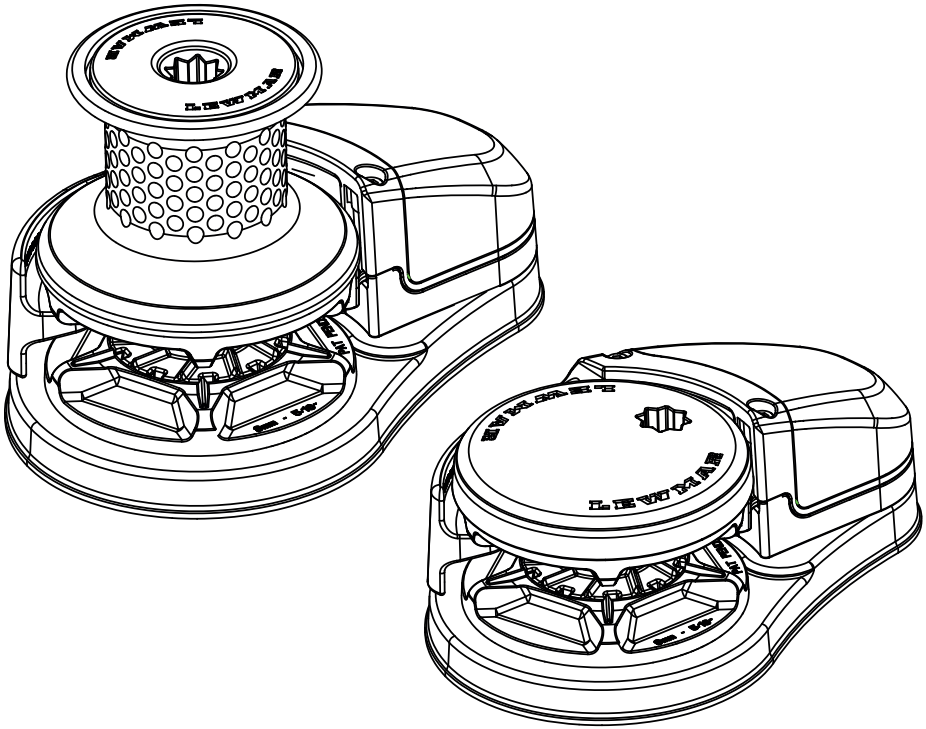
LEWMAR®

Lewmar VX Vertical Windlasses

65100045 Issue 9



GB Owners Installations, Operation & servicing manual

1. Introduction

Dear Customer,

Thank you for choosing Lewmar. Lewmar products are world renowned for their quality, technical innovation and proven performance. With a Lewmar product you will be provided with many years of outstanding service.

Product support

Lewmar products are supported by a worldwide network of distributors and Authorised Service Representatives. If you encounter any difficulties with this product, please contact your national distributor, or your local Lewmar dealer. Details are available at: www.lewmar.com

CE Approvals

For CE approval certificates contact Lewmar.

Important information about this manual

Throughout this manual, you will see safety and product damage warnings. You must follow these warnings carefully to avoid possible injury or damage.

The type of warnings, what they look like, and how they are used in this manual are explained as follows:.

⚠ WARNING!
This is a warning against anything which may cause injury to people if the warning is ignored. You are informed about what you must or must not do in order to reduce the risk of injury to yourself and others.

⃠ SAFETY SYMBOL
When you see the safety symbol it means: “Do not...”; “Do not do this”; or “Do not let this happen”.

2. Safety Notice

IMPORTANT: Read these notes before continuing.

⚠ WARNING!

2.1 Windlass general

Classification Societies and Lewmar require that a vessel at anchor must have its chain/rode held by a chain stopper or equivalent strong point at all times

At all times it is the responsibility of the boat operator to ensure that the anchor and rode are properly stowed for the prevailing sea conditions. This is particularly important with high-speed powerboats, because an anchor accidentally deploying while under way can cause considerable damage. An anchor windlass is mounted in the most exposed position on a vessel and is thus subject to severe atmospheric attack resulting in a possibility of corrosion in excess of that experienced with most other items of deck equipment. As the windlass may only be used infrequently, the risk of corrosion is further increased. It is essential that the windlass is regularly examined, operated and given any necessary maintenance.

Please ensure that you thoroughly understand the operation and safety requirements of the windlass before commencing the installation. Only persons who are completely familiar with the controls and those who have been fully made aware of the correct use of the windlass should be allowed to use it. If there is any doubt of how to install or operate this unit please seek advice from a suitably qualified engineer.

- Windlasses used incorrectly could cause harm to equipment or crew.
- Windlasses should be used with care and treated with respect.
- Boating, like many other activities can be hazardous. Even the correct selection, maintenance and use of proper equipment cannot eliminate the potential for danger, serious injury or death.
- Lewmar windlasses are designed and supplied for anchor control in marine applications and are not to be used in conjunction with any other use.
- Keep limbs, fingers, clothing and hair clear of windlass, rode and anchor during operation. Severe bodily harm could result.
- Ensure there are no swimmers or divers nearby when dropping anchor.
- Windlasses must not be used as the sole means of securing the anchor to the bow fitting especially under storm conditions. Anchors should be independently secured to prevent accidental release.
- Classification Societies require that a vessel lying at anchor must have its anchor rope/chain secured to a chain stopper or other suitable independent strong point.
- A windlass should never be used as a mooring bollard, the anchor rode MUST be secured to a mooring cleat, chain stopper or other designated strong point. Using the windlass to secure the rode will damage the windlass.
- Do not use windlass for ANY purpose other than deployment and recovery of anchor.
- The circuit breaker in this product must never be deactivated or otherwise bypassed, it is intended to protect the motor and cables from overheating and damage.
- Always switch off this windlass at the circuit breaker/isolator when not in use.
- It is the unavoidable responsibility of the owner, master or other responsible party to assess the risk of any operation on the vessel.
- Windlass must not be operated whilst under the influence of alcohol or drugs.

2.2 Fitting

- This equipment must be installed and operated in accordance with the instructions contained in this manual. Failure to do so could result in poor product performance, personal injury and/or damage to your boat.
- Consult the boat manufacturer if you have any doubt about the strength or suitability of the mounting location.

2.3 Electrical

- Make sure that the boat's battery power supply has been switched off before starting the installation.
- This product requires installation by a suitably qualified electrical engineer.

3. Installation

3.1 Basic requirements

Each installation requires the following tools:

Windlass Installation

An appropriate marine sealant and the following:

VX 1

- 10 mm (⅜") Drill
- 14 mm (9/16") Drill
- 18 mm (45/64") Drill
- 40 mm (1 37/64") Hole Saw
- 67 mm (2 ¼")Hole Saw

VX 2/3

- 10 mm (⅜") Drill
- 14 mm (9/16") Drill
- 18 mm (45/64") Drill
- 46 mm (1 13/16") Hole Saw
- 62 mm (2 7/16")Hole Saw

VX 1L

- 10 mm (⅜") Drill
- 15 mm (19/32") Drill
- 67 mm (2 ¼") Hole Saw
- 100 mm (3 15/16")Hole Saw

Wiring Installation

- Crimping Pliers / Wire Stripper
- Suitable electrical cable and crimp terminals

3.2 Accessories

Use only genuine Lewmar parts and accessories to ensure top performance and eliminate the risk of voiding your warranty. For replacement parts, please visit your dealer or www.lewmar.com

3.3 Gypsy Suitability

Gypsies fitted to the VX range of windlasses are ideally suited to handling our factory made Rope/Chain combination rodes, which consist of rope spliced to a chain tail. See Specifications section for details.

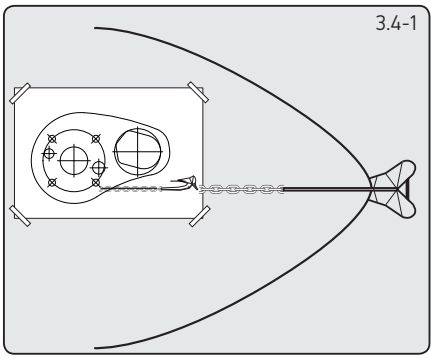
Ropes used must be windlass grade, medium lay nylon. Ropes from different manufacturers have wide variations in stretch and consistency in diameter. Therefore, rope and chain from other manufacturers may require some experimentation to determine the optimum size.

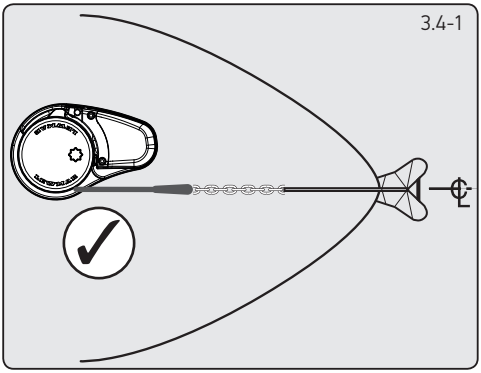
Should you have difficulty in matching a gypsy to your chain please consult your local agent or our international network of distributors.

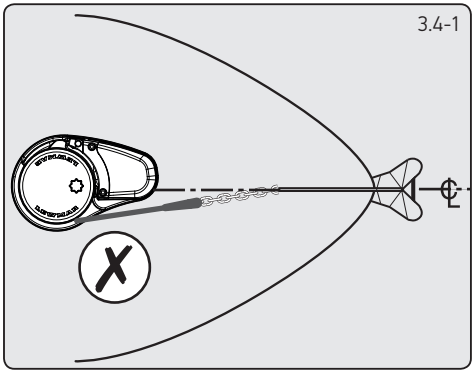
3.4 Above deck preparation

IMPORTANT - Plan location carefully and allow for the following:

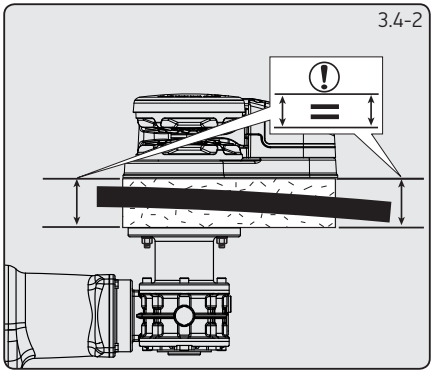
1. Make an accurate drilling template using the product dimensions from the dimension template and decide upon a position for it with reference to the vessel's bow roller and the chain locker below and the rotation of manual operating handle. If possible, select a flat area of deck.


3.4-1





2. If a pad is required for these models, care must be taken to ensure that the windlass base is parallel to the motor/gearbox mounting flange. Shims may be used, before the motor/gearbox is installed, to correct minor misalignment.



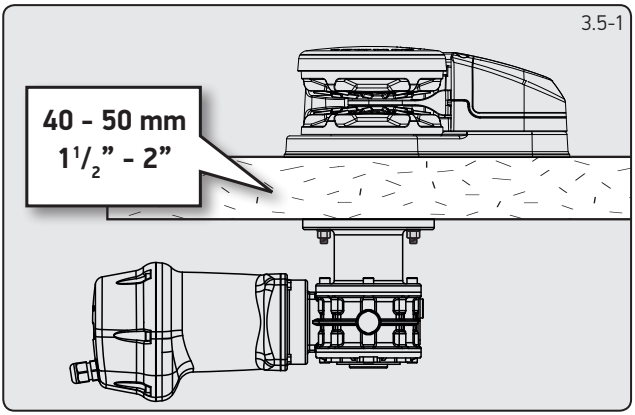
Notes

- if in doubt about the suitable construction of the pad consult a qualified marine engineer.
- Decks that are thin, or of foam or balsa laminate construction, will require reinforcement in order to spread the loads that will be applied to the deck while the windlass is in use

3.5 Deck thickness

The deck is an integral component of the windlass it has to secure the windlass and be strong enough to cope with the high torque stresses involved in recovering the anchor.

- Lewmar recommends a minimum deck thickness of 40mm (1½").

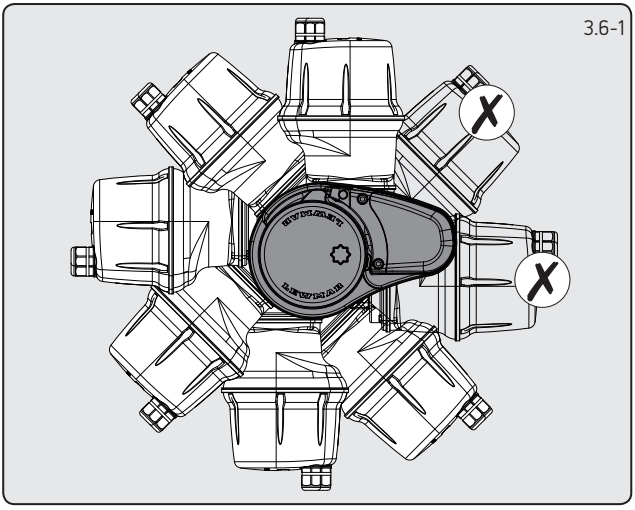


Note: For thicker deck, a longer shaft main be required (not standard). Contact your Lewmar representative for more information

Note: For thinner deck, a deck spacer is available 65100038

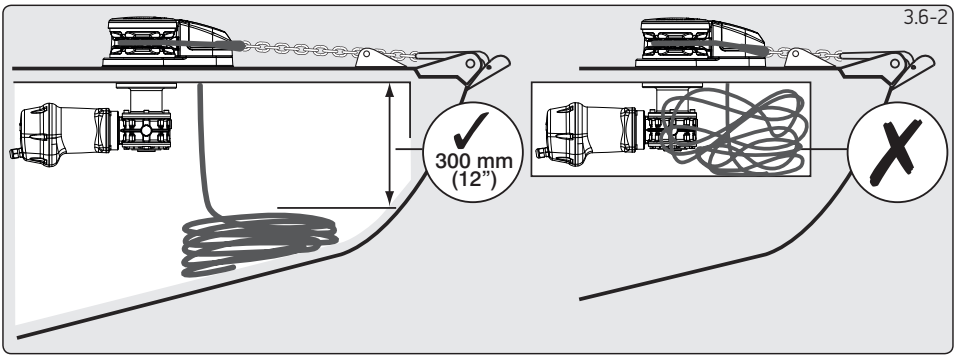
3.6 Below deck preparation

IMPORTANT:
The positioning of the windlass must be checked prior to cutting for deck/hull and bulkhead clearance.



1.The motor/gearbox is bolted via the through deck mounting bolts.

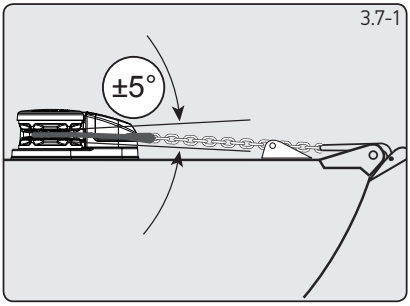
NOTE: Do not position motor/gearbox below rode/chain pipe fall area.



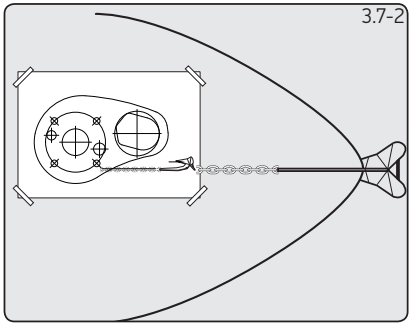
2. There must be sufficient vertical fall for the chain or rope when hauling in.

⚠ WARNING!
Failure to provide minimum vertical fall will cause jamming.

3.7 Above deck fitting



1. Lead from the roller should be fed horizontally back to the top of the gypsy and along its centre line within ±5˚.



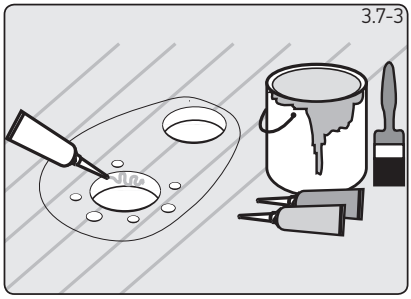
2. Using your template and after you have checked all the above and below deck requirements cut the following holes.

VX1

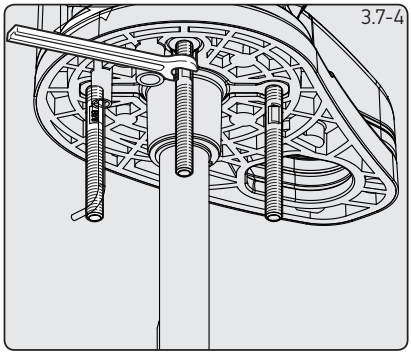
Using a 10mm (⅜") diameter drill, make the 4 holes for the mounting studs, 14mm (9/16") and 18mm (45/64") for the sensors. With a 40mm (1 37/64") and 67mm (2 ¼") diameter hole saw, make two holes for the mainshaft and rode to pass through.

VX2/3

Using a 10mm (⅜") diameter drill, make the 3 holes for the mounting studs, 14mm (9/16") and 18mm (45/64") for the sensors. With a 46mm (1 13/16") and 67mm (2 ¼") diameter hole saw, make two holes for the main unit / Motor gearbox and rode to pass through.

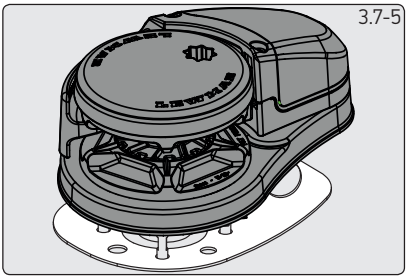


3. When all the holes have been made, remove the template. To help avoid water absorption by the deck, apply an appropriate marine sealant to the freshly cut hole edges.



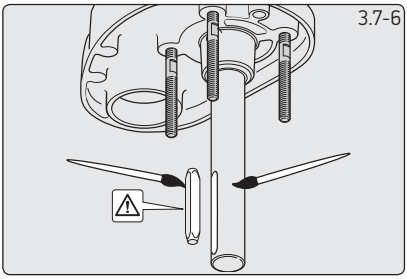
4. Assemble and tighten studs into base until they bottom out in their holes. Some studs have a flat. Position the flats of the studs nearest the base of the windlass.

- VX 1-3 - Studs 21Nm


3.7-5

5. Place the base mat in position on the deck. Optionally, apply a suitable sealant to the base of the windlass, any mounting pad or around the studs.

   NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts.

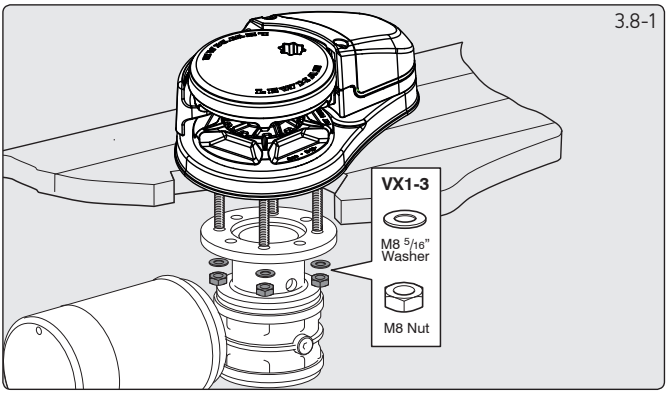

3.7-6

6. Lightly coat the shaft with grease and ensure the drive key is in place before assembly to motor/gearbox.

   Non-aplicable for VX1L

⊘ DO NOT use a permanent adhesive/sealant eg.5200

3.8 Under deck fitting



3.8-1

Lightly grease all moving parts.

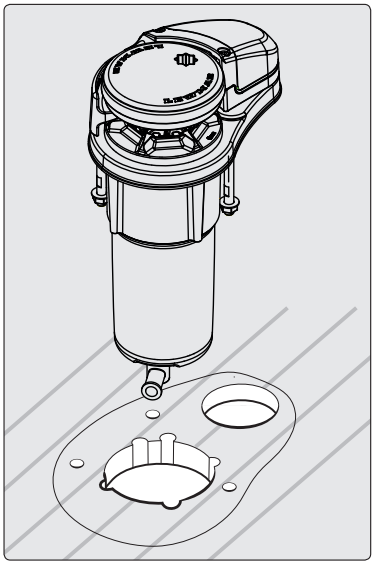
1. Ensure drive key is in place then gently slide the motor/gearbox up the drive shaft until it contacts the deck.

NOTE: Position the motor/gearbox away from the rope/chain pipe fall.

2. Check the motor/gearbox and windlass mounting surfaces are parallel.

• VX 1-3 - Assemble the washer then the M8 nut, secure with Loctite® threadlock to 21Nm torque.

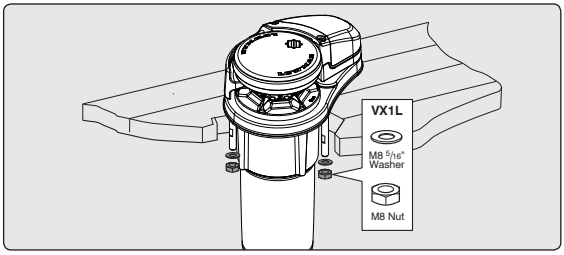
NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts.



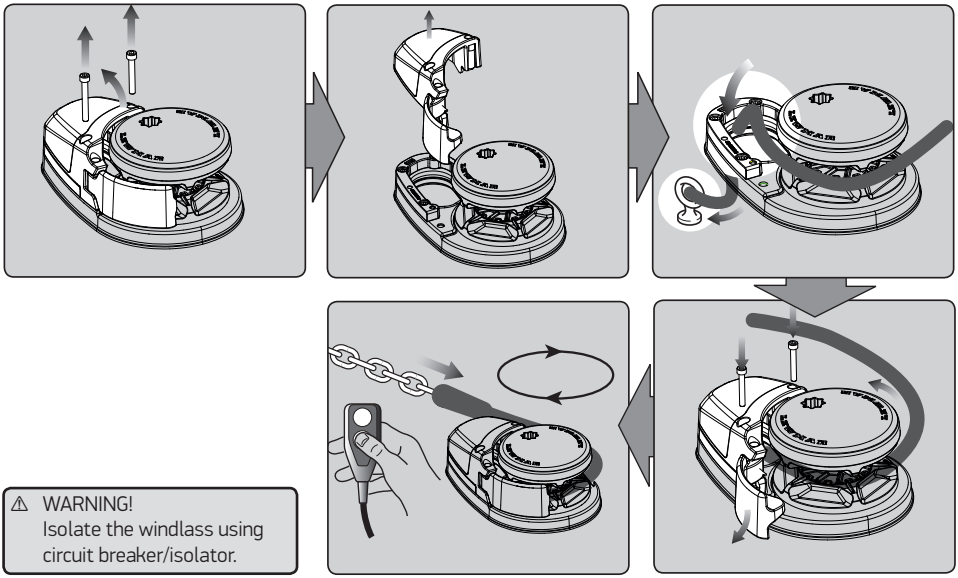
VX1L Fitting

Using a 10mm (⅜") diameter drill, make the 4 holes for the mounting studs, 15mm ($^{13}/_{32}$") for the gearbox fitting. With a 100mm (3 $^{15}/_{16}$") and 67mm (2 ¼") diameter hole saw, make two holes for the mainshaft and rode to pass through.

1. When all the holes have been made, remove the template. To help avoid water absorption by the deck, apply an appropriate marine sealant to the freshly cut hole edges.
2. Assemble and tighten studs into base until they bottom out in their holes. Some studs have a flat. Position the flats of the studs nearest the base of the windlass.



3.9 Loading rope/chain VX1 & VX1L

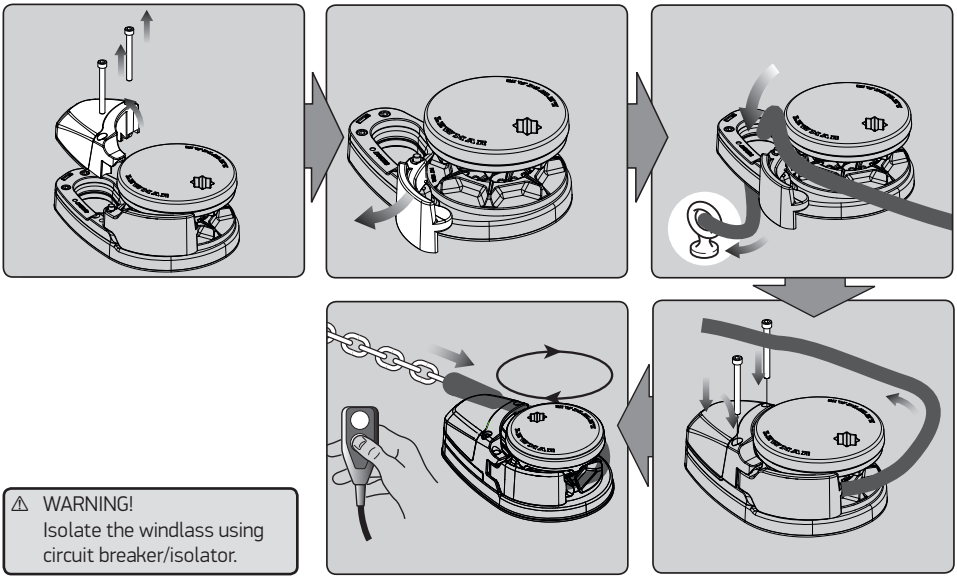


⚠ WARNING!
Isolate the windlass using circuit breaker/isolator.

For safety and performance Lewmar recommends the use of matched Lewmar anchor rodes.

1. Remove cover.
2. Pull out control arm.
3. Feed anchor rope/chain into entry hole. Tie off to suitable strong point.
4. Replace cover. Release control arm and wrap rope/chain around gypsy.
5. Power load rest of anchor rope/chain.

3.10 Loading rope/chain VX2/3



⚠ WARNING!
Isolate the windlass using circuit breaker/isolator.

For safety and performance Lewmar recommends the use of matched Lewmar anchor rodes.

1. Remove cover.
2. Pull out control arm.
3. Feed anchor rope/chain into entry hole. Tie off to suitable strong point.
4. Replace cover. Release control arm and wrap rope/chain around gypsy.
5. Power load rest of anchor rope/chain.

4. Electrical wiring

4.1 Electric cable selection

Installation of this product should meet the regulations and standards or codes of practice relevant to the craft to which it is being fitted. As a minimum the installer should conform ISO 10133.

Lewmar recommends the installer use cable with insulation rated at 90°C or higher.

Length = Length of cable from battery '+' terminal and back to battery '-' terminal including breaker and switch gear if fitted

Cable size guide given is for guidance only.

It is the responsibility of the installer to confirm the capacity and voltage drop for the installation. If in any doubt, contact your local marine electrician.

MODEL	CURRENT DRAW AT WORKING LOAD	BREAKER SUPPLIED AMPs	CSA TO MEET ISO 10133 ANNEX A FOR 20 M	AWG TO MEET ABYC E11 FOR L= 66 FEET
VX1 300	66	50	25	4
VX1 500	112	90	35	2
VX2 12V	120	90	35	1
VX2 24V	60	50	10	7
VX2+ 12V	131	110	50	1
VX2+24V	74	90	16	6
VX3 12V	132	110	50	1
VX3 24V	70	90	10	7

4.2 Wiring

Plan the installation to suit the controls and give the operator a full view of the windlass. The wiring system should be of the fully insulated type, which avoids possible electrolytic corrosion problems. We recommend the use of type III stranded, tinned copper wire with copper crimp terminals. Most modern installations are negative return (negative ground) but polarity should be checked.

Overload protection, in the form of the circuit breaker/fuse supplied, must be built into the windlass wiring circuit.

Circuit breaker supplied:

50A (Part No 68000348) 70A (Part No 68000240)

90A (Part No 68000349) 110A (Part No 68000350)

⚠ WARNING!

NOTE: The circuit breaker should be positioned close to the battery in a dry, readily accessible place.

The breaker must be manually reset should an overload occur that causes it to trip to the off position.

If you are not sure you understand these guidelines, seek professional help. Ensure that the installation complies with USCG, ABYC, NMMA or other local regulations.

4.3 Control switch installation

The unit is supplied with

- Guarded rocker switch (product ref 68000593)
- Contactor VX1/VX1L (12V- 68000939)
- VX2/3 (12V- 68000937) / VX2/3 (24V- 68000938)

Follow the wiring diagrams

NOTE: Optional electric footswitches and remote handheld control available.
Visit www.lewmar.com for more information.
Contactor box used in some installation refer to wiring diagram § 4.4 - 4.8
Optional wireless remote also available see table below for models and references.

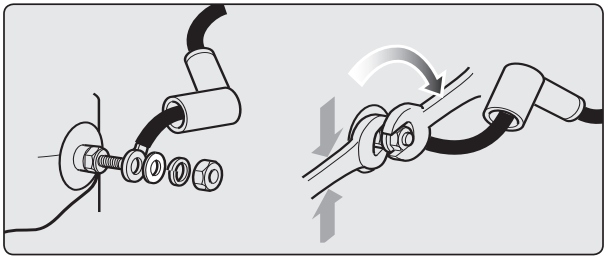
WIRELESS REMOTE (3 BUTTON WINDLASS ONLY)	WIRELESS REMOTE (5 BUTTON WINDLASS & THRUSTER)
68000967	68000968

NOTE: In a multi station installation all switches must be wired in a parallel circuit.

4.4 Electric motor terminal connections

- When wiring Lewmar electric motor into the ship's electrical system the following caution must be taken.
- When tightening the front nut hold the back nut with a separate wrench to make sure the back nut does not turn. If the back nut turns, serious damage will occur, voiding Lewmar's warranty on the electric motor.

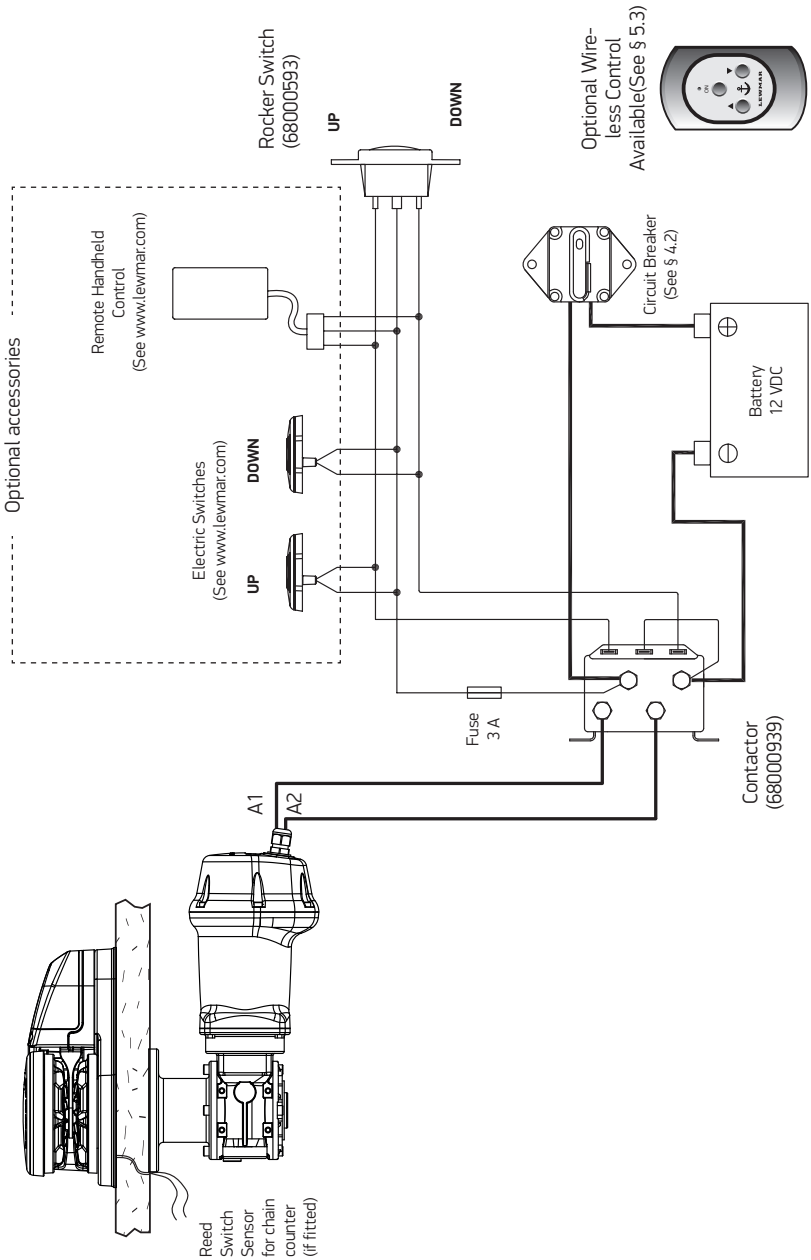
DO NOT overtighten electric motor terminal nuts.



4.5 VX1 - Wiring diagram using contactor provided (Part No 68000939)

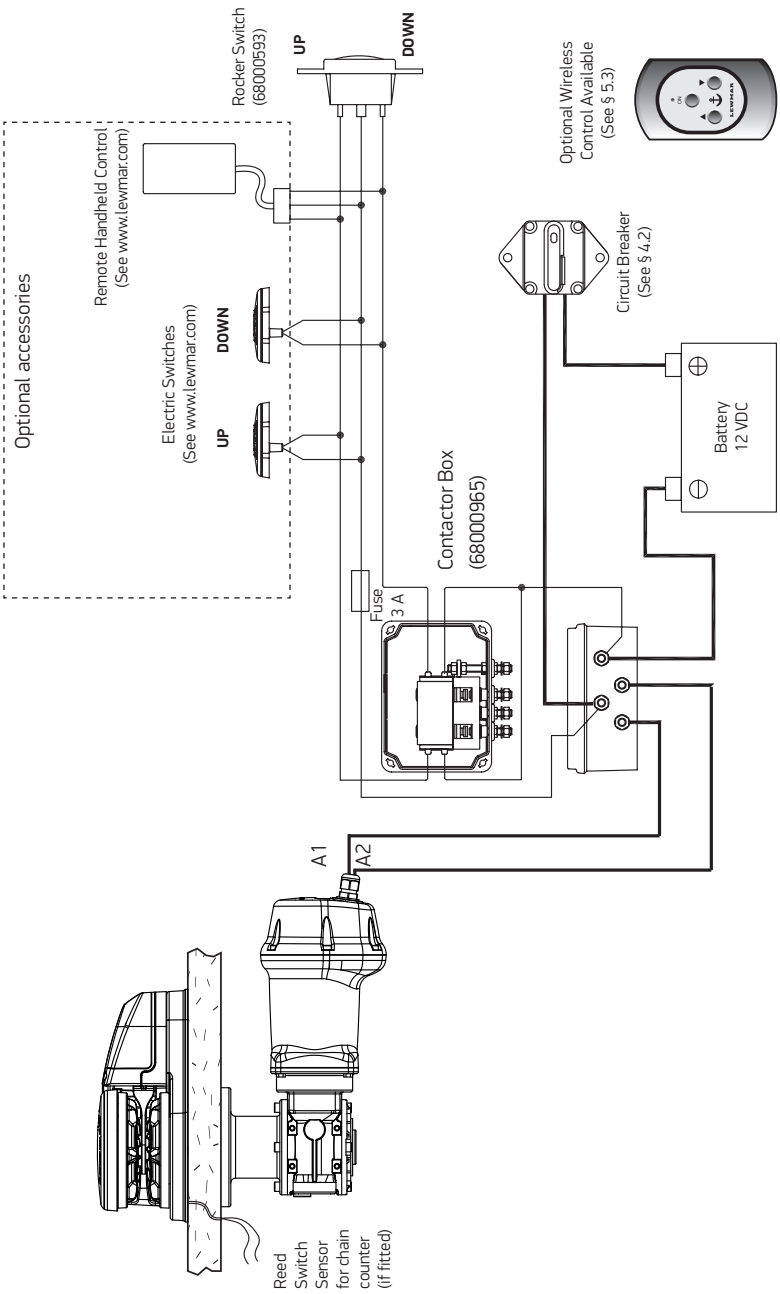
Installation instructions are supplied separately with any accessories.

Switch wire thickness:**1.5 mm2** (16 AWG)



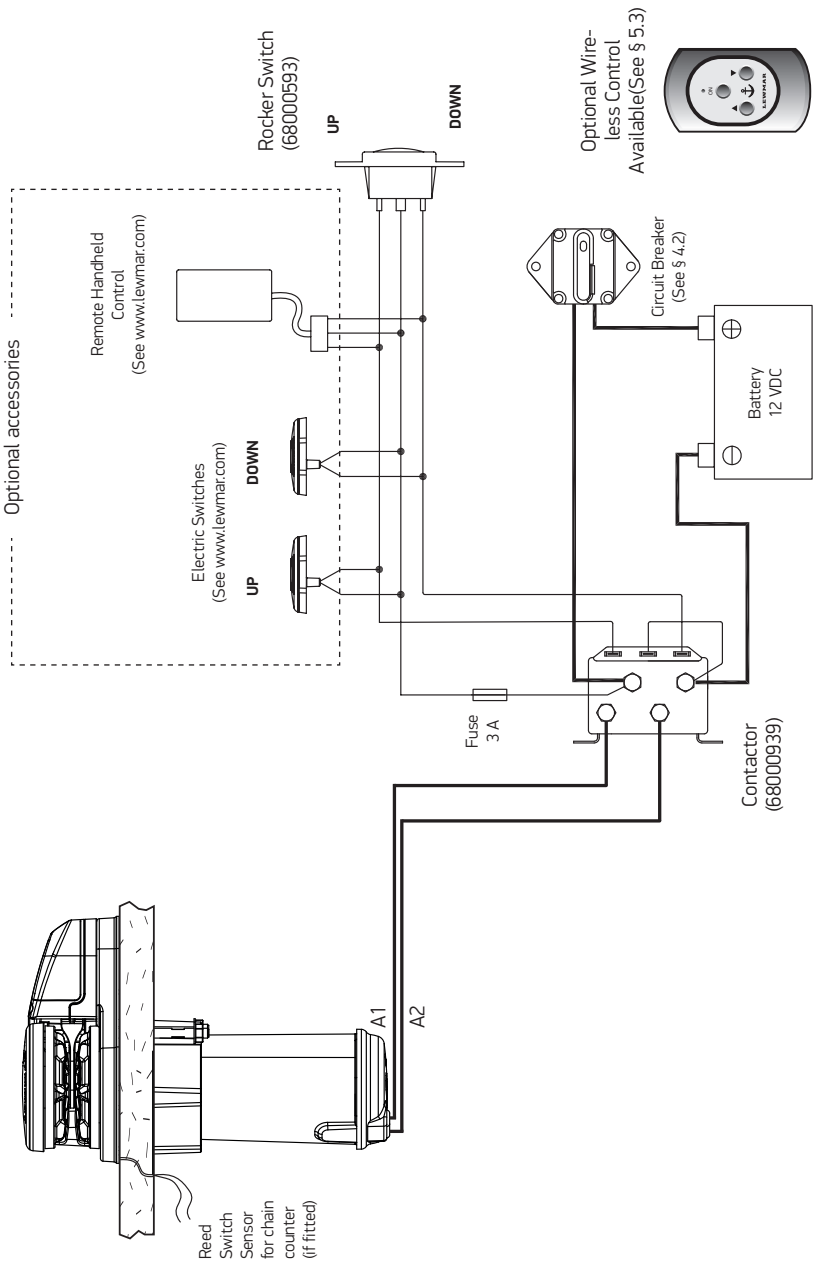
4.6 VX1 - Wiring diagram if a contactor box (Part No 68000965) is used

Installation instructions are supplied separately with any accessories.



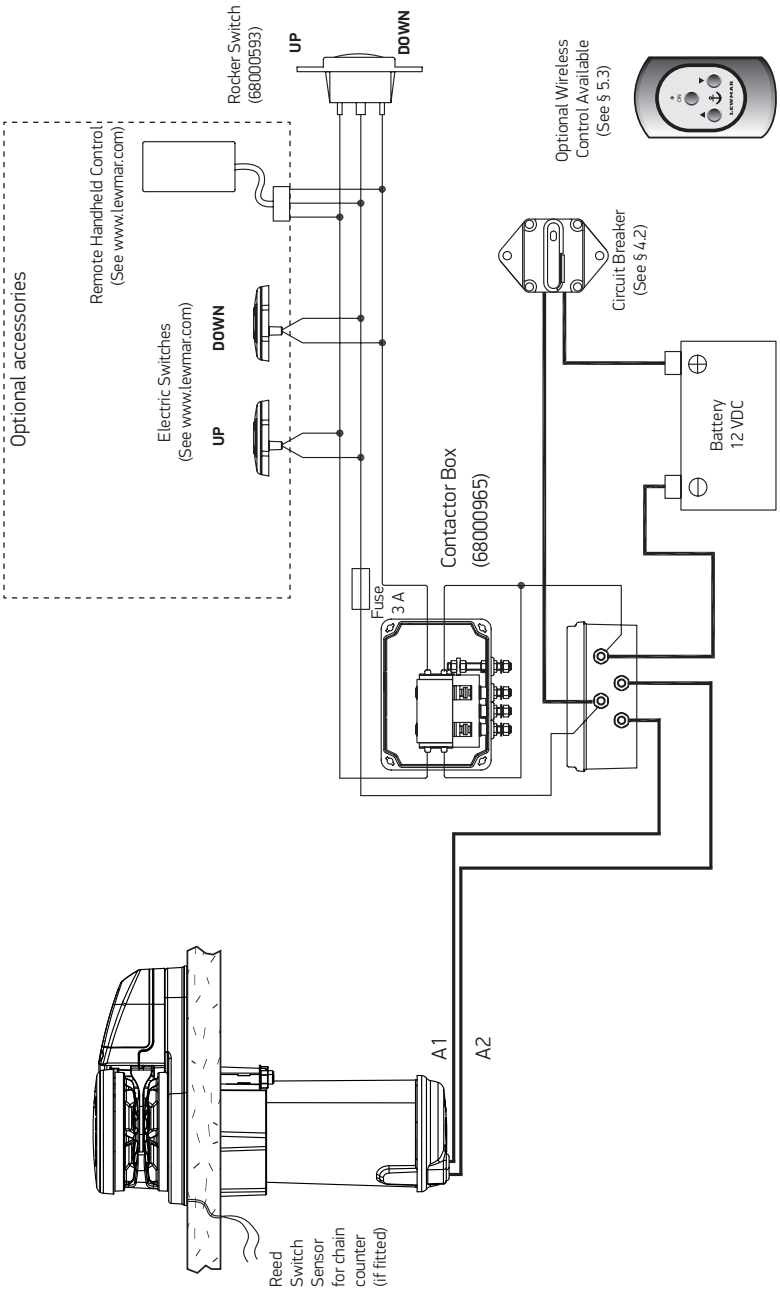
4.7 VX1L - Wiring diagram using contactor provided (Part No 68000939)

Installation instructions are supplied separately with any accessories.



4.8 VX1l - Wiring diagram if a contactor box (Part No 68000965) is used

Installation instructions are supplied separately with any accessories.



4.9 VX2/3 Wiring diagram

Installation instructions are supplied separately with any accessories.

1. **NOTE:** Motor connections
   D1 = F1
   D2 = F2