



# SailForce<sup>TM</sup>

Smart Electric Winch

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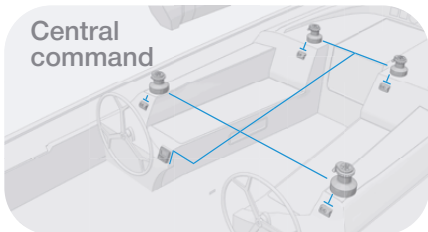
## Command units p. 4



Three options available for maximum customization.



2  
VARIABLE SPEEDS



Central command

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Super sensitive tension limiter



Capable of detecting a stuck reefing line or a knot caught in a pulley

350 kg

Real-time line tension monitoring

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Preserves the longevity of service batteries.

Consumption on service batteries

6 AMPS

-50%

energy consumption  
(compared to traditional 12V DC motors)

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Double-finger safety switch



5 safety features because onboard electrical safety is crucial.

# HUTTON winches

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40+ years of expertise



Sculpted in  
**BRONZE**

**TWICE**  
AS RESISTANT  
as aluminum

# Variable speeds & Performance

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A  
MAXIMUM SPEED  
25% FASTER  
than traditional  
12V DC motors.

An  
UNBEATABLE  
MINIMUM SPEED  
pour ajuster ses voiles

18  $\frac{\text{m}}{\text{min}}$



1  $\frac{\text{m}}{\text{min}}$

# Explore our all- inclusive offer

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3 choices to make.  
Everything is included, including cabling.

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HUTTON winch in sizes  
40, 45, 52, 57, 60, and 70

# Other specifications

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Lithium battery, command units,  
motor, and cabling

# COMMAND UNITS

## Advanced Command

**135 KG** Real-time line tension monitoring  
Patented technology

 **Central control**  
to operate multiple electric winches.

 **Ultra-sensitive tension limiter** : intuitive use thanks to the screen interface. Patented technology

 **Setting the tension limiter and storing tension limits** from the command unit and/or the mobile application.



## Essential Command

 **Ultra-sensitive tension limiter**  
Patented technology

 **Setting the tension limiter and storing tension limits** from the mobile application.



## Two variable speeds

For each of the two variable speeds, a **wide range of line speeds** at your fingertips.

 **from 1m/min up to 18m/min**



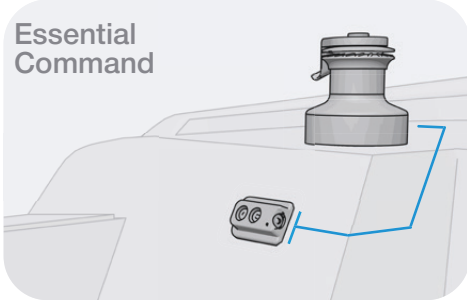
**Two push buttons: one for the fast speed of the winch and one for the slow speed.**



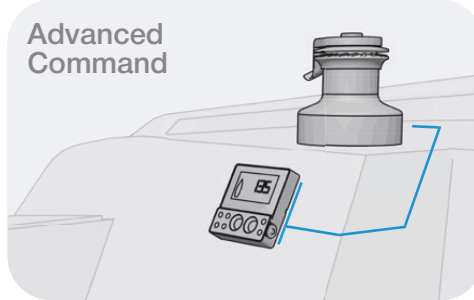
# Three possible configurations

Choose the option that suits your needs and your boat.

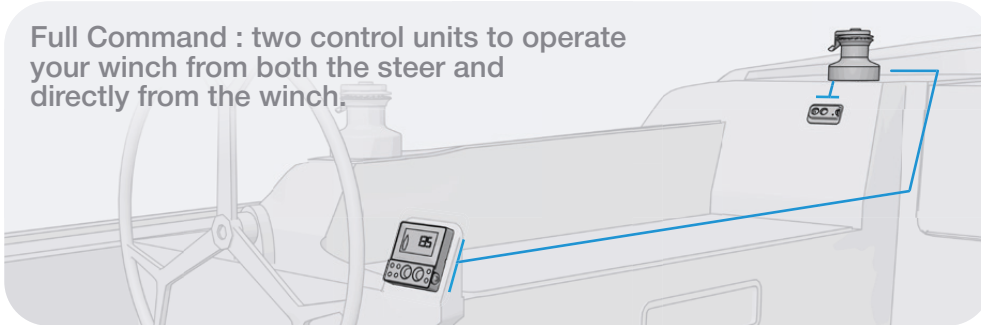
## Essential Command



## Advanced Command

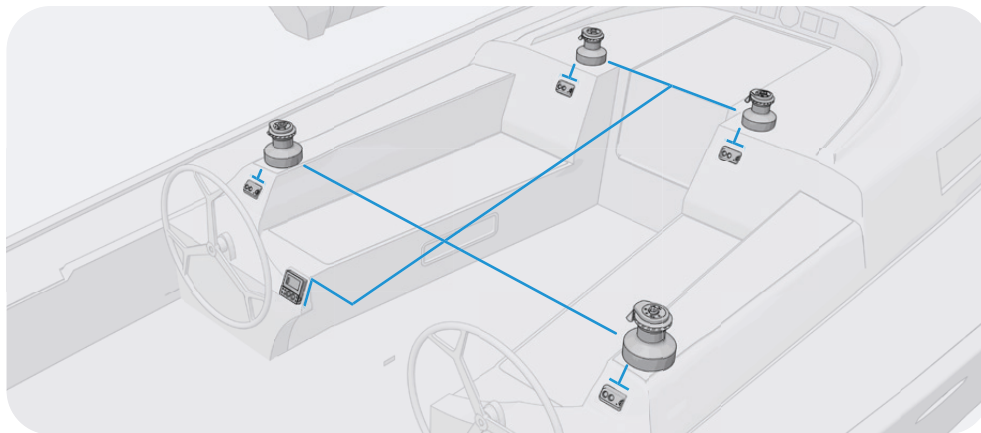


Full Command : two control units to operate your winch from both the steer and directly from the winch.



## Central Command

Control multiple electric winches from the steer with the central control feature of Advanced Command. Additionally, each winch has its own individual Essential Command unit.



# TENSION LIMITER & SAFETY

## Deck equipment protection

The tension limiter of SailForce™ is designed to detect scenarios such as a stuck reefing line or a knot caught in a pulley.

Select a tension limit between 10 kg and the maximum line load of your winch (from 850 kg for a size 40 winch to 1550 kg for a size 70 winch). The motor stops instantly when the limit is reached.



## Fully configurable tension limits

Tensions on the lines vary considerably from one maneuver to another. Therefore, it is essential to be able to configure tension limits specific to each maneuver. That's why we have created **Maneuver Programs**.

Each Maneuver Program stores its own tension

limits. For example: a "Hoist the mainsail" program, another "Furl the genoa," etc.

Each "Maneuver Program" offers two independent tension limits:

- one for the fast speed
- one for the slow speed

FAST  
SLOW



### Setting the Tension Limiter for Essential Command

A dedicated application connects via Wi-Fi to the command units and allows you to set the tension limits for Essential Command. Available for Android and iOS.

# Example : hoisting the main sail with the tension limiter

## Step 1

### Hoisting the main sail with the fast speed

Hoisting the mainsail requires a tension of **100 to 200 kg** on the halyard. If a reef is stuck, or if a slider gets jammed, the tension on the halyard will suddenly increase.

Simply adjust the tension limit of the winch's fast speed (speed 1) between 100 and 200 kg, depending on the boat (size and configuration).

The motor will immediately stop, thus avoiding the risk of breakage in case of an anomaly.

Configure tension limits quickly from Advanced Command.

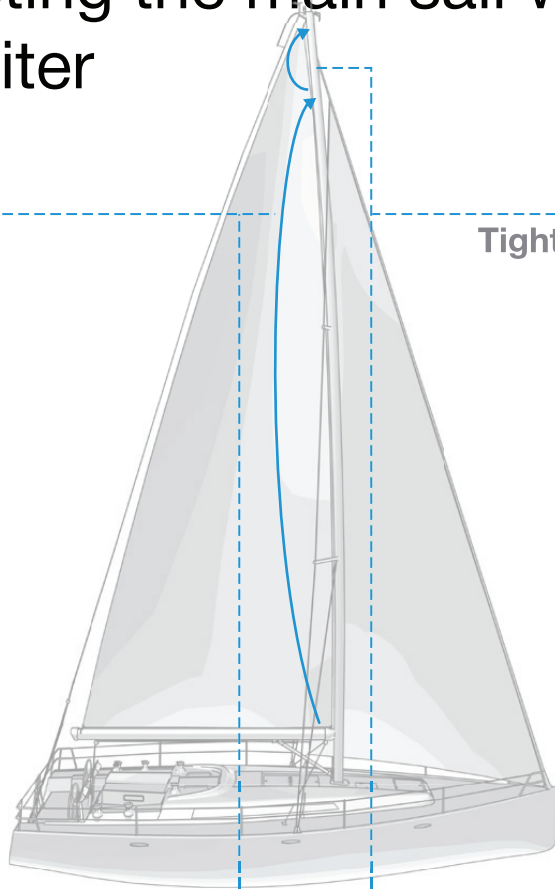


## Step 2

### Tightening the mainsail with the slow speed

Depending on the sailboat, the required tension varies between **450 and 800 kg** (this tension may be higher for larger boats).

Therefore, you simply need to set the tension limit of the winch's slow speed to an adequate level to ensure the completion of the maneuver.



Maneuver Program

Real-time line tension monitoring

Quickly switch from one Maneuver Program to another by pressing these arrows.



# HUTTON WINCH

**40+ years of**

We made a partnership with the Australian winch manufacturer HUTTON to provide an exceptionally robust and reliable electric winch. HUTTON has over 40 years of experience in manufacturing its winches.

These winches are produced in Australia and are manufactured exclusively from bronze-aluminum alloy and stainless steel parts. No plastic or aluminum parts are used. These





## Extremely easy maintenance

They can be disassembled and reassembled by a single person in a few minutes. Just a screwdriver, remove 3 circlips, and you're done.

# expertise

winches are available in sizes 40, 45, 52, 57, 60, and 70, and are offered in **chrome** or **polished bronze** versions.

An aluminum version is also available. Some features of the internal components mentioned in the following pages do not apply to this aluminum version. Please contact us for more details.



# Forged in **BRONZE**

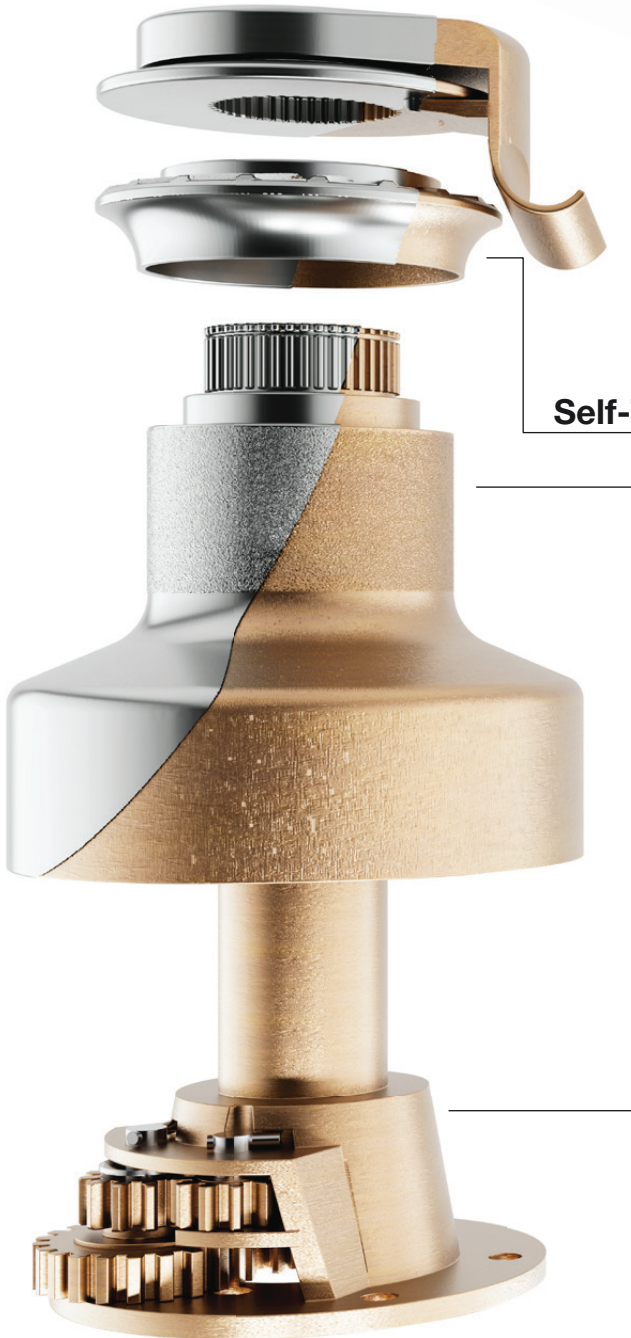
Twice as  
resistant as  
aluminum

The self-tailing, the drum, and the base form the structure of the winch. They are made from a cast **bronze-aluminum alloy**, then machined. Each of these pieces is cast in a single piece, **without any intermediate parts**. It's an expensive production method, but it ensures maximum resistance, whether against breakage or deformation.

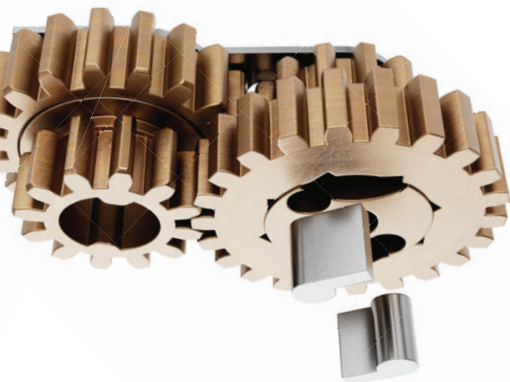
|  | Resistance<br>(Breakage res.) |    | Elastic modulus<br>(Deformation res.) |
|--|-------------------------------|----|---------------------------------------|
| HUTTON gears<br>Machined bronze-aluminum     | 750 N/mm <sup>2</sup>         | x3 | 135 GPa                               |
| HUTTON drum and base<br>Cast bronze-aluminum | 500 N/mm <sup>2</sup>         | x2 | 135 GPa                               |
| Aluminum winches<br>Machined aluminum        | 240 N/mm <sup>2</sup>         |    | 69 GPa                                |

## Ring gear of the drum

It is one of the most stressed parts of the winch. It is machined directly into the drum.  
**No welding.**



Self-Tailing  
Drum  
Base



## Pawls

Also highly stressed parts, they are all machined from reinforced **17-4PH stainless steel** (with a strength of 1000 N/mm<sup>2</sup>). A simple stainless steel, less resistant, would be much less suitable for these parts.

## Gears

HUTTON gears are not just twice but **three times more resistant than aluminum**. Just like the drum and the base, the gears are made of a bronze-aluminum alloy. However, the manufacturing method is slightly different: they are not cast but machined directly from a block of raw material.



## Central transmission shaft and gear shafts

Made of **stainless steel 303** (with a strength of 550 N/mm<sup>2</sup>): solid (no intermediate parts) and machined, with perfect rotational guidance on the winch base.

## Bearing cages

A HUTTON size 40 winch has 3 bearing cages, while the largest winch sizes have 4. The bearings are made of **stainless steel** (which offers much better efficiency than nylon).



# ELECTRICAL CONSUMPTION



## Motor powered by a 30V DC lithium battery

For optimal performance, the 12V DC (direct current) supplied by the service batteries is not sufficient. That's why the SailForce™ electric winch is powered by its own 30V DC lithium battery, with a **capacity of 144Wh**, which is more than enough to power one or two electric winches.

The SailForce™ battery is included with the motor. It consists of lithium cells in a single housing along with a charger and converter compatible with both 12V and 24V DC. It serves as a **buffer battery**, acting as an energy reservoir. When the electric winch is in use, it

provides the winch with a powerful 30V current, with an intensity of up to **45A**. When the winch is not in use, the lithium battery gradually recharges from the service batteries until it reaches its full charge, after which it no longer consumes energy from the service batteries.

It can be installed wherever you like in the cabin, **up to a distance of 8 meters from the electric winch**. All necessary cables are provided.

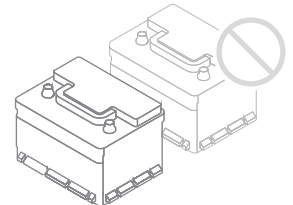
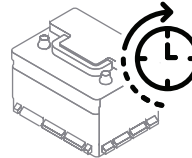


# Preserves the service batteries

The service batteries are typically designed for onboard equipment such as lighting or refrigeration, which rarely consume more than 6 amps. Therefore, these batteries are not suitable for the significant discharges required by an electric winch.

The SailForce battery never consumes more than **6 amps**, a consumption rate that may be comparable to that of the onboard refrigerator for a few minutes.

Preserves the longevity  
of the service batteries



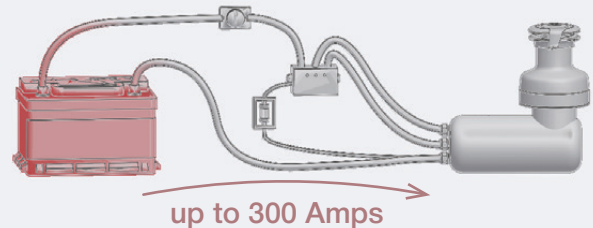
No need for additional  
service battery

6 Amps from  
the service batteries

up to 45 Amps  
to the motor

## Wear on the service batteries caused by traditional 12V electric winches with brushed motors.

These motors are directly connected to the boat's service batteries, without an intermediate buffer battery. They draw very high-intensity currents, reaching up to 200 or even 300 amps in some cases.

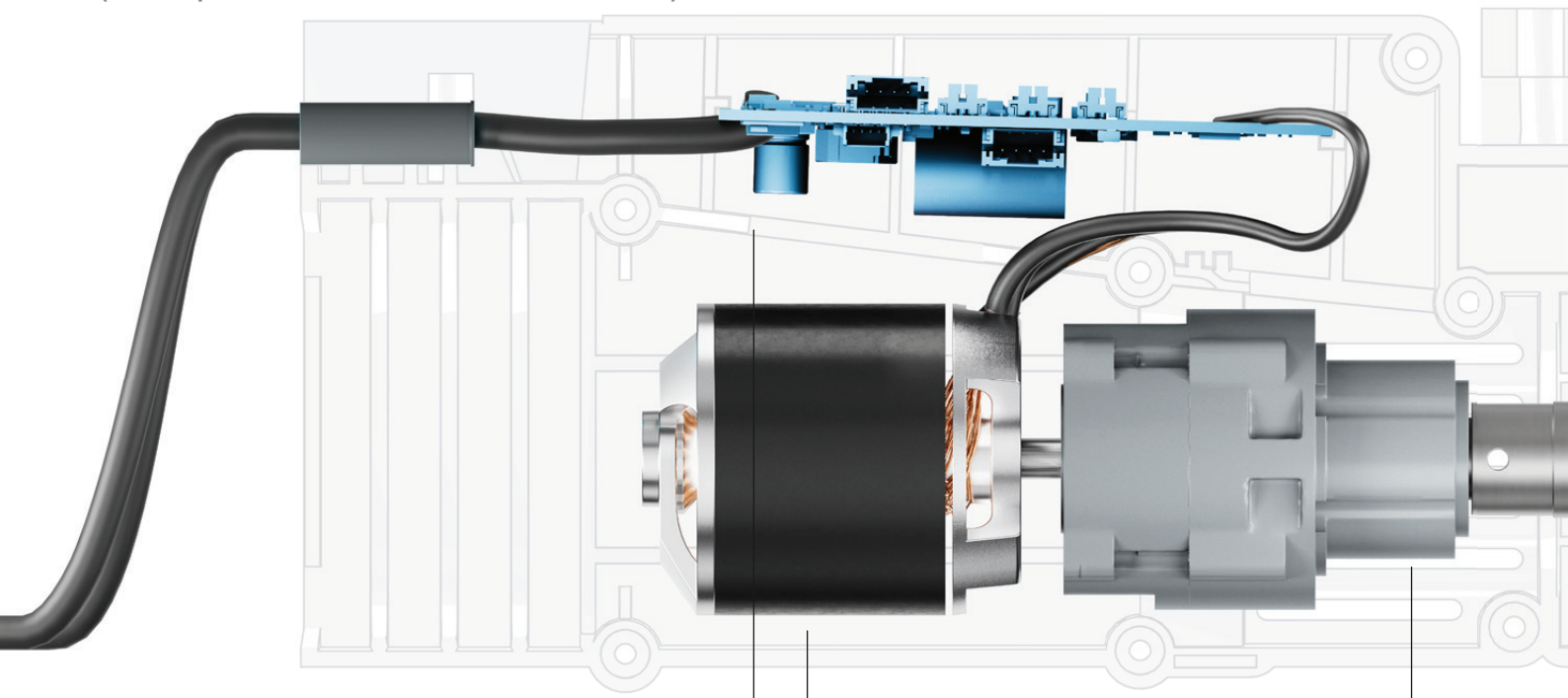


In addition to wasting energy onboard, these high currents have a **significant impact on the longevity of the service batteries.**

# A motor twice as efficient

results in half the energy consumption

(in comparison to conventional 12V motors)



## Electronic Board

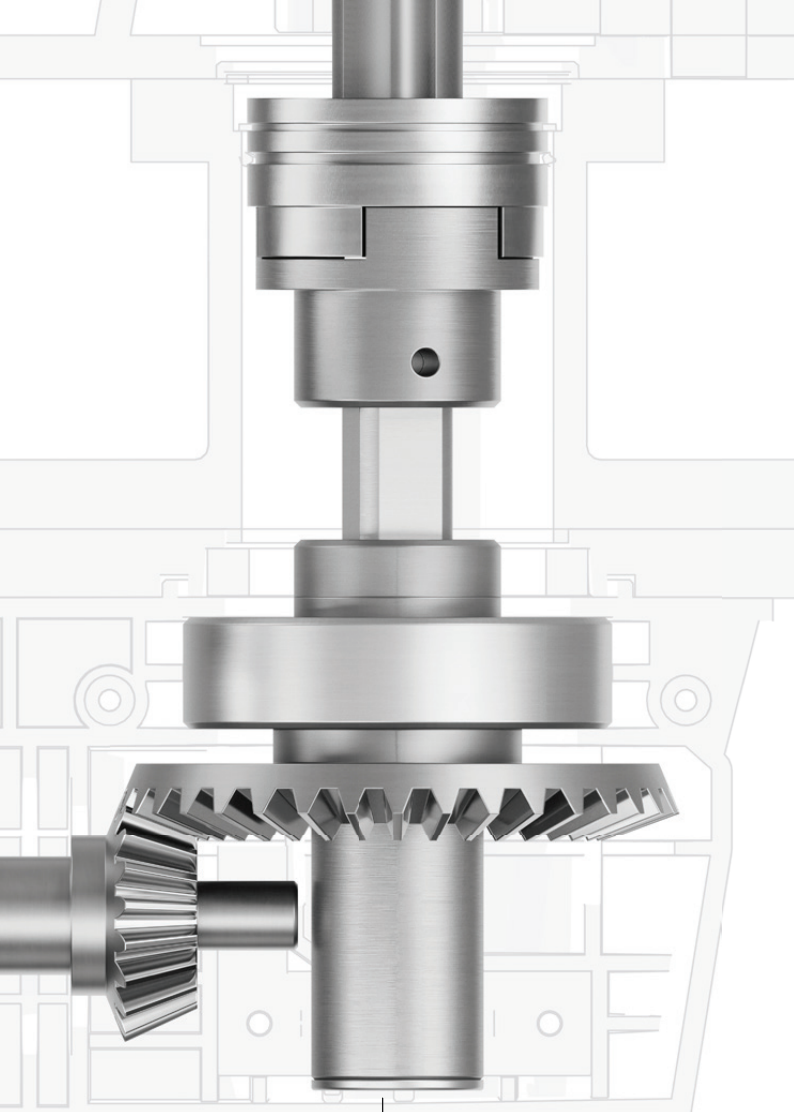
It fully controls the Brushless motor, regulating the current to the motor based on the required torque and ensuring current commutation inside the motor to control its speed.

It also stops the motor when the voltage limit is reached.

## Brushless Outrunner Motor 1250W

The efficiency of Brushless motors is significantly higher than that of 12V brushed motors traditionally used in electric winches.

Furthermore, the absence of brushes minimizes mechanical wear, significantly extending the motor's lifespan.

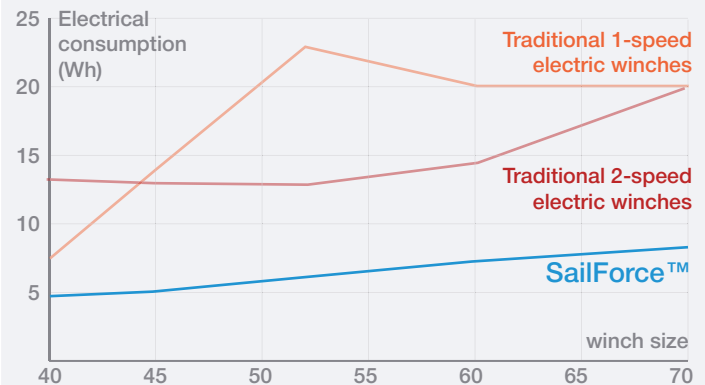


## In the end, an energy efficiency of 65%.

This represents an energy efficiency twice as high as that of traditional 12V motors, which have an efficiency of only 35%.

Consequently, it is 50% of energy saved and available for other uses onboard.

### Electrical Consumption by Winch Size to Pull 1m at Maximum Load



Data collected from public technical documentation. SailForce™ data obtained from Ewincher tests.

## Gearbox and Angular Reducer

The combination of a gearbox and an angular reducer exceeds in efficiency conventional worm gear systems.

It also allows for manual operation of the winch even when the winch is under load.

## 30V DC Power Supply

A higher voltage allows for better efficiency.

Put simply, with a higher voltage, an electrical system loses less energy in the form of heat. Therefore, it consumes less energy for an equal mechanical power output from the system.

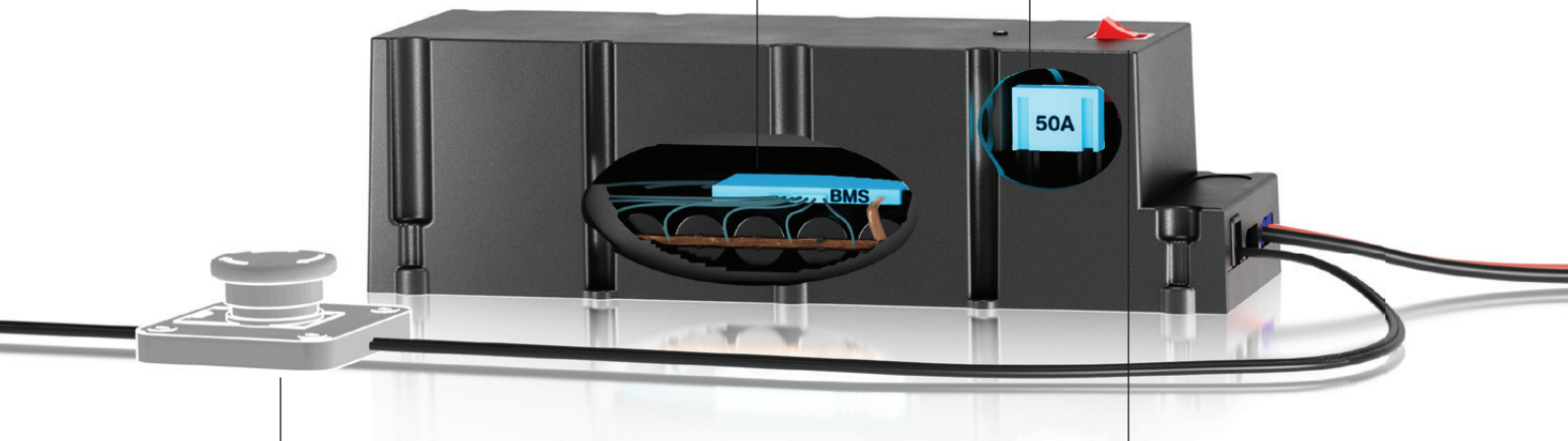
# ELECTRICAL SAFETY

## Battery Management System

The Battery Management System (BMS) ensures continuous monitoring of the proper functioning of the lithium battery: temperature, charge, and voltage, everything is monitored. In case of detected anomaly, it immediately interrupts the battery's power supply.

## Safety Fuse

In the highly unlikely event of BMS failure, a 50A fuse has been added to ensure a second level of safety (the battery's current during normal operation is 45A).



## Not included : Emergency Stop

An emergency stop can easily be added to the lithium battery power cable from the electrical panel.

## Main Switch

Power switch located on the lithium battery, allowing for the stopping and starting of the entire system.





### Double-finger Safety Switch

Located on the command units. To prevent any accidental starting of the winch.

### Continuous monitoring

Continuous monitoring of the consistency of information transmitted between the command units and the motor. The motor cannot start without being controlled by the electronic cards. Any anomaly thus results in the motor being stopped.



Because onboard  
electrical safety is essential

# Five Safety Features

# PERFORMANCE & VARIABLE SPEED

## A maximum speed 25% faster

SailForce™'s maximum speed is at least 25% faster than that of traditional electric winches (12V DC motors).

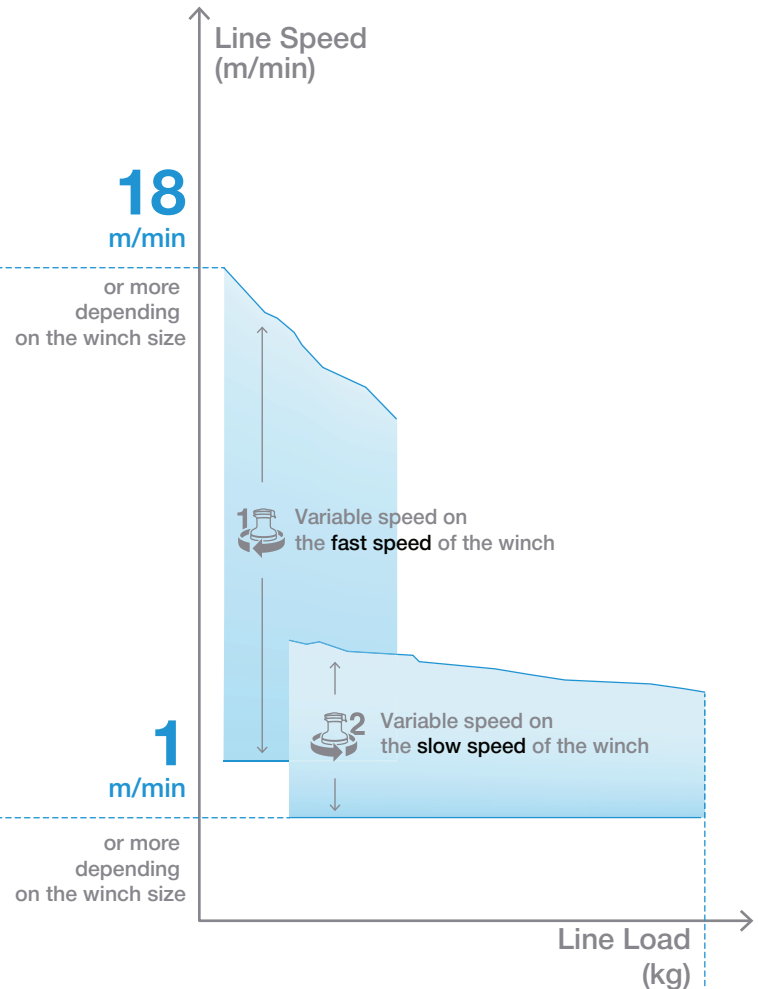
## An unbeatable minimum speed

SailForce™ offers a constant minimum speed of less than 1m/min (equivalent to 1.7cm/sec), regardless of the tension level on the rope, whether it's 100 kg or 1300 kg. Thanks to this, SailForce™ is unbeatable when it comes to fine-tuning the sails.

Unlike traditional electric winches without variable speed, which offer no minimum speed, making adjustments difficult, or even dangerous.

## Maximum Line Loads

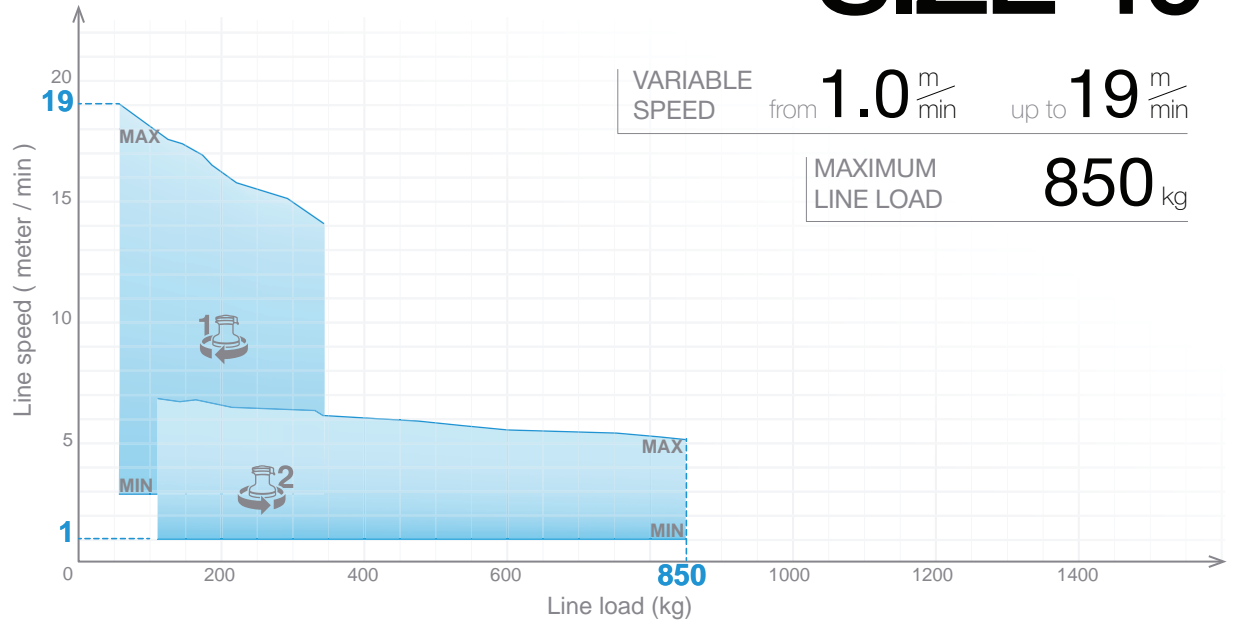
The recommended maximum line load that a winch can pull depends on its size and is the primary value to consider when choosing the winch size.



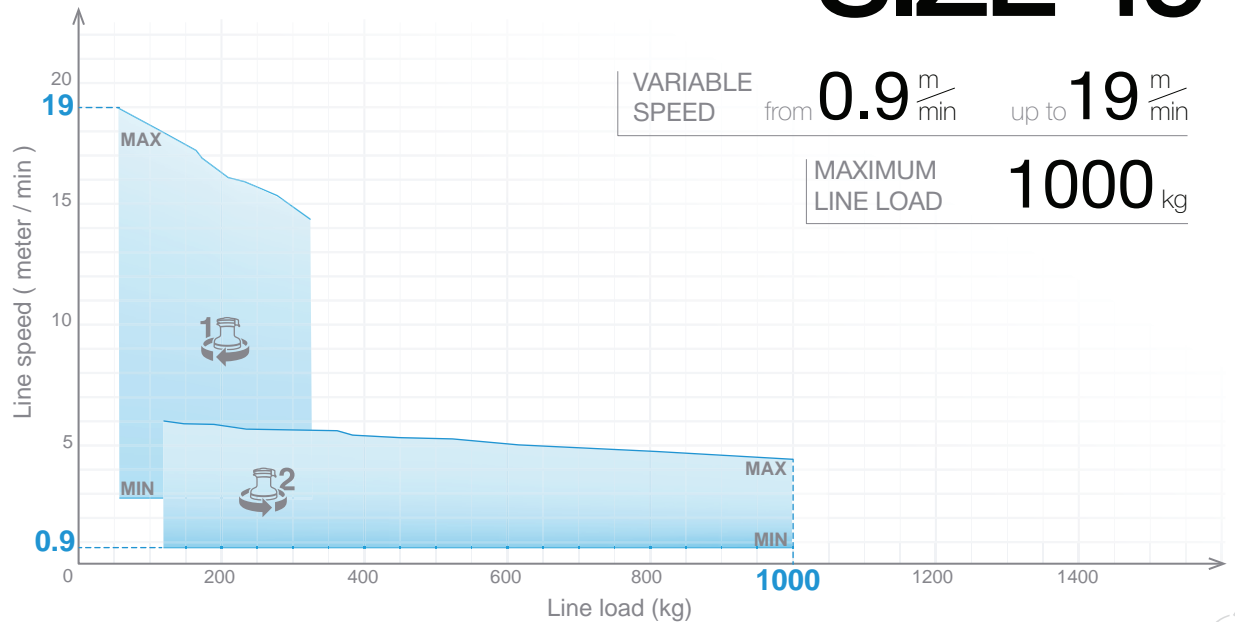
Maximum Line Load from **850 kg** up to **1550 kg**



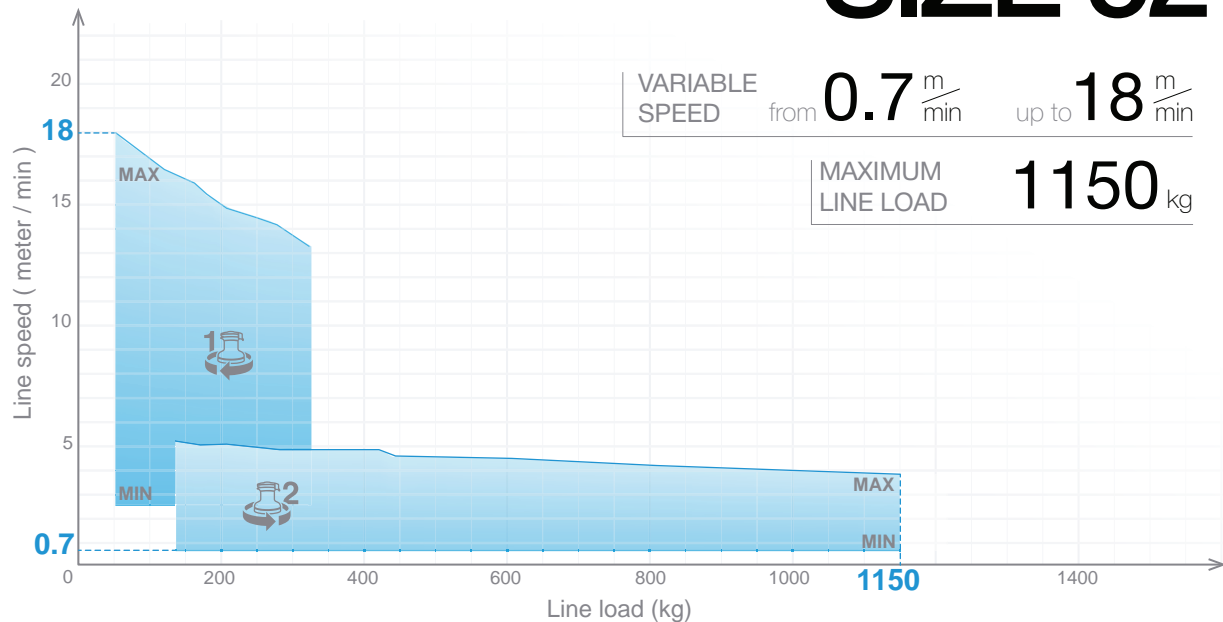
# SailForce™ Performance **SIZE 40**



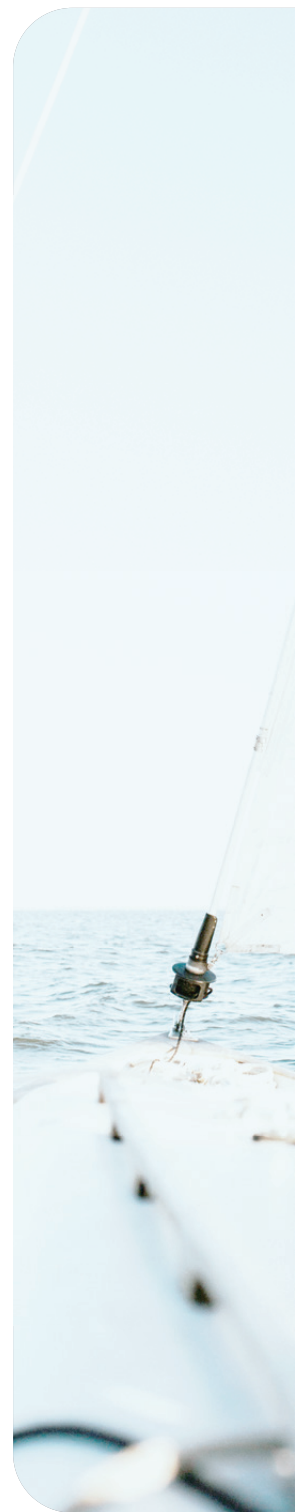
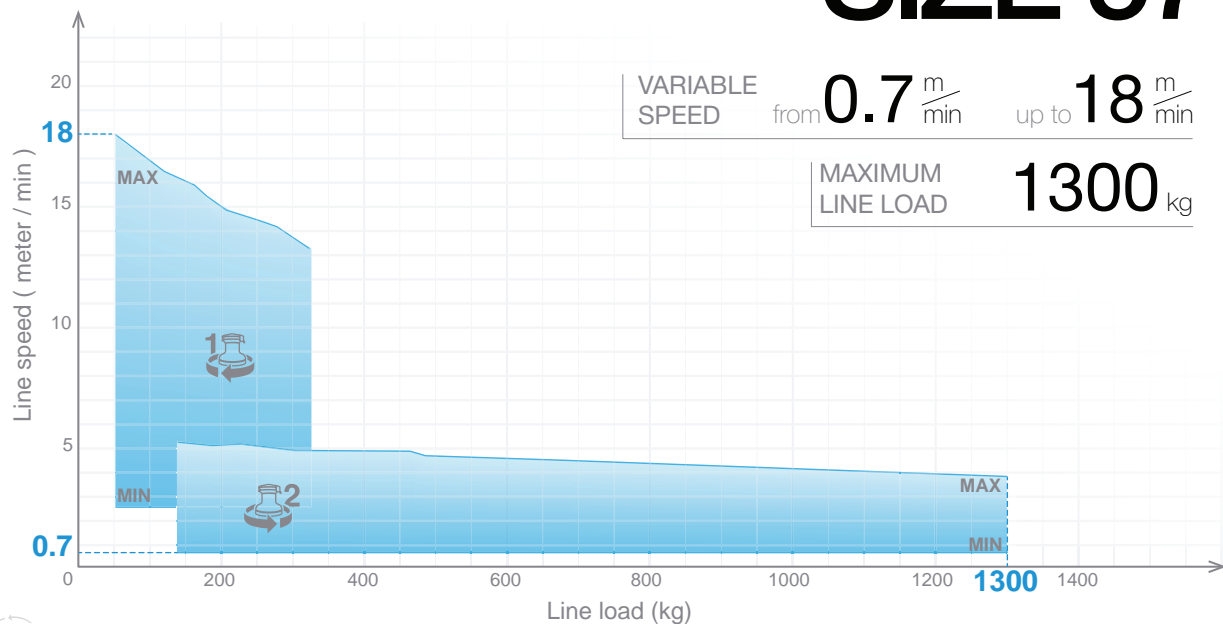
# SailForce™ Performance **SIZE 45**



# SailForce™ Performance **SIZE 52**

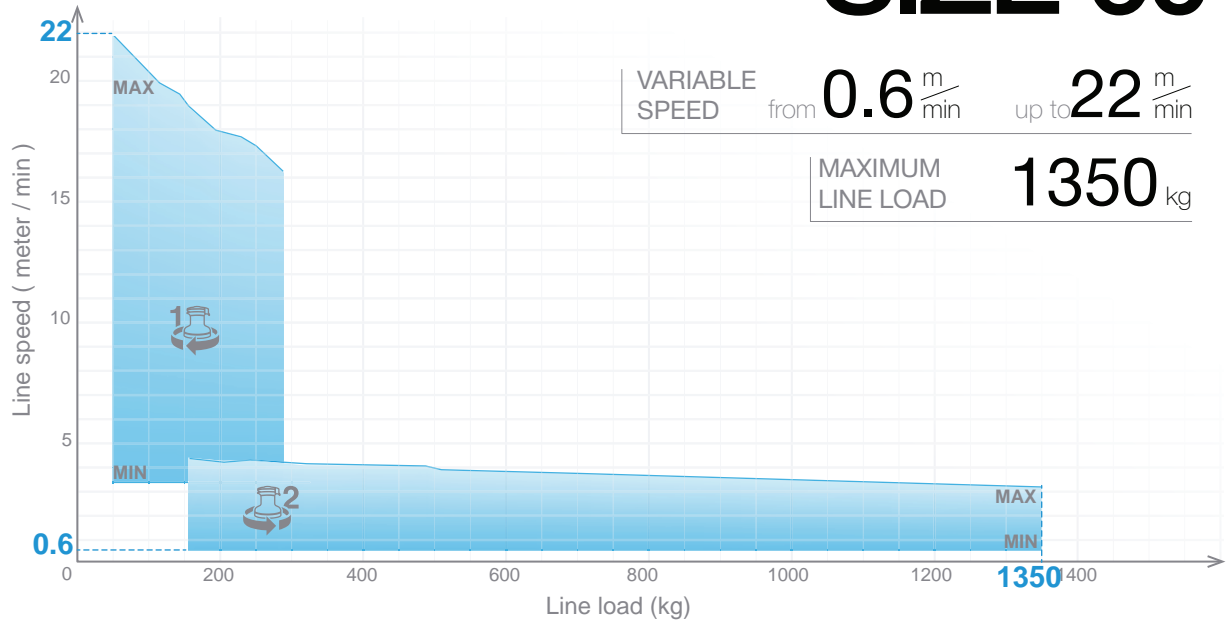


# SailForce™ Performance **SIZE 57**

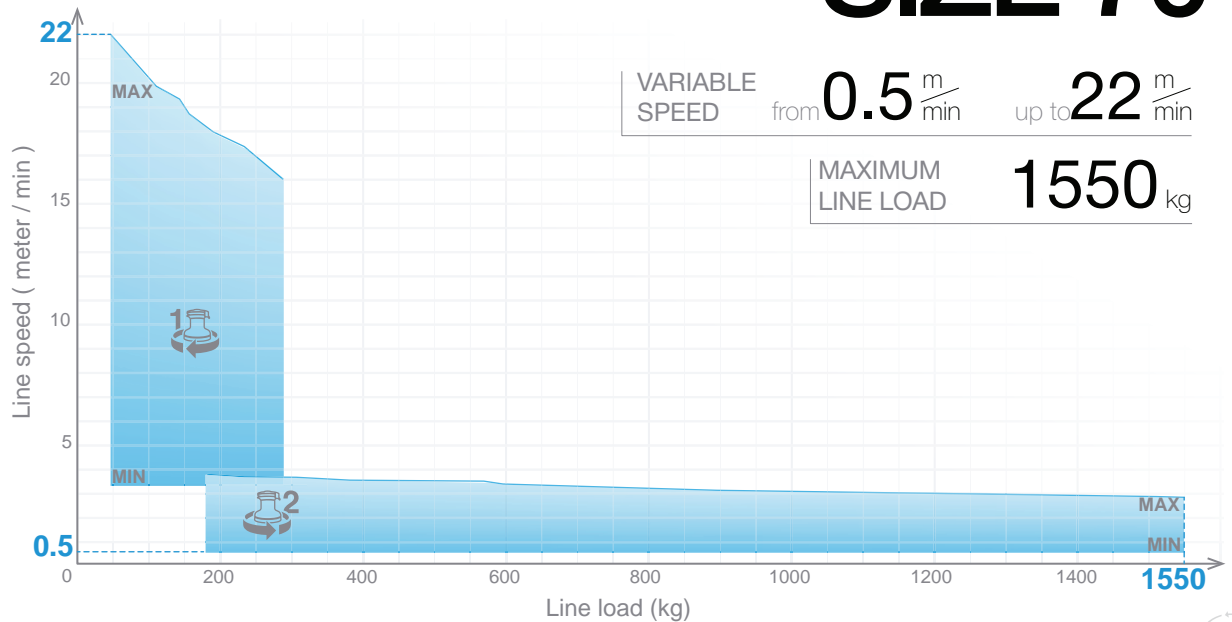




# SailForce™ Performance **SIZE 60**

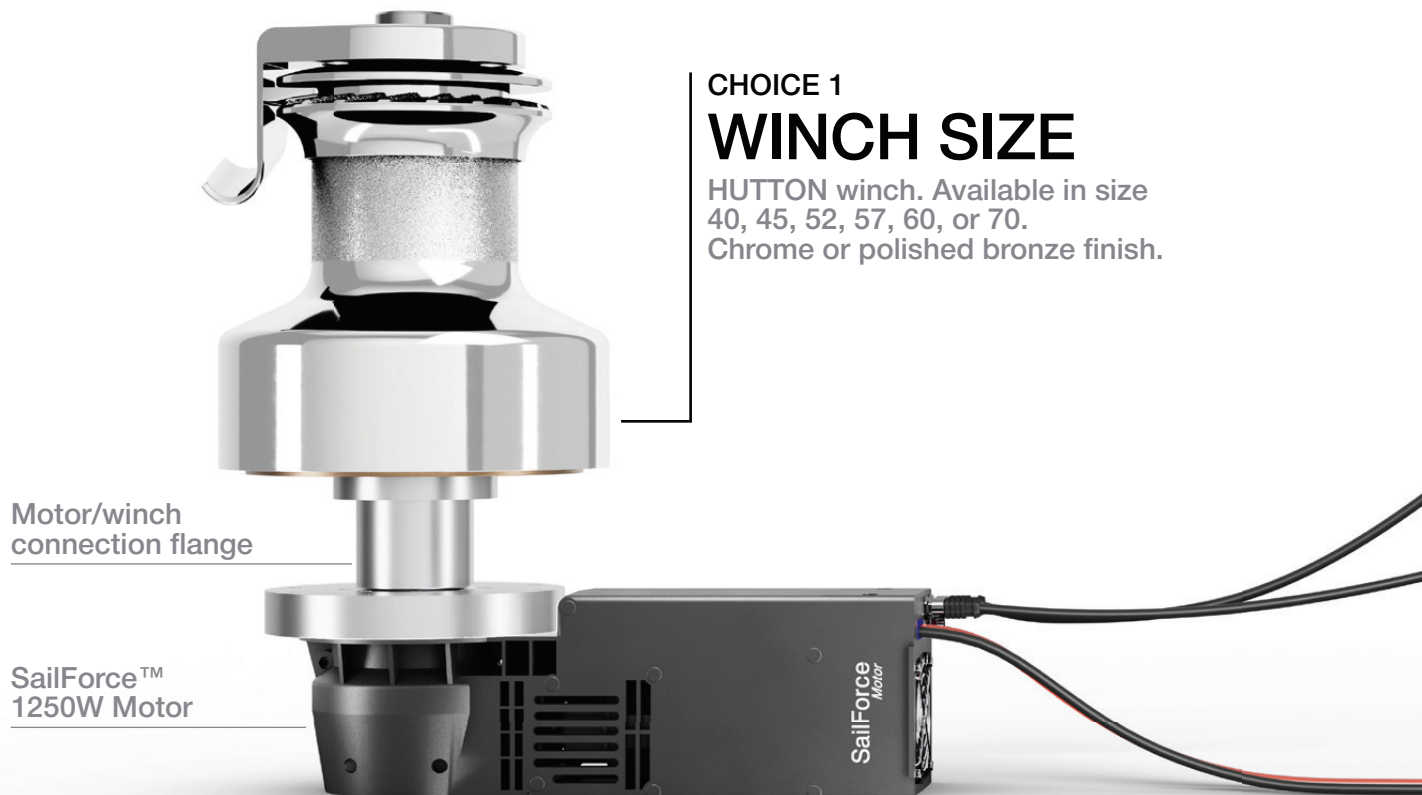


# SailForce™ Performance **SIZE 70**



# ALL-INCLUDED OFFER

**3 choices to make. All necessary components for installation are included, including cables.**



CHOICE 1

## WINCH SIZE

HUTTON winch. Available in size 40, 45, 52, 57, 60, or 70.

Chrome or polished bronze finish.



## MULTIPLE ELECTRIC WINCHES?

By quote only. Please consult with our partner retailers or contact us for a customized solution.

## CHECK PRICES

Make your selections and check prices with our partner retailers or on our website.



### CHOICE 2

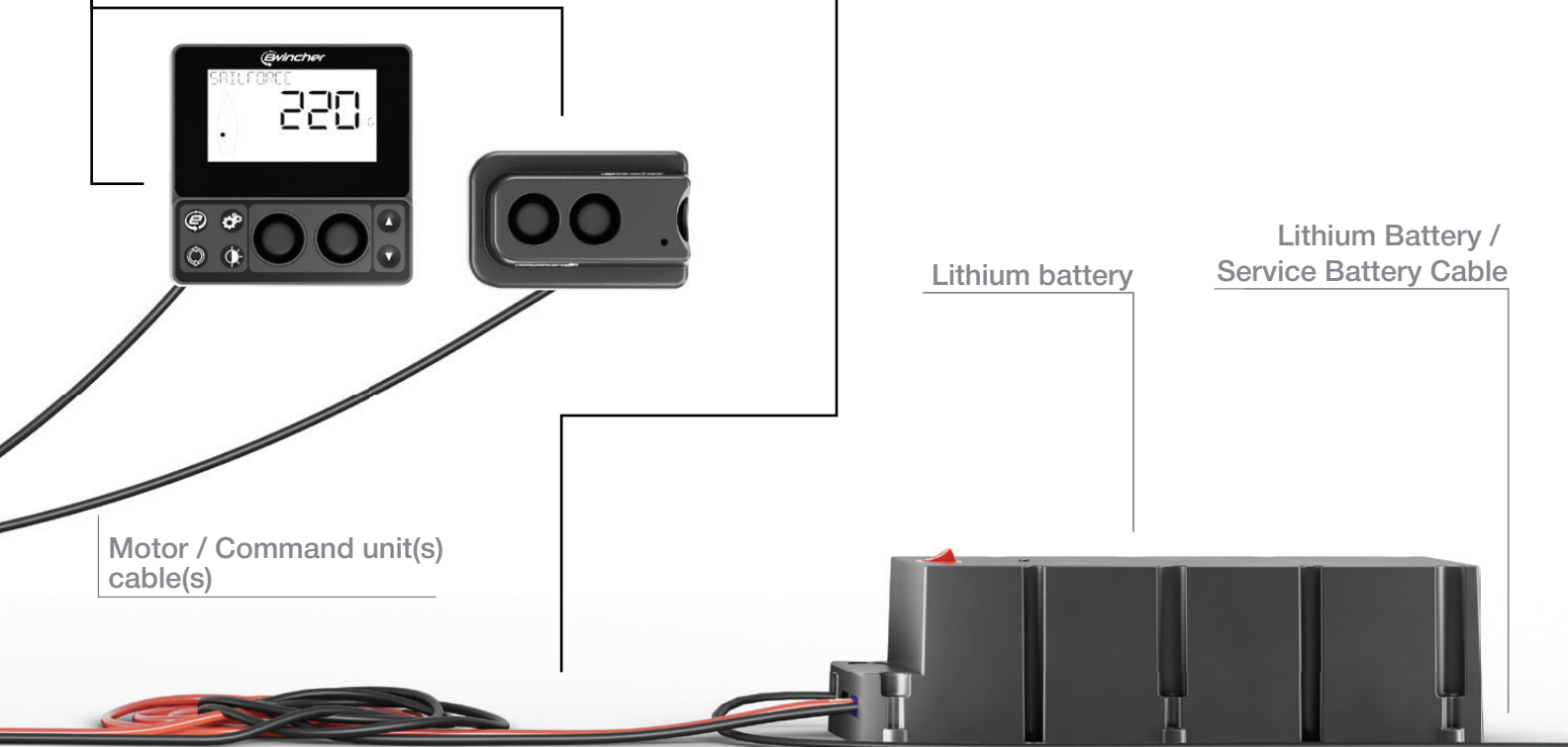
## COMMAND UNIT(S)

Essential Command, Advanced Command, or Full Command, make your choice based on your needs.

### CHOICE 3

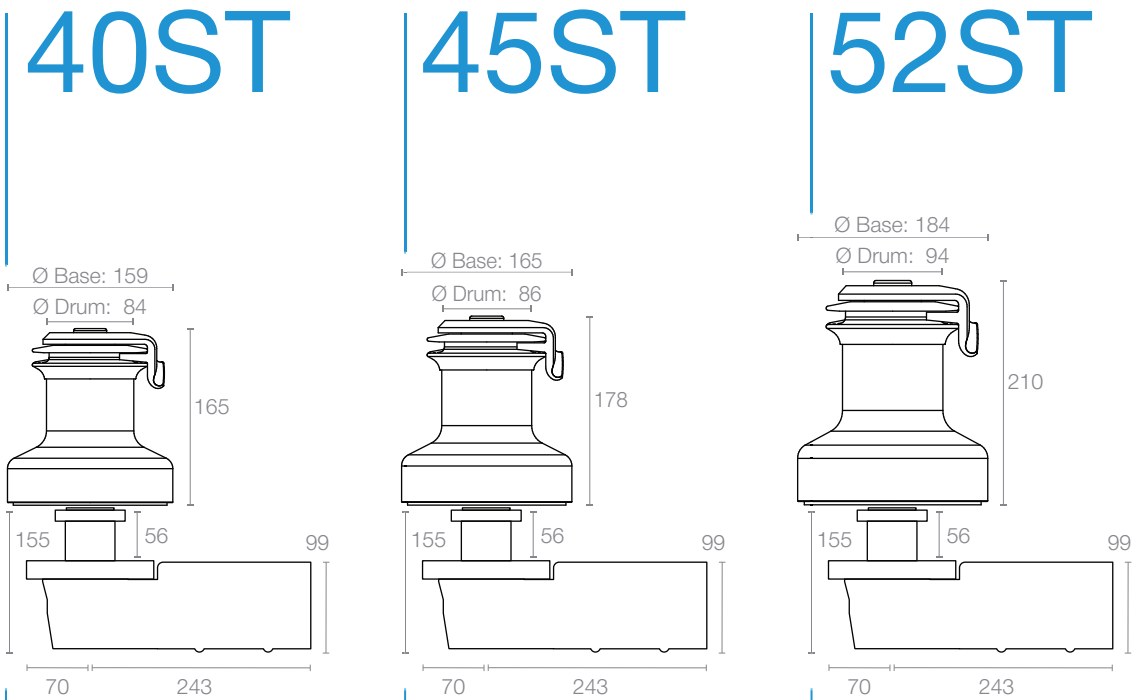
## LENGTH OF POWER CABLE(S)

You can choose to place the SailForce™ Lithium battery within less than 2.5 meters, 5 meters, or 8 meters from your electric winch.



WINCH SIZE

CHOICE 1



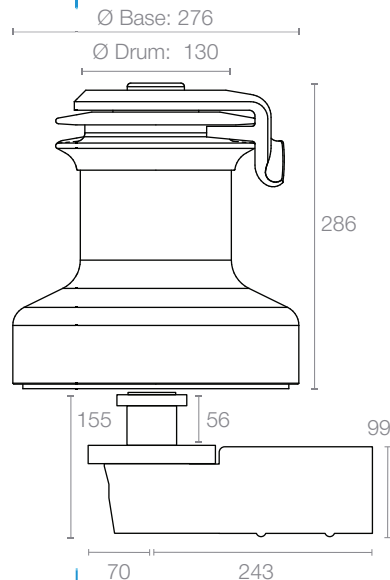
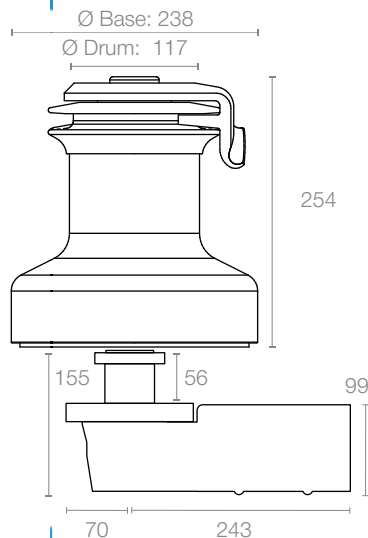
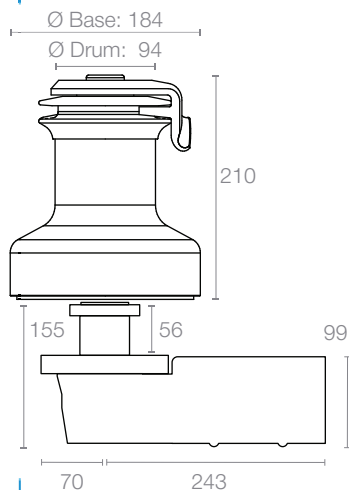
|   |                   |                               |                               |                               |
|---|-------------------|-------------------------------|-------------------------------|-------------------------------|
|    | Maximum Line Load | 850 kg                        | 1000 kg                       | 1150 kg                       |
| <div><div>Max</div><div>Min</div></div> | Line Speed        | 19 m/min<br>1,6 cm/sec        | 19 m/min<br>1,5 cm/sec        | 18 m/min<br>1,3 cm/sec        |
|   | Fast Speed        | Speed: 2,3:1<br>Power: 15,2:1 | Speed: 2,3:1<br>Power: 13,3:1 | Speed: 2,7:1<br>Power: 14,4:1 |
|   | Slow Speed        | Speed: 6,6:1<br>Power: 40,0:1 | Speed: 7,6:1<br>Power: 45,0:1 | Speed: 9,6:1<br>Power: 52,2:1 |
|   | Ø Line Diameter   | 8 à 14 mm                     | 8 à 14 mm                     | 10 à 16 mm                    |
|   | Weight            | 11,70 kg                      | 12,80 kg                      | 14,70 kg                      |
|   | Line Entry Height | 76,3 mm                       | 68,8 mm                       | 75,4 mm                       |



# 57ST

# 60ST

# 70ST



**1300 kg**

**18 m/min**

**1,2 cm/sec**

Speed: 2,7:1  
Power: 14,4:1

Speed: 10,5:1  
Power: 57,0:1

**10 à 16 mm**

**14,70 kg**

**75,4 mm**

**1350 kg**

**22 m/min**

**1,0 cm/sec**

Speed: 2,7:1  
Power: 11,9:1

Speed: 13,9:1  
Power: 60,0:1

**12 à 18 mm**

**25,60 kg**

**95,3 mm**

**1550 kg**

**22 m/min**

**0,8 cm/sec**

Speed: 3,0:1  
Power: 11,7:1

Speed: 17,9:1  
Power: 70,0:1

**12 à 18 mm**

**36,60 kg**

**94,5 mm**



**Maximum  
Line Load**



**Line  
Speed**



**Fast  
Speed**



**Slow  
Speed**



**Ø Line  
Diameter**












**Weight**



**Line Entry  
Height**

# COMMAND UNIT(S) CHOICE 2

|  | <br>ESSENTIAL<br>COMMAND | <br>ADVANCED<br>COMMAND | <br>FULL<br>COMMAND |
|--|---|--|--|
| <br>The speed 1 of the winch is motorized and variable.  | ✓   | ✓  | ✓  |
| <br>The speed 2 of the winch is motorized and variable.  | ✓   | ✓  | ✓  |
| <br>Double-finger safety switch  | ✓   | ✓  | ✓  |
| <br><b>Tension limiter</b> <ul style="list-style-type: none"><li>• configurable from the mobile application</li><li>• configurable from the command unit</li></ul> | ✓<br>✓  | ✓<br>✓<br>✓  | ✓<br>✓<br>✓  |
| <br>135 KG Real-time line tension monitoring   |   | ✓  | ✓  |
| <br>Allows control of the winch from two separate locations on the deck.   |   |  | ✓  |

# LENGTH OF POWER CABLES

## CHOICE 3

You can place the lithium battery at a distance of less than 2.5 meters, 5 meters, or 8 meters from the motor.

Available options:

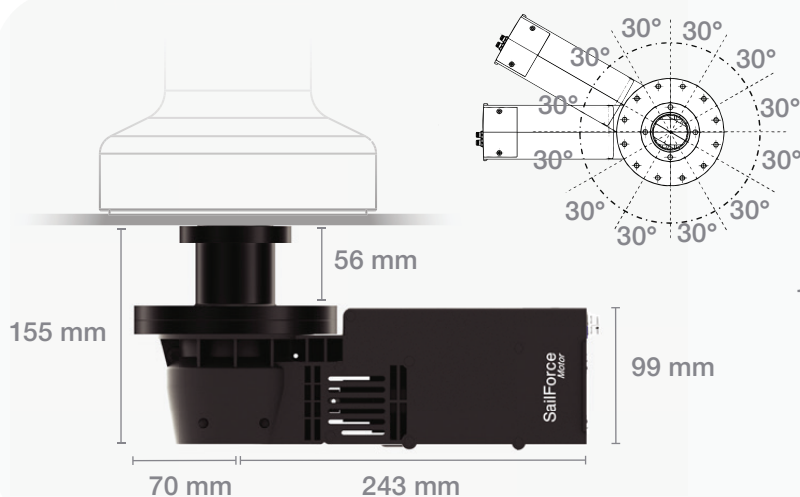
- 1 2x2.5 meters, section of 6 mm<sup>2</sup>, Ø 5 mm
- 2 2x5 meters, section of 10 mm<sup>2</sup>, Ø 6 mm
- 3 2x8 meters, section of 16 mm<sup>2</sup>, Ø 7 mm

**Note :** These cables are much easier to install than those used by traditional electric winches. They are thinner but also considerably more flexible, thanks to their construction of twisted multi-strand cables.

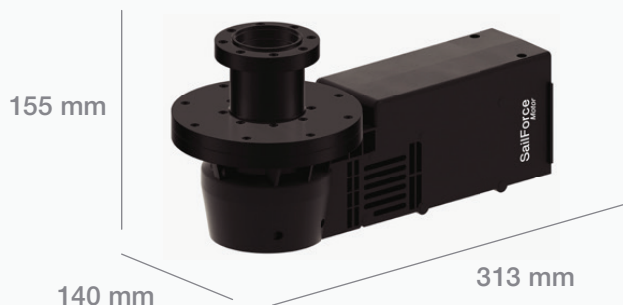
For comparison, for a size 40 winch, a traditional motor requires cables with a section ranging from 30 to 50 mm<sup>2</sup> and a diameter of 12 to 14 mm.

# OTHER SPECIFICATIONS

## SailForce™ 1250W MOTOR



The motor can be installed at 30-degree intervals around the winch axis.

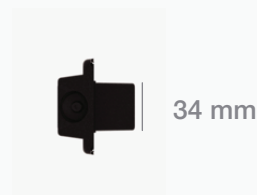


# Lithium Battery

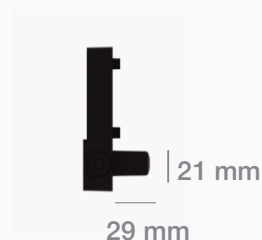
- Charge: 12V or 24V DC
- Capacity: 144Wh
- Lithium battery 30V DC including charger and converter
- Power Cable (lithium battery to 12 or 24V service battery): length 2 meters, Ø 6 mm



## Essential Command



## Advanced Command



## Command Unit(s) Cabling

These cables go from the winch motor to the corresponding command unit(s).  
According to the chosen type of command unit(s):

- Essential Command: 2 meters, Ø 5 mm
- Advanced Command: 2 meters, Ø 5 mm
- Full Command: 1x2 meters + 1x6 meters, Ø 5 mm







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