CONSERVARE QUESTO MANUALE A BORDO
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GUARDAR ESTE MANUAL A BORDO

Drum Winch

Multifunctional Winches

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

Drum Winch with rope and chain

5 Years Limited Warranty ★

UK

Lofrans' ®
WINDLASSES
THE ORIGINAL WINDLASS

UCINA

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www.lofrans.com - e-mail: contact@lofrans.com

CE MADE IN EU

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 capstans and 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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PRODUCT COMPLIANT WITH EC REGULATIONS-DIRECTIVE 2006/95/EC

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 behaviors 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 authorized distributors and assistance. In case of need, please contact your local Lofrans distributor. Details on website www.lofrans.com/network

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 drum winch is particularly exposed to oxidation and corrosion risk; therefore, it is necessary to arrange a frequent inspection of its part and a due maintenance to ensure safe and reliable operation. 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 authorized to use the drum winch. Should there be doubts on its installation or use, refer always to a skilled consultant.

2.1 General

- The drum winch, used in an inappropriate way, can cause damages to persons and/or things.
- Winches are potentially dangerous equipment and must be installed correctly. For your safety and the reliability of this product, Lofrans recommends installation by an experienced marine mechanic or marine electrician.
- Do not overload your winch and do not attempt prolonged pulls at heavy loads. Overloads can damage the winch and/or the rode, and create unsafe operating conditions. Do not maintain power to the winch if the motor stalls.
- Pay the utmost attention during the use of this equipment.
- Do not put your hands near the drum winch when there is power on the unit.
- 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, rope or drum.
- Before operating the drum winch, make sure that there are no persons in water in the vicinity.
- When the drum winch is not used, the anchor must always be fixed to a solid point in order to avoid damages.
- The drum winch must never be used as mooring point. The load must always be held by a specific cleat or solid point.
- Never allow shock loads to be applied to your winch as this can cause serious damage to your boat.

- The engine/generator should be running during winch operation to minimize battery drain and maximize winch power and speed. If considerable winching is performed with the engine off, the battery may become too weak to restart the engine.
- The system must always be protected by a suitable circuit breaker, as close to the battery as possible.
- Do not machine or weld any part of the winch. Such alterations may weaken the structural integrity of the winch and will void your warranty.
- Always disconnect the circuit through the circuit breaker when the drum winch is not in use.

2.2 Rope breakage and whiplash hazard.

1. Never stand between the load point and the winch. If the rope breaks it could snap back with enough force to cause severe injury or death.
2. Use the rope designed for this product.
3. This winch is intended to lift anchors of the specified weight range only. Do not attempt to lift oversized anchors or other objects (see chapter 8: working load)
4. Before each use inspect the winch system for wear or damage. A frayed rope or damage splice to the chain should be replaced immediately to avoid damage.

2.3 Electrical shock and fire hazards.

1. Do not use electrical wire sizes smaller than those specified in this manual. Using underrated cable could result in overload and fire.
2. To avoid the risk of electrical fire, use only the supplied switches, remote controls and accessories. Use of non-factory approved components may cause injury or property damage and will void your warranty.
3. For maximum protection, install the breaker as close as possible to the power source. If it is also used as the manual isolator, install it near the Up/Down switch.
4. To minimize corrosion, only use marine-grade, fully tinned wire for electrical connections.
5. Ensure crimped electrical connections are fit for purpose.
6. Disconnect and wrap the battery terminals in plastic before installing or servicing the winch.

2.4 Cruising and boat trailering hazards.

1. When the boat is cruising or being trailered, consider tying the anchor to a cleat (or other secure point) with the rope off the drum. If the anchor breaks free during cruising or trailering, it could cause serious damage and/or injury.

2.5 Entanglement hazards

1. Keep the winching area clear. Do not approach within one meter of the winch when power is applied to it. Hands, feet, hair and clothing, if caught in the winch when operating, can lead to serious injury or death.
2. Disable power from the winch when it is not in use.
3. Never place any object or tool in the rope spool while power is applied to it. Objects tangled in the rope could cause serious injury and/or damage to the winch.
4. Ensure no one is swimming nearby as the anchor is lowered or retrieved.
5. Never operate the winch under the influence of drugs and/or alcohol.

2.6 Anchoring hazards

1. Never guide the rope onto the drum with your hand. A roller or fairlead is used for this purpose.
2. Tie the anchor line off to a cleat (or other secure point) if the boat is left unattended or is anchored overnight or in heavy weather.
3. Do not attempt to lift a load greater than the rating of the winch. If the circuit breaker disconnects power to the winch during retrieval or deployment, the winch may have been overloaded. Determine why the breaker tripped before re-setting it.
4. Avoid continuous pulls from extreme angles as this will cause the rope to pile up on one end of the drum. This can jam the rope in the winch and cause damage to the rope or winch.

3 INSTALLATION

3.1 Contents of the package

In addition to the present manual, the package contains:

- Drum winch complete with motor and gearbox filled with oil-ready for use
- Control box, rocker switch, circuit breaker
- The rode (if part of kit): 70 meters of 12mm nylon three strand rope attached to 8 meters of 6mm chain. User can install different configurations-please see note on chapter 3.6 Fitting the rope, chain and anchor.
- Fixing hardware (50mm A4 screws included for deck thickness of 30mm. User can install longer screws if needed.)
- 316 Stainless steel backing plate

3.2 Equipment necessary for installation

✓ Drill, metric sockets and wrench, waterproof thread sealant and marine sealant

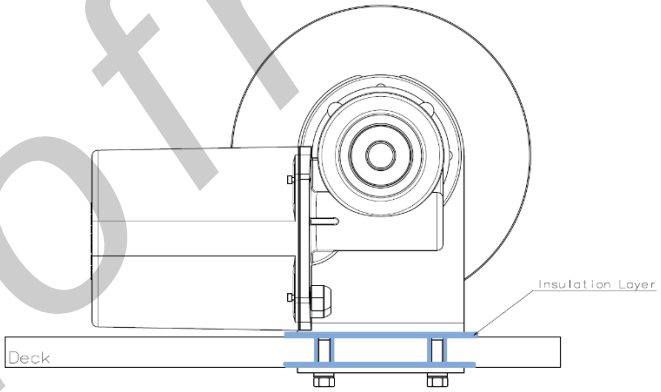
3.3 Recommended accessories

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 Prevention from electrolysis and galvanic corrosion.

For hulls that conduct electricity (example: aluminum alloy hulls), it is essential that the drum winch be insulated from the deck through a non-conductive gasket (not supplied). **This also applies to the mounting bolts, nuts, washers and backing plate, if installed.** Any stainless steel winch fitted to an alloy boat in a marine environment must be insulated from the deck to protect from electrolysis and galvanic corrosion.

Without these precautions, electrolysis and galvanic corrosion will lead to rapid corrosion of your equipment



3.5 Deck installation

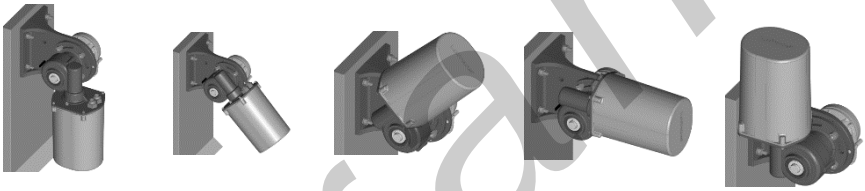
Follow the below steps for a correct and safe installation. For detailed wiring information, check chapter 4.

1. Check the packing list enclosed with your winch system. Carefully inspect the contents for completeness and for any damage that may have occurred during transit.

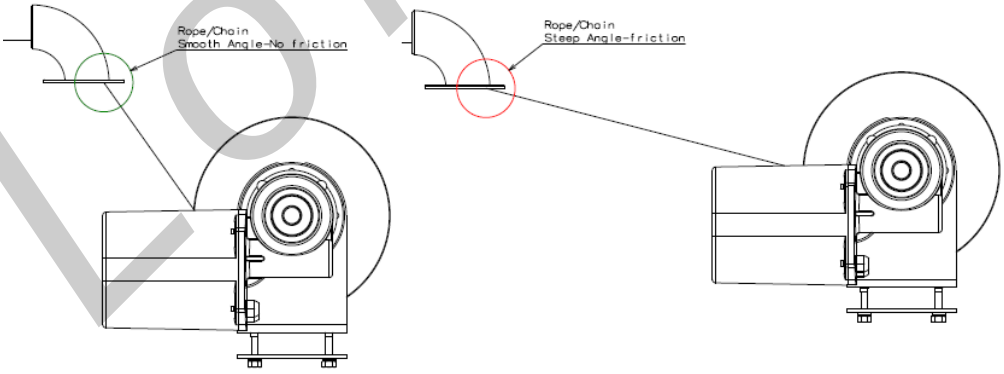
2. Study the boat's layout.

   Important: A critical consideration when fitting the drum winch is the strength and stability of the mounting point, as the winch could place extremely high loads. This is due to the winch's high torque, vibration and other shock forces involved. Using a cleat or another strong point can reduce the mechanical stress on the winch's mounting point while lying at anchor in heavy weather.

   a. The winch gearbox and motor can be rotated to different mounting positions:



Determine the best location for mounting the winch, control box, circuit breaker and Up/Down switch. If applicable, also consider the location for the guide roller or hawse pipe, the bowsprit/bow roller. These peripherals should be installed in a way that **the anchor rode does not bend in extreme angles**, to minimize friction and enable smooth deploying of the anchor. Ensure that the anchor rode will flow freely from the drum to the bowsprit/bow roller in both directions.



b. Ensure that the operator will have a clear view of the anchor when it is dropped and retrieved from the location where the Up/Down switch is to be fitted. It's possible to run dual switches off the control box if required. The secondary switch should be connected parallel to the primary and with the corresponding cable cross section used.

c. Install the winch in a suitable position on the deck (consider if a guide roller is needed) or in the anchor well (consider if guide roller/hawse pipe is needed) so that there is no interference from other ropes or objects. Ensure that the position of the winch, if crew and/or equipment are nearby, will not lead to any safety issues when it is operating.

d. Ensure that the rope has a clear lead to the winch. Use a roller if required to direct the rode to the drum. Ensure that there is sufficient room to run the electrical cables to the winch without interfering with the operation of the winch or with other activities on the foredeck.

e. If the deck is angled or curved, a suitably shaped mounting block will be required for proper operation and for spreading the load evenly over the deck surface. Mount the winch on a level and even footing. Depending on the thickness of the mounting, a suitable spacer may be required to mount the winch.

f. Check that the mounting points are strong enough to support the stresses from the winch, the guide roller or hawse pipe, the bowsprit/bow roller (if applicable) or any other peripherals. If unsure, refer to your boat maintenance professional or marine service.

g. Electrical cables will be run from the battery to the circuit breaker, control box and Up/Down switch. Investigate possible paths for the cabling to run. You may need to drill or cut holes for the cable to pass through bulkheads. Ensure that this does not have a negative impact on the integrity of waterproof compartments.

h. Select a suitable mounting point for the control box: in a dry area of the boat, ideally as close as possible to the winch to minimize voltage drop (less than 10% allowed).

i. Select a suitable mounting point for the circuit breaker, as close as possible to the positive battery terminal to ensure maximum protection for the electrical circuit and general safety.

j. Select a suitable mounting point for the battery terminals. If there is a common terminal point for the negative pole of the battery, the negative cable for the winch should be terminated at that point (not at the battery pole). This is done to minimize ground loops, which can cause electrical interference with radio communication and electrical instruments, and to minimize corrosion due to stray currents. There may be spare connections on the positive terminal of the battery to a busbar or common termination point.

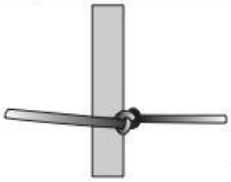
Caution: Before beginning winch installation, disconnect the battery, then insulate the positive terminal to ensure it cannot be inadvertently re-connected until the work is completed

3. If required, loosen and remove the nuts on the flange of the winch, then rotate the winch motor to the desired position. Re-position and tighten the nuts.
4. Position the drum winch carefully, checking the rope path before mounting to your deck or bulkhead. Drill mounting holes for the winch. Debur and clean up the holes, as required. After the installation, protect the hole entry point from water ingress and corrosion using appropriate sealants. If the mounting plate is made from fiberglass or timber, seal the exposed material with epoxy to prevent water ingress. If the mount is made from steel plate, rust proof the exposed metal.
5. Apply an appropriate rubber gasket to the base plate and mounting block (if required), taking care to align mounting holes when assembling. For aluminum and steel-hulled vessels, it is important to insulate the winch with a non-conductive rubber gasket to minimize corrosion. This also applies to the mounting bolts, nuts, washers and backing plate, if installed. Fit the backing plate to the reverse side of the mounting point, then install and tighten the mounting bolts.

6. To help the rope to lead onto the drum, a minimum spacing of one meter is recommended between the last roller and the winch. If the winch is being used inside a rope locker, it is recommended to have a guide roller or hawse pipe. Take care to minimize abrasion and friction as the rope feeds on and off the drum.
7. Ensure sufficient room to run electrical cables to the winch.

3.6 Fitting the rope, chain and anchor

1. Firmly attach the end of the rope on the drum.



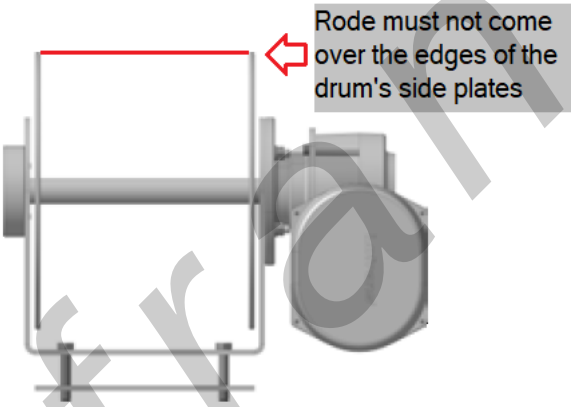
2. Check carefully that all mechanical and electrical connections are secure and correct. Tighten any loose fittings, bolts, etc. before placing the unit into service.
3. Check that everyone is safely clear of the winch and anchor line.
4. Apply power to the vessel and activate the winch circuit breaker. Check that the breaker has not tripped and carry out a quick visual inspection to ensure that everything is in order before continuing.
5. Press the Up switch for one or two seconds to verify that the winch is operational. Then repeat this step by pressing the Down switch. If the winch fails to rotate in the right directions, re-check all connections. You may need to use a voltmeter to trace the power circuits. Continue fault diagnosis until you are able to resolve any issues.
6. WARNING: Treat the area close to the winch as a hazardous area, even if the winch does not appear to be operating.
7. Feed the rope onto the drum by running the drum winch with the switch in the Up position. Correct rotation is essential for proper operation. Ensure the rope feeds correctly onto the drum (to the top or bottom of the shaft, as appropriate for your setup) without touching the decking.

8. Fit the anchor into the correct position on the bowsprit. Secure it temporarily so it can't fall.
9. Pass the other end of chain/rope through the hawse pipe (if applicable) then attach the chain to the anchor.
10. Once installation has been completed, isolate the winch from the battery supply. This may be done by tripping the circuit breaker and/or operating a manual winch isolation switch (if fitted).

11. Once installation has been completed, remember to adjust your boat's compliance plate. The plate should be amended to show the reduced carrying capacity due to the weight of the anchor system. While you will know to allow for this extra load, it is an important step to protect others operating your boat who may not know of this change.

Note: Installation of different configuration (length and size) of rope and chain by the client is possible. However, in this case, care must be taken for the below:

- When wrapped on the drum, the rope and chain should not overcome the edges of the side plates of the drum:



- The total weight of rode and anchor must not exceed the maximum working load of 160Kg, as indicated on the technical data of the product (chapter 9).

4. ELECTRICAL SYSTEM

4.1 Electrical cable section

In order to obtain the maximum performance from the drum winch and safeguard the electrical system, it is essential that the wires/cables used are of sufficient section as suggested in the below table. The material of the cable insulation must have a thermal rating of at least 90ºC. (Note: Max allowed voltage drop: 10%.)

Model	Motor Power (W)	Voltage (V)	Contactor (A)	Cable sizing according length of cable (positive + negative)							
				meters				feet			
				0-5	5-10	10-15	15-20	0-15	15-30	30-50	50-65
Drum Winch	1000	12	100	16mm^2	25mm^2	35mm^2	50mm^2	6AWG	4AWG	2AWG	1AWG

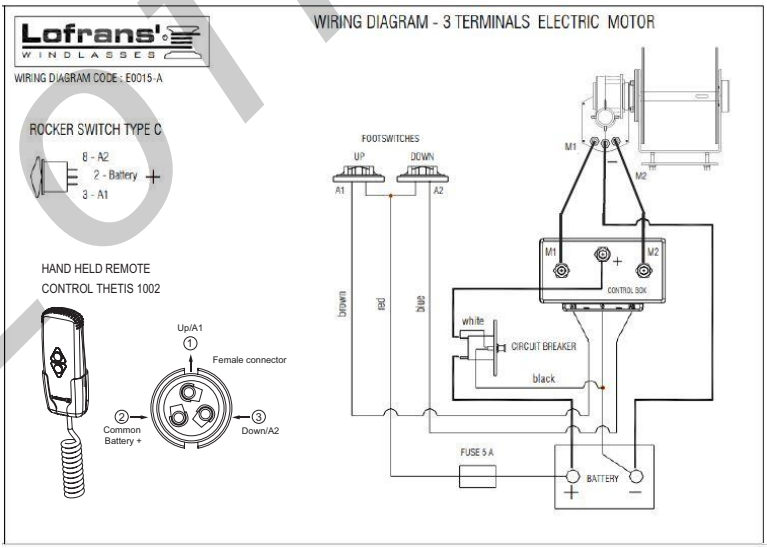
4.2 Control Box (Solenoid Valves)

Place it in a dry place near the Drum Winch, where it will not have direct water contact

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 Wiring Diagram

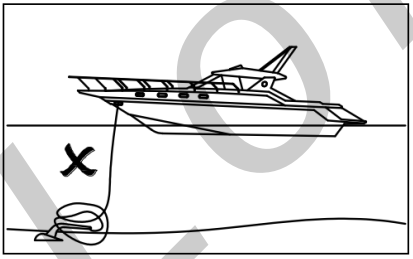


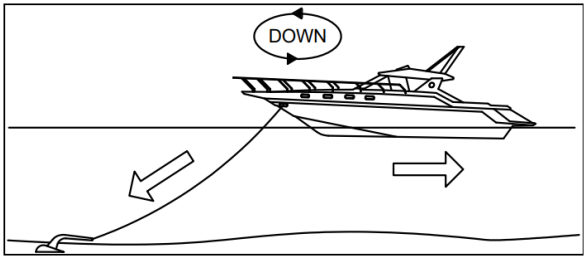
1. Connect the cables to the Up/Down switch. Drill the mounting holes in the panel. Seal the holes to prevent water ingress, as required. Pull the cables through to where they will be terminated on the control box. Use any form of cable ties, conduit or other method to secure the cable, then mount the Up/Down switch.
2. Connect the cables to the circuit breaker. Drill its mounting point. Seal the holes to prevent water ingress. Pull the cables through to where the breaker will be terminated on the battery and control box. Use cable ties, conduit or other method to secure the cables. Then mount the breaker.
3. Connect the winch's positive cable to the control box. Connect the winch's negative cable to the common negative point. These joins will usually require larger diameter cable with heat shrink. A double layer of heat shrink is recommended to minimize the risk of water ingress.
4. Mount the control box in a well-protected and dry area.
5. Critical Step: Attach all wires to the Up/Down switch, circuit breaker and winch as specified in the relevant circuit schematic. Failure to connect the terminals correctly will damage internal components and void your warranty. If unsure, contact your nearest service agent/dealer or marine mechanic before proceeding.
6. Once installation has been completed, it is important to test the direction of the drum rotation. Interchange the position of the cables from the control box to the motor terminals to reverse direction if needed.

5 OPERATION

5.1 Lowering the anchor

To release the anchor: go over the chosen spot, press the Down switch until your anchor reaches the sea bed, then put the boat into reverse and idle backward until the anchor digs in. Continue to idle backward away from the grounded anchor while slowly feeding out enough anchor rode.





More detailed steps below:

Caution: Never apply power or operate the winch when anyone is on the foredeck.

1. If the anchor rope is attached to a cleat or security cable, detach the rope first.

2. Perform a visual inspection of the anchor and winch. Ensure everything is in order before continuing. The drum winch should be operated from an Up/Down switch and circuit breaker located near the helm.

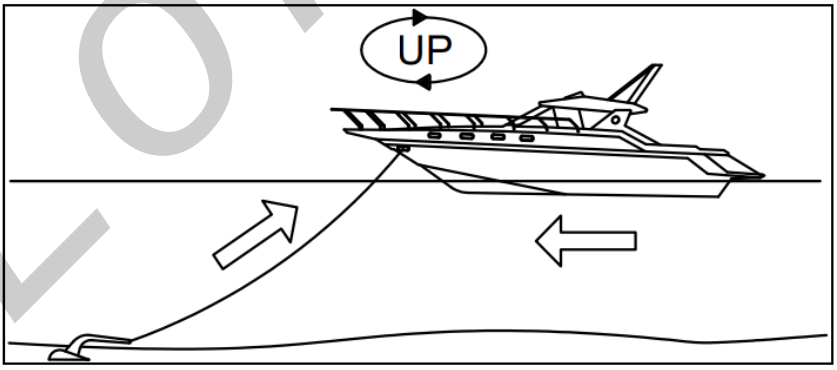
3. Activate the winch circuit breaker.

Note: Note: The engine should be idling before continuing this operation.

4. To lower the anchor, press and hold the switch in the Down position until the line feeding off the bow loses tension, indicating that the anchor has reached the sea bed. Release the Down switch.
5. Observe the operation while idling backwards and ensure there is adequate tension on the rope so the anchor can dig in the sea bed. Be sure not to overrun the rope coming off the drum.
6. Continue to feed more rope while reversing your boat to the position required. When satisfied with the position and the amount of rope released, switch off the engine.

5.2 Raising the Anchor

To retrieve the anchor, you must start your engine and idle forward while pushing the Up switch periodically to allow the rope to be wound cleanly onto the drum. DO NOT use the winch to pull the boat back to anchor. Once the rope is directly over the anchor, place the boat in neutral then use the winch to retrieve your anchor.



More detailed steps below:

1. The drum winch is simple to operate from an Up/Down switch operated from the helm. Ensure safe operation. No one should be on the foredeck when power is applied to the winch.
2. Perform a visual inspection of the anchor and winch. Ensure everything is in order before continuing. If the anchor rope is attached to a cleat or security cable, release it.
3. Activate the winch circuit breaker.

Note: The engine should be idling before continuing this operation.

4. To raise the anchor, press the Up switch. You may need to release the switch every few seconds to slow the operation. Continue until the chain breaks the surface. To slow down the final stage of the lift, 'jog' (press then release) the Up switch for a few seconds at a time. Take extra care during the final part of the lift as the anchor passes over the bowsprit. If the anchor comes up too fast, it could damage the bow of your boat. This can be completely avoided by slowing down the final stage of the lift.
5. Observe the operation and be ready to stop as the anchor reaches the top of the bow roller. At this point jog or inch the anchor into lock position on the bow roller.
6. Go slowly with the last five meters of chain. Your winch is extremely powerful. Do not allow the anchor to fly up over the roller and bang hard into the bowsprit, putting excessive load onto the winch and foredeck.
7. If the anchor jams tight in the bowsprit, take the load off the gearbox by engaging the Down switch or reversing the winch. This should allow you to lower the anchor to the preferred spot. When satisfied with the position and the amount of rode winched out, take your finger off the Up/Down switch.

6 TROUBLESHOOTING

CAUTION: If a problem occurs, such as a jammed rope, chain or anchor, trip the breaker and confirm that it has tripped before investigating. Never apply power or operate the winch when anyone is on the foredeck. Always carry a spare rope and anchor in case of a power or winch failure.

6.1 General Troubleshooting Guide:

Problem	Possible causes	Solution
1. The winch does not work when a control is operated.	***1.1*** Circuit breaker in OFF position ***1.2*** Lack of voltage in the system ***1.3*** Failure of the control box ***1.4*** Failure of the control switch ***1.5*** Failure of the electric motor	***1.1*** Check the circuit breaker 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 switch. ***1.5*** Measure the electric motor voltage; if it is OK, check the brushes and clean them. If this does not work, replace the electric motor.

2. The winch runs slowly and at times jumps the circuit breaker.	***2.1*** Poor electrical connections. ***2.2*** Dirty brushes. ***2.3*** Water leaks in the electrical motor. ***2.4*** The gearbox has lost oil. ***2.5*** The motor strains in one or both directions. ***2.6*** The winch works only in one direction. ***2.7*** Greatly oversized/too heavy anchor ***2.8*** Too steep angle between hawse pipe/guide roller and the drum winch	***2.1*** Check out the connections. ***2.2*** Clean the brushes. ***2.3*** Replace the electrical motor. ***2.4*** **(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 motor condition, which may have been damaged during the malfunction. ***2.5*** **(SERVICE)** Check out appropriately all connections of the power cables. If they are alright, uninstall the motor (in some cases it is convenient to disassemble also the gearbox). Check out and possibly replace the brushes. ***2.6*** Check out on the control box that between A1-C and A2-C contacts there are 12V when the respective buttons are pressed. If this should happen and one of the relays does not work, replace the control box. ***2.7*** Select anchor of reduced weight (see chapter. 8: wor king load) ***2.8*** Reinstall hawse pipe/guide roller or install an extra guide roller to allow a smoother angle and lower friction.
3. The electric motor runs but the drum does not rotate either Up or Down	***3.1*** Heavy wear or breakage of teeth of the crown / worm screw. ***3.2*** Breakage of the motor shaft. ***3.3*** Shaft key (motor or main shaft) broken or missing	***3.1*** **(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. Replace any other worn parts ***3.2*** **(SERVICE)** Replacing of the motor. Care must be taken that the broken part (s) did not remain in the hole of the worm screw. ***3.3*** **(SERVICE)** Verify the key is missing. If the key is broken, check if nearby parts are damaged. Replace key and other worn parts.
4. Anchor/rode jams on bowsprit	***4.1*** Excessive speed when lifting the anchor ***4.2*** Hawse pipe or other component undersized	***4.1*** Reduce speed when lifting the anchor by pressing then releasing the Up switch in shorter bursts (jogging). ***4.2*** Determine which component is undersized, then replace it with a more appropriate size.

7 MAINTENANCE

7.1 Maintenance programme

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

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

Disconnect power to the winch before any maintenance.

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

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. Check for evidences of corrosion and mechanical stresses

B. Grease the main shaft section that enters the gearbox with yellow marine grease that is non conductive.

C. Check the terminals of the electric motor. Test the voltage drop at the terminals. Maximum allowed voltage drop: 10 %.

D. CHECK & Replace all gearbox oil seals.

E. Remove the drum winch from the deck to clean the salt under the base. Replace all gaskets and seal again.

- Your winch motor and gearbox conform to the IP67 standard, which classifies the degree of protection provided against intrusion, dust, accidental contact, and water ingress of the mechanical casing and electrical enclosure. However, the drum and machine casings are exposed to abrasive materials such as mud, sand, salt, dirt and other environmental contaminants. To prolong its effective life, wash the winch and rode thoroughly after use.

- The rope and chain should be checked periodically for abrasions or cuts. If the rope is frayed or cut, replace it immediately. Soaking your anchor rope in a bucket of warm water and fabric softener every 12 months will keep your anchor rope soft and subtle, so it lays on nicely on the drum.

- Periodically check the tightness of mounting bolts and electrical connections. Remove any dirt or corrosion that may have accumulated on the electrical connections.

- If the vessel is not being used for long periods of time, it is recommended that you run the winch every three months to keep all moving parts lubricated.

- The gearbox is filled and sealed at the factory with long-life synthetic oil that does not require replacement, except in cases of oil leakage or unit revision. The recommended oil type is SAE 90-SAE 140 and the required capacity is 0,3 L.

7.2 Corrosion Prevention

Remember that even 316 Stainless Steel rusts, so clean your winch regularly to keep it in top condition. Periodically unwind the rope from the winch and wash the winch, thoroughly removing any sand and grit. Then dry it and give it a light spray of lanolin or a similar lubricant. This simple step will extend its life.
It is recommended using a close-fitting cover when the winch is not in use.

7.3 Winch Repairs

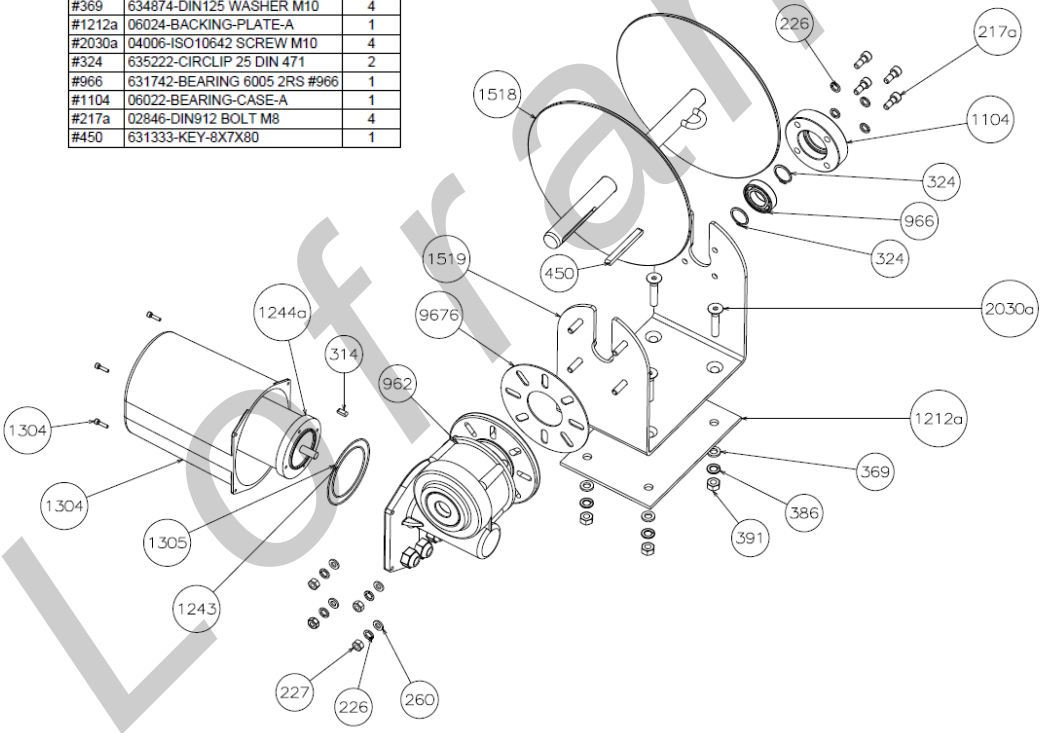
CAUTION Only authorized repair centers and marine mechanics are authorized to repair the winch and accessories. Do not attempt to disassemble the motor or gearbox. This will void your warranty.

8 TECHNICAL DATA

Model	Drum Winch
Motor Power	1000W
Vessel Length	up to 12m / 40ft
Power Supply	12V
Maximum Pull-Empty Drum (Kg / lb)	900 / 1985
Maximum Pull-Full Drum (Kg / lb)	220 / 485
Working Load (Kg / lb)	160 / 353
Amps at Working Load (A)	135
Max retrieval rate (mt./min. / ft/min.)	45 / 148
Max fall rate (mt./min. / ft/min.)	50 / 164
Net weight with Drum (Kg /lb)	19 / 42

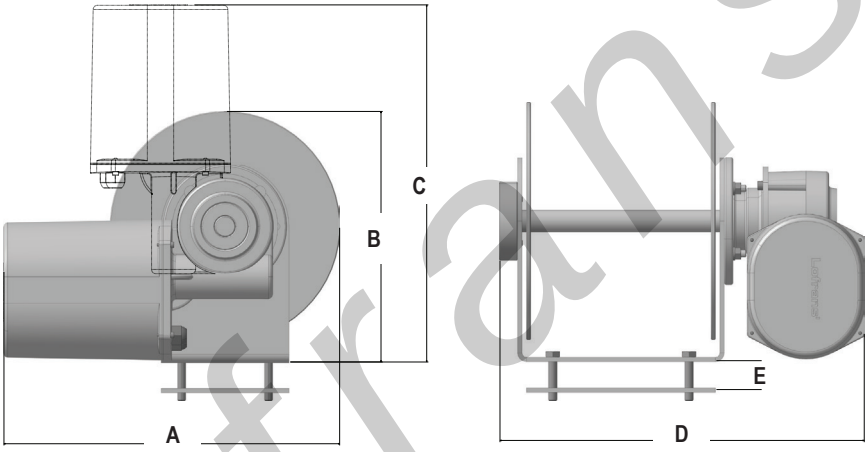
9 PART LIST

Number	Part Number/Description	Quantity
#1518	06018-DRUM-A	1
#1519	06023-MAIN-BASE-A	1
#9676	06025-SEALING-GASKET-A	1
#962	631988-GEARBOX-X2	1
#1304	197977-MOTOR COVER	1
#314	631311-KEY 5X5X15 DIN6885	1
#1304	635706-SCREW DIN912 M5X16	4
#1244a	633523-MOTOR-1000W	1
#1305	634572-ORING-NB70-OR275	1
#1243	634570-ORING-NB70-OR2287	1
#227	631788-DIN934 NUT M8	4
#226	634863-DIN127 WASHER M8	8
#260	634871-DIN125 WASHER M8 A4	4
#391	03343-DIN934 NUT M10	4
#386	06053-DIN127 WASHER M10	4
#369	634874-DIN125 WASHER M10	4
#1212a	06024-BACKING-PLATE-A	1
#2030a	04006-ISO10642 SCREW M10	4
#324	635222-CIRCLIP 25 DIN 471	2
#966	631742-BEARING 6005 2RS #966	1
#1104	06022-BEARING-CASE-A	1
#217a	02846-DIN912 BOLT M8	4
#450	631333-KEY-8X7X80	1



10 OVERALL DIMENSIONS

Dimensions (mm)



Model	A	B	C	D	E
1000 W	396	295	421	416	30*

*50mm A4 screws included for deck thickness of 30mm. User can install longer screws if needed.

11 WARRANTY CONDITIONS

Lofrans guarantees that in a normal use and by meeting the maintenance programs, the drum winch is covered by a warranty for a period of 5 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.

11.1 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 Drum Winch by the purchaser.
- Lofrans will not be liable in any whatsoever manner for failures, or any consequent damage deriving from:
  - use of the drum winch in an application for which it was not designed or envisaged;
  - water damage to the electrical components due to water ingress;
  - 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 analyze the problem.
  - Cases of galvanic corrosion between the drum winch and the hull or the installation voids the warranty.
  - The warranty does not cover the accessory costs met for interventions, removal, transport, and installation of the product;
  - Maintenance carried out by persons not authorized 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.

11.2 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
- Gaskets and seals
- Products used on charter boats.

11.3 Liability

The liability of Lofrans on this warranty is intended dependent 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.

11.4 Procedure

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

11.5 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.

11.6 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.

Lofrans'®

WINDLASSES

THE ORIGINAL WINDLASS

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