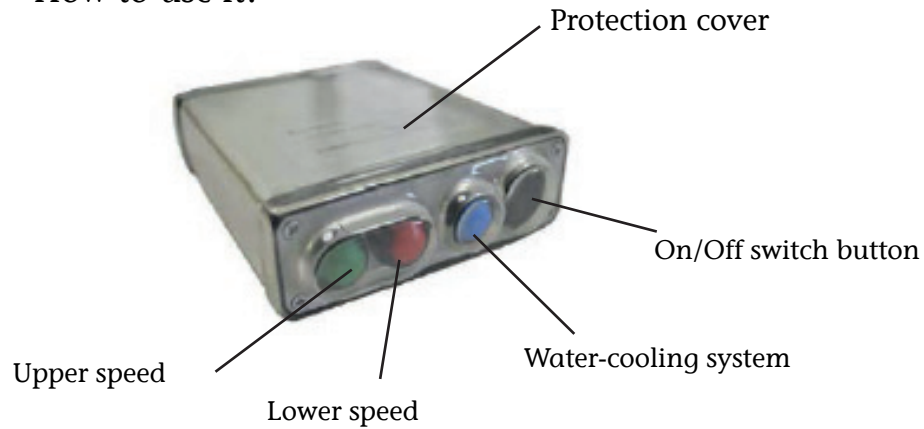
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# HDE Evolution Motor

## Operating Instructions

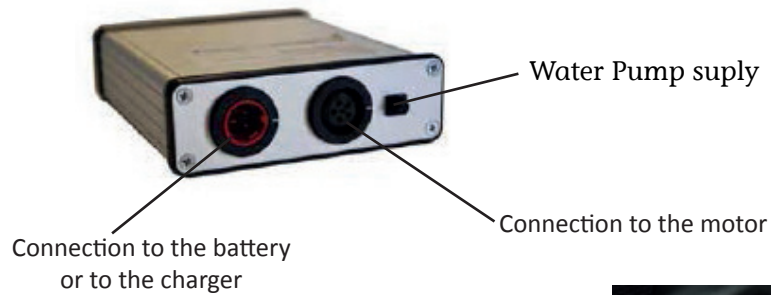
# Operating Instructions HDE Evolution

How to use it?



On/Off switch:

- If the blue light flashes slowly(1 time/sec): normal functioning
- If flashes faster (4 times/sec): bad functioning (wrong connection)



Please not the driver box itself (without the cover protection) is not waterproof. Please make sure you always use the driver box with its



# Operating Instructions HDE Evolution

## Motor

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- The motor itself is not waterproof, please do not immerse it in water
- Do not make the motor fall down, to avoid any damages

## Belt

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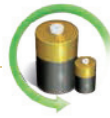
This rivet is dedicated to adjust the width of your belt & avoid that the driver box slips down the belt during the intervention (when pressing the buttons)  
Press hard to X it

## SETTING UP

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- Check that the transmission's screw of the drive shaft fits well into the motor's slit
- Screw the drive shaft to the motor driver
- Thread the drive shaft into the extension if you use one or simply connect your hand piece to the Quickex connection of your drive shaft
- Switch on your motor with the driver box & adjust your speed (we advise working on the 3rd level). You are ready work





- Only use our HDE Lithium Ion battery with your HDE EVOLUTION
- Do not charge your battery more than 12 hours at once
- Partial discharge is ne so you don't have to wait until your battery is dead to recharge it
- Reload and leave your battery in a dry environment at room temperature (18/20°)
- Your battery will last longer if you use it in an outside temperature between 10 and 20°
- Do not throw your battery in classic garbages, recycle them

## Battery

Connect the green connector + wire of the driver box to the green connector of the battery.



Always position the white mark on the wire connector straight opposite to the white mark on the battery.  
Do not turn the connector, just puk it slowly unplugg it.

**PLEASE VISIT OUR WEBSITE FOR FURTHER  
DETAILS AND LIVE INSTRUCTIONS**

[www.horse-dental-equipment.com](http://www.horse-dental-equipment.com)

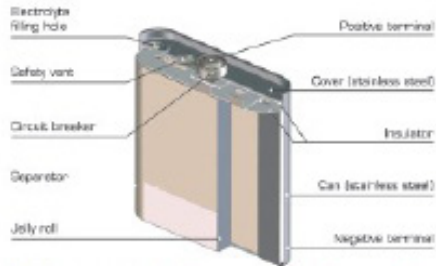
# MP 144350

## Battery assembly

In order to operate properly, individual Li-ion cells are mechanically and electrically integrated in battery assemblies specific to each application. The battery assembly incorporates electronics for performance, thermal and safety management.

### Technology

- Graphite-based anode
- Lithium Cobalt oxide-based cathode
- Electrolyte: organic solvents
- Built-in redundant safety protections (shutdown separator, circuit breaker, safety vent)
- Batteries assembled from MP cells feature an electronic protection circuit



### Built-in protection devices ensure safety in case of:

- Exposure to heat
- Exposure to direct sunlight for extended periods of time
- Short circuit
- Overcharge
- Overdischarge

### When handling Saft MP batteries:

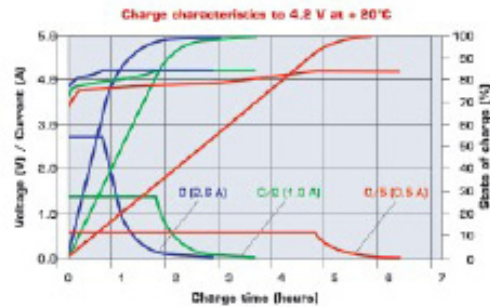
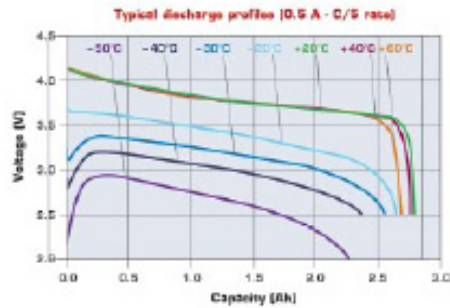
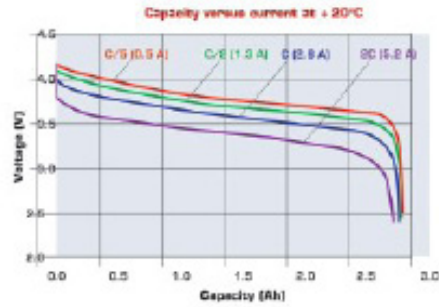
- Do not solder directly to cell terminal
- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

### Transportation and storage:

- Store in a dry place at a temperature preferably not exceeding 30°C
- For long-term storage, keep the battery within a (30 ± 15) % state of charge

Saft  
Specialty Battery Group  
www.saftbatteries.com

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## Battery loading

Car charger



Power charger

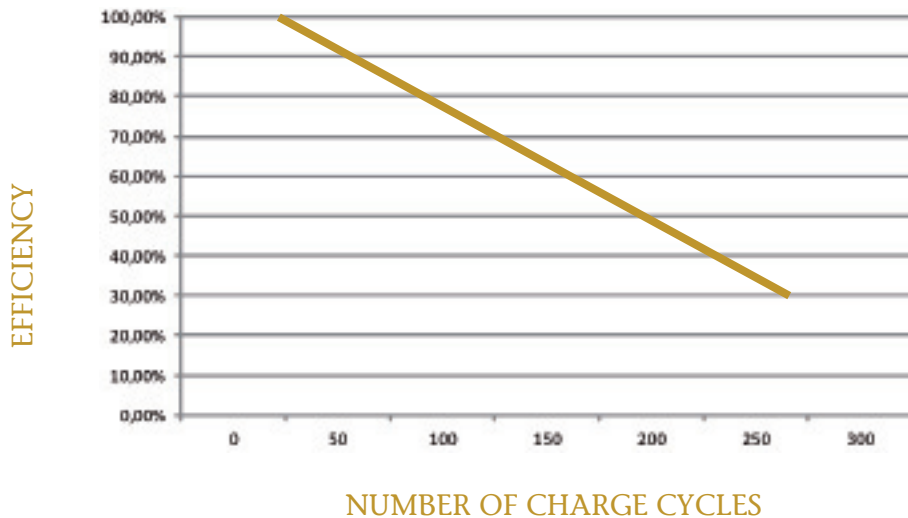
3 different levels of loading

RED: Low level of your battery  
ORANGE: Intermediate level  
GREEN: Full charge

- Make sure to choose an adapted box and storage case for the transport of you HDE evolution unit (special foarm+package) to avoid any shocks
- Do not leave your motor + battery near ammable materials
- Do not unsettle and repair the connectors by yourself

The EVOLUTION Lithium Ion baatery is guaranteed against manufacturing defects (faulty materials ans workmanship) for 12 months from the purchase date.

**As the battery is a consumable, warranty doesn't cover normal use**



On the basis of 10 horses per charge cycle when the battery is brand new, while working in an average temperature of 15°

**CONTRACTUAL TERMS CONCERNING WEAR**  
(refer to pages 7 & 8)

**Rechargeable lithium-ion battery**  
**MP 144350**

High performance  
Medium Prismatic cell

Soft always supplies MP cells  
in assemblies or as customized  
battery system constructions



**Benefits**

- Extended autonomy and life for mobile systems
- A broad operating temperature range
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Very high energy density (344 Wh/l and 143 Wh/kg)
- Unrivaled low temperature performance

**Key features**

- Excellent charge recovery after long storage, even at high temperature
- Maintenance-free
- Non-restricted for transport/ Non-assigned to Class 9 according to the UN Recommendations on the transport of dangerous goods - Model Regulations
- Underwriters Laboratories Component Recognition (File Number MH 12609) (UL)

**Main applications**

- Mobile asset tracking
- Small UPS
- Soldier of the future equipment
- Portable radios
- Professional portable lighting
- Bar code readers
- Portable payment terminal

**Electrical characteristics**

Nominal voltage (0.5 A rate at 20°C)	3.75 V
Typical capacity (at 0.5 A, 20°C, 2.5 V cut-off)	2.6 Ah
Nominal energy	9.75 Wh

**Mechanical characteristics (Steeled 100 % charged cell)**

Thickness (Thickness tends to increase with cycling, typically obtained after 500 cycles. Consult Saft) (At beginning of life 14.6 mm)	14.9 mm
Width (max)	43.9 mm
Height (max)	54.5 mm
Typical weight	69 g
Lithium equivalent content	0.79 g
Volume	28 cm <sup>3</sup>

**Operating conditions**

Charge method	Constant Current/Constant Voltage
Charge voltage	4.20 +/- 0.05 V
Maximum recommended charge current**	2.5 A (C rate)
Charge temperature range*	-20°C to +60°C
Charge time at 20°C	To be set as a function of the charge current: C rate     • 2 to 3 h C/2 rate   • 3 to 4 h C/5 rate   • 6 to 7 h
Maximum continuous discharge current**	5.0 A (-2C rate)
Pulse discharge current	up to 10 A (-4C rate)
Discharge cut-off voltage	2.5 V
Discharge temperature range*	-50°C to +60°C

\* For optimized charging below 0°C, 60°C and discharging at -50°C, consult Saft.  
\*\* Electronic protection circuits within battery packs may limit the maximum charge/discharge current; allowable. Consult Saft.