

LEWMAR®

Lewmar OCEAN & EVO® Electric/Hydraulic Winches

B2303 Issue 10



Ocean Winch size 40-111



Evo™ Winch size 40-90



Owners Installations, Operation & servicing manual

1. Introduction

Dear Customer,

Thank you for choosing Lewmar. Lewmar products are world renowned for their quality, technical innovation and proven performance. With a Lewmar product 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".

2. Safety Notice

IMPORTANT: Read these notes before continuing.



2.1 Winches general

Please ensure that you thoroughly understand the operation and safety requirements of the winch 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 winch 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.

- Winches used incorrectly could cause harm to equipment or crew.
- Winches 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 winches are designed and supplied for line control in marine applications and are to be used in conjunction with appropriate clutches, cleats and other manual controls and stoppers.
- It is the unavoidable responsibility of the owner or master or other responsible party to assess the risk of any operation on the vessel.
- Under no circumstances should any self tailing winch be used in self tailing mode for any lifting operation; rather suitable and adequate manual tailing should be arranged with proper means of manually cleating or stopping the hoist.
- Every winch should be installed with adequate means of manually cleating or stopping the loaded ropes.

2.2 Fitting


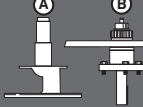
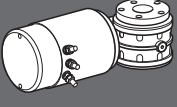

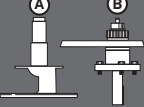
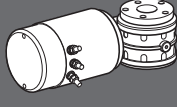
- This equipment must be installed and operated in accordance with the instructions contained in this manual. Failure to do so could result in poor product performance, personal injury and/or damage to your boat.
- Consult the boat manufacturer if you have any doubt about the strength or suitability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

2.3 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.

3. Installation

3.1 Electric conversion kit

OCEAN	KIT		EVO®	KIT	
					
40	48040055		40	48540055	
46	48046055		45	48545055	
48	48048055		50	48550055	
50	48050055		55	48555055	
54	48054055		65	48565055	
58	48058055				
65	48065055				

1. Ocean Wavespring manual winches manufactured from 1992 and EVO® manual winches can be converted to electric powered operation with a Lewmar conversion kit consisting of the following:

- Centre stem (A) and a power drive base (B).
- Then specify a suitable Lewmar motor/gearbox (C) to form the basic electric winch deck unit conversion.

3.2 Preparing manual winch for electric conversion

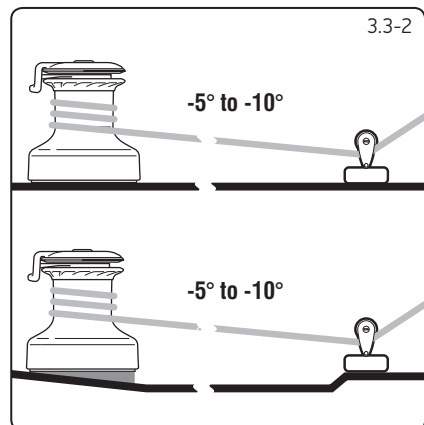
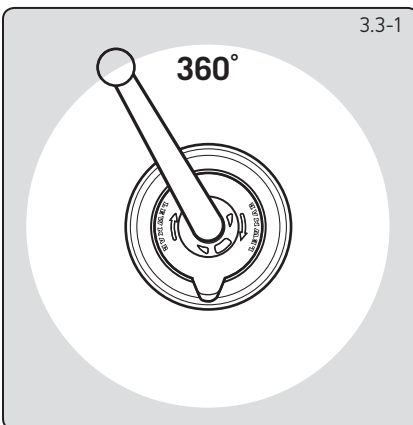
IMPORTANT: Check existing winch location is suitable for positioning motor/gearbox, see section 3.4.

- Remove the winch from the deck, replace centre stem with supplied kit centre stem. Reassemble winch, fix power drive base to the centre stem and fit motor/gearbox as instructed in this manual.

3.3 Above deck preparation electric/hydraulic winch

IMPORTANT: Always keep in mind the space available below deck for the motor/gearbox or hydraulic drive unit. Plan location carefully before drilling any holes and allow for the following:

1. 360 degree rotation of manual operating handle.
2. Lewmar recommend that the rope enters onto the drum at an angle of -5° to -10° to the base axis of the winch. To achieve this angle it may be necessary to use a base wedge when installing the winch.



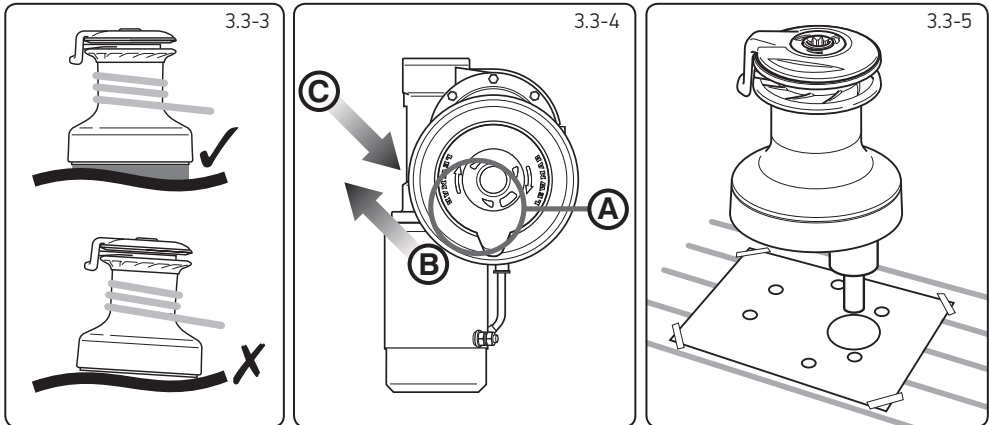
- It is essential that the winch is fixed to an even surface for maximum performance.
- If practical, for best performance, the winch should be installed so that the output gear (A) is situated in the optimum position in relation to the load (B) and sheet line entry (C).
-

Winches 40-65

Once position of winch is established, mark position of centre stem and drill $\varnothing 64\text{mm}$ hole. Strip winch (section 3.5) place base plate on deck then mark through mounting bolt holes, remove and drill to size of bolts.

Winches 68-111

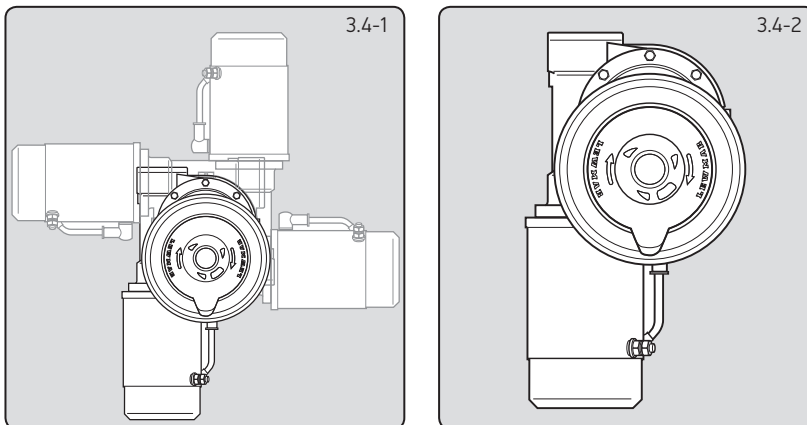
Remove the winch drum. Access to mounting holes is available through holes in the base of the centre stem. Mark hole positions and drill as necessary.



3.4 Below deck preparation

IMPORTANT: The positioning of the motor/gearbox or hydraulic drive unit must be checked prior to cutting for deck/hull and bulkhead clearance.

- The motor/gearbox can be rotated in 90 degree steps.
- The motor rotation is factory set for fitting to drive shaft as shown.

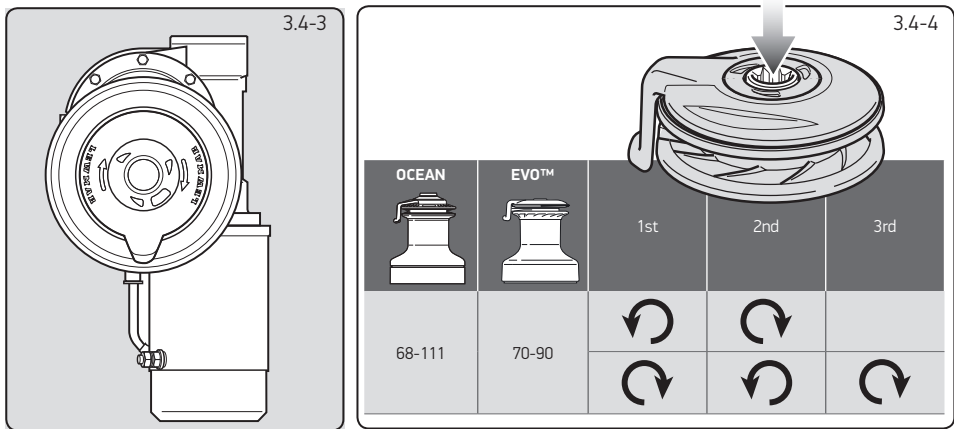


3. If the motor/gearbox is fitted the opposite way round it will produce the following problems:

- On a single speed winch it will not operate and make a clicking noise. Remove motor/gearbox and refit the opposite way round.
- On a 2 or 3 speed winch it will dramatically reduce performance. Contact Lewmar for correct fitting of electrical connections to rectify this situation or refit the motor/gearbox the opposite way round.

4. Correct spindle rotation when fitted and operated.

- Check clearance below deck and accessibility then position the deck switches near and in view of the winch. Use template as a guide to cut/drill hole, fit switch and seal.
- Once you have selected the ideal position for winch, motor/gearbox and controls, double check everything and only then drill holes in the deck.



3.5 Fitting an electric/hydraulic winch 40-65

⚠ WARNING! Isolate the winch using circuit breaker/isolator.

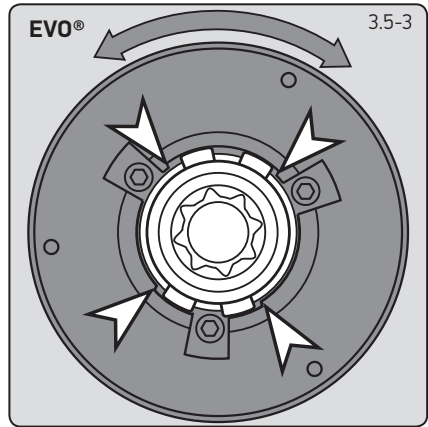
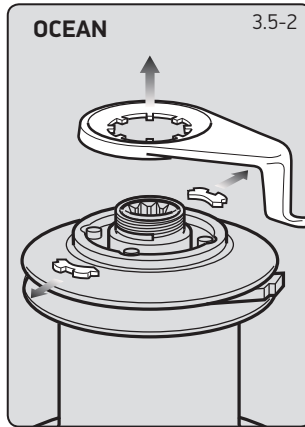
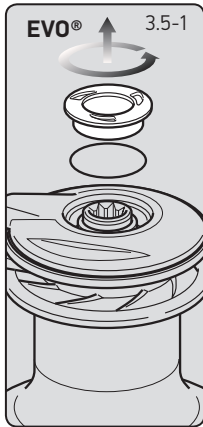
NOTE: Illustrations based on Model 50 Ocean winch unless stated otherwise. For winch models over 65 just removing the drum gives access to fixing bolt holes.

- Place the winch in position to ensure correct fit once the holes have been drilled/cut.

1. Unscrew the top cap anti-clockwise and remove.

2. OCEAN 40- Remove feeder arm and collets.
OCEAN 46-111- Remove feeder arm.

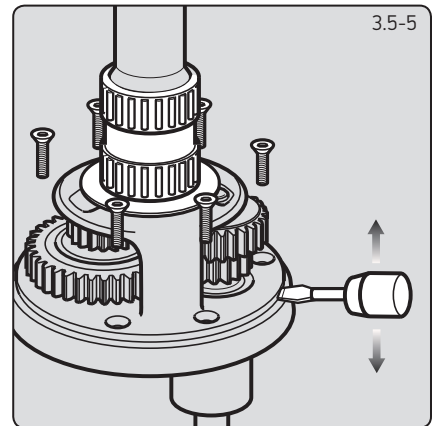
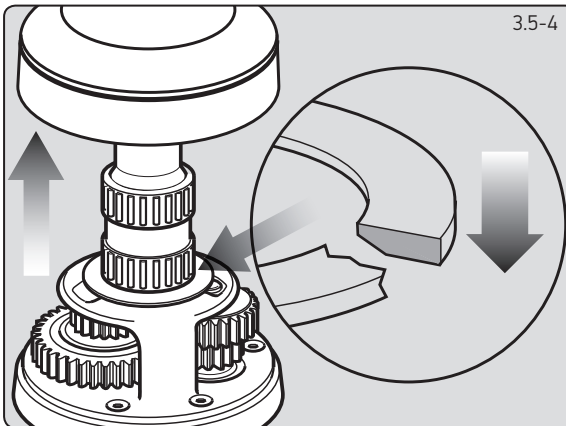
3. EVO®- Rotate the drum until the cutout in the upper crown is opposite the collets.



4. Lift off drum. Remember to take care in re-fitting the drum washer with bevel on underside.

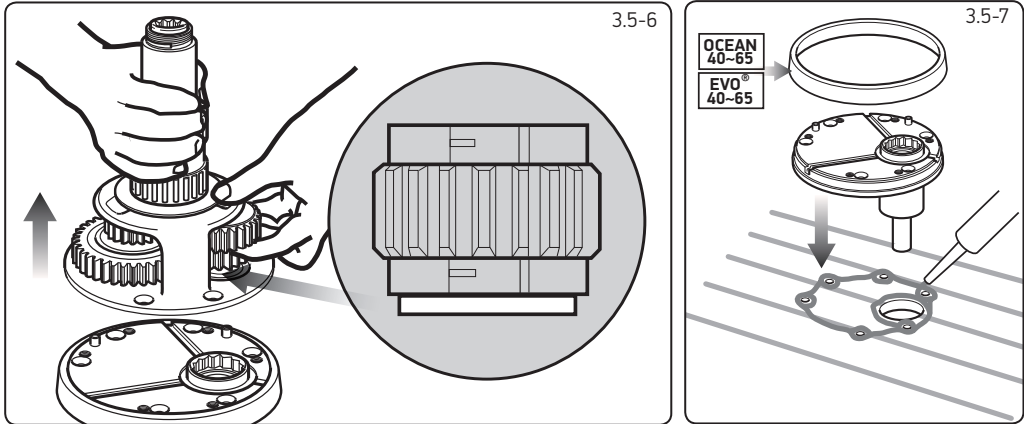
5. Remove all screws holding centre stem to base. Using a flat bladed screwdriver in the drainage slots, lever off centre stem assembly clear of the two dowel pins.

NOTE: For manual to electric winch conversion, replace centre stem with kit supplied unit.



6. Take care to hold the gear stack in position as shown. Keep pawls and pawl springs in place while rebuilding/ placing the centre stem onto the base.

NOTE: If pawl gear falls away, ensure shoulder face is down on re-assembly. Take notes of gear and other component positions if replacing the original stem with the conversion kit stem ready for reassembly.



7. Remove the base plate cover. Lift the base and bed down with a light coating of sealing compound to prevent leaks.

- Avoid using excessive sealant.

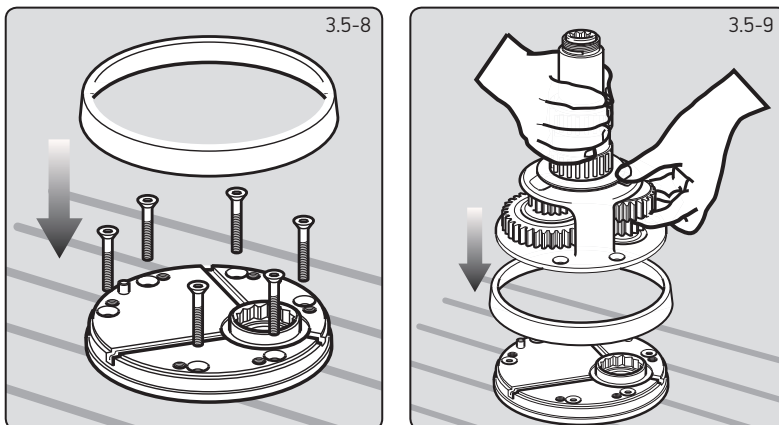
⊘ DO NOT use a permanent adhesive/sealant, eg. 5200.

8. Consult the fastening guide for bolt type and length. Bolt the base plate to the deck ensuring that all fastening heads are countersunk then replace base plate cover.

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.

9. Refit the centre stem assembly, taking care to hold the gear stack in position as before. Rotating the gears will facilitate re-engagement of the pawls and ratchet tracks.

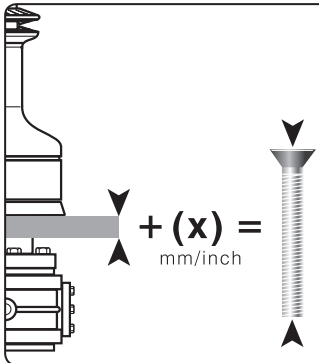
- Replace the drum, collets and feeder arm in correct position and screw on the top cap.



3.6 Fastenings

NOTE: Deck fastenings are not supplied.

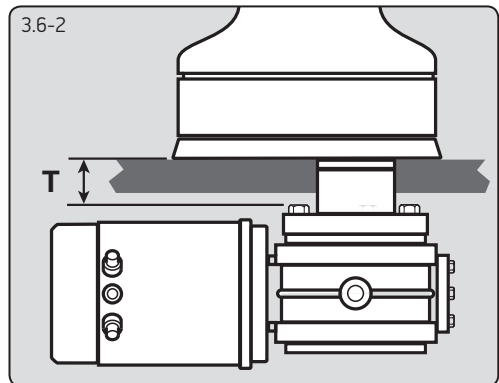
- Fix the winch to the deck using CSK Head, stainless steel washers and locknuts.
Use the table below to calculate the correct bolt length for your deck thickness.



OCEAN	EVO®	(x) mm (Min.)	(x) inch (Min.)		Nm
40	40	30	1¼	5 x M6 (¼")	9
46-48	45-50	33	1 ⁵ / ₁₆	5 x M8 (5/16")	21
50/54	55	33	1 ⁵ / ₁₆	6 x M8 (5/16")	21
58	-	36	1 ⁷ / ₁₆	5 x M10 (3/8")	43
65	65	38	1½	5 x M10 (3/8")	43
68-77-88	70-80-90	31	1¼	8 x M10 (3/8")	43

- If a thick deck or increased motor/gearbox distance from deck demands a greater 'T' dimension (see section 8). Optional extension kits are available to special order, please contact your nearest Lewmar office.

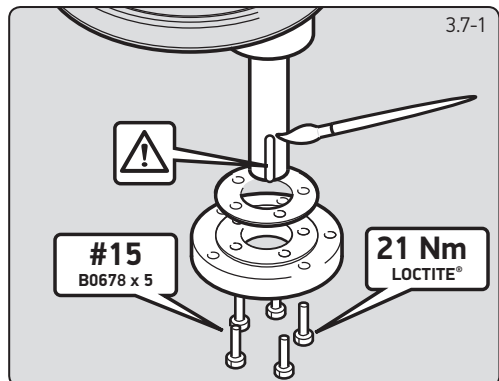
NOTE: Optional Lewmar "FAST FIT" studs screw directly into the base of the winch without having to remove the drum. Contact Lewmar for more details.



3.7 Electric winch motor/gearbox coupling

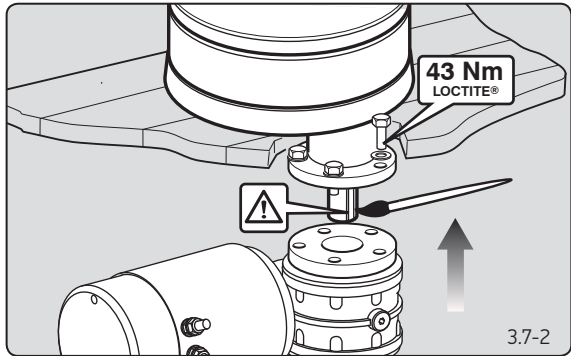
Winches 40-65

- These winches require the base motor coupling and shim to be fitted. Apply Loctite® threadlock to coupling bolts (# 15), insert isolation shim and secure to winch base plate. Assemble coupling bolts and washers, apply Loctite® threadlock and secure to 21Nm.
- Lightly coat the drive shaft with grease. Ensure the drive key is in place. Select the most suitable position and slide motor/gearbox into position, assemble bolts and washers, apply Loctite® threadlock and secure to 43Nm.



Winches 68-77

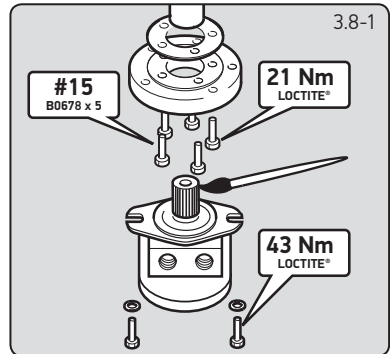
- Assemble coupling motor bolts and washers apply Loctite® threadlock and secure to 43Nm.
- Lightly coat the drive shaft with grease. Ensure the drive key is in place. Select the most suitable position and slide motor/gearbox into position, assemble bolts and washers, apply Loctite® threadlock and secure to 43Nm.

**3.8 Hydraulic winch coupling****Winches 46-65**

- These winches require the base motor coupling and shim to be fitted. Apply Loctite® threadlock to coupling bolts (# 15), insert isolation shim and secure to winch base plate. Assemble coupling bolts and washers, apply Loctite® threadlock and secure to 21Nm.

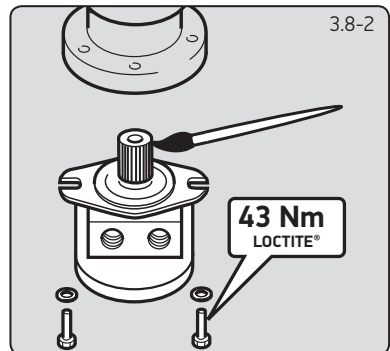
⊘ Hydraulic drive unit case drains
DO NOT need to be fitted.

- Lightly coat the motor splined input shaft with grease and slide motor into position, assemble bolts and washers, apply Loctite® threadlock and secure to 43Nm.

**Winches 68-111**

- Lightly coat the motor input shaft with grease and slide motor into position. Assemble coupling bolts and washers, apply Loctite® threadlock and secure to 43Nm.

NOTE: See section 5 for hydraulic connection specifications.



4. Electrical Wiring

4.1 Electric cable selection

The cable table gives recommended cable sizes based on total length of cable required, from the battery, following the route of the cables. Lewmar recommends to source and install cable that meets the requirements of the standards and regulations relevant to the installation and codes of practice.

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

- Winch performance is directly related to cable size and length. The cable sizes are calculated so that the maximum overall voltage drop do not exceed 10% over the whole cable installation.

⚠ WARNING! All electrical work must be carried out with the power OFF. Isolate the winch using circuit breaker/isolator.

CABLE SIZE 12V DC	CABLE SIZE 24V DC	TOTAL CABLE DISTANCE
50 mm ² (1/0 AWG)	25 mm ² (3 AWG)	up to 7 m (23 ft)
70 mm ² (2/0 AWG)	35 mm ² (2 AWG)	7-10 m (23-33 ft)
70 mm ² (2/0 AWG)	50 mm ² (1/0 AWG)	10-15 m (33-49 ft)
95 mm ² (3/0 AWG)	-	15-20 m (49-66 ft)

4.2 Wiring

Plan the installation to suit the controls and give the operator a full view of the winch. The wiring system should be of the fully insulated 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.

Overload protection, in the form of the circuit breaker/fuse (not supplied), must be built into the winch wiring circuit.

NOTE: The circuit breaker should be positioned close to the battery in a dry, readily accessible place.

- The breaker must be manually reset should an overload occur that causes it to trip to the off position.

⚠ WARNING!

- If you are not sure you understand these guidelines, seek professional help. Ensure that the installation complies with USCG, ABYC, NMMA or other local regulations.

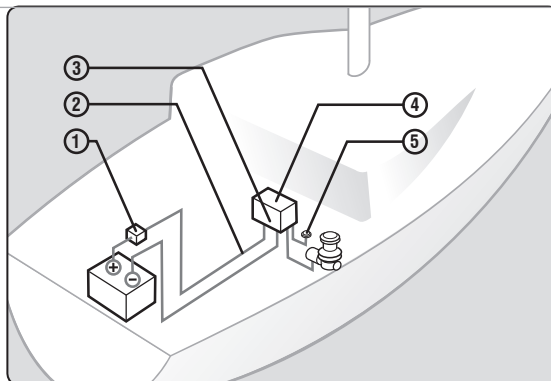
4.3 Control switch installation

Follow the mounting instructions supplied with the switch.

4.4 Typical electrical layout

NOTE: This is not a wiring diagram.

1. Position the circuit breaker close to the battery.
2. Route 2 cables from battery to the control box.
3. Attach motor cables to control box using recommended cable sizes.
4. Position the control box near the winch (± 1 metre) in a dry area for watertight security and accessible for maintenance.
5. Position deck switches in view of the winch. Route wire and attach to control box.



4.6 Type "E" - 40/46/48 + EVO® 50 electric 12/24V

- This simple installation of a power drive unit, motor and switch gear controls the winch by a single direction contactor, which can be a contactor housed in a waterproof box or a stand alone encased unit.
- The motor thermal trip is connected to monitor motor temperature.
- Manual override facility is still available for backup, or as a means of experiencing traditional sailing.
- Two plus one speed comes as standard control which gives two speed manual drive (handle) plus one speed electric drive.

4.7 Type "ELS" - 40-65 electric 12/24V

- This Electric Load Sensing installation controls the winch by Lewmar's unique Overload Protection Control Box, this allows the winch to be operated up to a set current relative to maximum load.

4.8 Type "ELS" - 68-77 + EVO® 80 electric 12/24V

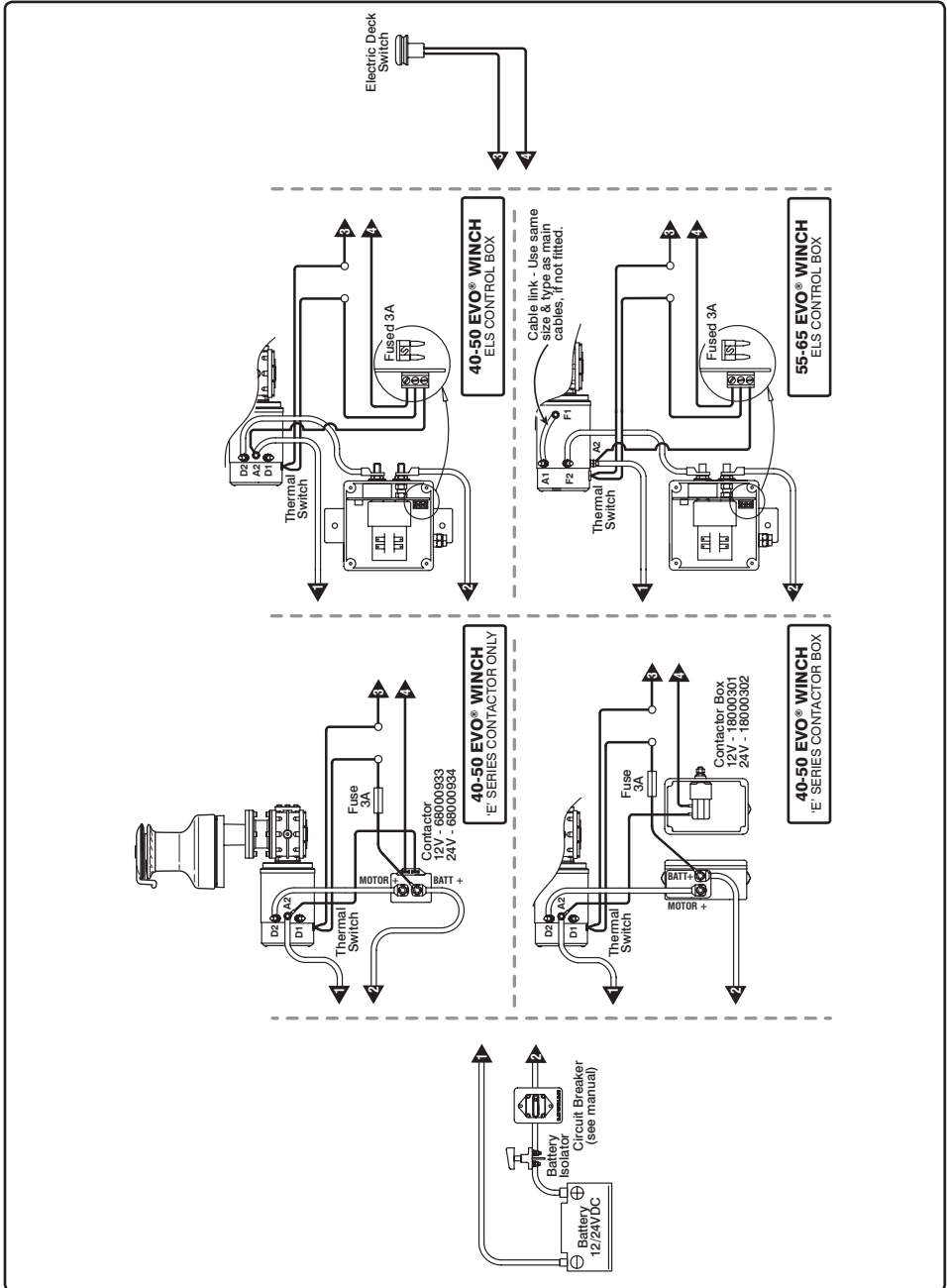
- This installation controls the winch by Lewmar's unique Overload Protection & Autoshift Control Box. This allows the winch to be started in 1st and if reaches the Safe Working Load, for the winch size and gear, will automatically shift the winch into 2nd gear for complete load control.
- In the case of a 3 speed winch the switch must be re-selected to achieve 3rd gear.

4.9 Electric deck switches

- For the latest information and list of electric deck switches visit: www.lewmar.com

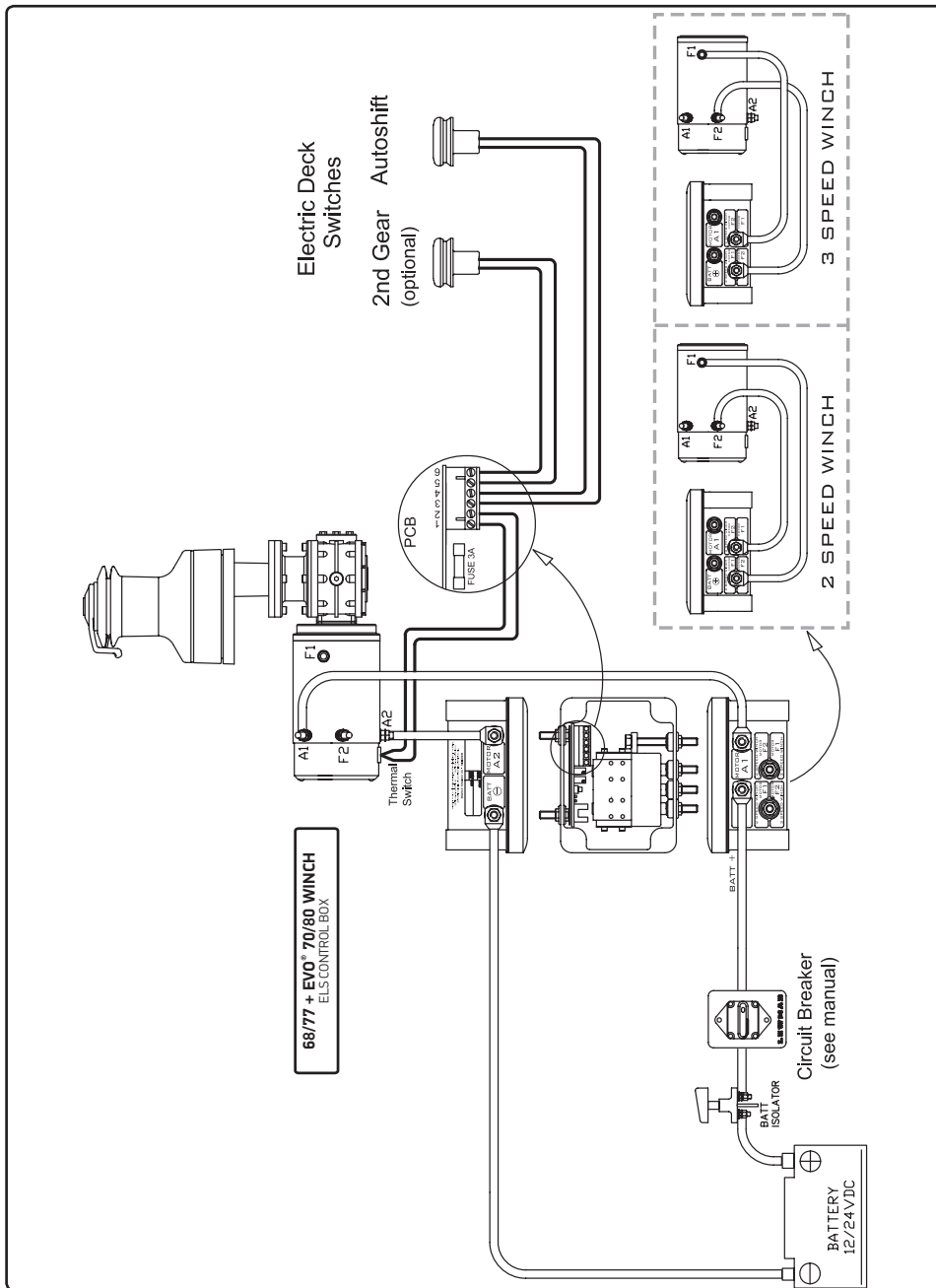
4.10 Wiring diagram 40-65

Switch wire thickness: 1.5 mm² (16 AWG)



4.11 Wiring diagram 68-77 + EVO® 70/80

Switch wire thickness: 1.5 mm2 (16 AWG)



5- Hydraulic System

5.1 Installation

NOTE: Hydraulic system installation is NOT covered in this publication.

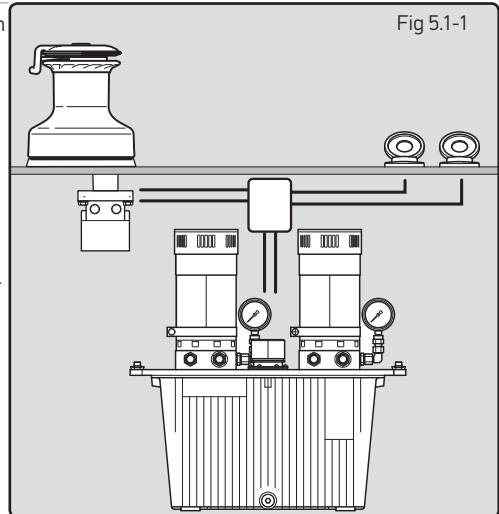
Lewmar hydraulic winches have been designed for ease of installation and follow a straight forward hydraulic and mechanical installation procedure.

Fig 5.1-1 shows typical hydraulic circuit for a winch with the Lewmar Commander Power System or equivalent.

The purpose of this manual is to provide the reader with sufficient information to install and operate a hydraulic winch. It assumes the reader will be familiar with sailing craft, marine hydraulics, mechanical installation and safety requirements. If in any doubt consult a qualified marine engineer.

⚠ WARNING!

The installation of hydraulic systems requires a high level of cleanliness. The ingress of dirt will dangerously impair the safe operation of the system and cause premature wear of hydraulic components.



5.2 Hose types

NOTE: Hoses and connectors are not supplied.

For reliable operation and safety it is essential to use reinforced braid hose for connecting to the motor A and B ports which conforms to SAE100R7 or ISO D1S3949 safety requirements.

The recommended hose sizes are:

- Up to 15m (50ft) 12mm (1/2")
- Over 15m (50ft) 16mm (5/8")
- Safe working pressure : see performance graphs section 6.
- Minimum recommended bend radius 150mm (6")

5.3 Hydraulic drive unit

NOTE: Refer to your installed hydraulic system manual for hydraulic drives.

This table refers to Lewmar Commander system port connections only.

The Lewmar hydraulic motor ports are: A & B ports 1/2" BSP.

OCEAN	EVO®	Motor Speeds	Port A	Port B
46	45	1	A	B
48	50	1	A	B
50	-	1	A	B
54	55	1	A	B
58	-	1	A	B
65	65	1	A	B
68	70	2-3	A	B
77	80	2-3	A	B
88	90	2-3	A	B
111	-	2-3	A	B

6- Operation

6.1 Powered winch overview

⚠ WARNING! Always remove handle when not in use.

⚠ WARNING! Isolate the winch using circuit breaker/isolator when not in use.

Electric 40-65 and Hydraulic 46-65 + EVO® 45-65

These are single speed powered winches and manual 2 speed, these winches employ an override ratchet gearing for safety when winching manually.

- To operate winch press the deck switch.

Electric 68-77 + EVO® 70-80 and Hydraulic 68-111 + EVO® 70-110

These are 2 or 3 speed powered and manually operated, they will not drive electrically while the winch lock-in handle is in the drive socket.

2 Speed Winch operation

- Autoshift (Standard)
- To engage winch press the deck switch, first gear will engage and centre spindle will rotate counter-clockwise. When load increases it will automatically switch to the next gear.

Optional 2nd gear switch

- To engage winch in first gear press the deck switch, centre spindle will rotate counter-clockwise.
- To engage second gear press second gear deck switch, when engaged the centre spindle rotates clockwise.

3 Speed winch operation

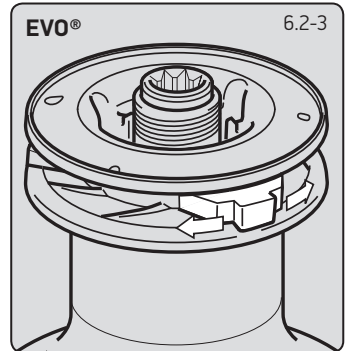
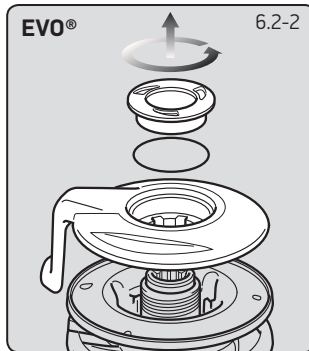
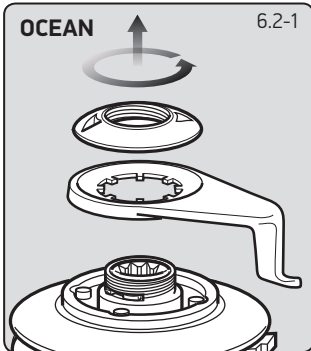
- Autoshift (Standard)
- Push winch base button in. To engage winch, press the deck switch, first gear will engage and centre spindle will rotate clockwise. When load increases it will automatically switch to 2nd gear. The winch base button will disengage and centre spindle will turn counter-clockwise.
- To engage third gear press the deck switch again, when engaged the central spindle will rotate clockwise.

Optional 2nd gear switch

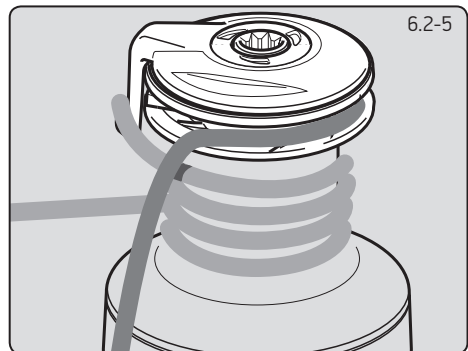
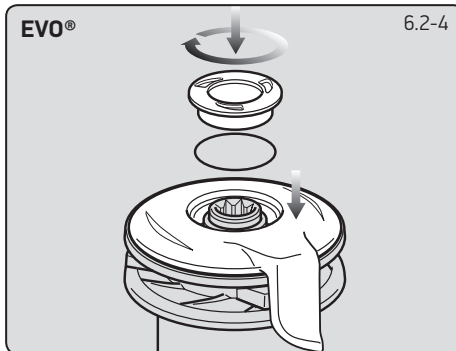
- Push winch base button in. To engage winch in first gear press the 1st gear deck switch, centre spindle will rotate clockwise.
- To engage 2nd gear press the 2nd gear deck switch, when engaged centre spindle rotates counter-clockwise and the winch base button will disengage.
- To engage third gear press the 1st gear deck switch again, when engaged the central spindle will rotate clockwise.

6.2 Adjusting self tailers

To adjust the position of the feeder arm, remove top cap and feeder arm.



1. OCEAN - Unscrew the top cap anti-clockwise and remove feeder arm.
2. EVO® - Unscrew the top cap anti-clockwise and remove feeder arm. Ensure O ring remains in top cap groove.
3. Rotate stripper ring to required position. Adjust the feeder arm so that the rope tails into a secure area away from the incoming line.



4. Replace feeder arm and top cap.
5. The turn leading from the drum must be passed across the stripper mechanism as shown, and placed correctly into the spring jaws.
 - There must be a minimum of three turns of rope on the drum.
 - Release the rope from the jaw set with care as load will be present, ease the line away with care, then remove from the drum.
 - The jaws are designed to accept a range of rope diameters. The winch should only be used with ropes of the sizes recommended.
 - Use the winch handle or power switch to operate the winch.

⚠ WARNING! Always remove handle when not in use.

⚠ WARNING! Never hold the incoming rope to the winch while the winch is operated. Only control the rope leaving the winch.

6.3 Electric performance

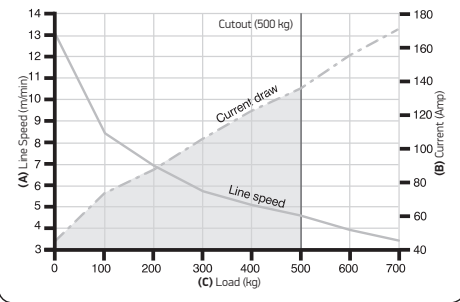
The following graphs show line speed and amperage draw relative to the load applied. Each control box will cut out at a set current relative to maximum load.

(A) Line speed (m/min)

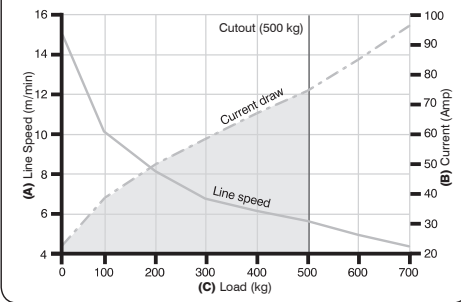
(B) Current (Amp)

(C) Load (kg)

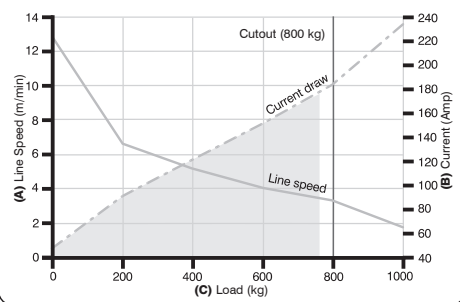
OCEAN 40 + EVO™ 40 - 12V



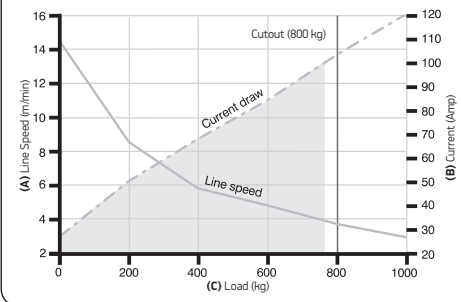
OCEAN 40 + EVO™ 40 - 24V



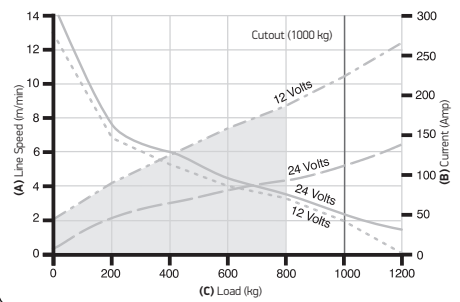
OCEAN 46 + EVO™ 45 - 12V



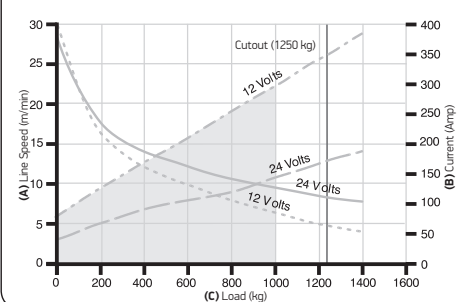
OCEAN 46 + EVO™ 45 - 24V



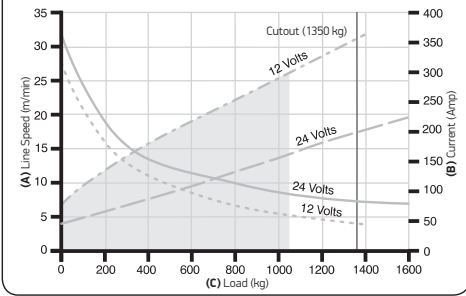
OCEAN 48 + EVO™ 50 - 12V @ 24V



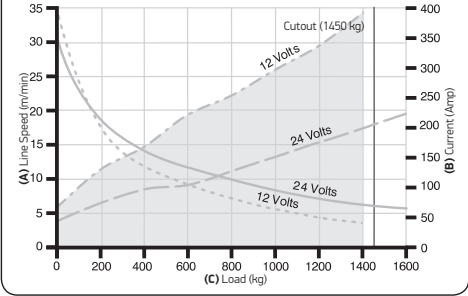
OCEAN 50 - 12V @ 24V



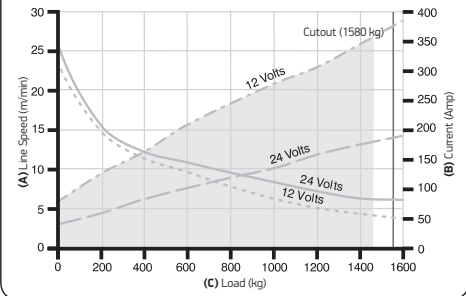
OCEAN 54 + EVO™ 55 - 12V @ 24V



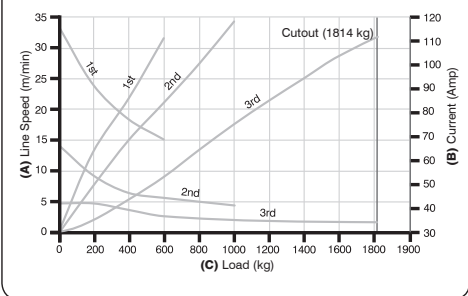
OCEAN 58 - 12V @ 24V



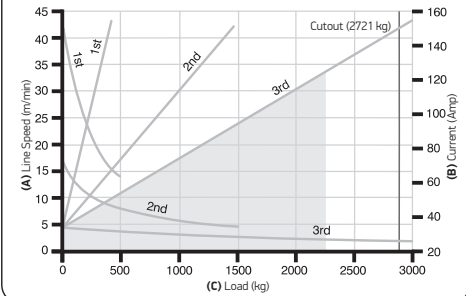
OCEAN 65 + EVO™ 65 - 12V @ 24V



OCEAN 68/3 + EVO™ 70 - 24V



OCEAN 77/3 + EVO™ 80 - 24V

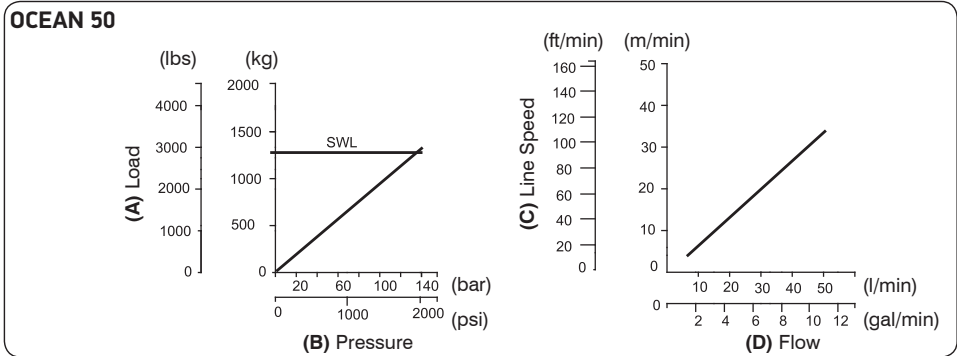
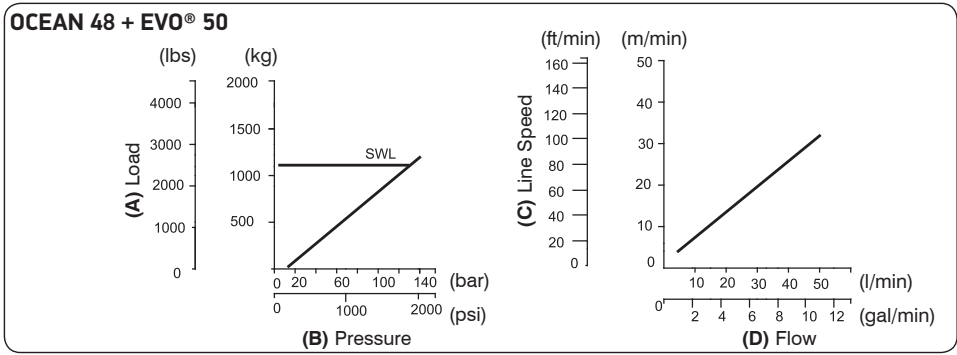
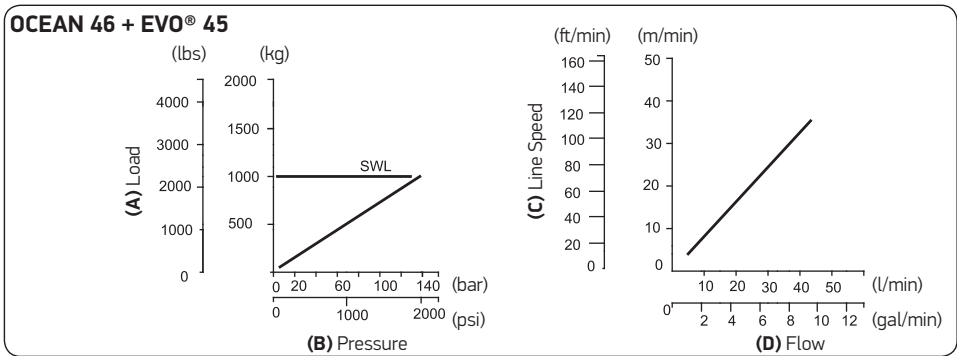


6.4 Hydraulic performance

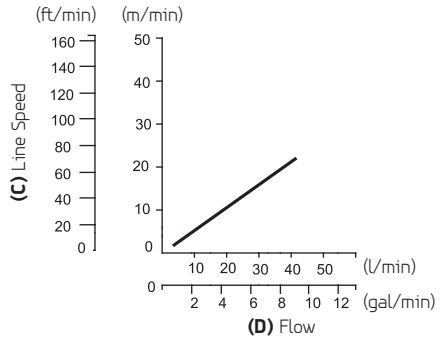
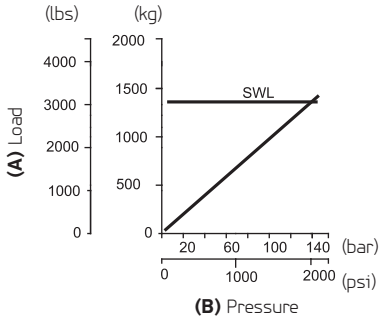
The following graphs show line speed and load characteristics against hydraulic flow and pressure. The following graphs show the maximum performance envelope. Refer to trouble shooting (section 9) if performance is inferior.

(A) Load / (B) Pressure / (C) Line Speed / (D) Flow

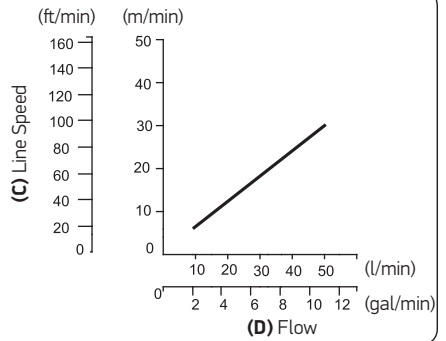
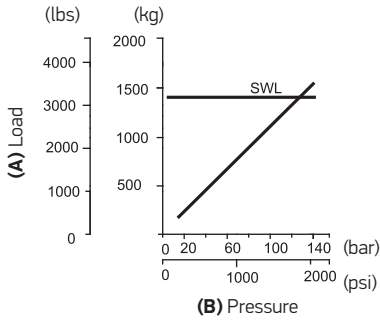
- Safe Working Loads (SWL) for hydraulic winches are lower than hand controlled winches due to significantly higher input/torque.
- If winch models 68-111 are installed with an Autoshift Commander unit, only one deck switch may be required. Winch models 46-64 + EVO® 45-65 are single switch operation only. Refer to Commander manual for deck switch installation details.



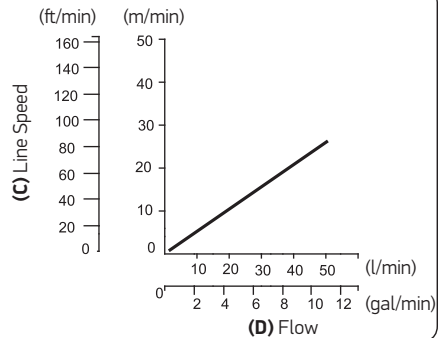
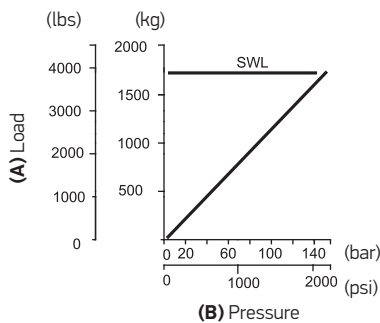
OCEAN 54 + EVO® 55



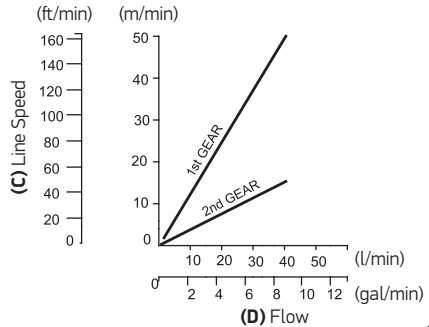
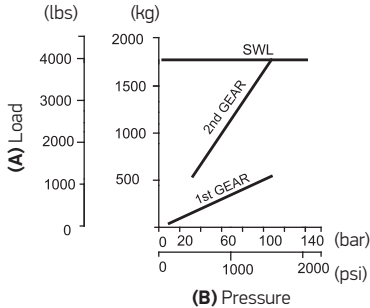
OCEAN 58



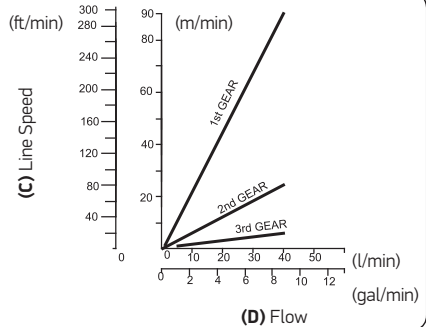
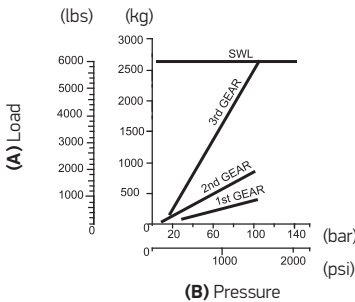
OCEAN 65 + EVO® 65



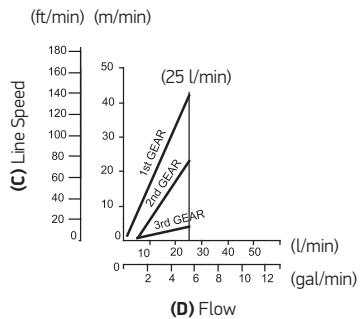
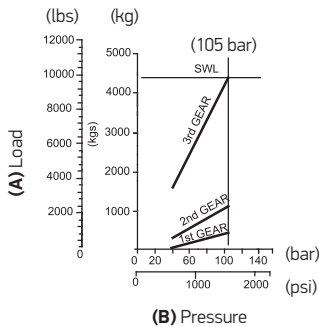
OCEAN 68 + EVO® 70



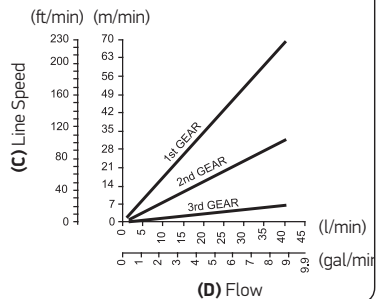
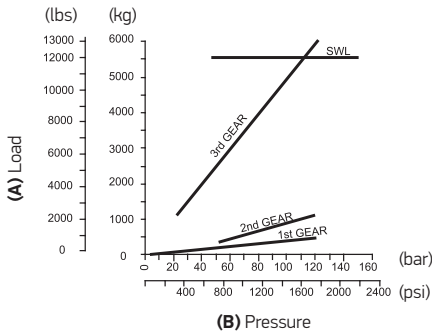
OCEAN 77 + EVO® 80



OCEAN 88



OCEAN 111

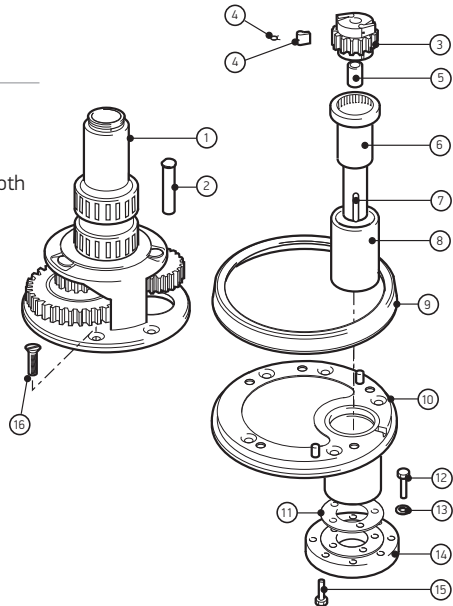


7- Servicing

7.1 Parts List Electric 40-65

NOTE: Manual winches cannot be converted into electric versions by adding parts listed here.

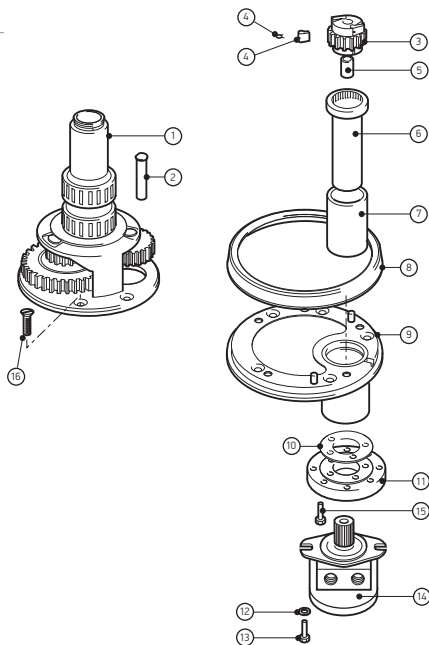
* EVO® part only. All other parts are common to both models.



			OCEAN	40	46	48	50	54	58	65
			EVO®	40	45	50	-	55	-	65
#	DESCRIPTION	QTY								
1	Centre Stem	1	45000237	48046037	48048037	45000560	45000660	45000760	45000860	
1*	Centre Stem	1	45500211	45500311	45500411	-	45500511	-	45500611	
2	Gear Spindle	1	45000241	45000344	45000444	45000544	45000744	45000744	45000744	
3	Ratchet Pawl Gear	1	45000242	45000342	45000342	45000542	45000642	45000742	45000842	
4	Pawl	4	15000094	15000094	15000094	15000301	15000301	15000301	15000301	
	Spring	4	1260/7	1260/7	1260/7	1260/7	1260/7	1260/7	1260/7	
5	Bearing	3	15000378	15000398	15000398	15000017	15000017	15000017	15000017	
6	Drive Shaft	1	45000357	45000357	45000357	45000543	45000543	45000543	45000543	
7	Key	1	15003287	15003287	15003287	15003287	15003287	15003287	15003287	
8	Plain Bearing	1	45000359	45000358	45000358	45000248	45000248	45000248	45000248	
9	Base Plate Cover	1	45000229	45000329	45000429	45000529	45000529	45000759	45000759	
9*	Base Plate Cover	1	45500212	45500312	45500412	-	45500512	-	45500612	
10	Base Plate	1	45000228	45000328	45000428	45000528	45000528	45000758	45000758	
	Dowel	2	45000235	45000235	45000235	45000581	45000581	45000581	45000581	
	Shaft Seal	1	B6234	B6234	B6234	B6235	B6235	B6235	B6235	
11	Insulation Shim	1	45000257	45000257	45000257	45000257	45000257	45000257	45000257	
12	HEX Bolt M8x25	4	B0173	B0173	B0173	B0173	B0173	B0173	B0173	
13	Washer M8	4	B1207	B1207	B1207	B1207	B1207	B1207	B1207	
14	Plate	1	45000350	45000350	45000350	45000350	45000350	45000350	45000350	
15	CSK HD screw M6 x 12	5	B0678	B0678	B0678	B0678	B0678	B0678	B0678	
16	CSK HD screw M6 x 16	5	B0524	-	-	-	-	-	-	
	CSK HD screw M8 x 16	6	-	B0536	B0536	-	-	-	-	
	CSK HD screw M8 x 25	6	-	-	-	B0812	B0812	-	-	
	CSK HD screw M10 x 25	5	-	-	-	-	-	B0567	B0567	

7.2 Parts List Hydraulic 46-65

* EVO® part only. All other parts are common to both models.

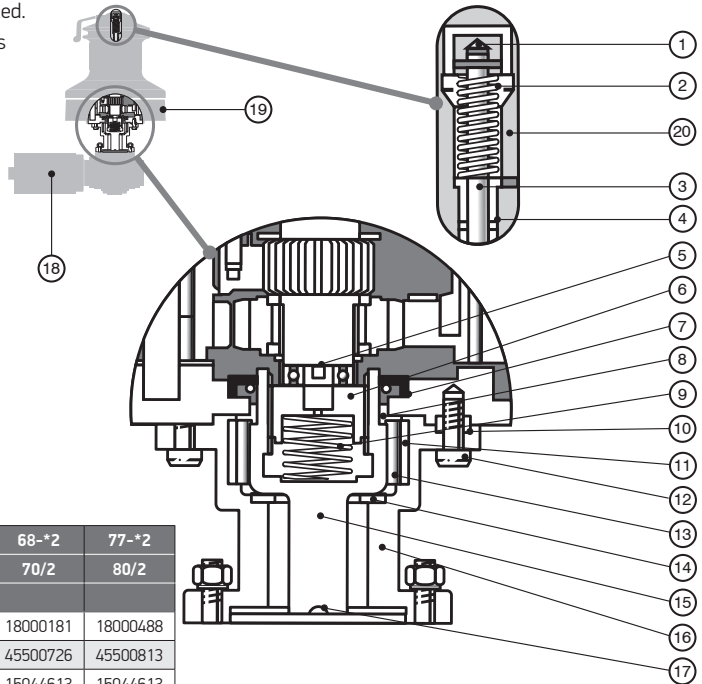


		OCEAN	46	48	50	54	58	65
		EVO®	45	50	-	55	-	65
#	DESCRIPTION	QTY						
1	Centre Stem	1	45000337	45000437	45000560	45000660	45000760	45000860
1*	Centre Stem	1	45500311	45500411	-	45500511	-	45500611
2	Gear Spindle	1	45000344	45000444	45000544	45000744	45000744	45000744
3	Ratchet Pawl Gear	1	45000342	45000342	45000542	45000642	45000742	45000842
4	Pawl	4	15000094	15000094	15000301	15000301	15000301	15000301
	Spring	4	1260/7	1260/7	1260/7	1260/7	1260/7	1260/7
5	Bearing	3	15000398	15000398	15000017	15000017	15000017	15000017
6	Drive Shaft	1	45000346	45000346	45000546	45000546	45000546	45000546
7	Plain Bearing	1	45000248	45000248	45000248	45000248	45000248	45000248
8	Base Plate Cover	1	45000329	45000429	45000529	45000529	45000759	45000759
8*	Base Plate Cover	1	45500312	45500411	-	45500511	-	45500612
9	Base Plate	1	45000328	45000428	45000528	45000528	45000758	45000758
	Dowel	2	45000235	45000235	45000581	45000581	45000581	45000581
	Shaft Seal	1	B6234	B6234	B6235	B6235	B6235	B6235
10	Insulation Shim	1	45000257	45000257	45000257	45000257	45000257	45000257
11	Plate		45000348	45000348	45000348	45000348	45000348	45000348
12	Washer M12		B1212	B1212	B1212	B1212	B1212	B1212
13	HEX Bolt M12	4	B0061	B0061	B0061	B0061	B0061	B0061
14	Hydraulic motor	4	B7718	B7719	B7719	B7720	B7720	B7720
15	CSK HD Screw M6 x 12	1	B0678	B0678	B0678	B0678	B0678	B0678
16	CSK HD screw M8 x 16	6	B0536	B0536	-	-	-	-
	CSK HD screw M8 x 25	6	-	-	B0812	B0812	-	-
	CSK HD screw M10 x 25	5	-	-	-	-	B0567	B0567

7.3 Parts list Electric 68-77

*2 Speed versions shown/detailed.

* EVO® part only. All other parts are common to both models.

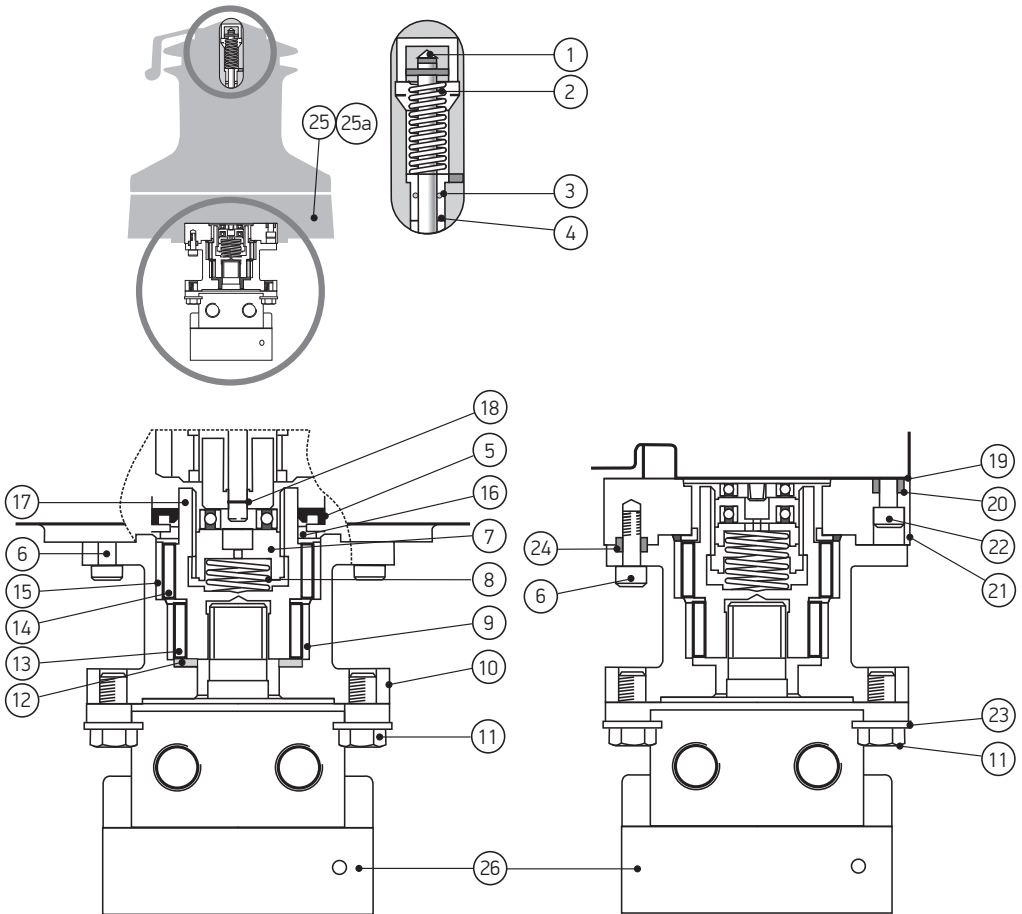


OCEAN			68-*2	77-*2
EVO®			70/2	80/2
#	DESCRIPTION	QTY		
1	Push Rod Assembly	1	18000181	18000488
1*	Push Rod Assembly	1	45500726	45500813
2	Spring	1	15044613	15044613
3	'O' Ring	1	B2532	B2532
4	Bush	1	15000184	15000184
5	Spring Clip	1	B9941	B9941
6	Drive Dog	1	15300688	15300575
7	Seal	1	B2593	B2593
8	Thrust Sleeve	1	45002154	45002154
9	Spring	1	15300489	15300489
10	Hollow Dowel	1	45002140	45002140
11	Bush	1	15000569	15000569
12	Screw	4	B0686	B0686
	Heli-coil	4	B2423	B2423
13	Roller Bearing	1	15010007	15010007
14	Thrust Washer	1	15003286	15003286
15	Connecting Shaft	1	45002156	45002156
16	Adaptor	1	45000944	45000944
17	Key	1	15003287	15003287
18	Motor/Gearbox 12 V	1	48000077	48000077
	Motor/Gearbox 24 V	1	48000078	48000078
19	Power Base	1	45000940	45002040
19*	Power Base	1	45000987	45002050
20	Main Spindle	1	45000947	45002180
20*	Main Spindle	1	45500722	45500804

7.4 Parts list hydraulic 68-111

Adaptors not required on 68 and 77

* EVO® part only. All other parts are common to both models.



OCEAN			68	68-3 & 77	88	111
EVO®			70	70/3	-	-
#	DESCRIPTION	QTY				
1	Push Rod Assembly	1	18000181	18000488	18000489	18000490
1*	Push Rod Assembly	1	45500726	45500727	-	-
2	Spring	1	15044613	15044613	15044613	15044613
3	'O' Ring	1	B2532	B2532	B2532	B2532
4	Bush	1	15000184	15000184	15000184	15000184
5	Seal	1	B2593	B2593	B2578	B2578
6	Screw	4	B0686	B0686	B0687	B0687
7	Drive Dog	1	15300688	15300575	15300575	15300575
8	Spring	1	15300489	15300489	15300489	15300489
9	Sleeve	1	15000617	15000617	15000617	15000617
10	Adaptor	1	45002151	45002151	45002151	45002151
11	Screw M12	2	B0061	B0061	B0061	B0061
12	Thrust Washer	1	15003286	15003286	15003286	15003286
13	Roller Bearing	1	15008007	15008007	15008007	15008007
14	Roller Bearing	1	15010007	15010007	15010007	15010007
15	Bush	1	15000569	15000569	15000569	15000569
16	Thrust Sleeve	1	45002154	45002154	45002154	45002154
17	Connecting Shaft	1	45000946	45000946	45000946	45000946
18	Spring Clip	1	15000186	15000186	15000186	15000186
19	Gasket	1	45002155	45002155	45002229	45002229
20	Hollow Dowel	1	-	-	15065111	15065111
21	Adaptor Plate	1	-	-	45002231	45002231
22	SKT CAP HD M12 x 25	4	-	-	B0688	B0688
23	Washer M12	2	B1212	B1212	B1212	B1212
24	Hollow Dowel	1	45002140	45002140	45002140	45002140
25	Adaptor Base Alloy	1	45000940	-	-	-
25*	Adaptor Base Alloy	1	45000987	-	-	-
25a	Adaptor Base Chrome	1	45000941	-	-	-
26	Hydraulic Motor Unit	1	B7717	B7717/B7718	B7719	B7720

7.5 General maintenance

⚠ WARNING! Isolate the winch using circuit breaker/isolator when not in use.

⚠ WARNING! Electric motors become hot during and for some time after use.

For more comprehensive information on stripping and cleaning your winch refer to B2304 Manual - How to service your winch from www.lewmar.com

Monthly

- Hose down winch with fresh water Remove drum, then lightly oil the pawls and grease the gears and bearings taking care not to get any grease in the pawls as they will stick in operation.

Two or three times during active sailing season.

- Strip, clean, check and lubricate.

End of season or beginning of new season.

- Strip, clean and thoroughly check for damage, lubricate and reassemble as detailed in B2304 Manual.
- Check condition of motor/gearbox. In the event of corrosion, clean and repaint motor with marine grade oil based enamel paint.

8- Specifications

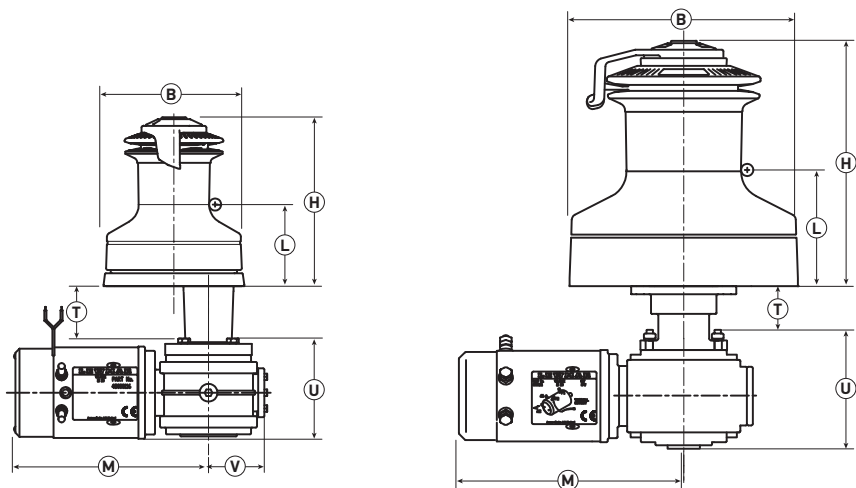
8.1 Electric above/below deck dimensions

L = Line entry.

T = Extension kits to increase 'T' are available to special order.

OCEAN	H - HEIGHT		L - LINE ENTRY		M		P		T		U		V		B - BASE Ø	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
40	190	7 ⁵ / ₃₂	96	3 ⁴⁹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	35	1 ²³ / ₆₄	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	154	6 ¹ / ₁₆
46	209	8 ¹³ / ₆₄	101	3 ⁶¹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	65	2 ¹⁷ / ₃₂	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	174	6 ⁵⁵ / ₆₄
48	225	8 ³³ / ₆₄	106	4 ⁹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	65	2 ¹⁷ / ₃₂	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	186	7 ²¹ / ₆₄
50	258	10 ³ / ₁₆	126	5	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	209	8 ¹ / ₄
54	270	10 ⁵ / ₈	136	5 ³ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	209	8 ¹ / ₄
58	287	11 ⁵ / ₁₆	139	5 ¹ / ₂	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	234	9 ¹ / ₄
65	292	11 ¹ / ₂	142	5 ⁹ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	234	9 ¹ / ₄
68	303	12	143	5 ⁵ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	282	11 ¹ / ₈
68/3	347	13 ⁵ / ₈	187	7 ⁵ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
77	348	13 ¹¹ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
77/3	348	13 ¹¹ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
88	355	14	160	6 ¹ / ₄	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	-	-	-	-	-	-	326	12 ³ / ₄
111	396	15 ⁵ / ₈	172	6 ³ / ₄	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	-	-	-	-	-	-	406	16

EVO®	H - HEIGHT		L - LINE ENTRY		M		P		T		U		V		B - BASE Ø	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
40	175	6 ⁹ / ₁₀	96	3 ⁴⁹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	35	1 ²³ / ₆₄	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	154	6 ¹ / ₁₆
45	194	7 ⁷ / ₈	101	3 ⁶¹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	65	2 ¹⁷ / ₃₂	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	174	6 ⁵⁵ / ₆₄
50	213	9 ³ / ₄	106	4 ⁹ / ₆₄	239	9 ²⁵ / ₆₄	50	1 ³¹ / ₃₂	65	2 ¹⁷ / ₃₂	121	4 ³ / ₄	73	2 ⁵⁵ / ₆₄	186	7 ²¹ / ₆₄
55	258	10 ¹ / ₈	136	5 ³ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	209	8 ¹ / ₄
65	274	10 ³ / ₄	142	5 ⁹ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	234	9 ¹ / ₄
70	275	10 ¹³ / ₁₆	143	5 ⁵ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	282	11 ¹ / ₈
70/3	319	12 ⁹ / ₁₆	187	7 ⁵ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
80	320	12 ¹⁰ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
80/3	320	12 ¹⁰ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆



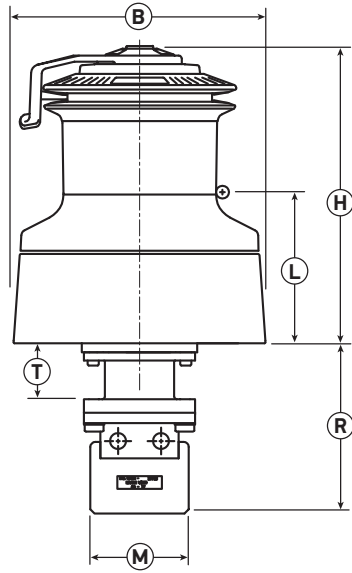
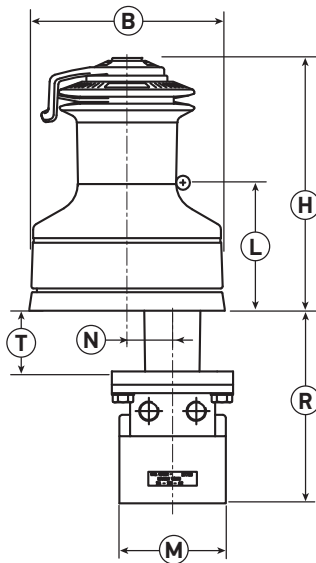
8.2 Hydraulic above/below deck dimensions

L = Line entry.

T = Extension kits to increase 'T' are available to special order.


OCEAN WINCH	H - HEIGHT		L - LINE ENTRY		M		N		T		R		B - BASE Ø		B - BASE Ø	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
40	225	8 ³³ / ₆₄	106	4 ¹ / ₈	130	5 ¹ / ₈	45	1 ³ / ₄	69	2 ³ / ₄	205	4 ³ / ₄	186	7 ²¹ / ₆₄	154	6 ¹ / ₁₆
46	225	8 ³³ / ₆₄	106	4 ¹ / ₈	130	5 ¹ / ₈	49	1 ¹⁵ / ₁₆	69	2 ³ / ₄	205	8 ¹ / ₁₆	186	7 ²¹ / ₆₄	174	6 ⁵⁵ / ₆₄
48	258	10 ¹ / ₈	126	5	130	5 ¹ / ₈	49	1 ¹⁵ / ₁₆	65	2 ⁹ / ₁₆	202	7 ⁵ / ₁₆	209	8 ¹ / ₈	186	7 ²¹ / ₆₄
50	271	10 ¹¹ / ₁₆	136	5 ³ / ₈	130	5 ¹ / ₈	49	1 ¹⁵ / ₁₆	65	2 ⁹ / ₁₆	207	8 ¹ / ₈	207	8 ¹ / ₈	209	8 ¹ / ₄
54	271	10 ¹¹ / ₁₆	136	5 ³ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	65	2 ⁹ / ₁₆	207	8 ¹ / ₈	207	8 ¹ / ₈	209	8 ¹ / ₄
58	271	10 ¹¹ / ₁₆	136	5 ³ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	65	2 ⁹ / ₁₆	207	8 ¹ / ₈	207	8 ¹ / ₈	234	9 ¹ / ₄
65	347	13 ³ / ₈	187	7 ⁵ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	65	2 ¹¹ / ₁₆	195	7 ¹¹ / ₁₆	294	11 ⁹ / ₁₆	234	9 ¹ / ₄
68	348	13 ⁹ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	65	2 ¹¹ / ₁₆	199	7 ³ / ₁₆	294	11 ⁹ / ₁₆	282	11 ¹ / ₈
68/3	355	14	162	6 ³ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	75	2 ¹⁵ / ₁₆	213	8 ³ / ₈	324	12 ³ / ₄	294	11 ⁹ / ₁₆
77	396	15 ⁹ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	88	3 ⁷ / ₁₆	231	9 ¹ / ₁₆	406	16	294	11 ⁹ / ₁₆
77/3	348	13 ¹¹ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆
88	355	14	160	6 ¹ / ₄	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	-	-	-	-	-	-	326	12 ³ / ₄
111	396	15 ⁵ / ₈	172	6 ³ / ₄	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	-	-	-	-	-	-	406	16

EVO® WINCH	H - HEIGHT		L - LINE ENTRY		M		N		T		R		B - BASE Ø		B - BASE Ø	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
40	194	7 ⁵ / ₈	101	3 ⁵ / ₁₆	130	5 ¹ / ₈	45	1 ³ / ₄	65	2 ¹⁷ / ₃₂	205	4 ³ / ₄	186	7 ²¹ / ₆₄	154	6 ¹ / ₁₆
45	213	9 ³ / ₈	106	4 ⁹ / ₆₄	130	5 ¹ / ₈	49	1 ¹⁵ / ₁₆	65	2 ¹⁷ / ₃₂	202	7 ⁵ / ₁₆	209	8 ¹ / ₄	174	6 ⁵⁵ / ₆₄
50	258	10 ¹ / ₈	136	5 ³ / ₈	130	5 ¹ / ₈	49	1 ¹⁵ / ₁₆	60	2 ⁵ / ₁₆	207	8 ¹ / ₈	207	8 ¹ / ₈	186	7 ²¹ / ₆₄
55	274	10 ³ / ₄	142	5 ⁹ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	60	2 ⁵ / ₁₆	207	8 ¹ / ₈	207	8 ¹ / ₈	209	8 ¹ / ₄
65	275	10 ¹³ / ₁₆	143	5 ⁵ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	195	7 ¹¹ / ₁₆	294	11 ⁹ / ₁₆	234	9 ¹ / ₄
70	319	12 ⁹ / ₁₆	187	7 ⁵ / ₁₆	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	195	7 ¹¹ / ₁₆	294	11 ⁹ / ₁₆	282	11 ¹ / ₈
70/3	320	12 ¹⁰ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	199	7 ³ / ₁₆	294	11 ⁹ / ₁₆	294	11 ⁹ / ₁₆
80	320	12 ¹⁰ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	199	7 ³ / ₁₆	294	11 ⁹ / ₁₆	294	11 ⁹ / ₁₆
80/3	320	12 ¹⁰ / ₁₆	174	6 ⁷ / ₈	290	11 ⁷ / ₁₆	62	2 ⁷ / ₁₆	68	2 ¹¹ / ₁₆	160	6 ¹ / ₄	80	3 ¹ / ₈	294	11 ⁹ / ₁₆



8.3 Electric OCEAN winch specifications 12V

OCEAN WINCH	ALLOY	CHROME	MOTOR/ GEARBOX	MOTOR	MAXIMUM WINCH LOAD		ROPE DIAMETERS		CIRCUIT BREAKER (NOT SUPPLIED)
					Watt	kg	lb	Ø mm	
40	48040255	48040256	48000116	700	795	1750	8-12	5/16"-1/2"	90 A - 68000349
46	48046255	48046256	48000116	700	1200	2645	8-14	5/16"-3/16"	100 A - 68000350
48	48048255	48048256	48000116	700	1250	2756	8-14	5/16"-9/16"	120 A - 68000239
50	48050200	48050201	48000075	1600	1360	3000	8-16	5/16"-5/8"	150 A - 68000351
54	48054200	48054201	48000075	1600	1480	3263	8-16	5/16"-5/8"	*200 A - 68000894
58	48058200	48058201	48000075	1600	1600	3527	8-18	5/16"-11/16"	*250 A - 68000895
65	48065200	48065201	48000075	1600	1700	3748	8-18	5/16"-11/16"	*250 A - 68000895
68	48068200	48068201	48000077	2000	3000	6614	10-20	3/8"-3/4"	120 A - 68000239
68/3	48068205	48068206	48000077	2000	3000	6614	10-20	3/8"-3/4"	120 A - 68000239
77	48077200	48077201	48000077	2000	3500	7716	12-22	1/2"-7/8"	150 A - 68000351
77/3	48077205	48077206	48000077	2000	3500	7716	12-22	1/2"-7/8"	150 A - 68000351


OCEAN WINCH					"E" CONTACTOR	"E" CONTACTOR BOX	"ELS" CONTROL BOX
	ALLOY WEIGHT	CHROME WEIGHT					
40	17.8	39.3	19.5	43	68000933	18000301	48000222 (T 1-8)
46	22.1	48.6	24.6	54.1	N/A	18000301	48000224 (T 2-2)
48	24.7	54.3	28.1	61.8	N/A	18000301	48000225 (T 2-3)
50	28.3	62.2	33.2	73	N/A	N/A	48000221 (T 1-7)
54	29	63.8	34.8	76.5	N/A	N/A	48000227 (T 2-5)
58	31.3	68.8	37.7	82.9	N/A	N/A	48000229 (T 2-7)
65	33.6	73.9	40.8	89.7	N/A	N/A	48000229 (T 2-7)
68	42	92	48.8	107.3	N/A	N/A	48000178
68/3	48	105.6	54.8	120.6	N/A	N/A	48000178
77	49.3	108.5	55.3	121.7	N/A	N/A	48000180
77/3	51.3	112.9	57.3	126.1	N/A	N/A	48000180

*ANL Fuse alternative available - contact Lewmar.

NOTE: Maximum safe working loads are recommended to be not more than those detailed above. This provides an acceptable safety margin for dynamic load surges in extreme sea conditions.

8.4 Electric EVO® winch specifications 12V

EVO® WINCH	ALLOY	CHROME	MOTOR/ GEARBOX	MOTOR		MAXIMUM WINCH LOAD		ROPE DIAMETERS		CIRCUIT BREAKER (NOT SUPPLIED)
				Watt		kg	lb	Ø mm	Ø inch	
40	48540200	48540201	48000116	700		795	1750	8-12	$\frac{5}{16}$ - $\frac{1}{2}$	90 A - 68000349
‡40	48540200	48540201	‡48000211	700		795	1750	8-12	$\frac{5}{16}$ - $\frac{1}{2}$	90 A - 68000349
45	48545200	48545201	48000116	700		1200	2645	8-14	$\frac{5}{16}$ - $\frac{9}{16}$	100 A - 68000350
‡45	48545200	48545201	‡48000211	700		1200	2645	8-14	$\frac{5}{16}$ - $\frac{9}{16}$	100 A - 68000350
50	48550200	48550201	48000116	700		1250	2756	8-14	$\frac{5}{16}$ - $\frac{9}{16}$	120 A - 68000239
‡50	48550200	48550201	‡48000211	700		1250	2756	8-14	$\frac{5}{16}$ - $\frac{9}{16}$	120 A - 68000239
55	48555200	48555201	48000075	1600		1480	3263	8-16	$\frac{5}{16}$ - $\frac{3}{8}$	*200 A - 68000894
65	48565200	48565201	48000075	1600		1700	3748	8-18	$\frac{5}{16}$ - $\frac{11}{16}$	*250 A - 68000895
70	48570200	48570201	48000077	2000		3000	6614	10-20	$\frac{3}{8}$ - $\frac{3}{4}$	120 A - 68000239
70/3	48570207	48570206	48000077	2000		3000	6614	10-20	$\frac{3}{8}$ - $\frac{3}{4}$	120 A - 68000239
80	48580200	48580201	48000077	2000		3500	7716	12-22	$\frac{1}{2}$ - $\frac{3}{8}$	150 A - 68000351
80/3	48580207	48580206	48000077	2000		3500	7716	12-22	$\frac{1}{2}$ - $\frac{3}{8}$	150 A - 68000351

EVO® WINCH					"E" CONTACTOR	"E" CONTACTOR BOX	"ELS" CONTROL BOX
	ALLOY WEIGHT	CHROME WEIGHT					
40	17.8	39.3	19.5	43	68000933	18000301	48000222 (T 1-8)
45	22.1	48.6	24.6	54.1	N/A	18000301	48000224 (T 2-2)
50	24.7	54.3	28.1	61.8	N/A	18000301	48000225 (T 2-3)
55	29	63.8	34.8	76.5	N/A	N/A	48000227 (T 2-5)
65	33.6	73.9	40.8	89.7	N/A	N/A	48000229 (T 2-7)
70	42	92	48.8	107.3	N/A	N/A	48000178
70/3	48	105.6	54.8	120.6	N/A	N/A	48000178
80	49.3	108.5	55.3	121.7	N/A	N/A	48000180
80/3	51.3	112.9	57.3	126.1	N/A	N/A	48000180


* ANL Fuse alternative available - contact Lewmar.

‡ Motor/gearbox with pre-mounted "E" Series Contactor.

NOTE: Maximum safe working loads are recommended to be not more than those detailed above. This provides an acceptable safety margin for dynamic load surges in extreme sea conditions.

8.5 Electric OCEAN winch specifications 24V


OCEAN WINCH	ALLOY	CHROME	MOTOR/ GEARBOX	MOTOR	MAXIMUM WINCH LOAD		ROPE DIAMETERS		CIRCUIT BREAKER (NOT SUPPLIED)
					Watt	kg	lb	Ø mm	
40	48040255	48040256	48000117	900	795	1750	8-12	5/16-1/2	40 A - 68000542
46	48046255	48046256	48000117	900	1200	2645	8-14	5/16-9/16	50 A - 68000348
48	48048255	48048256	48000117	900	1250	2756	8-14	5/16-9/16	70 A - 68000240
50	48050200	48050201	48000076	2000	1360	3000	8-16	5/16-5/8	90 A - 68000348
54	48054200	48054201	48000076	2000	1480	3263	8-16	5/16-5/8	90 A - 68000348
58	48058200	48058201	48000076	2000	1600	3527	8-18	5/16-11/16	90 A - 68000348
65	48065200	48065201	48000076	2000	1700	3748	8-18	5/16-11/16	90 A - 68000348

OCEAN WINCH					"E" CONTACTOR	"E" CONTACTOR BOX	"ELS" CONTROL BOX
	ALLOY WEIGHT		CHROME WEIGHT				
40	17.8	39.3	19.5	43	0052506	18000302	48000217 (T 1-3)
46	22.1	48.6	24.6	54.1	0052506	18000302	48000220 (T 1-6)
48	24.7	54.3	28.1	61.8	N/A	18000302	48000221 (T 1-7)
50	28.3	62.2	33.2	73	N/A	N/A	48000225 (T 2-3)
54	29	63.8	34.8	76.5	N/A	N/A	48000221 (T 1-7)
58	31.3	68.8	37.7	82.9	N/A	N/A	48000222 (T 1-8)
65	33.6	73.9	40.8	89.7	N/A	N/A	48000222 (T 1-8)

NOTE: Maximum safe working loads are recommended to be not more than those detailed above. This provides an acceptable safety margin for dynamic load surges in extreme sea conditions.

8.6 Electric EVO® winch specifications 24V


EVO® WINCH	ALLOY	CHROME	MOTOR/ GEARBOX	MOTOR	MAXIMUM WINCH LOAD		ROPE DIAMETERS		CIRCUIT BREAKER (NOT SUPPLIED)
					Watt	kg	lb	Ø mm	
40	48540200	48540201	48000117	900	795	1750	8-12	5/16-1/2	40 A - 68000542
‡40	48540200	48540201	‡ 48000212	700	795	1750	8-12	5/16-1/2	90 A - 68000349
45	48545200	48545201	48000117	900	1200	2645	8-14	5/16-9/16	50 A - 68000348
‡45	48545200	48545201	‡ 48000212	700	1200	2645	8-14	5/16-9/16	100 A - 68000350
50	48550200	48550201	48000117	900	1250	2756	8-14	5/16-9/16	70 A - 68000240
‡50	48550200	48550201	‡ 48000212	700	1250	2756	8-14	5/16-9/16	120 A - 68000239
55	48555200	48555201	48000076	2000	1480	3263	8-16	5/16-3/8	90 A - 68000348
65	48565200	48565201	48000076	2000	1700	3748	8-18	5/16-11/16	90 A - 68000348
70	48570200	48570201	48000078	2000	3000	6614	10-20	3/8-3/4	70 A - 68000240
70/3	48570207	48570206	48000078	2000	3000	6614	10-20	3/8-3/4	70 A - 68000240
80	48580200	48580201	48000078	2000	3500	7716	12-22	1/2-7/8	70 A - 68000240
80/3	48580207	48580206	48000078	2000	3500	7716	12-22	1/2-7/8	70 A - 68000240

EVO® WINCH					"E" CONTACTOR	"E" CONTACTOR BOX	"ELS" CONTROL BOX
	ALLOY WEIGHT	CHROME WEIGHT					
40	17.8	39.3	19.5	43	0052506	18000302	48000217 (T 1-3)
45	22.1	48.6	24.6	54.1	0052506	18000302	48000220 (T 1-6)
50	24.7	54.3	28.1	61.8	N/A	18000302	48000221 (T 1-7)
55	29	63.8	34.8	76.5	N/A	N/A	48000221 (T 1-7)
65	33.6	73.9	40.8	89.7	N/A	N/A	48000222 (T 1-8)
70	42	92	48.8	107.3	N/A	N/A	18000431
70/3	48	105.6	54.8	120.6	N/A	N/A	18000431
80	49.3	108.5	55.3	121.7	N/A	N/A	48000023
80/3	51.3	112.9	57.3	126.1	N/A	N/A	48000023


‡ Motor/gearbox with pre-mounted "E" Series Contactor.

NOTE: Maximum safe working loads are recommended to be not more than those detailed above. This provides an acceptable safety margin for dynamic load surges in extreme sea conditions.

8.7 Hydraulic OCEAN winch specifications

OCEAN WINCH				HYDRAULIC DRIVE UNIT	SAFE WORKING LOAD (SWL)		ROPE DIAMETERS					
SIZE	ALLOY	CHROME	ST/STEEL		kg	lb	Ø mm	Ø inch	ALLOY WEIGHT		CHROME WEIGHT	
									kg	lb	kg	lb
46	49046155	49046156	49046158	B7718	1136	2500	8-14	5/16-9/16	16.8	37	19.6	43.1
48	49048155	49048156	49048158	B7719	1250	2750	8-14	5/16-9/16	18.5	40.7	22.4	49.3
50	49050100	49050101	49050104	B7719	1363	3000	8-16	5/16-5/8	21.5	47.3	26.4	58.1
54	49054100	49054101	49054104	B7720	1477	3250	8-16	5/16-5/8	22.1	48.6	28	61.6
58	49058100	49058101	49058104	B7720	1591	3500	8-18	5/16-11/16	24.9	54.8	32.4	71.3
65	49065100	49065101	49065104	B7720	1704	3750	8-18	5/16-11/16	27.2	59.8	34.4	75.7
68	49068100	49068103	49068104	B7717	2727	6000	10-20	3/8-3/4	28.5	62.7	35.3	77.6
68/3	49068105	49068108	49068109	B7717	2727	6000	10-20	3/8-3/4	28.5	62.7	35.3	77.6
77	49077100	49077101	49077104	B7718	3409	7500	12-22	1/2-7/8	35.5	78.1	40.6	89.3
77/3	49077105	49077106	49077109	B7718	3409	7500	12-22	1/2-7/8	35.5	78.1	40.6	89.3
88	-	-	49088104	B7719	4545	10000	12-25	1/2-1	-	-	-	-
88/3	-	-	49088109	B7719	4545	10000	12-25	1/2-1	-	-	-	-
111	-	-	49111104	B7720	6000	14000	16-38	5/8-1 1/2	-	-	-	-
11 1/2	-	-	49111109	B7720	6000	14000	16-38	5/8-1 1/2	-	-	-	-

8.8 Hydraulic EVO® winch specifications

EVO® WINCH				HYDRAULIC DRIVE UNIT	SAFE WORKING LOAD (SWL)		ROPE DIAMETERS					
SIZE	ALLOY GREY	CHROME	ALLOY BLACK		kg	lb	Ø mm	Ø inch	ALLOY WEIGHT		CHROME WEIGHT	
									kg	lb	kg	lb
45	49545100	49545101	49545110	B7718	1136	2500	8-14	5/16-9/16	16.8	37	19.6	43.1
50	49550100	49550101	49550110	B7719	1250	2750	8-14	5/16-9/16	18.5	40.7	22.4	49.3
55	49555100	49555101	49555110	B7720	1477	3250	8-16	5/16-5/8	22.1	48.6	28	61.6
65	49565100	49565101	49565110	B7720	1704	3750	8-18	5/16-11/16	27.2	59.8	34.4	75.7
70	49570100	49570101	49570110	B7717	2727	6000	10-20	3/8-3/4	28.5	62.7	35.3	77.6
70/3	49570102	49570103	49570109	B7717	2727	6000	10-20	3/8-3/4	28.5	62.7	35.3	77.6
80	49580100	49580101	49580110	B7718	3409	7500	12-22	1/2-7/8	35.5	78.1	40.6	89.3
80/3	49580102	49580103	49580109	B7718	3409	7500	12-22	1/2-7/8	35.5	78.1	40.6	89.3

NOTE: Maximum safe working loads are recommended to be not more than those detailed above. This provides an acceptable safety margin for dynamic load surges in extreme sea conditions.

9- Trouble shooting

9.1 Electric question & answer

Winch will not operate manually

Check for correct assembly.

- Pawls stuck-over use of grease
- Strip and clean as necessary

Winch will not operate electrically

1. Is winch handle locked in (Models 66-77 only).
Remove handle
Check drive dog and spring, ensure free operation
2. Power at the battery.
Check terminal connections, battery voltage - adequate reserve battery capacity.
3. Isolator switch/circuit breaker on.
Switch on
4. Check fuse in control box.
Change fuse (3 Amp), check wiring
5. Power at winch.
Check circuit diagram, connections, clean and check cables
6. Check switch connection in control box.
Reconnect

Motor runs but winch does not turn

Check polarity.

9.2 Hydraulic oil leakage

The following are possible causes for hydraulic oil leakage from hydraulic drive unit:

- Excessive pressure.
- Dirt obstructing a seal.
- Loose or badly fitted connections.
- Damaged or broken components.

When an hydraulic oil leak is detected, identify the true cause of the leakage before remedial action is taken.

 **WARNING!**

Do not attempt to remove hydraulic components or repair the hydraulic system whilst pressured.
To prevent accidental operation, switch off power before removing any system component.

9.3 Hydraulic question & answer

Winch will not start

1. No power to Commander
 - Check unit is switched on
 - Check electrical connections to Commander
 - Check fuses & safety cut-outs
2. Insufficient hydraulic fluid
 - Check Commander fluid level.
3. Incorrect electrical or hydraulic connections
 - Refer to your Lewmar Commander manual
 - See the button sheet for correct function identification.

Winch motor is running but the winch is not working

Winches 44 - 64

1. Hydraulic pipes connected the wrong motor port.
 - Swap the hydraulic connections on the winch motor.

Winches 66 - 111

2. Winch handle left in winch
 - Remove handle.
3. Mechanical fault
 - Check all pawls & springs for correct operation and engagement.
 - Check drive dog & spring
 - Ensure free operation and engagement.

Winch runs very slowly

1. Hydraulic pipes connected to wrong Commander function.
 - Refer to Commander manual and examine the button sheet to identify correct function.
2. Hydraulic pipes connected to the wrong motor port.
 - Swap hydraulic connections on the winch motor.
3. Deck switch connected to wrong function.
 - Refer to Lewmar Commander manual.

Winch does not pull sufficient load

1. Insufficient hydraulic fluid.
 - Check Commander fluid level.
2. Hydraulic pipes connected to wrong Commander function.
 - Refer to Commander manual.
 - Examine the Button Sheet to identify correct function.
3. Sharp bends or kinks in the hydraulic pipes starving the winch of fluid.
 - Check pipe runs for sharp bends or kinks.
 - Minimum bend radius is 6" (150mm).
4. System pressure too low.
 - Refer to fault diagnostic charts in the Commander manual.

Notes

9. Warranty

Limited Warranty and Key Terms of Supply by Lewmar

Lewmar warrants that in normal private pleasure boat usage and with proper maintenance its products will conform with their specification for a period of three 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 three-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 that 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.
- g. Abuse
- iv Product subject to a warranty claim must be returned to the Lewmar outlet that supplied the product for examination unless otherwise approved 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 authorized 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
- Hatch & Portlight weather seals
- Products used in "Grand Prix" racing applications
- Products used in commercial or charter applications
- Anchor rodes

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 that supplied the product or to Lewmar Limited at Southmoor Lane, Havant, Hampshire PO9 1JJ, England.

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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