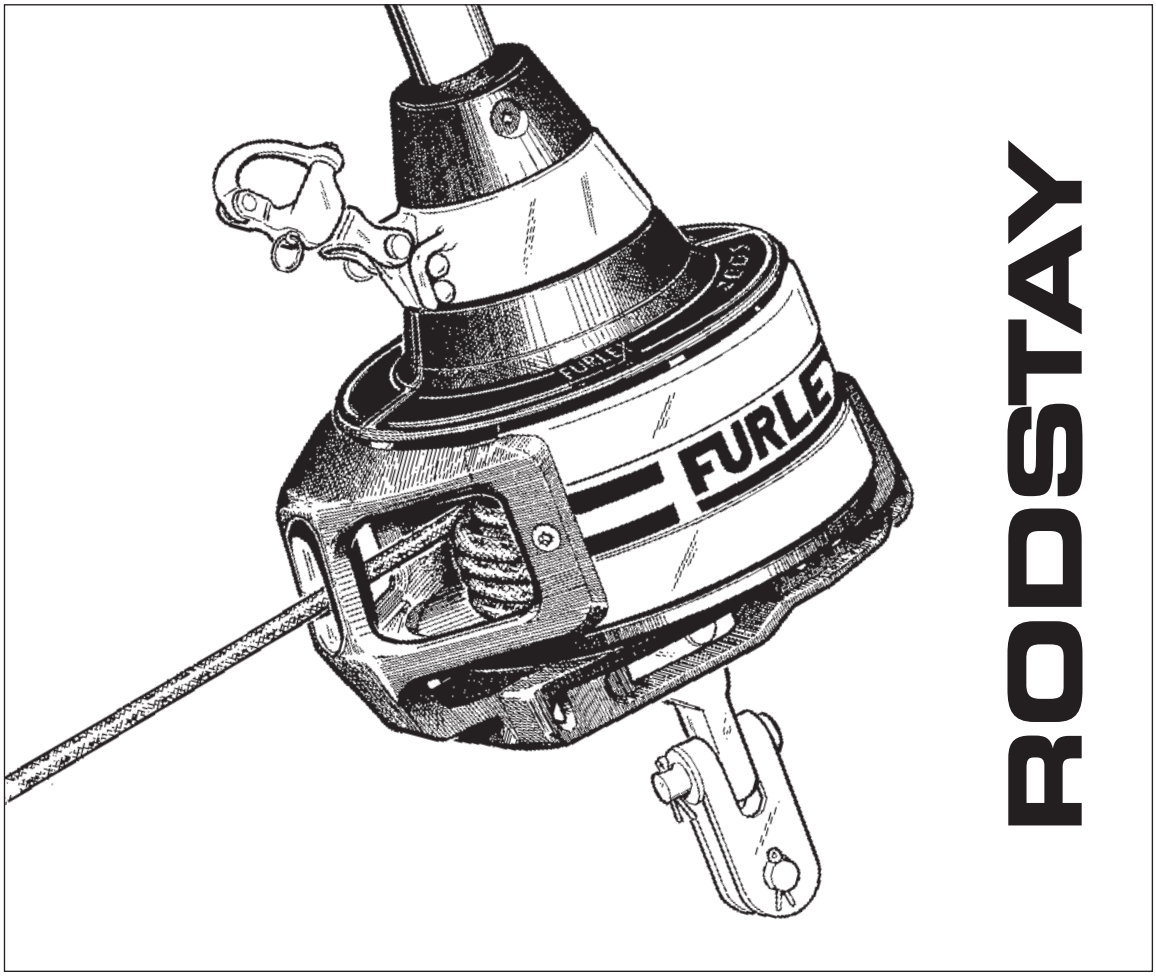
595-111-E
2004-12-15

FURLEX
SELDÉN

Assembly manual for Furlex *200 S, 300 S, 400 S & 500 S* with rod forestay



SELDÉN

1 Introduction

1.1 The manual

☐ This manual covers assembly of the rod forestay and replaces the corresponding headings in the ”Manual Furlex 200 S & 300 S” (ref. no. 595-104-E). resp ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).
These instructions is included in Furlex box. See **”Contents”** on Page 3.

☐ It is very important to read both manuals and note any cross references.

☐ All safety-related information is indicated by the following symbol: ⚠

☐ The manual covers four different Furlex sizes, 200 S, 300 S, 400 S and 500 S. The assembly proceedings varies on some points between the different sizes. This is marked in the manual.

☐ The model designation can be found on the line drum top.

☐ All dimensions specified in the manual are in millimetres (mm) unless otherwise indicated.

☐ The screws used for the halyard swivel and lower bearing assembly have a Torx or Allen socket. The requisite spanners are included with the Furlex. The table below gives the relevant screw sizes and corresponding sockets.

Skrew Size	Torx Socket		Allen Socket	
M 5	T 25		–	
M 6	T 30		–	
M 8	T 40		–	
M10	–		8 mm	
M12	–	*Fig: 1.1.a*	10 mm	*Fig: 1.1.b*

⚠ **This information must be followed to avoid damage to the system and the risk of personal injury. The 5-year guarantee on the Furlex-system is only valid if the system is assembled and operated correctly according to the manual.**

⚠ **PLEASE read the entire manual prior to assembly!**

Seldén Mast AB guarantees the Furlex-system for 5 years. The guarantee covers faults arising from defective design, materials or workmanship.

The guarantee is only valid if the Furlex-system 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 instructions.

If the system is repaired 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.

Contents

1.2 Product information

When the original Furlex was introduced in 1983, it was not a pioneering project. The design included features which improved on other manufacturers' products to increase performance, function and reliability. The first systems sold are still functioning well, providing ample proof of the design's effectiveness and long-term staying power. Furlex quickly became the market leader, a position it still occupies today. Our success can also be put down to how we select a system for a specific yacht. First we calculate the boat's righting moment, which is the function of its displacement, ballast, beam and draught. Then we use righting moment in combination with the rig type to calculate its power when sailing, and the likely loads on the Furlex system.

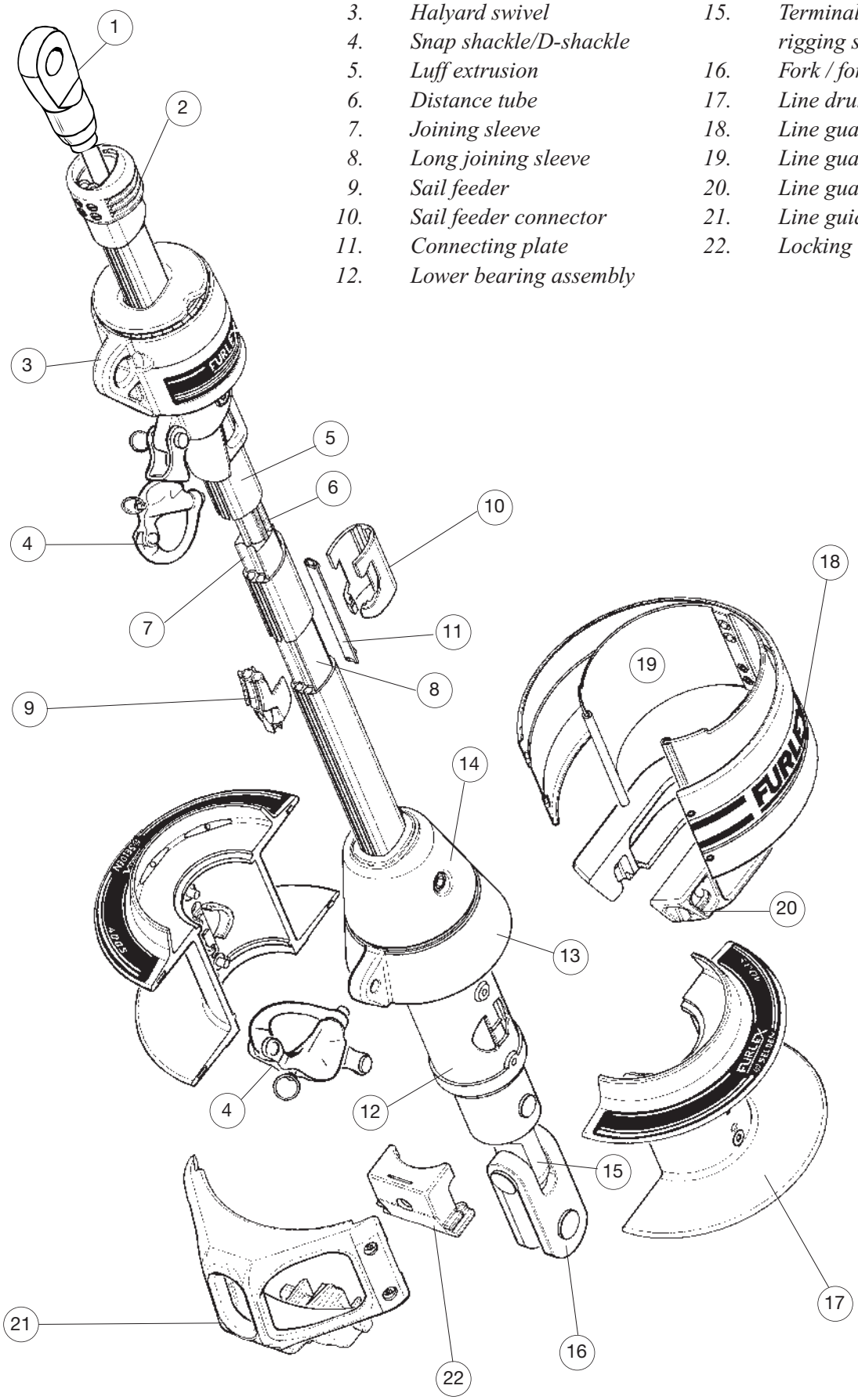
Furlex is only sold through authorized local dealers who are able to cover all service requirements for the customer, including assistance with assembly, the modification of sails or the production of new sails.

This new Furlex model range incorporates improvements based on our extensive experience, and represents the very latest development of the jib furling and reefing concept.

- ☐ Furlex is supplied as a complete assembly kit containing all the components required.
- ☐ The ball-bearing system of the halyard swivel features a load distribution facility, a unique patented system which distributes loads over the entire ball race. This permits smoother furling and considerably reduces bearing wear.
- ☐ Furlex can be supplied with an optional integral rigging screw.
- ☐ The Furlex luff section has the same dimensions over its whole length. The entire luff is furled in an even roll, right down to the tack of the sail. This is a requirement for satisfactory sail shape when reefed.
- ☐ The tack ring's "free turn" flattens out the sail, promoting an efficient shape when reefed.
- ☐ Furlex is suited to both cruising and racing. The line drum and line guide are easy to remove if you want to utilize the entire forestay length for racing.
- ☐ The luff section has two luff grooves, allowing two jibs to be goose-winged when running downwind and facilitating fast sail changes for racing yachtsmen.
- ☐ The aluminium extrusion is insulated from the forestay over its whole length. Furlex 200 S, 300 S and 400 S has the extrusion joining sleeves are also are insulated internally to prevent wear and corrosion. The clearance between the forestay and the joining sleeve on the 500 S is sufficiently large to be able to omit the insulation.
- ☐ The line guide fitting centres the line as it is wound onto the drum, and the flexible internal line guard maintains light pressure on the line to ensure even distribution on the drum.
- ☐ Furlex is manufactured by Seldén Mast, the world's leading manufacturer of masts and rigging systems.

Follow the instructions carefully when fitting.

1. *Forestay eye terminal*
2. *Top guard*
3. *Halyard swivel*
4. *Snap shackle/D-shackle*
5. *Luff extrusion*
6. *Distance tube*
7. *Joining sleeve*
8. *Long joining sleeve*
9. *Sail feeder*
10. *Sail feeder connector*
11. *Connecting plate*
12. *Lower bearing assembly*
13. *Tack ring*
14. *Adapter*
15. *Terminal part or rigging screw*
16. *Fork / fork toggle*
17. *Line drum half*
18. *Line guard housing*
19. *Line guard*
20. *Line guard bracket*
21. *Line guide fitting*
22. *Locking block*



1.3 Compatible sizes

						Limits imposed by strength of furling system			
						Max. righting moment at 30° heel (Nm)		Approximate displacement (tons)	
Furlex	**Forstay dim.**	**Rod diameter**	**Navtec**	**OYS[2]** (Riggarna)	**BSI**	**Mast-head rig**	**Partial rig**	**Mast-head rig**	**Partial rig**
200 S	6 mm	-8 (ø 5.7 mm)	●	●	●	37.000	40.000	7.5	8.0
200 S	7 mm	-10 (ø 6.4 mm)	●	●	●				
200 S	8 mm	-12 (ø 7.1 mm)	●	–	●				
		-15 (ø 7.5 mm)	–	●[1]	●				
300 S	8 mm	-12 (ø 7.1 mm)	●	–	●	70.000	75.000	14	15
		-15 (ø 7.5 mm)	–	●	●				
300 S	10 mm	-17 (ø 8.4 mm)	●	–	●				
		-22 (ø 9.5 mm)	●	●	●				
400 S	12 mm	-30 (ø 11.1 mm)	●	●	●	180.000	190.000	28	30
400 S	14 mm	-30 (ø 11.1 mm)	●	–	–				
		-40 (ø 12.7 mm)	●	●	●				
500 S	16 mm	-40 (ø 12.7 mm)	●	●	–	230.000	250.000	38	40
		-48 (ø 14.3 mm)	●	●	●				

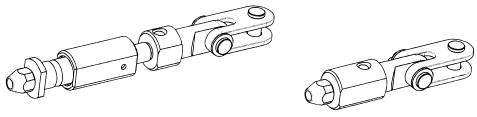
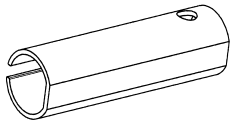
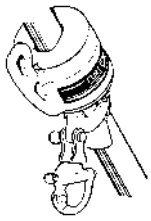
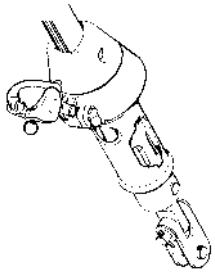
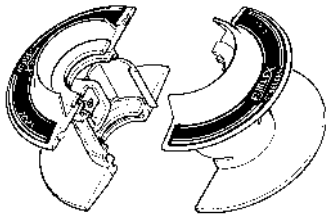
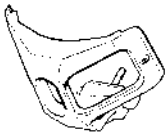
1) As the male part of this rod terminal type/size is too large to pass through the luff extrusions, the rod forestay can only be cold-headed at its upper terminal end after the stay has been pulled through the assembled extrusions. The extrusion must be made 200 mm (8”) shorter than the stay at the top to make room for the cold-heading machine. Consequently the luff extrusions length and available sail space is reduced. The system has to be manufactured by the rod manufacturer, which may give rise to transportation problems.

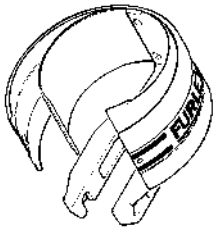
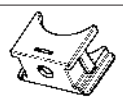
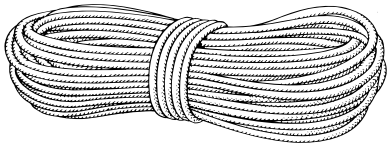
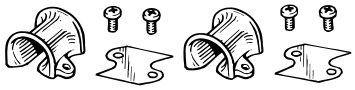
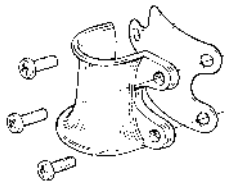
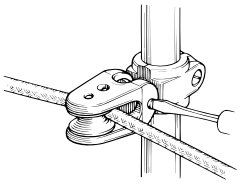
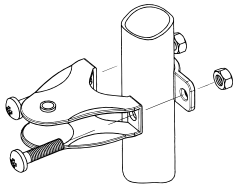
2) The upper eye terminal must be of the MNY type.

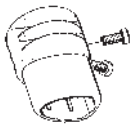
ASSEMBLY

2 Checklist

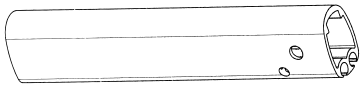
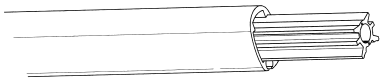
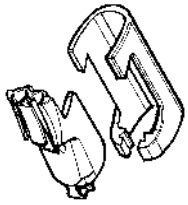
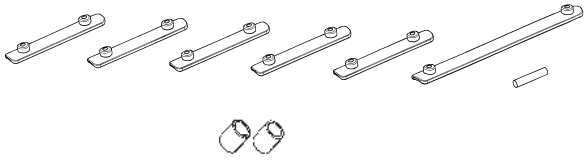
2.1 Furlex box

☐ Wire terminal (200 S & 300 S with spacer bush) or Furlex rigging screw function. (Depends on which type ordered.)	
☐ 400 S/Ø12 Rigging screw adapter	
☐ Halyard swivel with snap shackle/- D-shackle	
☐ Lower bearing assembly with snap shackle/D-shackle	
☐ 2x line drum halves (one with furling line end lock 200 S & 300 S)	
☐ Line guide fitting	

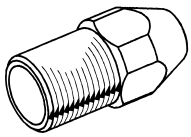
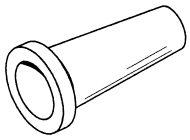
☐ Line drum casing	
☐ Line guide locking block	
☐ Furling line	
200 S: ☐ 2 halyard leads 508-159 with insulator sheets incl. 4 screws ☐ Drill bit Ø 5.3 mm (7/32”) 300 S: ☐ 2 halyard leads 508-128 with insulator sheets incl. 6 screws ☐ Drill bit Ø 5.3 mm (7/32”) 400 S: ☐ 2 halyard leads 508-128 with insulator sheets incl. 6 screws ☐ Drill bit Ø 5.3 mm (7/32”) ☐ 500 S: Halyard leads are not included. A halyard sheave box must be used for this model. (See ”Manual Furlex 400 S & 500 S”, ref no. 595-116-E. Chap. 5.2, Fig: 5.2.a, page 24.)	   
☐ 200 S & 300 S: Torx spanner set 400 S & 500 S: ☐ Torx spanner set + Allen keys 8 (5/16”) and 10 mm (3/8”).	
200 S: ☐ 4 stanchion blocks 538-971-02 300 S: ☐ 4 stanchion blocks 538-210-01 + 1 x 538-971-01 400 S & 500 S: ☐ 6 stanchion blocks 538-210-01	 
☐ Locking adhesive ☐ Lubricating grease	 

☐ Top guard incl. 2 screws	
☐ Instructions ☐ Spare parts list ☐ Certificate of guarantee	

2.2 Foil pack

☐ One 1000 mm (39 3/8”) luff extrusion	
☐ One 2000 mm (78 3/4”) luff extrusion with slotted distance tube	
200 S, 300 S and 400 S: ☐ 2400 mm (94 1/2”) luff extrusions with slotted distance tubes (number dependent on length ordered.) ☐ 500 S: 4800 mm (189”) luff extrusions with distance tube + joining sleeve (number dependent on length ordered).	
☐ 200 S, 300 S and 400 S: Sail feeder (sail feeder + sailfeeder connector) ☐ 500 S: The sail feeder is cut into the 1000 mm luff extrusion on this model.	
200 S, 300 S and 400 S: ☐ 1 short connecting plate for each 2400 mm (94 1/2”) luff extrusion 200 S, 300 S and 400 S: ☐ 1 long connecting plate (for sail feeder) 500 S: 1 short connecting plate for each ☐ 4 800 mm luff extrusion 200S & 300 S: ☐ 1 locking pin Ø 3 x 25 (Ø 1/8” x 1”) for 1000 mm (39 3/8”) luff extrusion ☐ 400 S & 500 S: 2 x bushes for 1000 mm (39 3/8”) luff extrusion	

2.3 Joining sleeve pack

☐ 1 long joining sleeve with insulator (not 500 S)	
☐ 400 S & 500 S: Bearing plug	
☐ Short joining sleeves with insulators (not 500 S) (number dependent on length ordered)	
☐ Socket	
☐ 1 seat for rod forestay in lower bearing assembly 500 S: Socket and seat forms one part	
☐ Instructions	

The joining sleeve pack and foil pack may be delivered as a combined package.

2.4 Tools

Tools needed for assembly:

Screwdriver
Hacksaw
2 adjustable spanners
“Polygrip” pliers
Adhesive tape
File
Marker pen (water-proof)
Torx spanners (included in Furlex package)
Steel measuring tape (30 m) (100”)
Knife

200 S, 300 S och 400 S:
For halyard leads:

Heavy-duty Philips screwdriver
Drill
Drill bit Ø 5.3 mm (7/32”)
(included in Furlex package)

3 Assembly preparations

3.1 Forestay attachment – guiding principle
3.2 Mast attachment
3.3 Deck attachment
3.3.1 Dimensions of lower bearing assembly

} See “Manual Furlex 200 S & 300 S” (ref. no. 595-104-E) resp. ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).

3.3.2 Dimensions of top eye terminal

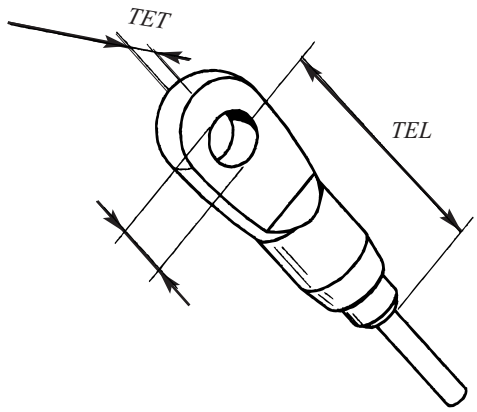


Fig: 3.3.2.a

Rod diameter	Navtec	(Marine Eye)			OYS (Riggarna)	(MYN)[1]			BSI	(RFE)		
		TET	TED	TET		TET	TED	TET		TET	TED	TET
-8 (ø 5.7 mm)	•	12.4 mm (1/2”)	13.1 mm (17/32”)	72 mm (2 27/32”)	•	10.0 mm (13/32”)	11.3 mm (7/16”)	71 mm (2 13/16”)	•	10.0 mm (13/32”)	11.3 mm (7/16”)	62 mm (2 7/16”)
-10 (ø 6.4 mm)	•	12.4 mm (1/2”)	13.1 mm (17/32”)	72 mm (2 27/32”)	•	11.0 mm (7/16”)	12.9 mm (1/2”)	76 mm (3”)	•	11.0 mm (7/16”)	13.1 mm (17/32”)	68 mm (2 11/16”)
-12 (ø 7.1 mm)	•	15.7 mm (5/8”)	16.3 mm (5/8”)	82 mm (3 7/32”)	–	–	–	–	•	14.0 mm (9/16”)	16.0 mm (5/8”)	80 mm (3 5/32”)
-15 (ø 7.5 mm)	–	–	–	–	•	14.0 mm (9/16”)	16.0 mm (5/8”)	89 mm (3 1/2”)	•	14.0 mm (9/16”)	16.0 mm (5/8”)	80 mm (3 5/32”)
-17 (ø 8.4 mm)	•	15.7 mm (5/8”)	16.3 mm (5/8”)	82 mm (3 7/32”)	–	–	–	–	•	14.0 mm (9/16”)	16.0 mm (5/8”)	86 mm (3 3/8”)
-22 (ø 9.5 mm)	•	18.8 mm (3/4”)	19.4 mm (3/4”)	99 mm (3 29/32”)	•	16.0 mm (5/8”)	19.2 mm (3/4”)	87 mm (3 7/16”)	•	17.0 mm (21/32”)	19.3 mm (3/4”)	100 mm (3 15/16”)
-30 (ø 11.1 mm)	•	21.8 mm (7/8”)	22.6 mm (29/32”)	111 mm (4 3/8”)	•	20.0 mm (25/32”)	22.4 mm (7/8”)	108 mm (4 1/4”)	•	19.5 mm (3/4”)	22.6 mm (29/32”)	115 mm (4 17/32”)
-40 (ø 12.7 mm)	•	25.1 mm (1”)	22.8 mm (29/32”)	122 mm (4 13/16”)	•	23.0 mm (29/32”)	25.7 mm (1”)	123 mm (4 27/32”)	•	22.0 mm (7/8”)	25.7 mm (1”)	129 mm (5 1/16”)
-48 (ø 14.3 mm)	•	28.2 mm (1 1/8”)	29.0 mm (1 1/8”)	127 mm (5”)	•	26.0 mm (1 1/32”)	29.0 mm (1 1/8”)	139 mm (5 15/32”)	•	25.0 mm (1”)	29.0 mm (1 1/8”)	146 mm (5 3/4”)

[1] Type MYE **cannot** be used.

3.3.3 Toggle dimensions
3.4 Assembly below deck

} See ”Manual Furlex 200 S & 300 S” (ref. no. 595-104-E) resp. ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).

3.5 Calculating the length of the rod forestay

1. Determine the rake of the mast with the fore-/backstay tensioned.
2. 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. However, if the forestay rigging screw setting has to be adjusted, measure the length or mark the original setting.
3. 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.

> **Always use a strong "D" shackle or tie the halyard!**

4. Take down the forestay. (If the rigging screw was adjusted, return it to its original setting.)
5. Measure the forestay length (FL) **with just enough tension to keep it straight**.
6. Enter the measurement in **"Calculation Table 1**" below, under the heading "Your forestay", on the row marked FL.
7. Calculate the new rod length WL in **"Calculation Table 1"**. Refer to the column marked "example" to see how this is done.

3.5.1	Calculation Table 1: Length of rod forestay	Your forestay	Example (Navtec -8) with rigging screw 50% extended
FL	Existing forestay length (FL), including rigging screw (See Fig. 3.5.a)		13.000
T	Deduction for lower wire terminal:		
H	If links or extra toggles are to be used, deduct this length (H) from FL. (See table 3.3.3.)	-	- 190
WL	See fig 3.5.a	=	= 12.810
	Addition for cold-heading of rod forestay (acc. to rod supplier's data)	+	+
	Deduction for top terminal (acc. to rod supplier's data)	-	-
	Cutting measurement of rod	=	=

Rod diameter		Navtec	OYS (Riggarna)	BSI	Without rigg. screw	With rigg. screw
200 S	-8 (ø 5,7 mm)	●	●	●	110 mm (4 5/16")	190 mm (7 1/2")
	-10 (ø 6,4 mm)	●	●	●	110 mm (4 5/16")	190 mm (7 1/2")
	-12 (ø 7,1 mm)	●	—	●	110 mm (4 5/16")	190 mm (7 1/2")
	-15 (ø 7,5 mm)	—	●	●	110 mm (4 5/16")	190 mm (7 1/2")
300 S	-12 (ø 7,1 mm)	●	—	●	130 mm (5 1/8")	230 mm (9 1/16")
	-15 (ø 7,5 mm)	—	●	●	130 mm (5 1/8")	230 mm (9 1/16")
	-17 (ø 8,4 mm)	●	—	●	130 mm (5 1/8")	235 mm (9 1/4")
	-22 (ø 9,5 mm)	●	●	●	130 mm (5 1/8")	235 mm (9 1/4")
400 S	-30 (ø 11,1 mm)	●	●	●	190 mm (7 1/2")	325 mm (12 7/8")
	-40 (ø 12,7 mm)	●	●	●	190 mm (7 1/2")	325 mm (12 7/8")
500 S	-40 (ø 12,7 mm)	●	●	—	190 mm (7 1/2")	325 mm (12 7/8")
	-48 (ø 14,3 mm)	●	●	●	190 mm (7 1/2")	325 mm (12 7/8")

3.6 Calculating the length of the luff extrusion

1. Insert the length of the new rod forestay (WL) as calculated in **"Calculation Table 1"** into **"Calculation Table 2"**, in the row marked WL.
2. Calculate the number of full-length extrusions and the length of the top extrusion.

<table>
<tr><th>3.6.1</th><th>Calculation Table 2: Length of luff extrusion</th><th>Your extrusion</th><th>Example (Navtec -8) with rigging screw 50% extended</th></tr>
<tr><td>WL</td><td>Length of new rod forestay (as per "Calculation Table 1")</td><td></td><td>12.810</td></tr>
<tr><td>A+B</td><td>Fixed deduction (A + B):
Check that length of terminal part of stay matches the measurement in 3.3.2.
<table>
<tr><th colspan="2">Rod diameter</th><th>Navtec</th><th>Without rigg. screw</th><th>With rigg. screw</th><th>OYS (Riggarna)</th><th>BSI</th><th>Without rigg. screw</th><th>With rigg. screw</th></tr>
<tr><td rowspan="4">200 S</td><td>-8 (ø 5,7 mm)</td><td>●</td><td>1320 mm (52")</td><td>1270 mm (50")</td><td>●</td><td>●</td><td>1340 mm (52 3/4")</td><td>1290 mm (50 3/4")</td></tr>
<tr><td>-10 (ø 6,4 mm)</td><td>●</td><td>1320 mm (52")</td><td>1270 mm (50")</td><td>●</td><td>●</td><td>1340 mm (52 3/4")</td><td>1290 mm (50 3/4")</td></tr>
<tr><td>-12 (ø 7,1 mm)</td><td>●</td><td>1320 mm (52")</td><td>1270 mm (50")</td><td>—</td><td>●</td><td>1340 mm (52 3/4")</td><td>1290 mm (50 3/4")</td></tr>
<tr><td>-15 (ø 7,5 mm)</td><td>—</td><td>—</td><td>—</td><td>●</td><td>●</td><td>1340 mm (52 3/4")</td><td>1290 mm (50 3/4")</td></tr>
<tr><td rowspan="4">300 S</td><td>-12 (ø 7,1 mm)</td><td>●</td><td>1400 mm (55 1/8")</td><td>1340 mm (52 3/4")</td><td>—</td><td>●</td><td>1410 mm (55 1/2")</td><td>1340 mm (52 3/4")</td></tr>
<tr><td>-15 (ø 7,5 mm)</td><td>—</td><td>—</td><td>—</td><td>●</td><td>●</td><td>1410 mm (55 1/2")</td><td>1340 mm (52 3/4")</td></tr>
<tr><td>-17 (ø 8,4 mm)</td><td>●</td><td>1400 mm (55 1/8")</td><td>1340 mm (52 3/4")</td><td>—</td><td>●</td><td>1410 mm (55 1/2")</td><td>1340 mm (52 3/4")</td></tr>
<tr><td>-22 (ø 9,5 mm)</td><td>●</td><td>1400 mm (55 1/8")</td><td>1340 mm (52 3/4")</td><td>●</td><td>●</td><td>1410 mm (55 1/2")</td><td>1340 mm (52 3/4")</td></tr>
<tr><td rowspan="2">400 S</td><td>-30 (ø 11,1 mm)</td><td>●</td><td>1450 mm (57")</td><td>1340 mm (52 3/4")</td><td>●</td><td>●</td><td>1450 mm (57")</td><td>1340 mm (52 3/4")</td></tr>
<tr><td>-40 (ø 12,7 mm)</td><td>●</td><td>1470 mm (58")</td><td>1380 mm (54 1/2")</td><td>●</td><td>●</td><td>1470 mm (58")</td><td>1380 mm (54 1/2")</td></tr>
<tr><td rowspan="2">500 S</td><td>-40 (ø 12,7 mm)</td><td>●</td><td>1395 mm (55")</td><td>1310 mm (51 1/2")</td><td>●</td><td>—</td><td>1395 mm (55")</td><td>1310 mm (51 1/2")</td></tr>
<tr><td>-48 (ø 14,3 mm)</td><td>●</td><td>1395 mm (55")</td><td>1310 mm (51 1/2")</td><td>●</td><td>●</td><td>1395 mm (55")</td><td>1310 mm (51 1/2")</td></tr>
</table></td><td></td><td>12.810

- 1.270</td></tr>
<tr><td>C+D</td><td>C+D=</td><td>=</td><td>=11.540</td></tr>
<tr><td>400 S
C</td><td>Max. no. of 2400 mm (94 1/2") extrusions whitch together are shorter than C+D: [.....x 2400 = C] C=</td><td>-</td><td>(4 sections)
- 9.600</td></tr>
<tr><td>500 S
C</td><td>Max. no. of 4800 mm (189") extrusions whitch together are shorter than C+D: [.....x 4800 = C] C=</td><td>-</td><td></td></tr>
<tr><td>D</td><td>Length of top extrusion =

The top extrusion is normally cut from the 2000 mm (78 3/4")(400 S 1700 mm (67")) extrusion. Round the edges of the cut end using a file.

If the top extrusion is shorter than 400 mm (15 3/4") (200/300 S), 700 mm (27 9/16") (400 S), 1000 mm (39 3/8") (500 S), the joint will be too near the top. In this case replace the uppermost full-length 2400 mm (500 S: 4800 mm) extrusion with the 2000 mm (78 3/4") (400 S: 1700 mm (67")) extrusion. In this way the joint is moved 400 mm (15 3/4") (400 S: 700 mm (27 9/16"); 500 S: 2800 mm (110")) down the stay.
Adjust the C and D measurements as follows:

Deduct from the C measurement: 200/300 S: 400 mm (15 3/4")
400 S: 700 mm (27 9/16")
500 S: 2800 mm (110")

Add to the D measurement: 200/300 S: 400 mm (15 3/4")
400 S: 700 mm (27 9/16")
500 S: 2800 mm (110")</td><td>=</td><td>=
1.940</td></tr>
</table>

Cont. on next page

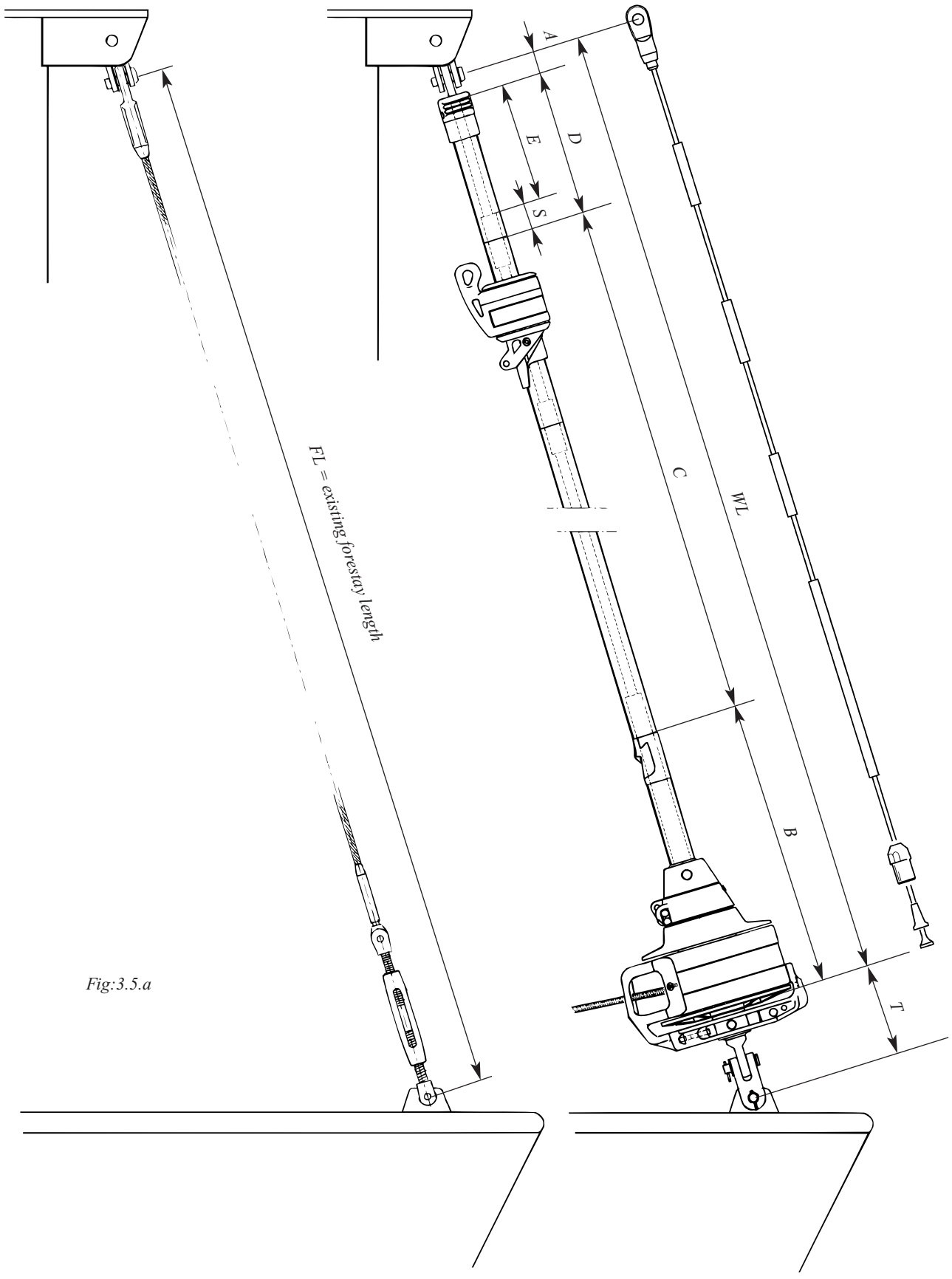


Fig:3.5.a

3.6.1	Calculation Table 2: Length of luff extrusion, *cont.*	Your extrusion	Example (Navtec -8) with rigging screw 50% extended
E	Cut the distance tube for the top extrusion in accordance with the following fixed deduction:		

Rod diameter		Navtec	OYS (Riggarna)	BSI	
200 S	-8 (ø 5,7 mm)	●	●	●	E = D - 100 mm (4”)
	-10 (ø 6,4 mm)	●	●	●	
	-12 (ø 7,1 mm)	●	—	●	
	-15 (ø 7,5 mm)	—	●	●	
300 S	-12 (ø 7,1 mm)	●	—	●	E = D - 125 mm (5”)
	-15 (ø 7,5 mm)	—	●	●	
	-17 (ø 8,4 mm)	●	—	●	
	-22 (ø 9,5 mm)	●	●	●	
400 S	-30 (ø 11,1 mm)	●	●	●	E = D - 150 mm (6”)
	-40 (ø 12,7 mm)	●	●	●	
500 S	-40 (ø 12,7 mm)	●	●	—	E = D - 150 mm (6”)
	-48 (ø 14,3 mm)	●	●	●	

	Your extrusion	Example (Navtec -8) with rigging screw 50% extended
Deduction:	-	- 100
Length of distance tube E =	=	= 1.840

4 Assembly of the Furlex-system

4.1 Assembly of the rod forestay

Assembly is carried out by the rod supplier. Apart from the actual rod forestay, only the joining sleeve pack is required.

1. Measure the length of the rod forestay. (The WL measurement and corrections for the length of the top terminal and the cold-headed head at the lower end have been calculated in **”Calculation Table 1”**.)
2. Cut the stay.
3. Form the head for the upper terminal and fit it. The eye part must only be fitted temporarily. Fasten any locking screws and attach the instructions for permanent assembly of the eye part.

4.

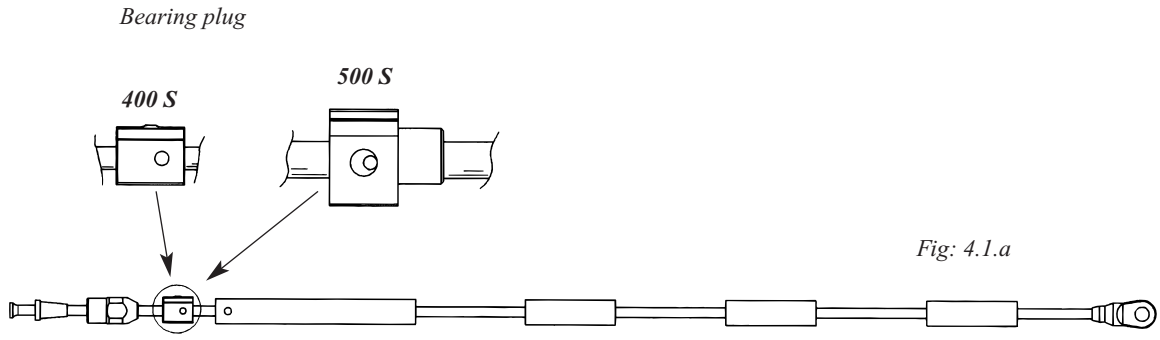


Fig: 4.1.a

Thread the joining sleeve sections on in the following order counting from the top:

- Short joining sleeves with accompanying insulation tubes. The number must correspond to the number of 2400 mm (94 1/2”) extrusions. (500 S: 48 000 mm). See **”Calculation Table 2”**, row C, section 3.6.1.
- The long joining sleeve with accompanying insulation tube. Locking pin hole (200 S & 300 S) towards socket.
- 400 S & 500 S: Bearing plug. Be sure to turn it as shown in the diagram.
- The socket. Be sure to turn it as shown in the diagram.
- Seat. Be sure to turn it as shown in the diagram. 500 S: Socket and seat forms one part.

5. Cold-head the head of the rod forestay for the lower bearing part.
6. Pack the stay, enclosing the completed **”Calculation Tables 1 & 2”.**

4.2 Assembly of the luff extrusion 200 S & 300 S:

Assembly should be carried out on a horizontal surface.

1. Unscrew the eye part of the upper terminal. Wind tape around the exposed thread of the male part to protect it.
2. Each extrusion must be pushed on over the short joining sleeves from the upper end of the stay in turn. Push the short joining sleeves up towards the upper end terminal and secure them in position temporarily with tape around the stay.

3.

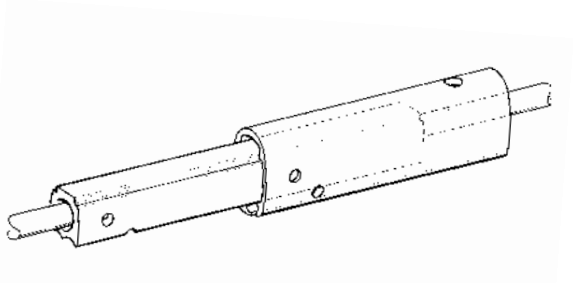


Fig: 4.2.a

Push the 1000 mm (39 3/8”) luff extrusion over all the short joining sleeves and partly over the long, lowest joining sleeve.

4.

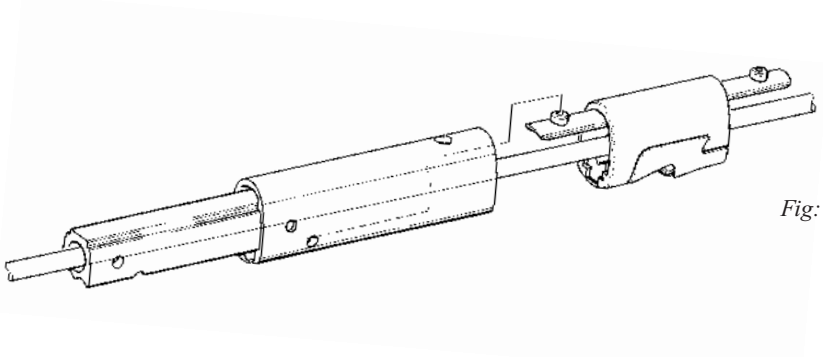


Fig: 4.2.b

Fit the long connecting plate at the same time as the sail feeder as shown in the diagram. Push the joining sleeve up so that it is flush with the top edge of the sail feeder.

5.

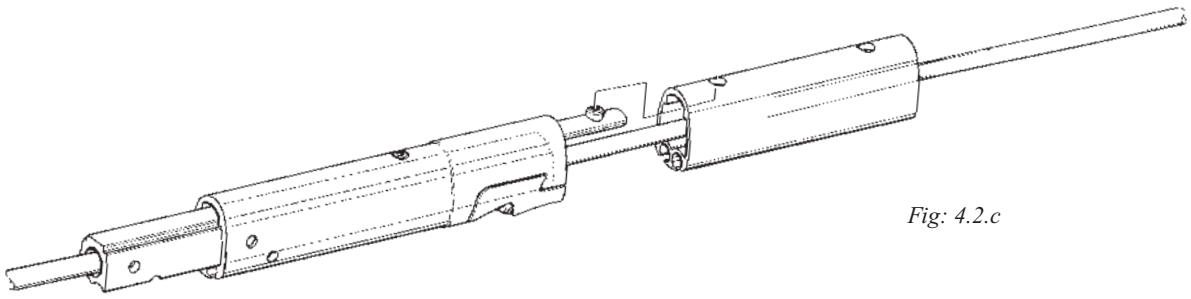


Fig: 4.2.c

Connect the 2400 mm (94 1/2”) extrusion to the 1000 mm (39 3/8”) extrusion. Push the long joining sleeve of the 1000 mm (39 3/8”) extrusion into the 2400 mm (94 1/2”) extrusion until it lies flush with the lower edge of the 1000 mm (39 3/8”) extrusion.

6.

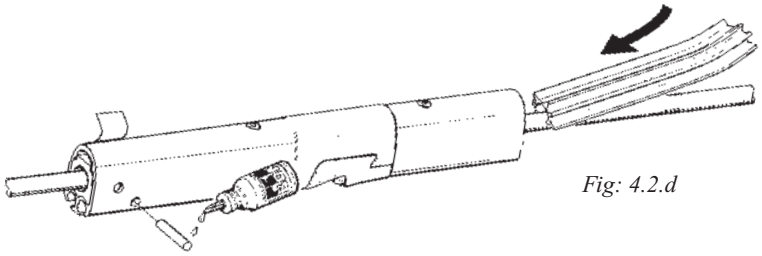


Fig: 4.2.d

Insert the locking pin together with the locking adhesive. Secure the pin with a piece of adhesive tape. (The tape is removed when the lower bearing assembly is slid on.)
NOTE: Do not allow locking adhesive to come into contact with the skin! Fit a slotted distance tube on the rod forestay and push it into the 2400 mm (94 1/2”) luff extrusion.

7.

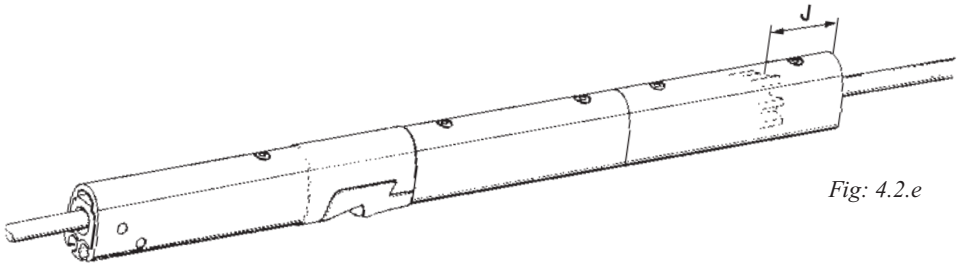


Fig: 4.2.e

Release the lowest joining sleeve by the upper end terminal and secure the remaining sleeves again. Slide the next 2400 mm (94 1/2”) extrusion over the rod’s top, then fit the joining sleeve andconnecting plate into it’s lower end. Connect this to the lower extrusions. Fit a distance tube onto the rod and push it into the 2400 mm (94 1/2”) extrusion. Release the next joining sleeve, and push the distance tube from the top until the lower joining sleeve touches the distance tube below the join. Check that the distance (J) between the end of the distance tube and the end of the extrusion is approximately half the length of a joining sleeve. Connect the remaining extrusions in the same manner.

8.

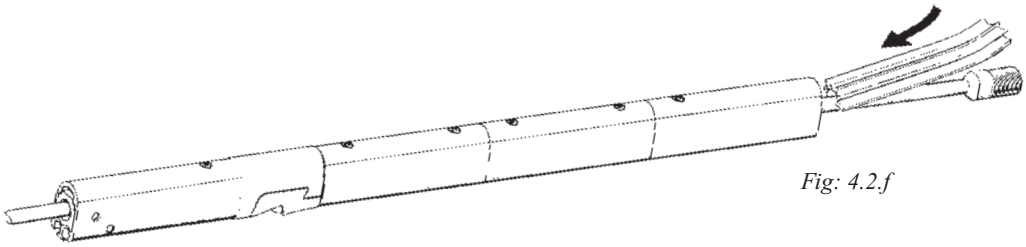


Fig: 4.2.f

Fit the uppermost, cut distance tube. Push the distance tube from the top until the joining sleeve touches the distance tube below the join. The top edge of the top distance tube should now be roughly flush with the top edge of the extrusion.

9.

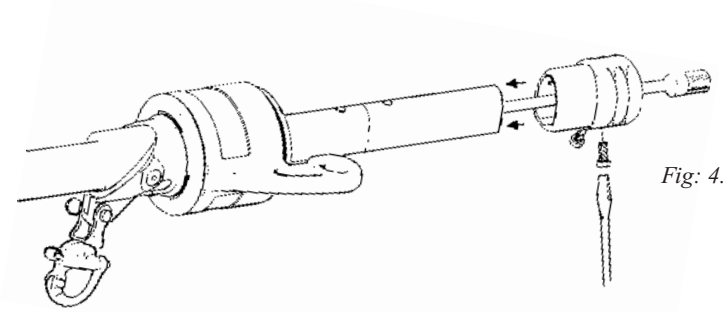


Fig: 4.2.g

Fit the halyard swivel over the top end of the extrusion, slide it down as far as the sail feeder and secure it in this position with adhesive tape. Fit the top guard and secure it with the two pre-fitted screws. Tighten the screws until they bottom, but do not over-tighten.

contiue on page 21.

4.2 Assembly of the luff section 400 S & 500 S:

The assembly procedure for the 400 S luff section is described below. Assembly of the 500 S luff section differs from the 400 S in the following respects:

The sail feeder of the 500 S is not a separate component, as shown in Fig. 4.2.b., but is cut into the 1000 mm (39 3/8”) luff extrusion.

The 500 S has two-part distance tubes, which are fitted in the same manner as on the 400 S.

The 500 S has 4800 mm (189”) luff extrusions instead of 2400 mm (94 1/2”) extrusions as on the 400 S.

Assembly should be carried out on a horizontal surface. Connect the luff extrusions one by one as follows:

1. Unscrew the eye part of the upper terminal. Wind tape around the exposed thread of the male part to protect it.
2. Each extrusion must be pushed on over the short joining sleeves from the upper end of the stay in turn. Push the short joining sleeves up towards the upper end terminal and secure them in position temporarily with tape around the stay.

3.

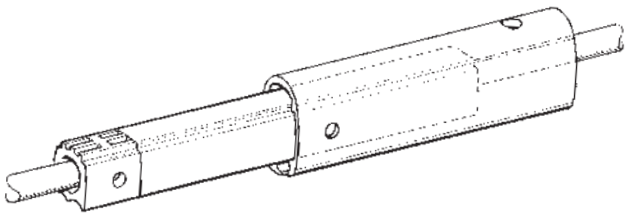


Fig: 4.2.a

Fit the long joining sleeve at the same time as the long connecting plate into a 2400 mm (94 1/2”) luff extrusion and guide the sail feeder on.

4.

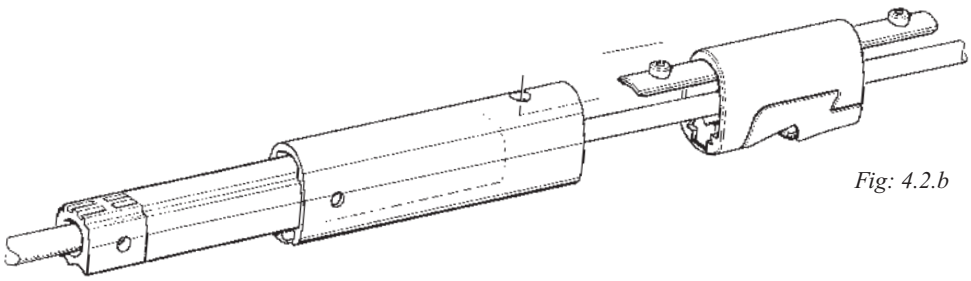


Fig: 4.2.b

Insert a distance tube (L = 2100 mm (82 11/16”)) and push the joining sleeve until it lies flush with the lower edge of the sail feeder.

5.

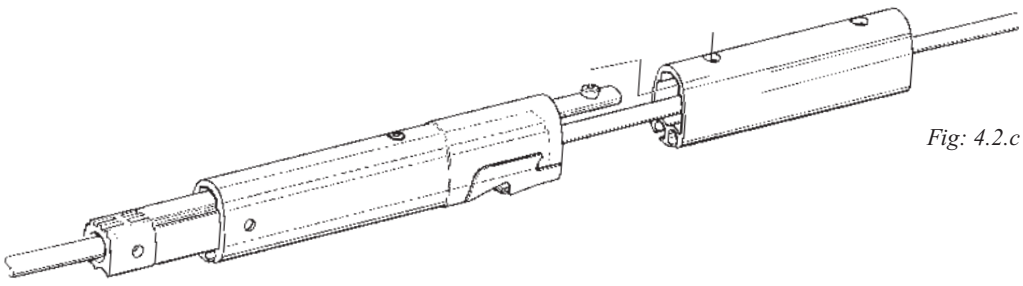


Fig: 4.2.c

Connect a 2400 mm (94”) to the 1000 mm (39 3/8") extrusion. Push the bearing plug and the long joining sleeve up so that the holes in the 1000 mm extrusion are aligned with the holes in the bearing plug.

6.

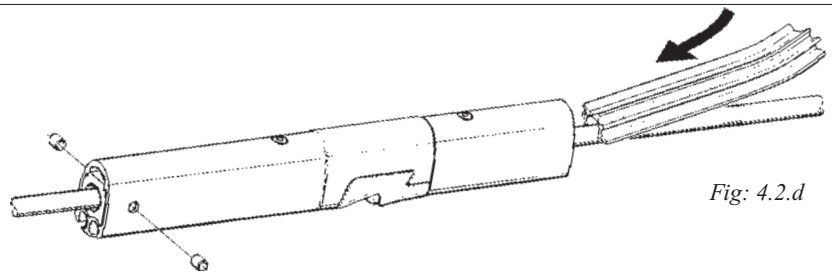


Fig: 4.2.d

Puch the bushes into the 1000 mm extrusion/bearing plug.
Fit a slotted distance tube on the rod forestay and push it into the 2400 mm (94 1/2”) luff extrusion.

7.

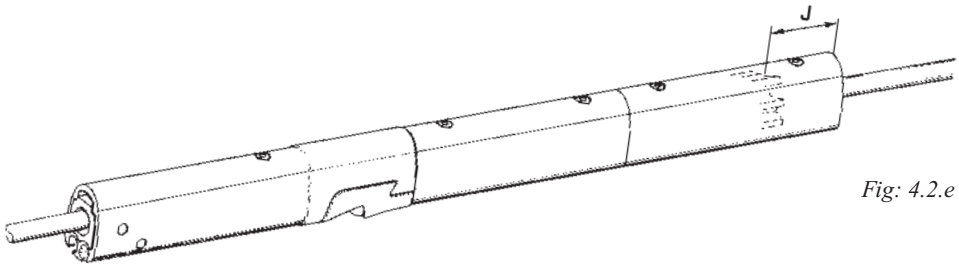


Fig: 4.2.e

Release the lowest joining sleeve by the upper end terminal and secure the remaining sleeves again. Slide the next 2400 mm (94 1/2”) extrusion over the rod’s top, then fit the joining sleeve and connecting plate into it’s lower end. Connect this to the lower extrusions. Fit a distance tube onto the rod and push it into the 2400 mm (94 1/2”) extrusion. Release the next joining sleeve, and push the distance tube from the top until the lower joining sleeve touches the distance tube below the join. Check that the distance (J) between the end of the distance tube and the end of the extrusion is approximately half the length of a joining sleeve. Connect the remaining extrusions in the same manner.

8.

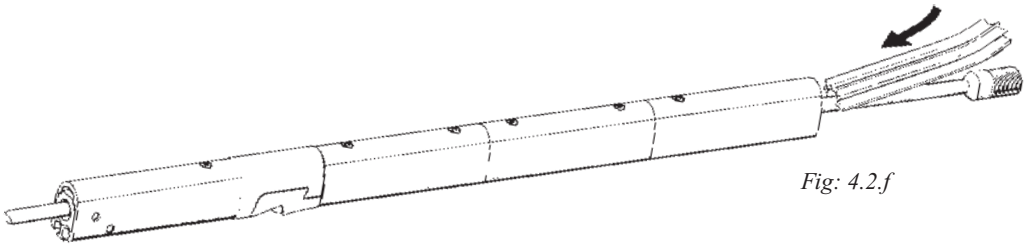


Fig: 4.2.f

Fit the uppermost, cut distance tube. Push the distance tube from the top until the joining sleeve touches the distance tube below the join. The top edge of the top distance tube should now be roughly flush with the top edge of the extrusion.

9.

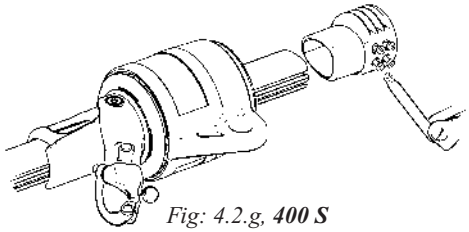


*Fig: 4.2.g, **400 S***

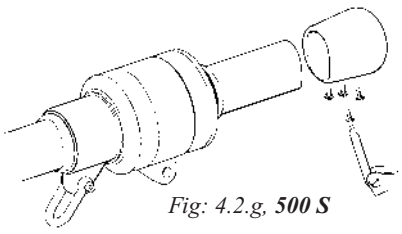


*Fig: 4.2.g, **500 S***

Fit the halyard swivel over the top end of the extrusion, slide it down as far as the sail feeder and secure it in this position with adhesive tape. Fit the top guard and secure it with the four pre-fitted screws. Tighten the screws until they bottom, but do not over-tighten.

10.

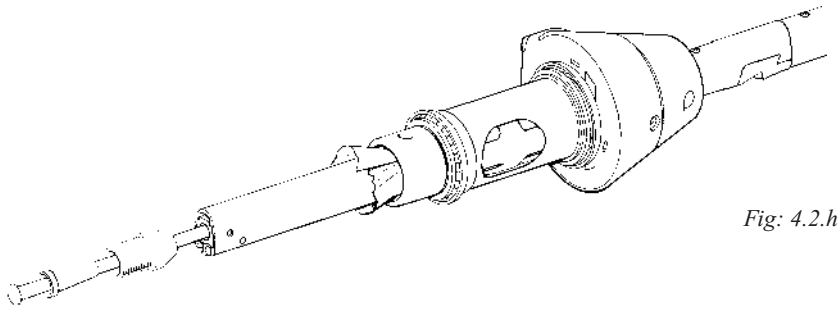


Fig: 4.2.h

Guide the lower bearing assembly on from below. Push it carefully onto the extrusion so that the stainless steel inner tube does not scratch the extrusion. Use cloth or paper for protection.

11.

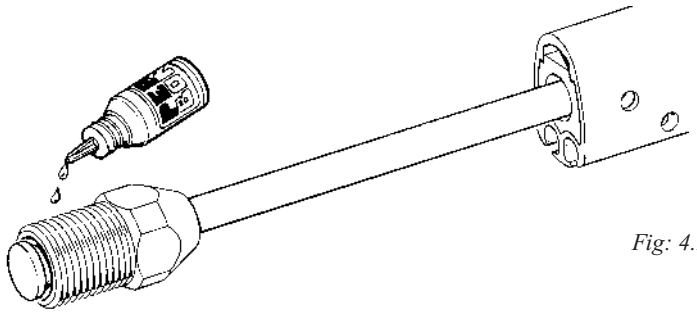


Fig: 4.2.i

Screw out the socket on the lower terminal part and remove the wedge and former. These three parts are no longer required. Put 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 is in the socket correctly. Tighten it securely. This is now permanently locked.

12. Fit the eye part of the upper end terminal permanently with locking adhesive + any stop screw/locking pin supplied.

13. Check the stay length FL in **"Calculation Table 1"** (3.5.1) & Fig. 3.5.a. If a Furlex rigging screw is fitted, this should be extended 50%. See table 14.1.1 for Furlex rigging screw adjustment.

14.1 **200 S & 300 S**

Terminal part:
Press spacer bush over wire.

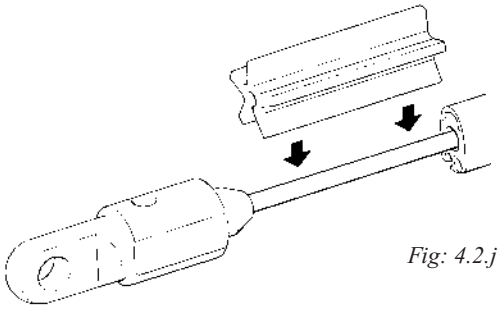


Fig: 4.2.j

14.2

Furlex rigging screw:
No spacer bush.

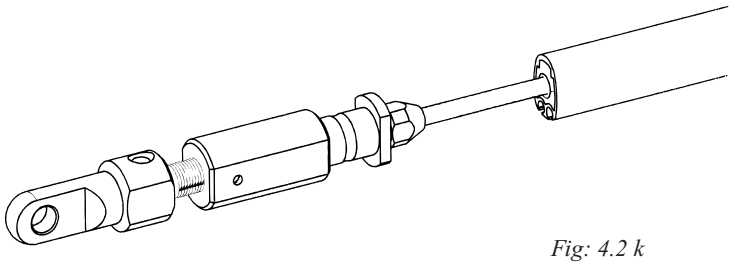


Fig: 4.2 k

15.1

Terminal part:
Guide the lower bearing assembly down over the spacer bush and terminal part. The inside of the lower bearing assembly matches the flat face on the terminal part.

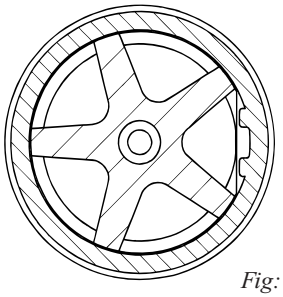


Fig: 4.2.l

15.2

Furlex rigging screw:
If a Furlex rigging screw is used, the flat faces of all three parts must be aligned. As the inside of the lower bearing assembly matches the flat faces, it will lock the rigging screw when assembled. When fitting the Furlex, the rigging screw should be unscrewed half-way.

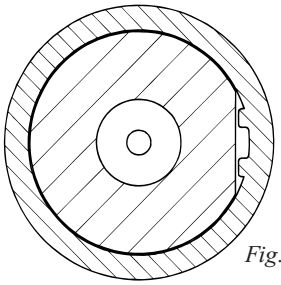


Fig: 4.2.m

16. **400 S & 500 S**

Terminal part:
Guide the lower bearing assembly down over the terminal part. The inside of the lower bearing assembly matches the flat face on the terminal part.

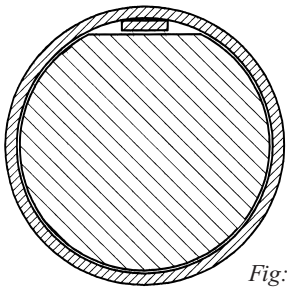


Fig: 4.2.n

17.1

Furlex rigging screw 400 S and 500 S:
Ensure that the flat surfaces of all three components are aligned. The rigging screw has an integral end stop to prevent it from being completely unscrewed. Never try to adjust the rigging screw past this point. Guide the lower bearing assembly down over the Furlex rigging screw. As the inside of the lower bearing assembly matches the flat faces, it will securely lock the rigging screw.

17.2. **Only 400 S wire Ø12 only with Furlex rigging screw**

Ensure that the flat faces of the rigging screw are aligned. The rigging screw has an integral stop to prevent it from being completely unscrewed. Never try to adjust the rigging screw past this point. Guide the adapter tube onto the rigging screw and then guide the lower bearing assembly down over this. The flat internal surface of the adapter tube matches the rigging screw and its flat external surface matches the flat inner surface of the lower bearing assembly, so that the components lock when assembled.

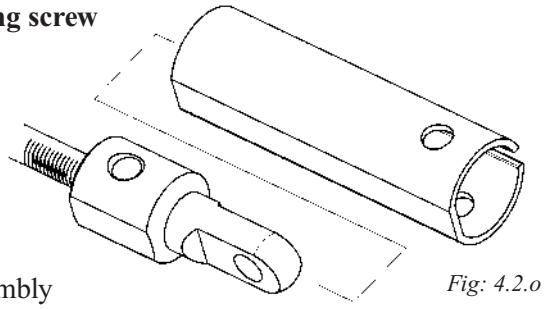


Fig: 4.2.o

18.

Fit the clevis pin and split pin. The shanks of the split pin are only opened approx. 20° ensuring that the pin remains intact on disassembly and could be reused.

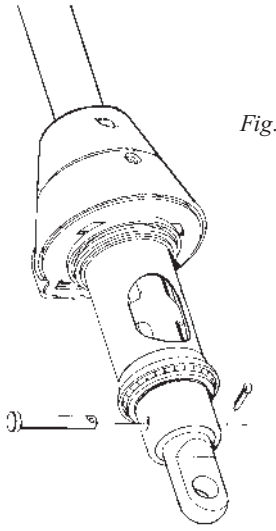


Fig: 4.2.p

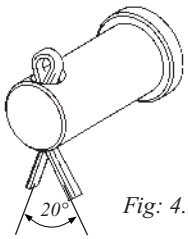


Fig: 4.2.q

19.a. **200 S & 300 S**

Position the extrusion so that its holes are aligned with the adapter holes. Insert the two screws ① into the adapter connecting the lower bearing assembly to the forestay section. Use the Torx spanner set enclosed with the Furlex kit. Tighten the screws firmly!

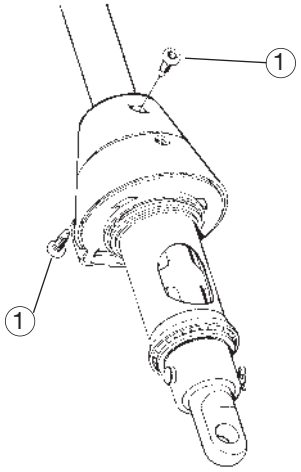


Fig: 4.2.r

19.b. **400 S & 500 S**

Adjust the position of the luff extrusion so that the centre of the marking ① on one side of the extrusion is aligned with the top edge of the adapter. Apply 2-3 drops of locking adhesive to the screws ② which fasten the lower bearing assembly to the luff extrusion. Insert the screws into the adapter, ensuring that they enter the holes in the luff extrusion. Use the 10 mm Allen key spanner enclosed to tighten the screws hard!

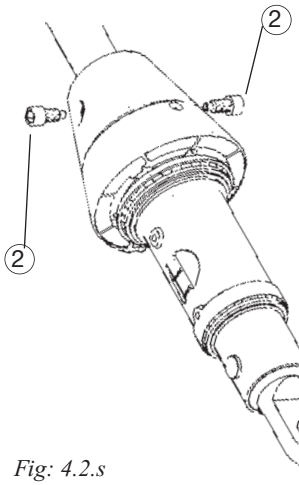


Fig: 4.2.s

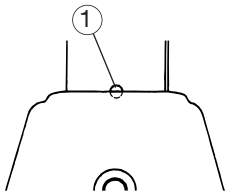


Fig: 4.2.t

21. We recommend fitting the Furlex-system onto the boat at this stage. See Chapter 16, **”Rigging”**. ”Manual Furlex 200 S & 300 S” (ref. no. 595-104-E). resp ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).

4.3 Fitting the line drum and line guide – 200 S & 300 S

The line drum consists of two halves. It is easier to fit after the Furlex stay is fitted to the mast.

1.

Feed the furling line through the hole in the line guide fitting and then through the hole in the line drum half which has a clip fitted.

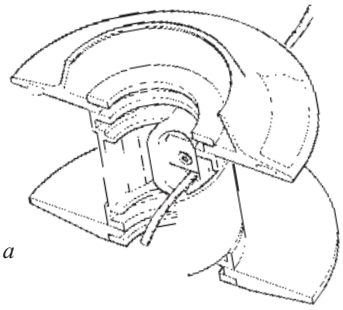


Fig: 4.3.a

2.

Undo the clip andinsert the line into the oval space as shown in the diagram. Fasten the clip securely, but do not overtighten.

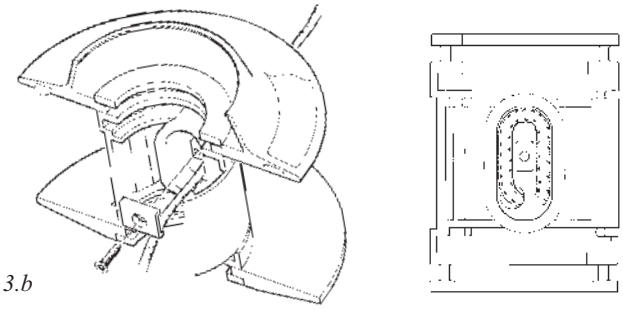


Fig: 4.3.b

3.

Press the line drum halves together around the lower bearing assembly. Each flange must align with the cut-out in the lower bearing assembly. Check that both connector clips engage.

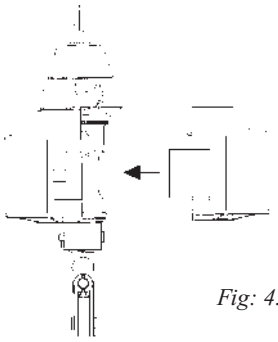


Fig: 4.3.c

4.

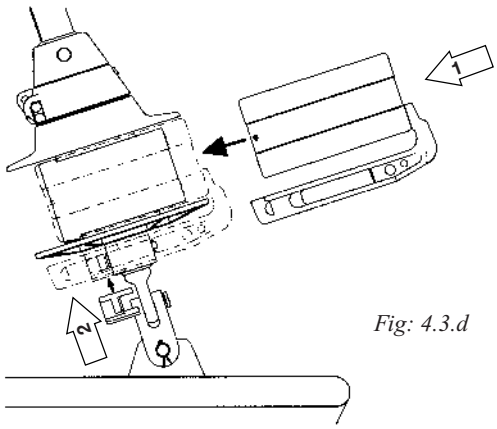
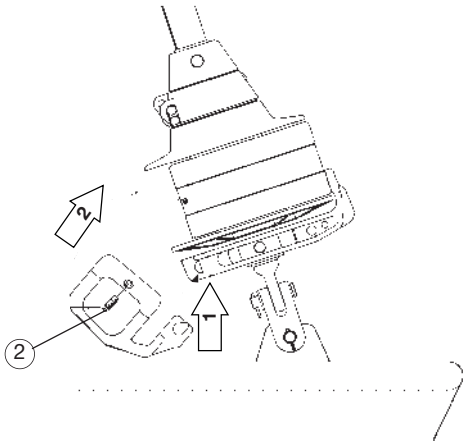


Fig: 4.3.d

Slide the line guard on in the direction of the clevis pin. Press the locking block in from underneath (Arrow 2) on the opposite side so that it “clips” firmly into place.

5.



Fasten the line guide fitting in the line guard and bring this up into the assembly position. Tighten the screws (2) in the stainless steel housing.

Cont.on page 26.

4.3 Fitting the line drum and line guide – 400 S & 500 S

The line drum consists of two halves. These are easier to fit after the Furlex is fitted to the boat.

1.

Feed the furling line through the hole in the line guide fitting and then through the hole in one of the line drum halves.

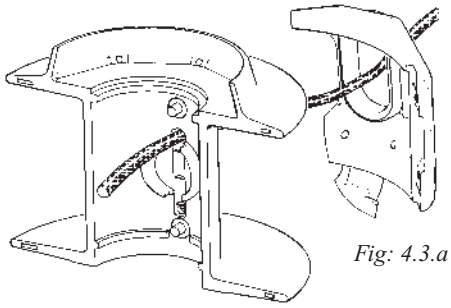


Fig: 4.3.a

2.

Bend the end of the line down so that it covers the inspection hole (1) in the line drum half.

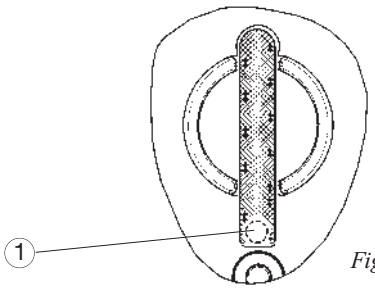


Fig: 4.3.b

3.

Start by first fitting the line drum half with the line onto the lower bearing assembly. Tighten the screws securely, thus locking the furling line. Check that the end of the line is visible through the inspection hole; if not, separate the line drum halves and put the line in position as shown in Fig. 4.3.b.

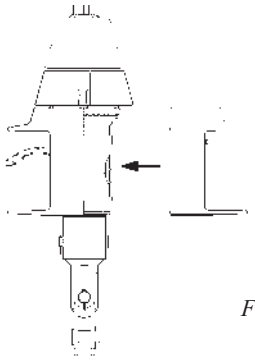


Fig: 4.3.c

4.1

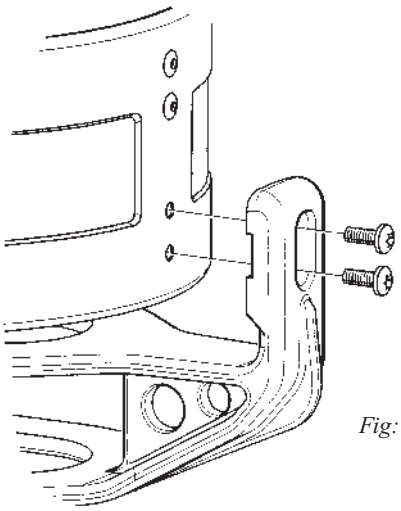


Fig: 4.3.i

Fasten the line guide fitting to the line guard casing using the screws enclosed.

4.2

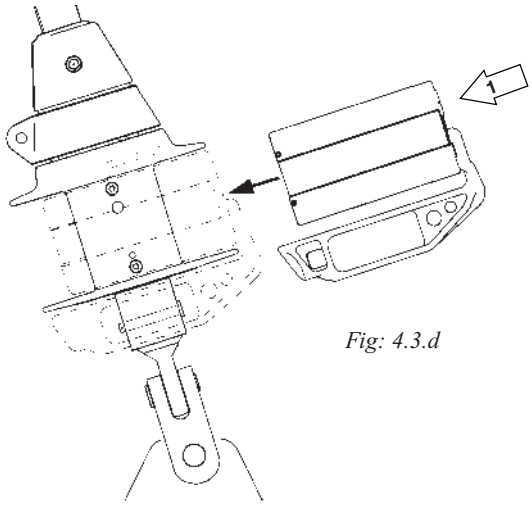


Fig: 4.3.d

Slide the line guard on in the direction of the clevis pin.

5.

Push the locking block in until it rests against the lower bearing assembly. Fasten the line guide fitting in the line guard and bring this up into the assembly position. Tighten the screws ② in the stainless steel housing.

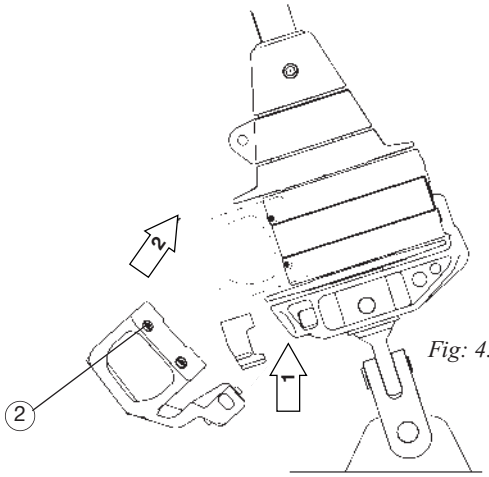


Fig: 4.3.e

6.

Tighten the screw ③ lightly.

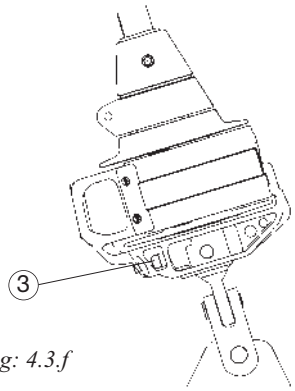


Fig: 4.3.f

7.

Adjust the line guide vertically so that it is midway between the line drum flanges. If the casing or line guard come into contact with the line drum flanges, unnecessary friction will be caused.

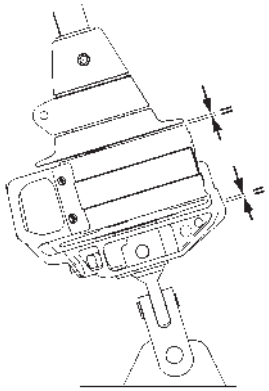


Fig: 4.3.g

8.

Adjust the alignment of the line guide towards the first lead block and tighten screw. (See also **”Furling line arrangement”**. Chapter 6.3, in ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).

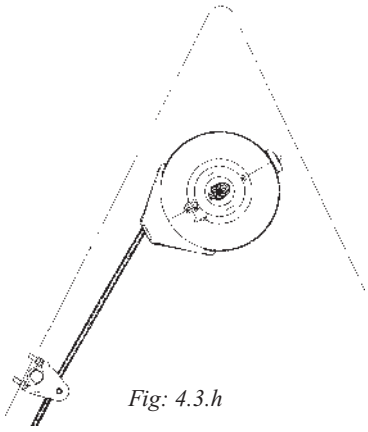


Fig: 4.3.h

17 Dismantling

17.1 Halyard swivel

See ”Manual Furlex 200 S & 300 S” (ref. no. 595-104-E) resp. ”Manual Furlex 400 S & 500 S” (art nr: 595-116-E).

Navtec -10, -12/200, -22, -30, -40 and Riggarna -9.5 mm, -40, -48.
The top guard and halyard swivel cannot be removed from the system by sliding them over the top eye terminal unless the eye part of the terminal is removed first.

17.2 Sail feeder
17.3 Line guide
17.4 Line drum
17.5 Lower bearing assembly

} See ”Manual Furlex 200 S & 300 S” (ref. no. 595-104-E). resp ”Manual Furlex 400 S & 500 S” (ref. no. 595-116-E).

17.7 Luff extrusion system

For a better understanding of the following instructions, we recommend that you first read the section on assembly in Chapter 4.1.

1. Make sure that the luff extrusions are straight and placed on a flat surface.
2. Unfasten the lower bearing assembly as shown in 17.5, 1, 2 and 3.
3. Take the spacer bush off by pressing the stay out of the longitudinal slot. (Only applies to Furlex 200 S & 300 S without rigging screw.)
4. Unfasten the terminal part (or Furlex rigging screw) from the socket as shown in 17.5.4.
5. Carefully slide the lower bearing assembly off the luff extrusion.

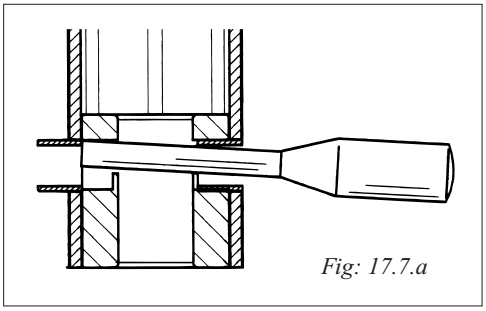


Fig: 17.7.a

6.a 200 S & 300 S: Push out the locking pin at the lower end of the 1000 mm (39 3/8”) luff extrusion.

6.b. 400 S & 500 S: Push the wire into the luff extrusion system until the end of the wire is approx. 50 mm (2”) inside the 1000 mm (39 3/8”) extrusion. Knock out the bushes at the lower end of the 1000 mm (39 3/8”) luff extrusion. See Fig: 17.7.a.

7. Hold the luff extrusion system firmly and pull the upper end terminal. This will bring the rod forestay, joining sleeves and distance tubes out together, enabling the extrusions to be separated.

If this method does not work due to corrosion or damage, the luff extrusion system connectors can be drilled out. Use a Ø 6 mm (15/64”) drill bit for the 200 S and a Ø 8 mm (10/32”) bit for the 300 S, 400 S och 500 S.

17.8 Top guard

If exchanging the top guard, please remember:

Navtec -12/200 S, -22, -30, -40 and Riggarna -40, -48: The guard cannot be removed from the system by pushing it over the top eye terminal unless the eye part of the terminal is removed first.

Navatec -48, Riggarna -22 mm: The internal flange at the top edge of the guard needs to be filed down.

Alternatively, the guard can be removed from below when dismantling the sail feeder and removing the lower bearing assembly and halyard swivel.

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