LEWMAR®

# Lewmar V8/ V9/ V10/ V12 Windlass

## 66300094 Issue 11

Lloyd's Register
TYPE APPROVAL

GB Owners Installations, Operation & servicing manual

## 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”.

⚠ This manual forms part of the product and MUST BE kept with boat documents.

To the best of our knowledge, the information in this manual was correct when it went to press. However, Lewmar cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Lewmar cannot accept liability for any differences between the product and the manual.

# 1. Safety Notice

IMPORTANT: Read these notes before continuing.

⚠ WARNING!

## 1.1 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.
- Do not wrap chain around a capstan barrel or drum where fitted.
- 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.

## 1.2 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.

## 1.3 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.

## 2. Anchoring Procedures

IMPORTANT: Read these notes before continuing.

The following guidelines are designed to assist crews in the correct usage of Lewmar anchoring equipment when deploying or retrieving the anchor.

Ensure the crew are fully trained in proper anchoring techniques to safely anchor the boat.

Refer to the Lewmar Owners' Manual for safe operation of your windlass.

### 2.1 Windlass Holding Load

The holding load of a windlass is calculated to be 1,5 x Max. Pull. If a higher load than this is exerted back through the windlass, breakages may occur.

### 2.2 Deploying Anchor

Apply the windlass band brake to prevent the gypsy from rotating. Remove any devils claw device used for securing the anchor, and ensure that the chain stopper is also released.

Raise the windlass drum / top nut to disengage the drive dogs. Ensuring that it is safe to do so, gradually release the brake to allow the anchor & anchor chain to free fall, keeping its descent under control using the brake to prevent it running away. Continue until the required amount of chain has been deployed to offer the ideal scope for the conditions.

### 2.3 Apply the Chain Stopper

Engage the chain stopper paddle ensuring that it is fully registered between adjoining links.

### 2.4 Setting Anchor

Once the anchor load has been transferred to the chain stopper, it is now possible to use the boats' engine power to set the anchor. If more scope is required, release the chain stopper and pay out more chain, ensuring that the chain stopper has once again been applied before allowing more load to be pulled. Once anchored, secure the anchor rode using the chain stopper. Tighten down the windlass drum / top nut to re-engage the drive dogs in preparation for raisingthe anchor.

### 2.5 Breaking & Retrieving Anchor

Release the chain stopper.

The windlass must not be used for pulling the boat to the anchor or breaking out the anchor if it

is fouled.

When retrieving the anchor rode, always motor towards the anchor. If the anchor is fouled, re-apply the chain stopper and use the boat's engine to break the anchor loose.

### 2.6 Stowing Anchor

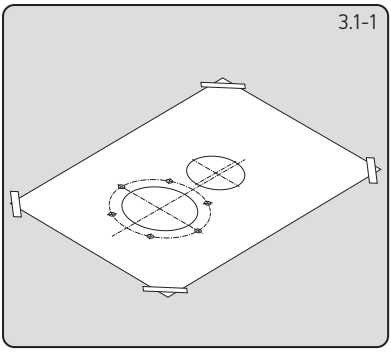
As the anchor breaks water, use short pulses on the control to bring the anchor up to its docking position, watching carefully to ensure that it is correctly orientated to prevent damage. Once the anchor has been fully docked, apply the devils claw or other device to secure the anchor, before releasing any tension on the windlass.

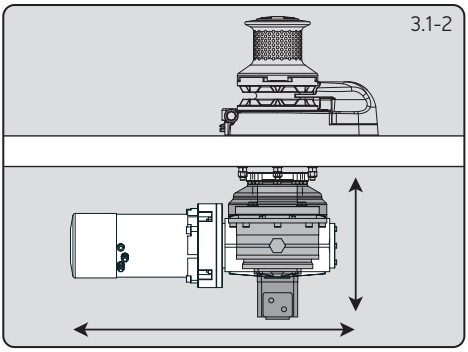
# 3. Installation

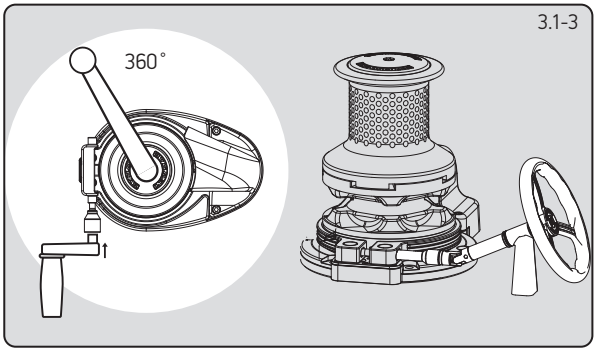
## 3.1 Above deck preparation

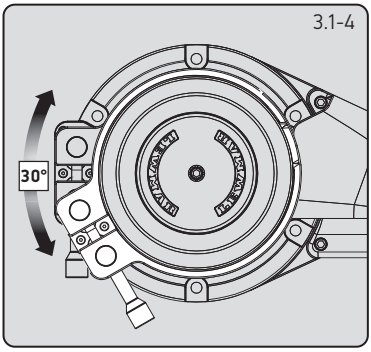
NOTE: Lewmar recommends V8/9/10/12 windlasses are specified and installed by competent marine engineers.

IMPORTANT: Plan location carefully making sure that the operator can monitor the anchor recovery and rode stowage and allow for the following:




**All models:**

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

- Confirm L/H or R/H deck unit chain alignment.
- If possible, select a flat area of deck. To take up any camber or sheer a suitable pad will be required.

1. Make an accurate drilling template using the product dimensions from Section 8 and position in line with anchor chain centre line.
2. Check space available under deck for electric/hydraulic motor unit and cable runs.
3. With the handle inserted, check that the drum can rotate through 360 degrees.

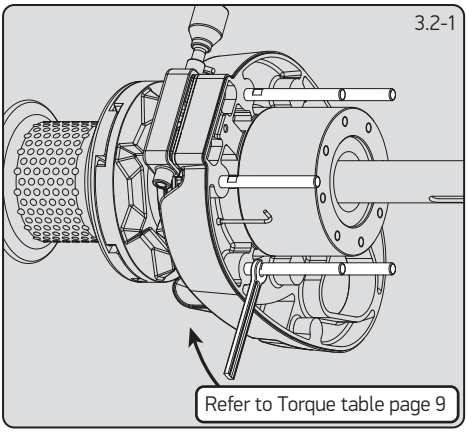
- Check the deck surrounding the windlass to ensure there is space for attachment and operating movement of band brake handle.
- Positioning of remote handwheel if fitted.

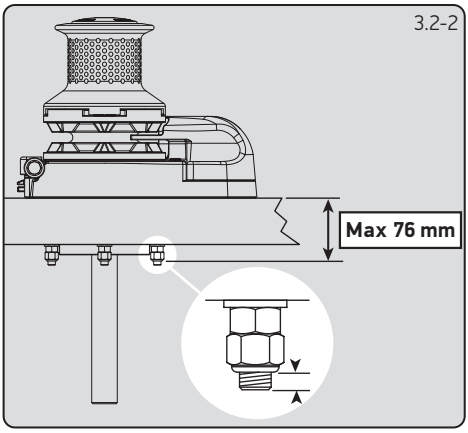
**Model V9 /10 / 12**

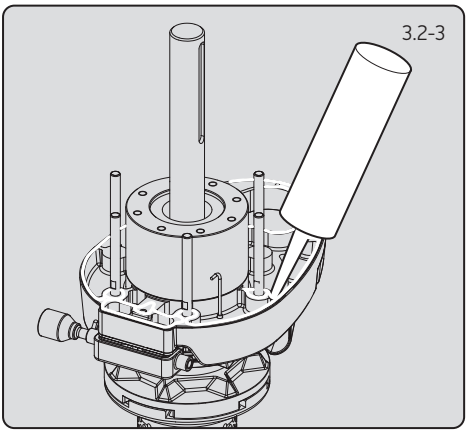
4. Standard brake operation position shown, orientation can be rotated in 30 degree increments to optimise brake position.

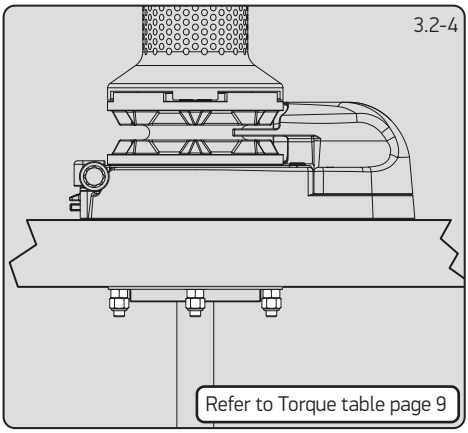
## 3.2 Model V8 fitting windlass

- Drill 13mm diameter stud holes.
- Drill 150mm and 115mm diameter holes.
- With a sandwich deck construction it is important to seal the exposed surfaces.



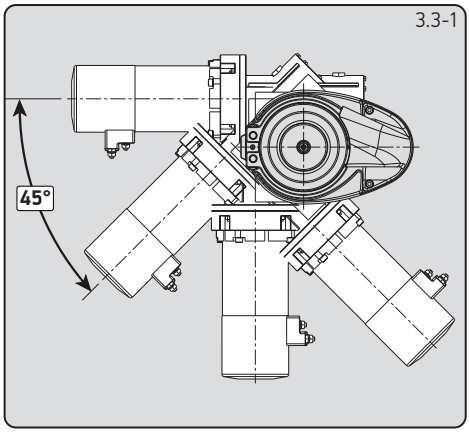



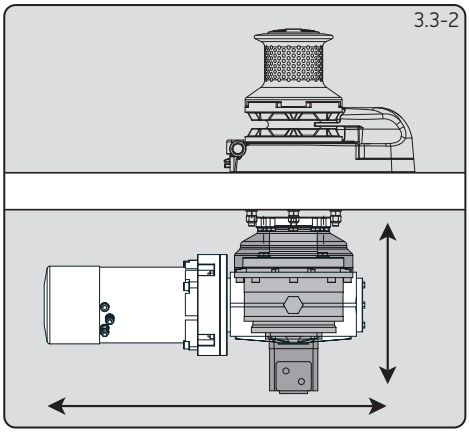

1. Secure studs to windlass base with Loctite® 243 , Tighten to specified torque
2. Measure deck depth plus clamp plate and the 2 nuts and add 5mm. Trim studs to length, if required. Maximum deck thickness 76mm (3")
3. Apply a bead of suitable sealant/bedding compound and mount the windlass through the deck.

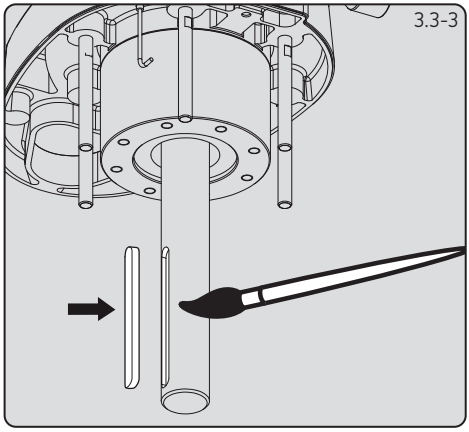
> ⊘ DO NOT use a permanent adhesive/sealant, eg. 5200.

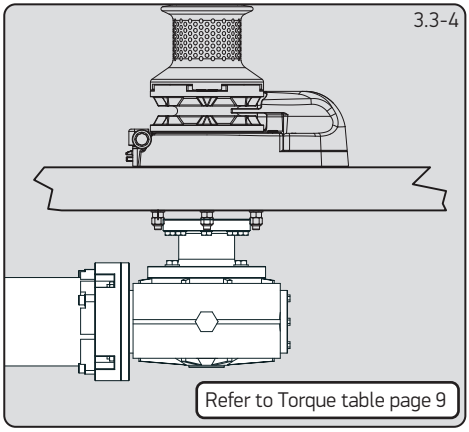
4. Fit windlass to deck and secure with Loctite® 243, Tighten to specified torque
5. NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts.

## 3.3 Model V8 under deck fitting



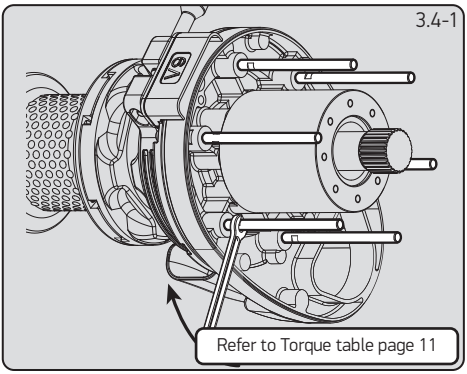



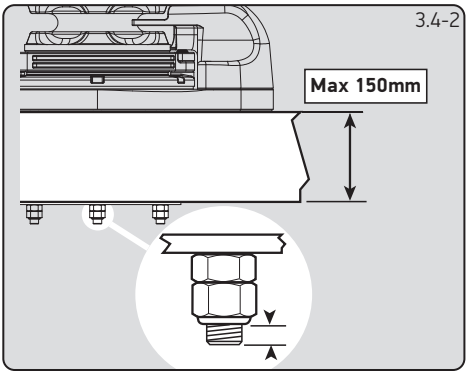

1. There are 4 positions available for electric motor/gearbox.
2. Minimum depth under deck required for electric motor/gearbox and hydraulic motor unit, see §8
3. Lightly coat the shaft of the windlass with grease. Ensure the drive key is in place and, selecting the most suitable of the 4 positions, slide the motor/gearbox into position.
4. Assemble the bolts and washers and secure with Loctite® 243, Tighten to specified torque.

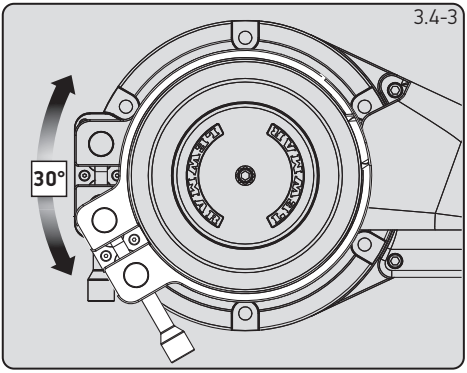
## 3.4 Model V9 fitting windlass

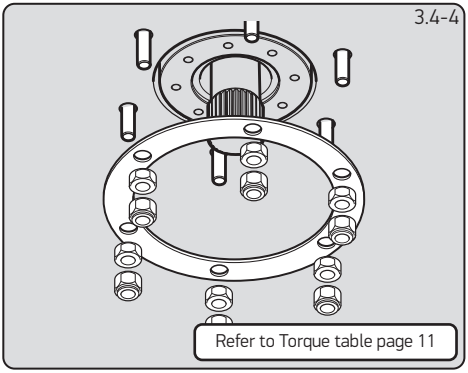
- NOTE: Lewmar recommends V9 windlasses are specified and installed by competent marine engineers.
- Using template drill 6 x 15mm diameter bolt holes.
- Cut 178mm and 140mm diameter holes.
- With a sandwich deck construction it is important to seal the exposed surfaces.

⚠ WARNING! Extremely heavy, use mechanical lift aid.




1. Secure studs to windlass base with Loctite® 243, Tighten to specified torque
2. Measure deck depth plus deck backing plate and the 2 nuts and add 5mm. Trim studs to length, if required. Maximum deck thickness 150mm.

- Apply a bead of suitable sealant/bedding compound and mount the windlass through the deck.

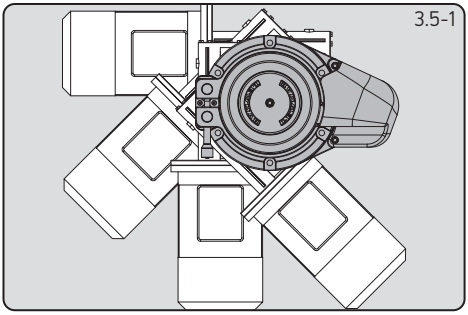
⊘ DO NOT use a permanent adhesive/sealant, eg. 5200.

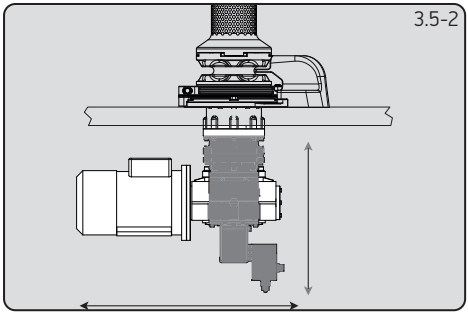
3. Select the operating position for the band brake and insert bolts.
4. Assemble the deck backing plate and M14 nuts. Use Loctite® 243 and tighten to specified torque.
5. Secure with M14 Nyloc nut.

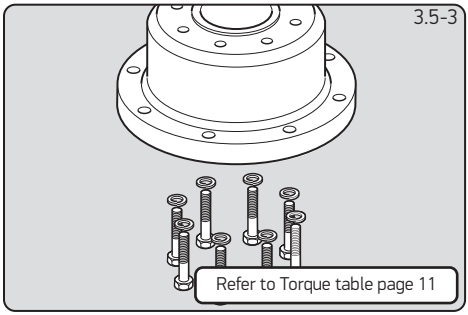
NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts.

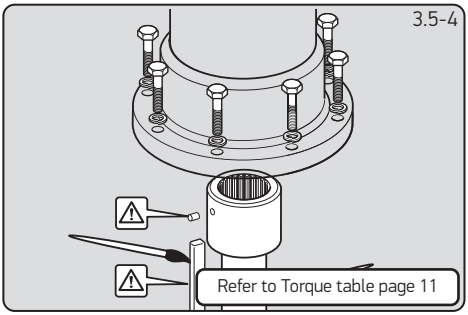
## 3.5 Model V9 under deck fitting

⚠ WARNING! Extremely heavy, use mechanical lift aid.




1. The motor/gearbox is bolted directly to the base via an adaptor. There are various positions available.

NOTE: Motor/gearbox must not obstruct the chain fall hole.

2. Minimum depth under deck required for electric motor/gearbox and hydraulic motor unit.
3. Fit the adaptor to the base of the windlass with 8 - M10x55 bolts and M10 spring washers
4. Lightly coat the splined drive shaft of the windlass with grease.

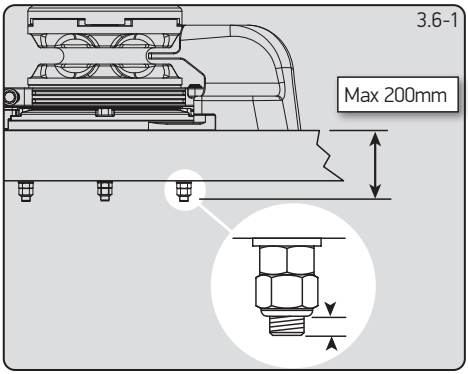
- **Electric/hydraulic motor/gearbox**
  Gently slide the splined end of the motor/gearbox coupling onto the spline of the windlass drive shaft and secure with grub screw. Ensure drive key is on the coupling. Selecting the most suitable position, slide the motor/gearbox in to place until its face meets with the adaptor plate. Secure with 8 - M12x50 bolts and M12 spring washers .
- **Hydraulic drive with brake**
  Proceed as above except this unit does not require a motor/gearbox coupling.

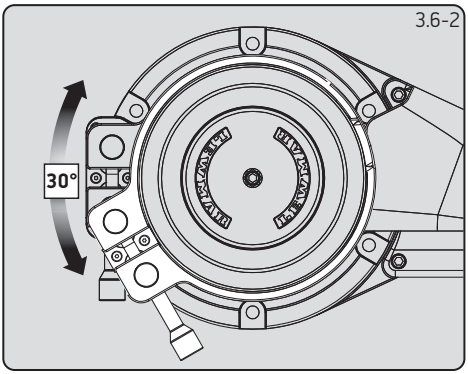
NOTE: Additional support is required for the electric motor/gearbox using the mounting support under the motor.

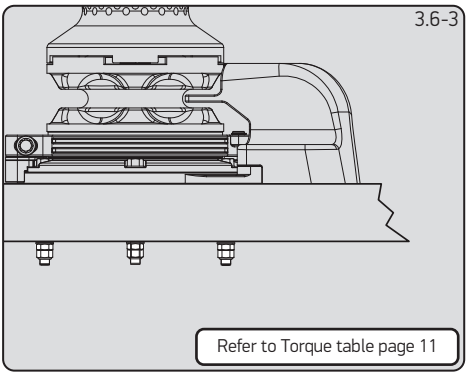
## 3.6 Model V10/12 fitting windlass

- NOTE: Lewmar recommends V10/12 windlasses are specified and installed by competent marine engineers.
- Using template drill 6 x 17mm diameter bolt holes.
- Cut 260mm and 120mm diameter holes.
- With a sandwich deck construction it is important to seal the exposed surfaces.

⚠ WARNING! Extremely heavy, use mechanical lift aid.




1. Measure deck depth plus the washer and 2 nuts then add 5mm. Select M16 bolts of suitable length (not supplied by Lewmar). Maximum deck thickness 200mm.
- Apply a bead of suitable sealant/bedding compound and mount the windlass through the deck.

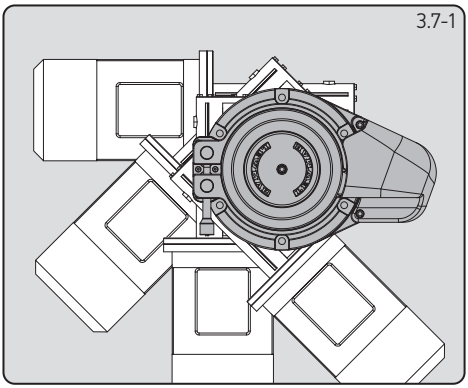
⊘ DO NOT use a permanent adhesive/sealant, eg. 5200.

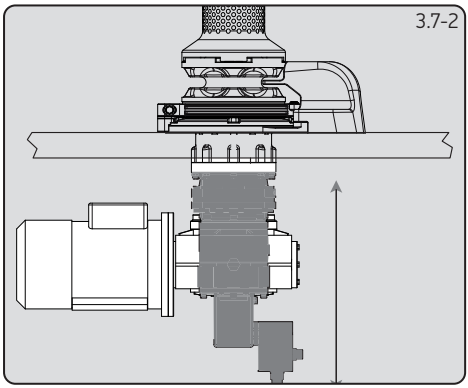
2. Select the operating position for the band brake and insert bolts.
3. Assemble the washer and M16 nut first and secure with Loctite® 243, Tighten to specified torque and then secure with M16 Nyloc nut.

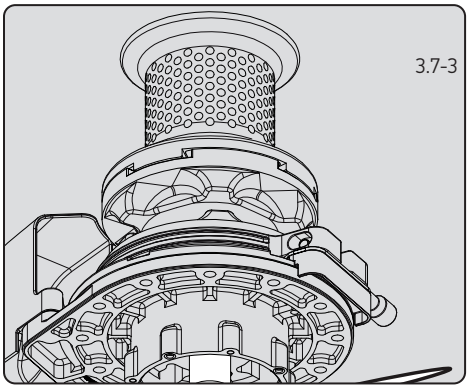
NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts.

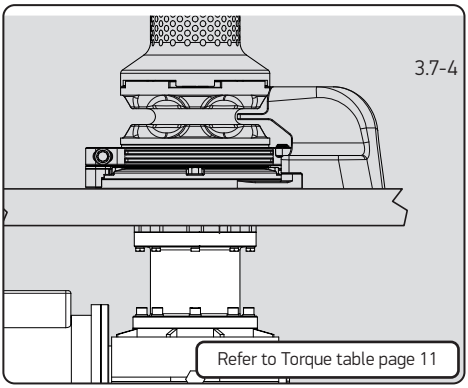
## 3.7 Model V10 & V12 under deck fitting

⚠ WARNING! Extremely heavy, use mechanical lift aid.




1. The motor/gearbox is bolted directly to the base via a down tube. There are various positions available.

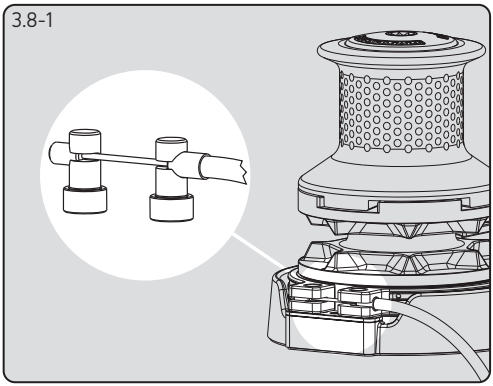
NOTE: Motor/gearbox must not obstruct the chain fall hole.

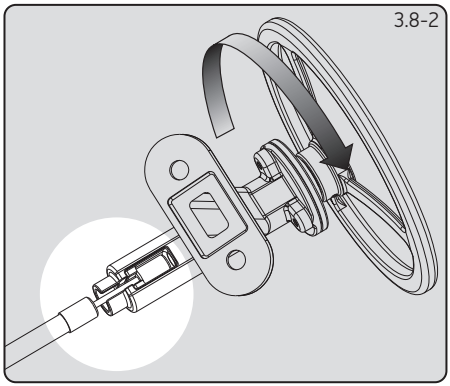
2. Minimum depth under deck required for electric motor/gearbox and hydraulic motor unit, see §8.
3. Lightly coat the splined shaft of the windlass with grease. Selecting the most suitable position, slide the motor/gearbox in to place.
4. Assemble the bolts and washers and secure with Loctite® 243, Tighten to specified torque
5. NOTE: Additional support is required for the electric motor/gearbox using the mounting support under the motor.

| FASTENER TIGHTENING TORQUES (A2-70 / A4-70 STAINLESS STEEL) | | |
|---|---|---|
| Thread Size | Tightening Torque | Tolerance |
| M8 | 14.5 Nm | ± 2.0 Nm |
| M10 | 30.0 Nm | ± 3.0 Nm |
| M12 | 50.0 Nm | ± 4.0 Nm |
| M14 | 79.0 Nm | ± 4.0 Nm |
| M16 | 121.0 Nm | ± 5.0 Nm |
| Apply Loctite® 243 medium strength locking fluid to threads | | |

## 3.8 Model V8 remote brake cable installation (optional)

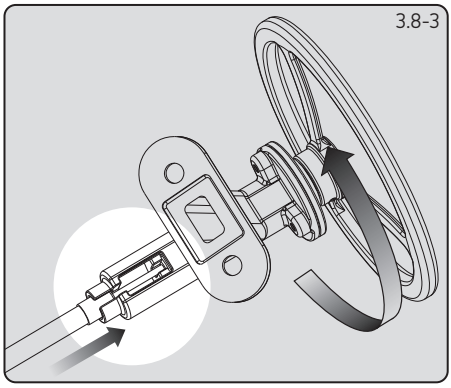
Illustrations based on 68000876




1. Insert one end of the brake cable into band brake pins on deck unit ensuring that both parts are fully located into recesses of pins as shown.
2. Rotate hand wheel anti-clockwise until the slide has fully wound back as shown.
   Insert other end of cable.
3. Rotate handwheel clockwise to move slide up into the housing body ensuring that cable end is fully located in slide recess.

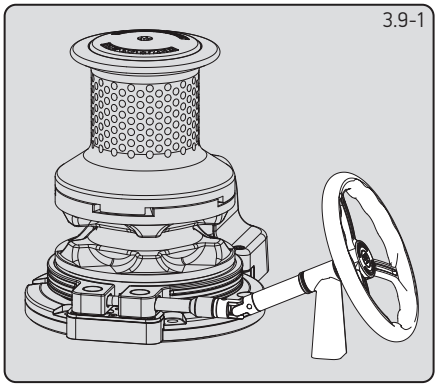
- Keep rotating handwheel until the outer sheath of cable is fully located into end of housing body and slack cable is taken up.
- Firmly secure to deck with M10 / ⅜" CSK Head bolts.




## 3.9 Model V9/10/12 remote brake installation (optional)

1. Select suitable position of band brake ring for brake wheel position.

- Insert brake wheel UJ connecter shaft in handle socket of deck unit ensuring that both parts are fully located.
- Hand tighten shaft until brake is applied, then back off 3 full turns.
- Once position of band brake and operating handle is established drill deck and secure using (20mm V9 / 24mm V10-12) stud through deck.



# 4. Electrical wiring

## 4.1 Electric cable selection

Lewmar recommends the installer source and install cable that meets the requirements of the standards and regulations relevant to the installation and codes of practice. The cable table gives recommended cable sizes based on total length of cable required, from the battery, following the route of the cables.

⃠ DO NOT confuse cable length with the length of the vessel

Windlass performance is directly related to cable size and length.
Voltage drop over the complete wiring run must not exceed 10%.

| 2.5 KW 24V DC USING 66000894 200 AMP MCB CABLE SIZING FOR LENGTH OF CABLE RUN | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 - 23 m | 0 - 75 ft | 23- 34 m | 75 - 95 ft | 34 - 47 m | 95 - 119 ft | 47 - 64 m | 119 - 151 ft |
| 35 mm² | 2 AWG | 50 mm² | 1 AWG | 70 mm² | 0 AWG | 95 mm² | 2/0 AWG |

| 3.5 KW 24 VDC USING 66000895 250 AMP MCB CABLE SIZING FOR LENGTH OF CABLE RUN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 - 20 m | 0 - 76 ft | 20- 27 m | 76 - 96 ft | 27 - 38 m | 96 - 122 ft | 38 - 52 m | 122 -154 ft | 52 - 66 m | 154 - 193ft |
| 35 mm² | 1 AWG | 50 mm² | 0 AWG | 70 mm² | 2/0 AWG | 95 mm² | 3/0 AWG | 120 mm² | 4/0 AWG |

## 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.

⚠ 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

Follow the mounting instructions supplied with the switch.

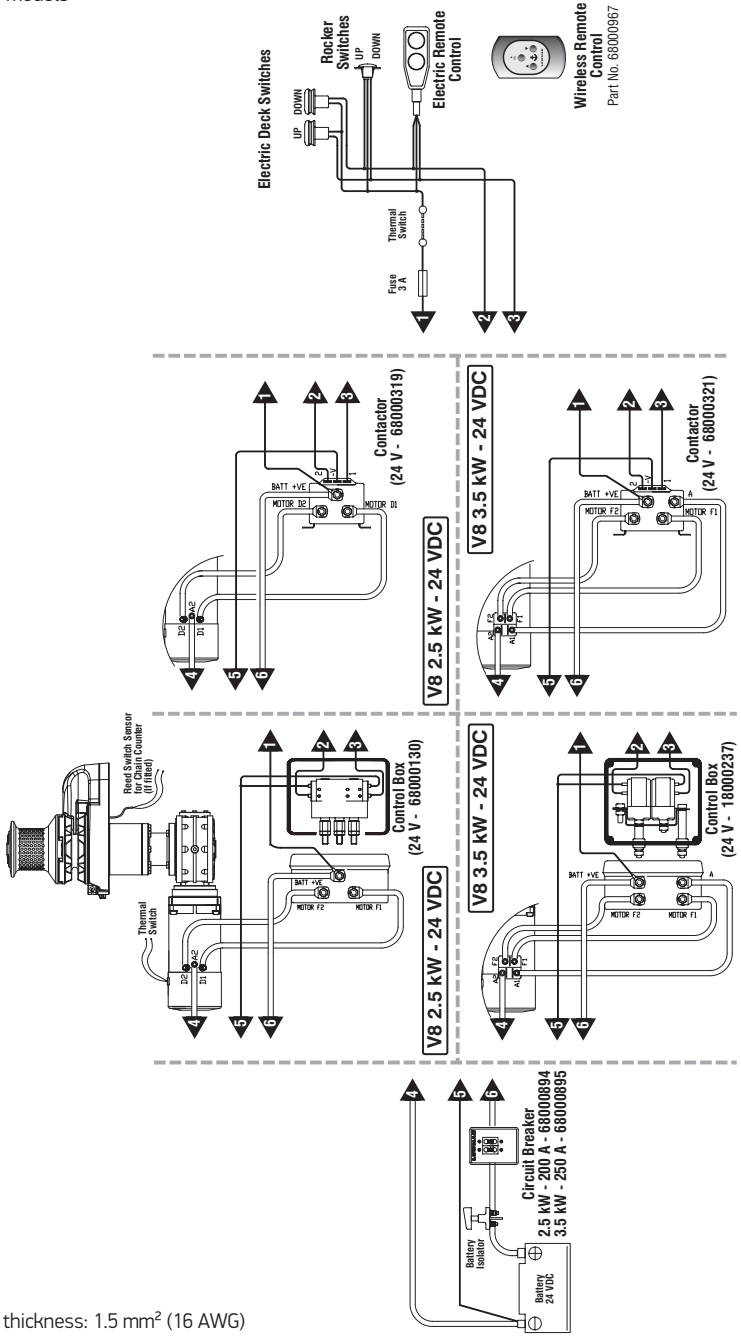
NOTE: In a multi station installation all switches must be wired in a parallel circuit.

## 4.4 V8/9/10/12 AC electric wiring installation

AC electric wiring information for the V8/9/10/12 will be published on a separate addition that can be found on Lewmar website www.lewmar.com

## 4.5 V8 Wiring diagram

V8 windlass models




Switch wire thickness: 1.5 mm² (16 AWG)

# 5. Hydraulic System

## 5.1 Installation

Windlass unit should be connected to a hydraulic powerpack with directional control valve installed to control the windlass movement.

Fig 5.1 shows typical hydraulic circuit for a windlass with the Hi-Power or Standard motor/gearbox.

## 5.2 V8 Hydraulic motor/gearbox

The hydraulic motor/gearbox consists of a high torque hydraulic motor fitted to a 90 degree gearbox or or an in-line gearbox.

Refer to section 5.5 for flows and pressures information.

The motor gearboxes are not self sustaining. A dual Pilot Operated Check Valve (POCV) must be installed in the system to temporarily sustain any load. The POCV can be line mounted (as shown in Fig 5.1) or modular type if for example a CETOP 3 directional valve is being used.

NOTE: To permanently sustain a load a Chain Stopper must be used.

## 5.3 V9/10/12 Hydraulic motor/gearbox

The hydraulic motor/gearbox consists

of a high torque hydraulic motor fitted

to an in line gearbox with brake.

Refer to section 5.7 for flows and pressures information.

The motor gearbox is self sustaining.

## 5.4 Hose types

For reliable operation and safety it is essential to use reinforced braid hose for connecting to the motor A and B ports which conforms to SAE100R2A or DIN 20 021 Part 2.

The recommended hose sizes are:

- Up to 30 l/min + ½" (13mm) bore diameter.
- Up to 40 l/min + ⅝" (16mm) bore diameter.
- Up to 57 l/min + ¾" (19mm) bore diameter.
- Ref: 3.78 litres = 1 US gallon
  4.54 litres = 1 Imperial gallon

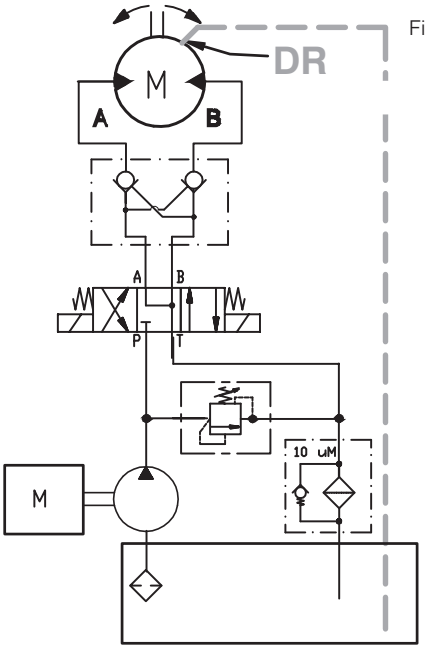
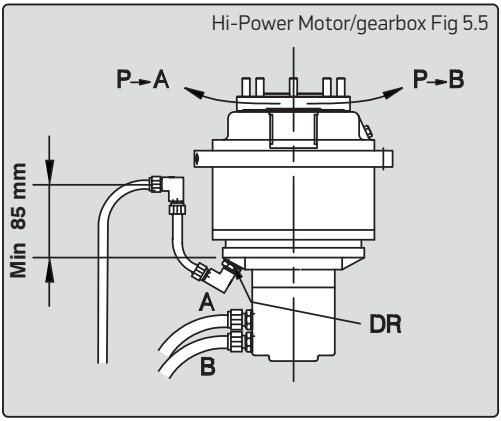
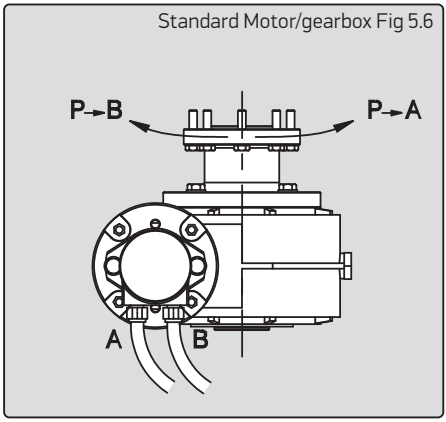



Fig 5.1

Hi-Power Motor/gearbox Fig 5.5




Standard Motor/gearbox Fig 5.6




## 5.5 Model V8 motor ports & drain - Hi-Power motor/gearbox

The Lewmar hydraulic motor ports are:

A & B ports ¾" BSP.

Drain port (only Hi-Power motor/gearbox) is ¼" BSP.

- The location of the ports for the Hi-Power motor/gearbox is shown in Fig 5.5. A drain line is required for the motor/gearbox.
- The minimum bore diameter of the drain line required is 6mm.
  Safe working pressure: 10 bar.
- Tubing material: Oil compatible semi-rigid plastic tube braided hose or steel pipe.

## 5.6 Model V8 Motor ports - Standard motor/gearbox

The location of the ports for the Standard motor/gearbox is shown in Fig 5.6 (no drain connection).

## 5.7 Model V9/10/12 motor ports & drain

The Lewmar hydraulic motor ports are:

A & B ports ½" BSP.

Drain port is ¼"BSP.

1. Hydraulic installation schematic:

- V9 - 5:1 Hydraulic gearbox (with brake) 300cc motor.
- V9 - 7:1 Hydraulic gearbox 230cc motor.
- V10 - 5:1 Hydraulic gearbox (with brake) 500cc motor.
- V12 - 13:1 Hydraulic gearbox (with brake) 250cc motor.

2. The location of the ports for the motor/gearbox is shown in Fig 5.7-2.

- A drain line is required on V9/10/12 motor/gearbox with brake.
- The minimum bore diameter of the drain line required is 10mm (⅜").
  Safe working pressure: 10 bar.
- Tubing material: Oil compatible semi-rigid plastic tube braided hose or steel pipe.

Fig 5.7-1

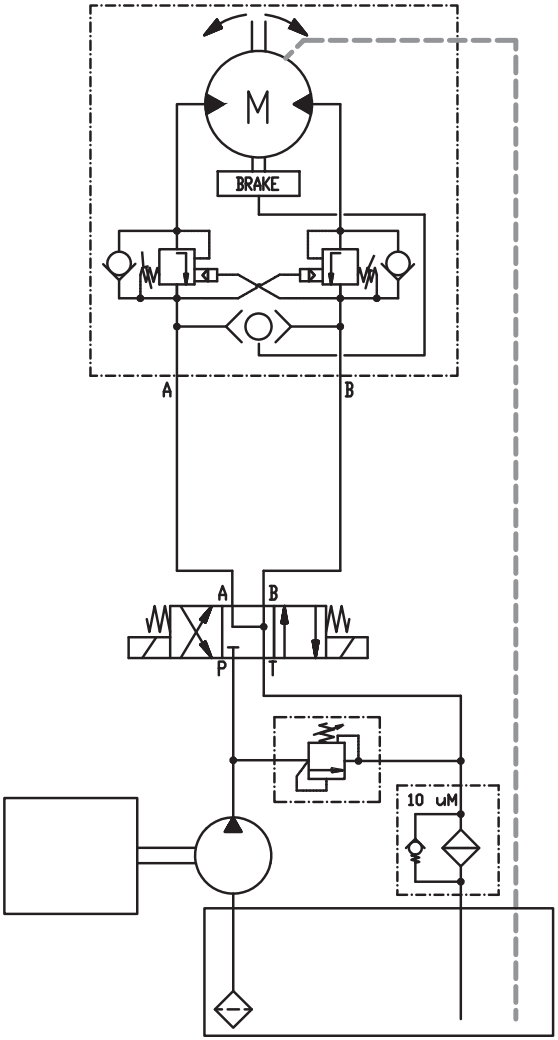
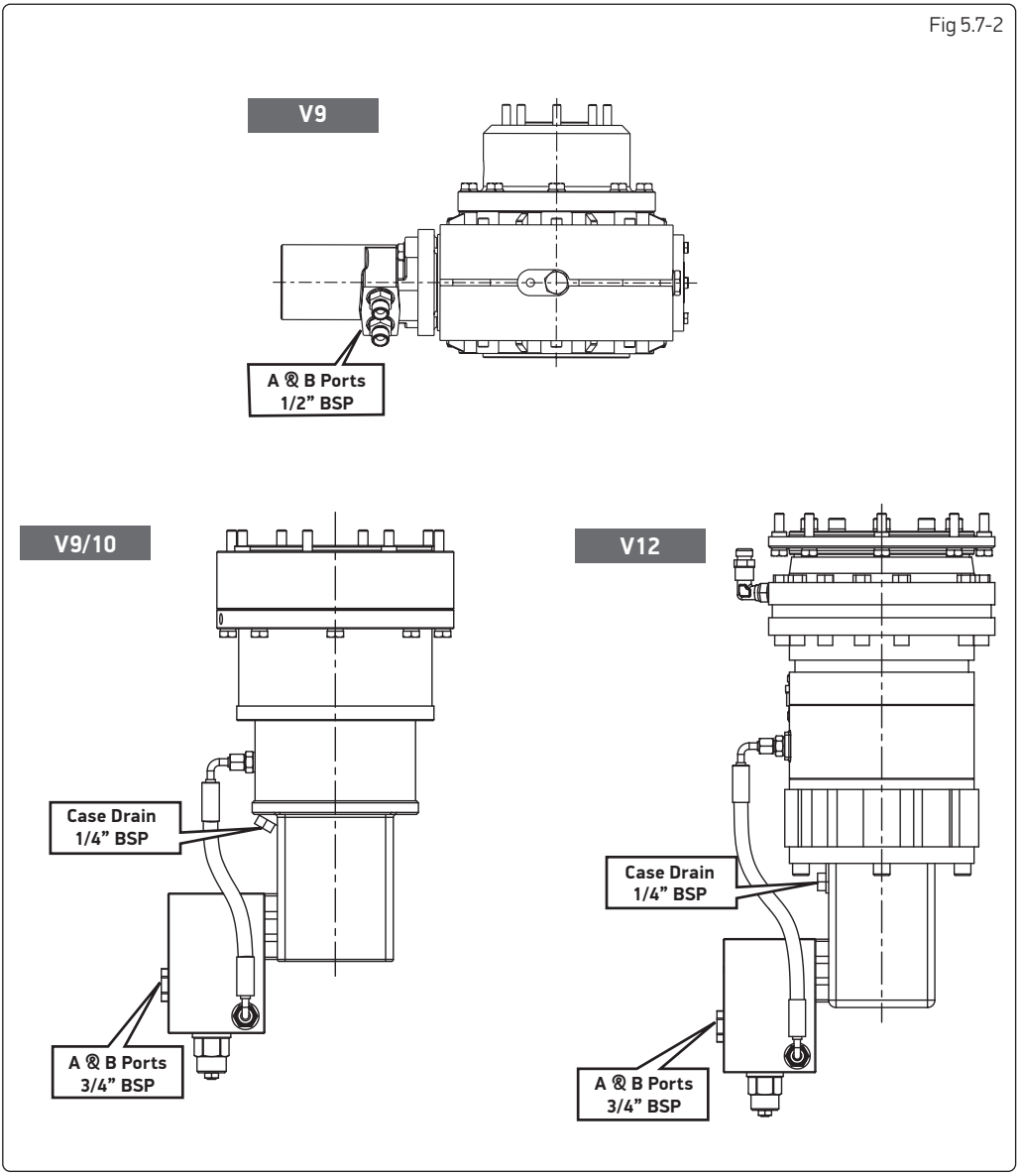


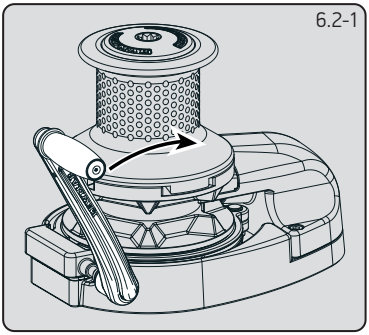
Fig 5.7-2

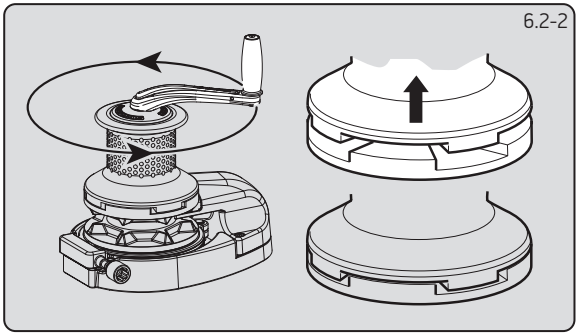

V9
A & B Ports
1/2" BSP
V9/10
Case Drain
1/4" BSP
A & B Ports
3/4" BSP
V12
Case Drain
1/4" BSP
A & B Ports
3/4" BSP

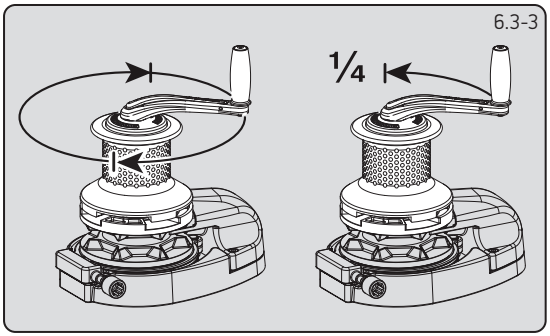
# 6. Operation

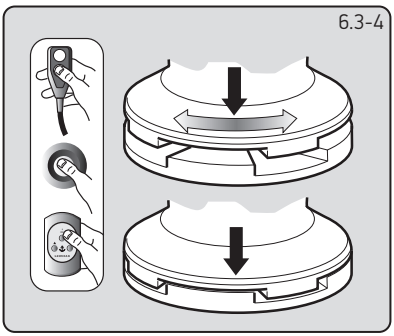
## 6.1 Powered drive overview

The main shaft, driven by the motor/gearbox, drives directly with the capstan. The gypsy can either be powered by the capstan or be free running. The gypsy is powered by engaging the dog drive teeth of the capstan to those of the gypsy.




## 6.2 Capstan dog drive release

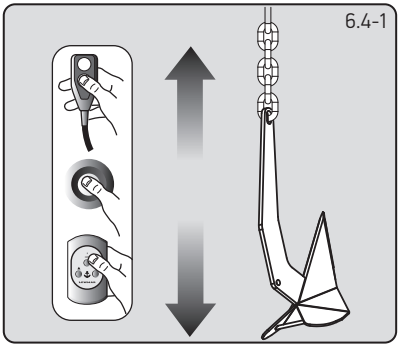
1. Tighten the band brake with a Lewmar winch handle to secure the gypsy.
2. Place a Lewmar winch handle into the top nut and turn anti-clockwise raising the capstan until the dog drive is fully disengaged. Remove the handle.

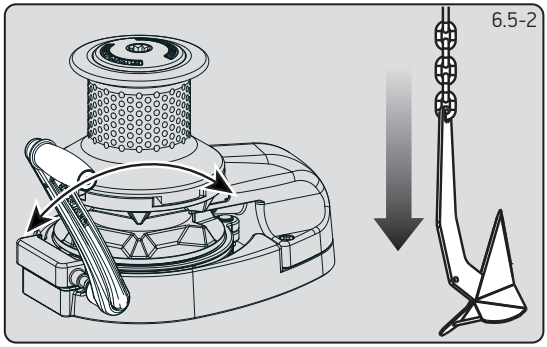
## 6.3 Capstan dog drive engagement / permanent drive

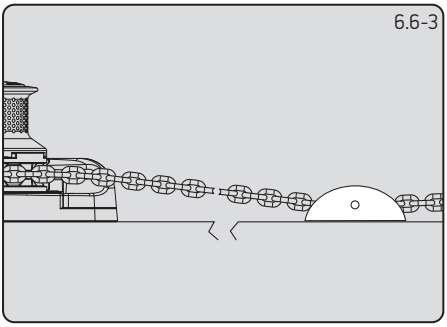
3. Place a Lewmar winch handle into the top nut and lower the capstan down onto the gypsy until resistance is felt. Back wind one quarter of a turn. Remove handle
4. Press the UP/DOWN switch and the dog drive will spring down into positive engagement.

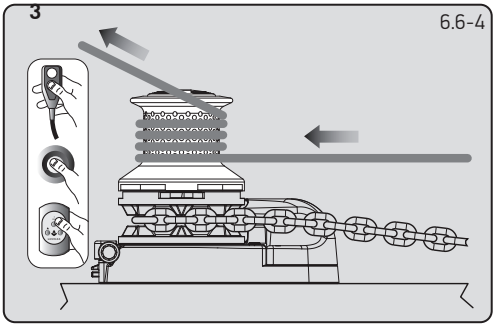
- Tighten down the top nut securely if required.
- Once the dog drive has been fully engaged, stop power operation and release the band brake before powered operation is continued.
- Remove handle.

⚠ WARNING! Always remove handle when not in use.




## 6.4 Power up/down

NOTE: Ensure that the band brake is released and that the dog drive is fully engaged.

1. Press the deck switch, remote control or toggle switch (anchor up/down).

Note: As anchor approaches the vessel use careful adjustments of controls to avoid damaging vessel

## 6.5 Braked anchor free-fall

NOTE: Ensure that the dog drive is fully released and band brake is fully tightened.

2. Using a Lewmar winch handle carefully release the brake to allow the gypsy to run free. The descent of the chain can be controlled and stopped by tightening the band brake.

## 6.6 Independent capstan/warping operation

NOTE: Ensure that the dog drive is fully released and band brake is fully tightened.

3. For temporary use of capstan, ensure chain is adequately secured to an independent strong point.
4. Wrap at least 3 coils of rope, loosely around capstan drum.

- Press the UP button to power the capstan and apply tension to rope gently.
- If warping speed is too fast, ease tension with rope.

⊘ DO NOT wrap chain around the capstan drum

## 6.7 Servicing schedule

Regularly:

- Wash down the windlass using fresh water.
- Strip the above deck components, clean and lightly grease.
- Inspect the brake band components and ensure the pins are free to move.
- Clean out any debris/dirt/deposits in the brake band area.

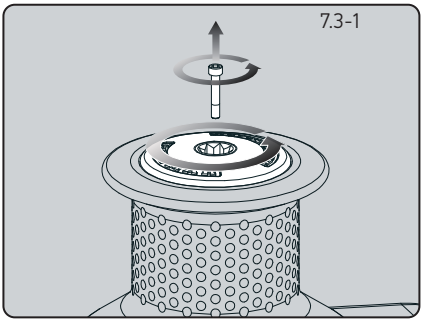
- Ensure brake band drain holes are not blocked.
- Ensure all below deck painted parts are in good condition. Any rusting or other corrosion should be cleaned off. Repair any damaged or worn painted surfaces with enamel paint. Any exposed aluminium/steel parts or hose connections protect with a thick layer of grease

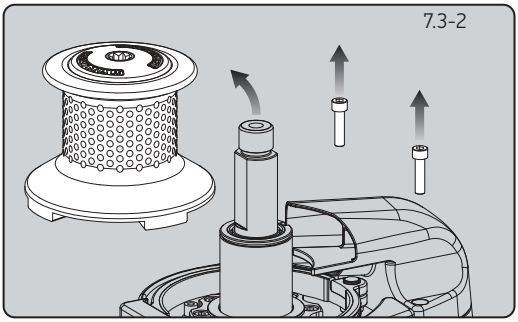
Annually:

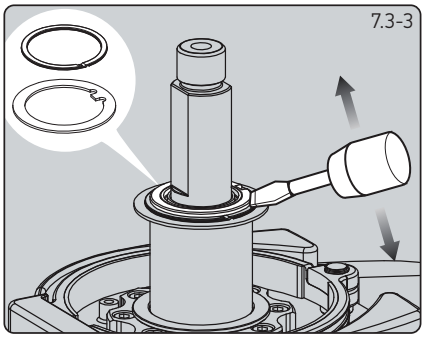
- Examine all electrical connections for corrosion, clean and lightly grease.
- Check electrical cables for damage. Repair/renew as required.
- Thoroughly check all below deck painted parts are in good condition. Any rusting or other corrosion should be cleaned off. Repair any damaged or worn painted surfaces with enamel paint. Any exposed aluminium/steel parts or hose connections protect with a thick layer of grease.

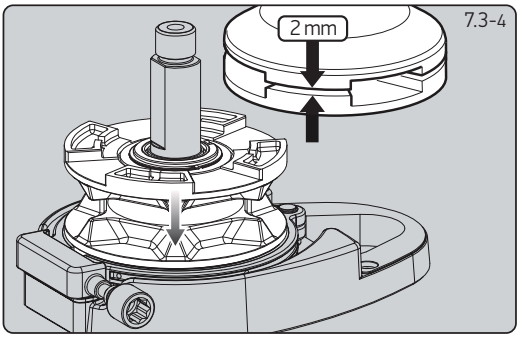
## 6.8 All Models fitting/replacing gypsy

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




1. Unscrew shoulder screw and unwind top cap anti-clockwise until loose.

2. Lift off drum, unscrew chain cover bolts and remove.

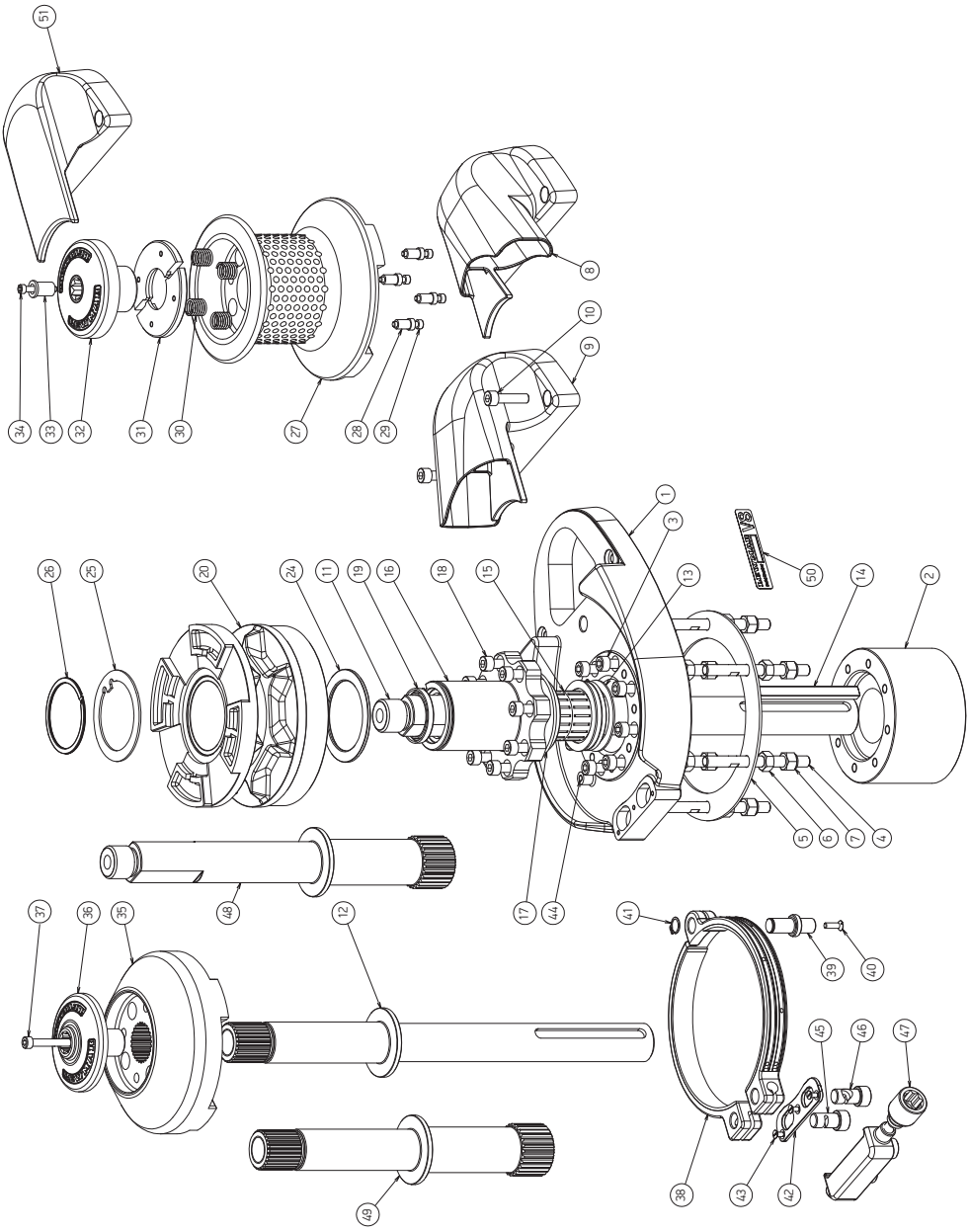
3. Prize loose the spiral spring clip on centre stem and remove with the tab washer.

4. Place gypsy with bearing over centre stem ensuring engagement with band brake. Assemble in reverse order. Wind down drum until the dog drive lugs are clear of the gypsy lugs by 2 mm. Apply Loctite® threadlock to M6 screw and screw down until it stops. Drum can then be wound down fully.

NOTE: Ensure spiral spring clip is in groove when reassembling.

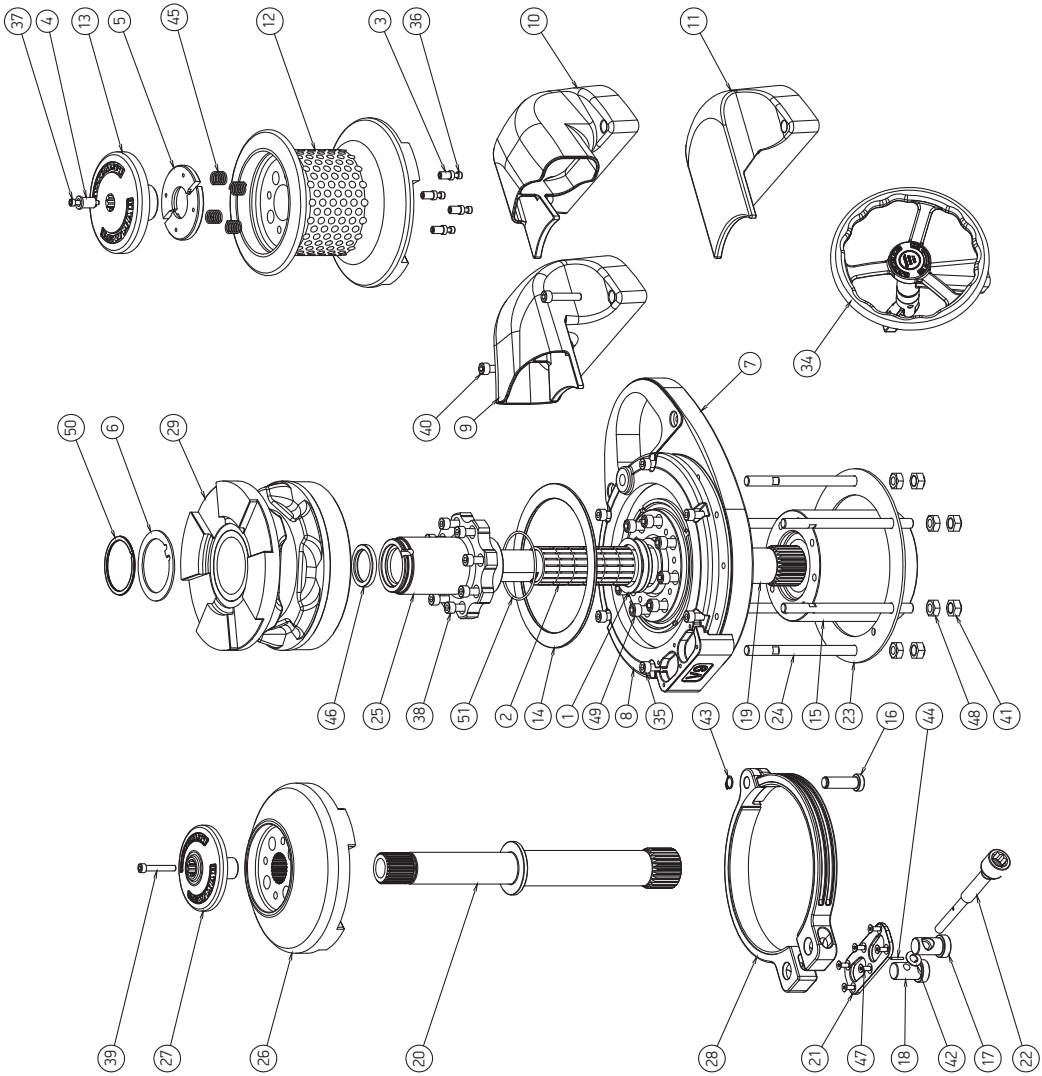
# 7. Servicing

## 7.1 Model V8 parts



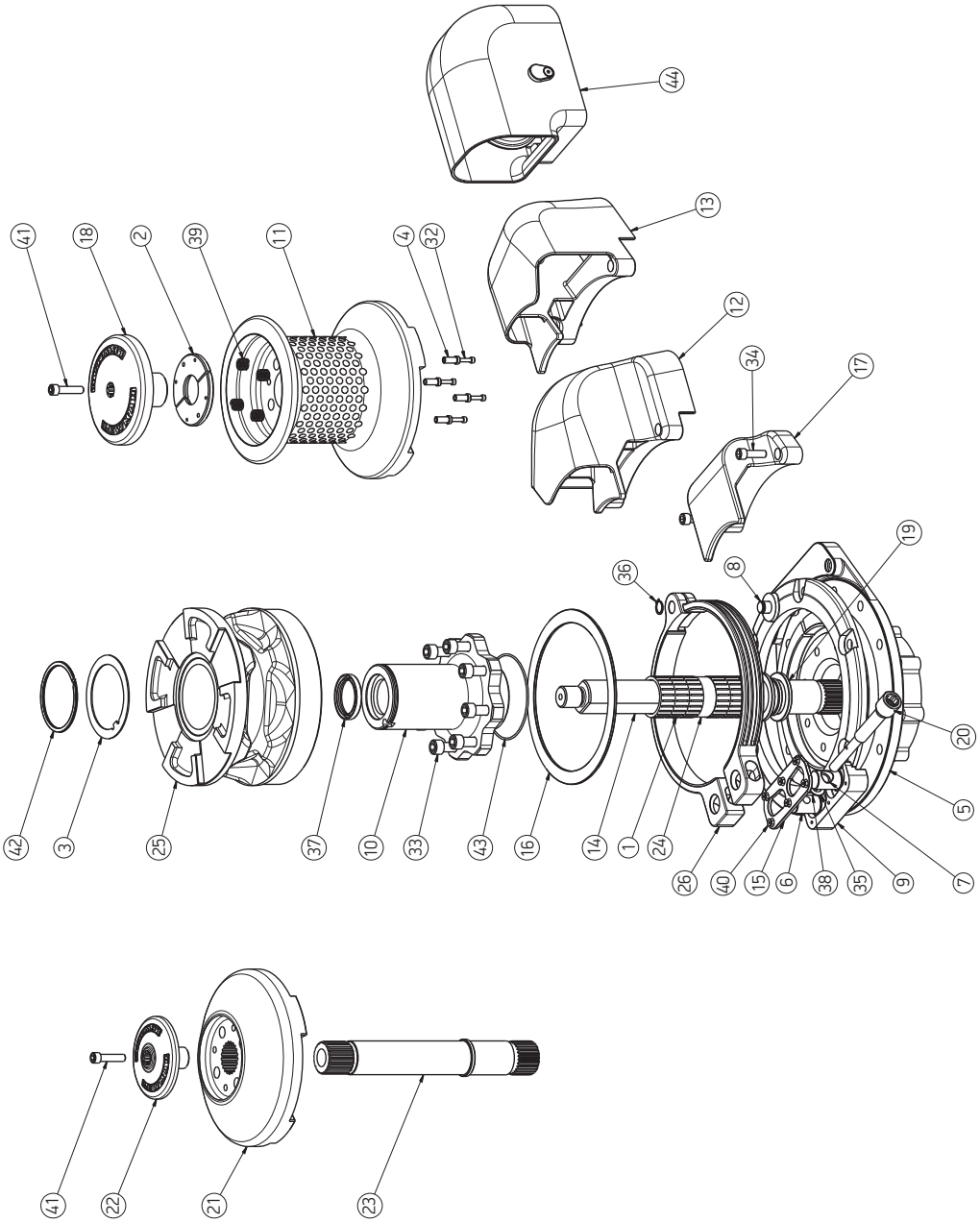
| V8 PARTS LIST | | |
|---|---|---|
| KIT NO. | KIT DESCRIPTION | ITEMS INCLUDED (QTY.) |
| 66000673 | MAINSHAFT GYPSY ONLY (HI-POWER) KIT | 49(1), 13(2) |
| 66000672 | MAINSHAFT GYPSY/DRUM (HI-POWER) KIT | 48(1), 13(2) |
| 66000671 | CLOSE COUPLED BRAKE CONTROL | 47(1) |
| 66000670 | CHAIN SENSOR KIT | 44(1) |
| 66000669 | REMOTE BAND BRAKE PIN KIT | 45(1), 46(1) |
| 66000668 | BAND BRAKE KIT | 38(2), 41(1) |
| 66000828 | BRAKE PIN KIT | 39(1), 40(1), 42(1), 43(3) |
| 66000667 | TOP DRIVE (GYPSY ONLY) KIT | 28(4), 29(4), 30(4), 31(1), 35(1), 36(1), 37(1) |
| 66000666 | DRUM KIT | 27(1), 28(4), 29(4), 30(4), 31(1), 32(1), 33(1), 34(1) |
| 66000665 | 1/2" ISO ACCO G4 GYPSY KIT | 20(1), 24(1), 25(1), 26(1) |
| 66000664 | 16 mm GYPSY KIT | 20(1), 24(1), 25(1), 26(1) |
| 66000663 | 14 mm GYPSY KIT | 20(1), 24(1), 25(1), 26(1) |
| 66000662 | 12 mm GYPSY KIT | 20(1), 24(1), 25(1), 26(1) |
| 66000661 | CENTRE STEM KIT | 16(1), 17(1), 19, 18(8) |
| 66000660 | ROLLER BEARING KIT | 15(5) |
| 66000659 | MAINSHAFT GYPSY ONLY KIT | 12(1), 13(1), 14(1) |
| 66000657 | MAINSHAFT GYPSY/DRUM KIT | 11(1), 13(1), 14(1) |
| 66000656 | L/H CHAIN COVER KIT | 9(1), 10(2) |
| 66000655 | R/H CHAIN COVER KIT | 8(1), 10(2) |
| 66000654 | MOUNTING KIT | 4(6), 5(1), 6(6), 7(6) |
| 66000653 | BASE KIT | 1(1), 2(1), 3(8) |

## 7.2 Model V9 parts



| V9 PARTS LIST | | |
|---|---|---|
| KIT NO. | KIT DESCRIPTION | ITEMS INCLUDED (QTY.) |
| 66000737 | DECK FIXING KIT | 23(1), 24(6), 41(6), 48(6) |
| 66000736 | BRAKE ADJUSTER KIT | 17(1), 18(1), 21(1), 22(1), 42(1), 44(1), 47(6) |
| 66000735 | BAND BRAKE KIT | 28(2), 16(1), 43(1) |
| 66000734 | TOP DRIVE (GYPSY ONLY) KIT | 26(1), 3(4), 5(1), 27(1), 36(4), 39(1), 45(4) |
| 66000733 | DRUM KIT | 12(1), 3(4), 4(1), 5(1), 13(1), 36(4), 37(1), 45(4) |
| 66000732 | CENTRE STEM KIT | 25(1), 38(8), 46(1), 51(1) |
| 66000731 | UNI VERSAL STRIPPER KIT | 11(1), 40(2) |
| 66000728 | ROLLER BEARING KIT | 2(6) |
| 66000727 | MAINSHAFT GYPSY ONLY KIT | 20(1), 1(2) |
| 66000726 | MAINSHAFT GYPSY/DRUM KIT | 19(1), 1(2) |
| 66000729 | L/H CHAIN COVER KIT | 9(1), 40(2) |
| 66000730 | R/H CHAIN COVER KIT | 10(1), 40(2) |
| 66000738 | 12.5mm studlink gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000775 | 14mm shortlink gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000721 | 14mm studlink gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000722 | 16mm studlink gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000723 | 16mm shortlink / DIN 766 gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000724 | 17.5mm studlink gypsy kit | 29(1), 6(1), 14(1), 50(1) |
| 66000725 | 18mm DIN 766 gypsy kit | 29(1), 6(1), 14(1), 50(1) |

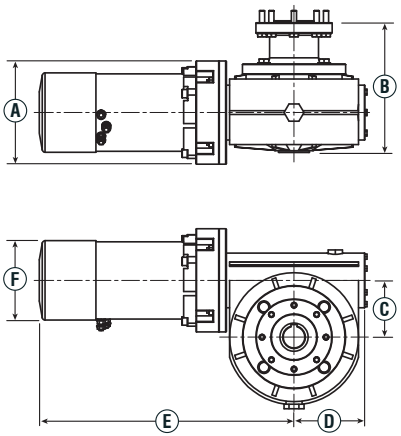
## 7.3 Model V10/12 parts



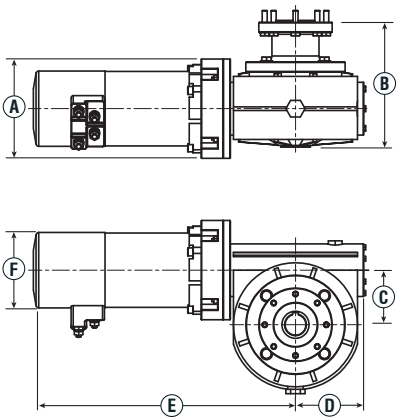
| V10-V12 PARTS LIST | | |
|---|---|---|
| KIT NO. | KIT DESCRIPTION | ITEMS INCLUDED (QTY.) |
| 66000716 | BRAKE ADJUSTER KIT | 6(1), 7(1), 15(1), 20(1), 35(1), 38(1), 40(6) |
| 66000715 | BAND BRAKE KIT | 26(2), 8(1), 36(1) |
| 66000714 | TOP DRIVE (GO) KIT | 21(1), 2(1), 4(4), 22(1), 32(4), 39(4), 41(1) |
| 66000713 | DRUM KIT | 11(1), 2(1), 4(4), 18(1), 32(4), 39(4), 41(1) |
| 66000712 | CENTRE STEM KIT | 10(1), 33(8), 37(1), 43(1) |
| 66000711 | STRIPPER KIT | 17(1), 34(2) |
| 66000710 | R/H CHAIN COVER KIT | 13(1), 34(2) |
| 66000709 | L/H CHAIN COVER KIT | 12(1), 34(2) |
| 66000708 | ROLLER BEARING KIT | 1(6), 24(1) |
| 66000707 | MAINSHAFT GYPSY ONLY KIT | 23(1), 19(2) |
| 66000706 | MAINSHAFT GYPSY/DRUM KIT | 14(1), 19(2) |
| 66000703 | 17.5mm STUDLINK GYPSY KIT | 25(1), 3(1), 16(1), 42(1) |
| 66000702 | 22mm STUDLINK GYPSY KIT | 25(1), 3(1), 16(1), 42(1) |
| 66000701 | 20.5mm STUDLINK GYPSY KIT | 25(1), 3(1), 16(1), 42(1) |
| 66000700 | 19mm STUDLINK GYPSY KIT | 25(1), 3(1), 16(1), 42(1) |
| 66000699 | 16mm STUDLINK GYPSY KIT | 25(1), 3(1), 16(1), 42(1) |
| 69000455 | OPTIONAL 22mm ROLLER PIPE | 44(1) |

# 8. Specifications

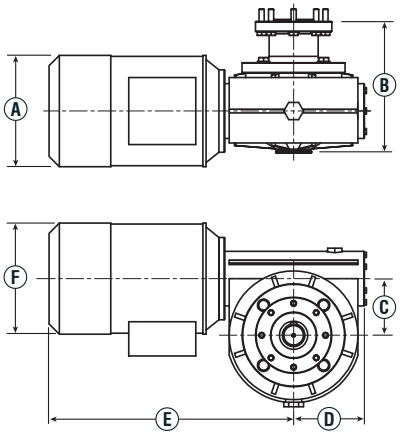
## 8.1 Model V8 dimensions



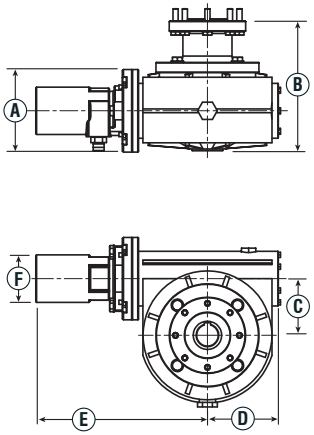

| 24 V 2.5 KW - 56 KG | | | |
|---|---|---|---|
| A | Ø200 mm | D | 142 mm |
| B | 252 mm | E | 494 mm |
| C | 110 mm | F | Ø154 mm |



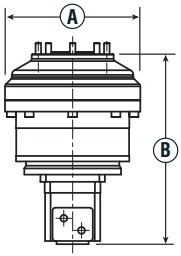

| 24 V 3.5 KW - 58 KG | | | |
|---|---|---|---|
| A | Ø200 mm | D | 142 mm |
| B | 252 mm | E | 528 mm |
| C | 110 mm | F | Ø152 mm |




| 4 KW 3 PHASE AC - 77 KG | | | |
|---|---|---|---|
| A | Ø216 mm | D | 142 mm |
| B | 255 mm | E | 475 mm |
| C | 110 mm | F | Ø216 mm |

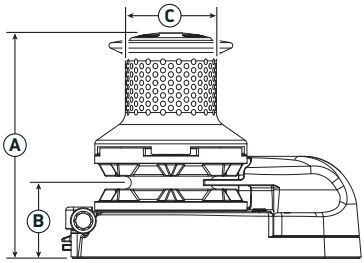


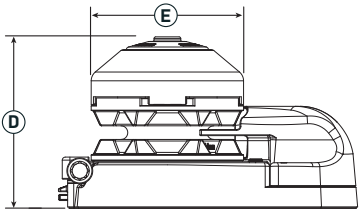

| HYDRAULIC - 39 KG | | | |
|---|---|---|---|
| A | Ø160 mm | D | 142 mm |
| B | 252 mm | E | 333 mm |
| C | 110 mm | F | Ø92 mm |

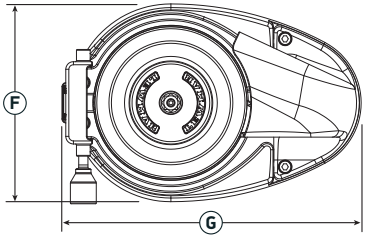



| HI-POWER HYDRAULIC - 52 KG | | | |
|---|---|---|---|
| A | Ø245 mm | B | 344 mm |

| | | D (mm) | D (inch) | P (mm) | P (inch) | W (mm) | W (inch) |
|---|---|---|---|---|---|---|---|
| 68000900 11mm Gypsy | 11 mm DIN 766 | 11 | 0.433 | 31 | 1.22 | 40 | 1.575 |
| 68000877 12-13mm Gypsy | 12 mm Short Link | 12 | 0.472 | 36 | 1.417 | 40.5 | 1.594 |
| | 7/16" ISO G4 | 11.8 | 0.464 | 35.5 | 1.4 | 40.1 | 1.578 |
| | 13 mm DIN 766 | 13 | 0.512 | 36 | 1.417 | 47 | 1.850 |
| 68000878 14mm Gypsy | 14mm Short Link | 14 | 0.551 | 42 | 1.654 | 49 | 1.929 |
| | 14mm DIN 766 | 14 | 0.551 | 41 | 1.614 | 50 | 0.969 |
| 68000879 16mm Gypsy | 16mm Short Link | 16 | 0.630 | 48 | 1.890 | 56 | 2.205 |
| | 16mm DIN 766 | 16 | 0.630 | 45 | 1.772 | 58 | 2.283 |
| 68000880 ½" Gypsy | ½" ACCO G4 | 13.2 | 0.519 | 40.4 | 1.590 | 45.7 | 1.798 |
| 68000881 14mm Studlink | 14mm Studlink | 14 | 0.550 | 56 | 2.205 | 50.4 | 1.984 |

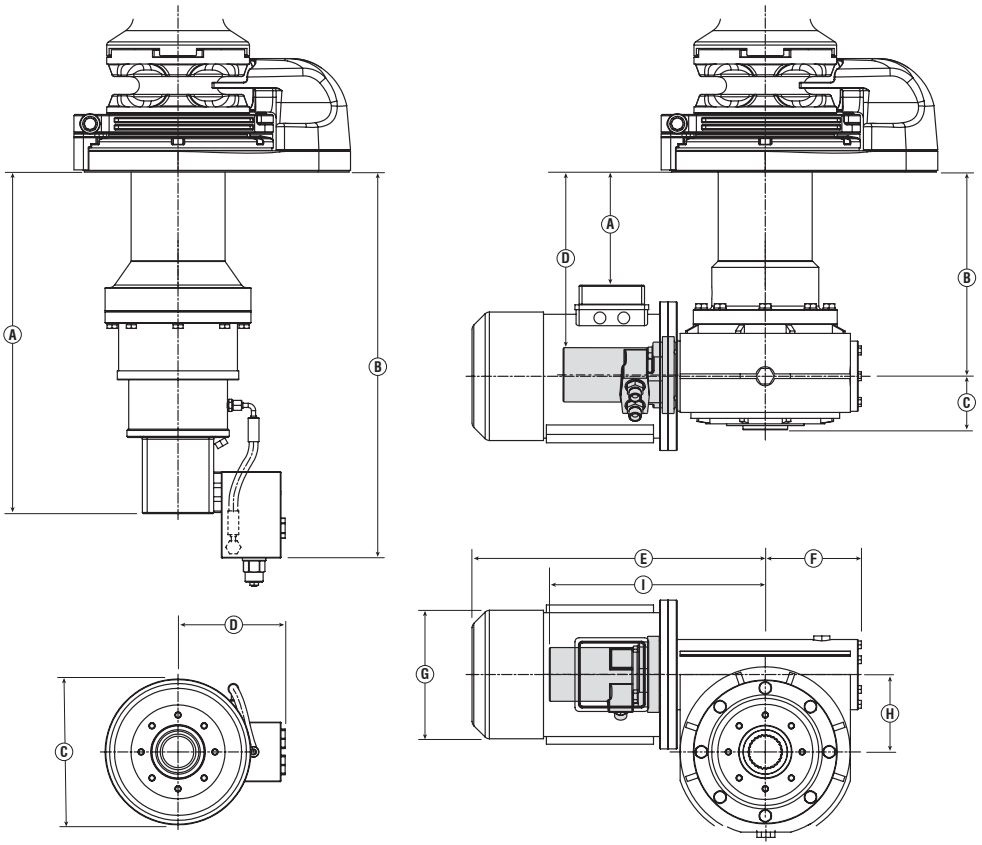



| V8 DECK UNIT DIMENSIONS | | | |
|---|---|---|---|
| A | 296 mm | E | Ø200 mm |
| B | 100 mm | F | 260 mm |
| C | Ø120 mm | G | 393 mm |
| D | 225 mm | | |

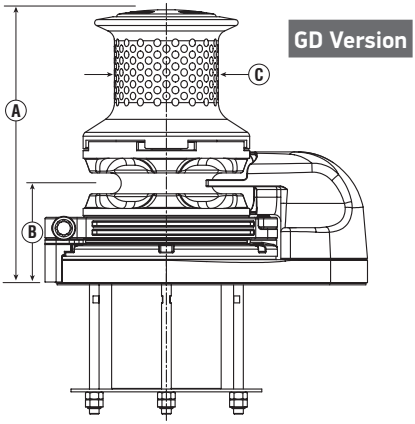
## 8.2 Model V9 dimensions

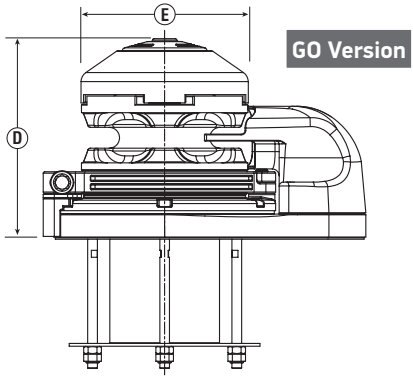


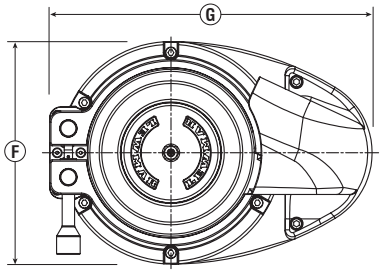

| V9 HYDRAULIC | | | |
|---|---|---|---|
| A | 574mm | C | Ø245 mm |
| B | 649 mm | D | 173 mm |

| V9 4KW AC/HYDRAULIC | | | |
|---|---|---|---|
| A | 190 mm | F | 162 mm |
| B | 343 mm | G | Ø250 mm |
| C | 92 mm | H | 130 mm |
| D | 297 mm | I | 338 mm |
| E | 493 mm | | |

| | | D (mm) | D (inch) | P (mm) | P (inch) | W (mm) | W (inch) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 14mm Studlink | 14mm Studlink | 14 | 0.550 | 56 | 2.205 | 50.4 | 1.984 |
| 16mm Studlink | 16mm Studlink | 16 | 0.630 | 64 | 2.520 | 57.6 | 2.268 |
| 16mm Shortlink | 16mm Shortlink | 16 | 0.630 | 48 | 1.890 | 56 | 2.205 |
| | 16mm DIN 766 | 16 | 0.630 | 45 | 1.772 | 58 | 2.283 |
| 17.5mm Studlink | 17.5mm Studlink | 17.5 | 0.689 | 70 | 2.756 | 63 | 2.480 |
| 18mm Shortlink | 18mm DIN 766 | 18 | 0.709 | 50 | 1.968 | 65 | 2.559 |

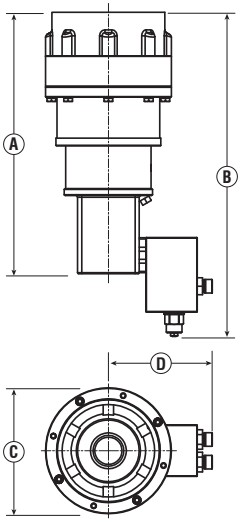


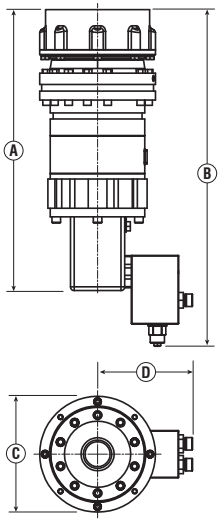




| V9 DECK UNIT DIMENSIONS | | | |
|---|---|---|---|
| A | 395 mm | E | Ø241 mm |
| B | 146 mm | F | 320 mm |
| C | Ø150 mm | G | 465 mm |
| D | 288 mm | | |

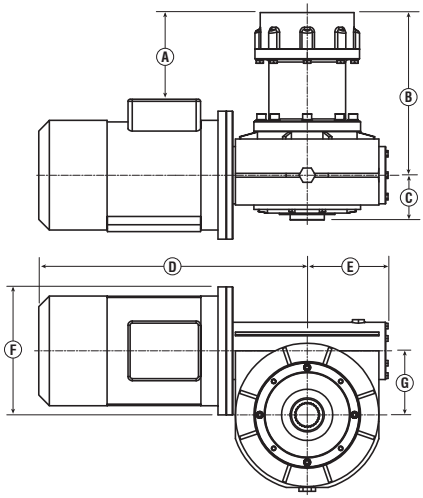
## 8.3 Model V10/V12 dimensions



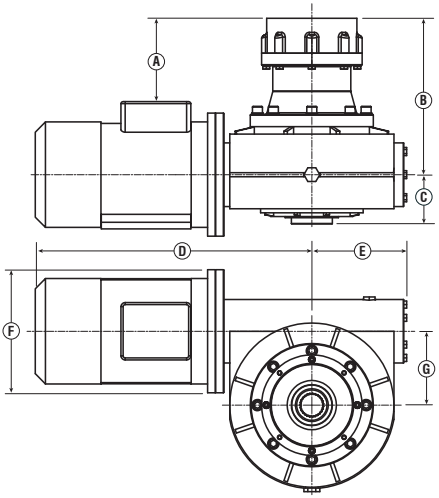

| V10 HYDRAULIC | | | |
|---|---|---|---|
| A | 509 mm | C | Ø245 mm |
| B | 631 mm | D | 202 mm |



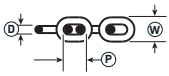

| V12 HYDRAULIC | | | |
|---|---|---|---|
| A | 595 mm | C | Ø245 mm |
| B | 712 mm | D | 201 mm |

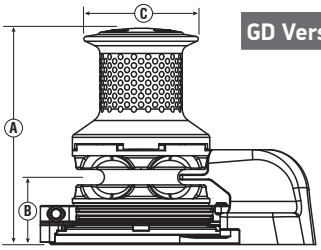



| V10 5.5KW AC | | | |
|---|---|---|---|
| A | 203 mm | E | 190 mm |
| B | 381 mm | F | Ø300 mm |
| C | 105 mm | G | 150 mm |
| D | 629 mm | | |

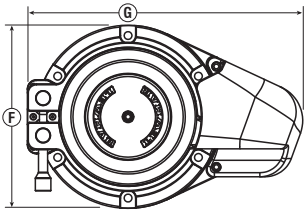



| V12 7.5KW AC | | | |
|---|---|---|---|
| A | 203 mm | E | 231 mm |
| B | 381 mm | F | Ø300 mm |
| C | 120 mm | G | 180 mm |
| D | 674 mm | | |

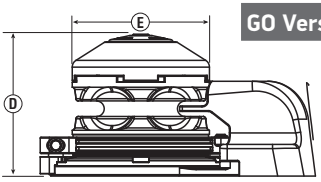
|  |  |  | | | | | |
|---|---|---|---|---|---|---|---|
| | | D (mm) | D (inch) | P (mm) | P (inch) | W (mm) | W (inch) |
| 68000944<br>16mm Studlink Gypsy Kit | 16mm Studlink | 16 | 0.630 | 64 | 2.520 | 57.6 | 2.268 |
| 68000946<br>17.5mm Studlink Gypsy Kit | 17.5mm Studlink | 17.5 | 0.689 | 70 | 2.756 | 63 | 2.480 |
| 68000943<br>19mm Studlink Gypsy Kit | 19mm Studlink | 19 | 0.748 | 76 | 2.992 | 68.4 | 2.693 |
| 68000932<br>20.5mm Studlink Gypsy Kit | 20.5mm Studlink | 20.5 | 0.807 | 82 | 3.228 | 73.8 | 2.906 |
| 66000702<br>22mm Studlink Gypsy Kit | 22mm Studlink<br>V12 Remote Hawse Only | 22 | 0.866 | 88 | 3.465 | 79.2 | 3.118 |



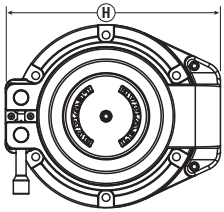

**GD Version**




**L/H Version**



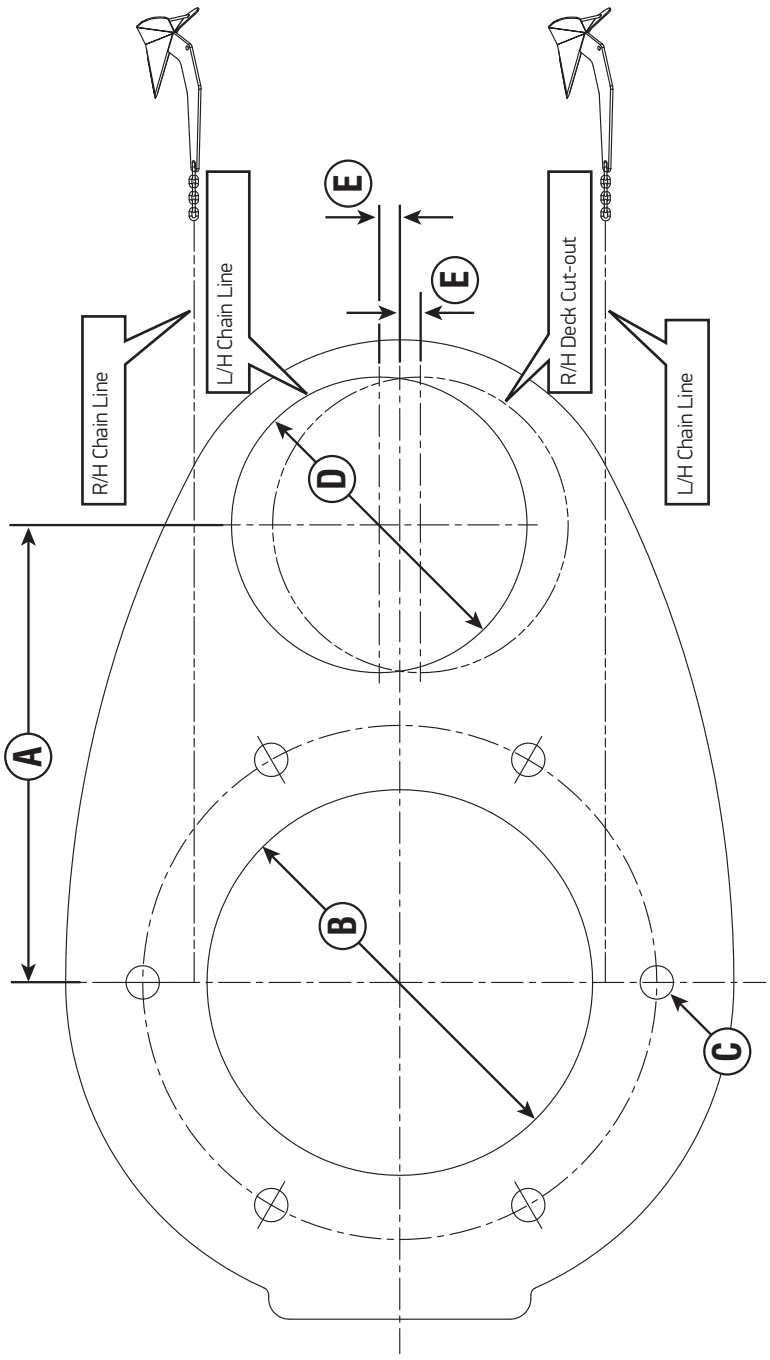

**GO Version**




**Remote Hawse Version**

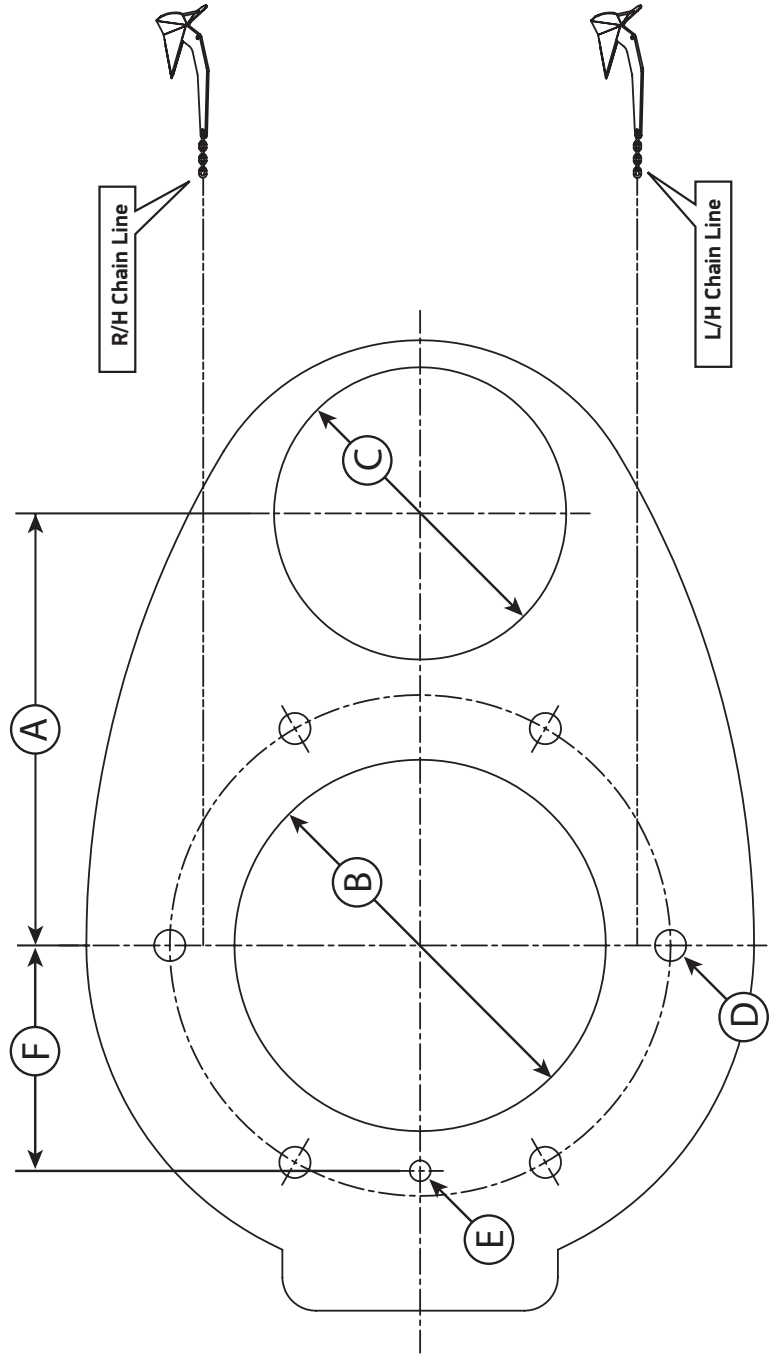
| V10-V12 DECK UNIT DIMENSIONS | | | |
|---|---|---|---|
| A | 472 mm | E | Ø300 mm |
| B | 147 mm | F | 400 mm |
| C | Ø180 mm | G | 602 mm |
| D | 310 mm | H | 470 mm |

## 8.4 Model V8 deck template guide



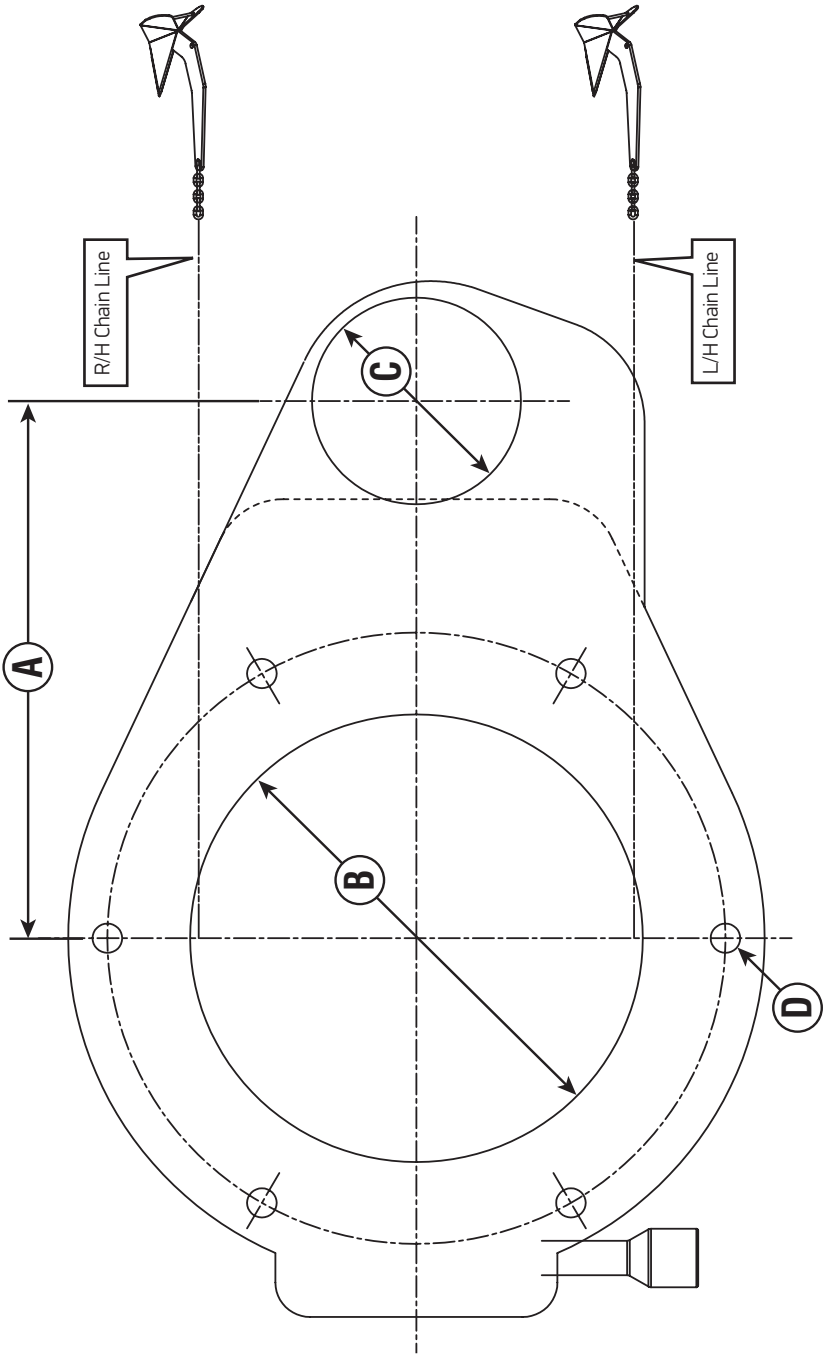

| MODEL V8 | | | |
|---|---|---|---|
| A | 178 mm (7") | D | Ø115 mm (4½") |
| B | Ø150 mm (6") | E | 8 mm (5/16") |
| C | 6 x Ø13 mm (½") PCD 200 mm (7⅞") | F | Ø154 mm |

## 8.5 Model V9 deck template guide




| MODEL V9 | |
|---|---|
| A | 220 mm (8 ⅔") |
| B | Ø178 mm (7") |
| C | Ø140 mm (5 ½") |
| D | 6 x Ø15 mm (⅝") PCD 240 mm (9 7/16") |
| E | Ø10 mm (⅜") |
| F | 108 mm (4 ¼") |

## 8.6 Model V10/12 deck template guide




| MODEL V10 / V12 | | | |
|---|---|---|---|
| A | 312 mm (12¼") | C | Ø120 mm (4¾") |
| B | Ø260 mm (10¼") | D | 6 x Ø17 mm (11/16") PCD 355 mm (14") |

## 8.7 Model V8 electric specifications

| ELECTRIC MOTOR/ GEARBOX | POWER OPTION | MOTOR | TYPICAL MAX. PULL | | MAX. LINE SPEED | | TYPICAL WORKING LOAD | | NORMAL CURRENT DRAW | TOTAL WEIGHT WINDLASS & DRIVE | | CIRCUIT BREAKER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Volts | Watts | kg | lb | m/min | ft/min | kg | lb | Amps | kg | lb | Amps |
| 69000383 | 24 | 2500 | 2273 | 5000 | 24 | 79 | 568 | 1250 | 210 | 101 | 222 | 200 |
| 69000384 | 24 | 3500 | 2727 | 6000 | 23 | 75 | 682 | 1500 | 290 | 103 | 227 | 250 |
| 69000444 | 400 AC | 4000 | 2500 | 5500 | 19 | 62 | 625 | 1375 | 9 | 105 | 231 | 10 |
| 69000445 | 208 AC | 4000 | 2200 | 4840 | 15.5 | 51 | 550 | 1210 | 10 | 105 | 231 | 20 |

## 8.8 Model V8 hydraulic specifications

| HYDRAULIC MOTOR/ GEARBOX | MAX. PRESSURE | | MIN./MAX FLOW RATE | | TYPICAL MAX. PULL | | MAX. LINE SPEED | | TYPICAL WORKING LOAD | | TOTAL WEIGHT WINDLASS & DRIVE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | bar | psi | l/min | US gal/ min | kg | lb | m/min | ft/min | kg | lb | kg | lb |
| 69000416 (165 cc/rev) | 155 | 2278 | 20-55 | 5.2-14.3 | 1818 | 4000 | 5-30 | 16-100 | 454 | 1000 | 84 | 185 |
| 69000385 (230 cc/rev) | 155 | 2278 | 20-55 | 5.2-14.3 | 2727 | 6000 | 5-14 | 16-46 | 682 | 1500 | 84 | 185 |
| 69000386 (in-line 200 cc/rev) | 175 | 2572 | 20-55 | 5.2-14.3 | 2727 | 6000 | 7.5-21 | 25-69 | 682 | 1500 | 95 | 209 |

## 8.9 Model V9/10/12 electric specifications

| ELECTRIC MOTOR/ GEARBOX | POWER OPTION | MOTOR | TYPICAL MAX. PULL | | MAX. LINE SPEED | | TYPICAL WORKING LOAD | | NORMAL CURRENT DRAW | TOTAL WEIGHT WINDLASS & DRIVE | | CIRCUIT BREAKER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Volts | Watts | kg | lb | m/min | ft/min | kg | lb | Amps | kg | lb | Amps |
| V9 - 69000486 | 400 AC | | | | | | | | | | | |
| V10 - 69000447 | 400 AC | 5500 | 4000 | 8800 | 18 | 59 | 2000 | 4400 | 12 | 301 | 662 | 13 |
| V10 - 69000448 | 208 AC | 5500 | 4000 | 8800 | 18 | 59 | 2000 | 4400 | 16 | 301 | 662 | 20 |
| V12 - 69000449 | 400 AC | 7500 | 5000 | 11000 | 20 | 66 | 2500 | 5500 | 15 | 357 | 785 | 16 |
| V12 - 69000450 | 208 AC | 7500 | 5000 | 11000 | 20 | 66 | 2500 | 5500 | 24 | 357 | 785 | 32 |

## 8.10 Model V9/10/12 hydraulic specifications

| HYDRAULIC MOTOR/ GEARBOX | MAX. PRESSURE | | MIN./MAX FLOW RATE | | MAX PULL | | MAX. LINE SPEED | | WORKING LOAD | | TOTAL WEIGHT WINDLASS & DRIVE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | bar | psi | l/min | US gal/ min | kg | lb | m/min | ft/min | kg | lb | kg | lb |
| V9 - 69000468 (300 cc/rev) 5:1 Gearbox | 180 | 2646 | 20-60 | 5.2-15.6 | 3000 | 6600 | 30 | 96 | 1500 | 3300 | 153 | 337 |
| V9 - 69000469 (250 cc/rev) 7:1 Gearbox | 180 | 2646 | 20-60 | 5.2-15.6 | 3000 | 6600 | 33 | 108 | 1500 | 3300 | 150 | 330 |
| V10 - 69000427 (500 cc/rev) 5:1 Gearbox | 155 | 2279 | 30-60 | 7.8-15.6 | 4000 | 8800 | 8 - 16 | 26-52 | 2000 | 4400 | 187 | 411 |
| V12 - 69000428 (250 cc/rev) 13.5:1 Gearbox | 155 | 2279 | 30-80 | 7.8-20.8 | 5000 | 11000 | 6-17 | 20-56 | 2500 | 5500 | 204 | 449 |

# 9. Trouble shooting

## 9.1 Hydraulic windlass

### Hydraulic leak

The following are possible causes for hydraulic oil leakage from hydraulic drive unit:

- Excessive pressure.
- Dirt obstructing a seal.
- Loose or badly fitted connections.
- Damaged or broken components.

When an hydraulic oil leak is detected, identify the true cause of the leakage before remedial action is taken.

- Do not attempt to remove hydraulic components or repair the hydraulic system whilst pressured. To prevent accidental operation, switch off power before removing any system component.

## 9.2 Hydraulic question & answer

### Windlass will not start

1. No power to Commander (Powerpack)
- Check unit is switched on
- Check electrical connections to Commander
- Check fuses & safety cut-outs
2. Insufficient hydraulic fluid
- Check Commander fluid level.
3. Incorrect electrical or hydraulic connections
- Refer to your Lewmar Commander manual
- See the button sheet for correct function identification.

### Windlass motor is running but the windlass is not working

1. Check the drive between the gypsy and capstan (friction drive or dog drive).
2. Check the drive shaft between the hydraulic motor and windlass gearbox.

### Windlass runs very slowly

1. Check sufficient flow is being provided by the hydraulic system as windlass speed is directly related to hydraulic oil flow.
- Refer to lewmar Commander fault finding.
2. Hydraulic pipes connected to the wrong motor port.
- Swap hydraulic connections on the winch motor.
3. Deck switch connected to wrong function.
- Refer to Lewmar Commander manual.

### Windlass does not pull sufficient load

1. Check sufficient flow is being provided by the hydraulic system as windlass speed is directly related to hydraulic oil flow.
- Refer to lewmar Commander fault finding.
2. Hydraulic pipes connected to wrong Commander function.
- Refer to Commander manual. Examine the Button Sheet to identify correct function.
3. Sharp bends or kinks in the hydraulic pipes starving the winch of fluid.
- Check pipe runs for sharp bends or kinks: Minimum bend radius is 6” (150mm).
4. System pressure too low.
- Refer to fault diagnostic charts in the Commander manual.

# 9. Warranty

Limited Warranty and Key Terms of Supply by Lewmar

Lewmar warrants that in normal private pleasure boat usage and with proper maintenance its products will conform with their specification for a period of three years from the date of purchase by the end user, subject to the conditions, limitations and exceptions listed below. Any product, which proves to be defective in normal usage during that three-year period, will be repaired or, at Lewmar's option, replaced by Lewmar.

A CONDITIONS AND LIMITATIONS

i Lewmar's liability shall be limited to the repair or replacement of any parts of the product which are defective in materials or workmanship.

ii Responsibility for the selection of products appropriate for the use intended by the Buyer shall rest solely with the Buyer and Lewmar accepts no responsibility for any such selection.

iii Lewmar shall not be liable in any way for Product failure, or any resulting loss or damage that arises from:

a. use of a product in an application for which it was not designed or intended;

b. corrosion, ultra violet degradation or wear and tear;

c. a failure to service or maintain the product in accordance with Lewmar's recommendations;

d. faulty or deficient installation of the product (unless conducted by Lewmar);

e. any modification or alteration of the product;

f. conditions that exceed the product's performance specifications or safe working loads.

g. Abuse

iv Product subject to a warranty claim must be returned to the Lewmar outlet that supplied the product for examination unless otherwise approved by Lewmar in writing.

v This warranty does not cover any incidental costs incurred for the investigation, removal, carriage, transport or installation of product.

vi Service by anyone other than authorized Lewmar representatives shall void this warranty unless it accords with Lewmar guidelines and standards of workmanship.

vii Lewmar's products are intended for use only in the marine environment. Buyers intending to use them for any other purpose should seek independent professional advice as to their suitability. Lewmar accepts no liability arising from such other use.

B EXCEPTIONS

Cover under this Warranty is limited to a period of one year from the date of purchase by the end user in the case of any of the following products or parts of products:

- Electric motors and associated electrical equipment
- Electronic controls
- Hydraulic pumps, valves and actuators
- Hatch & Portlight weather seals
- Products used in "Grand Prix" racing applications
- Products used in commercial or charter applications
- Anchor rodes

C LIABILITY

i Lewmar's liability under this warranty shall be to the exclusion of all other warranties or liabilities (to the extent permitted by law). In particular (but without limitation):

a. Lewmar shall not be liable for:

- Any loss of anticipated turnover or profit or indirect, consequential or economic loss;
- Damages, costs or expenses payable to any third party;
- Any damage to yachts or equipment;
- Death or personal Injury (unless caused by Lewmar's negligence).

Some states and countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you

b. Lewmar grants no other warranties regarding the fitness for purpose, use, nature or satisfactory quality of the products.

ii Where applicable law does not permit a statutory or implied warranty to be excluded, then such warranty, if permitted by that state or country's law, shall be limited to a period of one year from the date of purchase by the end user. Some states and countries do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

D PROCEDURE

Notice of a claim for service under this warranty shall be made promptly and in writing by the end user to the Lewmar outlet that supplied the product or to Lewmar Limited at Southmoor Lane, Havant, Hampshire PO9 1JJ, England.

E SEVERANCE CLAUSE

If any clause of this warranty is held by any court or other competent authority to be invalid or unenforceable in whole or in part, the validity of the remaining clauses of this warranty and the remainder of the clause in question shall not be affected.

F OTHER RIGHTS

This warranty gives you specific legal rights, and you may also have other legal rights, which vary from state to state and country to country.

In the case of European States a Consumer customer (as defined nationally) has legal rights under the applicable national law governing the sale of Consumer Goods; this Warranty does not affect those rights.

G LAW

This warranty shall be governed by and read in accordance with the laws of England or the state or country in which the first end user is domiciled at the time of purchase of the product.

H DISPUTES

Any dispute arising under this warranty may, at the option of the end-user, be referred to alternative dispute resolution under the rules of the British Marine Federation or to the Courts of the State whose law shall govern the warranty or to the Courts of England and Wales.

The British Marine Federation may be contacted at Marine House, Thorpe Lea Road, Egham, England, TW20 8BF

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