Leisure furl®

IN BOOM FURLING SYSTEM

Owners Manual

For Maintenance and Operation

THE INFORMATION CONTAINED IN THIS MANUAL IS TO BE USED AS A GUIDE FOR THE SAFE OPERATION OF THE LEISURE FURL SYSTEM.
WE RECOMMEND YOU KEEP THIS MANUAL ON BOARD FOR REFERENCE.

Index

IMPORTANT

Read this manual from cover to cover before attempting to use the Leisure furl. It contains important operating and sail fitting instructions. The "Your Questions" section contains important tips and trouble-shooting advice.

Follow the instructions in this manual. We accept no responsibility if you fail to do so.
If you are uncertain of any points please contact an authorised distributor listed on the back cover.

We have made every effort to explain the operating and sail fitting procedures as clearly and completely as possible. Nonetheless, it is not possible to anticipate, or address every conceivable problem that might arise under actual sailing conditions. Hence, we can not accept responsibility for errors or omissions in this manual.

This manual is intended to provide general guidance to owners of a Leisure furl system. For specific guidance and technical support, contact the person who sold you the Leisure furl system, or an authorised distributor listed on the back cover.

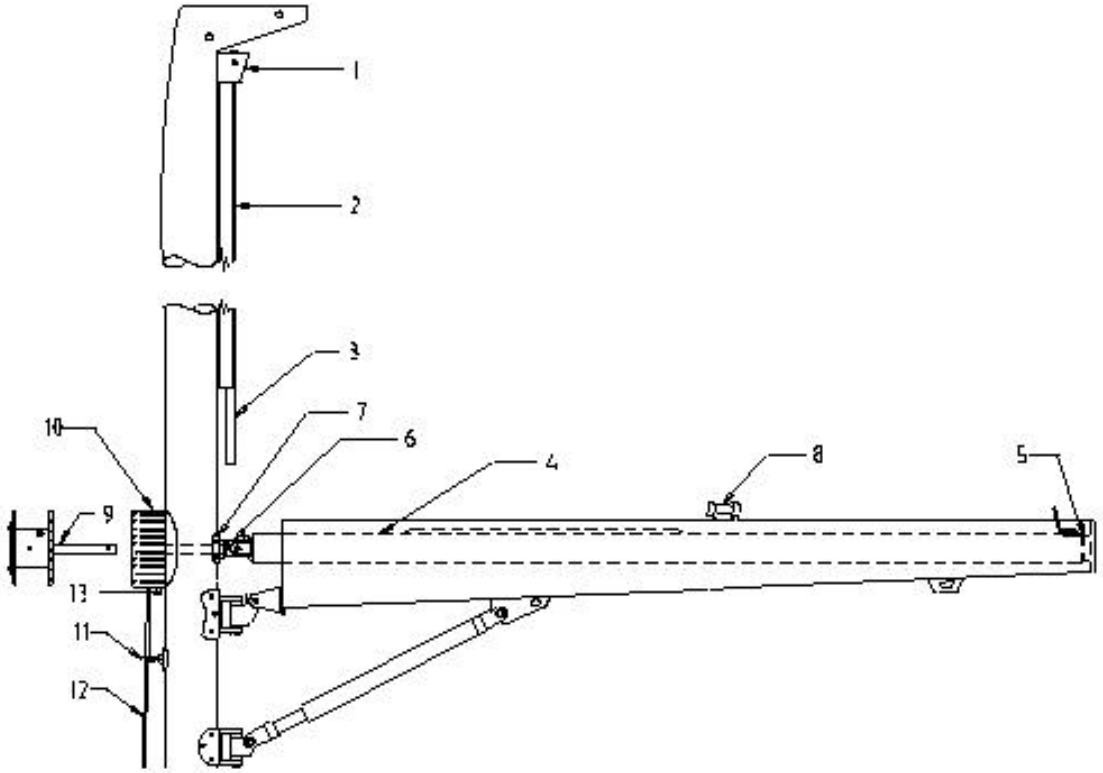
Learn how to use the Leisure furl system before taking your boat out on open waters.

The operator is expected to have prior sailing experience, including knowledge of generally recognised safe sailing procedures. The operator should also have an understanding of such basic sailing techniques as hoisting and reefing a sail. The instructions in this manual should be read in conjunction with such techniques and safe sailing procedures. Such techniques and procedures shall be deemed to supplement the instructions in this manual.

Use the Leisure furl at your own risk. We accept no liability for personal injury or property damage resulting from your failure to follow the instructions in this manual or generally recognised safe sailing procedures. As the manufacturer did not install the Leisure furl, we accept no liability for personal injury or property damage resulting from faulty installation.

WARNING -- It is possible for the furling mandrel to slide off the aft spigot, if the boom is lowered to the deck, resulting in possible damage to the mast area and universal if raised into position without realignment. Ensure the mandrel is aligned with the spigot before lifting up to the desired height.

Leisure furl *Components list*



1. Halyard sheave box
2. Sail track
3. flexible feeder
4. Mandrel
5. Outer bearing
6. Universal
7. Inner bearing
8. Support bracket
9. Spool & Shaft
10. Spool cover
11. Rope guide
12. Furling line
13. Ratchet lock

Leisure furl *Sail fitting instructions*

Initial check

- *Ensure the furling mandrel rotates freely. Lubricate as per "maintenance schedule" if necessary.*
- *Ensure the feeder is correctly aligned with the sail track, see diagram 5. Adjust to correct if necessary, see sail feeder alignment.*
- *If already fitted remove the furling line before fitting the sail*

Sail fitting

1. With the sail laid on the port side, lift the foot up to the furling mandrel, then slide the foot bolt rope into the track, from either forward or aft.

2. Attach first the tack to the furling mandrel, leaving around 30mm between the tack web and tack ring on the universal, *see adjustment A, diagram 4.*

3. Now lash the clew to the outhaul saddle, *see adjustment C, diagram 4*. Do not pull the foot out tight, leave fullness in the foot for efficient down wind sailing. The in built sail controls will generate outhaul tension.

4. Lash also the clew to the furling mandrel, using a separate lashing, pulling the clew within 10mm of the mandrel, *see adjustment B, diagram 4*.

5. Using a winch handle inserted into the drive gear, roll the sail onto the port side of the mandrel. (We recommend two persons assist by pulling either the luff or leach, so as to ensure the bolt rope remains in the area between the boom edge and the mast, whilst the sail is being furled).

6. In some special cases, hoisting the sail from the deck may be prefered, as the spool and boom height from the deck may inhibit manual fitting. In this instance the furling line will need to be pre-wound on the spool before the sail is attached, and the boom set to the correct angle for furling, *see setting up boom height*, before the sail is hoisted.

7. With the sail rolled fully on the mandrel, fasten one end of the retraction line to the spool, by firstly placing five turns around the spool drum in an anti clock wise direction, looking aft, then pass the free end through the hole in the spool. Tie a single knot as close to the end as possible, and push the knot into the counter bore of the spool drum.

The sail fitting is complete, However minor adjustments may need to be made as the lashings stretch.

Leisure furl *setting up boom height*

See Hoisting the sail

To establish the correct operating angle for the boom, once at full hoist, over tension the main halyard. This will give an accurate indication of the tack angle. Pull on the topping lift, tie this off and mark a position for future reference, as this is the correct position for furling. Release now the topper if interfering with the mainsail. It is possible for the topper to stretch, so review the height as above regularly.

Release the load of the main halyard until wrinkles appear at the luff. Engage the main halyard jamber, and mark a position for reference on the main halyard. This position will become our maximum hoist. With the foot track on the mandrel in its uppermost position, ensure adequate fullness has been allowed for. This should now be a full and powerful down wind sail. Adjust if required *see sail adjustments*

With the main halyard jamber still engaged, pull on the furling line. This will flatten the foot and tension the luff, as if an outhaul and cunningham had been applied. This becomes an efficient up wind sail. When the furling line is released, the mandrel will rotate back to the down wind position.

We will now set up the reef points for the sail.

- Snub the main halyard around a winch or T cleat, to take the halyard load once the jamber is released.
- Release the main halyard rope jamber, ensuring load on the halyard is maintained.
- Pull in on the furling line, as you ease the main halyard. Apply the desired amount of resistance to the halyard so as to control the amount of “pull back”. *See sail control*
- When each batten is approximitly 20mm from the furling mandrel, engage the main halyard rope jamber, then flatten the sail further by pulling in on the furling line, over tensioning the luff each time. The batten should lay along the underside of the mandrel, and the sail should flatten along the foot. The batten in this position avoids fullness creeping into the foot, so where possible reef on each of the batten positions.
- At each of the reef positions mark the main halyard at the jamber position for future height reference.

Leisure furl *operating instructions – Hoisting the sail*

Once every 2-3 months we recommend that areas of the bolt rope be coated with the “luff lube” supplied, during the hoist, with special attention given to the head of the sail and the batten ends.

Pre check before hoisting the sail

- *Guide the sail into the feeder, and attach the main halyard*
- *Check that the boom is at the correct angle to the mast*
- *Ensure the ratchet lock is disengaged*
- *Release the main sheet, and position the yacht head to wind, so as to unload the sail*

Sail hoisting

1. Load the halyard winch with the main halyard and release the furling line rope jamber

2. Proceed to hoist the sail, allowing the furling line to pull lightly through the hand.

3. Hoist the sail fully, or to a reef position.

4. Lock off the furling line rope jamber.

5. Tension the main sheet or bear away and proceed to sail.

Controling sail shape (luff tension & outhaul)

The in built sail controls allow sail shape to be controled without the use of a cunningham or outhaul, by simply tensioning the furling line.

To flatten the sail for upwind conditions.

1. Lock off the main halyard rope jamber, then over tension the furling line.

   This rotates the furling mandrel and draws fullness out of the foot as with an outhaul, at the same time as tensioning the luff as with a cunningham.
   Do not adjust the main halyard until such time as you wish to furl the sail below this flattened position.

Leisure furl *operating instructions – Furling the sail*

Pre check prior to reefing or furling the sail

- *Check that the boom is at the correct angle to the mast, see setting up boom height*
- *Release the main sheet, or position the yacht head to wind, so as to unload the sail*

Sail furling

1. Snub the main halyard around a winch or T cleat, to take the halyard load once the jamber is released.

2. Release the main halyard rope jamber, ensuring load on the halyard is maintained.

3. Pull in on the furling line, as you ease the main halyard. Apply the desired amount of resistance to the halyard so as to control the amount of "pull back". *See sail control*

4. Once at the desired reef position, engage the main halyard rope jamber, then flatten the sail further by pulling in on the furling line until the sail is completely flattened.

5. Tension the main sheet or bear away and proceed to sail.

Notes

A mandrel locking ratchet has been incorporated into the system so the load can be released from the furling line. It does not have to be used, but when engaged, can be extremely useful in the following circumstances …

- When the sail is to be reefed for a long period of time.
- In the event of deck gear, or furling line failure, a winch handle inserted in the face plate of the spool, will allow for manual furling without fear of a counter rotation.
- Whilst racing the yacht, when an effective outhaul and cunningham is required, it is useful to engage the ratchet to avoid the creep that will occur as the furling line pulls into the turns of rope on the spool. Without the ratchet, the furling line may have to be re-tensioned. Due to the load on the locking pin, the system will need to be unloaded prior to the locking ratchet being disengaged.

Leisure furl *Sail Control*

Pull back

Pull back is a term used, to refer to the sail gradually working back along the mandrel as it is furled and is visable as lines on the sail, stretching back from the feeder at an angle to the furling mandrel. A system that is set up and operated correctly will control the amount of pull back, and sail shape. Ideally the sail should always furl neatly, and directly under the feeder. Indications that the sail is pulling back excessively will be highly visable by lines stretching through the sail from the feeder, *see diagram 1.*
If the sail shows these signs of substantial pull back, reduce the resistance on the main halyard. You will immediately notice that the lines of pull back gradually disappear as you continue.

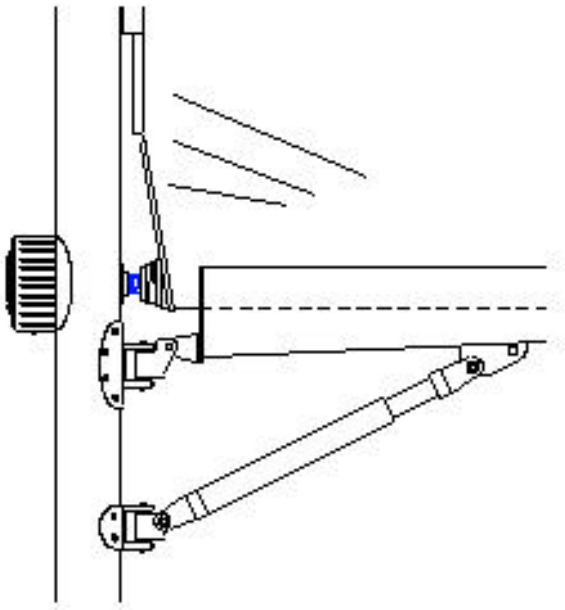


Diagram 1

Sail works forward

In this instance increase the resistance on the main halyard, also ensure the sail is unloaded.

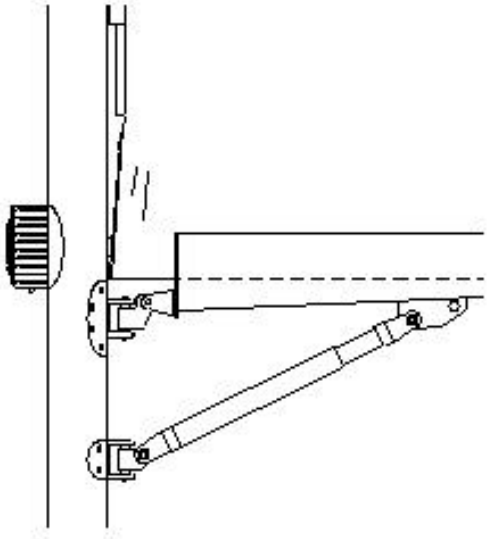


Diagram 2

Do not release the main halyard in spurts, *see diagram 3*.

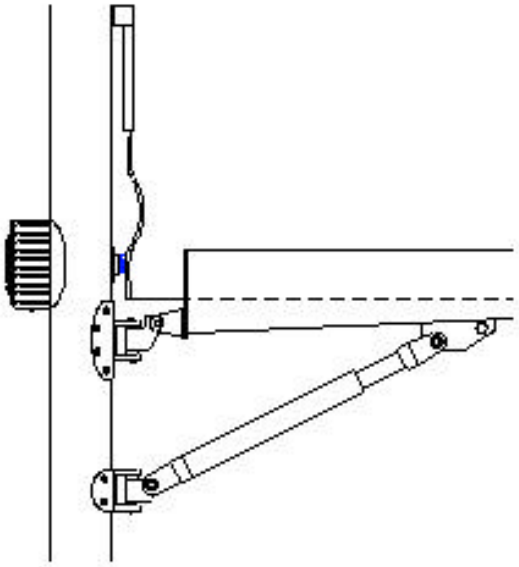


Diagram 3

The balance of resistance is essential for efficient furling.

If the pull back does not appear to be controllable as explained consider the following

The boom height is not set correctly
The sail has not been unloaded
The sail is not positioned correctly on the mandrel *see sail adjustments*

Leisure furl *Sail adjustments*

Small adjustments to perfect the furl can be made as follows

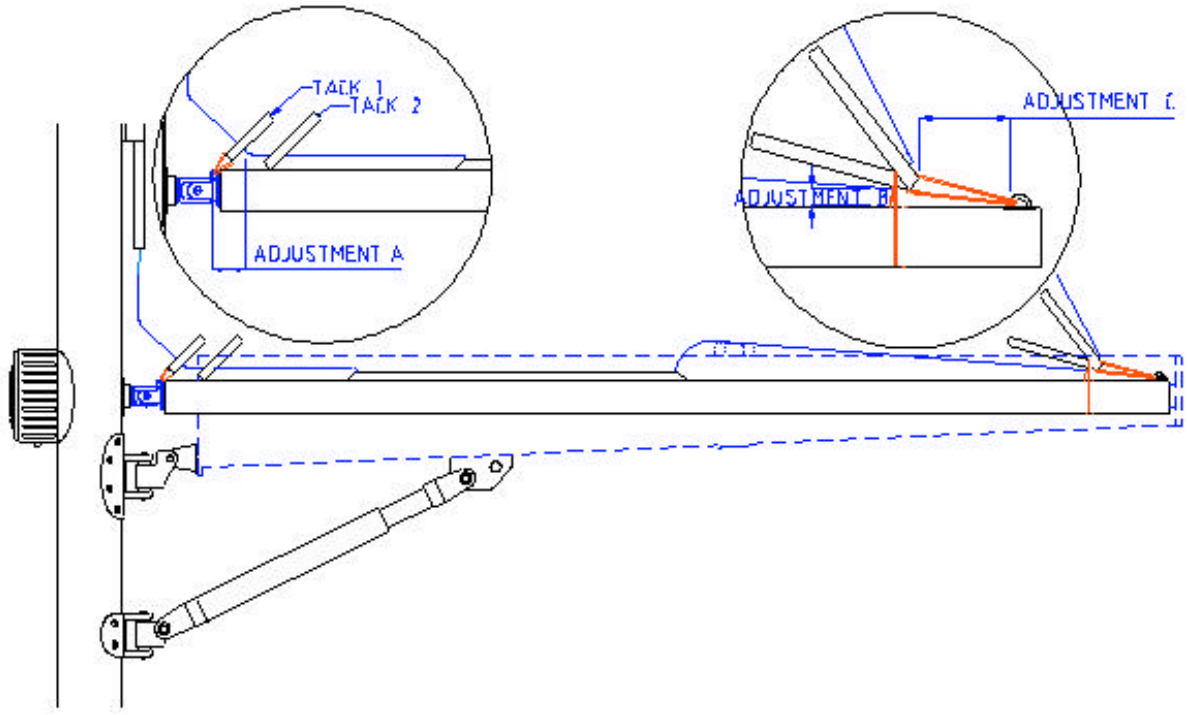
- If the sail shows signs of pull back, without resistance on the halyard, make adjustment at the tack (*A*), pulling the tack closer into the saddle artificially creates luff round down low. Use the aft tack web if necessary for greater adjustment. This may cause slight distortion at the luff area around the first batten.

- Ease adjustment *(C)* to return fullness to the foot. Adjustment (*B*) will not need to be moved from its original setting.

- If the sail works forward as it furls, release adjustment *(A)* approximately 40mm. Leave adjustment *(B)* as it is and pull adjustment *(C)* out by 40mm. Also it may help to pull the topper on a little, past the set mark before furling.

If these adjustments do not rectify the problem, sail modifications may be required. Contact an authorised dealer for further assistance.

Diagram 4



Leisure furl *Sail feeder alignment*

The sail feeder and sail track supplied have been manufactured to exacting tolerances to suit this vessel.
The following diagram illustrates the correct and incorrect alignment of the feeder in relation to the luff track. It is essential that the feeder be correctly positioned at all times, so as to ensure the load of the sail is taken on the feeder not the sail track. Incorrect alignment may substantially reduce the life of the luff tape, and risks the sail not entering the sail track correctly.

With the correct alignment, the luff tape on the sail will give many years trouble free use. See diagram 5.

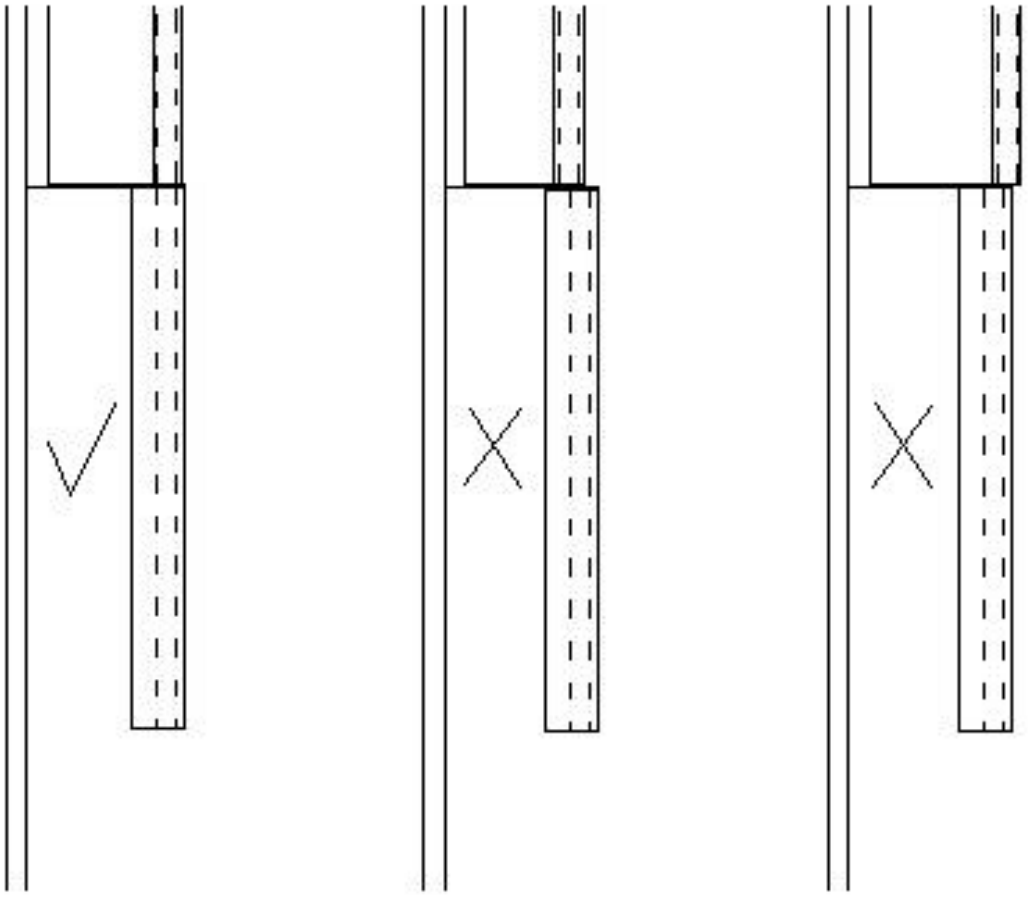


Diagram 5

Leisure furl *Operating tips*

Use of the Ratchet Lock

A ratchet lock is built into the system to enable manual furling, without the fear of a counter rotation. It has proven useful also when reefed for extended periods. The ratchet will eliminate “creap” which is experienced on the furling line through stretch, and the rope pulling in on the other turns on the spool. Use of the ratchet will also remove load from the deck fittings.
To disengage the ratchet lock, simply over tighten the furling line, as you disengage the locking pin.

Reef on a batten

Whilst possible to reef at any point of hoist, It remains desirable to reef on a batten as fullness may creap into the foot, and some efficiency lost for up wind sailing.

Luff tension

Luff tension is essential for efficient sail shape in an up wind heavy weather sail. It is a good idea to over tension, rather than under tension, as sail shape will suffer in the later circumstance.

Tension with the furling line

The system uses the main halyard as a means of hoisting the sail only. When luff tension is desired we normally use the furling line. Lock the main halyard off at the desired position, then pull against this with the furling line to achieve a flatter sail with tensioned luff.

Furling down wind

If it is necessary to furl down wind, we introduce a modified procedure to Furling the Sail as was stated earlier.

- Square away to a broard reach, or flat run.
- Pull the mainsheet in so the boom is approx 45° to the centreline.
- Release the vang a little and cause the boom to sky, and pull in on the topper.
- Snub the main halyard off before releasing the main halyard rope jamber. Do not release any of the main halyard.
- Initiate furling without releasing any main halyard, then slowly allow the halyard to pull against the power of the winch. Alot of power will be required.

Leisure furl *Trouble shooting*

Sail cannot hoist

- Furling line rope jamber is not disengaged
- Locking ratchet is still engaged
- Furling line has a knot in it somewhere
- Sail has not been fed into the feeder correctly

Sail is hard to hoist

- Sail is partially loaded
- Main halyard is catching somewhere
- Furling line is catching somewhere
- Furling line is jambed in the spool

Sail cannot furl

- Main halyard rope jamber is not disengaged
- Main halyard is jambed somewhere
- Sail is caught somewhere

At any stage the sail can be lowered by simply releasing the halyard

Sail pushes forward when furling

- Sail has not been unloaded
- Boom height is set to low
- Insufficient halyard resistance applied during the furl
- Sail is positioned to far forward on the mandrel

Sail pulls back excessively when furling

- Boom height is set to high
- Too greater halyard resistance applied
- Sail is positioned to far back on the mandrel

Broken or damaged furling line, deck gear

- Bring the yacht head to wind, Insert a winch handle in the spool, engage the locking ratchet, ease the main halyard as the spool is rotated, at the desired level of hoist engage the main halyard rope jamber, continue rotating the spool to tension the luff and flatten the foot.

System makes a noise whilst at anchor

- Take the load of the topping lift or attach a shock cord from the support bracket to the topping lift, then pull tight.
- If the sail cover rattles at night, pull the cover along the boom to open.

Leisure furl *MAINTENANCE SCHEDULE*

LUFF TAPE:

With a new sail on first hoist apply an even coat of "luff lube" to the full length of the sail on both sides during hoist, ensuring the head and batten ends are well coated.

After several weeks use, apply a further coat mainly to the head and batten ends.

Thereafter apply to head and batten ends approx three times a season.

BEARINGS:

Use Super lube or similar, once a season.

Aft spigot	*Apply several drops through accessible holes.*
Forward Mast Bearing Aft Mast Bearing	Remove grub screws & apply several drops.
Universal Gooseneck Support bracket roller Cover Rollers Locking Ratchet	Apply several drops to accessible moving parts

COMPONENTS:

Check once a season.

Vang Tang Mainsheet Tangs Preventer Tangs	Ensure that all machine screws are tight & there is no sign of movement.
Locking Ratchet	Ensure plunger is free & When disengaged is well clear of spool.

ROPES:	Main Halyard Furling Line Sail Cover	}	Check for any signs of chafe at rope clutches, rope guides, sheaves etc Check retrieving line & where lines are joined.
RIG:	Leisure Furl Track – Check the attachment slug nuts are tight and lubricate the sheave box at the mast crane.		
SAIL:	Lashings – check foot lashings for chafe.		
	Inner batten ends Bolt rope	}	Check for any signs of chafe.

Service record

Leisure furl *Your Questions*

Must I always reef with a batten on the mandrel?
No. You can reef at any point, but the batten on the mandrel is the most efficient position in terms of holding the foot totally flat. The least efficient position is with the batten just outside the boom.

Must I go head to wind, to reef?
No. Under normal circumstances, as with a slab reef, it's desirable to have the main completely unloaded. However, if the boom is out more than 45 degrees though the universal becomes fairly inefficient and quite a lot of power is required.

Do I need to snub the furling line when hoisting?
If the mainsheet is totally free, the furling line only needs to be snubbed if blowing hard. It's good practice to let it run through the hand while hoisting.

Does corrugation in the sail roll damage the sails?
Corrugations are caused by small sail faults, but do not cause any problems. They will gradually disappear as the sail softens up.

For racing, can I get degrees of fullness in the foot and still get luff tension?
Yes. Degrees of fullness can be achieved by pulling small amounts on the furling line but, if this is required, luff tension will need to be achieved with conventional cunningham at full hoist. Remember to ensure it's removed before furling.

Do I have foot control after reefing?
No, it's not required. If correct procedures are followed, the sail will always be totally flat on the foot. If more power is required, simply unwind more sail.

Can I still operate the system if my winch should fail?
Yes. Take controls to another winch or operate from the mast.

Can I still operate the system if I break a furling line or some of my deck gear fails?
Yes. Go forward with a winch handle and engage locking ratchet. Wind sail down with winch handle to desired position and tension with main halyard against ratchet.

What do I need to watch in very strong winds?
Only that the mainsheet is totally released and that the bow is not allowed to drop off far enough for the sail to start filling. Also make sure furling line is snubbed when hoisting and main halyard snubbed adequately when furling.

Can I use a solid vang in place of a topper?
Yes. Hydraulic vangs are quite satisfactory, but the angle has to be watched before furling. If using a gas or spring vang without a topper, there must be considerable upward pressure on the boom at its normal furling height, otherwise in a seaway the boom will start bouncing while furling.

Can I get away without a vang if I only cruise?
No. A vang is essential to stop the boom riding up when furling.

Leisure furl *Glossary of terms*

Bolt Rope	The rope used in the luff tape.
Clew	The outer corner of the sail between the foot and the leach.
Cunningham	The rope that tensions the luff of the sail
Down Wind	With the wind aft of the beam.
Drive Shaft	The shaft that connects the mandrel to the spool in front of the mast.
Feeder	The block at the bottom of the sail track that guides the bolt rope.
Flat Run	With the wind directly from the stern.
Foot	The edge of the sail that attaches to the boom.
Furling Line	The line which is used to lower the sail.
Gooseneck	The fitting attaching the boom to the mast.
Head	The top of the sail.
Head to wind	With the bow of the yacht directly into the wind.
Leach	The back edge of the sail between the clew and the head.
Leisure furl track	The sail track on the aft face of the mast.
Luff	The front edge of the sail closest to the mast.
Luff Tape	The tape at the sail luff which feeds up the sail track.
Topping lift	The rope that holds the boom up from the aft end.
Main Halyard	The rope that pulls the sail up the mast.
Main Sheet	The rope that pulls the boom in and out.
Mandrel	The tube that the sail furls around.
Outer Bearing	The bearing at the outer end of the mandrel.
Outhaul	The tensioning device on a conventional setup (not required with L/f as L/f has its own unique totally efficient foot tensioning system).
Ratchet	The mandrel locking device that is located at the bottom of the spool.
Roach	The area of sail that extends out from the leach.
Rope guide	The guide that centralizes the furling line in the spool.
Spool	The drum on the front of the mast that the furling line winds around.
Support bracket	The device in the middle of the boom that limits the flex of the mandrel.
Support bracket guides	The stainless steel rods that guide the sail around the support.
Tack angle	The eternal angle between the foot and the luff.
Tack	The corner of the sail between the foot and the luff.
Universal	The swiveling joint that attaches the mandrel to the drive shaft.
Unload the main	Allow the mainsail (and mainsheet) to become totally slack.
Vang	The strut or rope purchase system that controls the boom angle.

Leisure furl *World Service*

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