

B10490 Issue 1

GB

Pro-Series & Pro-Fish Windlass

Owner's Installation, Operation &
Basic Servicing Manual



LEWMAR®

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B10490 Issue 1. Pro-Series & Pro-Fish Windlass.

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To the best of our knowledge, the information in this manual was correct when it went to press. However, Lewmar cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Lewmar cannot accept liability for any differences between the product and the manual.

⚠ This manual forms part of the product and MUST BE RETAINED along with, OR incorporated into, the Owner's Manual for the vessel to which the windlass is fitted.

Introduction

Dear Customer,

Thank you for choosing Lewmar windlass. Lewmar products are world renowned for their quality, technical innovation and proven performance. With a Lewmar windlass you will be provided with many years of outstanding service.

Product support

Lewmar products are supported by a worldwide network of distributors and Authorised Service Representatives. If you encounter any difficulties with this product, please contact your national distributor, or your local Lewmar dealer. Details are available at:

www.lewmar.com

CE Approvals

For CE approval certificates contact Lewmar.

Important information about this manual

Throughout this manual, you will see safety and product damage warnings. You must follow these warnings carefully to avoid possible injury or damage.

The type of warnings, what they look like, and how they are used in this manual are explained as follows:

Warning!
This is a warning against anything which may cause injury to people if the warning is ignored. You are informed about what you must or must not do in order to reduce the risk of injury to yourself and others.

Safety Symbol
When you see the safety symbol it means: "Do not..."; "Do not do this"; or "Do not let this happen".

Safety notices

General

Please read before installing and operating your Windlass.

Classification Societies and Lewmar require that a vessel at anchor must have its rode held by a chain stopper or equivalent strong point at all times!

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 powerboats, because an anchor accidentally deploying while 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. It is essential that the windlass is regularly examined, operated and given any necessary maintenance.

Please ensure that you thoroughly understand the operation and safety requirements of the windlass before commencing the installation. Only persons who are completely familiar with the controls and those who have been fully made aware of the correct use of the windlass should be allowed to use it. If there is any doubt of how to install or operate this unit please seek advice from a suitably qualified engineer.

- Windlasses used incorrectly could cause harm to equipment or crew.
- Windlasses should be used with care and treated with respect.
- Sailing, like many other sports can be hazardous. Even the correct selection, maintenance and use of proper equipment cannot eliminate the potential for danger, serious injury or death.
- Lewmar windlasses are designed and supplied for anchor control in marine applications and are to be used in conjunction with any other use.
- It is the unavoidable responsibility of the owner or master or other responsible party to assess the risk of any operation on the vessel.

- Lewmar recommends the use of appropriate Personal Protective Equipment and hands free communication equipment by any person going aloft, and only then where the person going aloft is properly trained in the use of that equipment and where there remain sufficient trained and experienced personnel on deck to ensure constant observation and the continued safe conduct both of the vessel and the hoisting operation.

Fitting

- This equipment must be installed and operated in accordance with the instructions contained in this manual. Failure to do so could result in poor product performance, personal injury and/or damage to your boat.
- Consult the boat manufacturer if you have any doubt about the strength or suitability of the mounting location.

Electrical

- Make sure you have switched off the power before you start installing this product.
- If in doubt about installing electrical equipment please seek advice from a suitably qualified electrical engineer.

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 magnetic interference but the installer is advised to carry out checks when the installation is complete.

1. Installation

• Pro-Series & Pro-Fish Manual

All references regarding installation and wiring etc. of Pro-Series apply to the equivalent Pro-Fish model (700 or 1000).

1.1 Gypsy suitability

Gypsies fitted to the Pro-Series range of windlasses are ideally suited to handling our factory made Rope/Chain combination rodes, which consist of rope spliced to a chain tail.

Model	Gypsy	Chain	Rope
700	RC0762	7 mm (1/4") High Test G-4 ISO	12 mm or 1/2" 3 strand medium lay or 8 plait nylon
700	RC0670	6 mm (NON USA)	12 mm (NON USA)
1000	RC0850	8 mm (5/16") High Test G-4 ISO	14-16 mm or 9/16" - 5/8" 3 strand medium lay or 8 plait nylon

Ropes used must be windlass grade, medium lay nylon. Ropes from different manufacturers have wide variations in stretch and consistency in diameter. Therefore, rope and chain from other manufacturers may require some experimentation to determine the optimum size.

Should you have difficulty in matching a gypsy to your chain please consult your local agent or our international network of Lewmar distributors worldwide.

1.2 Package contents

- Windlass
- Intelligent Mounting Studs, Washers and Nuts
- All-in-one Installation Wrench & Clutch Lever
- Base Gasket Seal
- Safety Instructions
- Mounting Template
- Instruction Booklet
- Warranty Registration Card
- Breaker/Isolator
- Control Switch (Pro-Series 700 only)
- Guarded Rocker Switch (Pro-Series 1000 only)
- Contactor (Pro-Series 1000 only)

1.3 Additional requirements

Each installation requires:

Windlass installation

The following tools:

- 10 mm (3/8") Drill.
- 75 mm (3") Hole saw.
- An appropriate marine sealant.

Wiring installation

The following tools:

- Crimping pliers/wire stripper.
- Suitable electrical cable and crimp terminals.

1.4 Accessories

Use only Lewmar parts and accessories to ensure top performance and eliminate the risk of voiding your warranty. For replacement parts, please see the Parts section or visit your nearest dealer or the Lewmar website.

1.5 Specifications

Model 700	
Maximum pull	320 kg (700 lb)
Maximum line speed	32 m/min (105 ft/min)
Typical working load	80 kg (175 lb)
Normal line speed	27 m/min (88 ft/min)
Boat size	up to 10.7 m (35 ft)

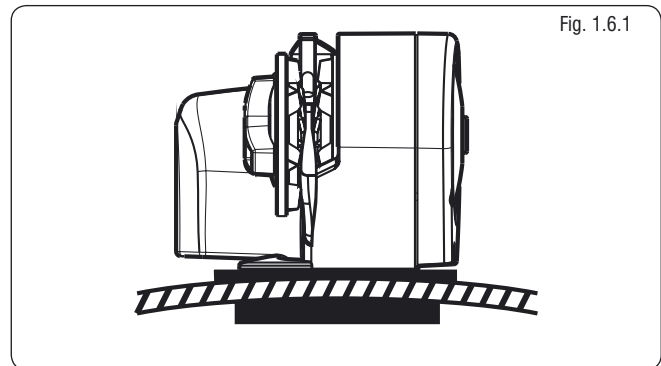
Model 1000	
Maximum pull	454 kg (1000 lb)
Maximum line speed	32 m/min (105 ft/min) 12 V
Typical working load	114 kg (250 lb)
Normal line speed	27 m/min (88 ft/min) 12 V
Boat size	up to 13.7 m (45 ft)

1.6 Fitting the windlass to the deck

- If the deck is not flat, a suitable mounting pad may be required to take up camber or sheer.

Decks that are thin, or of foam or balsa laminate construction, will require reinforcement in order to spread the loads that will be applied to the deck while the windlass is in use.

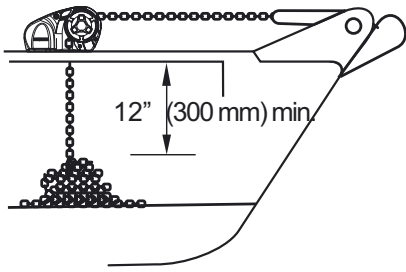
The standard 8 mm (5/16") threaded mounting studs supplied suit deck and packing thickness of up to 76 mm (3"). These are adequate for most installations.



- Place the windlass on the deck and decide upon a position for it with reference to the vessel's bow roller (Fig. 1.6.2) and the chain locker below. Rode lead from the roller should ideally be fed horizontally back to the top of the gypsy and along its centerline (Fig. 1.6.3).

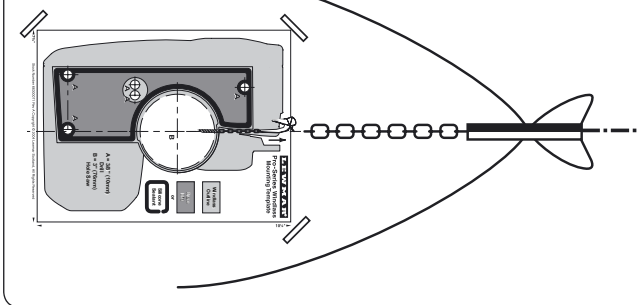
There must be sufficient vertical fall for the chain or rope, even with a full locker, to draw the rode from the gypsy when hauling in.

Fig. 1.6.2



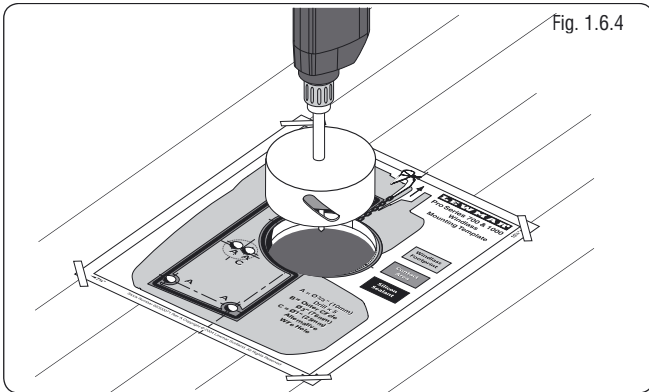
- Place the mounting template on the deck or mounting pad in the desired position for the windlass and hold it in place using adhesive tape.
- **NOTE: Check the scale of the template matches the winch.**

Fig. 1.6.3



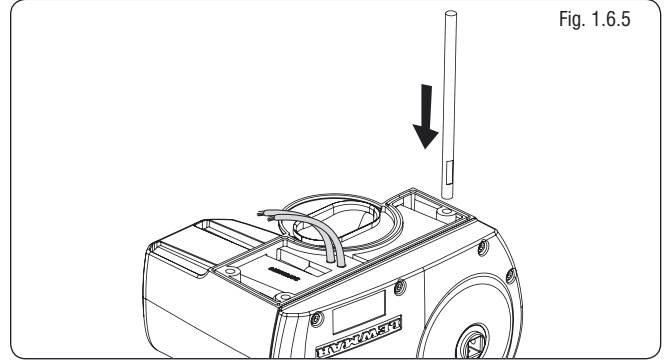
- Using a 10 mm ($3/8$ ") diameter drill, make the three holes for the mounting studs and two for the motor wires. With a 76 mm (3") diameter hole saw, make the hole for the rode to pass through. When all the holes have been made, remove the template. To help avoid water absorption by the deck, apply an appropriate marine sealant to the freshly cut hole edges.

Fig. 1.6.4



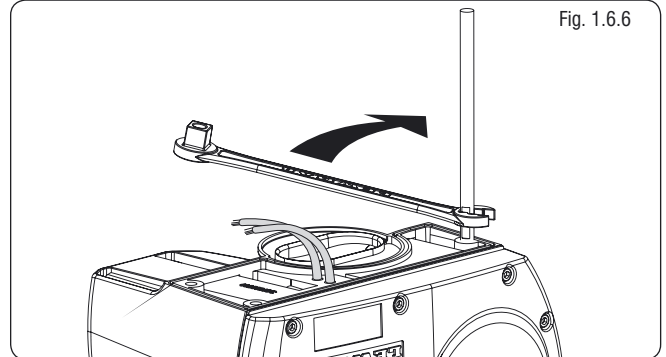
- Fully screw the three mounting studs into the base of the windlass. This can be done, quite simply, using the multi-tool wrench supplied. Screw the studs into the base finger tight, with the flats towards the base (Fig 1.6.5).

Fig. 1.6.5



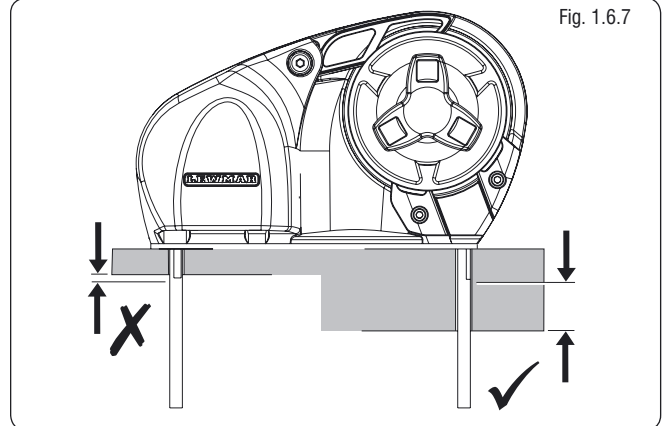
- Next, using the wrench on the flats, tighten the studs until they bottom out in their holes. Do this to each of the studs in turn.

Fig. 1.6.6



- Place the base mat in position on the deck, optionally, apply a suitable sealant.

Fig. 1.6.7



⊘ DO NOT use a permanent adhesive/sealant, e.g., 5200 to the base of the windlass, any mounting pad or around the studs.

⊘ DO NOT get CAULK or SEALANT under the GEAR TRAIN COVER (17) as it makes it difficult to remove. Secure the windlass firmly to the deck from below, using the nuts and washers supplied.

As a rule of thumb, if the flats on the studs are visible below deck, the deck and/or any packing is likely to be too thin to offer adequate support when the windlass is under load.

- **NOTE: If using silicone or other rubbery type sealant, it is advisable to allow curing of the sealant before final tightening of the mounting nuts. Trim the studs back to 6 mm ($1/4$ ") below the fully tightened nuts.**

2. Electrical wiring installation

2.1 Electric cable selection

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

The following table gives recommended cable sizes. The recommendations are based on total length of cable required, from the battery, following the route of the cables.

- **Total length of cable run is from the battery to the windlass, and from the windlass back to the battery.**

DO NOT confuse cable Length with the length of the vessel!

Model 700 cable selection				
Volts	Cable Length		Size	
	m	ft	mm ²	AWG
12	0 - 12	0 - 40	10	8
	12.5 - 18	41 - 60	10	6
	18.5 - 24	61 - 80	15	6

Model 1000 cable selection				
Volts	Cable Length		Size	
	m	ft	mm ²	AWG
12	0 - 15	0 - 50	16	4
	15.5 - 21	51 - 70	25	2
	21.5 - 30.5	71 - 100	35	2

- In Multi Station installations 14 AWG wire (1.5 mm² cross sectional area, 21/0.30 PVC covered) is used to connect the switches to the reversing control box.

2.2 Wiring

Plan the installation to suit the controls and give the operator a full view of the windlass. The wiring system should be of the two cable fully insulated return type, which avoids possible electrolytic corrosion problems. We recommend the use of type III stranded, tinned copper wire with copper crimp terminals. Most modern installations are negative return (negative ground) but polarity should be checked. If necessary add a grounding strap between the mounting studs and an earthing point.

In a Model 1000 installation, the contactor must be sited in a dry location.

DO NOT install the contactor in the anchor locker.

If a contactor is installed in an anchor locker it is exposed to harsh conditions it is not designed to withstand. Furthermore this type of installation will void your warranty.

Overload protection, in the form of the circuit breaker/isolator supplied, must be built into the windlass wiring circuit. This protects the wiring and prevents undue damage to the windlass motor, in the event of its being stalled by an excessive load in service.

It is advisable to site the circuit breaker/isolator in a dry, readily accessible place. The Breaker/ Isolator supplied must be manually reset should an overload occur that causes it to trip to the off position.

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

If you are not sure you understand these guidelines, seek professional help.

2.3 Control Switch Installation

Follow the mounting instructions supplied with the switch. Remember, in a Multi Station installation all switches must be wired in a parallel circuit.

2.3 Model 700 - 12 V

Choice of cable thickness depends on total cable length:
A + B + C + D + E =
Battery to windlass, windlass to battery.

Model	Motor	Breaker / Isolator	Contactor
700	12 V	50 A (68000348)	-
1000	12 V	70 A (68000240)	0052531

Fig. 2.3.1

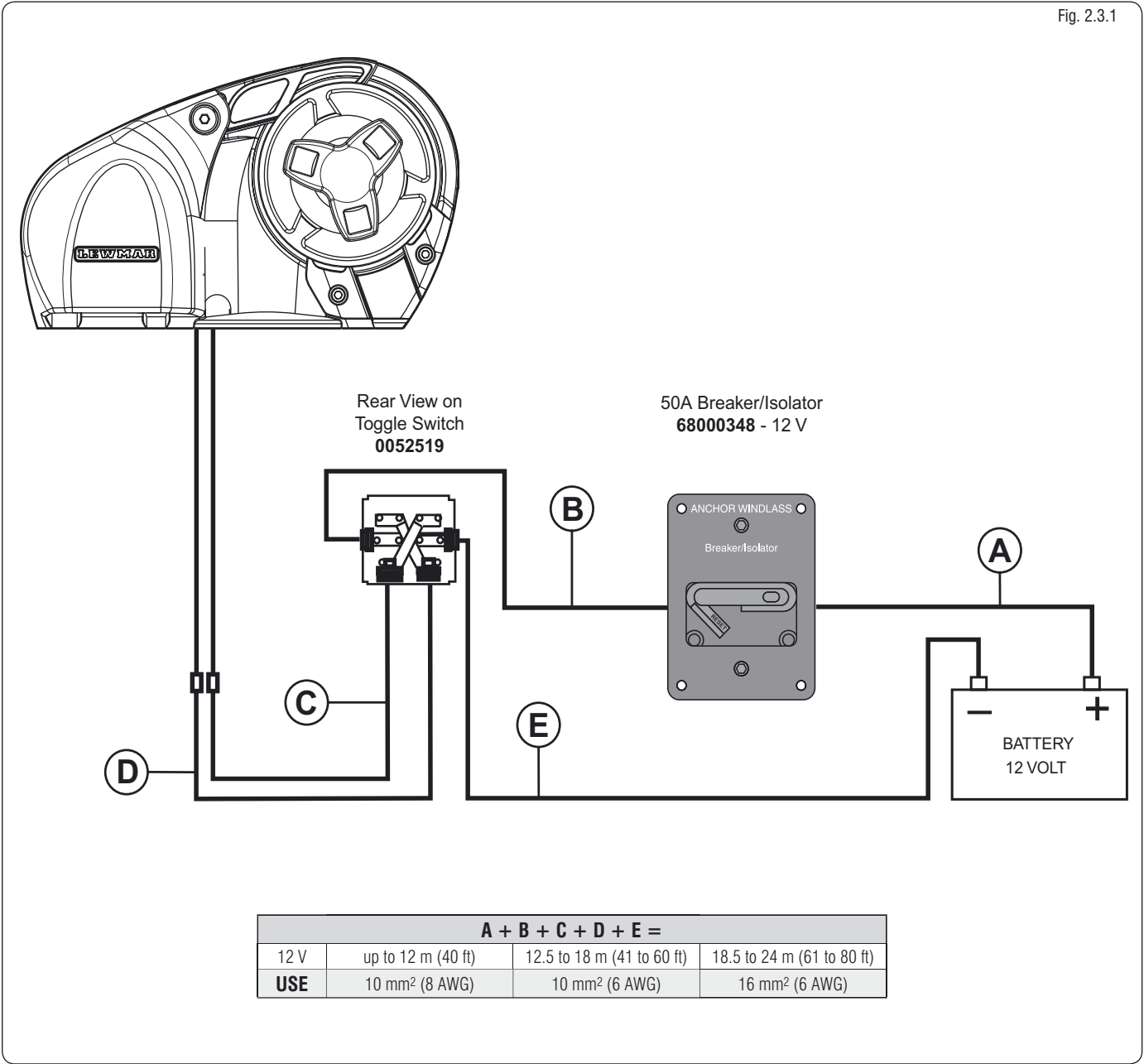
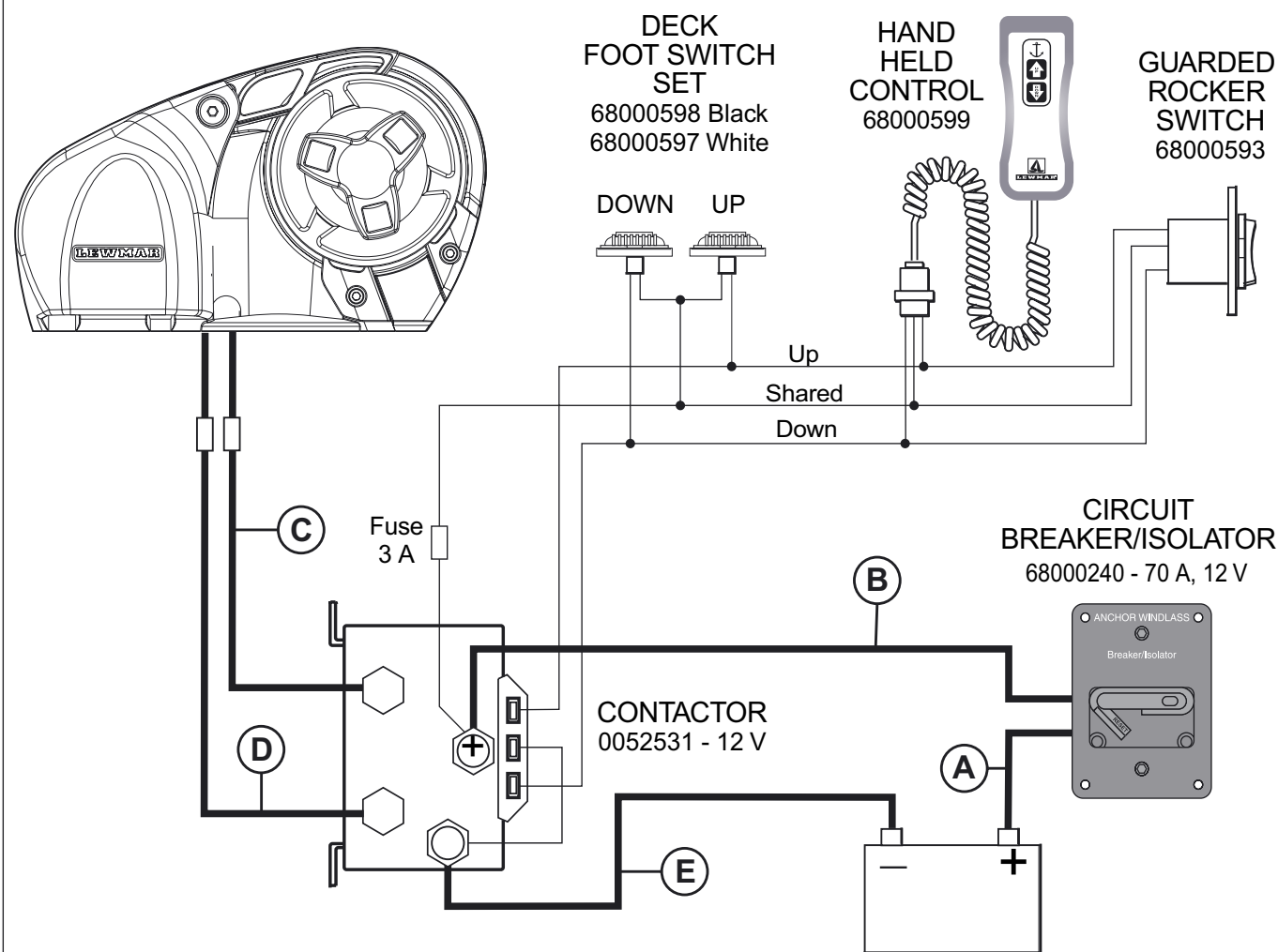


Fig. 2.4.1



A + B + C + D + E =			
12 V	Up to 15 m (50 ft)	15.5 to 21 m (51 to 70 ft)	21.5 to 30.5 m (71 to 100 ft)
USE	16 mm ² (4 AWG)	25 mm ² (2 AWG)	35 mm ² (2 AWG)

3. Operating your windlass

As a prudent act of seamanship, anchor recovery operations require the undivided attention of skipper and crew to prevent personal injury or damage to the vessel.

In a typical anchor recovery situation, the windlass will pass through a number of operational phases.

3.1 Safety first

To avoid personal injuries ensure that limbs, fingers and clothing are kept clear of the anchor rode and windlass during operation. Always ensure that there are no swimmers or divers nearby when dropping your anchor.

3.2 Use of clutch on Pro-Series

To tighten the clutch - using the Installation Tool & Clutch Lever supplied, rotate the clutch nut (1) clockwise, this will grip the gypsy, effectively locking it to the windlass gear train.

To slacken the clutch - turn the nut anticlockwise, this will free the gypsy allowing it to turn independently of the windlass gear train. Always remove the handle after use.

3.3 Use of clutch on Pro-Fish freefall

Press DOWN button for 2 seconds until the anchor is under freefall. (Note: Pressing the DOWN button for 5+ seconds will result in a longer clutch re-engagement time during the next UP command). If using a rope/chain rode, motor astern to create the desired scope.

Once scope has been created press the UP button continuously until freefall stops. It normally takes several seconds to fully re-engage the internal clutch mechanism, locking the windlass. Failure to do this could result in rope/chain creeping out. Press the UP button continuously to recover the anchor.

⚠ To ensure continuous freefall operation using rope/chain rode, it is important that the rope is FREE from knots or hockles. To avoid this problem we recommend periodically paying out the rode whilst motoring astern (in deep water) to unwind and knots or hockles that may be present.

3.4 Letting go under gravity

Insert the clutch lever into the clutch nut (1) and turn it clockwise to ensure that the clutch is tight. Release any independent anchor locks. If it is safe to do so, pull back on the clutch lever until the anchor and rode begin to pay out. Control the rate of descent of the anchor by pushing the clutch lever forwards. When sufficient rode has been paid out, fully tighten the clutch nut once again.

3.5 Letting go under power

Release any independent anchor locks. If it is safe to do so, let go under power by operating a down control. Release the control when sufficient rode has been paid out.

⚠ Isolate the windlass electrically and tie rode off to a secure fixing point prior to carrying out operation 3.6.

3.6 Change Pro-Fish to power down mode

Lock the Pro-Fish Plunger (38) in, using the Stopper (41). The unit will now function as a standard Pro-Series.

3.7 Lying to anchor safely

Vessels at anchor will snub on the rode and this can cause slippage or apply excessive loads to the windlass.

For maximum safety and to prevent damage, the windlass must not be left to take the entire force from the anchor rode while at anchor. The rode should be made fast directly to a bollard, sampson post or cleat.

3.8 Hauling in

Untie the bridle or replace the rode in the gypsy. If it is safe to do so, operate an 'Up' control. Having retrieved the anchor, ensure it is independently secured to prevent its accidental release.

3.9 Manual recovery

Insert a standard 12 mm ($\frac{1}{2}$ ") drive ratchet into the socket on the end of the Driveshaft (30). Using the ratchet, turn the driveshaft clockwise.

3.10 Operating tips

When anchoring, it is best to power the rode out, allowing the vessel to take up stern way before full scope is let out. This helps prevent the rode from becoming tangled on top of your anchor on the seabed.

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 be motored over and beyond the anchor, as this can cause the rode to damage your topsides. As the anchor approaches the stemhead, the last few feet of rode should be inched in by judicious use of controls to avoid damage to the vessel. Having retrieved the anchor, ensure it is independently secured to prevent accidental release. It is strongly advised to use an anchor safety strap (Part No. 66840011), or a chain stopper (Part No. 2417301).

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 as it approaches the jetty. Make fast your vessel with warps from the stern.

3.11 Joining rope to chain

When splicing rope to chain, select a length of chain that will avoid having the splice positioned in the gypsy when the anchor comes over the stemhead. Furthermore, ensure that the splice is no tighter than the rope. A hard splice is not desired.

With whipping twine or similar, seize your rope 200 mm (8") from the rope's end and unlay the strands.

Pass one strand through the chain link from one side and the other two strands from the opposite side. Remove seizing and complete a back splice in the normal manner for four full tucks.

With a hot knife pare down the three strands by one half of their diameter and continue with two further tucks.

With a hot knife, carefully melt the ends back into the line. Because of wide variations in rope type and construction some experimentation may be required.

Whip the line with permanent whipping at the beginning of the taper.

The above method of joining is designed to minimize chafe between the rope and chain but as a matter of prudent seamanship the splice should be checked regularly and remade if there is any evidence of wear.

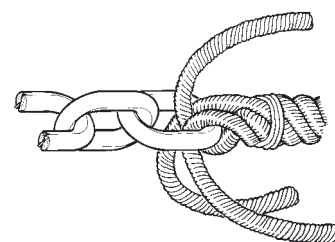


Fig. 3.11.1

4. Maintenance

4.1 General recommendations

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

- After the first two or three anchor recoveries, check the mounting nuts to ensure that the windlass is still fastened tightly to your deck, as it should now be bedded-in.
- Regularly wash down the exterior of your windlass with fresh water.

- Examine all electrical connections for possible corrosion, clean and lightly grease as necessary.
- Anchor rode splice should be checked regularly and remade if there is any evidence of wear.
- The Gypsy should be examined on a regular basis, because it is a high wear item. The Gypsy is designed for short scopes of chain and will last longer if properly used.

5. Dismantling procedures

5.1 Gypsy replacement (Pro-Series)

Remove the Clutch Nut (1), anti-clockwise using the clutch operating lever. Withdraw the Gypsy Cone (2), carefully set aside the two Stainless Steel Drive Pins (28). Pull the Control Arm (8) into the upright position. Remove the Screws (31) that retain the Stripper (4) using a 4 mm ($\frac{5}{32}$ ") Allen Wrench. Remove the Gypsy assembly. Remove the stripper from the Gypsy. To replace the Gypsy, reverse the above procedure.

5.2 Gypsy replacement (Pro-Fish)

Remove the Shoulder Screw (45) anticlockwise using a 8 mm ($\frac{5}{16}$ ") Allen wrench. Remove the Washer (46) from the centre of the Pro-Fish Drive Cap (36). Lock the Pro-Fish Plunger (38) in, using the Stopper (41). Remove the Pro-Fish Drive Cap (36) anticlockwise. Remove Socket Head Cap Screws (10) anticlockwise, using a 4 mm ($\frac{5}{32}$ ") Allen wrench. Remove the Pro-Fish Stopper Cam (37). Remove the Gypsy assembly (3) and Stripper (4) from the unit. Remove the Stripper (4) from the Gypsy (3).

To replace the Gypsy, reverse the above procedure. Clean thread of Shoulder Screw (45) and use Loctite® 638 (66200160) (Loctite® 2701 or 262 may also be used) on thread during re-assembly. Tighten bolt to 21 Nm (15.4 lb/ft) and allow at least 15 minutes for the Loctite® to cure before use.

5.3 Control arm replacement

To remove the Control Arm (8) rotate it to the vertical position. Unscrew the Grub Screw (33) using a 2 mm ($\frac{5}{64}$ ") Allen Wrench by 3 mm ($\frac{1}{8}$ "). Allow the Control Arm to return to its normal position. Withdraw the Control Arm Pivot (6) using a 4 mm ($\frac{5}{32}$ ") Allen wrench. The Allen wrench should be used initially to push the Control Arm Pivot in towards the centerline of the windlass. On doing this the Torsion Spring (7) will tend to turn the Control Arm Pivot and Allen wrench clockwise. Allow it to travel clockwise as far as it can and, using some side force on the wrench, withdraw the Pivot. Remove the Control Arm, Pivot Pin Washer (34) and Torsion Spring from the maincase. Reverse this procedure to replace the Control Arm. Place the Torsion Spring in the hole, ensuring that the outer tang is aligned parallel to the ridge on the maincase and the dog leg is parallel to the deck. Place the Pivot Pin Washer in board of the flange and offer up the Control Arm such that it is pointing at the two o'clock position. Pick up the Pivot Pin, align the groove on its head also to the two o'clock position. Insert it through the hole on the maincase and engage the spring with its slot. Holding the Control Arm in position, use the Allen wrench to push the Pivot Pin in. Then turn it anti-clockwise as far as it will go. Using side force again, pull the wrench out until the head of the Pivot

Pin sits slightly proud of the case. Rotate the control arm to the vertical and, applying a spot of Loctite® 2701 threadlock, fully re tighten the Grub Screw.

5.4 Gypsy drive shaft replacement & lubrication service

- **NOTE: Lubrication and internal parts will not fall out when the windlass is disassembled.**

The gear train and its bearings have been lubricated for you with SFG 100 grease and should not require regular attention. SFG is a white synthetic grease containing PTFE. Use grease of a similar specification throughout. It is recommended that the external Drive Shaft components be stripped, cleaned and re-greased at least annually. To do this, the Gypsy (3) and Stripper (4) should be removed as detailed above. To inspect the Maincase Wiper Seal (29) for signs of wear the Mainshaft must be removed as detailed below. If the seal is found to be unserviceable, the Gypsy Drive Shaft (30) will have to be withdrawn and the seal replaced. Remove the Gear train Cover (17) using a 4 mm ($\frac{5}{32}$ ") Allen Wrench.

⚠ DO NOT use a screwdriver or sharp edged tool to pry the Gear train Cover open.

If there is sealant present, use a razor blade to cut through it. Withdraw the 1st Compound Gear Assembly (16), taking care not to lose the Teflon™ Flat Washers (14). Remove the 2nd Compound Gear Assembly (22).

- **NOTE: Rotate this gear assembly as you pull on it, eventually this action will orientate a flat on its washer and allow the assembly to pass the Drive Shaft Gear (25).**

Remove the External Circlip (23) and withdraw the Drive Shaft Gear (25). Gently tap the Drive Roller (27) through the Drive Shaft.

The Drive Shaft can now be withdrawn with or without the Gypsy Assembly attached, provided the Stripper is no longer attached to the Case. Remove the Seal and replace it with a new one. Clean the stripped down components in kerosene, dry them and inspect them for wear.

To reassemble, reverse the above procedure. Rebuild the windlass applying generous amounts of grease.

5.5 Electric motor replacement

⚠ Isolate the windlass electrically!

Disconnect the Motor Cables from the vessel's wiring loom. Remove the Gear Train Cover (17) using a 4 mm ($\frac{5}{32}$ ") Allen Wrench as detailed above. Remove the 1st Compound Gear Assembly (16) and Teflon™ Flat Washers (14).

Using a 4 mm ($\frac{5}{32}$ ") Allen Wrench remove the Motor Screws (10). Withdraw the motor from the Main Case. Note that silicone is used to seal the holes in the case where the motor wires pass through. Be careful not to strip the insulation from the Motor Wires when pulling them through the Main Case.

Replace the Motor by reversing the above procedure, using fresh silicone to seal the wire holes in the case. Use Loctite® 2701 threadlock on the Motor Screws.

5.6 Pro-Fish conversion

Pro-Series units from Serial Number ***0603*** (March 2006) or later, can easily be converted to Pro-Fish units by removing the Clutch nut (1), Gypsy Cone (2), Drive Pins (28) & Screws (31) and fitting the Pro-fish conversion kit (66000616). Fully fitting instructions, tools & loctite are included in the kit.

6. Parts list

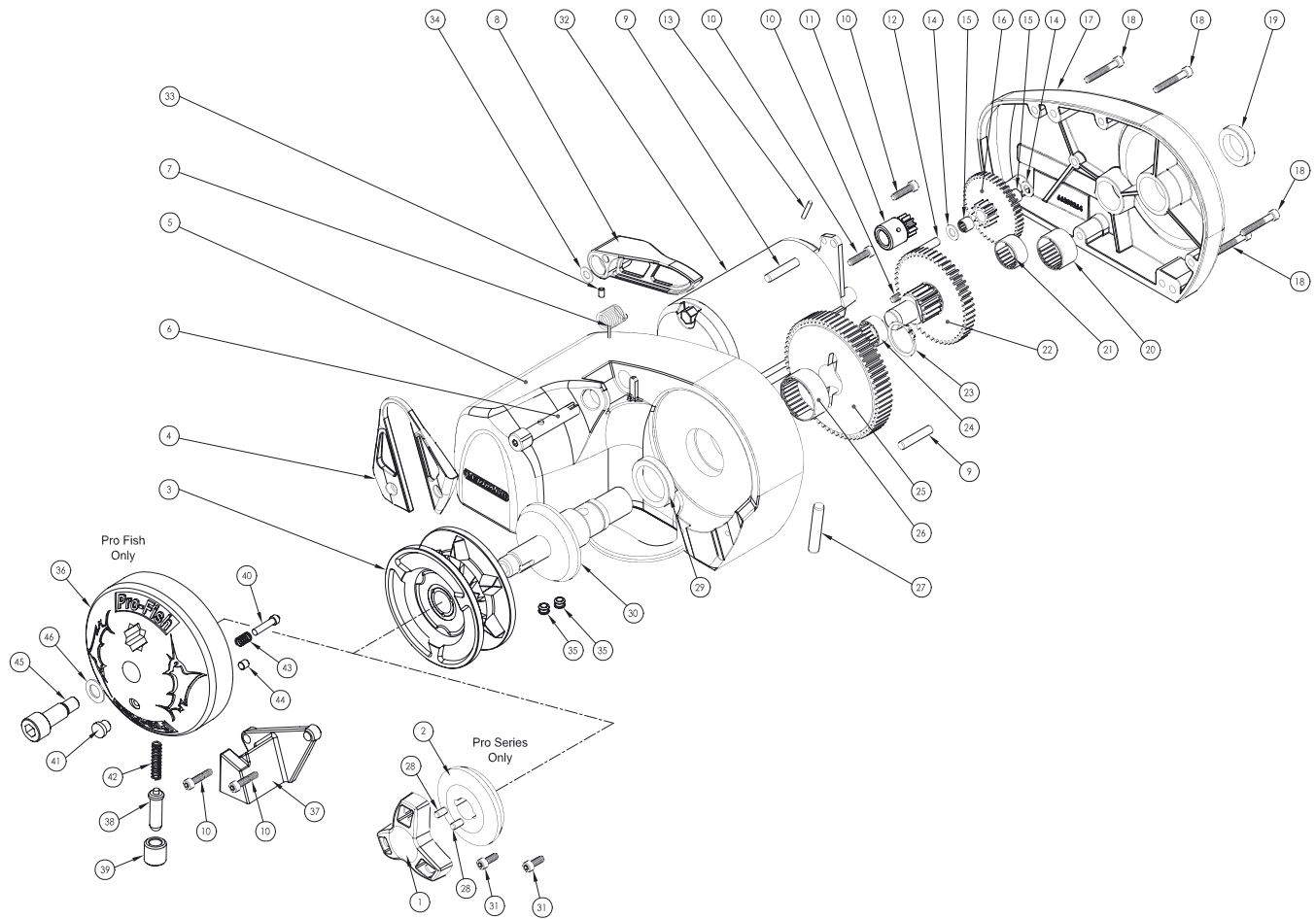
6.1 Parts list key Pro-Series & Pro-Fish models 700 & 1000

Item	Description	Qty.	Part No.
1	Clutch Nut	1	66000098
2	Gypsy Cone	1	66000098
3	Gypsy RC 7 mm ($\frac{1}{4}$ ")	1	66000110
3a	Gypsy RC 8 mm ($\frac{5}{16}$ ")	1	66000101
3b	Gypsy RC $\frac{5}{16}$ " G4	1	66000102
3c	Gypsy RC 6 mm	1	66000112
4	Stripper Arm	1	66000096
5	Maincase	1	N/A
6	Control Arm Pivot	1	66000097
7	Torsion Spring	1	66000097
8	Control Arm	1	66000097
9	Dowel $\frac{1}{4}$ " x 1 $\frac{1}{4}$ "	3	66000104
10	Socket HD Cap Screw 10-24UNC x $\frac{3}{4}$ "	5	66000616 or 66000617 or 66000096 or 66000104 or 66000107
11	Motor Pinion	1	66000105 or 66000107
12	Dowel, 6 x 30 mm	1	66000104 or 66000107
13	Spirol Pin, 3 x 20 mm	1	66000104 or 66000105 or 66000107
14	Teflon Flat Washer	2	66000105
15	Needle Roller Bearing	2	66000103 or 66000105
16	1st Compound Gear	1	66000105
17	Gear Train Cover	1	66000109
18	Socket HD Cap Screw, 10-24UNC x 1 $\frac{1}{4}$ "	6	66000104 or 66000109
19	Wiper Seal	1	66000104 or 66000109
20	Needle Roller Bearing	1	66000103 or 66000109
21	Needle Roller Bearing	1	66000103 or 66000109
22	2nd Compound Gear Assembly	1	66000105 or 66000106
23	External Clip	1	66000103 or 66000104 or 66000105

Item	Description	Qty.	Part No.
24	Roller Clutch	1	66000103
25	Mainshaft Gear	1	66000105
26	Needle Roller Bearing	1	66000103
27	Dowel, 8 x 45 mm	1	66000104 or 66000105
28	Drive Pins, 5 x 10 mm	2	66000098 or 66000104
29	Wiper Seal	1	66000104
30	Gypsy Drive Shaft	1	66000105
31	Socket Head Cap Screw, 10-24UNC x $\frac{1}{2}$ "	2	66000096 or 66000104
32	Powertek Motor 12 V	1	66000107
33	Grub Screw, 8-32 UNC x $\frac{1}{4}$ "	1	66000097
34	Pivot Pin Washer	1	66000097
35	Rubber Grommets	2	66000107
36	Pro-Fish Drive Cap	1	66000616 or 66000620
37	Pro-Fish Stopper Cam	1	66000616 or 66000617
38	Pro-Fish Plunger	1	66000616 or 66000620
39	Pro-Fish Plunger Housing	1	66000616 or 66000620
40	Pro-Fish Plunger Retaining Pin	1	66000616 or 66000620
41	Pro-Fish Plunger Retaining Cap	1	66000616 or 66000620
42	Pro-Fish Plunger Spring	1	66000616 or 66000620
43	Pro-Fish Retaining Spring	1	66000616 or 66000620
44	Grub Screw, 8-32 UNC x $\frac{3}{16}$ "	1	66000616 or 66000620
45	Shoulder Screw	1	66000616 or 66000620
46	Pro-Fish Drive Cap Spacer	1	66000616 or 66000620
47*	Base Mat	1	66000100 or 66000108
48a*	Mounting Stud, Washer & Nut (Imperial)	1	66000100
48b*	Mounting Stud Washer and Nut (Metric)	1	66000108

* Not shown on exploded drawing

6.1.1 Parts list



6.2 Pro-Series & Pro-Fish models 700 & 1000 service kits

Service Kit	Description	Items Included (Qty)
66000096	Pro-Series Stripper Arm Kit	4(1), 10(2), 31(2)
66000097	Control Arm Kit	6(1), 7(1), 8(1), 33(1), 34(1)
66000098	Pro-Series Clutch Nut & Cone Kit	1(1), 2(1), 28(2)
66000099	Clutch Lever	Clutch Lever (1)
66000100	Fastening Kit (Imperial)	47(1), 48a(1)
66000101	Gypsy RC 8 mm ($\frac{5}{16}$ "	3a(1)
66000102	Gypsy RC $\frac{5}{16}$ " G4	3b(1)
66000103	Bearings Kit	15(20, 20(1), 21(1), 23(1), 24(1), 26(1)
66000104	Pro-Series Seals and Screw Kit	10(5), 12(1), 13(1), 18(6), 19(1), 23(1), 9(3), 27(1), 28(2), 29(1), 31(2)
66000105	Gears and Shaft Kit	11(1), 13(1), 14(2), 15(2), 16(1), 22(1), 23(1), 25(1), 27(1), 30(1)
66000106	Compound Gear Kit	22(1)
66000107	Motor 12 V	11(1), 32(1), 10(3), 12(1), 13(1), 35(2)
66000108	Fastening Kit (Metric)	47(1), 48b(1)
66000109	Gear Train Cover Kit	17(1), 18(6), 19(1), 20(1), 21(1)
66000110	Gypsy RC 7 mm ($\frac{1}{4}$ "	3(1)
66000112	Gypsy RC 6 mm	3c(1)
66000616	Pro-Fish Conversion Kit	36(1), 37(1), 38(1), 39(1), 40(1), 41(1), 42(1), 43(1), 44(1), 45(1), 46(1), 10(2)
66000617	Pro-Fish Stopper Kit	37(1), 10(2)
66000620	Pro-Fish Drive Cap Assembly Kit	36(1), 38(1), 39(1), 40(1), 41(1), 42(1), 43(1), 44(1), 45(1), 46(1)

7. Troubleshooting

7.1 Anchor rode pays out independently while windlass is not in use

This problem is a result of not securing the anchor rode combined with the Clutch Nut (1) being slack. Tighten the clutch nut using the tool provided and always secure the anchor rode independently of the windlass whenever it is not being deployed or recovered.

7.2 Anchor rode pays out independently while windlass not in use (Pro-Fish)

This problem is a result of not securing the anchor rode combined with the internal Clutch mechanism not being fully engaged. Operate the UP button briefly to fully re-engage the internal

clutch mechanism. Always secure the anchor rode independently of the windlass whenever it is not being deployed or recovered.

7.3 Electrical troubleshooting

As with most electrical marine equipment the majority of problems that arise are electrical in nature. Therefore it is essential that the proper voltage be maintained. The proper voltage on a 12 volt system is 13.5 volts. (Constant low voltage will destroy the motor). Ensure that electrical cable size is large enough to handle 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%.

Follow the charts to troubleshoot the problem.

Failure to Operate (Pro-Series 700 Only) Troubleshoot Chart: Reversing Toggle Control Switch (Part No. 0052519)	
Is there voltage at the input terminal (positive) to the control switch?	If no voltage is present, the battery isolation switch is OFF, the breaker is tripped or a fuse has blown. The battery may also have been dead or disconnected.
YES ↓ NO →	
Check voltage at the output terminals of the control switch with the switch on forward then reverse. Is there voltage at either output terminal for forward then reverse?	Control switch is defective.
YES ↓ NO →	
Replace motor.	

Sluggish Operation Troubleshoot Chart	
Is windlass overloaded?	Ease the load and ensure the battery is well charged.
YES ↓ NO →	
Check the voltage across the motor leads with the windlass on. (Proper voltage is 13.5 V. Constant low voltage will destroy the motor). Is the voltage low? (Below 11.0 V on a 12 V system).	There is a severe voltage drop in the circuit. Check for undersized cables, poor connections or corroded connections. Also check for resistance across the battery isolation switch or solenoid. (Feel them to see if they are heating up).
YES ↓ NO →	
Is the voltage correct? (Above 11.0 V and anchor is not fouled).	The motor is defective. Replace the motor.
YES →	

Failure to Operate Troubleshoot Chart	
Is there voltage at the input terminals to the contactor and switch(es)?	Check the circuit breaker/isolator switch and any fuses.
YES ↓ NO →	
Operate the switch. Is there voltage at the positive switch terminal on the solenoid?	The switch (or its wiring), is defective.
YES ↓ NO →	
Keep the switch activated. Is there voltage at the main output terminal on the contactor?	Check the contactor coil ground circuit. If okay, replace the contactor.
YES ↓ NO →	
Check the voltage at the motor. If voltage is present, the motor is defective. If you have any questions call your nearest Lewmar representative.	

8. Lewmar limited warranty

LIMITED WARRANTY and KEY TERMS OF SUPPLY BY LEWMAR

Lewmar warrants that in normal usage and with proper maintenance its products will conform with their specification for a period of five years from the date of purchase by the end user, subject to the conditions, limitations and exceptions listed below. Any product, which proves to be defective in normal usage during that five-year period, will be repaired or, at Lewmar's option, replaced by Lewmar.

A CONDITIONS AND LIMITATIONS

- i Lewmar's liability shall be limited to the repair or replacement of any parts of the product which are defective in materials or workmanship.
- ii Responsibility for the selection of products appropriate for the use intended by the Buyer shall rest solely with the Buyer and Lewmar accepts no responsibility for any such selection.
- iii Lewmar shall not be liable in any way for Product failure, or any resulting loss or damage which arises from:
 - a use of a product in an application for which it was not designed or intended;
 - b corrosion, ultra violet degradation or wear and tear;
 - c a failure to service or maintain the product in accordance with Lewmar's recommendations;
 - d faulty or deficient installation of the product (unless conducted by Lewmar);
 - e any modification or alteration of the product;
 - f conditions that exceed the product's performance specifications or safe working loads.
- iv Product subject to a warranty claim must be returned to the Lewmar outlet which supplied the product for examination unless otherwise agreed by Lewmar in writing.
- v This warranty does not cover any incidental costs incurred for the investigation, removal, carriage, transport or installation of product.
- vi Service by anyone other than authorised Lewmar representatives shall void this warranty unless it accords with Lewmar guidelines and standards of workmanship.
- vii Lewmar's products are intended for use only in the marine environment. Buyers intending to use them for any other purpose should seek independent professional advice as to their suitability. Lewmar accepts no liability arising from such other use.

B EXCEPTIONS

Cover under this Warranty is limited to a period of one year from the date of purchase by the end user in the case of any of the following products or parts of products:

- Electric motors and associated electrical equipment
- Electronic controls
- Hydraulic pumps, valves and actuators
- Weather seals
- Products used in "Grand Prix" racing applications

C LIABILITY

- i Lewmar's liability under this warranty shall be to the exclusion of all other warranties or liabilities (to the extent permitted by law). In particular (but without limitation):
 - a Lewmar shall not be liable for:
 - Any loss of anticipated turnover or profit or indirect, consequential or economic loss ;
 - Damages, costs or expenses payable to any third party;
 - Any damage to yachts or equipment;
 - Death or personal Injury (unless caused by Lewmar's negligence).

Some states and countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

- b Lewmar grants no other warranties regarding the fitness for purpose, use, nature or satisfactory quality of the products.
- ii Where applicable law does not permit a statutory or implied warranty to be excluded, then such warranty, if permitted by that state or country's law, shall be limited to a period of one year from the date of purchase by the end user. Some states and countries do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

D PROCEDURE

Notice of a claim for service under this warranty shall be made promptly and in writing by the end user to the Lewmar outlet which supplied the product or to Lewmar at Southmoor Lane, Havant, Hampshire, England PO9 1JJ.

E SEVERANCE CLAUSE

If any clause of this warranty is held by any court or other competent authority to be invalid or unenforceable in whole or in part, the validity of the remaining clauses of this warranty and the remainder of the clause in question shall not be affected.

F OTHER RIGHTS

This warranty gives you specific legal rights, and you may also have other legal rights, which vary, from state to state and country to country.

In the case of European States a Consumer customer (as defined nationally) has legal rights under the applicable national law governing the sale of Consumer Goods; this Warranty does not affect those rights.

G LAW

This warranty shall be governed by and read in accordance with the laws of England or the state or country in which the first end user is domiciled at the time of purchase of the product.

H DISPUTES

Any dispute arising under this warranty may, at the option of the end-user, be referred to alternative dispute resolution under the rules of the British Marine Federation or to the Courts of the State whose law shall govern the warranty or to the Courts of England and Wales.

The British Marine Federation may be contacted at Marine House, Thorpe Lea Road, Egham, England, TW20 8BF



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