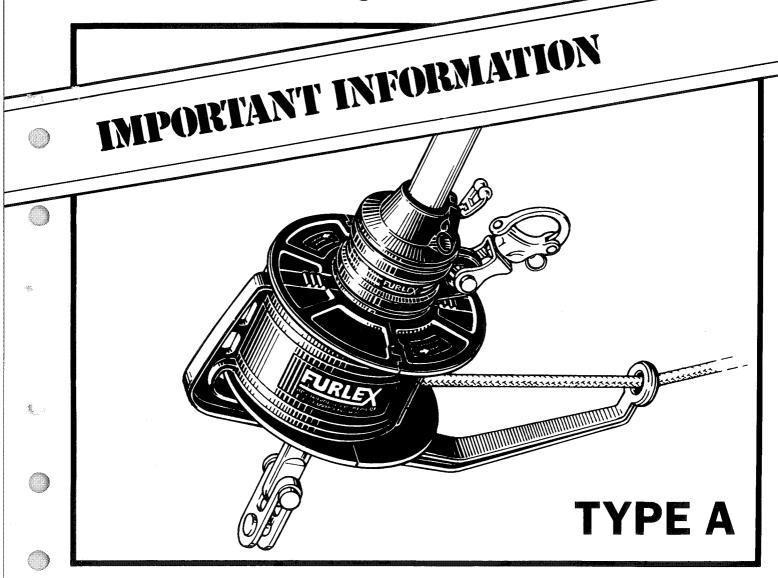


JIB FURLING & REEFING SYSTEM



SELDÉN

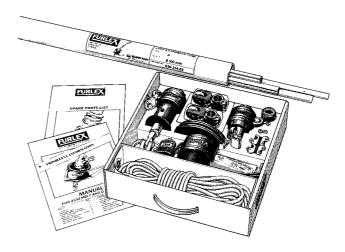


MANUAL FOR ASSEMBLY AND OPERATION

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CHECK-LIST

Check that the kit is complete.



Packing box ☐ 1 Halyard Swivel (with snap shackle) ☐ 1 Lower Bearing Assembly (with snap shackle) ☐ 4 Line Drum Flange Halves ☐ 1 Line Guide Fitting ☐ 1 Furling Line $\ \square$ 2 Halyard Leads 508-135, incl. 4 screws and insulator sheets 4 Stanchion Blocks

	☐ 1 Drill-bit 5.3 mm Ø	C. L.		
	☐ 1 Luff Extrusion sample (for the sailmaker)			
	☐ 1 Prefeeder incl. shock cord and hook			
	☐ 1 bottle, Locking Adhesive			
	\square 1 tube, Lubricating Grease			
	☐ 1 Top Guard incl. 2 screws			
	☐ 1 Forestay wire			
	☐ Instruction Manaual			
	☐ Spare Parts List			
	☐ Certificate of Guarantee	To be able to keep you informed about new developments, maintenance, and handling of your FURLEX, your dealer should fill out the enclosed registration coupon and return it to the wholesaler.		
/	Packing Tube			
	☐ 1×1000 mm Luff Extrusion with Distance Tube + Joint Sleeve			
	☐ 1×2000 mm Luff Extrusion with Distance Tube + Joint Sleeve			
	2-4×2400 mm Luff Extrusions with Distance Tubes + Joint Sleeves			
	☐ 1 Spacer (at sail feeder) ☐ 1 long Connecting Spring for each 2400 and 2000 mm Luff Extrusion ☐ 1 short connecting Spring for the 1000 mm Luff Extrusion			

TOOLS NEEDED FOR ASSEMBLY

Screwdriver

Hacksaw

2 adjustable spanners (one of smaller type, or size 16 fixed). Pair of channel joint pliers.

Adhesive tape

File

Steel measuring tape (20 m)

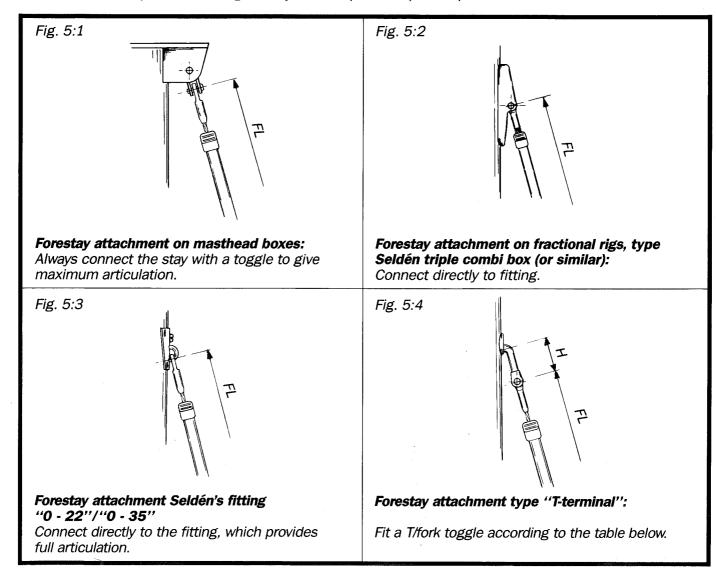
Knife Permanent dye marker

For halyard leads: Heavy duty Phillips screwdriver. Drill (Drill-bit 5.3 mm Ø supplied)

PRODUCT INFORMATION FURLEX is supplied as a complete kit containing every part required. FURLEX is the ultimate jib furling gear for cruising and racing. The line drum and line guide fitting are easy to remove if you want to race. Twin luff-grooves allow fast sail changes; a great feature for the racing man. When cruising they also make goose-winging two jibs possible for downwind sailing. ☐ FURLEX is designed for reefing under severe conditions. However, make sure that the sail has sufficient strength. ☐ The automatically retracting prefeeder is always at hand. ☐ The ballbearing system is based on a unique design which distributes the loads around the entire ball race. This system gives smoother furling with less friction. Follow the instructions carefully when assembling FURLEX. Top Guard Halyard Swivel Sail Feed Lower Bearing Assembly Flange halves Lineguide

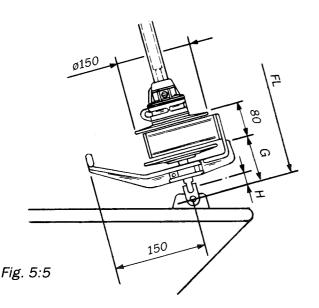
HULL AND MAST ATTACHMENTS

There are many different hull and mast attachment designs. Generally the fittings should be designed so that the connections allow enough flexibility to cope with forestay sag. Check that the spinnaker halyard, if any, cannot catch the halyard swivel or the top end of the luff extrusion when furling. If this can happen, let the halyard run through a halyard lead (508-159) to keep it clear.



The lower end of FURLEX is supplied with a fork toggle as standard. This toggle can be attached directly to the forestay deck-fitting. Check that the line drum does not interfere with pulpit, bow anchor or other deck fittings.

The line drum can be raised by adding toggles (fork/eye) (see table) or with links. Links should be connected at their lower ends with a toggle.



Wire Ø Toggle	4 mm	5 mm	6 mm
Toggle (eye/fork)	174-102	174-103	174-104
(Hasselfors No)	H=25 (80252)	H=35 (80253)	H=40 (80254)
Toggle (fork/fork)	517-056-02	517-054-02	517-046-02
	H=25	H=30	H=40
Toggle (T/fork)	174-127	174-128	174-122
80	H=60	H=70	H=80
G	~ 100	~ 100	~ 120

TO CALCULATE THE LENGTH OF THE FORESTAY WIRE (See fig. 7:1)

- 1 Decide the rake of the mast with tensioned fore and backstays.
- 2 Slacken the backstay as much as possible. Pull the masthead forward using the genoa halyard. Do not use the snap shackle but a "D" shackle or tie the halyard to a strong hull or deck fitting. Remove the forestay without changing its rigging screw setting (if any). Measure the length of the forestay (FL) on a flat, horizontal surface. Use a steel measuring tape.
- 3 Write the length measured on the table below and calculate the correct wire length (WL).
- 4 Measure the length from the center of the hole in the wire terminal. Mark the measurement WL on the wire using a permanent dye felt pen, so that the mark cannot move. Do not cut the forestay yet.

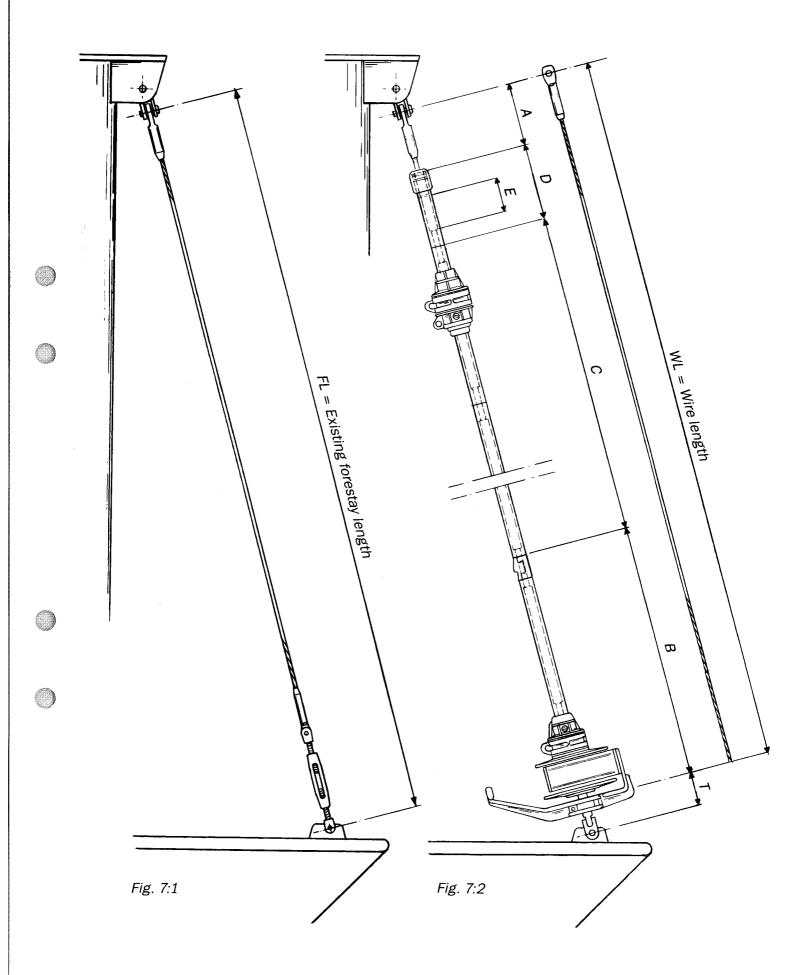
 BE CAREFUL WHEN YOU OPEN THE WIRE COIL AS IT CAN UNCOIL QUICKLY!!!

CALCULATION OF FORESTAY WIRE LENGTH		YOUR FORESTAY	EXAMPLE ø5
FL	Existing forestay length (FL), inclusing rigging screw. (See fig. 7:1)		9.675
Т	Deduction for lower wire terminal: 4 mm ø wire: — 45 mm 5 mm ø wire: — 55 mm 6 mm ø wire: — 70 mm	_	_ 55
	If a link or extra toggle is to be used deduct its length as well.	_	_
WL	The new forestay wire is to be measured and marked at: (WL, acc. to fig. 7:2)	=	= 9.620

TO CALCULATE THE LENGTH OF THE LUFF EXTRUSION (See fig. 7:2)

The length of the luff extrusion is calculated according to the form below. Insert the length of the new forestay wire (WL) taken from the preceding form and calculate starting from the top of the form.

CALCU	LATION OF LUFF EXTRUSION LENGTH		YOUR EXTRUSION	EXAMPLE ø5
WL	Length of new forestay wire (see table above)			9.620
A+B	Fixed deduction (A+B) 4 mm ø wire: — 1340 mm 5 mm ø wire: — 1340 mm 6 mm ø wire: — 1290 mm		_	- 1.340
C+D	**.	C+D=	=	= 8.280
С	Max. number of 2400 mm extrusions that together are shorter than C+D=extr. × 2400 mm=C		_	(3 extrusions) - 7. 200
D	If D comes out longer than 2000 mm: If D comes out between 400 and 2000 mm: Use a If D comes out shorter than 400 mm: Pepla 2400 2400 2400 2400 2400 2400 2400 240	2400 mm extrusion. 2000 mm extrusion. 2000 mm extrusion. ce the top full length mm extrusion with 2000 mm extrusion. In ay the joint is moved nm down the stay. Ad- ne C and D measure- st thus: ct 400 mm from the C urement. 200 mm to the D urement. For the top sion use a 2400 mm		= 1.080
E	Cut the distance tube for the top extrusion: 4 mm ø wire: E=D—120 mm 5 mm ø wire: E=D—120 mm 6 mm ø wire: E=D—200 mm Len	gth of distance tube E=		/20 = 960



ASSEMBLING FURLEX

Assembling the luff extrusions

Assembly should be carried out on a horizontal surface. Connect the luff extrusions one by one, starting at the lower bearing assembly.

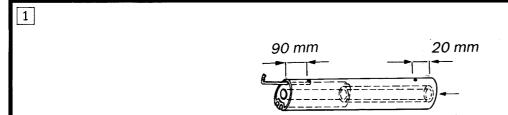
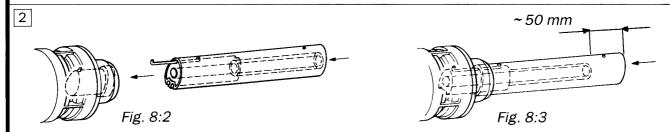
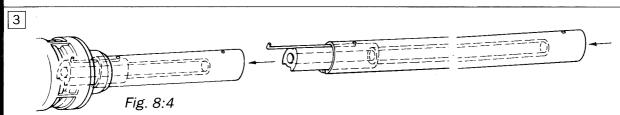


Fig. 8:1

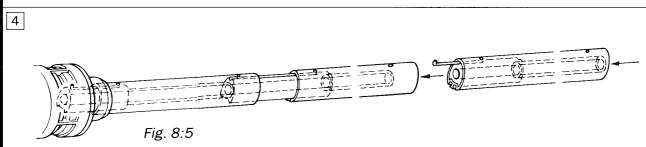
Fit the short connecting spring (L=103 mm) to the 1000 mm extrusion. The large hook should be at the free end.



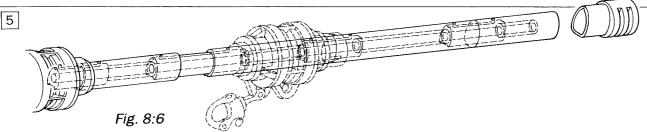
Connect the 1000 mm extrusion to the hole in the lower bearing assembly. Engage the connecting spring in its hole in the bearing assembly. Push the joint sleeve and distance tube 50 mm into the extrusion until they bottom in the hole.



Fit the connecting spring (L=144~mm) to the 2400 mm extrusion. Engage the spring in the hole in the 1000 mm extrusion. Push the distance tube until the joint sleeve hits the bottom. The end of the distance tube should be buried a distance corresponding to half the length of a joint sleeve. A 50 mm gap is created at this join, which will serve as a sailfeed. A spacer will be fitted later.



Connect the remaining extrusions following the table on page 6.



Slide the halyard swivel all the way down to the sail feeder gap. Secure it in position with some turns of adhesive tape.

Slide the top guard over the top extrusion and secure it with the two pre-fitted screws.

Fitting the wire terminal

- $\boxed{6}$ Dismantle the removable parts of the wire terminal: eye + wedge + former.
- 7 Feed the forestay wire from the top. If the wire catches inside the extrusion, turn it anti-clockwise until it passes the obstruction.
- 8 Put adhesive tape around the wire on both sides of the cut mark and cut the wire with a hacksaw. The cut wire should protrude from the wire terminal by approx. 30-50 mm.

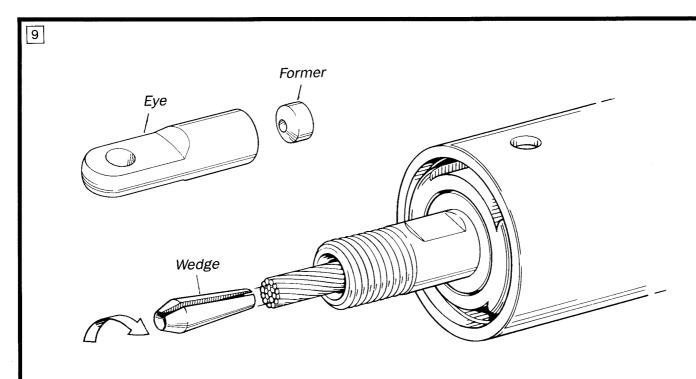


Fig. 9:1

Slide the wedge over the core of the wire. Re-lay the outer strands (clockwise seen from below).

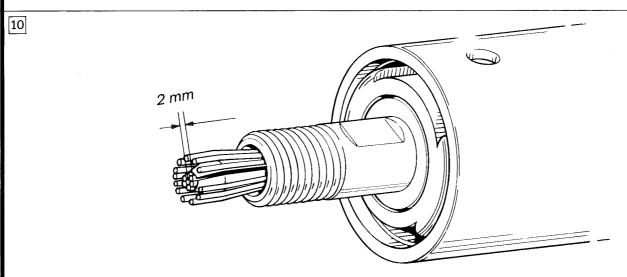


Fig. 9:2

Push the wire and wedge into the socket so that the outer strands are kept in place and evenly spaced around the wedge.

The wire core should protrude 2 mm from the wedge. Tap the wire lightly so the outer strands jam in the seat. Bend the ends of the outer strands inwards slightly with channel-joint pliers.

NOTE! CHECK THAT NO STRANDS SLIP INTO THE SLOT IN THE WEDGE.

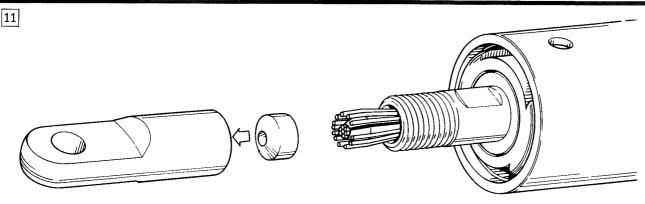


Fig. 10:1

Put the former into the eye piece of the terminal. Fit the terminal eye piece so that the wire is formed inside the terminal.



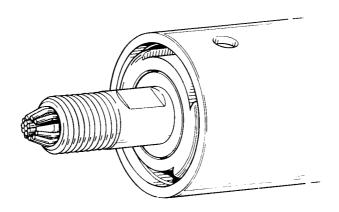


Fig. 10:2

Dismantle again and check the strands. If some have crossed, correct their alignment. CHECK AGAIN THAT NO STRAND HAS SLIPPED INTO THE SLOT OF THE WEDGE. (If the assembly is unsuccessful see page 19 for applicable instructions "Dismantling FURLEX".)



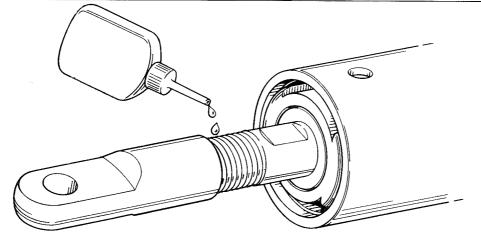


Fig. 10:3

Apply 2 or 3 drops of locking adhesive to the male threads and tighten down hard. The terminal is now permanently locked.

Avoid skin and eye contact when using the adhesive.





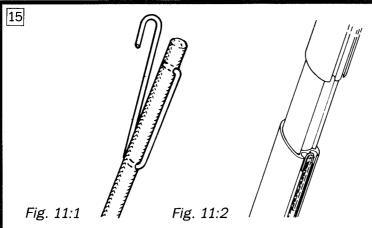
Fig. 10:4

The swaged end fitting will protrude completely on FURLEX with 4 or 5 mm Ø wire.

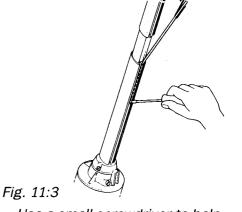


Fig. 10:5

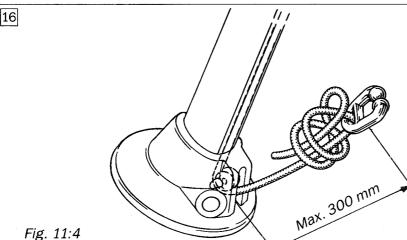
On FURLEX A with 6 mm Ø wire, about half of the swaged fitting will be exposed.



The hook is connected to the rubber cord acc. to fig. 11:1. Feed the cord through the starboard sail groove as shown in fig. 11:2 and then through the slot in the lower bearing assembly. Fix the hook in position.



Use a small screwdriver to help if the rubber cord is difficult to feed through the luff groove.



prefeeder is correctly fitted or it will not work properly.

It is most important that the

rig. 11:4

Tension the cord as hard as possible and tie the pre-feeder to the cord as shown and 300 mm from the slot.

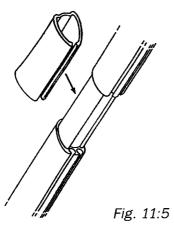
Tighten the knot and cut off excess cord.

CAUTION: If the cord is too loose the prefeeder could be moved from its static position by centrifugal force (created by the lower bearing assembly revolving quickly).

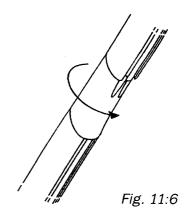
If the sail has a tendency to come out of the feeder, reduce the gap width by squeezing the two arms together with a pair of pliers.

17

The spacer is fitted at the sail feeder:



Fit the spacer in the 50 mm gap at the lowest joint. The fitting is pressed on to the pointed part of the joint sleeve from the front, and



is then given half a turn. The spacer will then cover the two sail grooves of the lowest luff extrusion.

FITTING OF LINE DRUM AND GUIDE ARM

Fig. 12:1

Fit the two upper flange halves (with the labels) on the lower bearing.

Fig. 12:2

Feed the furling line through the hole in the line guide and into the oval hole in the lower bearing assembly until it is just past the small sighting hole. Tighten the locking screw hard.

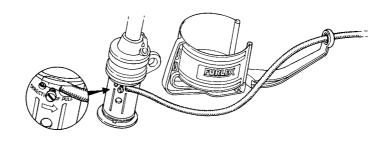


Fig. 12:3

Remove the screw in the line guide.
Slide the guide over the eye wireterminal and hold it against the fitted
flange halves. Replace the screw and
fit the line guide in this position. Fit
the lower flange halves.

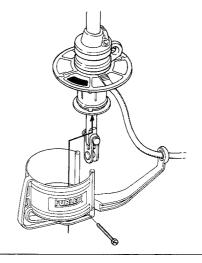


Fig. 12:4

Adjust the line guide so that the line guard does not touch and hinder line drum rotation.

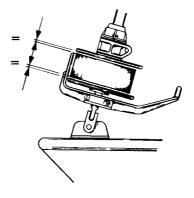
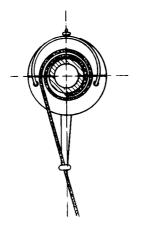


Fig. 12:5

THE FURLING LINE MUST EXIT ON THE PORT SIDE OF THE DRUM



Wind the line on the drum so that it exits on the port side in order to use the effect of the rotating tack attachment properly when reefing. This also ensures that the torsional forces are correctly distributed.

Avoid too many turns of furling line on the drum. When the largest sail is fully furled there should be no more than 3-5 turns left.

FURLEX FOR RACING

Fig. 13:1

FURLEX can easily be modified for racing. The line guide and the drum can be dismantled without removing the forestay from its deck fitting, and the halyard swivel can be lowered below the sail feeder. The sail can then be tacked at deck level and the full hoist of the foretriangle utilized. The twin luff-grooves enable quicker sail changes.

- 1 Unroll the entire furling line from the drum. Make a note of the number of turns to be able to rewind it correctly.
- 2 Dismantle the flange halves and the line guide.
- Lower the halyard swivel to the lower end off the luff extrusion.
 In this position it will not interfere with any sail changes, nor add weight to the top of the mast. Your FURLEX is ready for racing.

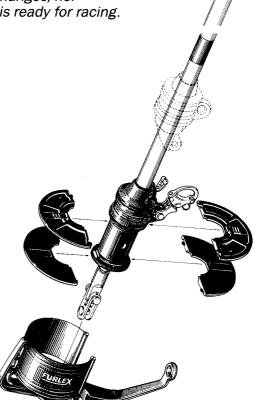


Fig. 13:2

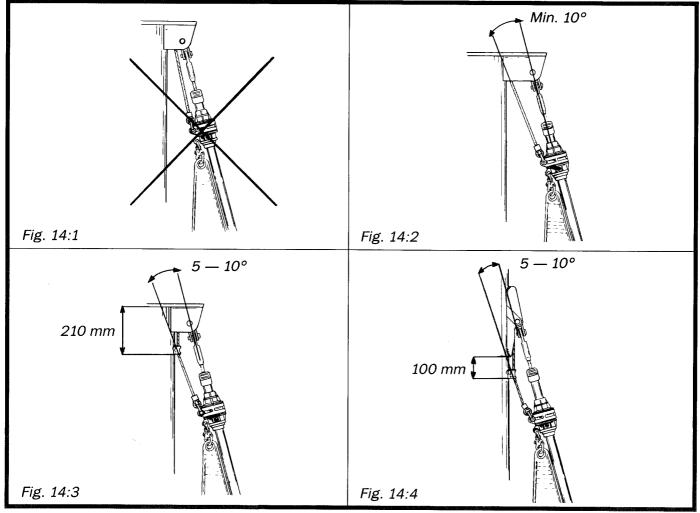
HALYARD LEADS

When the sail is furled on a forestay with a halyard swivel the genoa halyard could twist due to friction in the swivel. Furling will stop after only a few turns if this happens, and both halyard and stay may be damaged.

The halyard should form an angle to the forestay of at least 10° to prevent this (see fig. 14:2). However this requirement is not usually fulfilled. The halyard should then be run through the supplied halyard lead 508-159 (see fig. 14:3 — 14:4).

The kit contains two leads. If the mast is equipped with two genoa halyards, they should each run through their own lead to avoid the second halyard being unintentionally used for the halyard swivel. The leads should be fitted side by side.

If fitted to a Seldén mast, the leads should be located according to fig. 14:3 — 14:4. These measurements could also be used with other masts, but the angle must be checked carefully. Too great an angle can cause severe halyard chafe.

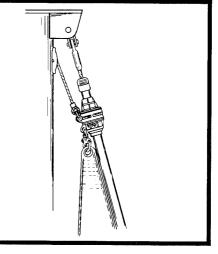


The halyard leads are made from a bronze alloy that reduces wear on the halyards. Most wear will be on the leads themselves.

Halyard leads should be examined annually and any sharp edges filed down. Leads should be replaced when only 50% of the original material remains.

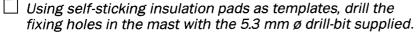
When producing a new mast on which FURLEX is to be fitted, a sheave box is preferably fitted just below the head box. In this way genoa halyard chafe caused by a halyard lead is eliminated.

A halyard box can also be added to an old mast, but the work entailed hardly justifies the advantage gained.



Fitting the halyard leads.

Decide positioning of the leads.



The screws are self-tapping M6 screws which can be screwed directly into the 5,3 mm ø holes.

Use the supplied insulating sheet between mast and fitting. Lubricate the screws with grease. Fit the lead over the halyard as the halyard (snap) shackle is too big to be fed through the lead eye.

If two halyard leads are fitted to a stepped mast they should be fitted before the FURLEX, which would otherwise be in the way when drilling on the front face of the mast.

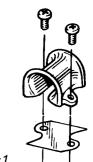
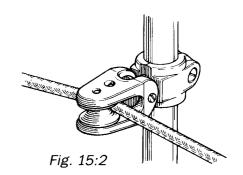


Fig. 15:1

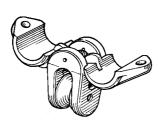
STANCHION FAIR LEAD BLOCK

The kit contains 4 stanchion blocks to be fitted to 25 mm ø stanchions or pulpit. The block has a ball-and-socket joint so that it can be angled in any direction.

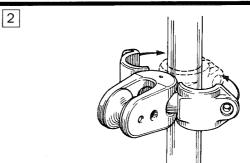
The block is designed to serve as a fair-lead only. A stronger block should be used for heavy loads and/or sharp turning angles.





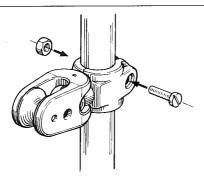


Fit the clamp halves into the sheave house, as shown.



Squeeze the clamps together around the stanchion.

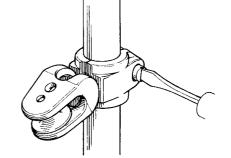




Screw the clamp halves lightly together using the M6 screw and nut supplied.

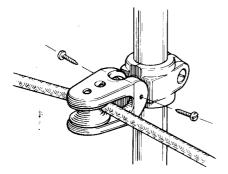


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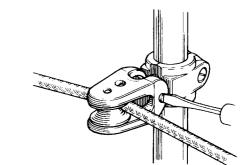


Angle the sheavehouse in the desired direction and tighten the M6 screw.





Fit the rope and check the lead. Finally, lock the block...



...with the self-tapping screws supplied.

THE SAIL

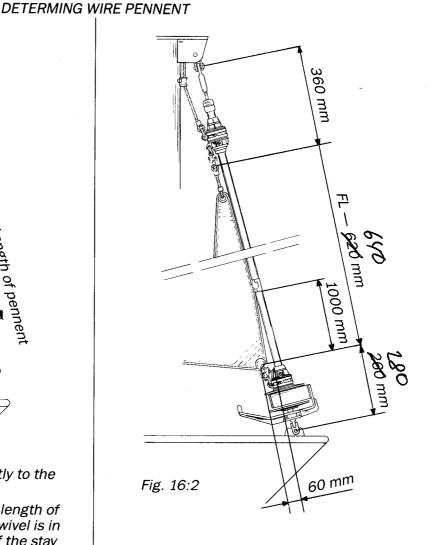
Turn the tack ring anti-clockwise before the sail is fitted to the tack snap shackle.
Use the starboard groove when hoisting the sail. Initial furling resistance is minimized as the sail is
less sharply bent along the luff than if hoisted in the port groove.
If the boat has several genoas, they should all have the same total luff length so that the halyard
swivel will be located at the same level when the sail is hoisted. (ie, the "5 — 10° requirement"
should be fulfilled, see "HALYARD LEADS" page 14.) The best way to adjust luff lengths is to fit wire

head and/or tack pennents of suitable lengths. The correct length is decided by testing on board.

Fig. 16:1

- 1 Attach the head of the sail directly to the halyard swivel.
- 2 Tack the sail at deck level with a length of line. Adjust the line so that the swivel is in the correct position at the top of the stay with normal halyard tension (correct position = 5—10° -requirement).

Pennent length = length of line pennent.



3 Attach the pennent to the head of the sail with a Talurit splice. Then it will not be unintentionally removed, lost or exchanged.

THERE SHOULD BE AT LEAST 20 MM CLEARANCE BETWEEN THE TOP OF THE HALYARD SWIVEL AND THE TOP GUARD WHEN THE SAIL IS FULLY TENSIONED.

Dimensions for sail adjustments:

Max. length of luff = FL (length of existing forestay) minus head and tack deduction (see fig. 16:2).

"Cutback" for tack (see fig. 16:2).

The kit contains a sample of the extrusion intended for sail adjustment. The sail should be made to run very easily through this sample as friction increases many times when the luff runs through the entire length of the luff section. We recommend max. 5 mm ø luff-rope/luff-tape (max. 4 mm ø "hard" line).

Any ultra-violet protection should be on the starboard side of the sail. A high-clewed headsail can give an acceptable sheeting angle without changing the sheeting point.

We recommend that tape is used instead of cringles at tack and head attachments.

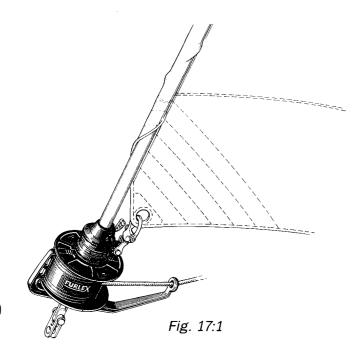
3,0 m 6 mmø

Overall Extrusion dimensions:

26 x 17 mm

16

Fig. 16:3



REEFING

FURLEX is provided with a tack attachment which rotates in relation to the luff extrusion. When reefing while simultaneously applying a limited countertension in the sheet, the luff extrusion turns approx. one revolution before the tack fitting also starts rotating. In this way that part of the sail with the biggest draft will be flattened. This flattens the sail as reefing progresses.

Remember!!

- Reef at least 5 6 turns.
- Gently counteract the reefing action by slipping the sheet from the winch.
- Experiment to find the best method for your sail wardrobe.
- Do not expose your light weather sails (=low cloth weight) to too much wind. Consult your sailmaker if you are not sure.

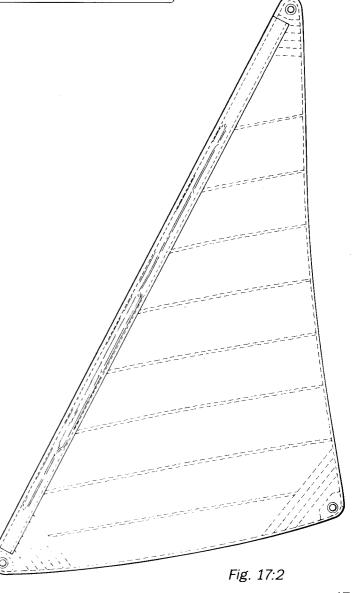
Furlex is one of the stoutest and easiest turning roller reefing systems designed, and hand power is normally more than sufficient. However, if in spite of this you decide to use a winch in heavy wind, first check that there is no external obstruction that can cause friction or damage.

The shape of a reefed sail can be improved.

Several methods to improve the shape of the reefed sail have been developed. Many sailmakers fit "plastic foam" along the luff. The foam is matched to the draft of the sail. It will compensate for the draft of the sail so that the sail becomes flatter when reefed.

Another way is to add a sleeve along the luff. Ropes of varying length/diameter can be fed into this sleeve to compensate for excess sail draft. The advantage with this system is that it can be adjusted in steps to suit the individual sail. This is therefore a suitable method when old foresails are converted for FURLEX.

Talk with your sailmaker to find the best solution for your sails.



MAINTENANCE.

To keep FURLEX rotating easily and smoothly through the years, the following maintenance should be carried out at regular intervals. (For example, at the autumn overhaul.)

Periodic annual examination and maintenance of the system is necessary if it is to operate easily and give long service. Give it a thorough examination every time you de-mast. Keep to the following schedule.

Wash away salt.

Wash and rinse the complete FURLEX with fresh water to clear away all salt deposits.

N.B. Most detergents contain substances which can cause corrosion, so take special care to thoroughly swill away all washing agents.

When the parts have dried the anodized surfaces of the luff sections can be treated with a silicone-free boat-polish or wax. This provides good protection, and prevents dirt adhering to the surfaces which could then soil the sail.

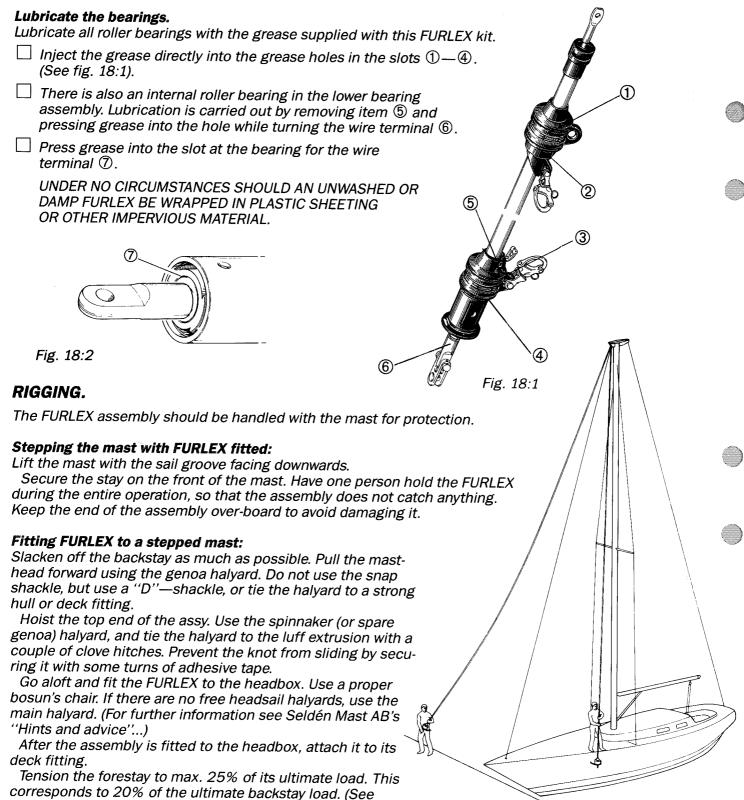


Fig. 18:3

Seldén Mast AB's "Hints and advice...".) A tensioned stay

means less forestay sag and less friction for furling.

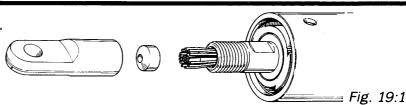
DISMANTLING FURLEX.

Dismantling subjects include:

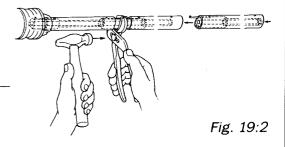
- 1-8 Dismantling to shorten the wire or extrusion.
- 1-13 To remove the lower bearing from the extrusion.
- 1-15 Dismantling the extrusions.

It is recommended that you read the assembly instructions (pp 8-13) before dismantling. This will give you a good picture of the design, and make dismantling easier.

- Remove the toggles from the wire terminal.
 - 2 Remove the eye piece of the terminal. The thread is held by a locking adhesive. If it cannot be turned, heat the eye to approx. 100°C (212°F) and unscrew the eye while hot.



- 3 Remove the former from the bottom of the eye piece.
- Screw on the eye piece fully, and then loosen 2-3 turns.
- 5 Hit the top of the eye, **hard**, a couple of times along the line of the forestay. Use a heavy hammer. The wire will then leave its coned seat. Remove the eye. Note: The stay must not be fixed anywhere during this operation.
- 6 Cut all wire strands protruding outside the wedge at the bend (approx. 5 mm of the strands).
- Widen the wedge slightly by putting the end of a screwdriver into the slot and twisting. Remove the wedge and turn the wire strands in their correct positions (anti-clockwise seen from below).
- Pull the wire out from the luff extrusion.
- Remove the sail feeder spacer by pulling it aft off the joint sleeve.
- [10] Remove the hook which holds the pre-feeder shock cord to the sailfeeder. Pull out the pre-feeder.
 - 11 Move the joint sleeve upwards by holding it firmly with a pair of pliers and hitting the tool. Protect the surface of the joint sleeve from the plier jaws with a sheet of material; thick paper for example.
 - 12 Move the joint sleeve upwards 50-60 mm so that the luff extrusions can be separated.



- 13 Turn the 1000 mm long lower bearing assy and luff section upside down. The joint sleeve has to be moved 15 mm to allow the parts to be disconnected. This is best done by striking the luff section against something that will not damage it, such as a piece of wood. Strike with the luff section no harder than is necessary to move the distance tube and the joint sleeve..
- 14 Push the joint sleeve at the sail feeder flush with the luff extrusion.

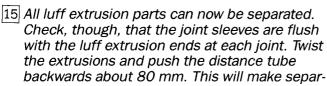
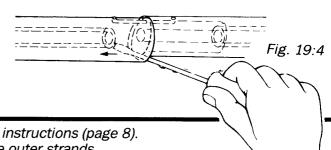




Fig. 19:3

ation easier. Twist one of the extrusions a little and detach the section.



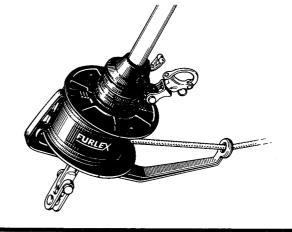
Reassembly is carried out according to the assembly instructions (page 8). Before reassembly, cut the core strands flush with the outer strands.

The decrease of forestay length is compensated by an increase of stay tension by 5% of the ultimate wire load (but permanent tension must not exceed 25% of the ultimate load of the wire). If this wire length reduction is unacceptable, the decrease can be made equal to the length of a toggle. This toggle should be of the eye/fork type.

NOTE: Do not dismantle the halyard swivel or lower bearing assembly. You will find it difficult to re-assemble them correctly, (the many ball-bearings are uncaged and akward to refit for example.) CONTACT YOUR FURLEX DEALER IF SERVICE IS REQUIRED

TO CHECK BEFORE SAILING

Following the list below, check your FURLEX system to ensure that all important items of the instructions have been carried out. This is to make sure that your FURLEX will work under all conditions without any problems.



1. Is the furling line wound in the correct direction? It should exit on the port side of the drum.
2. Check that the line guard does not touch the drum flanges.
$\ \square$ 3. Check that the halyard forms an angle of 5 $-$ 10° to the stay when the sail is hoisted.
4. Check that every sail used with the FURLEX is provided with a pennent so that the angle required in item 3 is fullfilled.
\square 5. Check that no halyard can snag on the halyard swivel or luff extrusion.
☐ 6. Check that there is sufficient clearance between the halyard swivel and the top guard. (Min. clearance = 50 mm).
7. The extended pre-feeder shock cord should not exceed 300 mm.
8. Check that the furling line runs in a straight line through the guide eye. This minimises friction and chafe.
9. Check that the tack ring is in correct position (page 16).

We are sure that using your FURLEX will give you many years of enjoyable sailing.



