# INSTALLATION AND USER'S MANUAL STORE THIS MANUAL ON BOARD

# GECKO Stern Windlass ALU 12V only Rope







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# **1. INTRODUCTION**

#### **1.1 Purpose of the Manual**

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

 $\triangle$ 

**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

#### **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 authorized 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.
- Do not put your hands near the windlass 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.
- The windlass is not designed for loads that might occur in extreme weather conditions. Lofrans' is not responsible for failures during use under such conditions.
- Pay the utmost attention so that arms, legs, fingers, hair, and clothes do not get entangled in the gipsy.
- Check that there are no swimmers nearby while using the windlass.
- When the windlass 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 must be always fixed to a solid point.
- The anchor windlass must not be used for functions other than releasing or weighing the anchor.
- The system must always be protected by a suitable circuit breaker, according to the instructions of chapter 4. Electrical System of the current manual.
- Always disconnect the circuit through the circuit breaker when the anchor windlass is not in use.

# **3. INSTALLATION**

#### **3.1 Contents of Package**

The package contains:

- Lofrans' Gecko Stern Windlass Only Rope
- Control box / Relay
- Handle
- Leaflet with QR code for manual download
- Studs
- Automatic Stop

#### 3.2 Equipment Necessary for Installation

- Drill
- Center punch
- Bits for wood and steel: Ø9mm (23/64"), Ø12mm (15/32"), Ø50mm (2") hollow mill
- Hexagonal Wrenches: 7mm, 13mm
- Philips head screwdrivers
- Wire cutters and pliers

#### **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

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

1. The external and the internal support must be parallel. If the stern is not planar, duly compensate the difference.



2. There must be sufficient vertical fall of at least 300mm (30cm) at the internal side in order to avoid jamming.



3. The angle between the rope and the horizontal reference line must not exceed 60°.



4. The angle between the rope and the vertical reference plane must not exceed 10° for both sides.



Non-observance of the above requirements will cause the malfunctioning of the anchor windlass, the premature wear of various parts and warranty voidance.



# **3.5 Prevention from Electrolysis**

If the material of the stern on which the windlass is positioned is a good conductor of electricity then, it is essential that the anchor windlass be insulated from the stern through a non-conductive gasket (not supplied).





Without this precaution, various corrosion phenomenon will cause a rapid deterioration of the anchor windlass.

The installer is responsible to protect the windlass from electrolysis and galvanic corrosion between the windlass and the hull.

### **3.6 Stern Installation**

 Place carefully the drilling template on the stern, by ensuring the correct alignment. Mark and drill as indicated in the drilling template. The edges of the holes can be sharp. <u>Make sure that the scale is 1:1.</u>



2. Place the external support along with the 4 M8x70 countersunk screws on the external side and pass the automatic stop cables through the Ø12 hole.

NOTE: If the stern thickness is bigger than 25mm, you might need to use longer screws than M8x70.



3. Place the internal part and fix it using 4 nuts along with washers. The automatic stop cables can be passed through the depicted hole of the internal support. Do not apply silicone or any other sealant on the cables for future removal without damaging them.



4. Grease the main shaft and fix the motor-gearbox using 4 nuts along with the washers. The motor-gearbox can be installed in various positions.



5. Place the stern cover over the external support and fix it with the Tapping Screw Hexagon Head M4,2x9,5 DIN7976 A4 along with plastic washer on the bottom side.



6. Pass the rope through the hole on the external part, around the gypsy and through the hole of the support under the gypsy.



7. Measure the distance between the stern cover and the anchor to determine the position of the automatic stop and fix it around the rope as depicted in the below figure. (Note: no specific magnets versus is required during the mounting inside the plastic cases).



8. Connect the cables coming from the battery to the electric motor by following the indications of the next paragraph and the wiring diagram.

# **4. ELECTRICAL SYSTEM**

#### 4.1 Electrical Cable Section

	Motor	Valtara	Contortor	Cable sizing according length of c			Cable sizing according length of cable (positive + negative)					
Model	Power	ower voltage C		m			ft					
	(W) (V)	(A)	0-5	5-10	10-15	15-20	0-15	15-30	30-50	50-65		
Caska	600	12	35	10mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	35mm <sup>2</sup>	8AWG	6AWG	4AWG	2AWG	
Gecko	900	12	70	16mm <sup>2</sup>	25mm <sup>2</sup>	35mm <sup>2</sup>	50mm <sup>2</sup>	6AWG	4AWG	2AWG	1AWG	

In order to obtain the maximum performance from the anchor windlass and safeguard the electrical system, it is essential that the anchor windlass is wired with cables of sufficient section as suggested in the above table. The material of the cable insulation must have a thermal rating of at least 90°C. (Note: Max allowed voltage drop: 10%.)

#### 4.2 Control Box / Relay

Firmly position the control box near the windlass in a dry place.

#### **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). Mount and seal the electric panel board so that the terminals remain in a dry place.

#### **4.5 Protection**

The installer is responsible to properly protect the motor and the electrical components (such as the control box) from direct water contact. Water damage to the electrical components due to water ingress will void the warranty. Do not remove the IP motor cover.

#### 4.6 Battery Type

We recommend using AGM Deep cycle batteries and the consulting of an electrician.

#### **4.7 Command Cables**

The wires must have a minimum cross section size of 1.5mm<sup>2</sup> / 16AWG. Install a 5 A (ampere) fast safety fuse on the positive (+) wire of the battery. Do not use the voltage generated by the engine battery set to provide power.



# **5. USE OF WINDLASS**

#### **5.1 Lowering the anchor**

The anchor can be lowered automatically by using the free fall system. If the free fall system is deactivated, the lowering can be done either electrically or manually.



When the anchor is lowered, the rope must be always fixed to a strong point or device in order to avoid any potential damage to the anchor windlass and especially the roller.

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 towards the opposite direction.

#### A) Automatic lowering with free fall system in use

- Detach the rope and anchor from any fixing points or devices.
- Keep the DOWN button pressed up to the point in which the anchor can fall freely without encountering any problems and then release the button. Do not attempt to press the UP button before the windlass stops and the rope is released.
- Once the anchor is lowered and the windlass stops, secure the rope by attaching it to a strong point or device, the tension must be removed from the roller.

#### B) Electrical lowering when free fall system is deactivated

The deactivation of the free fall system is described in paragraph 5.3.

- Make sure that the clutch is tightened.
- Detach the rope and anchor from any fixing points or devices.
- Press the DOWN button from the control at your disposal. In this way, the lowering of the anchor and the unwinding of the rope will be perfectly controllable.
- Once the anchor is lowered, secure the rope by attaching it to a strong point or device.

#### C) Manual lowering when free fall system is deactivated

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

The deactivation of the free fall system is described in paragraph 5.3.

- Detach the rope from any fixing points or devices.
- Disengage the clutch gradually using the handle: Note: It is possible to adjust the descent speed of lowering, through the handle. By turning it clockwise, the braking speed of the chain will increase (until complete stop), while by turning it counterclockwise, the braking will be reduced.
- Once the anchor is lowered, secure the rope by attaching it to a strong point or device.





Always remove the handle when not in use.

By disengaging completely the clutch, the anchor will be lowered at high speed. It is recommended always to check the speed.

#### 5.2 Weighing the anchor

- Make sure that the circuit breaker is activated.
- If the free fall system is deactivated, make sure that the clutch is well tightened.
- Detach the rope from any fixing points or devices.
- Press the UP button from the control at your disposal until the anchor reaches its position inside the bow roller.
- Deactivate the circuit breaker.
- Secure the rope by attaching it to a strong point or device in order to avoid a potential damage of the windlass
  as well as unexpected releases.



If possible, 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.

When the windlass will not be used for long period of time, disconnect all power from the windlass and cover the windlass in order to protect it from weather conditions.

#### **5.3 Automatic Free Fall System**

By default, the automatic free fall operation is in use. Lowering and weighing of the anchor are described in detail in paragraphs 5.1 and 5.2.

To deactivate the automatic free fall operation, follow the below procedure:

- Turn off power to the windlass.
- Secure the rope to a strong point or device.
- Remove the top screw from the windlass shaft:



• Use the handle to unscrew the gypsy cap.



• Remove the free fall pivot and the spring and keep them apart.



• Screw the gypsy cap again using the handle and tighten it.



• Release the rope and turn the power to the windlass on again.



Always remove the handle when not in use.

#### 5.4 Notes for Use

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

To ease the recovery and avoid overloading the windlass, steer up in a way that the boat slowly moves over the anchor.



During the anchor recovery, when it is close to the stern roller, slow down the recovery in order to check carefully the insertion of the anchor into its position. It is advised not to rely on the automatic stop system to stop the anchor recovery.



When the anchor is lowered, the rope must be always fixed to a strong point or device in order to avoid any potential damage of the anchor windlass.

You should always control the anchor recovery when it is close to its final position.



The windlass must not be operated without load.

# **6. MAINTENANCE**

#### **6.1 Maintenance Program**

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

EDEOLIENICY	USE OF THE YACHT (MONTHS)					
FREQUENCE	LESS THAN 2	<b>BETWEEN 2 AND 6</b>	MORE THAN 6	CHARTER		
EVERY 3 MONTHS			A - B	A - B		
EVERY 6 MONTHS		A - B				
EVERY 12 MONTHS	A - B - C	С	С	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 remove all salt layers.
- B. Grease the rotating parts. Particularly, the main shaft threads and cone clutches. Check for evidence of corrosion and mechanical stresses.
- 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 stern to clean the salt in-between and place it again.

In case of oil leakage or unit revision, oil change is required. The recommended oil type is **SAE 90 – SAE 140** and the required capacity is **0.15 L**.

#### 6.2 Gypsy Maintenance/Replacement

In order to replace the gypsy, follow the below procedure.

- 1. Remove the rope from the windlass.
- 2. Remove the motor-gearbox assembly.



3. Remove the screws and the free fall support along with the stripper and the finger.



4. Remove the screw over the cap and unscrew the cap by rotating it counterclockwise.



5. Slip off from the shaft the external cone clutch, the gypsy, and the internal cone clutch.



6. Wash with running water.

Do not use water under pressure.

- 7. Ensure that there is no evidence of corrosion or mechanical stresses.
- 8. 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	<ul> <li>1.1 Protection switch in OFF position</li> <li>1.2 Lack of voltage in the system</li> <li>1.3 Failure of the control box</li> <li>1.4 Failure of the control</li> <li>1.5 Failure of the electric motor</li> </ul>	<ul> <li>1.1 Check the protection switch and set it in the ON position</li> <li>1.2 Check the charge status of the battery, check connections</li> <li>1.3 Check and possibly replace the control box</li> <li>1.4 Check and possibly replace the control</li> <li>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</li> </ul>
2. The rope sticks or gets heaped around the windlass components	<ul><li>2.1 The vertical fall is not respected (see paragraph 3.4)</li><li>2.2 The rope type or diameter is not suitable for the gypsy</li></ul>	<ul><li>2.1 Use a rope of proper type and size</li><li>2.2 Ensure that the vertical fall of 30cm is respected</li><li>(see paragraph 3.4) and check the rope (if it is damaged, it must be replaced)</li></ul>
3. The anchor windlass turns slowly	<ul> <li>3.1 Unsuitable cable sections (see paragraph 4.1)</li> <li>3.2 Stern and windlass support are not parallel (see paragraph 3.4)</li> <li>3.3 Poor electrical connections</li> <li>3.4 Dirty motor brushes</li> <li>3.5 Water infiltration in the electric motor</li> </ul>	<ul> <li>3.1 Increase cable section</li> <li>3.2 Make stern and windlass support parallel by compensating the difference</li> <li>3.3 Check connections</li> <li>3.4 Clean motor brushes</li> <li>3.5 Replace the electric motor</li> </ul>
4. The electric motor operates, but the shaft does not rotate either Up or Down	4.1 Heavy wear or breakage of teeth of the crown / worm screw 4.2 Breakage of the engine spindle	<ul> <li>4.1 (SERVICE) Uninstall the winch and replace the broken parts. Check out carefully that pieces or splinters of broken parts did ruin other mechanical parts. (*)</li> <li>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. (*)</li> <li>(*) Take advantage of this opportunity to replace any other worn parts, especially gaskets, screws, tabs, seeger, and oil.</li> </ul>
5. The weighing of the anchor is not performed. The electric engine runs, the shaft runs, but the gypsy does not rotate	<ul> <li>5.1 The gypsy is not pressed with the cone clutches and slips under the load effect. Check out all pieces in sequence</li> <li>5.2 The cone clutches or the free fall pivot are deformed and thus, gypsy closure is prevented</li> </ul>	<ul> <li>5.1 Check out clutch tightening. If necessary, measure the parts and check out possible deformations. It is possible to add some thickness to face the problem. Then replace the damaged parts.</li> <li>5.2 Try deactivating the free fall system (Paragraph 5.3). If the problem is solved, the free fall system must be replaced. In other case, replace the clutch and/or the gypsy.</li> </ul>
6. The shaft does not run well, is not aligned, and so is the gypsy.	6.1 The shaft bent because the winch was subjected to an excessive load.	<ul> <li>6.1 Check out that the procedures of use fall within the specifications of the windlass.</li> <li>(SERVICE) Uninstall the windlass and replace the shaft. Take this opportunity to replace worn parts, gaskets, seeger, tabs and oil.</li> </ul>
7. Loss of oil between the engine and the gearbox body	7.1 The coupling of the engine is loose and causes the worm screw into an irregular rotation, leading to loss of oil from the gasket	7.1(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 windlass 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
		8.1 Increase the cable section
		8.2 Check out the connections
		8.3 Clean the motor brushes
		8.4 Replace the electrical motor
	8.1 Unsuitable cable sections (see	8.5 Make stern and windlass support parallel by
	naragraph 4 1)	compensating the difference
	8 2 Poor electrical connections	8.6 (SERVICE) Uninstall the gearbox and check out its
	8 3 Dirty motor brushes	condition. Replace damaged parts after discovering the
8. The windlass	8.4 Water infiltration in the	causes of the leak. Also, replace gaskets and screws.
runs slowly and, at	electric motor	Check out also the engine condition, which may have
times, jumps the	8.5 Stern and windlass support are	been damaged during the malfunction.
circuit breaker	not parallel (see paragraph 3.4)	8.7 (SERVICE) Check out appropriately all connections
	8.6 The gearbox has oil leakage	of the power cables. If they are alright, uninstall the
	8.7 The motor strains in one or	engine (in some cases it is convenient to disassemble
	both directions	also the gearbox). Check out and possibly replace the
		brushes.
		Indeed, check out on the control box that between B2-
		C and B3-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.
		9.1 Check out the connections (see paragraph 4.8)
9. The automatic	9.1 Poor/Wrong electrical	9.2 While the control box is powered on, place a
stop system does	connections	(if they do you will be able to been a court) if you the
not operate	9.2 Reed sensor is destroyed	(ii they do, you will be able to near a sound). If not, the
		automatic stop system must be replaced.

For additional support, please contact our website:

https://www.lofrans.com/troubleshooting https://www.lofrans.com/contact

# **8. TECHNICAL DATA**

Model	GEC	СКО	
Motor Power (W)	600	900	
Power Supply (V)	12	12	
Maximum linear Load/Pull (Kg/lb)	630/1400	700/1600	
Max Lift Working Load (Kg/lb)	95/210	125/275	
Amps at Working Load (A)	65	80	
Max Line Speed (m/min ft/ min.)	24/79	25/82	
Line Speed (m/min ft/ min.)	18/59	20/65	
Net Weight (kg/lb)	9/20	10/22	
Rope Supported	12/14/16 mm 3-strand or leaded rope		



Kit A = (Automatic stop Support), Kit B = (Magnet case), Kit C = (Finger), Kit D = (Free fall cap), Kit E = (Maintenance)

Item	Description	Kit	Q.ty
208	Ring DIN17224, Material:X12CrNi177, d=16,5mm, width=2 mm	Kit E	1
216	Bush X1		1
223	Circlip 18 DIN471 X39 CrMo171	Kit E	2
224	Key 6X6X45, DIN6885 - UNI6604 - ISO773, AISI 316	Kit E	1
226	Washer DIN125 M8 A4	Kit E	8
227	Nut hexagon DIN934 M8 A4	Kit E	8
230	Washer spring lock DIN127 M5 A4	Kit E	2
231	Washer DIN125 M5 A4	Kit E	2
232	Key 4X4X15, DIN6885 - UNI6604 - ISO773, AISI 316	Kit E	1
238	Spring Diameter 8 DORADO	Kit C	1
260	Washer spring lock DIN127 M8 A4	Kit E	8
293	Screw socket head DIN912 5x16 A4	Kit E	2
342	Spring TIGRES	Kit D	1
392	Screw hexagon fully threaded DIN933 8x25 A4	Kit E	4
842	Lofrans' Floating Winch Handle, 25cm	V	1
907	Screw socket head DIN912 6x50 A4	Kit E	1
1014	Pivot Marlin (FF)	Kit D	1
1046	Ring Seal 18-30-7 NBR Type G	Kit E	1
1047	Washer X1		2
1049	Cone Clutch X1		1
1050a	Gypsy Cap LION CRO (FF)	Kit D	1
1167	Gypsy DORADO Rope		1
1226	Gearbox A1 With Flange For IP67		1
1231	DC Motor X1 2011 - 500W/12V B14		1
1231B	LOFRANS DC MOTOR X1-X2 2016 - 800W/12V B14		1
1303	Lofrans Motor cover for X1 -500/700/800W		1
2006	Main Shaft Gecko		1
2007	Stern Support Gecko		1
2008	External Support Gecko	Kit A	1
2009	Automatic Stop Kit Gecko	Kit A	1
2010	Stern Cover Gecko	Kit A	1
2015	Roller Shaft Gecko	Kit A	1
2016	M5x20 Hex Drive Flat Head Countersunk DIN7991 A4	Kit A	2
2017	Screw socket head DIN912 6x30 A4	Kit E	1
2018	Finger Gecko	Kit C	1
2019	Pin parallel DIN7 4x40 A4	Kit C	1
2020	Free Fall Support Gecko		1
2028	Washer DIN125 M4 Nylon	Kit A	1
2029	Tapping Screw Hexagon Head M4,2x9,5 DIN7976 A2	Kit A	1
2030	Screw countersunk hexagon socket DIN7991 8x70 A4	Kit E	4
2039	Roller Gecko	Kit A	1
2040	Stripper Gecko		1
2051	Screw socket head DIN912 6x22 A4	Kit E	1
2052	Finger stopper Gecko		1
2053	M2,9x22 Rounded Screw Head DIN7981 A4	Kit B	4
2054	Magnet Case Gecko	Kit B	2

2055	Magnet for Gecko	Kit B	2
2056	Inner Cone Clutch CAT. 6-7-8		1
-	Sealing Ring 20-42-7	Kit E	1
-	Sealing Ring 30-42-7 Type G	Kit E	2
-	O-Ring 2250	Kit E	1
-	O-Ring NB70, OR 2325, Int.D=82.27mm, Cord.D=1,78mm, BS (EN) 42	Kit E	1
-	O-Ring NB70, OR 3287, Int.D=72.69mm, Cord.D=2,62mm, BS (EN) 150	Kit E	1
-	Circlip for bore 42, DIN 472	Kit E	1

#### **10. OVERALL DIMENSIONS**



