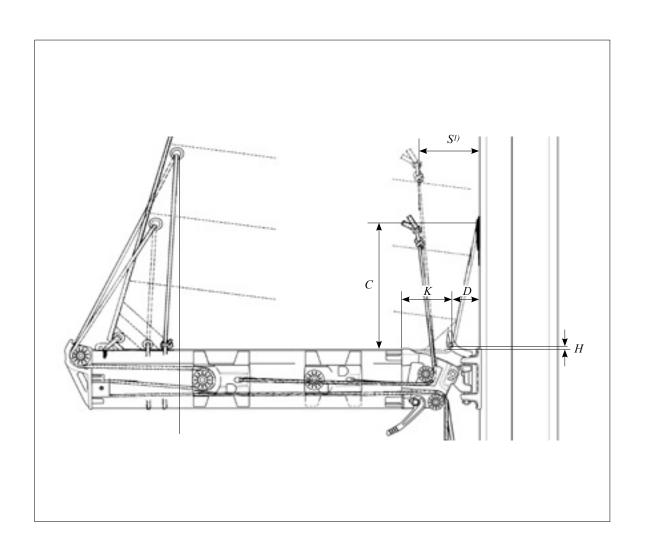
Sailmaker's guide

Everything a sailmaker needs to know about Seldén masts, booms and furling systems.





D

1 Introduction

This guide is intended to provide sailmakers with the information necessary for them to ensure that rig and sail will be compatible. It covers the major part of Seldén's production from 1977 onwards. The information generally applies to Kemp products of the same period.

Masts between 1977 and 2002 are normally type D or E (conventional masts) or type R (furling mast). Masts from 2003 are type C (conventional masts) or type F (furling masts). Each section of the guide is marked with mast type to help the reader in locating the correct information.

D and E-sections: Conventional masts, 1977 - 2002

R R-sections: Furling masts, 1989 - 2002

C C-sections: Conventional masts, 2003 - →

F-sections: Furling masts, 2003 - →

Although this Guide is primarily aimed at Sailmakers, the content should assist our end customers in making the best use of our impoved product.

However, we would point out that this guide is only intended as an aid, and that variations can occur. It is the sailmaker's responsibility to ensure that the sail suits the rig.

This information will be up-dated as new products are introduced. Seldén reserves the right to change the specifications given without prior notice.

		The following information must be given to the sailmaker by the customer:		
	Conventional mainsail with "short" battens.	 Mast section dimensions. Boom section dimensions. Sail Plan ("P" & "E"). 		
Mainsails	Conventional mainsail with full length battens.	Mast section dimensions. • Boom section dimensions. • Sail Plan ("P" & "E").		
	Furling mast mainsails	Mast section dimensions. • Boom section dimensions. • Reefing system type (Seldén furling, Furlex-Main, etc.)		
Foresails	Roller furling genoas.	Furlex type. • Total forestay length incl. all toggles or available sail space • Sail Plan		

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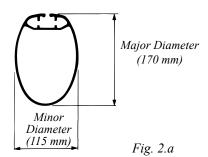
D&E

2 Conventional masts

C

2.1 Mast sections

Mast section measurements are given as follows: Major Diameter/Minor Diameter (i.e. 170/115). Take note of the mast section shape. This will help identification and the use of correct measurements. The major diameter of the mast can usually be found in the number engraved at the mast heel. For example K23-170-1233.

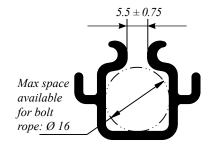


Conventional masts before 2003						
	Mast	Luff Groove mm	Slider			
E-Section (10° aft face)	122/85 130/93	4.0 + 1.0 - 0.0	511-601			
	138/95 155/104 170/115 177/124 189/132 206/139 224/150 237/162	5.5 ± 0.75	511-602 or 511-603			
	274/185 321/171 365/194	6.25 ± 0.75	511-603			
E-Section (Round aft face)	126/85	+ 1.0 4.0 - 0.0	511-601			
(iade)	147/95 162/104 178/115 216/139 239/162	5.5 ± 0.75	511-602 or 511-603			
D-Section	109/88 121/92	+ 1.0 4.0 - 0.0	511-601			
	129/100 137/113 146/112 160/132	5.5 ± 0.75	511-602 or 511-603			
P-Section	73/53 90/65 100/73 111/81 123/90	+ 0.75 4.0 - 0.00	611-601			
	137/100	+ 0.75 4.5 - 0.00	511-601			
	152/111 169/123 188/137	5.5 ± 0.75	511-601 or 511-603			

		Conve	ntional mas	sts from 20	003		
	Mast	Mast dim	Luff groove mm	Groove insert for bolt rope ¹⁾	MDS- car	Sail slider	Bolt rope (mm)
C-Section (2006)							
	C080 C086 C096	79/60 87/64 96/69	4.5 ± 0.75	-	-	511-601	Ø 10
C-Section (2006)	C106 C116 C126 C139	106/71 116/75 126/79 139/85	5.0 ± 0.75	-	-	511-602	Ø 10
C-Section (2003)	C156 C175 C193	156/87 175/93 193/102	10 ± 0.75	5.5 ± 0.75	511-702	511-605 or 511-607	Ø 10
	C211 C227 C245 C264 C285 C304	211/110 227/119 245/127 264/136 285/147 304/157	10 ± 0.75	5.5 ± 0.75	511-701 or 511-702	511-605 or 511-607	Ø 10
	C321 C365	321/171 365/194	16 ± 0.75	-	511-730 or 511-731	-	-

- ¹⁾ Special groove insert and sail feeder gate are required to accept bolt rope. If sail slider are to be used in combination with bolt rope insert, use HA 258/A019 or Rutgerson 102.
- 2) Recommended Bolt rope diameter Ø 10 mm.

Groove insert for bolt rope for C156-C304



Mast	Mast dim	Luff groove	Groove insert for bolt rope	Inner wheel slider	Sail slider	Bolt rope (mm)
C137	137/98	10.5 +-0.7	4.7 +-0.5	511-729	511-605	ø8-ø10
C153	153/107	10.5 +-0.7	4.7 +-0.5		or	ø8-ø10
C180	180/113	10.5 +-0.7	4.7 +-0.5		511-607	ø8-ø10
C192	192/120	10.5 +-0.7	4.7 +-0.5	511-729		ø8-ø10
C208	208/131	10.5 +-0.7	4.7 +-0.5	or		ø8-ø10
C225	225/141	10.5 +-0.7	4.7 +-0.5	511-760	511-760	ø8-ø10
C242	242/153	10.5 +-0.7	4.7 +-0.5			ø8-ø10
C261	261/164	10.5 +-0.7	4.7 +-0.5			ø8-ø10
C280	280/176	10.5 +-0.7	4.7 +-0.5			ø8-ø10

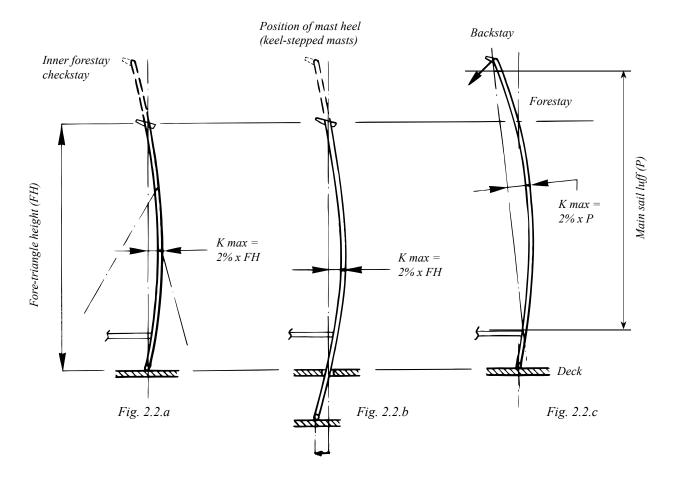
E & C

2.2 Mast deflection curves

Our spars and fittings are designed to cope with a maximum longitudinal deflection of 2% of the fore-triangle height (FH). On fractional rigs the maximum deflection can be taken as being 2% of the mainsail luff (P). These values are guiding principles only.

The conditions are:

- 1) The mast forms an even curve (convex front) from deck level to mast-head.
- 2) The deflection must be kept within the stated values, even in rough seas, by suitable longitudinal staying. The deflection curve is formed by:

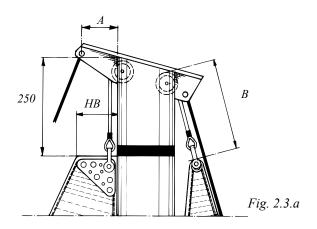


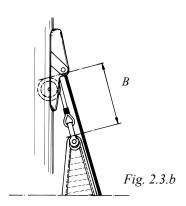
It may be possible to increase the above values on some masts. However, in such cases the customer must request a special calculation for this from Seldén Mast, and have our written agreement for the increase in deflection depth.

2.3 Head measurements, Yacht masts

See page 38-41 for furling mast and page 42-43 for Furlex Main - Retro-fit system.

C





A (mm)					
	C-mast				
	Mast- head	Fractional std/long crane	Tapered std/long crane		
C156	70	80/280	80/270		
C175	105	115/280	85/295		
C193	100	100/265	75/200	"A" =	
C211	110	115/235	105/240	75-100 mm.	
C227	110	100/220	90/225	(With non-tapered	
C245	115	120/285	110/210	fractional rigs using section D-109/88	
C264	110	100/265	65/95	or E-122/85 the	
C285	100	130	90/120	measurement is	
C304	175	110	80/110	25 mm	
C321	175	140/190	110		
C365	240	155	110		

To avoid the halyard splice or Talurit damaging the mast-head sheave, dimension "B" must not be shorter than that shown.

When choosing the "B" measurement, consideration must be taken to dimension HB and the mainsail roach in relation to the backstay.

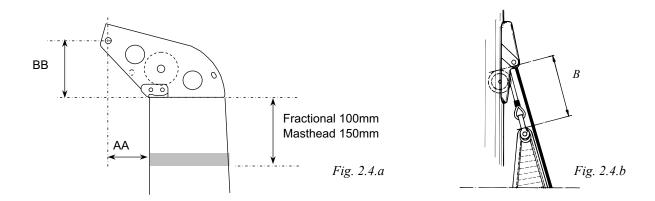
For other halyard boxes the "B" measurement is calculated from the upper edge of the sheave to the topmost point of the sail.

Rope halyard					
Rope Dimension	"B" mm Knot	"B" mm Spliced			
Ø 6 mm	60	430			
Ø 8 mm	70	430			
Ø 10 mm	80	430			
Ø 12 mm	90	440			
Ø 14 mm	100	440			

Wire halyard					
Halyard Wire Dimension	"B" mm Hand-Spliced Halyard Eye	"B" mm Talurit-Spliced Halyard Eye			
Ø 3 mm	200	140			
Ø 4 mm	230	150			
Ø 5 mm	260	170			
Ø 6 mm	300	200			
Ø 7 mm	350	230			
Ø 8 mm	400	250			

2.4 Head measurements, keelboat

See page 38-41 for furling mast and page 42-43 for Furlex Main - Retro-fit system.



	Masthead		Fractional						
		Non ta	Non tapered Tapered mast						
		ma	mast Standard crane Long crane			Top with	spin block		
Section	AA	AA	ВВ	AA	ВВ	AA	ВВ	AA	ВВ
C087	-	65	75	58	65	149	90	99	75
C096	-	56	75	52	65	143	90	93	75
C106	-	80	85	70	70	180	100	105	80
C116	-	70	85	63	70	173	100	99	80
C126	70	95	90	83	85	212	120	127	100
C139	65	82	90	74	85	203	120	118	100

Rope halyard							
Rope Dimension	"B" mm Knot	"B" mm Spliced					
Ø 5 mm	60	430					
Ø 6 mm	60	430					
Ø 8 mm	70	430					
Ø 10 mm	80	430					
Ø 12 mm	90	440					
Ø 14 mm	100	440					

To avoid the halyard splice or Talurit damaging the mast-head sheave, dimension "B" must not be shorter than that shown.

For other halyard boxes the "B" measurement is calculated from the upper edge of the sheave to the topmost point of the sail.

3 Mainsails

D&E

3.1 Fitting slides

Correct: Free-moving fixture

To avoid jamming in the luff groove, slides must have freedom of movement on the sail.

C

Fig. 3.1.a

Wrong: Stiff fixture

Fig. 3.1.b

Several systems are available for full length battens. Seldén's RCB system is shown on pages 18-19 and Seldén's MDS system is shown on pages 14-17. Refer to the relevant manufacturers concerning other systems.



3.2 Sail slides E-masts

It is imperative that the correct sliders are used on Seldén masts in order to fit the Seldén sail feeder gate.

Art. no.	Slider (mm)	Fits luff groove (mm)	Breaking load	Bainbridge part no.
511-601	5.5	4	700 N (70Kp)	A 013
511-602	7	5	2250 N (225Kp))	A 014
511-603	7 16	5.5	4000 N (400 Kp)	A 015

C

3.3 Sail slides C-masts

It is imperative that Seldén slides are used on Seldén masts in order to fit the Seldén sail feeder gate.

Art. no.	Slider (mm)	Fits luff groove (mm)	Breaking load (N)	Bainbridge part no.
511-605	5.1	10	2250 N (225 Kp)	A011
511-607	5.1	10	4000 N (400 Kp)	A012

¹⁾ For Mast sections, see page 11 and 13.

D&E

3.4 Shackles for sliders

Art. no.	Shackle (mm)	Fits slide (mm)	Breaking load (N)	Bainbridge part no.
307-094-01	8.5 45.1	511-602 511-603 511-605 511-607	2000N (200 Kp)	-



Important!

The shackle should not to be used with MDS cars.

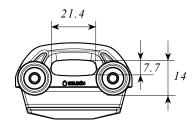


3.5 OWS (Outer Wheel Support) slider



Seldén OWS sliders are designed both as batten sliders and webbing sliders. Each model is available in 5 different versions. One version fits Seldén E-sections (1977-2002) and older Seldén/Kemp oval sections. Any of the other 4 versions fits most of all other mast brands on the market.

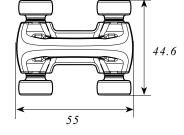
OWS sliders do not fit Seldén C-section for which MDS-sliders should be used.

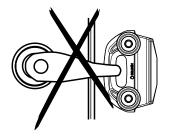


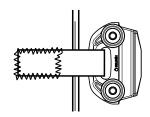
OWS slider for webbing

To acheive maximum strength, the OWS slider should be attached to the main sail using a webbing strap.

All sliders for webbing can be used for headboard attachments and as intermediate sliders.

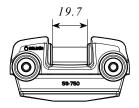


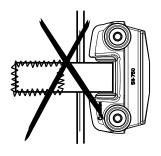


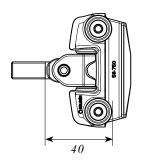


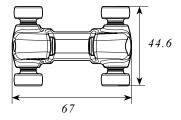
OWS slider for batten

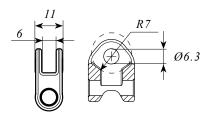
The OWS batten slider is designed to take compression load from the batten in a full batten main sail. To achieve optimal function and strength, use Seldén toggle M10 stud 511-739-01.

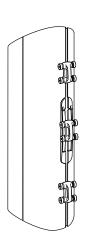










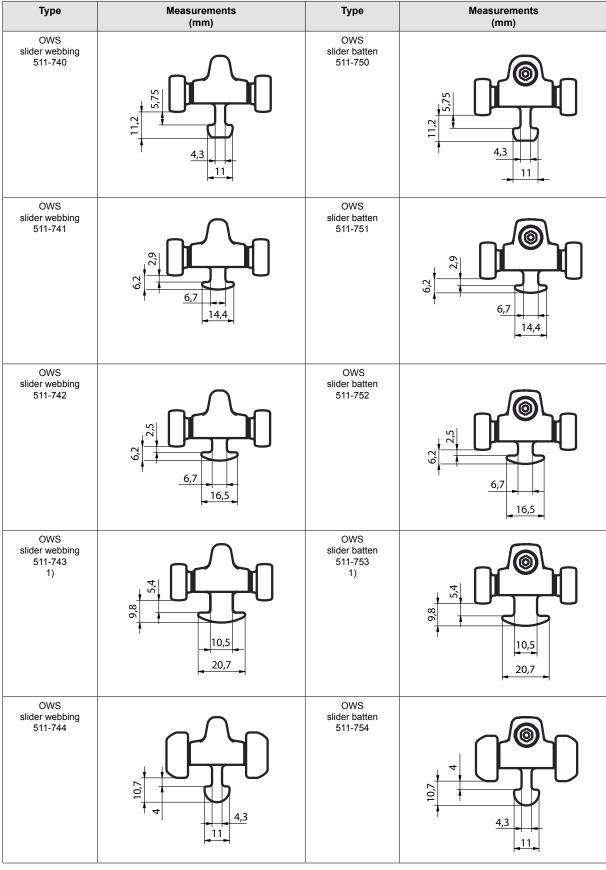


OWS compatible sail feeder gates

The OWS E-section slider (511-740 and 511-750) can be used with, and **passes through** Seldén sail feeder gate 505-501-01.

The OWS sliders 511-744 and 511-754 for keelboat sections (C106-C139) can be used with and passes through Seldén sail feeder gate 505-533-02.

3.5.1 OWS slider - dimensions



All sliders for webbing can be used for headboard attachments and as intermediate sliders.

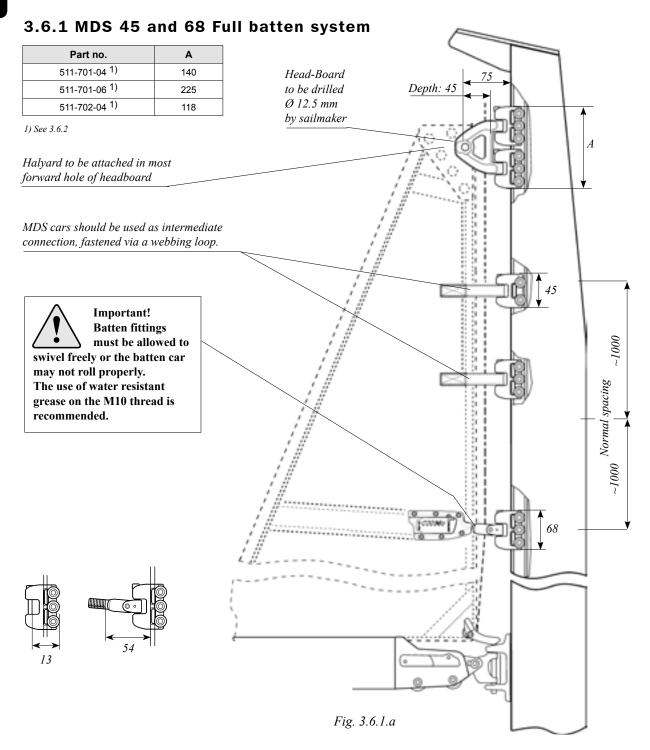
¹⁾ OWS sliders do not fit Seldén C-section for which MDS-sliders should be used.

3.5.2 OWS slider - range

Туре	Art. No.	Fits luff groove (mm)	Breaking load (N)	Assembly Art. No.		Parts Art. No.	
OWS slider webbing	511-740	5.5	5000	511-740-01			
OWS slider batten		5.5	7000	511-750-03	511-750-01	511-739-01 M10 screw	153-117
	511-750			511-750-02	511-750-01		153-117
OWS slider webbing	511-741	10	5000	511-741-01			
OWS slider batten		10	7000	511-751-03	511-751-01	511-739-01 M10 screw	153-117
	511-751			511-751-02	511-751-01		153-117
OWS slider webbing	511-742	10	5000	511-742-01			
OWS slider batten		10	7000	511-752-03	511-752-01	511-739-01 M10 screw	153-117
	511-752			511-752-02	511-752-01		153-117
OWS slider webbing	511-743	12	5000	511-743-01			
OWS slider batten		12	7000	511-753-03	511-753-01	511-739-01 M10 screw	153-117
	511-753			511-753-02	511-753-01		153-117
OWS slider webbing Big wheel	511-744	5.5	5000	511-744-01			
OWS slider batten Big wheel		5.5	7000	511-754-03	511-754-01	511-739-01 M10 screw	153-117
	511-754			511-754-02	511-754-01		153-117

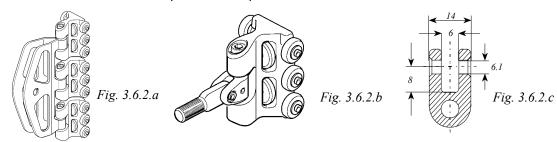
Туре		Fits	mast section	(only geomet	ric fit)		
OWS		Seldén		John Mast	Soromap	Sparcraft	Z-spars
slider webbing 511-740	E-section (10° aft face)	E-section (round aft face)	D-section	135D 148D 150D	NF200 NF270 NF350	F135 F195 F305	Z301 Z351 Z380
ows	138/95 155/104 170/115 177/124 189/132	147/95 162/104 178/115 216/139 239/162	129/100 137/113 146/112 160/132	165D 167D 185D 186D 208D	NF430 NF540 NF710 NF1410	F385 F460 I620 S622 I830	Z401 Z501 Z531 Z601 Z602
slider batten 511-750	206/139 224/150 237/162 274/185			222D 245D 280D 305D 335D		S830	Z701 Z702
OWS slider webbing 511-741							
OWS slider batten 511-751							
OWS slider webbing 511-742							
ows							
slider batten 511-752							
OWS slider webbing 511-743				220E 262E 290E		NG60 NG70 NG80 NG86 F580 F740 F1060	Z902 Z1001 Z1250 Z1400
OWS slider batten 511-753						F1395 S1630 S2100 F2390 F3360 F4600	
OWS slider webbing Big wheel 511-744	C-section C106 C116 C126 C139			150E 116E 125E		F35 F50 F67 F78 F101 S137 S180 S260	Z170 Z190 Z230 Z265
OWS slider batten Big wheel 511-754						S330 IMS80 IMS256	

3.6 MDS Full batten system for C-masts



<u> </u>	Important! Only MDS car 511-702 MUST be but will NOT function properly.	used in	the mast	ts sections below. 511-701 is possible to fit
Mast section		C156	C175	C193
MDS car	511-702			511-701

3.6.2 Parts and RM-limits, MDS 45, MDS 68 and MDS 68 ALU



511-701-06/511-717-06

511-701-03/511-717-03

511-723

					511-725					
	Assembly	Max RI Asse		Parts	Parts		Section			
Head	511-707-01	Mh 90	Frac 70	511-707	166-234-0	1	C156 C211 C175 C227 C193 C245			
board	511-708-01	160	120	511-708	166-234-0	1	C264 C285 C304			
	511-702-04	55	40	511-707-01	MDS 45 511-702-01	153-118	C156 C175 C193			
Head board car	511-701-04	90	70	511-707-01	MDS 68 511-701-01	153-117	C211 C264 C227 C285 C245 C304			
	511-701-06 MDS 68 ALU 511-717-06	160 330	120 250	511-708-01	MDS 68 511-701-01 MDS 68 ALU 511-717-01	153-117	C211 C264 C227 C285 C245 C304			
	511-702-03			MDS 45 511-702-01	511-712-01 M10 screw 153-118		C156			
Batten	511-702-08	90	70	MDS 45 511-702-01	511-723 ¹⁾	153-118	C175 C193			
Car	511-701-03 MDS 68 ALU 511-717-03	160 330	120 250	MDS 68 511-701-01 MDS 68 ALU 511-717-01	511-712-01 M10 screw	153-117	C211 C227 C245			
	MDS 68 511-701-08 MDS 68 ALU 511-717-08	160 330	120 250	MDS 68 511-701-01 MDS 68 ALU 511-717-01	511-723 ¹⁾	153-117	C264 C285 C304			
Sail	MDS 45 511-702-02	90	70	MDS 45 511-702-01	(153-118	C156 C245 C175 C264 C193 C285 C211 C304 C227			
Car	MDS 45 511-702-02 MDS 68 511-701-02	160	120	MDS 45 511-702-01 MDS 68 511-701-01	(10	153-118	C211 C264 C227 C285 C245 C304			
	MDS 68 ALU 511-717-02	330	250	MDS 68 ALU 511-717-01	511-719	153-117				

¹⁾ Measurement see fig. 3.6.2.c.

3.6.3 MDS 80 Full batten system

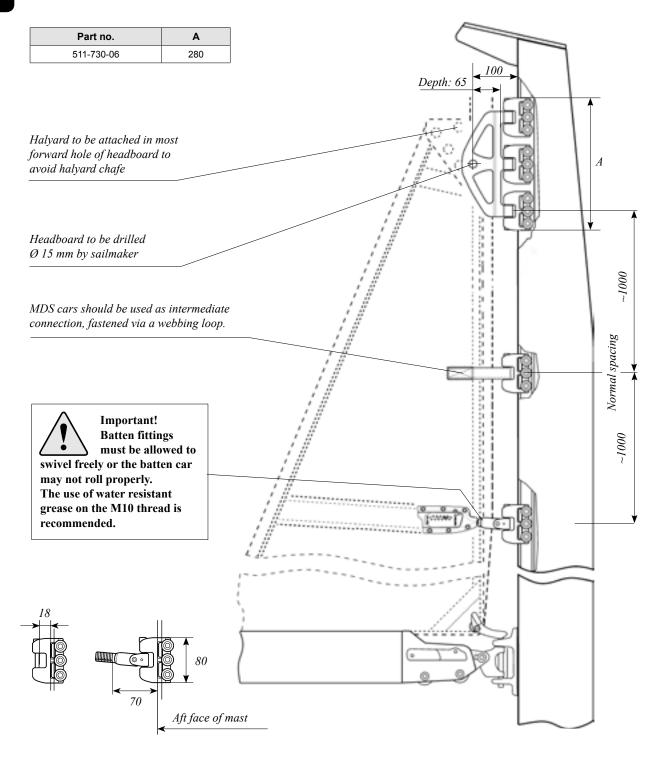


Fig. 3.6.3.a

3.6.4 Parts and RM-limits, MDS 80 and MDS 80 HD* $\,$

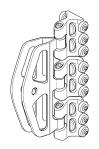


Fig. 3.6.4.a

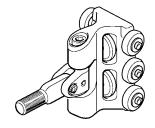


Fig. 3.6.4.b

511-730-06/511-731-06

511-730-03/511-731-06

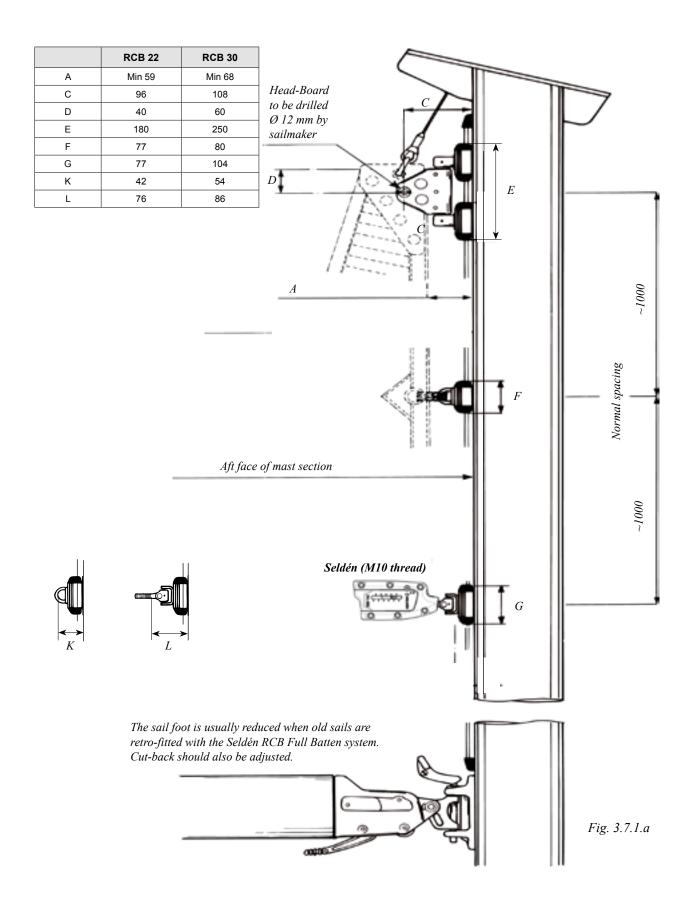
	Assembly	Max RI Asse Mh		Parts	Pa	rts	Section
Head board	511-728-01	550 450		511-728	165-5	C321 C365	
Heard board car	MDS 80 511-730-06 MDS 80 HD 511-731-06	250 550	200 450	\$11-728-01	511-730-01	153-139	C321 C365
Batten car	MDS 80 511-730-03 M10 screw MDS 80 511-730-09 M12 screw MDS 80 HD 511-731-03 M10 screw MDS 80 HD 511-731-09 M12 screw	250 550	200 450	MDS 80 511-730-09 MDS 80 HD 511-731-09	511-727-01 M12 511-727-02 M10	153-139	C321 C365
Sail car	MDS 80 511-730-02 MDS 80 HD 511-731-02	250 550	200 450	MDS 80 HD 511-731-09 511-727-02 M10 153-139 MDS 80 511-730-01 MDS 80 HD 511-731-01 153-139			C321 C365

^{*} MDS 80 HD has machined aluminium body



3.7 Seldén – RCB full batten System 22 and System 30

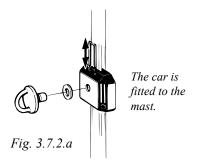
3.7.1 Dimensions



D&E

3.7.2 Parts

The slide attachment eye is easily detached from the slide and can be sent to the sailmaker separately. It also facilitates fitting the mainsail.

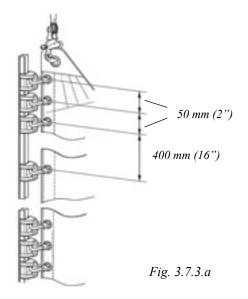


		Connectors	Car	Total assembly
Head-board car				E
	RCB 22	511-595-11	511-581-11	511-595-01
	RCB 22 Light	511-703-11	511-703-11	511-703-11
	RCB 30	511-695-11	511-681-11	511-695-01
Batten car All-Round:				
Fits Rutgerson	RCB 22	511-590-01	_	511-581-04
batten fitting and others	RCB 22 Light	511-703-11	G	511-703-11
and others	RCB 30	511-690-01		511-681-04
Batten car With M-10				
screw: Fits Bainbridge	RCB 22	511-598-01	511-581-11	511-581-03
batten fitting	RCB 22 Light	511-703-11	511-703-11	511-703-11
and others	RCB 30	511-692-01	511-681-11	511-681-03
		©	F F	
Sail car	RCB 22	511-590-01	511-581-11	511-581-04
	RCB 22 Light	511-703-11	511-703-11	511-703-11
	RCB 30	511-690-01	511-682-11	511-681-04

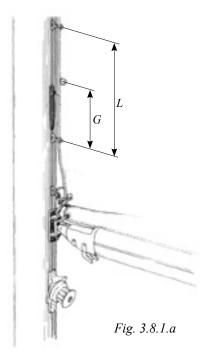
3.7.3 Try Sail slider

(Part. no.: 511-713)

- Three sliders at the head and tack of the sail c/c 50 mm (2"). Remaining cars to be fitted with c/c ~400 mm (16").
- For sufficient articulation always connect cars to sail via shackles.
- For less friction use Seldén Silicone lubricant (Part No. 312-506) or similar products on the track.
- Breaking load 2.6 kN.







3.8 Sail Feeder Gates

3.8.1 Seldén E-section Sail Feeder Gate

The Seldén E-section sail feeder gate allows reefing without needing to remove the slides from the luff groove. Ensure that the measurement "G" is sufficient to allow the reef cringle to be hooked on with the slides in place in the luff groove.

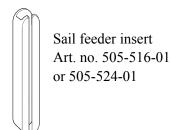
"L"= the largest possible slide spacing as recommended by the sailmaker.

Note. Remember that the reef cringles also have "cut-back" to reduce horizontal loading on the nearest slide.

See Reef-hook cut-back "F"or Single Line Reef cut-back "S" at chapter 5, Slab reefing booms.



Sail feeder gate Art. no. 505-501-01 or 505-503-01



Sail slide cassette kit Art. no. 505-514-01

Fig. 3.8.1.b

Fig. 3.8.1.c

Fig. 3.8.1.d

Section Series E122/85-274/185 & D109/88-160/132

The sail feeder is fitted with a removable gate to permit the mainsail to be fitted with either a luff rope or with slides. See fig. 3.8.1.b. Length of outer oval casing of 505-501-01 is 160 mm, 505-503-01 is 130 mm.

Section Series E126/85-239/162 & P73/53-188/137

From 1977 to 1979 inclusive, these sections were fitted with the sail feeder gate mentioned above. Earlier sections have a dilated luff groove just above the gooseneck fitting to allow either luff rope or slides to be fed in. An extension tube, see fig. 3.8.1.d (part number 505-514-01) is obtainable as extra equipment for these masts. This allows slides to move down the luff groove to the upper edge of the gooseneck fitting, and permits reefing in the same way as in fig. 3.8.1.a.

Sail feeder Gate Insert for Full length Batten Cars

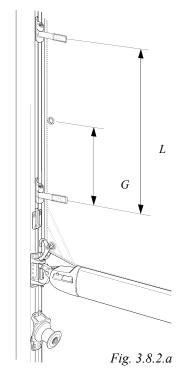
For sails with full batten sliders, a sail groove insert is available (see fig. 3.8.1.c).

This insert was developed for full batten sliders from other brands than Seldén. Seldéns own full batten slider (OWS slider) does not need this extra insert as the OWS slider can passes through the original Seldén sail feeder gate 505-501-01/505-503-01.

For other brands of full batten sliders:

Insert 505-516-01 can be fitted instead of the original sail feeder gate 505-501-01. (Sections E138/95-E274/185 & D129/100-D160/132). Insert 505-524-01 can be fitted instead of the original sail feeder gate 505-503-01. (Sections E122/85, E130/93, D109/88 & D121/92).

3.8.2 Seldén MDS Sail Feeder Gate - Yacht mast



The Seldén C-section sail feeder gate allows reefing without needing to remove the slides from the luff groove. Ensure that the measurement "G" is sufficient to allow the reef cringle to be hooked on with the slides in place in the luff groove.

"L" = the largest possible slide spacing as recommended by the sailmaker.

Note. Remember that the reef cringles also have "cut-back" to reduce horizontal loading on the nearest slide.

See Reef-hook cut-back "F"or Single Line Reef cut-back "S" at chapter 5, Slab reefing booms.

Fig. 3.8.2.b MDS Sail feeder gate for C156-C304 Part. no. 505-519-01

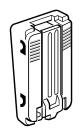
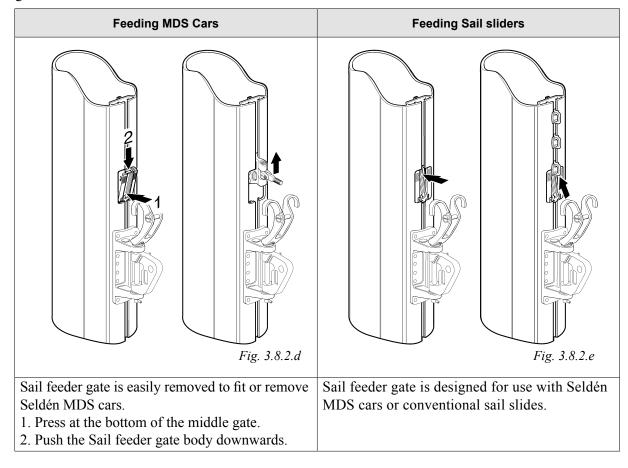


Fig. 3.8.2.c MDS Sail feeder gate for C321 and C365 Part. no. 507-309-01

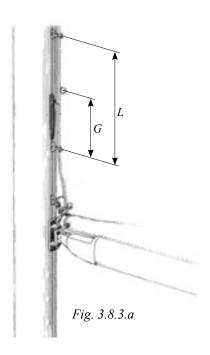


Instructions for the MDS sail feeder gate.

The MDS-sail feeder gate is designed for use with MDS cars or conventional sail sliders. When using MDS cars, simply remove the sail feeder gate when installing or removing the cars. When using it with conventional sliders, feed the sliders through the spring-loaded mid section of the sail feeder gate.







3.8.3 Seldén Sail feeder Gate - Keelboat

The Seldén C-section sail feeder gate allows reefing without needing to remove the slides from the luff groove. Ensure that the measurement "G" is sufficient to allow the reef cringle to be hooked on with the slides in place in the luff groove.

"L" = the largest possible slide spacing as recommended by the sailmaker.

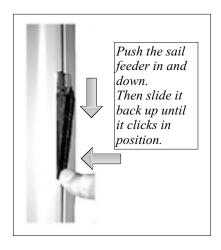
Note. Remember that the reef cringles also have "cut-back" to reduce horizontal loading on the nearest slide.

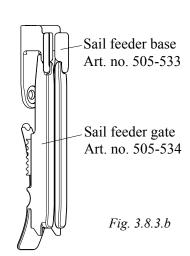
See Reef-hook cut-back "F"or Single Line Reef cut-back "S" at chapter 5, Slab reefing booms.

Section Series C080 - C139

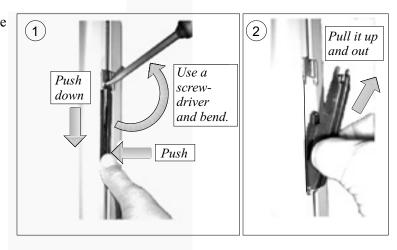
The sail feeder is fitted with a removable gate to permit the mainsail to be fitted with either a luff rope or with slides. See fig. 3.8.3.b.

How to fit Sail feeder



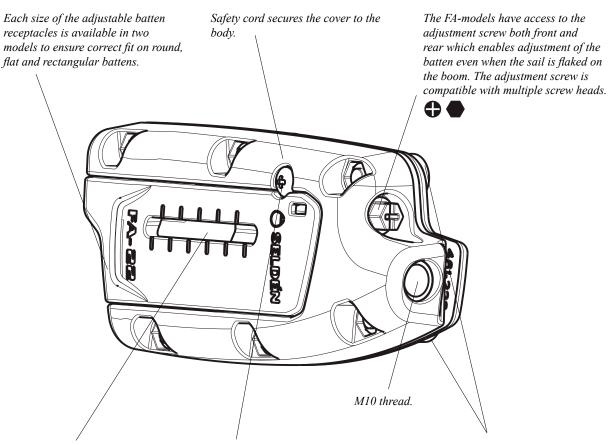


How to remove Sail feeder



4 Batten receptacles

Batten receptacles



Indicators to record batten tension for the ultimate trim.

Easy set up and removal of batten with sliding cover and a locking screw. No need to fully release the screw to remove the cover.

Protecting collar at the backing plate prevents the forward screw heads to chase on the mast surface.

4.1 Batten receptacle fittings

The fittings are designed to be used with toggle M10 stud (511-712-01, 511-727-02 or 511-739-01).

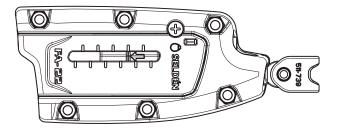


Fig. 4.1.a

The adjustable batten receptacles are available for either round or rectangular battens.





Fig. 4.1.b (461-210-01)

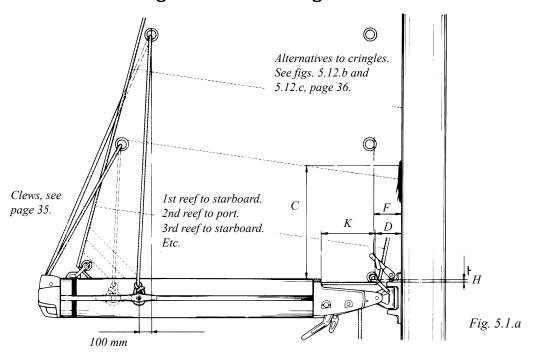
Fig. 4.1.c (461-210-02)

4.2 Batten receptacle range

Туре	Art. No.	Batter (m	n sizes nm)	E	Batten receptacle	Adj. length	Stud dim.
		Round	Flat			(mm)	
P-30	461-237-01	Ø10	5.5x31	1		-	M10
P-40	461-235-01	Ø10	5.5x41		O Manada Pada	-	M10
A-17	461-210-01	-	6.5x18			38	M10
	461-210-02	Ø8	-				
FA-22	461-220-01	-	9.5x23			33	M10
	461-220-02	Ø10	-				
FA-30	461-230-01	-	6.5x31		and and a second a	36	M10
	460-230-02	Ø12	-		O sea unidade		

D&E 5 Slab reefing booms

Boom sections on conventional masts (through 1991) (Tacks, reefing hooks etc) Slab reefing and roller reefing on older booms



	Boom section	Luff foot groove	ga	eeder ite back"	Та	ck	Reef hooks	No. of internal reefing lines	Reef line attachment at aft end of boom	
		mm	C mm	K mm	D mm	H	F mm			
	Grooved Section 1977–1991	+ 0.75 4.0 - 0.0							Desfer lies tied	
 }	85/58 86/59*	0.0	600 600	190 190	60 60	0 0	50 50	2 2	Reefing line tied fast to slide on the boom. Free choice of	
	111/75 128/90 150/105 162/125	5.5 ± 0.75	830 830 830 830	205 225 265 330	75 75 60 60	10 20 30 25	65 65 105 105	2 2 3 4	number of slides.	
	E-Section 1982–1991 189/132 206/139	5.5 ± 0.75	830 830	330 330	60 60	25 25	105 105	4 4	Reefing line tied around boom; see fig. 5.2.a, page 26.	
	P-Section 1969–1980 73/53 90/65 111/81	+ 0.75 4.0 - 0.0	Several variations exist. Spars must be individually measured.					Usually roller reefing booms, but also slab-reefing booms with external reefing lines occur.	Adjustable slides on tracks occur, but reefing lines can also be tied around boom. See fig. 5.2.a	
	137/100	+ 0.75 4.5 - 0.0						occur.	page 26.	

 $^{* \}it Still in production.$



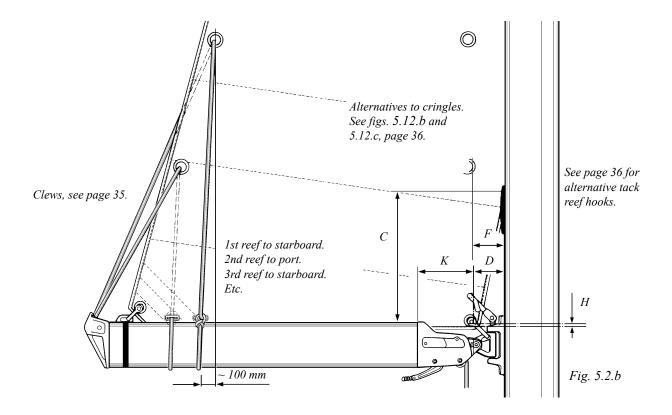
5.2 Traditional slab-reefing booms from 1991 inclusive 2003



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).

 Fig. 5.2.a



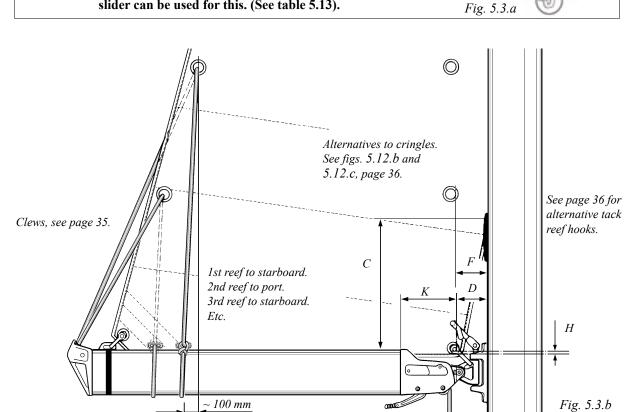
	Boom section	Luff foot groove	ga	eeder ite back"	Та	ck	Reef hooks	No. of internal reefing lines	Reef line attachment at aft end of boom
		mm	C mm	K mm	D mm	H	F mm		
	120/62	5.5 ± 0.75	830	215	75	10	65	2 slab reefs + 1 flattening reef	Reefing line tied around boom;
	143/76		830	160	80	20	80	3 slab reefs	see fig. 5.2.a.
	171/94		830	190	80	20	80	3 slab reefs	
	200/117	6.25 ± 0.75	830	250	100	20	110	4 slab reefs	
	250/140		830	275	100	20	110	4 slab reefs	
(F3)	300/155	6.25 ± 0.75	830	100	77	37	Running hook page 36	2–4 slab reefs	

5.3 Traditional slab-reefing booms on C-mast from 2003 - 2007



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).



Mast section		Boom section	Luff foot groove		Sail feeder gate "cut-back"		Tack		Reef hooks	No. of internal reefing lines	Reef line attachment at aft end
			mm	C (MDS slides) mm	C (bolt rope) mm	K	D mm	H	F mm		of boom
C156 C175	Ę	120/62	5.5 ± 0.75	130	850	150	80	35	80	2 slab reefs + 1 flattening reef	Reefing line tied around
C193		143/76	5.5 ± 0.75	110	830	165	80	20	80	3 slab reefs	boom; see fig. 5.3.a.
C211		171/94	5.5 ± 0.75	110	830	195	80	20	80	3 slab reefs	
C227 C245	5	200/117	6.25 ± 0.75	110	830	270	80	20	80	4 slab reefs	
C264	Ę	171/94	5.5 ± 0.75	180	830	210	100	45	110	3 slab reefs	
C285		200/117	6.25 ± 0.75	150	830	250	100	20	110	4 slab reef	
C304		250/140	6.25 ± 0.75	150	830	275	100	20	110	4 slab reef	
C264	\ru_{\tag{2}}	300/155	6.25 ± 0.75	170	830	75	100	35	Running hook	2–4 slab reefs	
C285									page 36		
C304											

5.4 New boom section series 2008

During 2007/2008 a new series was launched containing more different section sizes and new end fittings. The new booms can be identified by their shorther inboard ends.

The boom sections will have changed descriptions from 2008.

Old Description	New Description				
120/62	B120				
New 2008	B135				
143/76	Outgoing 2007				
New 2008	B152				
171/94	B171				
200/117	B200				
230/70	B230				
250/140	B250				
290/155					
New 2016	B172				

New boom series 2008

	Boom	Boom dim.	Sail foot groove mm
	B087	86/59	5.5 ± 0.6
B087 B104	B104	104/60	5.5 ± 0.6
	B120	120/62	5.5 ± 0.75
	B135	135/71	5.8 ± 0.75
	B152	152/82	5.8 ± 0.75
	B171	171/94	5.5 ± 0.75
+Y	B172	171/98	10 ± 0.8
	B200	200/117	6.25 ± 0.75
8 2 8	B250	250/140	6.25 ± 0.75
X	B290	290/155	10.25 ± 0.75
	B300	300/155	6.25 ± 0.75
	B380	380/186	-
P	B190	190/60	5.5 ± 0.75
	B230	230/70	6.25 ± 0.75



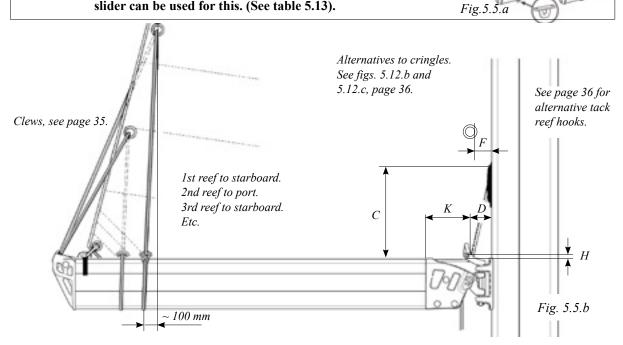
"Old" boom inboard end 1991-2007	New boom inboard end 2008	New boom inboard end 2016

5.5 Traditional slab-reefing booms on C-mast from 2008



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).



Mast section		Boom section	Luff foot groove		feeder gaut-back"		Та	ıck	Reef hooks	No. of internal reefing lines	Reef line attachment at aft end
			mm	C (MDS slides) mm	C (bolt rope) mm	K	D mm	H	F mm		of boom
C080 C087 C096 C106		B087	5.5 ± 0.75	~	600	55	55	0	70	2 slab reefs	Reefing line tied around boom;
C116 C126 C139		B104	5.5 ± 0.75	~	600	55	55	0	70	2 slab reefs	see fig. 5.5.a.
C126 C139		B120	5.5 ± 0.75	~	600	165	65	20	70	2 slab reefs	
C156		B087	5.5 ± 0.75	130	750	55	65	20	70	2 slab reefs	
		B104									
C156 C175		B120	5.5 ± 0.75	130	750	150	80	35	80	2 slab reefs + 1 flattening reef	
C193 C211		B135	5.8 ± 0.75	130	750	105	80	30	80	3 slab reefs	
C227		B152		120	750	105	80	20	80	3 slab reefs	
C245		B171	5.5 ± 0.75	110	750	120	80	20	80	3 slab reefs	
		B172	10 ± 0,8	110	750	100	80	20	65	3 slab reefs	
		B200	6.25 ± 0.75	170	750	175	100	15	80	4 slab reefs	
C264	σ	B171	5.5 ± 0.75	180	750	135	100	45	110	3 slab reefs	
C285 C304		B172	10 ± 0,8	180	750	110	100	50	95	3 slab reefs	
		B200	6.25 ± 0.75	150	750	175	100	15	110	4 slab reefs	
	(,	B250		150	750	175	100	15	110	4 slab reefs	
C264 C285 C304	لها	B290	10.25 ± 0.75	170	750	75	100	35	Running hook page 36	2–4 slab reefs	
C3U4		B300	6.25 ± 0.75						page 30		
C365		B380	_	210		150	80	0			
C405				_							

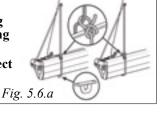
D&E

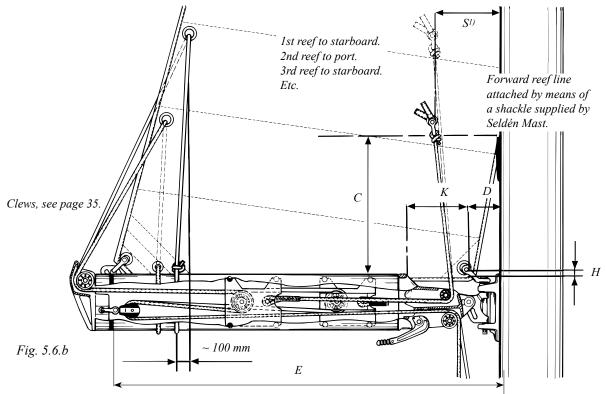
5.6 Single line reef booms from 1991 - 2003



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).





	Boom section	Luff foot groove	Sail fe gat "cut-b	e	Tack		Single line reef	No. of internal reefing lines	Reef line attachment	Max height for reef 1 (Starboard)	Max height for reef 2 (Port)
			C mm	K	D	Н	S¹) mm			3)	3)
		mm		mm	mm	mm				mm	mm
	120/62	5.5 ± 0.75	830	215	75	10	120	2 single line + 1 flattening	Reef line attached	E-1800	E-600
	143/76		830	160	80	20	140	2 single line +	as per fig. 5.6.a	E-1800	E-700
	171/94		830	190	80	20	150	1 traditional slab reef ²)		E-1900	E-850
	200/117	6.25 ± 0.75	830	250	100	20	190	2 single line + 2 traditional		E-2000	E-950
ح	250/140		830	275	100	20	200	slab reefs 2)		E-2500	E-1100

¹⁾ The "S" measurement includes the shackle supplied by Seldén Mast.

Comprehensive instructions on Single Line reefs can be obtained from Seldén Mast; reference No 595-664-SET, (in Swedish, English and German).

²⁾ Running Reef Hooks as shown on page 36 should be used for traditional 3rd and 4th slab reefs in conjunction with Single Line Reefs. If permanent reef hooks are used at the tack there is a risk that the sail can snag when a Single Line Reef is shaken out.

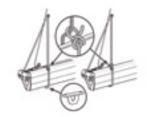
^{3) &}quot;Max height" information refer to forward reef cringle only.

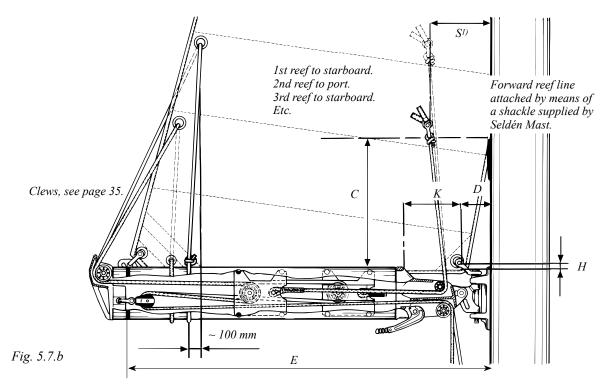
5.7 Single line reef booms on C-mast from 2003 - 2007



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).





Mast section		Boom section	Luff foot groove		eder ga t-back"		Та	ck	Single line reef	No. of internal reefing	Reef line attachment	Max height for reef 1 (Starboard)	Max height for reef 2 (Port)
			mm	C (MDS slides) mm	C (bolt rope) mm	K	D mm	H	S ¹⁾	lines		3) mm	3) mm
C156 C175	ŒŊ	120/62	5.5 ± 0.75	130	850	150	80	35	120	2 single line + 1 flattening	Reefing line tied around	E-1800	E-600
C193 C211		143/76		110	830	165	80	20	140	2 single line + 1 traditional	boom; see fig. 5.7.a.	E-1800	E-700
C227 C245		171/94		110	830	195	80	20	150	slab reef ²⁾		E-1900	E-850
	5	200/117	6.25 ± 0.75	110	830	270	80	20	190	2 single line + 2 tradi- tional slab reefs ²⁾		E-2000	E-950
C264 C285	(L)	171/94		180	830	210	100	45	180	2 single line + 1 tradi- tional slab reefs ²⁾		E-1900	E-850
C304		200/117	5.5 ± 0.75 6.25 ± 0.75	150	830	250	100	20	190	2 single line + 1 traditional		E-2000	E-950
	لحا	250/140	0.20 ± 0.75	150	830	275	100	20	200	slab reefs ²⁾		E-2500	E-1100

¹⁾ The "S" measurement includes the shackle supplied by Seldén Mast.

Comprehensive instructions on Single Line reefs can be obtained from Seldén Mast; reference No 595-664-SET, (in Swedish, English and German).

²⁾ Running Reef Hooks as shown on page 36 should be used for traditional 3rd and 4th slab reefs in conjunction with Single Line Reefs. If permanent reef hooks are used at the tack there is a risk that the sail can snag when a Single Line Reef is shaken out.

^{3) &}quot;Max height" information refer to forward reef cringle only.

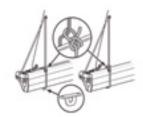
C

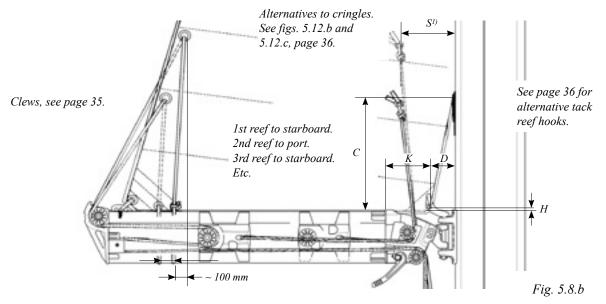
5.8 Single line reef booms on C-mast from 2008



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).





Mast section		Boom section	Luff foot groove		eder g		Та	ck	Single line reef	internal reefing	Reef line attachment	Max height for reef 1 (Starboard)	Max height for reef 2 (Port)
			mm	C (MDS slides) mm	C (bolt rope) mm	K mm	D mm	H mm	S ¹⁾	lines		3) mm	3) mm
C080 C087 C096 C106		B087	5.5 ± 0.75	~	600	55	55	0	95	2 single line	Reefing line tied around boom; see fig. 5.8.a.	E-1650	E-450
C106 C116 C126 C139		B104	5.5 ± 0.75	~	600	55	55	0	95	2 single line	see lig. 5.6.a.	E-1650	E-450
C126 C139		B120	5.5 ± 0.75	~	600	165	65	20	70	2 single line		E-1650	E-450
C156		B087 B104	5.5 ± 0.75	130	750	165	65	20	105	-		-	-
C156 C175	CI	B120	5.5 ± 0.75	130	750	150	80	35	70	2 single line + 1 flattening		E-1650	E-450
C173	()	B135	5.8 ± 0.75	130	750	105	80	30	165	2 single line + 1 traditional		E-1800	E-650
C211	\ /	B152		120	750	105	80	20	165	slab reef ²⁾		E-1800	E-750
C227	5	B171	5.5 ± 0.75	110	750	120	80	15	165			E-1900	E-850
C245		B172	10 ± 0.8	110	750	100	80	20	150				
		B200	6.25 ± 0.75	170	750	175	100	15	240	2 single line + 2 traditional slab reefs ²⁾		E-2000	E-950
C264 C285	σ	B171	5.5 ± 0.75	180	750	135	100	45	200	2 single line + 1 tradi- tional slab reefs ²⁾		E-1900	E-850
C304		B172	10 ± 0.8	180	750	110	100	50	185				
		B200	6.25 ± 0.75	150	750	175	100	15	240	2 single line + 1 traditional		E-2000	E-950
	لحما	B250		150	750	175	100	15	240	slab reefs ²⁾		E-2500	E-1100
		B290	10.25 ± 0.75	150	750	80	100	30	240			E-2900	E-1550

The "S" measurement includes the shackle supplied by Seldén Mast.

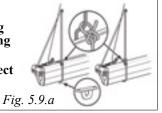
Running Reef Hooks as shown on page 36 should be used for traditional 3rd and 4th slab reefs in conjunction with Single Line Reefs. If permanent reef hooks are used at the tack there is a risk that the sail can snag when a Single Line Reef is shaken out. "Max height" information refer to forward reef cringle only. Length is calculated on 16-plait reef line. For low stretch lines, reef height

5.9 Slab reef - Match booms



Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this. (See table 5.13).



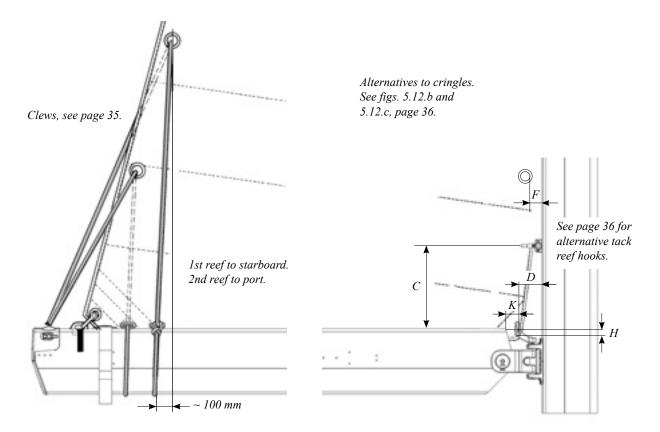


Fig. 5.9.b

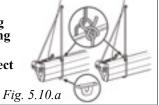
Mast section		Boom section	Luff foot groove		feeder ga		Та	ck	Reef hooks	No. of internal reefing	Reef line attachment at aft end
			mm	C (MDS slides) mm	C (bolt rope) mm	K	D mm	H	F mm	lines	of boom
C175 C227	Ŋ	B190	+ 0.45 5.8 - 1.05	100	750	35	80	0	80	2 slab reefs	Reefing line tied around boom;
C211 C245		B230	6.25 ± 0.75	80	750	45	80	20*	80	2 slab reefs	see fig. 5.9.a.

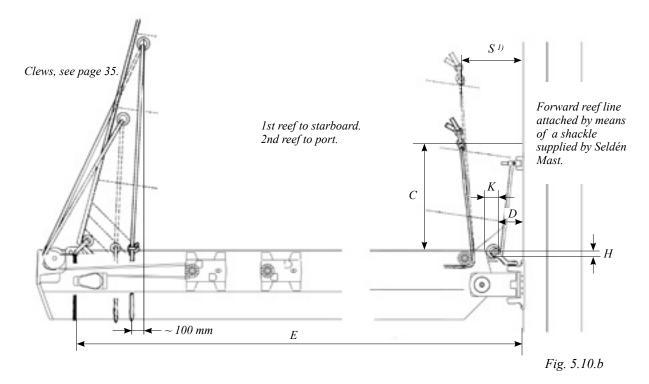
 $^{* \}textit{ Tack shackle below top of extrusion}.$

5.10 Single line reef Match booms

Important!

- 1. The reefing line is tied as illustrated, with a bowline and running noose. No. 1 reef is shown. Note that grommets are required along the foot for each reef.
- 2. For loose-footed sails, the reef line loop must be held in the correct position along the boom, to ensure proper reefing. Seldén's eye slider can be used for this.





Mast section		Boom section	Luff foot groove		eder ga t-back"		Та	ck	Single No. of line internal reef reefing		attachment	Max height for reef 1 (Starboard)	for reef 2
			mm	C (MDS slides) mm	C (bolt rope) mm	K	D mm	H	S ¹⁾	lines		3) mm	3) mm
C175 C227	Ŋ	B190	+ 0.45 5.8 - 1.05	100	750	35	80	0	180	2 slab reefs	Reefing line tied around boom;	E-1650	E-470
C211 C245	<u></u>	B230	6.25 ± 0.75	80	750	45	80	204)	195	2 slab reefs	see fig. 5.10.a.	E-1900	E-650

- 1) The "S" measurement includes the shackle supplied by Seldén Mast.
- 2) Running Reef Hooks as shown on page 36 should be used for traditional 3rd and 4th slab reefs in conjunction with Single Line Reefs. If permanent reef hooks are used at the tack there is a risk that the sail can snag when a Single Line Reef is shaken out.
- 3) "Max height" information refer to forward reef cringle only. Length is calculated on 16-plait reef line. For low stretch lines, reef height may be increased slightly.
- 4) Tack shackle below top of extrusion.

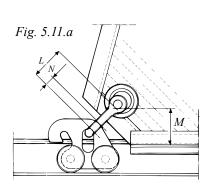
Comprehensive instructions on Single Line reefs can be obtained from Seldén Mast; reference No 595-664-SET, (in Swedish, English and German).

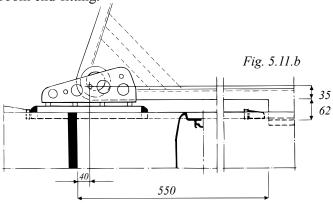
D&E

5.11 Clews

See page 38-44 for furling.

Outhaul cars or slides are supplied complete with shackles on all current Seldén booms. However, there are older booms from section series P 73/53–137/100 which were supplied without either. In these cases, the sail's clew is lashed to the boom end-fitting.





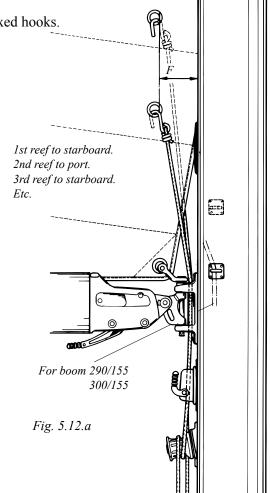
Boom		aul car/slide asic No.	Shackle L	М	N min.
111/81 137/100	507-701	(O) (O)	Ø 7 mm key shackle L = 40 mm 307-004	40 mm	11 mm
85/58 86/59	511-519		Ø 5 mm key shackle L = 34 mm 307-001	40 mm	11 mm
111/75 128/90	507-602		Ø 8 mm key shackle L = 44 mm 307-005	45 mm	13 mm
150/105 162/125	507-602		Ø 10 mm shackle L = 44 mm 307-024	45 mm	13 mm
189/132 206/139	507-603		Ø 10 mm shackle L = 38 mm 307-024	45 mm	13 mm
B087 B104	507-612		Ø 5 mm shackle L = 38 mm 307-045	35 mm	5 mm
B120	507.540		Ø 8 mm shackle L = 35 mm 307-026	40 mm	8 mm
B135	507-519		Ø 8 mm shackle L = 35 mm 307-026	40 mm	8 mm
143/76			Ø 8 mm shackle L = 35 mm 307-026	40 mm	10 mm
B152		G	Ø 8 mm shackle L = 35 mm 307-026	40 mm	10 mm
B171	507-569		Ø 10 mm shackle L = 38 mm 307-024	45 mm	10 mm
B172	511-503		Ø 10 mm shackle L = 38 mm 307-024	45 mm	10 mm
B190			Ø 10 mm shackle L = 38 mm 307-024	45 mm	10 mm
B200 B230 B250	511-570		Ø 10 mm shackle L = 38 mm 307-024	50 mm	14 mm
B200 B250	511-617	0.0.00	pin Ø 12 x 33 165-402 jaw width: 20 mm	Soo fig	5 11 h
B300	511-588	0.000	pin Ø 12 x 37 165-409 jaw width: 23 mm	- See fig. 5.11.b	
B290	511-648		Ø 12 mm shackle L = 41 mm 307-004	55 mm	12 mm

D&E

5.12 Running reef-hooks

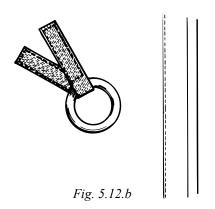
"Running" reef-hooks may be used as an alternative to fixed hooks.

	Boom section	Reef hooks	
		F mm	
	120/62	120	
	135/72	120	
a a b	143/76	120	
	152/84	120	See page 25-34 for
	171/94	120	other tack data.
	B172	120	
	200/117	130	
	250/140	130	
(F.J.)	290/155	130	Use "Alternative to cringles second
	300/155	130	alternative" (Fig. 5.12.c)



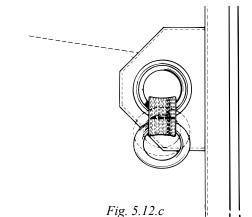
Alternatives to cringles

First alternative



Is used when the reefing line is attached with a shackle, such as for "Single Line Reefing".

Second alternative



Improves handling when the sail is to be reefed to a permanent tack reef-hook.

5.13 Boom sliders - eye

Boom section	T-track width	Part no.	Sliders
86/59 B087 B104	16 mm	511-555-02	Composite slider
B087 B104	20 mm	511-641-01	Stainless steel slider
B120 B135 B152 B171 B172	25 mm	511-571-01	Stainless steel slider
B200 B250 B290 B300	32 mm	511-572-01	<u>a</u>
B120 B135 B152 B171 B172 B190	25 mm	511-636-01	Divisible sliders for retro fit directly into the track. (Composite)
B200 B250 B290 B300	32 mm	511-637-01	For lazy-jack or reefline location only (not for reefline attachment)

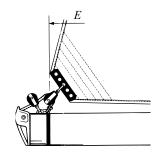
6 Furling mast

6.1 R section: manual, hydraulic and electro (1989 - 2002)

			Mast section					Lu	iff extrusion	
Sail slot Sail compartment			Luff	C	Luff groove Luff tape					
Mast sec- tion	Sail com- part-	Sail slot	Max foot length E max ⁴⁾	Sp	are luff gro in mast	ove	71.	Dia- meter	Luff groove	Max space for luff tape
	ment		L max	Luff groove	Max space available for luff tape	Slide				iun tape
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
190/94 213/104 235/116	Ø 85 Ø 90 Ø 100	13.5 ± 3	3750 4000 4500	3.25	Ø 7.2	_	RA	Ø 25	2.75 ± 0.25	Ø 6.0
214/122 232/126 260/136	Ø 110 Ø 114 Ø 114	15 ± 3	4750 5500 5500	3.25	Ø 10.0	Bainbridge AO32	RB	Ø 30	3.25 ± 0.35	Ø 8.0 ¹⁾
290/150 324/169 ³⁾	Ø 124 Ø 154	15 ± 3	6000 7000	3.25 4.0	Ø 10.0 Ø 12.0	Bainbridge AO32 Bainbridge AO32 or Rutgerson 101	RC	Ø 38	3.25 ± 0.25	Ø 10 ²⁾
370/1923)	Ø 174	15 ± 3	7500	3.3	Ø 13.0	Bainbridge AO33 or Rutgerson 102	RD	Ø 58	3.25 ± 0.25	Ø 10

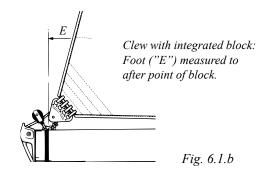
- 1) 1995 and earlier: Ø 10
- 2) Max Ø7 mm luff tape due to new sail feeder (2001).
- 3) For more performance oriented furling main sails with a lot of shape and/or stiffer (non-dacron) sail cloth, and for sails with horizontal battens, an optional sail guide can be provided (art. no 535-811-01).
- When the sail is fully furled, 300 mm of Emax will remain outside the mast due to reinforcement and clew-board. Note! Listed values are MAX VALUES for DACRON® main sails designed primarily for easy furling and reefing. For more performance oriented sails with more shape and stiffer sail cloth, max foot length will be reduced depending on sail design and sail cloth.
- 5) Note! Spare main sail entry is an optional feature from 2012 and onwards.
- ☐ Design aspects on furling main sails, see page 44.

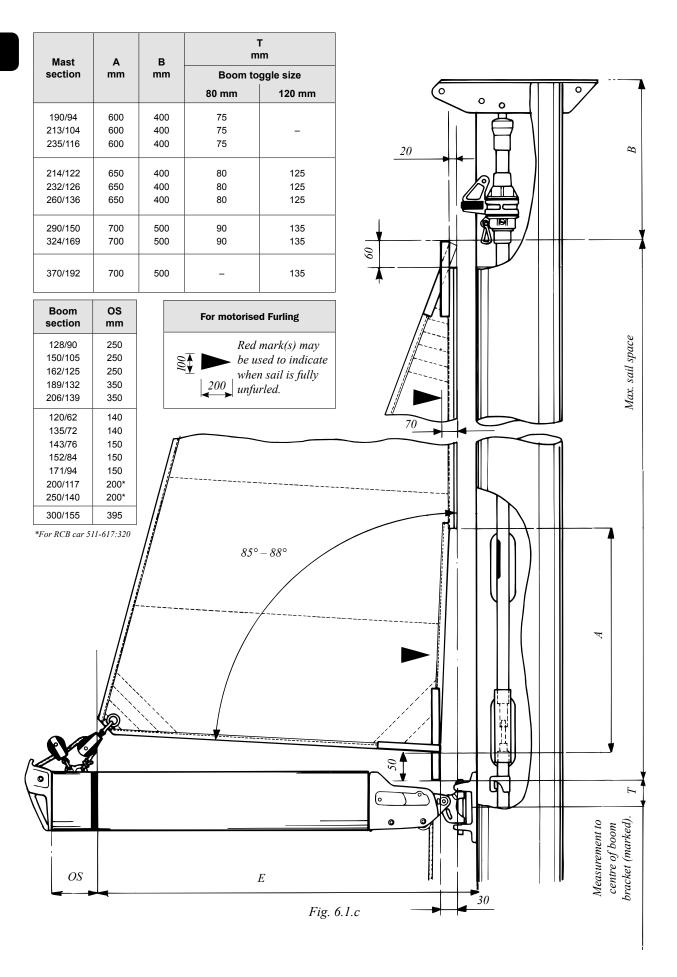
Alternative clew executions



Clew with clew-board:
Foot ("E") measured to after
point of sail.
Clew-board gives longer
effective ("E") than
integrated block or normal
cringle.

Fig. 6.1.a





6.2 F section: manual, hydraulic and electro (2003 - →)

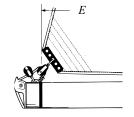
Sections		Section dimn.	ly	l _x	Wall thickness,	Weight	W _y min	W _X min
		X/Y mm	cm ⁴	cm ⁴	mm	kg/m	cm ³	cm³
Furling masts	F176	176/93	526	187	2.90	4.12	58.2	40.0
J	F194	194/101	709	254	3.05	4.69	70.8	49.8
	F212	212/109	970	337	3.15	5.45	88.2	61.8
PS	F228	228/118	1306	453	3.4	6.30	112	76.8
	F246	246/126	1781	613	3.75	7.37	139	97.3
1 Y	F265	265/135	2392	828	4.15	8.66	173	122
\ /	F286	286/146	3237	1122	4.5	10.02	220	154
	F305	305/156	4389	1513	5.05	11.75	276	194
X	F324	324/169	5576	2056	5.5	13.8	329	243
	F370	370/192	8835	3149	5.8	16.6	468	326
	F406	408/207	14321	4725	6.5	19.34	671	451

	F	406	408/20	07	14321	4725	6.5	19.34		671	451		
				Mast se	ction				Lu	ff extrusion	1		
Sail	compartment					Luff groove Luff tape				Luff groove Luff tape			
Section	Section Sail Max compart- foot length			Sail slot	S	pare luff groo	ove	Туре	Dia-	Luff	Max space for luff		
	ment		max ¹⁾	Siot	Luff groove	Max space available	Slide		meter	groove	tape		
	mm		mm	mm	mm	for luff tape mm	mm	mm	mm	mm	mm		
F176	Ø 85	RA	3750			6							
F194	Ø 93	RA	4200			O	-						
F212	Ø 100	RA	4500					RA	Ø 25	2.75±0.25	Ø6		
1 2 12	\$ 100	RB	4400	15±3									
F228	Ø 108	RA	5000			8	Bainbridge AO31						
	10 100	RB	4900						g Ø 30		Ø 8		
F246	Ø 114	RB	5400		3.25±0.25			RB					
F265	Ø 123	RB	6000		0.2020.20								
		RC	5800										
F286	Ø 133	RB	6500										
		RC	6300	17±3		10	Bainbridge AO32	RC	Ø 38		Ø 10 ²)		
	~	RB	6900	-						3.25±0.35			
F305	Ø 141	RC	6700	-									
		RD	6000					 		_			
F324	Ø 154	RC RD	7000	20±3	4.005	12							
	~	RC		20.5	4±0.25	Bainbridge AO32		RD	Ø 58	8	Ø 10		
F370	Ø 174	RD	7500	22±3		13							
F406	Ø 190	RD	9500	24±3	6.5±0.5	15	Bainbridge AO33						

Note: For more performance oriented furling main sails with a lot of shape and/or stiffer (non-dacron) sail cloth, and for sails with horizontal battens, an optional sail guide can be provided

- 1) When the sail is fully furled, min 300 mm of Emax will remain outside the mast due to reinforcement and clew-board. Note! Listed values are MAX VALUES for DACRON® main sails designed primarily for easy furling and reefing. For more performance oriented sails with more shape and stiffer sail cloth, max foot length will be reduced depending on sail design and sail cloth.
- 2) Max Ø7 mm luff tape due to new sail feeder (2001).
- 3) Note! Spare main sail entry is an optional feature from 2012 and onwards.
- ☐ Design aspects on furling main sails, see page 44.

Alternative clew executions



Clew with clew-board: Foot ("E") measured to after point of sail.

Clew-board gives longer effective ("E") than integrated block or normal cringle.

Fig. 6.2.a

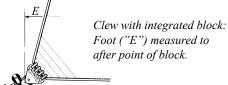
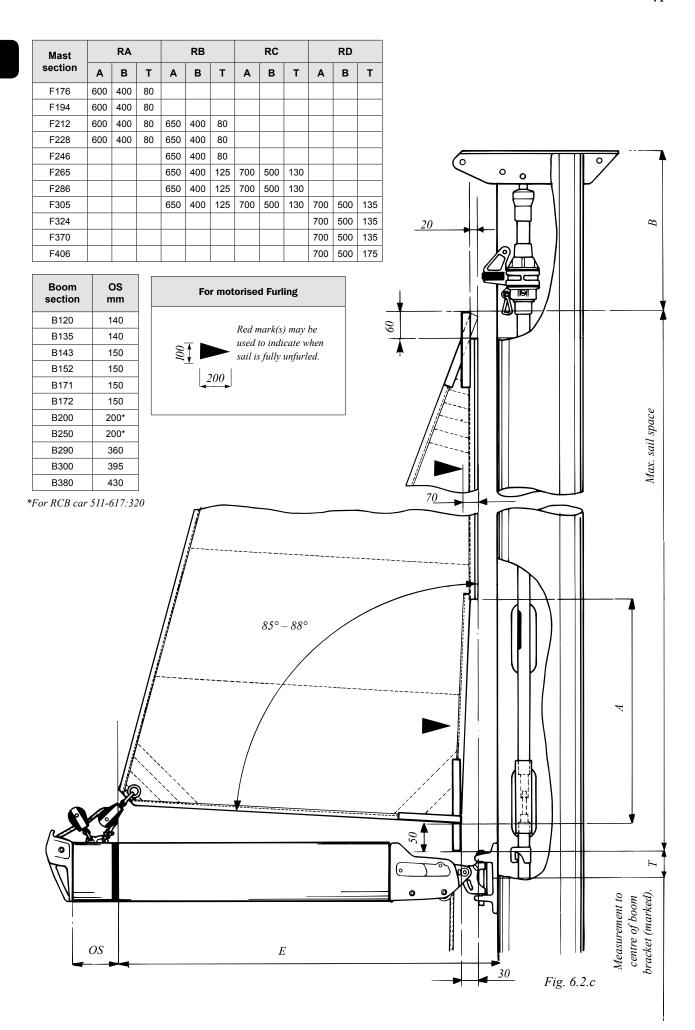


Fig. 6.2.b



6.3 Furlex Main - Retro-fit system

(Production of this product range discontinued 2003).

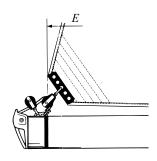
		F	urlex Main – Other so	ection				Luf	f extrusion	
Sail slot Sail chamber Sail Sail May foot longth				Luff tape chamber Luff groove			Luff groove Luff tape			
Furlex Main	Sail cham-	Sail slot	Max. foot length recommended ¹⁾	Spare luff groove in mast			Туре	Dia- meter Luff gr	Luff groove	space
Туре	ber		"E	Luff groove	Max space available for luff tape	Slide				for luff tape
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
Type 76 Type 90	Ø 76 Ø 90	13.5 ± 3	3500 4000	3.25 3.25	Ø 9.4 Ø 9.4	Bainbridge AO31 or Rutgerson 101	RA	Ø 25	2.75 ± 0.25	Ø 6.0
Type 108	Ø 108	15 ± 3	5000	3.25	Ø 10.0	Bainbridge AO32 or Rutgerson 101	RB	Ø 30	3.25 ± 0.35	Ø 8*

¹⁾ Note! Listed values are MAX VALUES for DACRON® main sails designed primarily for easy furling and reefing. For more performance oriented sails with more shape and stiffer sail cloth, max foot length will be reduced depending on sail design and sail cloth.

*1995 and earlier: Ø 10

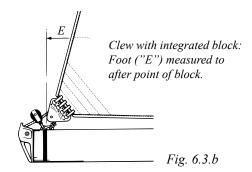
- ☐ The luff extrusion is asymmetrically shaped in order to help overcome initial resistance when starting to furl. Do not use heavy sail-cloth in the luff area.
- ☐ Head and tack webbing bands should be of soft quality which can fold easily. 20 mm is a suitable width. Do not use metal cringles on them.
- ☐ Battens must be located on the port side of the sail so as not to snag on the inside of the sail compartment.
- ☐ If clew cringles are used they must not be thicker than 14 mm in order to fit the outhaul block.
- □ The upper part of the luff extrusion will be kept centered by the halyard swivel, while most of the section will rest on the aft face of the sail compartment when sailing. The luff curve must have a wedge formed into it for compensation (0 to 30 mm) at the upper 500–800 mm of the luff.

Alternative clew executions



Clew with clew-board:
Foot ("E") measured to after
point of sail.
Clew-board gives longer
effective ("E") than
integrated block or normal
cringle.

Fig. 6.3.a



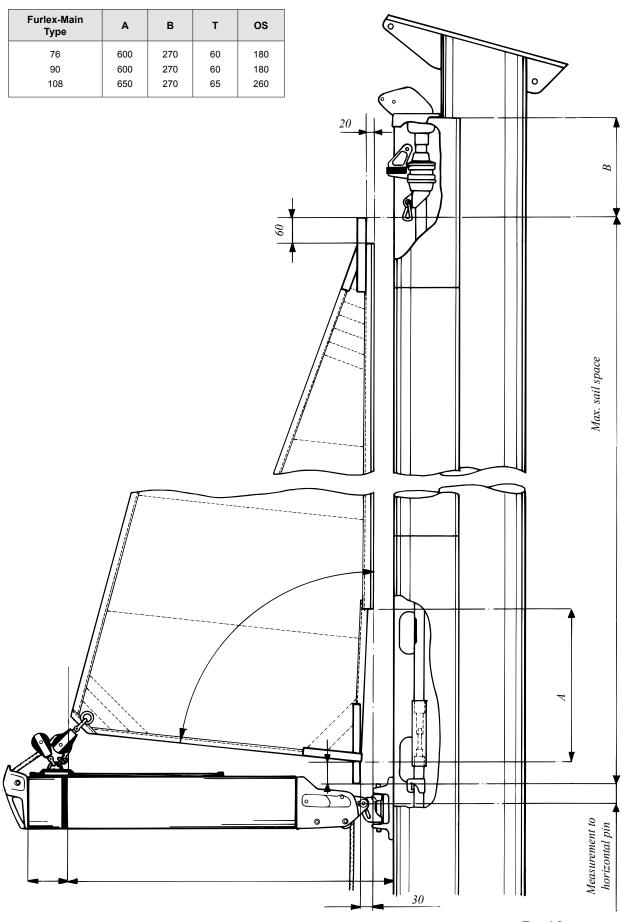


Fig. 6.3.c

6.4 Design aspects on furling mast main sails

Sail cloth type

In general, single layer cloth (e.g. Dacron TM) folds easier around the luff extrusion than multilayer laminate cloth, causing less furling resistance. "Softer" sail cloth therefore allows more sail to be furled into the mast. Sail cloth generally becomes softer with time, so a new sail can cause more furling resistance than a sail that has been used for some time.

Sail cloth disposition

The luff extrusion is asymmetrically shaped in order to help overcome initial resistance when starting to furl. Do not use heavy sail cloth in the luff area.

Clew height

A furling main sail foot should should rise towards the clew, approximately 85°–88° (see e.g. fig. 6.2.c). This increases leech tension when furling and prevents the lower part of the sail roll becoming too bulky. Note that when the sail is furled, the weight of the sail may cause the clew to move downwards.

Luff curve shape

The upper part of the luff extrusion will be kept centered by the top swivel, while most of the luff extrusion will rest on the aft face of the sail compartment when sailing. The luff curve must have a wedge formed into it for compensation (0- to 30 mm) at the upper 500 – 800 mm of the luff.

Clew reinforcement

The clew reinforcement should be made so that it allows the sail to be furled in leaving approximately 300 – 500 mm outside the mast.

Webbing tape

Head and tack webbing tapes should be of soft quality which can fold easily. Do not use cringles.

Luff tape

Avoid using luff tape close to head and tack. The high loads in head and tack may damage the luff tape. (See e.g. fig. 6.2.c)

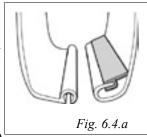
Clew cringles

If clew cringles are used they must not be thicker than 14 mm in order to fit the outhaul block.

Batten types

The main batten types used in furling main sails are: full-length vertical battens, short vertical battens and horizontal (foldable) battens. Experience has shown that vertical battens work very well whereas horizontal battens have a tendency to snag in the sail slot when the sail is furled out. For more performance oriented fur-

ling main sails with a lot of shape and/or stiffer (non-dacron) sail cloth, and for sails with horizontal battens, an optional sail guide (art. no 535-811-01) can be provided (see fig. 6.4.a).



If full-length vertical battens are used, round battens generally work better than square battens since square battens can twist. If short vertical battens are used, square battens often work well and are usually less bulky.

Batten location

Battens must be located on the port side of the sail so as not to snag on the inside of the sail compartment.

End fittings, connectors and tensioning arrangement

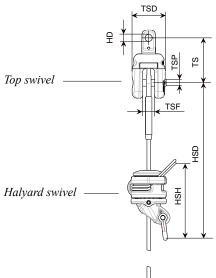
End fittings, connectors and tensioning arrangement (vertical battens) should be made as slim as possible. Bulky solutions may cause the battens to snag in the sail slot.

Short vertical battens – vertical displacement

Short vertical battens should be located so that they do not overlap each other vertically. The lowest batten should not overlap the clew reinforcement.

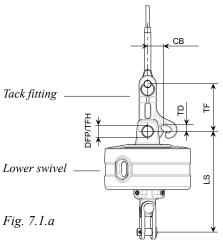
7 Furlex - Seldén jib furling and reefing system

7.1 Furlex, 20S-40S





As Furlex 20S, 30S and 40S has no luff extrusion these models are not suitable for reefing.



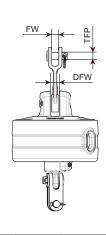
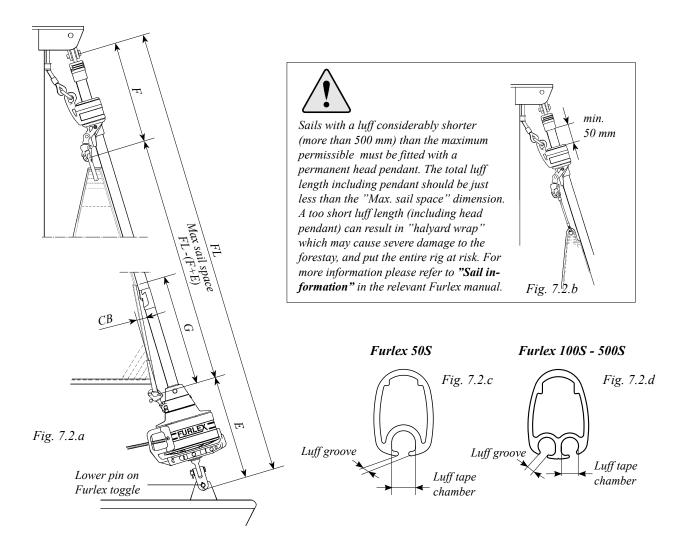


Fig. 7.1.b

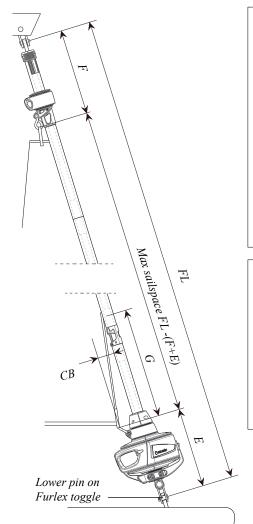
Measurement	Code	Furlex 20S	Furlex 30S	Furlex 40S
Top Swivel Height	TS	35	52	52
Top Swivel Diameter	TSD	Ø 26	Ø 39	Ø 39
Top Swivel Pin	TSP	Ø 6	Ø 8	Ø 8
Top Swivel Fork	TSF	10	14	14
Upper Hole Dia	HD	Ø 5,5	Ø 8,5	Ø 8,5
Halyard Swivel Height	HSH	-	90	90
Halyard Swivel Deduction	HSD	-	180	180
Tack Fitting height	TF	-	55	55
Tack Fitting Fork Width	FW	-	8	8
Tack Fitting Pin	TFP	-	Ø 8	Ø 8
Tack Fitting Hole	TFH	-	Ø 8,5	Ø 8,5
Cut Back	СВ	-	20	20
Tack Deduction	TD	-	10	10
Lower Swivel Height	LS	60	106	117
Drum Fork Width	DFW	9	10	10
Drum Fork Pin	DFP	6	8	8

7.2 Furlex 50S-500S



	Furlex Section dimension		Luff groove	Max. space available in chamber	Max. luff tape	Cut- back	Cut- back height	Maximum sail space FL–(F+E (Measurement calculated from existing forestay length: FL).		ulated from	
			mm	mm	mm	CB mm	G mm	F mm	E mm	F+E mm	
	A	26/17	3.0	Ø 6	Ø 5	60	1100	360	280	640	
	В	31/20	3.0	Ø6	Ø 5	60	1100	390	340	730	
	С	40/27	3.0	Ø 7	Ø 6	80	1100	540	420	960	
	D	50/34	3.0	Ø 8	Ø 6	100	1100	620	490	1110	
	50S	22/15	2.6	Ø6	Ø 5	25	630	360	215	575	
Manual	100S Ø 4 & 5	26/17	3.0	Ø6	Ø 5	60	1100	410	280	690	
Mar	100S Ø 6	26/17	3.0	Ø6	Ø 5	60	1100	425	295	720	
	2008	31/21	3.0	Ø6	Ø 5	60	1100	540	330	870	
	300S Ø 8	39/27	3.0	Ø 7.5	Ø 6.5	80	1100	550	400	950	
	300S Ø 10	39/27	3.0	Ø 7.5	Ø 6.5	80	1100	650	400	1050	
	400S	48/34	3.0	Ø 8	Ø 6.5	95	1100	620	535	1155	
	500S	60/46	3.0	Ø9	Ø 7	95	1100	670	535	1205	
Thi	s data is also	This data is also valid for Furlex Electric.									

7.3 Furlex 104S-404S (2014-)





Sails with a luff considerably shorter (more than 500 mm) than the maximum permissible must be fitted with a permanent head pendant. The total luff length including pendant should be just less than the "Max. sail space" dimension. A too short luff length (including head pendant) can result in "halyard wrap" which may cause severe damage to the forestay, and put the entire rig at risk. For more information please refer to "Sail information" in the relevant Furlex manual.

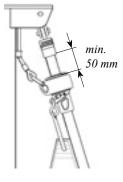


Fig. 7.3.b



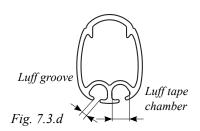
Furlex 104S/304S Mk2/404S halyard swivel.

Don't make the sail too short. Incorrect halyard routing can cause the halyard shackle to wear against the luff extrusion.



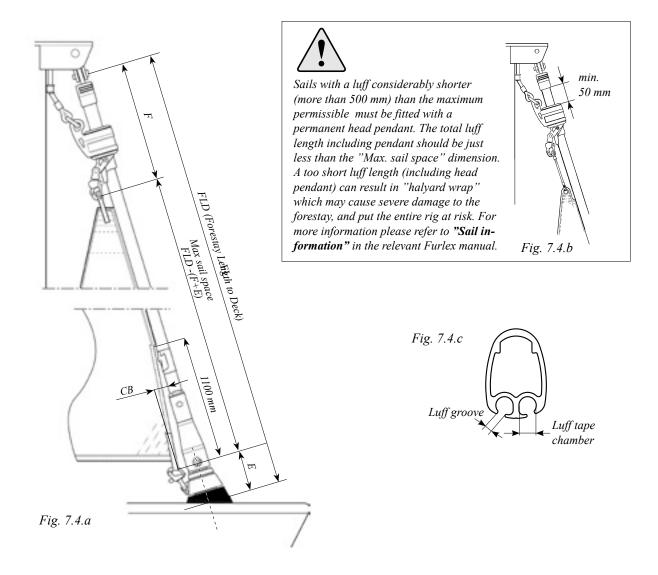
Fig. 7.3.c





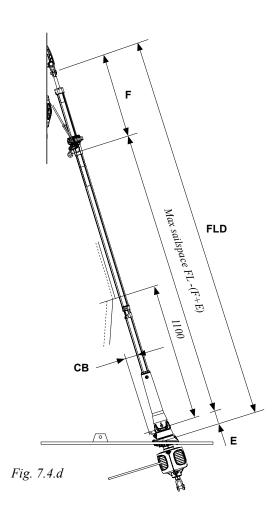
	Furlex Type/Serie	Section dimension	Luff groove	Max. space available in chamber	Max. luff tape	Cut- back	Cut- back height	(Mea	um sail spac surement calcu ting forestay le	
			mm	mm	mm	CB mm	G mm	F mm	E mm	F+E mm
	104S Ø 4 & 5	30/20	2.75	Ø6	Ø 5	60	1100	440	205	645
	104S Ø 6	30/20	2.75	Ø6	Ø 5	60	1100	440	220	660
	204S Ø 6	35/25	3.0	Ø6	Ø 5	60	1100	425	265	690
-	204S Ø 7	35/25	3.0	Ø6	Ø 5	60	1100	425	265	690
Manual	204S Ø 8	35/25	3.0	Ø6	Ø 5	60	1100	425	275	700
Σ	304S Ø 8	42/31	3.0	Ø7	Ø 6.5	60	1100	430*	310	740
	304S Ø 10	42/31	3.0	Ø7	Ø 6.5	60	1100	530*	315	845
	404S Ø 12	52/38	3.0	Ø 8	Ø 6.5	80	1100	630	390	1020
	404S Ø 14	52/38	3.0	Ø 8	Ø 6.5	80	1100	630	410	1040

7.4 Furlex 200TD-400TD (Through Deck)



	Furlex Section dimension Groove Chamber Type/Serie Luff tape chamber		Max. luff tape	Cut-back	Maxim	Maximum sail space FLD-(F+E)				
			mm	mm	mm	CB mm	F mm	E mm	F+E mm	
	200TD	31/21	3.0	Ø6	Ø 5	60	540	130	670	
Manual	300TD Ø 8	39/27	3.0	Ø 7.5	Ø 6.5	80	550	150	700	
Mar	300TD Ø 10	39/27	3.0	Ø 7.5	Ø 6.5	80	650	150	800	
	400TD	48.5/34	3.0	Ø8	Ø 6.5	95	620	210	830	
This	This data is also valid for Furlex TD Electric.									

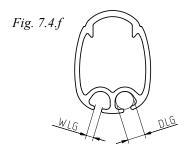
7.4 Furlex 304TD (Through Deck)





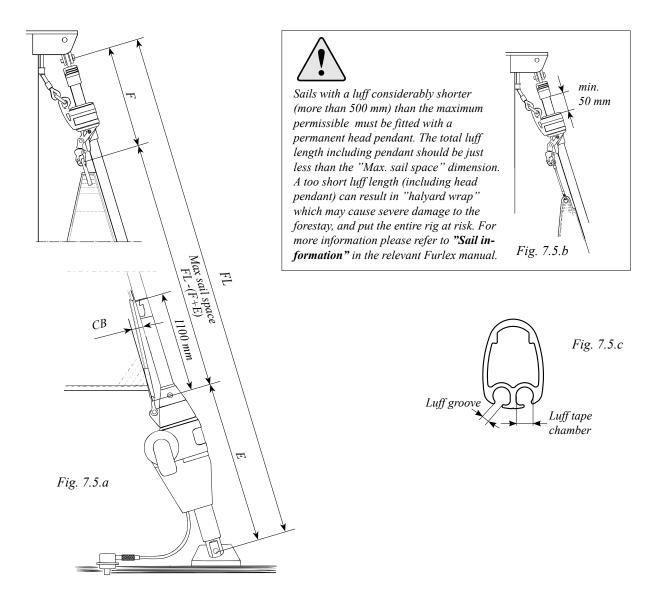
Sails with a luff considerably shorter (more than 500 mm) than the maximum permissible must be fitted with a permanent head pendant. The total luff length including pendant should be just less than the "Max. sail space" dimension. A too short luff length (including head pendant) can result in "halyard wrap" which may cause severe damage to the forestay, and put the entire rig at risk. For more information please refer to "Sail information" in the relevant Furlex manual.





	Furlex	Section dimension	Luff groove	Luff tape chamber	Max. luff tape	Cut-back	Maximum sail space FLD-(F		ce FLD-(F+E)	
	Type/Serie		mm	mm	mm	CB mm	F mm	E mm	F+E mm	
ınal	304TD Ø 8	42x31	3.0	Ø 7	Ø 6.5	60	490	85	575	
Manual	304TD Ø 10	42x31	3.0	Ø 7	Ø 6.5	60	590	85	675	
This	This data is also valid for Furlex TD Electric.									

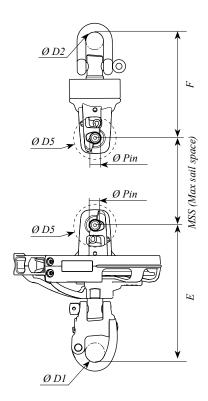
7.5 Furlex Hydraulic 300H-500H



7	Furlex Type/Serie	Section dimension	Luff groove	Max. space available in chamber	Max. luff tape	Cut-back	(Me	num sail spa asurement cal sting forestay	
			mm	mm	mm	CB mm	F mm	E mm	F+E mm
	C-Hydraulic	40/27	3.0	Ø7	Ø6	80	540	520	1060
	D-Hydraulic	50/34	3.0	Ø8	Ø6	100	620	675	1295
<u>:</u>	E-Hydraulic	60/46	3.0	Ø9	Ø7	100	620	675	1295
Hydraulic	300H Ø 8	39/27	3.0	Ø 7.5	Ø 6.5	80	550	490	1040
Ť	300H Ø 10	39/27	3.0	Ø 7.5	Ø 6.5	80	650	490	1140
	400H	48/34	3.0	Ø8	Ø 6.5	100	620	610	1230
	500H	60/46	3.0	Ø9	Ø 7	100	670	675	1345

8 Furling system CX & GX

8.1 Seldén CX, Furling system for Code 0 and stay sail





See manual 595-731-E for further information.

Fig. 8.1.a

System	(Measure halyard sha	mum sail s ement calcula ackle to faste boat/bow sp	ited from ning device				Max fork
	E mm	F mm	F+E mm	D1 mm	D2 mm	Ø Pin mm	space Ø D5 mm
CX10	115	90	205	14	12	10	40
CX15	125	95	220	16	12	10	40
CX25	155	120	275	22	20	12	45
CX40	190	145	335	24	24	16	55
CX45	190	145	335	24	24	16	66

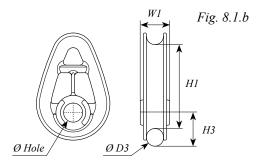
Thimbles for AT-cables & AT-lines

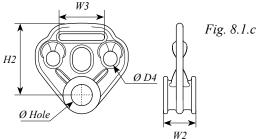
System	Part no.	Ø Hole mm	D3 Max Ø AT-cable mm	W1 mm	H1 mm	H3 mm ¹⁾
CX10/15	545-114	10.3	9	16	45	18
CX10/15	545-116	10.3	11	16	45	18
CX25	545-214	12.3	11	19	55	22
CX25	545-216	12.3	13	19	56	21
CX40/CX45	545-416	16.3	16	20	59	27

1) For max Ø AT-cable

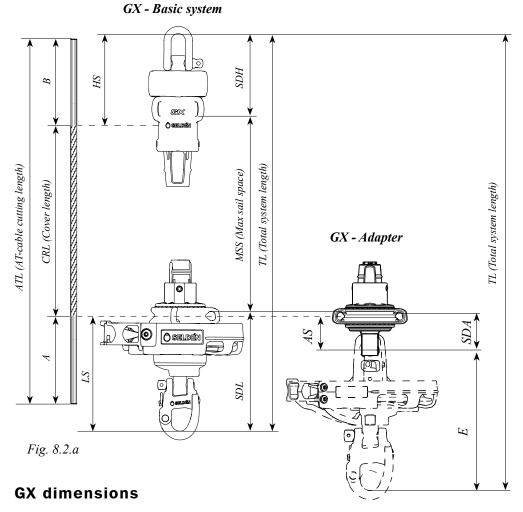
Thimbles for double luff rope

System	Part no.	Ø Hole mm	D4 mm	W2 mm	W3 mm	H2 mm
CX10/15	545-115	10.3	8	16	22	34
CX25	545-215	12.3	8	19	27	42
CX40/CX45	545-415	16.3	12	20	33	52





8.2 Seldén GX - Furling system for Gennakers/ Asymmetric spinnakers



System	Maximum (TL-SDL	sail space -SDH) ¹⁾		AT-cabl (TL-LS+		
	SDL mm	SDU mm	LS mm	HS mm	A mm	B mm
GX7.5	100	70	100	70	120	120
GX10	105	70	110	70	120	120
GX15	115	80	120	75	120	120
GX25	155	100	155	95	150	150



To calculate the length of the AT-cable, see manual 597-077-E.

Dimension for GX tack adapter in combination with CX lower swivel

System	Adapter Part no.	AS adapter deduction	E CX lower swivel deduction	SDA sail deduction adapter
GX7.5 adapter - CX10	545-028-01	30	115	35
GX10 adapter - CX15	545-128-01	30	125	35
GX15 adapter - CX25	545-228-01	40	155	40
GX25 adapter - CX45 1)	545-428-01	45	190	50

¹⁾ Same values for CX40 as for CX45.

¹⁾ System Maximum sail space includes space for lashing rope.

Notes
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