

# ELECTRIC ACCESSORIES

The range of accessories consists of a large selection of products to control windlass operations. All products are designed and built to guarantee perfect and reliable operation in the marine environment. Lofrans' Accessories are manufactured to the highest quality for reliability and safety, conforming to EC regulations covering electromagnetic compatibility (89/336/CEE). They are tested by official organizations for compliance to regulations and are CE marked.

For a windlass to function properly you will need to install:

- The **control box** unit which is supplied as standard, is made up of two solenoids included in a watertight box with an IP56 rating. Connecting the remote control to the control box is easily done by simply plugging the wiring onto the control box
- The **circuit breaker**, which offers three functions:
  - Protection from short circuit
  - Protection of the electric motor from current overload
  - Voltage interruption when the anchor windlass needs to be switched off. The circuit breaker is installed on a panel and has an LED indicator.
- One or more electric controls which can be connected in parallel.

## IRIS

CHAIN COUNTER



2  
Years Limited  
Warranty

## GALAXY 102

HAND HELD CONTROL



### Panel Chaincounter IRIS

This fly bridge chain counter IRIS is technologically advanced instrument with an elegant and ergonomic design makes it suitable for all type of boat cockpits. IRIS is supplied with an evolved microprocessor, with different operations allowing an optimum anchoring.

- Chain speed indicator / mooring length in meters or feet
- Voltage indicator
- Up alarm sensor
- Switch on button / Key tones adjustment
- High vision LCD display / Backlit display screen / Eight level of contrast
- Six language menu (IT, EN, FR, DE, ES, GR)
- Able to control free fall windlasses
- Parallel connection

Code	600017
Command transmission	Wire
Number of button	3
Voltage	12 - 24V <sub>dc</sub>
Operative temperature	-10 : + 0
IP protection rated*	67
Max contacts amperage (A)	2
Weight (gr)	500
Dimension (mm)	110x105x15 (5 flat version)

\* When installed

### Hand Held Control GALAXY 102

This hand held remote control model GALAXY 102 has an elegant and functional design. The soft rubber case, which covers sideways the remote control, allows a safe and handy taking under any condition.

This hand held remote control is rated with IP66 and supplied with waterproof plug and socket rated IP67. The extending flexible cable (approximately 4 metres) gives the maximum freedom on board during anchoring manoeuvring.

- Inversion polarity protection
- Parallel connection
- 2 buttons (up-down)

Code	600013
Command transmission	Wire
Number of button	2
Voltage	12 - 24V <sub>dc</sub>
Operative temperature	-10 : + 0
IP protection rated	66
Max contacts amperage (A)	2
Weight (gr)	580
Dimension (mm)	155x65x45

# GALAXY 703

CHAIN COUNTER



# GALAXY 503

CHAIN COUNTER



## Radio Control Chaincounter GALAXY 703

Without cable ties, plug or panels and with load always perfect by rechargeable battery, the radio chain counter GALAXY 703 gives finally all the freedom of manoeuvres and the comfort of reading in the anchoring operations.

- Chain speed indicator / mooring length in meters or feet
- Voltage indicator
- Up alarm sensor
- Switch on button / Key tones adjustment
- High vision LCD display / Backlit display screen / Eight level of contrast
- Six language menu (IT, EN, FR, DE, ES, GR)
- Able to control free fall windlasses
- Parallel connection

## Hand Held Remote Control Chaincounter GALAXY 503

This remote chain counter model GALAXY 503 has been specifically designed to give the full control in anchoring. It's a reliable and practical instrument, technologically advanced, specifically design for use in marine environments. The external casing, rated with IP66 and supplied with waterproof plug and socket rated IP67. The extending flexible cable (approximately 4 metres) gives the maximum freedom on board during anchoring manoeuvring. Provided with an evolved microprocessor that offers a series of advantages for full control of the anchoring.

- Chain speed indicator / mooring length in meters or feet
- Voltage indicator
- Up alarm sensor
- Switch on button / Key tones adjustment
- High vision LCD display / Backlit display screen / Eight level of contrast
- Six language menu (IT, EN, FR, DE, ES, GR)
- Able to control free fall windlasses
- Parallel connection

Code	600016
Command transmission	Remote
Number of button	3 (Transmitter)
Voltage	12 - 24V <sub>dc</sub> (Receiver)
Operative temperature	-10 : + 0
IP protection rated*	66 (Transmitter)
Max contacts amperage (A)	2 (Receiver)
Weight (gr)	480
Dimension (mm)	155x65x45 (Transmitter)

Code	600015
Command transmission	Wire
Number of button	3
Voltage	12 - 24V <sub>dc</sub>
Operative temperature	-10 : + 0
IP protection rated*	66
Max contacts amperage (A)	2
Weight (gr)	710
Dimension (mm)	155x65x45

## Radio Remote Control

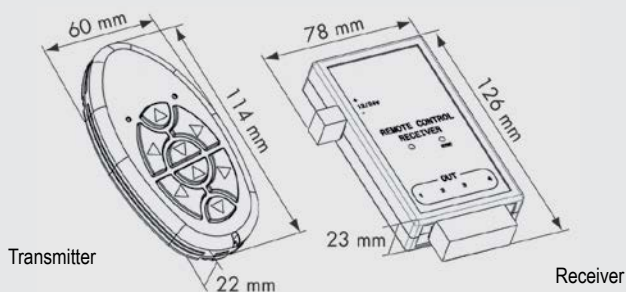


## Mini Remote Control



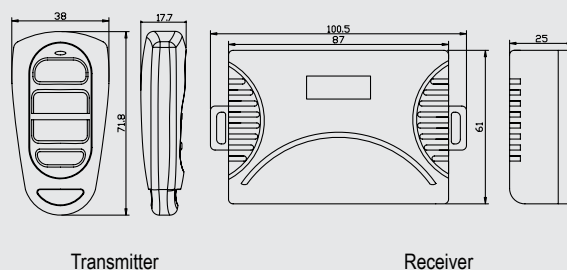
Lofrans' radio remote control is designed to work with our range of windlasses. The remote control can also be used to operate other onboard equipment such as thrusters, passerelles, cranes, etc.

- Transmitter rated IP67
- Supports up to 8 independently controlled channels
- Each receiver can switch 4 channels (12/24 V - 2 A)
- Each transmitter can handle 2 receivers (8 channels)
- Digital recognition avoids accidental activation of other system
- Zero power consumption when in standby mode (transmitter)
- Easy to install and set up, simple to use



Code	312976	312977
Description	Transmitter & Receiver (EU)	Transmitter & Receiver (USA)
Frequency	868 MHz	915 MHz
Number of button	8 (Transmitter)	
Voltage	12 - 24V <sub>dc</sub> (Receiver)	
Operative temperature	-10 : + 0	
IP protection rated	67 (Transmitter)	
Max contacts amperage (A)	2 (Receiver)	
Weight (gr)	310	
Dimension (mm)	114x60x22(transmitter) / 126x78x23(receiver)	

- Easy to install and setup, simple to use.
- Small form factor makes it ideal to carry it anywhere on-board.
- Supports up to 4 independently control channels (12/24V - 10A).
- Zero Power consumption when in standby (transmitter)
- Transmitter rated IP 67



Code	636305
Description	Transmitter & Receiver (EU/USA)
Frequency	433 MHz
Number of button	4
Voltage	12 - 24V (Receiver) 3V (Transmitter)
Operative temperature	-10 : + 0
IP protection rated	IP 67
Max contacts amperage (A)	10
Weight (gr)	31 (Transmitter) / 95 (Receiver)
Dimension (mm)	71,8x38x17,7 (Transmitter) / 100,5x61x25 (Receiver)

*\*\* 868 MHz is the authorised frequency for Europe and Australia. 915 MHz is the authorised frequency for Canada and the USA. Retail sales and use of non-authorised frequency transmitters and receivers is prohibited. For all other countries please consult the local regulation in force.*

## Foot switch

This device is a switch which works simply pushing the foot on the button. The base is in stainless steel while the cover to prevent accidental engagement is in composite. The button is in special marine rubber able to withstand UV ray and the marine environment. Available in UP and DOWN version

Code	600012	600011	602121
Description	Black / Grey	Red / Grey	Blue / WASH DOWN
Voltage	12 - 24V <sub>dc</sub>		
Operative temperature	-10 : 60		
IP protection rated	67		
Max contacts amperage (A)	5		
Weight (gr)	100		
Dimension (mm)	80x95x20		



## INOX Foot switch

This device, made by marine stainless steel (INOX), is a switch that works simply by pushing the foot on the button.

Code	636075	636074
Description	Black / INOX	Red / INOX
Voltage	12 - 24V <sub>dc</sub>	
Operative temperature	-10 : 60	
IP protection rated	67	
Max contacts amperage (A)	5	
Weight (gr)	250	
Dimension (mm)	80x95x20	



## Control Box Solenoids for DC

The Control Box is an electric unit made up of two remote control switches enclosed inside a special container which protects it from marine corrosion. The entire unit has been designed with a view to simplifying and speeding up the various electrical connections. For this purpose there is no need to open and/or pierce the container, as all the terminals and the panel for the electrical connections are perfectly accessible from the outside. Outer construction in self-extinguishing polyester resin, resistant to shock and marine corrosion. Degree of protection IP 56 - protection against deckwater.



Code	600018	600019	600020	602590	600021	600022	602587
Number of terminals	3	3	3	4	4	4	4
Power	12 V	24 V	24 V	12 V	12 V	24 V	24 V
Motor Size	500-1700 W	500-1700 W	1700-2300 W	500-700 W	1000-1700 W	500-1700 W	3500 W

\* Wiring diagrams depending on configuration and number of terminals (see page 63)



# Switchboards for AC

## Switchboard Up/Down 1Motor

The Lofrans' switchboards can cover all the Lofrans' AC motorized windlasses. They can be powered by 110V, 230V or 400V (single phase or three phase), for power up to 7.5 KW. Possibility of supplying low tension starters with inverter and special cabling.

Code	Volt	Kw	PH	Hz
600095	400	2,2	3	50/60
600096	400	4,0	3	50/60
600676	440	2,2	3	50/60
600684	230	3,6	1	50/60
600688	440	4,0	3	50/60
600693	400	5,5	3	50/60
600698	230	2,2	3	50/60



## Circuit Breaker

The thermal circuit breaker is an essential component of the electric plant. It has three functions:

- protects from very dangerous short circuits
- protects the electric motor of the windlass
- interrupts tension to windlass when desired

In case of short circuit the intervention is immediate. Concerning the electric motor a specific intervention curve has been studied in cooperation with E-T-A Germany. It is possible to re-activate the circuit breaker at the end of the intervention. The thermal circuit breaker is supplied with an elegant plaque for fixing and a led light. This unit is in compliance with EEC regulations and homologated by Bureau, Veritas.



	35 A	40 A	70 A	80 A	100 A	125 A
Thermal	187331	-	187332	-	187333	187334
Hydraulic	-	600029	-	630616	600028	-



## Thermal Circuit Breaker Surface Mounted

The thermal circuit breaker is an essential component of the electric plant. It has three functions:

- protects from very dangerous short circuits
- protects the electric motor of the windlass
- interrupts tension to windlass when desired

In case of short circuit the intervention is immediate.

	40 A	70 A	100 A	110 A	120 A	150 A
Thermal	636087	636088	636089	636090	636091	636092





# Control Switch



## TYPE "L"

This switch, usually installed on the cockpit, is made by a fixing plaque and by a three position switch (Up-Off-Down).

Code | 404728



## TYPE "C"

This rocker switch has a modern and practical design. It is reliable and watertight and it is supplied with the apposite case to make simple and sure the installation.

Code | 187338



## Kits for big Models & Capstans

### KIT A - SEALS

Code	For WINDLASS
474013	X4 & PROJECT 2000
418428	ERCOLE VERTICAL
418403	TITAN
418423	ERCOLE
427806	SUPER ERCOLE
418410	T500
418411	T700 - T1000
418422	T1500 - T1700
418399	T2000 - T2500

### KIT B - SCREWS

Code	For WINDLASS
474012	X4 & PROJECT 2000
418475	ERCOLE VERTICAL
418457	TITAN
418472	ERCOLE
418476	SUPER ERCOLE
418446	T500

### KIT C - PINS

Code	For WINDLASS
474011	X4 & PROJECT 2000
418499	ERCOLE VERTICAL
418493	TITAN
418494	ERCOLE
418500	SUPER ERCOLE
418483	T500
418487	T1500 - T1700

### KIT D - CIRCLIPS

Code	For WINDLASS
474010	X4 & PROJECT 2000
418556	ERCOLE VERTICAL
418553	TITAN
418555	ERCOLE
418575	SUPER ERCOLE
418512	T500
418513	T700 - T1000
418514	T1500 - T1700
418515	T2000 - T2500

### KIT F - FINGERS

Code	For WINDLASS
474023	X1, X2 & PROJECT 1000
474017	X3 & PROJECT 1500
601047	X2
602105	X3
35036	DORADO
632116	ATLAS

### KIT S - MAGNETIC SENSORS

Code	For WINDLASS
474053	X1, X2 & X3
600033	X4
474048	for all horizontal windlasses

# Winch Handle Floating

- Floats in water
- Material: glass reinforced plastic

Code	Description	Length
72740	with locking	205mm
72741		255mm
72742	without locking & handle	205mm
72743		255mm
72907	without locking	255mm



# Maintenance Kit

**KEEP YOUR LOFRANS' AS GOOD AS NEW!**

Code	For WINDLASS
72036	X0
72037	X1
72038	X2 & PROJECT 1000
72039	X2 ALU
72040	X3, X3 ALU & PROJECT 1500
72046	ROYAL
72047	DORADO
72048	KOBRA & CAYMAN
72050	TIGRES
72051	FALKON
72045	ATLAS

Please refer to our website for Kit Contents

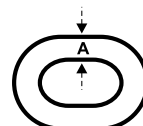


Exploded diagram ►



# CABO Rope for chain rode use

*three strand with connection, Nylon, White*



Code	72319	72320	72321	72322	72323	72324
Rope Diameter(mm)	12			14		16
Length(m)	30	60	90	30	60	60
Ring Diameter - A(mm)	6			8		10
Breaking load (kg)	2300			2940		3640

# CHAINS

**new**



**It is LOFRANS!!!**

**Hot Dip Galvanized.**

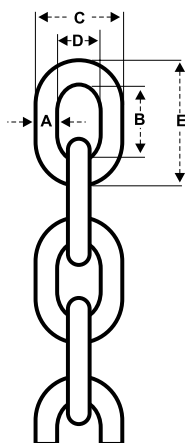
**Calibrated.**

**Grade 40** - tougher than Grade 30 - over 30% higher breaking load.

**Extended quality** tested on Lofrans' Windlasses.

**Lofrans' Authenticity Check** - "LFR" is engraved every thirty centimeters.

**Certificate of Analysis Included**



Code	72312	723121	72749	72750	72313	723131	72751	72752	72314	723141
Type	ISO 4565 / DIN 766				ISO 4565 / DIN 766				DIN 766	
A (mm)	6				8				10	
B (mm)	18,5				24				28	
C (mm)	20				27,5				34	
D (mm)	8				11,5				14	
E (mm)	30,5				40				48	
Weight / m (kg)	0,8				1,42				2,2	
Breaking load (kg)	2400				4300				6750	
Available Pack (m)	Carton Drum	Pallet box	Bag	Bag	Carton Drum	Pallet box	Bag	Bag	Carton Drum	Pallet box
	120	400	30	50	120	400	30	50	120	300

Code	72315	723151	72753	72754	72316	723161	72755	72408	72409
Type	ISO 4565				ISO 4565			ISO4565 / DIN 766	
A (mm)	10				12			14	16
B (mm)	30				36			41,5	45
C (mm)	34,5				39,6			47,4	54,6
D (mm)	14,5				15,6			19,4	22,6
E (mm)	50				60			69,5	77
Weight / m (kg)	2,14				3,23			4,37	5,72
Breaking load (kg)	6750				9700			13230	17280
Available Pack (m)	Carton Drum	Pallet Box	Bag	Bag	Carton Drum	Pallet box	Bag	Carton Drum	Carton Drum
	120	300	30	50	120	300	50	200	200

## Available Packs



Carton Drum



Pallet Box



Bag

**WITH THE EXPERIENCE  
AND QUALITY OF**

**Lofrans®**  
WINDLASSES



# GYPSIES



## For Vertical Windlasses

For windlass	Chain Size	Gypsy Code
X1 & SX1	6mm ISO4565/DIN766	630970
	7mm ISO4565 - 1/4" G40	630980
	8mm ISO4565/DIN766	630999
X2 & SX2	6mm ISO4565/DIN766	630953
	8mm ISO4565/DIN766	630949
	10mm ISO4565	630951
	10mm DIN766	630955
X3 & SX3	8mm ISO4565/DIN766	630957
	10mm ISO4565	630951
	10mm ISO4565	630959
	10mm DIN766	630966
	12mm ISO4565 - 13mm DIN766	630961
SX3.5	10mm DIN766	631026
	10-38 HT (NICHELATO)	631024
	12-13mm DIN766	631045
	14mm	631074
X4 & SX4	3/8" G40	631124
	7/16" HT	630992
	1/2" G40	631036
	10mm DIN766 3/8" BBB	631132
	10mm ISO4565 3/8" HT	631022
	12-13mm DIN766	631031
	13mm DIN764	631050
SX5	14mm	631059
	1/2" STUDLINK	631053
	12-13mm DIN766	631042
	14mm	631065
	14 STUDLINK	631071
Ercole Vertical	1/2" STUDLINK	631053
	12-13mm DIN766	631039
	13 ITALMET	631056
	13mm DIN764	631085
	14mm	631065
	14 STUDLINK	631068
	14.5 UNI4417	630989
	16mm ISO4565	631082
	16mm DIN766	631088
	16 STUDLINK	631092
	18 STUDLINK	631098
Project 1000	18mm ISO4565	631101
	6mm ISO4565/DIN766	630953
	8mm ISO4565/DIN766	630949
	10mm ISO4565	630951
	10mm DIN766	630955
Project 1500	8mm ISO4565/DIN766	630957
	10mm ISO4565	630951
	10mm ISO4565	630959
	10mm DIN766	630966
	12mm ISO4565 - 13mm DIN766	630961
Project 2000	5/16" HT	631129
	7/16" HT	630992
	1/2" G40	631036
	10mm DIN766 - 3/8" BBB	631132
	10mm ISO4565 - 3/8" HT	631022
	12-13mm DIN766	631031
	14mm	631059

## For Horizontal Windlasses

For windlass	Chain Size	Gypsy Code
Royal	5/16" HT	631077
	3/8" BBB	631120
	3/8" PC	631122
	6mm ISO4565/DIN766	630968
	7mm ISO4565 - 1/4" G40	630978
	8mm ISO4565/DIN766	630994
	10mm ISO4565 - 3/8" HT	631011
	10mm DIN766	631118
LION 1000	6mm ISO4565/DIN766	631005
	7mm ISO4565	631007
	8mm ISO4565/DIN766	631009
Dorado	6mm ISO4565/DIN766	630974
	7mm ISO4565 - 1/4" G40	630984
	8mm ISO4565/DIN766	631003
	Only ROPE gypsy	634877
Cayman	5/16" HT	631077
	3/8" BBB	631120
	3/8" PC	631122
	6mm ISO4565/DIN766	630968
	7mm ISO4565 - 1/4" G40	630978
	8mm ISO4565/DIN766	630994
	10mm ISO4565 - 3/8" HT	631011
Kobra	10mm DIN766	631118
	5/16" HT	631077
	3/8" BBB	631120
	3/8" PC	631122
	6mm ISO4565/DIN766	630968
	7mm ISO4565-1/4" G40	630978
	8mm ISO4565/DIN766	630994
	10mm ISO4565-3/8" HT	631011
	10mm DIN766	631118
	12mm ISO4565 - 13mm DIN766	631028
Tigres	5/16" HT	631129
	3/8" BBB	631120
	3/8" PC	631122
	6mm ISO4565/DIN766	630968
	7mm ISO4565-1/4" G40	630978
	8mm ISO4565/DIN766	630994
	10mm ISO4565 - 3/8 HT	631011
	10mm DIN766	631118
Falkon	12mm ISO4565 - 13mm DIN766	631028
	5/16" HT	631129
	1/2" G40	631036
	8mm ISO4565/DIN766	630996
	10mm ISO4565-3/8 HT	631022
	10mm DIN766 - 3/8" BBB	631132
Titan	12-13mm DIN766	631031
	3/8" G40	631124
	7/16" HT	630992
	1/2" G40	631036
	10mm ISO4565 - 3/8" HT	631022
	10mm DIN766 - 3/8" BBB	631132
	12-13mm DIN766	631031
	14mm	631059

## For Horizontal Windlasses

For windlass	Chain Size	Gypsy Code
Super Ercole	5/8" HT	630986
	12-13mm DIN 766	631039
	14mm	631065
	16mm ISO 4565	631082
	16mm DIN 766	631088
	16 STUDLINK	631092
	18mm DIN 766	631095
	18 STUDLINK	631098
	18mm ISO 4565	631101
Ercole Horizontal	19 STUDLINK	631104
	1/2" STUDLINK	631053
	12-13mm DIN 766	631039
	13 ITALMET	631056
	14mm	631065
	16mm ISO 4565	631082
	16mm DIN 766	631088
	16 STUDLINK	631092
	18 STUDLINK	631098
	18mm ISO 4565	631101

### Chain Identification

CHAIN d	Inside Length L (mm)	Outside Width w (mm)
6 ISO	18	20
7 ISO	21	24
8 ISO	24	27
10 ISO	30	34
12 ISO	36	40
14 ISO	42	47
6 DIN 766	18,5	20
7 1/4" DIN 766	22	23
8 - 5/16" DIN 766	24	26
10 - 3/8" DIN 766	28	34
13 - 1/2" DIN 766	36	44

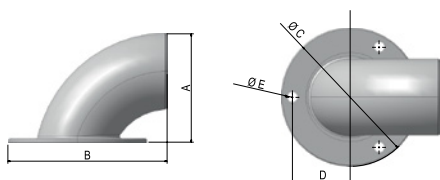
## Chain Pipes for SX Series - Vertical Windlasses

*Stainless Steel*

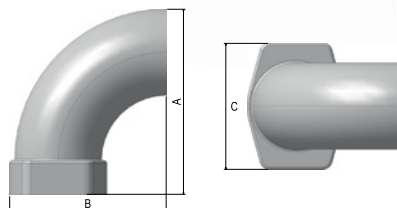


Code	636311	636312	636313	636314
for windlass	SX2 & SX3	SX3,5	SX4	SX5

### Dimensions in mm



Model	Code	A	B	C	D	E
For SX2 & SX3	636311	86	127	Ø110	46	Ø8,5
For SX3,5	636312	114	165	Ø140	55	Ø10,5
For SX4	636313	125	163	Ø140	55	Ø10,5



Model	Code	A	B	C
For SX5	636314	191	161,5	130

# SELECTING THE WINDLASS

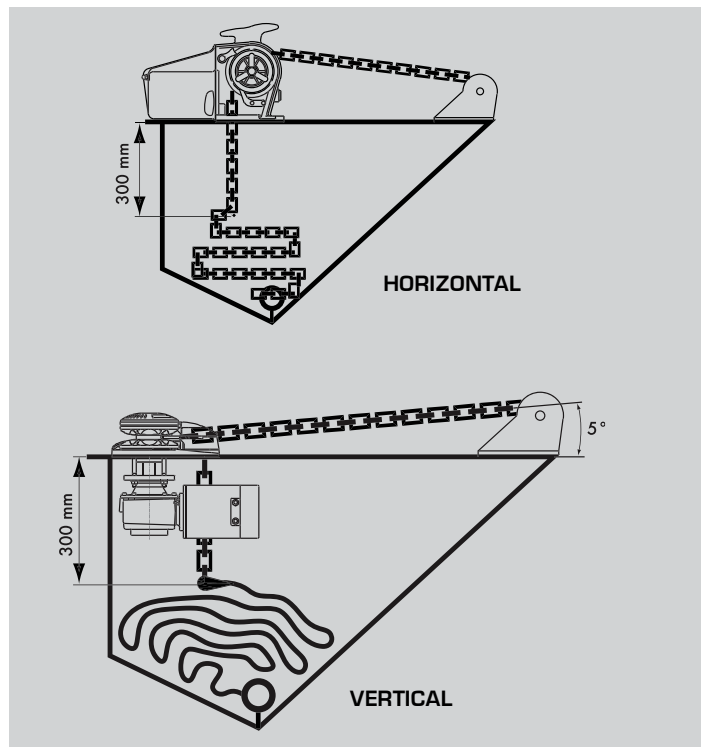
## VERTICAL OR HORIZONTAL?

The space available on and under the deck is the main criteria to be considered when selecting a vertical or a horizontal windlass.

**Vertical windlasses** have main shaft rotation vertical to the deck and allowing a reduced use of space on deck while the electric motor and the gearbox are below deck, in the chain locker.

**Horizontal windlasses** are installed on deck and they have a rotation horizontal to the deck. They are recommended on vessels where there is a limitation to the chain locker space. The electric motor and the gearbox are protected by a cover and they are easily accessible for maintenance.

To help stowing of the chain in the chain locker and for better performance of the windlass, the distance between the top of the heaped chain and the underdeck must be at least 300 mm.



## DC, AC OR HYDRAULIC?

The windlass can be supplied in three different ways of motorization: direct current, alternate current and hydraulic.

- D.C. motorization is the most popular for reliability. The maintenance is very limited and this kind of electric motor is used for vessels up to 90 feet of length.
- A.C. motorization is the choice for boats from 90 up to 120 feet of length which have generators on board. A.C. motors offer good torque; they need a simple installation and limited maintenance.
- Hydraulic motorization gives the advantage of supply a constant torque while the load changes. They are very popular on boats of over 120 feet length. They need a specific installation.

## MAX PULL AND WORKING LOAD

**Max pull** is the maximum pull that the windlass is able to supply for a few seconds.

**Working Load** is a load which simulates the operating conditions.. This load is the reference for ampere drawing and the speed data indicated in the catalogue.

## PROPER WINDLASS SELECTION

The steps to select a vertical or horizontal windlass are:

- Select the proper model checking the chart - windlass model length of the boat.
- Calculate the ground tackle which is made by anchor weight, total chain and rope weight on board.
- Ground tackle not to exceed the working load with a tolerance + 10%.

Eg sample on a boat of 42 feet

1. Calculation of the round tackle (anchor + rope + total chain)				
eg	Anchor	Chain 10 - 75mt - weight 2,2 kg/mt	Rope 25m/75ft	Ground tackle
	25g	165Kg	5Kg	190Kg

## CIRCUIT BREAKER

The circuit breaker protects the electric motor and the cables of the windlass from current overload. It is installed on the power line and it trips automatically when the current is over the rated use following a specific time/ current curve. It is essential install this device for safety reasons.

The circuit breaker once tripped can be engaged again.

Choosing the proper circuit breaker is very important. You have to select the delayed time/current curve as the anchor windlass ampere drawing changes following the variable load.

Lofrans' does not recognize warranty in case of improper proper circuit breaker being installed.

## SAFETY

The windlass is designed to lift the ground tackle but it is not designed to take the load of the whole boat. For this reason we strongly recommend the use of a chain stopper in order to spread the load and avoid to damage from overload on the structural components of the windlass.

## MANUAL OVERRIDE

Most of the Lofrans' windlasses are supplied with manual override which makes the windlass able to recover the chain in case of failure of the electric.

The manual override is inserted inside the gearbox and consists of a spring loaded ratchet which has the secondary function to make a sort of mechanical safety feature, in order to prevent chain jams in the chain locker from damaging the deck.

## CLUTCH

In the Lofrans' anchor windlasses, the main shaft and the gypsy are connected by a pair of conical discs called clutches. They are normally engaged by screwing the top or side, star shaped nut. To engage or disengage the clutch you have to insert the supplied handle in this nut.

By disengaging the clutch, the gypsy is free to rotate and the weight of the anchor releases the rode into the water.

## AUTOMATIC FREE FALL

On some horizontal anchor windlasses there is an installed optional device called AUTOMATIC FREE FALL. This device allows the user to disengage the clutch automatically simply by pushing the DOWN button of the remote.

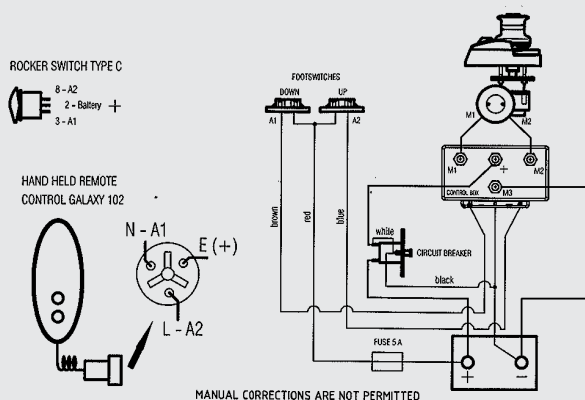
## ROPE AND CHAIN MANAGEMENT

Most of the Lofrans anchor windlasses are able to manage rope and chain by a special spring load tension arm called finger which pushes the rope deeply inside the gypsy teeth.

## Wiring diagrams depending on configuration and number of terminals

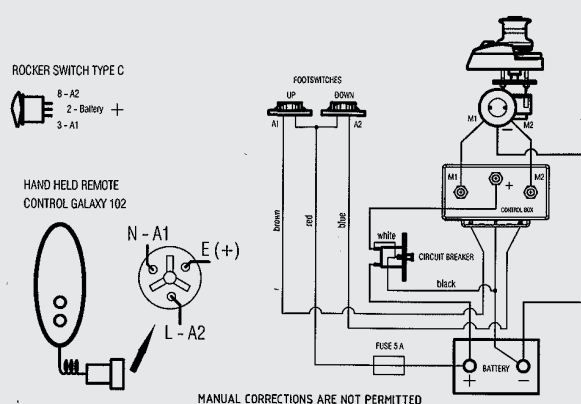
### WIRING DIAGRAM - 2 TERMINALS ELECTRIC MOTOR

Control Box Code: 600021 - 600022



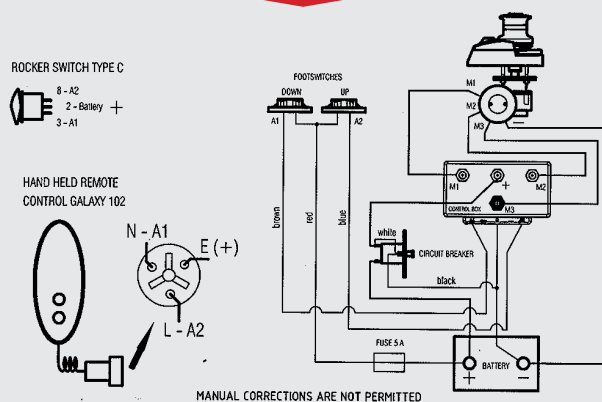
### WIRING DIAGRAM - 3 TERMINALS ELECTRIC MOTOR

Control Box Code: 600018 - 600019 - 600020

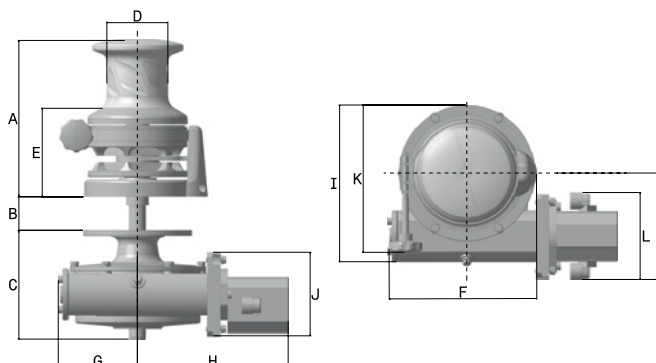


### WIRING DIAGRAM - 4 TERMINALS ELECTRIC MOTOR

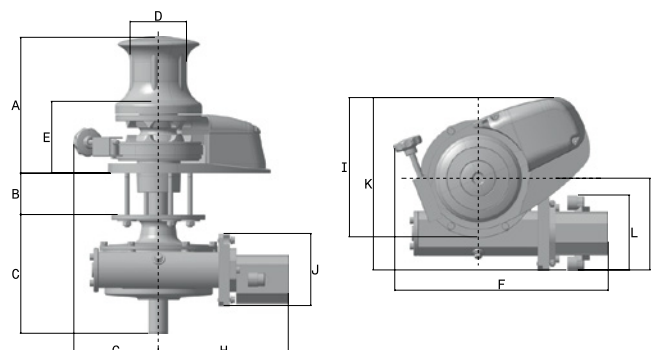
Control Box Code: 600021 - 600022



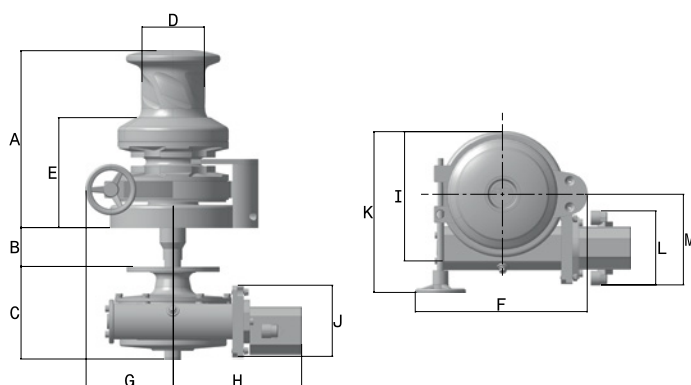
## Hydraulic Models - Dimensions in mm



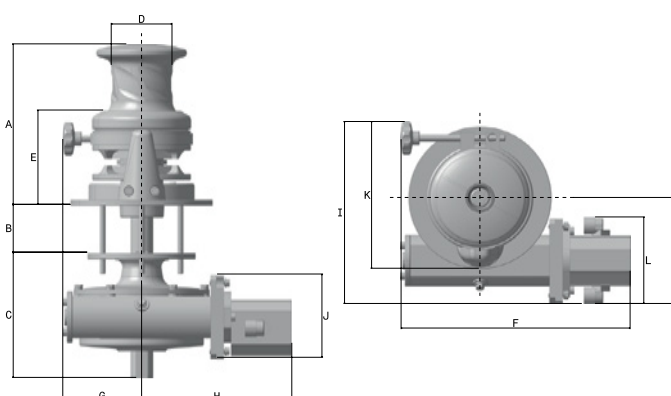
SX3,5	A	B	C	D	E	F	G	H	I	J	K	L	M
Hydraulic 8cc	281	60	195	Ø109	159	265	142	271	281	150	264	156	191



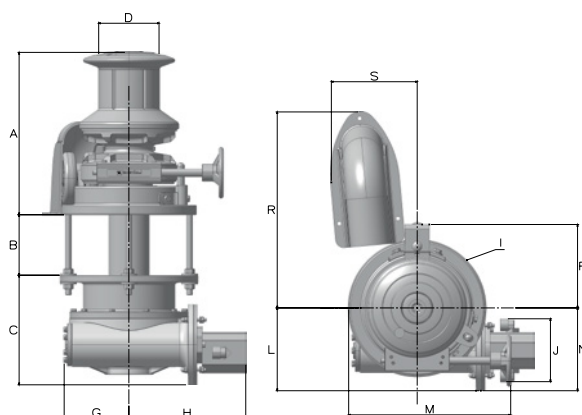
X4	A	B	C	D	E	F	G	H	I	J	K	L	M
Hydraulic 8cc	283	86	247	Ø117	150	444	176	541	290	150	359	156	191



SX5	A	B	C	D	E	F	G	H	I	J	K	L	M
Hydraulic 8cc	373	82	195	Ø131	232	362	184	271	272	150	339	156	191



SX4	A	B	C	D	E	F	G	H	I	J	K	L	M
Hydraulic 8cc	289	86	226	Ø109	170	412	142	541	328	150	264	156	191



Ercole Verticale	A	B	C	D	G	H	I	J	L	M	N	P	R	S
Hydraulic 11cc	400	150	272	150	160	290	340	156	205	405	205	205	min 490 - max 600	min 200 - max 230



# INTEGRATED HYDRAULIC SYSTEMS

**MAX**  
POWER

As of 2013, a strong partnership has been built among Lofrans' and Max Power thrusters creating a synergy in yacht control and maneuvering solutions.

As a natural evolution from simple stand-alone independent units, Max Power is able to offer fully integrated hydraulic systems for sailing yachts. Whether running winches, windlasses, bow thrusters, stern thrusters, hydraulic davits or complex keel lifting mechanisms, our complete hydraulic solutions are used by many of the world's large sailing yacht manufacturers. Unique in their flexibility, Our systems are built using a common central line principle.

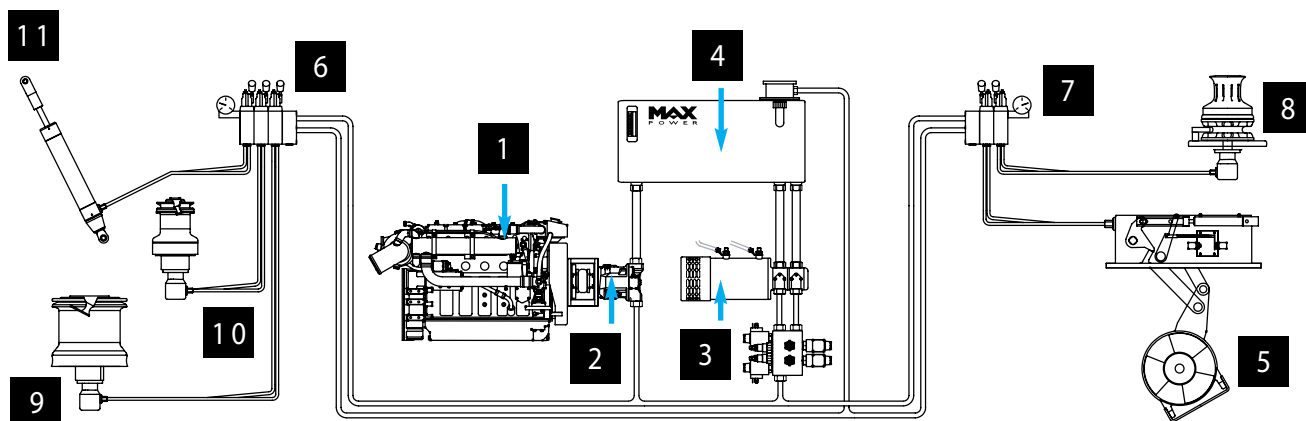


This means any function can be run from any power source thereby allowing a high level of user control. The use of load sensing pumps and valves ensures efficient and silent operation over a wide range of hydraulic flows and pressures. Our experience in designing and supplying complete solutions ensures that a Max Power-Lofrans' integrated system will be efficient, flexible and reliable.

Sailing yacht power systems typically include one or several generator mounted hydraulic pumps and in addition will require a DC power pack for silent sailing and light maneuvering. The PowerValve™ power pack range used in our systems, offers exceptional flexibility and power efficiency over a wide range of hydraulic flows.

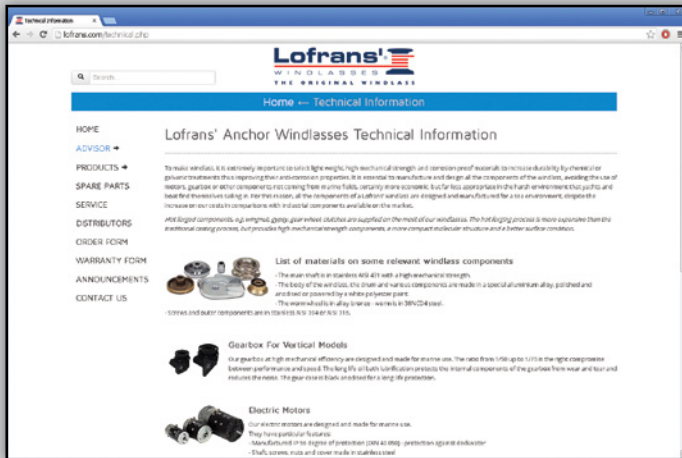
Available as single or twin motor units, each motor pump can deliver 3 flow ratings at two predetermined system pressures, thereby accommodating a wide variety of hydraulic functions.

From high pressure, low flow keel, to a powerful high flow windlass, each function only draws the amperage needed for that specific application.



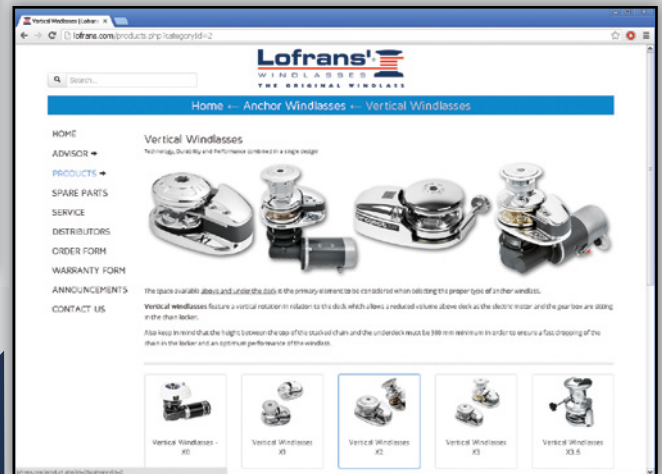
- |                                      |                  |
|--------------------------------------|------------------|
| 1 Generator with PTO                 | 7 Control Valve  |
| 2 Variable displacement pump         | 8 Windlass       |
| 3 DC power pack                      | 9 Winch          |
| 4 Oil tank with filtration and gages | 10 Winch         |
| 5 Thruster                           | 11 Hydraulic ram |
| 6 Control Valve                      |                  |

# www.lofrans.com



## ADVISOR

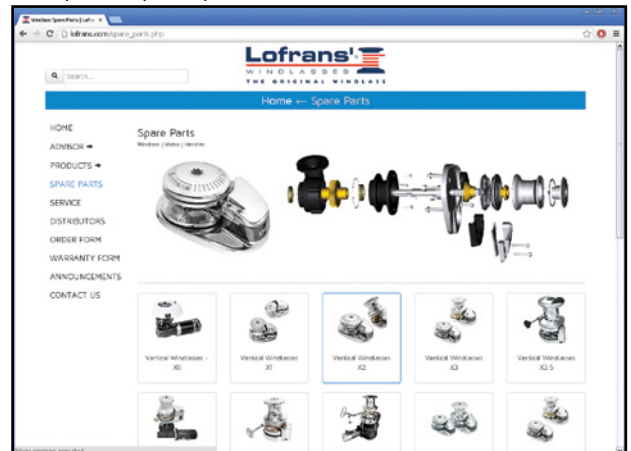
Up-to-date technical information



## PRODUCTS

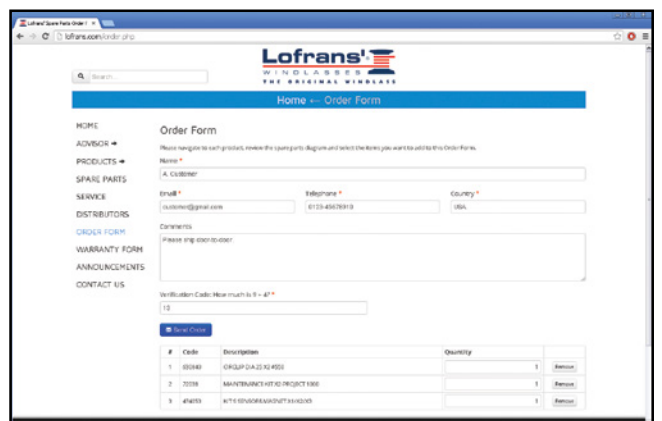
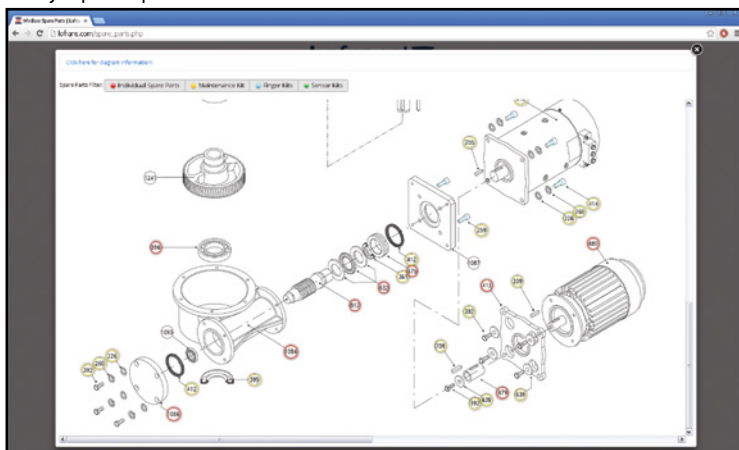
Comprehensive product selection

Complete spare parts information



## SPARE PART ORDERING IN 2 STEPS

Easy spare part selection



To order spare parts, all is needed is an internet connection





# Lofrans!®

WINDLASSES

THE ORIGINAL WINDLASS

**We have been making  
boating safer & easier  
since 1966**



**We have  
revived & reinvented  
customer satisfaction**

