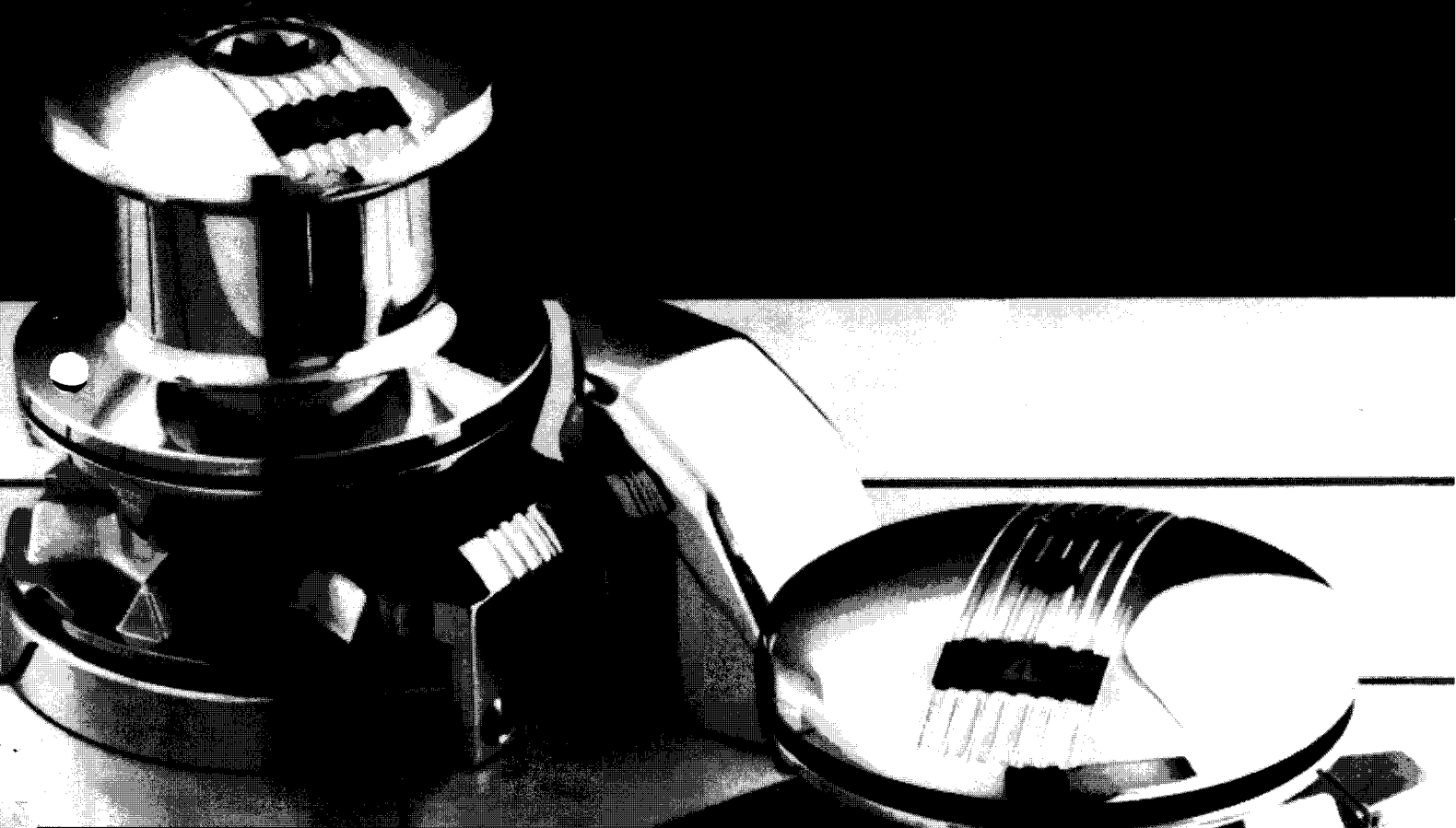


Anchorman Power 1000

Installation, Operation and Maintenance Instructions



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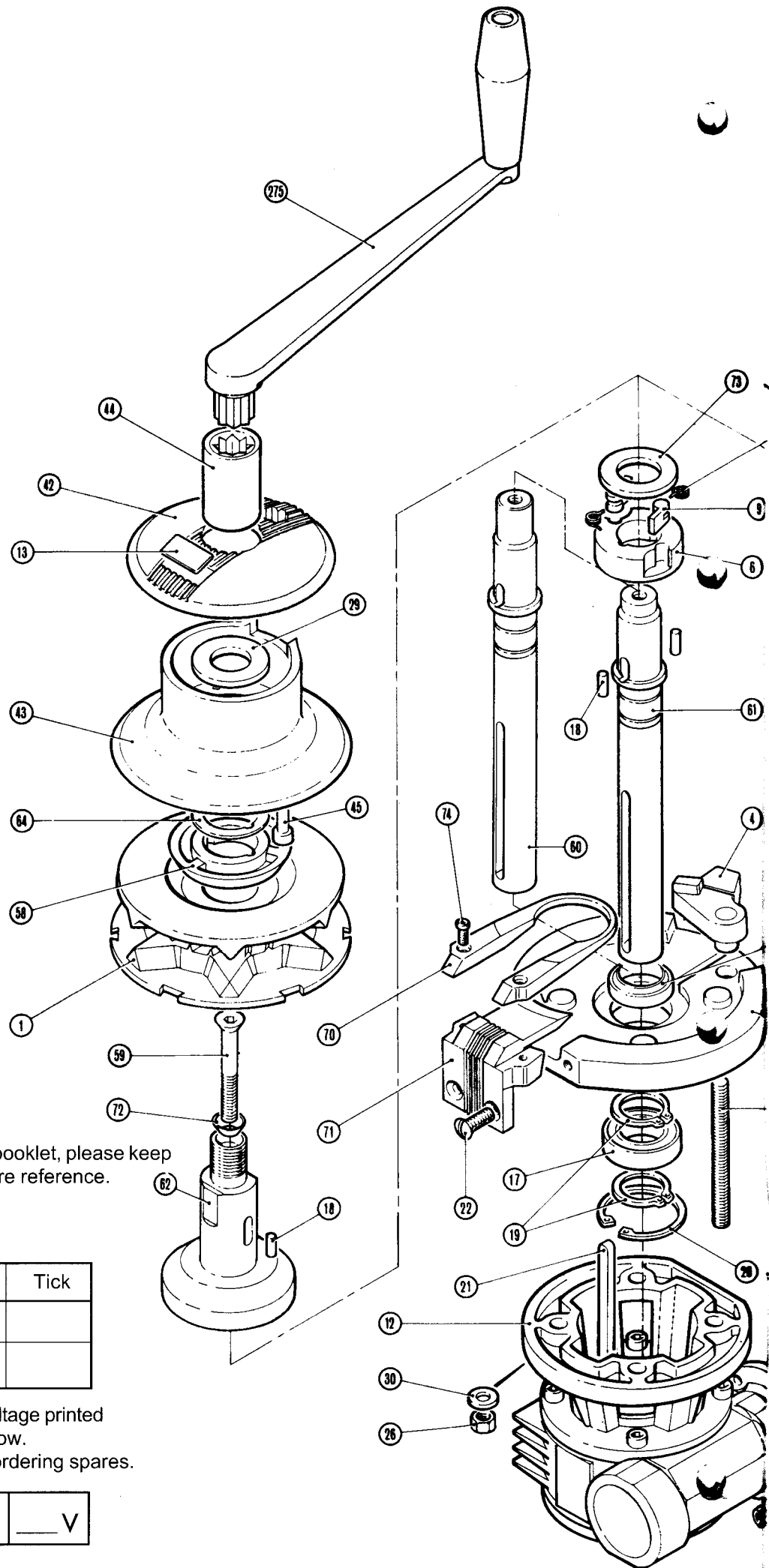
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**SIMPSON
LAWRENCE**

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.

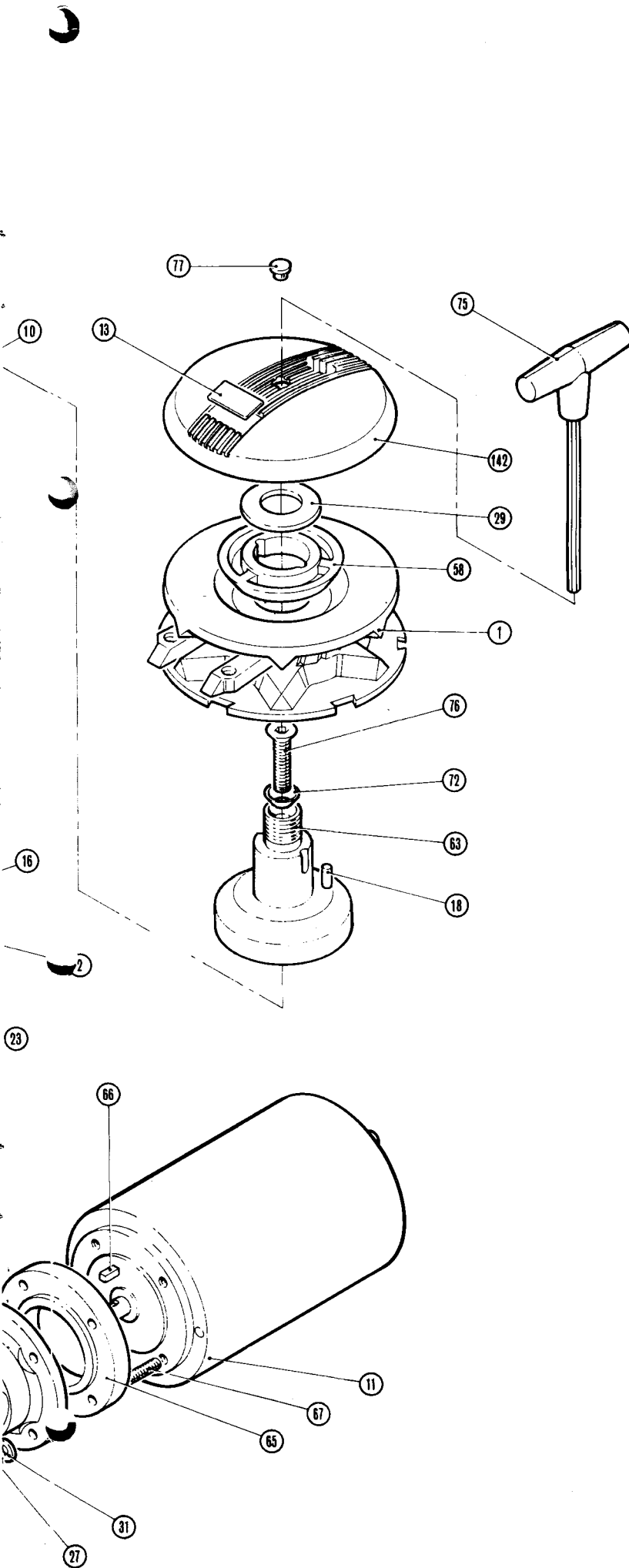
1.2.1 Identify your model

Model	List No.	Tick
Gipsy/Drum	0043900	
Gipsy only	0044000	

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.

	V
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1.3 PARTS LIST



Part Number	Description	Quantity	
		439	440
1	Gipsy	1	1
2	Baseplate	1	1
4	Gipsy Pawl	1	1
6	Drive Pawl Carrier	1	1
9	Drive Pawl	2	2
10	Pawl Spring	2	2
11	Motor	1	1
12	Gearbox Assembly	1	1
13	Nameplate	1	1
16	Wiper Seal	1	1
17	Sealed Bearing	1	1
18	Drive Roller	4	4
19	External Circlip	2	2
20	Internal Circlip	1	1
21	Key	1	1
22	Screw	2	2
23	Stud	4	4
26	Nut	4	4
27	Nut	4	4
29	Washer	1	1
30	Washer	4	4
31	Washer	4	4
42	Drum Cap	1	0
43	Drum	1	0
44	Clutch Nut	1	0
45	Screw	3	0
58	Clutch Cone	1	1
59	Socket Screw	1	0
60	Mainshaft (Gipsy/Drum)	1	0
61	Mainshaft (Gipsy Only)	0	1
62	Gipsy/Drum Carrier	1	0
63	Gipsy Carrier	0	1
64	Distance Piece	1	0
65	Motor Adaptor Plate	1	1
66	Key	1	1
67	Stud	4	4
70	Fleming	1	1
71	Fleming Stripper	1	1
72	Friction Cone	1	1
73	Washer	1	1
74	Screw	2	2
75	Socket Screw Key	1	1
76	Socket Screw	0	1
77	Plug	0	1
142	Gipsy Cap	0	1
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 rope/chain gipsies should be three strand nylon.

The RC172 gipsy is designed to suit 12 mm (1/2") rope, the RC162 and RC152 gipsies to suit 16 mm (5/8") rope but they all may accept diameters that are plus or minus 3 mm (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 ropes be used! The 180 & 181 gipsies handle chain only.

Chain should be chosen to suit gipsies as follows:-

GIPSY	CHAIN	PITCH (mm)	SIZE
RC152	US NACM		5/16"
RC162	S-L 0058004		9.5 mm
	S-L 0058604 Stainless		10 mm
	US BBB	27.7	3/8"
	French NFE 26011		10 mm
	German DIN 766		9&10 mm
	Italian		10 mm
	Norwegian		1/4"
	Australian PWB & Beavers Australian Grade 'L'		8 mm 10 mm
RC172	S-L 0058002		1/4"
	S-L 0058003		8 mm
	S-L 0058603 Stainless		8 mm
	US Transport 'G7' (ISO Spec.)	25.4	1/4"
	US BBB	25.4	5/16"
	US High Test 'G4' (ISO Spec.)	26.2	5/16"
	French NFE 26011		8 mm
	German DIN 766		8 mm
	Italian		8 mm
	Norwegian		1/4" 5/16"
Australian		8 mm 8 mm	
180	Accoloy		9/32"
181	German DIN 766(86)		6 mm

Depending on manufacture, other chains in the range from 6mm to 10mm and 1/4" to 3/8" may be suitable with one of the above gipsies. Should you have difficulty in matching a gipsy to your chain please consult your local agent or Simpson-Lawrence Ltd.

2.2 Package Contents

Windlass Above Deck Assembly

Motor & Gearbox Unit

Mounting Studs, Washers & Nuts

Socket Screw Key

Safety Instructions D1000-6

Instruction Manual D1011-6

Mounting Template D1018-2

2.3 Additional Requirements

Each windlass installation requires :

- A standard sheet winch handle.
- 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)
- A control switch (or switches) by preference.
- A Breaker/Isolator for overload protection which can also be used as a main isolating switch. (We recommend the ones listed under '3. Accessories')
- The following tools:

Flat Bladed Screwdriver
9.5mm (3/8") Diameter Drill
Jig Saw or Trepanning Tool
13mm AF Spanner (wrench)
Crimping Pliers / Wire Stripper

c. Sealant

g. 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 5%, roughly 0.5V for a 12V installation and 1.0V for a 24V one. 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 ²
	m	ft.	
12	9.2	30	20
	12.8	42	25
	17.7	58	35
	19.7	64	40
	24.0	79	50
24	23.3	76	15
	25.3	83	16
	28.9	95	20
	40.1	131	25

AMERICAN CABLE

VOLTAGE	Cable Length ft.	Cable Size AWG
12	35	4
	56	2
	71	1
	89	1/0
24	69	6
	110	4
	176	2

Thin wire of 1.5mm² 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 indicator light to the main circuit.

3. ACCESSORIES

Item	List Number
10 Amp Breaker/Isolator - - 12 Volt Installation	0050711
50 Amp Breaker/Isolator - - 24 Volt Installation	0050710
12 Volt Solenoid - - - - - Single direction	0052505
24 Volt Solenoid - - - - - Single direction	0052506
12 Volt Solenoids - - - - - Reversing	0052509
24 Volt Solenoids - - - - - Reversing	0052510
Push Button Switch - - - - - Single direction	0052512
Foot Switch - - - - - Single direction	0052514
High Load Foot switch - - - - Single direction	0052516
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
Code Management System - - - - -	0044901
Chain Pipe - - - - - Flat type with cover	2417201
Chain Pipe - - - - - Hooded type	2417202
10" Operating Handle - - - - - Autolock	2756700
10" Operating Handle - - - - - Standard	2756900
Windlass Cover - - - - - White	0044701
Windlass Cover - - - - - Blue	0044702

4 SPECIFICATION

4.1 Performance

Maximum Pull

	12V Model	24V Model
Chain in Gipsy	400kg (880lb)	500kg (1100lb)
Rope in Gipsy	450kg (990lb)	550kg (1210lb)
Rope on Drum	425kg (935lb)	525kg (1155lb)

Typical Working Figures

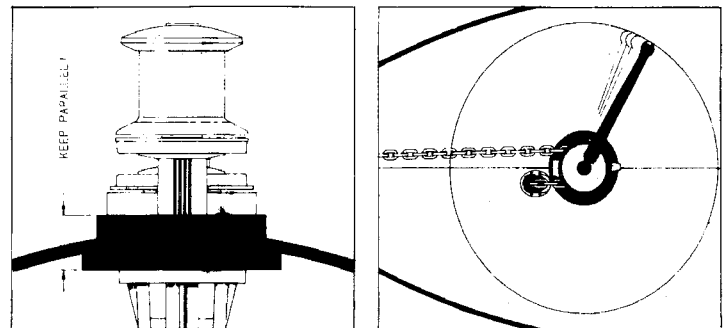
	Load	Speed	Current Draw
12V	50kg 110lb	19.3m/min 63.5ft/min	70 Amp
24V	50kg 110lb	20.9m/min 69ft/min	40 Amp

4.2 Materials

Drum/Cap	Hot Stamped Bronze
Gipsy	Hot Stamped Bronze
Internal Pawls	Stainless Steel
Base Plate	Hot Stamped Bronze
Mainshaft	Stainless Steel
Gearbox	Aluminium Case, Steel/Bronze Gear Set
Electric Motor	1000W, 4 Pole Permanent Magnet
Weight	Gipsy/Drum Model 19kg (42lb) Gipsy Only Model 18kg (40lb)

5. INSTALLATION

5.1 Fitting Windlass to Deck

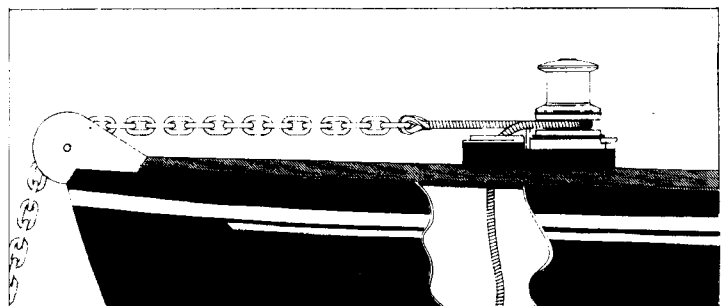


5.1.1 If the deck top is not flat a suitable mounting pad may be required to take up camber or sheer. Decks which are thin, of foam or balsa laminate construction, will require a backing piece in order to spread the loads which will be applied locally to the deck while the windlass is in use. Care must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

5.1.3 Rode lead from the bow roller should be in the same plane as the centre of the gipsy so any deck pad may also be required 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.

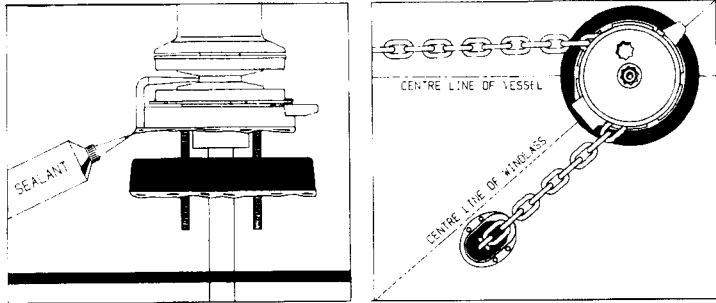
Cut a 55mm diameter (2 3/8") clearance hole for the baseplate and mainshaft to pass through and four 9.5mm (3/8") holes for the studs. The studs supplied are 100mm (4") long to suit decks and mounting pads up to 70mm (2 3/4") thickness. For thinner decks or some installations without mounting pads it may be necessary to reduce the length of the mounting studs.

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 a suitable sealant to the bottom of the base plate, the mounting pad and around the studs. Place the windlass in position.

5.1.7 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.



5.1.8 Please note the following when fitting a chain pipe :

- When using rope or rope/chain combination rodes in the gipsy, we strongly recommend the chain pipe be fitted close to the stripper as shown on the mounting template.
- The chain pipe should, where possible, be fitted against the baseplate of the windlass in alignment with the stripper as detailed on the template. In certain installations this may not be possible - e.g. where the windlass cannot

be sited directly over the chain locker - and under such restrictions, the chain pipe can be fitted remotely (see note d. below) but must always be in direct alignment with the stripper so that the rode runs in a straight line off the gipsy (see diagram).

- It is essential that the rode leaves the gipsy and enters the chain pipe horizontally, this may entail placing packing below the chain pipe in order to achieve this, especially if the windlass has had to be mounted on a deck pad.
- If mounting the chain pipe remotely from the windlass, it is necessary to ensure that the minimum fall of rode within the full chain locker is still greater than the distance between the stripper and the chain pipe. This enables gravity to aid the stripping of the rode from the gipsy.

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.

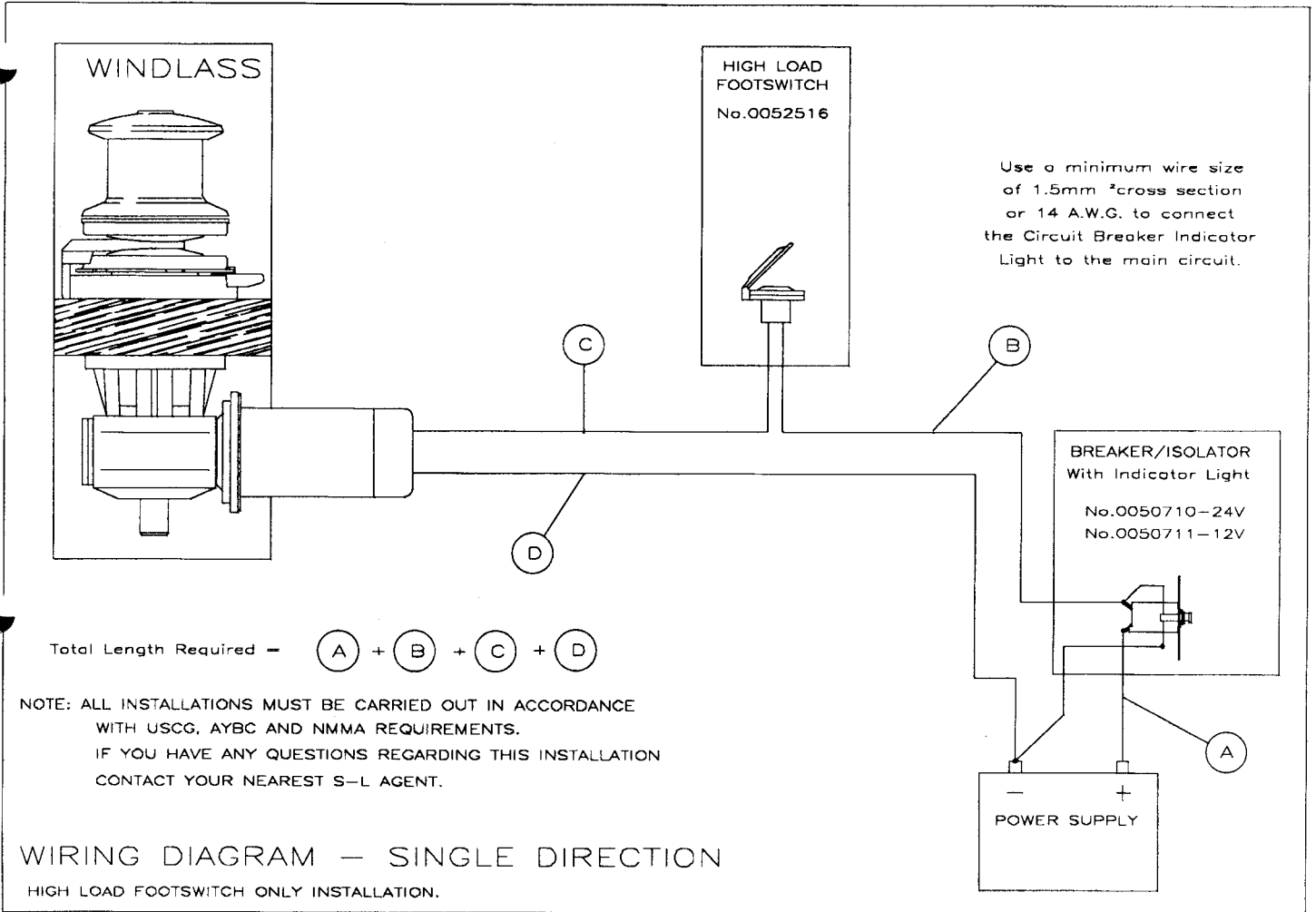
When fitted, Solenoids should be sited in a dry location as close to the battery as possible.

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

5.2.2 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.

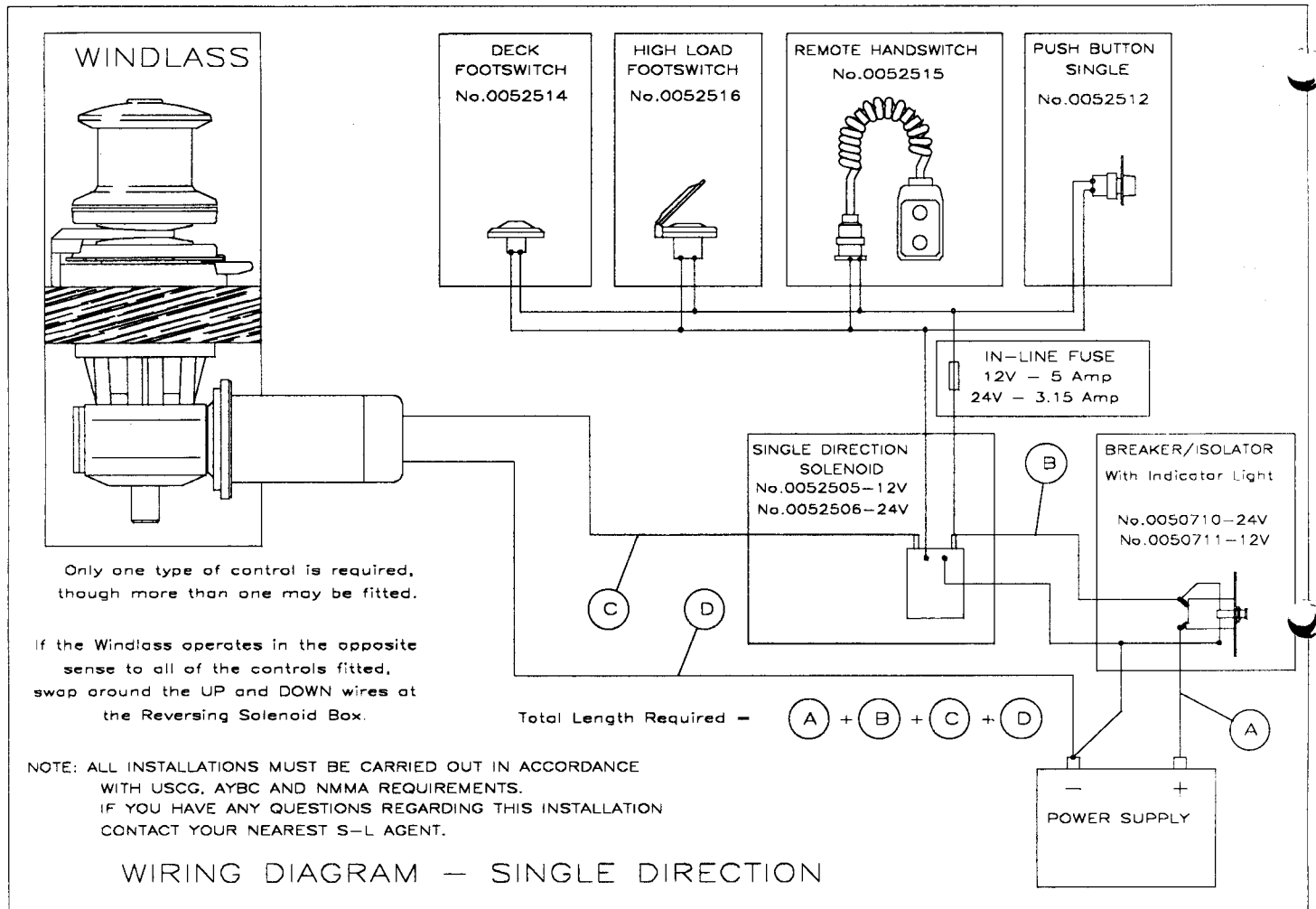
5.2.3 Single Direction Wiring (High Load Foot switch Only)



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)

***NB** The pre wired lead on the Breaker/Isolator indicator light should be left in position

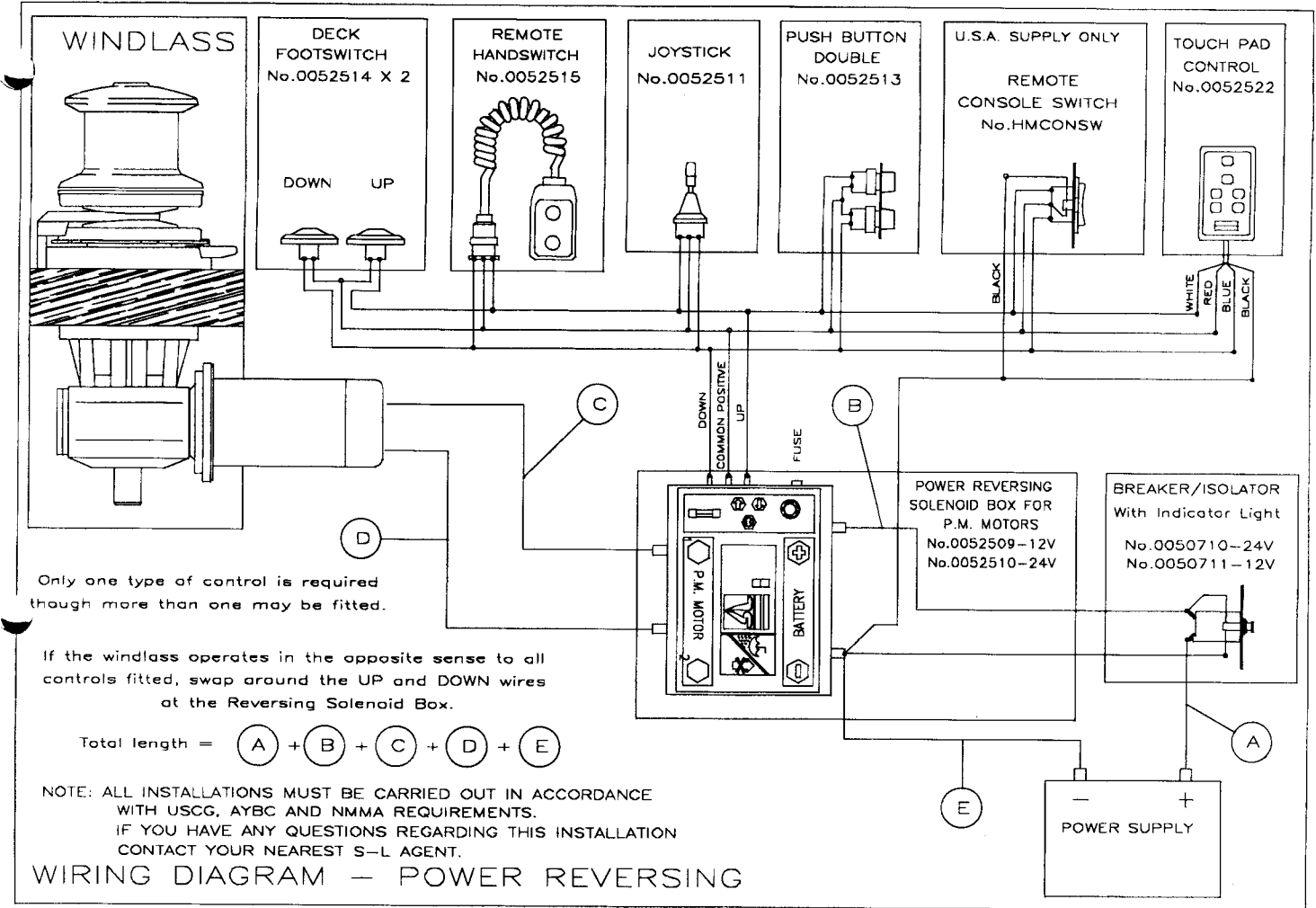
5.2.4 Single Direction Wiring



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 (positive)*
Thin wire	Breaker/Isolator Indicator Light	Main circuit (negative)

***NB** The pre wired lead on the Breaker/Isolator indicator light should be left in position

5.2.5 Power Reversing Wiring

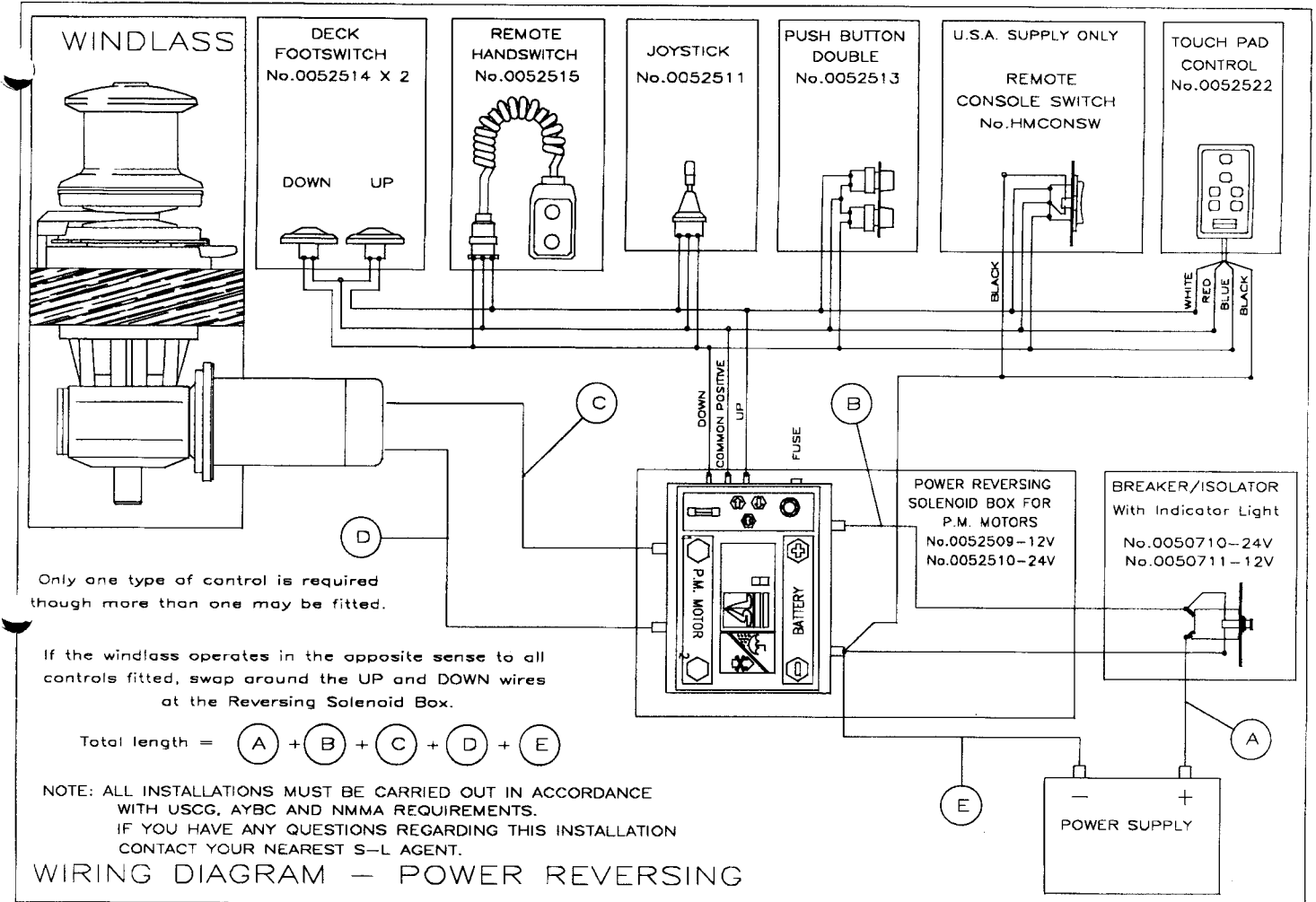


WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker/Isolator
Thick cable	Breaker/Isolator	Reversing Solenoid box
Thick cable	Solenoid box	Motor
Thick cable	Negative battery terminal	Reversing Solenoid box
Thick cable	Solenoid box	Motor
Thin wire	Solenoid box	Control switch(es) common terminal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

***NB** The pre wired lead on the Breaker/Isolator indicator light should be left in position

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

5.2.5 Power Reversing Wiring

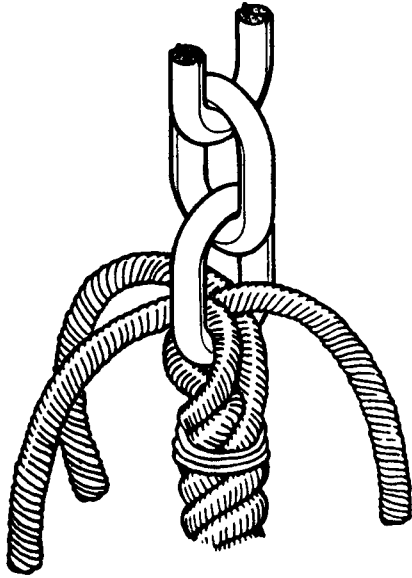


WIRE	FROM	TO
Thick cable	Positive battery terminal	Breaker/Isolator
Thick cable	Breaker/Isolator	Reversing Solenoid box
Thick cable	Solenoid box	Motor
Thick cable	Negative battery terminal	Reversing Solenoid box
Thick cable	Solenoid box	Motor
Thin wire	Solenoid box	Control switch(es) common terminal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

***NB** The pre wired lead on the Breaker/Isolator indicator light should be left in position

NB 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 remade 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 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. To fully engage the clutch, lock the gipsy pawl into any notch on the gipsy flange whilst rotating the sheet winch handle clockwise.

6.3 Function of Gipsy Pawl

- 6.3.1 The gipsy pawl, item 4, swivels in and out of engagement.
- 6.3.2 It has been designed such that when engaged in the gipsy, anti-clockwise rotation of the gipsy is resisted. However, clockwise rotation of the gipsy during hauling in will automatically disengage it.
- 6.3.3 For this reason, when the pawl is being used to help in fully tightening the clutch, it must be actively held in position.

6.4 Function of Friction Cone

- 6.4.1 In normal use the Friction Cone, part 72 is compressed by the Socket Screw, part 59 or 76, depending on the model. This is achieved using the Socket Screw Key, part 75.
- 6.4.2 The friction cone gives the gipsy a positive power out capability that enables it to haul the rode out from the chain locker. However, should there be an obstruction to the rode coming out of the locker, the friction cone slips to avoid damage to the deck or windlass.
- 6.4.3 It is only necessary to disengage the friction cone when the windlass is to be operated manually (see 6.10 below).

6.5 Letting Go Under Gravity

- 6.5.1 Disengage the gipsy pawl.
- 6.5.2 Slacken the clutch slowly with the handle by turning it anticlockwise until the gipsy begins to turn and the rode runs out.
- 6.5.3 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.
- 6.5.4 When sufficient rode has been let out, fully tighten the clutch (see 6.2 above).
- 6.5.6 Re-engage the gipsy pawl.

6.6 Letting Go Under Power

- 6.6.1 With a power reversing installation the anchor and rode can be lowered without slackening off the clutch.
- 6.6.2 Check that the clutch is fully tightened by inserting the handle and rotating it clockwise (see 6.2 above).
- 6.6.3 Disengage the gipsy pawl.
- 6.6.4 Activate a 'down' control switch.
- 6.6.5 Should the windlass turn, yet fail to power out, ensure that the rode has not become jammed in the chain pipe below deck and that the Socket Screw (part 59/76) is fully tightened by inserting the Socket Screw Key (part 75) through the clutch nut or gipsy cap hole as appropriate until the key engages with the Screw. The key should be turned clockwise to fully tighten the Screw.
- 6.6.6 Release the 'down' control switch when sufficient rode has been lowered.
- 6.6.7 Please note, activating both UP and DOWN controls simultaneously will stop the windlass if it is connected correctly to the Simpson-Lawrence solenoid box listed earlier.

6.7 Lying to Anchor Safely

- 6.7.1 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.

- 6.7.2 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.

6.8 Hauling In

- 6.8.1 Ensure the clutch nut or gipsy cap is fully tightened by turning the clutch handle clockwise.
- 6.8.2 Press an 'up' control. The speed of hauling depends on the load on the anchor and will increase after the anchor breaks out.
- 6.8.3 Avoid damage caused by bringing the anchor hard up against the stemhead fitting. The rode should be inched by careful use of the controls.
- 6.8.4 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.

6.9 Warping (Gipsy/Drum Only)

- 6.9.1 If the gipsy is in use, ensure that the gipsy pawl is engaged.
- 6.9.2 Slacken the clutch nut to disengage the gipsy clutch.
- 6.9.3 The warping drum can now be made to revolve independently of the gipsy under power.
- 6.9.4 Rope/drum slippage can normally be overcome by increasing the number of turns of rope on the drum.

6.10 Emergency Manual Operation (Loss of Power)

- 6.10.1 Insert the Socket Screw Key (part 75) through the centre of the clutch nut (GD models), or gipsy cap (G models, after removing the hole plug, part 77) until the key engages with the Socket Screw (part 59 or 76).
- 6.10.2 Turn the key anti-clockwise and slacken the Screw by one revolution.
- 6.10.3 Insert a Sheet Winch Handle into the clutch nut (GD models) or offset hole (G models) and rotate it clockwise.
- 6.10.4 The above procedure allows rapid recovery of the rode and anchor under light loads as well as emergency recovery in the event of power failure.
- 6.10.5 When finished using the windlass in manual mode, remove the Sheet Winch Handle from the windlass and re-tighten the central Socket Screw (see 6.4 above).

6.11 Operating Tips

- 6.11.1 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.
- 6.11.2 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.
- 6.11.3 When mooring stern to, at a suitable distance from the jetty, deploy the anchor to prevent the bows 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.

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 apply grease around the exterior of the deck seal, part 16.

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.