simpson-lawrence

pacific

installation, operation & maintenance instructions

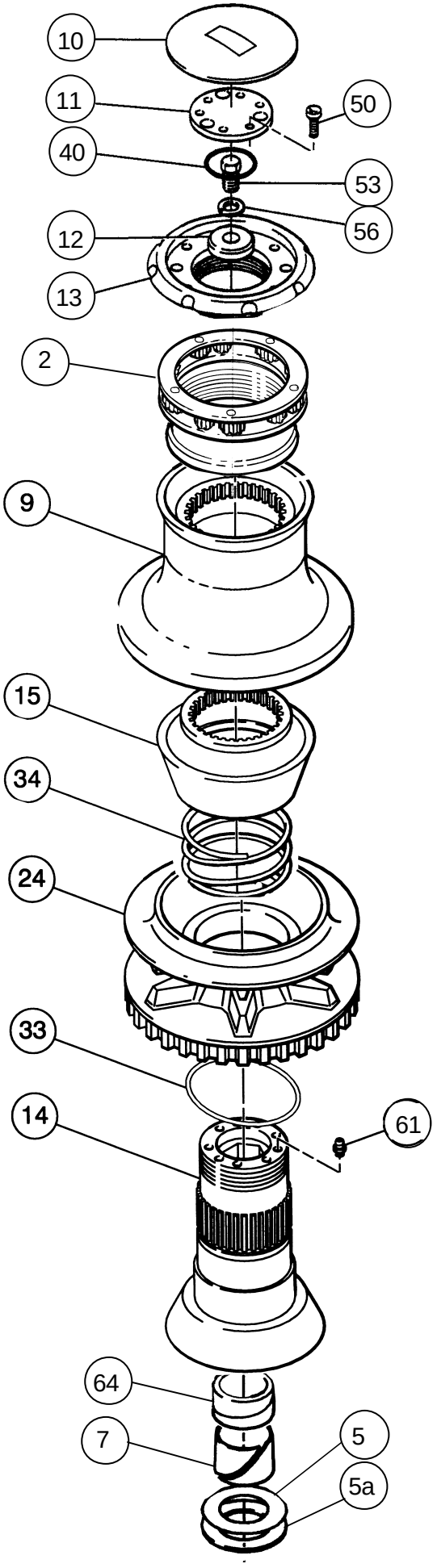
V6000 24v / Hydraulic

Series 1 & 2

V6000

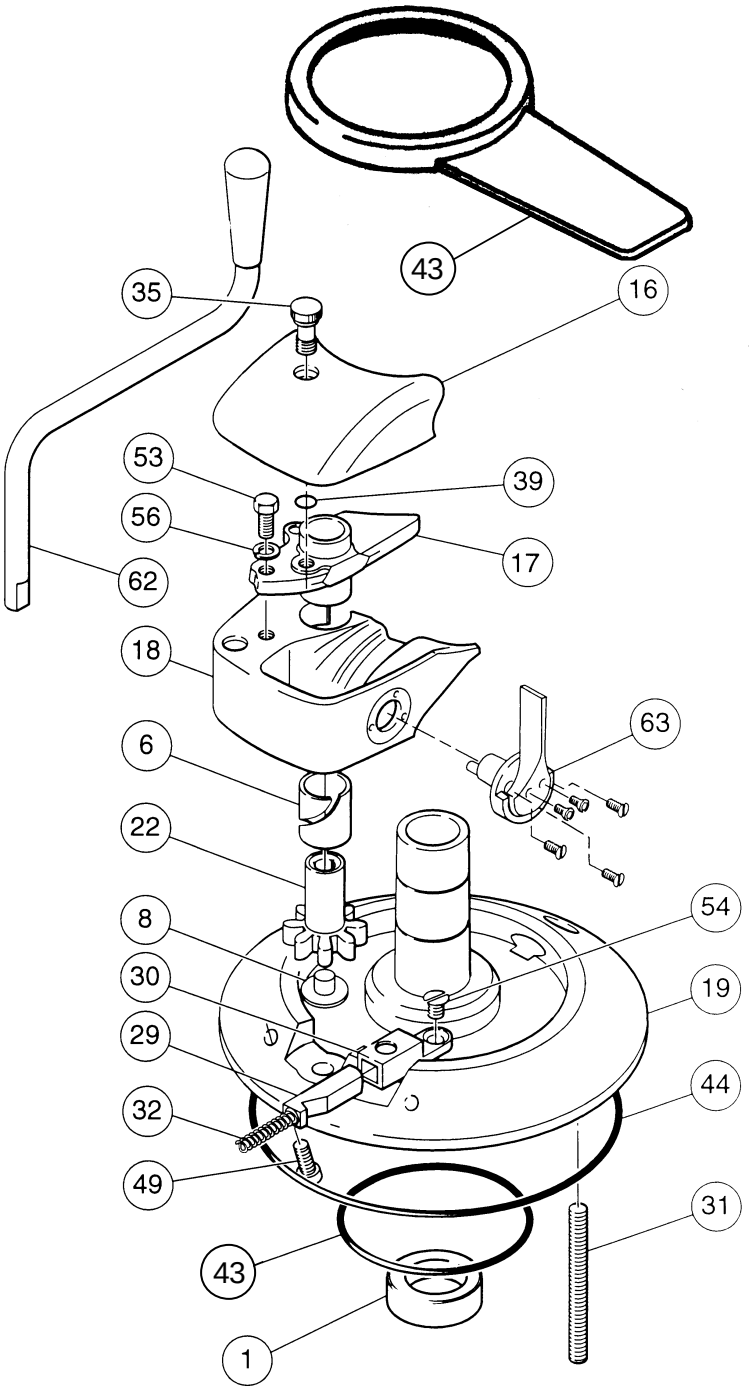
SIMPSON
LAWRENCE

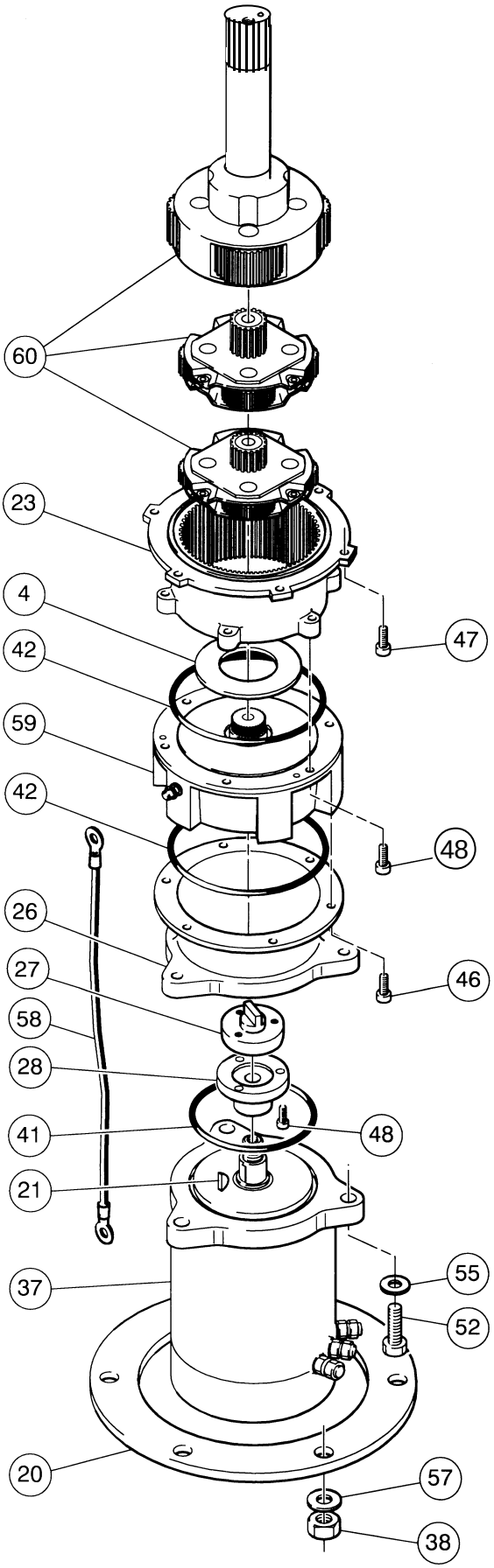
V6000 GD
Series 2



V6000 GD
Series 2

Right hand panel shows parts that are unique to 24v DC drive windlasses. See separate page for hydraulic “arf” braked drive .





V6000 GD
Series 2

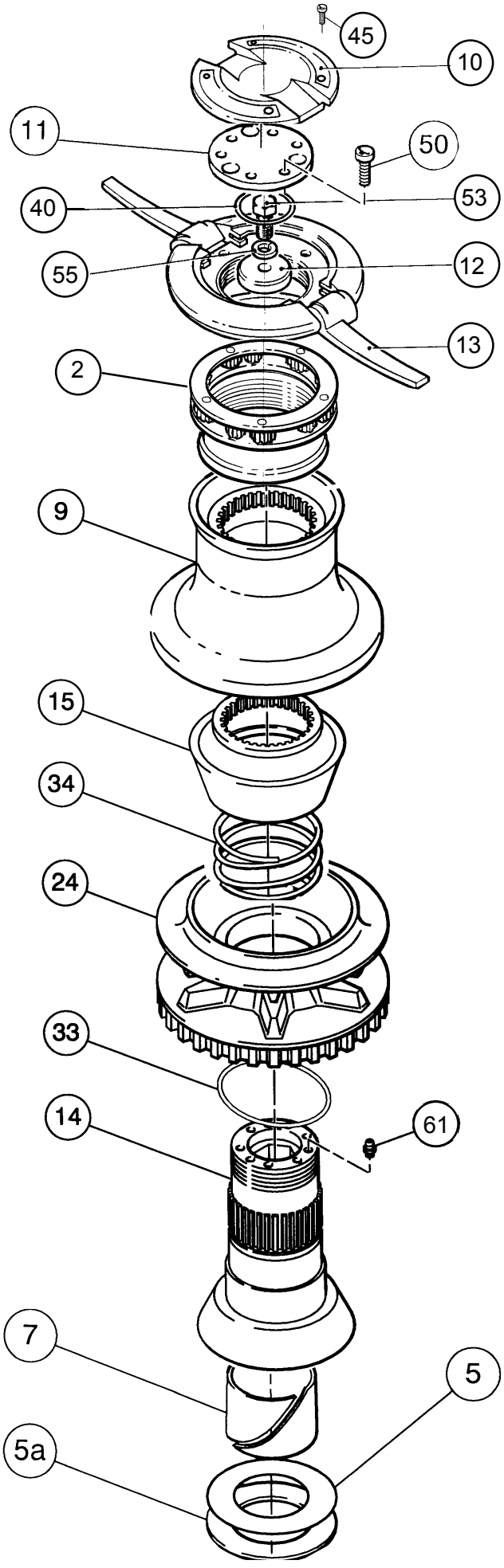
Parts list: Ref 606001A.xls

Parts list for V6000GD24v right or left hand

Diag ref	Part	Qty	Description
1	103005	1	Bearing
2	406058	1	Inner clutch nut assembly
4	103036	1	Shim bearing, gearbox
5	103025	1	Shim bearing, lower clutch
5a	154418	1	Spacer, adjusting, lower clutch
6	103026	1	Shim bearing, emergency wind
7	103074	1	Shim bearing main lower
8	103057	1	Bearing pad, emergency wind
9	106025	1	Capstan
10	106206	1	Cap outer
11	106226	1	Cap inner
12	106218	1	Cap lock
13	106319	1	Clutch nut
14	106416	1	Lower clutch
15	106413	1	Upper clutch
16	106540	1	Cover right hand (illustrated)
16	106541	1	Cover left hand (not illustrated)
17	106525	1	Stripper right hand (illustrated)
17	106527	1	Stripper left hand (not illustrated)
18	106537	1	Chain pipe right hand (illustrated)
18	106539	1	Chain pipe left hand (not illustrated)
19	109022	1	Deck housing right hand (illustrated)
19	109023	1	Deck housing left hand (not illustrated)
20	109307	1	Deckclamp
21	113020	1	Key, woodruff
22	118197	1	Pinion emergency wind
23	119010	1	Gearbox
24	1206XX	1	Gypsy (specify no. of teeth & chain)
26	136018	1	Motor flange DC
27	136059	1	Motor adaptor d drive
28	136065	1	Motor coupling
29	151213	1	Ratchet pawl
30	151218	1	Ratchet housing right hand (illustrated)
30	151219	1	Ratchet housing left hand (not illustrated)
31	154004	6	Stud
32	154223	1	Spring ratchet
33	154219	1	Spring gypsy lift
34	154221	1	Spring upper clutch
35	154407	1	Screw chain pipe cover
37	336033	1	Motor cima 24V-1500w
38	339031	6	Nut hex
39	342010	1	O ring
40	342030	1	O ring
41	342045	1	O ring
42	342046	2	O ring
43	342053	1	O ring
44	342453	1	O ring
46	354014	6	Capscrew

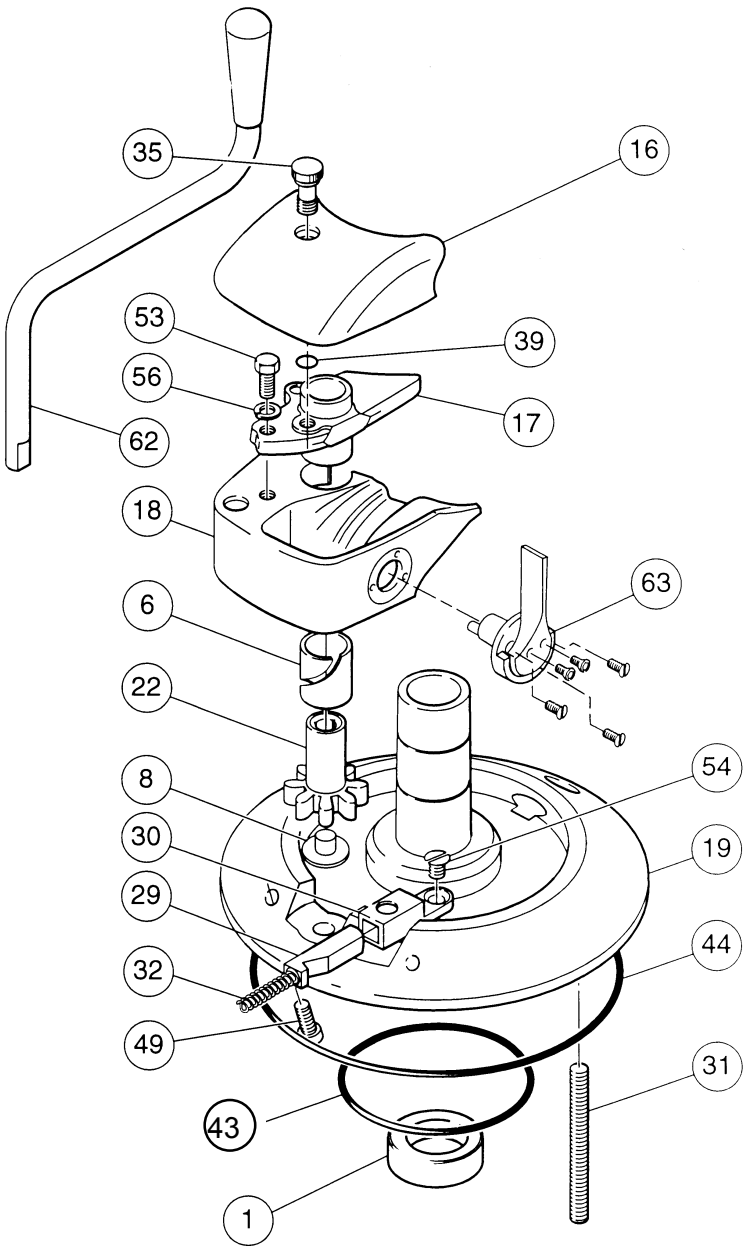
47	354230	6	Setscrew
48	354015	9	Capscrew
49	354049	3	Capscrew
50	354032	3	Capscrew
52	354232	3	Setscrew
53	354242	3	Setscrew
54	354333	2	Setscrew
55	366042	3	Washer
56	366051	3	Washer
57	366061	6	Washer
58	403042	1	Negative brake link
59	406103	1	Brake assembly 24v
60	418028	1	Stage 1 + motor pinion
60	418058	1	Stage 2
60	418066	1	Stage 3
61	418100	3	Grease nipple
62	421003	1	Emergency handle
63	466013	1	Ratchet kit right hand
63	466014□	1	Ratchet kit left hand (not illustated)
64	103014□	1	Upper main bearing
65	121016□	1	Clutch nut key

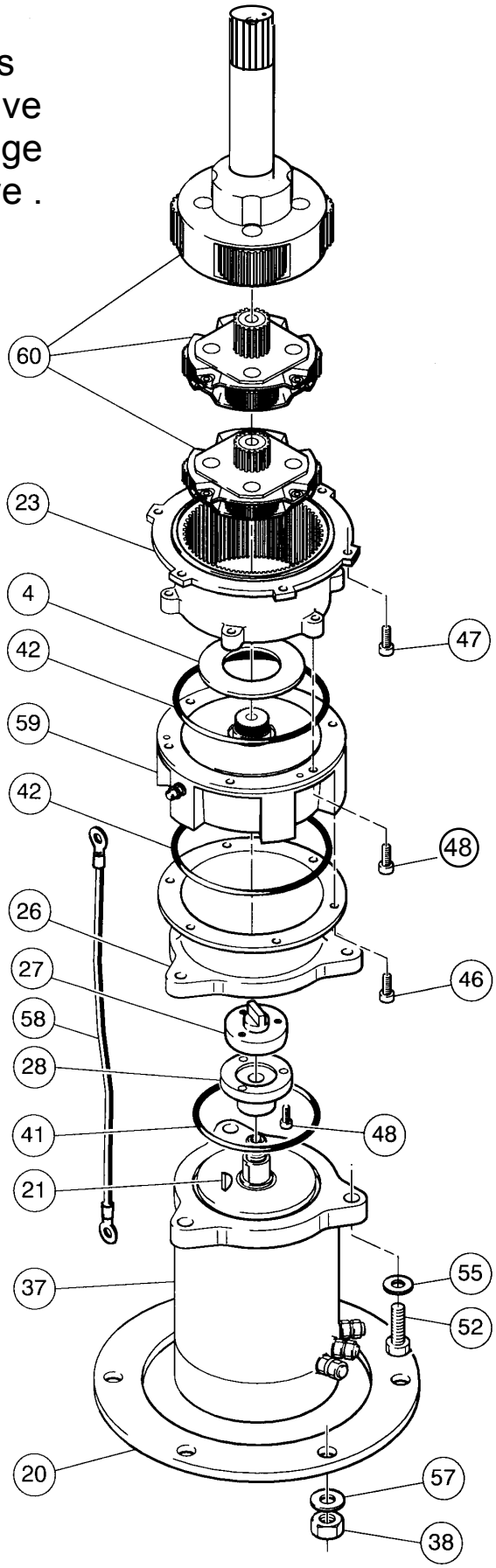
V6000 GD
Series 1



V6000 GD
Series 1

Right hand panel shows parts that are unique to 24v DC drive windlasses. See separate page for hydraulic “arf” braked drive .





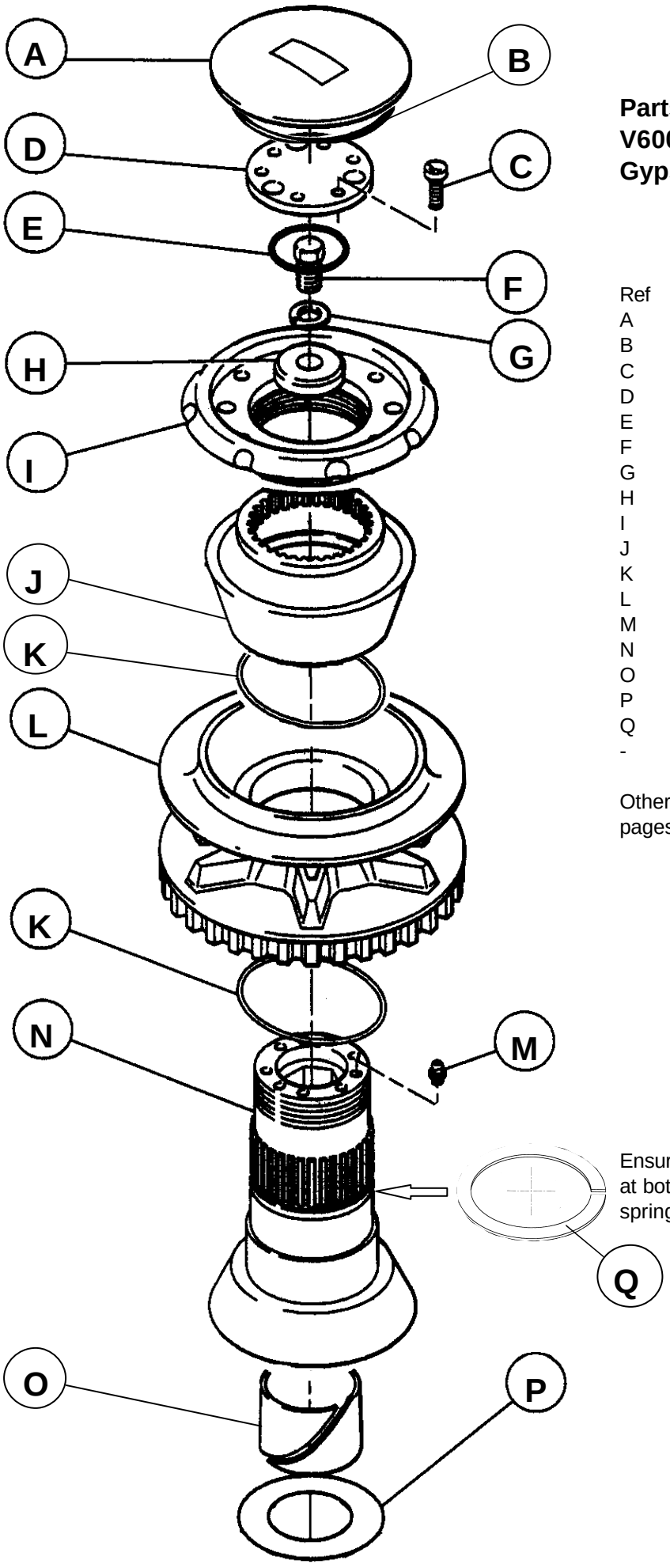
V6000 GD
Series 1

Parts list: Ref 606001A.xls

Parts list for V6000GD24v right or left hand

Diag ref	Part	Qty	Description
1	103005	1	Bearing
2	406058	1	Inner clutch nut assembly
4	103036	1	Shim bearing, gearbox
5	103025	1	Shim bearing, lower clutch
5a	154418	1	Spacer, adjusting, lower clutch
6	103026	1	Shim bearing, emergency wind
7	103024	1	Shim bearing main
8	103057	1	Bearing pad, emergency wind
9	106025	1	Capstan
10	106208	1	Cap outer
11	106226	1	Cap inner
12	106218	1	Cap lock
13	406056	1	Clutch nut assembly
14	106415	1	Lower clutch
15	106413	1	Upper clutch
16	106540	1	Cover right hand (illustrated)
16	106541	1	Cover left hand (not illustrated)
17	106525	1	Stripper right hand (illustrated)
17	106527	1	Stripper left hand (not illustrated)
18	106537	1	Chain pipe right hand (illustrated)
18	106539	1	Chain pipe left hand (not illustrated)
19	109022	1	Deck housing right hand (illustrated)
19	109023	1	Deck housing left hand (not illustrated)
20	109307	1	Deckclamp
21	113020	1	Key, woodruff
22	118197	1	Pinion emergency wind
23	119010	1	Gearbox
24	1206XX	1	Gypsy (specify no. of teeth & chain)
26	136018	1	Motor flange DC
27	136059	1	Motor adaptor d drive
28	136065	1	Motor coupling
29	151213	1	Ratchet pawl
30	151218	1	Ratchet housing right hand (illustrated)
30	151219	1	Ratchet housing left hand (not illustrated)
31	154004	6	Stud
32	154223	1	Spring ratchet
33	154219	1	Spring gypsy lift
34	154221	1	Spring upper clutch
35	154407	1	Screw chain pipe cover
37	336033	1	Motor cima 24V-1500w
38	339031	6	Nut hex
39	342010	1	O ring
40	342030	1	O ring
41	342045	1	O ring
42	342046	2	O ring
43	342053	1	O ring
44	342453	1	O ring
45	354018	4	Capscrew
46	354014	6	Capscrew

47	354230	6	Setscrew
48	354015	9	Capscrew
49	354049	3	Capscrew
50	354032	3	Capscrew
52	354232	3	Setscrew
53	354242	3	Setscrew
54	354333	2	Setscrew
55	366042	3	Washer
56	366051	3	Washer
57	366061	6	Washer
58	403042	1	Negative brake link
59	406103	1	Brake assembly 24v
60	418028	1	Stage 1 + motor pinion
60	418058	1	Stage 2
60	418066	1	Stage 3
61	418100	3	Grease nipple
62	421003	1	Emergency handle
63	466013	1	Ratchet kit



Parts list - above deck
V6000G
Gypsy only version

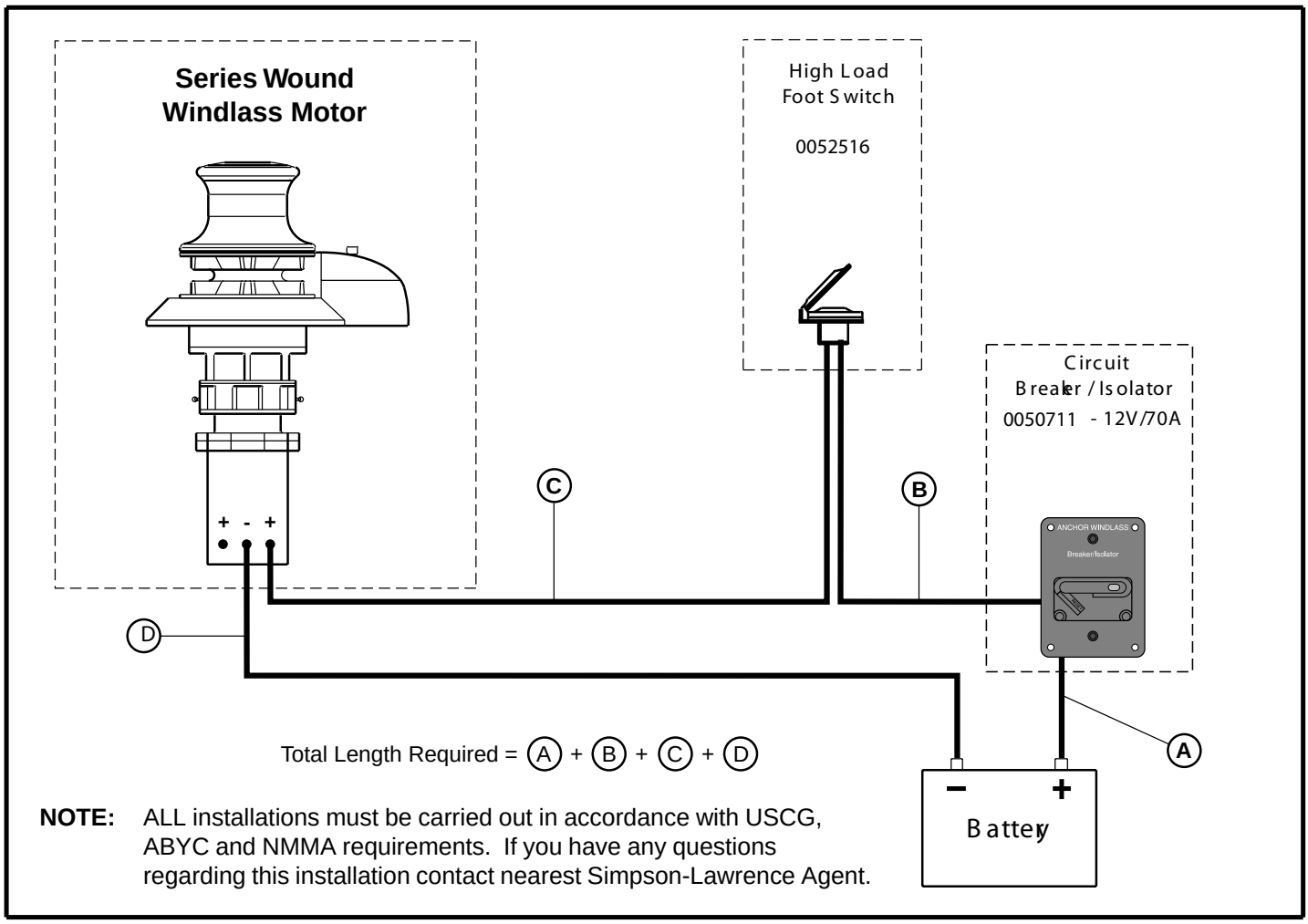
Ref	Part	Qty	Description
A	106206	1	Outer cap
B	342052	1	O ring
C	354032	3	Cap screw
D	106225	1	Inner cap
E	342030	1	O ring
F	354242	1	Hex screw
G	366051	1	Spring washer
H	106218	1	Lock cap
I	106313	1	Clutch nut
J	106418	1	Upper clutch
K	154219	2	Spring
L	1206XX	1	Gypsy X=noteeth
M	418100	2	Grease nipple
N	106419	1	Lower clutch
O	103027	1	Main bearing
P	103025	1	Bearing washer
Q	154420	1	Spacer ring
-	421004	1	Clutch handle

Other parts are as illustrated on other pages of manual.

Ensure spacer “Q” is fitted to groove at bottom of spline before fitting upper spring “K”

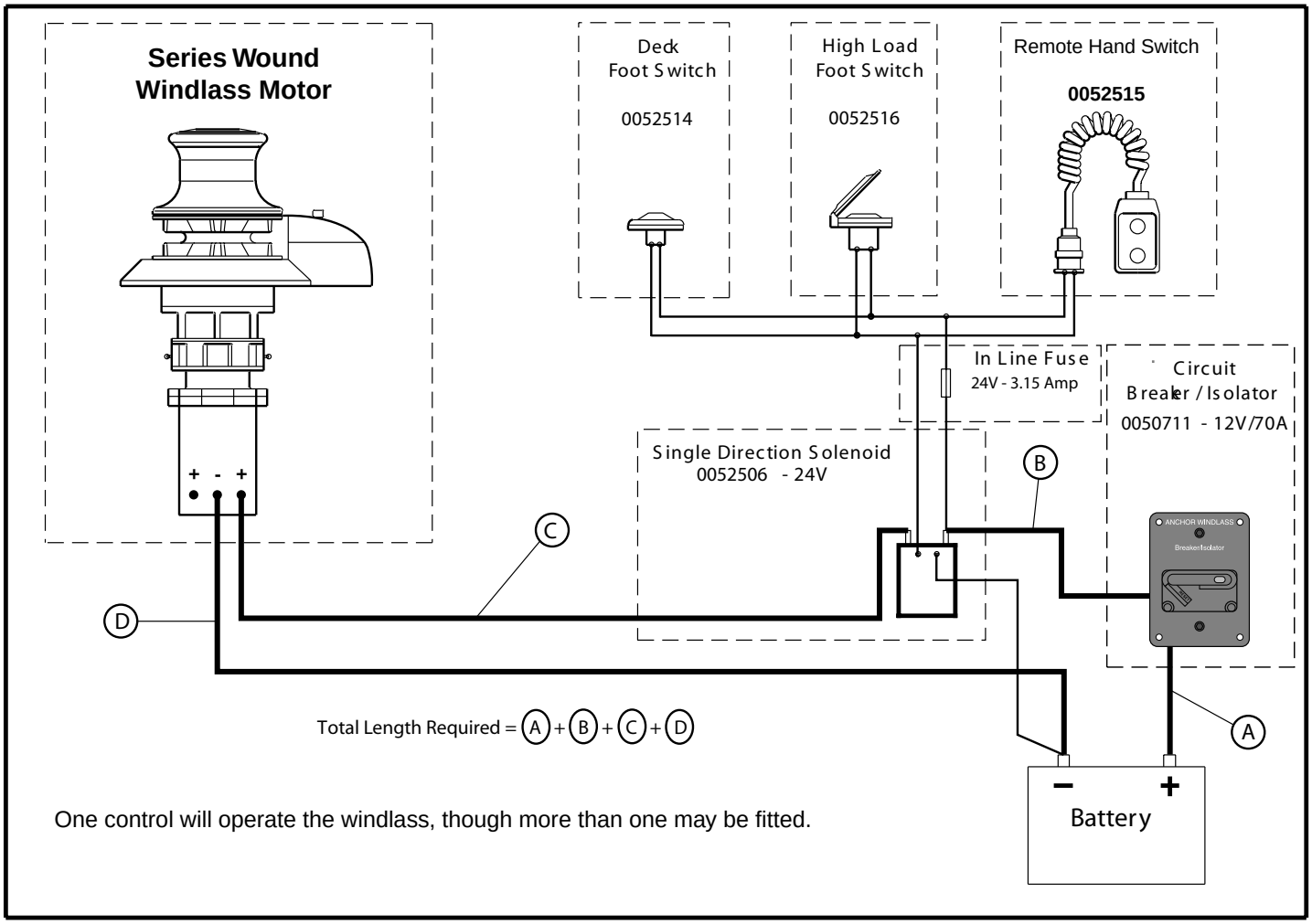
5.5.0 **Wiring Diagrams**

5.5.1 **Single Direction Wiring** (High Load Foot Switch Only)



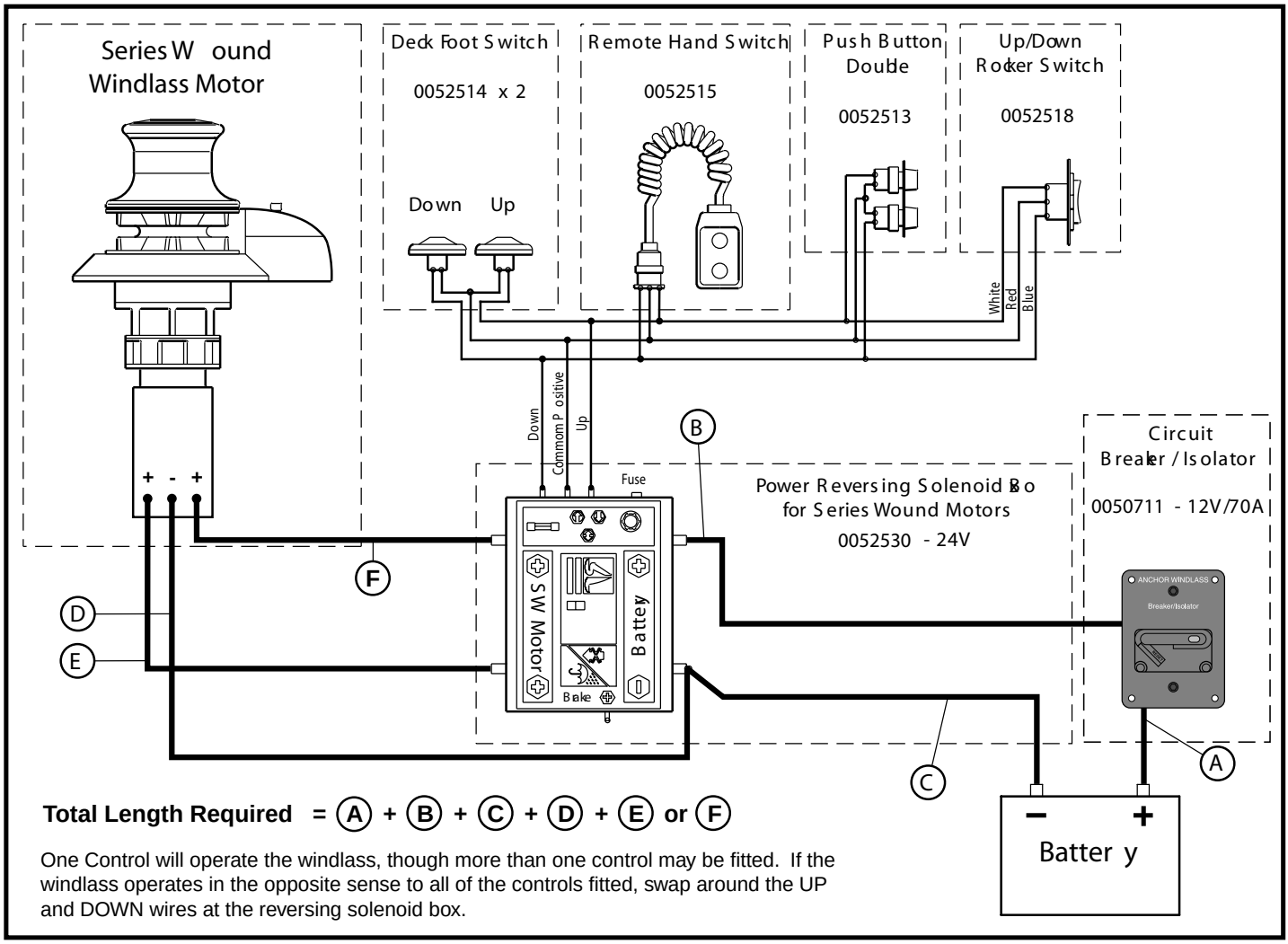
WIRE	FROM	TO
Thick cable	Positive battery terminal	High load foot switch
Thick cable	High load foot switch	Windlass positive terminal
Thick cable	Negative battery terminal	Windlass negative terminal

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)

NB Use a minimum wire gauge of 1.5mm^2 (14AWG) to connect switches.



Total Length Required = (A) + (B) + (C) + (D) + (E) or (F)

One Control will operate the windlass, though more than one control may be fitted. If the windlass operates in the opposite sense to all of the controls fitted, swap around the UP and DOWN wires at the reversing solenoid box.

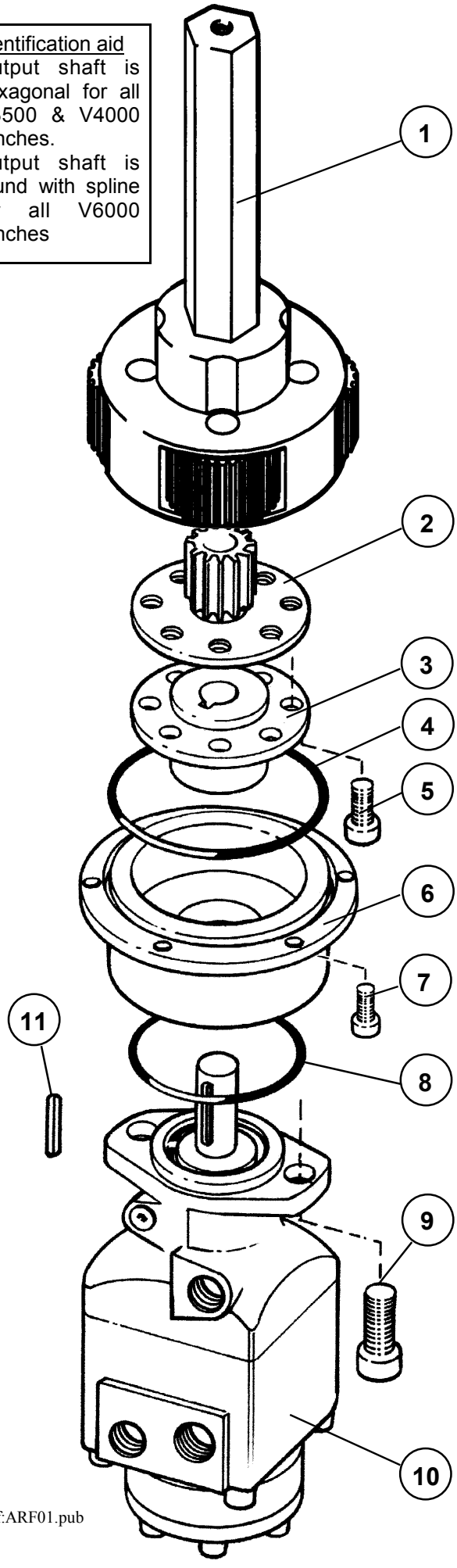
Ref:ARF01

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)

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

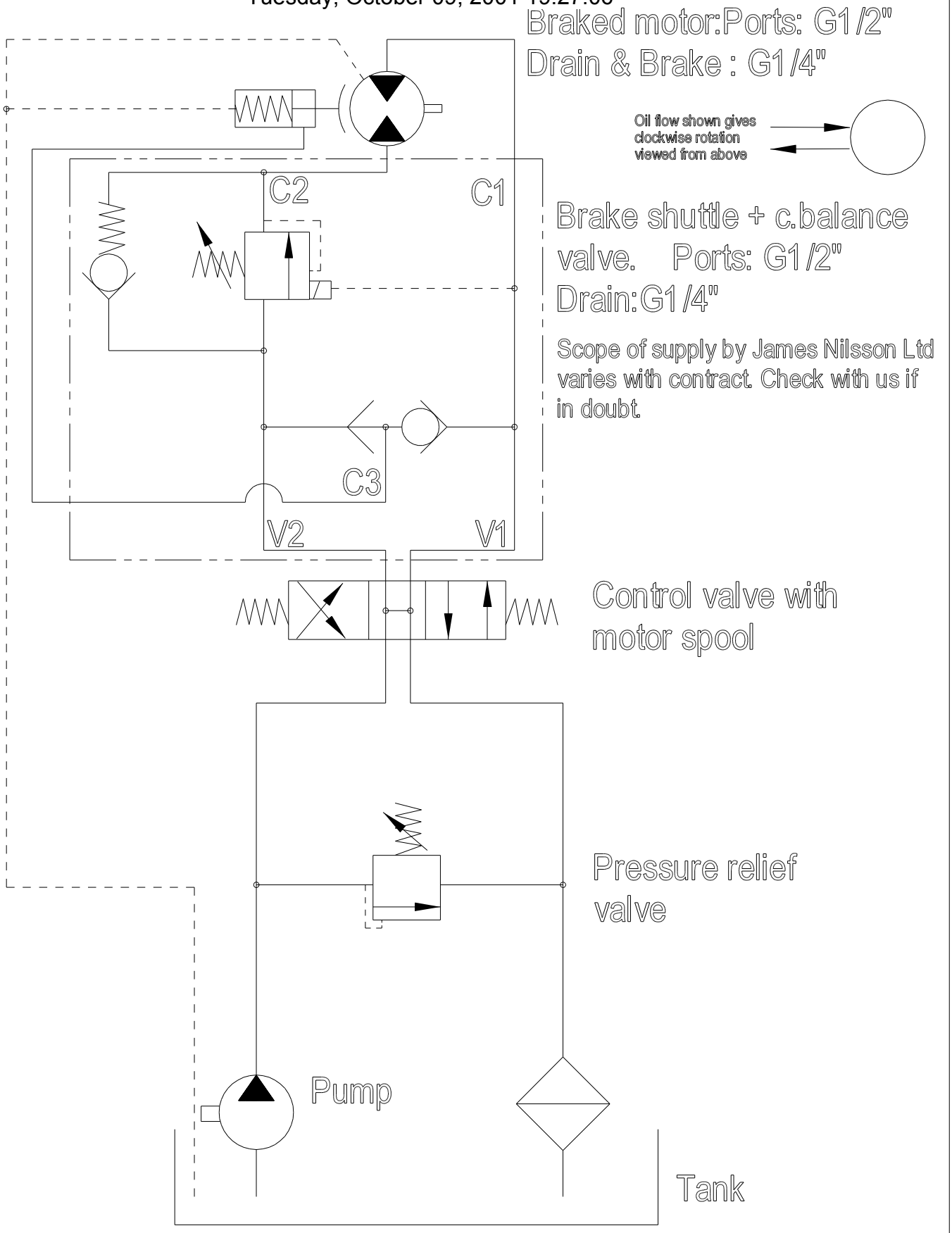


Ref	Part number	Description	Quantity used per winch C3500	V4000G	V4000GD	V6000G	V6000GD
1	418065	Final drive	1				
	418063			1			
	418064				1		
	418067					1	
	418066						1
2	106602	Pinion	1	1	1		
	106604					1	1
3	106606	Coupling	1	1	1		
	106603					1	1
4	342051	Seal	1	1	1		
	342053					1	1
5	354032	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 istallation and secure in upside down position.
3] Do not dis assemble 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 sytems

Manufactured by James Nilsson Ltd, 69 Hillside Road, Glenfield, Auckland, New Zealand. Tel: ++649 444 5219 Fax: ++ 649 444 5222
Email: sales@jamesnilsson.co.nz



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

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:

a. 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.
b. 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.
c. The footswitch(es) should be positioned to allow the operator to comfortably tail rope off the drum when necessary.
d. The top of the windlass must be accessible for greasing and clutch operation.

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 and the nuts and washers and tighten evenly and firmly using a150mm (6") long spanner.

5.1.5 Longer Studs

For thicker than standard decks, simply fit longer studs as appropriate (M8 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 areNOT using the Breaker/Isolator recommended, an alternativeMUST 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.

5.3 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

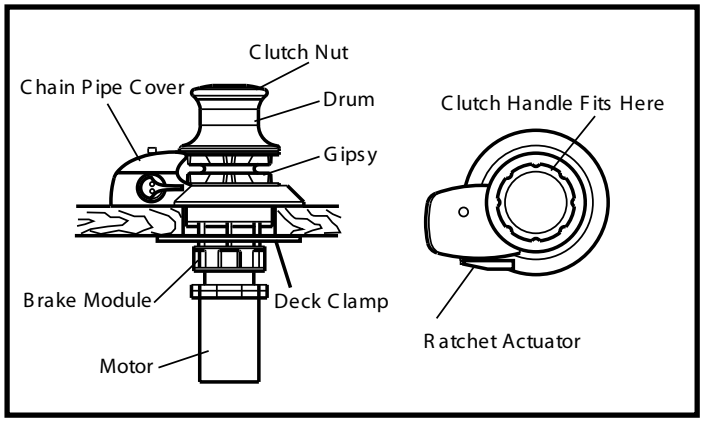
Check all terminals or connections are firmly secured. Coat ALL below deck surfaces, including the terminals, with rubber or plastic type paint (automotive underseal is one convenient way) OR wrap completely in self amalgamating tape OR coat/protect in a similar way with some other system suitable for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

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 keep the Isolator switch OFF except when in use.

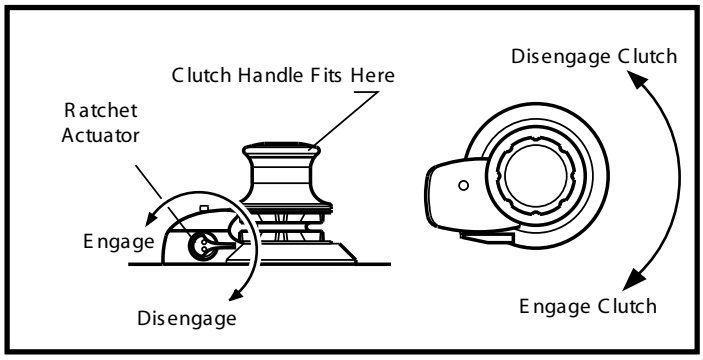


6.2 Use Of Clutch

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*.

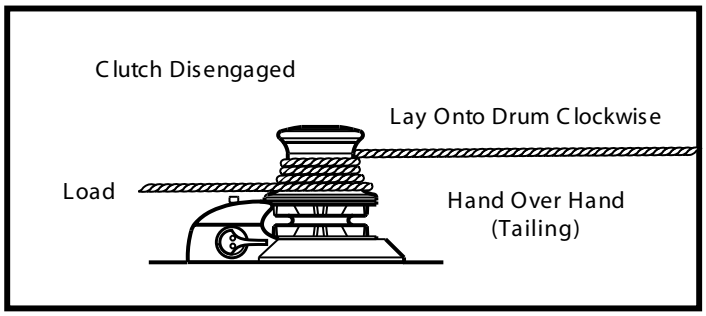
6.6 Anchor Recovery

Use firm hand pressure to tighten the clutch, DO NOT force or hammer the clutch nut! Ensure that the gipsy 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.

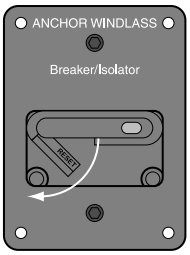
Activate the windlass by using a foot switch, hand switch control, etc., using the windlass' power to bring the boat over the site of the anchor. Maintaining a slow speed whilst approaching the anchor is a good safe practice, especially in a crowded anchorage. If the anchor is snagged and/or heavy loads 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

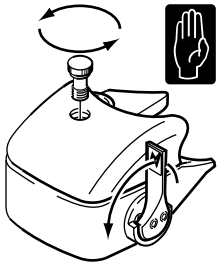


Before warping, if the anchor is in use, secure anchor rope/chain to an independent strong point. Otherwise secure anchor and anchor rope/chain to an independent strong point. Slacken the clutch nut to enable the drum to rotate independently of the gipsy. Wrap at least three coils of rope, loosely, around 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.

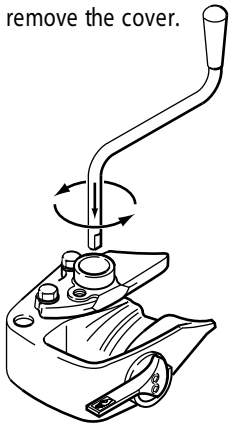
6.8 Emergency Hand Gear Operating Instructions



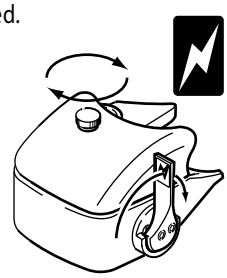
1. Isolate the windlass using the circuit breaker/isolator.
WARNING! Do not switch on power when the ratchet pawl actuator is in the manual ( ) position.



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



3. Release clutch nut, then 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.

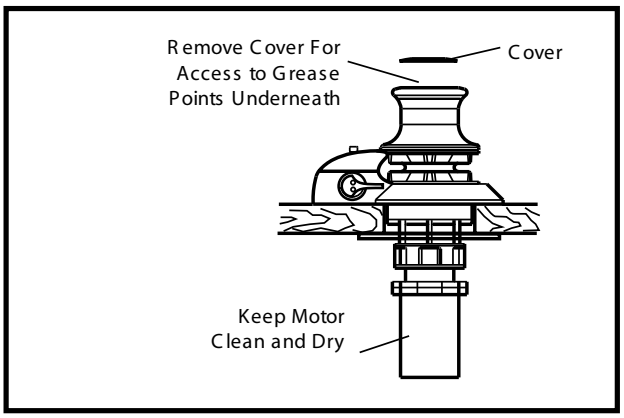
6.11 Ordering a Gipsy

Should you ever have to order a replacement gipsy it should be noted that the part number has five digits and the suffix X. The X refers to the number of pockets or chain teeth on the gipsy.

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 no. 9) using a pocket knife or broad bladed tool. As the cap

WARRANTY COVERAGE: SIMPSON-LAWRENCE LIMITED., 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 it's 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.

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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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