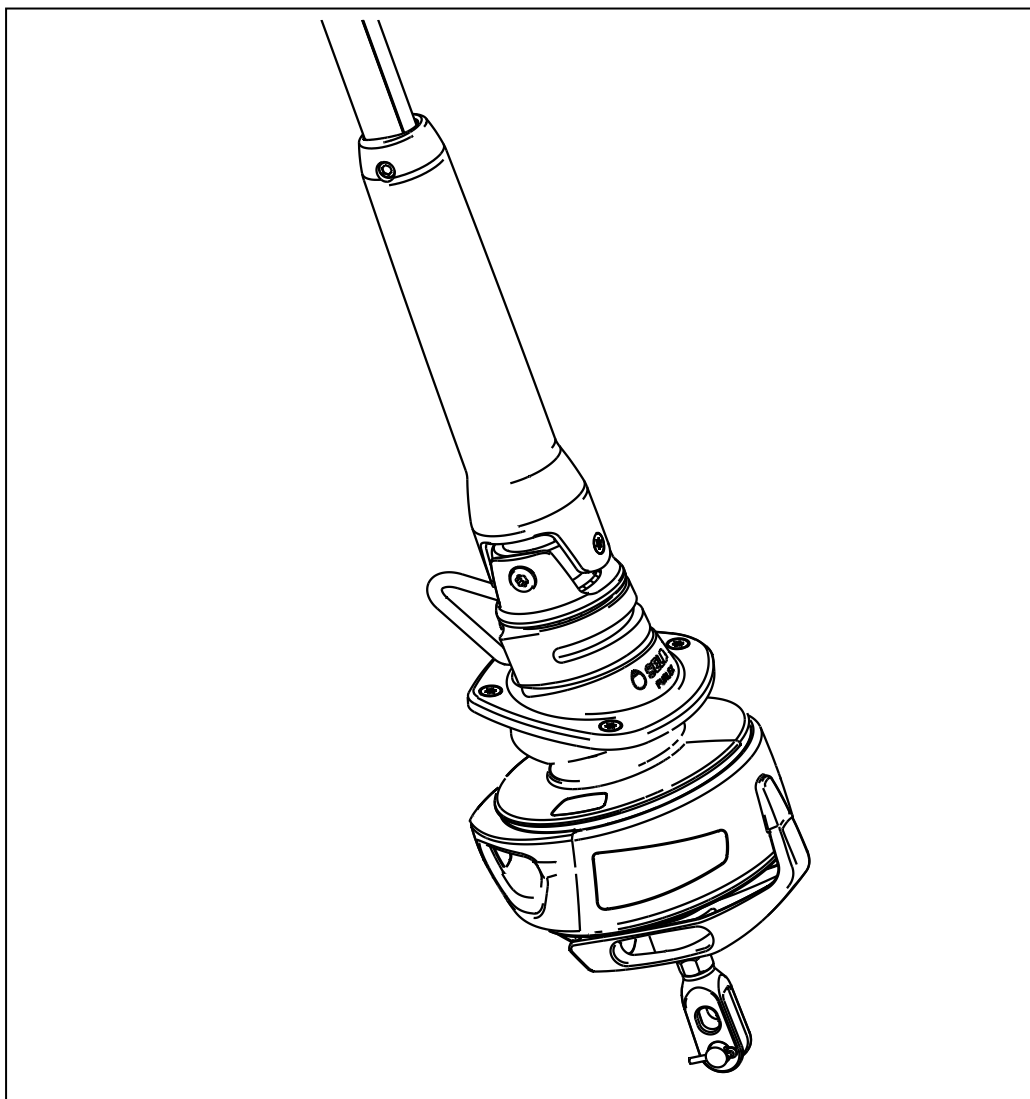


FURLEX



Manual and Spare parts List Furlex *104TD*



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1 Introduction

Congratulations on the purchase of your new Furlex 104TD

This manual covers installation and operating instructions for Furlex 104TD

Please read the entire manual before assembly/usage and keep the manual available for future reference. The latest version is available at www.seldenmast.com.

1.1.1 Related installation manuals and user guides:

1.1.2 Safety Precautions

Carefully pay attention to, and follow the instructions with the following symbols:



ATTENTION

This symbol indicates a critical moment in the assembly or technical advice.



WARNING

This symbol indicates a potentially hazardous situation. If not avoided, this could result in serious personal injury or damage to property.

1.1.3 Choosing the correct version of Furlex for your boat:

The key to a safe and properly working installation is correct dimensioning in relation to the boat size the products shall be used on. Seldén provides dimensioning guidelines in catalogues, leaflets and on the website. If there are any questions about selecting the right product, please consult an authorized Seldén dealer. All dealers are listed at www.seldenmast.com and divided in categories describing their competence.

2 Furlex 104TD

2.1 Product presentation

Furlex 104TD is a manual operated furling and reefing system for jib and genoa. It's the latest and smallest member in the Furlex TD family.

Maximized luff length

Tacking the sail at deck level allows for a longer luff length of your foresail. You will improve sailing performance without compromising the convenience of the jib furling system. The bow will also be less cluttered as the line drum is hidden below the deck.

Optimized halyard swivel

A HMPE loop is fitted to the ring of the halyard swivel in which the halyard shackle is attached. The loop is surrounding the ring which makes for load distribution and reduced furling resistance.

Tack swivel

The "free turn" of the tack ring allows for the luff to be furled one turn before the tack. This makes for a flatter and more efficient sail shape when the sail is reefed. Reduced tack ring diameter in combination with a short soft shackle reduces the furling resistance.

Aero grooves

Similar to the dimples on a golf ball, the Furlex AERO groove system reduces drag and creates better aero dynamic flow around the luff extrusion.

Roller bearing

A roller bearing between the main ball bearings of the drum unit distributes the load from the furling line over a large bearing area. This makes for lower resistance when furling.

Floating connectors

The 316 stainless steel connectors are subjected to vertical loads only and no torsional loads. Torsional loads are taken by the join pieces alone which leaves the connectors "floating" inside the join thus reducing wear inside the joins.

Air gaps

Every join in the system is made with a nominal gap which means the extrusion ends will never get in contact with each other. This way there will be minimum chafe and no aluminium deposits staining on your new sail.

Detachable swivels

Both the halyard swivel and the drum unit can be easily removed from the foil for off-season storage. This facilitates storing the foil with the mast and makes handling easier.

Three options for wire termination

Furlex can be delivered with three different wire terminal options. Sta-lok wire eye terminal, Sta-lok wire terminal rigging screw for adjustability (stroke is 60 mm), or a swaged stud terminal – a common solution for large volume OEM deliveries of the forestay length. The rigging screw is integrated in the torque tube and does not affect the tack height of the sail.

2.2 What's included

Basic pack / Extended pack

The Furlex TD-system includes a basic pack with drum unit, torque tube, deck fitting, halyard swivel, sail feeder, bearing halves, top guard and furling line. In addition, the extended pack also includes halyard leads, stanchion blocks and pre-feeder pack.

Foil pack, wire pack and wire terminal

The system also includes a foil pack with luff extrusions, distance tubes and connectors. A complete forestay wire is also supplied with every Furlex and an eye terminal is swaged to its upper end. For the lower end, there are three alternative terminals available:

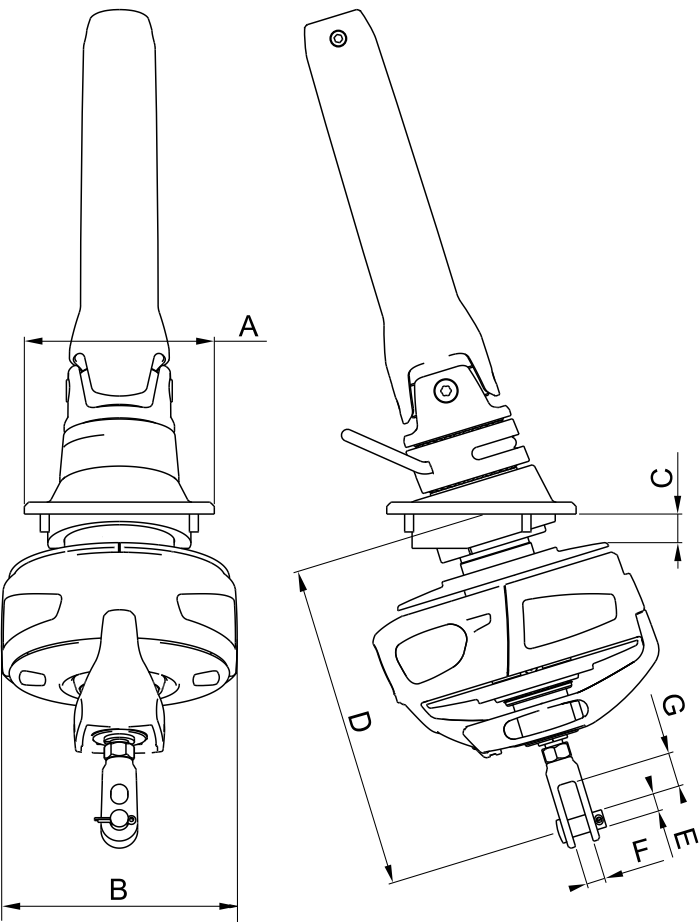
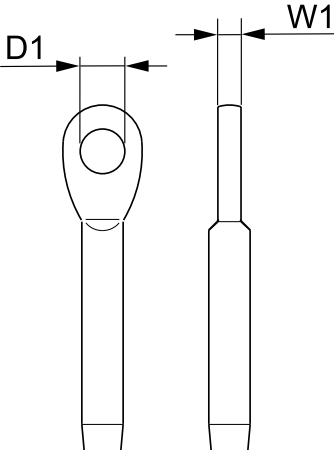
1. Swaged terminal with eye (no adjustment).
2. Sta-lok terminal with eye (no adjustment).
3. Sta-lok terminal with rigging screw.

All three alternatives are used for 1x19 strand wire or compact wire (Dyform), but alternative 2 and 3 can also be used with rod. Rod forestays are always provided by the manufacturer of the rod.

Basic pack/Extended pack		Foil pack	Wire pack with terminal
• Lower bearing assembly • Halyard swivel • Furling line • Bearing halves • Topguard • Sail feeder • Manual	In addition, the extended pack includes halyard leads, stanchion blocks, pre-feeder.	• Luff extrusions • Distance tubes • Joining sleeves • Connecting plates	• Wire with swaged eye • Eye terminal with required type of terminal (with or without rigging screw)

2.3 Main dimensions

All dimensions in millimetres (mm)

											
Furlex model	A	B	C	D	E	F	G	Wire Dim.	Pin	D1	W1
104TD ø5	128	160	18	220-290	Ø10	10.5	22	Ø5	Ø 10	Ø10.5	5.3
104TD ø6.Rod-8					Ø 12	12.5	22	Ø6	Ø 12	Ø12.5	7

2.4 Safety precautions

The information in this manual must be followed carefully to avoid damage to the system and to avoid the risk of personal injury. The warranty is only valid if the system is assembled and operated according to this manual.

Please read the entire manual before assembly!

- Be very careful when you open the wire coil! It may spring open and cause damage and/or personal injury.
- Never use a snap shackle to secure the standing rigging, not even temporarily. When installing the system on a rigged boat, always use a strong screw pin shackle or tie the spinnaker halyard to a strong point on the boat before removing the existing forestay.
- If using a winch for the furling line, first check that there is no obstruction which may interrupt the furling operation and possibly cause damage.
- A common example is no furling line left on the line drum. When furling the sail in heavy wind, the sail is packed tighter and requires more furling line to be pulled than when furling in light wind.
- Take care to ensure that all split pins are secured properly after installation.



- Incorrect halyard routing can result in "halyard wrap" which may cause severe damage to the forestay and put the entire rig at risk. The angle between the halyard and the forestay must never be less than 10°.

2.5 Sail measurements

Your sailmaker has all the necessary sailmaker information through the Seldén Sailmakers Guide. The Sailmakers Guide can be downloaded from www.seldenmast.com

Note that if you want to use an existing sail, it will need some modifications.

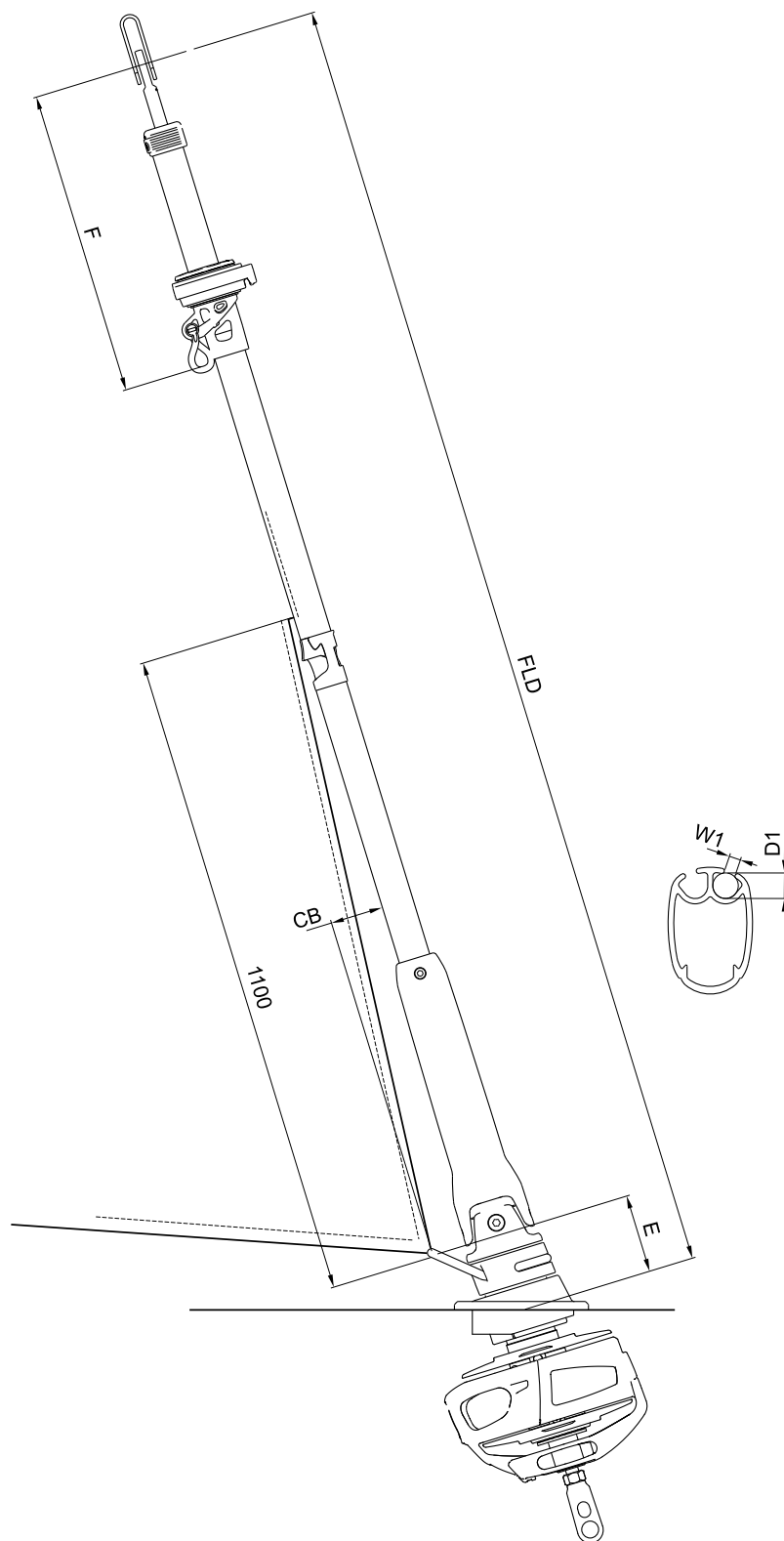
- The luff length needs to be adjusted.
- A luff tape is required. The luff tape must be compatible with the Furlex luff extrusion geometry.
- Use webbing loops at the sail head and tack instead of grommets (cringles). The sail will then form tightly round the luff extrusion when furling and achieve a better shape when reefed.

It is most important that the halyard swivel is located so that the halyard satisfies the 10–15° angle requirement. If the sail prevents the swivel from reaching the correct position, the luff length needs to be adjusted.

IF THE SAIL IS TOO LONG: Shorten the sail, e.g. in conjunction with changing to a luff tape compatible with Furlex.

IF THE SAIL IS TOO SHORT: Lengthen the sail by means of a HMPE or wire pendant fitted to the head of the sail. Attach the pendant directly to the sail to prevent unintentional removal, loss or exchange.

Head deduction F	440
Tack deduction E (Any additional pendant to the tack must be added to E)	70
Cut-back CB	50
Internal diameter of luff groove D1	Ø6 (Max luff tape: 5mm)
Width of luff groove W1	2.7
Luff extrusion dimensions	30x20



3 Assembly

3.1 Assembly preparations

Before starting with the assembly, make sure you have the following tools available:

- Hack saw
- Torx bits and bit holder
- Measuring tape
- Knife
- Hammer
- Pencil/Pen
- Medium strength thread locking adhesive.

If Sta-lok is to be fitted you will also need:

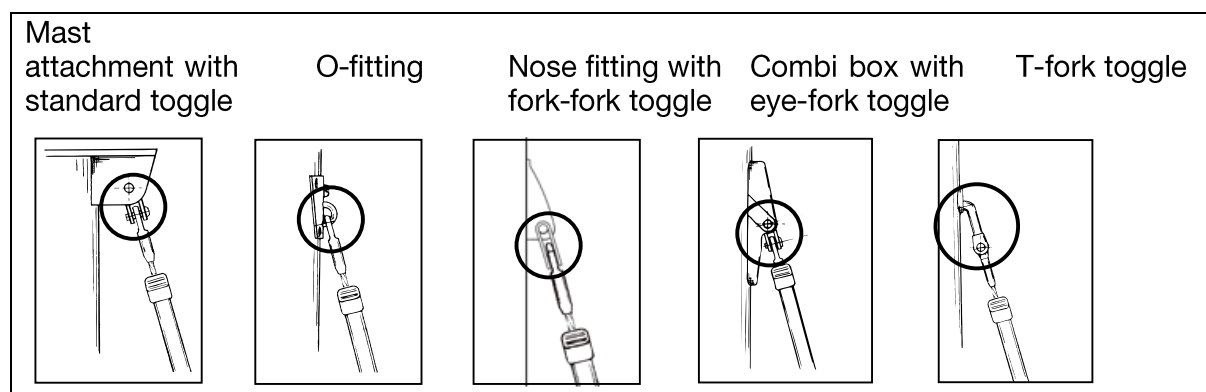
- Small slotted screwdriver
- Two adjustable spanners
- Pair of pliers
- Tape
- File
- Locking adhesive (included in the eye fitting pack)

Tools needed for making the hole in deck:

- Template (1:1) (included in kit)
- Jig saw and drill driver
- Drill bit $\varnothing 6.5$

3.2 Mast attachment

Always make sure that the forestay can articulate in all directions in the top. Toggles must be used in most cases to ensure sufficient articulation.

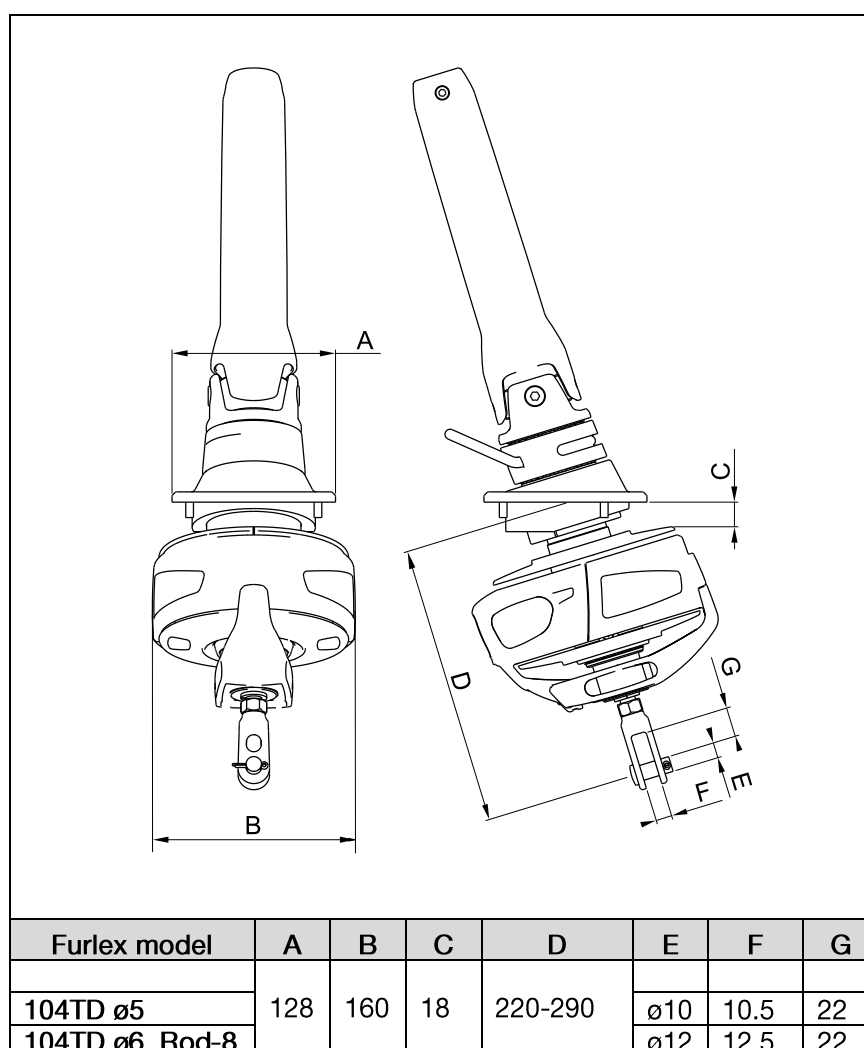


3.3 Hull attachment

The lower bearing assembly of the Furlex TD system is to be considered as an extension of the forestay fitting inside the hull. As it is locked horizontally at deck level, there is a toggle fitted between the lower bearing assembly and the forestay/luff section. This toggle, together with the universal joint function of the adapter tube, will create the required articulation. Check that the through-deck fitting does not interfere with pulpit, navigation lights or other deck fittings. Check that the anchor well drains freely. Make sure that the forestay fitting in the anchor well is designed to take the full forestay load.

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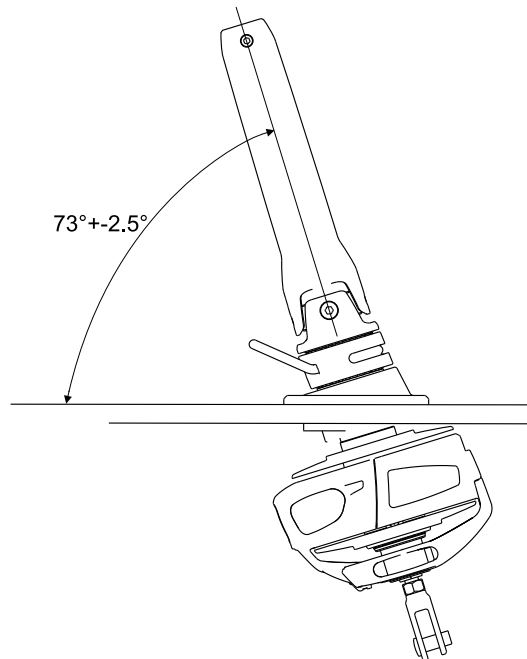
The dimension C is nominal. In this area the thickness of the deck should not exceed 15mm. If the deck is thicker than 15 mm, it should be possible to reduce this with a cavity. This will allow the clearance for the top forward drum edge. If the deck is of sandwich construction, ensure that water cannot enter the core material and cause structural damage. Furlex TD incorporates an adjustable fork terminal for fine adjustment of the under deck dimension "D". If D exceeds 290mm-the forestay fitting needs to be modified. Do not add any toggles or links as this will cause unwanted articulation.



Attachment point at pin "E" must be fixed in all directions

3.4 Location of the through-deck hole

The bearing at deck level has a spherical surface which compensates for smaller angle discrepancies between forestay and the through-deck fitting. However, it is important to minimize the discrepancies to achieve maximum furling performance. The angle between the forestay and deck must be between $70,5^\circ$ and $75,5^\circ$. If the angle exceeds these limits, the deck needs to be modified. Spacers or wedges under the through-deck fitting is also a solution. Note that modifications can affect distance C.

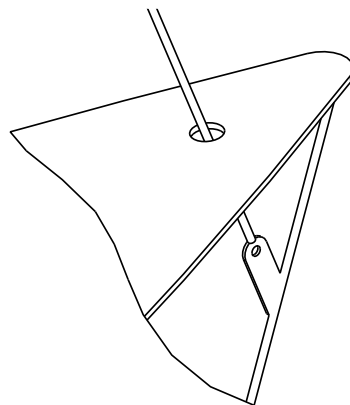


Finding the intersection point between the deck and forestay.

The best method is to stay the mast using a forestay which extends through a smaller hole in the deck. See chapter 4 Assembly of the Furlex system.



Incorrectly positioned hole for the through deck fitting will cause lateral loads at deck level affecting furling performance. Be careful when finding the intersection point.



3.5 Calculating the length of the forestay wire.

(The following is valid for a yacht with the mast stepped.)

If a Sta-lok terminal (with or without rigging screw) is included, the wire is supplied over-length. The wire has a swaged eye terminal on one end while the other end is open (= without terminal). If your Furlex is supplied with a fixed-length forestay, with a swaged eye on one end and a swaged stud in the other end, skip this part and go directly to 2.6. The same apply for rod stays. If a stud-terminated stay is to be manufactured by a local rigger it is important to note that WL in this case equals the length of the finished stay, from eye to end of stud, see page 13. WL is calculated in table 1.

Before assembly, an over-length wire (for Sta-lok) must be marked and finally cut to the correct length to fit the boat's actual forestay length. To find out the correct measurement, follow the steps below. If the mast is not stepped, you can jump directly to step 4. If the mast is stepped, you can jump directly to step 4.

1. Slacken the backstay as much as possible, but make sure that any rigging screw is not unscrewed so far that the threads are no longer visible "on the inside". The forestay setting should not be adjusted. If there is insufficient adjustment in the backstay, and the forestay rigging screw must be adjusted to allow removal, first mark its thread with adhesive tape.
2. Pull the masthead forward using the genoa halyard. Secure the halyard using a "D" shackle or tie it to a strong deck fitting. For safety reasons, do not use the halyard snap shackle. Secure the opposite end of the halyard properly.
3. Go up the mast. Connect a free halyard to the forestay. Then detach the forestay and lower it using the free halyard. Bring the stay down and place it on a flat surface. If the forestay rigging screw was slackened, adjust it back to the tape mark
4. Measure the forestay length (FL) with just enough tension to keep the forestay straight on the ground. Forestay length (FL) is the distance between the hole in the swaged top terminal and the hole in whatever lower part that was attached directly to the hole in the chain plate. Enter the measurement into "Table 2" below, in the row marked FL

Table 1. Calculation of the forestay wire length			Your forestay	Example 104TD 6mm (with rigging screw 50% extended)
FL	Existing forestay length including rigging screw, no tension.			8650
CH	Add the distance between the hole in the chainplate and deck level, along the direction of the forestay.			30
FLD	FLD=FL+CH			8680
TDH	Deduction for distance above deck: 125 mm			125
NFL	New forestay length NFL=FLD-TDH			8680-125=8555
T	Deduction for terminal:			120
	Eye terminal or Stud (wire only)			
	With rigging screw			
	Wire Ø5:	35 mm	120 mm	
	Wire Ø6:	35 mm	120 mm	
	Rod -8 (5.7mm):	35 mm	120 mm	
WL	Cutting measurement: WL=NFL-T. The new forestay wire is to be marked at this point (For forestays with swaged stud, WL equals the length of the finished stay from the upper eye terminal pin hole to end of stud. See fig 2.6.1 page 13.			8555-120=8435

3.6 Calculating the length of the luff extrusion

The Furlex luff extrusion consists of a number of shorter sections. Starting from the bottom there is a 760mm luff extrusion connected to the torque tube and extending up to the sail feeder. Then, from the sail feeder and up there are a number of full length luff extrusions (L=2400 mm) and finally there is a 2000 mm top extrusion that must be cut to length to suite the actual forestay length.



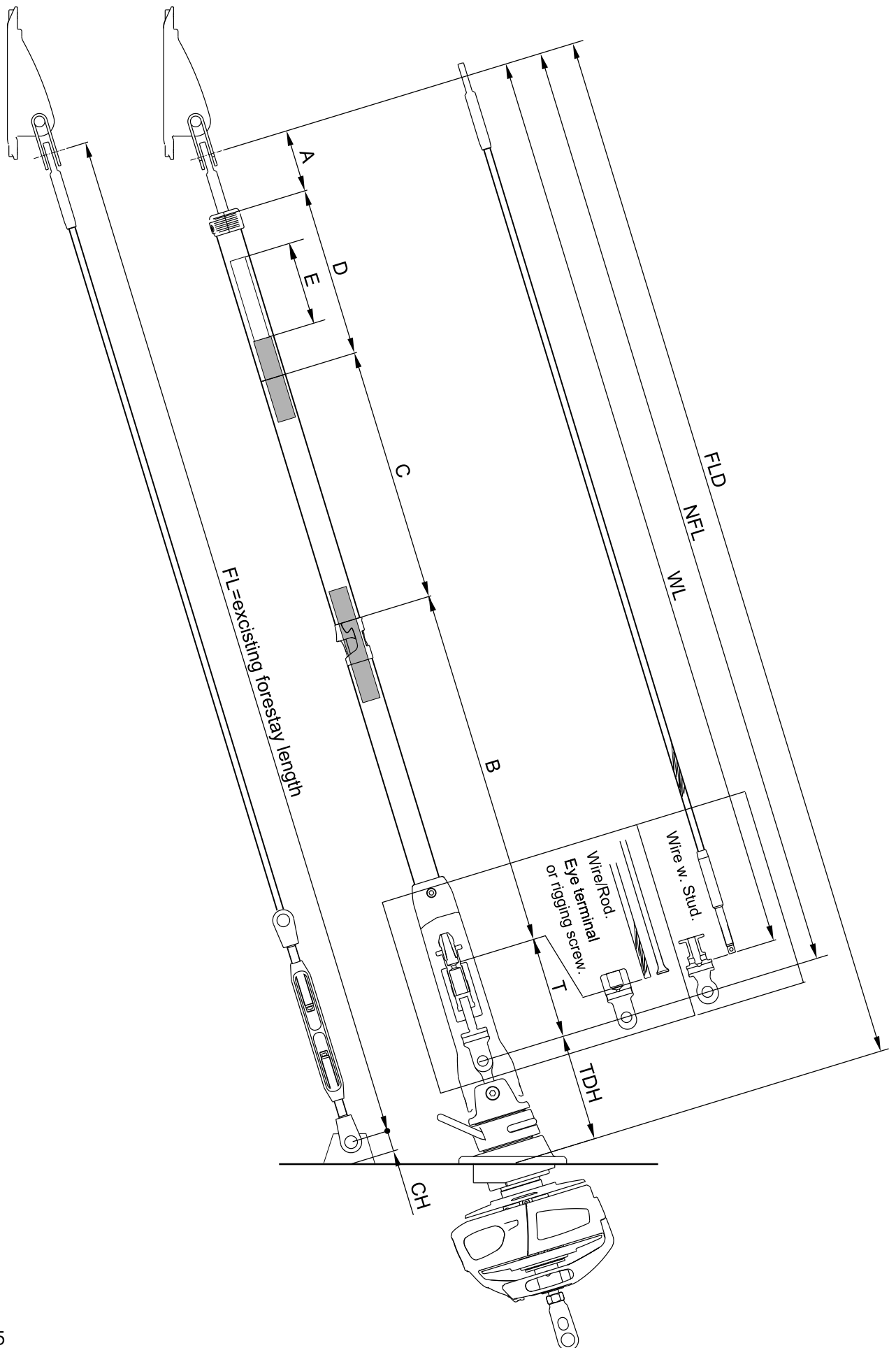
Note! If the calculation gives a top extrusion length (D) that is shorter than 400 mm, the calculation must be reworked by exchanging one of the 2400 mm extrusions with the uncut 2000 mm extrusion. By doing so the top extrusion will be cut from a 2400 mm extrusion and its length will then exceed 400 mm. If the calculation gives a top extrusion length (D) that exceeds 2000 mm, the top extrusion must be cut from one of the 2400 mm extrusions. In this case the 2000 mm extrusion will not be used.

To find out the cutting length of the top extrusion (D) and the length of the top distance tube (E), start with the length of the forestay wire (WL) that was calculated in table 1. Then follow the steps in table 2 below. On fixed length forestays (incl. rod stays), verify WL by measuring the stay length from centre of eye to end of stud (wire) or end of rod head.

Table 2. Calculation of top luff extrusion length			Your forestay	Example 104TD 6mm (with rigging screw 50% extended)
WL	Length of the new forestay wire (as per Table 1).			8435
A+B	Eye terminal or Stud (wire only)	With rigging screw		
	Wire Ø5: 1035 mm Wire Ø6: 1050 mm Rod -8 (5.7 mm): 1050 mm	Wire Ø5: 970 mm Wire Ø6: 985 mm Rod -8 (5.7mm): 985 mm		985
N	Number of full length extrusions to be used: $N = (WL - (A+B)) / 2400$			$(8435-985)/2400=3.1$ N=3
C	Total length of the number of full length extrusions (2400 mm) to be used: $C = N \times 2400$			$3 \times 2400 = 7200$
D*	Length of top luff extrusion: $D = WL - (A+B) - C$			$8435-985-7200=250$
X	Fixed deduction: 200 mm			200
E*	Length of the top distance tube: $E = D - X$			$250-200=50$

*If, as in our example, D becomes less than 400 mm it is necessary to recalculate as below and cut one of the full length luff extrusions according to D_{new} and one of the full length distance tubes according to E_{new}. Note that the original top 2000mm luff extrusion and the original top distance tube will now be used as intermediate extrusions.

Table 2B. Recalculation if D<400 mm		Your forestay	Example
N new	Reduce the number of full-length extrusions by one. $N_{\text{new}} = N - 1$		N=2
C new	$C_{\text{new}} = N_{\text{new}} \times 2400 + 2000$		$2 \times 2400 + 2000 = 6800$
D new	$D_{\text{new}} = D + 400$		$250 + 400 = 650$
E new	$E_{\text{new}} = E + 400$		$50 + 400 = 450$



4 Assembly of the Furlex system

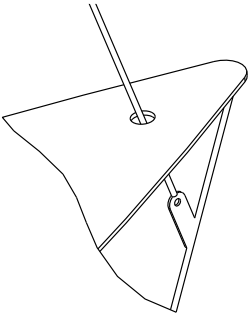
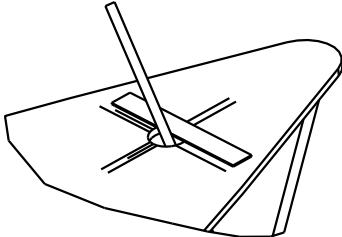
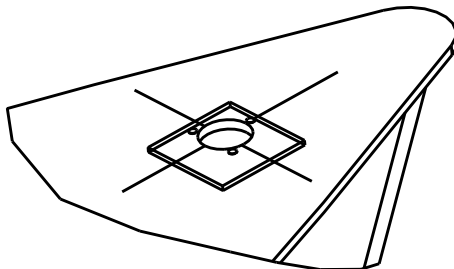
4.1 Making the hole for the through deck fitting

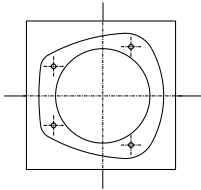
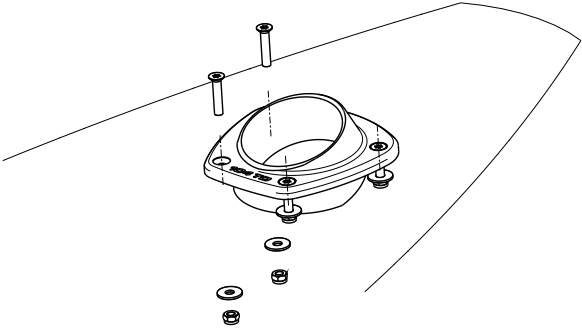
The best way to decide the location of the through-deck fitting is to step the mast with a forestay, which passes through a smaller hole in the deck.



If working on a boat with stepped mast-secure mast with a halyard before removing the forestay.

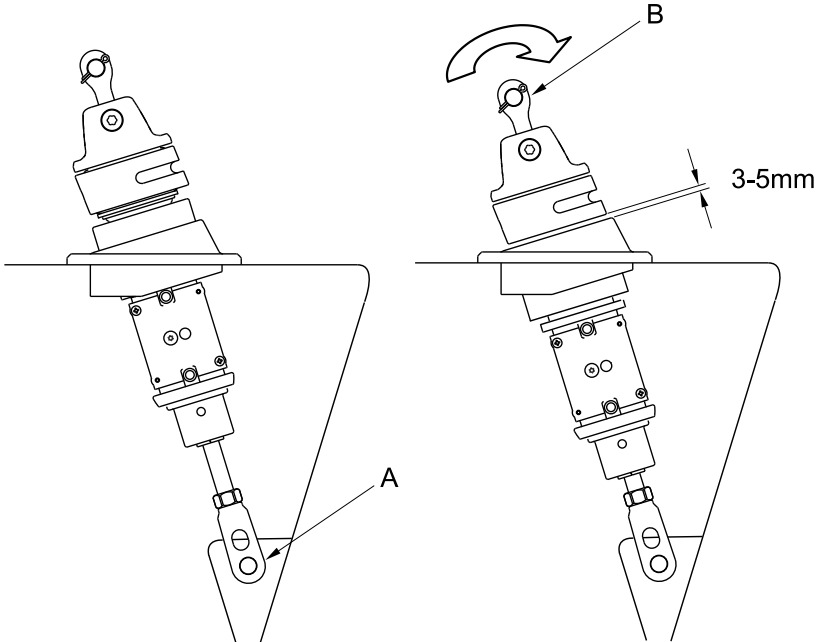
Do not use snap shackle when securing the mast, use D shackle or tie the halyard.

1. Remove the old forestay deck fitting and increase the hole in deck if necessary. Do not make the hole larger than ~ø50 mm. Using the jib halyard as forestay-lead it through the hole in the deck and attach it to the forestay fitting. Use a D shackle.	
2. Mark the position of the halyard on the edge of the 50 mm hole longitudinally as well as laterally.	
3. Offload the jib halyard, using another halyard. Disconnect the jib halyard.	
4. Fit a piece of plywood or similar from below, using 3 screws. Place the screws close to the edge of the hole to provide clearance for the saw (ø96). Note: To make the markings more precise, the 50 mm hole should be filled with a piece of wood and/or filler. Draw new lines between the double lines made under point 2.	

5. Place the enclosed hole jig on top of the hole: Check that the jig reference lines coincide with the deck markings. Secure the jig with adhesive tape.	
6. Cut the large hole using a hole saw or jigsaw. Do not make the hole too big. Grind if required. Also drill the holes for the screws.	
7. Place the through deck fitting in the hole. Check that the fitting rests against the aft edge of the hole when the screws are tightened. (Main load direction). Remove fitting and adjust the length of the screws if necessary. Add caulking under the fitting and tighten the screws	

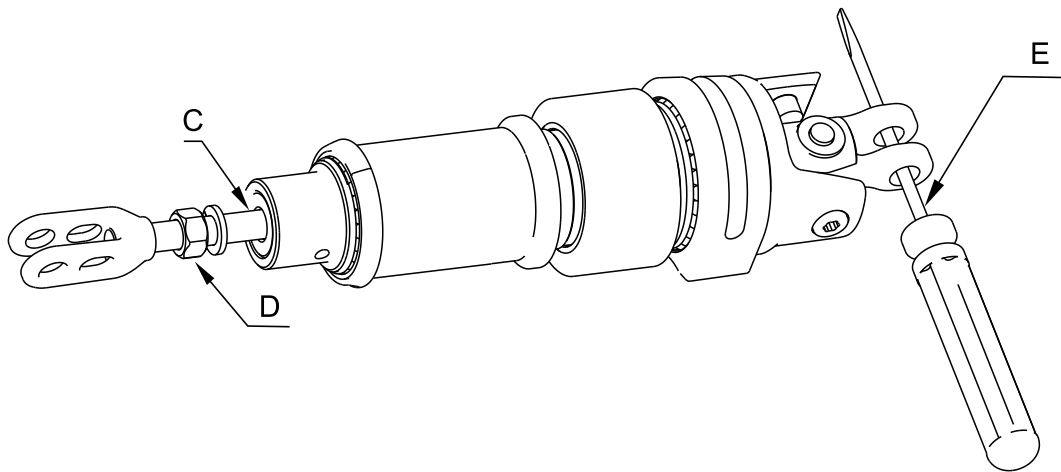
4.2 Fitting of the lower bearing assembly to the boat.

The length of the lower bearing assembly needs to be adjusted for every boat.

1. Remove the clevis pin from the fork terminal A. Un-screw the terminal so that fork reaches the forestay fitting in the boat with some margin. 2. Guide the lower swivel through the deck fitting and attach it to the forestay fitting. Fit the clevis pin but do not fit the split pin. 3. Grip the upper toggle B and turn the assembly clockwise until the gap between tack ring and through deck fitting is 3-4mm when lifting the toggle.	
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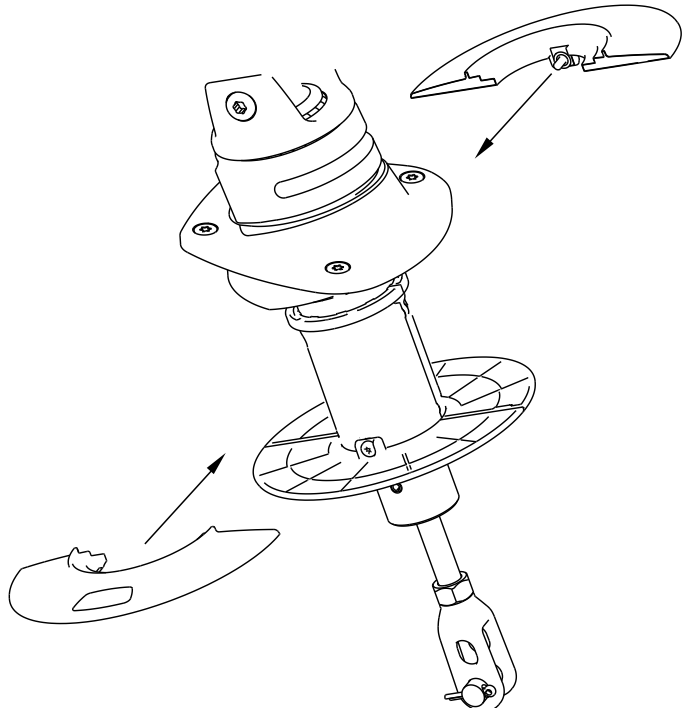
4. Remove the clevis pin and remove the lower swivel from the boat.

5. Unscrew the fork terminal at least 5 turns, Note! count the turns. Apply a bead of locking adhesive to the thread (C) and screw the terminal back to its original position (counting the turns). Tighten the locking nut (D) firmly while clamping the toggle in a vise if possible, or locking it with a screwdriver or similar (E). This is a permanent setting of the length of the lower bearing assembly, ensure the nut is tight. Lower the bearing assembly through the deck fitting again. Fit the clevis pin and the split pin connecting the fork to the chain plate. Lift the tack shackle upwards and rotate the tack ring ensuring the gap to the through deck collar is still satisfactory.



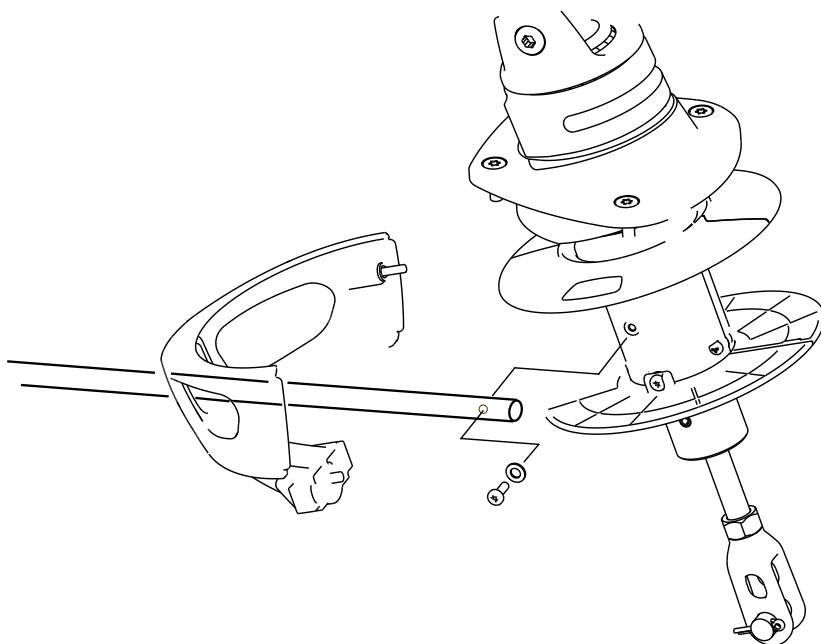
4.3 Fitting the brim halves.

1. Fit the brim halves.



4.4 Furling line installation

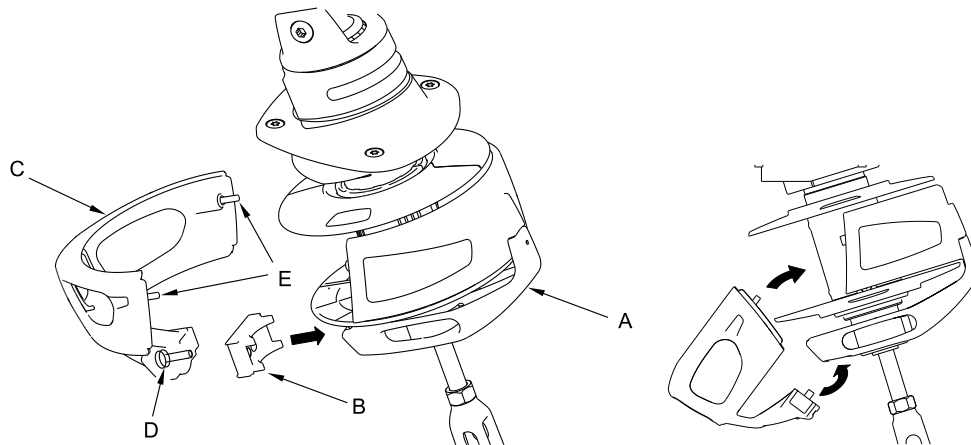
1. If the sail's ultraviolet (UV) protection is fitted on the starboard side of the sail, the furling line should exit on the port side of the drum. If the UV protection is fitted on the port side, the furling line should exit on the starboard side of the line drum. Use an awl or similar tool to make a hole in the rope 10-15 mm from the rope end and fit the screw through the hole. Route the line through the line guide fitting. Make sure that the washer is fitted under the screw head, then tighten the screw firmly. Use locking adhesive on the screw.



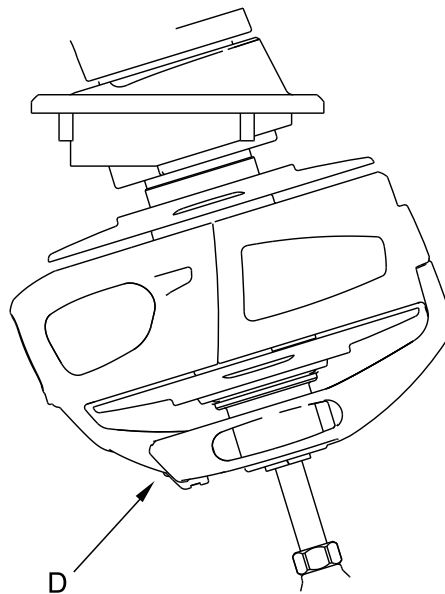
2. Wind the line onto the drum by rotating the drum. Wind up approximately 30 turns onto the line drum. Number of turns can be adjusted later depending on sail foot length. Note that there should always be 3-5 turns left on the drum when the sail is fully furled.

4.5 Fitting the line guard

1. Fit the lineguard assembly (A) over the shaft. Insert the locking block (B) into the line guard bracket. The locking block should be pushed against the shaft.
2. Fit the line guide (C) from below and turn it up against the line guard. Loosen the locking screw (D) a couple of turns if necessary.
3. Tighten the screws (E)



4. Tighten the locking screw (D) moderately. Final adjustment of the line guard assembly to be made later.



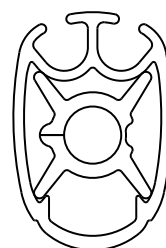
5 Assembly

5.1 Assembly of the luff section-Wire forestay

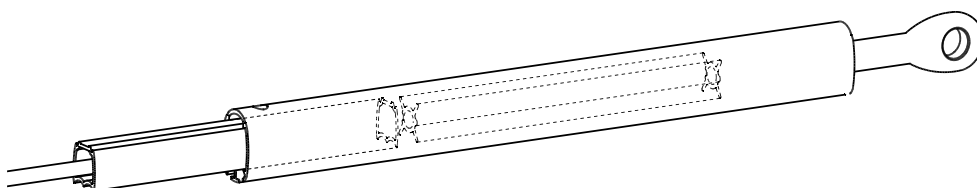
Luff assembly should be carried out on a clean, flat surface. Make sure there is enough space for the entire forestay length to be stretched out.

1. Stretch out the wire on a flat, clean surface. On stays with swaged lower terminal, be careful not to damage the terminal thread. The thread can be protected with tape or similar.

2. Start by feeding the top luff extrusion and the top distance tube onto the forestay wire. Note the correct orientation of the distance tube - hinge to be sideways.



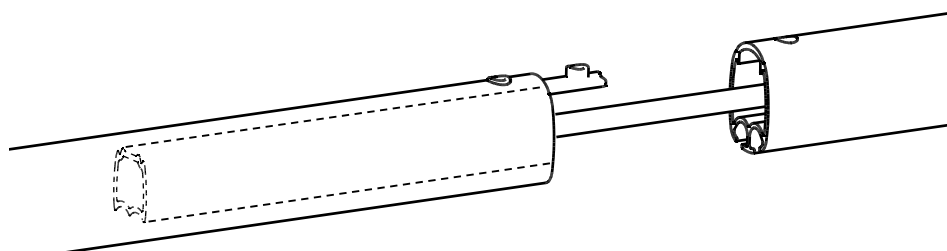
3. Add a short joining sleeve (200mm) and use it to push the distance tube up into the top luff extrusion. The distance tube should be pushed in approximately half the length of a joining sleeve.



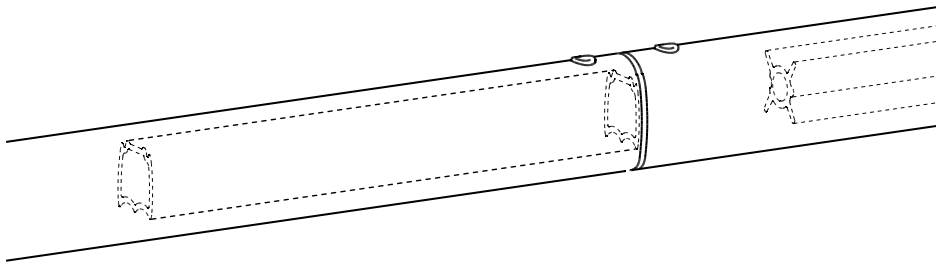
4. On Sta-lok terminated systems, the halyard swivel and the top guard can be fitted at this point, see below. On stud terminated systems, the top guard must be fitted after the sail feeder has been mounted.

5. Add a 2400mm luff extrusion and a distance tube. Make sure the distance tube is oriented correctly. Also add another short joining sleeve

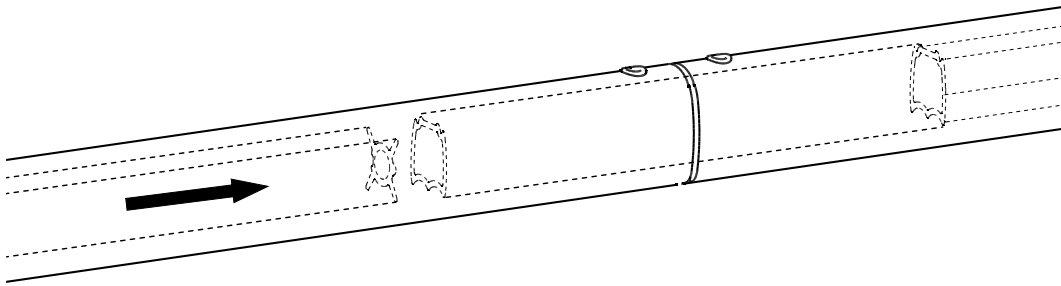
6. Fit a short connecting plate into the second luff extrusion as shown. Push the first joining sleeve down into the second luff extrusion to lock the connector.



7. Connect the two luff extrusions.

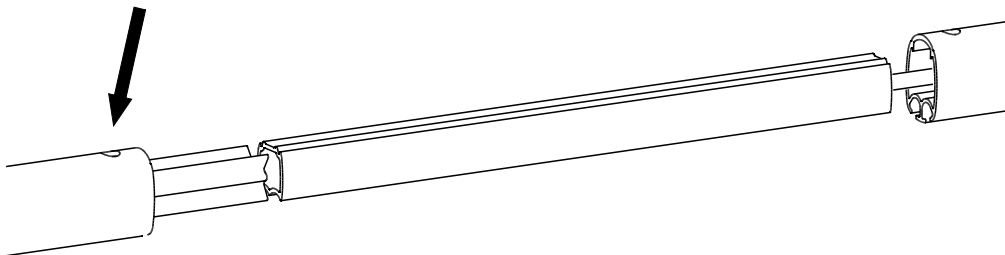


8. Push the first joining sleeve back up into the first luff extrusion to lock the joint. Use the second joining sleeve to push on the second distance tube. The second distance tube should be pushed in approximately half the length of a joining sleeve. This will ensure correct location of the first joining sleeve.



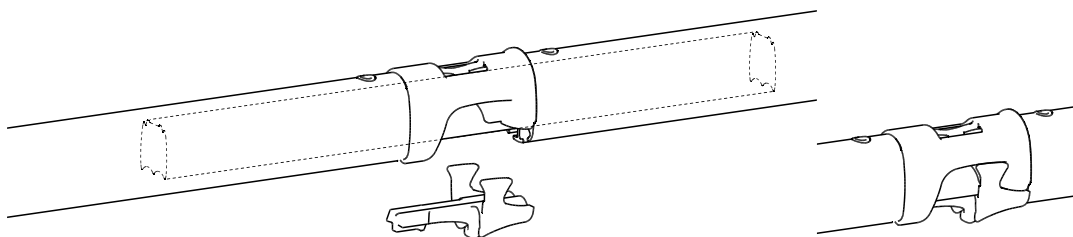
9. Repeat for the remaining 2400 mm (94 1/2") luff extrusions. Use short joining sleeves only.

10. Fit the long black joining sleeve (250mm) onto the wire. Then fit the short (625mm) distance tube and finally the 760 mm luff extrusion. Make sure that the end with the single hole goes on first. Do not remove the insulating tape at lower end.

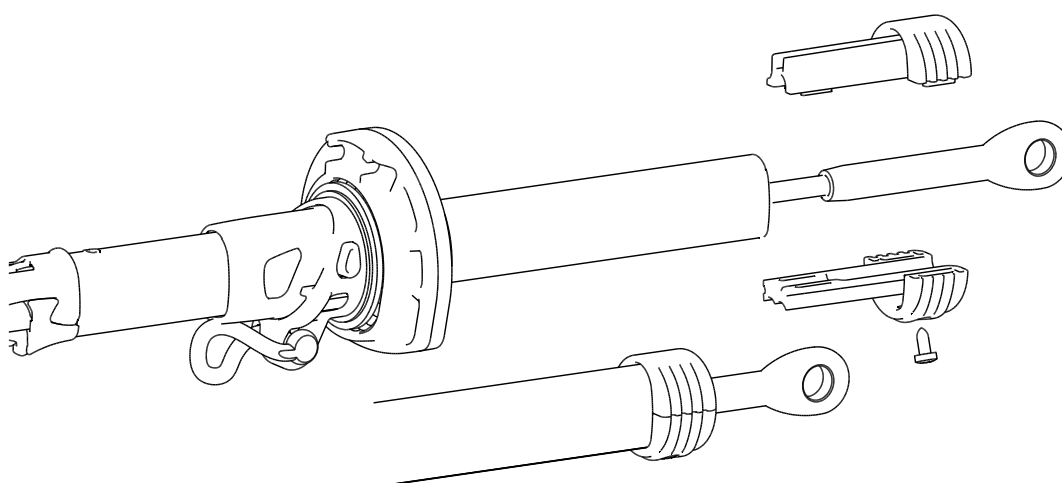


11. Connect the same way as previous joints but use the long connecting plate. Push the short distance tube in approximately 35 mm, leaving space for the bearing plug halves, see point 14 below.

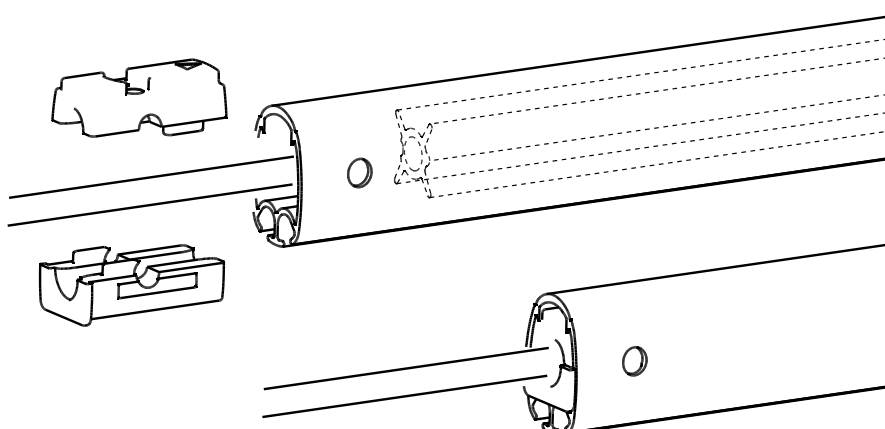
12. Snap the sail feeder connector over the joining sleeve and push the sail feeder in position.



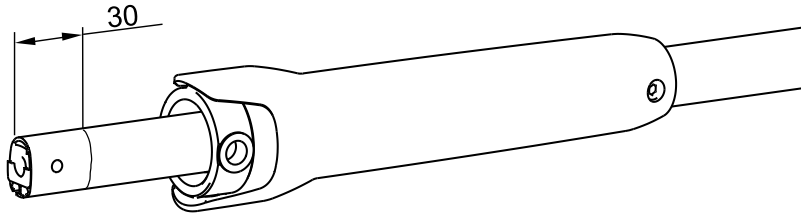
13. Fit the halyard swivel from the top and slide it down until it stops on top of the sail feeder. Then fit the top guard and push it into the top luff extrusion until it stops. Secure it with the two pre-fitted screws. Tighten the screws until they bottom, but do not over-tighten.



14. Fit the lower bearing plug halves as shown. Fully pressed in the holes in the bearing plug should align with the holes in the luff extrusion. This completes the luff assembly.



15. Loosen the screws of the torque tube and feed the torque tube on to the luff section. Protect the luff section and the torque tube with paper or plastic. Secure the torque tube with tape before rigging. Take caution not damaging the insulating tape at the lower end of luff section.



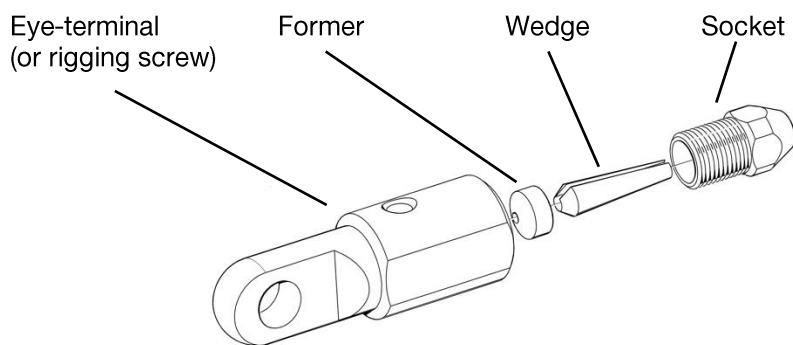
5.2 Fitting the Sta-Lok eye terminal (with or without rigging screw).

Note! For systems with swaged stud terminal or rod, skip this part and go directly to section 5.3 or 5.4.

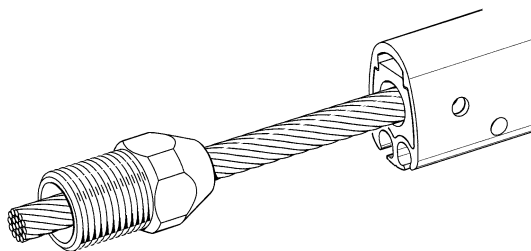
1. Before cutting the wire, measure the wire from the centre of the hole in the top swaged eye terminal. Mark the measurement WL carefully on the wire using a marker pen. (The WL measurement was calculated in "Table 1" on page 12.

2. Tape around the wire on both sides of the cutting mark to assist cutting. Carefully cut the wire using a hacksaw.

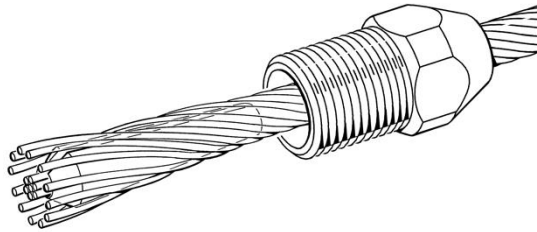
3. Unscrew the socket, wedge and former from the terminal part (or Furlex rigging screw if used). Remove the locking tube from rigging screw.



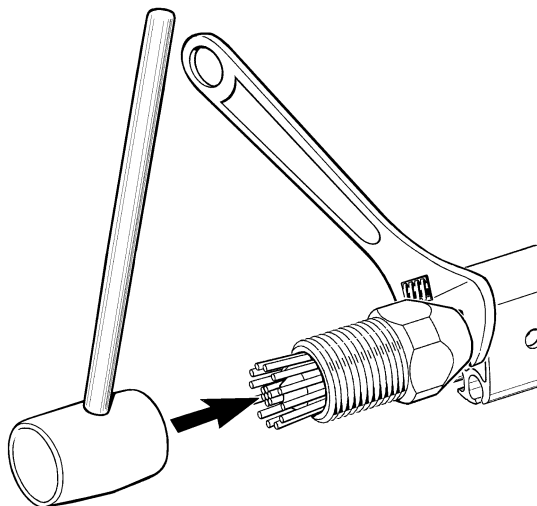
4. Fit the socket over the wire.



5. Fit the wedge over the core of the wire. The core of the wire should protrude approx. 2mm from the wedge.

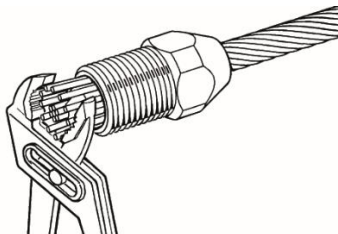


6. Space the outer strands of the wire evenly around the wedge and bring down the socket so that the strands are held in place. Hold an adjustable spanner between the lower extrusion and the socket. Tapping the core of the wire, locate it firmly in the socket. Check that the core of the wire still protrudes approx. 2 mm from the wedge.



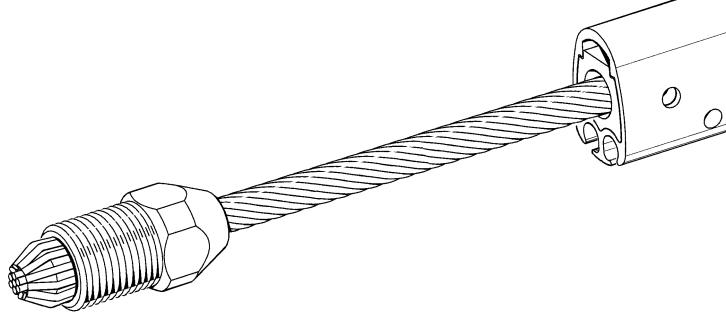
NOTE! Check that no strands slip into the slot of the wedge

7. Bend the outer strands inwards a little using a pair of pliers or tap the strands with a small hammer. In the latter case, rest the socket's thread on a soft surface (wood or similar) to prevent damage.



8. Insert the former into the threaded hole of the terminal part/rigging screw. Lubricate the socket's thread with a long bead of locking adhesive. Screw the terminal part onto the socket and tighten carefully, forcing the wire further into the terminal.

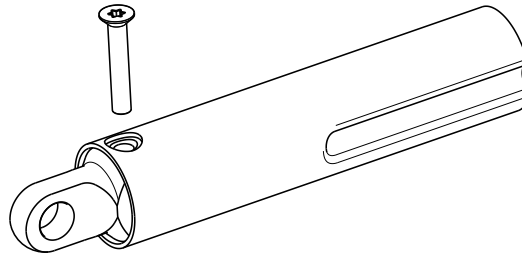
9. Unscrew and check that the outer strands are evenly distributed around the wedge. If some strands are crossed, correct their positions.



NOTE! Check that no strands have slipped into the slot of the wedge

10. Apply another 2 or 3 drops of the locking adhesive to the thread and screw the terminal together, tightening it firmly. The terminal is now permanently locked.

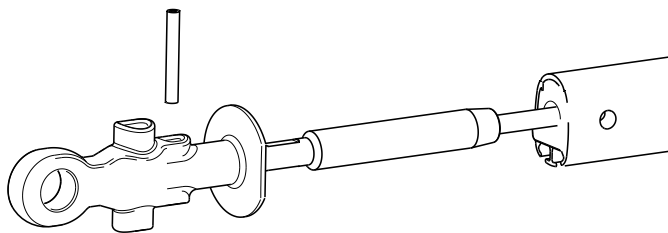
11. Align the flat surfaces on the rigging screw parts. Slide the stainless locking over the rigging screw, if applicable. Add a drop of locking adhesive to the end of the screw. Do not over-tighten the screw.



Check that the length of the luff section corresponds to the NFL measurement on page 14. If it does, the luff section is now ready to be rigged.

5.3 Fitting eye terminal to swaged stud (Stud/Eye)

1. Screw the eye terminal part onto the stud terminal until the holes in stud and eye align. Fit the spiro pin using a hammer to lock the terminal.

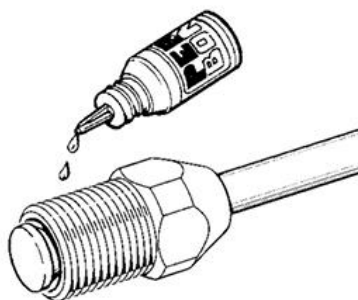


2. Check that the length of the luff section corresponds to the NFL measurement on page 14. If it does, the luff section is now ready to be rigged.

5.4 Fitting lower eye terminal to rod stay

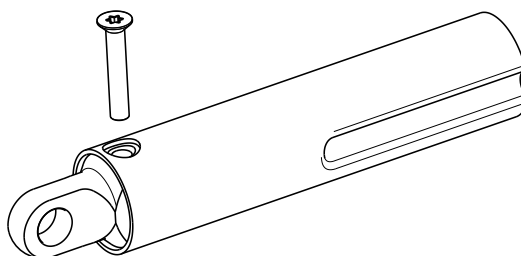
1. Screw out the socket on the lower terminal part or rigging screw and remove the wedge and the former. These three parts are not to be used in rod applications.

2. Add 2-3 drops of locking adhesive on the thread and screw the terminal together. Check that the rod head sits correctly in the seat and that the seat sits correctly in the socket.



3. Tighten firmly for permanent locking.

4. Align the flat surfaces on the rigging screw parts. Slide the stainless locking over the rigging screw, if applicable. Add a drop of locking adhesive to the end of the screw. Do not over-tighten the screw.



Check that the length of the luff section corresponds to the NFL measurement on page 14. If it does, the luff section is now ready to be rigged.

6 Rigging

The Furlex system is best transported and rigged together with the mast.

6.1.1 6.1 Fitting the Furlex on a stepped mast

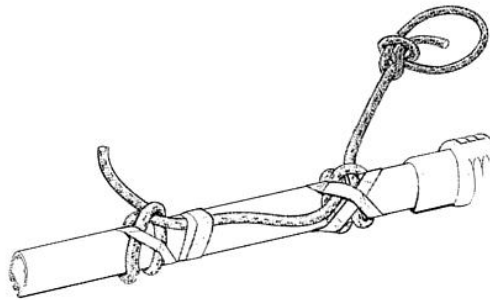
1. Slacken the backstay as much as possible but make sure that any rigging screw is not unscrewed so far that the threads are no longer visible "on the inside".
2. Pull the masthead forward using the genoa halyard. Secure the halyard using a D shackle or tie it to a strong deck fitting. Do not use the halyard snap shackle for safety reasons.



If working on a boat with stepped mast-secure mast with a halyard before removing the forestay.

Do not use snap shackle when securing the mast, use D shackle or tie the halyard.

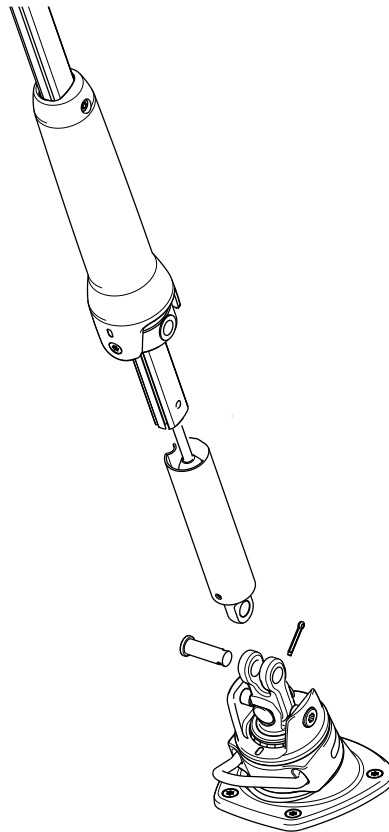
3. Tie a strong line or a spare halyard around the luff extrusion. Make two clove hitches, the upper approx. 1 m from the top, secure the knots with tape to prevent them from sliding.



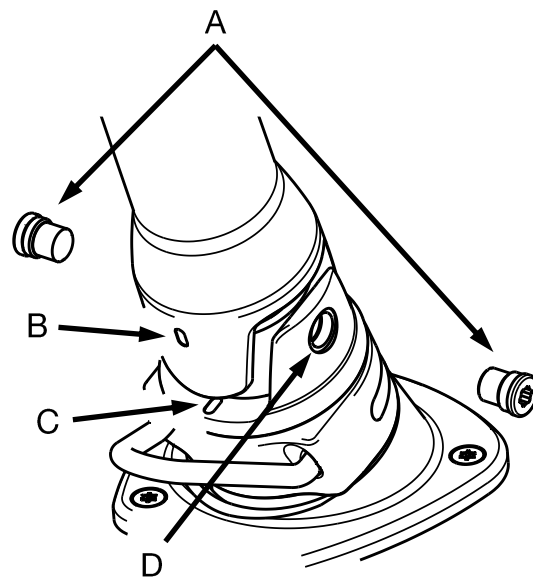
4. Hoist the stay.

5. "Go aloft" and attach the top end of the Furlex system to the forestay attachment. Always use a proper bosun's chair. If there are no free headsail halyards use the main halyard. For further information, see Seldén Mast AB "Hints and Advice" on "Working aloft" or contact your Furlex dealer.

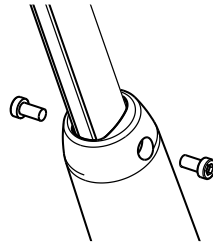
6. Attach the stay to the headbox and then to the lower bearing assembly. The split pin for the clevis pin should be opened by $\sim 20^\circ$. It will then retain its shape on dismantling and can be used again.



7. Remove the plungers (A) from the lower bearing hub. Slide the torque tube down. Align the marking (B) on the torque tube with corresponding mark on the bearing assembly (C). Apply medium strength locking adhesive to the plungers. Align the bearing holes in the torque tube ring with the holes in the lower bearing hub (D). Fit the plungers and tighten hard.



8. Apply locking adhesive to one of the luff screws. Lift up the luff section until the upper edge of the tape aligns with the upper edge of the adapter. The holes in the torque will now align with corresponding holes in the luff section. Tighten the screw lightly. Apply locking adhesive to the other screw and fit it. Tighten both screws hard.



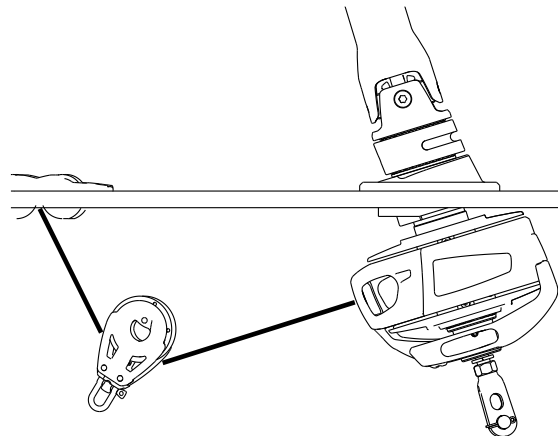
9. Tension the forestay to 20% of the wire's breaking load. As the tension on the forestay cannot be measured easily when it is encased in the luff extrusion, this can be done using the backstay. Owing to the difference in the angle of these stays relative to the mast, this is on a Masthead rig equivalent to approx. 15% of the backstay's breaking load, assuming that it is the same diameter as the forestay. (Forestay tension = approx. 1.25 x backstay tension.) A firmly tensioned stay offers the least furling resistance.

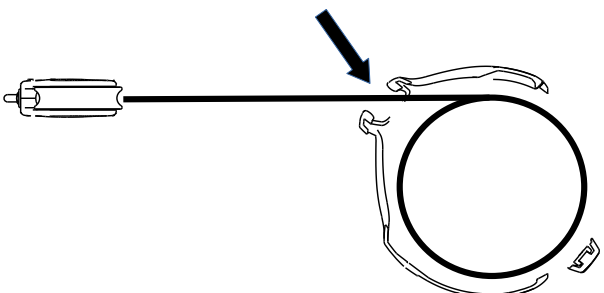
6.1.3 6.2 Stepping the mast with Furlex stay fitted

1. Lay the mast with the front uppermost.
2. Connect the top end of the Furlex system to the forestay attachment.
3. Lift the mast with the Furlex system lying on the leading edge of the mast.
4. Have one person watching the Furlex system to ensure that it does not get caught when lifting the mast. Keep the end of the stay outside the deck area in order to avoid damage.
5. Attach the stay to the boat as described on page 28.

6.2 Routing the furling line

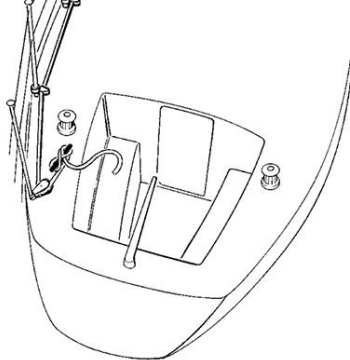
1. The turning block inside the anchor well and the sheave box required to lead the line through the deck are not included in the Furlex package as these parts must be individually adopted for each boat.
2. The furling line must enter the line drum perpendicular to the forestay. There must be at least 300 mm from the drum to the first turning point of the line to make the line furl evenly on the drum.
3. The turning block below deck and through deck passage sheave house must have a safe working load of not less than 3kN. Blocks with large sheaves on roller bearings are recommended to minimize friction losses.



4. Adjust the line guard so that the furling line enters the drum with as little deflection as possible. See page 19. Adjust the line guard vertically so that it clears the line drum brims.	
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6.3 Fitting the stanchion blocks

The line should be led aft to the cockpit via lead blocks. Lead blocks are included in the Extended Pack. The lead blocks are normally mounted on the pulpit and on the stanchions leading the line back to cockpit.

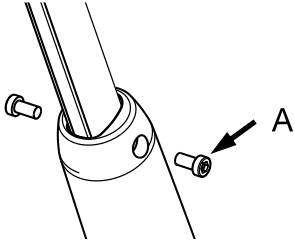
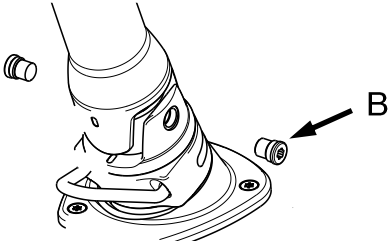
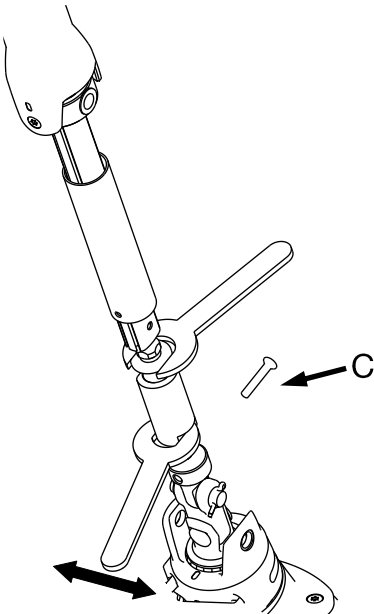
1. The final turning block by the cockpit is not included in the Furlex kit. This needs to be matched individually to each boat depending on the attachment points, the line arrangement chosen and possibly also the type of other blocks on the boat. We recommend a swivel block which is free to self-align. The maximum working load of the block should not be less than 3kN.	
 It must be possible to belay the furling line securely. A block with a Cam-cleat works well when securing a reef, but is unreliable if the boat is left unattended. The line should then be secured on a normal cleat for safety reasons. We recommend a single turning block in combination with a cleat. If the furling line is accidentally released, the sail may unfurl and flap out of control and cause damage.	

6.4 Adjusting the forestay length

The Furlex system may be supplied with or without an integrated rigging screw.

With an integral rigging screw, the forestay length can be easily adjusted. Tensioning the forestay, however, is done by tensioning the cap shrouds and/or the backstay, and not by tensioning the forestay rigging screw.

The sail must be removed or unfurled and halyard slackened before the forestay length can be adjusted. Then follow the steps below:

1. Loosen the luff screws (A). Lift up and unload the luff section before the second screw is removed in order to prevent the luff section to drop onto the rigging screw. To unload the foil, a halyard can be tied around the luff section and tensioned moderately.	
2. Remove the plungers (B).	
3. Slide the torque tube up along the luff section and secure it with tape. Remove the locking screw (C) and slide the locking tube up along the luff foil. Secure with tape. Adjust the rigging screw by holding the terminal part and by turning the bronze rigging screw body until the desired forestay length is achieved. Do not turn the terminal (upper wrench)! Reassemble in reverse order. Note that the flat faces of the rigging screw must align to let the locking tube down to lock the rigging screw. Add locking adhesive to the screw (C) and tighten moderately.	
 The rigging screw has a stop at the maximum position to which it can be unscrewed. Do not overload this stop by trying to unscrew the rigging screw further.	

7 The sail

7.1 Adapting the sail to the Furlex system

To fit the Furlex system, an existing sail may need a number of modifications. See measurements on page 8.

If the sail is to be fitted with UV protection, this is best placed on the starboard side. The tack of the sail will then be in line with the luff grooves of the luff section when unfurled. If the sail already has UV protection on the port side, the tack will be turned slightly to starboard. The free turn of the tack ring will function equally well.

Use webbing loops at the sail head and tack instead of eyes (cringles). The sail will then form tightly round the luff extrusion when furling, and achieve a better shape when reefed.



It is most important that the halyard swivel is located so that the halyard satisfies the 5–10° angle requirement. If the sail prevents the swivel from reaching the correct position, the luff length needs to be adjusted. IF THE SAIL IS TOO LONG: Shorten the sail, e.g. in conjunction with changing to a luff tape compatible with Furlex. IF THE SAIL IS TOO SHORT: Lengthen the sail by means of a wire pendant fitted to the head of the sail. Attach the pendant directly to the sail by a talurit splice to prevent unintentional removal, loss or exchange. All the boat's foresails should be adjusted to the correct luff length. See 1.5 page 6 (There must be a minimum distance of 50 mm between the top of the halyard swivel and the top guard when the sail is fully tensioned).

7.2 Check list

Go through the checklist below and make sure that all the important steps have been carried out. This will ensure that the Furlex system functions safely and reliably for many years and in all conditions.

- Check that the angle between the halyard and forestay is 10–15° when the sail is hoisted.
- Check that the clearance between the halyard swivel and the top guard is at least 50 mm.
- Check that all the sails used, have sufficient luff length or an extension pendant fitted so that the 10–15° requirement is satisfied.
- Check that no halyards can get caught in the halyard swivel or wrapped around the luff extrusion.
- Check that the routing of the furling line is optimized below deck to reduce friction and wear.
- Check that the luff extrusion rotates one turn before the tack ring starts to rotate.
- Check that the drum cover does not come in contact with the brims of the line drum when furling.
- Check that the forestay articulates freely at the upper and lower attachments.
- Check that all split pins are secured properly by a 20° separation

7.3 Hoisting the sail

1. Lay the sail out on deck. It should be carefully flaked down with the tack turned forward.
2. Turn the tack ring counterclockwise if the furling line exits on the port side of the drum, or clockwise if it exits on the starboard side. Doing this right is important as it ensures that the free-turn function works properly and the sail shape is kept flat when reefed.
3. Attach the tack of the sail to the tack shackle.
4. Attach the sheet to the clew.
5. If included, tie the pre-feeder to the tack shackle and insert the luff rope in the pre-feeder.
6. Attach the halyard to the upper eye of the halyard swivel.
7. Hoist the sail in the correct groove through the sail feeder. If the furling line exits on the port side of the line drum, the sail should be hoisted in the starboard groove and vice versa. Hoisting the sail in the "right" groove reduces initial resistance when furling the sail.
8. Apply maximum tension to the backstay.
9. Hoist the sail. The pre-feeder helps guide the sail in towards the sail feeder at a small angle. If the pre-feeder is not included, then feed the sail manually through the sail feeder.
10. Tension the halyard until a vertical crease appears in the luff of the sail, then slacken off until the crease disappears.
11. After hoisting the sail, remove the pre-feeder completely.
12. Furl the sail by pulling on the furling line. Let the windward sheet run freely but keep some tension in the leeward sheet, for example by placing a turn around a winch. It is important to furl the sail tightly and evenly, as a sail that is furled too loosely may partly blow out in strong winds.
13. Check the number of turns of the furling line remaining on the line drum when the sail is fully furled. There should be at least 3–5 turns left. To adjust the number of turns, furl the sail and detach the sheets. Then turn the luff extrusion by hand until 3–5 turns are left on the drum and re-attach the sheets. When furling in strong winds, the sail will roll more tightly, requiring more turns left on the line drum. Therefore make sure to always have sufficient turns left on the drum.
14. When the sail is hoisted, check that the halyard swivel is at least 50 mm below the top guard and that the halyard angle satisfies the 10–15° requirement.
15. Finally, mark the halyard as shown to prevent over tensioning. This is very important! Also mark the maximum tension position of any backstay adjuster. The forestay/backstay tension can now be adjusted without putting too much strain on the halyard.

7.4 Unfurling the sail

1. Release the furling line and the windward genoa sheet. Allow these to run freely while the sail is being unfurled.
2. For a controlled unfurling maneuver, it is best to place a turn of the furling line around a winch or a half turn around a cleat. This induces some drag, which is particularly useful in stronger winds.
3. Place a turn of the leeward genoa sheet around a winch and unfurl the sail by pulling in the sheet. Once the wind catches the sail it will unfurl more easily. The best point of sail for unfurling is between close reach and beam reach, as the wind will then fill the sail quickly.
4. Place a few more turns of the sheet around the winch and sheet the sail in to the desired trim.

7.5 Furling the sail

1. Release the windward sheet and ensure that it can run freely.
2. Furl the sail by pulling the furling line. Release the leeward sheet but keep a little tension on it, for example by placing a turn around a winch. It is important to furl the sail tightly and evenly, as a sail which is furled too loosely can blow out a little in strong winds. If the boat is left unattended, the sail may flap until it tears. A very loosely furled sail may also cause unnecessary wear, as the sail roll will swing back and forth in the wind.
3. Belay the furling line carefully. If the boat is left unattended, the furling line should be belayed on a cleat for safety.



If the furling line is accidentally released, the sail may unfurl and flap without control in strong winds. If left for any length of time, it will be damaged beyond repair!

If the boat is left for a long period of time, it is a good idea to take down the sail and stow it below deck. It is then protected from UV radiation and dirt. Alternatively, a sail cover ("furling sock") can be used to protect the sail.

7.6 Reefing

Furlex is provided with a tack attachment which rotates in relation to the luff extrusion. When furling and simultaneously applying a limited counter tension in the sheet, the luff extrusion makes approximately one revolution before the tack fitting starts rotating as well. The part of the sail with the biggest draft will in this way be flattened. This makes the sail flat as the furling continues. This function is referred to as the "Free turn".

The best point of sail for reefing is on a close reach to beam reach. The wind will then partly fill the sail and help to improve its shape when reefed.

If using a winch for the furling line, first check that there is no obstruction which may interrupt the furling operation and possibly cause damage.

How to reef:

1. Slacken off the leeward sheet until the sail just begins to flap along the luff.
2. Pull in the furling line so that the sail is furled and flattened out. Gradually slacken the sheet when furling.
3. Belay the furling line.

When the sail is reefed, it may be necessary to adjust the sheeting position.

7.7 Racing

The Furlex system can be converted from a furling system to a twin-groove racing head foil by lowering the halyard swivel below the sail feeder. To remove the sail feeder see chapter 7.4.1. Lower the halyard swivel to the torque tube and refit the sail feeder. The twin grooves now make swift sail changes possible.

8 Maintenance

8.1 Inspection

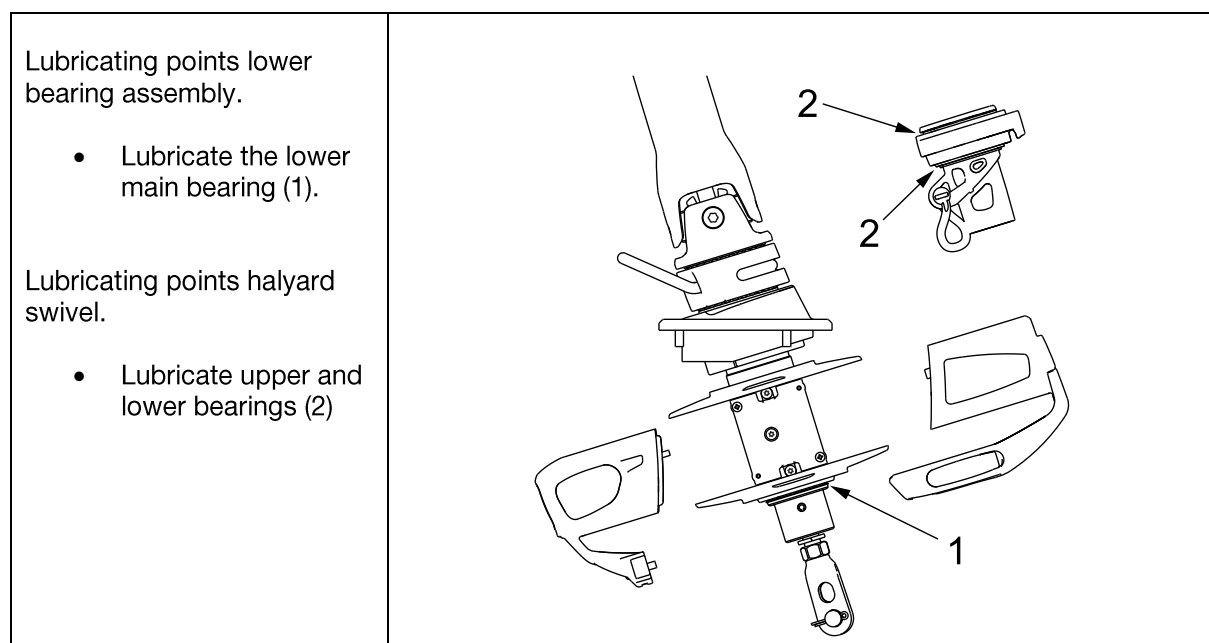
- To ensure that the system rotates easily and functions satisfactorily year after year, regular inspection and maintenance should be carried out once a year. Maintenance is simple, even with the Furlex rigged on the boat.
- Check for damages on the luff extrusion. If the sail grooves are damaged this may cause damage to the sail.
- Check that all rotating parts turn freely and that all bearings are greased. Lubricate with water resistant Furlex grease if bearings seem dry.
- If a wire halyard is used, the halyard leads (bronze) should be inspected once a year and any sharp edges smoothed with a file. A halyard lead should be replaced, at the latest, when wear exceeds 50%.

8.2 Service

Wash and rinse the entire Furlex-system with fresh water and a mild detergent to remove dirt and salt. Note! Some detergents contain substances which can cause aluminium to corrode, so it is important to rinse all detergent off thoroughly.

When the parts have dried, the anodized surfaces of the luff extrusions can be treated with a silicon free boat polish or wax. This offers good protection and prevents particles of dirt from adhering and then soiling the sail. The stainless-steel components can be treated with a suitable polish. Always protect black plastic when polishing stainless components.

Most of the bearings have Torlon ® balls and require no lubrication. Use water-resistant bearing grease for the steel ball bearings.



8.3 Storage

The Furlex-system is preferably stored with the mast when the mast is down. Make sure that no aluminium surfaces are in contact with steel parts.

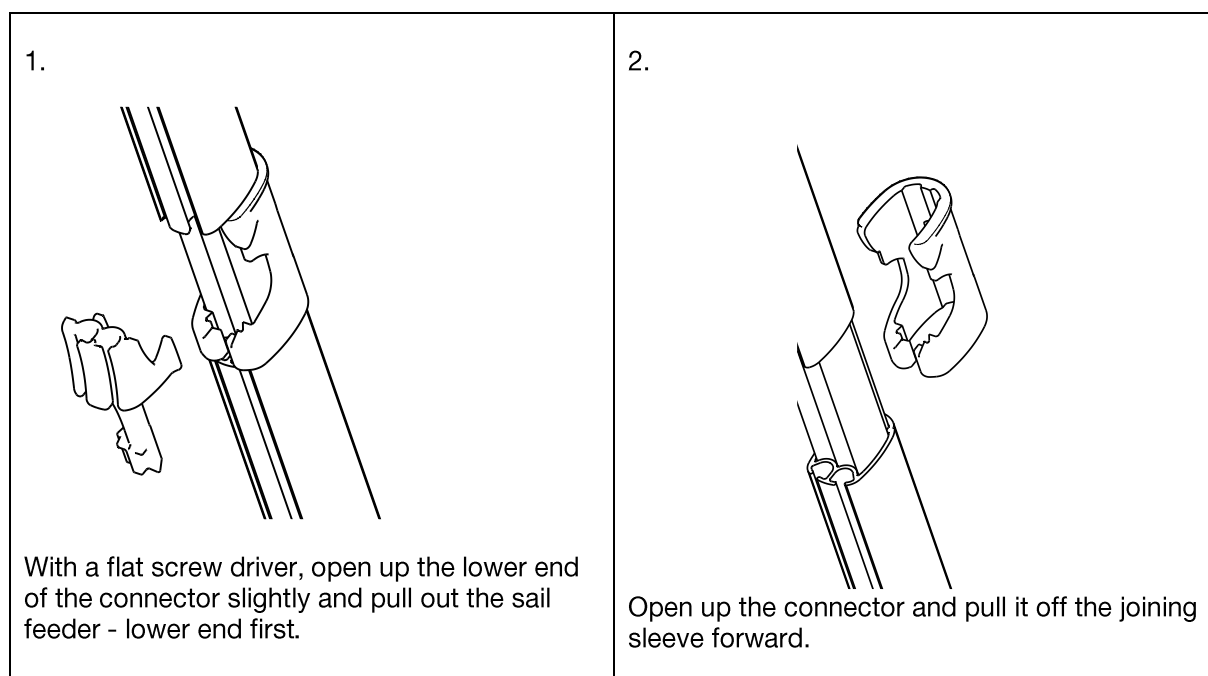
Under no circumstances should an unwashed or damp Furlex system be wrapped in plastic or any other impervious material.

In areas where sub-zero temperatures can occur, the Furlex system should be stored in a dry place or with its centre extrusions raised to prevent stagnant water from freezing.

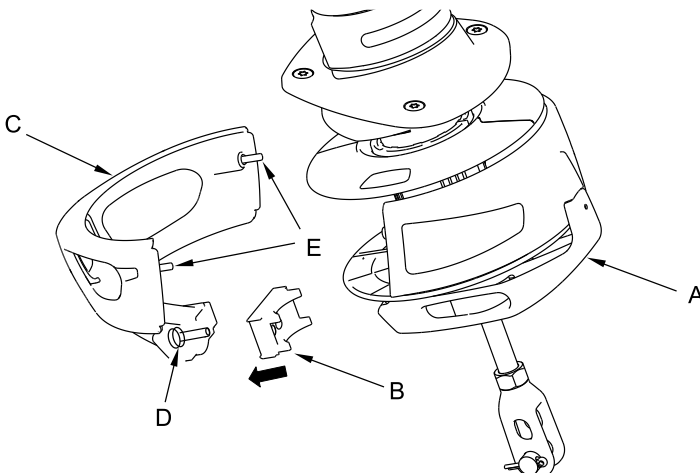
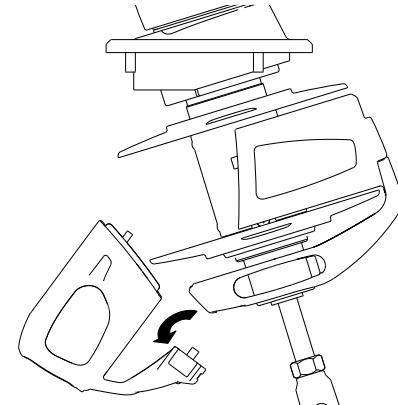
8.4 Dismantling

Never take the halyard swivel or the drum unit apart as you will find it difficult to reassemble them correctly. (The ball-bearings are loose and difficult to refit!). Contact your Furlex dealer if service is required.

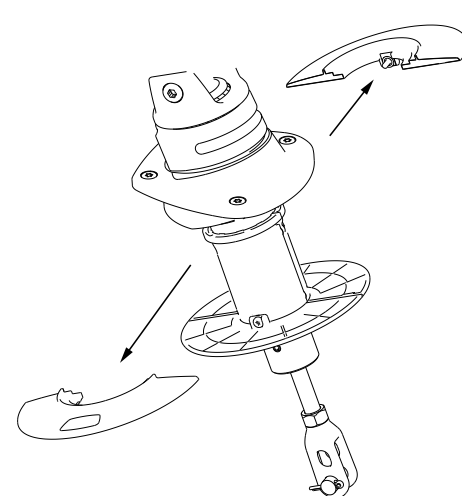
8.4.1 Sail feeder



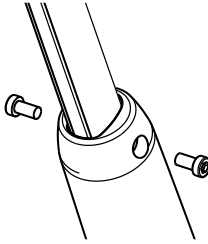
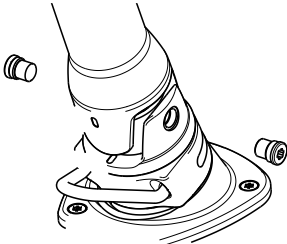
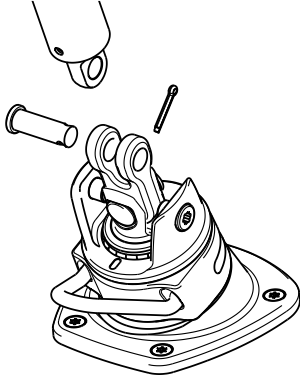
8.4.2 Line guard and line guide fitting

1. Loosen the screw (D) a couple of turns.	 The diagram illustrates the initial disassembly step. It shows a line guard (A) with a line guide fitting (C) attached. A screw (D) is being loosened. A locking block (B) is also shown, along with a screw (E) that connects the line guide fitting to the line guard.
2. Loosen the screws (E) disconnecting the line guide fitting (C) from the line guard (A). Loosen the screws a little at the time ensuring the retaining washers stay on the screws. 3. Tilt the line guide fitting and pull it downwards. 4. Pull out the locking block (B) 5. Remove the line guard (A) by pulling it forward.	 The diagram illustrates the subsequent steps of disassembly. It shows the line guide fitting (C) being tilted and pulled downwards. The locking block (B) is also shown being pulled out. The line guard (A) is shown being pulled forward.

8.4.3 Brims

Loosen the screws in the middle of the brims and pull the brims from their slots.	 The diagram illustrates the final step of disassembly. It shows the brims being pulled from their slots. Arrows indicate the direction of movement for the brims.
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8.4.4 Disconnecting the forestay

1. Loosen the two luff screws in the torque tube. Lift up and unload the luff section before the second screw is removed to prevent the luff section from falling uncontrolled onto the terminal. To unload the section, a halyard can be tied around the luff section and tensioned.	
2. With the luff section standing on the top of the terminal, remove the plungers. Slide the torque tube up along the luff section and secure it with tape.	
 Before disconnecting the forestay from the lower bearing assembly, the rig must first be secured by a halyard as a substitute for the forestay.	
3. Remove clevis pin and split pin.	

8.4.5 Sta-lok terminal

1. To remove the Sta-lok eye, heat up the thread to release the locking adhesive.
2. Remove the terminal part (or rigging screw) from the socket.
3. Remove the former from the bottom of the terminal part.
4. Fit the terminal part, then loosen it 2 turns.
5. Tap on the end of the terminal part (or rigging screw) so that the socket is pushed up along the wire. If possible, fix the wire in a vice or use a large pipe wrench or similar tool. There should be at least 10 mm of free wire between the top of the socket and the jaws of the vice. Be careful to protect the wire against damage by the vice or wrench jaws.
6. Unscrew the terminal part again.
7. Cut all wire strands protruding outside the wedge at the bend by approx. 5 mm (13/64").

8. Pry the wedge apart slightly by inserting a small screwdriver into the slot and turning. Tap on the screwdriver so that the wedge slides off the wire.

9. Twist the wire strands into the correct positions around the core (counterclockwise when seen from underneath) and remove the socket.

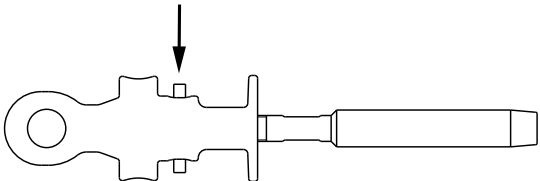
10. The wire can now be pulled out of the luff extrusion.

Prior to reassembly of the Sta-lok wire terminal:

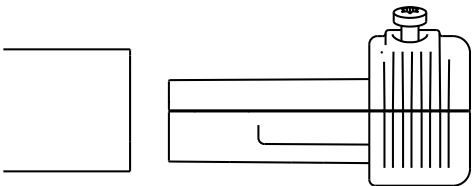
1. replace the used wedge with a new.

2. Cut the wire core flush with the outer strands. Remove any burrs with a file.

8.4.6 Stud/eye terminal

1. Drive out the spring pin. 2. Unscrew the eye terminal from the stud terminal.	
--	--

8.4.7 Top guard

1. Loosen the two screws. 2. Push out the halves.	
---	--

8.4.8 Halyard swivel

The halyard swivel is removed from the system by sliding it downwards in conjunction with dismantling the sail feeder and removing the drum unit. Alternatively, the halyard swivel can be removed over the top terminal eye after the top guard has been removed. In both cases the stay needs to be detached from the boat.



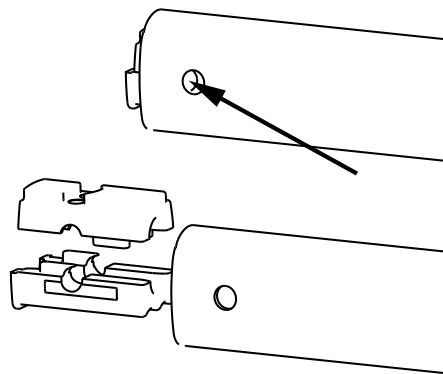
If the halyard swivel is to be removed, the rig must first be secured safely using a halyard as a substitute for the forestay before proceeding. After disconnecting the system from the boat's stem head, the drum unit and halyard swivel can be slid down over the terminal or rigging screw and removed.

8.4.9 Luff extrusion

Drum unit and eye lower terminal must be removed before the luff extrusion can be dismantled.

1. Place the Furllex system on a flat surface and make sure that the luff extrusion is kept straight.

2. Push out the lower bearing halves using a small screwdriver or similar. Be careful not to damage the hole in the luff extrusion.



3. Remove sail feeder and top guard.
4. Feed the exposed lower joining sleeve (at sail feeder level) down to release the lower connector and split the joint. The lower 760mm luff extrusion and distance tube can now be removed.
5. Use the disconnected joining sleeve to push up all the remaining distance tubes and joints until all joints disconnect. Hold tight on the luff extrusion while knocking on the joining sleeve with a hammer. Use a piece of wood or similar so that the joining sleeve is not damaged.
6. Collect the connectors at each joint and pull out the wire.

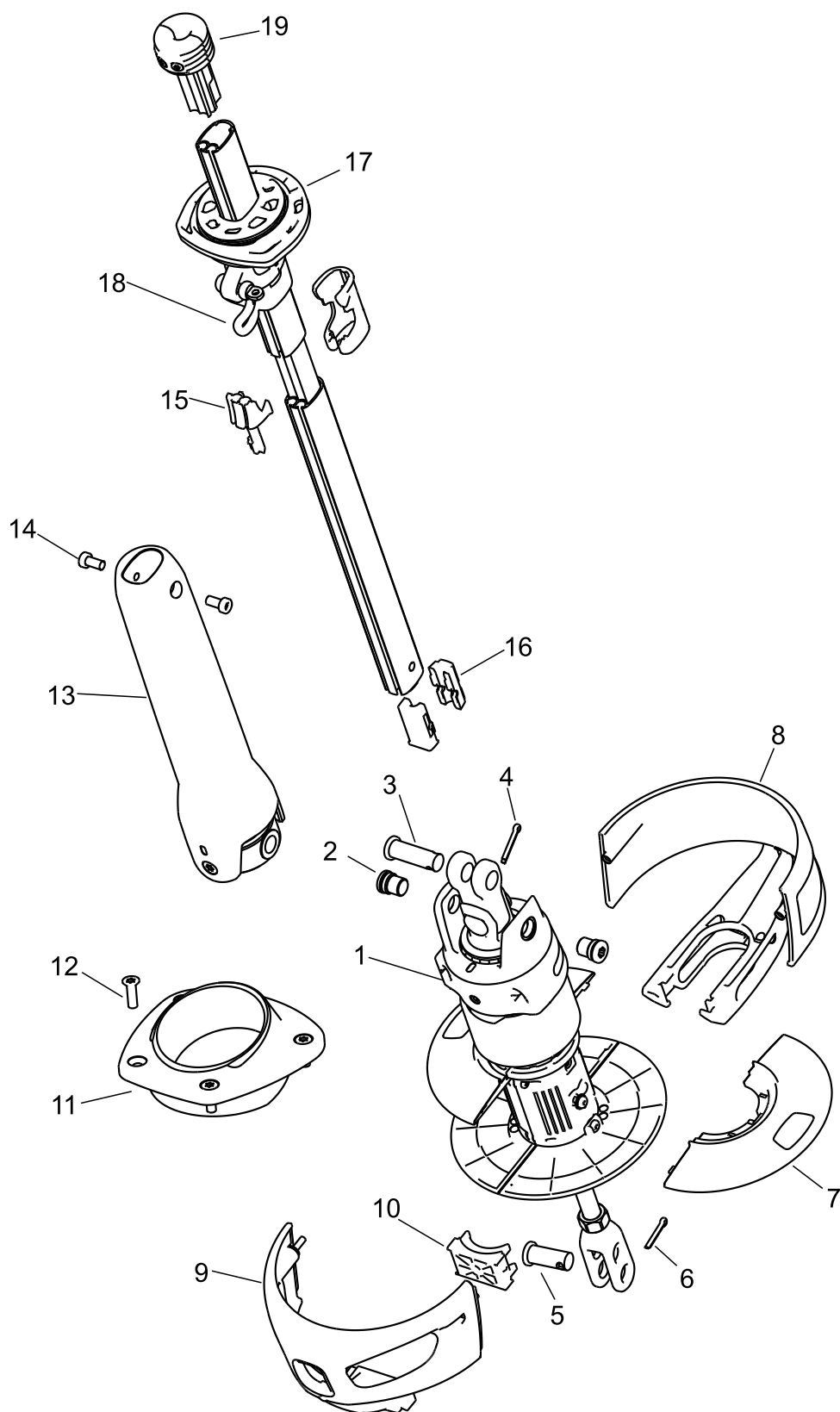
8.5 Trouble shooting

	Problem	Probable cause	Action
8.5.1	"The sail will not unfurl or will only partly unfurl."	• The jib halyard is wrapped around the luff extrusion.	• Ease the halyard slightly and try to reverse the system.
		• Another halyard is wrapped around the luff extrusion.	• Furl the system. Free the halyard.
		• The furling line is not free to run or has become tangled.	• Slacken or free the furling line.
		• The forestay is too slack.	• Tension the forestay, first of all by tensioning the backstay adjuster or backstays. If this doesn't help, decrease the length of the Furlex system.
		• Dirt and salt in the bearings.	• Rinse the bearings with fresh water and lubricate steel bearings with Furlex grease.
		• Too much strain on the halyard.	• Ease the halyard off.
8.5.2	"The sail will not furl, is hard to furl or can only be partly furled"	• The jib halyard is wrapped around the luff extrusion.	• Ease the halyard slightly and try to reverse the system.
		• Another halyard is wrapped around the luff extrusion.	• Unfurl the system. Free the halyard.
		• There is no line left on the drum.	• Unfurl the sail. Take it down and wind more line on the drum. Alternatively, loosen the sheet, gather the sail around the system with a rope, wind more line on the drum.
		• The forestay is too slack.	• Increase forestay tension.
		• Excessive wind pressure on the sail.	• Let the leeward sheet off more.
		• Windward sheet is not released.	• Release the sheet.
		• The sheet has become tangled.	• Sort out the sheet.
		• The free turn is not functioning.	• Unfurl the sail. Ease the halyard. Disconnect the tack and turn the tack ring and attach the tack.
		• Large turning angles in the furling line route which increase friction.	• Re-route the furling line, avoiding large turning angles.
		• Dirt and salt in the bearings.	• Rinse the bearings with fresh water and lubricate with Furlex grease.
		• The furling line has become tangled on the drum.	• Unfurl the sail and take it down. Rewind the furling line. Unfurl with slight drag on the furling line in future and avoid having too much line on the drum.

		• The line guide fitting chafes against the drum.	• Loosen the fastening screws below the drum and adjust the fitting.
		• Too much strain on the halyard.	• Ease the halyard off a little.
8.5.3	"The system 'wobbles' when furling and unfurling"	• The forestay is too loose.	• Tension the backstay and/or the cap shrouds. This will tension the forestay.
8.5.4	"The sail unfurls after reefing or furling"	• The sail is not furled tightly enough.	• Furl with some tension in the furling line.
		• The furling line is not belayed.	• Furl and belay the furling line
8.5.5	"The sail is hard to hoist"	• The luff tape is too thick.	• Return the sail to the sailmaker and refer to this manual.
		• The sail is caught on something or is not sufficiently loose on the foredeck.	• Arrange the sail better on the foredeck.
		• Fault in halyard routing.	• Check the sheaves, winch etc.
		• Dirt and salt in the luff groove.	• Clean the luff groove.
8.5.6	"The luff cannot be tensioned"	• The halyard swivel comes into contact with the top guard.	• The luff of the sail is too long. Have the sail shortened by the sailmaker.
		• The angle between the forestay and the halyard is too great.	• Shorten the sail or move the halyard lead up.
8.5.7	"The sail cannot be taken down"	• The halyard is wrapped around the top of the luff extrusion.	• Ease the halyard off and try to reverse the system.
		• The halyard wraps around the luff extrusion as the sail is coming down.	• Tension the halyard manually keeping a slight drag on it while taking the sail down.
		• The halyard is stuck.	• Check the halyard routing (sheaves, stoppers etc).
8.5.8	"The sail's UV protection is on the inside of the furled sail"	• The furling line is wound on the drum in the wrong direction.	• Remove the sheet from the furled sail and gather the sail around the Furlex system with a rope. Pull on the line until the drum is empty. Wind a couple of turns on the drum by hand in the right direction. Unfurl the sail. Furl again, checking the number of turns of furling line on the drum.
8.5.9	"The sail is wrinkled at the tack"	• The tack ring was turned in the wrong direction before tacking the sail.	• Unfurl the sail and ease off the halyard. Undo the tack snap shackle. Rotate the tack ring "around the system" and retack the sail. Furl slowly and check that the furling of the tack is retarded by one revolution in relation to the luff extrusion.
		• The sail is old or incorrectly cut.	• Consult your sailmaker.

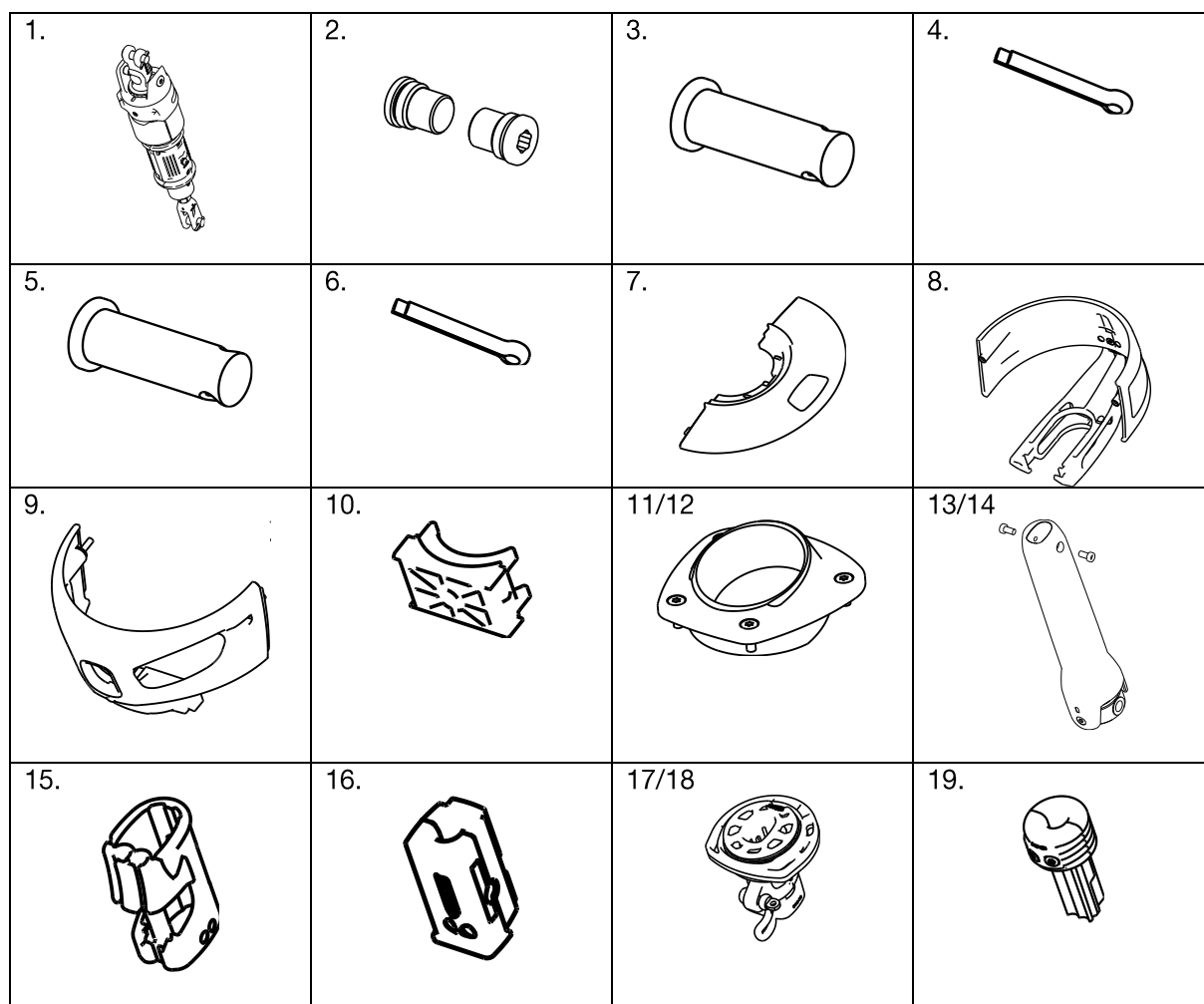
8.5.10	"The leach flogs despite sheeting hard"	• Incorrect sheeting point.	• Move the sheeting point forward.
		• Incorrectly tensioned leach line.	• Adjust the leach line (Consult your sailmaker).
		• The sail is old or incorrectly cut.	• Consult your sailmaker.
8.5.11	"The leach closes (bends inwards)"	• Incorrect sheeting point.	• Move the sheeting point backwards.
		• Incorrect sheeting point.	• Consult your sailmaker.

9 Spare parts and accessories



9.1 Spare parts and accessories

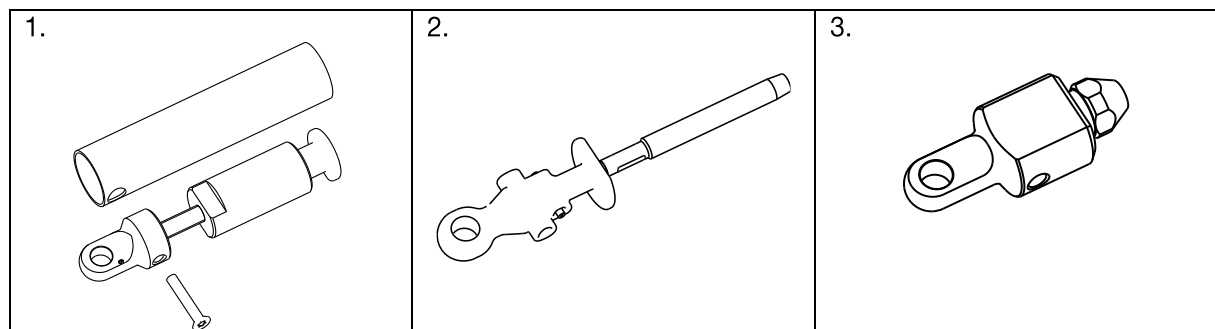
	Description	104TD ø5		104TD ø6	
		Dimension	Part no.	Dimension	Part no.
1	Lower bearing assembly	Ø5	549-170-05	Ø6	549-170-02
2	Plunger	M14x14	549-163	M14x14	549-163
3	Clevis pin	Ø10x28	165-203	Ø12x37	165-409
4	Split pin	2.5x16	301-004	3.2x20	301-011
5	Clevis pin	Ø10x22	165-202	Ø12x29	165-431
6	Split pin	3.2x16	301-049	3.2x20	301-011
7	Brim half assembly	Ø148	549-107-01	Ø148	549-107-01
8	Ling guard assembly	Ø156	549-109-01	Ø156	549-109-01
9	Line guide assembly	160x107	549-110-01	160x107	549-110-01
10	Locking block	40x27	549-111	40x27	549-111
11	Deck collar assembly	127x55	549-174-01	127x55	549-174-01
12	Screw MFT	6x30	162-044	6x30	162-044
13	Torque tube assembly	Ø68x275	549-160-01	Ø68x275	549-160-01
14	Screw MLC6S	6x12	153-166	6x12	153-166
15	Sail feeder assembly	50x22	549-123-01	50x22	549-123-01
16	Lower bearing	L=37	549-119-02	L=37	549-119-02
17	Halyard swivel	104S/TD	549-116-01	104S/TD	549-116-01
18	Shackle-twisted	Ø6	307-023	Ø6	307-023
19	Top guard	104S/TD	549-125-01	104S/TD	549-125-01



		104TD		
			Forestay wire size	
	Description	Dimension	Ø5	Ø6
20	Grease	100g	312-501	312-501
21	Furling line	Ø8x20000	612-034-12	612-034-12
22	Stanchion block (1-pack)	For ø25	538-971-01	538-971-01
23	Prefeeder pack	-	505-538-01	505-538-01
24	Locking adhesive	1g	312-305	312-305
25	Connecting plate kit	1 long+5 short	549-127-01	549-127-01
26	HMPE sling (halyard swivel)	Ø4	613-051-20	613-051-20

Wire pack & terminal pack

		104TD		
			Forestay wire size	
	Description	Dimension	Ø5	Ø6
-	Forestay wire pack	L=10500	601-003-64	601-004-64
		L=12900	601-003-65	601-004-65
-	Forestay compact wire pack	L=10500	601-053-64	601-054-64
		L=12900	601-053-65	601-054-65
1	Rigging screw pack		174-566-02	174-567-02
2	Eye pack-stud		301-653-11	301-654-11
3	Eye pack Sta-Lok		301-672-11	301-673-11



Luff extrusion pack, wire ø5-6

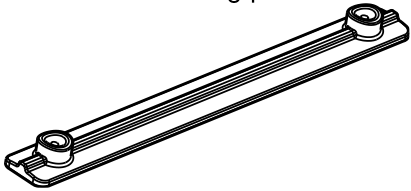
Including luff extrusions, joining sleeves, distance tubes and connecting plates for forestay lengths according to table.

Description	Dimension	Part no.
Luff extrusion pack	FLD=8000	549-132-32
	FLD=10400	549-132-33
	FLD=12800	549-132-34

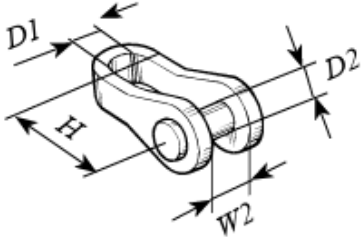
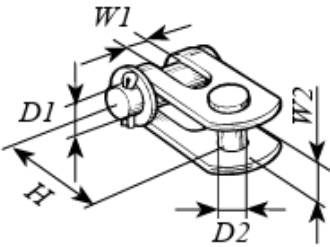
Single luff extrusion pack, wire ø5-6

Including 1 luff extrusion, 1 joining sleeve, 1 distance tube and 1 connecting plate

Description	Part no.	Luff extrusion	Joining sleeve	Distance tube	Connecting plate
Luff extrusion pack	549-180-01	L=760	L=250	L=625	L=90
	549-131-01	L=2000	L=200	L=1800	L=40
	549-132-06	L=2400	L=200	L=2200	L=40

Luff extrusion	Joining sleeve	Distance tube	Connecting plate
			

9.2 Toggles and links

Toggle type		Forestay dimension	
		Ø5	Ø6
Eye/Fork toggle 	Part no.	174-103	174-104
	Length (H)	35	40
	Eye (D1)	10	11
	Clevis pin (D2)	9.5	11
	Fork width (W2)	10	12
Fork/Fork toggle 	Part no.	517-054-02	517-046-02
	Length (H)	30	40
	Clevis pin (D1)	10	12
	Fork width (W1)	10	11
	Clevis pin (D2)	10	10
	Fork width (W2)	11	11

10 Warranty

Seldén Mast AB guarantees a Furlex 104TD for 2 years. The guarantee covers faults arising from defective design, materials or workmanship.

The guarantee is only valid if the product is assembled, operated and maintained in accordance with this manual and is not subjected to loads in excess of those indicated in the brochure and on the Seldén website.

Complete shipment and warranty conditions are to be found on Seldén's website www.seldenmast.com. See Resources/Partners information/General information/General conditions of sale (595-546-E).

If the system is repaired or modified by anyone other than Seldén Mast AB or one of our authorized dealers, the guarantee ceases to be valid.

Seldén Mast AB reserves the right to alter the content and design without prior warning.

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Our well known brands are Seldén and Furlex. The worldwide success of Furlex has enabled us to build a network of over 750 authorised dealers covering the world's marine markets. So wherever you sail, you can be sure of fast access to our service, spare parts and know-how.

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