

B2304 Issue 6

# Winch Service Manual

Standard and Self Tailing  
Models 6 to 66



**LEWMAR®**

Lewmar winches have been developed over many years by extensive testing aboard the world's finest ocean racers, long distance cruising yachts and match racing yachts. They are manufactured to the highest quality standards and only the finest materials are used. If installed, used and maintained as described in this booklet, they will give outstanding performance. Full details of our 3 year warranty and conditions of sale are described on page 52/53.

## WHEN TO SERVICE

### FREQUENCY OF SERVICING

Lewmar winches, like any other precision engineered product, must be serviced regularly. Yacht winches are required to carry deceptively high loads. For example, the genoa sheet load on a 40' (12 m) cruising yacht can easily reach 1000 lbs (453 kg). Regular servicing with attention to correct assembly and condition of parts is vital to the safety and performance of your boat.

#### WHEN?

- 1. TWO OR THREE TIMES DURING ACTIVE SAILING SEASON:** Lewmar winches should be stripped, cleaned and re-lubricated.
- 2. AT THE END OF EACH SAILING SEASON AND BEFORE STARTING THE NEW SAILING SEASON:** All Lewmar winches should be completely stripped, cleaned, thoroughly checked for damage and lubricated with reference to the information provided in the Lewmar Volume 10 Service Manual.

### EXTERNAL CLEANING OF DRUM

**Chrome winches** - Wash drum regularly with fresh water and dry with a cloth.

Occasionally use non-abrasive liquid chrome cleaner to remove dirt deposits.

**Alloy** - Wash drum regularly with fresh water and dry with a cloth. DO NOT USE POLISHES OR ABRASIVES.

**Stainless Steel Winches** - Wash drum regularly with fresh water and dry with a cloth.

Occasionally use non-abrasive liquid cleaner to remove dirt deposits.

**Bronze** - Wash drum regularly with fresh water and use bronze cleaner.

## TOOLS

All winches are designed according to Lewmar's "strip from the top" philosophy, so that any winch can be stripped for servicing in seconds, without the need to remove the winch from its fittings, using a very basic set of tools as described in the table below.

### TOOLS REQUIRED FOR ROUTINE SERVICING

**Tools** - Small flat bladed screwdriver, clean soft cotton, cleaning fluid - white spirit, paraffin (not petrol), light machine oil, Lewmar winch grease.

#### MODEL

6, 7, 8, 16, 30, 40 & 44

Basic requirement only.

14ST, 16ST, 28/30ST, 34/40ST, 44ST, 48ST

Basic requirement plus cross-headed screwdriver.

50ST, 54ST, 58ST, 64/65ST

Basic requirement plus a 5 mm A/F Allen key.

66ST

Basic requirement plus a 6 mm and 8 mm A/F Allen key.

Lewmar winches are known worldwide for their quality, technical innovation and performance. They have been tested to their limits by our engineers in the laboratory and by racing crews in their search for victory. In addition, they have given years of outstanding service to many thousands of yachtsmen to whom the ultimate performance of a yacht or its equipment is perhaps secondary to the pure joy of sailing a fine craft equipped with the best yacht hardware in the world.

This booklet tells you how to give your Lewmar winches the care and attention they need to ensure that whether you sail for results, records or pleasure, your winches will contribute that extra level of performance that is the hallmark of their design. Your Lewmar winches have been built to perform in the best possible manner in all sailing conditions. With care and attention they will give many years of service.

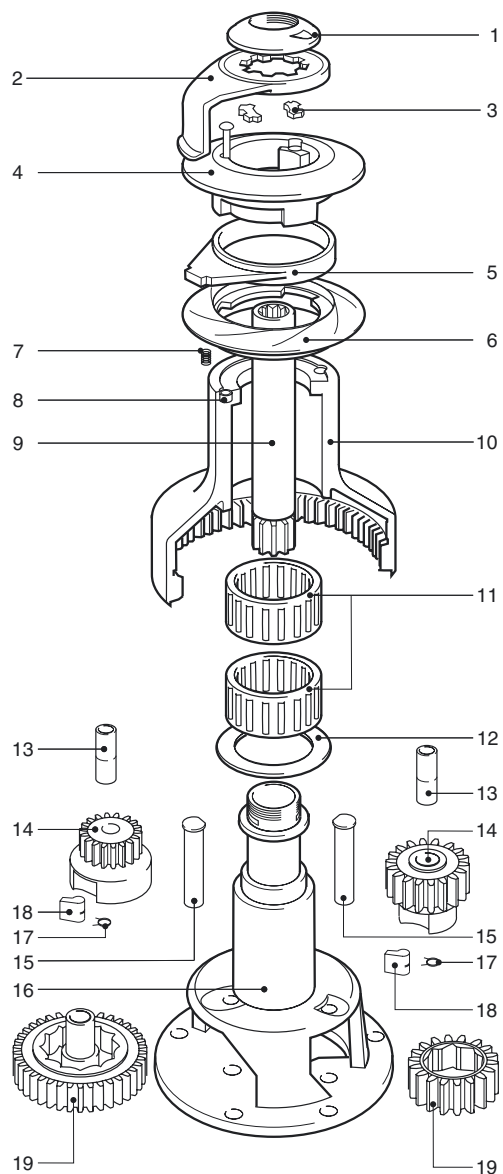
Service details contained in this booklet apply to the current range of Lewmar winches. The same overall servicing principles may be used for earlier versions, although the detailed construction of the winches may be different.

Lewmar wish you good sailing for many years to come.

**GB**

Servicing instructions for earlier models of Lewmar winches are contained in Service Manuals No's 5 & 6. Please consult the table on page 49 of this manual for the appropriate publication, or alternatively contact your Lewmar offices for service details.





**GB**

**KNOW YOUR WINCH**

1. 'O' Ring 2. Feeder arm 3. Collet 4. Upper crown  
5. Stripper ring 6. Lower crown 7. Spring 8. Spring cup  
9. Main spindle 10. Drum 11. Roller bearing assembly 12. Drum washer 13. Gear spindle sleeve  
14. Pawl gear 15. Gear spindle 16. Centre stem  
17. Pawl spring 18. Pawl 19. Ratchet gear.

**GB**

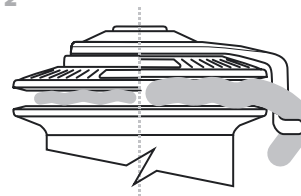
**SELF-TAILER CONVENIENCE**

A self tailer enables you to use both hands to wind, by freeing you of the necessity to tail the sheet. Lewmar's patented Wavespring concept is a simple, safe and convenient method of self-tailing.

**A CLOSER LOOK**

The Wavespring design is the second generation of Lewmar self tailing systems. It combines the renowned and gentle Wavegrip feature with the automatic self adjusting action that only springs can provide. This enables the Wavespring self-tailing system to handle a large variety of rope diameters and textures without the need for adjustment, yet still allows the valued ability to "tail through", giving even faster sail control. The sleek new feeder and stripper design assures absolute snag-free operation, and the unique jaw design eliminates the possibility of damage caused by too few rope turns (always use a minimum of three turns) being loaded on the drum.

**FIGURE 2**



**SELF-TAILERS - HOW THEY WORK**

The winch must be mounted so that the loose sheet falls correctly into a secure stowage position. The position of the stripper arm can be adjusted to give correct sheet stripping.

There must be a minimum of three turns on the drum. The turn leading from the drum must then be passed across the stripper mechanism and placed into the spring jaws as shown above.

Release the rope from the jaw set with care as LOAD will be present - ease the line away, then remove the turns from the drum.

The jaws of each Lewmar winch are designed to accept a range of rope diameters. Winches should only be used with ropes of recommended size, as set out in the table on page 23.

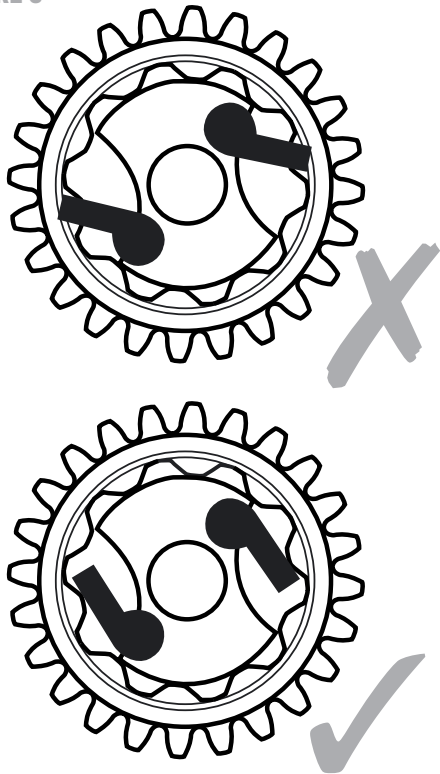
**RATCHET GEARS - PAWL ENGAGEMENT**

When assembling ratchet gears, check pawl engagement as shown in fig. 3, page 23. Incorrect assembly will lead to back winding of the winch. This is very dangerous for obvious reasons, so extreme care should be taken.



14ST	6-10mm	$\frac{1}{4}$ " - $\frac{3}{8}$ "
16/28/30/34/40ST	8-12mm	$\frac{5}{16}$ " - $\frac{1}{2}$ "
44/48ST	8-14mm	$\frac{5}{16}$ " - $\frac{9}{16}$ "
50/54ST	8-16mm	$\frac{5}{16}$ " - $\frac{5}{8}$ "
58/64/65ST	8-18mm	$\frac{5}{16}$ " - $\frac{11}{16}$ "
66ST	12-22mm	$\frac{1}{2}$ " - $\frac{7}{8}$ "

**FIGURE 3**



**GB**

**14, 16, 28, 30, 34, 40, 44, 48, 50, 54, 58, 64, 65, 66**

1. Unscrew the top cap.
2. Lift off the feeder arm.
3. Rotate the stripper ring to the required position.
4. Replace the feeder arm in the correct position to suit the stowage of the loose sheet (see note).
5. Check the condition of the 'O' ring in the top cap. Replace if necessary. Lubricate with a light smear of Lewmar winch grease and replace the top cap.

**Note:** When replacing the feeder arm, ensure the stripper ring is correctly located within the groove on the back of the feeder arm.



**1a**



**1b**



**2a**



**2b**

**GB**

**1a+1b WINCHES FROM 14ST TO 48ST HAVE LOWER SPRUNG JAWS**

Using a cross headed screw driver, remove the 3 cross headed screws which secure the crown assembly to the drum.

Lift the crown clear of the drum. Care should be taken not to lose any springs that may adhere to the lower crown. Separate the crowns and clean with fresh water. Check crowns and stripper ring for wear. Replace if necessary. Reassemble in reverse order.

**2a+2b WINCHES FROM 50ST TO 66ST HAVE UPPER SPRUNG JAWS**

Using an allen key, undo the 4 cap headed retaining screws evenly (5 screws on 66ST). Lift off the top plate together with the retaining screws. Also remove the springs and spring pillars. Next, remove and separate the crown assembly, and clean with fresh water. Check crowns and stripper ring for wear. Replace where necessary. Reassemble in reverse order.

**Note:** When rebuilding the crown assembly, care should be taken to engage the locating lug on the underside of the lower crown within its locating hole in the drum top.

**GB**

**CLEANING**

All components should be removed and cleaned in a paraffin bath in the course of servicing. If you do not have access to a paraffin bath, use half of an old plastic container with an old toothbrush. Even a cotton cloth soaked in paraffin or white spirit will suffice.

**CAUTION**

Some Lewmar winches contain plastic components which may be damaged by inappropriate cleaning agents. Always check the manufacturer's directions before using any cleaning agents.

**GREASING**

Never use grease to lubricate your pawls, as this can lead to pawls sticking in their pockets and disabling the winch. Instead, lubricate with a light engine oil.

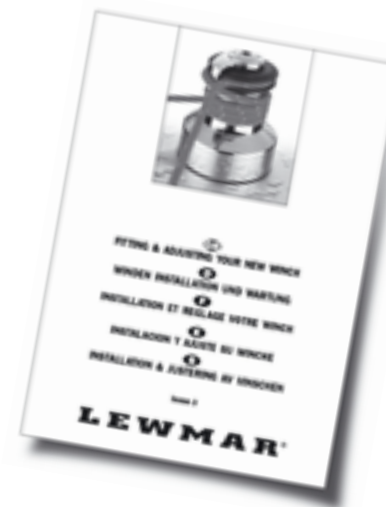
Use only a light smear of winch grease when lubricating ratchet tracks, gear teeth and bearings. Otherwise, excess grease will be forced out and will collect in potentially dangerous areas, such as pawl pockets.

**ASSEMBLY**

Winches must be re-assembled in the reverse sequence to the order of dismantling. After re-assembly, immediately check the winch functions correctly.

**MOUNTING**

Winches must be fitted in the manner laid out in leaflet B2189 (supplied with every winch) shown below. Winches are self-draining and care should be taken to ensure the drain holes are not obstructed.





**GB**

1. Carefully prise off circlip.
2. Remove top plate and lift off drum.
3. Remove and clean the drum bearings.
4. Remove the spindle by easing out the retaining key, clean, regrease and refit.
5. Remove, clean and inspect the four pawls located in the drum, replace as necessary and lubricate with light oil.
6. Lightly grease the two ratchet tracks and the bearing surfaces. Reassemble winch in reverse sequence.





**GB**

1. Remove the circlip and top late then lift off the drum. Remove the 3 x 5 mm screws holding the crown, remove, clean and oil the two pawls.
2. Remove and clean the retaining key and main spindle.
3. Using a small, thin bladed screwdriver lift out the gear spindle. Remove the gears.
4. Separate the gears. Remove, clean and inspect the pawls and springs, replace if necessary. Lubricate the pawls with a light machine oil.
5. Lightly regrease the inside of the ratchet gear with Lewmar winch grease.
6. Reassemble the gears, rotating as you do so to aid assembly. Reassemble winch in reverse sequence.



**GB**

1. Remove circlip and lift off the drum and top cap.
2. Remove and clean drum bearings and washer, then remove the two spindle retaining collets and the main spindle.
3. Using a thin bladed screwdriver, lift out the gear spindle and remove the gears.
4. Inspect the gear assemblies for signs of excess water. Replace pawls and springs if necessary.
5. Using a small bladed screwdriver, raise the two gear spindles.
6. Reassemble the winch in reverse sequence, taking care to grease lightly all gear teeth and bearing surfaces.







**GB**

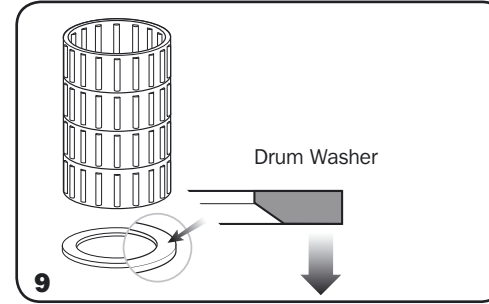
1. Unscrew and remove the top cap, lift off the feeder arm and remove the 2 retaining collets.
2. Lift off the drum.
3. Remove and clean the drum bearings and washer.
4. Remove and clean the gear spindle and gear.
5. To remove the main spindle, rotate it in a clockwise direction as you lift it, also remove the ratchet gear.
6. Remove, clean and inspect the pawls and springs, look for excess wear, replace if necessary. Lubricate pawls with a light machine oil.
7. Lightly grease the ratchet gear, place it in position with the ratchet facing up as shown.
8. Re-assemble in reverse order, remember to lightly grease all gears, ratchet tracks, spindles and bearings.
9. Remove the three fixing screws holding the crown assembly to the drum.
10. Carefully lift off the crowns and lift out the springs.
11. Remove, clean and inspect pawls and pawl springs, look for excess wear, replace as necessary. Lubricate pawls with a light machine oil. Re-assemble.
12. To fit the drum, you will need to use a small bladed screwdriver to close the pawls.



**GB**

1. Unscrew top cap.
2. Lift and remove the feeder arm.
3. Remove the two retaining collets, lift out the main spindle.
4. Remove and clean the drum bearings and washer.
5. Using Lewmar winch grease, lightly grease the gear ratchets and internal bearing surfaces. Reassemble the gears.
6. Lift out the gear spindles and remove the gear assemblies.
7. Remove and inspect the pawls and pawl springs, replace if necessary.
8. Assemble the pawls and springs, lightly oil the pawls, check for correct operation (no sticking).
9. Lightly grease the ratchet and bearing surfaces, reassemble the gears.
10. Lightly grease and fit the gears, gear spindles and the main spindle.
11. Strip and clean crown assembly. See the Servicing Wavespring section in this manual.
12. Reassemble the drum, main spindle retaining collets and feeder arm. Lightly grease the 'O' ring and top cap thread before fitting.





**GB**

1. Unscrew top cap, remove the feeder arm and retaining collets. Lift off the drum. Undo and remove the 6 x 10 mm fixing screws holding the centre stem to the base.
2. Carefully lift off the centre stem, take care to support the main spindle as you do so.
3. To remove the gear assemblies, lift them both out at the same time.
4. Separate the gear assemblies. Clean and inspect for signs of excess wear.
5. Using a cross headed screwdriver, remove the three screws securing the pawl retaining plate. Clean and inspect all pawls and springs, replace if necessary.
6. Lightly grease the ratchet gears and bearing surfaces. Remember to replace the plastic washer before reassembling these gears.
7. Remove the circlip. Remove, clean and inspect pawls and springs, replace as necessary.
8. Remember to lightly grease all bearings and moving parts.
9. Care should be taken when fitting the drum washer. Ensure the chamfer is facing down when fitting the washer.

**GB**

## SERVICE MANUALS

Full servicing of any winch should not be undertaken without reference to the appropriate service manual, as set out in the table below. These are available from you local Lewmar Distributor office.

For models not mentioned here and earlier models, please contact your Lewmar offices for service details.

### Service Manual Volume 5 Specials applies

Winch	Start
3 speed, 3 gear 55/3, 65/3	Jan 85
3 speed, 3 gear 55ST,65ST	Jan 85
Also grinders and linkages	

### Service Manual Volume 6 applies

Winch	Start
6	Jan 83
7, 8	Jan 85
16, 24, 30, 40	May 85
43, 46	Mar 85
52	Dec 84
48, 55, 65	Jan 84
16ST, 40ST	Mar 85
30ST, 43ST, 46ST	Mar 85
48ST, 55ST, 65ST	Jan 84
52ST	Dec 84
56ST	Mar 87
66ST	Dec 88
Nr. 1 Halliard	Jan 78

### Service Manual Volume 6 Specials applies

Model	Start
430, 460, 520	1987
550, 650, 700	1988
900, 1100, 1200, 1400	1989
All grinders and linkages	

### Service Manual Volume 7 applies (Ocean) OR Volume 8 Winch Parts Manual

Model	Start
6	Jan 83
7, 8	Jan 85
16, 24, 30, 40	May 85
43	Mar 85
16ST to 66ST	Mar 92

Note: 14ST, 44 in Volume 10 only.