

# Manual for Furling mast ***TYPE RB Mk 4***



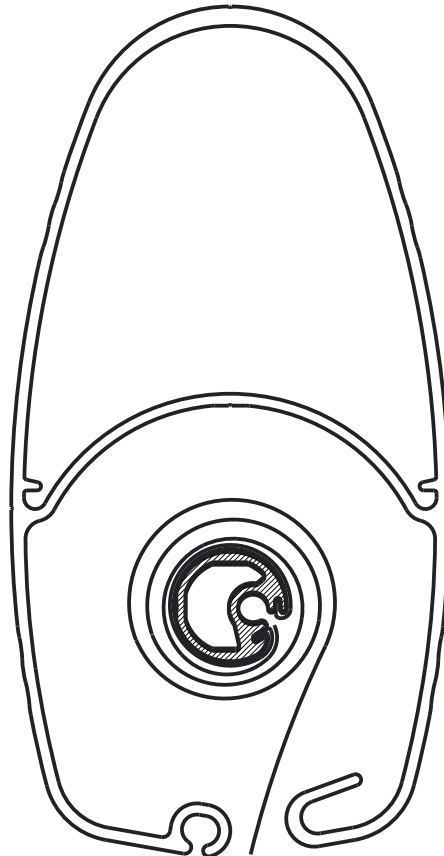
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## Product description

- Seldén furling mast allow for convenient setting and reefing of the mainsail.
- The unique design of the halyard swivel bearing distributes the load over the whole ball race to give smoother furling and the lowest possible friction, even under high loads.
- The new Mk 4 compact gear mechanism offers improved gear efficiency, allows a smaller mast cutout and is prepared for easy retro fit of electric furling drive unit.
- This Instruction Manual has been compiled to give you information on the furling mast reefing system. Study it and follow the instructions carefully, and we guarantee you pleasurable use from your Seldén furling mast.

Follow the relevant rigging instructions in our booklet "HINTS AND ADVICE" for tuning the rig.



**Fig. 2:1** Sail compartment with luff extrusion

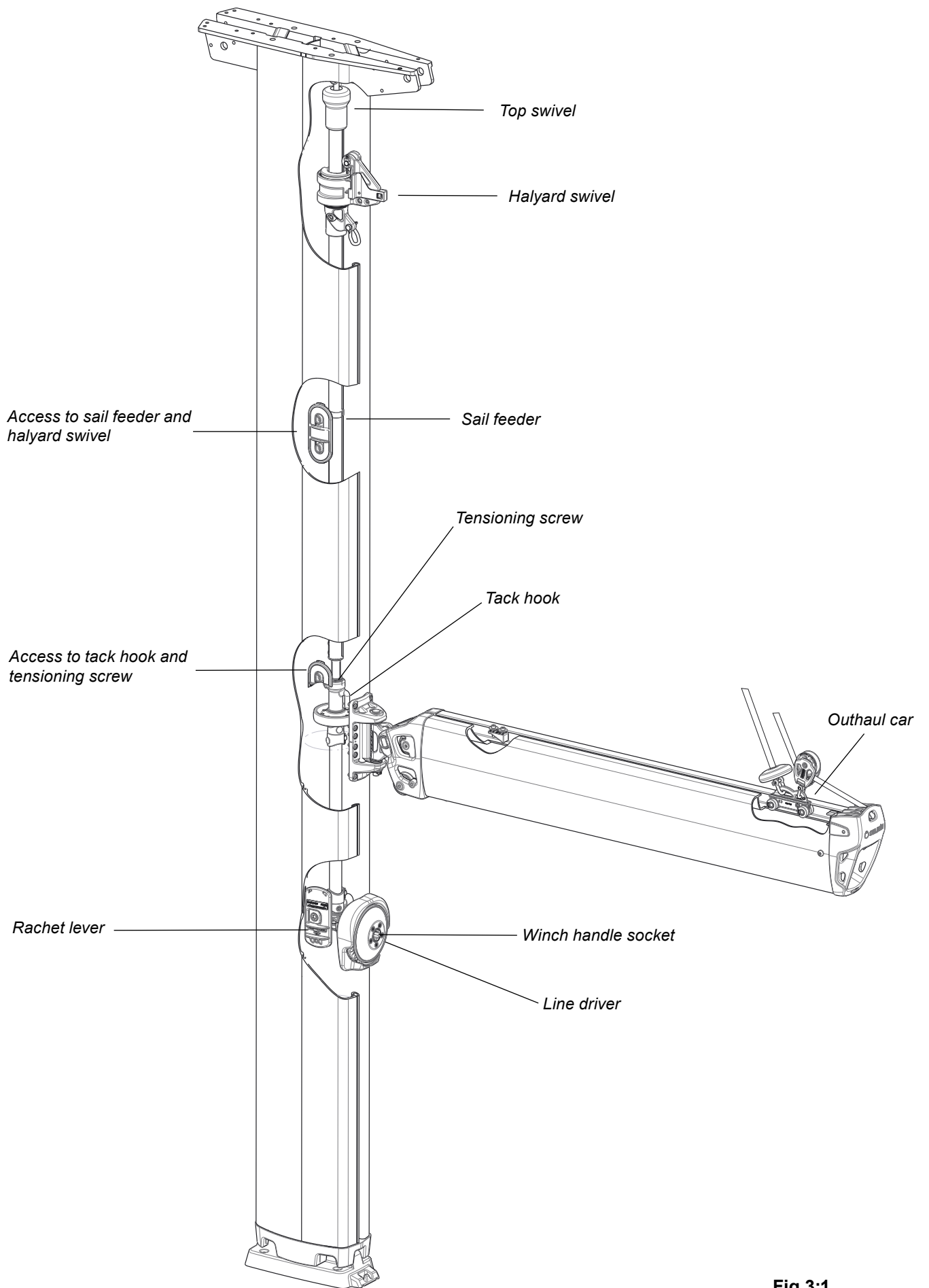


Fig 3:1

## Checking luff extrusion tension prior to stepping the mast

The luff extrusion is correctly tensioned before leaving the factory, but tension can be re-checked before stepping the mast in the following manner.

Lay the mast horizontally on the side and keep it straight. The luff extrusion should now be just clear off the mast wall at its midpoint. If adjustment is necessary see points 1-5 below.

If adjustment has to be made after the mast has been stepped, then the luff extrusion should be so tensioned that it does not beat against the mast wall when you grasp it through the upper access hole and shake it.

The luff extrusion can be tensioned also with the sail fitted if the winds are very light; Roll out the sail, lower it slightly and remove the tack from the tack hook. Hoist the sail so it does not interfere with tension screw.

Part of the extrusion will be resting on the aft face of the sail compartment when sailing.

**DO NOT OVER-TENSION!** A luff extrusion that is over-tensioned will require increased furling effort.

## Luff extrusion adjustment

### 1. Remove the access covers.

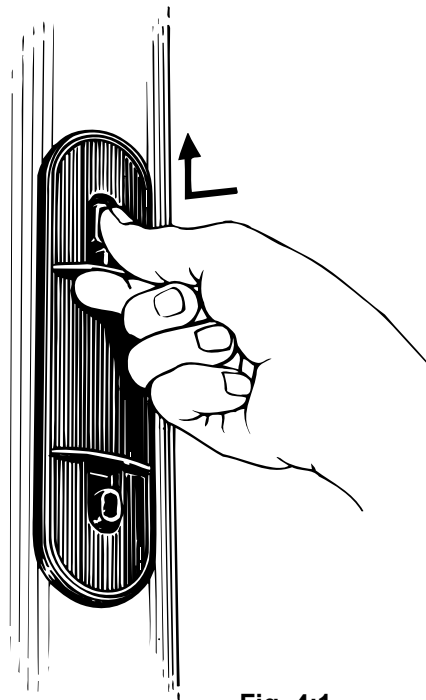


Fig. 4:1

*Depress one button and push.*

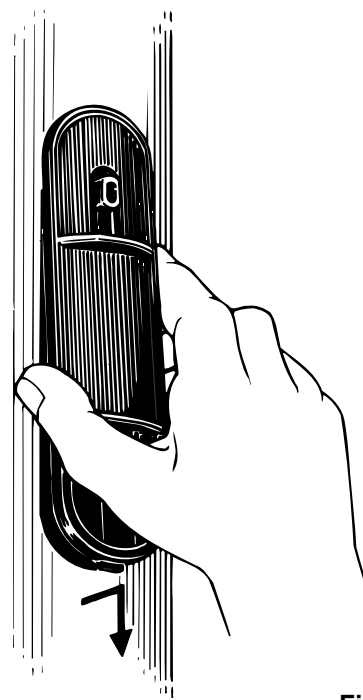
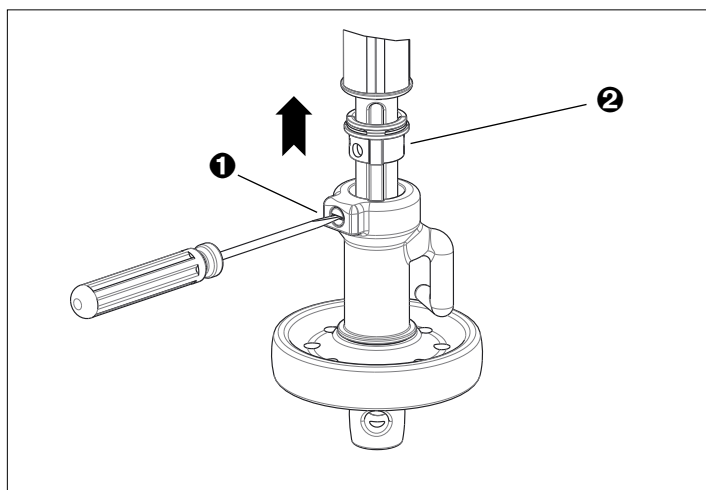


Fig. 4:2

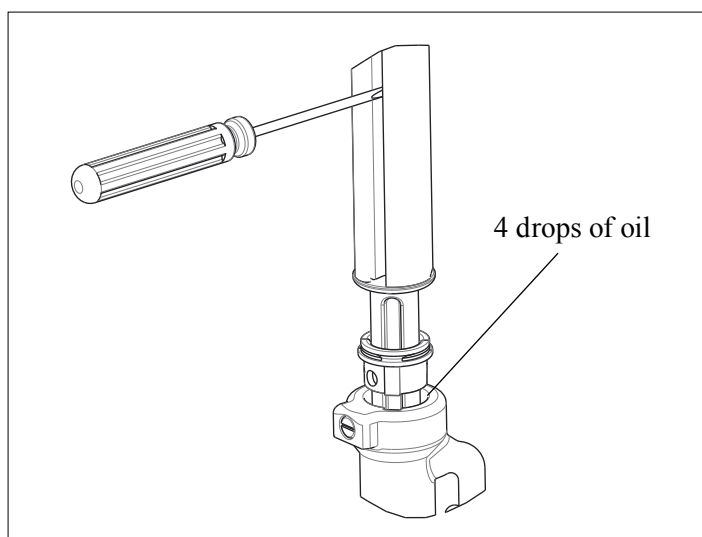
*Lift the opposite end and remove.*

## 2. Release locking ring



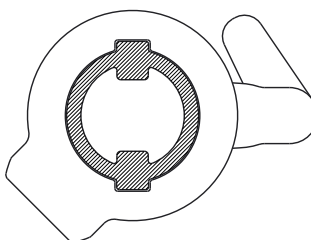
Release the locking screw ① 3 turns and lift the locking ring ②. Locking ring can be temporarily secured by a piece of tape.

## 3. Adjust luff tension



Lubricate the tension screw with rigging screw oil (art. nr 312-502). Put a screwdriver in the sail groove of the luff profile to prevent it from rotating. A piece of tape on the tip of the screwdriver prevents damage to the luff profile. Turn the reefing winch using the winch handle until the luff profile is correctly tensioned.

## 3. Engage locking ring in position and tighten locking screw



## 5. Refit access covers.

## Line routing

Furling and unfurling is accomplished with an endless reefing line and an outhaul operated either from the cockpit or at the mast. In the latter case the outhaul is also taken to the boom or mast near the gooseneck. (See Fig. 7.1).

## Endless reefing line

If the furling mast is to be operated from the cockpit an endless reefing line (loop) in combination with a self-tailing winch is recommended. Reefing line should be  $\text{\O}10$  mm polyester rope. The endless loop must have extra length to allow it to be easily removed from the winch. The tail-end of the loop must also be belayed on a stopper. On most installations, the reefing line needs to be fed through blocks and stoppers before making an endless splice according to Seldén instruction 595-673. If the blocks and stoppers are possible to dismantle, a spliced endless line can be used according to the spare part list page 15.

## Outhaul line

A self-tailing winch and a stopper is also recommended for the outhaul line.

## Layout 1

Figs. 6: suggested arrangement.

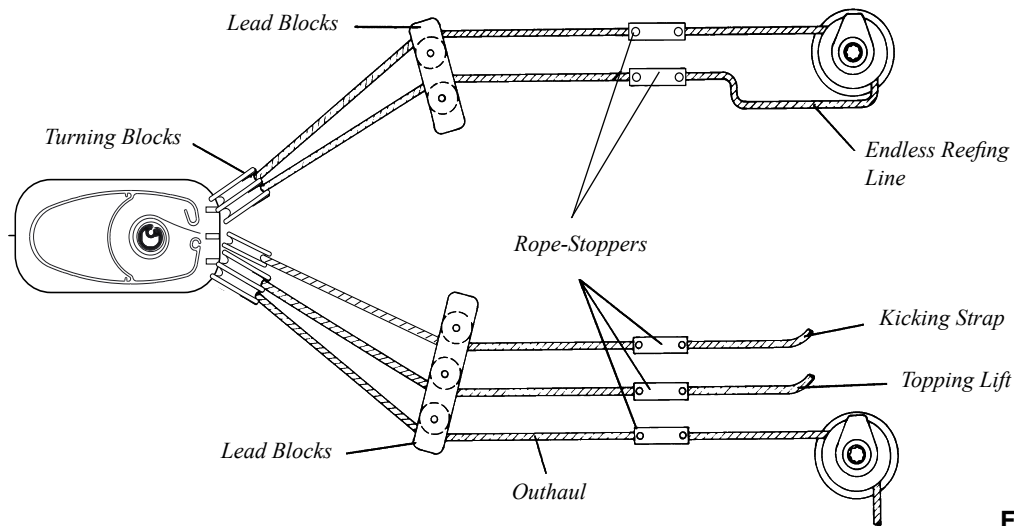


Fig 6:2

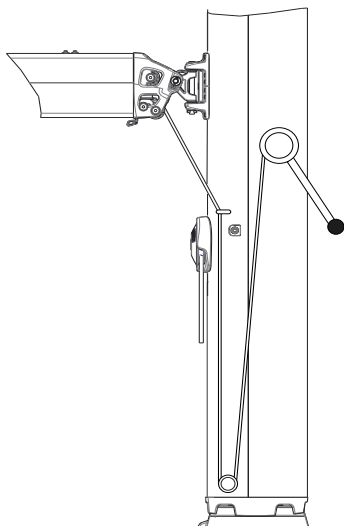


Fig. 7:1

Alternative clew outhaul arrangement.

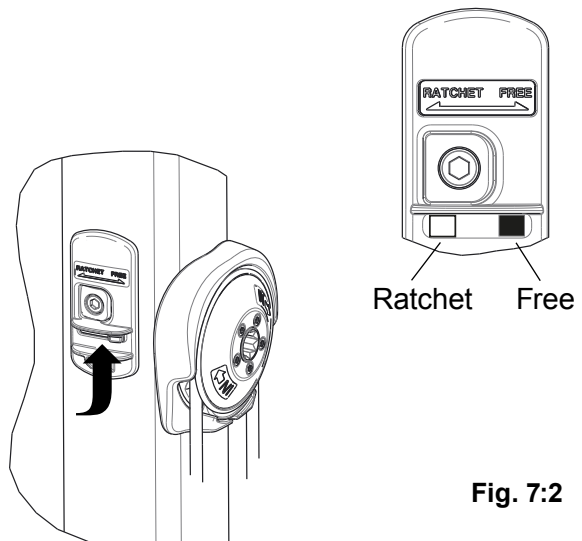


Fig. 7:2

## Operation

Furling and unfurling is accomplished either from the cockpit with an endless reefing line and an outhaul line or at the mast using a winch handle at the mast linedriver. In the latter case the outhaul is taken to the boom or mast near the gooseneck. (See Fig. 7.1).

### Unfurling

When unfurling from the cockpit the linedriver must be set to "free". (See Fig. 7:2).

1. Free both sides of the endless loop from the winch and stopper. It will then slide on the linedriver.
2. Pull out the sail with the outhaul line.

### Furling

1. The leech should be kept fairly tight when reefing or furling. Adjust the boom angle (vang or topping lift) to achieve this, and the sail will form a tight roll around the luff extrusion.
2. Locate the starboard part of the endless furling line on the winch and pull by hand, or if necessary use a winch handle.
3. Keep slight tension on the outhaul while doing this. This applies especially when the wind is abaft the beam or in light air.

### Reefing

1. Carefully slacken off the outhaul line.
2. Locate the starboard part of the endless furling line on the winch and pull by hand, or if necessary use a winch.
3. The leech should be kept fairly tight. Keep slight tension on the outhaul during the maneuver.

When operating at the mast:

Activate the lock on the linedrive (-IN') before reefing the sail. Use a winch handle to furl the sail. When the desired amount of sail is rolled in, use the outhaul to tension the foot of the sail. **Don't leave the winch handle in the linedriver!**

When operating from the cockpit:

When reefed to desired sail area, lock both parts of the endless lines in stoppers and tighten to lock the reefing winch. Finally, tension the outhaul.

### When leaving the boat.

Always lock the linedriver with the ratchet lever when leaving the boat!



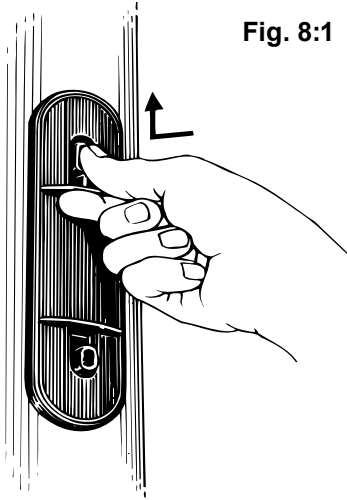
**WARNING! Never leave the winch handle in the linedriver!  
It will rotate very rapidly when the sail is unfurled.**

## Fitting and hoisting sail

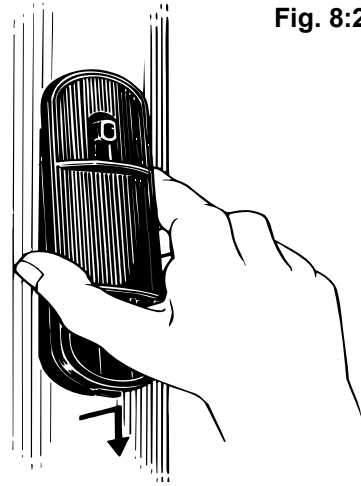
Check that the tack and head of the sail are made in accordance with Seldén instruction 595-542 “Sailmakers guide”. An incorrect design can cause wrinkles in the sail and make smooth furling difficult.

1. Remove the covers. Press one button and push. Lift the opposite end and remove. Press one button and push. Lift the opposite end and remove.

*Remove the covers.*



**Fig. 8:1**

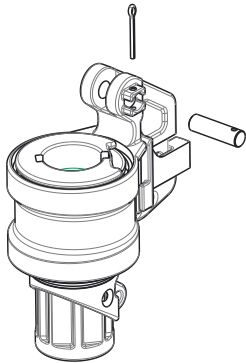


**Fig. 8:2**

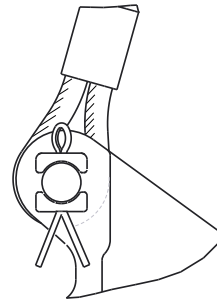
*Depress one button and push.*

*Lift the opposite end and remove.*

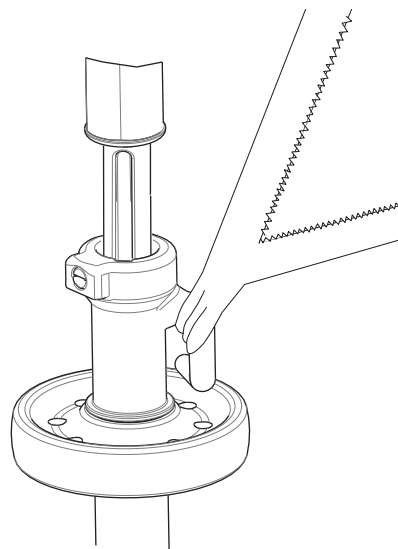
2. Attach the head of the sail to the halyard swivel.



**Fig. 8:3**



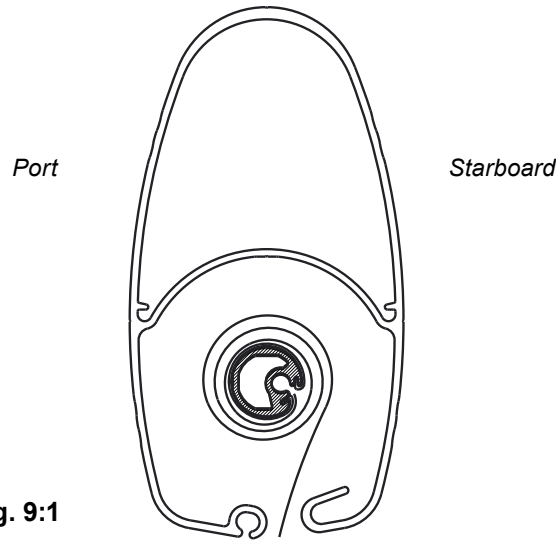
**Fig. 8:4**



**Fig. 8:5**



4. Attach the clew to the Outhaul Car.
5. Hoist the mainsail whilst simultaneously ensuring that it is feeding correctly into the luff extrusion.
6. Join the sail to the tack hook. (See fig. 8:3).
7. Tighten the halyard.
8. Furl the sail until only 200-300 mm of the clew is exposed. The linedriver should be turned clockwise. (See Fig. 9:1).



**Fig. 9:1**



**Note. For correct furling, pull on starboard part of the endless furling line for the line driver to turn clockwise.**

### **Before sailing**

1. Check that the sail is correctly furled on the STARBOARD SIDE of the luff extrusion. (See Fig. 9:1).
2. Furl and unfurl the sail a couple of times to ensure that the system works as it should, and to familiarize yourself with its operation, and also to check that the sail is correct size.
3. The area aft of the mast must be free from halyards etc. or these can be caught by the sail during the furling procedure.

### **Sail dimensions**

For up to date sail design information, please see the sailmakers guide, 595-542-E.

## Maintenance of the in-mast furling mast

### Periodic Maintenance

Maintenance should be undertaken at least once a year. All bearings should be greased with GREASE (Part No. 312-501), a tube of which is delivered with the mast. Read the following instructions and see Fig. 13: 1.

When greasing bearings and gears, do not over-grease. A thin coating of evenly applied grease is sufficient.

#### Top swivel:

The bearing has a lubrication hole ① marked "GREASE" where the grease should be injected. Access through the sail slot.

#### Halyard swivel::

Lubricate the swivel by injecting grease into the gaps ② & ③ in the ring. This is best done through the upper access hole.

#### Furling mast gear.

1. Remove the access covers and un-tension the luff - see pages 4 & 5.
2. Remove ratchet cover assembly ④.
3. Grease the bevel gears ⑤ and ball-bearing ⑥.

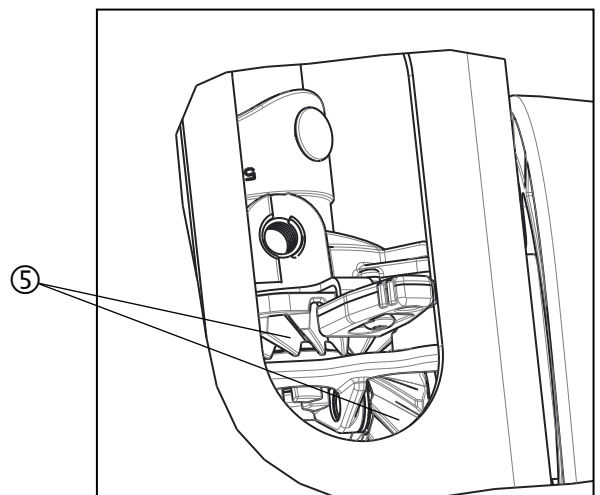
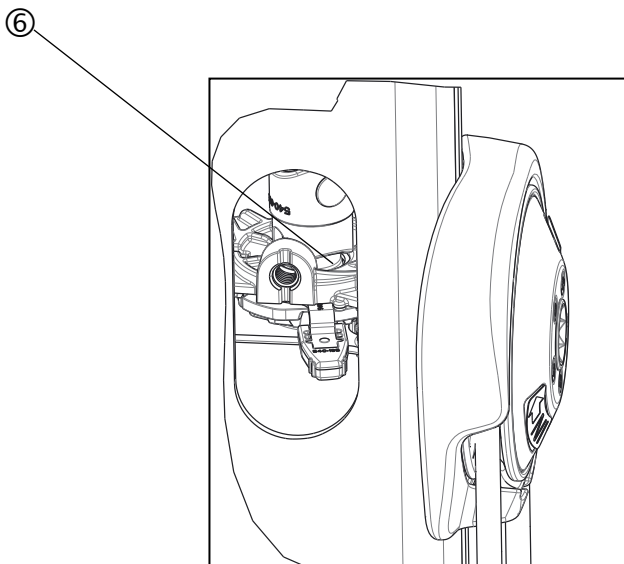
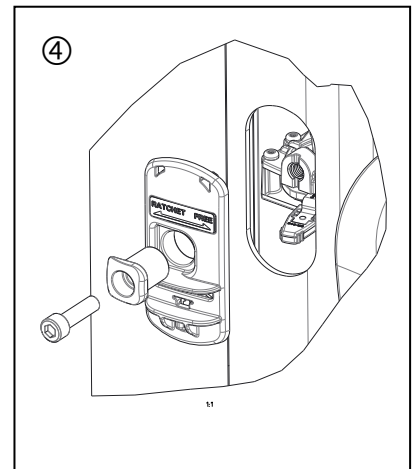
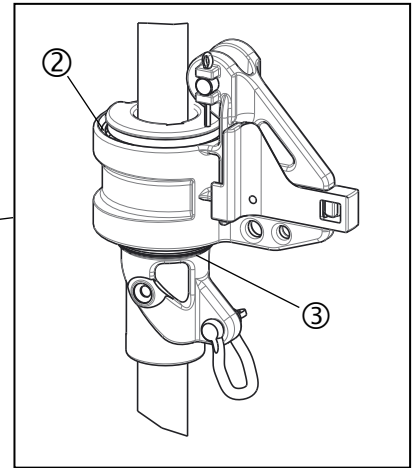
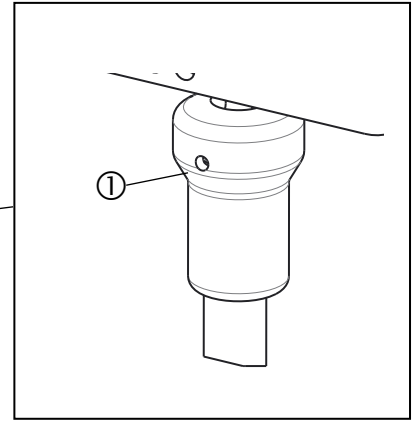
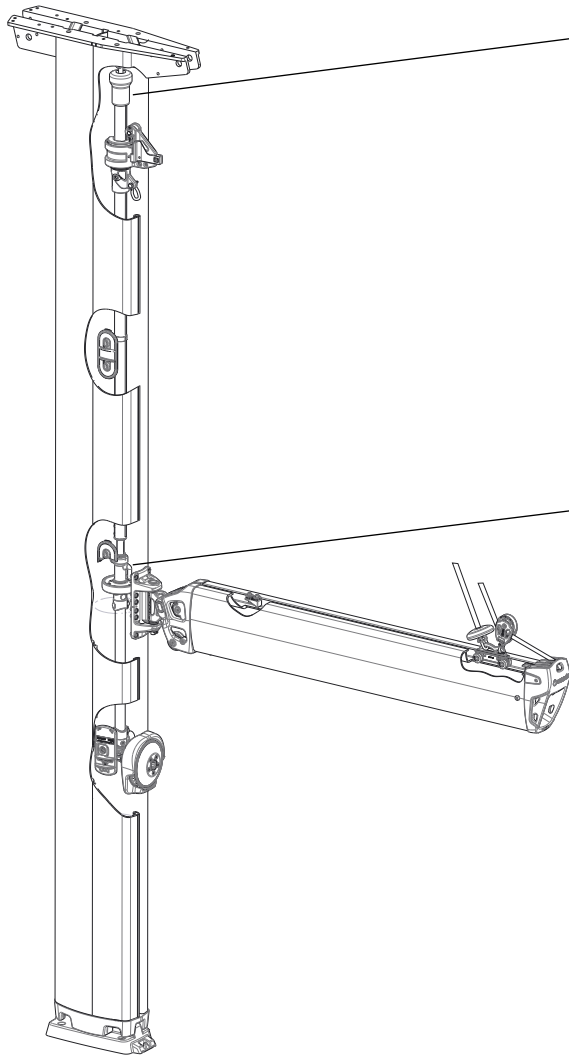
### Complete Service

It is a good idea after some years use to dismantle the gear for thorough cleaning and re-greasing. The in-mast furling mast is built so that servicing will be easy even after protracted use. Stainless steel thread inserts for all screw fastenings ensure that corrosion is eliminated.

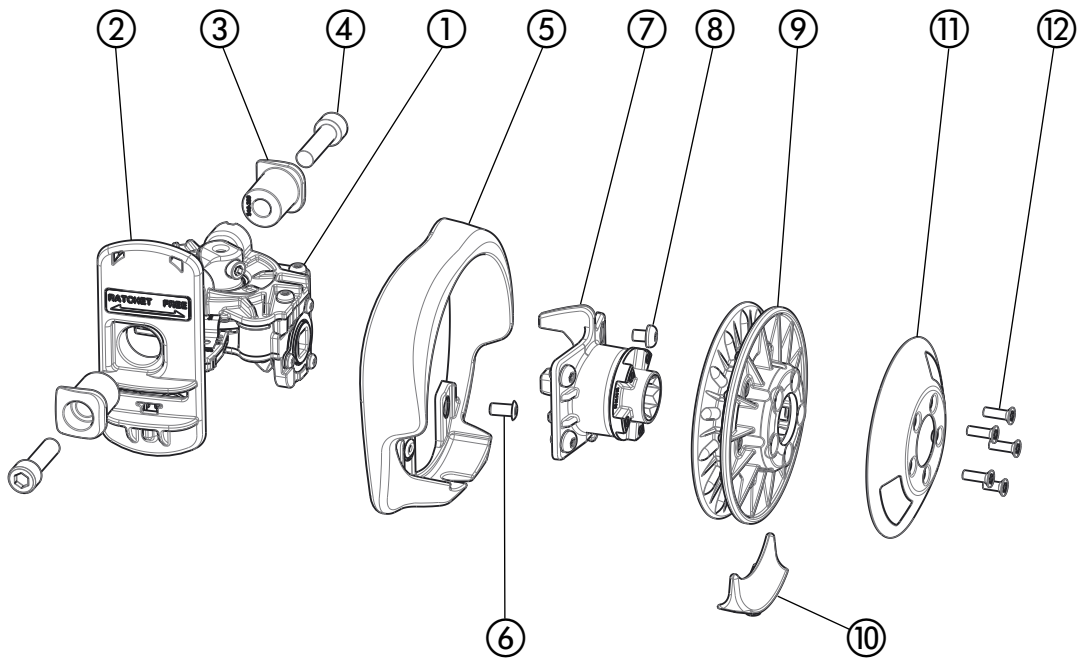
### Removal of the furling mast gear from the mast

1. Lay the mast horizontally on trestles.
2. Relieve tension on the luff extrusion by slackening the tensioning screw. (The tensioning screw is described on page 5).
3. Remove the upper plastic plug (4) Detach the Luff Extrusion from the furling Gear through the Grease Hole. The lower split pin and clevis pin (5) are removed.
4. Remove the furling gear from the mast by undoing the eight holding screws and taking it away from the mast. (The furling gear can be removed even when the mast is stepped).
5. Remove the headbox by undoing the nuts on top ⑩. The box can then be lifted off. Detach the Top Swivel from the head box.
6. The luff section and the Halyard Swivel can now be pulled out of the mast.

Fig. 13:1



## Spare parts

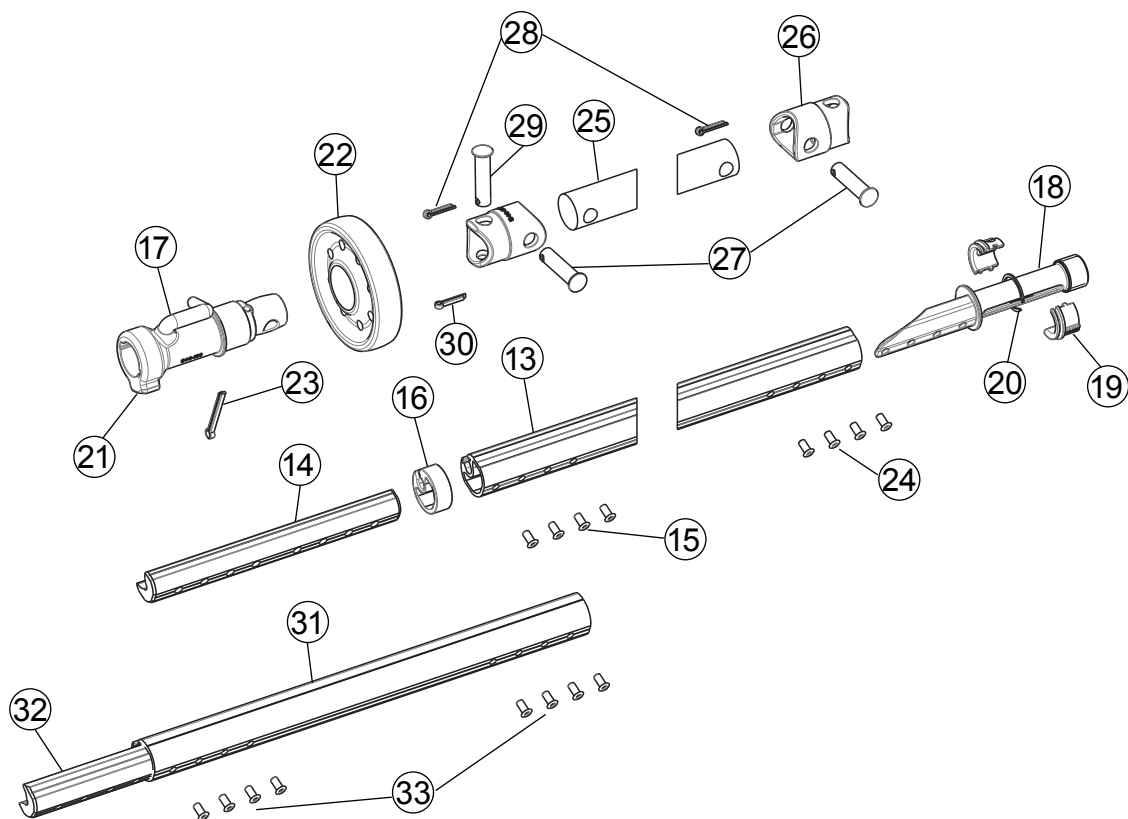


### Furling gear

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
1	Gear house assembly	-	1	540-090-01	540-090-01	540-090-01
2	Ratchet cover assembly	-	1	540-392-01	540-392-01	540-392-01
3	Flange bush	Ø23/10.5-28	2	540-388	-	-
3	Flange bush	Ø23/10.5-32	2	-	540-389	-
3	Flange bush	Ø23/10.5-36	2	-	-	540-390
4	Screw	MC6S 10x30	2	153-059	-	-
4	Screw	MC6S 10x35	2	-	153-061	-
4	Screw	MC6S 10x35	2	-	-	153-061
5	Line driver cover	142x148	1	540-089	540-089	540-089
6	Pop rivet	Ø6.4x12.7	4	167-004	167-004	167-004
7	Bearing house assy	-	1	540-087-01	540-087-01	-
7	Bearing house assy	-	1	-	-	540-087-02
8	Screw	MRT 6x8	4	155-624	155-624	155-624
9	Linedriver assembly	Ø120x33	1	540-085-01	540-085-01	540-085-01
10	Stripper	58x20	1	540-034	540-034	540-034
11	Cover	ø112x29	1	540-194	540-194	540-194
12	Screw	MFT5x12	5	162-048	162-048	162-048

### Sail feeder tube assembly

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
13	Sail feeder tube	30/29-524	1	540-381	540-381	540-381
14	Joint sleeve	L=192	1	540-167	540-167	540-167
15	Pop rivet	4.8x9.9	4	167-007	167-007	167-007
16	Sail feeder	32x12	1	540-344	540-344	540-344



### Tack assembly

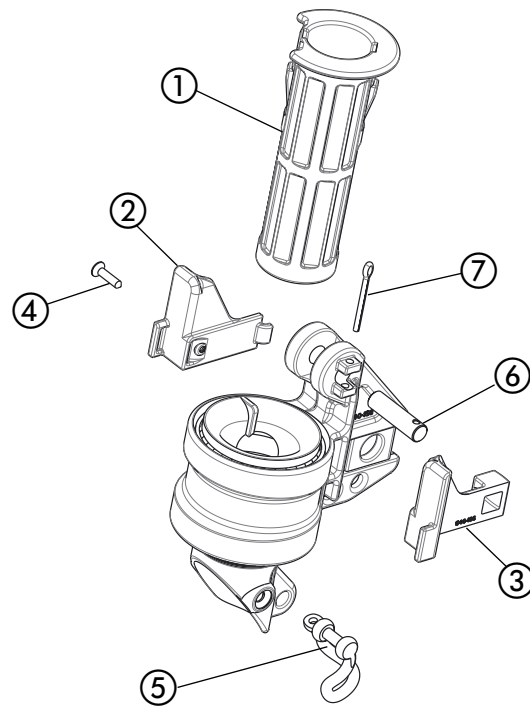
Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
17	Tack hook body	37x117	1	540-100	540-100	540-100
18	Tensioning screw	M22x165	1	540-099	540-099	540-099
19	Torque connector	30x17	2	540-098	540-098	540-098
20	Retaining ring	-	1	301-063	301-063	301-063
21	Screw	MC6S 5x6	1	155-072	155-072	155-072
22	Wheel	ø90/31-20	1	319-622	319-622	319-622
23	Split pin	3.7x40	1	301-062	301-062	301-062
24	Pop rivet	4.8x9.9	4	167-007	167-007	167-007

### Shaft assembly

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
25	Shaft	Ø25x356	1	540-399	540-399	540-399
26	Gimbal joint	Ø34/32-49	2	540-097	540-097	540-097
27	Clevis pin	Ø10x40	2	165-211	165-211	165-211
28	Split pin	2.9x16	2	301-049	301-049	301-049
29	Clevis pin	Ø10x40	1	165-211	165-211	165-211
30	Split pin	2.9x16	1	301-049	301-049	301-049

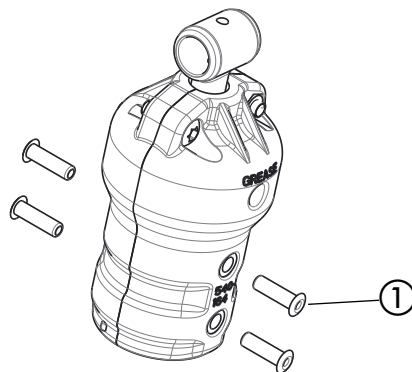
### Luff extrusion

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
31	Luff extrusion w. cover	L=7500	1	540-111-01	540-111-01	540-111-01
32	Joining sleeve	L=180	1	540-148	540-148	540-148
33	Pop rivet	4.8x9.9	8	167-007	167-007	167-007



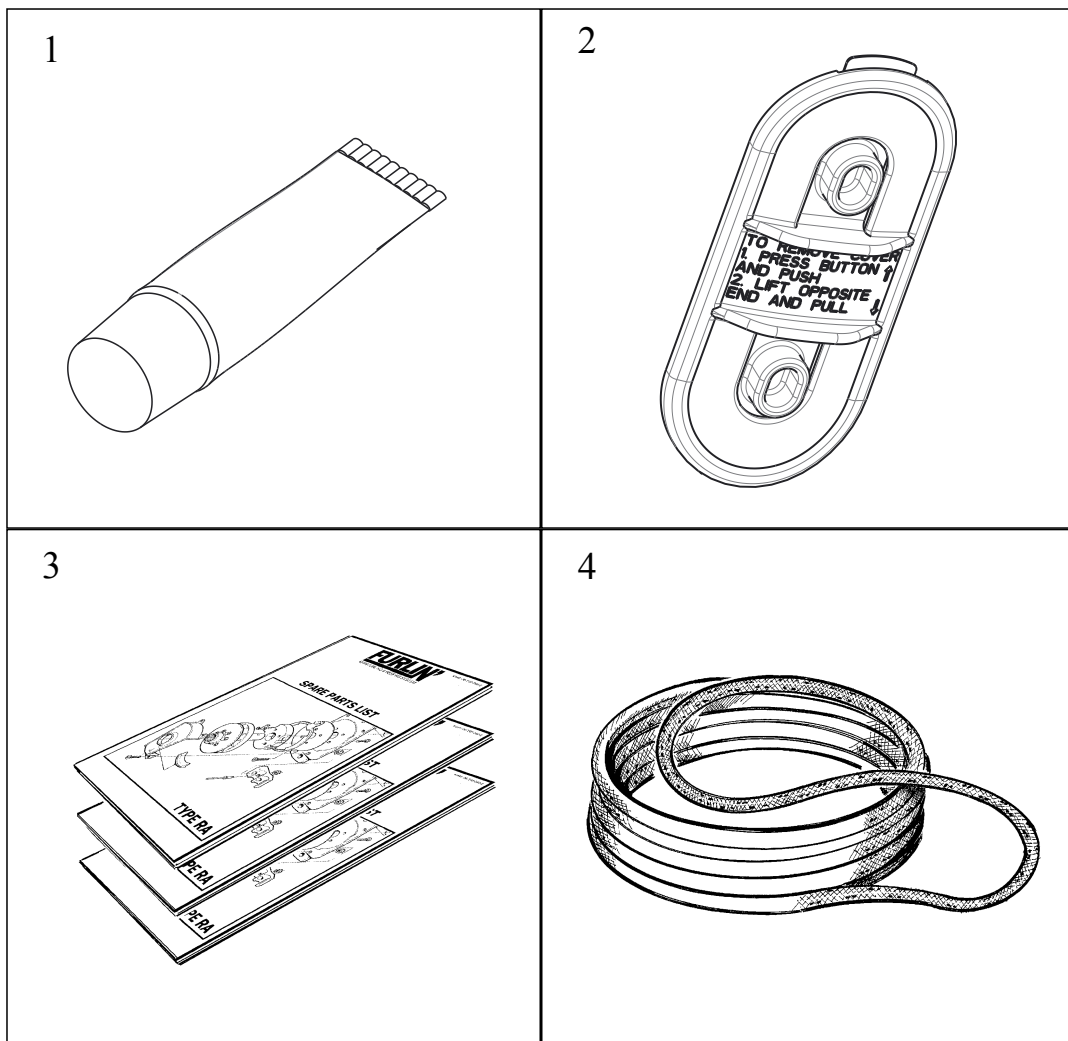
### Halyard swivel

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
Complete halyard swivel ->				540-158-01	540-158-01	540-158-01
1	Sliding sleeve	64x140	1	540-159	540-159	540-159
2	Sliding insert-stb	52x52	1	540-165	540-165	540-165
3	Sliding insert-port	52x52	1	540-166	540-166	540-166
4	Screw	3.5x9.5	1	171-047	171-047	171-047
5	Schackle	M7/13/25	1	307-023	307-023	307-023
6	Pin	ø10x37	1	166-222	166-222	166-222
7	Split pin	2.9x32	1	301-525	301-525	301-525



### Top swivel

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
Complete top swivel (pop rivets not included)->				540-164-01	540-164-01	540-164-01
1	Pop rivet	4.8x16.5	4	167-006	167-006	167-006



### Additional items

Item	Description	Dimension	Qty	Mast extrusion		
				F228	F246	F265
1	Grease	100g	1	312-501	312-501	312-501
2	Access hole cover	57x126	1	540-026	540-026	540-026
3	Manual/Spare parts list-Swedish	A4	1	595-065-S	595-065-S	595-065-S
3	Manual/Spare parts list-English	A4	1	595-065-E	595-065-E	595-065-E
3	Manual/Spare parts list-German	A4	A4	595-065-T	595-065-T	595-065-T
4	Endless line Ø10	2x5000	1	611-011-05	-	-
4	Endless line Ø10	2x7000	1	-	611-011-06	-
4	Endless line Ø10	2x9000	1	-	-	611-011-07

# DINGHIESKEELBOATSYACHTS

*Seldén Mast AB, Sweden  
Tel +46 (0)31 69 69 00  
Fax +46 (0)31 29 71 37  
e-mail [info@seldenmast.com](mailto:info@seldenmast.com)*

*Seldén Mast Limited, UK  
Tel +44 (0) 1329 504000  
Fax +44 (0) 1329 504049  
e-mail [info@seldenmast.co.uk](mailto:info@seldenmast.co.uk)*

*Seldén Mast Inc., USA  
Tel +1 843-760-6278  
Fax +1 843-760-1220  
e-mail [info@seldenus.com](mailto:info@seldenus.com)*

*Seldén Mast A/S, DK  
Tel +45 39 18 44 00  
Fax +45 39 27 17 00  
e-mail [info@seldenmast.dk](mailto:info@seldenmast.dk)*

*Seldén Mid Europe B.V., NL  
Tel +31 (0) 111-698 120  
Fax +31 (0) 111-698 130  
e-mail [info@seldenmast.nl](mailto:info@seldenmast.nl)*

*Seldén Mast SAS, FR  
Tel +33 (0) 251 362 110  
Fax +33 (0) 251 362 185  
e-mail [info@seldenmast.fr](mailto:info@seldenmast.fr)*

*[www.seldenmast.com](http://www.seldenmast.com)*

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