

2023

CATALOGUE



INNOVATIVE FURLING SOLUTIONS

facnor[®]
FURLING SYSTEMS

Photo © J. Sintzy

 **DAME**

SPECIAL MENTION 2022

Deck equipment, sails and rigging

FX 

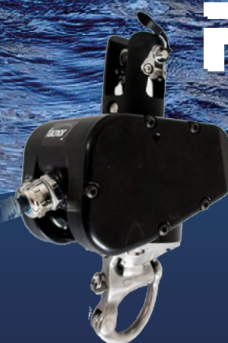
NEW :
FXe Electric
Code sail Furler

facnor

4  ans
d'innovation

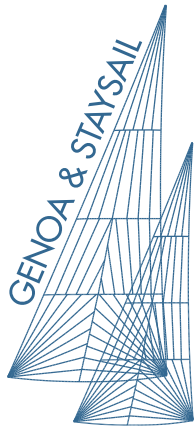


Snatch blocks



 **Wichard**
since 1919

S U M M A R Y



NEW!

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NEW!



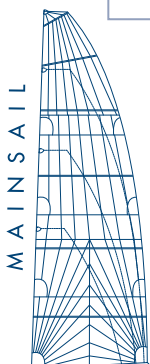
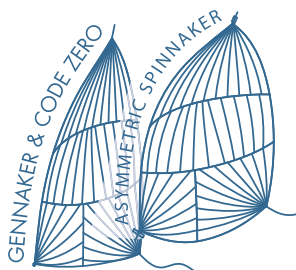
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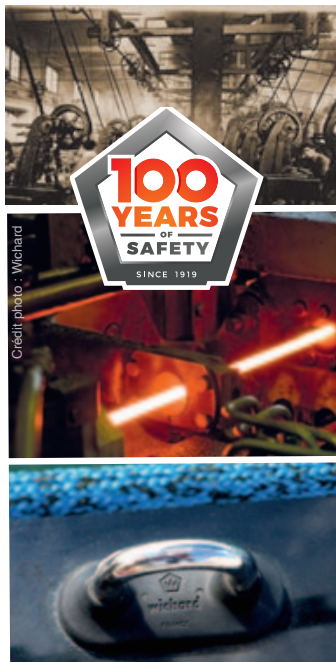
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NEW!



Credito photo : Wichard



WICHARD, RELIABLE SINCE 1919

■ **Wichard** is a manufacturer of high quality equipment and has become a world leader in the marine hardware industry by both internal R&D development and through the acquisition of other manufacturing capabilities.

■ Wichard's established position makes us a reliable partner for shipyards, naval architects, boat managers and dealers.

■ The Brands of the Wichard Groupe:

- **Wichard** : Forged Marine Hardware
- **Profurl** : Furling systems
- **Sparcraft** : Carbon & Aluminium masts
- **Lorima** : Carbon masts
- **Maillard** : CNC & plastic injection
- **Péguet** : Quick links



Credito photo : Sam CADE

WICHARD GROUP KEY FIGURES

■ **Wichard Group** : a network of 1000 points of sales in France, 100 distributors, over 200 industrial customers.

■ **350 employees**

■ **9 production sites** : two in Saint Vaast-la-Hougue, one in Thiers, Périgny, Saint Malo, Lorient, Annemasse, Angers (France) Charlotte (NC, USA).

■ **Export shares** : approximately 60% for Wichard, 50% for Facnor.

■ **Thousands of items available for masts** (aluminium & carbon), hardware, rigging, booms, outhauls, Spinnaker poles, furling systems, locks, mainsail cars and tracks,....



40 YEARS OF INNOVATION FOR FACNOR



"Facnor celebrated its 40th anniversary last July in the presence of distributors, skippers, suppliers,

shipyard managers, Wichard Group colleagues and Facnor employees. And of course his founder in 1981, Jean-Michel Desprès. Before an evening party at the Cité de la mer museum the participants were able to discover the factory, share product assembly experience and enjoy Cherbourg navigation area on board of a Class40', an IMOCA 60' and a

Dehler 46' with in-pre-view tests of our new innovation : the FXE Electric Code Sail furler . This complicity and closeness that we have with our interlocutors is a driving force in

our innovation drive: to be ever closer to the needs of the end customer. We want to perpetuate this

spirit and work - within the Wichard Group. To always surprise our customers ... Hope you enjoy our approach!



40 years of innovation



Dominique Yon, Manager of Facnor



Crédit photo : Antoine Soubigou

- A long experience in marine industry **since 1981**
- An engineering team qualified in metallurgy as well as composite materials
- A synergy of means in computerised design
- Human resources based on skills and dynamism
- Products tested in extreme conditions by experienced ocean skippers

PRODUCTION : PERFORMANCE, QUALITY AND GROUP SYNERGY

- Anodizing baths among the longest in the world (Sparcraft America) and Europe (Sparcraft);
- CNC and traditional machining (France)
- Wide production capacity & Group synergy : complementary production means in plastic processing (Maillard, France), hot forging (Wichard - France) and carbon (Lorima - France)
- Endurance and resistance testing units through validation process systematically performed by our R&D Department



CUSTOMER SERVICE : FROM SALES TEAM TO DEALER NETWORK

- **Customer support agents within 35 countries**
- **Responsive sales team**
- Industrial means and experience in **efficient logistics**
- **Authorized Economic Operator** : Facnor is recognized as AEO, a partnership programme between the customs authority and the economic operators in Europe, a sign of reliability



THEY SPOKE ABOUT US... (DISTRIBUTOR)



■ "Facnor is one of our main suppliers and we have had a close and very good relationship since 2002, and also with Sparcraft (masts and rigging). When we need help, in every cases, they are here and we like to work together."

Carsten Burfeind, German distributor (Hahnfeld Masten)

■ "With Sparcraft, (mast & standing rigging), we can offer a complete product for my customers. With

Wichard Group, it's a strong company. And I believe that this would help for product development be even better in the future". **Didrick Godaker, Norwegian Distributor (Southern Cross Spar)**

■ "I have been working with Facnor since 1988, thanks to the efficient team behind it. And every year Facnor comes out with new products, such as the electric furler. They are always at the forefront of innovation." **Gilles L'Heveder, Spanish Distributor / Eromar**

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40 years
of innovation



> Video History



CUSTOM PROJECTS

The custom projects for ocean cruising or racing maxi-yachts require high tech means: computerised design, knowledge in hightech materials, and a constant updated data-base. Our team offers a good response, an efficient shipping management as well as an innovative spirit and capacity.

RACES : RELIABILITY AND INNOVATION

From its experience in ocean racing equipment, Facnor has shown its success in numerous races and circumnavigations. Such prestigious victories come from a willingness to take up the challenge.

Vendée Globe : four victories

- **60' Imoca** : four victories in the Vendée Globe and many boats equipped
- **Ultims** : Sodebo Ultim and Sodebo Ultim'3, Maxi Banque Populaire IX and XI
- **Multihull & Orma** : Banque Pop, Géant, Groupama, ..
- **Maxis** : Mari-Cha 140' and Wally cento
- **Multi One Design 70'** : all units equipped
- **Class 40'** : many boats equipped.



© Photo Groupe Apicil

Our partnerships with high level skippers are set up on long-term basis. We have successfully gained the trust of our customers thanks to our responsiveness as well as our capacity in innovating and supplying constant high production.



THEY SPOKE ABOUT US (TECHNICAL PARTNER)



"That's quite natural that I approached facnor for my last participation in the Vendée Globe because I was looking for equipment with extreme reliability, with simplified use. And above all, we were able to change small things together on hardwa-

re in order to make my life on board a little easier (...)

And so things went very well with the whole Facnor team and today I'm delighted with this partnership which continues until the next Vendée Globe.

Damien Seguin / IMOCA 60' Groupe Apicil

facnor 40 years of innovation

MAXI-YACHT EXCELLENCE



Facnor & the Maxi-yachts : Furlers of "Haute couture"

From its own experience gained in ocean races, Facnor has been offering Maxi yacht skippers to supply tailor made equipment. The high requiring projects must be carefully carried out: "Furlers of haute couture for high rank cruising". Facnor is nowadays **well-known for its reliable and sturdy products**. This led it to participate in some outstanding architectural projects.

From maxi-yachts to cruising yachts :

Facnor has built a solid reputation of reliability and expertise within the elite circles of the maxi yachts as well as Ocean racers. In partnership with high experienced sailing teams, Facnor has innovated and improved performance and strength of its products.



THEY SPOKE ABOUT US (PARTNER COMPANY)



super yachts, we have been always impressed by professionalism and quality that Facnor brings any projects

Miles Amin / Rigging Projects

"Since the early days of Rigging Project , with the Orma. 60' et Open 60' classes, right through the

facnor

40 years
of innovation

> We carry out the follow-up of the supplied custom equipment – ocean racing and maxi-yachts

> The most requiring teams entrust the servicing of their tailor-made gears to us: structural furlers, Code sail furlers, locks, special hardware,...

> Complete inspection and replacement of worn parts

> Control of structural parts if necessary by radiography

Many projects :

Baltic 147' Visione,
Baltic 197' Hetairos,
Briand 108' Inoui,
Class J 121' Shamrock V,
Class J 131' Velsheda,
CNB 76'
Finot Conq 100' Nomad IV,
Gun Boat 55', 60', 62',
66', 90'
Maxi 147' Mari-Cha III,
Maxi 140' Mari-Cha IV,
Maxi 142' Sarissa & Mystere,
Maxi Open 115'
Maiden Hong Kong,
Maxi 85' Winquest,
Perinavi 197', Perseus 3
Sarissa 142' Bill Trip design
Schooner 152' Windrose,
Schooner 203' Athos,

Superyacht 156' Hyperion,
Swan 80, 82, 100, 112,
VPLP 142' Hemisphere,
Wally 80' and 82'
Wally 94' Y3K,
Wally 96' Magic Carpet 2,
Wally 100' Magic Carpet 3,
Wally 100' Dark Shadow,
Wally 100' Alexia,
Wally 107' Kenora & Nariida

Custom product pages:

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INVOLVED IN LONG-TERM PARTNERSHIPS

Facnor has been supported, throughout its development, by various long term, sport and solidarity projects where sharing experiences and challenges have helped track its course.

TECHNICAL AND SPORT PARTNERSHIPS

©BERNARD LE BARS



Since 1993 Facnor has been involved in racing with some skippers, like the French skipper, Halvard Mabire : First, on his 60', then on the Whitbread around the world race, on Class 40' and again with Miranda Merron in Imoca 60' Class. As experienced ocean sailors and reliable technical consultants, they both trust Facnor products.

Facnor is also technical partner of :

- Louis Duc, Imoca **Fives – Lantana Environnement**
- Damien Seguin, Imoca **APICIL**
- Jonas Gerckens, Class 40 **Volvo**
- Luke Berry, Class 40' **Lamotte Module Création.**
- This cooperation is also a fruitful feedback of knowledge transfer.

Their web sites : www.mabiremerron.com
<https://www.facebook.com/louisduc.imoca>

www.lukeberry-sailing.com
<https://www.sailing-jonas.com>

THEY SPOKE ABOUT US (TECHNICAL PARTNER)



" After 2015 with my former Class40', where we used a Facnor Gennaker furler. We wanted to develop products like the 2T hooks on the new Class40'. And when we bring a few small ideas, the team is always ready

to develop these pieces with us. It's just awesome. I then restarted a new project with an old IMOCA. After our dismasting, Facnor was still present and offered to help us. And now I still have lots of little ideas with them for the Vendée Globe (2024)"

Louis Duc IMOCA 60' Fives - Lantana Environnement

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40 years
of innovation

PARTNER OF HUMANITARIAN PROJECTS

In a socially responsible approach, Facnor supports humanitarian projects undertaken by modest sailors ready to sail miles away sometimes in difficult seas for noble reasons. Among other involvements, Facnor has become partner of some charity or humanitarian associations on board of :



- Etela Lab (sailing & Disability)
- Barba (Arctic Island expedition)
- Emeraude Solidaire (catamaran Norma 60' Ephata)
- Cap Handi (40.7 / C. Souchaud)
- Cherbourg Sailing School

Their web sites :

<https://www.estrellalab.com>

<https://www.voile-australe.com>

<https://barba.no>

<https://emeraudevoilesolidaire.org>

<https://www.caphandi.org>

<http://ecole-voile-cherbourg.com>



Photo Credit : Voile-Australe



© Barba.no

ZOOM ON ESTRELLA LAB

Small Floating Laboratory of Humanities that do good to wear the colors of inclusion across the oceans. Welcome on board! 🇫🇷 🇪🇺 🇬🇧
Support them : www.estrellalab.com

HEADSAIL FURLING & REEFING SYSTEMS MANUAL & MOTORIZED

GENOA & STAYSAIL



Photo : © Performance Classic Yacht

Your furling system for your navigation program...
Each sailor will be able to find the Facnor furling gear suitable for his/her navigation: classic drum (LS/RX), webbing drum (FD), electrical motorized drum (EC & EF+), or hydraulic motorized drum (HF).

MANUAL

LS/RX CLASSIC DRUM

P8

FD WEBBING DRUM *

P12

EC & EF+ ELECTRIC MOTORIZATION

P16

HF HYDRAULIC MOTORIZATION

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RECOMMENDATIONS & ACCESSORIES

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SECTIONS

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MOTORIZED

CLASSIC DRUM FURLING & REEFING SYSTEMS

Already widely tested round the world, the LS-RX ranges have resistant sections and connectors and are fitted with bearings running in grease.



© Arthur Smeets - KM Yachtbuilders

RELIABILITY OF THE MECHANISMS

LS-RX

- No maintenance bearings
- Rotating tack fitting and sail feeder (RX)
- Large range and widely tested around the world
- Strong connectors & sections
- Easy installation (thanks to the telescopic section)
- 360° adjustable furling line
- Option : in-deck version (IDLS)

Sail feeder

S/s body = RX foil sections
Aluminium = SX foil sections
(see P23)



DRUM & SWIVEL

Bearing box

(Steel bearings running in grease)

Smooth rotation

This bearing box takes the axial loads (halyard tension) and lateral loads (outhaul tension)

Anodization

(30 microns) protects parts against impacts and abrasion

IN-DECK VERSION

IDLS

Underdeck furling system
smart & maximum luff



IDLS

Halyard deflector wheel

(see page 22)

High load Swivel

(waterproof)

Strong sections and connections

Torx® screws for an easy fitting and further dismantling (see p.24)



Bottom telescopic section

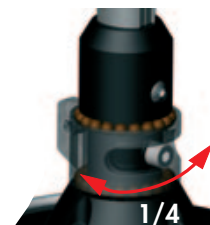
enables to adjust foil section length, no cutting

Internal turnbuckle fitting

provides space inside for the turnbuckle
(see page 10)

Rotating tack fitting (RX)

Fitted with Torlon® balls : this system takes up automatically the sail fullness when furling.



1/4

Synthetic insulation

to prevent electrolysis

360° adjustable furling line

For an optimal running of the furling line



360°





	Ranges	
Features	L S	R X
Removable drum		■
Classic drum	■	
Aluminium feeder	■	R34
Stainless steel feeder		■
Rotating tack fitting		■
Fixed tack fitting	■	
Round sections	■	
Elliptical sections		■

You will find within the two ranges of headsail furling and reefing systems (LS-RX), the Facnor product adapted to your needs either cruising, ocean navigation or racing.

“CRUISING” RANGE LS

LS cruising programm: widely tested range with rounded sections, classic drum, aluminium feeder and fixed tack fitting.

Model	LS 60	LS 70	LS 100	LS 130	LS 165	LS180	LS 200	LS290	LS330
Boat length (meters & feet)	5,5 ↓ 7 m	6,5 ↓ 8 m	7,5 ↓ 9 m	8 ↓ 11 m	9 ↓ 12 m	10 ↓ 13 m	11,5 ↓ 14 m	13 ↓ 18 m	15 ↓ 28 m
	20' ↓ 23'	21' ↓ 28'	24' ↓ 29'	26' ↓ 36'	29' ↓ 40'	40' ↓ 43'	38' ↓ 45'	43' ↓ 60'	50' ↓ 90'
	5	5	6	6-7*	8-10*	8-10*	10-12*	12-14*	14-22*
max. forestay ø (mm & inch)	5/32"	5/32"	1/4"	1/4" 9/32" *	5/16" 3/8" *	5/16" 3/8" *	3/8" 1/2" *	1/2" 9/16" *	9/16" 3/4" *
Section	SX 25	SX 25	SX 33	SX 33	SX 39	SX 39	SX 47	SX 47	SX 53
Weight (g/m)	577	577	658	658	914	914	1095	1095	1413
Halyard swivel	C 25	C 25	C 33	C 33	C 39	C 39	C 47	C 47	C 600
Options	link plates / turnbuckle								

*necessary to have removable eye or turnbuckle



Removable drum : system used as a simple head foil

Just a few minutes are needed to change the furling system into a twin groove head foil ready for racing.

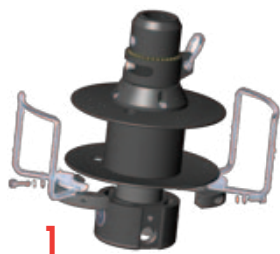
«RACING» RX RANGE- REMOVABLE DRUM

RX racing/cruising programm: The aerodynamic sections, the rotating tack fitting and the removable drum plates make the RXs well adapted for racing.



Model	RX 70	RX 100	RX 130	RX 165	RX 220	RX260	RX300
Boat length (meters & feet)	6,5 ↓ 8 m	7,5 ↓ 8,5 m	8 ↓ 9,5 m	9 ↓ 11,5 m	10 ↓ 12,5 m	11,5 ↓ 15 m	13 ↓ 18 m
	21' ↓ 24'	24' ↓ 29'	28' ↓ 30'	29' ↓ 37'	32' ↓ 42'	37' ↓ 49'	42' ↓ 60'
	5	6	6 or 7	8	8 or 10	10	12,7
max. forestay ø (mm & inch)	5/32"	1/4"	1/4" or 9/32"	5/16"	5/16" or 3/8"	3/8"	1/2"
	Necessary to have removable eye or turnbuckle						
Section:	R 14	R 14	R 14	R 24	R 26	R 26	R 34
Weight (g / m)	451	451	451	555	641	641	991
Halyard swivel	C 14	C 14	C 14	C 24	C 26	C 26	C 34
Options	link plates / turnbuckle						

1. Unscrew and remove the furling line guide



2.Remove the half plates



3.Fit the two half protection rings

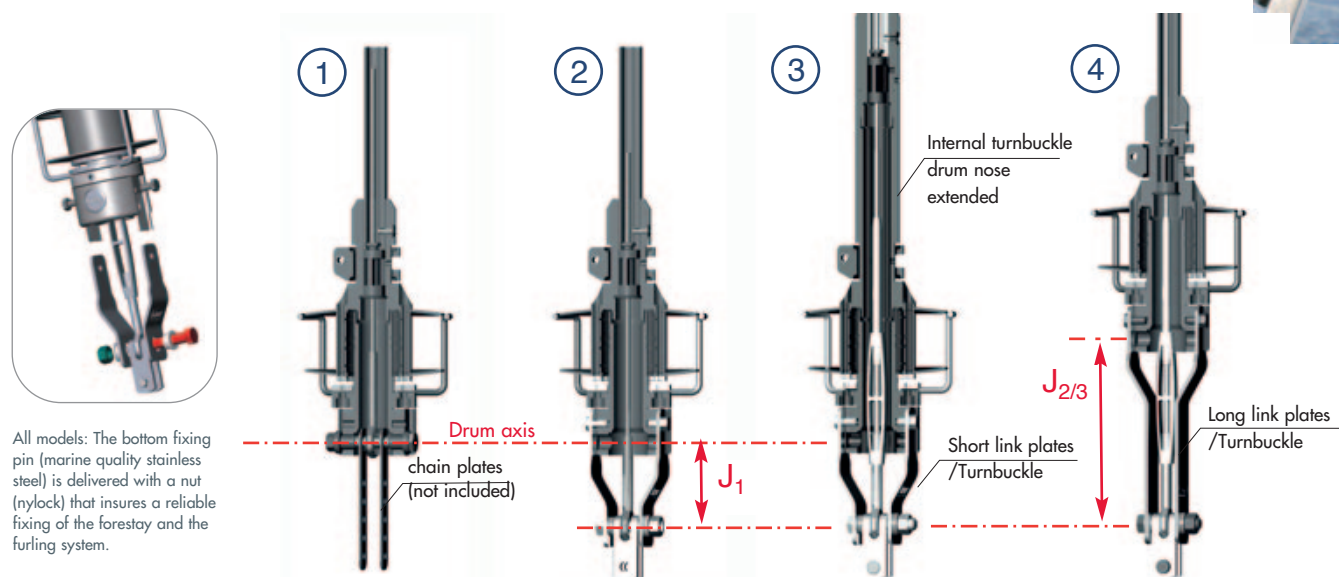


4. Once the half plates are removed, a racing Genoa can be hoisted using the twin groove head foil



4 POSSIBLE TYPES OF INSTALLATION

The drum fixation depends on the bottom forestay terminal fitted on your boat :



Bottom forestay terminal	Eye + chain plates	Eye + jaw toggle	Turnbuckle + double jaw toggle	Turnbuckle + double jaw toggle
Type of installation	① Standard	② with short link plates Option	③ with internal turnbuckle & short link plates Option	④ with long link plates Option

LINK PLATE KITS & INTERNAL TURNBUCKLE FITTINGS

Short link plates option pict ② ③: bent stainless steel plate 4 or 5 mm thick. Pin to pin = 100 ou 150 mm

Long link plates option pict ④: bent stainless steel plate 4 or 5 or 6 mm thick. Pin to pin = 200 ou 250 mm

Extra-long link plates option (only for biggest models): bent stainless steel plate 6 mm thick. Pin to pin = 350 mm.

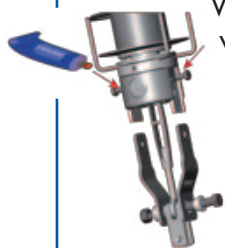
Plates Option	LS 60	LS 70	LS 100	LS 130	LS 165	LS180	LS 200	LS290	LS330
	-	RX 70	RX 100	RX 130	RX 165	RX 220	RX260	RX300	-
Short link plates option - Pin to pin β Thickness (mm) + Height J1 / Standard (mm)	lgth 100 thk 4 + 82				lgth 150 thk 4 + 128		lgth 150 thk 5 + 126		
Long link plates option - Pin to pin β Thickness (mm) + Height J 2-3 / Standard (mm)	lgth 200 thk 4 + 182				lgth 250 thk 5 + 228		lgth 250 thk 6 + 226		
Extra-long link plates - Pin to pin β Thickness (mm) + Height J 2-3 / Standard (mm)	-	-	-	-	-	-	lgth 350 thk 6 + 326		

Internal turnbuckle option fig. ④: With the internal turnbuckle fitting, the turnbuckle can be positioned inside the drum and be easily adjusted. 5 models available

Internal turnbuckle option	LS 60	LS 70	LS 100	LS 130	LS 165	LS180	LS 200	LS290	LS330
LS & LX Internal turnbuckle fitting ø inner dimension & lgth (mm)	ø 28 lgth 256	ø 34 lgth 279		ø 42 lgth 315		ø 50 lgth 432		ø 64 lgth 546	
RX Internal turnbuckle fitting ø inner dimension & lgth (mm)	-	RX 70	RX 100	RX 130	RX 165	RX 220	RX260	RX300	-
		ø 28 lgth 256		ø 34 lgth 279		ø 42 lgth 315		ø 50 lgth 432	



Greasing screws :



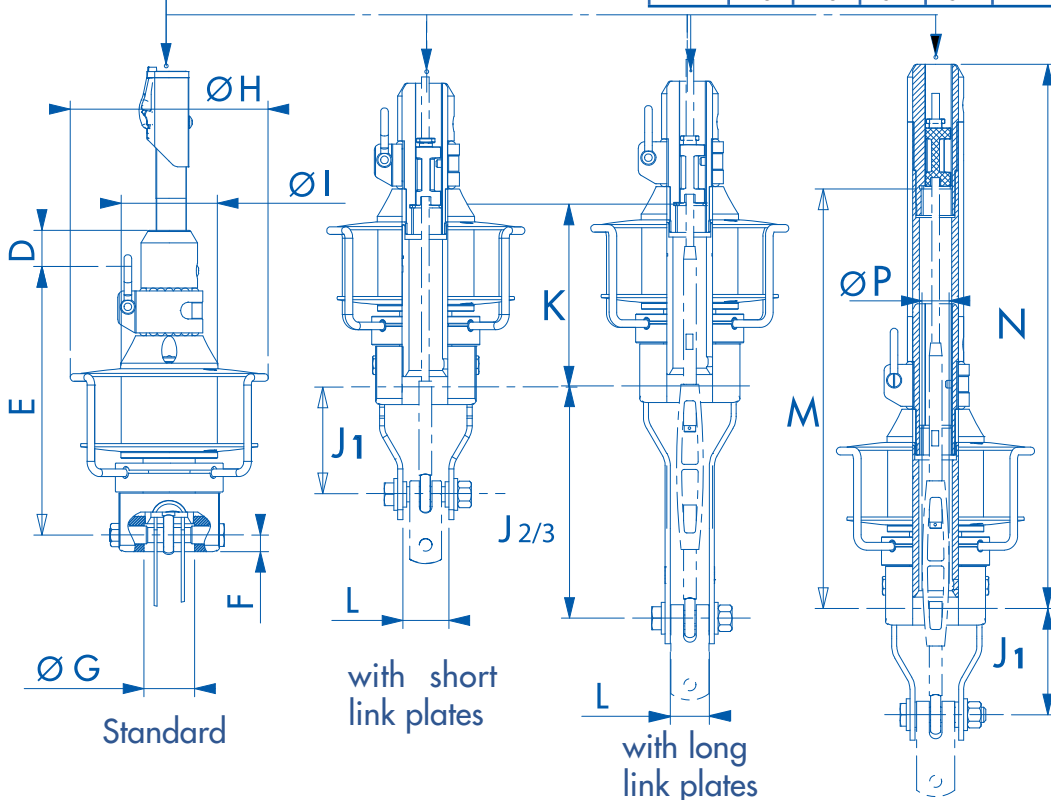
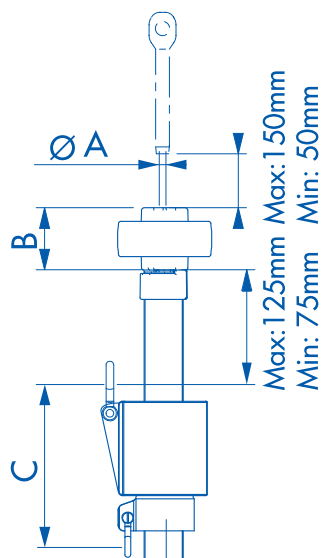
When assembling and servicing during the winter your furling gear, put grease on the screws situated at the bottom telescopic section and the top of the drum link plates. This will simplify the dismantling or turnbuckle access if necessary.

Reminder : no need to cut the forestay when installing Facnor furling system (see page 24).

Rinsing the drum/swivel : LS-RX models do not require any specific maintenance except from regular cleaning with fresh water. This will remove salt deposits, source of corrosion.

LS-RX DIMENSIONS

Measurements (mm)	LS 60	LS 70	LS 100	LS 130	LS 165	LS 180	LS 200	LS 290	LS 330
	-	RX 70	RX 100	RX 130	RX 165	RX 220	RX 260	RX 300	-
B	53	53	53	53	53	53	53	53	53
C LS	142	142	158	158	175	175	220	220	228
C RX	-	142	142	142	158	175	175	220	-
D	34	34	29	29	16	16	28	28	38
E	207	207	225	225	241	241	278	278	306
F	13	13	12,5	12,5	18	18	20	20	20
G	40	40	48	48	56	56	78	78	78
H	146	157	171	191	210	225	246	276	320
I	76	76	84	84	95	95	124	124	124
J	(See page 10)								
K	142	142	156	156	173	173	202	202	-
L	26	26	32	32	41	41	61	61	61
M	331	331	367	367	419	419	551	551	687
N	429	429	465	465	513	513	656	656	812
ø P	28	28	34	34	42	42	50	50	63



Note: The specifications are subject to change without notice, please refer to your "pro support" on the extranet Facnor (reserved for dealers) for more information or discounted technical support www.facnor.com

with internal turnbuckle option & short link plates



FlatDeck is a unique powerful furling system fitted with a webbing. This great Facnor innovation offers safe and easy headsail furling: no reefing line overriding and a massively improved torque. With the FD low profile drum, you benefit from a maximum luff!

Photo : © Arnaud De Buyzer / RM Yachts

PERFORMANCE & EASY FURLING

FlatDeck

- Maximum power when you start furling in
- Maximum luff (low profile drum)
- No risk of overriding (webbing guide exit)
- Complete webbing fitting / rope & leads
- Rotating tack fitting



Great torque

since the beginning unlike classic drums (see pict 1)

High load Swivel
(waterproof)



Linear Rotation

Bearing box supports both halyard and sail foot tensions.



LS/LX/RX Evolution into FlatDeck

possibility to upgrade a classic model* by adding a FD drum. (*see p13)

360° Rotating tack fitting

fitted with Torlon® balls : takes up automatically the sail fullness when furling.

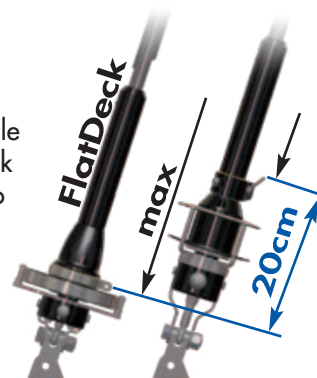


Low drum

fitted with short link plates

Maximum luff

thanks to the low profile drum and the Genoa tack and foot that lays close to the deck



Internal Turnbuckle (standard)

Webbing guide exit

This eliminates overrides as the webbing lays flat inside the drum. New 360° rotating guide



High resistance webbing

Stretching and UV resistant webbing (Polyester FD 90 to FD 190, Dyneema FD 210 to FD 310)

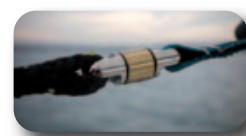
> Video FD



FURLING LINE & SECTIONS

Webbing / Furling rope kit :

- See description of the furling line kit (see p.14)
- The webbing is connected to the line with a swivel.
- The oblong design of the swivel guarantees a free run.



Foil sections :

- kits available with "R" **elliptical foil sections** (lighter and thin) but also with "SX" **rounded foil sections** (cruising). See p.24

"RACING & RACING - CRUISING" FD-R RANGE

	FD 110	FD 190	FD 230	FD 310
Boat length (feet-meters)	26' → 33' 8 → 10 m	29' → 39' 9 → 12 m	36' → 43' 11 → 13 m	41' → 60' 12,5 → 18 m
Section weigh / meter	Elliptical sections R* *necessary to have removable eye or turnbuckle			
	R 14 451 g	R 24 555 g	R 26 641 g	R 34 991 g
max. forestay ø (inch & mm)	9/32*** ø 7**	5/16" ø 8	3/8" ø 10	1/2" ø 12,7
Halyard swivel	C 14	C 24	C 26	C 34

** Close turnbuckle cage if open cage ø > 24 mm



FD Standard kit:

- drum
- internal turnbuckle fitting
- short link plates
- sections + connexions
- halyard swivel
- webbing / rope kit (see page 14)

International awards :

- 2012 Segeln Award (Germany)
"best sailing equipment category"



- 2011 Pittman Award (USA)
"Racing gear category"



> "R", "SX" retro-fitting & other brands :

- boat with LS/RX Facnor drums (SX & R sections) or other brands, can be retrofitted with FlatDeck model (with drum kit + webbing + leads). Your Facnor dealer can advise you (jaw installation and bottom terminal ø required).

«COMFORT /CRUISING» FD-S RANGE

	FD 90	FD 170	FD 210	FD 280
Boat length (feet-meters)	20' → 26' 5,5 → 8 m	24' → 36' 7,5 → 11 m	29' → 43' 9 → 13 m	38' → 60' 11,5 → 18 m
Section weigh / meter	Rounded sections SX			
	SX 25 577 g	SX 33 658 g	SX 39 914 g	SX 47 1095 g
max. forestay ø (inch & mm)	5/32" 5 mm	1/4" - 9/32"* 6 - 7* mm	5/16" - 3/8"* 8 - 10* mm	1/2" - 9/16"* 12 - 14* mm
Halyard swivel	C 25	C 33	C 39	C 47

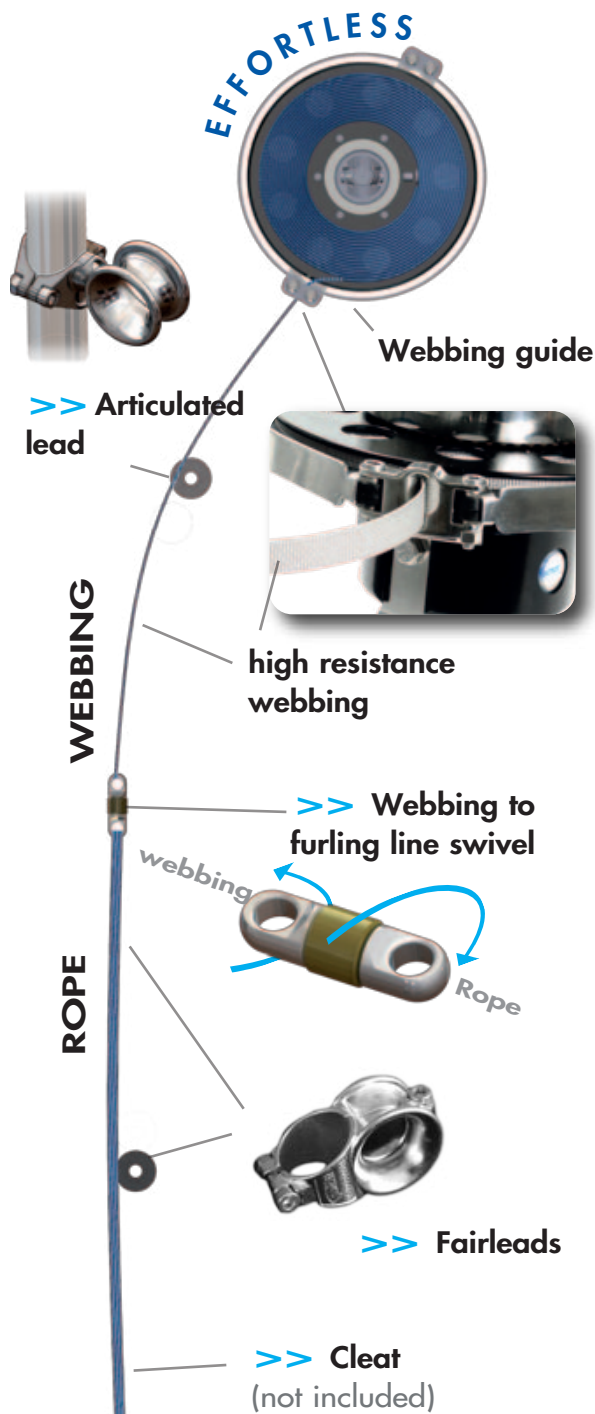
*necessary to have removable eye or turnbuckle



© Performance Classic Yachts



EASY INSTALLATION WEBBING & DRUM



> Installation of the furling line kit (included in standard kit)

- furling line swivel
- webbing (from 10 up to 27 m.);
- standard furling line;
- 1 articulated lead + S/S single leads (number according model);



Photo Credit : © Chantier Marée Haute / Django

Webbing fitting :

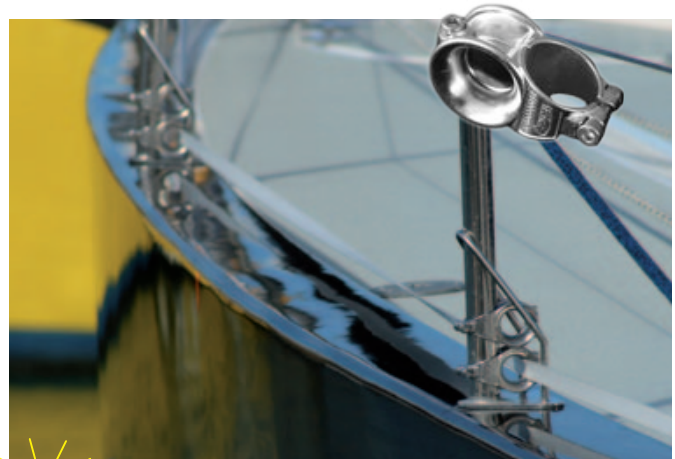
- **efficient and quick installation** : thanks to a complete kit (delivered).
- Furling line circuit : the articulated fairlead and the furling line guide (360° orientation) leaves various possible ways of fittings.
- the F.D. standard kit includes the webbing/furling rope fitted onto the swivel.

Furling system assembly:

- Like LS/RX ranges, the drum fitting depends on the forestay terminal (see page 10).
- You can even change your LS/RX drum for a FlatDeck one with **keeping the existing foil sections**.
- other brands : please contact your agent.

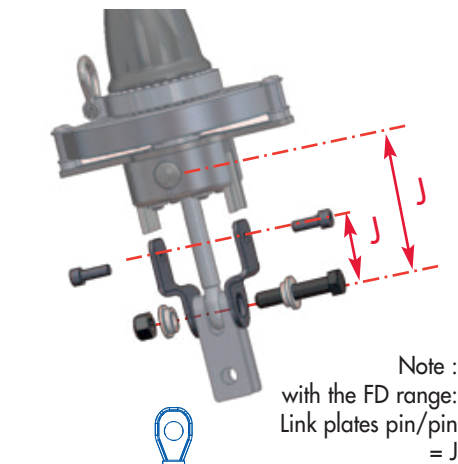
Dimensions: the gain in luff length with low profile FD drum is obvious. To achieve this aim, the base of the drum has been lowered and standard link plates are short (see table against).

Furling line leads: The s-s leads are simply screwed round the stanchion. They have been **specially designed for the free running of the swivel**. The kit includes an articulated lead to be fitted at the first front.



Furling line circuit : Your Facnor agent will suggest you the most adapted solution.

FD LINK PLATES DIMENSIONS



Link plates model			FD 90	FD 170	FD210	FD 280
			FD110	FD190	FD 230	FD310
STANDARD	short link plates kit	J1 (mm)	lgth 48	lgth 66		lgth 77
		thickness	thk 4	<thk 4		thk 5
OPTIONS	medium link plates kit	J2 (mm)	lgth 100	lgth 150		lgth 150*
		thickness	thk 4	thk 4		thk 5
	long link plates kit	J3 (mm)	lgth 200	lgth 250		lgth 250*
		thickness	thk 4	thk 5		thk 6

* $\varnothing A < 12$ max.

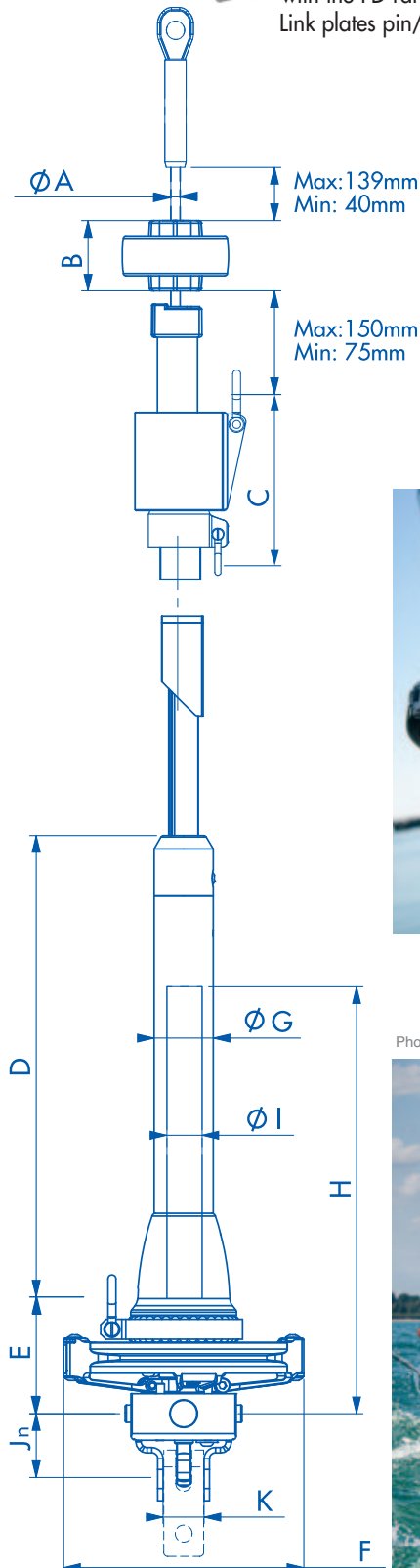
FD MODELS DIMENSIONS

Measurements(mm)	FD90 FD110	FD170 FD190	FD210 FD230	FD280 FD310
B	53	53	53	53
C (FDSX)	142	158	175	220
C (FDR)				
D	342	466	466	634
E	88	92	92	105
F	182	232	232	282
G	45	61	61	73
H	332	459	459	632
I	28	42	42	50
J	(See table "link plates" above)			
K	30	40	40	60
\varnothing max turnbuckle	24	38	38	46

H,I = Available space for the turnbuckle inside the drum



Photo Credit : © Tobias Stoerkle / Heinrichwerft



In order to furl sails easier, Facnor offers furling motorizations, EC & EF+ electric models (from 9-meter boats) and HF hydraulic models (from 46 m up to 72 footers). Whatever configuration and reefing assistance chosen for your sailboat, motorization will bring a great comfort in navigation, especially on big units but also on smaller units.

COMFORT OF THE EC & EF+ ELECTRIC FURLERS

- Wired or radio remote control (see option page 18)
- Waterproof drive unit. No specific maintenance required
- Optimized power
- Low energy consumption & reduced noise level
- Fitted over the existing forestay without cutting
- Easy retrofit : motorization kit for converting Facnor (manual LS 165 - 330) into electric EC or EF+
- Available in 12 and 24V with inverting box (details p.18)
- International 3-year warranty

Special aluminium cover

Strong drive unit

Anticorrosion surface treatment

increased durability

New concept of electric multi-motorized power (EC)

Installation over the existing forestay

Passing through the drive unit.

> Video EC



29' → 48'
EC 39 & 47

45 → +55'
EF+ 550 & 600

..... **SX foil sections**
high torque resistance
(see page 24)

Possibility of retro-fit

Simple upgrade path from Facnor manual units (similar dimensions).

Back up device

If manual operation is required a winch handle: see page 18, emergency continuous line system.



(after use, screw the cap back)

Stainless steel link plates, with multiple holes for drive unit

level adjustment according to anchor passage.



EC & EF+ ELECTRIC MOTORIZATION RANGE

EC & EF+ Technical datas :

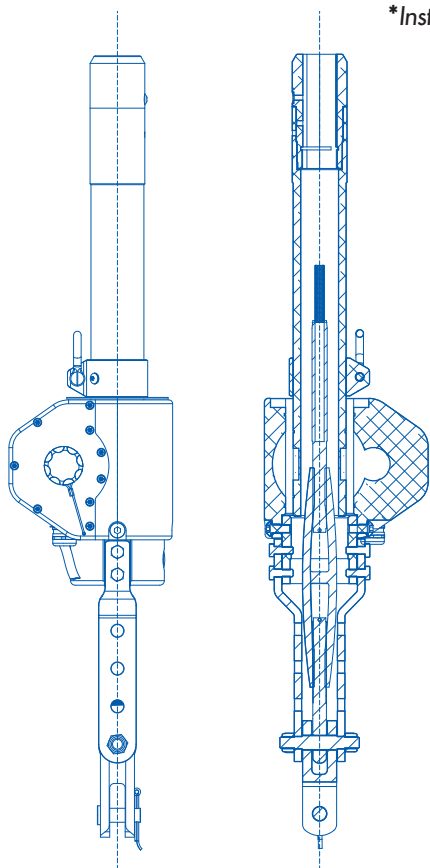
- Remote control option (wired or radio version) : see page 18



Boat length (m/ feet)	Max forestay Ø	Section / Swivel	Model ref	Forestay length	Power / Rotation speed (max)	Amperage / Voltage
9 → 12 m 29' → 39'	8 mm 10 mm*	SX39 / C39	EC 39 (12 / 24 V)	14 m 50 16 m 50	400 W 40 RPM ¹	40 A / 12 V 24 V (20A) on request
12 → 16 m 39' → 48'	12 mm 12,7 mm*	SX47 / C47	EC 47 (12 / 24 V)	18 m 50 20 m 50	800 W 55 RPM ¹	40 A / 24 V 12 V (80A) on request
15 → 18 m 45' → 55'	12,7 mm 14 mm*	SX47 / C47	EF+550 (12 / 24 V)	18 m 50 20 m 50	800 W (12V) 1200 W (24V) 33 RPM ¹	60 A / 12 V 30 A / 24 V
+ 18 m + 55'	16 mm / 19 mm* 22 mm	SX53 / C600	EF+600 (12 / 24 V)	20 m 50 22 m 50 22 m 50 24 m 50	800 W (12V) 1200 W (24V) 33 RPM ¹	60 A / 12 V 40 A / 24 V
+ 21 m + 69'	19 mm* 22 mm*	SX53 / C600	EC70 (24 V)	26 m 50 28 m 50	1500 W (24V) 60 RPM ¹	80 A / 24 V

*Installation with swage rigging screw or "manual"

RPM¹ : Rotations per Minute



Toggle and stainless steel link plates

Fitted according to bottom forestay terminal (turnbuckle + toggle or eye + toggle). Toggle and stainless steel link plates are delivered in the standard kit .

EC & EF+ FOIL SECTIONS & SWIVELS

Foil section ref. : see page 24.

- The large sized connectors guarantee a great torque resistance. The telescopic section prevents any requirement to cut the foil sections when adjusting.
- Option : special part available for «R» foil section adaptation.
- Waterproof swivels, high load resistant :
 - C39 → EC39, C47 → EC47
 - C47 → EF+550, C600 → EF+600 & EC70

Complete kits :

- motorization kit (drive unit, stainless steel link plates, toggle, relay box, circuit breaker)
- foil section kit (see P. 24)
- swivel, halyard deflector wheel

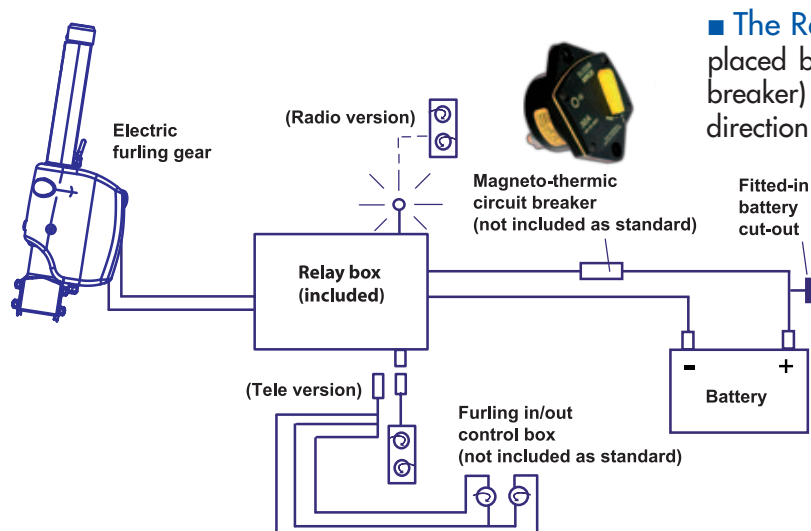
Options (see page 18) :

- wired or radio remote control
- emergency continuous line system



photo credit : Amel

RELAY BOX / REMOTE CONTROL



■ The **Relay box** is a polarity inverting gear that is placed between the power supply (battery + circuit breaker) and the drive unit. It inverts the rotation direction and therefore enables to furl in or out, the foil sections turn at constant speed

■ **Waterproof circuit breaker** (delivered in the standard kit) : turns off the furling gear in case of overheating (due to a Genoa sheet not released for instance).



> EC relay box instructions

OPTIONS

■ Remote control

① **Wired**
(waterproof device)

② **Radio version**

- pocket transmitter,
- receiver to be fixed underneath the top cover of the relay box



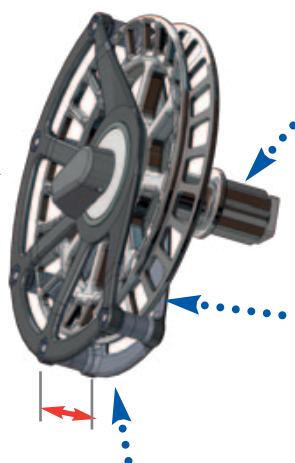
Remote control	Part number	Model Ref.
Wired ①	56012000140	EC 39 EC47
Radio Remote Controller ② Pocket transmitter + Receiver	56012000150	EF+550 EF+600 EC70

■ **Emergency system (electric or hydraulic furler) : operating in any circumstances**

The "FACNOR emergency system" is made up of a notched drive wheel and a continuous line. If an electrical failure were to occur, this device allows the operator to quickly and easily furl in the headsail (standing one meter behind).

Sturdy fitting
corrosion resistant
(stainless steel)

Furling power.....
thanks to the torque
of the continuous line drum
ø drum = 165 mm



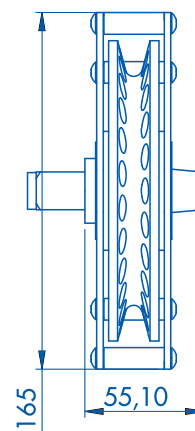
Compactness



Self-locking device
Standard square drive
winch socket.

Continuous furling line

- Easy : pull the continuous line to manually operate the furling system..
- Quick



Adaptable on any standard model of electric/hydraulic furlers
Ref. 03039000200. Thickness = 55 mm.

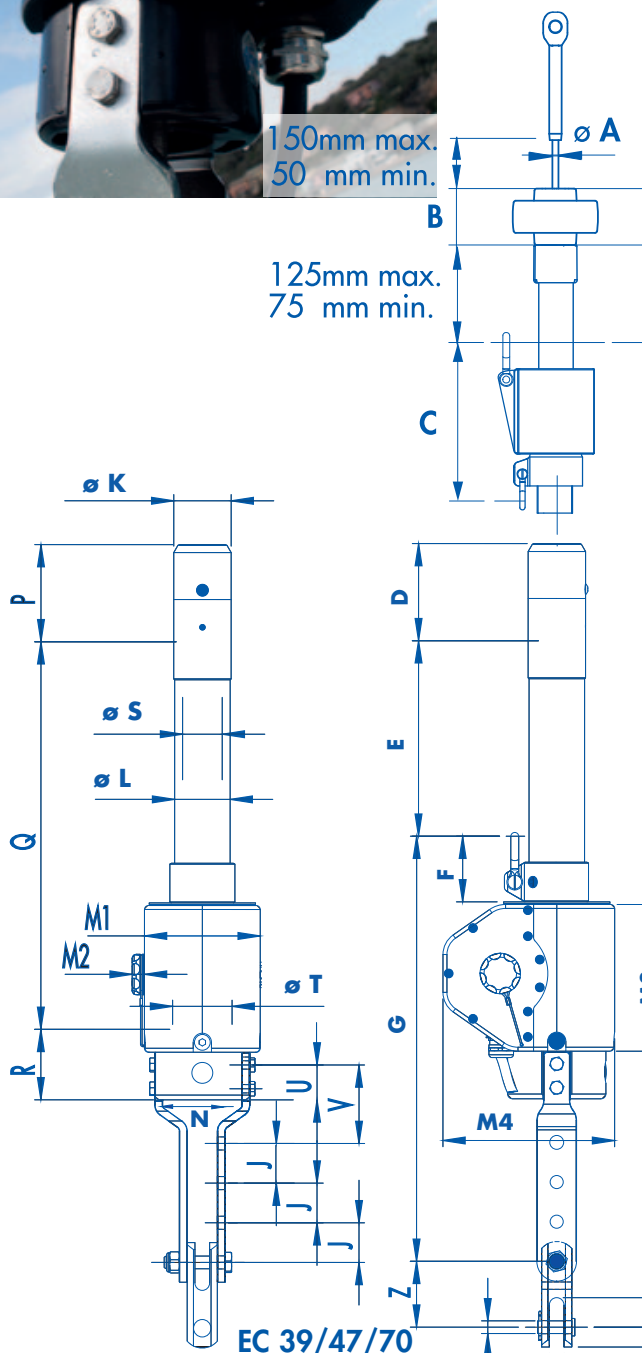
Delivered inside a fabric protection bag and with an endless line (8mm Ø)



EC & EF+ DIMENSIONS

MODEL Elec. furler	EC 39 SX 39	EC 47 SX 47	EF+ 550 SX 47	EF+ 600 SX 53	EC 70 SX 53
Section /Swivel Ref.	SX 39 C39	SX 47 C47	SX 47 CX47	SX 53 C600	SX 53 C600
A = max. forestay ø (mm) (* turnbuckle)	ø 8 ø 10*	ø 12 ø 12,7*	ø 12 ø 14*	ø 16 ø 19*/22*	ø 19* ø 22*
B	53		53	53	52
C	175	220	220	228	
D**	98	106	103	123	127
E	162	248	263	486	404
F	62	77	82		101
G	496*	536*	770		515
J	50	50	60		-
M4	184	216	267		297
ø K	60	72	72	85	85
ø L	60	70	72	86	85
M1	122	146	146		200
M2	16		172		215
M3	160	185	324		310
N	78	100	93		-
P	98	106	103	123	127
Q	363	485	435	671	767
R	79	89	265	318	177
ø S	42	50	53		64
T	54	75	78		80
U	39	44	70		-
V	105*	104*	126		-

** End of the telescopic section



EC 39/47/70

Pin ø i	Z	Z1	Z2	Z3
12.7	77	27	19	13
16	82	28	25	18.5
19	94	42	29	20.5
22	105	36.5	32.5	22.5
25	125	55	35	26.5
28	140	50	39	31
32	165	75	42	33
32 (EC70)	165	91	42	33

EC39-47



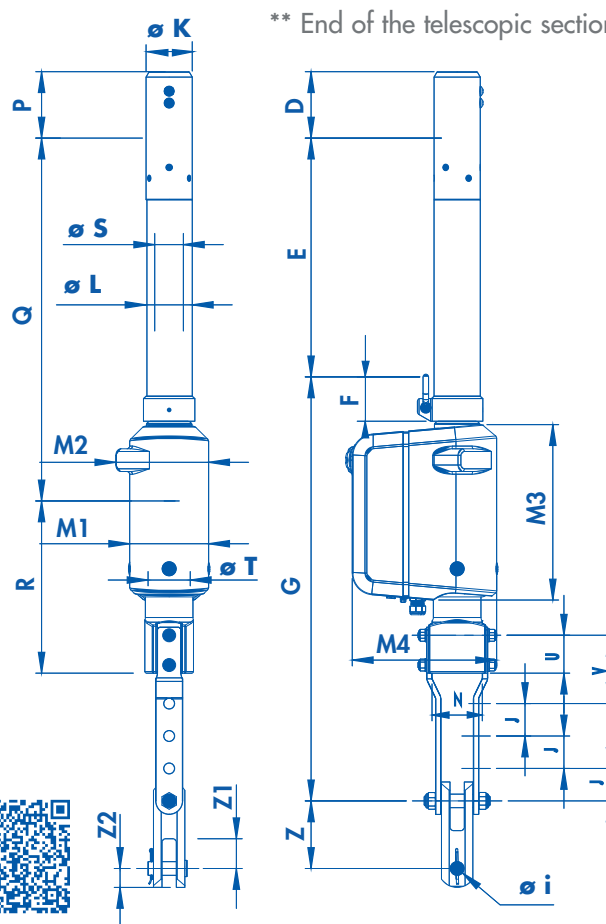
EC70



EF+



> EC/EF+ Instructions



EF+ 550 & 600



Hydraulic motorised furling systems brings ease of use to sailing handling on yachts 42' and over. The Facnor HF range is suitable for yachts unto 72' often equipped with other hydraulic devices.

photo credit : MichaelSchmidtYachtBau / explorer

THE HYDRAULIC MOTORIZATION: POWER & TORQUE

HF
Hydraulic

- Plugged on standard hydraulic devices (max 140 bars*)
- Durable drive unit, waterproof and compact, low noise level
- Power ratio / Optimum torque
- Installation on existing forestay
- Compact : reduced lateral dimensions compared with a classic drum
- Quick installation : split foot (HF700) + internal turnbuckle fitting
- No specific maintenance. International 3-year warranty

*See chart against. In case of debit higher than the recommended one, please contact one agent. A debit control will be needed.

Special aluminium cover

Strong drive unit

Anticorrosion surface treatment

increased durability

3 compact models

from 42 to 72'



42 → 60'
HF500 & 600



60 → 72'
(HF700)

Installation over existing forestay

Passing through the drive unit.

SX foil sections

Capacity to support high level torques (see page 24)

Back up device

situated on starboard for emergency handling (or the Facnor emergency continuous line system / see p18).



(after use, screw the cap back)

Reduced lateral dimensions

(increased space for anchoring)

specific to HF700 :
removable split polished base for easy installation and access to the turnbuckle without dismantling forestay.



HYDRAULIC MOTORISED RANGE

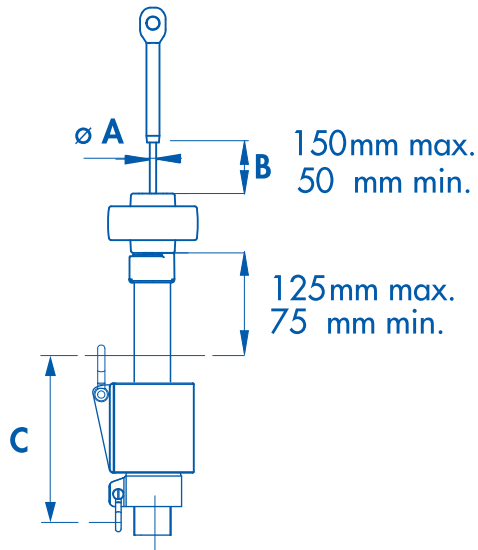
Technical datas :

- Option : wired or radio remote control (see page 18)

Boat Length	Max forestay Ø	Section / Swivel	Model ref.	Forestay length	hydraulic connections	Max recommended / pressure (bars)	Max recommended / flow (L/min)	Max. rotation speed (RPM ¹ / mn)
14 → 18 m 42' → 54'	14*	SX47 / C47	HF550	18 m 50 20 m 50	9/16"	125 (140 max)	15 (20 max)	30
18 → 20 m 54' → 60'	19*	SX 53 / C600	HF600	22 m 50 24 m 50				
20 → 24 m 60' → 72'	22* / #76*		HF700	28 m 50 30 m 50				
					3/8"		15-18 (20 max)	60

RPM¹: Rotations per Minute

*Installation with swage rigging screw or "manual"



Stainless steel toggle & link plates

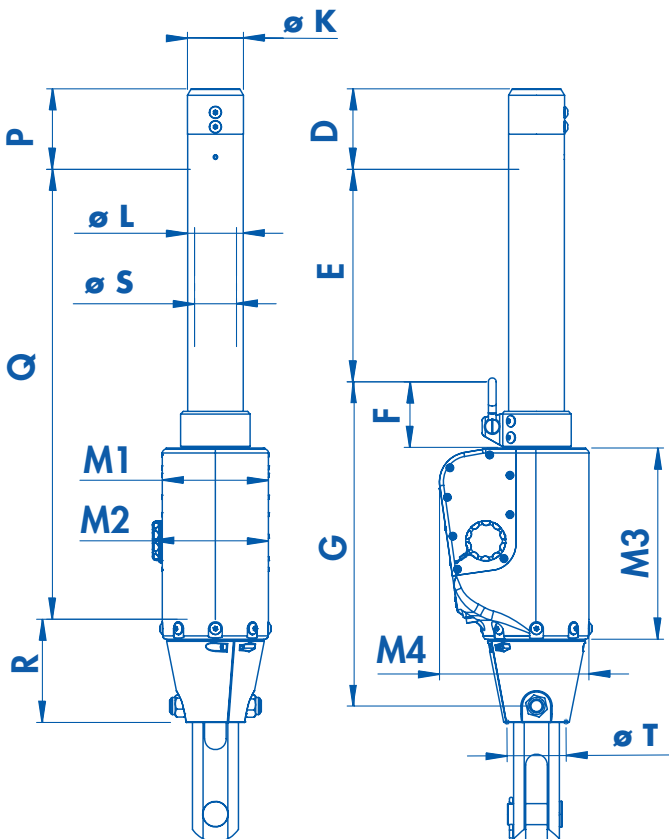
- Fitted according to bottom forestay terminal (turnbuckle+toggle or eye+toggle). Toggle and stainless steel link plates are delivered in the standard kit.

HF Sections :

- Standard SX47 & SX53 foil sections are common to all systems.
- SC carbon sections available (see p. 24)

HF DIMENSIONS

Rep.	HF MODEL		
	HF 550	HF 600	HF 700
Section / Swivel Ref.	SX 47 C47	SX 53 C600	SX 53 C600
A = max. forestay Ø (* turnbuckle)	14 mm*	19 mm*	22 mm* #76*
B	53	53	52
C	220	228	228
D*	106	103	123
E	248	263	325
F	77	82	100
G	536*	770	495
M4	216	267	267
Ø K	72	72	85
Ø L	70	72	85
M1	146	146	162
M2	16	172	177
M3	185	324	292
P	106	103	123
Q	485	435	686
R	89	265	158
Ø S	50	53	64
T	75	78	90

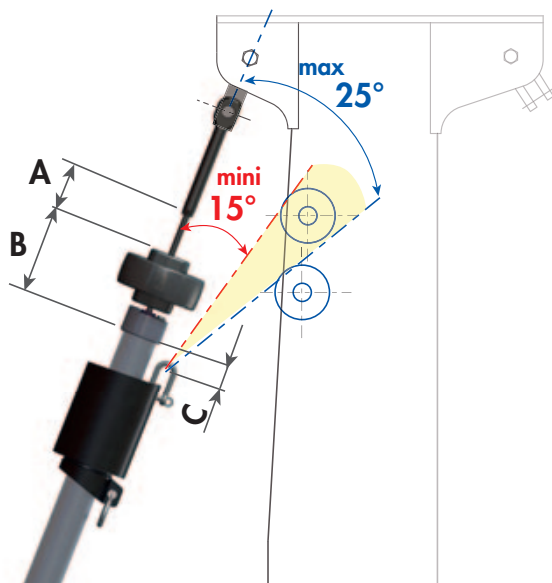


RECOMMENDATIONS : HALYARD ANGLES

Halyard deflector wheel :

It prevents the halyard from wrapping round the forestay and also deflects Spinnaker

halyard. It is important to maintain this part to protect the forestay.

**Halyard angle with forestay :**

- It must be situated between 15 and 25°

- Distance between halyard swivel & top car must not measure more than 150mm.

A = mini 50 mm and maxi 80 mm between halyard deflector wheel and bottom end of the forestay terminal.

B = 78 mm

C = 80 mm max. between the halyard swivel & the top car (after sail stretching)

Note: These average values fluctuate according to the mast geometry. We strongly recommend that you instruct a skilled professional to install your furling system (see our worldwide agent network on www.facnor.com)



> LS/RX Instructions

HALYARDS SPECTACLES

**Universal Spi spectacles :
Halyard handling**

If the angle between the halyard and the forestay is too narrow (less than 15°), it is recommended to add universal spi spectacle to open this angle. It prevents the halyard from wrapping around the forestay. Please contact a Sparcraft dealer (www.sparcraft.com)

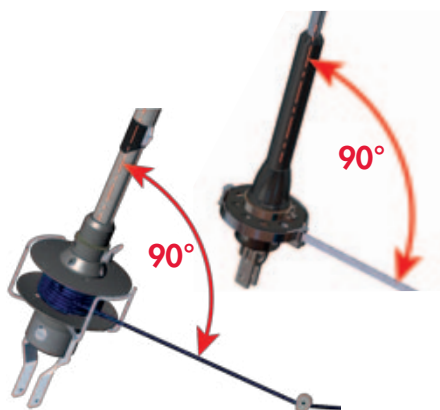


Sparcraft spi spectacle model	ø A int. (mm)	rope ø (mm)
Small size (with 4 rivets)	ø 12	ø 5 → ø 10
Middle size (with 4 rivets)	ø 17,6	ø 12 → 16
Large size (with 4 rivets)	ø 22	ø 18 → ø 22

RECOMMENDATIONS FOR FURLING LINE FITTING

90° for the furling line :

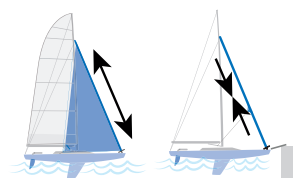
Whatever furling model (LS, RX or FD), the furling line must run with 90° angle from the forestay (see against).

**Furling line inside the guide :**

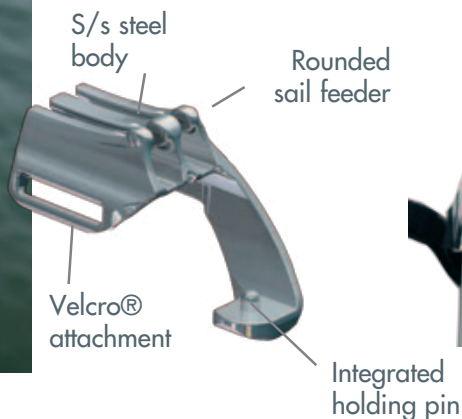
LS-RX models: the furling line must run through one S/S guide.

**Halyard tension :**

- The halyard can be slackened when sailing downwind or in light winds (and inversely) in order to improve boat performance
- After sailing, one should not forget to slacken the halyard, this will release tension in the sail, mast sheaves and above all the halyard swivel.
- don't forget to stretch the halyard before sailing.



ACCESSORIES FOR R & SX FOIL SECTIONS

**Sail feeder (R foil sections only) :**

- For quick change of sail, entirely removable.
- Velcro strap : ensures an easy fitting or disassembly from **elliptic R foil sections**.
- Design and smooth shape prevent from luff tape wearing.
- Strength

All the SX and R34 sections = aluminium.

Aluminium / SX foil section	
Section Ref.	Reference
SX25	09130128250
SX33	09130128340
SX39	09130128390
SX47	09130128470
SX53	09130128530



S/s steel / R foil section	
Section Ref.	Reference
R14	09130128142
R24	09130128242
R26	09130128262
R34 (alu)	09130128340

FD-LS-RX ACCESSORIES

Furling line / Fairleads kit (LS/RX):

Furling line kit includes polyester good quality rope, adapted to the furling use.



Rope & leads kits	LS-RX Model	Reference
\varnothing 6 x 20 m Rope 1 articulated lead + 3 single fairleads	LS 60-100 RX 70-100	24106201300
\varnothing 8 x 24 m Rope 1 articulated lead + 3 single fairleads	LS 130-180 RX 130-220	24108241300
\varnothing 10 x 24 m Rope 1 articulated lead + 4 single fairleads	LS 200-290 RX 260-300	24110241400

Fairleads :

Those different fairlead models allow you to build the best circuit of furling lines for Genoa's. The fairleads are adapted to the FD swivels.



Model	Description	for stanchion \varnothing	Reference
M10	Deck fairlead \varnothing 18 (+ washer + nut M10)	(Deck)	24000102400
D18	Deck fairlead \varnothing 18 (2 holes)	(Deck)	24000102418
ASL25/28	Articulated fairlead (rope hole \varnothing 20)	25 to 28	24000102300
SL25	Single fairlead (rope hole \varnothing 20)	25	24000102200

Twin fairleads for Gennaker and code zero furlers (continuous line) : p.43



STRENGTH & ADAPTABILITY

Foil sections are fitted on the various headsail furling and reefing systems : classic drum (LS & RX), webbing drum (FD) and motorized drum (EC & EF+, HF).



Long high performance polyamid bearing

centres forestay inside foil

CNC machining holes

insuring the sections will be perfectly aligned

Torx print

easy assembly and dismantling

Material insulated

Screws covered with tuff lock® (locking and insulating product)

Telescopic section

Allows adjusting the section length.
High torque resistance



Connectors with high torque resistance

guarantee a great rigidity at the section connections

Anodized extruded aluminium

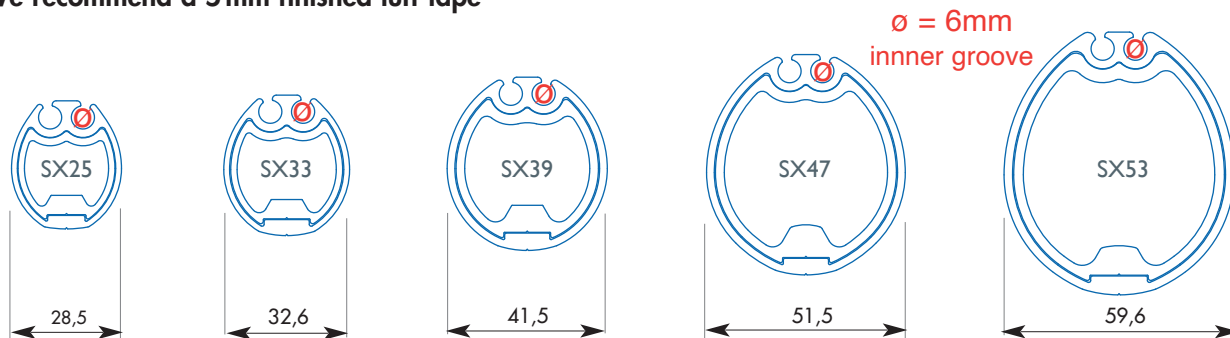
Material : 6000 series
Standard Length : 2 m (6'8")

SX & R SECTIONS DIMENSIONS

ROUNDED SECTIONS SX 25 / SX 33 / SX 39 / SX 47 / SX 53 :

The SX twin groove foil sections, round shaped, offer smooth furling as well as a high rigidity.

We recommend a 5 mm finished luff tape

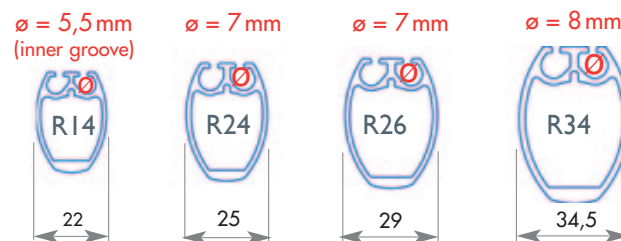


ELLIPTICAL SECTIONS R14 / R24 / R26 / R34

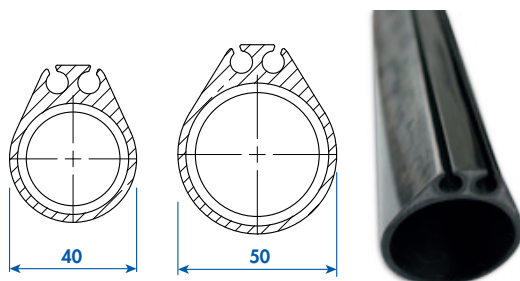
This range of sections offers good aerodynamics, and the twin-groove allows easy sail changing.

We recommend these following finished luff tape :

R14=ø4.5 / R24 & 26=ø5 / R34=ø7.0 mm



SC CARBON FOIL SECTIONS



- Carbon sections : rigidity and lightness (40% lighter than alloy furling sections).
 - "water drop" shaped sections for better aerodynamics.
 - Simple installation : elements bonded together (no screw). This improves torque resistance of the connected sections.
- TWO MODELS : SC40 & SC50 - Length : 4 meters.**

STRUCTURAL FURLERS & LOCKS GENOA & STAYSAIL

© photo : Martin Martinez - Pertusafilms / Crosscall



Structural furlers : the "in/out" systems

The structural furler - unlike the Gennaker furler - supports both mast and sail loads. The Facnor **STK systems** are fitted with anti-twist fiber forestay from 40 footers. Widely tested on ocean races, like the **external and internal halyard locking devices**, reliability made their success. The different **STG / STB / FLT** systems can be fitted with a classic wire forestay from 24 to 30 footers.



STRUCTURAL STAYFURLERS
STK 5 → 35 T (from 40' up to +130')



New!

P26-27

INTERNAL & EXTERNAL LOCKS
2 - 30 T and +



P28-29



STRUCTURAL WIRE FURLERS,
STG / STB / FLT (from 21 up to 34')

P30

Structural furlers have been installed on racing sailboat for a long time. These structural furlers support mast loads and can entirely furl in and out headsails (such as Solent, Staysail, Genoa). This high performance system is also supplied on ocean cruising yachts for Staysails.

PERFECT SAIL & LIGHTNESS

STK FURLERS

- Saving weight (**up to 3 times lighter** than a conventional furling system)
- Stronger furling power with large diameter drum
- Maximum luff thanks to the low profile drum (continuous line drum)
- Simple installation fitting various forestay terminals
- Resistant and tested for heavy loads
- Tensioning halyard possible by 2-to-1 (see terminal options)
- **Classic or endless line drum** available, connection on jaw or thread

The in/out furling system:

- This in/out system enables a performance sail (Solent, Staysail, Genoa).
- **Structural system** : the forestay (high quality textile fibers) turns and holds the mast.



Two possible assemblies

The structural furlers can be connected onto the textile stay with classic thimbles or threaded cone-shaped terminals (Navtec system)



Top terminal

Fixation of the swivel at the head of the mast (delivered)

Head swivel

Connects the rotating stay to the mast and supports mast loads.

Anti-twist terminal

thimble or threaded connection terminal

Anti-twist structural stay

it supports the mast and also transmits the rotation of the bottom drum to the swivel

Single line drum :

- standard furling line
- handle from all winch of the cockpit

Continuous line drum :

- single block.
- the large diameter of the continuous line drum increases the furling power and reduces effort.
- Maximum luff length
- unlimited numbers of turns

Bottom terminal

directly integrated on the drum or continuous line drum. Many options available.

STRUCTURAL FURLER RANGE 5 → + 35 TONS

Continuous or discontinuous line drum

STK Models : Discontinuous or continuous line drums

Parameters / Furler model*	STK 5 T	STK 9 T	STK 10 T	STK 15 T	STK 20 T	STK 25 T	STK 35 T	STK + 35 T
Boat length (feet)	40'	50'	60	60 / 70'	70'	+70'		
ROD equivalence	-17	-30	-40	-48	-60	-76 & -91	-115 & -150	Contact us
wire 1x19 equivalence (mm)	10	14	16	19	22	-	-	
Kevlar wire working loads (safety coefficient x 2)**	5 T	9 T	10 T	15 T	20 T	25 T	35 T	

STK 5T Ultra flat drum

Single furling line, single block & lashing eye (other terminals available)

New!

* model name = Kevlar stay breaking loads

** If we replace a metal wire or a rod forestay by a textile wire, this one will be largely over dimensioned, as the essential criteria to choose the model is not the solidity but the resistance against stretching. This is why the safety coefficient is so high.

TERMINAL OPTIONS (BOTTOM OR TOP)

Different articulating parts (bottom or top) :

- terminals : ball joint eye, diabolos, twin anchor, lashing soft eye terminal,... many other terminals.
- interchangeable : the terminals are screwed into mechanisms. These articulating parts can be interchanged.

Twin spool terminal
more flexible articulation

**Lashing soft eye terminal**

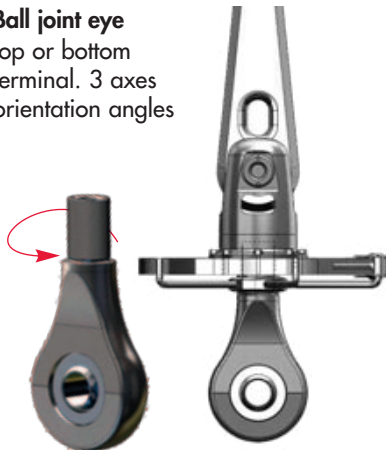
(Bottom or top)
(fitted above the swivel or underneath the drum) the lashing gives more flexibility to the articulation and allows to adjust the luff length.

**Eye terminal**

(Bottom or top)
Double toggle jaw or strap toggle



Ball joint eye
top or bottom terminal. 3 axes orientation angles

**Soft solid sheaves**

help to build a 2-to-1 or a 3-to-1 tensioning

**Twin spool terminal**

fitted underneath the drum it keeps its attachment in position

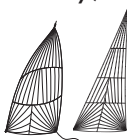


- Materials : 17-4 PH stainless steel, Titanium (40% lighter than S/s), other materials

High resistance body Halyard locks improve flying sail use (Staysail/Gennaker) saving weight and reducing mast compression loads. This simple and efficient device makes the halyard locking/unlocking easy and safe. Fitted either inside or outside the mast, the Facnor lock tremendously eases the handling of flying forestays.

BUILD INTO MAST FRONT

- HL 2 T and +**
- Halving mast compression loads
 - Luff constantly tight (less halyard elasticity)
 - Easier foredeck handlings
 - Different possibilities of use :
Gennaker or Code zero & Staysail
 - Reduction of the boat heel/windage (lowered sail)



Halyard /locking control

Halyard partially without outer shell on 2 x the lock body length

>> Resistant

High resistance body



>> Optimum integration of the lock

- device fitted from outside the mast;
- lock supported by the mast contact area;
- easy mast inspection, fixation by two screws;



>> Options:

Some models (5T or +) can be specially equipped with fitted-in sensors "upwards stop" and "locked", various terminals available (see page 29)

- ① Pull up the halyard until the sail reaches full hoist for locking

>> Reliable mechanism

"Star-shaped" inner part

- The rotating ring is fitted with three projecting blocks that adjust themselves in the body of the mast part.
- specific surface processing

- ② Pull up again the halyard for unlocking (and thereby taking down the sail).



>> Bullet lock:

Aluminium body, pin and sheave in stainless steel
Used for wide angulation halyard



HBL Lock model*	HBL 2 T	HBL 3 T	HBL 5 T	HBL 8 T
Working load	2T	3T	5T	8T

>> Internal halyard HL locks technical features

HL Lock model*	HL 2 T	HL 3 T	HL 5 T	HL 8 T	HL 10 T	HL 12 T	HL +
Working load	2 T	3 T	5 T	8 T	10 T	12 T	on request

* model name = Kevlar stay breaking loads (see structural furler mention)

See the video 

<https://youtu.be/2V9NX9SgFvA>

Alternatively, the halyard locking device can be fitted on a mast chain plate. Among those external locks we distinguish two types : the two-in-one locking swivels and the locks attached by a loop.

>> Polyvalent interface with the forestay



The benefits of the lock :

"Thanks to the lock, we can lower the furled staysail in order to tack or jibe easily, or even to reduce windage. Moreover, the locked staysail presents various advantages in comparison with a fixed forestay : sail furling, tight luff, easy handling. Hoisting and lowering the staysail is quicker and easier".
Halvard Mabire, skipper of the Class 40' Campagne 2 France and Facnor technical partner

HE EXTERNAL LOCKS WITH LOOP BODY

>> Fixed locking device and mobile pin :

- Easy & simply fitted : can be fixed onto the head attachment with an articulated device (toggle, latching, Unibal ball or others).
- The halyard (small \varnothing) can then run down inside or outside the mast.

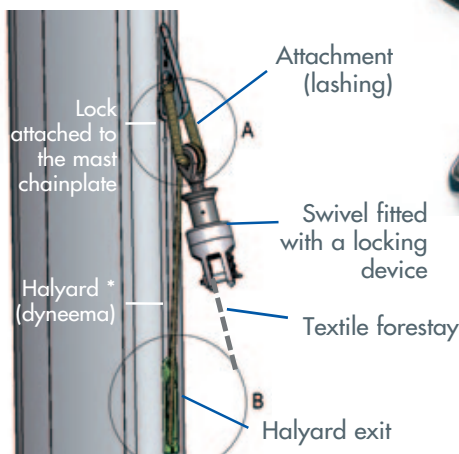


16 tons lock for Maricha III (147')
Code zero

>> HE Swivel & lock technical features

HE Lock model*	HE 3 T	HE 5 T	HE 7 T	HE 10 T	HE 12 T	HE 16 T	HE 24 T	HE 30T+
Working load	3 T	5 T	7 T	10 T	12 T	16 T	24 T	30 T

>> Swivel & lock : Double function, compact and light



* Halyard partially without outer shell on 1.1 to 1.2 x the luff length

* HSW 2T5 & 4 T = different model

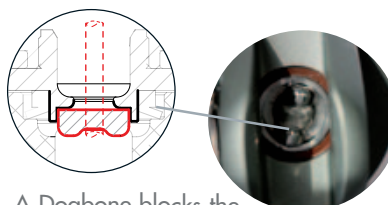
EXTERNAL LOCKS : SWIVEL & LOCK

>> HSW Swivel & lock technical features

HSW Lock model*	2 T 5*	4 T*	5 T	7 T	10 T	+10T
Working load	2 T 5	4 T	5 T	7 T	10 T	Please contact us

>> Locking Swivels with fixed pin / removable swivel

Pin attached to chain plate (fig 1), the body of the locking swivel flies from the deck – for instance from the bag - to the top of the mast to get secured (fig2)



A Dogbone blocks the halyard in the swivel





STRUCTURAL FURLERS

© ANWB Audio Visuele Dienst /Dragonfly

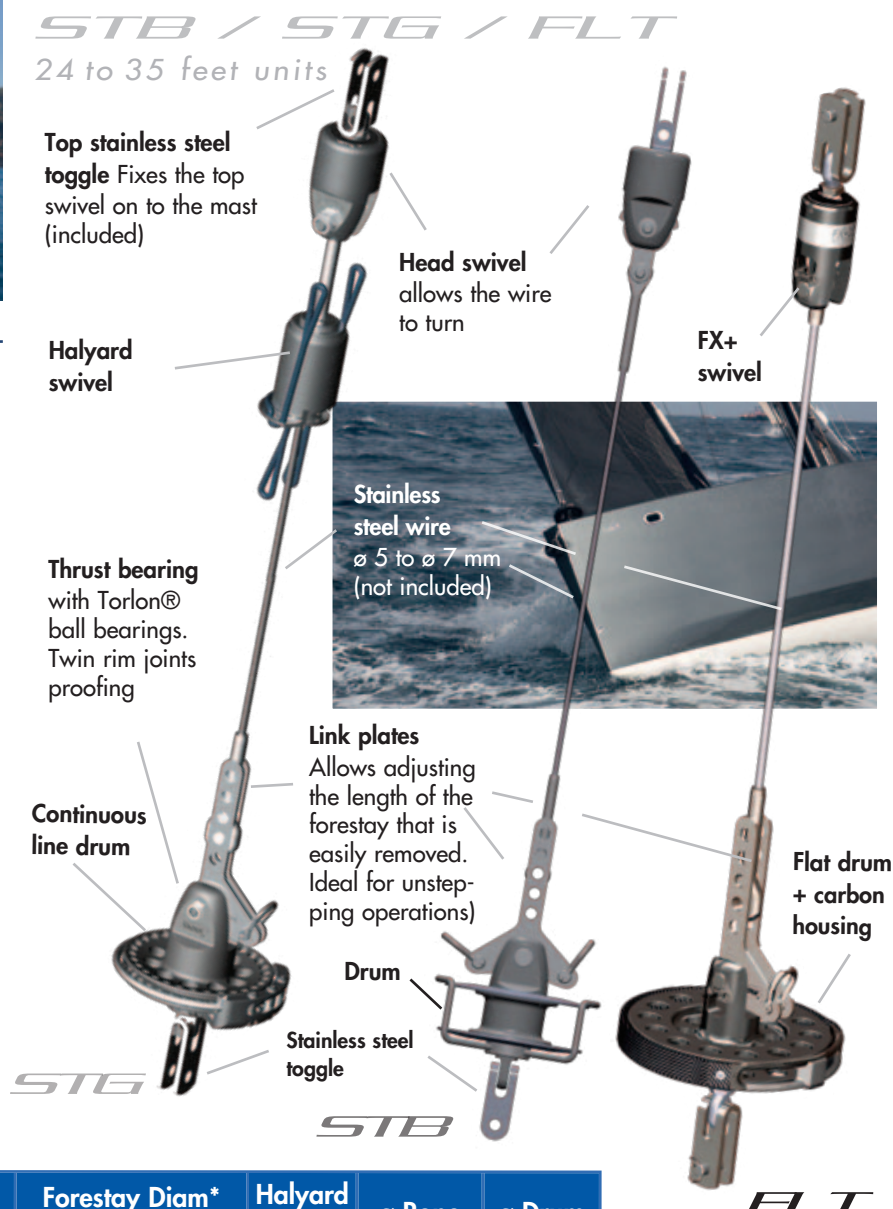
STOCKEURS STG & STB

STB / STG advantages

- **STG & STB**: wire structural furlers, light and easy to install.
- Sails luff fitted with hanks or a zip.
- Each kit model includes :
 - 1 x halyard swivel with top stainless steel toggle (rotation of the wire)
 - 1 x drum with S/s toggle to fit on the foredeck chain plate.

Features

- **STG**: equipped with an head swivel, a halyard swivel and a continuous line drum for maximum luff.
- **STB**: cheaper version, with a discontinuous drum and a head swivel.

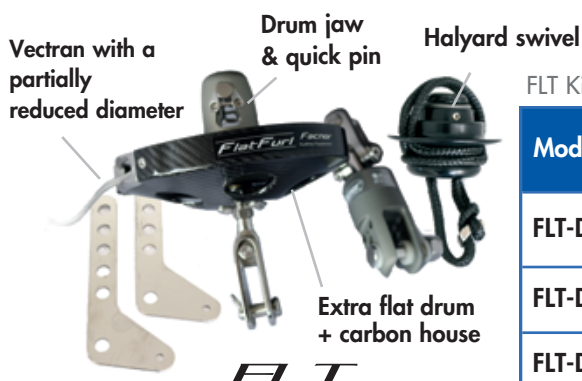


Model	Reference	Boat length	Forestay Diam* (monoron / Dyform)	Halyard swivel	ø Rope	ø Drum
STB-D5/6	43010001590	24' → 31'	ø 5 mm / ø 6 mm	-	ø 4-5	(drum)
STG-D5/6	43010001580	7,5 → 9,5m		included	ø 4-5	119 mm*

*Wire non delivered

FLT FLAT DRUM STRUCTURAL FURLERS

Perfect for racing boats : The FLT drum structural furler is compact. The low profile mechanism offers a longer luff and its large diameter a strong furling power. It is easy to operate with the partially reduced diameter line.



FLT Kit = flat drum + masthead swivel + halyard swivel

Model	Reference	Boat length	Forestay* ø (mm)	ø Bottom pin (mm)	ø Rope (mm)	ø Drum (mm)
FLT-D5	43311001540	21' → 24' 6,5 → 7,5m	ø 5	ø 8	ø 4	127
FLT-D6	43311002540	24' → 31' 7,5 → 9,5m	ø 6	ø 10	ø 4	167
FLT-D7	43311003040	29' → 34' 9 → 10,5m	ø 7	ø 12	ø 5	212

*Rod forestays are not adapted

FLYING SAILS FURLERS MANUAL & MOTORIZED

GENNAKER & ASYMMETRIC SPINNAKER



Photo : © J. Stintzy

DAME

SPECIAL MENTION
2022

FX



Its **long and high level experience** in the use of flying sail furlers has enabled Facnor to supply the biggest sailing boats. Our **FX+** range dedicated to Gennakers, Code sails and asymmetric Spinnakers (with **FAST thimble**) reflects this expertise. The range of manual furlers was enlarged to the hydraulic (**FXH & IDXH**) version as well as various accessories and **bowsprits**.

MANUAL

FX+ GENNAKER & CODE ZERO FURLERS



P32

FAST THIMBLES for ASYMMETRIC SPINNAKER FURLERS

P36

MOTORIZED

FXE ELECTRIC CODE ZERO FURLERS

New!



P38-39

FXH HYDRAULIC FURLERS

P40-41

IDXH UNDER DECK



P42

OPTIONS & ADVICES

New!



P43-P45



Photo : © M. Lebarbier / Lamotte création

CODE SAIL FURLERS

FX+
design by Facnor

Further to constructive technical exchanges with ocean racers, Facnor has developed a sophisticated range of Code sail furlers : the FX+.
A true evolution : light, easy to fit and aesthetic. Fitted on request with a ratchet device securing the furling, locking both clockwise and anti-clockwise (Facnor patent).

The FX+ flying sails furler is an "in/out system".
The anti-twist rope is captive within the sail luff tape.

Various attachment
(option 2-to-1
see page 44)

Anti-impact cover for swivel

in neoprene (delivered)

high-visibility marking

Thimbles
see page 44

+ THAN 25 YEARS OF EXPERIENCE IN GENNAKERS FURLERS

- Widely tested & strong mechanisms bodies
- Lightness : ultracompact
- Secured sail connection
- Easy to fit and to adjust with simplified use
- Conversion for asymmetric Spinnaker (see page 36)
- Ratchet system

Drum

- large diameter (torque \nearrow) : for a better furling power
- Drum and swivel, machined from one single piece



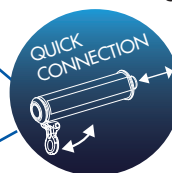
Torque rope

More anti-twist is the rope, faster is the revolution (supplied on request).

Secured sail connection Sail / Mechanism

Smooth push spring release device*

+ Captive quick release pin



Easy fitted furling line

NEW!

Stainless steel guide



Furling line

Carbon housing

- lighter;
- insures a smooth and perfect run of the furling line (no overriding)



Start and Go Rotation option

drum self-locking device (optional).
Fitted with a ratchet (S/s Duplex)

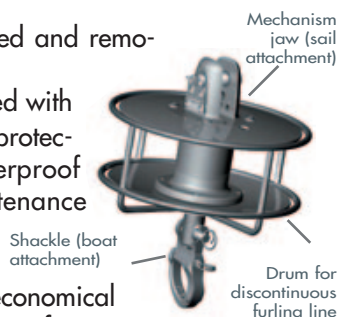


Bottom and top adjustable fastenings (see OPTIONS page)

FXT FURLERS WITH DRUM

FXT Gennaker & Code Zero furler

- quickly installed and removed after use.
- The **FXT** is fitted with steel bearings protected by waterproof joints (maintenance free)
- good technical and economical alternative solution for users who prefer a discontinuous furling line.



The main criteria (but not exhaustive) to select the model Gennaker and Code Zero furler model is the loads of the sail (see below) :

FXT Model	FXT 4500	FXT 7000	FXT CUSTOM
Boat length (meters-feet)	9,5 → 16 m 31' → 55'	+ 16 m + 55'	on request
Max. sail area (meters ² - feet ²)	100 m ² 1073 ft ²	200 m ² 2147 ft ²	
Safe Working Load* (tons- lbs)	4,5 T 9920 lbs	7 T 15432 lbs	

* SWL maxi : see note at bottom of page

- The swivel and the drum are fitted with the same bearings (top shackle for halyard fitting).

The Gennaker continuous line furler FX+

are made of one swivel and one flat continuous line drum (maximum luff and no overlapping round the drum).

- carbon house
- half the weight of a standard Gennaker furler.



- **Ratchet system** : Option for FX+1500 → 7000 (retro-fit available on most FX+ models)



See the video on

YouTube

FX+ CONTINUOUS LINE FURLERS

The wide FX range from 16' day boat to 200' mega yachts :

FX+ Model	FX+ 900	FX+ 1500	FX+ 2500	FX+ 4500	FX+ 7000	FX+ 9000	FX+ 12000	FX+ 15000	FX+ 20000
Boat length (meters-feet)	6 ↓ 10,5	10 ↓ 12	12 ↓ 14	13 ↓ 16	16 ↓ 20	21 ↓ 24	24 ↓ 30	+ 30 ↓	
	20 ↓ 30	30 ↓ 40	40 ↓ 45	42 ↓ 55	55 ↓ 70	70 ↓ 80	80 ↓ 100	+ 100	
Max Gennaker or Code zero area (m² ft²)	30 m ²	60 m ²	100 m ²	140 m ²	250 m ²	350 m ²	450 m ²	550 m ²	+ 550 m ²
	322 ft ²	646 ft ²	1076 ft ²	1500 ft ²	2690 ft ²	3770 ft ²	4844 ft ²	5920 ft ²	+ 5920 ft ²
Safe Working Load* (tons- lbs)	0,9 T	1,5 T	2,5 T	4,5 T	7 T	9 T	12 T	15 T	20 T
	1984 lbs	3306 lbs	5511 lbs	9920 lbs	15432 lbs	19842 lbs	26455 lbs	33069 lbs	44100 lbs
Ratchet	Not available	Option	Option	Option	Option	Contact us	Contact us	Contact us	Not available

* SWL maxi : see note at bottom of page

- Leading in Gennaker furler manufacturing Facnor has acquired a long experience on these types of products - tested during ocean races in extremely tough conditions.

Staysail on a FX+ furler :



a Staysail can be fitted on a FX+ furler so that a stormsail can be used according to the weather conditions. In this configuration, we recommend to install a 2-to-1 block (halyard better tighten and less tension

in the mast).

2-to-1 block option :

See options P. 44

STAYSAILS FITTED WITH FX+ FURLERS

FX+ Model	FX+ 1500	FX+ 2500	FX+ 4500	FX+ 7000	Structural furler
Staysail max area indicatives datas (m ² ft ²)	20 m ²	30 m ²	50 m ²	70 m ²	over 70' boat, it is highly recommended to fit a structural furler (see page 24)
	215 ft ²	322 ft ²	538 ft ²	753 ft ²	
Safe Working Load* (tons)	1,5 T	2,5 T	4,5 T	7 T	
	3306 lbs	5511 lbs	9920 lbs	15432 lbs	

* The working loads indicated correspond to maximum working loads of the mechanisms only and not the maximum loads of the whole furling system when terminals are included. Under no circumstances should these working loads be exceeded

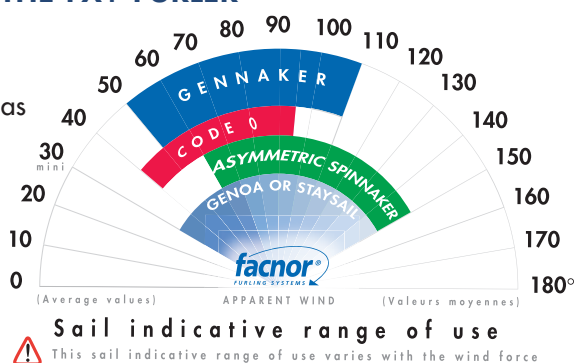


We remind you that an adapted deck attachment must be installed

- FX+ for staysails : ideally featted with a locking swivel (see P. 28)

USE CONDITIONS OF THE FX+ FURLER

The **use range** of the sails as shown on the diagram opposite varies with the force of the wind. The complementary use with closer reach headsails is possible, however, under certain conditions (see page 33).



Installation of the FX+ furler



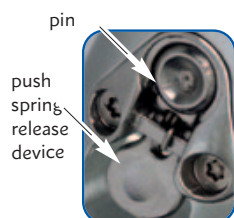
- Lay the furler Gennaker on the deck (fig. 1). Install the furling line round the drum (fig. 2). See below for details;
 - Fasten the upper thimble onto the swivel (fig.3). Attach the drum onto the chain plate or bowsprit (fig. 4). Adjust the bowsprit and secure with a bridle
 - Check that the halyard is clear, hoist the sail (fig 5), tighten and control the sail sheet (fig 6). Ready!
 - Ratchet system OPTION : From a locked position, release the ratchet by operating the drum by rotating (furling in) half a turn. Once released the sail will unfurl easily (see opposite)
- Note: always keep the reefing line under tension and fit a line stopper. Lower the furler sail after use.

FURLING LINE & QUICK FASTENING DEVICE

Installation of the furling line : Easy to install or remove (see opposite).

Easy installed and stored :

- adjustable fastenings : snapshackle (bottom) or shackle (top).
- adapted systems for asymmetric Spinnakers : see page 36.

**Fitted-in and secure sail connection :**

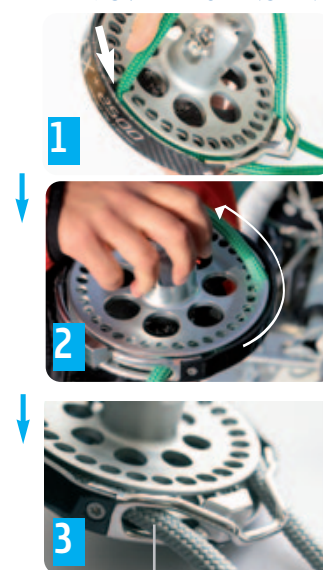
- The sail can be removed from the furler in one "click".
- Smooth push spring release device* with captive quick release pin for FX+ models (NEW : FX+900 with quick release pin).

Used for different sails :

As it is very simple to disconnect the sail from the furler and to fit a 2-to-1 block on the swivel, the Gennaker can be quickly changed for the staysail if needed*.

* provided that the loads are equivalent for both sails (voir page 33). Your Facnor agent will advise you on the best possible solution.

REMOVABLE FURLING LINE



New guide



> FX+ instructions



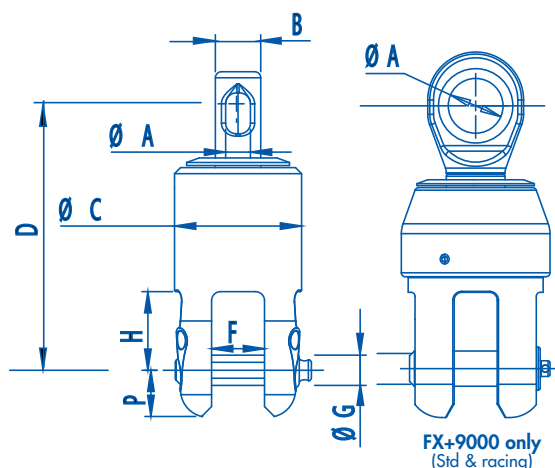


Furling with the ratchet system :

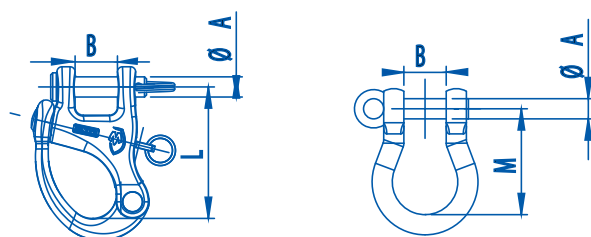
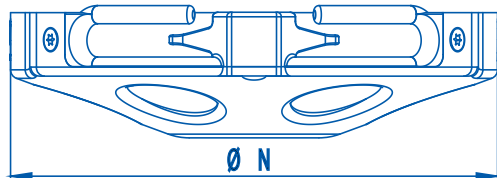
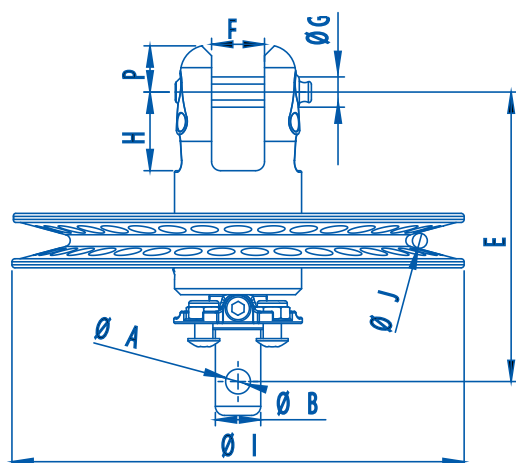
Lay Furling OUT with the ratchet option on.

From a locked position, rotate the drum half a turn (furling in) to release the ratchet lock. Once released the sail will unfurl easily.

Furling IN with the ratchet option on. Start furling in. If you stop at any time and let go of the furling line, the flying sail will be automatically locked, thanks to the ratchet device. Once ready to resume, simply start furling again. The ratchet in the continuous line drum will be automatically activated from the first rotation.



FX+9000 only
(Std & racing)



Important : NEVER SAIL WITH THE GENNAKER OR CODE ZERO PARTIALLY FURLED. ONCE FURLED, NEVER RELY ON THE RATCHET TO FULLY SECURE YOUR SAIL

FX+ DIMENSIONS

Rep.	FX+ 900	FX+ 1500	FX+ 2500	FX+ 4500	FX+ 7000	FX+ 9000 Std	FX+ 9000 Racing	FX+ 12000	FX+ 20000
Dimensions (mm)									
Ø A	6	8	10	12	28	28	14	20	
Ø B	12	15	20	25	30	30	30	40	
Ø C	34	42	49,5	60	76	76	76	86	
D	66	88	100	114	135	135	117	153	
E	79	96	108	121	137	137	130	161	
F	15	17,5	19	26	26	22	22	29	
Ø G	8	10	12	14	16	18	18	20	
H	22	26	33	39	40	32	43,5	50	
I	85	109	149	170	207	224	248	298	
J	6	8	8	10	10	10 STD (Ø 8 acceptable)		12	
L	40	54	65	49 (SSH)	62 (SSH - solid sheave)			-	
M	35	41	52	62	100 (textile shackle)			-	
Ø N	95	121,5	161	181,5	218	237	272	332	
P	12	15,3	18,5	19,9	18	25	25	28	
Weight (g) Swivel (Ws) & Drum (Wd)									
Ws	151	303	493	714	1050	970	2540		
Wd	340	413	767	1095	1557	2160	2160	5140	

Standard drum attachment (snap shackle)

Standard swivel attachment (shackle)



ASYMMETRIC SPINNAKER FURLERS



The FX+ furler, fitted with the Fast thimble, allows to furl in the asymmetric Spinnakers from the cockpit by pulling the bottom furling line. The anti-twist rope rotates up to the top and then transmits the rotation from the head to the tack of sail. With this simple system it is possible to use your existing asymmetric Spinnaker.

FAST ASYMMETRIC SPINNAKER THIMBLE

FX+ FAST

- FAST thimble : with the FX+ furler, this FAST system allows you to use your FX+ from Gennaker to asymmetric Spinnaker in a two clicks
- Possibility to use your existing asymmetric Spinnaker
- Easy and regular furling from top to bottom (see pictures below). Free luff on asymmetric Spinnaker
- Same FX+ features : tested mechanisms, strong and clever
- Maintenance free: high protection of the mechanisms

Anti-twist rope
(supplied on request)

Simple mechanisms FX+



Smooth rotation
Torlon® balls

Safe tack attachment.
Stainless steel. Resistant and smooth edge for a secure lashing



> Video
Fast FX+



Carbon housing
strong and light

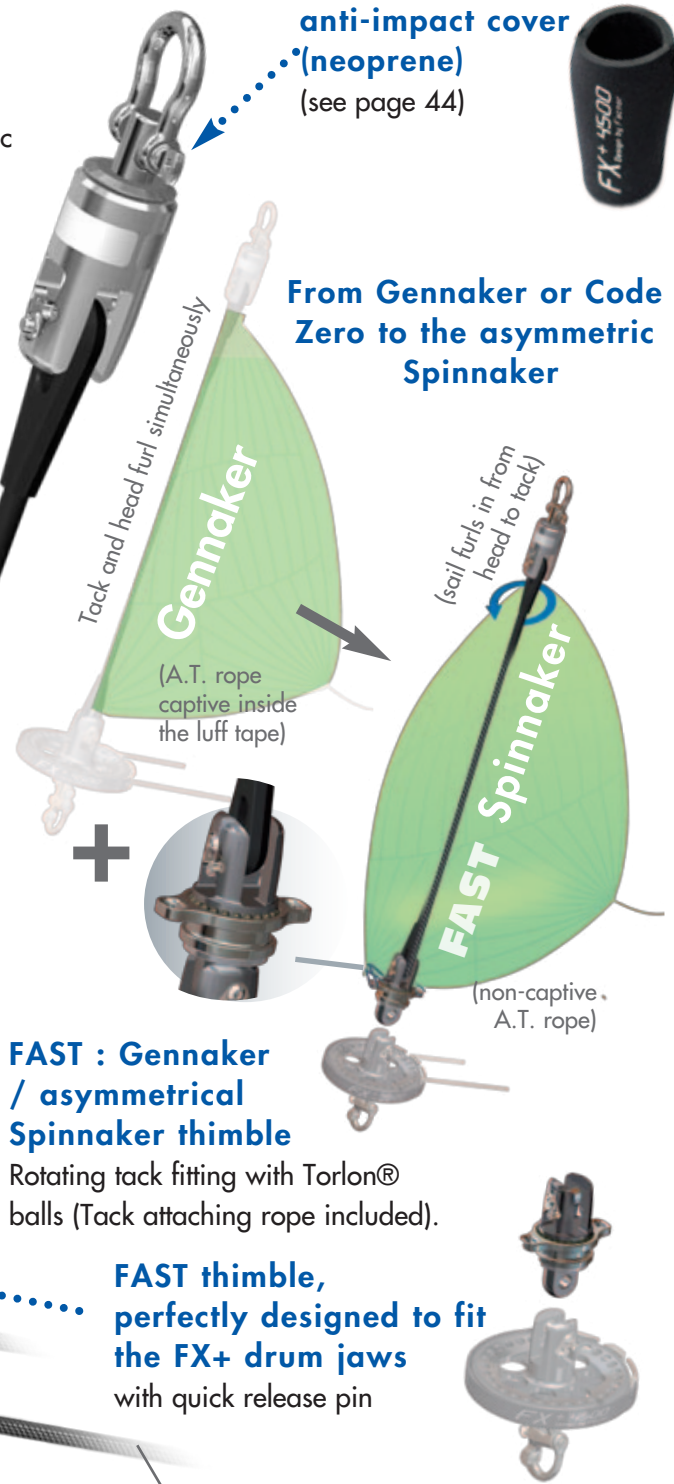
FAST thimble,
perfectly designed to fit the FX+ drum jaws with quick release pin

Removable furling line

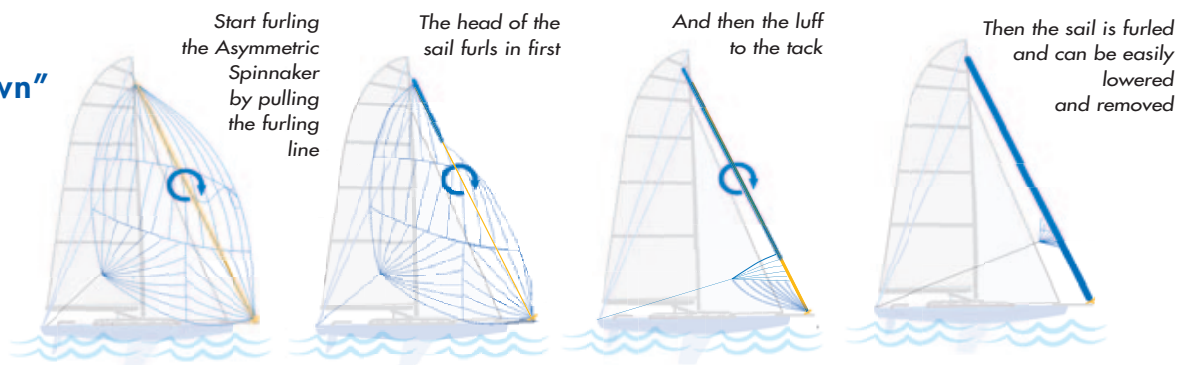
FX+ swivel with anti-impact cover (neoprene)
(see page 44)



From Gennaker or Code Zero to the asymmetric Spinnaker

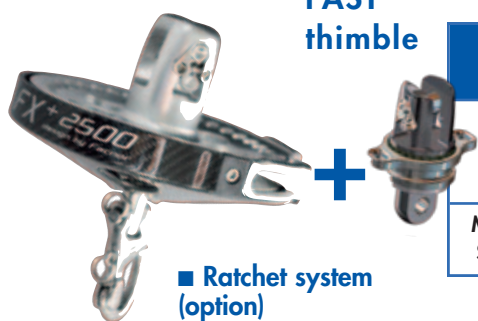


"top-down" system



FX+ Furler

FAST thimble



■ Ratchet system (option)

see page 32 & 33

FX+ / FAST : FURLER MODELS

Model	FX+ FAST 900	FX+ FAST 1500	FX+ FAST 2500	FX+ FAST 4500	FX+ FAST 7000	FX+ FAST 12000
Boat length meter / feet	6 → 10,5 20 → 28'	10 → 12 28 → 40'	12 → 14 40 → 45'	13 → 16 42 → 55'	16 → 20 55 → 70'	contact us
Max asymmetric Spinnaker area	40 m ² 430 Ft ²	80 m ² 861 Ft ²	150 m ² 1614 Ft ²	240 m ² 2583 Ft ²	340 m ² 3660 Ft ²	

FX+ FAST: Option fitting for asymmetric Spinnaker

(System suitable for use with an existing FX furler)



Fast thimbles for FX+ furlers

Model	FX+/FXT Model	Jaw width (mm)	Height* (mm)	Weight (g)	Reference
FAST 900	FX+ 900	12	65	220	43230000940
FAST 1500	FX+ 1500	15	65	222	43230001540
FAST 2500	FX+ 2500	17,5	82	426	43230002540
FAST 4500	FX+ 4500	19	92	581	43230004540
FAST 7000	FX+ 7000	26	119	1114	43230007040
FAST 12000	contact us				
Custom					

* Pin to pin

Two options are available to adjust the tack of your asymmetric Spinnaker :

■ SSH+ solid sheave :

- used to adjust the tack point, with a maximum luff;
- This option is available from 1500 up to 12000 (above models on request).

■ Soft converter :

- Soft converting part for snapshackle (Wichard)
- Available for FX+ 4500 and FX+ 7000

→ see page 45

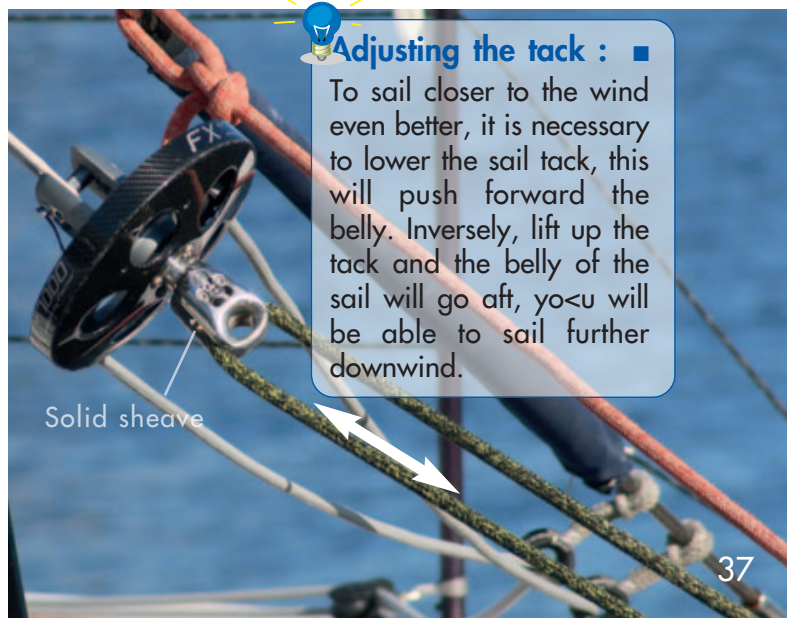


TACK ADJUSTMENT



Adjusting the tack : ■

To sail closer to the wind even better, it is necessary to lower the sail tack, this will push forward the belly. Inversely, lift up the tack and the belly of the sail will go aft, you will be able to sail further downwind.



Solid sheave

FXE ELECTRIC CODE SAIL FURLERS

Further to the successful developments made for the electric headsail furlers, the Wichard Group teams have adapted the multi-motor concept to Code Sails up to 140 m². The result is a concentrate of energy in a compact, light and particularly efficient furler: 45 seconds to effortlessly furl a 140 m² Code Sail !



«PLUG AND PLAY» CONCEPT

- Simple installation : complete kit and simple / waterproof electric connection
- Easy to set up : snap shackle at the bottom + fast tack attachment + protection cover with handle for drive unit
- Compact & light : reduced in size to allow easy switch from manual to electric system, and in weight for handy operation
- Fast & comfortable to use : 45 seconds for furling a 140 m² Code sail (85 rpm* for the 12V version) just by pressing a button!
* (-20% rpm / under load)
- Contained power consumption : 15-25 Ah under load
- Widely tested : numerous mechanical and electric endurance tests in workshop and in real-life conditions.

Concept of electric multi-motorized power (already used on the EC electric headsail furler)

85 rpm (12V)

8T version

NEXE 8T
(> 140 M²)



FXE
4500

Electric wire
(7 m - included)

Snap shackle
with 90° orientation

Top swivel attachment
(complete pack)

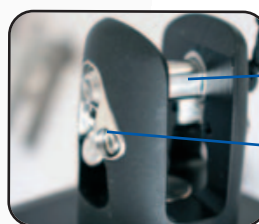


Swivel with neoprene
anti-impact protection
(complete pack)

Protection cover
with handle (bottom)



Quick assembly Bottom unit & top swivel



Captive pin

integral quick-release
pin (including material
insulation)

Fits various thimbles

Same jaw than the FX+



Remote control option

- Release
- Furling in/out
(see options above)

or Wire control option

Waterproof easy plug (Deck socket)



Plug with protection cap



Installation

> Video FXE





- Standard : 4500 FXE complete kit : with swivel ref. 43720200450 (12V)
- 4500 FXE Motorization kit : (top swivel not included) ref. 43801045120 (12V)

International awards :

2022 nominated to the DAME Awards
"Deck equipment category"



COMPONENTS, OPERATION & OPTIONS

■ Simple installation :

- > Pre-installation & complete kit : drive unit supplied plugged onto 35A socket
- > Integrated snap shackle

■ Easy switch from manual to electric code sail furler

Compact, height close to the manually-operated endless line drum.

- > See "4500 FXE Motorization kit"



■ Complete pack including :

- Bottom electric unit
- Top swivel
- Relay box
- Circuit breaker
- Wire (7 m)
- Deck plugging
- Protection cover and storage bag



■ Compatible options :

Compatible with our flying sail accessories :

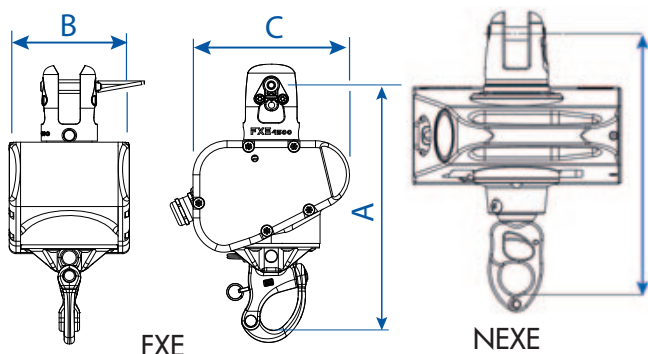
- Fast thimbles, 2-to-1 blocks, anti-twist rope accessories....
- Radio-remote controller
- Wire control

■ Use :

- The irreversible rotation of the electric unit ensures an controlled unfurling of the sail via remote controller. The rotation of the upper rotating jaw of the electric engine will not freely reverse in case you stop the furling process.



> Notice FXE



FXE & NEXE Technical features (Std & motorization kit)

MODELS & DIMENSIONS

REFERENCE Part N°	MODEL	LOAD MAXI. SWL*	BOAT LENGTH	CODESAIL AREA	BOTTOM ATTACHMENT	DIMENSIONS (mm)		
						A	B	C
FXE & NEX E STANDARD								
43720200450	FXE 4,5T 12V	4,5 tons	38 < 52' 11,5 < 16 m	140 m²	Snap shackle	216	106	138
43610008120	NEXE 8T 12V	8 tons	58 < 65' 18 < 20 m	250 m²	Snap shackle	278	221	252
43610008240	NEXE 8T 24V							
ELECTRIC MOTORIZATION KITS FOR CODE SAIL FURLER						A	B	C
43801045120	FXE-MOT 4,5T 12V	4,5 tons	38 < 52' 11,5 < 16 m	140 m²	Snap shackle	216	106	138
43600008120	NEXE-MOT 8T 12V	8 tons	58 < 65' 18 < 20 m	250 m²	Snap shackle	278	221	252
43600008240	NEXE-MOT 8T 24V							

* The S.W.L. is the maximum safe working load over which distortions of the furler can appear. This load is approx. 50% of the breaking load (depending on models)

FXH HYDRAULIC FURLERS

The quick-plug in FXH furler follows the Facnor principle of easy sailing. It has been especially designed to give assistance to light sail handling on 50' boats and above. The available options are specifically adapted to maxi yachts.



© Yacht Solutions

«PLUG AND PLAY» CONCEPT

- Sail quickly installed (quick-release pin)
- Intuitive design and humidity resistant
- Hydraulic connections easily fitted without fluid leaks
- Easy sailing: constant torque, simple fitting and uncluttered foredeck
- Option: micro power pack with 4 functions - "furling in", "furling out", "release" cutting the pressure for easy wire plugging and "bypass" disengaging the drive unit when over speed furling out
- Integrated in-deck version available : IDXH (See page 42)

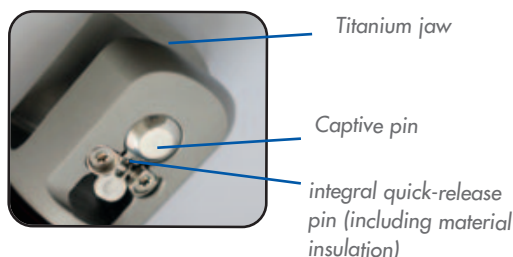
FXH ydrau



Standard or 2-to-1 fitting

Fx+ neoprene swivel with anti-impact cover
(included)

Quick assembly jaw & swivel



Titanium jaw

Captive pin

integral quick-release pin (including material insulation)

Titanium jaw on drive unit and swivel

Light and resistant. CNC machined mono block

Quick and reliable connections

Self-sealing wire plugs



Plugging without oil leak



Remote control with specific functions

- Release
- Bypass
- Furling in/out (see options above)



Controlled hydraulic operation

120 tower / rpm

Version "in deck"

IDXH

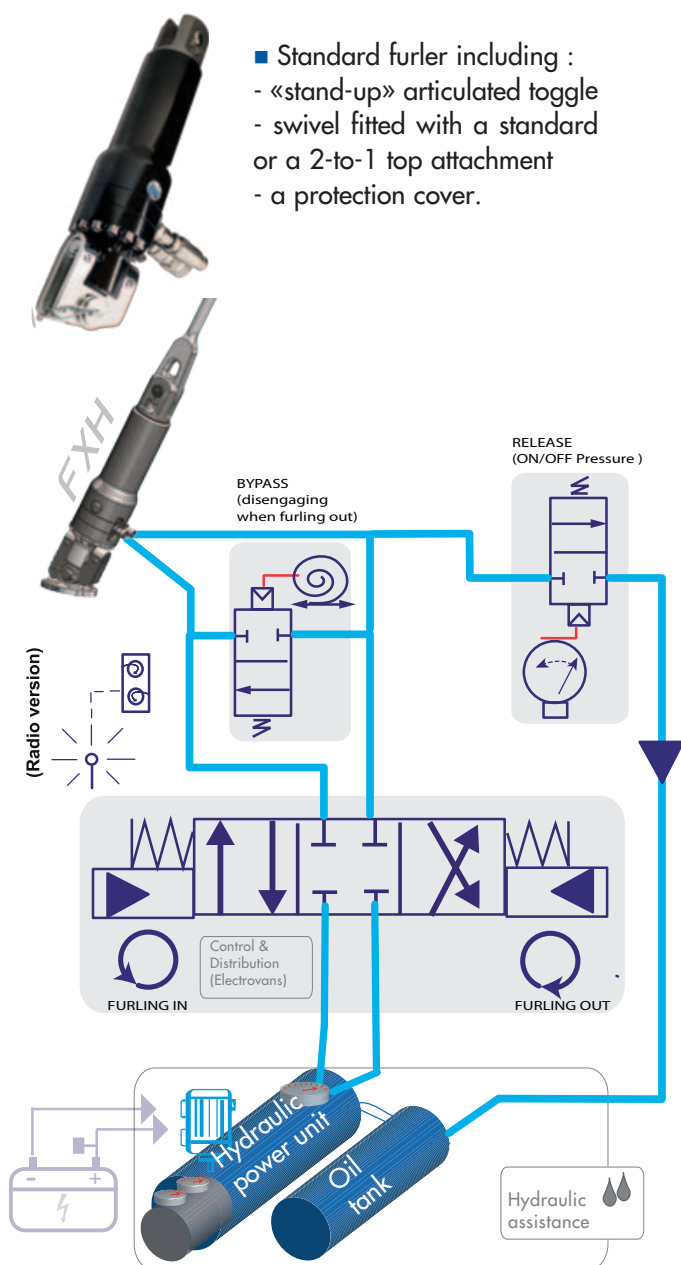
(see page 44)

stand up toggle

Hydraulic assistance

Advised installation: "stand up" toggle and quick plug in and out device

- Standard furler including :
 - «stand-up» articulated toggle
 - swivel fitted with a standard or a 2-to-1 top attachment
 - a protection cover.



See the video on

<https://youtu.be/-pM24ZtervU>



COMPONENTS, OPERATION & OPTIONS

Operation :

■ 3 possibilities for supplying power :

- > Existing hydraulic power unit + extended tube circuit dedicated to the furler;
- > Existing hydraulic power unit + Facnor control box + 5-meter flexible tube
- > Facnor micro hydraulic power box + Facnor control box + 5-meter flexible tube

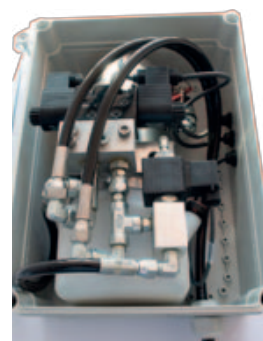
Options :

- **4-functions control box** : driven by manual switch or remote controllers*
+ 2x 5-m flexible tubes

Specific functions :

Release – to reduce pressure and plug the connectors in
Disengage – to furl out at high speed (300 to 400 turns/min instead of 120 turns/min)

*receiver/radio remote control,



- **4-function control box + micro power unit**

- **integrated in-deck version (IDXH) :**

Small dimensions.
See page 42.



MODELS & DIMENSIONS

FXH Technical features & micro hydraulic power box

REFERENCE Part N°	MODEL	LOAD MAXI. SWL*	BOAT LENGTH	POWER	ø PIN	DIMENSIONS (mm)		
						A	B	
FXH HYDRAULIC FURLER								
43500007000	FXH 7000	7 tons	16 → 20 M	80 Nm to125 Bars	ø 14	26	355	
43500012000	FXH 12000 STD	12 tons	+20 M→		ø 16	26	355	
43500012001	FXH 12000 Racing	12 tons	+20 M →		ø 18 (fiber terminal)	22	354	
OPTION FXH** CENTRAL HYDRAULIC POWER BOX						Length	Width	Height
56017000010	FKX_OPTION		16 → +20 M	1600 - 2000 W	-	600	260	350



* The S.W.L. is the maximum safe working load over which distortions of the furler can appear. This load is approx. 50% of the breaking load (depending on models)

IDXH INDECK HYDRAULIC FURLERS FOR FLYING SAIL

The IDXH hydraulic furler performs similar functions to the FXH model, but is fitted under the deck or in the bowsprit what makes it invisible and elegantly integrated.

IDXH: THE "INVISIBLE" FURLER

- Fast furling
- Smart and aesthetic design (unlikely to be remarked)
- Facilitated handlings and cleared deck
- Same options as FXH: micro hydraulic central unit + 3-function kit (furl-in/furl-out/bypass) that operates the clutch in cas of high speed furl-out
- Adaptable to various deck thicknesses and according to configuration : connection by rear or side port.

Upper stainless steel fixing flange

(Through deck optional tailor-made flange according deck thickness)

Deck

In-line motor monoblock

Rotating padeye with lashing eye (stainless steel)

Fixed connections type G3/8

72° & 90°

hydraulic motor (rear port*)

Integrated inclination at 72° & 90°

engine (side port*)

IDXH technical datas

MODEL REFERENCE	MAX. SWL*	Boat Length (m)	Engine	Speed	Power	ø PIN	max thick. (mm)	DIMENSIONS (mm)				
								ø A	B	C	D	E
"Angular motor" version available with 72° and 90° inclination												
IDXH 12000 72°/90°	12 tons	16 → 20m 52' → 65'	20 cc rear port or side port	150 RPM at 6L/min	50 N.m at 100 bars	Ø 20 (for fiber terminal)	35	60	49	172	100	236
IDXH 16000 72°/90°	16 tons	+20m→ +65'→	100 cc side port	150 RPM at 30L/min	380 N.m at 140 bars		40	61	50	170 no connec.	140	296
"Inline" Version												
IDXH 12000 inline	12 tons	16 → 20m 52' → 65'	50 cc rear port or side port	150 RPM at 7,5L/min	46 N.m at 70 bars	Ø 20 (for fiber terminal)	20	60	48	208	105	105

* The S.W.L. is the maximum safe working load over which distortions of the furler can appear. This load is approx. 50% of the breaking load (depending on models)

Connection = G3/8

IBXE : ELECTRIC IN-BOWSPRIT FURLER

- Innovative plug & play system for catamarans over 40'
- Ready-made solution with BDH-ME option (Electric) whisker pole
- Motorization is assembled into an aluminium whisker pole (BDH-ME or BDX-MH) or existing boat forefront.
- Powerful drive unit 800 W (12/24 V) / 100 RPM
- Relay box and textile schackle are included.

> Video IBXE

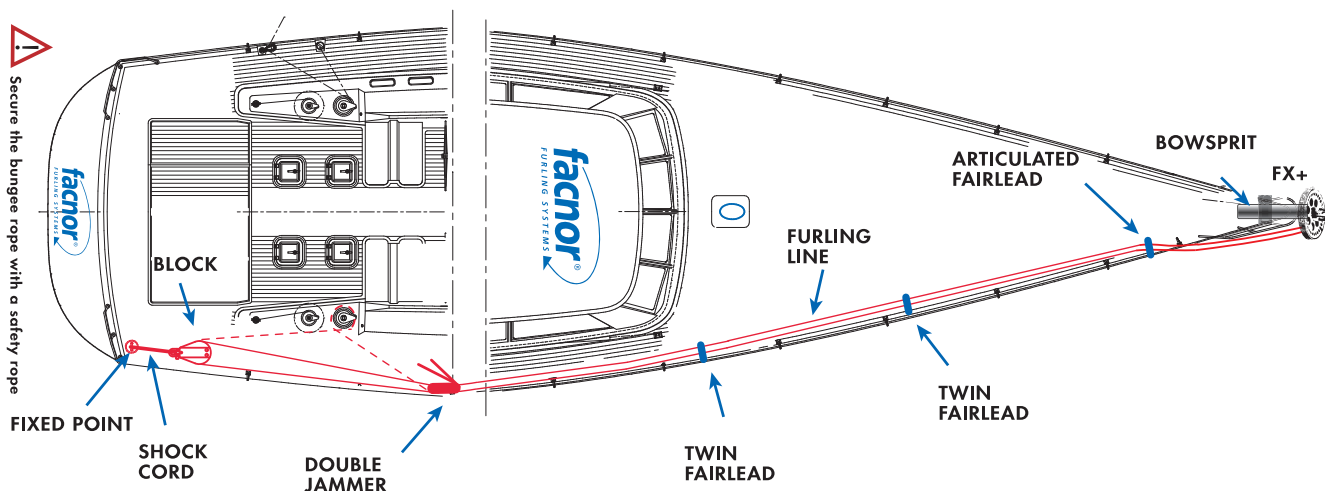




FLYING SAIL FURLER ACCESSORIES & ADVICES

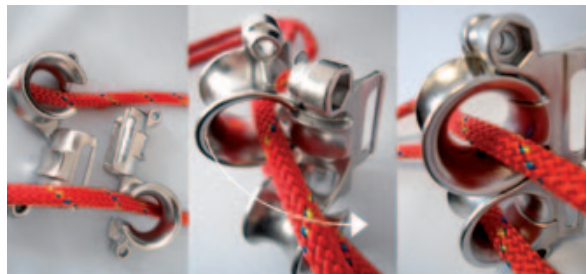
FX+ CIRCUIT OF CONTINUOUS FURLING LINE

FX+ : The continuous furling line is easy to install thanks to the articulated and twin fairleads (See below). The loop can be tightened and then secured with a double jammer.



TWIN FAIRLEADS

The fairlead can be open in order to fit a spliced furling line.



Model	Description	for stanchion ø	Reference
TSL25	Twin fairlead (rope hole ø 20)	25	24000102110
TSL28	Twin fairlead (rope hole ø 20)	28	24000102130

SPliced FURLING LOOP

Rope : polyester /braid polyester rope

Available : ø 6, ø 8, ø 10, ø 12

Length : 12, 16, 20, 26, 32 m and other lengths on request



Grip suitable for
Gennaker & Code zero
furlers

Spliced furling loop		
ø (mm) x L (m)	FX+ Model	Reference
ø 6 x 12 m	FX+900	24016060120
ø 6 x 16 m		24016060160
ø 8 x 16 m	FX+1500 FX+ 2500	24016080160
ø 8 x 18 m		24016080180
ø 8 x 20 m		24016080200
ø 10 x 20 m	FX+4500	24016100200
ø 10 x 26 m		24016100260
ø 10 x 32 m	FX+ 7000	24016100320



ANTI-TORSION ROPES & FX+ OPTIONS

Flying sails like Gennaker, Code 0 or Asymmetric Spinnaker fitted on furlers are supplied with an **anti-twist luff rope**. Anti-twist as it needs to transmit the rotation down to the top of sail. For an optimum revolution the jaws of furler mechanisms are connected to the luff rope thimbles. And for an optimum halyard tension, a two-to-one block can be fitted.

(Example of installation)

Snatch blocks

■ in case of high load, they reduce the halyard load on the sheave box; connected above the swivel or underneath the drum.

LB LIGHT SNATCH BLOCK						
Model	FX+/FXT/FAST Ref.	ø Sheave	SWL	B (mm)	Weight (g)	Reference
LB02T	FX+1500	40	1,5T	59	99	43180402040
LB03T	FX+2500	45	2,5T	64	141	43180403040
LB04T5	FX+4500	55	4,5T	79	249	43180404540
LB07T	FX+7000	70	7T	90	461	43180407040
LB09T	FX+9000	85	9T	88	897	43180403040

The thimbles

■ Adjusted to the mechanism jaw for a optimum transmission in rotation.

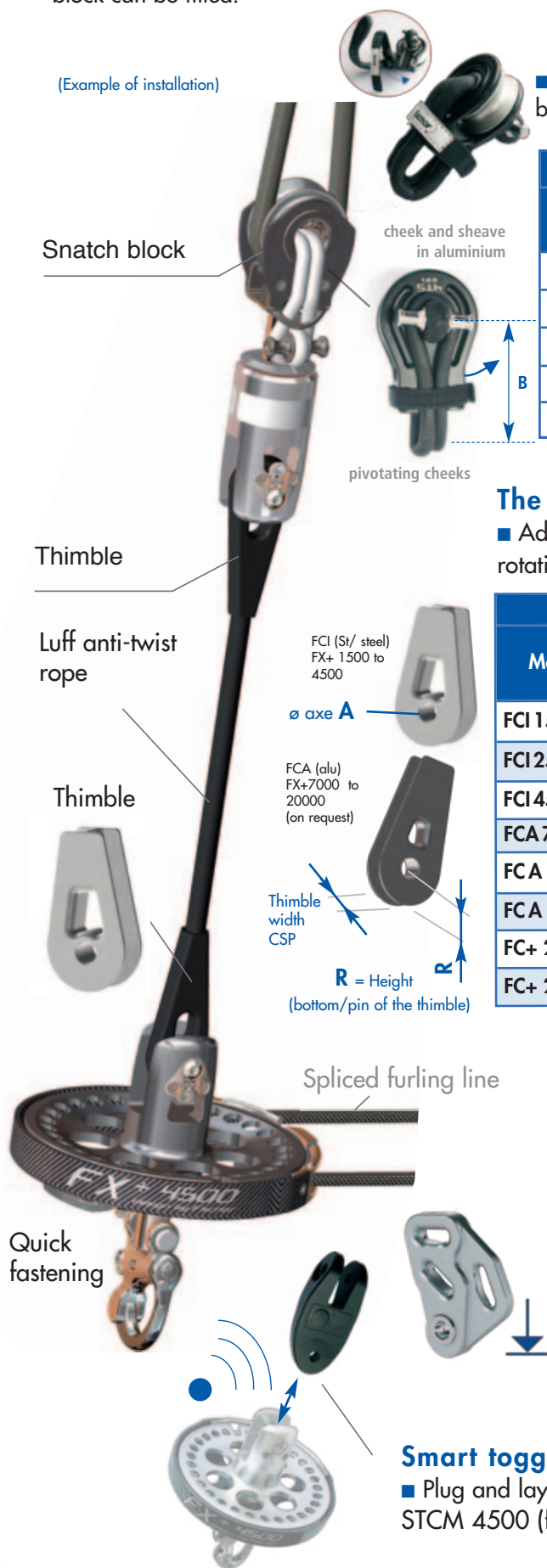
FCI / FCA / FC+ STANDARD THIMBLES						
Model	FX+/FXT/FAST Ref.	Rope ø (mm)	Axis A (mm)	CSP	R	Reference
FCI 1500	FX+ 1500	9 → 11	8	14,5	15	25200010110
FCI 2500	FX+ 2500	11 → 13	10	17	18,5	25200010112
FCI 4500	FX+ /FXT 4500	13 → 15	12	18,5	22	25200010114
FCA 7000	FX+ /FXT 7000	16 → 22	14	25	35	43130237030
FCA 12000	FX+ 12000 std	16 → 22	16	25	35	43130231220
FCA 12000	FX+ 12000 race	16	18	21	35	43130231230
FC+ 20000*	FX+ 20000 std	20 → 24	20	28	41	43130232020
FC+ 20000*	FX+ 20000 race	20 → 24	29	30	41	43130232030

* 2 models : Standard & Racing for FCA 12000 & FCA+ 20000

FCL CABLE LESS THIMBLE			
Model	FX/FXT Ref.	TOP Reference	BOTTOM Reference
FCL 900/1500	FX+ 2500	43130240010	43130250010
FCL 2500	FX+/FXT 2500	43130240020	43130250020
FCL 4500	FX+/FXT 4500	43130240040	43130250040
FCL 7000	FX+/FXT 7000	43130240070	43130250070
FCL 12000 Racing	FX+9000/12000 racing / STK 9T	43130240071	43130250071

Smart toggle Cyclops Marine

■ Plug and lay system. Effort measured in real time via bluetooth. STCM 4500 (for FX+4500). Ref. 43130160450 Contact us

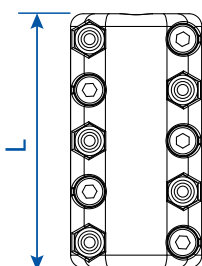
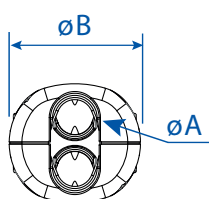


CLAMPS FOR ANTI TWIST ROPE

New!

In order to facilitate the installation of **anti-torsion ropes** by sailmakers, Facnor has developed a range of highload clamps (Duplex Marine quality stainless steel) :

- Adapted shape for lashing
- Complementary to Facnor thimble range
- Quick assembly (three types of assembly : with long screws for manual preassembly, with vice or with hydraulic press machine thanks to a special tool)
- 4 models fitted from 9,5 mm to 15 mm \varnothing
- Kit including clamp + stainless steel screws (including long screws for preassembly) + thermoshrinkable sleeves
- **IMPORTANT:** For use on Code sails FRC clamps have been validated with Marlow Pro-Drive Plus AT rope only for the time being. The use with any other AT rope brand or model is not under our responsibility.



CLAMPS

Model	References	\varnothing A.T. Rope* (mm)	Dimensions		
			$\varnothing A$ (mm)	$\varnothing B$ (mm)	$\varnothing L$ (mm)
FRC D09 mm	24000091090	9,5	8,5	29	56
FRC D11 mm	24000091110	11	10	31	60
FRC D13 mm	24000091130	13	12	35	62
FRC D15 mm	24000091170	15	15	40	100

Quick fastenings :

Different quick fastening devices (top or bottom) are available:

- snap shackles ...
- soft converting part fitted on Wichard snapshackle (small size solid sheave)



FX+ 900
FX+ 1500
FX+ 2 500
FX+ 4 500



FX+ 7 000
FX+ 12 000
FX+ 20 000



ref. 25200180010

QUICK FASTENINGS

Solid sheaves :

material : Duplex stainless steel
see use for asymmetric Spinnaker (page 36) or Staysail (page 33)



SSH+ 1500 > 7000



SSH+ 12000



H

SOLID SHEAVE

SSH SOLID SHEAVE				
Model	FX/AFX Ref.	Height (mm)	weight (g)	Reference
SSH+ 1500	FX+ 1500	53	173	43354320153
SSH+ 2500	FX+ 2500	60	226	43354320253
SSH+ 4500	FX+ 4500	69	280	43354320453
SSH+ 7000	FX+ 7000	73	350	43354320543
SSH+12000	FX+ 12000	84	415	43354320943



COVERS FOR DRUM & SWIVEL

Continuous line drum covers : the FX+ cover is ideal for protecting your continuous line furlers from deck impacts. The cover is made of padded PVC and assembled with thick and strong strips. Standard available for the FX+ 2500, FX+ 4500, FX+ 7000, FX+9000/12000 (Tailor-made cover : on request).

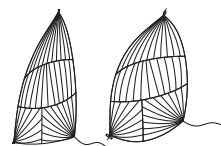
FX+ Drum	FX+ 2500	FX+ 4500	FX+ 7000	FX+ 9000 FX+ 12000
REFERENCE	29050000076	29050000056	29050000060	29050021200

FX+ & FXT SWIVEL	FX+ 900 FX+ 1500	FX+ 2500	FX+ / FXT 4500	FX+ / FXT 7000
REFERENCE	29050010150	29050010250	29050010450	29050010700



Swivel protection covers (neoprene) : an additional benefit of securing the mast and the sailing crew. Delivered in FX+ standard kit : FX+ 2500, FX+ & FXT 4500, FX+ & FXT 7000.

BOWSPRIT FOR GENNAKERS & ASYMETRICAL SPINNAKERS



from 25 up to 57'

Simple and efficient functioning



- Automatic locking device on deck fixing blocks;
- Simple installation (only a short backwards movement is needed to fit the bowsprit on the deck);
- Quick removal & storage on a third fixing block;

■ The central fixing collar is removable from the fixing block. The foredeck is therefore totally free.

■ Rotating collar captive from the section : removable bowsprit for storage alongside one boat edge



■ Integrated line stopper for holding the tackline.



Complete kit including :

- Aluminium bowsprit with special end fittings : bridle attachment at the front and fixing block device at the back (delivered pre-installed);
- Adjustable Central fixing collar + Deck fitting blocks and two counter plates.



Technical data and references

ø section (mm)	Total length (mm-feet)	Mini. length inside (mm-feet)	max. length outside (mm-feet)	Use example boat length (feet)	Max sail area (m²)		Fitting FX+ & FX+SPI models
					Asym. Spi.	Gennaker & code zero	
ø 70	1600	800	800	25-36'	60	37*	1500/2500
ø 80	1800	900	900	36-40'	82	52*	2500/4500
ø 90	1900	950	950	40-47'	102	65*	4500/7000**
ø 100	2000	1000	1000	48-57'	130 / 150*	105*	4500/7000**

*with bridles ** FX+7000 with snap shackle option

■ **Options :** «working» and «parking» deck fittings, deck fitting covers, stemhead fittings, bridle kits, furler fitting ring (Gennaker attachment)...

Articulating toggle (option) for Gennaker / Code zero furler attachment

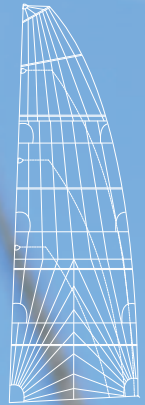


Bridle kit (option)



FACSLIDE⁺
REEFING LOCKS
GAFF LOCKS

MAINSAIL



Full Mainsail set : Above a certain area, a full batten mainsail needs to be fitted with ball bearing cars for more comfortable cruising. In addition to Lazy-jacks, Facslide® allows easy hoisting, lowering and reefing of the mainsail. Furthermore, the reefing locks completes cunningly this car and track device. For squared mainsails, the gafflock can also help for folding the mainsail.



New!



FULL BATTEN CAR SYSTEMS FACSLIDE⁺

P48-49

GAFF LOCKS FOR SQUARED MAINSAILS

P51

MAINSAIL REEFING LOCKS & RINGS



P52

The system of recirculating ball bearing cars is designed for full batten mainsail. It helps to raise, lower and reef the sail easily. The FACSLIDE® system combined with a Lazy Bag is the installation to handle perfectly your mainsail on your own*.

* a 50 m² mainsail weights approx. 35 kg for a monohull or 70 kg for multihull.



EB15 (F10,20,30)



ER40 (F40)

ADAPTABILITY & RELIABILITY

- Fitting to the mast without modification : tracks easily fixed with slugs
- Strength : monobloc design of the car
- Toggle with large articulation and fitting most of batten boxes
- The cars are supplied with torlon® balls and safety clip device (FL10, FL20, FL30)
- FR25x15, FR40 : flat and light tracks, hard anodizing (40 microns)
- Compact & economical : Possibility of mixing the car models in order to lower the sail stack height when the cars are down (Facnor patent).

FACSLIDE⁺

Top and bottom stoppers (EB15, ER40)

Delivered in the FACSLIDE® kit, these stoppers prevent the cars from sliding out of the tracks.

Headboard cars (FT10, FT20, FT30, FT40)

can be fitted on the head board of the existing sail or simply on a ring

Gafflock option

Mainsail autolocking 2T5 and 4T (see p.52)

New!

+ than 180°

toggle with large articulation

Safety-clip device (similar to the FX Gennaker furlers)

Monoblock cars

The FACSLIDE® cars are CNC machined in one block of aluminium, this makes them shock-proof when lowering the sail.

Automatic reefing

■ Reefing the mainsail is easy as the effort for tightening the halyard are limited.

■ As a complementary boom option Facnor supplies the F40 outhaul foot car. (ref. 540 204 008 20)



Tracks fitting to the mast without modification

The tracks are easily fixed with slugs alongside the existing mast without unstepping (see page 48).



Photo : © Morris Adant / Garcia - Grand large yachting

FACSLIDE+ MODEL SELECTION

Facslide Model	Track Reference*	MONOHULL Mainsail area	MULTIHULL Mainsail area
F 10	FR25x15	45 M ²	40 M ²
F 20	FR25x15	60 M ²	55 M ²
F 30	FR25x15	85 M ²	70 M ²
F 40	FR40	130 M ²	90 M ²

* with screws and slugs



■ Cars references :

- Batten cars : FL10, FL20, FL30, FL40.
- Intermediates cars : FI10, FI20, FI30, FI40.

■ Compact Facslide set :

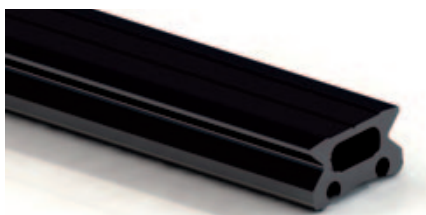
- FACSLIDE[®] set includes : tracks, headboard, batten and intermediate cars.
- for a reduced cars height when mainsail lowered, it is possible to mix different car models



■ Tracks : Two types of tracks according to the mainsail area :

FR+ 25 x 15 Tracks for F10-20-30 cars

- Length = 2 meters
- anodization (black) of the tracks : 40 microns.



FR40 Tracks for F40 cars

- Length = 1,7 meter
- colorless anodization



- installation of the tracks : see against
- dimensions page 50.

INSTALLATION OF THE TRACK WITH THE SLUGS

■ **No modification of the mast :** The tracks are easily fitted to your mast with slugs without unstepping and modifying it. The various types of slugs ensure the compatibility of our system to most existing mast grooves. The tracks are CNC drilled with high precision. Made of aluminium extrusion, they are also perfectly straight.

- Two types of slugs : flat and round
- Various sizes available (see chart p. 48 or ask to your Facnor dealer)



Salted water at the head...

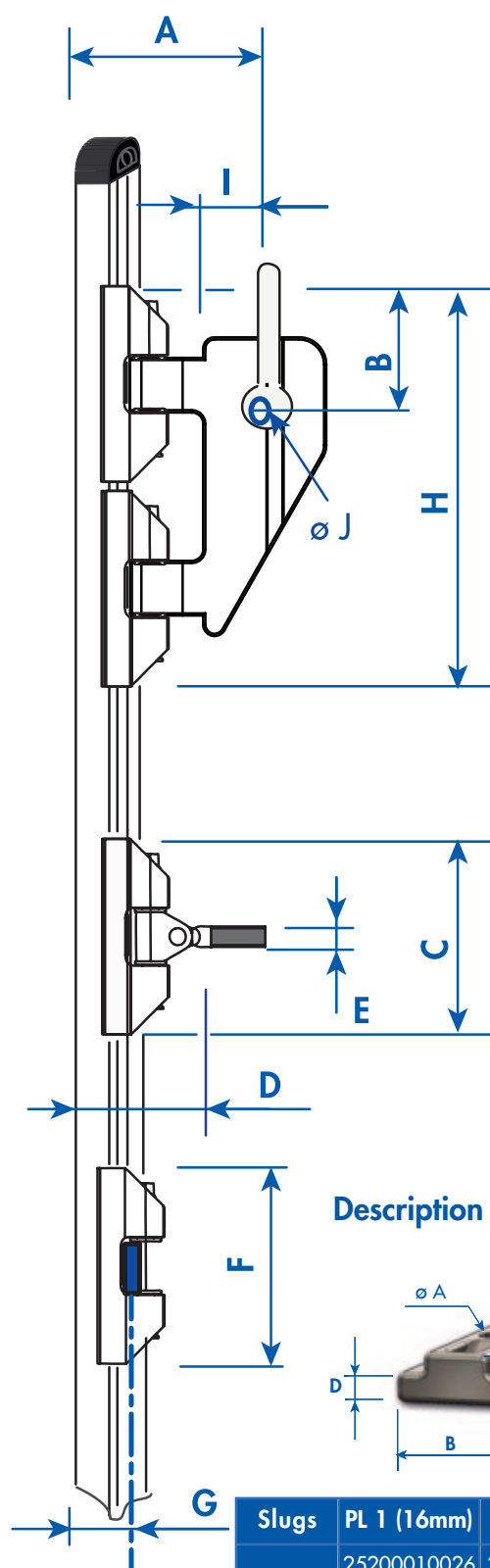
Even though the head cars are positioned 10 meter high, they receive sea water, therefore do not hesitate to rinse the cars with fresh water.

Facnor advice: once a year put a drop of washing up liquid on the car balls.



Lower mainsail with
Facslide system combined with lazy Jack

FACSLIDES + DIMENSIONS

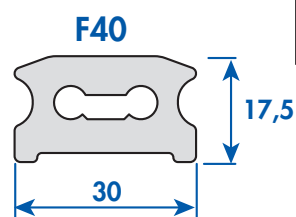
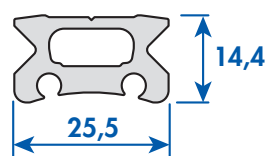


Track ref.	F10+
	FR 25x15
Marks	Dimensions (mm)
A	72
B	45
C	74
D	58
E	M10
F	64
G	26
H	162
I	38
ø J	8

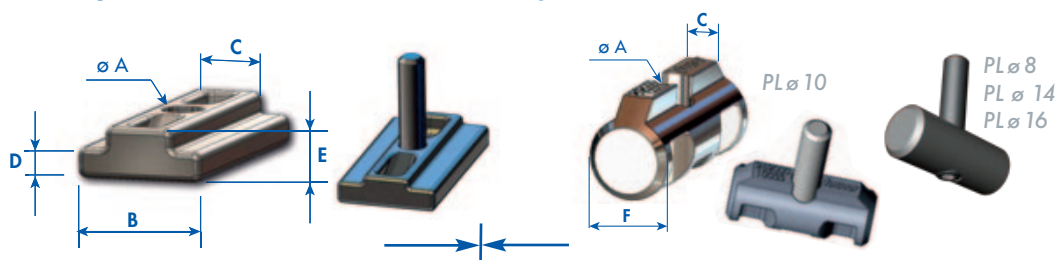
	F20+	F30+
	FR 25x15	FR 25x15
Marks	Dimensions (mm)	
A	72	115
B	50	98
C	84	94
D	58	60
E	M10	M10
F	74	94
G	26	28
H	172	197
I	35	40
ø J	8	18

Track ref.	F40+
	FR 40
Marks	Dimensions (mm)
A	120
B	150
C	140
D	120
E	M12
F	85
G	37
H	300
I	39
ø J	18

F10-20-30



Description and dimensions of the slugs :



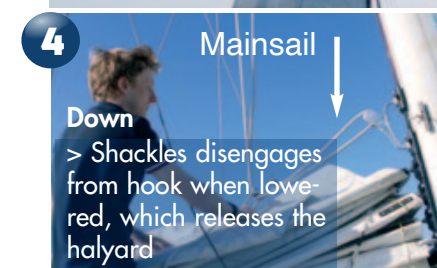
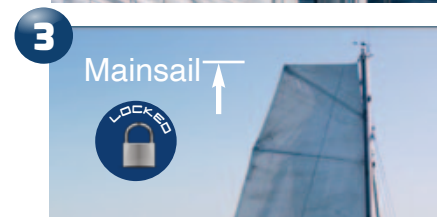
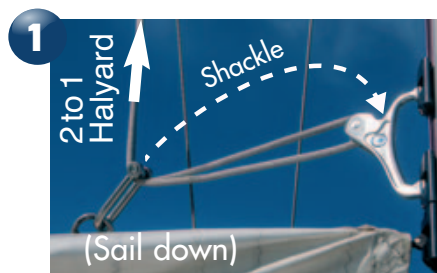
Slugs	PL 1 (16mm)	PL 2 (19mm)	PL 3 (23mm)	PL ø 8	PL ø 10	PL ø 14	PL ø 16
Part N°	25200010026 (M5)	25200010028 (M5)	25200010030 (M5)	51095080000 (M5)	25200010033 (M5)	25200010035 (M5)	28051006160 (M6)
Dim.			25200010032 (M6)				
A	5 mm	5 mm	5-6 mm	5 mm	5 mm	5 mm	6 mm
B	16 mm	19 mm	23,7 mm	-	-	-	-
C	9 mm	9 mm	12,4 mm	-	3,8 mm	4,8 mm	-
D	4 mm	4,5 mm	4,8 mm	-	-	-	-
E	6,3 mm	6 mm	7,7 mm	-	-	-	-
F	-	-	-	8 mm	10 mm	14 mm	16 mm

GAFF LOCKS : MAINSAIL AUTO-LOCKING

MAINSAIL ACCESSORIES

- Catamaran over 40' (F30/ F40)
- Squared mainsail automatically locked
- Mainsail easily folded
- Simple use : long top batten simply hoisted and lowered along side the boom

Gaff Lock
FOR mainsails



■ Adaptation with other brands of batten cars : contact us

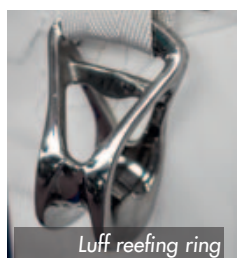
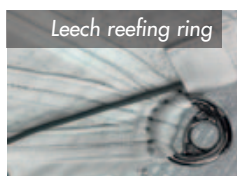
■ Material : duplex



> Video
GAFFLOCK

GAFF LOCK MODELS			
Reference	Max Load	Description	Reference
FT-GL 30	2T5	F30 Gafflock Heaboard Car	54041400650
FT-GL 40	4T	F40 Gafflock Heaboard Car	54041400700
GAFFLOCK/FACSLIDE RETROFIT			
FT-GL 30	2T5	F30 Gafflock toggle retrofit	54043000600
FT-GL 40	4T	F40 Gafflock toggle retrofit	54044000600

MAINSAIL REEFING RINGS WITH WEBBING ATTACHMENT



■ Friction rings with various applications for boat sails and mainly mainsail

■ Material: Duplex Marine quality stainless steel

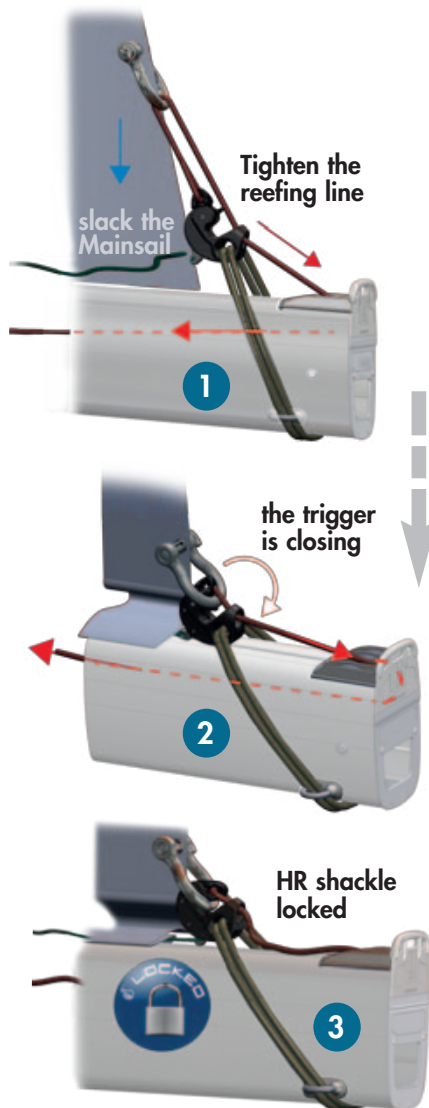
■ **Leech reefing ring** : in replacement of reefing blocks.

■ **Luff reefing ring** : single line reefing systems or Cunningham



Model	Reference	Max. SWL (tons)	Rope ø (mm)	Dimensions
Leech reefing ring (Rear)				
1T100 SWL	25200010200	1,1	10-12	56 x 59 x 20
2T400 SWL	25200010210	2,4	12-14	70 x 68 x 25
Luff reefing ring (Front)				
1T200 SWL	25200010220	1,2	10-12	45 x 72 x 37

MAINSAIL REEFING LOCKS



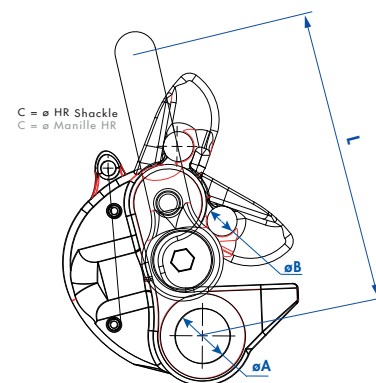
High Resistance Main Sail reefing locking system from 35'

- The HRC locking systems : protects the boom sheaves and reefing lines, subject to high tensions.
- Reduce the compression on the boom section due to the high tension of the reefing line
- Wide range: 3 Sizes HRC 4 / 6 / 9 Tons (SWL)
- Material : Duplex Marine quality stainless steel
- Locking : Release the Mainsail halyard in position and tighten the reefing line (1) up to the locking position of the trigger (2) then release the reefing line and hoist the Mainsail Halyard (3)
- Unlocking : tighten the trigger line and hoist the Mainsail
- Installation by a sailmaker is recommended, depending on the configuration and the efforts on the Mainsail (please find the list of our distributors on www.facnor.com)
- Shackle included



Features

Model	Reference	max. SWL (tons)	approx. Boat length	Weight* (grams)	DIMENSIONS			
					ø A (mm)	ø B (mm)	ø C shackle (mm)	L (mm)
HRC 4T	88931104005	4	Mono 45-55' Multi 45-55'	466	18	10	12	95
HRC 6T	88931106005	6	Mono 55-70' Multi 55-65'	855	22	12	16	121
HRC 9T	88931109005	9	Mono + 65' Multi + 65'	1566	27	14	20	143



VIDEO SUPPORT

Installation of Facnor equipment, use, product information :

VIDEOS - JOIN US ON

FACNOR CHANNEL

<https://www.youtube.com/user/Facnor>



TECHNICAL SUPPORT

Instructions for headsail furling & reefing systems, Gennaker & Code zero furlers, Facslide+, former ranges,...

Consult the Facnor instructions on our technical support





FACNOR WORLDWIDE DEALER NETWORK

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