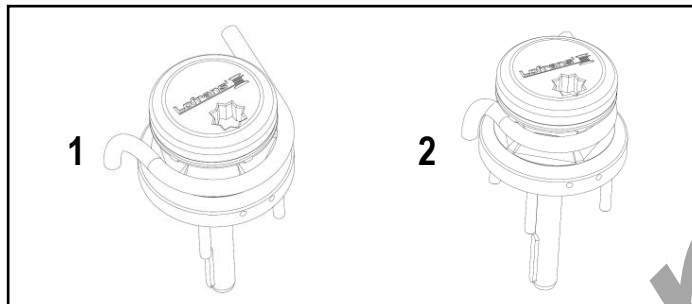


⚠ ATTENTION! Always disconnect electrical power to the anchor windlass before carrying out any operation.

3.9 Chain insertion

In order to guarantee performances and reliability, it is recommended to use a calibrated chain of the measure corresponding to the gipsy supplied.



1. Insert the chain into the hole and fix to a safe point.
2. Wrap the chain in the gipsy.
3. Recover all the chain by using the motor, taking care that the chain enters into the gipsy well aligned.

⊘ Insert always an articulated joint between the chain and the anchor so that the chain itself does not turn into as spiral.

4 ELECTRICAL SYSTEM

Model	Motor Power (W)	Voltage (V)	Contactor (A)	Cable sizing according length of cable (positive + negative)			
				0-15 m	0-50 ft	15-25 m	50-75 ft
SX1	500	12		16 mm ²	6 AWG	25 mm ²	4 AWG
	500	24		10 mm ²	8 AWG	10 mm ²	8 AWG
	800	12		16 mm ²	6 AWG	25 mm ²	4 AWG
	800	24		10 mm ²	8 AWG	10 mm ²	8 AWG

4.1 Electrical cable section

In order to obtain the maximum performances from the anchor windlass and safeguard the electrical system, it is essential that the anchor windlass be wired with cables of sufficient section as suggested in the table.

4.2 Solenoid valves (Control Box)

Place it in a dry place near the capstan.

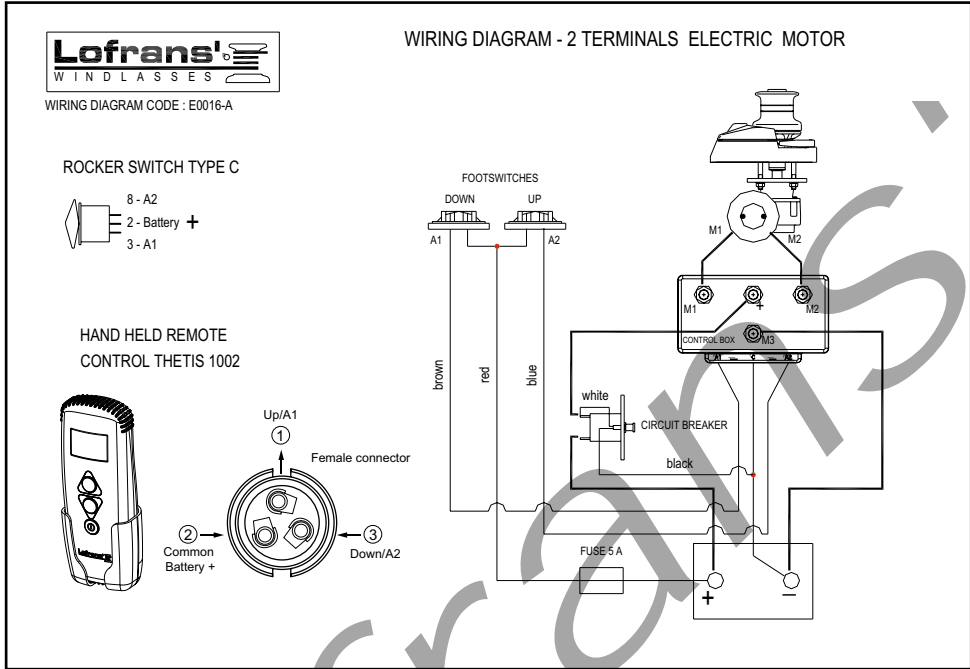
4.3 Circuit breakers

The circuit breakers recommended by Lofrans have an intervention curve and not a simple plate value. The switches selected for each model guarantee the correct operation of the system.

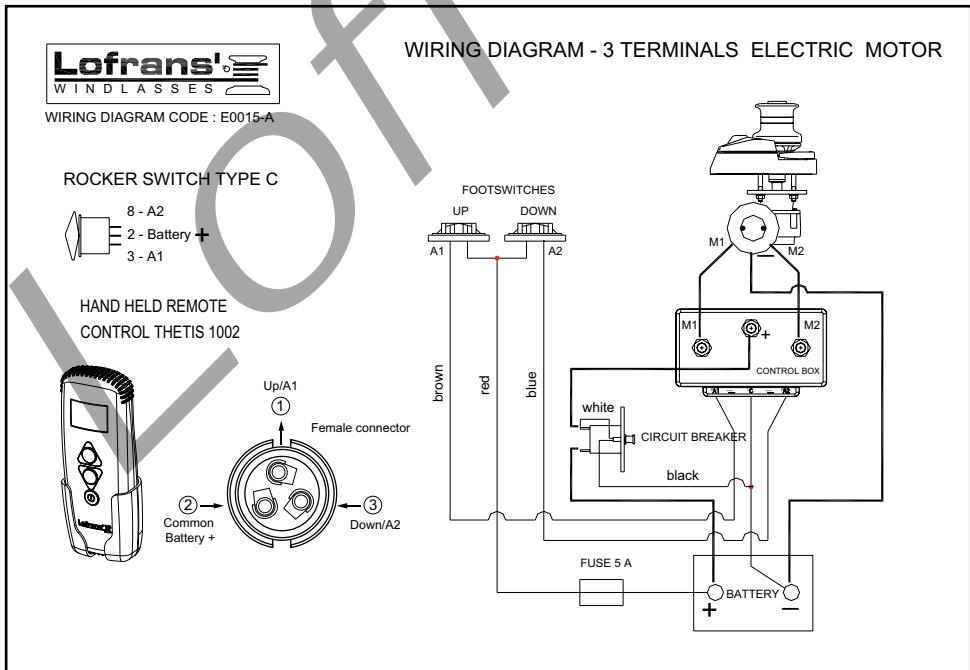
4.4 Remote control electric panel board

The remote control electric panel board must be mounted in a comfortable position (such as the deck, the rudder or the cockpit), so that the operator can see the capstan during the manoeuvre. Mount and seal the electric panel board so that the terminals remain in a dry place.

4.5 Wiring Diagram



UK

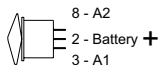


WIRING DIAGRAM - 4 TERMINALS ELECTRIC MOTOR

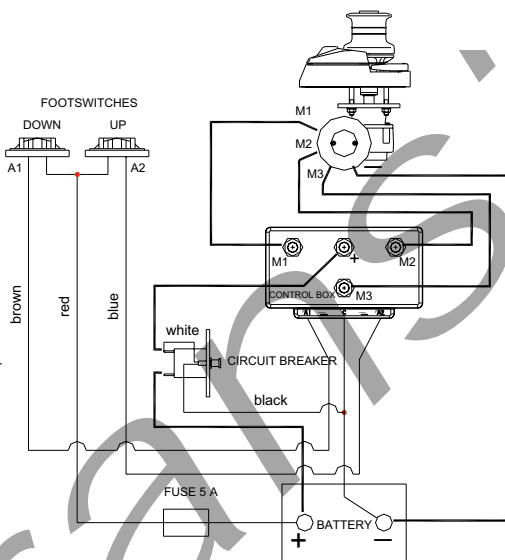
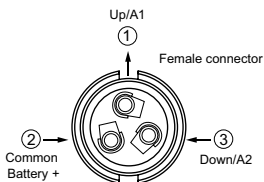
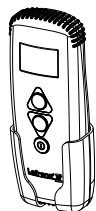


WIRING DIAGRAM CODE : E0017-A

ROCKER SWITCH TYPE C



HAND HELD REMOTE CONTROL THETIS 1002




5 USE OF THE ANCHOR WINDLASS

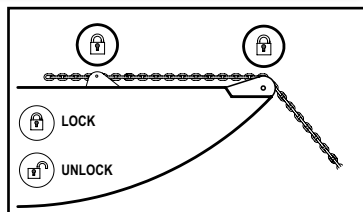
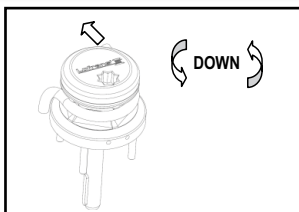
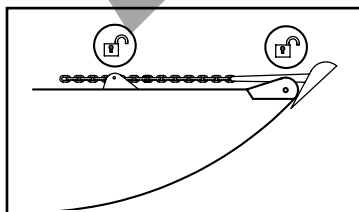
5.1 Lowering the anchor


Lowering of the anchor can be carried out through the electric control or by gravity:

5.1.1 Lowering the anchor electrically

1. Make sure that the clutch is tightened. Disengage all chain fixing devices.
2. Activate the safety switch
3. Press the DOWN button from the control at your disposal. In this way, the lowering of the chain will be perfectly controllable and the unwinding of the chain regular.
4. Once the chain is lowered, deactivate the safety switch.
5. Engage the chain fixing devices.

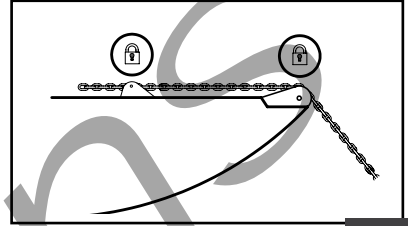
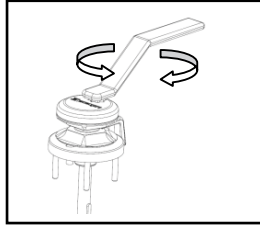
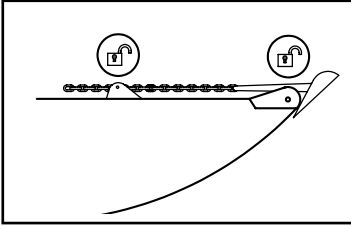
 During the use of the anchor windlass, do not change directly from one direction to the other but wait until the anchor windlass stops before manipulating the control into the opposite direction




 Make sure the anchor windlass is not powered before carrying out manual interventions.

5.1.2 Lowering the anchor by gravity

1. Make sure that the clutch is tightened and then disengage the chain stopper or safety stops.
2. Disengage the clutch gradually through the manoeuvre handle. Note: to adjust the descent speed of the chain act, through the handle, on the clutch. By turning it clockwise, the braking speed of the chain will increase (until complete stop), while by turning it anticlockwise, braking will be reduced.
3. Fix the chain to a strong point.

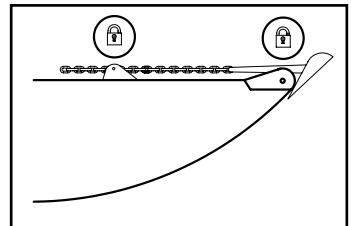
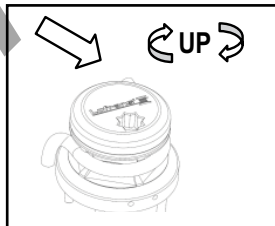
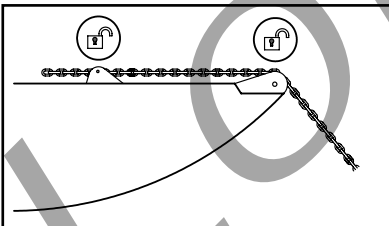



 By disengaging completely the clutch, the anchor will be lowered at high speed. Consequently, the fast passage of the chain into the hood and bow roller could damage them. It is recommended always to check the speed.

UK


5.2 Weighing the anchor

1. Make sure that the hydraulic magnetic circuit breaker is activated.
2. Make sure that the clutch is well tightened. Take out the manoeuvre handle from the drum or gipsy.
3. Disengage the chain stopper and safety stops.
4. Press the UP button from the control at your disposal until the anchor reaches its position inside the bow roller.
5. Deactivate the hydraulic magnetic circuit breaker.
6. Fix the chain with the chain stopper. In this way a potential damage of the anchor windlass will be avoided as well as unexpected chain releases.



 Do not carry out the anchor recovery operation by relying only on the onboard batteries. Start the motor of the boat (or the generator) to obtain the necessary electromotive force.

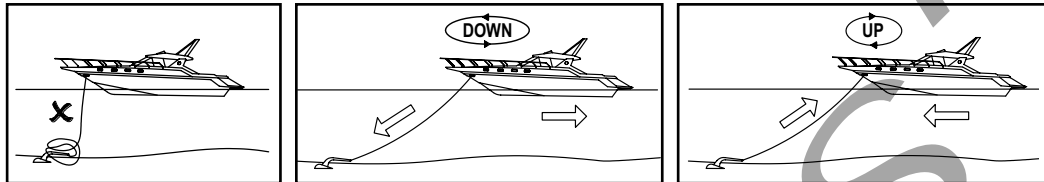
To safeguard the anchor windlass, the hydraulic magnetic circuit breaker is sized so that it comes into action when the anchor windlass is subjected to higher loads than those for which it has been designed. Should it get released owing to an overload reactivate it again and wait some minutes before operating it; waiting for the operation after an overload is necessary to allow the circuits to cool and recover their functionalities.


 The hydraulic magnetic circuit breaker does not protect against an excessive increase in the motor temperature due to a prolonged operation of the anchor windlass. Therefore, give the motor the necessary time to cool, to avoid possible damages to the motor thereof.


5.3 Notes for use

During mooring, the load on the chain can be very high due to current, wind and waves.

1. By paying out the chain, it is necessary to manoeuvre so that the chain is laid down on the seabed without heaping on itself.
2. To ease the recovery and not overloading the capstan, steer up in a way that the boat slowly moves on the vertical of the anchor.
3. When the anchor is in the vicinity of the bow roller, slow down the recovery to check at best the insertion of the anchor into the seat.




 Mooring, do not use the anchor windlass as strong point but always use a chain stopper.

 If during recovery, the anchor windlass should block, slip or turn into self-protection mode, check the cause before proceeding.

6 MAINTENANCE

	USE OF THE YACHT (MONTHS)			
	LESS THAN 2	FROM 2 UP TO 6	MORE THAN 6	CHARTER
EVERY 3 MONTHS	A - A		A - B	A - B
EVERY 6 MONTHS		A - B		
EVERY 12 MONTHS	A - B - C	C	C	C - D
EVERY 24 MONTHS		D	D	E
EVERY 36 MONTHS	D - E	E	E	

 Follow strictly the maintenance programme. Not meeting the maintenance programme will cause forfeiture of the warranty.

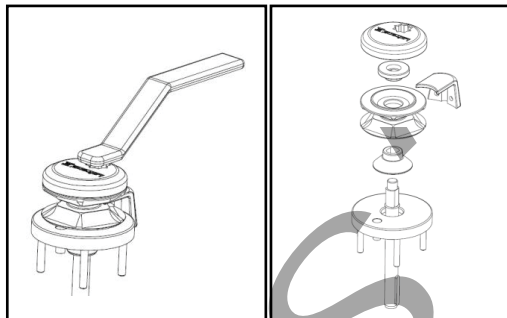
 Disconnect power to the anchor windlass before any maintenance.

6.1 Maintenance programme

- A.** Clean all external surfaces and hidden points with fresh water and soft cloth or non abrasive sponge to remove all salt layers. Do not use chlorine, bleach or acid solutions to clean the windlass as this will damage the INOX parts and the seals. Apply metal polish compound and coat all INOX parts to remove oxidation and renew the bright finish of the material.
- B.** Grease the rotating parts with yellow marine grease that is non conductive. Particularly, the main shaft threads and clutch cones. Check for evidences of corrosion and mechanical stresses. Apply anti seize grease to the cone clutch and main shaft thread (631829+630680)
- C.** Check the terminals of the electric motor. Test the voltage drop at the terminals.
- D.** Replace all gaskets.
- E.** Remove the anchor windlass from the deck to clean the salt under the base and seal again.

6.2 Gipsy maintenance/replacement

1. By turning anticlockwise, remove the hand-wheel of the gipsy through the manoeuvre handle.
2. Remove the 2 M6 screws from the side of the base that connect the stripper and remove it.
3. Slip off from the shaft the upper clutch cone, the gipsy, and the lower clutch cone.
4. Wash with running water. DO NOT USE WATER UNDER PRESSURE.
5. Check that there is no evidence of corrosion or mechanical stresses.
6. Reassemble by proceeding in the reverse order, remembering to lubricate threads and all moving parts with grease.



7 TROUBLESHOOTING

Problem	Possible causes	Solution
1. The anchor windlass does not work when a control is operated	1.1 Protection switch in OFF position 1.2 Lack of voltage in the system 1.3 Failure of the control box 1.4 Failure of the control 1.5 Failure of the electric motor	1.1 Check the protection switch and set it in the ON position 1.2 Check the charge status of the battery, check connections 1.3 Check and possibly replace the control box 1.4 Check and possibly replace the control 1.5 Measure the electric motor voltage; if it is OK, check the brushes and clean them. If it does not work, replace the electric motor
2. The chain jams frequently	2.1 The chain locker is not deep enough with respect to the quantity of chain chosen 2.2 The chain is not suitable for the gipsy 2.3 The chain is not calibrated	2.1 Position the anchor windlass in the deepest point of the chain locker or reduce the quantity of chain 2.2 Change the gipsy 2.3 Check the chain: if it does not meet the tolerances, it must be replaced
3. The winch runs slowly and at times jumps the circuit breaker.	3.1 Section of cables not suitable. 3.2 Poor electrical connections. 3.3 Dirty brushes. 3.4 Water leaks in the electrical engine. 3.5 There is no parallelism between upper deck and below deck. 3.6 The gearbox has lost oil. 3.7 The engine strains in one or both directions. 3.8 The winch works only in one direction.	3.1 Increase the cable section 3.2 Check out the connections 3.3 Clean the brushes 3.4 Replace the electrical engine 3.5 Work surfaces and/or add shims to restore parallelism. 3.6 (SERVICE) Uninstall the gearbox and check out its condition. Replace damaged parts after discovering the causes of the leak. Also, replace gaskets and screws. Check out also the engine condition, which may have been damaged during the malfunction. 3.7 (SERVICE) Check out appropriately all connections of the power cables. If they are alright, uninstall the engine (in some cases it is convenient to disassemble also the gearbox). Check out and possibly replace the brushes. 3.8 Check out on the control box that between B2-C and B3-C contacts there are 12/24V when the respective buttons are pressed. If this should happen and one of the relays does not work, replace the control box.

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Problem	Possible causes	Solution
<p>4. The electric engine runs but the shaft does not rotate either Up or Down</p>	<p>4.1 Heavy wear or breakage of teeth of the crown / worm screw. 4.2 Breakage of the engine spindle.</p>	<p>4.1 (SERVICE) Uninstall the winch and replace the broken parts. Check out carefully that pieces or splinters of broken parts did not enter into the oil circuit and have ruined other mechanical parts. (*) 4.2 (SERVICE) Replacing of the engine. Care must be taken that the broken part did not remain in the hole of the worm screw. (*) (*) Take advantage of this opportunity to replace any other worn parts, especially gaskets, screws, tabs, seeger, and oil.</p>
<p>5. The electric engine runs, the shaft rotates Up, but does not rotate Down</p>	<p>5.1 The chain locker is tangled; 5.2 The chain is of poor quality with burrs and zinc deposits that do not allow the free flow of the links; 5.3 The chain was placed in the locker in block and the links are stuck with each other;</p>	<p>5.1 Check out that immediately after the anchor there is a joint that allows the chain to unfold properly when weighed. 5.2 Remove the chain from the locker and inspect it link by link. Intervene with the appropriate tools to make it as loose as possible and free of obstructions. 5.3 Lower manually all the chain in a sea bed deep enough to enable it to unfold properly. Retrieve it with the winch.</p>
<p>6. The winch cannot be weighed: the electric engine runs, the shaft runs, but the gypsy is still</p>	<p>6.1 The gypsy is not closed on the clutch cones and slips under the load effect, or for some reason the closing wheel is at end stroke. Check out all pieces in sequence. 6.2 The clutch cones or the gypsy cones are deformed and the clutch hubs are in contact and prevent closure.</p>	<p>6.1 Check out clutch tightening. If necessary, measure the parts and check out possible deformations. It is possible to add some thickness to stem the problem. Then replace the damaged parts. 6.2 Replace the clutch and/or the gypsy</p>
<p>7. The shaft does not run well, is not aligned, and so is the gypsy and/or the bell.</p>	<p>7.1 The shaft bent because the winch was subjected to an excessive load.</p>	<p>7.1 Check out that the procedures of use fall within the specifications of the winch. (SERVICE) Uninstall the winch and replace the shaft. Take this opportunity to replace worn parts, gaskets, seeger, tabs and oil.</p>
<p>8. Loss of oil between the engine and the gearbox body</p>	<p>8.1 The coupling of the engine is loose and causes the worm screw into an irregular rotation, leading to loss of oil from the gasket.</p>	<p>8.1 (SERVICE) Find the reasons why the screws or nuts have become loose. Uninstall the engine and check out the status of the spindle and the hole of the worm screw. If an oval form of the cylindrical part of the screw is observed (outer hole and diameter) uninstall the winch and repair the damaged parts on the bench. Check out if the oil has entered into the electrical engine. Take this opportunity to replace all gaskets, tabs, seeger, screws, oil, and any worn parts.</p>
<p>9. On installation, it is found that the shaft and the studs are short for a correct coupling with the gearbox.</p>	<p>9.1 The request referred to the deck thickness was wrong.</p>	<p>9.1 If the key shaft works in the gearbox along all its length, the fixing studs can be adapted. Otherwise, a longer shaft must be requested.</p>

8 TECHNICAL DATA

Motor Power	500W	800W
Vessel Length Heavy Duty (ft)	20 - 30	25-35
Vessel Length Light Duty (ft)	30 - 35	35-40
Power Supply	12V	12V
Maximum linear Load/Pull (Kg /lb)	630 / 1386	700 / 1540
Max Lift Working Load (Kg /lb)	95 / 209	100 / 220
Amps Work Load (A)	75	80
Max Line Speed (mt./min. / ft/min.)	26 / 78	28 / 84
Line Speed (mt./min. / ft/min.)	23 / 69	25 / 75
Net weight with Drum (Kg /lb)	- / -	- / -
Net weight Low Profile (Kg /lb)	11 / 24	13 / 28

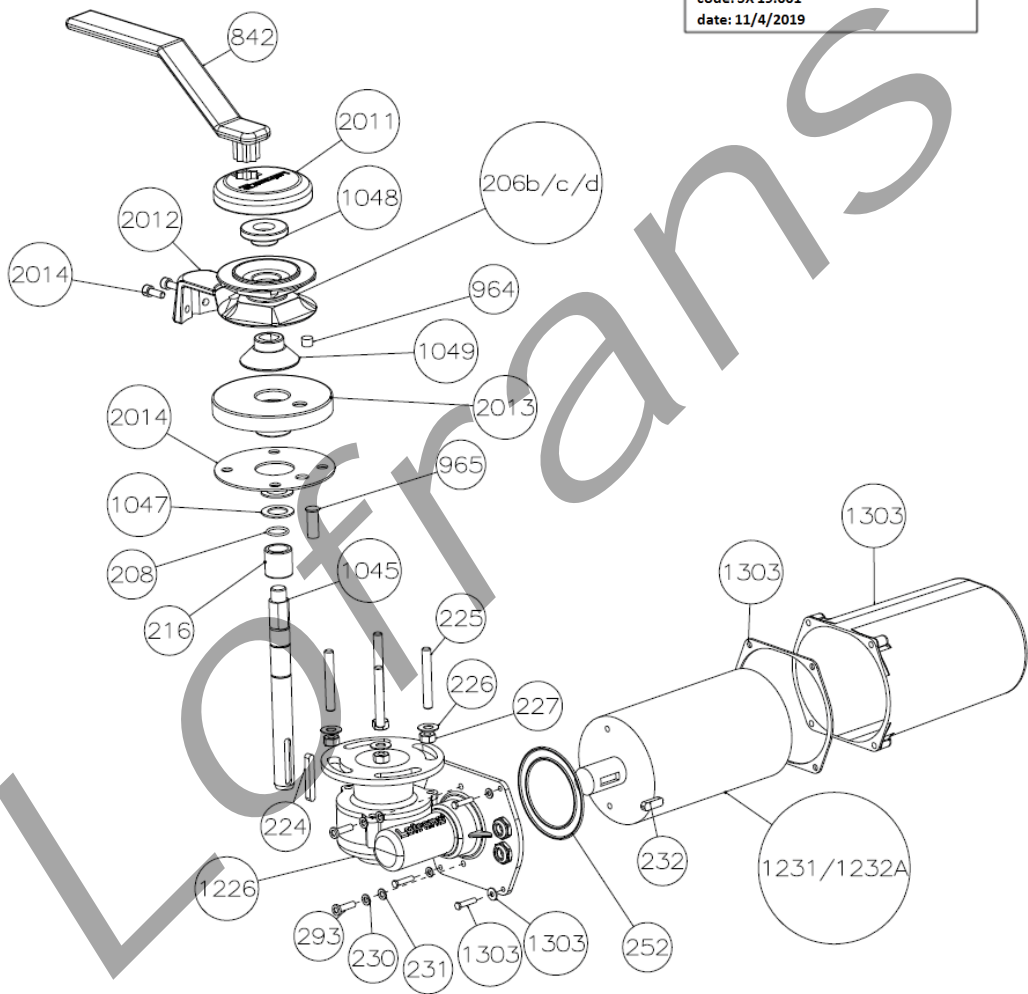
Gipsy	6mm			7mm				8mm			
	6mm	6mm	3/16"	7mm	7mm	1/4"	1/4"	8mm	8mm	5/16"	5/16"
Chain supported	ISO	DIN 766	BBB	ISO	DIN 766	G4	BBB	ISO	DIN 766	G4	BBB

UK

9 SPARE PARTS

Lofrans!
WINDLASSES

SX1
code: SX 19.001
date: 11/4/2019

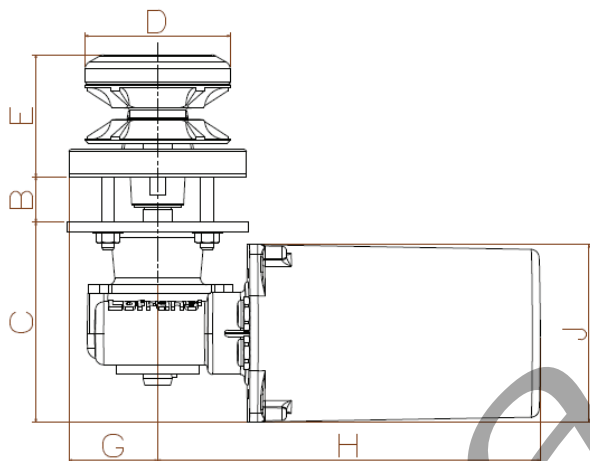


SX1

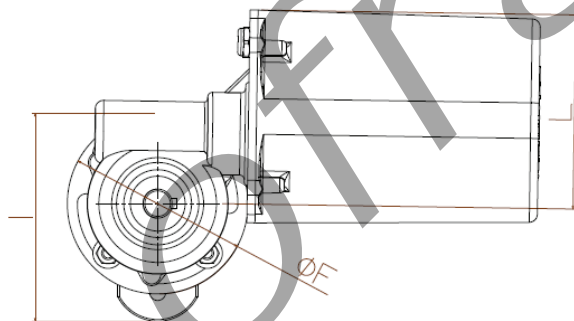
Item	Description	Maintenance Kit	Q.ty
208	Ring		1
216	Bush		1
224	Key - 6x6x45	√	1
226	Washer for M8 screw	√	4
227	Nut - M8	√	4
230	Spring washer for M5 screw	√	2
231	Washer for M5 screw	√	2
232	Key - 4x4x15	√	1
252	O Ring 2325		1
293	Hd cap screw M5X16	√	3
964	Magnet	√	1
965	Sensor	√	1
1047	Ring		2
1048	Clutch cone - outer		1
1049	Clutch cone - inner		1
1225	PG9		2
1226	Gearbox		1
1228	O Ring 2250		1
1231	Electric Motor 500W 12V		1
1303	Complete motor cover kit	Kit Cover	1
1045a	Main shaft without drum		1
1232a	Electric Motor 800W 12V		1
206b	Gipsy chain 6 - 5 pockets		1
206c	Gipsy chain 7 - 5 pockets		1
206d	Gipsy chain 8 - 5 pockets		4
225a	Stud M8x58		1
842a	Handle		1
2011	Gipsy cap SX1		1
2012	Stripper SX1		1
2013	Base SX1		1
2014	Allen M6X16		2

UK

10 OVERALL DIMENSIONS

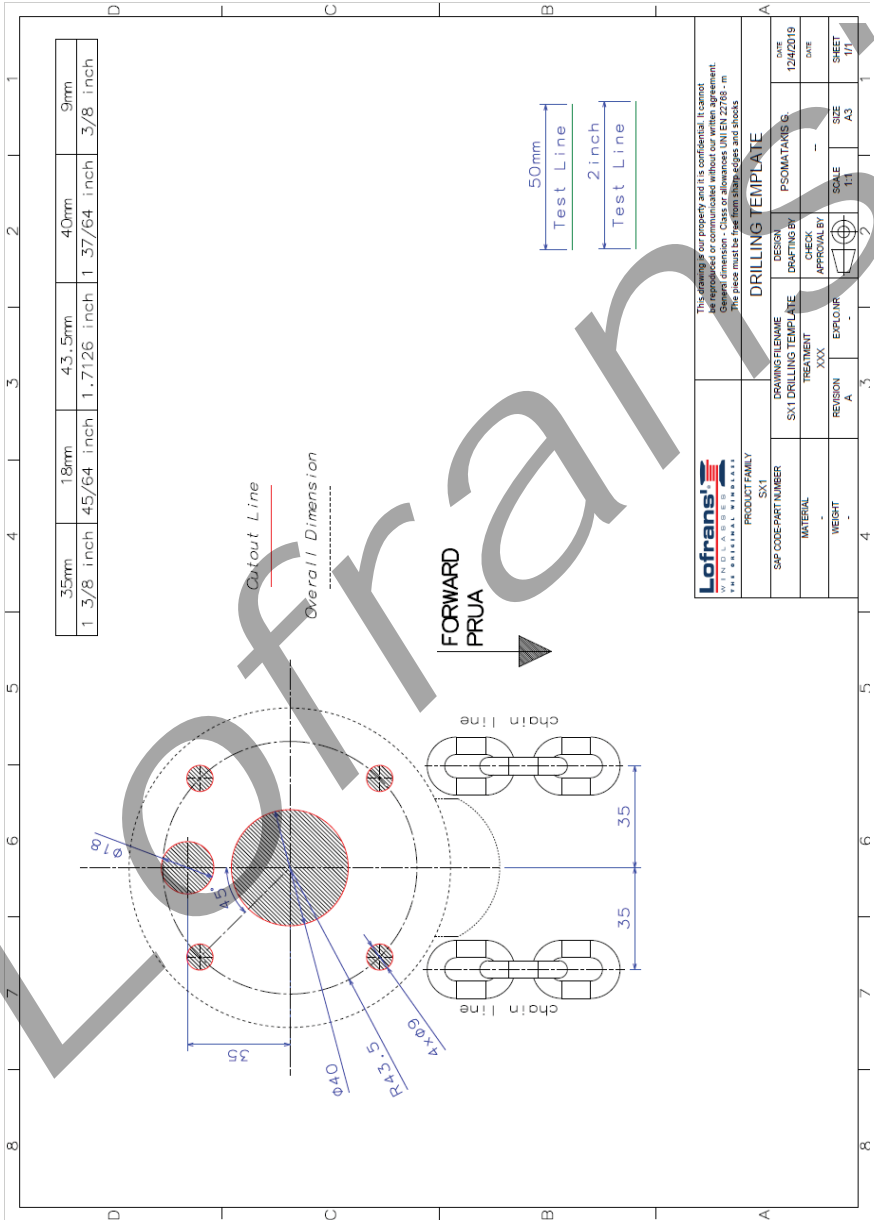


	mm	inches
B	Min 18 Max 30	Min 3/4" Max 1 1/4"
C	124	4,9
D	90	3,5
E	74	2,9
F	110	4,3
G	55	2,2
H	237	9,3
I	128	5,0
J	110	4,3
L	120	4,7



Lofrans! WINDLASSES		Data	Diseg. G.P	Approv.	Scala 1:1	Peso Kg. -
Modello SX1			Nr. disegno		Revisione -	Formato A4
<p>A termine di legge ci riserviamo la proprietà di questo disegno con divieto di riproduzione o di renderlo noto a terzi senza la nostra autorizzazione scritta. This drawing is our property and it is confidential. It must not be copied or shown to third parties unless our written authorization. All rights reserved.</p>						

11 DRILLING TEMPLATE



UK

12 WARRANTY CONDITIONS

Lofrans guarantees that in a normal use and by meeting the maintenance programmes, the anchor windlass is covered by a warranty for a period of **3 years** from the date of purchase by the ultimate user, subject to the conditions, limitations, and exceptions listed hereunder. Any product that proves to be defective in a normal use during this period will be repaired or replaced at the choice of Lofrans.

12.1 Conditions and limits

- Lofrans liability will be limited to the repair or replacement of all parts of the product that show material or processing defects.
- Lofrans s.r.l is not liable for the wrong choice of the anchor windlass by the purchaser.
- Lofrans s.r.l will not be liable in any whatsoever manner for failures, or any consequent damage deriving from:
 - use of the anchor windlass in an application for which it was not designed or envisaged;
 - corrosion, degradation by UV rays and wear;
 - non-observance of the maintenance plan;
 - wrong or unsuitable installation of the product;
 - any modification or alteration of the product;
 - conditions of use beyond the specifications and the performances of the product:
- Except for different directives given directly by Lofrans, any product subject to a warranty request must be returned to Lofrans, which will analyse the problem.
- The warranty does not cover the accessory costs met for interventions, removal, transport, and installation of the product;
- Maintenance carried out by persons not authorised by Lofrans will invalidate this warranty;
- The Lofrans products are intended to be used only in a marine environment. Lofrans is not liable should these products be used differently.

12.2 Exceptions

The cover under warranty of the following components is limited to a period of one year from the date of purchase by the ultimate user:

- Electric motors and related electric equipment - Electronic controls
- Hydraulic pumps, valves, and actuators
- Gaskets and seals
- Products used on charter boats.

12.3 Liability

The liability of Lofrans on this warranty is intended dependant on meeting the regulations and laws in force.

Lofrans s.r.l is not liable for any other kind, such as:

- Any loss of turnover, advances, or direct or indirect profits, or any other financial loss;
- Damages, costs or expenses payable to third parties;
- Damages to yachts or equipment;
- Death or personal injuries (unless caused by negligence of Lofrans s.r.l).

Certain States and Countries do not allow the exclusion or limitation of incidental or consequential damages, therefore the aforementioned limitations or exclusions might not be applicable.

12.4 Procedure

Every request for intervention under warranty will be made promptly and in writing by the ultimate user to the local Lofrans assistance centre.

12.5 Clause of termination

If any whatsoever clause of this warranty will be invalidated by a Judge or other competent authority, the validity of the remaining clauses of this warranty and the rest of the clause in question will not be affected.

12.6 Compliance

This warranty is governed by the laws and in compliance with the Italian Laws or the State or Country in which the ultimate user is domiciled at the time of purchase of the product.

Lotrans.

Lofrans![®] 
WINDLASSES
THE ORIGINAL WINDLASS