

# SL PACIFIC

V2000

Windlass Handbook  
Installation, Operation  
and Maintenance  
Instructions



SIMPSON  
LAWRENCE

# 1. PARTS

## 1.1 EXPLODED DIAGRAM

### 1.2 FOR FUTURE REFERENCE

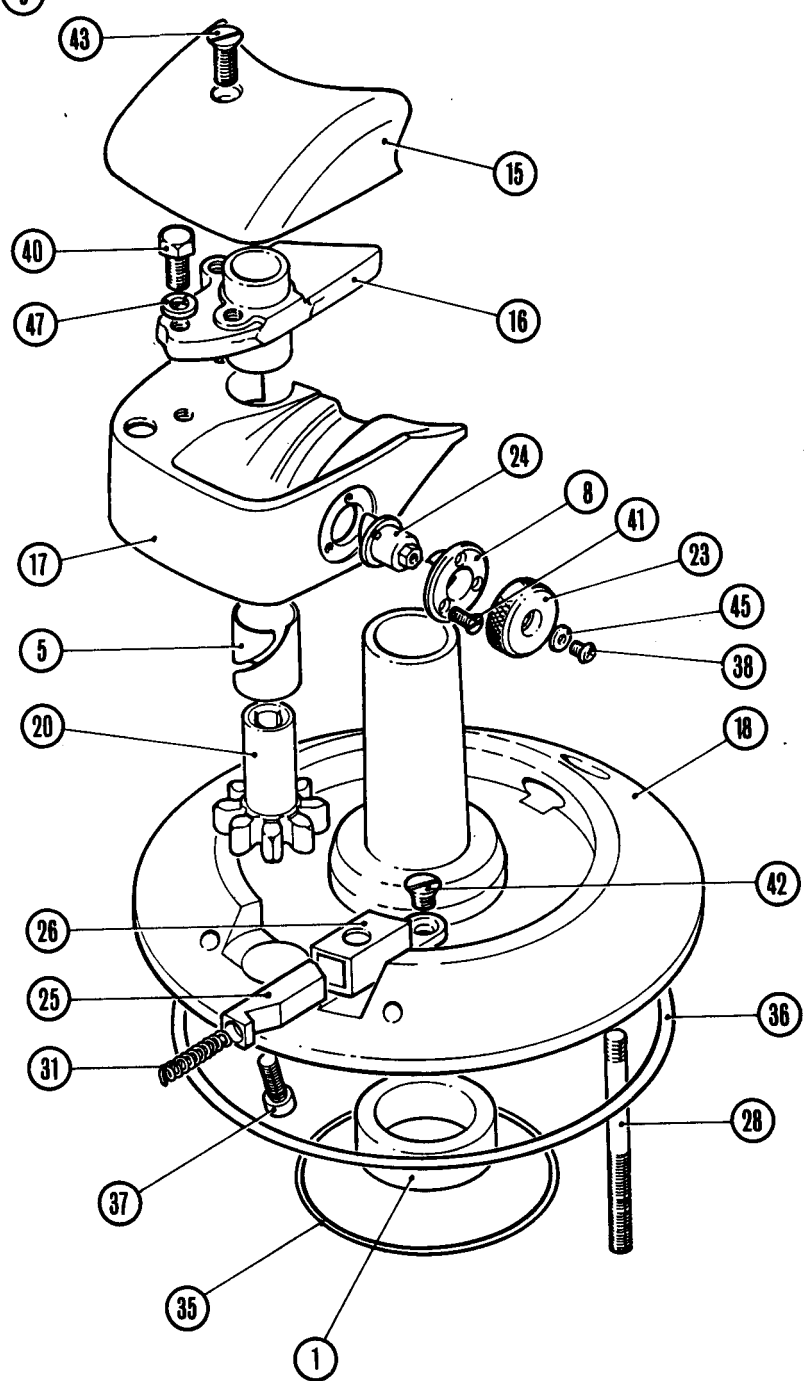
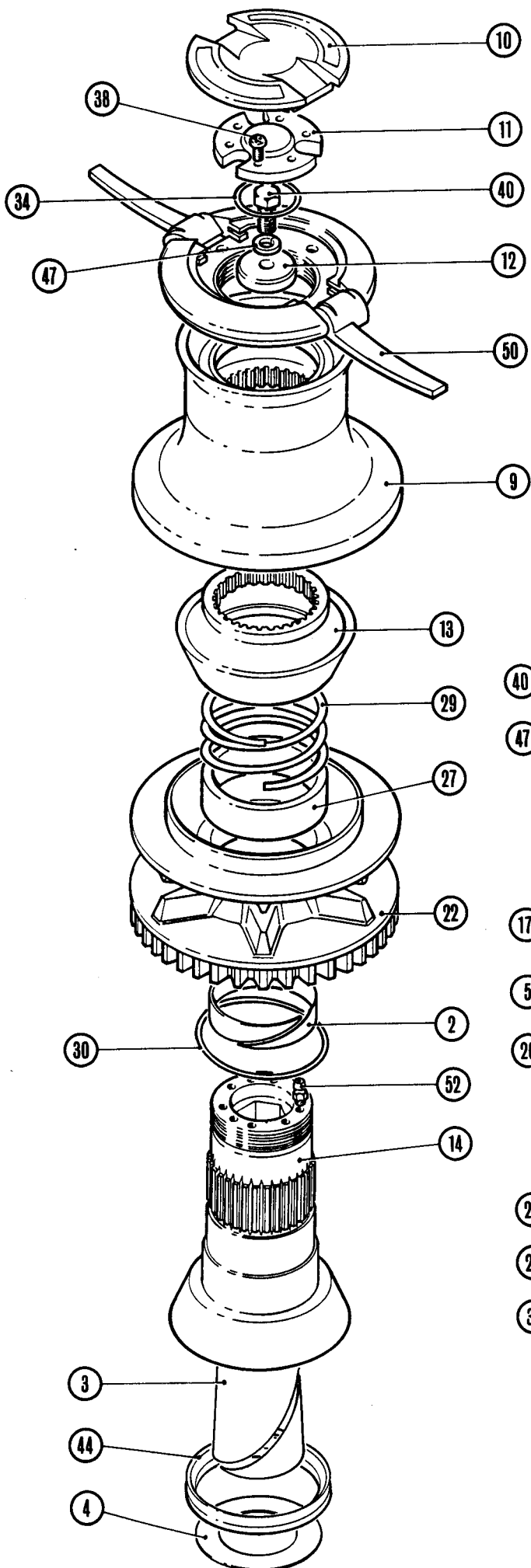
After you have read this instruction booklet, please keep it safe on board your vessel for future reference.

#### 1.2.1 Identify your Model.

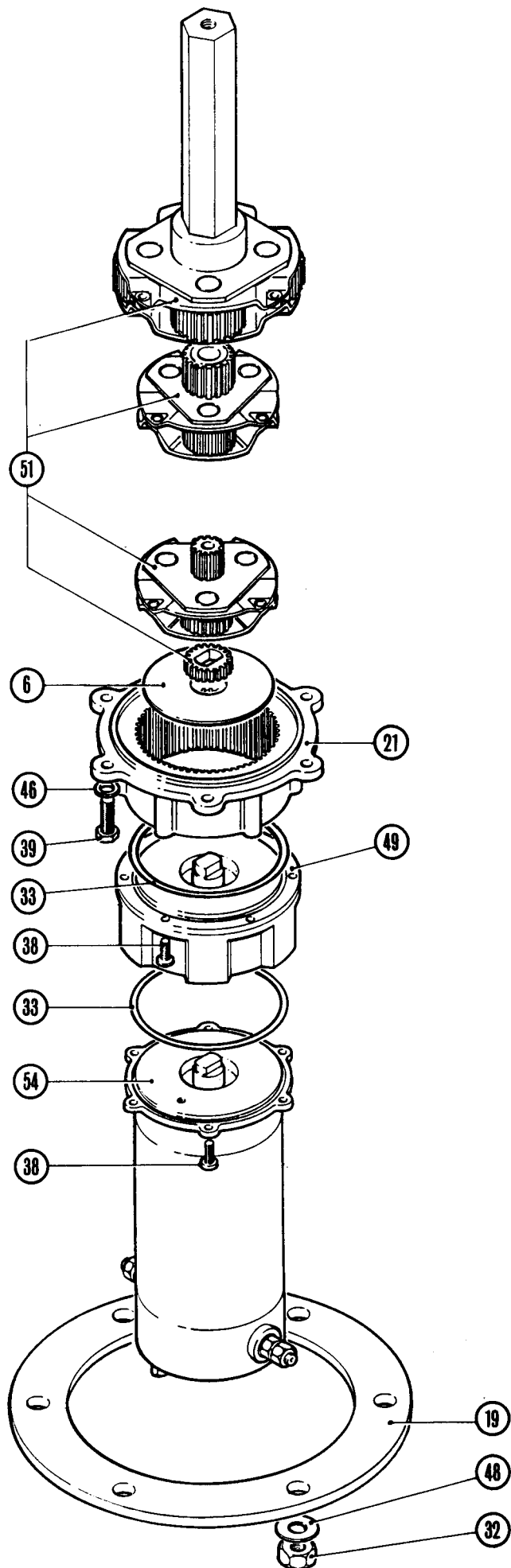
Type	List No	Tick
12v Non-Reversing	<b>0033010</b>	
24v Non-Reversing	<b>0033020</b>	
12v Reversing	<b>0033050</b>	
24v Reversing	<b>0033060</b>	

1.2.2. Please note your serial number and voltage (printed on motor label). This information is essential when ordering spares.

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### 1.3 PARTS LIST



Item	Part No.	Part Description	Quantity
1	103002	Plain Bearing	1
2	103032	Shim Bearing – Gipsy	1
3	103033	Shim Bearing – Main	1
4	103034	Shim Bearing – Washer	1
5	103035	Shim Bearing – Emergency Wind	1
6	103036	Shim Bearing – Gears	1
7	103055	Bearing Pad – Emergency Wind	1
8	103056	Bush – Ratchet Control	1
9	106010	Drum	1
10	106202	Cap – Outer	1
11	106211	Cap – Inner	1
12	106216	Cap – Inner Lock	1
13	106401	Clutch – Top	1
14	106403	Clutch – Bottom	1
15	106503	Chain Pipe Cover	1
16	106511	Chain Stripper	1
17	106517	Chain Pipe Body	1
18	109011	Deck Housing	1
19	109303	Deck Clamp	1
20	118191	Pinion – Emergency Wind	1
21	119001	Gearbox	1
22	12010X	Gipsy	1
23	151200	Pawl Knob	1
24	151205	Pawl Cam	1
25	151210	Pawl	1
26	151215	Pawl Housing	1
27	154400	Spring Sleeve	1
28	154001	Stud	6
29	154204	Spring – Upper Clutch	1
30	154205	Spring – Gipsy Lift	1
31	154206	Spring – Ratchet	1
32	339017	Nut	6
33	342000	O-Ring	2
34	342027	O-Ring	1
35	342046	O-Ring	1
36	342450	O-Ring	1
37	354045	Cap Screw	3
38	354106	Screw	19
39	354220	Screw	6
40	354230	Screw	3
41	354311	Screw	3
42	354320	Screw	2
43	354331	Screw	1
44	363075	V-Ring	1
45	366011	Washer	1
46	366031	Washer	6
47	366041	Washer	3
48	366045	Washer	6
49	403000	Brake Assembly 12v	1
49	403001	Brake Assembly 24v	1
50	406050	Clutch Nut Assembly	1
51	408090	Gearset	1
52	418100	Grease Nipple	3
53	420000	Emergency Handle (Not Illustrated)	1
54	436002	PM Motor 12v Single Direction	1
55	436003	PM Motor 24V Single Direction	1
56	436004	PM Motor 12v Dual Direction	1
57	436005	PM Motor 12v Dual Direction	1

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## 3. SPECIFICATION

### 3.1 SUITABILITY

Suitable for vessels up to 18.3m (60ft) LOA

### 3.2 PERFORMANCE

Maximum Load (12v Rating)

Chain in Gipsy ..... 750kg (1650lb)  
 Rope on Drum ..... 1000kg (2200lb)

Typical Working Figures (12v)

Load	Speed	Current Draw
200kg	11.5 m/min	78A
440lb	37.0ft/min	

### 3.3 MATERIALS

Drum	Chrome Plated Bronze
Gipsy	Chrome Plated Bronze
Base Plate	Chrome Plated Bronze
Mainshaft	Steel
Gearbox	Integral Epicyclic, Hardened Steel Gear Set
Motor	800W, 4 Pole Permanent Magnet
Weight	Non Reversing 21kg 46 (lb) Power Reversing 23kg 50 (lb)

## 3.4 PACKAGE CONTENTS

Windlass  
 Mounting Washer & Nuts  
 Mounting Template  
 Instruction Manual

## 4. ACCESSORIES

List No.	Item
0050705	12 volt Overload Protection Unit
0050703	24 volt Overload Protection Unit
0052505	12 volt Solenoid ..... Non-reversing
0052506	24 volt Solenoid ..... Non-reversing
0052507	12 volt Solenoids ..... Power reversing
0052508	24 volt Solenoids ..... Power reversing
0052511	Joystick ..... Power reversing
0052512	Push Button ..... Non-reversing
0052513	Push Buttons ..... Power reversing
0052514	Foot Switch x 1 ..... Non-reversing
0052514	Foot Switch x 2 ..... Power reversing
0052515	Remote Handswitch ... All installations
0030501	Programmable Control 12v Power reversing
0030502	Programmable Control 24v Power reversing

## 5. PLANNING THE INSTALLATION

### 5.1 ADDITIONAL REQUIREMENTS

Each windlass installation requires:

- a. A solenoid for single direction installation, or a boxed pair of solenoids for a reversing installation.
- b. A control switch (or switches) by preference.
- c. An Overload Protection Unit which can also be used as a battery isolator.
- d. Suitable electrical cable and crimp terminals.
- e. The following tools:

Flat Bladed Screwdriver  
 10mm (3/8") Diameter Drill  
 Jig Saw or Trepanning Tool  
 13mm AF Spanner

### 5.2 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 5%, roughly 0.5v for a 12v installation and 1.0v for a 24v one.

The following table shows maximum recommended cable lengths in *Metres* of various wire sizes to give rated performances. Distance measured is from battery to winch following the path of the cable.

MODEL & VOLTAGE	WIRE SIZES						
	8mm <sup>2</sup> 9AWG	16mm <sup>2</sup> 5AWG	25mm <sup>2</sup> 3AWG	35mm <sup>2</sup> 2AWG	40mm <sup>2</sup> 1AWG	60mm <sup>2</sup> 00AWG	
V2000	12	2.0	4	6.5	9	12	16
V2000	24	13.0	28.0	47	63	85	117

Finally, wire of 2.5mm cross sectional area, 35/0.30 or 50/0.25 PVC covered (American equivalent 14 AWG) is required for the connections between the solenoid(s), control switch(s) and the main motor circuit.

## 6. INSTALLATION

### 6.1 FITTING WINDLASS TO DECK

**6.1.1** If the deck top is not flat 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 loads 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 correct clamping.

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

- An unobstructed route for the chain from the stemhead roller to the gypsy. The chain should enter the gypsy at a point 90 Degrees 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 (1-1, 1/2ft) below the windlass motor.
- 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.

**6.1.3** Place the mounting template in the desired position. Drill the holes for the motor and chain to pass through as detailed and six 9.5mm (3/8") holes for the studs. The studs supplied suit decks and mounting pads up to 75mm (3in) thickness.

**6.1.4** Place windlass and studs through holes in deck, when satisfied that all is correct, fit any packing, the clamping ring and the nuts and washers and tighten evenly and firmly using a 150mm (6in) long spanner.

**6.1.5** For thicker than standard decks, simply fit longer studs as appropriate (Thread M8 x 1.25). Studs to special lengths may be obtained from the factory.

## 6.2 WIRING

### 6.2.1 General Recommendations

The wiring system should be of the 2 cable fully insulated return type, to avoid possible electrolytic corrosion problems. Most modern installations are negative return but polarity should be checked.

Solenoids are splash proof but not watertight and should be situated away from the possibility of water contamination, such as from the chain as it comes through the deck. The underside of the deck is one recommended location.

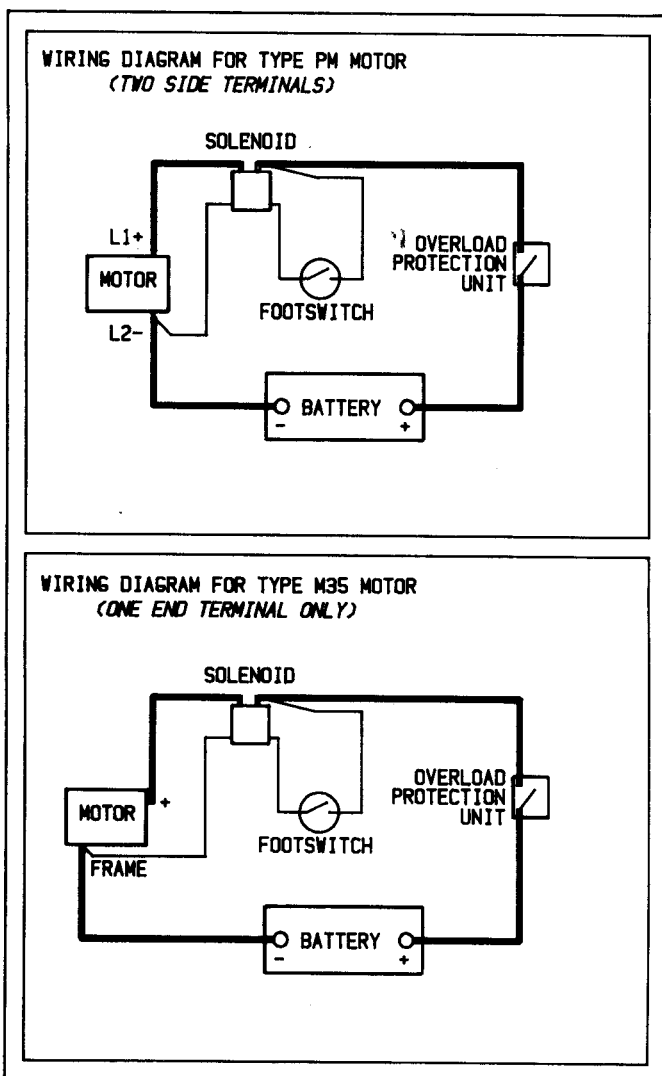
An Overload Protection Unit (OPU) should be incorporated between the battery and the windlass (see accessories). We recommend that the OPU is positioned close to the battery, to act as an isolating switch, in addition to protecting the wiring circuit and the windlass motor.

It is advisable to situate the OPU in a dry readily accessible position as it must be manually reset should it trip "OFF" when an overload occurs. If not using an Overload Protection Unit recommended (0050703 or 0050705), any non-fuse circuit breaker rated at 63Amps for 12v or 50Amps for 24v is suitable.

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

**6.2.2** When the option to use more than one control switch is exercised it is important for their correct operation that they are wired in a parallel circuit.

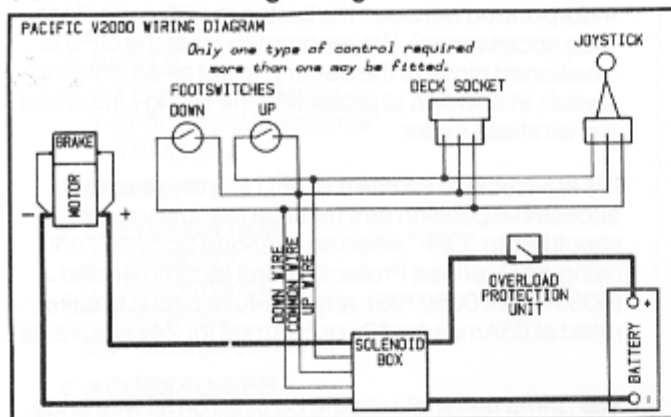
### 6.2.3 Non Reversing Wiring



Wire	From	To
Thick Cable	Positive battery terminal	Overload Protection Unit
Thick Cable	Overload Protection Unit	Solenoid
Thick Cable	Solenoid	Motor positive terminal
Thick Cable	Negative battery terminal	Negative motor terminal
Thin wire	Solenoid	Control switch(s)
Thin wire	Control switch(s)	Main circuit (positive)
Thin wire	Solenoid	Main circuit (negative)



## 6.2.4 Power Reversing Wiring

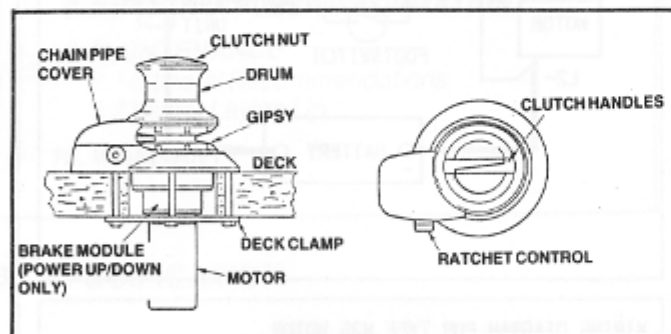


Wire	From	To
Thick Cable	Positive battery terminal	Overload Protection Unit
Thick Cable	Overload Protection Unit	Solenoid box*
Thick Cable	Solenoid box	Motor
Thick Cable	Negative battery terminal	Solenoid box
Thick Cable	Solenoid box	Motor
Thin wire	Solenoid box	Control switch(s) common terminal
Thin wire	Solenoid box	Control switch(s) up terminal
Thin wire	Solenoid box	Control switch(s) down terminal

\* Further information regarding connections are to be found under the lid of the box.

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

## 7. OPERATING INSTRUCTIONS



### 7.1. SAFETY FIRST!

Your S-L 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.

Ensure that fingers and loose clothing are kept clear of the gipsy/drum whilst in motion to avoid personal injury also!

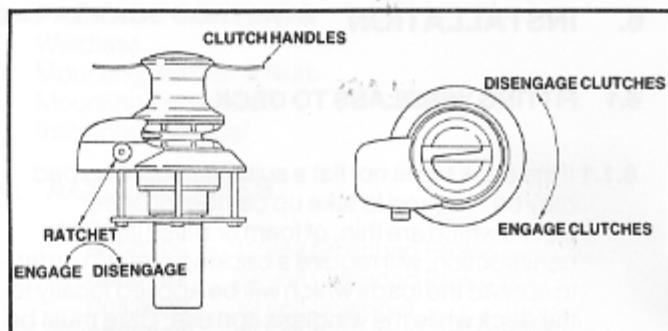
**Always replace the clutch handles to their flush position after use and never attempt to use them whilst the windlass is in motion.**

Always keep Isolator switch "OFF" except when in use.

### 7.2. USE OF CLUTCH

To tighten the clutch – fold out the clutch handles on top of the drum and rotate them clockwise, this will grip the gipsy, effectively locking it to the windlass geartrain.

To slacken the clutch – turn the handles anti-clockwise, this will free the gipsy to turn independently of the windlass geartrain.



### 7.3. USE OF GIPSY RATCHET

The gipsy spring ratchet is controlled by the round knob on the side of the chain pipe.

Clockwise rotation of the knob disengages the ratchet from the gipsy, which is then free to rotate in either direction.

Anti-clockwise rotation of the knob engages the ratchet with the gipsy, preventing chain run out (anti-clockwise rotation of the gipsy.)

**NEVER HAVE RATCHET ENGAGED WHEN LETTING CHAIN OUT!**

### 7.4. ANCHOR RELEASE

#### 7.4.1 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 clutch is tightened and spring ratchet is disengaged. Power out desired length of chain, Use controlled boat motion in the direction of the prevailing wind or current to bed anchor into bottom, that being done, engage the spring ratchet.

#### 7.4.2 Under Gravity

Ensure spring ratchet is disengaged. Carefully release clutch to allow anchor and chain to pay out under gravity. Use clutch as a brake to control run of chain if necessary. When anchor is bedded in, engage spring ratchet.

### 7.5. LYING TO ANCHOR

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

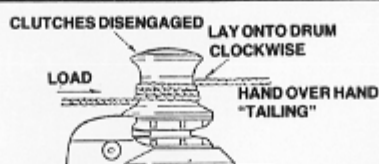
### 7.6. ANCHOR RECOVERY

Ensure clutch is tightened by firm hand pressure. (Do not force or hammer the clutch handles!) Ensure spring ratchet is disengaged. Check visually that foredeck is clean around windlass and that there are no swimmers etc. in the vicinity.

We recommend that the ships' engine is run during anchor recovery. Activate windlass by using footswitch or panel control etc. Use the windlass power to bring the boat over the site of the anchor. Using the engine to provide dead slow steerage way whilst approaching the anchor is a good safe practice, especially in crowded anchorages. If the anchor is snagged and heavy loads are being applied by the windlass, use the engine to come up over the anchor to break out. Do not hurry the operation. The speed of hauling depends on the load on the anchor and will increase after the anchor breaks out. As the anchor approaches the stemhead, the chain should be inched by judicious 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 seconds before trying again. If the overload has tripped it will require to be manually reset before the windlass can be used again. If the OPU proves difficult to reset, allow it to cool for a few moments. It is sensible to avoid stalling your windlass whenever possible.

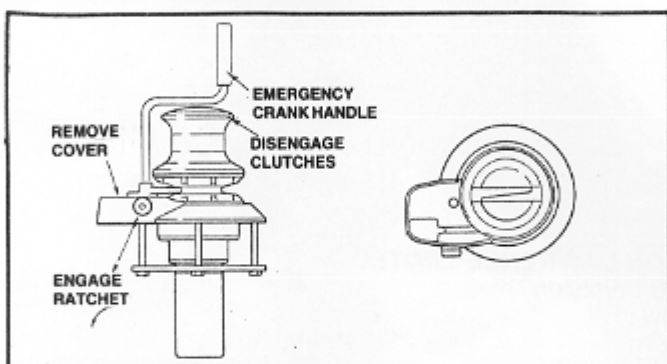
## 7.7. WARPING



If the gipsy is in use it should be locked by its pawl. Slacken the clutch to enable the drum to rotate independantly of the gipsy.

Wind sufficient turns of the rope on the drum clockwise to avoid it slipping. Keep a light hand pressure on 'tail' of warp and apply power. While the windlass rotates under power, 'tail' the warp hand over hand until work required is complete. Secure the warp after use.

## 7.8. EMERGENCY HAND OPERATION



In the event of a power or control failure, engage the spring ratchet. Disengage the clutch and remove the chain pipe cover. Fit the emergency hand wind crank into its hole until fully home. Wind handle anticlockwise to recover chain and anchor. The ratchet will prevent the gipsy from running back out.

## 7.9. OPERATING TIPS

We recommend 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.

## 8. IMPORTANT USER INFORMATION

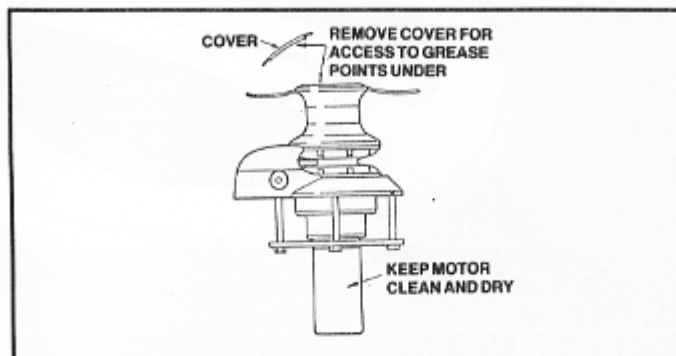
Classification Societies require that a vessel lying to anchor should have its chain held by a cable stopper or equivalent strong point as windlasses are not designed to withstand the loads generated under storm conditions. The same rule applies to small craft!

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 frequent maintenance. *This is of even greater importance when the windlass is installed in an anchor well!*

## 9. MAINTENANCE



### 9.1 General Recommendations

After the first two or three anchor recoveries, check all fastenings are tight.

Every three months, open up clutch handles and prise off the top cap using a broad bladed screwdriver. Apply two shots of grease to each grease nipple under the top cap and apply a touch of oil to the hinges, 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.

## 10. WARRANTY

The Simpson-Lawrence warranty covers your unit for a period of one year from the date of purchase, to be free from defects in material and workmanship. This warranty is subject to proper installation and use in service as described in this literature.

The models described in this document are subject to a policy of continual improvement. Simpson-Lawrence Ltd 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:—



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