

Verricelli Verticali

Vertical Windlasses

MANUALE DI INSTALLAZIONE E D'USO - INSTALLATION AND USER'S MANUAL
MANUEL D'INSTALLATION ED D'UTILISATION - MANUAL DE INSTALACIÓN Y USO
INSTALLATION UND BEDIENUNG

CONSERVARE QUESTO MANUALE A BORDO
STORE THIS MANUAL ON BOARD
DIESES HANDBUCH AN BORD AUFBEWAHREN
GUARDAR ESTE MANUAL A BORDO

SX7



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Lofrans[®]
WINDLASSES
THE ORIGINAL WINDLASS



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Dear Customer,

Thank you for choosing a Lofrans' product. Lofrans' is a leader company in the production and worldwide distribution of nautical systems manufactured according to the most modern technologies, in compliance with international regulation requirements and the most important certifying bodies. All our products are manufactured with excellent materials suited for operations in marine environments and are subject to continuous checks to improve the qualitative levels and make them without any manufacturing defects. Together with such requirements, Lofrans' anchor windlasses are a synthesis of reliability and efficiency, by guaranteeing the maximum performances during each phase of mooring, even in the most difficult. With a Lofrans' product, years of reliable operations are guaranteed.

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1 INTRODUCTION

1.1 Purpose of the manual

This manual will supply information on safety and correct use of the product. Follow these warnings carefully to avoid possible accidents or damages.

DANGER!

A warning such as this indicates the existence of a serious risk that has high probabilities to cause death or a serious accident if appropriate precautions are not taken.

ATTENTION:

A warning such as this indicates a reference to the application of safety practices, or draws the attention on unsafe behaviours that might cause personal injuries or damages to the boat.

1.2 Assistance

The Lofrans' products are backed throughout the world by a network of authorised distributors and assistance. In case of need, please contact your local Lofrans' distributor. Details on website www.Lofrans.com

1.3 Receipt and Storage

Upon receipt of the package, verify the integrity of packing. Should it be necessary to store the product for a prolonged period, keep it in a dry and protected place.

2 SAFETY INFORMATION

Safety standards and certifying bodies require peremptorily that, during the standing of the anchor, the load must be held by a chain stopper or a high resistance fixing point.

The user is responsible for guaranteeing that during navigation the anchor is properly stowed and fixed. This precaution is more important when the navigation speed is higher and sea conditions are worse. Indeed, an anchor paid out by mistake during navigation can have very serious effects. Considering its position and not always frequent use, the anchor windlass is particularly exposed to oxidation and corrosion risk; therefore, it is necessary to arrange a constant inspection of its parts and a due maintenance.

Make sure to have read and understood every part of this manual before proceeding with installation and use. Only persons who know how to operate should be authorised to use the anchor windlass. Should there be doubts on its installation or use, refer always to a skilled consultant.

- Anchor windlasses used in an inappropriate way can cause damages to persons and/or things.
- Pay the utmost attention during the use of powerful equipment.
- Even the most careful use can be a source of damages, even serious.
- Lofrans' products are supplied exclusively for recreational nautical use. Lofrans' declines all responsibility for improper uses.
- Pay the utmost attention so that arms, legs, fingers, hair, and clothes do not get entangled in the chain or gipsy.
- Before operating the capstans, make sure that there are no persons in water in the vicinity.
- When the capstan is not used, the anchor must always be fixed to a solid point in order to avoid damages.
- The anchor windlass must never be used as mooring point. The load from chain and anchor must always be held by a chain stopper or solid point.
- The drum must not be used for functions other than paying out or weighing the anchor.
- The chain must never be used on the warping drum.
- The system must always be protected by a suitable circuit breaker.
- Disconnect always the circuit through the circuit breaker when the anchor windlass is not in use.

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3 INSTALLATION

3.1 Contents of the package

In addition to the present manual, the package contains:

- ✓ Anchor windlass complete with motor reducer
- ✓ Control box/direction solenoids (only for SX7 units equipped with DC motor)
- ✓ Package includes QR code to download the manual
- ✓ Handle
- ✓ Chain pipe

3.2 Equipment necessary for installation

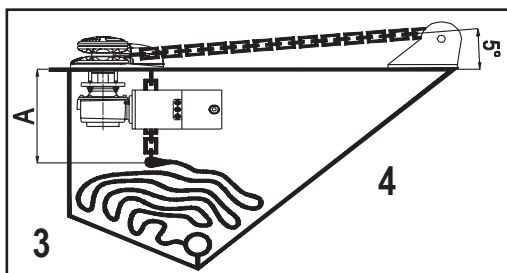
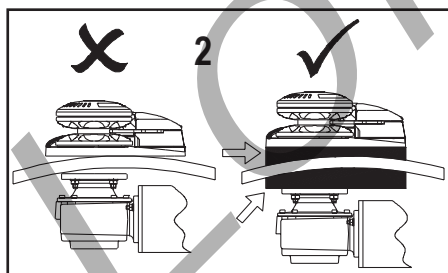
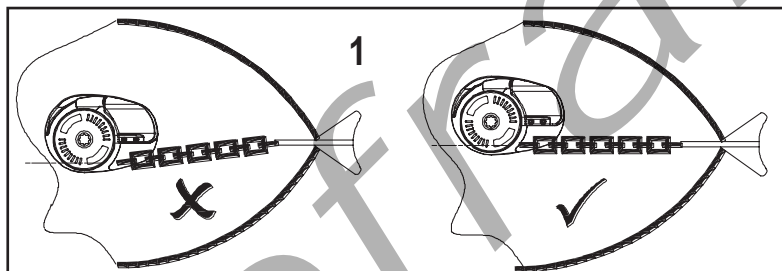
- ✓ Drill
- ✓ 6 and 16 mm bit for wood and steel
- ✓ 60mm diameter hollow drill bit
- ✓ 10 mm., 13 mm., and 17 mm. hexagon keys

3.3 Recommended accessories

Use exclusively original Lofrans' accessories and spare parts, designed and manufactured to ensure performances, duration and for keeping valid the warranty. For information on available spare parts, contact your local reseller or visit website www.Lofrans'.com

3.4 General requirements for installation

In order to operate the anchor windlass correctly, it must be installed to meet the following conditions:



1. Bow roller alignment: the precise alignment of the anchor windlass to the bow roller is essential for the correct operation of the anchor windlass.

2. The parallelism between deck floors must be guaranteed; should it not occur, duly compensate the difference.

3. Chain locker depth: the chain fall into the chain locker must be such that when the chain is completely stored, there must be a minimum of 300 mm, between the underside of the deck and the top of the heaped chain.

4. Bow roller height: it must be such to guarantee a chain inclination lower than 5 degrees.



Non-observance of these requirements will cause the malfunctioning of the anchor windlass and voidance of warranty.

3.5 Prevention from electrolysis

For hulls that conduct electricity, it is essential that the anchor windlass be insulated from the deck through a non-conductive gasket (not supplied). In addition, it is important that also the anchor and the chain be insulated from the hull, including



Without these precautions, the electrolysis phenomenon will lead to a rapid corrosion of the anchor windlass.

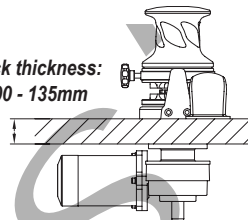
3.6 Deck thickness

The area of the deck where the capstan is mounted must be solid and resistant so to be able to support the stresses due to the recovery of the anchor.

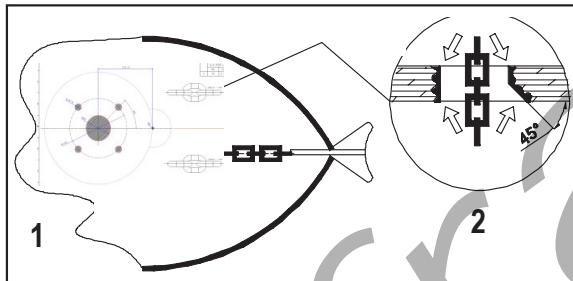
The standard series studs and shaft allow an admissible range of deck thickness of 100 - 135 mm.

Upon request, different deck thicknesses may be provided.

Deck thickness:
100 - 135mm



3.7 Deck installation



1. Place carefully the drilling template on the deck, by ensuring the **correct alignment** with the bow.

2. Mark and drill as indicated in the Mark and drill as indicated in the figure. Let the edges of the holes sharp, while the edge side of the holes of the chain towards the bow must be smoothed for an angle of 45° degree figure. Let the edges of the holes sharp, while the edge side of the holes of the chain towards the bow must be smoothed for an angle of 45° degree.

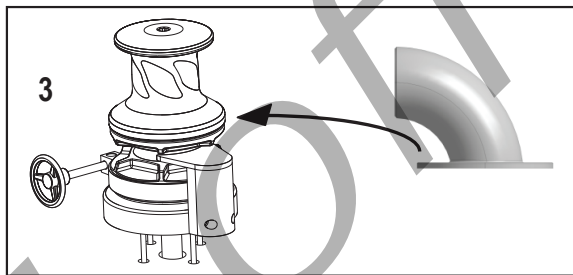
3. Place carefully the upper part of the anchor windlass on the deck.

Note:

It is recommended to seal the base of the anchor windlass to the deck by means of silicone glue. Do not use a permanent glue to fix the base of the anchor windlass to the deck since this will make difficult the removal in case of maintenance or intervention.

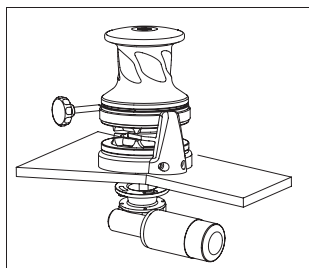
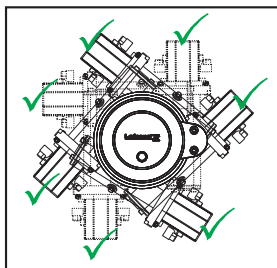


Chain pipe installation is suggested in order to guide the chain properly aligned to the chain locker and keep windlass efficiency high*



3.8 Under deck installation

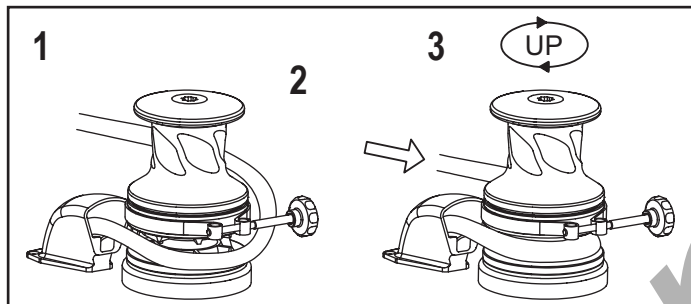
1. Grease the main shaft.
2. Join the reducer to the upper part by aligning the motor far from the chain hole.
3. Screw washers and related nuts to the studs by fastening them appropriately.
4. Connect the cables coming from the battery to the electric motor by following the indications of the wiring diagram



⚠ ATTENTION! Always disconnect all 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)			
				15-25 m	50-75 ft	> 25 m	> 75 ft
SX7	3500	24	200	95 mm ²	3/0	*	*

* Calculate accordingly for maximum allowed voltage drop of 10%.

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. (Maximum allowed voltage drop 10%)

4.2 Contractor (Control Box)

Place it in a dry place near the windlass in which the control box unit will not have direct water contact. The control box must be firmly supported in position

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 and the validity of the warranty.

4.4 Remote control electric panel board

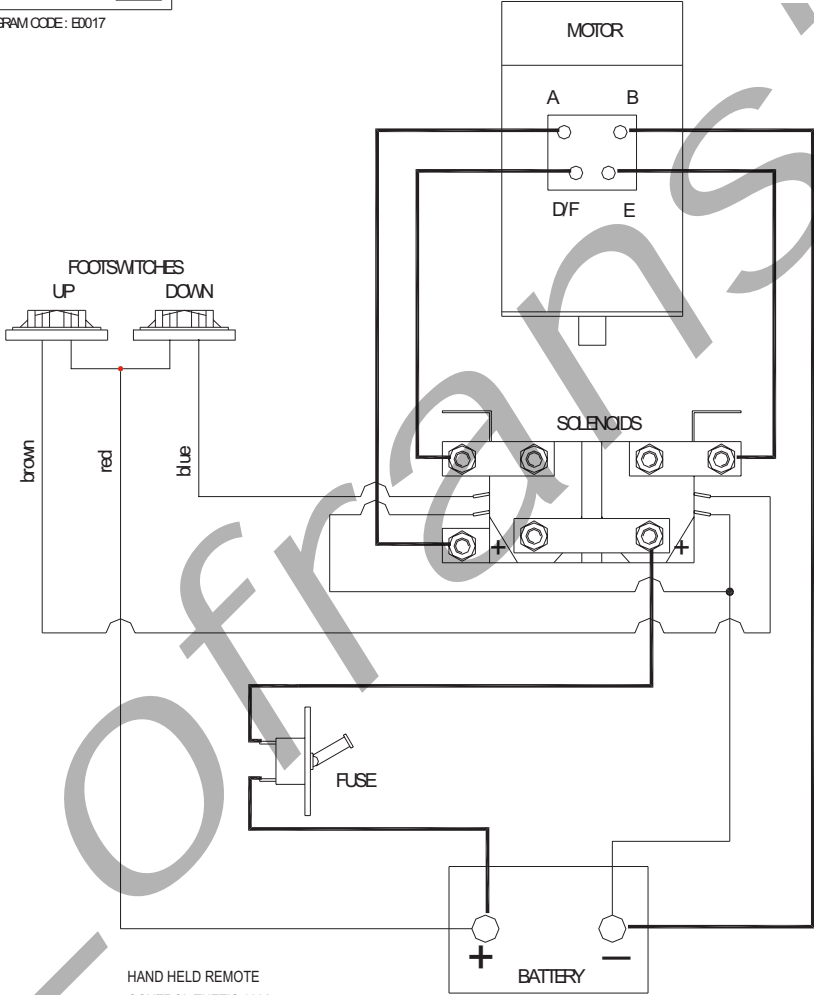
The remote control electric panel board must be mounted in a comfortable position (such as the deck, the rudder or the cockpit), so that the operator can see the windlass during the manoeuvre. Mount and seal the electric panel board so that the terminals remain in a dry place.

4.5 Wiring Diagram

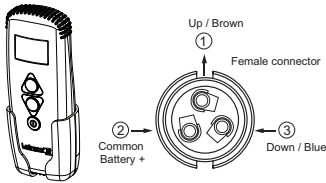
WIRING DIAGRAM - 4 TERMINALS 3500W 24V ELECTRIC MOTOR

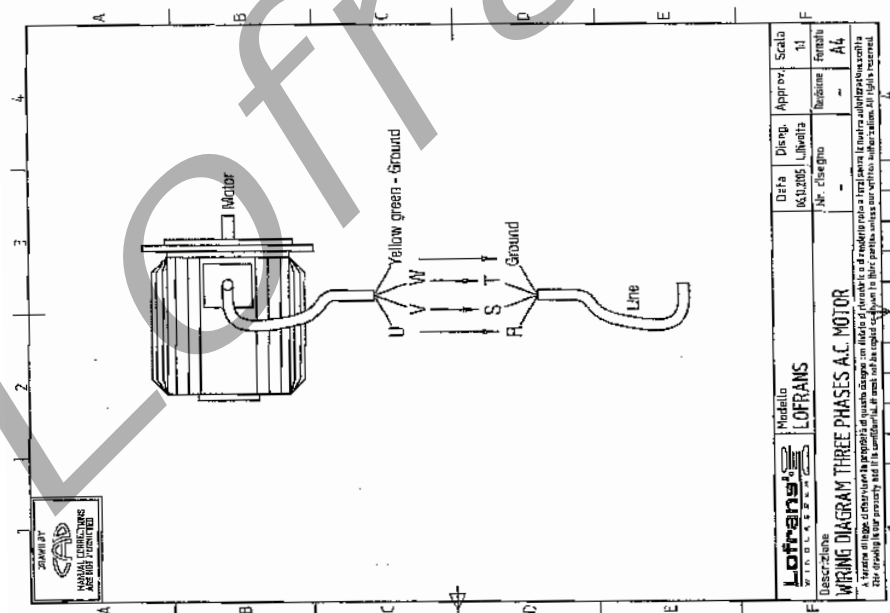
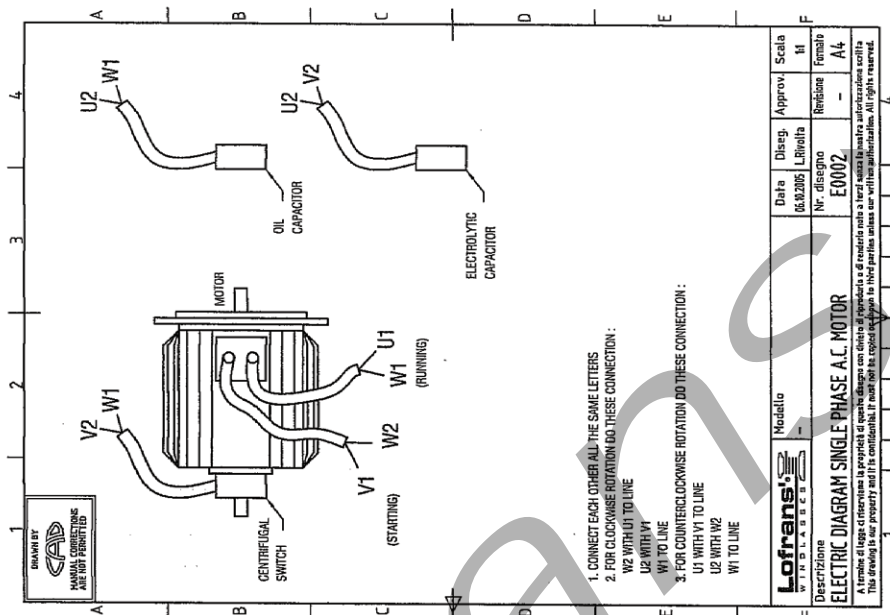


WIRING DIAGRAM CODE : ED017



HAND HELD REMOTE
CONTROL THETIS 1002

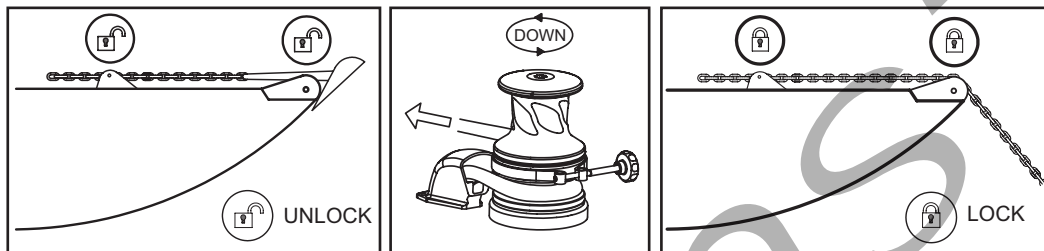




5 USE OF THE WINDLASS



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



5.1 Lowering the anchor

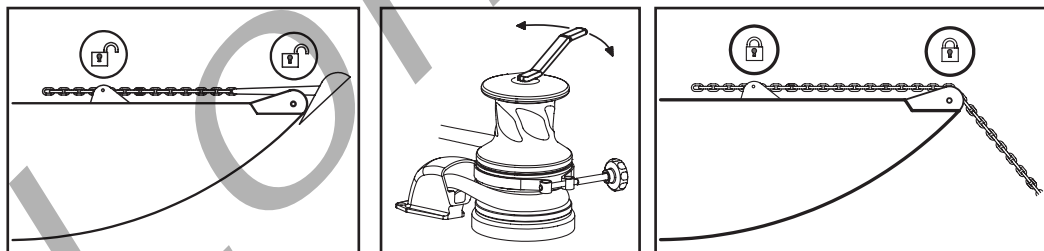
Lowering of the anchor can be carried out through the electric control or by gravity:

5.1.1 Lowering the anchor electrically

1. Make sure that the clutch is tightened and the brake is disengaged. 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.



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. Disengage the brake.
2. Disengage the clutch gradually through the manoeuvre handle.

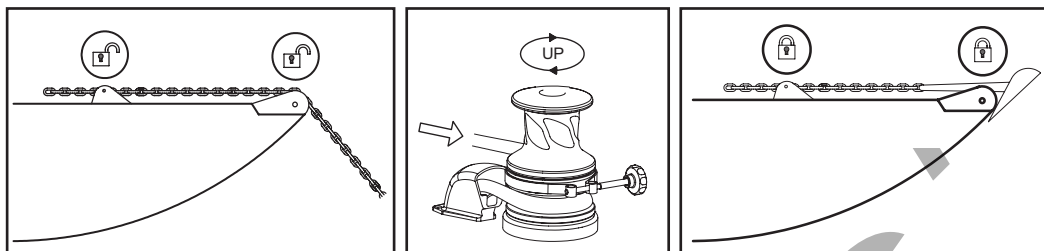
Note: to adjust the descent speed of the chain act, through the handle, on the clutch. By turning it clockwise, the braking speed of the chain will increase (until complete stop), while by turning it anticlockwise, braking will be reduced.

3. Fix the chain (or the rope) 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. The speed must always be regulated.

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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 and the brake is disengaged. 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.

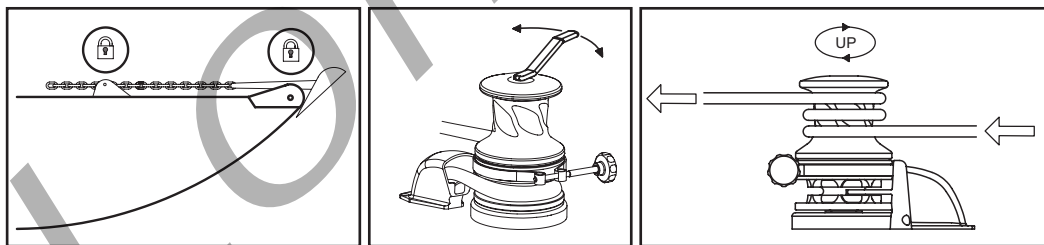


Do not carry out the anchor recovery operation by relying only on the on board batteries. Start the motor of the boat (or the generator) to have sufficient charge on the batteries of windlass.

To safeguard the anchor windlass, the 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 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.



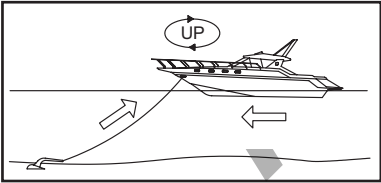
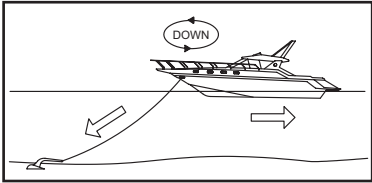
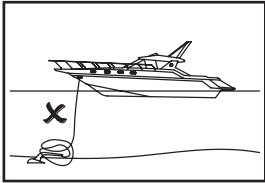
5.3 Use of the warping drum

The warping drum can be used regardless of the gipsy, to help the mooring manoeuvres.

1. Tighten the brake and make sure that the anchor is appropriately blocked.
2. Insert the manoeuvre handle into the drum and disengage the clutch by turning it clockwise. This operation will make the drum independent of the gipsy.
3. Turn clockwise around the drum with three laps of rope.
4. By keeping the end of the rope, press the UP button and carry out the mooring manoeuvre.
5. Once the manoeuvre is ended, remove the rope from the drum and fasten it to a bollard.
6. Deactivate the safety switch.



Always remove the manoeuvre handle when not in use.



5.4 Notes for use

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

- ⚠ During 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.

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.

6 MAINTENANCE

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	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 - A
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 all electrical power to the anchor windlass before any maintenance and when the windlass is not used for long period of time.

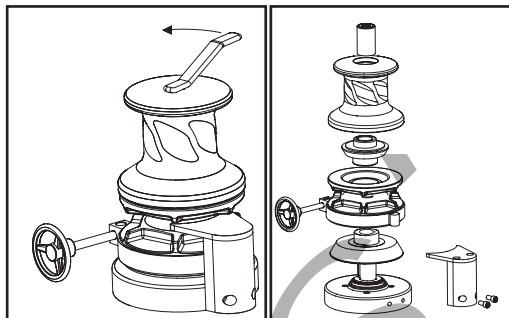
6.1 Maintenance programme

For obtaining the best performances and the utmost efficiency of the anchor windlass, it is necessary to follow strictly the maintenance programme indicated hereby.

- 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 clutch nut and main shaft thread (635494+636441)
- 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. Slip off from the shaft the upper clutch cone, the gipsy, and the lower clutch cone.
3. Wash with running water. DO NOT USE WATER UNDER PRESSURE.
4. Check that there is no evidence of corrosion or mechanical stresses.
5. Reassemble by proceeding in the reverse order, remembering to lubricate threads and all moving parts with yellow grease (non conductive).



7 TROUBLESHOOTING

Problem	Possible causes	Solution
1. The anchor windlass does not work when a control is operated	<p>1.1 Protection switch in OFF position</p> <p>1.2 Lack of voltage in the system</p> <p>1.3 Failure of the control box</p> <p>1.4 Failure of the control</p> <p>1.5 Failure of the electric motor</p>	<p>1.1 Check the protection switch and set it in the ON position</p> <p>1.2 Check the charge status of the battery, check connections</p> <p>1.3 Check and possibly replace the control box</p> <p>1.4 Check and possibly replace the control</p> <p>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</p>
2. The chain jams frequently	<p>2.1 The chain locker is not deep enough with respect to the quantity of chain chosen</p> <p>2.2 The chain is not suitable for the gipsy</p> <p>2.3 The chain is not calibrated</p>	<p>2.1 Position the anchor windlass in the deepest point of the chain locker or reduce the quantity of chain</p> <p>2.2 Change the gipsy</p> <p>2.3 Check the chain: if it does not meet the tolerances, it must be replaced</p>
3. The anchor windlass turns slowly	<p>3.1 Unsuitable cable sections</p> <p>3.2 Deck floors not parallel</p> <p>3.3 Bad electrical connections</p> <p>3.4 Dirty brushes</p> <p>3.5 Water infiltrations in the electric motor</p>	<p>3.1 Increase cable section</p> <p>3.2 Make floors parallel by interposing thicknesses</p> <p>3.3 Check connections</p> <p>3.4 Clean brushes</p> <p>3.5 Replace the electric motor</p>
4. The electric engine runs but the shaft does not rotate either Up or Down	<p>4.1 Heavy wear or breakage of teeth of the crown / worm screw.</p> <p>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. (*)</p> <p>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. (*)</p> <p>(*) Take advantage of this opportunity to replace any other worn parts, especially gaskets, screws, tabs, seeger, and oil.</p>

Problem	Possible causes	Solution
5. The electric engine runs, the shaft rotates Up, but does not rotate Down	<p>5.1 The chain locker is tangled; therefore, the emergency mechanism becomes operative.</p> <p>5.2 The chain is of poor quality with burrs and zinc deposits that do not allow the free flow of the links; therefore, the emergency mechanism becomes operative.</p> <p>5.3 The chain was placed in the locker in block and the links are stuck with each other; therefore, the emergency mechanism becomes operative.</p> <p>5.4 Wear of the emergency mechanism of the spring control.</p> <p>5.5 The chain stripper interferes with the gypsy: it is possible to weigh the operation, while to lower, the emergency mechanism becomes operative.</p>	<p>5.1 Check out that immediately after the anchor there is a joint that allows the chain to unfold properly when weighed.</p> <p>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.</p> <p>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>5.4 A (SERVICE) Uninstall the winch from the boat and disassemble it into its parts by replacing the spring. Take advantage of this opportunity to replace any other worn parts, gaskets, screws, tabs, seeger, and oil.</p> <p>B (SERVICE) It is possible to block the EMERGENCY MECHANISM so that the gears are always engaged both in UP and in Down. This operation must be authorized by the shipowner. The solution rules out completely the possibility of carrying out the emergency operation.</p> <p>5.5 Restore the condition of the chain stripper by repositioning properly in the gypsy centreline. If it is deformed. It must be replaced.</p>
6. The electric engine runs but it cannot be bell warped.	6.1 The bell warp is being used wrongly; therefore, the emergency mechanism becomes operative	6.1 To carry out the warping operation the main shaft must run in the same rotation direction of the winch gypsy when it weighs the chain.
7. The winch cannot be weighed: the electric engine runs, the shaft runs, but the gypsy is still although the brake belt is loose.	<p>7.1 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.</p> <p>7.2 The clutch cones or the gypsy cones are deformed and the clutch hubs are in contact and prevent closure.</p>	<p>7.1 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.</p> <p>7.2 Replace the clutch and/or the gypsy</p>
8. The shaft does not run well, is not aligned, and so is the gypsy and/or the bell.	8.1 The shaft bent because the winch was subjected to an excessive load.	<p>8.1 Check out that the procedures of use fall within the specifications of the winch.</p> <p>(SERVICE) Uninstall the winch and replace the shaft. Take this opportunity to replace worn parts, gaskets, seeger, tabs and oil.</p>
9. Loss of oil between the engine and the gearbox body	9.1 The coupling of the engine is loose and causes the worm screw into an irregular rotation, leading to loss of oil from the gasket.	9.1 (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.
10. On installation, it is found that the shaft and the studs are short for a correct coupling with the gearbox.	10.1 The request referred to the deck thickness was wrong.	10.1 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.

UK

Problem	Possible causes	Solution
11. The winch runs slowly and at times jumps the circuit breaker.	<p>11.1 Section of cables not suitable.</p> <p>11.2 Poor electrical connections.</p> <p>11.3 Dirty brushes.</p> <p>11.4 Water leaks in the electrical engine.</p> <p>11.5 There is no parallelism between upper deck and below deck.</p> <p>11.6 The gearbox has lost oil.</p> <p>11.7 The engine strains in one or both directions.</p> <p>11.8 The winch works only in one direction.</p>	<p>11.1 Increase the cable section</p> <p>11.2 Check out the connections</p> <p>11.3 Clean the brushes</p> <p>11.4 Replace the electrical engine</p> <p>11.5 Work surfaces and/or add shims to restore parallelism.</p> <p>11.6 (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.</p> <p>11.7 (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.</p> <p>11.8 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.</p>

For more troubleshooting steps please visit our website: lofrans.com/troubleshooting

8 TECHNICAL DATA

Motor Power	3500 W	4000 W	Hydraulic - 8cc
Power Supply (V)	24	230-400	-
Maximum linear Load/Pull (kg)	3000	3100	3700
Max Lift Working Load (kg)	800	840	1000
Amps Work Load (A)	240	9 - 16	-
Max Line Speed (m/min)	7	8	10
Line Speed (m/min)	9	10	10
Net weight with Drum (kg)	160	160	145
Max hydraulic Pressure (bar)	-	-	200
Max hydraulic Flow (lt/min)	-	-	28

Chain supported	12 mm ISO4565	13 mm DIN 766	14 mm ISO 4565
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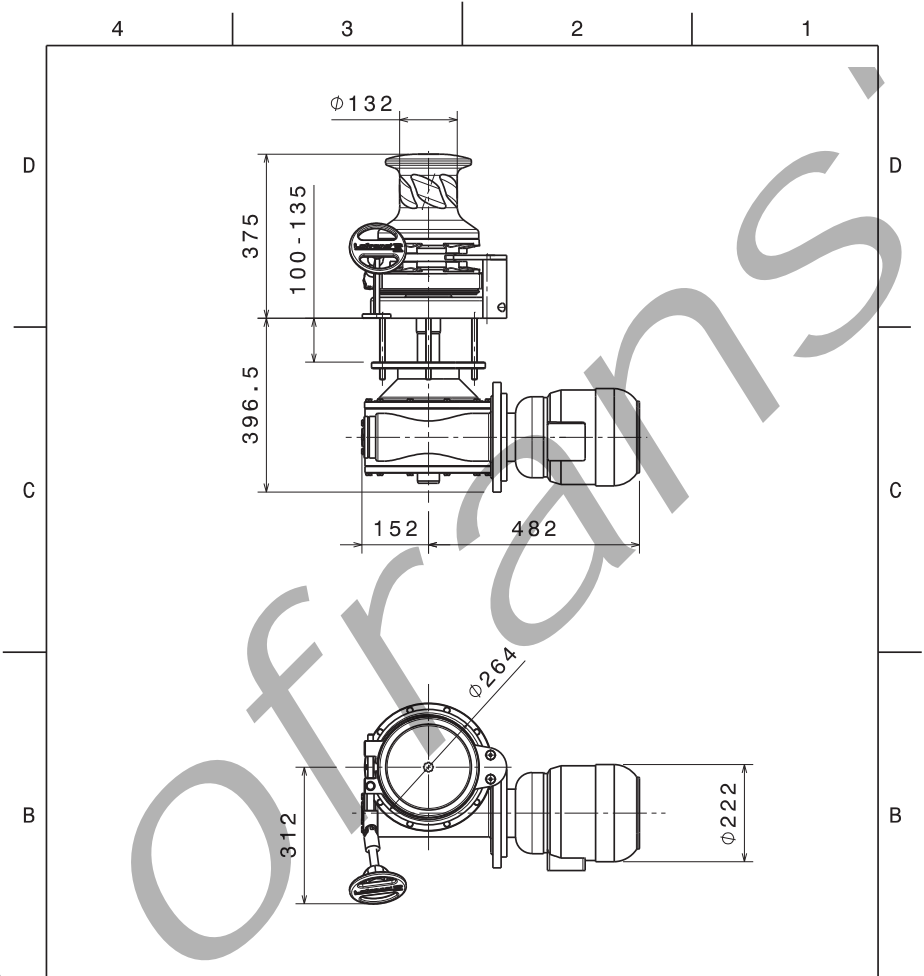
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Sale Code	Description	Q.ty
630866	RING SEAL 40-72-10	1
630874	RING SEAL 55-72-10	1
630882	RING SEAL 55-90-10	1
630941	BUSH	1
631042	GYPSY 12mm ISO4565 -13mm DIN766	1
631065	GYPSY 14mm ISO4565	1
631222	BASE SX7	1
631305	BUSH	6
631307	BUSH	1
631327	KEY 8X7X30, DIN 6885 - UNI 6604 - ISO 773, AISI 316	1
631341	KEY 12X8X60 AISI 316	1
631408	BRAKE COVER	1
631458	DRUM INOX	1
631618	BEARING 30205A	1
631631	GEARCASE	1
631748	BEARING 6011 2Z	2
631749	BEARING 6014 2Z	2
631767	BEARING 51108	1
631772	Nut hexagon nylon lock DIN982 M12 A4	1
631788	Nut hexagon DIN934 M8 A4	4
631790	Nut hexagon DIN934 M12 A4	4
631820	Spiral ring D55mm	2
631839	CONE CLUTCH OUTER	1
631873	CONE CLUTCH INNER	1
632051	KEY 12X8X40 C45	2
632066	FLANGE	1
632134	FLANGE	1
632137	FLANGE	1
632177	BRAKE BAND (with brake lining)	1
633223	SP-Joint	1
633265	GEAR	6
633316	HANDLE	1
633428	SIGHTGLASS	1
633432	MAGNET	1
633505	DC MOTOR 24V 3,5KW	1
633483	AC MOTOR 230/400V 4,0KW	1
633298	HYDRAULIC MOTOR KM20-8 LEA/EA-N	1
633528	REED SENSOR	1
633538	SPRING PROJECT 1000 (NICKELED)	1
633541	SPRING	1
633547	SPRING	2
634563	O RING NB70, OR 153, Int.D=49,20mm, Cord.D=3,53mm, BS (EN) 830	1
634587	O RING 6945	2
634618	Pivot	1
634623	BRAKE PIVOT BRACKET	1
634684	STUD M8X45	4
634863	Washer spring lock DIN127 M8 A4	40
634868	Washer DIN125 M5 A4	2
634871	Washer DIN125 M8 A4	4
634876	Washer DIN125 M12 A4	8
634876	Washer DIN125 M12 A4	2
635219	CIRCLIP 15 DIN 471 STEEL	6
635286	Stripper SX7	1
635338	Sensor Support	1

Sale Code	Description	Q.ty
635345	SUPPORT BRAKE PIVOT	1
635385	SP-Support Wheel Brake INOX	1
635386	SUPPORT STRIPPER (CHROMED)	1
635435	CIRCLIP 90 DIN472	2
635494	CLUTCH NUT CRO	1
635698	WORM	1
635700	Screw socket set flat point DIN913 8x6 A4	2
635704	Screw socket head DIN912 5x8 A4	7
635706	Screw socket head DIN912 5x16 A4	2
635731	Screw socket head DIN912 12x30 A4	2
635743	Screw hexagon fully threaded DIN933 8x30 A4	36
635763	Screw countersunk hexagon socket DIN7991 8x120 A4	2
635771	Screw countersunk hexagon socket DIN7991 10x30 A4	4
635823	SP- Shaft wheel brake SX7	1
635824	SP-PERNO VOLANTINO FRENO SX7	1
636225	Washer spring lock DIN127 M12 A4	8
636314	Lofrans" Chain Pipe SX5/SX7	1
636438	COVER FOR GEARCASE SX7	1
636439	FLANGE SX7	1
636542	Flange satellite holder SX7 (machined)	1
636441	MAIN SHAFT SX7, L=709,3	1
636445	GEAR SX7	1
636450	Wormwheel SX7	1
636471	Pivot DIA.15x55mm for SX7	6
636472	Brake hand wheel for SX7	1
636473	Ring seal 70-85-10	2
636474	Bronzina 70-75-50	2
636476	Key 12X8X200 A4	2
636477	Circlip 105 DIN 471 Steel	1
636478	Screw socket set flat point DIN913 8x10 A4	3
636488	Stud M12x200 A4	8
636564	Spacer SX5/SX7	1
634835	RONDELLA-(13-30-3)	12

10 OVERALL DIMENSIONS

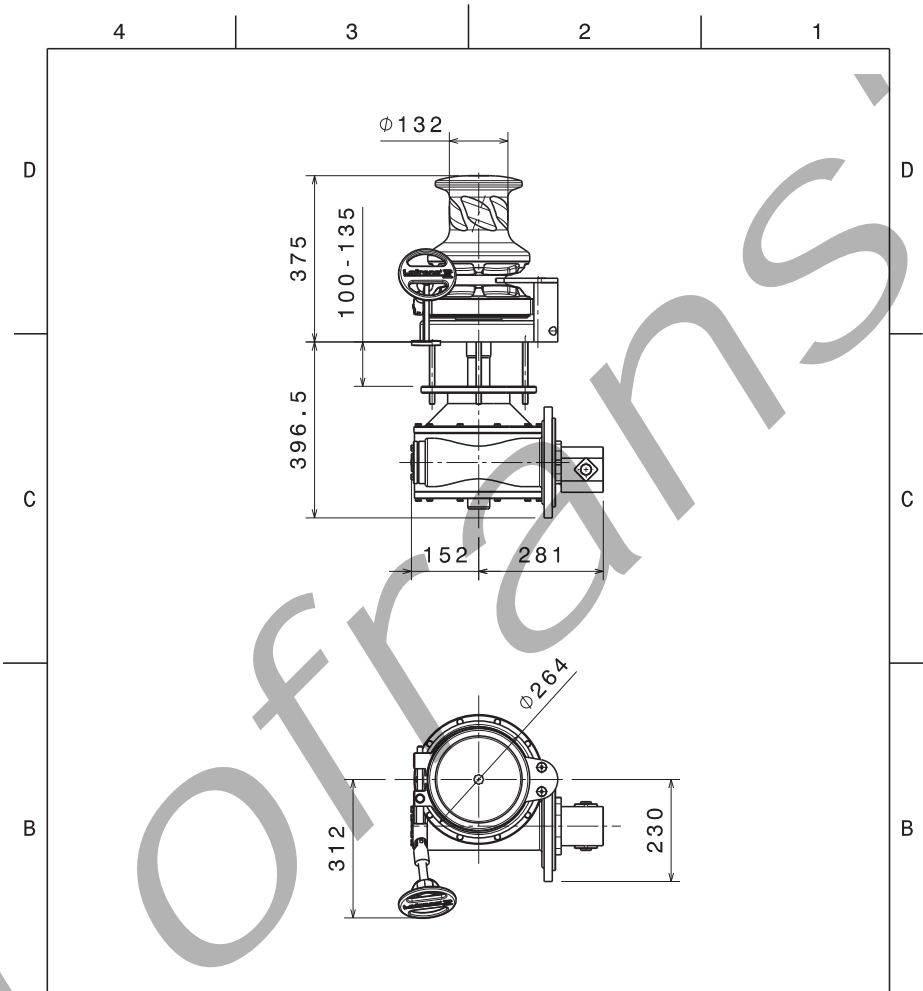


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This drawing is our property and it is confidential. It cannot be reproduced or communicated without our written agreement.
General dimension - Class of allowances UNI EN ISO 22768 - m
The piece must be free from sharp edges and shocks

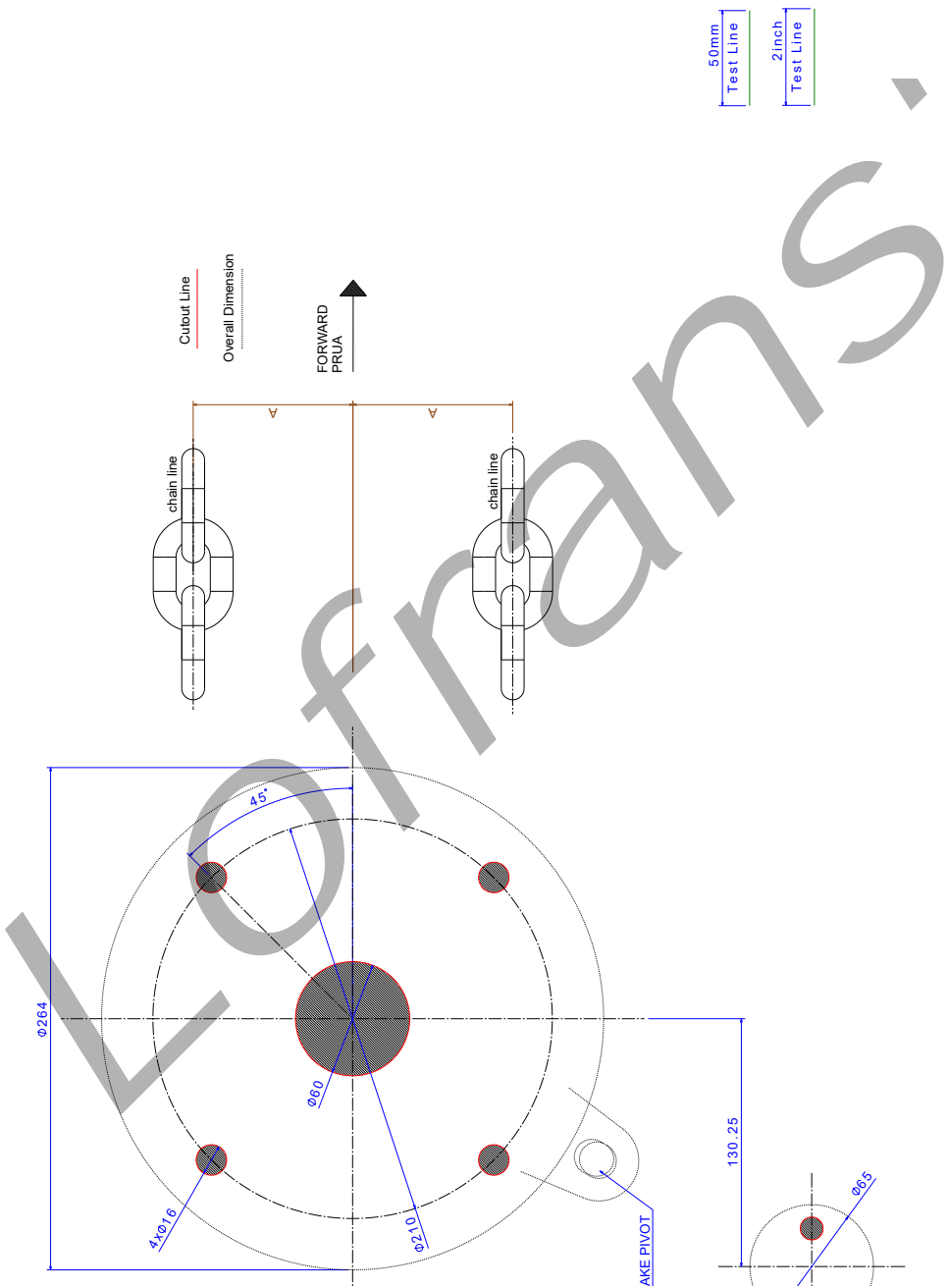
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Part number	Drawing filename SX7 MODEL		Date 30/10/2019				
Material Stainless steel	Treatment ---		Date 30/10/2019				
Weight Kgs	Revision	Expl.Nr. ---		Scale 1:10	Size A4	Sheet 1/1	



This drawing is our property and it is confidential. It cannot be reproduced or communicated without our written agreement.
General dimension - Class of allowances UNI EN ISO 22768 - m
The piece must be free from sharp edges and shocks

Product family SX7		General Dimension (Hydraulic)					
Part number	Drawing filename SX7 MODEL		Date 30/10/2019				
Material Stainless steel	Treatment ---		Date 30/10/2019				
Weight Kgs	Revision	Expl.Nr. ---		Scale 1:10	Size A4	Sheet 1/1	

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® is not liable for the wrong choice of the anchor windlass by the purchaser.
- Lofrans® 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® 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®). 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



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