

# Sprint Atlantic

Installation, Operation and Maintenance Instructions



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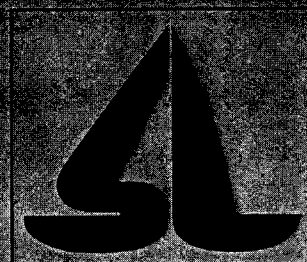
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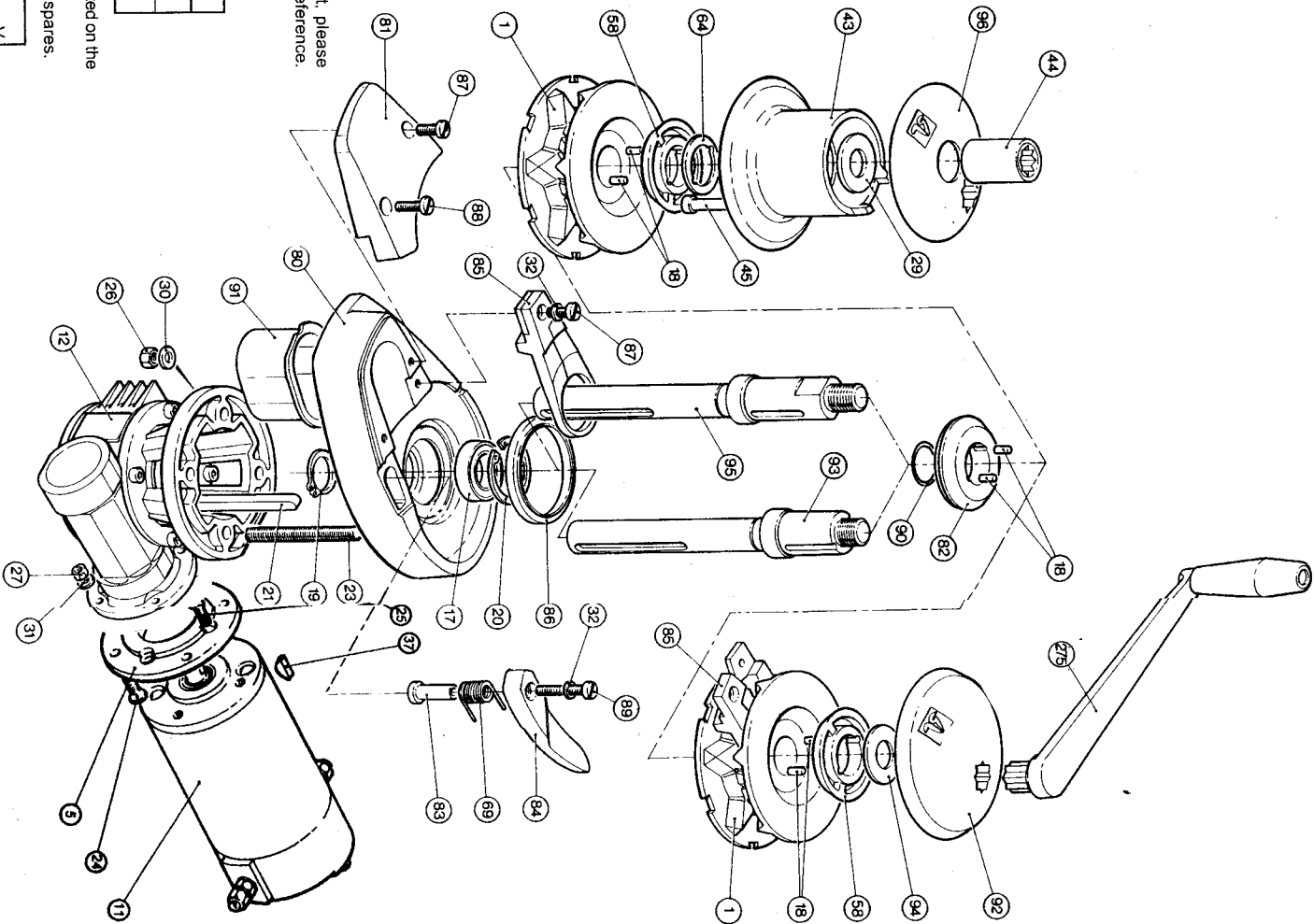
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**SIMPSON**

**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

Model	List No.	Tick
Gipsy/Drum	0045700	
Gipsy only	0045800	

1.2.2 Please find the serial number and voltage printed on the gearbox label and note it below.  
This information is essential when ordering spares.

Serial Number: \_\_\_\_\_  
Voltage: \_\_\_\_\_ V

1.3 PARTS LIST

Part Number	Description	Quantity	Quantity
1	Gipsy	457	458
5	Motor Adaptor Plate	1	1
11	Electric Motor	1	1
12	Gearbox Assembly	1	1
17	Sealed Bearing	1	1
18	Drive Roller	4	4
19	External Circlip	1	1
20	Internal Circlip	1	1
21	Key	1	1
23	Stud	4	4
24	Screw	4	4
25	Screw	4	4
26	Nut	4	4
27	Nut	4	4
29	Washer	1	0
30	Washer	4	4
31	Washer	4	4
32	Washer	2	2
37	Woodruff Key	1	1
43	Drum	1	0
44	Clutch Nut	1	0
45	Screw	3	0
58	Gipsy Cone	1	1
64	Drum Spacer	1	0
69	Torsion Spring	1	1
80	Baseplate	1	1
81	Baseplate Cover	1	1
82	Lower Clutch Cone	1	1
83	Control Arm Pin	1	1
84	Control Arm	1	1
85	Rope/Chain Fleming	1	1
86	Wiper Seal	1	1
87	Screw	2	2
88	Screw	1	1
89	Screw	1	1
90	O Ring Seal	1	1
91	Chain Pipe Sleeve	1	1
92	Gipsy Cap	0	1
93	Gipsy Only Mainshaft	0	1
94	Thrust Washer	0	1
95	Gipsy/Drum Mainshaft	1	0
96	Drum Cap	1	0
275	Sheet Winch Handle (Not included, see accessories)	1	1

## 2. PLANNING THE INSTALLATION

### 2.1 Gipsy Suitability

The rope/chain gipsy enables the windlass to be used for hauling rope and chain without the need to transfer from warping drum to gipsy. It is ideally suited to anchor rodes which consist of rope with a chain tail.

Rope used with the rope/chain gipsy should be good quality, medium lay three strand nylon.

The RC172 gipsy is designed to suit 14 mm ( $\frac{9}{16}$ " ) rope but may accept diameters that are plus or minus 3mm ( $\frac{1}{8}$ " ) depending on the particular lay of the rope. Because of wide variations in rope type and construction some experimentation may be required. On no account should multiplait rope be used!

Chain should be chosen to suit gipsies as follows:-

GIPSY	CHAIN	SIZE	PITCH (mm)
RC162	S-L 0058004	9.5 mm	27.7
	S-L 0058604 Stainless	10 mm	
	US BBB	$\frac{3}{8}$ "	
	French NFE 26011	10 mm	
	German DIN 766	9&10 mm	
	Italian	10 mm	
	Norwegian	$\frac{1}{4}$ "	
Australian PWB & Beavers	8 mm		
Australian Grade 'L'	10 mm		
RC172	S-L 0058002	$\frac{1}{4}$ "	25.4
	S-L 0058003	8 mm	
	S-L 0058603 Stainless	8 mm	
	US Transport 'G7' (ISO Spec.)	$\frac{1}{4}$ "	
	US BBB	$\frac{5}{16}$ "	
	US High Test 'G4' (ISO Spec.)	$\frac{5}{16}$ "	
	French NFE 26011	8 mm	26.2
	German DIN 766	8 mm	
	Italian	8 mm	
	Norwegian	$\frac{1}{4}$ "	
		$\frac{5}{16}$ "	
		8 mm	
	Australian	8 mm	

Should you have difficulty in matching a chain to your gipsy please consult your local agent or Simpson-Lawrence Ltd.

### 2.2 Package Contents (Checklist)

Windlass Above Deck Assembly  
 Motor & Gearbox Unit  
 Mounting Studs, Washers & Nuts  
 Chain Pipe Sleeve  
 Safety Instructions D1000-6  
 Installation Warning Label D1008-4  
 Mounting Template D1054-1  
 Instruction Manual D1100-1

### 2.3 Additional Requirements

Each windlass installation requires :

- A standard sheet winch handle.
- The following tools:
  - Flat Bladed Screwdriver
  - 9.5mm ( $\frac{3}{8}$ " ) Diameter Drill
  - Jig Saw, Trepanning Tool or
  - Ø 51mm (2" ) &
  - Ø 60mm (2  $\frac{3}{8}$ " ) Hole Saws

Course & Fine Rasps or Files  
 13mm AF Spanner (Wrench)  
 Crimping Pliers / Wire Stripper

- Marine Grade Sealant
- A Breaker/Isolator for overload protection which can also be used as a main isolating switch. (We recommend the one listed under '3. Accessories')
- A control switch (or switches) by preference.
- 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)
- 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%, i.e. 1.2V for a 12V and 2.4V for a 24V installation.

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		Size mm <sup>2</sup>
	m	ft.	
12	8.4	28	20
	11.7	38	25
	16.2	53	35
	18.0	59	40
	22.0	72	50
24	20.4	67	15
	22.1	73	16
	25.3	83	20
	35.1	115	25

#### AMERICAN CABLE

VOLTAGE	Cable Length ft.	Cable Size AWG
12	20	6
	32	4
	51	2
	65	1
	82	1/0
24	61	6
	97	4
	154	2

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) and the Breaker / Isolator pilot light to the main circuit.

### 3. ACCESSORIES

Item	List Number
70 Amp Breaker/Isolator - 12 Volt Installation	0050711
USA Part Number for above	HM70BKR
50 Amp Breaker/Isolator- 24 Volt Installation	0050710
USA Part Number for above	HM50BKR
12 Volt Solenoid - Single direction	0052505
12 Volt Solenoids - Reversing	0052509
24 Volt Solenoid - Single direction	0052506
24 Volt Solenoids - Reversing	0052510
Push Button Switch - Single direction	0052512
Foot Switch - Single direction	0052514
High Load Foot Switch- Single direction	0052516
USA Part Number for above (Black)	LEWP49C
USA Part Number for above (White)	LEWP49CW
Joystick Control Switch - Single or Reversing	0052511
Hand Remote Switch - Single or Reversing	0052515
Push Button Switch - Reversing	0052513
Foot Switch X 2 - Reversing	0052514
Touch Pad Control- Reversing	0052522
USA Console Rocker Switch - Reversing	HMCONSW
10" Operating Handle - Autolock	2756700
10" Operating Handle - Standard	2756900

### 4. SPECIFICATION

#### 4.1 Performance

##### Maximum Pull

	12V	24V
Chain in Gipsy	275kg (600lb)	375kg (825lb)
Rope in Gipsy	325kg (715lb)	425kg (935lb)
Rope on Drum	300kg (660lb)	400kg (880lb)

##### Typical Working Figures

Load	12V		24V	
	Speed	Current Draw	Speed	Current Draw
50kg	19.3m/min	70 Amp	20.8m/min	45 Amp
110lb	63.5ft/min		68.2ft/min	

#### 4.2 Materials

Drum/Cap	Hot Stamped Bronze
Gipsy	Hot Stamped Bronze
Base Plate	Cast Bronze
Mainshaft	Stainless Steel
Gearbox	Aluminium Case, Steel/Bronze Gear Set
Electric Motor	1000W, 4 Pole Permanent Magnet
Weight	Gipsy/Drum Model 17.5kg (38.5lb) Gipsy Only Model 18.5kg (41lb)

#### 4.3 Certification

This product conforms to the requirements of the European Union directives on machinery and electromagnetic compatibility where appropriate, provided that it is installed as recommended in the wiring instructions. This device complies with part 15 of the FCC Rules.

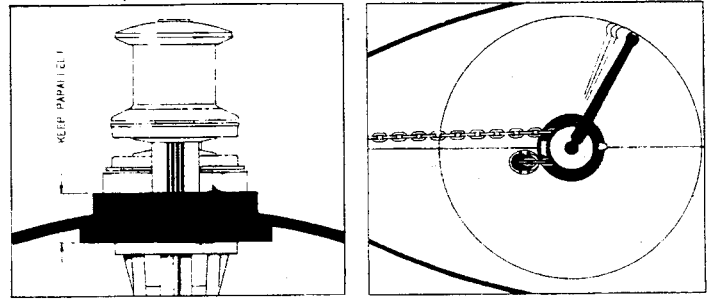
Operation is subject to the following two conditions:-

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

As it is not practical to affix permanent labels in the marine conditions on small craft the statutory requirements are met by incorporation in the Operating Instructions.

### 5. INSTALLATION

#### 5.1 Fitting Windlass to Deck

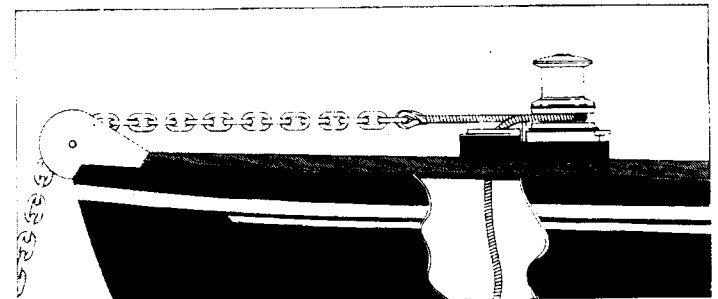


5.1.1 If the deck top is not flat a suitable mounting pad may be required to take up camber or sheer. Decks which are thin, of foam or balsa laminate construction, will require a backing piece in order to spread the loads which will be applied locally to the deck while the windlass is in use. Care must 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 alignment.

5.1.2 Place the windlass on the deck or mounting pad in the desired position and check the line up of the chain or rope with reference to the stemhead roller and the chain locker below.

Check that there is sufficient room to fully rotate a bi-square winch handle without obstruction as this is used to operate the clutch.

5.1.3 Rode lead from the bow roller should be on the same plane as the centre of the gipsy so any deck pad may also require to be angled. There must be sufficient vertical fall for the chain or rope, even with a full locker, to draw the rode from the gipsy when hauling in.



5.1.4 Place the mounting template in the desired position. Cut the prescribed holes and check that the chain pipe fits squarely in place. Apply a film of sealant to the freshly cut hole edges to minimise water absorption by the deck. The studs supplied are 100mm (4") long to suit decks and mounting pads up to 70mm (2<sup>3</sup>/<sub>4</sub>") thickness. For thinner decks or some installations without mounting pads it may be necessary to reduce the length of the mounting studs with a hacksaw.

5.1.5 Screw the studs into the baseplate, this can best be done by putting two nuts on the opposite end, one of which acts as a lock nut. Use this technique on each of the four studs in turn.

5.1.6 Apply sealant to the top of the chain pipe flange, then position it in place with the location pegs on the underside of the base plate.

5.1.7 Apply sealant to the bottom of the base plate, any mounting pad that may require to be fitted and around

the studs. Place the windlass in position.

5.1.8 Apply grease to the mainshaft below deck then offer up the gearbox and secure it firmly to the studs with the nuts and washers supplied.

**NB** If using silicone or other rubbery type sealants it is advisable to allow curing of the sealant before final tightening of the mounting bolts.

## 5.2 Wiring

### 5.2.1 General Recommendations

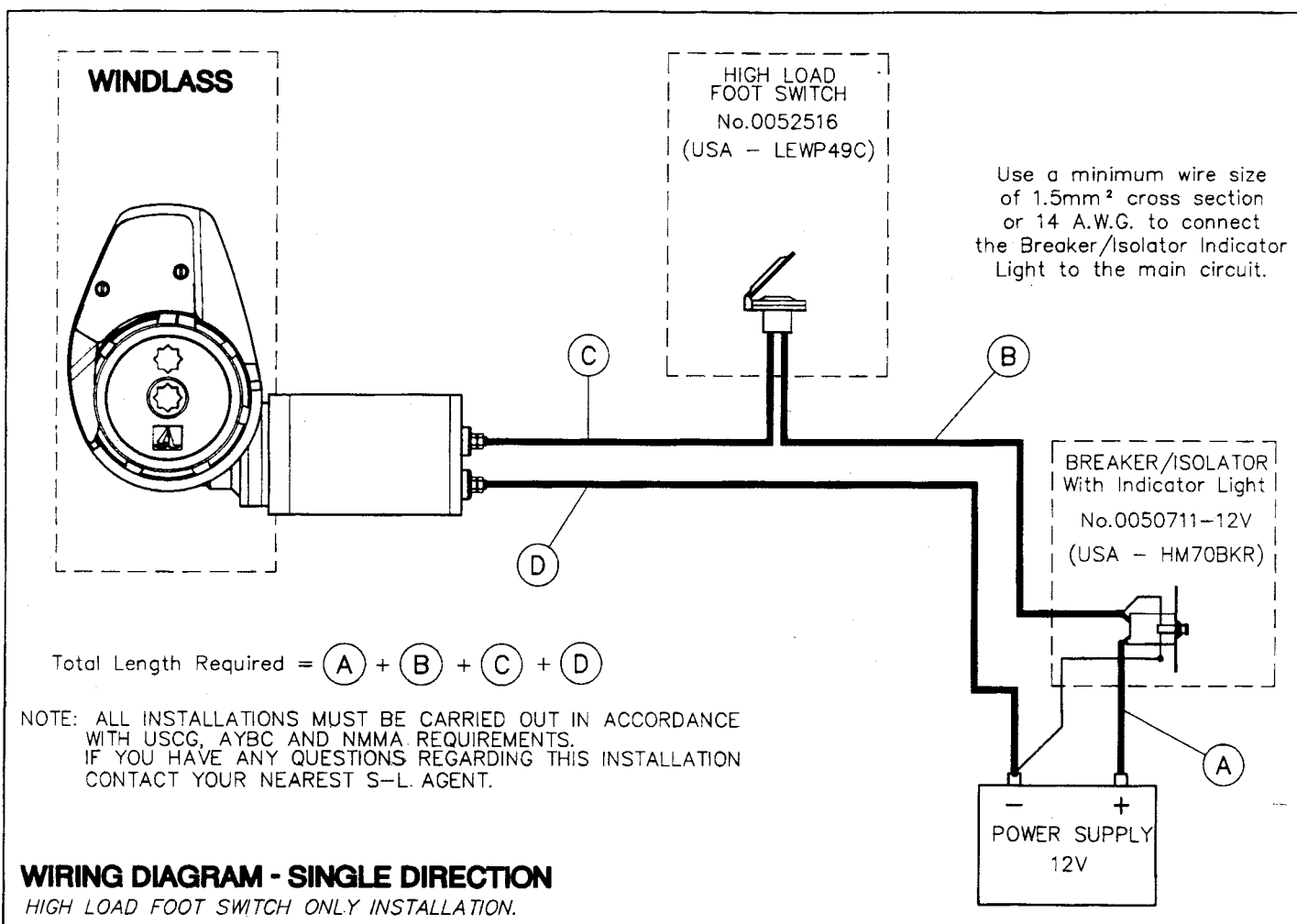
The wiring system should be of the two cable fully insulated return type, which avoids possible electrolytic corrosion problems. Most modern installations are negative return (negative earth) but polarity should be checked.

A Breaker/Isolator **must** be included in 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. The recommended Breaker/Isolator should be mounted 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 not using the Breaker/Isolator recommended, an alternative must have identical characteristics.

When fitted, Solenoids should be sited in a dry location as close to the battery as possible.

**NB** Crimp terminals should be used on **all** wire ends wherever possible for good electrical contacts.

### 5.2.4 Single Direction Wiring (High Load Foot Switch Only)



WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker/Isolator
Thick cable	Breaker/Isolator	High Load Foot Switch
Thick cable	High Load Foot Switch	Positive motor terminal
Thick cable	Negative battery terminal	Negative motor terminal
Thin wire	Breaker/Isolator Indicator Light	Main circuit (positive)
Thin wire	Breaker/Isolator Indicator Light	Main circuit (negative)

N.B. The prewired red lead on the Breaker/Isolator Indicator light must remain in position. If you are not sure that you understand the above guidelines seek professional advice.

### 5.2.2 Electromagnetic Compatibility

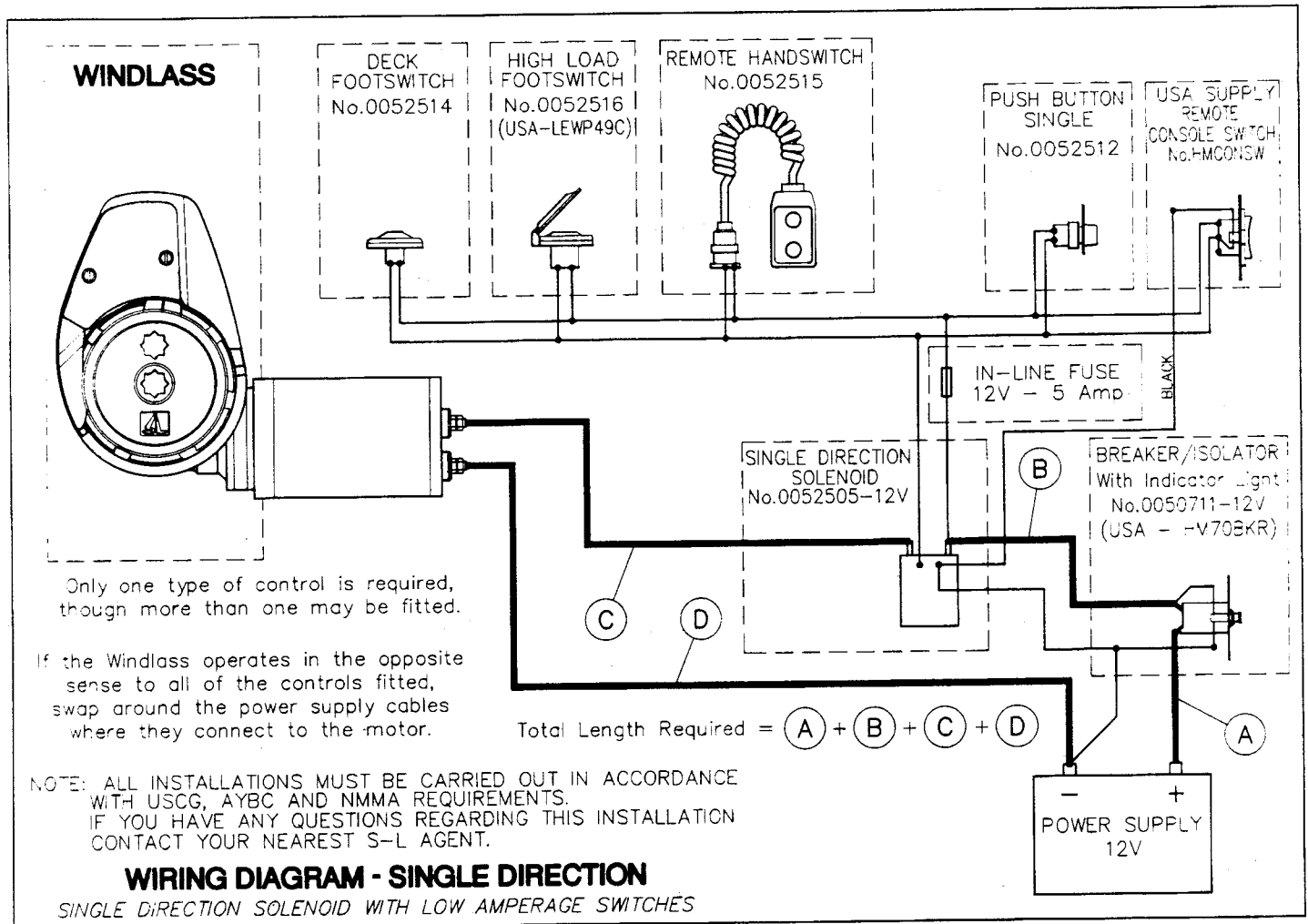
It is essential that this product does not cause any electromagnetic disturbance to any other electrical or electronic equipment installed in the vessel. This will be achieved if the windlass is connected to the same battery as the vessel's starter motor and not to the service battery to which other equipment is connected. In addition, the run of the wiring, from the battery to the windlass, should be kept as far apart from the other wiring on the vessel as possible. For instance, if the

main wiring loom is to starboard, fit the windlass wiring to port. It should be noted that there is no evidence to indicate that windlass installations do cause electromagnetic interference but the installer is advised to carry out checks when the installation is complete.

### 5.2.3 Control Switch Installation

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

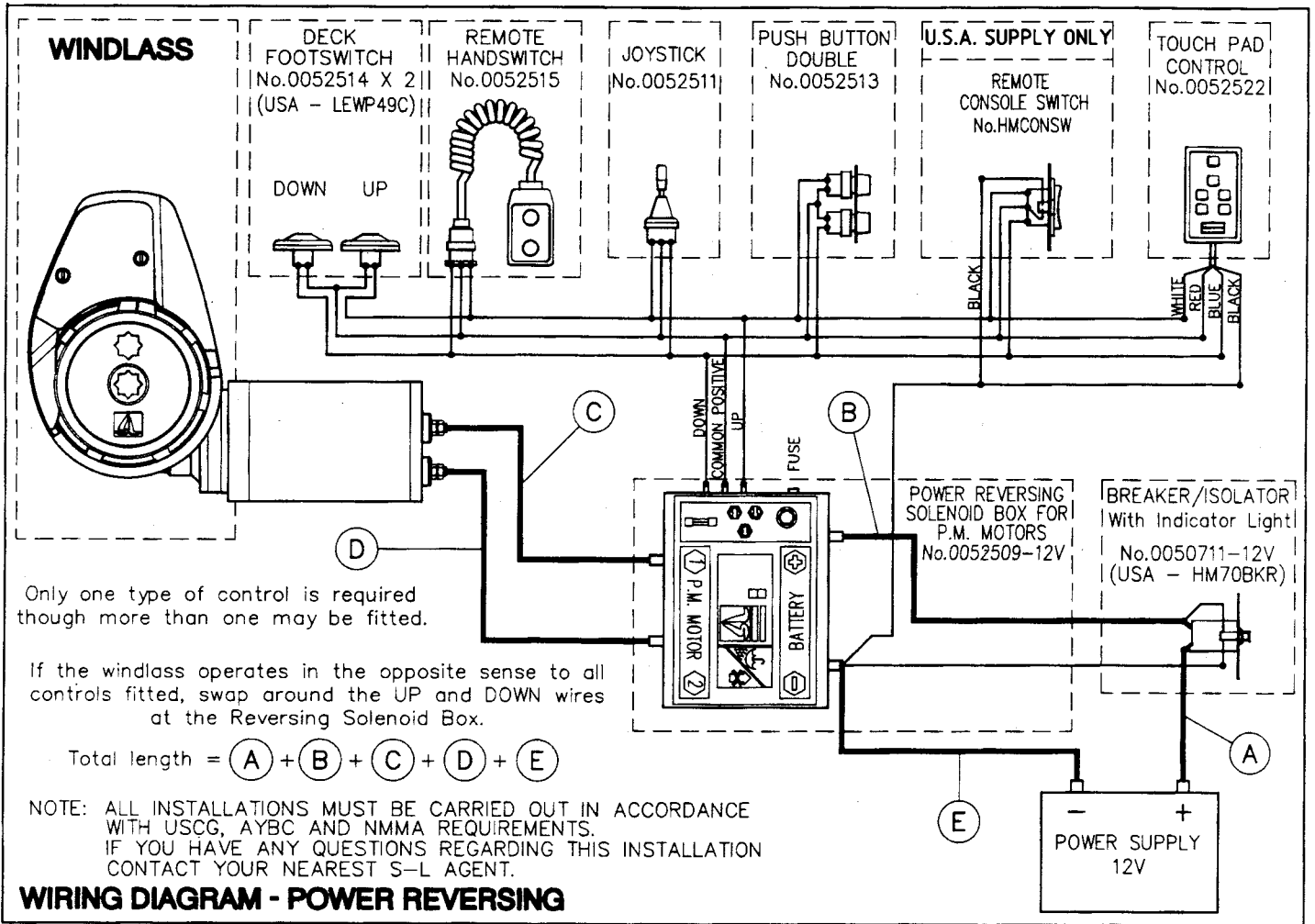
### 5.2.5 Single Direction Wiring



WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker/Isolator
Thick cable	Breaker/Isolator	Solenoid
Thick cable	Solenoid	Positive motor terminal
Thick cable	Negative battery terminal	Negative motor terminal
Thin wire	Solenoid	Control switch(es)
Thin wire	Control switch(es)	Main circuit (positive)
Thin wire	Solenoid	Main circuit (negative)
Thin wire	Breaker/Isolator Indicator Light	Main circuit (negative)

N.B. The prewired red lead on the Breaker/Isolator Indicator light must remain in position. If you are not sure that you understand the above guidelines seek professional advice.

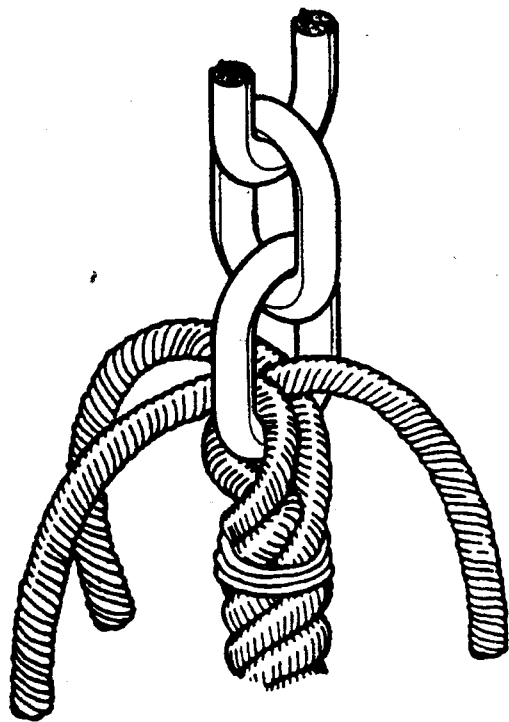
5.2.6 Power Reversing Wiring



WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker/Isolator
Thick cable	Breaker/Isolator	Reversing Solenoid box (Positive)
Thick cable	Reversing Solenoid box	Motor Terminal
Thick cable	Negative battery terminal	Reversing Solenoid box (Negative)
Thick cable	Solenoid box	Motor Terminal
Thin wire	Reversing Solenoid box	Control switch(es) common terminal
Thin wire	Reversing Solenoid box	Control switch(es) up terminal
Thin wire	Reversing Solenoid box	Control switch(es) down terminal
Thin wire	Breaker/Isolator Indicator Light	Main circuit (negative)

N.B. The prewired red lead on the Breaker/Isolator Indicator light must remain in position. If you are not sure that you understand the above guidelines seek professional advice.

### 5.3 JOINING ROPE TO CHAIN



- 5.3.1 With whipping twine or similar, seize your rope 300mm (12") from the rope's end and unlay strands.
- 5.3.2 Pass one strand through the chain end link from one side and the other two strands from the opposite side.
- 5.3.3 Remove seizing and complete back splice in normal manner for two full tucks.
- 5.3.4 With a hot knife pare down the three strands by one third and continue with two further tucks.
- 5.3.5 Pare strands down by another third and finish with another two tucks.
- 5.3.6 Cut away remaining tails.

This method of joining is designed to minimise chafe between rope and chain but as a matter of prudent seamanship it should be checked regularly and re-made if there is any evidence of wear.

Because of wide variations in rope type and construction some experimentation may be required.

## 6. OPERATING INSTRUCTIONS

### 6.1 Safety First!

- 6.1.1 Adopt the habit of removing the handle from the clutch nut, drum or gipsy cap, when it is not being used, to avoid personal injury and the possibility of inadvertently releasing the clutch!
- 6.1.2 Ensure that fingers and loose clothing are kept clear of the rode and gipsy whilst they are in motion to avoid personal injury also!
- 6.1.3 Always ensure that there are no swimmers or divers nearby when dropping your anchor.

### 6.2 Function of Clutch

The clutch engages and disengages the gipsy from the windlass drive. It is designed to operate with a standard sheet winch handle, if you do not possess such an item please refer to the 'Accessories' paragraph for further details.

Insert the sheet winch handle into the central clutch nut (gipsy/drum models), or offset bi-square hole (gipsy

only models). Disengage the clutch by rotating the handle anti-clockwise. Clockwise rotation engages the clutch, giving a breaking action which controls the speed at which rode runs out under gravity.

### 6.3 Letting Go Under Gravity

- 6.3.1 Slacken the clutch slowly with the handle by turning it anti-clockwise until the gipsy begins to turn and the rode runs out.
- 6.3.2 Note that the handle may also be used as a brake and the speed at which the rode runs out can easily be controlled by moving it clockwise or anti-clockwise.
- 6.3.3 When sufficient rode has been let out, fully tighten the clutch (see 6.2 above).

### 6.4 Letting Go Under Power

- 6.4.1 With a power reversing installation the anchor and rode can be lowered without slackening off the clutch.
- 6.4.2 Check that the clutch is fully tightened by inserting the handle and rotating it clockwise (see 6.2 above).
- 6.4.3 Activate a 'down' control switch.
- 6.4.4 Should the windlass turn, yet fail to power out, ensure that the rode has not become jammed in the chain pipe below deck.
- 6.4.5 Release the 'down' control switch when sufficient rode has been lowered.
- 6.4.6 Please note, activating both UP and DOWN controls simultaneously will stop the windlass if it is connected correctly to the Simpson-Lawrence Reversing Solenoid box listed earlier.

### 6.5 Lying to Anchor Safely

- 6.5.1 Boats lying to their anchor in a high swell or heavy weather conditions will snub on the anchor or mooring rope and this can cause the rode to slip or apply excessive loads to the windlass.
- 6.5.2 For maximum safety the windlass must not be left to take the entire force from the anchor rode and a bridle should be used to transfer the load to a mooring cleat or bollard.  
Alternatively, the rode can be removed from the windlass gipsy and made fast directly to a bollard or sampson post.

### 6.6 Hauling In

- 6.6.1 Ensure the clutch nut or gipsy cap is fully tightened by turning the clutch handle clockwise.
- 6.6.2 Press an 'up' control. The speed of hauling depends on the load on the anchor and will increase after the anchor breaks out.
- 6.6.3 Avoid damage caused by bringing the anchor hard up against the stemhead fitting. The rode should be inched by careful use of the controls.
- 6.6.4 Should the windlass stall, switch off and wait a few seconds before trying again. If the windlass fails to operate at all check to see if the Breaker/Isolator needs to be reset.

It is important to the future good performance of the windlass' motor that the windlass is not allowed to stall for more than a few seconds.

It is sensible to avoid stalling your windlass whenever possible.

- 6.6.5 On retrieval, always remember to secure your anchor independently of the windlass so as to prevent an



accidental launch when under way.

### 6.7 Warping (Gipsy/Drum Only)

- 6.7.1 If the gipsy is in use, ensure that the rode is tied off.
- 6.7.2 Slacken the clutch nut to disengage the gipsy clutch.
- 6.7.3 The warping drum can now be made to revolve independently of the gipsy under power.
- 6.7.4 Rope/drum slippage can normally be overcome by increasing the number of turns of rope on the drum.
- 6.7.5 **Never** use chain on the warping drum as personal injury may result!

### 6.8 Operating Tips

- 6.8.1 When anchoring, it is best to allow the rode to run out slowly, allowing the vessel to take up sternway before full scope is let out. This helps prevent the rode from becoming tangled on top of your anchor on the sea bed.
- 6.8.2 To aid anchor recovery, we recommend that the vessel's engine be used to assist by moving the vessel towards the anchor. We do not recommend that the vessel is motored over and beyond the anchor, as this can cause the rode to damage your topsides.
- 6.8.3 When mooring stern to, at a suitable distance from the jetty, deploy the anchor to prevent the bow from swinging. Gently pay out the rode under the influence of the stern way of the vessel. By stopping the windlass, the anchor can be used to restrain the vessel as it approaches the jetty. Make fast your vessel with warps from the stern.

## 7. 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 overboard 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 motor and gearbox is given the necessary maintenance to avoid external corrosion. This is of even greater importance when the windlass is installed in an anchor well!

## 8. 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 your deck as it should now be 'bedded-in'.

For smoothest operation of the clutch ensure that the clutch mechanism and gipsy exterior is kept free from excess salt deposits.

Regularly wash down the exterior of your windlass with fresh water. The gearbox and its bearings have been lubricated for you and should require no internal attention. As with all types of similar equipment it is advisable to run the windlass occasionally to circulate the lubricant if nothing else. External moving parts should have a few drops of oil applied occasionally.

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

### 8.2 Dismantling

At least once a year dismantle the above deck parts. Clean them thoroughly and apply a small amount of marine grade teflon grease to all bearing surfaces, then re-assemble. In particular pack grease inside and around the exterior of the deck seal, part 86.

### 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.

NOTES