

USER INSTRUCTIONS





## Congratulations !

You have just acquired the most innovative surfboard of its generation. It will allow you to catch more waves, but also to multiply your playing areas tenfold. You will go up the lineup more quickly and more easily, you will be better placed, your take-off will be more stable and easier. Spots and waves away from the crowds, hitherto impassable, are now within your reach. Your new board will revolutionize your practice and allow you to progress like never before.

With great powers, great responsibilities! The use of your board requires compliance with certain rules to ensure your safety and that of other surfers. Please read this manual carefully before your first session and refer to it as soon as necessary to ensure that your equipment has a long life.

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# PREREQUISITES

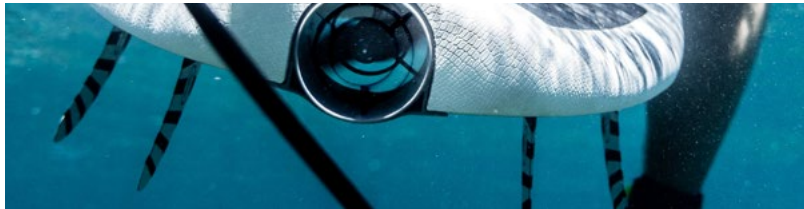
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# SECURITY

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An M-Core electric assistance is integrated into the heart of your surfboard, equipped with a propeller rotating at high speed. Special attention is therefore necessary to avoid injury when handling your equipment.

**We have included a number of safeties to prevent accidents**



- The propeller is fully streamlined and protected inside the board
- A gate upstream avoids putting your hands on it
- Downstream grid increases user safety
- Propeller stops in seconds if out of water
- When the battery has just been connected, the propeller cannot start until the user has switched his board to “surf” mode (see p.18).

**Nevertheless, you must be particularly vigilant**

- Never put your fingers or any other body part or object inside the drive when the battery is connected.
- If you have long hair, tie it up to prevent it from being sucked into the propeller in the event of a fall.
- The battery must be disconnected before any operation on the propulsion, to clean algae clinging to the grids for example.
- The use of a leash is compulsory.
- Do not leave your board or battery exposed full sun when out of water.
- Your safety must not be depende.
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# CHILDREN

**KAHE Surf boards are not recommended for children under 16 years old. Regardless of age, adult supervision is required. As an adult responsible for the safety of children using Kahe Surf boards, you must ensure that the boards are in perfect working order and that children understand how to use them safely, as described in this manual.**



# CHARTER OF GOOD CONDUCT

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Your KAHE board gives you countless advantages. We invite you to take advantage of the possibilities offered by M-Core assistance to explore new horizons: isolated, soft or breaking waves, bars that are usually difficult to pass...

**You are faster, more agile, you undeniably catch more waves, so for the best of the surfing spirit, please respect the KAHE charter**

- It is so much easier for you to position yourself for the take-off: give priority to traditional surfers, even if you are better placed closer to the peak.
- On the ascent, you go quickly without effort: circumvent the waves well so as never to hinder a surfer in action.
- You have the possibility of surfing waves far from overcrowded spots: go find your own peak.
- Admire the purists as they deserve: they drool, they are gifted, they are infinitely patient. Respect !

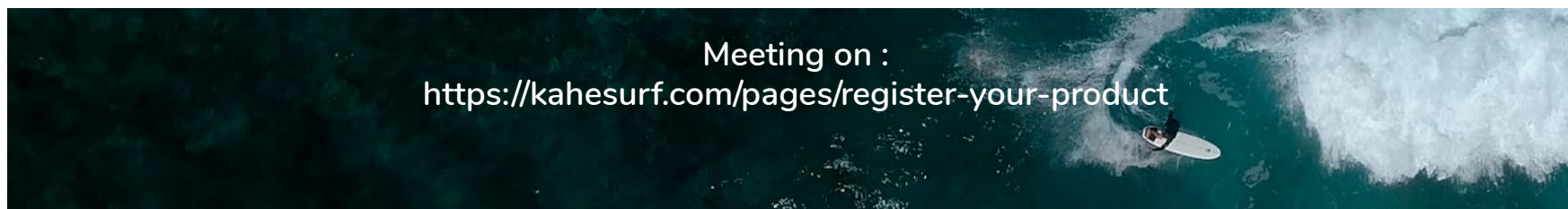
**And of course, the usual rules specific to our sport remain applicable.**

- Find out before you go surfing: local regulations, bathing areas, weather, tides, currents...
- A single surfer in action in the wave
- The surfer closest to the peak has priority if he is not equipped with a KAHE board: do not tax, do not snake.
- Never let go of your board, it is a danger for others (use of a leash compulsory).
- Beyond the rules, use common sense and be respectful of everyone... whatever the level, equipment or current conditions!

# REGISTRATION AND WARRANTY OF YOUR BOARD

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**It is important that you register your product, so that we can provide you with the best service available. You will be kept informed of the latest updates, our advice and any other information to facilitate your practice in complete safety.**



KAHE products are guaranteed for 2 years. The warranty covers manufacturing defects of the equipment, it is strictly limited to the replacement of parts recognized as defective or non-compliant after inspection by us.

The product or parts under warranty must be returned by the buyer to his distributor of the brand or to our workshops, at his expense and risk, accompanied by a letter explaining the breakdown as well as the purchase invoice. . This manufacturer's warranty does not affect the legal rights of consumers applicable under the French legislation in force. This warranty does not cover boards intended for rental or professional use.

Failures or malfunctions related to:

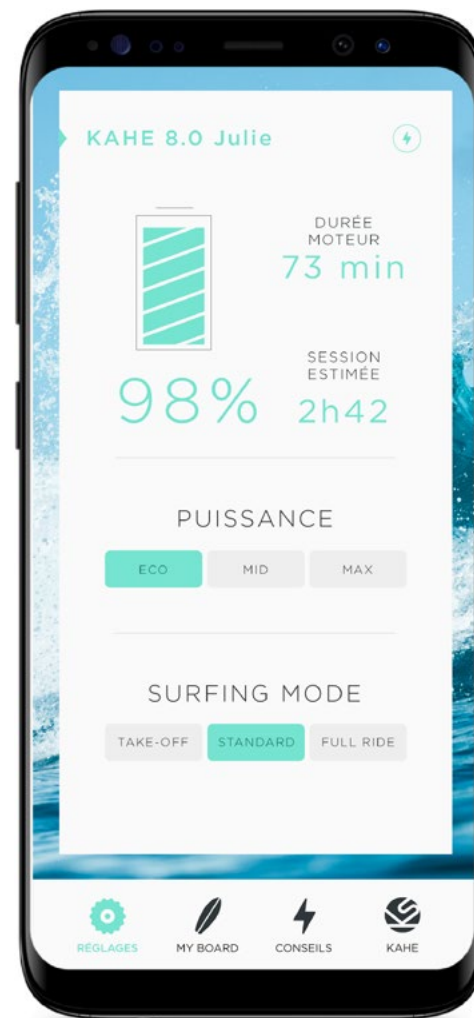
- use of the board that does not comply with what it is intended for (surfing at sea)
- non-compliance with the instructions for use and precautions for use, as described in this user manual
- external elements or poor treatment inflicted on the equipment: fall, shock, accident, vandalism, etc.
- lack of maintenance or care that does not comply with the operations described in this manual.
- to a repair, an intervention or a modification of the board or its assistance, carried out by persons or entities not approved by the brand.
- normal wear of the various components of the board, particularly: EVA pads, propeller, bearings, sacrificial anode (propeller warhead), reduced battery performance with the time, wearing parts...

## APP DOWNLOAD

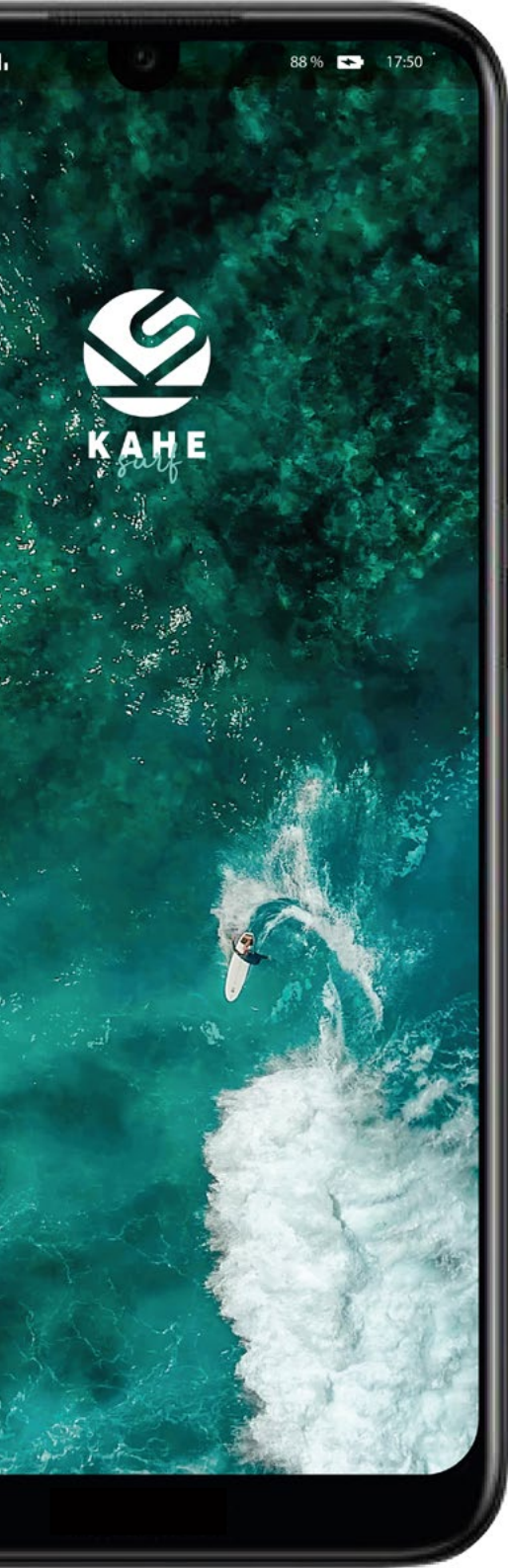
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**Before using your board for the first time, you must download the KAHE application to unlock the M-Core propulsion and adjust help!**

The application is available on Google Play (Android) and the Apple Store (iOS): just search for “Kahe Surf”.







# APP

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# FIRST CONNECTION

After its installation, the application guides you to your first connection. Your phone's bluetooth must be turned on. The board must be switched on (battery connected, see page 17). The application will ask you to access some information and your location, it is without obligation, but it will allow us to better understand the use made of the kahe boards. We will not use this data for any other purpose.

The first step is to connect your board to the app. You then have access to all the assistance settings ("settings" menu), the characteristics of your board ("my board" menu), the most important information ("advice" menu) and means of contacting us ("Kahe" menu).



RÉGLAGES



MY BOARD



CONSEILS



KAHE



# SETTINGS MENU



This is the menu that allows you to adjust the assistance of your board as you wish and to access information related to the battery.

## BATTERY

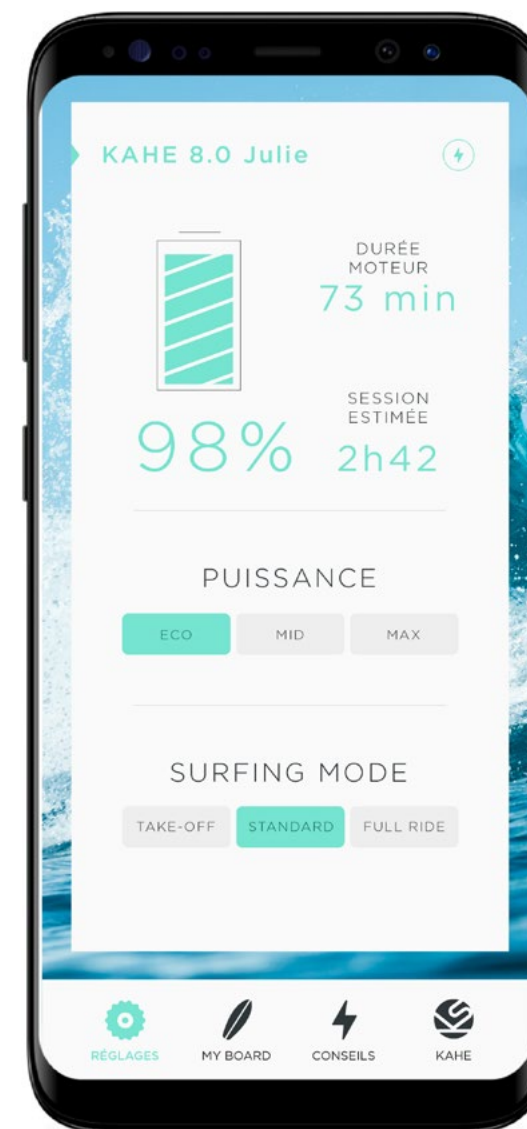
On the left, you have access to the charge/discharge level of the connected battery, as a percentage of its total capacity.

### > Engine duration

It is calculated based on the state of charge of the battery. This varies slightly depending on other factors (the weight of the surfer, the power of the waves, the current, etc.).

### > Session Duration

It is estimated according to the engine life. As a general rule, you use the motor for 1/3 of your time in the water, so we deduce the duration of your session. But it is not an exact science!





## ENGINE POWER

You can adjust the power of the electric propulsion according to 3 values.

### > Eco

You want to do a long session or be close to the sensations of a traditional board. All the same, with assistance that allows you to save yourself during the rowing phases and a slight support during the take-off!

### > Mid

An intermediate value, good compromise between assistance and autonomy!

### > Max

You want to position yourself quickly, surf soft waves, help you on the take-off, pass the bar easily, face strong currents.

Of course, the stronger your motor power, the faster your battery will drain and the shorter your session will be. The motor and session durations are automatically adjusted according to the motor power chosen. Don't worry, you still risk getting tired faster than the assistance!

## SURFING ASSISTANCE

The assistance remains active when you catch a wave. And you can configure how you want smart assistance to accompany you while you surf.

### > Take off

The assistance just gives you the impetus to take the wave, but stops as soon as the wave pushes your board. However, the assistance remains active if the thrust of the wave is insufficient (very small wave or soft wave for example).

### > Standard

The assistance accompanies you at the take off and until you have gained enough speed to surf the wave with complete peace of mind.

### > Full ride

The assistance remains activated most of the time even in medium waves. The motor stops only in powerful waves that take over the assistance.

These are indications to guide you but as always it is the ocean that decides and the surfer who adapts! Try the different settings to get an idea and learn to choose what suits you best depending on the waves of the moment.



## MYBOARD MENU

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### > **Connected board**

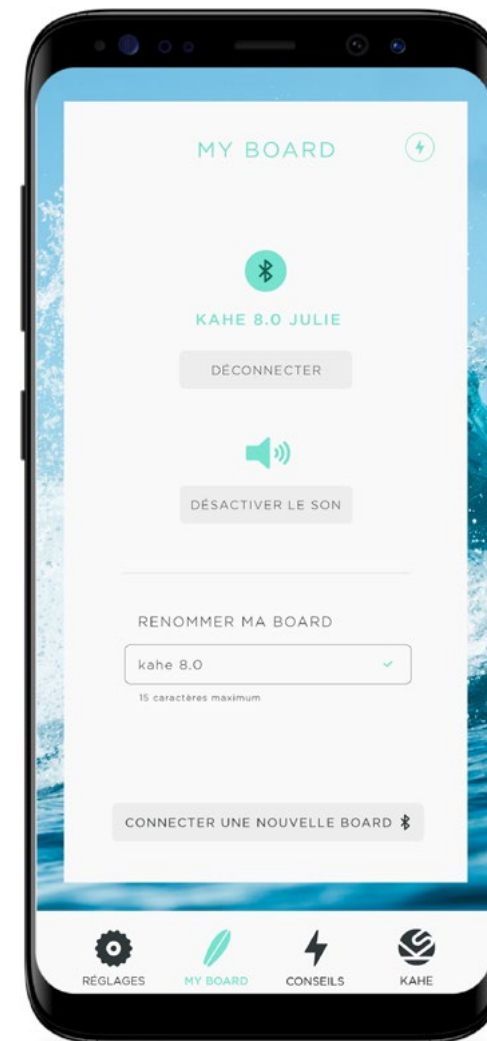
The first line shows the board currently connected to your phone via bluetooth. You can rename it as you see fit.

### > **Sound**

We have integrated a silent mode that allows you, on the water, to activate and deactivate the propulsion without your board emitting the slightest sound. On the beach, when plugging in the battery and switching from one mode to another, your board will also emit a lot less “beeps”, to remain discreet.

### > **Renaming my board**

You can rename your surfboard as you see fit, the name will be saved in the memory of the M-Core propulsion unit, allowing you to recognize your board even if other boards are present around it.



## TIPS & KAHE MENUS



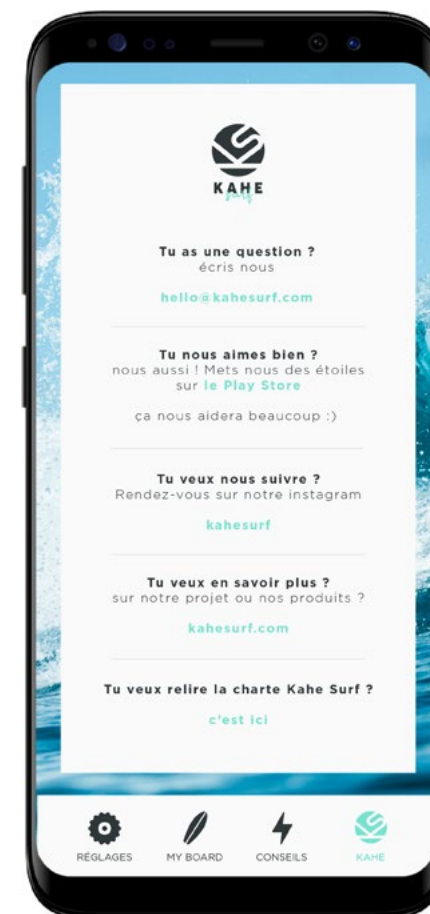
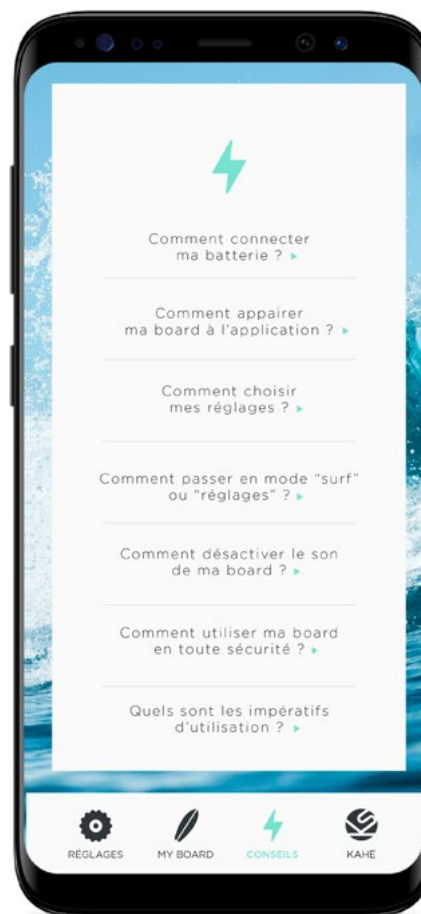
### TIPS

This page gives you access at any time to the information you need to make the best use of your board: rules for safety, maintenance and use.



### KAHE

For all other needs, the Kahe Surf menu gives you all the means to find the right information to contact us!





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# CHARGING THE BATTERY

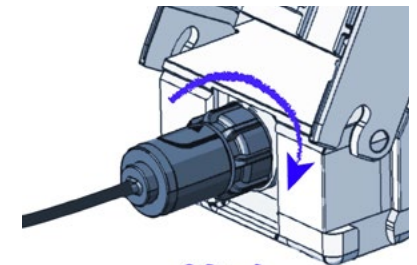
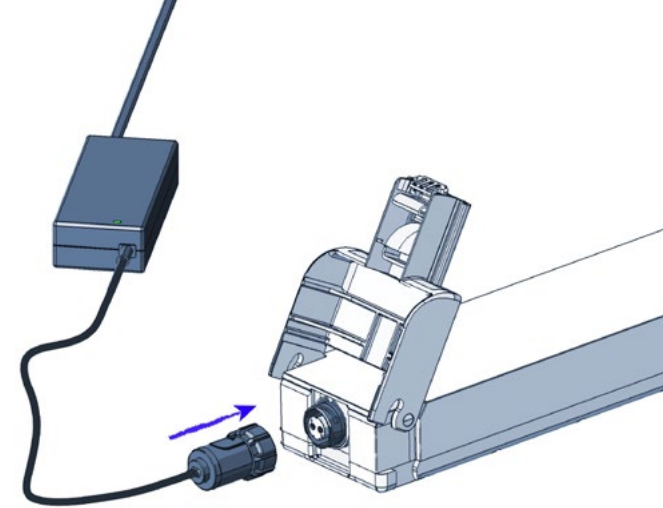
**It is recommended to fully charge the battery before first use.**

To recharge the battery, only use the charger delivered with your board or a charger dedicated to your equipment and sold by Kahe Surf. At any time, you can access the state of charge of your battery using the application on your phone (see p. 11).

### To recharge your battery

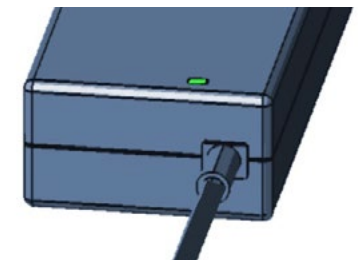
- Connect the charger to a suitable mains socket (the indicator should light up green)
- Connect the connector to the battery and lock it (quarter turn to the right)
- If the battery needs to be charged, the light will turn red. If it is already charged, the light stays green.
- When the battery is fully charged, the indicator turns green: the connector can be disconnected.

Battery charging time is approximately 3 hours for the standard battery and 5 hours for the extended battery (estimated time from 10% to 90% charge).



« Click »

In Charge      Charged





# BATTERY INSTALLATION

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The battery compartment must be clean before switching on. place of the battery (no sand, no foreign object). THE male and female connectors must be perfectly dry before 1 they are connected: water must under no circumstances be present inside inside the connectors.

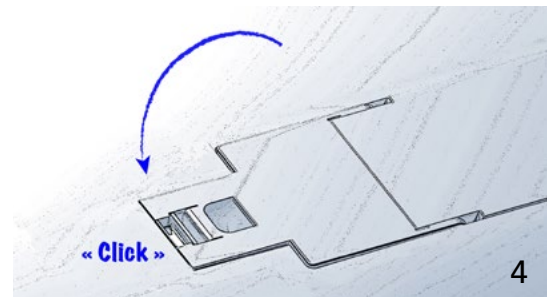
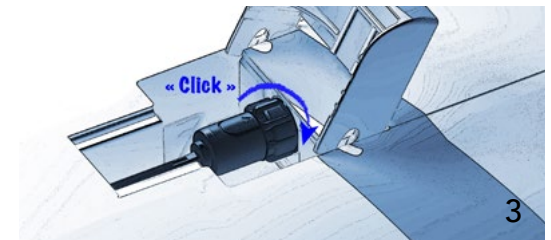
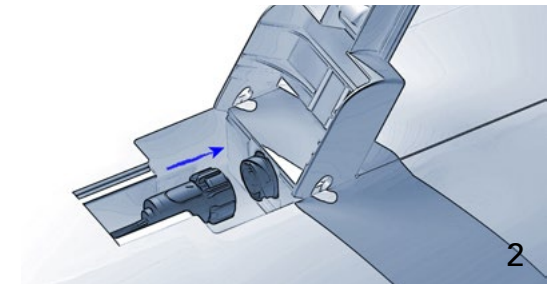
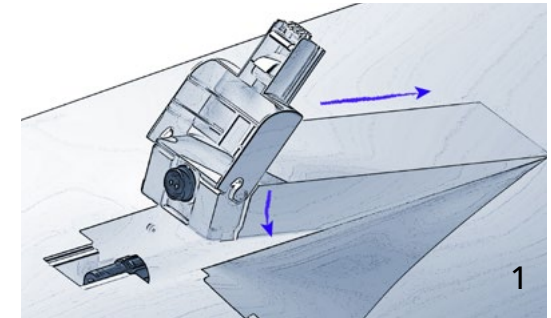
1. Insert the battery in its housing, mobile flap raised, pushing it towards the front of the board. Plate it at the bottom of its housing.
2. Plug in the connector, keyed up. The board then signals its powering up with an audible signal (beeps).
3. Lock the connector in place by turning the mobile ring a quarter turn to the right, until the lock clicks.
4. Fold the mobile flap until it locks (“click”)

The board is then in “settings” mode and allows you to adjust the assistance using the Kahe app.

## IMPORTANT

Perfectly lock the connector (to ensure its tightness) until the locking «click». Otherwise, it is not waterproof!

Lock the mobile flap to prevent the battery from coming out of its housing.



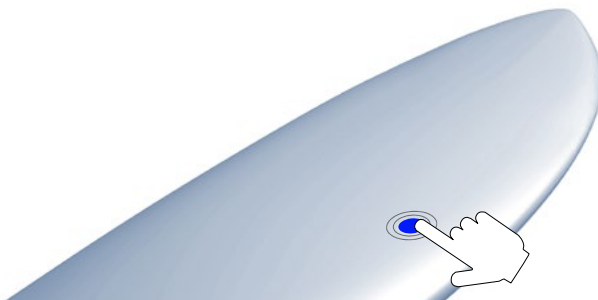
# LET`S GO !

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**That's it, it's time to take the plunge! And to activate the M-Core assistance of your KAHE Surf board... To do this, simply switch your board to «surf» mode.**

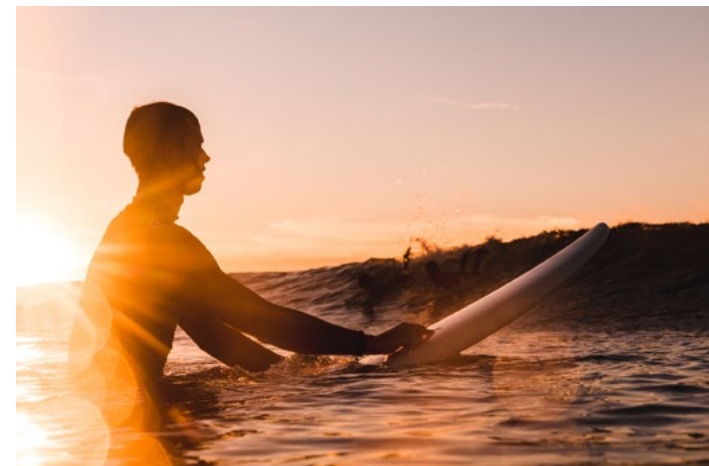
1. When the battery is connected, a long press on the switch of the board (2 sec) switches from 'settings' mode to 'surfing' mode: the electric assistance is on. To be used only when the board is in the water!
2. A short press on the switch then starts the electric assistance. Another short press stops the motor if it is running.
3. You can return to 'settings' mode and modify your settings with another long press.

Note: the motor stops turning after a few seconds if the assistance detects that the propeller is not submerged in water.



## IMPORTANT

Remember to leave the 'surf' mode when you take the board out of the water at the end of the session (long press on the switch): the propulsion will no longer be able to start with a simple short unexpected press.



## ON-BOARD INTELLIGENCE

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**Your M-Core assistance is equipped with advanced functions allowing you to concentrate only on your practice.**

The assistance helps you with the take-off and stops automatically when you are surfing, depending on the setting you have saved with the Kahe Surf app (p.12).

**Take off :** the assistance just gives you the impetus to take the wave, but stops as soon as the wave pushes your board. However, the assistance remains active if the thrust of the wave is insufficient (very small wave, or soft wave for example).

**Standard :** the assistance accompanies you on the take off and until you have gained enough speed to ride the wave with complete peace of mind.

**Full ride :** the assistance remains activated most of the time, even in medium waves. The motor stops only in powerful waves that take over the assistance.

These are indications to guide you but as always it is the ocean that decides and the surfer who adapts! Try the different settings to get an idea and learn to choose what suits you best depending on the waves of the moment.

The assistance also switches off automatically when it detects that you are no longer on your board, after a few seconds after the propeller is out of the water.



## BATTERY ALERTS

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**On the water, the assistance will alert you when the battery will soon be empty. This will allow you to get back to the beach with the assistance before the battery is completely depleted.**

Here are the different indications that your board will give you:

### **15% battery remaining**

Your board will emit a series of 6 “beeps” every two minutes of motor use. Depending on your distance to the beach, we advise you to go back.

### **10% battery remaining**

The engine power will be reduced by 40% to allow you to keep autonomy and the series of 6 «beeps» will sound every minute of engine. We strongly advise you to return to the beach to change the battery or to put the battery back to charge.

### **3% battery remaining**

The engine will be cut without the possibility of restarting it. You will hear a long “beep” (four seconds). You will have to return without assistance and recharge your battery as soon as possible, otherwise its performance will deteriorate sharply (see p. 25).



## BATTERY CHANGE

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**If you have several batteries, allowing you to multiply the surf sessions in the same day, we draw your attention to the need to take certain precautions when changing the battery.**

It is essential that no traces of salt are found inside the electrical connectors. It is also imperative that water does not seep into it.

### AS A RESULT

- Before unlocking the battery connector, rinse it with fresh water to remove any presence of sea water.
- Thoroughly dry the connector with a cloth or absorbent paper before unlocking it.
- When the assembly is rinsed with fresh water and then dried, you can disconnect the connector and change the battery





# MAINTENANCE

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## BEFORE GOING IN THE WATER

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**Before each session, carefully inspect your board and its propulsion to check that everything is in working order. The electrical connectors must be perfectly locked, just like the battery door and the grid must be present!**

Check that your battery is fully charged and attach your leash before setting off..



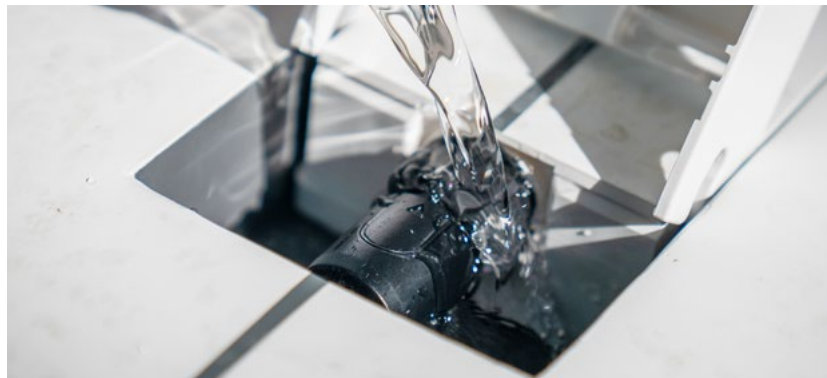
### **IMPORTANT**

If you notice that a piece of your board is broken or damaged, no longer using the board. Immediately contact the brand's aftersales service to resolve the problem.

## RETURN FROM SESSION

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**When you return from your sessions, as soon as you get out of the water, it is prudent to put your board back in «set up» mode (long press of 2 seconds on the switch), which completely deactivates the motorization (see p. 18).**



You must then rinse your board completely with fresh water to clean it and remove the sea salt.

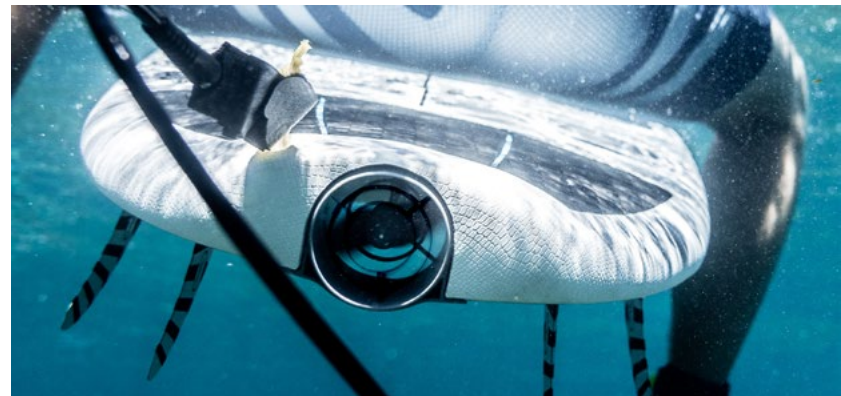
The electrical connectors on your board and battery are only waterproof when plugged in and locked together. When they are disconnected from each other, they must under no circumstances be in contact with water.

### AS A RESULT

- The connectors must remain connected and locked when you rinse your board with fresh water at the end of the session.
- The connectors must be dried before disconnecting or reconnecting them.

Sometimes, algae or other dirt can remain attached to the propulsion grids or the propeller despite rinsing. For your safety, wait until you can disconnect the battery before putting your hands in it to clean them.

On the other hand, the propeller nose will lose its shine over time and its surface may become slightly porous. Its role is indeed to protect the propeller shaft from marine corrosion by suffering attacks in its place: this is called a sacrificial anode. This is completely normal !



Your equipment must be stored in a dry place and away from direct sunlight and any source of heat. The battery must be disconnected.



# BATTERY

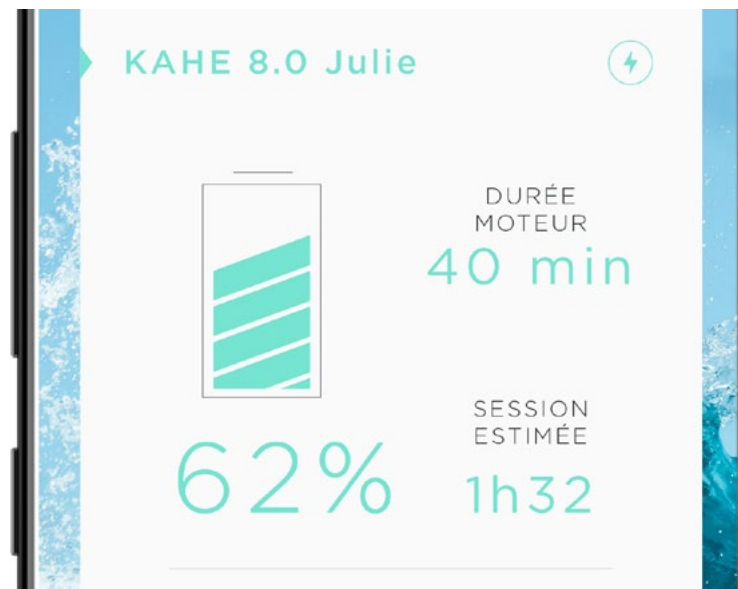
Your battery uses lithium-ion technology, which gives you an excellent range/weight ratio.

However, and this is normal, its performance drops slightly as the charge and discharge cycles progress. We give you the following advice to prolong its performance to the maximum.



A fully discharged battery can be damaged beyond repair. We have planned to cut the assistance on your board when there is only 3% of energy left in your battery. But be aware that an unused battery still discharges gradually, even if it is not connected.

**It is therefore necessary to quickly recharge a battery that has been deeply discharged (until the automatic cut-off of the assistance for example, see p.20).**



**When not in use for several months, your battery should be stored with a charge level between 50% and 75%.** This will prolong its life to the maximum. Because a stored battery charged at 100% sees its performance degrade more quickly.

The battery should be stored in a cool, dry (but frost-free) place, away from direct sunlight and any heat source.

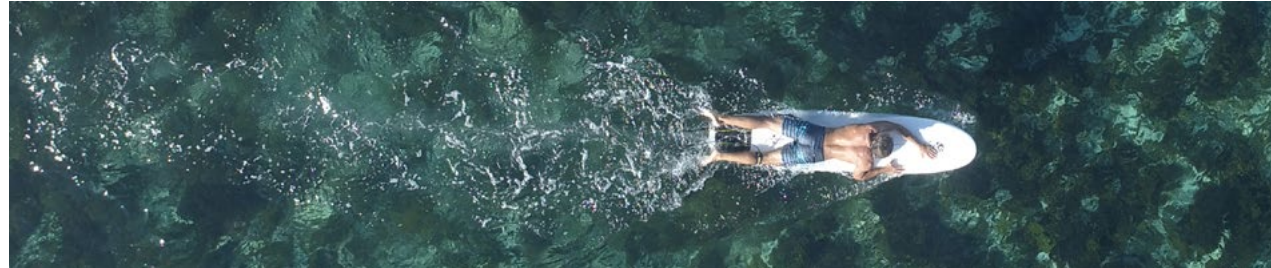


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# ENGINE AUTONOMY

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Kahe Surf		Power consumption (watts)*	Speed (km/h)*	Motor autonomy (min)*		Distance to motor (km)*	
				Standard battery	Long battery life	Standard battery	Long battery life
Engine power	Eco	130	4,8	76	129	6,2	10,5
	Mid	170	5,6	58	99	5,6	9,3
	Max	210	6,4	47	80	5,0	8,3

\* Data for information only, depending on many factors (surfer's weight, board model, position on the board, currents, wind, swell...). Our data comes from tests carried out in flat water, with a 65 kg surfer on an 8' board.

## TECHNICAL DATA

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### **M-CORE electric assist**

MOTOR : Direct drive 4030 - 250 Kv brushless outrunner motor

STANDARD BATTERY: : 6S3P lithium-ion (M26 LG Chem cells) - 160 Wh capacity

LONG LIFE BATTERY : 6S5P lithium-ion (M26 LG Chemcells) - 280 Wh capacity

ESC : High frequency 8 kHz - 50 amps max

MICROCONTROLLER : ATmega 168

### **Li-ion charger**

INPUT : AC 100-240V

OUTPUT : DC 25.2V 2.0A

CHARGING TIME\* : 3 hours (standard battery) - 5 hours (long life battery)

\* Estimated charging time from 10% to 90%

# DECLARATION OF CONFORMITY



CORPORATE NAME AND ADDRESS: Motion Concept Group - 87 quai de Queyries 33100 Bordeaux

Declares that the Smart Electric Assist Surfboard below:

TRADE NAME : Kahe Surf 8.0' M-Core

TYPE : Surf with smart electric assistance

complies with the essential safety requirements applicable to it:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive  
EN IEC 61000-6-1:2019 & EN 61000-6-3:2007 +A1:2011
- RoHS Directive 2002/95/EC
- Battery standards IEC 62133-2:2017 & UN 38.3



**MOTION  
CONCEPT  
GROUP**

Done in Bordeaux  
on April 22, 2021

Nicolas Quendez  
President of Motion Concept Group