

simpson-lawrence

# pacific

installation, operation & maintenance instructions

## contents

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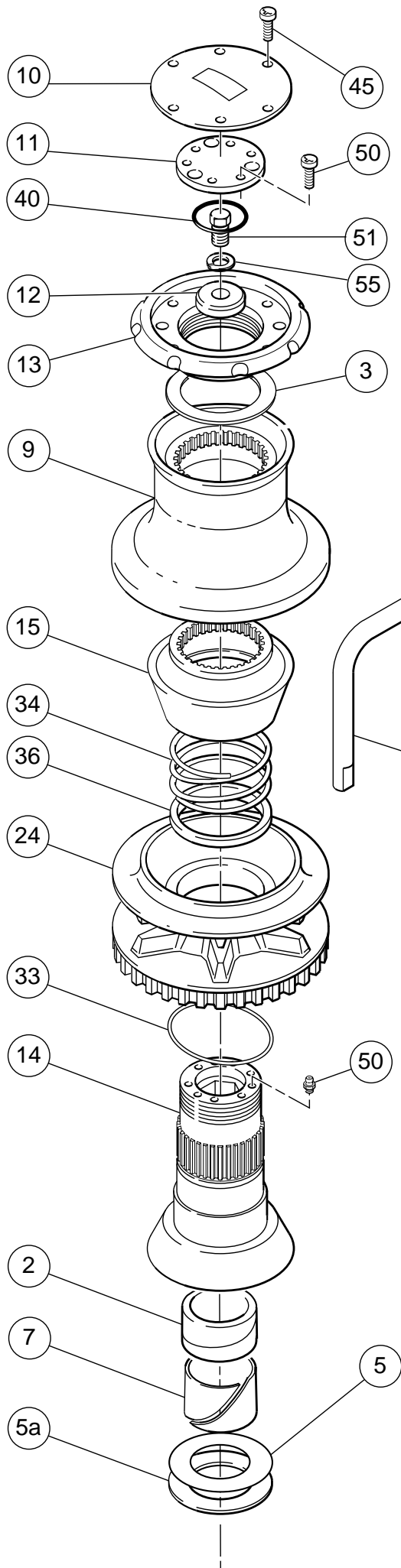
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V4000



1.0 PARTS

1.1 Exploded Diagram



1.2 For future reference

After you have read this instruction booklet, please keep it safe on board your vessel for future reference.

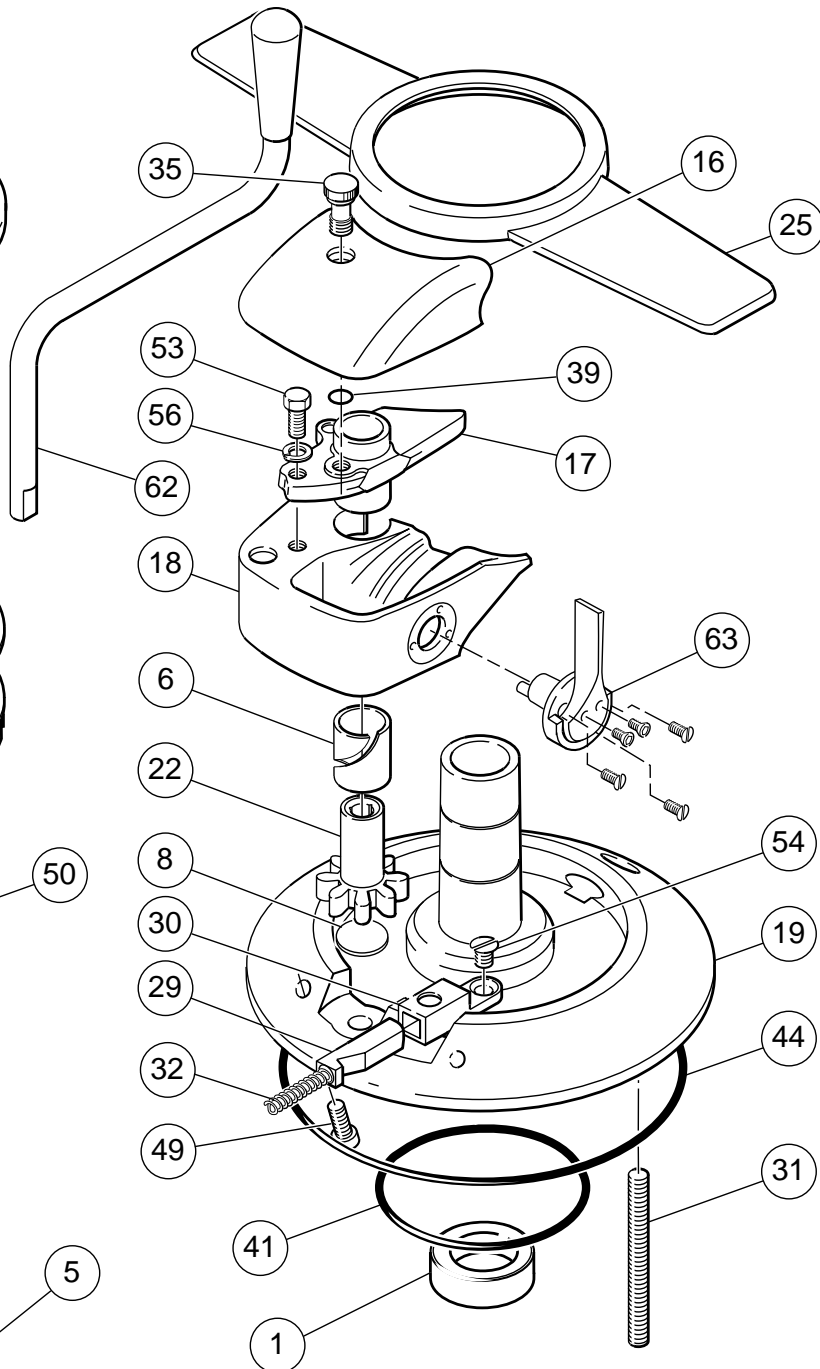
1.2.1 Identify your model

Type	List No	Tick
12V Reversing	0034050	
24V Reversing	0034060	

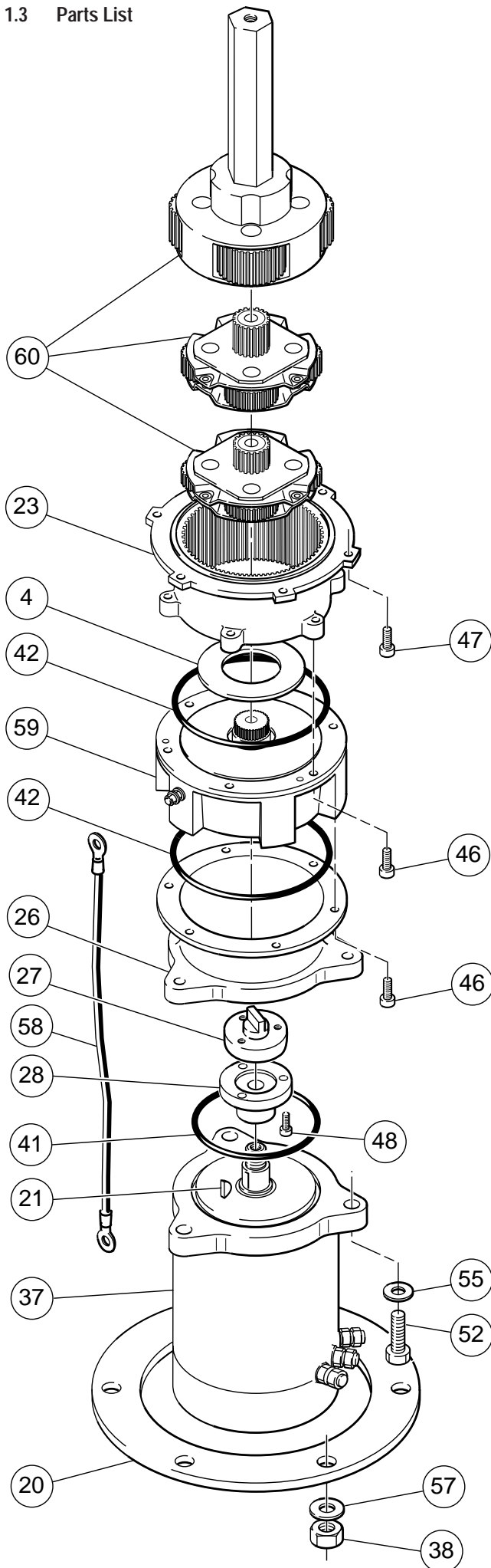
1.2.2 Please note your serial number and voltage.  
(Printed on motor label)

	__ V
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This information is essential when ordering spares.



### 1.3 Parts List



Item	Part No	Part Description	Qty.
1	103003	LF Bearing	1
2	103013	Bearing - Upper	1
3	103025	Shim Bearing	1
4	103036	Shim Bearing - Gears	1
5	103045	Shim Bearing - Lower Clutch	1
5a	154418	Spacer - Adjusting Lower Clutch	1
6	103046	Shim Bearing - Emergency Wind	1
7	103054	Shim Bearing - Main	1
8	103055	Bearing Pad	1
9	106016	Drum	1
10	106203	Cap - Outer	1
11	106213	Cap - Inner	1
12	106217	Cap - Lock	1
13	106310	Clutch Nut	1
14	106408	Clutch - Lower	1
15	106411	Clutch - Upper	1
16	106509	Chain Pipe Cover	1
17	106523	Chain Stripper	1
18	106535	Chain Pipe Body	1
19	109016	Deck Housing	1
20	109306	Deck Clamp	1
21	113020	Woodruff Key	1
22	118195	Pinion - Emergency Wind	1
23	119006	Gearbox	1
24	12040X	Gipsy	1
25	121001	Clutch Nut Key	1
26	136018	Motor Flange	1
27	136059	Motor Adaptor D Drive	1
28	136065	Motor Coupling	1
29	151212	Ratchet Pawl	1
30	151217	Ratchet Housing	1
31	154003	Stud	6
32	154206	Spring - Ratchet	1
33	154215	Spring - Gipsy Lift	1
34	154217	Spring - Upper Clutch	1
35	154403	Chain Pipe Cover Screw	1
36	154406	Spring Support Sleeve	1
37	336031	24V Motor	1
or 37	336032	12V Motor	1
38	339021	Nut	6
39	342010	O-Ring	1
40	342030	O-Ring	1
41	342045	O-Ring	1
42	342046	O-Ring	2
43	342051	O-Ring	1
44	342452	O-Ring	1
45	354013	Cap Screw	6
46	354014	Cap Screw	12
47	354031	Cap Screw	6
48	354015	Cap Screw	3
49	354045	Cap Screw	3
50	354106	Screw (pan head pozi)	6
51	354231	Screw (hex M8)	1
52	354232	Screw	3
53	354240	Screw (hex M10)	2
54	354320	Screw (set countersunk slot)	2
55	366042	Washer	4
56	366051	Washer	2
57	366055	Washer	6
58	403042	Brake Wire	1
59	406102	12V Brake	1
or 59	406103	24V Brake	1
60	418024	Gear Set (Stage 1)	1
or 60	418047	Gear Set (Stage 2)	1
or 60	418064	Gear Set (Stage 3)	1
61	418100	Grease Nipple	2
62	421000	Emergency Handle	1
63	466015	Ratchet Actuator Kit	1

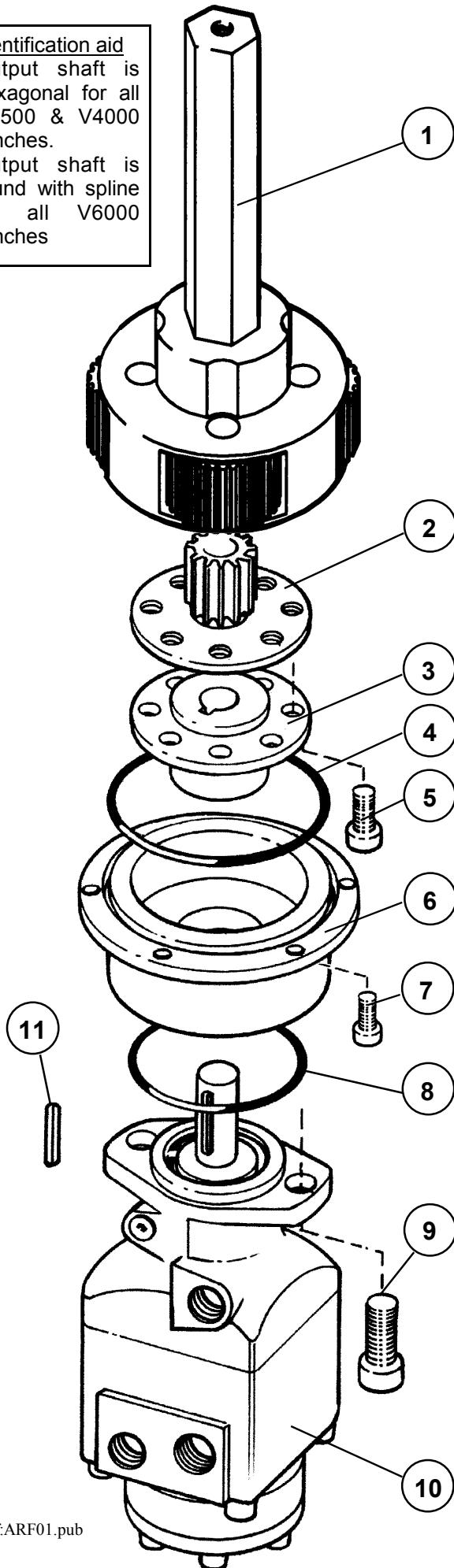
**Identification aid**  
 Output shaft is hexagonal for all C3500 & V4000 winches.  
 Output shaft is round with spline for all V6000 winches

Ref:ARF01

**Transmission Parts List**  
**C3500ARF Capstan**  
**V4000GARF, V4000GDARF Windlass**  
**V6000GARF, V6000GDARF Windlass**

All other parts of winch are as shown on DC electric powered parts diagram.

When ordering parts, give full description of part item required, winch model, and all details from nameplate(s)



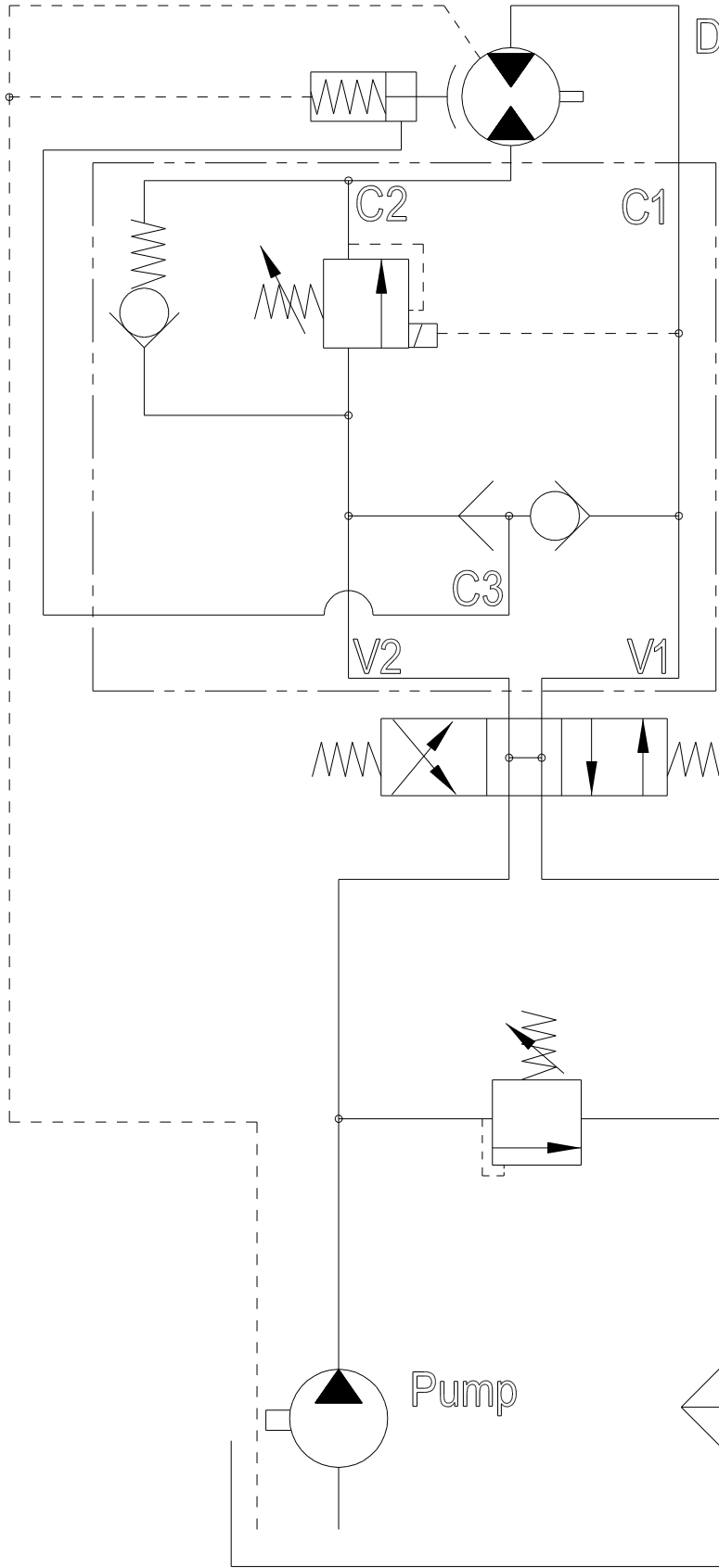
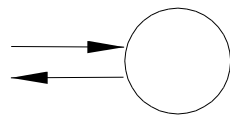
Ref	Part number	Description	Quantity used per winch				
			C3500	V4000G	V4000GD	V6000G	V6000GD
1	418065	Final drive	1				
	418063			1			
	418064				1		
	418067					1	
	418066						1
2	106602	Pinion	1	1	1		
	106604					1	1
3	106606	Coupling	1	1	1		
	106603					1	1
4	342051	Seal	1	1	1		
	342053					1	1
5	354032	Screw	6	6	6		
	354050					8	8
6	119056	Adaptor	1	1	1		
	119053					1	1
7	354032	Screw	6	6	6		
	354044					6	6
8	342042	Seal	1	1	1	1	1
9	354060	Screw	2	2	2	4	4
10	336054	Motor	1	1	1		
	336053					1	1
11	-	Key	1	1	1	1	1

**Servicing this transmission unit.**

- 1] Disconnect hydraulic lines. Plug motor ports and line ends to ensure no contamination of oil system.
- 2] Remove winch from installation and secure in upside down position.
- 3] Do not disassemble motor/brake unit - item 10. This should be serviced by an authorised service agent.
- 4] If necessary remove components following diagram. Clean all parts thoroughly.
- 5] Removal of final drive requires release of centre screw at top end of winch. Final drive should fit freely in housing
- 6] Keep screw thread holes clean and free of lubricant. These must be kept clean for thread lock compound on assembly
- 7] With final drive in position and secured by centre screw (not shown), fill gear box to top with fluid grease (Castrol TC or similar 00 grade fluid grease). Rotate gear train and top up. Assemble in sequence filling voids with grease. Apply locking compound to all screw threads and tighten evenly and firmly.
- 8] After a few hours use, check all fastenings are tight and re check from time to time. Follow standard commissioning procedures for hydraulic systems

Braked motor: Ports: G1/2"  
Drain & Brake : G1/4"

Oil flow shown gives  
clockwise rotation  
viewed from above



Brake shuttle + c.balance  
valve. Ports: G1/2"  
Drain: G1/4"

Scope of supply by James Nilsson Ltd  
varies with contract. Check with us if  
in doubt.

Control valve with  
motor spool

Pressure relief  
valve

Pump

Tank

We recommend BREVINI hydraulic equipment

James Nilsson Ltd  
Auckland, New Zealand  
Tel: [64 (0) 9] 444 5219  
Fax: [64 (0) 9] 444 5222  
Email: sales@jamesnilsson.co.nz

Typical hydraulic circuit for  
V6000, V4000, C3500  
with "ARF" braked drives

Sheet Issue: 1-01/00

Drawing no:  
ARFCIRC

## 2.0 PLANNING THE INSTALLATION

### 2.1 Suitability

Suitable for vessels up to **25.0m** (82 ft.) LOA

### 2.2 Package Contents

Windlass  
 Mounting Studs, Washers, Nuts and 'O' Ring  
 Deck Clamp  
 Clutch Nut Key  
 Emergency Operating Handle  
 Mounting Template  
 Instruction Manual  
 Safety Instructions

### 2.3 Additional Requirements

Each windlass installation requires :

a. The following tools:

#### Windlass Installation

**10mm** (<sup>3</sup>/<sub>8</sub>" ) Diameter Drill  
**13mm** A/F (<sup>1</sup>/<sub>2</sub>" ) Spanner (Wrench)  
 Jig Saw or Trepanning Tool

#### Wiring Installation

Flat Bladed Screwdriver  
 Crimping Pliers / Wire Stripper  
**13mm** A/F (<sup>1</sup>/<sub>2</sub>" ) Spanner or Socket  
**8mm** A/F (<sup>5</sup>/<sub>16</sub>" ) Spanner or Socket

b. Marine grade silicone sealant. **DO NOT use permanent adhesive/sealant.**

c. A breaker/isolator for overload protection which can also be used as a main isolating switch. (Simpson-Lawrence recommend the breaker/isolators listed under **3.0 Accessories**)

d. A control switch (or switches) by preference.

e. A solenoid for a single direction installation, or a boxed pair of solenoids for a reversing installation. (Unless the High Load Foot Switch only is used)

f. Suitable electrical cable and crimp terminals.

### 2.4 Electric Cable Selection

To achieve the best performance and safeguard your electrical system, it is essential that any electric windlass is fitted with sufficiently large diameter cable to cope with the current draw imposed upon it and to keep the voltage drop within acceptable limits. In any circumstance voltage drop due entirely to cable resistance should not exceed 10%.

The following tables give recommended cable sizes. The recommendations are based on the total length of cable required, from the battery to the windlass and back to the battery, following the route of the cables. (See the Wiring Diagram for the definition.)

**DO NOT** confuse Cable Length with the length of the vessel!

### METRIC or STARTER CABLE

Voltage	Cable Length m (ft.)	Size (mm <sup>2</sup> )
12	<b>24.0m</b> (80ft.)	50
	<b>34.0m</b> (110ft.)	50
	<b>43.0m</b> (140ft.)	70
	<b>49.0m</b> (160ft.)	95
24	<b>24.0m</b> (80ft.)	10
	<b>37.0m</b> (120ft.)	16
	<b>49.0m</b> (160ft.)	25

### AMERICAN CABLE

Voltage	Cable Length m (ft.)	Size (AWG)
12	<b>24.0m</b> (80ft.)	1
	<b>34.0m</b> (110ft.)	1/0
	<b>43.0m</b> (140ft.)	2/0
	<b>49.0m</b> (160ft.)	3/0
24	<b>24.0m</b> (80ft.)	6
	<b>43.0m</b> (140ft.)	4
	<b>49.0m</b> (160ft.)	4

Thin wire of **1.5mm<sup>2</sup>** cross sectional area, 21/0-30 PVC covered (American equivalent 14 AWG) is required for the control switch circuits. This is used to connect the switch(es) to the solenoid(s).

### 3.0 ACCESSORIES

Item		List Number
Breaker/Isolator (70 Amp)	12 Volt Installation	0050711
Breaker/Isolator (50 Amp)	24 Volt Installation	0050710
12 Volt Solenoid	Single direction	0052505
24 Volt Solenoid	Single direction	0052506
12 Volt Solenoids	Reversing	0052529
24 Volt Solenoids	Reversing	0052530
Push Button Switch	Single direction	0052512
Foot Switch	Single direction	0052514
High Load Foot Switch	Single direction	0052516
USA list number for above (Black)		LEWP49C
USA list number for above (White)		LEWP49CW
Hand Remote Switch	Single or Reversing	0052515
Push Button Switch	Reversing	0052513
Foot Switch x 2	Reversing	0052514
Touch Pad Control	Reversing	0052522
Up/Down Rocker Switch	Reversing	0052518

## 4.0 SPECIFICATION

### 4.1 Performance: Maximum Load

Chain in Gipsy (12V)	1630kg (3590lb)
Chain in Gipsy (24V)	1750kg (3850lb)

Typical Working Figures (12V)		
Load	Speed	Current Draw
300kg(660lb)	10.0m(32ft)/min	100 Amp

Typical Working Figures (24V)		
Load	Speed	Current Draw
300kg(660lb)	11.0m(35ft)/min	50 Amp

Motor	1200W
Weight	52kg (114lb)

## 5.0 INSTALLATION

### 5.1.0 Fitting Windlass To Deck

#### 5.1.1 Preparation

If the deck top is uneven a suitable mounting pad may be required to take up camber or sheer. Decks which are thin, of foam or balsa laminate construction, will require a backing piece in order to spread the load which will be applied locally to the deck while the windlass is in use. Care must be taken if the deck is of uneven thickness and a mounting pad and/or backing piece fitted that the top and bottom surfaces are parallel for optimum clamping.

#### 5.1.2 Position of Windlass

Select a site for the windlass that allows for the following:

- An unobstructed route for the chain from the stemhead roller to the gipsy. The chain should enter the gipsy at a point **90°** to the main windlass centre line.
- The chain locker or storage area under the windlass should be as deep as possible and preferably of a **tall and narrow** design. The highest point of the stowed chain heap should ideally be **300-400mm** (1-1½ft) below the windlass motor.
- The footswitch(es) should be positioned to allow the operator to comfortably tail rope off the drum when necessary.
- The top of the windlass must be accessible for greasing and clutch operation.
- When planning the installation of your windlass, allow for the operation of the emergency handle.

#### 5.1.3 Mounting Template

Place the mounting template in the desired position. Drill the holes for the motor and chain to pass through as detailed and six **10mm** (3/8") holes for the studs. The studs supplied suit decks and mounting pads up to **75mm** (3") thickness.

#### 5.1.4 Fitting

Place the windlass and studs through the holes in the deck, when satisfied that all is correct, fit any packing, the clamping ring, the nuts and washers, and tighten evenly and firmly using a **150mm** (6") long spanner. Apply caution when tightening nuts, as over tightening may crush the deck. **DO NOT use a permanent adhesive/sealant to install windlass.**

### 5.1.5 Longer Studs

For thicker than standard decks, simply fit longer studs as appropriate (M10 Thread). Studs to special lengths may be obtained from Simpson-Lawrence Engineering Limited.

## 5.2.0 Wiring

### 5.2.1 General Recommendations

The wiring system should be of the two cable fully insulated return type, which avoids possible electrolytic corrosion problems. Most modern installations are negative return (negative earth) but polarity should be checked.

Solenoids should be mounted as close to the battery as possible, in a dry location using the mounting holes provided. Under no circumstances should solenoids or solenoid control boxes be installed in chain lockers or similar damp or semi exposed areas.

Overload protection must be built into the windlass wiring circuit. This protects the wiring and prevents undue damage to the windlass motor, in the event of it being stalled by an excessive load in service. It is advisable to site the Breaker/ Isolator in a dry, readily accessible place, as it must be manually reset should an overload occur that causes it to trip to the **OFF** position.

If you are **NOT** using the Breaker/Isolator recommended, an alternative **MUST** have identical characteristics.

**NB:** Crimp terminals should be used on all wire ends for good electrical connections.

### 5.2.2 Control Switch Installation

Follow the mounting instructions supplied with the switch. Remember when using more than one control switch, it is important to their correct operation, that they are wired in a parallel circuit.

### 5.2.3 Electric Brake Warning!

This windlass is fitted with an electric brake. This brake must be wired according to the installation instructions, **prior to operating** the windlass, or both the brake assembly and motor will be damaged beyond repair.

It is important to note that the brake is engaged (locking the windlass) when no power is applied to the brake. Power must be applied to the windlass and brake at the same time, releasing the brake and allowing the windlass to rotate.

Simpson-Lawrence **will not** provide warranty replacements for motors and brakes damaged by failure to follow the wiring instructions.

## 5.3 Test

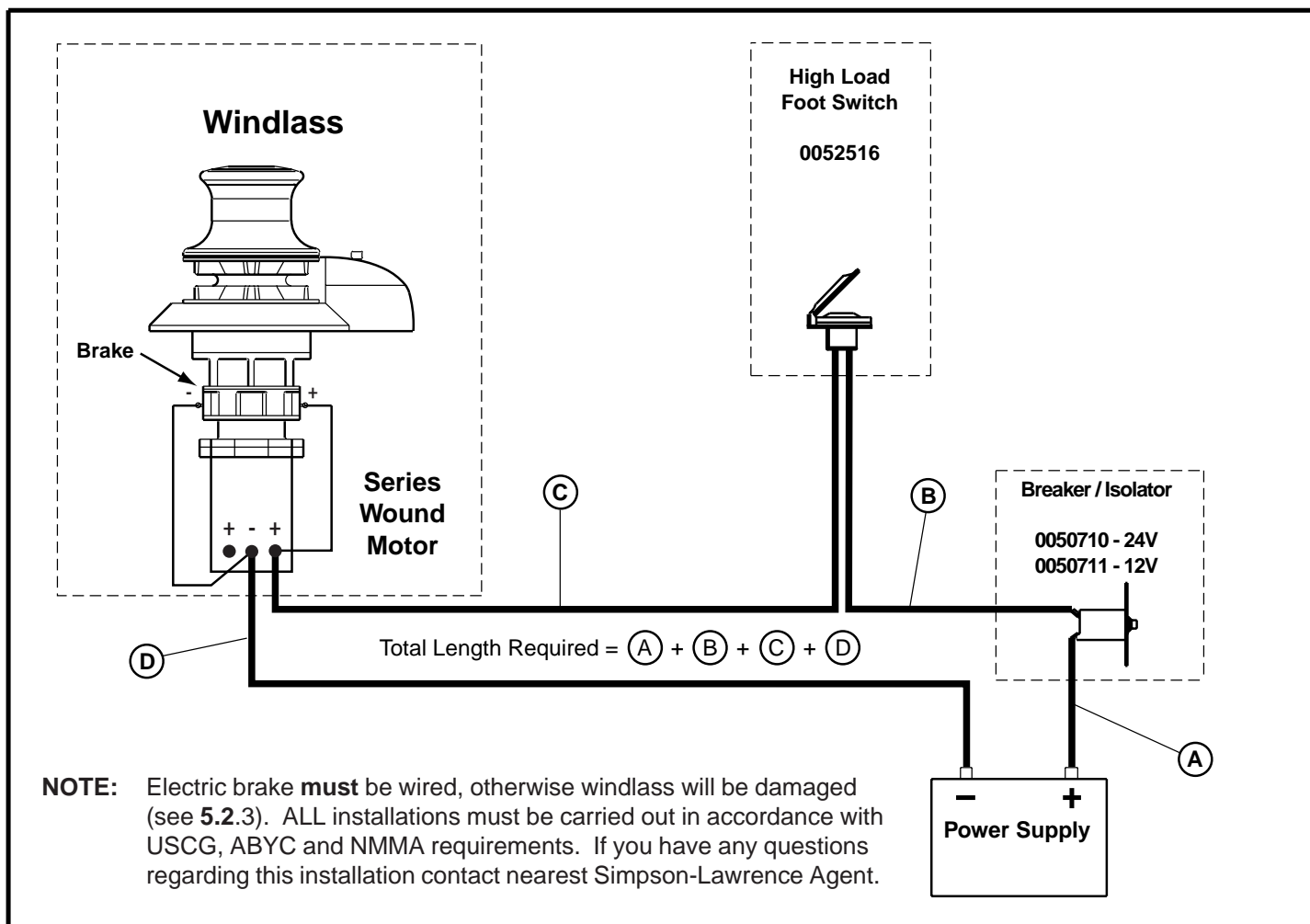
**Immediately after installation**, it is recommended that the winch is tested to ensure it functions correctly in all modes, e.g., forward, reverse and manual operations should be tested.

## 5.4 Protection of Below Deck Parts

Check all terminals or connections are firmly secured. Coat **ALL** below deck surfaces, including the terminals, with rubber or plastic type paint (automotive underseal is one convenient way) **OR** wrap completely in self amalgamating tape **OR** coat/protect in a similar way with some other system suitable for a marine environment.

5.5.0 Wiring Diagrams

5.5.1 Single Direction Wiring (High Load Foot Switch Only)



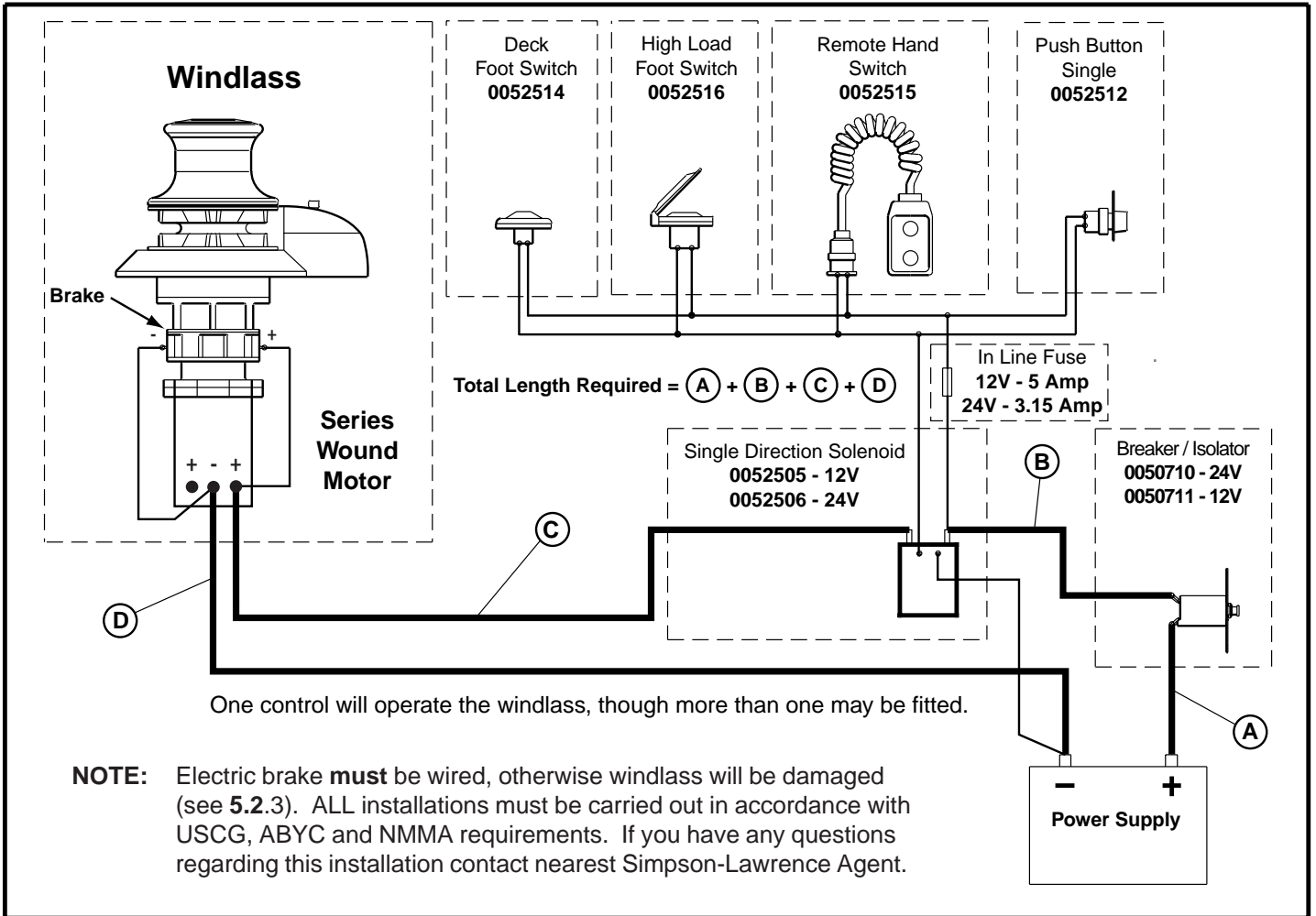
WIRE	FROM	TO
Thick cable	Positive battery terminal	High load foot switch
Thick cable	High load foot switch	Windlass positive terminal
Thick cable	Negative battery terminal	Windlass negative terminal
Thin wire	Brake	Main circuit (positive)
Thin wire	Brake	Main circuit (negative)

**WARNING!** If you are not sure that you understand the above guidelines seek professional advice.

**NB** Use a minimum wire gauge of 1.5mm<sup>2</sup> (14AWG) to connect switches.



5.5.2 Single Direction Wiring

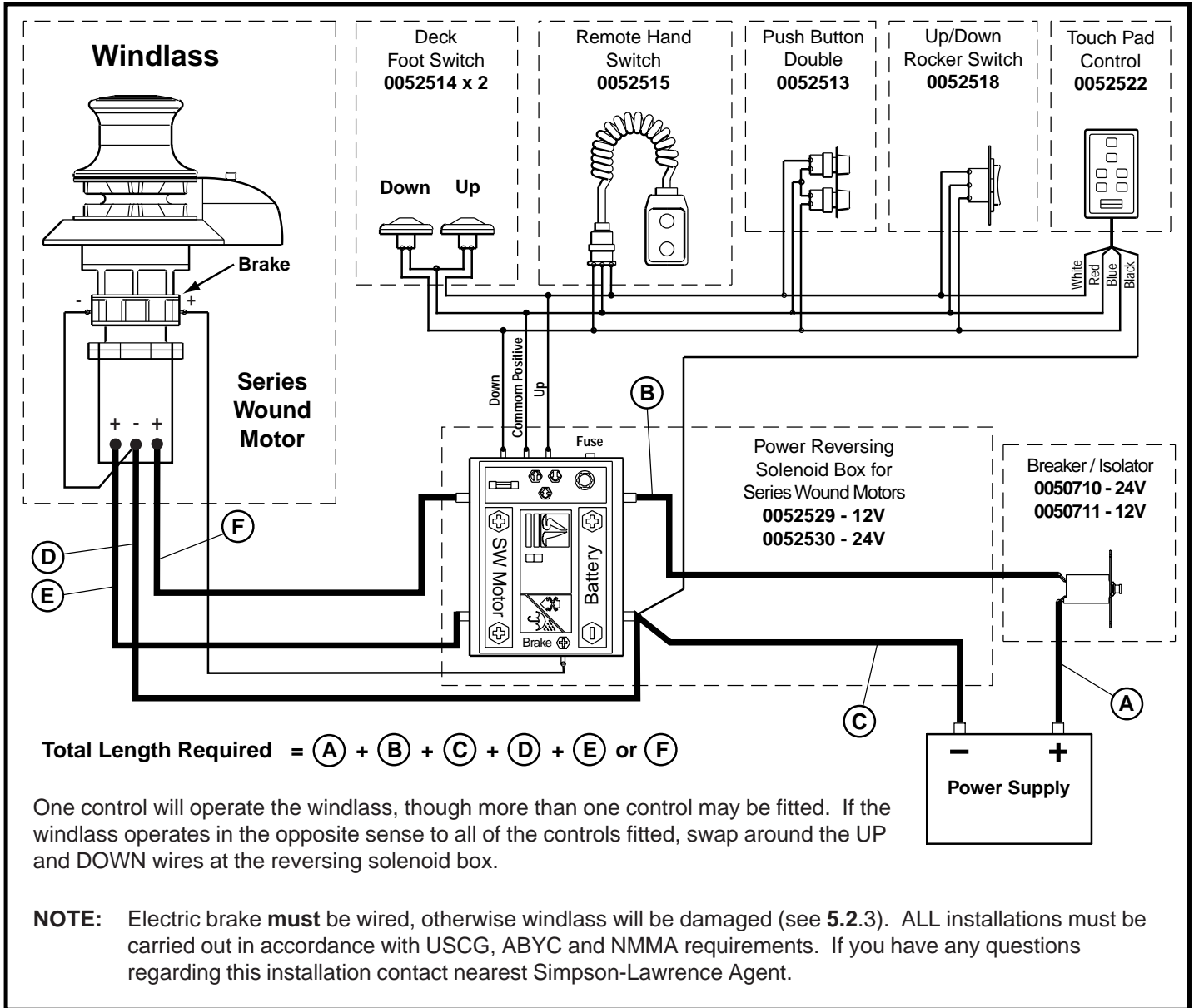


WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker / Isolator
Thick cable	Breaker / Isolator	Solenoid
Thick cable	Solenoid	Motor positive terminal
Thick cable	Negative battery terminal	Negative motor terminal
Thin wire	Solenoid	Control switch(es)
Thin wire	Control switch(es)	In line fuse
Thin wire	In line fuse	Main circuit (positive)
Thin wire	Solenoid	Main circuit (negative)
Thin wire	Brake	Main circuit (positive)
Thin wire	Brake	Main circuit (negative)

**WARNING!** If you are not sure that you understand the above guidelines seek professional advice.

**NB** Use a minimum wire gauge of 1.5mm<sup>2</sup> (14AWG) to connect switches.

### 5.5.3 Power Reversing Wiring



WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker / Isolator
Thick cable	Breaker / Isolator	Solenoid box
Thick cable	Negative battery terminal	Solenoid box
Thick cable	Solenoid box positive	Positive motor terminal
Thick cable	Solenoid box positive	Positive motor terminal
Thick cable	Solenoid box negative	Negative motor terminal
Thin wire	Solenoid box	Control switch(es) common terminal
Thin wire	Solenoid box	Control switch(es) up terminal
Thin wire	Solenoid box	Control switch(es) down terminal

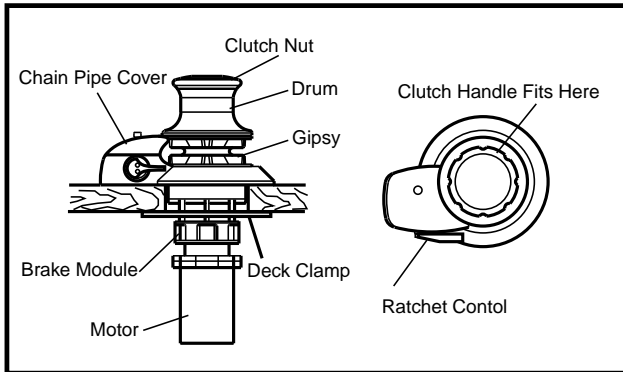
**WARNING!** If you are not sure that you understand the above guidelines seek professional advice.

**NB** Use a minimum wire gauge of 1.5mm<sup>2</sup> (14AWG) to connect switches.

## 6.0 OPERATING INSTRUCTIONS

### 6.1 Safety First!

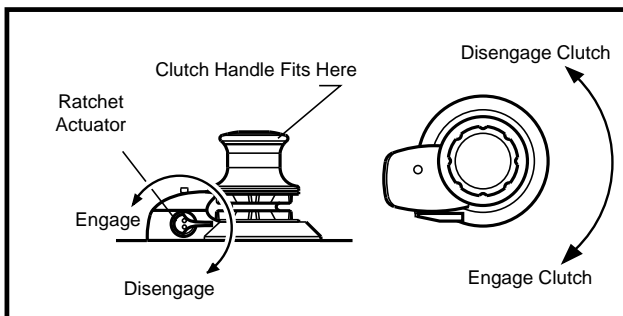
Your Simpson-Lawrence Pacific winch is a powerful piece of equipment and should be respected as such. Keep young children and observers, who are unfamiliar with anchoring procedures, away from the operating area when in use. To avoid personal injury, ensure that fingers, limbs and clothing are kept clear of the rode and windlass during operation. Always ensure there are no swimmers nearby when dropping your anchor. Always isolate the windlass using the breaker/isolator, except when in use.



### 6.2 Use Of Clutch

Firstly, isolate the windlass using the breaker/isolator. To tighten the clutch - rotate the clutch nut clockwise, this will grip the gipsy, effectively locking it to the windlass geartrain. To slacken the clutch - turn the nut anti-clockwise, this will free the gipsy allowing it to turn independently of the windlass geartrain.

**Always remove the handle after use.**



### 6.3 Use Of Gipsy Ratchet

The gipsy spring ratchet is controlled by the lever on the side of the chain pipe. Clockwise rotation of the lever disengages the ratchet from the gipsy, which is then free to rotate in either direction. Anti-clockwise rotation of the lever engages the ratchet with the gipsy, preventing chain run out, i.e., when the gipsy rotates anti-clockwise.

**To prevent damage, NEVER have the ratchet engaged when letting chain out!**

### 6.4.0 Anchor Release

#### 6.4.1 Under Power

When the power reversing option is used, the anchor and chain can be lowered at a regular rate by activating the **DOWN** control. Ensure that the clutch is tightened and that the gipsy ratchet is disengaged. Power out the desired length of chain. Use controlled boat motion in the direction of the prevailing wind or current to set the anchor into the sea bed. Secure as detailed in section 6.5.

### 6.4.2 Under Gravity

Ensure that the gipsy ratchet is disengaged. Carefully release the clutch to allow the anchor and chain to pay out under gravity. Use the clutch as a brake to control the run of the chain if necessary. When the anchor is set, secure rode as detailed in 6.5.

### 6.5 Lying To Anchor

To avoid direct loading on the windlass while lying at anchor, use a **chain stopper** or **heavy nylon bridle** to secure rode to an **independent strong point**. When using rope, it should be made fast to a **sampson post, bollard, or mooring cleat**.

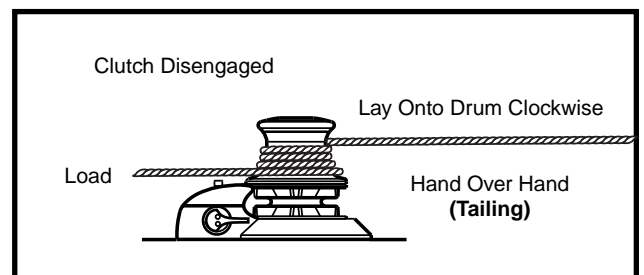
### 6.6 Anchor Recovery

Use firm hand pressure to tighten the clutch, **DO NOT** force or hammer the clutch nut! Ensure that the spring ratchet is disengaged and visually check that the foredeck is clear around the windlass. Check that there are no swimmers, divers, etc., in the vicinity.

It is recommended that the ship's engine is run during anchor recovery.

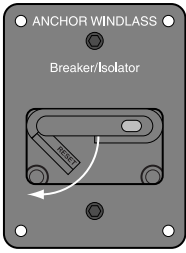
Activate the windlass by using a foot switch, touch pad control, etc., using the windlass' power to bring the boat over the site of the anchor. Maintaining a slow speed whilst approaching the anchor is a good safe practice, especially in a crowded anchorage. If the anchor is snagged and/or heavy loads are being applied by the windlass, use the ship's engine to manoeuvre over the anchor to help free it. **DO NOT** hurry the operation. The hauling speed depends on the load placed on the anchor, remember that it will increase after the anchor breaks free. As the anchor approaches the stemhead, the chain should be slowly and carefully landed with the use of the controls to avoid damage to the vessel and its fittings. Should the windlass stall, switch it **OFF** immediately and wait a few minutes before trying again. If the breaker/isolator has tripped, it will require to be manually reset before the windlass can be used again. If the breaker/isolator proves difficult to reset, allow it to cool for a few moments. Avoid stalling your windlass whenever possible.

### 6.7 Warping



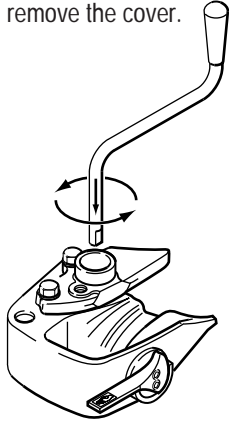
If the gipsy is in use it should be locked by its ratchet. Slacken the clutch nut to enable the drum to rotate independently of the gipsy. Wrap at least three coils of rope, loosely, around the drum clockwise to avoid it slipping. Apply a light hand pressure on the *tail* of the warp and apply power. While the windlass rotates under power, *tail* the warp hand over hand until the task is complete. Secure the warp after use.

## 6.8 Emergency Hand Gear Operating Instructions

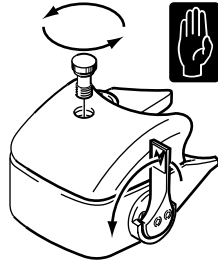


1. Isolate the windlass using the circuit breaker/isolator.  
**WARNING! Do not switch on power when the ratchet pawl actuator is in the manual (M) position.**

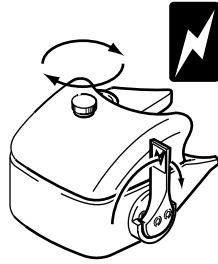
2. Switch lever to manual then unscrew the chain pipe cover screw and remove the cover.



3. Insert emergency handle into the chain stripper and turn in an anti-clockwise direction until anchor rope/chain is fully recovered.



4. Once anchor rope/chain is fully recovered, secure to an **independant strong point**, remove operating handle, replace chain pipe cover and revert switch lever to **power on**.



## 6.9 Operating Tips

It is recommended that the boat engine should be running when hauling in the anchor so that the helmsman can gain immediate control of the craft if necessary after the anchor breaks free. When mooring stern to, drop the anchor at the required distance from the jetty and gently ease off the gipsy clutch just enough to allow the chain to run out under the influence of the stern way of the vessel, thus preventing the bows from swinging. By engaging the clutch fully, the anchor can be used to restrain the vessel as it approaches the jetty. Make fast with warps from the stern.

### 6.10.1 Warning!

If the correct installation procedure is followed, it should not be necessary to dismantle any part of the windlass. 'O' ring seals are used extensively in the construction of this windlass and if any seals are broken, special care must be taken to ensure correct positioning of the seals and that they are not pinched when re-assembling.

### 6.10.2 To Change Gipsy

1. Remove top cap
2. Remove inner cover and seal. **DO NOT** remove central hexagon screw under inner cover.
3. Unscrew clutch nut and remove drum, top clutch, spring and spring retainer.
4. Remove chain pipe cover and 2 hexagon screws holding the stripper.
5. Rotate the stripper away from the gipsy and lift the gipsy off.
6. Put new gipsy into place taking care to fit the internal shim

bearing if the gipsy has a groove in the bore. The gipsy must engage with the emergency pinion. **DO NOT FORCE.**

7. Assemble in reverse order, taking care to screw fastenings down firmly but **WITHOUT USING FORCE.**

### 6.10.3 Warning!

**Serious damage can be caused by incorrect assembly and your guarantee may be invalidated as a result. Always proceed with care.** The Pacific family of windlasses have been designed for ease of installation and removal. It should not be necessary to remove any parts other than the deck clamping ring, nuts and washers.

## 7.0 IMPORTANT USER INFORMATION

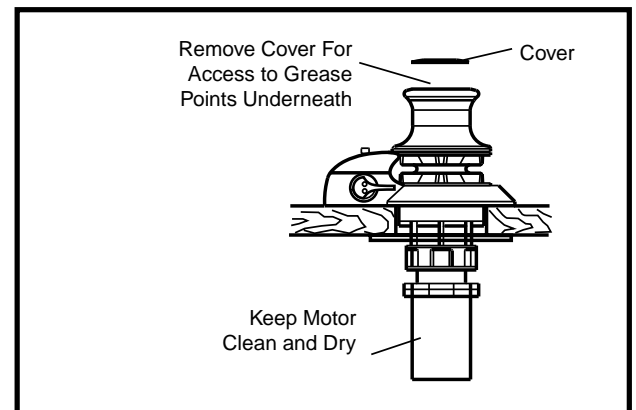
Classification Societies require that a vessel lying to anchor should have its rode held by a chain stopper or equivalent strong point as windlasses are not designed to withstand the loads generated under storm conditions. This rule should be applied to all craft!

At all times it is the responsibility of the boat user to ensure that the anchor and rode are properly stowed for the prevailing sea conditions. This is particularly important with high speed power boats as an anchor accidentally falling into the water whilst 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.

When the windlass is mounted in an anchor well with a closing lid, due to lack of ventilation and consequent high saline conditions the rate of corrosion is accelerated. It is essential that the windlass is regularly examined, operated and given any necessary maintenance. This is of even greater importance when the windlass is installed in an anchor well!

## 8.0 MAINTENANCE



### 8.1 General Recommendations

Isolate the windlass electrically, before carrying out any maintenance work.

After the first two or three anchor recoveries, check that the windlass is still fastened tightly to the deck as it should now be **bedded-in**. Every three months, remove the drum cap (Part 9) using a pocket knife or broad bladed tool. As the cap may be stiff, a good fit in the slot is advised to avoid damage to the cap. Apply two shots of grease to each grease nipple under the top cap and apply a touch of oil to the ratchet control and other above deck mechanisms this will help keep everything operating smoothly.

Regularly wash down the above deck parts of your windlass with fresh water.

Ensure that all below deck parts are kept dry. The gears and gearbox bearings have been lubricated for you and require no regular attention. We recommend that the gearbox and motor exteriors are regularly treated with a water repellent spray when mounted exposed within a chain locker.

Examine all electrical connections for possible corrosion. Clean and lightly grease as necessary.

## 8.2 Quarterly Maintenance of Clutch

It is recommended that the tapered mating faces of Parts 14, 15 and 24 should be given a coat of pressure spray lubricant

(WD40 or similar) applied at three monthly intervals. **DO NOT USE GREASE.** Refer to section 6.10.2 Change Gipsy for instruction and information on its assembly.

## 8.3 Winter Laying Up

As with all items of marine equipment poor installation or neglect is often responsible for damage caused during the winter lay up period. Given correct installation and maintenance your windlass will require little attention prior to, or after, winter lay up. Check between the windlass deck housing and deck for signs of water ingress. Should it occur, remove, clean and reseal the deck plate and if necessary, replace O-ring.

## 9.0 THREE YEAR LIMITED WARRANTY

**WARRANTY COVERAGE:** SIMPSON-LAWRENCE LTD., warrants to the original purchaser, subject to the limitations and exclusions described below, that this product will be free from defects, in material and workmanship under normal use and service, for a period of three (3) years from the date of its original sale, except that the warranty shall be for a period of one (1) year for seals, electric motors, electrical equipment, electronic controls, composite gipsies and hydraulic pumps. Simpson-Lawrence will repair or replace any part which proves to be defective in normal use during the period of the warranty.

**WARRANTY CLAIMS PROCEDURES:** If a defect is discovered during the applicable warranty period, Buyer must promptly notify Simpson-Lawrence of such, in writing, at the nearer address below, providing proof of purchase. For warranty service, the product must be returned to Simpson-Lawrence for examination. This examination will be performed by Simpson-Lawrence at no charge to Buyer. Buyer is responsible for any labour costs associated with preparing the product or parts for shipping and the cost of shipping or transporting the product or parts to and from Simpson-Lawrence.

**REMEDY:** Simpson-Lawrence will repair any defect in material or workmanship or, at its option, correct such defect by replacing non-conforming goods or parts. Such repairs and/or new parts are warranted for the unexpired portion of the original warranty, or for 90 days, whichever is later. Warranty work (parts and/or Labour) shall be at Simpson-Lawrence's expense; however, product preparation and shipping costs to or from Simpson-Lawrence shall be borne by Buyer. These remedies are the Buyer's exclusive remedies for breach of warranty.

**LIMITATIONS AND EXCLUSIONS:** (1) This warranty applies only if the product is used under non-commercial, normal use in service, and shall not apply to (a) products subjected to (i) conditions or usage that exceed the product's performance specifications, (ii) incorrect maintenance, or (iii) use in applications for which they are not intended; (b) defects or damage caused by a force majeure which exceed design specifications, including but not limited to, wear and tear, corrosion or ultraviolet degradation; and (c) defects or damages caused by unauthorized attachments, accessories or modifications. (2) Simpson-Lawrence's warranties of fitness and merchantability, as well as other expressed warranties contained herein, shall apply only to those parts and components manufactured by Simpson-Lawrence, which were installed by Simpson-Lawrence or other authorized personnel, and shall not be effective or actionable if any warranty repair or replacement work is performed by any unauthorized party. Simpson-Lawrence reserve the right to alter the products specifications and design without prior notice.

**THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DO NOT EXTEND BEYOND THE DURATION OF THE EXPRESSED WARRANTIES PROVIDED HEREIN.**

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**SOME STATES, OR COUNTRIES, DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.**

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE, OR COUNTRY TO COUNTRY.**

The model described in this document is subject to a policy of continual improvement. **Simpson-Lawrence Engineering Limited** reserve the right to alter specifications and recommendations without notice. For the latest information regarding any aspect of your windlass please contact your local agent or Simpson-Lawrence Engineering Limited:-

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